APPENDIX A

Notice of Preparation and NOP Comments

AUGUST 2010 REVISED NOTICE OF PREPARATION AND NOTICE OF PUBLIC SCOPING MEETING CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION PROPOSED NORTHERN CALIFORNIA REENTRY FACILITY AND DEWITT NELSON YOUTH CORRECTIONAL FACILITY CONVERSION SAN JOAQUIN COUNTY, CALIFORNIA

RECIRCULATION OF EIR SCOPING NOTICE

The California Department of Corrections and Rehabilitation (CDCR) has revised and is distributing for a third time the Notice of Preparation (NOP) for an Environmental Impact Report (EIR) for the proposed Northern California Reentry Facility (NCRF) on Arch Road in San Joaquin County south of Stockton. The NOP has been revised to acknowledge that CDCR will now consider not only the NCRF project but also the proposed conversion of the adjacent DeWitt Nelson Youth Correctional Facility (DeWitt Nelson) to a mental and medical health facility for adult male inmates in a single EIR. The NCRF/DeWitt Nelson EIR will address both proposals equally at a project level of environmental analysis.

The DeWitt Nelson facility is located in the southeastern corner of Northern California Youth Correctional Center (NCYCC). NCYCC consists of a complex of four CDCR Division of Juvenile Justice (DJJ) correctional facilities including N. A. Chaderjian, O. H. Close, Karl Holton, and DeWitt Nelson Youth Correctional Facilities. The proposed NCRF is situated immediately northeast of the Karl Holton facility. The Karl Holton and DeWitt Nelson facilities are now considered permanently closed and no longer needed to meet the needs of the DJJ. These facilities are excess to the DJJ's needs because of the substantial reduction in the number of wards being committed to the state's juvenile justice system. However, the N. A. Chaderjian and O. H. Close facilities are to remain operational and the DJJ believes these juvenile correctional facilities will continue to be needed for the foreseeable future.

SEPTEMBER 2009 NOP AND REVISED DECEMBER 2009 NOP

Two NOPs for the proposed NCRF project have been previously circulated for public and responsible agency review by CDCR; this includes the original NOP in September 2009 (hereinafter the September 2009 NOP) and subsequent revised NOP in December 2009 (hereinafter the December 2009 NOP). The proposed NCRF project involves the renovation and reuse of the former women's correctional facility. The project would consist of a 500-bed secure reentry facility for adult male inmates that are scheduled for parole to San Joaquin County, Amador County, and Calaveras County.

After release of the September 2009 NOP on September 18, 2009, two subsequent developments occurred that resulted in a change to the anticipated scope of the original NCRF EIR. These changes were addressed in the December 2009 NOP; this document was recirculated for community and agency consideration on December 2, 2009.

One of the changed conditions that required the recirculation of the NOP was the formal approval of the 1,734-bed California Health Care Facility (CHCF) for adult male inmates at the site of the former Karl Holton facility by the California Prison Health Care Receiver (CPR) in mid-October 2009. Another changed condition was CDCR's decision to consider the potential reuse of the former DeWitt Nelson facility as a 1,133-bed correctional facility that would serve mental health and medical health care needs for adult male inmates. The revised December 2009 NOP indicated that, while only conceptual, the proposed DeWitt Nelson conversion would be addressed in the NCRF EIR as a potential future project that could contribute to cumulative environmental effects.

Since distribution of the December 2009 NOP, CDCR has advanced the planning process for conversion of the former DJJ facility and is formally proposing the DeWitt Nelson conversion project. The budget and scope of this proposal have been authorized by the State Public Works Board under the provisions of the Public Safety and Offender Rehabilitation Act of 2007 (Chapter 7, Statutes of 2007 [AB 900]). Therefore, CDCR is re-circulating a second revised NOP (to be known as the "August 2010 Revised NOP") for the NCRF EIR to expand the scope of the EIR to include analysis of the DeWitt Nelson Conversion as an additional and separate project analyzed at an equal-level of detail as the proposed NCRF project.

Under the revised EIR scope, no additional environmental review would be necessary after certification of the EIR for either the NCRF project or the DeWitt Nelson conversion project (or both) as long as the projects remain within the EIR's scope, environmental analysis, findings, and adopted mitigation measures for each project. Further, each project is evaluated separately in the EIR, as well as combined, so that CDCR can consider whether to approve one or both of the projects through separate approval processes. The approval of one project (i.e., NCRF or DeWitt Nelson) does not result in the approval of the other project. CDCR will consider each project independently based on the analysis contained in the EIR and comments received from public agencies and the public.

The description of the proposed NCRF project has not changed since the release of the September 2009 NOP. For the sake of completeness a copy of the September 2009 NOP (Attachment A) and the December 2009 NOP are attached to this NOP (see Attachment B). Distribution of the August 2010 Revised NOP for the proposed NCRF and DeWitt Nelson Conversion projects is intended to provide the community, responsible agencies, and representatives of local agencies an additional opportunity to comment on the scope of the environmental issues that will be addressed in this combined EIR.

STATUS OF CHCF PROJECT

Since release of the December 2009 Revised NCRF NOP the proposed CHCF, Stockton, has become a fully authorized project by the State Public Works Board under the provisions of AB 900. On August 2, 2010 the City of Stockton, County of San Joaquin, Stockton Chamber of Commerce, CDCR, and California Prison Healthcare Receivership Corporation (CPR) signed an agreement settling litigation brought jointly by the City, County, and Chamber against the EIR for the CHCF project. There is no further pending litigation against the CHCF; CDCR and CPR are in the process of implementing the conditions of the settlement agreement. Initial construction activities are expected to begin on the CHCF in fall 2010. Certain elements of the "CHCF Settlement Agreement" will affect aspects of the NCRF and DeWitt Nelson projects including, but not limited to, the planned extension of water service that would benefit all three projects, local traffic improvements to Arch and Austin Roads, potential annexation of the NCYCC/NCWF properties to the City of Stockton, and the implementation of the CHCF Local

Hire Outreach Plan and Citizens Advisory Committee provisions. The settlement provisions are included within the baseline for analysis for the two projects.

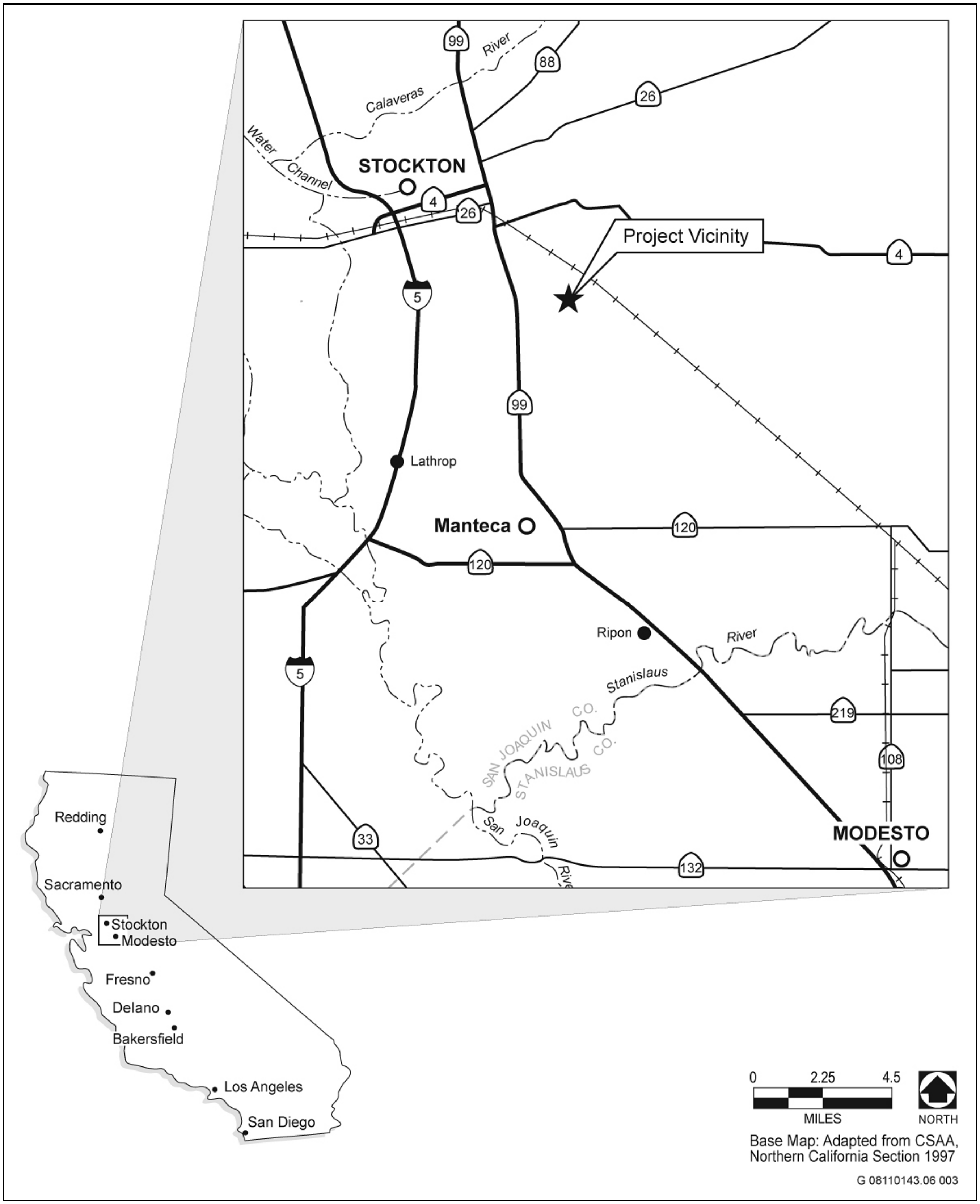
General Information

Project Title: Northern California Reentry Facility and DeWitt Nelson Youth Correctional Facility Conversion

Lead Agency: California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827
Contact: Roxanne Henriquez, Senior Environmental Planner
(916) 255-3010

Project Location: There are two projects and related sites that will be addressed in the EIR: one for the proposed NCRF project and the other for the proposed DeWitt Nelson Conversion project. The NCRF project site consists of 134 acres and the DeWitt Nelson project site consists of 70 acres. Both sites are state-owned properties in unincorporated San Joaquin County, immediately southeast of the Stockton city limits (see Exhibit 1).
The sites are less than two miles east of State Route 99 (SR 99), which provides regional access to the sites. Arch Road provides direct access to the NCRF site, and the DeWitt Nelson site is currently accessed via Newcastle Road. The NCRF site was formerly used as a correctional officer training academy and, prior to that, a women's detention facility, the Northern California Women's Facility. The DeWitt Nelson site was formerly used as a DJJ youth correctional facility; it is part of the Northern California Youth Correctional Center.

CEQA Requirement: This Notice of Preparation is intended to satisfy the requirements of the California Environmental Quality Act, (CEQA), (Public Resources Code, Division 13, Sections 21000–21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Sections 15000–15387).



Source: AECOM 2010

Regional Location **Exhibit 1**

Potential Permits and Approvals Required:

- CDCR: Overall project approval. The NCRF and DeWitt Nelson projects will be considered for approval separately following certification of the EIR.
- San Joaquin Valley Air Pollution Control District: Authority to construct and permit to operate (applies to both projects).
- Central Valley Regional Water Quality Control Board: General construction permit (applies to both projects).
- City of Stockton: Potential annexation of both sites as well as the remainder of the NCYCC property.
- San Joaquin County: Potential annexation of the sites and balance of the NCYCC property into the City would require County approval of detachment.
- San Joaquin County Local Agency Formation Commission (SJLAFCO): Boundary changes to authorize water service from the City of Stockton. Potential consideration of a request to annex sites and other portions of NCYCC to City of Stockton. The CHCF settlement agreement provides for CDCR to enter into a deferred annexation agreement which provides that the City may apply to SJ LAFCO for annexation. CDCR may also petition the Commission for the modification of the existing boundaries of fire districts that serve the combined project area.

PROJECT PURPOSE AND NEED

NCRF

California Penal Code Section 6275 (SB 943 of 2007) authorized the conversion of the former woman’s facility to a secure community reentry facility. The proposed NCRF would serve inmates from San Joaquin, Calaveras, and Amador Counties. The reentry facility would house adult male inmates during the last 6–12 months of their respective sentences prior to parole. The goal is to provide inmates a variety of special educational, vocational, and personal development programs to better prepare them for return to the community of their last legal residence.

DEWITT NELSON CONVERSION

In August 2009, a three-judge district court composed of Judges Reinhardt, Karlton, and Henderson issued an opinion for the *Coleman v. Schwarzenegger* case that imposes a population cap on California's prisons. The court found that the cap is necessary to cure constitutional violations that have long existed with respect to the provision of medical and mental health care. The court found that the overcrowding in the prisons led to “criminogenic” conditions, which resulted in more crimes being committed by former prisoners and an increase in the recidivism rate. It also determined that, with adequate safeguards and improved rehabilitation and reentry programs, the state could ensure that the order would result in an increase in public safety. (U.S. District Court Order January 12, 2010).

The proposed DeWitt Nelson project is included in the CDCR Division of Correctional Health Care Services (DCHCS) plans (May 26, 2009 and November 6, 2009) to meet the long-range mental health bed needs ordered by the Federal *Coleman* Court on behalf of the plaintiffs. On January 4, 2010, the United States District Court in *Coleman* included this project in CDCR's plans, pursuant to the provisions of the governing June 18, 2009 order.

The proposed DeWitt Nelson project has been authorized by the State Public Works Board (PWB) for design and environmental review in accordance with AB 900. AB 900 authorizes the design and construction of infill projects to increase prison capacity and reentry facilities along with other corrections programs. The PWB authorization does not authorize or otherwise approve the project for construction. The project would need to complete all appropriate environmental reviews prior to CDCR considering the project for approval.

PROJECT BACKGROUND

NCRF

In February 2008, an Initial Study/Proposed Mitigated Negative Declaration (IS/MND) for the conversion of the former Northern California Women's Facility (NCWF) to an adult male reentry facility was released for public review. CDCR approved the project in April 2008. At the time the IS/MND was prepared and the project approved, the site was used as a correctional officer training academy.

The California Correctional and Peace Officers Association (CCPOA) subsequently challenged the adequacy of the IS/MND. On March 12, 2009, the Superior Court of San Joaquin County found that the environmental analysis was not adequate and ordered CDCR to set aside its approval of the MND and the project. In May 2009, CDCR rescinded and set aside all resolutions, decisions, and orders approving the MND (State Clearinghouse Number 2008021233) for the proposed NCRF. CDCR determined following the court's decision that it was necessary to prepare an EIR for the project.

The facility remains closed with the exception of occasional use for officer training. The current condition of the project site and surrounding area (at the time this August 2010 Revised NOP is released) will comprise the baseline used for the EIR's environmental analysis. The description of the proposed NCRF project has not changed since the release of the September 2009 NOP (see Attachment A).

DEWITT NELSON CONVERSION

As mentioned above, one of the primary reasons the NOP for the NCRF project was recirculated in December 2009 was to inform the public and responsible agencies that CDCR had determined that it would potentially reuse the former DeWitt Nelson facility for a proposed 1,133-bed correctional facility that would serve mental health and medical health care needs for adult male inmates. Because the project was in the very early planning stages, CDCR planned to analyze the proposed DeWitt Nelson project as a related project in the cumulative analysis section of the NCRF EIR.

Since distribution of the December 2009 NOP, the State Public Works Board has authorized the DeWitt Nelson project under the provisions of AB 900. The PWB authorization does not authorize or otherwise approve the project for construction. The project would need to complete all appropriate environmental reviews prior to CDCR considering the project for approval. Therefore, CDCR is distributing the August 2010 Revised NOP to acknowledge the preparation of a combined EIR for the proposed DeWitt Nelson Conversion project and the proposed NCRF project.

PROJECT LOCATION

NCRF

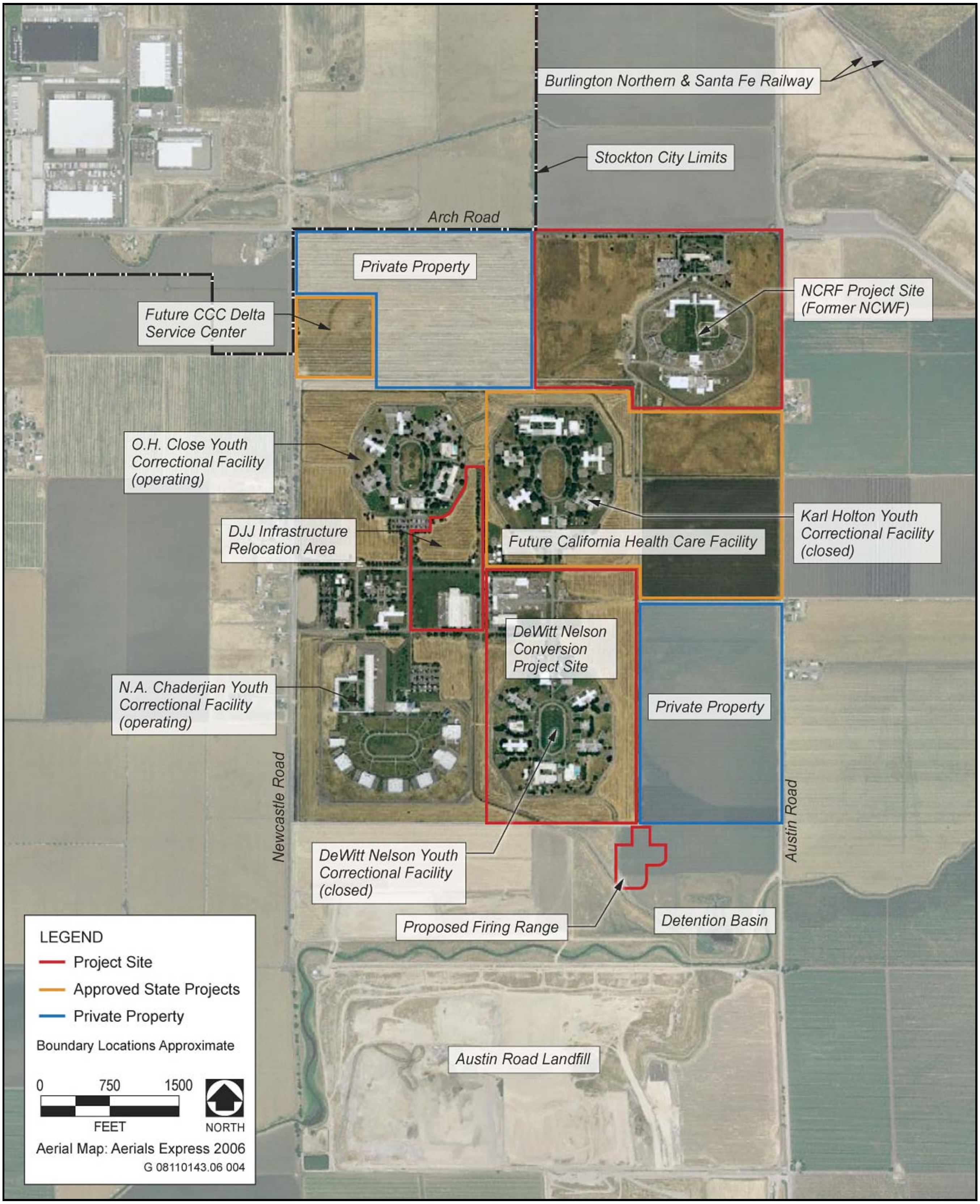
The NCRF project site is located on 134-acres of state-owned property adjacent to the northeast corner of the NCYCC. The site is less than two miles east of SR 99 in unincorporated central San Joaquin County, immediately southeast of the Stockton city limits (see Exhibit 2). It is approximately 6 miles northeast of the cities of Lathrop and Manteca, 21 miles northwest of Modesto, 17 miles northeast of Tracy, and 15 miles south of Lodi. Arch Road provides direct access to the project site and SR 99 provides regional access. The site is immediately north of the 1,734-bed CHCF project (approved October 2009), which is also located on the grounds of the NCYCC.

The reentry facility project site was originally the Northern California Women's Facility, a secure adult female inmate prison that closed in 2003. Subsequently, the facility was used as a correctional officer training academy called the Richard A. McGee Correctional Training Center Annex (CTCA), which closed in 2008. With the exception of occasional field training exercises, the site is currently vacant but maintained. The project site includes a hexagonal two-row exterior perimeter fence (12 feet tall topped with razor ribbon). The vacant buildings surrounding the former recreation yard include four former housing units, a former food service building and reception building, and a former control/support/program building. The area south of the former recreation yard includes the former kitchen delivery/service area, plant operations, storage, maintenance, and an abandoned Prison Industry Authority facility that previously operated a laundry, warehouse, and program space. There are no guard towers on the project site.

DEWITT NELSON CONVERSION

The DeWitt Nelson project site is located on 70 acres directly south of the CHCF project site and is currently accessed from Newcastle Road. The former DeWitt Nelson Youth Correctional Facility originally opened in 1971 as part of the NCYCC, which was operated by CDCR's DJJ. In 1996, at its peak of operation, DeWitt Nelson population was 638 wards, but the ward population declined to an average population of 350 wards by January 2008. The DeWitt Nelson facility was deactivated in July 2008 and has remained unused. The proposed DeWitt Nelson project would potentially renovate or replace the existing housing units and provide for the construction of additional buildings and infrastructure to accommodate a 1,133-bed medical and mental health facility for adult male inmates.

The CHCF project site is directly north of the DeWitt Nelson project site. The two site plans have a contiguous boundary.



Source: AECOM 2010

Site Vicinity Aerial Map **Exhibit 2**

DESCRIPTION OF PROPOSED PROJECTS

NCRF

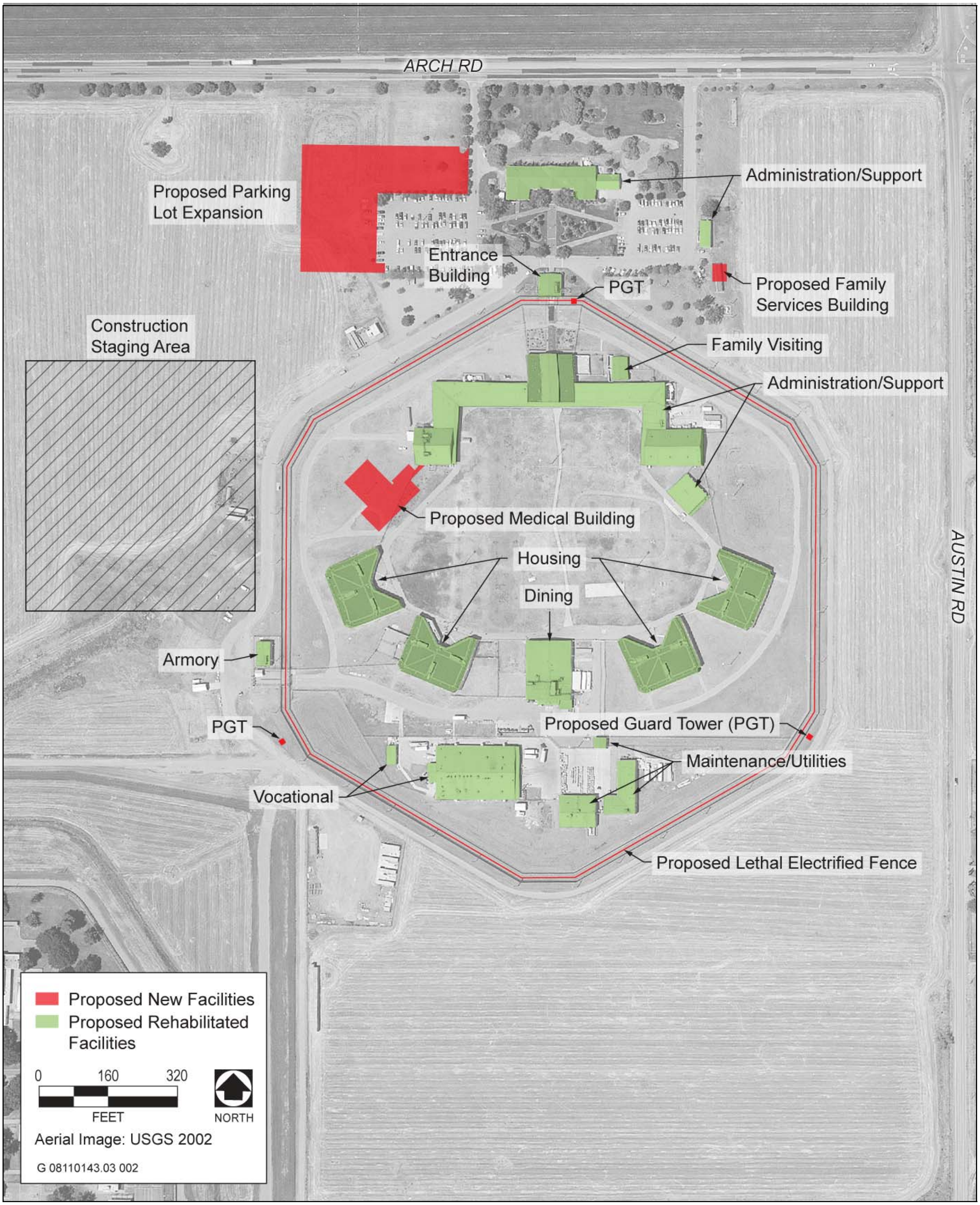
The proposed conversion would involve construction of a new medical building, as well as renovation of buildings for facility program support services, dining and receiving, family visiting, academic and vocational education, miscellaneous support, and a gymnasium (see Exhibit 3). Existing structures contain 400 cells. Total planned inmate capacity for the reentry facility is 500 beds. To provide the additional capacity CDCR proposes to provide 100 double-bunked units; the balance of the housing facilities would remain single-bed units.

Chapter 9.8 of Assembly Bill 900 (Section 6271[a]) sets a limit on reentry facilities of "up to 500 beds each;" therefore, the population of the reentry facility cannot exceed the 500-bed legislative cap.

At the northwest part of the prison site, a new 16,500 square foot medical building would be constructed at a similar scale to the existing buildings. The project would be designed to comply with Leadership in Energy and Environmental Design Green Building Rating System (LEED) standards, LEED Silver, for the proposed medical facility.

Perimeter security for the proposed NCRF would be enhanced to include a lethal electrified fence and three armed perimeter guard towers. Other improvements would include the construction, repair, or replacement of the boundary line fencing, roads, parking, outer perimeter landscaping, inmate recreation yard improvements, site grading, site lighting, storm drainage improvements, and extension of utilities to each building. CDCR would also improve the prison's electrical supply, distribution, water and wastewater service, and refuse disposal systems. No new high-mast lighting would be added to the project site.

Water service to NCYCC and the former NCWF was historically provided from four on-site wells operated by the DJJ. However, due to shallow groundwater contamination detected in three of the wells associated with the adjacent municipal landfill, water service is being extended from the City of Stockton's water system to the DJJ facilities. Service lines are expected to be in place to provide water connections into the DJJ water distribution system by the end of 2010. The new service will be installed in Newcastle Road; a service line will extend into the DJJ property to provide a direct connection to the facility's water distribution storage tank. Connection with city-supplied water will require isolation of the facilities' existing three contaminated wells; they will no longer provide service to the DJJ and NCWF and will be properly closed and abandoned unless the Central Valley Regional Water Quality Control Board directs that the contaminated wells must remain operable for monitoring purposes
As a result of the CHCF settlement agreement CDCR will extend new water service through the installation of a new 16-inch water service line in Arch and Austin Roads to the point of connection to this new facility. This additional water service and water meter will provide the point of connection for all new water service to not only the CHCF but also the proposed NCRF and DeWitt Nelson facilities. CDCR has the right to also install a third connection point at approximately Logistics Drive to assure adequate water supply to service all facilities on this property.



Source: AECOM 2010

Proposed NCRF Site Plan **Exhibit 3**

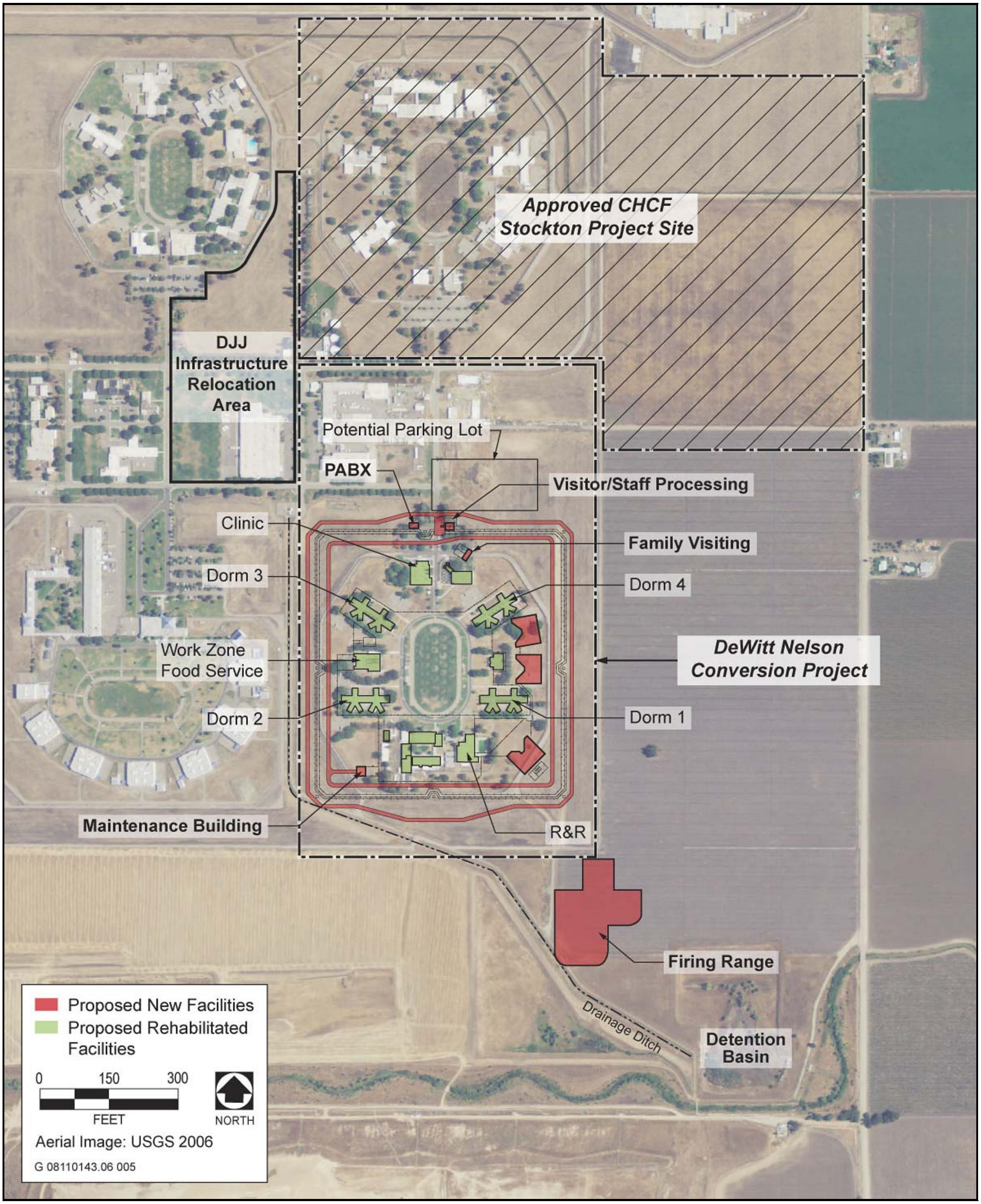
Sewer service at NCYCC and the former NCWF is provided by an existing gravity collection line that transports wastewater to City of Stockton treatment facilities. CDCR believes there is adequate capacity within the current agreement (800,000 gallons per day) to meet the needs of all facilities within the state property. The CHCF settlement agreement acknowledges the continuation of this agreement past its current expiration date (2018). The agreement clarifies that if the combined discharge rate of the existing and proposed facilities exceeds the existing historic wastewater agreement, then CDCR would purchase additional capacity and, if necessary, upgrade the capacity of the export line. Solid waste generated at the NCRF and DeWitt Nelson facility would be transported to the adjacent Austin Road landfill.

The proposed facility would operate 24 hours a day, year-round, with three 8-hour shifts (watches). An estimated 350–400 staff would be employed at the proposed facility and would include correctional officers, administrative, and other types of support staff. Visiting hours would be by appointment only from 8:00 a.m. to 9:00 p.m., seven days a week, and the average number of weekday visitors is estimated to be approximately 30 with weekend visitors estimated to be 100.

Construction of the reentry facility is anticipated to begin in summer 2011; there will be an approximately 24 month construction schedule and a tentative activation date of winter 2013. Construction work shifts would generally be between 6 a.m. and 6 p.m., Monday through Friday, for the reentry facility. A construction staging area for NCRF would be located on a roughly 6-acre field west of the existing perimeter fence line and parking lot. Additional construction staging areas would be provided within the CHCF project site and in open areas within the DeWitt Nelson facility. All construction staging would occur within state property at NCYCC and NCWF. Parking for construction workers would be provided in the existing NCWF staff and visitor parking lots as well as on temporary parking lots to be developed for the CHCF and DeWitt Nelson projects. All parking for construction workers would be within the NCYCC state-owned property.

DEWITT NELSON CONVERSION

The proposed DeWitt Nelson project includes the conversion and reuse of the existing DeWitt Nelson facility to a semi-autonomous adult male medical and mental health facility. Depending on the final construction plans all or a portion of the existing buildings may be renovated, modified, or removed and replaced. The adjoining CHCF project is expected to provide primary administration and support for the proposed DeWitt Nelson facility. The proposed project would include housing, programming, healthcare facilities, inmate visiting and some support facilities. The project would contain three new housing units and the potential renovation of four existing dormitory housing units for the proposed inmate population (see Exhibit 4). The new housing units and four existing dormitories would house up to a maximum of 1,133 inmates. In addition, a proposed firing range would be located south of the DeWitt Nelson boundary near the existing detention basin just north of the landfill. Additional stormwater storage facilities may be developed near the existing detention basin. Access to the DeWitt Nelson site would be at the entrance on Austin Road to be developed for the CHCF project. Employee and visitor parking for the DeWitt Nelson facility would either be at the northeast corner of the project site or be provided in a shared parking lot to be developed on the east side of the adjacent CHCF project.



Source: AECOM 2010

Proposed DeWitt Nelson Site Plan **Exhibit 4**

Pursuant to Executive Order S-20-04, CDCR is designing and will construct the new buildings to meet minimum LEED Silver design standards. Renovation work of existing buildings would include window/door hardware repairs, electrical repairs, mechanical repairs, and upgrades for the lighting and fire alarm system. Existing buildings would be brought up to the Americans with Disabilities Act (ADA) Standards for Accessible Design, CDCR Design Criteria Guidelines (DCG), and the California State Building Code requirements. Existing buildings would also be analyzed for potential LEED Silver certification.

Site infrastructure upgrades would include distribution systems for water supply and storage, wastewater systems, natural gas distribution system, telecommunication systems, and primary and secondary electrical distribution systems. Site security improvements would include a lethal electrified perimeter fence in between a double security fence topped with barbed tape, appropriate lighting, and perimeter guard towers, including one tower at the vehicle/pedestrian sallyport. A chain link fence with slats would be provided to physically and visually separate the adult correctional facilities from the remaining DJJ facilities at the NCYCC complex. Armed supervision and gun access would be provided consistent with CDCR policy. Other improvements include the construction of roads, parking, inmate recreation yards, and site grading.

This facility would employ approximately 450 employees, including correctional officers, medical and mental health professionals, and other support staff working around the clock in three 8-hour shifts. The project would operate 24 hours per day, 7 days per week.

Construction of this proposed facility is anticipated to begin in spring 2011 with an initial activation date of December 2013. Construction work shifts and worker parking arrangements would be the same as described above for the NCRF project, except that construction activities on the proposed DeWitt Nelson facility may extend into evening hours and potentially include weekends.

Both the NCRF project and DeWitt Nelson project would include environmental protection measures related to water quality protection and earthquake resistant design. Water-quality-related protection measures require preparation of a Storm Water Pollution Prevention Plan, as well as additional measures to reduce impacts related to stormwater quality. The protection measures related to earthquake resistant design require preparation of a geotechnical design study and incorporation of its recommendations. The EIR will describe these environmental protection measures in greater detail.

DJJ INFRASTRUCTURE RELOCATION/COMBINED PERIMETER SECURITY FENCE

DJJ Infrastructure Relocation

Conversion of the DeWitt Nelson facility as an adult prison will require the relocation and replacement of some existing shared DJJ infrastructure, support buildings, and a portion of the corporation yard situated at the northern end of the site plan (See Exhibit 4). These infrastructure elements would be reconstructed in an area situated between the O. H. Close and Chaderjian facilities immediately west of where they are generally now situated.
This includes water tanks, fuel storage, a fueling station for vehicles, a boiler house, a plant operations building, vehicle maintenance, and driveways. The boiler house, which produces steam for food preparation areas at the DJJ, would be reduced in size because it would now

only serve the two remaining juvenile facilities. All replacement buildings and structures would be within the interior of the remaining DJJ campus; they would generally not be noticeable from Newcastle Road.

Option for Combined CHCF/DeWitt Nelson Perimeter Security Fence

The current site plan for the conversion of the existing DeWitt Nelson facility provides for the installation of a new double security fence perimeter with a lethal electric fence element around the entire facility. This perimeter would replace the existing DJJ perimeter that can only be used for juvenile wards. The new perimeter would meet all CDCR adult correctional safety standards including the installation of armed observation towers (about 750 feet apart) and an outer patrol road. The CHCF would have an identical perimeter fence, towers, and outer patrol road. Pedestrian sallyports would be placed on the north side or northeast corner of the DeWitt Nelson facility and on the south side or southeast corner of the CHCF to facilitate the direct movement of staff and inmates between the two facilities for treatment and care each day.

However, there is a potential that the proposed perimeter security system of the DeWitt Nelson facility may be combined into a single continuous perimeter fence that encompasses not only DeWitt but also the CHCF. This combined perimeter would substantially reduce the movement of inmates and staff through the two pedestrian sallyports, it would reduce the total amount of perimeter fencing, and it would provide for a more unified perimeter security operation.
This concept has been successfully deployed at other facilities wherein CDCR has two complementary prisons in close physical proximity. Only minimal changes would be required to the CHCF perimeter fence plan; joining the two perimeter security systems can be accomplished by extending the segments of the east and west fence lines of the respective facilities so the combined site plans are encircled by a single perimeter. The existing plans for parallel cross fences at the end of each facility would be eliminated; a single pedestrian sallyport would be replaced the original plans for two individual sallyports.

Option for Integration of DeWitt Nelson and CHCF Site Plans

Another potential option that CDCR may consider in the EIR is to allow the integration of the site plans for the CHCF and DeWitt Nelson facilities into a single facility. Under this concept, the scope of the CHCF and DeWitt Nelson projects would <u>not</u> change. That is, each project would continue to provide the same number of beds, employees, and services as previously approved for the CHCF (1,734 beds) and the current proposal for the DeWitt Nelson facility (1,133 beds). This option would allow for potential improvements in the delivery of medical and mental health care services to the inmates by having a more cohesive arrangement of the building complex. For instance, some facilities included within CHCF could be physically located on the DeWitt Nelson site in order to reduce environmental impacts, provide services more efficiently, and/or reduce construction or operational costs. Alternatively, and for similar reasons, facilities planned as part of the DeWitt Nelson Conversion project could be located on the CHCF site. This site plan alternative, as well as others that may be considered in the EIR, represent preliminary design concepts for the proposed DeWitt Nelson facility. They have been included in this NOP because CDCR intends to evaluate the feasibility of various configurations at the facility and are not intending to determine the ultimate configuration and/or design of the subject project. Such decision is subject to the CDCR Secretary’s independent discretion and approval but only after certification of the combined NCRF/DeWitt

Nelson EIR. The Secretary would make such decisions in collaboration with CPR; such decision could also result in the adoption of a feasible alternative based on findings of the EIR.

Potential Environmental Effects

The EIR will evaluate potentially significant direct, indirect, and cumulative environmental impacts associated with construction and implementation of the proposed NCRF project and the proposed DeWitt Nelson Conversion project. Mitigation measures will be recommended where appropriate to reduce significant impacts. Due to the addition of the DeWitt Nelson Conversion project, the scope of the EIR has expanded from the scope described in the previously released NOPs (e.g., the September 2009 and December 2009 NOPs). With the exception of two of the environmental issue areas identified in the "Environmental Checklist" (Appendix G *State CEQA Guidelines*), mineral resources and recreation, the EIR will be "full-scope," which means all the other environmental issue areas identified in the "Environmental Checklist" will be evaluated in the EIR's environmental impact analysis. Because this EIR will be "full-scope" an Initial Study was not prepared. CDCR has determined that the following issues will be analyzed in detail in the EIR.

Aesthetics

Although both sites are currently developed and the majority of new on-site structures would be single-story, both the NCRF project and the DeWitt Nelson Conversion project include guard towers, which could obstruct views of any visual resources identified in the area.
In addition, project site lighting could cause lighting and glare impacts. The EIR will provide an assessment of both projects' impacts to visual resources, as well as lighting and glare impacts. While generally not visible from adjacent local roadways, such as Austin Road, views of the DeWitt Nelson facility would be affected by the potential removal of existing landscape trees.

Air Quality

The EIR will describe regional and local air quality in the vicinity of the project site and evaluate impacts to air quality associated with project construction and operation. The estimated air emissions of both projects will be compared to emissions thresholds of the San Joaquin Valley Air Pollution Control District. The EIR will also include a discussion of greenhouse gas emissions and both projects' contribution to potential cumulative impacts on global climate.

Agricultural Resources

The site was classified Prime Farmland and Farmland of Statewide Importance prior to conversion to prison land uses. The proposed NCRF Project and the proposed DeWitt Nelson Conversion project would both be located primarily within the boundaries of the existing facilities, which would not result in impacts to existing farmland. However, the firing range would be located on state-owned land that is currently undeveloped. The EIR will examine the potential impacts associated with conversion of small undeveloped areas situated in or near the DeWitt Facility that have potential farmland resource value.

Biological Resources

Although the majority of both existing correctional complexes would be re-used for new and rehabilitated facilities, the project would involve some grading and site preparation for new buildings, removal of trees, improvements to infrastructure, etc. Grading could potentially conflict with existing foraging habitat of local raptor species. There is a potential that all or a significant number of the existing trees within the DeWitt Nelson compound would need to be removed to address security concerns with adult male inmates; a limited number of trees facing Arch Road just west of NCRF may also be subject to removal due to street widening. Tree removal could result in the removal of active raptor nests or the potential for future use of the trees as nesting sites. Operation of the proposed lethal electrified fences could also result in the individual take of some species. The potential for both projects to adversely affect special-status species and their habitat will be analyzed in the EIR.

Cultural and Historical Resources

None of the buildings on either project site are over 50 years old and, therefore, none would be considered historic resources. Although both projects would primarily be constructed on previously disturbed areas, some land that has not been disturbed could be affected on both the NCRF project and DeWitt sites. These areas could contain known and/or unknown cultural resources. Both projects' potential to affect cultural resources will be analyzed in the EIR.

Geology, Soils, and Paleontological Resources

Construction of the NCRF project and the DeWitt Nelson Conversion project could result in impacts related to geotechnical hazards, including seismicity of the area, potential for liquefaction and subsidence, erodibility of the sites' soils, soil stability characteristics, and shrink/swell potential of site soils, as applicable. Furthermore, it is currently unknown whether the soils of these project sites have the potential to contain paleontological resources. If such resources exist on either or both sites, soil disturbing construction activities could result in potentially significant impacts. The EIR for the proposed project will evaluate potential impacts related to geology, soils, and paleontological resources.

Hazards and Hazardous Materials

The former DeWitt Nelson Youth Correctional Facility includes a former auto body shop and a paint spray booth (with a current permit from San Joaquin Valley Unified Air Pollution Control District, permit number N-581-3-0, expiration date August 31, 2014). Potential soil or other contamination associated with these facilities will be examined in the EIR. Rehabilitation of the former NCWF facility and the former youth correctional facility could involve exposure of workers to asbestos containing materials (ACMs), lead based paint (LBP), as well as mercury and polychlorinated biphenyls (PCBs) from fluorescent lighting fixtures. Furthermore, operation of the proposed health care facility on the former DeWitt Nelson site would involve disposal of medical waste, and operation of the firing range for peace officers that would result in the handling of hazardous materials and equipment including live and spent ammunition and firearms. The EIR will evaluate the potential for both projects to result in impacts associated with hazards and hazardous materials.

Hydrology and Water Quality

The EIR will describe both projects' effects on the hydrology and water quality characteristics of the project area including alteration of drainage patterns, erosion, storm water discharges, and flooding. The EIR may address provisions for additional stormwater storage facilities at the southeast corner of the NCYCC property. Further, the EIR will discuss potential water quality impacts associated with operation of the proposed firing range.

Land Use and Planning

The EIR will describe both projects' potential effects on existing land uses. CDCR will consider relevant federal or state land use policies. However, as a State agency, CDCR is exempt from plans, policies, and regulations adopted by non-state or federal agencies. Nevertheless, the EIR will provide a discussion of relevant local plans and policies because conflicts could potentially result in environmental impacts.

Noise

The EIR will describe the construction and operational noise levels for both projects (including noise generated by the proposed firing range) and will compare these levels to applicable noise thresholds to determine whether the projects would result in a significant noise impact. The EIR will also consider noise generated by existing surrounding land uses, such as the Stockton Metropolitan Airport, and will evaluate the potential effects on the proposed facilities, staff, and inmates.

Employment, Population, and Housing

The EIR will evaluate both projects' effect on population and housing in the local area based on projections of project employment and distribution of the employees by place of residence.

Public Services

The EIR will evaluate both projects' potential to create an adverse impact to schools, and will also evaluate effects on local police and fire services.

Transportation/Traffic

The EIR will evaluate both projects' potential impacts on regional and local transportation facilities based on a transportation analysis that will assess both construction-related impacts (heavy truck trips and construction worker trips), as well as operational impacts (employee trips, patient transport, access, and parking). A traffic study will be prepared for both projects in consultation with the City of Stockton, San Joaquin County, Caltrans, and SJCOG. The basis of this traffic analysis will include the projected traffic volumes of existing and known future projects in the surrounding region.

Utilities and Service Systems

The EIR will analyze the current capacity of the drainage, water, wastewater, natural gas, and electrical systems, including energy demands of the projects, and the potential for both projects to exceed capacity of these systems. An analysis of local water supply conditions will be provided. The EIR will describe the existing dry utilities (gas, electric, phone, etc.) and water, wastewater, and drainage facilities within the project vicinity, and provide an impact analysis of on-site and off-site utility line construction. The EIR will also describe the existing solid waste facilities that serve the site.

Water Supply and Distribution

The EIR will evaluate the water demand of both projects. However, the CHCF settlement agreement assumes that all of the facilities on the NCYCC and NCWF properties will have City-supplied water service and infrastructure. The connection fees for new water meters include the applicable cost of regional distribution and supply systems.

Growth Inducement

The EIR will evaluate the potential of both projects to result in growth inducement as a result of expansion or extension of infrastructure improvements, as well as new demand for housing, and goods and services. The effect of primary and secondary increases in employment and economic activity will be discussed.

Cumulative Impacts

The EIR will discuss the incremental contribution of both projects to cumulative effects of other past, current, and planned and reasonably foreseeable projects in the vicinity. As noted, the cumulative analysis will include the recently approved medical prison facility.

ALTERNATIVES TO BE EVALUATED IN THE EIR

In accordance with the CEQA Guidelines Section 15126.6, the EIR will describe a reasonable range of alternatives to both of the proposed projects that are capable of meeting most of the projects' objectives, but would avoid or substantially lessen any of the significant effects of the projects. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will also provide an analysis of the No Project Alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Interested individuals, groups, and agencies may provide CDCR with written comments on topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5 p.m. on September 16, 2010.

Agencies that will need to use the EIR when considering permits or other approvals for the proposed project should provide CDCR with the name of a staff contact person. Please send all comments to:

Roxanne Henriquez, Senior Environmental Planner
California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827
Email: roxanne.henriquez@cdcr.ca.gov
Fax: (916) 255-3030
Phone: (916) 255-3010

CDCR is holding two public scoping meetings on **August 24, 2010 at 2:00 PM and at 6:00 PM** at the San Joaquin Council of Governments building located at 555 E. Weber Avenue in Stockton. The public scoping meeting is intended to receive comments on the scope and content of the environmental information CDCR will address in the EIR for the proposed project.

REFERENCES

U.S. District Court. 2010. *Case information, Opinion and Orders for Coleman v. Schwarzenegger (2:90-CV-0520 LKK JFM).* Available at <http://www.caed.uscourts.gov/caed/staticOther/page_1644.htm> Accessed April 21, 2010.

ATTACHMENT A

Notice of Preparation, dated September 2009

(The Environmental Checklist is not included in this attachment)

NOTICE OF PREPARATION

PROJECT DESCRIPTION AND LOCATION

GENERAL INFORMATION

Project Title: Northern California Re-Entry Facility, Stockton

Lead Agency: California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827
Contact: Roxanne Henriquez, Senior Environmental Planner
(916) 255-3010

Project Location: The 134-acre project site is state-owned property in unincorporated San Joaquin County, immediately southeast of the Stockton city limits. (See Exhibit 1) The site is less than two miles east of State Route 99 (SR 99), which provides regional access to the site. Arch Road provides direct access to the project site and SR 99. The site was formerly used as a correctional officer training academy and, prior to that, a women's detention facility, the Northern California Women's Facility.

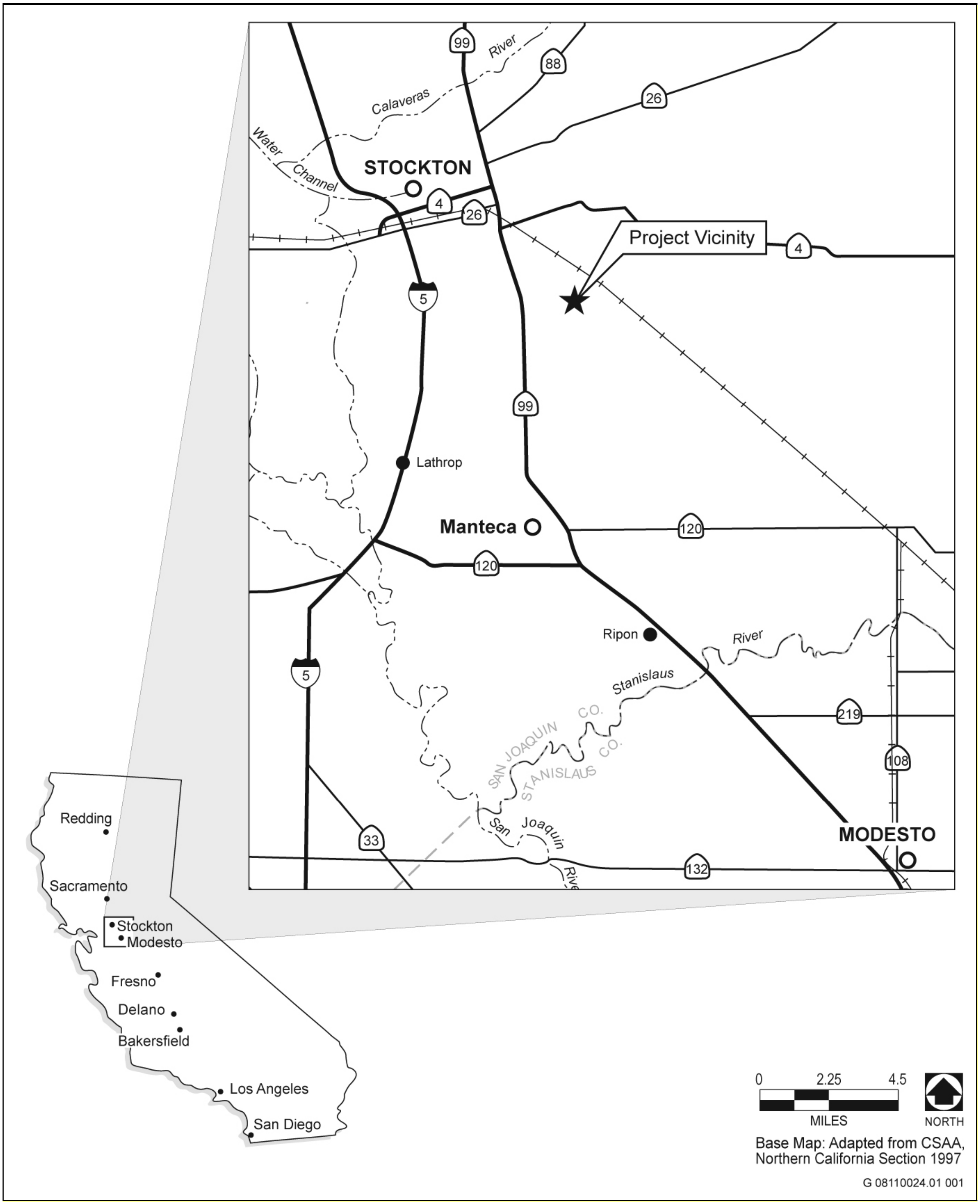
CEQA Requirement: This Notice of Preparation is intended to satisfy the requirements of the California Environmental Quality Act, (CEQA), (Public Resources code, Division 13, Section 21000–21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000–15387).

Potential Permits and Approvals Required:

- CDCR: Overall project approval
- San Joaquin Valley Air Pollution Control District: Authority to construct and permit to operate
- Regional Water Quality Control Board: General construction permit
- Potential City of Stockton annexation of site to provide water services to the site, if needed.
- Local Agency Formation Commission: boundary changes to potentially annex site to City of Stockton for provision of water and wastewater services (annexation is not proposed; see City of Stockton description above)

PROJECT PURPOSE AND NEED

Currently, 74,000 parolees are returned to custody at an expense of approximately $450 million annually. Parole violators are returned to custody for an average of 153 days. Incarceration as the primary punishment for minor parole violations does not appear to discourage new parole violations, does not provide parole violators with the necessary skills to remain in the community, does not reduce the cost to the taxpayer, and does not reduce the risk to public safety for an extended period of time. Both the Governor's office and the Legislature recognize the need for change to more effectively supervise offenders and fulfill the California Department of Corrections and



Source: EDAW 2008

Regional Location **Exhibit 1**

Rehabilitation's (CDCR) commitment to public safety. To specifically authorize the first secure community re-entry facility in California at the former Northern California Women's Facility (NCWF) and correctional officer training academy, Governor Schwarzenegger signed Senate Bill 943 on September 26, 2007, which subsequently became legislation (California Penal Code § 6275). This law authorizes the use of the former NCWF as a reentry facility to house adult male inmates during the last 12 months of their respective sentences prior to parole, and to provide these inmates special programs to better prepare them for return to the community of their last legal residence.

PROJECT BACKGROUND

In February 2008 a Mitigated Negative Declaration (MND) for the proposed project was released for public review. CDCR approved the project in April 2008. At the time the MND was prepared and the project approved, the site was used as a correctional officer training academy.

The California Correctional and Peace Officers Association (CCPOA) challenged the adequacy of the MND. On March 12, 2009, the Superior Court of San Joaquin County found that the environmental analysis was not adequate and ordered CDCR to set aside its approval of the MND and the project. In May 2009, CDCR rescinded and set aside all resolutions, decisions, and orders approving the MND (State Clearinghouse Number 2008021233) for the proposed Northern California Re-Entry Facility.

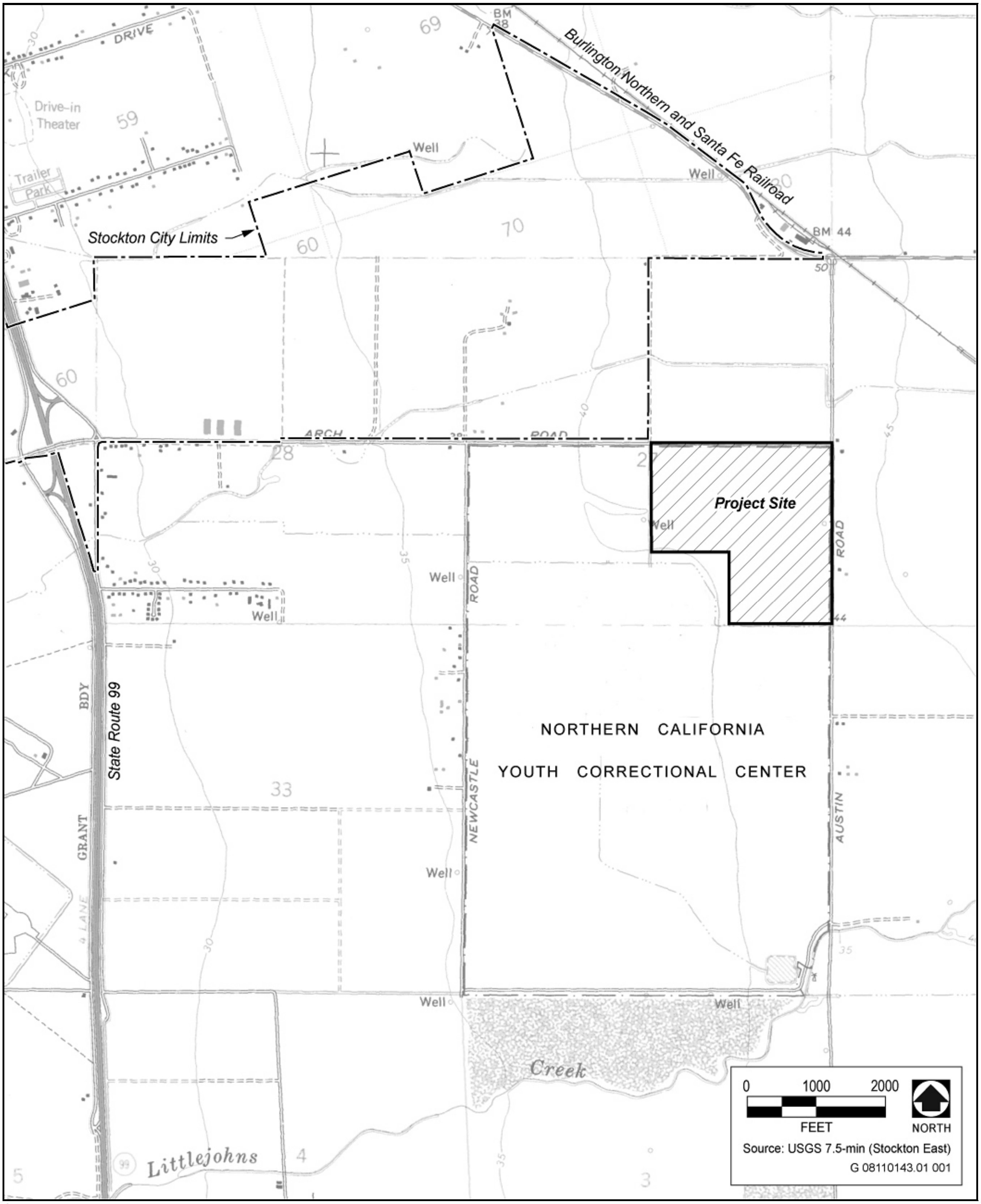
CDCR has decided to respond to the Superior Court's ruling by re-analyzing the potential impacts of the project on the environment in this EIR. The project remains substantially the same as described in the MND. The bed count would remain the same. The project would house up to 500 inmates and employ an estimated 381 staff.

Since the time the MND was released, the correctional training facility has closed and the site is currently not in use. The current condition of the project site and surrounding area (at the time this NOP is released) will comprise the baseline used for the EIR's environmental analysis.

PROJECT LOCATION

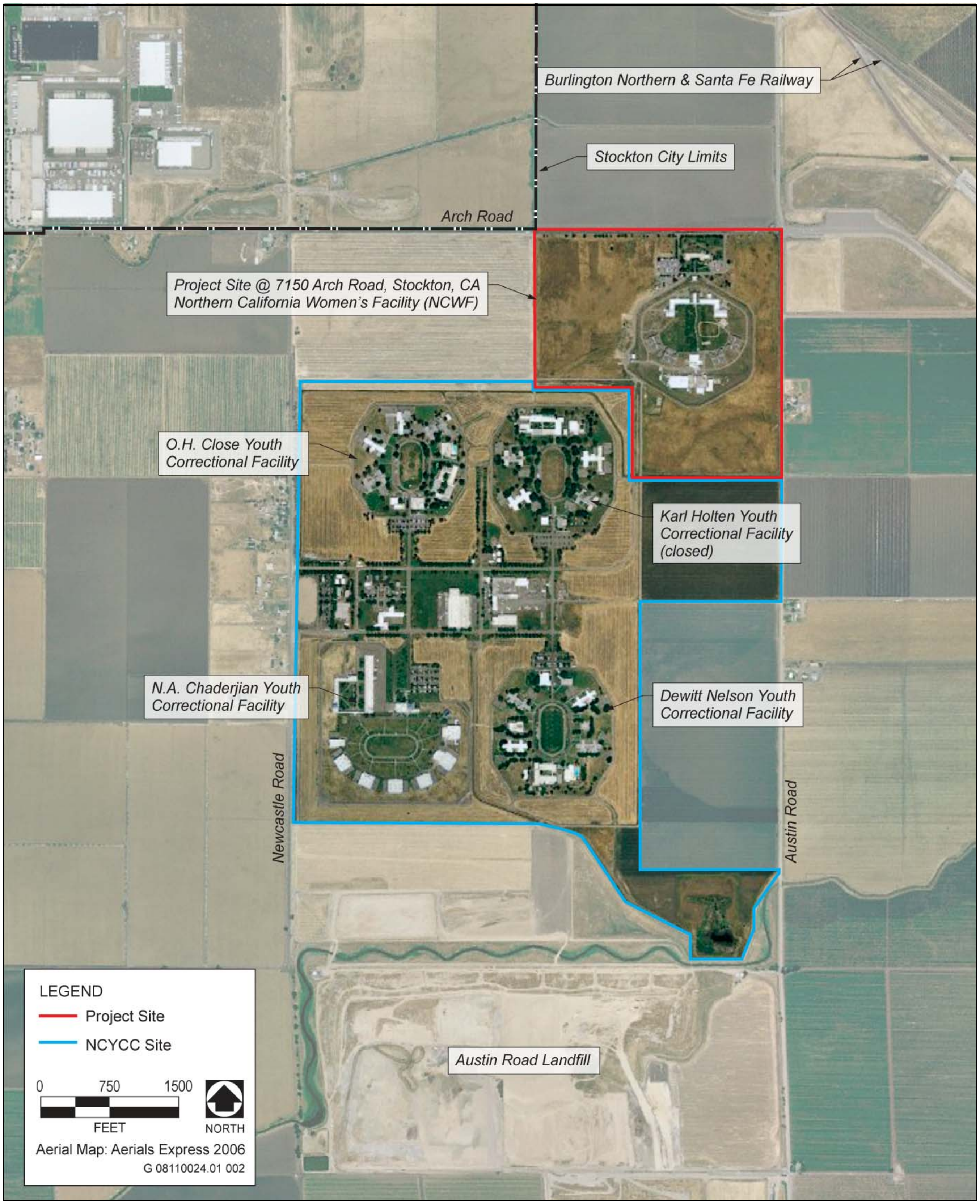
The project site is located on 134-acres of state-owned property (See Exhibit 2) adjacent to the northeast corner of the Northern California Youth Correctional Center (NCYCC). The site is less than two miles east of State Route 99 (SR 99) in unincorporated central San Joaquin County, immediately southeast of the Stockton city limits. It is approximately 6 miles northeast of the cities of Lathrop and Manteca, 21 miles northwest of Modesto, 17 miles northeast of Tracy, and 15 miles south of Lodi. Arch Road provides direct access to the project site and State Route (SR) 99 provides regional access. The site is immediately north of the proposed 1,734-bed California Prison Health Care Facility (CHFC), Stockton project, which is also located on the grounds of the NCYCC.

The project site was originally the Northern California Women's Facility, a secure female inmate prison, which closed in 203. Subsequently, the facility was used as a correctional officer training academy called the Richard A. McGee Correctional Training Center Annex (CTCA), which closed in 2008. The site is currently unused and on-site structures are vacant but maintained. The project site includes a hexagonal two-row exterior perimeter fence (12 feet tall topped with razor ribbon) (See Exhibit 3). The vacant buildings surrounding the former recreation yard include four former housing units, a former food service building and reception building, and a former control/support/ program building. The area south of the former recreation yard includes the former kitchen delivery/service area, plant operations, storage, maintenance, and an abandoned Prison Industry Authority (PIA) facility that previously operated a laundry, warehouse, and program space. There are no guard towers on the project site.



Source: EDAW 2008

Topography Map **Exhibit 2**



Source: EDAW 2008

Site Vicinity Aerial Map **Exhibit 3**

Description of Proposed Project

The proposed conversion would involve construction of a new medical building, as well as renovation of buildings for facility program support services, dining and receiving, family visiting, academic and vocational education, miscellaneous support, and a gymnasium (See Exhibit 4). Existing structures currently contain 400 cells; total inmate capacity would be 500, with 300 single bed units and 100 double-bunked units. Chapter 9.8 of Assembly Bill 900 (Section 6271[a]) sets a limit on re-entry facilities of "up to 500 beds each," therefore, the population of the facility cannot exceed the 500-bed legislative cap.

At the northwest part of the prison site, a new 16,500 square foot medical building would be constructed at a similar scale to the existing buildings. The project would be designed to comply with LEED (Leadership in Energy and Environmental Design Green Building Rating System) standards, with a goal of LEED Silver for the proposed medical facility.

Perimeter security for the proposed NCRF would include a lethal electrified fence installed between the exterior and interior fences of the existing double fence and three armed perimeter guard towers. Other improvements would include the construction, repair, or replacement of the boundary line fencing, roads, parking, outer perimeter landscaping, inmate recreation yard improvements, site grading, site lighting, storm drainage improvements, and extension of utilities to each building. CDCR would also improve the prison's electrical supply and distribution, water and wastewater supply, storage, treatment, and disposal systems, including connection to City of Stockton water supply lines. No new high-mast lighting would be added to the project site.

The City of Stockton would provide municipal water and wastewater service to the project site. NCYCC's garbage truck would transport the project's solid waste to the Forward Landfill.

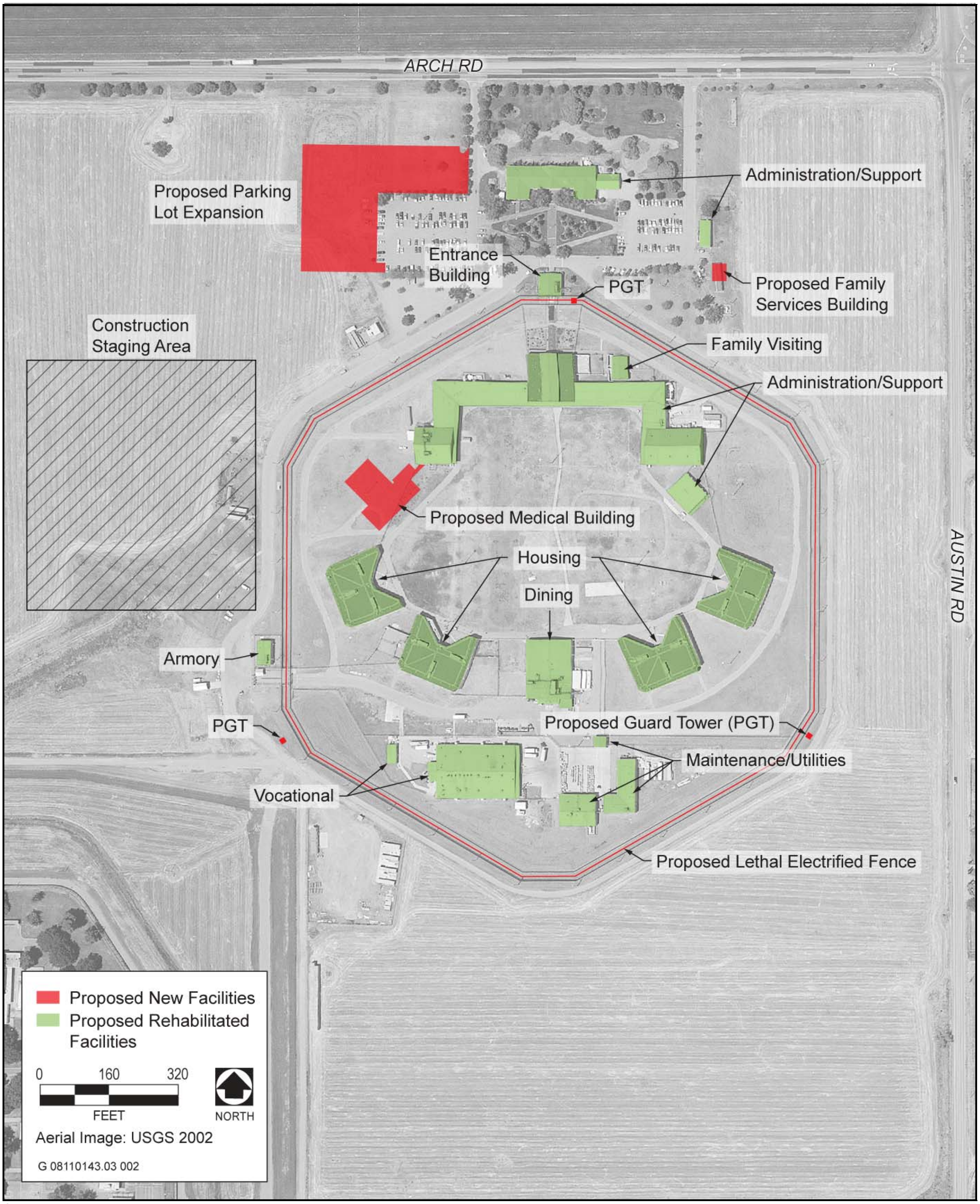
The proposed facilities would operate 24 hours a day, year-round, with three 8-hour shifts (watches). An estimated 381 staff would be employed at the proposed facility and would include correctional officers, administrative, and other types of support staff. Visiting hours would be from 9:00 a.m. to 4:00 p.m., seven days a week, and the average number of daily visitors is estimated to be approximately 100.

Construction of the proposed facilities would begin in Summer 2010, with an estimated completion date of Summer 2012. Construction work shifts would generally be between 6 a.m. and 6 p.m. Monday through Friday. A construction staging area would be located on a roughly 6-acre field west of the existing hexagonal perimeter fence line. Parking for construction workers would be provided in the existing visitor parking lot.

The proposed project would include environmental protection measures related to water quality protection and earthquake resistant design. Water-quality-related protection measures require preparation of a Storm Water Pollution Prevention Plan (SWPPP), as well as additional measures to reduce impacts related to stormwater quality. The protection measures related to earthquake resistant design require preparation of a geotechnical design study and incorporation of its recommendations. The EIR will describe these environmental protection measures in greater detail.

Potential Environmental Effects

The EIR will evaluate the probable direct and cumulative environmental impacts associated with construction and implementation of the proposed NCRF project as described below. Mitigation measures will be recommended where appropriate to reduce potentially significant and significant impacts. In order to accurately scope the project's potential environmental impacts, an Initial Study was prepared and included as part of this NOP. Based on the results of the Initial Study, CDCR has determined that the following issues will be analyzed in detail in the EIR:



Source: EDAW 2009

Proposed Site Plan **Exhibit 4**

AIR QUALITY

The EIR will describe regional and local air quality in the vicinity of the project site and evaluate impacts to air quality associated with project construction and operation. The project's estimated air emissions will be compared to emissions thresholds of the San Joaquin Valley Air Pollution Control District. The EIR will also include a discussion of greenhouse gas emissions and the project's contribution to potential cumulative impacts on global climate.

Biological Resources

The proposed project involves grading and site preparation, which could result in potential impacts to foraging habitat of raptor species. Operation of the proposed lethal electrified fence could also result in ongoing individual take of species. The project's potential to adversely affect special status species and their habitat will be analyzed in the EIR.

Cultural Resources

None of the buildings are over 50 years old and so none would be considered historic resources. Although much of the proposed project would be constructed on previously disturbed areas, a portion of the project site consists of disked vacant land. This portion of the site could contain known and/or unknown cultural resources. The project's potential to affect cultural resources will be analyzed in the EIR.

Transportation/Traffic

The EIR will evaluate the project's potential impact on regional and local transportation facilities based on a transportation analysis that will assess both construction-related impacts (heavy truck trips and construction worker trips), as well as operational impacts (employee trips, patient transport, access, and parking). A traffic study will be prepared for the project in consultation with the City of Stockton, San Joaquin County, and Caltrans.

Water Supply and Distribution

The EIR will evaluate the project's water demand and the City of Stockton's near and long-term availability of water to supply the proposed project. This section will also evaluate whether water infrastructure in the area, in addition to existing and proposed water facilities, would be adequate to provide appropriate water service to the site.

Growth Inducement

The EIR will evaluate the project's potential for growth inducement resulting from expansion or extension of infrastructure improvements, as well as new demand for housing, and goods and services. The effect of primary and secondary increases in employment and economic activity will be discussed.

Cumulative Impacts

The EIR will discuss the incremental contribution of the project to cumulative effects of other past, current, and planned and reasonably foreseeable projects in the vicinity.

ALTERNATIVES TO BE EVALUATED IN THE EIR

In accordance with the CEQA Guidelines Section 15126.6, the EIR will describe a reasonable range of alternatives to the proposed project that are capable of meeting most of the project's objectives, but would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will also provide an analysis of the No Project Alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Interested individuals, groups, and agencies may provide CDCR with written comments on topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5 p.m. on **October 19, 2009**.

Agencies that will need to use the EIR when considering permits or other approvals for the proposed project should provide CDCR with the name of a staff contact person. Please send all comments to:

Roxanne Henriquez, Senior Environmental Planner
California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827

Email: roxanne.henriquez@cdcr.ca.gov

INITIAL STUDY

This section presents the Initial Study that was prepared by CDCR for the proposed NCRF project in San Joaquin County, California. This Initial Study evaluates the potential environmental effects of the proposed project and has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 2100 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq).

An Initial Study is prepared by a lead agency to determine if a project may have a significant effect on the environment. In accordance with State CEQA Guidelines Section 15064(a), an Environmental Impact Report (EIR) must be prepared if there is substantial evidence that a project may have a significant effect on the environment. This Initial Study was prepared to evaluate CDCR's NCRF project and presents responses to environmental checklist items under each environmental resource topic. All responses take into account the whole of the action involved, including direct and indirect effects of project implementation and construction and operation of project facilities.

Although the Initial Study concluded that impacts would either be less-than-significant or could be reduced to a less-than-significant level, CDCR concluded that the project may nevertheless have the potential to result in significant impacts, especially in light of cumulative impacts in conjunction with potential construction of the California Prison Health Care Receivership Corporation's (CPR) proposed health care facility at the NCYCC, and determined that an EIR was necessary. Because CDCR has already elected to prepare an EIR, the Initial Study does not include a detailed discussion for those impacts identified as potentially significant or less than significant with mitigation. The Initial Study environmental checklist responses indicate those impacts will be addressed in detail in the EIR.

ATTACHMENT B

Notice of Preparation, dated December 2009

(The Environmental Checklist is not included in this attachment)

REVISED NOTICE OF PREPARATION
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION
PROPOSED NORTHERN CALIFORNIA REENTRY FACILITY
7150 ARCH ROAD
SAN JOAQUIN COUNTY, CALIFORNIA

RE-CIRCULATION OF EIR SCOPING NOTICE

The California Department of Corrections and Rehabilitation (CDCR) has revised and is re-distributing the Notice of Preparation for the Draft Environmental Impact Report (DEIR) for the proposed Northern California Reentry Facility (NCRF) on Arch Road in San Joaquin County near Stockton, California. The original NOP was released to the public and responsible agencies for a 30-day period on September 18, 2009. The proposed NCRF project, which would be built within the now-closed Northern California Women's Facility, would consist of a 500-bed secure reentry facility for inmates that are scheduled for parole to San Joaquin County, Amador County, and Calaveras County. The NCRF project site is situated just north and contiguous to the Northern California Youth Correctional Center (NCYCC) near Stockton. A revised notice was necessary to clarify the potential for additional correctional projects within close proximity of the NCRF site.

NCYCC consists of four CDCR Division of Juvenile Justice (DJJ) correctional facilities including the N.A. Chaderjian, O.H. Close, Karl Holton, and Dewitt Nelson complexes. The Karl Holton and Dewitt Nelson Youth Correctional Facilities are now closed and considered excess to DJJ's long-term housing needs. Based on the substantial reduction in the number of wards housed by DJJ it is not anticipated these facilities will be needed by DJJ in the foreseeable future. However, the N.A. Chaderjian and O.H. Close are currently operating and the DJJ believes these correctional facilities will be needed for the foreseeable future.

Since the release of the original NOP, there have been two developments at NCYCC that will affect the scope of the cumulative analysis for the NCRF EIR. In mid-October 2009 the California Prison Health Care Receiver (CPR) formally approved the California Health Care Facility at Stockton. This project involves the demolition and re-use of the Karl Holton site for a new 1,734-bed prison medical care facility that would be constructed and operated by CDCR. This facility was the subject of an EIR that was prepared and certified by CPR prior to the approval of the subject project. Copies of all the environmental documentation for the new CPR health care facility are available from the CDCR contact person identified in this notice. Although this project was already among the related projects to be considered in the cumulative analysis of the NCRF EIR, its approval elevates the potential immediacy of the combined environmental effects of the NCRF and CPR projects.

CDCR also has determined there is a potential for the re-use of the former DJJ Dewitt Nelson correctional facility for a proposed 1,133-bed correctional facility that would serve inmate mental health and medical health care needs. The new facility would involve the renovation of existing housing units at the Dewitt Nelson facility and construction of some additional buildings and infrastructure. Since this proposal remains at a conceptual level of facility planning, there are no detailed plans available for this site. However, the EIR for the NCRF project will add the Dewitt Nelson conversion project as a related project in the cumulative analysis and will address its collective environmental effects along with other cumulative projects. Once there are more details on this proposal, and if CDCR formally proposes this project to help meet California's shortage of inmate medical and mental health services, a separate environmental review process would be initiated by the department.

Recirculation of the NCRF NOP is intended to provide the community, responsible agencies, and representatives of local agencies with an additional opportunity to comment on the scope of the environmental issues that will be addressed in the proposed project EIR. In addition to recognition of the recent approval of the CPR health care project on the grounds of the Karl Holton facility, and the conceptual proposal for the re-use of the Dewitt Nelson facility for an adult correctional facility, other near-term projects will also be included in the cumulative impact analysis of the EIR. These include the California Conservation Corps (CCC) Delta Service Center (west of the NCRF site near Newcastle Road), the Opus light industrial development (on the north side of Arch Road), and the Mariposa Lakes Specific Plan (southern planning area boundary is approximately one-half mile north of the NCRF site). CDCR will further coordinate with the City of Stockton and San Joaquin County to establish a complete list of proposed and approved projects that should be included in the DEIR's analysis.

The description of the proposed NCRF project has not changed since the release of the September 18, 2009 NOP.

PROJECT DESCRIPTION AND LOCATION

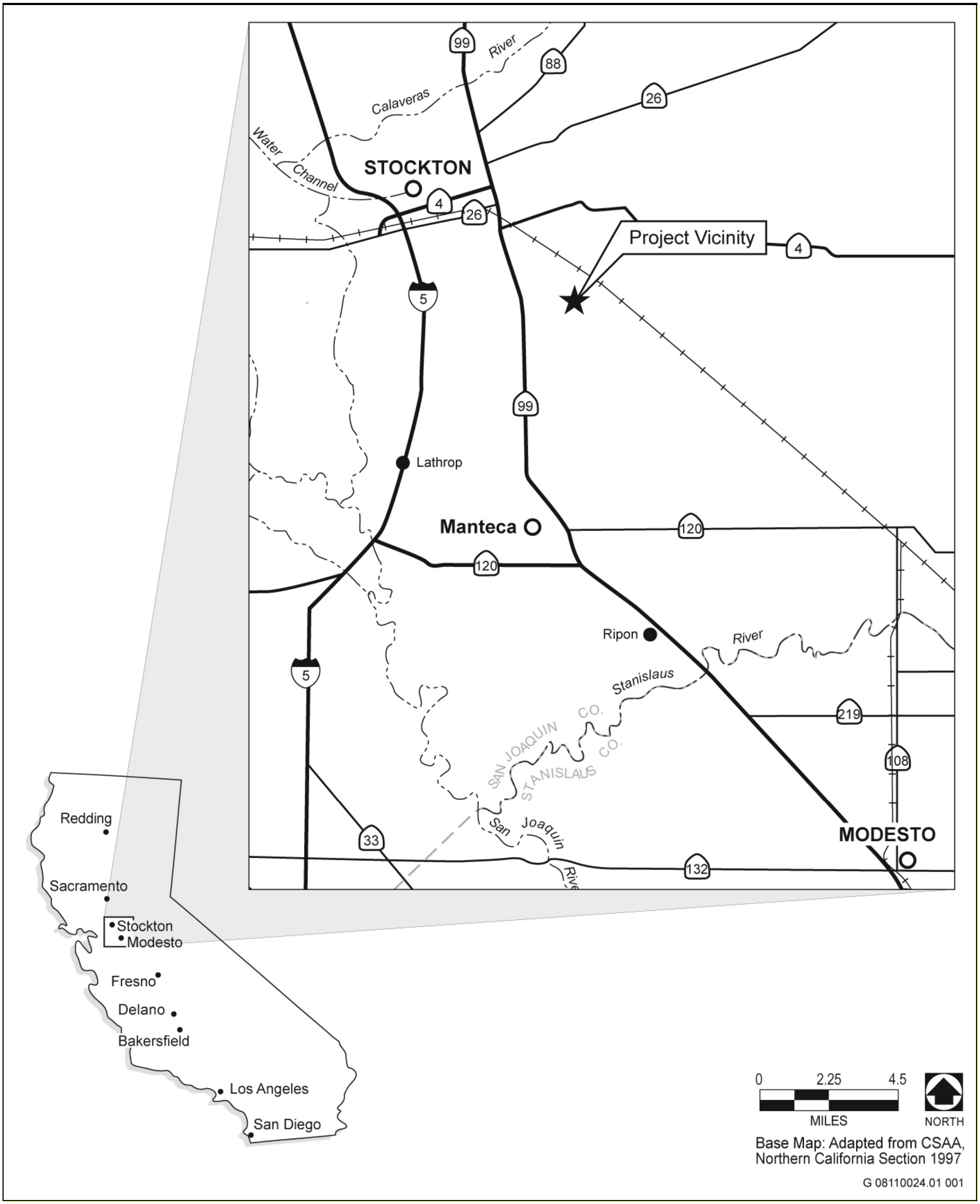
GENERAL INFORMATION

Project Title: Northern California Reentry Facility, Stockton

Lead Agency: California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827
Contact: Roxanne Henriquez, Senior Environmental Planner
(916) 255-3010

Project Location: The 134-acre project site is state-owned property in unincorporated San Joaquin County, immediately southeast of the Stockton city limits. (See Exhibit 1) The site is less than two miles east of State Route 99 (SR 99), which provides regional access to the site. Arch Road provides direct access to the project site and SR 99. The site was formerly used as a correctional officer training academy and, prior to that, a women's detention facility, the Northern California Women's Facility.

CEQA Requirement: This Notice of Preparation is intended to satisfy the requirements of the California Environmental Quality Act, (CEQA), (Public Resources code, Division 13, Section 21000–21177), and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000–15387).



Source: EDAW 2008

Regional Location **Exhibit 1**

Potential Permits and Approvals Required:

- CDCR: Overall project approval

- San Joaquin Valley Air Pollution Control District: Authority to construct and permit to operate

- Regional Water Quality Control Board: General construction permit

- City of Stockton: Potential annexation of site to assure consistency of service area boundaries. The City utility department is already planning to extend service to the NCYCC complex because of localized groundwater contamination associated with the nearby Austin Road Landfill.

- Local Agency Formation Commission: Boundary changes to potentially annex site to City of Stockton for water service (see above, CDCR is not proposing annexation. Action, if necessary, would be initiated by the City of Stockton to assure consistency of district service boundaries.)

PROJECT PURPOSE AND NEED

Currently, 74,000 parolees are returned to custody at an expense of approximately $450 million annually. Parole violators are returned to custody for an average of 153 days. Incarceration as the primary punishment for minor parole violations does not appear to discourage new parole violations, does not provide parole violators with the necessary skills to remain in the community, does not reduce the cost to the taxpayer, and does not reduce the risk to public safety for an extended period of time. Both the Governor's office and the Legislature recognize the need for change to more effectively supervise offenders and fulfill the California Department of Corrections and Rehabilitation's (CDCR) commitment to public safety. To specifically authorize the first secure community reentry facility in California at the former Northern California Women's Facility (NCWF) and correctional officer training academy, Governor Schwarzenegger signed Senate Bill 943 on September 26, 2007, which subsequently became legislation (California Penal Code § 6275). This law authorizes the use of the former NCWF as a reentry facility to house adult male inmates during the last 12 months of their respective sentences prior to parole, and to provide these inmates special programs to better prepare them for return to the community of their last legal residence.

PROJECT BACKGROUND

In February 2008 a Mitigated Negative Declaration (MND) for the proposed project was released for public review. CDCR approved the project in April 2008. At the time the MND was prepared and the project approved, the site was used as a correctional officer training academy.

The California Correctional and Peace Officers Association (CCPOA) challenged the adequacy of the MND. On March 12, 2009, the Superior Court of San Joaquin County found that the environmental analysis was not adequate and ordered CDCR to set aside its approval of the MND and the project. In May 2009, CDCR rescinded and set aside all resolutions, decisions, and orders approving the MND (State Clearinghouse Number 2008021233) for the proposed Northern California Reentry Facility.

CDCR has decided to respond to the Superior Court's ruling by re-analyzing the potential environmental consequences of the proposed project in an EIR. The project remains substantially the same as described in the MND. The bed count would remain the same. The project would house up to 500 inmates and employ an estimated 350–400 staff.

Since the time the MND was released, the correctional training facility has closed and the site is currently not in use. The current condition of the project site and surrounding area (at the time this NOP is released) will comprise the baseline used for the EIR's environmental analysis.

PROJECT LOCATION

The project site is located on 134-acres of state-owned property adjacent to the northeast corner of the Northern California Youth Correctional Center. The site is less than two miles east of State Route 99 (SR 99) in unincorporated central San Joaquin County, immediately southeast of the Stockton city limits. (See Exhibit 2.) It is approximately 6 miles northeast of the cities of Lathrop and Manteca, 21 miles northwest of Modesto, 17 miles northeast of Tracy, and 15 miles south of Lodi. Arch Road provides direct access to the project site and State Route (SR) 99 provides regional access. The site is immediately north of the recently approved 1,734-bed California Prison Health Care Facility (CHCF), Stockton project, which is also located on the grounds of the NCYCC.

As mentioned above, CDCR is in the early planning stages of a project to convert the former DeWitt Nelson Youth Correctional Facility at NCYCC to an adult correctional facility. Dewitt Nelson is located directly south of the CHCF project site. The facility being planned for DeWitt Nelson would renovate the existing housing units and provide for the construction of additional buildings and infrastructure to accommodate a 1,133-bed medical and mental health facility. (See Exhibit 3)

The reentry project site was originally the Northern California Women's Facility, a secure female inmate prison that closed in 2003. Subsequently, the facility was used as a correctional officer training academy called the Richard A. McGee Correctional Training Center Annex (CTCA), which closed in 2008. With the exception of occasional field training exercises the site is currently vacant but maintained. The project site includes a hexagonal two-row exterior perimeter fence (12 feet tall topped with razor ribbon). The vacant buildings surrounding the former recreation yard include four former housing units, a former food service building and reception building, and a former control/support/ program building. The area south of the former recreation yard includes the former kitchen delivery/service area, plant operations, storage, maintenance, and an abandoned Prison Industry Authority facility that previously operated a laundry, warehouse, and program space. There are no guard towers on the project site.

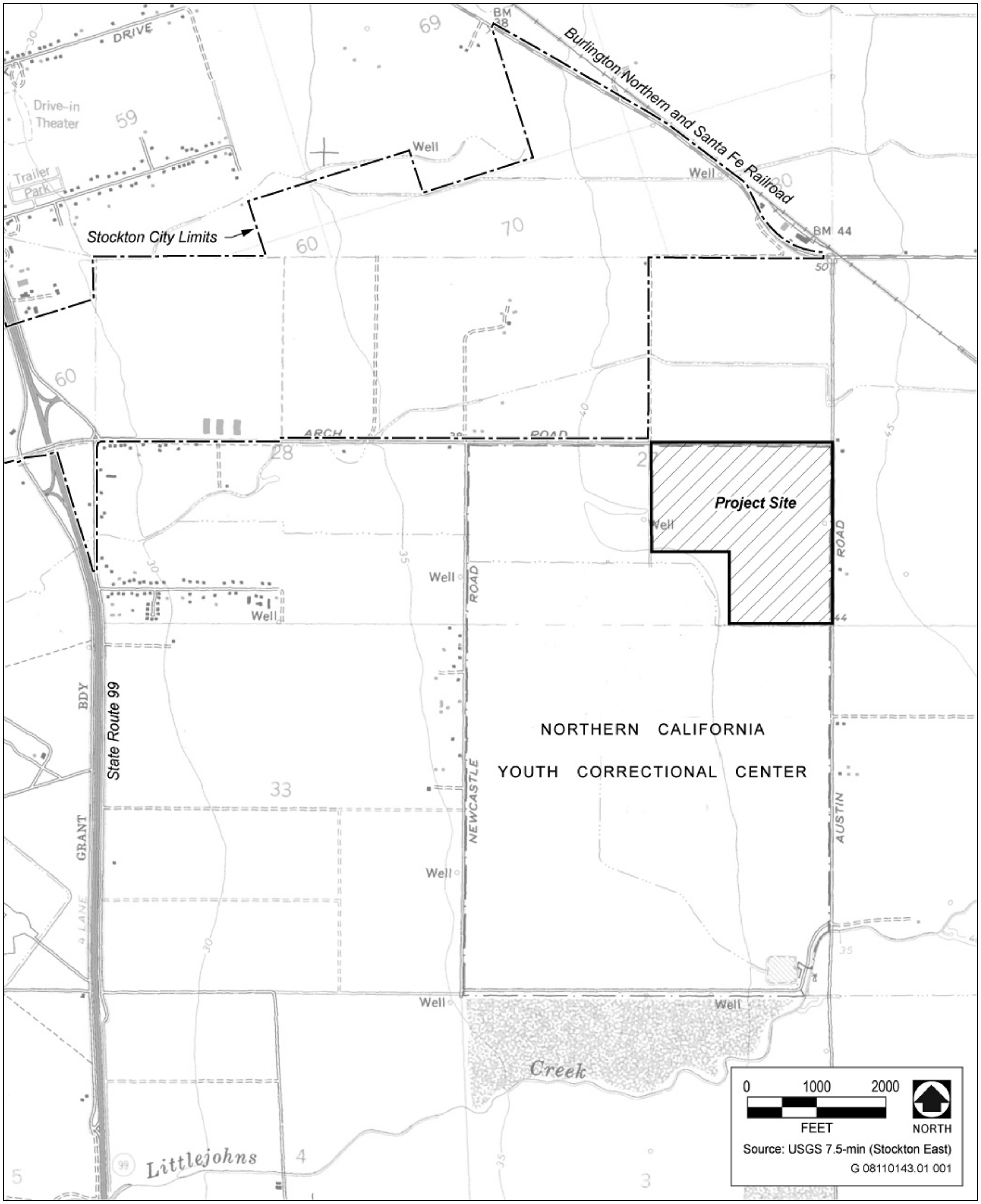
DESCRIPTION OF PROPOSED PROJECT

The proposed conversion would involve construction of a new medical building, as well as renovation of buildings for facility program support services, dining and receiving, family visiting, academic and vocational education, miscellaneous support, and a gymnasium (see Exhibit 4). Existing NCWF structures contain 400 cells; total planned inmate capacity for the reentry facility is a total of 500 beds. To provide the additional capacity there would be 100 double-bunked units; the balance of the housing facilities would remain single-bed units. Chapter 9.8 of Assembly Bill 900 (Section 6271[a]) sets a limit on reentry facilities of "up to 500 beds each;" therefore, the population of the facility cannot exceed the 500-bed legislative cap.

At the northwest part of the prison site, a new 16,500 square foot medical building would be constructed at a similar scale to the existing buildings. The project would be designed to comply with LEED (Leadership in Energy and Environmental Design Green Building Rating System) standards, with a goal of LEED Silver for the proposed medical facility.

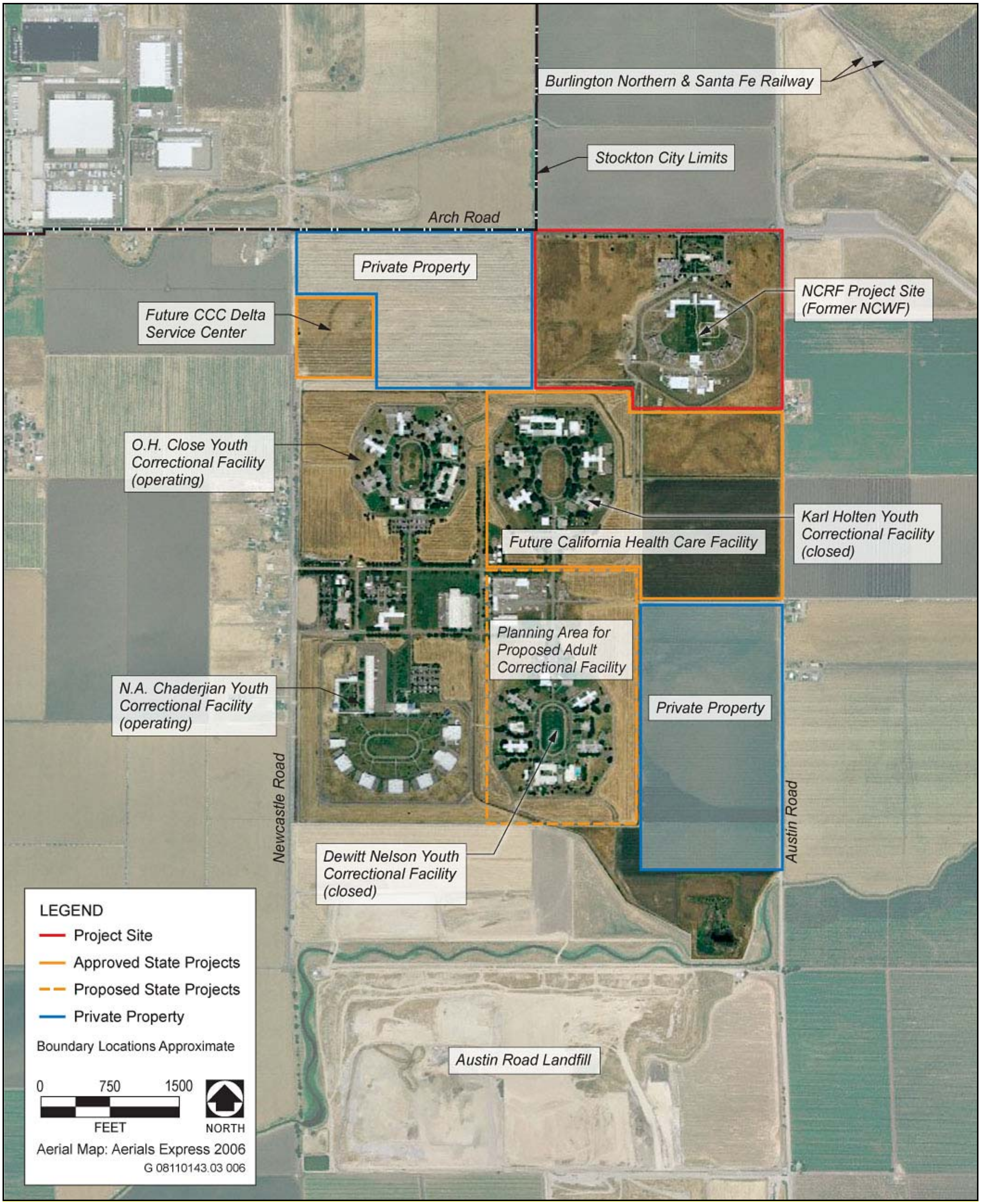
Perimeter security for the proposed NCRF would be enhanced to include a lethal electrified fence and three armed perimeter guard towers. Other improvements would include the construction, repair, or replacement of the boundary line fencing, roads, parking, outer perimeter landscaping, inmate recreation yard improvements, site grading, site lighting, storm drainage improvements, and extension of utilities to each building. CDCR would also improve the prison's electrical supply, distribution, water and wastewater service, and refuse disposal systems. No new high-mast lighting would be added to the project site.

Water service to NCYCC and NCWF are from on-site wells. However, due to shallow groundwater contamination associated with the adjacent municipal landfill the City's utility department is planning to extend



Source: EDAW 2008

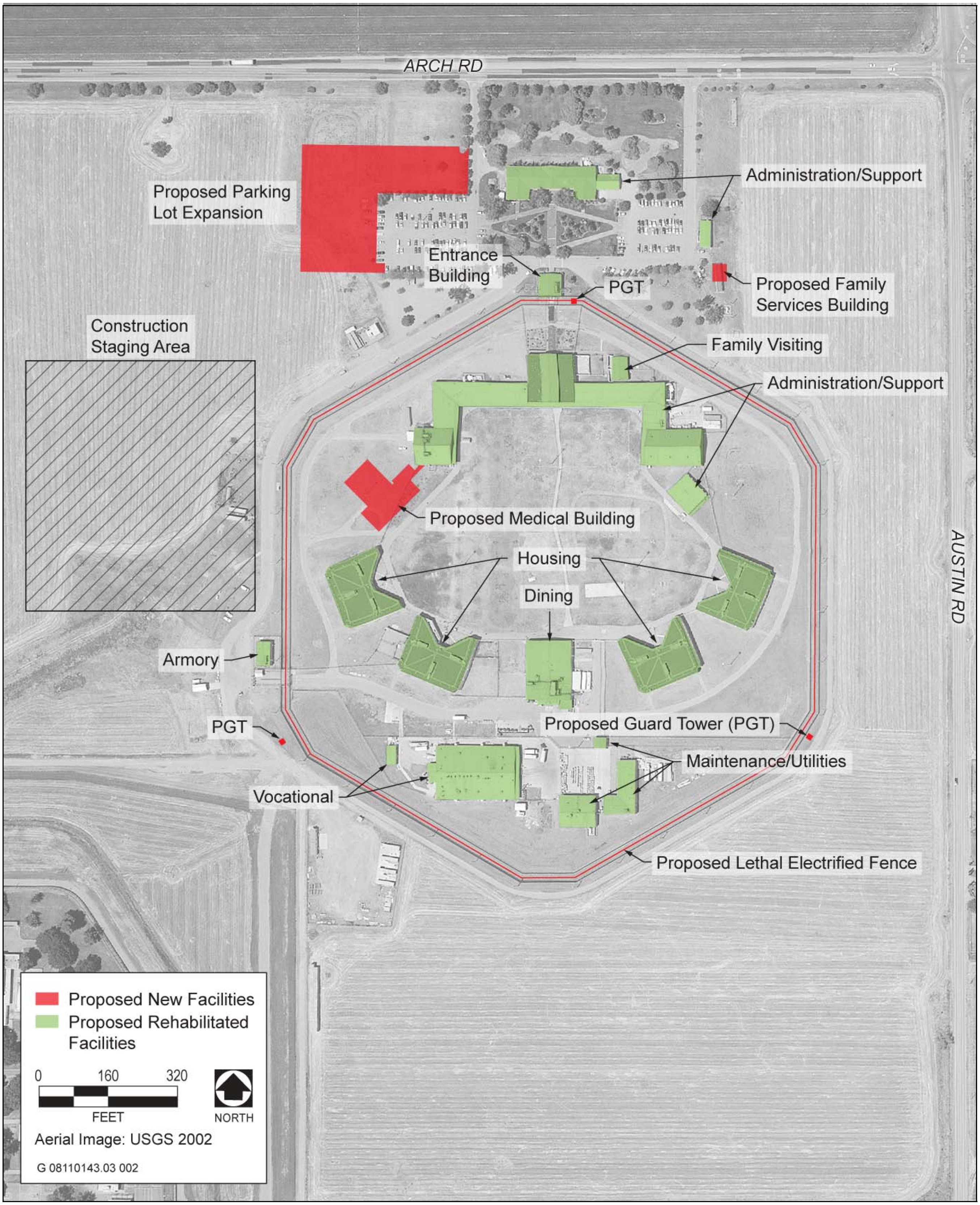
Topography Map **Exhibit 2**



Source: EDAW 2008

Site Vicinity Aerial Map

Exhibit 3



Source: EDAW 2009

Proposed Site Plan **Exhibit 4**

water service to the complex in the near future. Continued use of the on-site wells (with water quality treatment) will be considered an alterative source of drinking water if it is subsequently determined the City's proposal to provide water is deemed infeasible. The complex already has wastewater service that is expected to be sufficient to meet the needs of the planned reentry facility. NCYCC's garbage truck would transport the project's solid waste to the Austin Road Landfill.

The proposed facilities would operate 24 hours a day, year-round, with three 8-hour shifts (watches). An estimated 350–400 staff would be employed at the proposed facility and would include correctional officers, administrative, and other types of support staff. Visiting hours would be from 9:00 a.m. to 4:00 p.m., seven days a week, and the average number of daily visitors is estimated to be approximately 100.

Construction of the proposed facilities is anticipated to begin in summer 2010 with a tentative completion date of summer 2012. Construction work shifts would generally be between 6 a.m. and 6 p.m. Monday through Friday. A construction staging area would be located on a roughly 6-acre field west of the existing hexagonal perimeter fence line. Parking for construction workers would be provided in the existing visitor parking lot.

The proposed project would include environmental protection measures related to water quality protection and earthquake resistant design. Water-quality-related protection measures require preparation of a Storm Water Pollution Prevention Plan, as well as additional measures to reduce impacts related to stormwater quality. The protection measures related to earthquake resistant design require preparation of a geotechnical design study and incorporation of its recommendations. The EIR will describe these environmental protection measures in greater detail.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will evaluate the probable direct and cumulative environmental impacts associated with construction and implementation of the proposed NCRF project as described below. Mitigation measures will be recommended where appropriate to reduce potentially significant and significant impacts. In order to accurately scope the project's potential environmental impacts, an Initial Study was prepared and included as part of this NOP. Based on the results of the Initial Study, CDCR has determined that the following issues will be analyzed in detail in the EIR:

Air Quality

The EIR will describe regional and local air quality in the vicinity of the project site and evaluate impacts to air quality associated with project construction and operation. The project's estimated air emissions will be compared to emissions thresholds of the San Joaquin Valley Air Pollution Control District. The EIR will also include a discussion of greenhouse gas emissions and the project's contribution to potential cumulative impacts on global climate.

Biological Resources

Although the majority of the existing prison complex would be re-used for the reentry facility the project would involve some limited grading and site preparation for new buildings, improvements to infrastructure, etc. This grading could potentially conflict with existing foraging habitat of local raptor species. Operation of the proposed lethal electrified fence could also result in the individual take of some species. The project's potential to adversely affect special status species and their habitat will be analyzed in the EIR.

Cultural Resources

None of the buildings are over 50 years old and so none would be considered historic resources. Although much of the proposed project would be constructed on previously disturbed areas, a portion of the project site consists of disked vacant land. This portion of the site could contain known and/or unknown cultural resources. The project's potential to affect cultural resources will be analyzed in the EIR.

Transportation/Traffic

The EIR will evaluate the project's potential impact on regional and local transportation facilities based on a transportation analysis that will assess both construction-related impacts (heavy truck trips and construction worker trips), as well as operational impacts (employee trips, patient transport, access, and parking). A traffic study will be prepared for the project in consultation with the City of Stockton, San Joaquin County, and Caltrans. The basis of this traffic analysis will include the projected traffic volumes of existing and known future projects at NCYCC and in the surrounding region.

Water Supply and Distribution

The EIR will evaluate the project's water demand and the adequacy of on-site wells to serve the proposed facility. The EIR will also assess the City of Stockton's near and long-term availability of water to supply to the proposed project. This section will evaluate whether water infrastructure in the area, in addition to existing and proposed water facilities, would be adequate to provide appropriate water service to the site.

Growth Inducement

The EIR will evaluate the project's potential for growth inducement resulting from expansion or extension of infrastructure improvements, as well as new demand for housing, and goods and services. The effect of primary and secondary increases in employment and economic activity will be discussed.

Cumulative Impacts

The EIR will discuss the incremental contribution of the project to cumulative effects of other past, current, and planned and reasonably foreseeable projects in the vicinity. As noted, the cumulative analysis will include the recently approved medical prison facility and the conceptual proposal for conversion of the Dewitt Nelson facility to an adult correctional facility.

ALTERNATIVES TO BE EVALUATED IN THE EIR

In accordance with the CEQA Guidelines Section 15126.6, the EIR will describe a reasonable range of alternatives to the proposed project that are capable of meeting most of the project's objectives, but would avoid or substantially lessen any of the significant effects of the project. The EIR will also identify any alternatives that were considered but rejected by the lead agency as infeasible and briefly explain the reasons why. The EIR will also provide an analysis of the No Project Alternative.

OPPORTUNITY FOR PUBLIC COMMENT

Interested individuals, groups, and agencies may provide CDCR with written comments on topics to be addressed in the EIR for the project. Because of time limits mandated by State law, comments should be provided no later than 5 p.m. on January 4, 2010.

Agencies that will need to use the EIR when considering permits or other approvals for the proposed project should provide CDCR with the name of a staff contact person. Please send all comments to:

Roxanne Henriquez, Senior Environmental Planner
California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827
Email: roxanne.henriquez@cdcr.ca.gov

INITIAL STUDY

This section presents the Initial Study that was prepared by CDCR for the proposed NCRF project in San Joaquin County, California. This Initial Study evaluates the potential environmental effects of the proposed project and has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 2100 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq).

An Initial Study is prepared by a lead agency to determine if a project may have a significant effect on the environment. In accordance with State CEQA Guidelines Section 15064(a), an Environmental Impact Report (EIR) must be prepared if there is substantial evidence that a project may have a significant effect on the environment. This Initial Study was prepared to evaluate CDCR's NCRF project and presents responses to environmental checklist items under each environmental resource topic. All responses take into account the whole of the action involved, including direct and indirect effects of project implementation and construction and operation of project facilities.

Although the Initial Study concluded that impacts would either be less-than-significant or could be reduced to a less-than-significant level CDCR has determined that it is necessary to prepare an environmental impact report for the reentry project. Because CDCR has already elected to prepare an EIR, the Initial Study does not include a detailed discussion for those impacts identified as potentially significant or less than significant with mitigation. The Initial Study environmental checklist responses indicate those impacts that will be addressed in detail in the EIR.

EIR SCOPING MEETING NORTHERN CALIFORNIA
REENTRY FACILITY AND DEWITT NELSON
YOUTH CORRECTIONAL FACILITY
CONVERSION PROJECTS

CALIFORNIA DEPARTMENT OF CORRECTIONS
AND REHABILITATION OFFICE OF FACILITY
PLANNING, CONSTRUCTION
AND MANAGEMENT

AUGUST 24, 2010

555 WEST WEBER AVENUE
STOCKTON, CALIFORNIA
2:00 P.M.

Reported by:
ANGIE MATERAZZI, CSR NO. 13116

JAN BROWN & ASSOCIATES
WORLDWIDE DEPOSITION & VIDEOGRAPHY SERVICES
701 Battery Street, 3rd Floor, San Francisco, CA 94111
(415) 981-3498 or (800) 522-7096

BOB SLEPPY: This is our continued series of meetings about the environmental review process for the projects that we're doing down at Northern California Youth Correctional Center. We want to give you a little presentation on our PowerPoint here and then there's a chance for each of you to get up, if you want to, and provide some comments. You don't have to, but you're certainly welcome to.

We're very glad to be here. It's nice to see all of you. We like this town. What this preparation is, it's a technical term under the State's Environmental Quality Act. It's the process we have to go through.

Talk a little bit about the three projects: Northern California Reentry, the California Health Care Facility and, now, a third one, which is the conversion of DeWitt Nelson facility to an adult prison.

We have Gary Jakobs to talk a little bit about environmental issues and then we're going to have time for testimony.

We're glad to be here. We've kind of taken a liking to Stockton. It's a nice 55-minute drive down here and we finally know some folks.

I want to introduce some of our staff that are here. We have for Reentry, Deborah Johnson and Joe

Cocke, who are both real, live officers. They don't have their weapons today, but they're the real thing, so they can talk about inmates and handling inmates, and they are really, truly experts about the whole Reentry program. So they're good folks to talk to.

The woman that's in charge of the EIR, is Roxanne Henriquez. Mike Parker is our lead consultant along with the others. Gary and Amanda are both principals in Ascent Environmental, which, along with Todd Chambers from AECOM, are the contractors responsible for doing our EIR.

Nancy MacKenzie is our leading Environmental planner for the day. Rick Jamie over there, who runs NCYCC, he knows everything there is to know about NCYCC.

So I thank you for coming out. We're glad to be here. When you have to do -- when you're a state agency, you're a public agency and you're going to do a development project, you're obligated to comply with the State's Environmental review law, California Environmental Quality Act, CEQA. The very first step in that process when you decided that you have a fairly large project that requires an Environmental impact report.

There's three kinds of documents. But the big one is the EIR, Environmental Impact Report. You have

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to come out to the public and say, What do you think the issues are going to be that we need to address in the EIR? Traffic, noise, dust, whatever. This is a very important step as we get started into the preparation of EIR.

We have been here a couple of times before because our scope of our project has changed progressively since about a year ago when we got started initially on this EIR. And we're going to talk about that a little bit.

Who is the decision maker? The decision maker is our boss, Secretary Cate, who is the secretary for the California Department of Corrections and Rehabilitation. He's our boss. He's the person who makes the decisions once we get the EIR done. We'll also be in close contact with Clark Kelso, who is the receiver for the federal court orders on inmate health care and things like that.

Our department is responsible for this environmental review process. A while back, the Receiver did an EIR and kind of got people confused. This one is being done by Corrections. We are certainly going to be working closely with the Receiver, but this is our project, our responsibility.

Some background: Our state prison system,

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whether you like inmates or don't like inmates or like people locked up or don't like them locked up, is at a horrible overcrowded condition. We stopped building prisons some time ago and the consequence was we kept on getting people convicted.

The Department of Corrections and Rehabilitation has nothing to do with arrests, nothing to do with trials, convictions. It only has to do with when the felon shows up on the bus, we have to take them for the duration of their sentence. That's our job. We simply house felons that have been convicted under the Penal Code of a crime that comes to us.

We're not the DA we're not the jury, we're not the judge. It's not our area, but it is our area when an inmate comes to us that needs to be housed at the state level.

Right now we have about 165,000 inmates in California in 33 prisons. Those prisons are very overcrowded. In light of that, a couple of years ago, legislation passed a bill, Assembly Bill 900, that gave us funding for additional prison capacity. And more recently, it's been amended to allow us to also fund a medical prison project.

Our prison system operates under a number of court orders. The one you hear about the most is

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medical. The inmates were not getting constitutional level of health care, so we have a separate, stand alone, court appointed receiver who provides medical care to our inmates inside of our prisons. We are not charged medical treatment, the Receiver is.

We're working very closely in this administration to try to combine those services back into one big department again, so we don't have two stand-alone departments. A lot of progress is being made. We have that court order. We have a court order for mental health. We have a lot of inmates that were not getting adequate mental health treatment, so we have a court order about mental health. We also have some court orders about some smaller things like ADA and even dental, if you can believe it.

An odd thing has happened. While our adult prison system has gotten more and more and more overcrowded to the point of double bunking gymnasiums, lunchrooms and hallways, we've had our juvenile justice system go from about 10,000 wards, a couple of three years ago, down to about 1,400 today.

We have got substantial reduction in the number of juveniles committed to state facilities. And that's because we basically changed the rules of who gets to come to us. We started charging what it cost to house them, which is not inexpensive, and I think some of the counties felt they maybe could provide better treatment and care of the ward.

Right now our juvenile system, which is now a division of our department, it used to be the California Youth Authority, has had a significant excess of capacity created by the fact that they keep on reducing, keep on reducing. And that really affects the Northern California Youth Correctional Center. They have been around for many, many years. They have four facilities down there that we're going to talk about. It's affected our facility in Paso Robles, affected our facility down in Ontario. We got some fairly empty facilities. That's providing an opportunity for us to say, sometimes these housing units, it's like a prison, it doesn't have the same security that we have for adults, but it's housing units that we can potentially use for adults.

This AB900 contemplated that we can reuse what we've got. That's a good thing because we don't like taxable land and stuff like that.

We started, and we're still working on, a Reentry proposal. Reentry, is simply a one-of-a-kind facility for inmates that are about to parole back to the county to where they came from. We want to start bringing inmates out of the big prisons and into the specialized treatment facilities, where they get more one-on-one treatment, they're not overcrowded, get them away from the gang violence, get them away from bad, you know, living situations.

Our very first one of those that we have been working on is the Northern California Reentry Facility. And that is the only one we're doing this. We're trying to reuse an empty prison out on Austin Road and Arch Road. So we're trying to convert that into a Reentry facility.

That project from the get-go, beginning a year ago and actually before that, has not changed. It's the same 500-bed project. No change there at all.

Two significant things have happened as we have gone through this environmental review process for the Reentry. Some months ago, the Receiver, Federal Receiver, Clark Kelso, working independent of our department and then eventually working in concert with us, approved a 1,734-bed prison that has a medical admission. It's a prison, but it's got a medical admission. This is a significant facility for the Receiver, statewide. It's going to serve Northern California. We got a similar type of facility down in Southern California.

This was a big change from originally wanting to build seven 1,500-bed facilities. They decided they could kind of consolidate. We've had this project approved. About the time it was approved, we decided that it was a joint project with our departments, so we came in to share that project. We're going to talk about that a little bit. That's now a funded, approved project.

And most importantly, we had some community members down here from the city and county and chamber of commerce to tell us that EIR was not the best EIR, so we just went through litigation and just had a very, very positive outcome, a settlement agreement that was just signed a couple of three weeks ago. We're going to talk about that a little bit because it affects these other three projects.

The second big reason we're here today is since we started on our Reentry project, EIR, nice little simple EIR, we decided that to meet our court orders for having adequate beds for mental health patients, to reuse another empty youth authority facility, which happens to be right next door. So we're going to talk about the DeWitt Nelson conversion to an adult facility.

To get you oriented, we're down off of Arch

Road off of 99. We're next to the big rail yard and next to the airport, next to the landfill.

Youth Authority has had four facilities for many, many years. Northern California Youth Correctional Facility is four independent, stand-alone facilities that they house the wards separately: H.O. Close, Chaderian, which is our high security juvenile Facility, DeWitt Nelson, and this used to be, it still is, but it's about to be removed, the Karl Holton Facility.

Up in the corner is our old women's facility, Northern California Women's Facility, which has been closed for many years. It's been used as a training center and right now it's empty also.

Right now this is going to continue as a juvenile justice facility. These two, Karl Holton and DeWitt, are empty, have been empty for quite awhile and we have no plans, the need to reopen them. So those have become good candidates for adult correctional facilities.

We used to own a whole lot of property down here (indicating). We actually don't own this anymore or this (indicating). We have a separate Conservation Corps, a little parcel for a Delta Conservation Corps that may get built yet.

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So we're going to talk a bit about the Reentry goes here (indicating). This is the California Health Care Facility that we have been talking that just had litigation on, and this is the DeWitt Nelson. You can see that they're are all kind of contiguous, run together. Arch Road is the way get to them. Austin Road goes passed, what will be our entrance.

Out of AB900, out of this legislation a couple of years ago, the Department -- they actually changed the name of the Department, added rehabilitation. There's been a growing awareness that, you know, sometimes inmates don't stand a chance. When they come out of a 190 percent, 210 percent overcrowded prison, they don't get to do anything. They barely can get out of their cell, go have breakfast and go back to their cell. You just can't manage that circumstance. You're exposed to a lot of personal danger, assault. It's hard to get to go to a class about anything.

The legislature authorized us to do these 500 beds -- they don't get overcrowded facilities by law. They are for inmates returning to specific counties, so they're kind of regional or county-based facilities. They are by comparison not to be overcrowded. They are to be a positive environment where, if you don't get along, you go back to prison. You have to be

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selectively participatory in this kind of program. You get vocational education and things like that. We have been working on this for a while. We haven't opened one up yet, but we think we're getting closer to having that.

The last year or so of an inmate's -- about 90 percent of inmates will parole, even though you hear about the lifers, three strikes a lot. The majority of inmates will parole. They'll come to this. It's the one for the Stockton area, San Joaquin County, Amador County and Calaveras County inmates only, parolees. There's a chance they'll be closer to home when they're released.

They are not work-release facilities. They are still enclosed prison-like correctional secured facilities. They simply will be closer to the community where they're coming out to. All of the programs will be internal to the area. Deborah Johnson and Captain Cocke are really good on this, if you want to talk to them afterwards.

The old woman's facility works out really well for us. We have a 400-bed capacity already. If we double-bunk one of them, we can get 500 beds out of it. We're going to use that old facility. It's up at the corner of Arch Road and Austin Road, modest little

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prison-like facility.

It will be the only one that's not -- it will be an atypical facility. We actually have a new design, for stand-alone facilities. We're going to make this one work. It's got a good housing unit. It's got program space. We're going to make a few changes. We're going to add a building to it. In particular, we're going to add -- all of our adult facilities have a lethal electrified perimeter fence around anything from a Level 2 to a Level 4 prison, which means we have two fences, 12-foot high, razor wire on top. And between those two fences is a lethal electrified fence that's between there, so you can't run into it by accident. It is meant to be lethal. It is not a stun fence. It's not an ouch fence. It is a lethal fence and it's been a significant deterrent. So we're going to do some renovations and things like that.

The site plan is pretty simplistic. We already have these housing units that work for us. We already have a nice admin and reception center kind of place. So we have a lot of parts that we need to run this. And then we got to add a medical building and kind of fix up the infrastructure a little bit and add the new fence. For about a year and a half, the Receiver, Federal Receiver, has worked on this proposal

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that became their Northern California anchor for their medical -- serve their medical needs. They don't typically provide acute care, but they are just below that. So extreme hospitalizations still goes off site. In fact, we have an agreement with San Joaquin General to provide some of those services to us. It's a significant facility.

And what kind of matters here (indicating) is that through this process, not only were some mitigation measures adopted that are of significance to the community, but we had a litigation circumstance. And out of that came a settlement agreement. And that settlement agreement I want to talk about a little bit because there's been a lot of very positive things I think for the community came out of it, oddly to come out of litigation.

Adopted measures, the settlement agreement enhanced a lot of those issues and it added some new ones. In particular, the settlement agreement finally brought closure to the fact that we don't have, any longer, our own source of water that's dependable. Our wells have become contaminated because of the adjacent landfill operation.

So in the process of the settlement agreement, we worked out finally, the city providing water service out to our property. We reached an agreement about whose paying what to whom. They're going to provide connections into our existing facility. We're going to provide some additional piping over to other connection points. We're going to pay for some additional water meters. We have a graduated scale of when we start paying 100 percent for water. This is a great outcome for us because it keeps our property very viable for future use. We also had an old sewer agreement. We are one of the few that actually owned a piece of the sewer plant from the 1950s. This settlement agreement allowed us to maintain that agreement.

Traffic, we're already committed to some improvements at Arch Road, the interchange of 99, but the settlement agreement emphasized that we're paying into to two regional fare share programs where people, as development occurs on a per square foot or trip end basis, you pay so much to help retire projects that are needed for the whole region. We're paying about 2 million to the county and we need the counsel of governments to help pay for a share of some of these traffic improvements in the area.

We're also dedicating a right-of-way along Arch Road and Austin Road for an eventual street widening that the county wanted. We are contributing to

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new stop lights that the county is installing at Arch and Austin Roads and we're going to bring our entrance down to Austin Road so we keep traffic away from Arch Road.

The City of Stockton really wanted to consider the potential annexation of the property, both because they're now providing water service to it, sewer, and just because it's a logical extension of the city. So we have committed to supporting their request for annexation.

The part that, really, I think most people are interested in, though, is that the City, Chamber and the County all wanted to see if we would commit to a percentage of hires, percentage of companies that we would bring in to the construction and operation of this facility.

Under the state law, we felt that there really wasn't a choice for us to have a requirement or so many percent of people from a certain ZIP code. So what we worked out, and it's the first time we've ever done it, we're pretty excited about it, is we have something we've adopted through the settlement. We're going to apply it to the consolidated California Health Care Facility and the DeWitt Nelson, and to the degree we can, to the Reentry. It's called the contractor's local hire outreach program. And this program commits us to working very closely, especially, with Mr. Wilhoit, the chamber of commerce and others to get the word out, what your contracting opportunities are, what your potential hiring opportunities are, if you're a local labor or trades person, advertising locally. We're going to try our best to get the word out locally about the opportunities. We're going to have over $600 million construction contract at some point here for just the CHCM. There's a lot of opportunities. We're using a type of contract that does not involve a pure low bid. There's opportunity for people to propose, show why they're so qualified.

This plan is the first time we've ever done it. There's preference given to being from a local in terms of a few points and your proposal. There's participation along with us at corrections in the scoring and the evaluation of the project teams that come in. There's continuity of keeping track of how are we doing in terms of an audit trail. We're trying to make sure the taxes stay local, where we buy materials and thing like, sales tax. So this is a good thing. We have never been able to do this. I think the litigation, ironically, helped us perfect something that we can apply to the circumstance, you know, wasn't right in the state, but doesn't violate state law. And we think there's a good labor pool, contractor pool, here, so we got a lot of choices to pick from.

All of our prisons have an advisory committee that usually operates under the warden. In this case, we rolled all three facilities into one, citizens, advisory group, and there are specific positions for local on that so there will be clear continuity having input as we go through our construction planning and on to the operation.

We also -- through this plan, we have to hire a lot of people. There's been a lot of concerns about hiring away all the local. Medical professionals, for example. We have to do a lot of training, so we've committed through this to do some training programs at the local community college, some other resources. We're trying to work very closely with hiring recruitment folks so we can get the word, where there's a job opportunity, how to get that job, things like that.

Why we actually came here? And that's our third piece here is that we came to realize to meet one of the court orders that we're operating underneath, we needed one more facility to provide for adult inmate correctional facility. And since the DeWitt Nelson facility was also empty, we decided to use it, to both renovate it and build some new buildings there to house 1,133 beds. These are bed capacities. We are stuck with those numbers once we go through EIR. DeWitt offers some opportunities to use some old housing units, and in some case, build some new things. As with everything else we're doing down at NCYCC, it will have it's own lethal electric fence. The California Health Care Facility will have a lethal fence, the Reentry will have a lethal fence and so will DeWitt Nelson

There's obvious opportunities for the Health Care Facility and DeWitt to share because they have some similar programs, mental health, some medical, so we're going to talk about that too.

For DeWitt, we have some multiple site option opportunities that we usually don't get to do with prisons. It's because the Health Care Facility, the receiver approved, and DeWitt they touch each other. They're side by side. They are just a few yards apart. So we've looked at infrastructure, we looked at a shared secured perimeter. We have one perimeter instead of two, opportunities to provide a firing range for all of our facilities. In particular, there's chance that the two can kind of merge together into one project rather than two separate projects, still having the same bed

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count. So DeWitt today has got a series of housing units. It's a stand-alone facility all by itself. Here's where the Karl Holton is and here is where the consolidated care facility goes (indicating). One thing that's kind of a problem about joining these two, there's a bunch of secured infrastructure in between that serves all four of these (indicating). So there's some water tanks, maintenance buildings, and things like that right here (indicating). These two are close together. They will have a similar program. They will have a similar security system.

The type of stuff that we're going to look at in the EIR and this will kind of evolve as we go, so these are very preliminary. This is basically the site plan for the California Health Care Facility as is. This is our site plan for DeWitt if we just left them within their boundaries.

We have interest in relocating a bunch of utilities, kind of out of the way, out to the west into an area between these two facilities, just to make it more developable. And, in particular, we have a chance to combine the secure perimeters into one fence. We like that because we have one less gate for people to go in and out of. We cut down on a lot of vehicular trips. So we are considering, at a minimum, simply combining the secure perimeters of the two facilities. These are still, when I talk about this, 1,734 beds, 2,400 staff. This is still 1,133 beds (indicating). The scopes never change, just the physical arrangement changes.

The last one is -- and this is so premature, who knows how we're going to land. It's to actually mix them together and kind of consolidate them, kind of use a little less land. They always have the same entrance over to Austin Road. They don't share a parking lot, but you still got to move utilities. But there's a chance, it may be more efficient, from a construction standpoint or more timely or more -- the programs could work together or all three, by just kind of mixing the programs a little closer together. We always still have the same number of beds.

In the time that we're living in, economic is always an important thing. Our mission is to get prisons built and keep them operational. It's a tough job, but it shouldn't be ignored, that these construction projects are very timely in our economy as well as the operational budget.

Just so you got a feel for this, these are the construction budgets, not architectural engineering and land acquisition. These are just construction budgets. The Reentry is about $85 million in construction dollars. The Health Care Facility is combined with about $675 million. $600 million for buildings and $75 million for site work, utility work, access. And DeWitt is probably about $100 million.

So you have some significant projects within the next year or so if everything stays on track, especially the Consolidated Care Facility and DeWitt will be going into construction in the fall. This could go to construction next spring (indicating).

Permanent employees, state employees, custody, program staff, support staff, maintenance folks, a whole realm of people, medical staff, nurses, doctors, NCRF is about 350 to 400 employees. The Health Care Facility is about 2400 employees and DeWitt Nelson is about 450. By combining these two, there's a chance we'll have a little lower staff, but we just don't know that yet.

There's two other things that come out of these facilities that we're doing. Uniquely, on state prison projects, we pay a one-time fee to a community if it's a brand new bed, as opposed to renovating a bed. It's called a community impact fee. It was developed back in the '90s because a lot of times communities couldn't absorb the construction. We've stuck with the formula. We basically provide, through legislative direction, $800 per new bed, one time. The $800 per bed one time is divided by statute to the schools, get a check right off the bat, and the city, county, depending on how they want to break it down, get the other part.

So for these three, when we go to construction on NCRF, we'll be looking at distributing $400,000; on CHCF, $1.4 million; and DeWitt Nelson, about $1 million, $900,000. These are one-time fees. They sort of help augment the committees' basis for absorbing projects. The three of them together are probably about $350- to $450 million in annual operating budgets with salaries, food service, utilities.

As we go through, I'm going to have Gary Jakobs talk for a few minutes about the environmental effect, but I'll give a little intro here.

How we do an EIR is we do a notice of preparation. This is the third time we started this, but this time we're going to make it stick and get it right. We prepare -- it's a final product, but it's called a draft development impact report and that's because it goes out to the public for public review periods, so everybody gets a chance to read and comment on it and tell us what they think. We have a public hearing, so we'll be down here again in a public forum to talk about that EIR. At a point we prepare responses to all the comments we received on the draft EIR. That becomes something called a final EIR and then we can bring it to our secretary, Secretary Cate, to make a decision whether or not to approve the project, say the EIR is complete.

I'm going to ask Gary Jakobs, who's worked on prison projects so long it's kind of scary. He's going to talk about the Environmental effects that we anticipate.

GARY JAKOBS: Thank you, Bob. I'm going to actually turn it over to Amanda Olekszulin.

AMANDA OLEKSZULIN: As we approach the important part of tonight's meeting where we're going to hear your comments, we wanted to talk briefly about the Environmental issues that are going to be evaluated in the EIR.

Consistent with the requirements of CEQA, the California Enviromental Quality Act, we're preparing a full-scope Environmental impact report. In the next slide, it will show those issue areas. But what we'll do is we'll evaluate the direct and indirect, as well as cumulative impacts of the project. The DeWitt Nelson project in combination with the NCRF Project, both projects in combination with other development projects going on within the region.

Both the NCRF project and the DeWitt Nelson project will be evaluated at an equal level of detail, both separately and together in the Environmental impact reports, so you can assess the impacts of one of those projects going in, both of those projects going in at the same time. CDCR will be taking two separate actions on each of those projects. NCRF will be considered separately from the DeWitt Nelson project.

The issues to be addressed -- this is a full listing. These are the issues that we want to hear from you on, on how we can refine the scope of work for the EIR. Issues including air quality, climate change, green house gases, which is a more prevalent topic these days, hazardous materials, water supply, ground contamination from Forward Landfill. All these issues will be addressed at a project level of detail in the EIR.

So we're coming to that point of today's meeting, where we want to hear from you. We're also in the middle of our public comment period. You have until September 16th to submit any written comments. You can either send them via e-mail, fax or you can provide written comments today by filling out a comment card and leave it at the back of the room.

For those braver folks who would actually like to get up and speak in front of us, we do have speaker cards. Just raise your hand and we'll give you a speaker card. The reason why we do this is we want to know your name. We have a court reporter here so we can record your comments and make sure that we're adequately considering those comments in preparing the EIR.

BOB SLEPPY: Thank you. All of these documents are available online on our internet site.

This is a chance for all of you to get up and speak. You don't have to. Every form of communication is considered equal, written little notes, hand to Nancy or Roxanne. You don't have to speak today to have a standing to comment on the review, on the draft EIR. Everybody has the same opportunity when the EIR comes out. If you think you're interested in that, it would be good to get your name and address so we can put you on the mailing list, if you aren't already on our mailing list.

I appreciate you folks coming out to this. I've gotten to like Stockton pretty well. I know a lot of folks now and I appreciate the community you do have that cares a lot about what goes on down at our property. We appreciate how we get to the point we're at frankly. It's a pretty positive situation.

BOB: Will you entertain a question?

BOB SLEPPY: We will do questions. We may not be able to answer them, but we'll sure give it a try.

BOB: I see the difference between the beds at the DeWitt Facility and the Holton Facility. When you compare it to the staffing between the DeWitt Facility, something is way off. I assume there's a significant difference in the admission, but I just don't understand.

BOB SLEPPY: That's pretty intuitive. The California Health Care Facility will be a subacute and nearly acute level medical treatment for inmates that need medical care. It will be very rich in mental staffing programs, medical treatment, even some mental health. It will be very rich in terms of staffing.

We have a lot of inmates that prematurely get old and they need health care, like anybody at some point needs health care. It's not a full hospital. We're not going to do a lot of surgery and things like that. We still send that out. But it is a very intense program, so it has proportionately a very high staffing.

The DeWitt Nelson is more mental health-oriented, so you have clinicians meeting with inmates, talking to them, prescribing drugs to them, things like that. It's a much lower staffing so it's --

AMANDA OLEKSZULIN: Can I ask you to state

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your name for the record?

BOB: Bob.

BOB SLEPPY: Mr. Sanchez, do you want to speak?

RAUL SANCHEZ: Raul Sanchez, and I'm on the San Joaquin Mental Health Board and I have been for a couple of years. I have been involved with this process since the Receiver's representative and someone from the prison system made a presentation to the mental health court, and it got me very interested and I have submitted comments in the past. I'm glad to see you here again.

My comment -- of course, I'll be submitting written comments to detail stuff. I just want to encourage everybody who's involved in this to consider this: That we have three state facilities. One, Reentry, which means they will be released in the community and that presents a challenge for mental health professionals, mental health, family members and the consumers themselves that they be -- that outreach be made to the community services to achieve the objective of the Reentry facility which is, Don't get back in prison. That's one issue.

We also have other facilities coming in that may present opportunities. For example, the veteran

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administration facility. The precise location is yet to be announced. But, of course, our veterans have some mental health issues there. All of these facilities have mental health clients. And, of course, our county jail has mental health clients in them.

So we have a challenge, but also have some resources coming into San Joaquin County, where if we can get together, the citizens advisory committee involved the federal government, and try to fashion programs that take advantage of the various resources and the various skills within each level of government and within the community. And maybe we can start with the citizens advisory committee and see what we can fashion out of that.

That's my message. Thank you for being here.

BOB SLEPPY: Mr. Nunez.

SAMMUEL NUNEZ: It's kind of almost piggybacking off of Mr. Sanchez's comments here.

You had mentioned that one of your objects is to reduce recidivism. I think it hovered somewhere around 70 percent. My question is, What is your goal in terms -- what is your specific goal in reducing recidivism?

Obviously, when you have a 70 percent recidivism rate, most of the folks that are retained,

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they're pro-violations, right?

So what is your goal in terms of reducing recidivism. I would like to see a figure and how do you to that?

May I ask a kind of a three part question?

BOB SLEPPY: Sure. Go ahead.

SAMMUEL NUNEZ: The inmates themselves that are committed, they're already committed. Are they on the tail end of their sentence or are these new commitments that you are going to be housing there?

And then the last question is -- this is kind of tied into the whole recidivism rate. How is parole preparing for this? Parole officers have a pretty large caseload here in our county, right? I would wonder how this is going to add or -- you know, how are they going to work with this to achieve the goals. Because, again, your objective that you started off with was to reduce recidivism, increase public safety.

That's it.

DEBORAH JOHNSON: We don't expect our parole numbers to change. They will still be paroled back to their county of last legal residence. And people in the medical facilities, will still go back home to wherever their last legal residence was. So if they're from Sacramento County, they're going to go back to

Sacramento County and be on parole.

The inmates that will be at the Reentry Facility, those 500 inmates, they are already coming back to San Joaquin County. Their parole date is not going to change. It's just that they'll spend their last 12 months in the Reentry Facility as opposed to being in one of other 32 prisons or something else within CDCR.

So the numbers aren't going to change. Having said that, parole is in the process of parole reform and parole does want to expand and increase their services, and they're working on that. And San Joaquin County will get their portion of those increased services just as if there was no Reentry Facility.

Does that answer?

BOB SLEPPY: Does the program have a target for reducing the recidivism?

DEBORAH JOHNSON: I have not seen a number and I don't think anybody would want to say, We plan to reduce by 10 percent or 15 percent. We want to reduce, obviously, all the way down to the national average, which hovers around 40 or 50 percent.

Any reduction in recidivism that we can and we'll take it. We're in the process of overhauling all of CDCR to try to reduce recidivism statewide.

DOUG WILHOIT: Bob, it's nice to have you here today under some real good circumstance. To the general public, my name is Doug Wilhoit, CEO of the Greater Stockton Chamber of Commerce. Bob and I got to know each other very well over the last two years. It's a lot different what's happening here today as opposed to October and November of 2008 when the first scoping meetings were in this very same room, on the Health Care Facility under the Receiver.

Now, I can tell you folks as citizens, and both Mr. Sanchez and Mr. Nunez, that these issues that you talk about, even though they're not part of the EIR, I feel very confident that what we have accomplished over the last two years with CDCR and the receiver, Mr. Kelso, is an opened dialogue within the community now. We feel very comfortable. Rather than this being an adversarial position, we're in a cooperative partnership position.

We're just here to say we support. To be very candid, part of our settlement agreement was not to file a lawsuit on this part of the project, which we're not going to do. We want to work with the CDCR and the firms doing the EIR.

It's a big difference from November of 2008 when we had a scoping meeting here that was, at best, glaring across at each other and two adversarial parties. And now I think we're joined as one.

The thing that we're excited about is the amount of jobs that will be coming here. The dialogue has been opened with CDCR and the committees that will be on board, full time, watching these projects.

One interesting aspect that's come from this is the Chamber is more of a management organization, but this brought the labor and management together in San Joaquin County for the first time, along with the City and County and we're very excited about that. We're watching this going forward.

Bob, I want to thank you for putting up with us for two years. I'm here to assure the community that are here that going through the EIR process, going through the construction and the operational process, that dialogue is open. For your two concerns, I'm very confident that not only parole, but CDCR will be looking at how to reduce that. Although, that's not part of the EIR process here. It's on the ongoing process after the fact.

Bob, welcome back to Stockton.

BOB SLEPPY: Anybody else want to speak? It's not necessary to be part of this. The written word is just as fine. You can still comment on the EIR when it

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comes out and we hope to get your address, so we can let you know when it's available. Although, there will be a public announcement in the Stockton Record.

AMANDA OLEKSZULIN: If any of you haven't signed in, but would like to be kept apprised of any notices that go out regarding this project, please sign your name and put your mailing address, and we'll make sure that we'll keep you apprised of this project.

BOB SLEPPY: We'll be around for a while. Thank you very much for coming out. We always appreciate seeing the faces.

Thank you very much.

(Whereupon the meeting was concluded at 2:48 p.m.)

CERTIFICATE OF REPORTER

I, Angie M. Materazzi, a Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing proceedings were reported by me, a disinterested person, and thereafter transcribed under my direction into typewriting and is a true and correct transcription of said proceedings.

I further certify that I am not of counsel of attorney for either or any of the parties in the foregoing proceedings and caption named, nor in any way interested in the outcome of the cause named in said caption.

Dated the 9th day of September, 2010.

ANGIE MATERAZZI CSR NO. 13116

EIR SCOPING MEETING NORTHERN CALIFORNIA
REENTRY FACILITY AND DEWITT NELSON
YOUTH CORRECTIONAL FACILITY
CONVERSION PROJECTS

CALIFORNIA DEPARTMENT OF CORRECTIONS
AND REHABILITATION OFFICE OF FACILITY
PLANNING, CONSTRUCTION
AND MANAGEMENT

AUGUST 24, 2010

555 WEST WEBER AVENUE
STOCKTON, CALIFORNIA
6:00 P.M.

Reported by:
ANGIE MATERAZZI, CSR NO. 13116

JAN BROWN & ASSOCIATES
WORLDWIDE DEPOSITION & VIDEOGRAPHY SERVICES
701 Battery Street, 3rd Floor, San Francisco, CA 94111
(415) 981-3498 or (800) 522-7096

AMANDA OLEKSZULIN: We're going to get started. Just for general logistics, I'm going to go through a brief presentation. My name is Amanda Olekszulin. I'm with Ascent Enviromental. We are the contractor hired, together with AECOM, to prepare the enviromental impact report for the project that we will be discussing tonight.

Just a few introductions that we'll do. I have Mike Parker to my left. He's also with Ascent Enviromental. Todd Chambers, who is with AECOM. I have Roxanne Henriquez, in the back, and she's in charge of enviromental for the California Department of Corrections and Rehabilitation, as well as Nancy MacKenzie, who is also leading that effort for CDCR. We do have a representative for the Reentry Facility, which is a component of tonight's talk, Joe Cocke, who is right outside the room. We also have CDCR legal counsel, Evelyn Matteucci and communications for the Receiver, Liz Kanter, is here tonight. Hopefully, we have all of the staff here so if you have any questions at the end of tonight's meeting, we can answer them.

Just a brief rundown. We're here to talk tonight about the notice of preparation, which is a requirement under the California Enviromental Quality Act. That requires us to describe the project that we are evaluating and solicit comments from the public on the scope and content of the EIR. We'll describe what the purpose is, give a brief project history, rundown the enviromental issues that we're planning to evaluate in the enviromental document and take any public comments, should any of you want to.

We have a court reporter here so that we can make sure that we're taking you're comments as they are said and not interpreting them differently. We are going to use those comments in developing the scope and work for the EIR. And if you want to speak, since there's only a few of us here, you could probably raise your hand and state your name so that we have it for the record.

NANCY MACKENZIE: Angie, since this presentation is the same as the previous one, I think you don't need record this.

THE REPORTER: Thank you, Nancy.

AMANDA OLEKSZULIN: For those of you who don't want to speak tonight or who would like be kept apprised of the project as it goes through the enviromental process, please make sure that you sign in at the front so that we have your name and address. We'll send you notices as we hit different stages in the process.

We appreciate that everyone is here tonight and hopefully we can provide some valuable information. We welcome your feedback on how we should scope the EIR for this project.

(Whereupon, the same previous PowerPoint presentation was then presented as the 2:00 o'clock PowerPoint presentation.)

RON SKAGGS: Ron Skaggs, resident of Stockton. What is the EIR status of the other two projects with relation to this project?

Let me rephrase my question. What is the EIR status of the Health Care Facility?

AMANDA OLEKSZULIN: That EIR has been approved by CDCR. It's through its enviromental review process and it's going through the design and construction.

CHANDA CHHIN: What is your ultimate goal with this project and what is the purpose of the firing range?

AMANDA OLEKSZULIN: The firing range is a support service for the correctional officers. It will be used for training and weapons certification. It's just an element proposed as part of the project.

NANCY MACKENZIE: Can we have Joe answer that question because he can provide a bit more detail.

JOE COCKE: The correctional officers are required to qualify annually and the officers that are going to be at the gun post are required to qualify quarterly. There will be transportation teams involved in there. They actually have to qualify on a transportation-qualification type of range. That's why we're going to have a range, because if we didn't have one here, then they would have to travel, which would be not cost effective. They would have to travel to either Ione State Prison or Mule Creek State Prison or Galt, so it's more convenient to have the staff qualify right in this location.

The range will take place on a weekly basis. The staff will be cycled through it at different times. There will be a small amount of staff qualifying regularly so that all the staff will get qualified annually or quarterly.

CHANDA CHHIN: I understand that South Stockton is a toxic hot spot. I'm not quiet sure which lawsuit it was. I know it was sometime ago that there was a factory in South Stockton that omitted some chemicals into the environment. How is that going to exacerbate the issues -- the pending issue, you know, in the EIR?

AMANDA OLEKSZULIN: Sure. I'll tell you a little bit about what the process of the EIR analysis is going to be. One of the topics is hazards and hazardous materials and we will discuss what the project could possibly introduce to the environment, as well as, what is happening surrounding the environment that could influence the facilities on the ground there.

What we do is we do database record searches to understand whether there have been past contamination spills out at the site or in the surrounding area that has contaminated the soil, groundwater or other chemicals of concern.

One of the issues is, we are located next to Forward Landfill. Forward Landfill does have documented groundwater contamination from the leachate from the landfill. So the EIR will be addressing that issue as it relates to on-site groundwater contamination, construction worker exposure, as well as potential drinking water concerns. So the EIR will be addressing those issues. There is a process in which we go through to access what the hazards are associated with the project and the surrounding area.

CHANDA CHHIN: Could you list or could you name the indirect issues?

AMANDA OLEKSZULIN: We're going through that process now, so I can't necessarily list what the indirect impacts of this project are. But in some cases, some projects may spur population growth in the city, so we need to assess what those other population growth impacts are. It's different for each project. We'll be going through a systematic process in trying to identify those indirect impacts.

CHANDA CHHIN: What is the funding source for this project?

AMANDA OLEKSZULIN: I will divert my attention to Evelyn, who will tell us.

EVEYLN MATTEUCCI: The funding source is bond funded money from the State of California. It doesn't have anything to do with local sales tax or anything like that. This is a state project. We were not funded by sales tax or anything like that.

What we do is we basically borrow money through a bond and then we pay it back over 25 years, so that's how it should be funded.

AMANDA OLEKSZULIN: Good questions.

Anyone else?

I guess that's the conclusion of our presentation. Like I said, we have until September 16th to receive your comments. We certainly encourage you to submit any comments you have on the scope and the contents of the EIR. We'll be hanging around for a few minutes, so if you have any lingering questions, let us know.

NANCY MACKENZIE: I'll also add, at the back table, Roxanne has copies of the NOP announcement. And in that announcement, it has our web site address. The notice of preparation is posted there and the draft enviromental impact report will be posted there. So you can just check in every now and then. Also, if you put your name on the sign in sheet, your name and address, we'll make sure that you get notices as we progress.

(Whereupon the meeting was concluded at 6:37 p.m.)

CERTIFICATE OF REPORTER

I, Angie M. Materazzi, a Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing proceedings were reported by me, a disinterested person, and thereafter transcribed under my direction into typewriting and is a true and correct transcription of said proceedings.

I further certify that I am not of counsel of attorney for either or any of the parties in the foregoing proceedings and caption named, nor in any way interested in the outcome of the cause named in said caption.

Dated the 9th day of September, 2010.

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ANGIE MATERAZZI CSR NO. 13116

SAN JOAQUIN COUNCIL OF GOVERNMENTS

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September 10, 2010

Ms. Roxanne Henriquez, Senior Environmental Planner
California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction, and Management
9838 Old Placerville Road, Suite B, Sacramento, CA 95827

Dear Ms. Henriquez:

Re: CMA Review - Notice of Preparation (NOP)
Northern California Re-Entry Facility and NCWF Conversion

Thank you for the opportunity to comment on this important document. As the County's designated Congestion Management Agency, the San Joaquin Council of Governments (SJCOG) has reviewed the above-referenced document with respect to traffic impacts pursuant to the California Environmental Quality Act (CEQA).

The establishment of a Regional Congestion Management Program (RCMP) is required by State Government Code, Section 65088 – 65089.10 and the County's Measure K Renewal Ordinance. The purpose of the RCMP is to monitor the cumulative transportation impacts of growth of the regional roadway system, establish a level of service standard, identify deficient regional roadways and develop plans to mitigate the deficiencies, and encourage travel demand management and operational preservation strategies for existing and planned development.

The attached exhibit shows the roadways within San Joaquin County that are monitored as part of the adopted RCMP Network. The monitored roadways within close proximity of the project site are Airport Way, Arch Rd., Mariposa Rd., and State Route 99.

One of the major implementation actions of the RCMP is to establish and monitor Level of Service (LOS) conditions on the Network and to assess where any deficiencies exist. With the last program update in December 2007, the Board voted to adopt a two-tiered LOS standard. The first tier is triggered when the roadway is operating at a Level of Service of

(LOS) "D". This begins an effort by SJCOG to broaden alternative modal programs and target TDM measures on the likely sources of trips on the road segment(s) with the goal of reducing trips or shifting trips to alternate modes. In addition to reducing congestion, these programs help lay the groundwork for greater efforts that must be undertaken when the next threshold is triggered.

The second tier is triggered by any roadway operating at LOS "E" or "F." Once a roadway segment is identified as deficient, the agency where the majority of a segment physically lies will have twelve months to prepare a Deficiency Plan. Government Code Section 65089.4 details the required analysis and components of a Deficiency Plan.

A second major implementation action of the CMP is the CMA's requirement to analyze and comment on future land uses (threshold criteria are projects that may generate 125 or greater peak hour trips) that may impact roadways located within the RCMP network. The *Land Use Analysis Process* was adopted as part of the 2007 Regional Congestion Management Plan and is also a requirement of state CMP statute and the Measure K Renewal Ordinance.

<u>Project's conformance with CEQA Thresholds</u>

The significance thresholds within the 2010 CEQA Guidelines, Appendix G, with a direct relation to CMA, MPO, and RTPA authority are:

XVI. TRANSPORTATION/TRAFFIC – Would the project:

a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

b) *Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

As it is probable that the land uses proposed with this project will generate 125 or more peak hour trips, SJCOG, in implementing the RCMP, requires that the potential impacts to roadways be analyzed within the project's Traffic Impact Analysis (TIA) and the findings summarized within the DEIR. The DEIR should contain a section that specifically addresses requirements and standards of the Regional Congestion Management Plan. If the project trips result in a degradation of LOS conditions, the identification and implementation of mitigation measures to resolve or mitigate the identified impact(s), including an estimate of the costs associated with the mitigation is required per state CMP statute. This analysis will also meet the intent of State CMP Statute, Section 65089 (4) relating to the Land Use Impact Analysis Program.

Please note that in determining a significant impact, state CMP statute mandates that the following trips are excluded from the volumes used in determining the impact:

1. Interregional travel (trips that originate outside the county's boundary);

2. Traffic generated by the provision of low-income and very low income housing;

3. Traffic generated by high-density residential development located within one-fourth mile of a fixed rail passenger station; and,

4. Traffic generated by any mixed use development located within one-fourth mile of a fixed rail passenger station, if more than half of the land area, or floor area, of the mixed use development is used for high density residential housing, as determined by the agency.

If after the trip exemptions are applied, the analysis shows that the project will have significant direct impacts to the CMP Network, the EIR will need to fully disclose, mitigate to the extent possible, and make Overriding Considerations, if necessary. Of important note is that in the event that the impact is significant and unmitigable and Overriding Considerations are adopted does not exempt the requirements of preparing a Deficiency Plan (DP). As these are deficiencies that are "planned", the best way to justify them is to have a pro-active DP as part of the mitigation measures.

State Statute allows for two types of deficiency plans, one being a Direct-fix DP and the other a System-wide DP. If the roadway cannot, or if the jurisdiction deems it impractical, to directly fix the deficient road to meet the CMP LOS Standard, then a System-wide Plan would be appropriate. A System-wide deficiency plan is a mitigation plan for the allowance of a roadway to become deficient or remain deficient by promoting alternative improvements that will measurably improve multi-modal performance, and contribute to significant improvements in air quality (as detailed in Govt. Code 65089.4).

If there is a deficiency and a proactive plan is not considered as part of this project's mitigation, the jurisdiction in which the deficient segment lies will have full responsibility to take the lead in preparing either a Direct-fix or System-wide DP. This will be required when the CMA, as part of its biennial update, determines that the roadway does not meet the LOS standard. As a reminder, the trip exemptions listed above will be deducted from the volumes as part of the analysis.

Travel Demand Management

Travel demand management is an integral part of San Joaquin's congestion management program. Not only is this a mandated component of the state's CMP legislation (Section 65089(5)), it is also required by the voter approved Measure K Referendum. Additionally, the federal Congestion Management Process (mandated through SAFETEA-LU) stipulates that no federal funds will be advanced for capacity increasing projects unless travel demand reduction and operational strategies have been implemented, to the extent possible, on the roadway.

Although roadway segments operating at LOS "D" are not considered deficient, this standard does trigger a requirement. Roadway segments operating at LOS "D" are subject to the preparation of a plan that analyzes specific strategies for operational preservation and transportation demand management. These strategies include ensuring that new development projects provide provisions that will promote alternative travel.

SJCOG requests that the project be conditioned to provide support for travel by bicyclists, pedestrians, transit passengers, and carpools. These provisions can include on-site construction, roadway design, off-street parking areas, designation of park-and-ride spaces, and participation in San Joaquin COG's Commute Connection (www.commuteconnection.com).

Commute Connection is the regional rideshare program operated by the San Joaquin Council of Governments whose mission is to reduce traffic congestion and improve air quality. The program is designed to help commuters make the transition from driving alone to a convenient ridesharing option such as carpooling, vanpooling, bicycling/walking or riding transit. The program serves San Joaquin County and through a special agreement with the Stanislaus Council of Governments, also serves Stanislaus County. The program includes free services such as commuter ride-matching, Guaranteed Ride Home and Employer Services.

Coordination with Commute Connection services/programs is required for the following development types:

- All business or industrial parks
- All event centers or stadiums
- Schools with greater than 150 students
- All government institutions, commercial, industrial, and retail offices with greater than 50 full-time equivalent employees

Therefore, as a means of mitigating any potential significant effect regarding a conflict with adopted policies, plans, or programs supporting alternative transportation SJCOG requests that measures be added that will ensure that development of the corrections facility the will include provisions for alternative travel, as discussed above, and that the Department of Corrections will coordinate with SJCOG's Commute Connection Program.

Surface Transportation Assistance Act (STAA) terminal access routes

The proposed project includes non-residential development that may depend on large STAA rated trucks serve their needs. Therefore, the roadways supporting these non-residential operations must be designed to accommodate STAA rated trucks.

Surface Transportation Assistance Act (STAA) terminal access routes

The proposed project includes non-residential development that may depend on large STAA rated trucks serve their needs. Therefore, the roadways supporting these non-residential operations must be designed to accommodate STAA rated trucks.

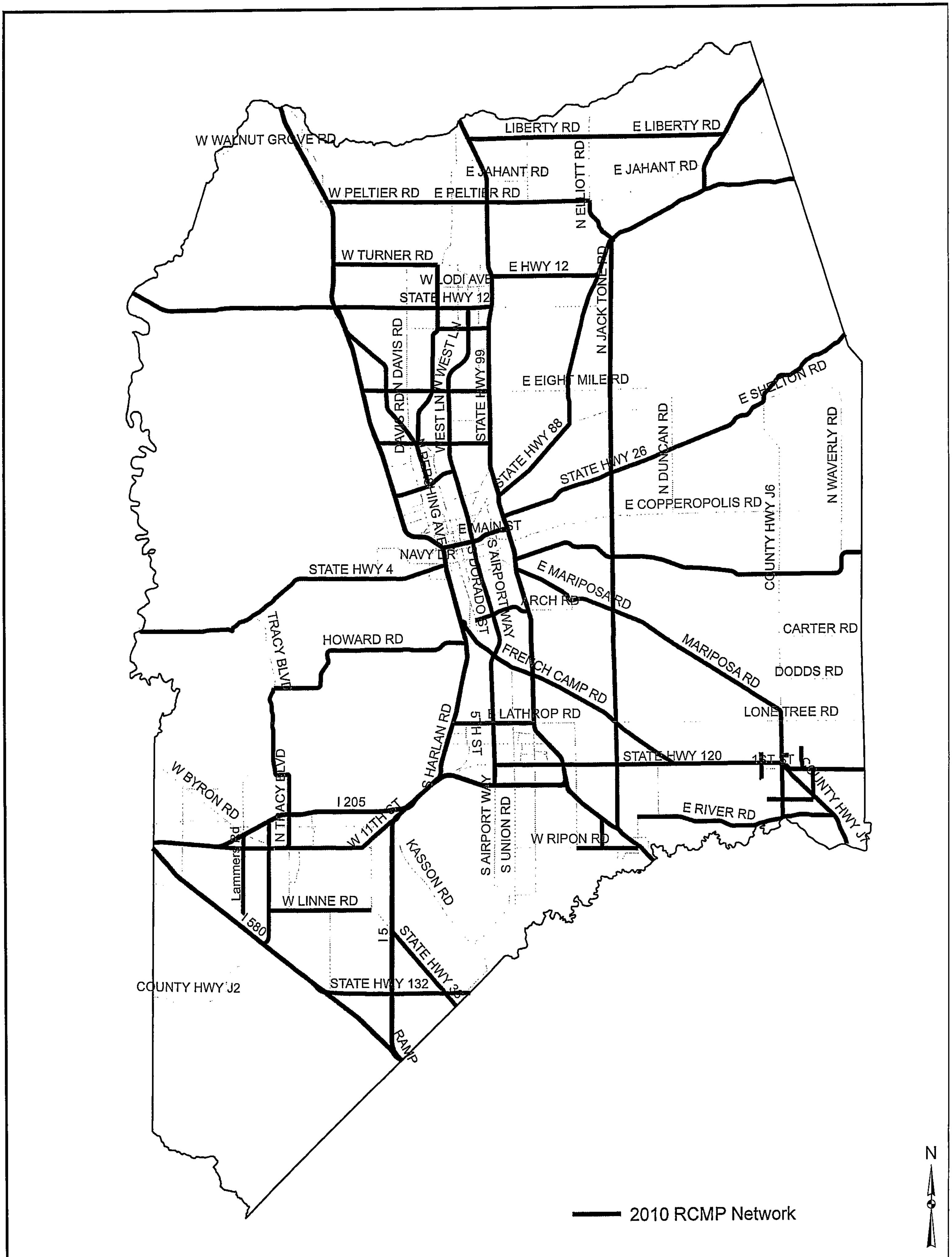
Thank you for the opportunity to review and comment on the Northern California Reentry Facility and Dewitt Nelson Youth Correctional Facility Conversion Project. If you have any questions please call the RCMP's lead planner, Laura Brunn, at (209) 235-0579. If helpful, we are available to meet with the Dept. of Corrections staff concerning these comments.

Sincerely,

Laura Brunn

Laura Brunn
Associate Regional Planner

Cc: Dana Cowell, SJCOG Deputy Director
Mike Swearingen, SJCOG Senior Regional Planner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CITY OF STOCKTON
OFFICE OF THE CITY MANAGER
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September 15, 2010

Roxanne Henriquez
Senior Environmental Planner
California Department of Corrections and Rehabilitation
Office of Facilities Planning, Construction and Management
Environmental Planning Section
9838 Old Placerville Road, Suite B
Sacramento, CA 95827

CITY OF STOCKTON COMMENTS ON THE REVISED NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED NORTHERN CALIFORNIA REENTRY FACILITY AND DEWITT NELSON YOUTH CORRECTIONAL FACILITY

The City of Stockton submits this comment letter regarding the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the proposed Northern California Reentry Facility (NCRF) and DeWitt Nelson Youth Correctional Facility Conversion. The proposed project site, which is within the existing Northern California Youth Correctional Center (NCYCC) complex, is located immediately outside City of Stockton boundaries, within unincorporated San Joaquin County.

The NOP has been revised to acknowledge that the California Department of Corrections and Rehabilitation will now not only consider the Northern California Reentry Facility project but also the proposed conversion of the adjacent DeWitt Nelson Youth Correctional Facility (DeWitt Nelson) to a mental and medical health facility for adult male inmates, in a single EIR. The NOP further acknowledges the recent California Health Care Facility Settlement Agreement and its implications on the NCRF and DeWitt Nelson projects, including, but not limited to, the planned extension of water service, local traffic improvements, potential annexation to the City of Stockton, and implementation of a "Local Hire" outreach plan. The settlement provisions are now included within the baseline analysis of the two projects.

The City recognizes and appreciates that improvements were made to the proposed scope of the EIR based on City staff's prior comments. It is expected that the current approach will result in a more comprehensive analysis of the cumulative effects of all of the State's projects at the NCYCC. At this time, City staff offers the following comments:

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1. When these facilities are operational, it may be necessary to enter into cooperative aid agreements with the Stockton Fire Department to provide assistance in the case of a widespread disaster. This should be discussed in the the EIR.

2. Add the following under the heading – **Potential Permits and Approvals Required:** City of Stockton: Submission and approval by the City Engineer of public improvement plans for the extension of the 16" diameter water main in Arch and Austin Roads.

3. Clarification under the heading – **DESCRIPTION OF PROPOSED PROJECTS/NCRF:** Per the Settlement Agreement, Meter 3 will be located at the intersection of Austin Road and the utility entrance to the CHCF site. Meter 4 will be installed at the discretion of the CDCR, and will be located at the intersection of Arch and Logistics Roads.

4. Arch Road is a major Surface Transportation Assistance Act (STAA) truck route between State Route 99 and Austin Road within the City and County jurisdictions. The traffic analysis in the EIR should include a discussion of truck traffic on Arch Road.

5. The City acknowledges and appreciates that the transportation impact analysis for the State's Project EIR will be performed based on the City of Stockton's Existing Plus Approved Projects (EPAP) and Cumulative traffic forecasting models. Since the Project site area is located on the fringe of the City of Stockton limits, it is very likely potential off-site impacts will be identified for transportation facilities within the City's jurisdiction. The City respectfully requests that all potential impacts are appropriately mitigated with improvements acceptable to the City and the Project's fair share percentage contribution, based on traffic loadings, be identified for any cumulative mitigation improvements.

Thank you for the opportunity to comment on this Notice of Preparation. Should you have any questions regarding this matter, please do not hesitate to contact me at 937-8294 or Community Development Director Mike Niblock at 937-8444.

for Laurie Montes

BOB DEIS
CITY MANAGER

BD:MMN:ab

cc: Kerry Sullivan, Community Development Director
San Joaquin County Community Development Department
1810 East Hazelton Avenue
Stockton, CA 95205

emc: Mayor and City Council
John Luebberke, City Attorney
Guy Petzold, Deputy City Attorney
Michael M. Niblock, Director, Community Development Department
Mark Madison, Municipal Utilities Director
Gregg S. Meissner, Deputy Director, Community Development Department/PES
Bob Murdoch, Director, Public Works Department
Matt Duaime, Fire Marshall

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manatt
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September 16, 2010

BY FED EX AND E-MAIL (ROXANNE.HENRIQUEZ@CDCR.CA.GOV)

Ms. Roxanne Henriquez
Senior Environmental Planner
Office of Facilities, Planning, Construction, and Management
California Department of Corrections and Rehabilitation
9838 Old Placerville Road, Suite B
Sacramento, CA 95827

Re: Northern California Re-Entry Facility and DeWitt Nelson Youth Correctional Facility Conversion (Stockton) – Revised Notice of Preparation dated August 2010

Dear Ms. Henriquez:

Manatt, Phelps & Phillips, LLP ("Manatt") represents the California Correctional Peace Officers Association ("CCPOA") and submits this letter on their behalf. Manatt is very familiar with this project, having submitted comments on both the September 2009 Notice of Preparation ("September 2009 NOP") and the December 2010 Revised Notice of Preparation ("December 2010 NOP") on October 19, 2009 and January 4, 2010, respectively. While the August 2010 Revised Notice of Preparation (the "August 2010 NOP") expands the project to include the proposed DeWitt Nelson Youth Correctional Facility Conversion project that was recently authorized by the State Public Works Board, the August 2010 NOP remains inadequate because it does not include the series of coordinated and related projects currently being planned by the Department of Corrections and Rehabilitation ("CDCR") under AB 900 and the federal court order in *Coleman v. Schwarzenegger*. As discussed below, CEQA requires that these related individual projects be addressed comprehensively in a single Program EIR and in the cumulative impact analysis. The August 2010 NOP also fails to meet CEQA's requirement of providing sufficient information about the project to enable a reasonable response by responsible agencies. In addition, the August 2010 NOP still fails to acknowledge and address the environmental health risks associated with Valley Fever, despite repeated requests by CCPOA to do so. Finally, the NOP should provide sufficient evidence for excluding the EIR's analysis of the project's impacts on mineral resources and recreation, address the project's potential to result in irreversible environmental changes and identify mitigation measures to reduce the project's wasteful consumption of energy. This letter discusses these issues and respectfully requests their inclusion in a revised and recirculated NOP.

I. A Program EIR is Required.

Although the project has been expanded to include the DeWitt Nelson Facility Conversion project ("Conversion") in addition to the Northern California Re-Entry Facility ("Facility"), these are merely two of a series of coordinated projects currently being planned by the Department of Corrections and Rehabilitation ("CDCR") under (a) Assembly Bill 900 ("AB 900"); and (b) the federal court order in Coleman v. Schwarzenegger that should be addressed comprehensively in a Program EIR as required by CEQA.

A. AB 900 Projects.

AB 900 was signed by Governor Schwarzenegger in 2007 and authorized, among other things, $2.6 billion to construct up to 16,000 beds at numerous secure reentry facilities, like the Facility. Plans are well underway for the construction of reentry facilities to meet this 16,000 bed benchmark. According to the Population Reduction Plan filed by the State of California with the United States District Court on September 18, 2009 (*See* Exhibit A):

> To date, eleven counties have agreed to locate a reentry facility to serve their population. The first reentry facilities are being planned in the counties of Kern, Madera, San Joaquin (to also serve Amador and Calaveras), San Luis Obispo (to also serve Santa Barbara and San Benito), and San Bernardino. A reentry facility planned for San Diego is currently being sited. Additional counties have expressed interest in supporting reentry facilities in their communities.
>
> Assuming no obstacles arise, [the State of California] estimate[s] this program will build approximately 500 beds in or about Fiscal Year 2010-2011, 2,500 additional beds in or about Fiscal Year 2012-2013, 2,500 additional beds in or about Fiscal Year 2013-2014, and 2,500 additional beds in or about Fiscal Year 2014-2015. (Population Reduction Plan, p. 14).

B. *Coleman v. Schwarzenegger* Projects.

The Facility and the Conversion are also part of a master plan to provide new beds and treatment space for over 1,400 inmates in California pursuant to the United States District Court's order in *Coleman*. This September 24, 2009 order required the State to file "a detailed long-range plan, including activation schedules" to provide outpatient and inpatient mental health treatment beds to the *Coleman* population. On November 6, 2009, this plan was filed with the Court. (*See* Exhibit B). According to the November 6, 2009 Press Release filed by CDCR:

> The conversion of DeWitt is part of the state's overall efforts to increase bed capacity for medical services as required under the court order in the Coleman v Schwarzenegger lawsuit. The detailed plan will be included in a comprehensive statewide plan to be filed by CDCR on November 6, as required by the court. This project is one of several being planned for construction statewide to provide additional capacity for the state's prison population.

(*See* Exhibit C). Other projects proposed by CDCR to comply with the *Coleman* order are set forth in a CDCR Fact Sheet called *Integrated Strategy Plan Proposed Projects*. (*See* Exhibit D).

C. **CEQA Requires Preparation of a Program EIR.**

Therefore, far from being stand-alone projects, the Facility and the Conversion are only part of **two** master-planned programs for which money has been allocated, sites have been selected, and development is being actively pursued. Given the coordinated nature of this development, the proposed preparation of a project-level EIR is not appropriate under the California Environmental Quality Act ("CEQA"). Rather, CEQA requires preparation of a Program EIR when multiple individual projects that together comprise a single ultimate project will result in significant environmental impacts. (*See* CEQA Guidelines § 15165, which states, in relevant part, that "Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, **the Lead Agency shall prepare a single program EIR for the ultimate project**.") Because the planned facilities constitute a series of related actions, they are characterized as a single large project under Section 15168. Therefore, the Program EIR must evaluate the cumulative effect from the environmental changes that will result from the ultimate 16,000-bed project authorized by AB 900 and from all facilities planned in response to the *Coleman* court order. This program-level EIR must also include program-level mitigation measures.

Preparation of a Program EIR will fulfill a number of policy goals envisioned by CEQA, including: (a) providing for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action; (b) ensuring consideration of cumulative impacts that might be slighted in a case-by-case analysis; (c) avoiding duplicative reconsideration of basic policy considerations; (d) allowing for consideration of broad policy alternatives and program wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts; and (e) reducing paperwork. (CEQA Guidelines § 15168). All of these goals are consistent with the Legislature's intent that CEQA be interpreted in such manner so as to afford the fullest possible protection to the environment. (*See, e.g.*, *Friends of Mammoth v. Board of Supervisors*, 8 Cal.3d 247 (1972)).

Proceeding with individual project EIRs for each of the facilities contemplated by these master plans would constitute project-splitting, or "piecemealing," which is forbidden under CEQA. Under well-established CEQA law, lead agencies are prohibited from splitting a single large project into a number of small pieces in order to avoid environmental review of the entire project. (*See, e.g.*, Orinda Ass'n v. Board of Supervisors, 182 CA3d 1145 (1986); CEQA Guidelines § 15378). By considering the Facility and the Conversion in isolation, the EIR will ignore the cumulative impacts that may result from the development of the remaining facilities. The August 2010 NOP should be revised and recirculated to acknowledge that the programmatic nature of this undertaking will be addressed in a Program EIR.

II. The August 2010 NOP Fails to Adequately Describe the Project.

The project description included in the August 2010 NOP is inadequate under CEQA. It fails to provide responsible and trustee agencies and the Office of Planning and Research with sufficient information describing the project and its potential environmental effects to allow for a meaningful response, as required by CEQA Guidelines Section 15082. Instead, the August 2010 NOP raises a series of open-ended questions about the scope of the project and its resulting environmental impacts, illustrating how even CDCR is not sure exactly what form the project will take. As CDCR should know, an accurate, stable and consistent project description is required for a legally sufficient CEQA document. A curtailed or distorted project description may stultify the objectives of the reporting process. (*See* County of Inyo v. City of Los Angeles (1977) 71 Cal.App.3d 185). A non-exhaustive list of the August 2010 NOP's project description inadequacies follows, all of which should be remedied in a revised and recirculated NOP:

- Water Line Extension – Page 9 of the August 2010 NOP indicates that "water service is being extended from the City of Stockton's water system to the DJJ facilities. Service lines are expected to be in place to provide water connections into the DJJ water distribution system by the end of 2010." What is not clear is (a) whether this water line extension is part of the proposed project; and/or (b) whether the potential environmental impacts associated with the water line extension have been contemplated by the Lead Agency. For instance, water line extensions are often associated with potential growth inducing impacts because they enable additional development. Will the EIR consider such growth inducing impacts? Without additional information, responsible and trustee agencies and the Office of Planning and Research lack sufficient information regarding the water line extension to provide a meaningful response on its potential environmental effects.

- DeWitt Nelson Conversion – The scope of the DeWitt Nelson Conversion is undefined and amorphous, as illustrated by the following three passages from Page 11 of the August 2010 NOP:

    - "Depending on the final construction plans all or a portion of the existing buildings may be renovated, modified, or removed and replaced."

    - "Additional stormwater storage facilities may be developed near the existing detention basin."

    - "Employee and visitor parking for the DeWitt Nelson facility would either be at the northeast corner of the project site or be provided in a shared parking lot to be developed on the east side of the adjacent CHCF project."

  With so many questions (and so few answers) regarding key elements of the proposed Conversion—such as which buildings will be renovated, modified, or replaced—it is impossible for responsible and trustee agencies and the commenting public to provide a meaningful response on the project's potential environmental effects.

- Combined CHCF/DeWitt Nelson Perimeter Security Fence – The current Conversion site plan calls for the installation of a new double security fence perimeter with a lethal electric fence element around the entire facility. This project feature was contemplated by the NOP when assessing the project's potential environmental impacts. However, according to Page 14 of the August 2010 NOP, "there is a potential that the proposed perimeter security system of the DeWitt Nelson facility may be combined into a single continuous perimeter fence that encompasses not only DeWitt but also the CHCF." Here, again, the project description is shown to be in flux and uncertain, which prevents responsible and trustee agencies and the public from providing a meaningful response on the project's potential environmental effects.

- Integration of DeWitt Nelson and CHCF Site Plans – Finally, in what is perhaps the most egregious example of the August 2010 NOP's failure to provide a legally sufficient project description, Page 14 states that CDCR "may consider" the integration of the site plans for the CHCF and DeWitt Nelson facilities into a single facility. In other words, the public should not assume that any of the physical development described in the NOP will actually be a part of the project, because CDCR may decide to do something completely different. This is a clear violation of CEQA Guidelines Section 15082 in that it prevents responsible and trustee agencies and the public from providing a meaningful response on the project's potential environmental effects.

These substantive omissions and inconsistencies are confusing and result in the Lead Agency's failure to provide the public (not to mention responsible and trustee agencies and the Office of Planning and Research) with an opportunity to completely understand the scope of the project. The omissions also violate CEQA, which requires that the entire project being proposed for approval be described to ensure that all of its potential environmental impacts are considered. (*See* City of Santee v. County of San Diego (1989) 214 Cal.App.3d 1438).

III. The August 2010 NOP Fails to Address "Valley Fever" (*Coccidiodomycosis*); This Impact Should be Addressed in the EIR.

Notwithstanding substantial evidence provided in our previous NOP comment letters regarding the potentially significant air quality impact related to Valley Fever, the August 2010 NOP completely ignores the issue. Coccidioidomycosis, also known as "Valley Fever," is a fungal disease caused by Coccidioides species. (Centers for Disease Control and Prevention website, *available at* http://www.cdc.gov/nczved/dfbmd/disease_listing/coccidioidomycosis_gi.html). Infection occurs when fungal spores become airborne after disturbance of contaminated soil. (*Id*). People who develop symptoms may experience a flu-like illness, with fever, cough, headache, rash and muscle aches. (*Id*).

According to a June 2007 report entitled *Recommendation for Coccidioidomycosis Mitigation in Prisons in the Hyperendemic Areas of California* ("Report," *see* Exhibit E), Valley Fever has been recognized in California State inmates since 1919, both inside and outside known endemic areas. As indicated in the Report, portions of San Joaquin County (where the Facility and the Conversion are located) are recognized as endemic areas.

As stated in our prior comment letters, both the construction and operation of the Facility and the Conversion will generate airborne dust from activities that disturb the soils. Project construction would involve grading and excavation, while project operation would occur on bare, graded land thereby creating the potential for dust from both wind and vehicles. In the event that the Facility and/or the Conversion is located in an area where Coccidioides species fungal spores are present, both construction and operation of these projects would present a potentially significant air quality impact related to Valley Fever.

Given the high incidence of Valley Fever in prison populations, as well as the location of the Facility and the Conversion in/near an endemic area and the dust-generating features of the these projects themselves, the EIR must analyze this potentially significant environmental impact and, if necessary, implement mitigation measures suggested in the Report (e.g., landscaping with ground cover, placing concrete and other dust reducing materials on the grounds).

IV. **The Scope of the Cumulative Impact Analysis is Unduly Narrow.**

The narrow scope of the cumulative impact discussion in the August 2010 NOP violates CEQA. CEQA Guideline Section 15165 requires that the list of related projects that will be contemplated in the EIR's cumulative impact analysis must be augmented to include other past, present, and reasonably foreseeable AB 900 reentry projects and *Coleman* projects, regardless of whether all such projects are evaluated in a program-level EIR. (CEQA Guidelines § 15165 states, in relevant part, that "Where one project is one of several similar projects of a public agency, but is not deemed a part of a larger undertaking or a larger project, the agency may prepare one EIR for all projects, or one for each project, but **shall in either case comment upon the cumulative effect**.")

According to the August 2010 NOP, "[t]he EIR will discuss the incremental contribution of the project to cumulative effects of other past, current, and planned and reasonably foreseeable projects *in the vicinity*." (August 2010 NOP, p. 18; emphasis added). Here, however, proposed AB 900 reentry projects and *Coleman* projects are located throughout the State, not merely in the "vicinity" of the Facility and the Conversion. Since all such reentry projects have the potential to result in cumulative impacts, CEQA requires that they be evaluated in the EIR's cumulative impact discussion. (*See* CEQA Guidelines §§ 15130, 15355, and 15165).

V. **The EIR Should Address the Project's Potential to Result in Irreversible Environmental Changes and Identify Mitigation Measures to Reduce the Wasteful Consumption of Energy.**

In addition to the potential environmental effects listed on pages 15-18 of the August 2010 NOP (aesthetics, air quality, agricultural resources, biological resources, cultural and historical resources, geology, soils and paleontological resources, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, employment, population and housing, public services, transportation/traffic, utilities and service systems, water supply and distribution, growth inducement, and cumulative impacts) the EIR should address the project's potential to result in significant irreversible environmental changes and identify mitigation measures to reduce the wasteful, inefficient and unnecessary consumption of energy. CEQA Guidelines Section 15126 requires that the EIR address significant irreversible environmental changes which would be involved in the proposed project should it be implemented. (*See Mira Monte Homeowners Ass'n v. County of Ventura*, 165 Cal. App. 3d 357, 360). This discussion should address the use of nonrenewable resources during the initial and continued phases of the project that may be irreversible and describe primary and secondary impacts which generally commit future generations to use nonrenewable resources. Additionally, Public Resources Code Section 21100(b)(3) requires that an EIR include mitigation measures to reduce wasteful, inefficient and unnecessary consumption of energy. Failure to include such mitigation measures may render an EIR legally inadequate. (*People v. County of Kern* (1976) 62 CA3d 761). Specifically, the EIR should quantify the amount of energy that the project will demand, address whether there is a sufficient supply of existing resources to meet this anticipated demand, address the cumulative impact of the project on energy supply and delivery systems, and set forth any significant energy-related effects on the environment would be irreversible if the proposed project is implemented.

VI. The August 2010 NOP Fails to Support the Exclusion of Two Impact Areas.

The August 2010 NOP indicates that mineral resources and recreation will not be evaluated in the EIR's environmental impact analysis, but provides no substantial evidence in support of that decision. In the absence of an Initial Study or other substantial evidence, CDCR lacks any basis for excluding these two impact areas.

VII. Conclusion.

For the reasons set forth above, we again urge CDCR to prepare a Program EIR for all reentry facilities funded by AB 900 and all projects proposed in response to the Coleman decision. Such a Program EIR must include an analysis of Valley Fever and address the cumulative impacts of all past, past, present, and reasonably foreseeable AB 900 and Coleman projects throughout the State. The EIR should also address the project's potential to result in irreversible environmental changes, identify mitigation measures to reduce the wasteful consumption of energy and address the project's impact on mineral resources and recreation (or provide sufficient evidence for the exclusion of these impact areas). These issues should be acknowledged and addressed in a revised and recirculated NOP. We also urge CDCR to revise and recirculate the August 2010 NOP so that it accurately describes the final project in a way that satisfies CEQA Guidelines Section 15082.

Manatt hereby reserves the right to provide additional comments on any future EIR prepared in connection with the Facility and/or the Conversion. Finally, Manatt requests to be provided copies of all notices published by the CDCR with respect to this project and notified of all actions taken by the CDCR in connection with the Facility and the Conversion. All correspondence should be sent to my attention at the mailing address noted in the footer on the first page of this letter.

Very truly yours,

Sean Matsler
Manatt, Phelps & Phillips, LLP

Enclosures

cc: David Sanders

EXHIBIT A

POPULATION REDUCTION PLAN

EDMUND G. BROWN JR.
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IN THE UNITED STATES DISTRICT COURTS

FOR THE EASTERN DISTRICT OF CALIFORNIA

AND THE NORTHERN DISTRICT OF CALIFORNIA

UNITED STATES DISTRICT COURT COMPOSED OF THREE JUDGES

PURSUANT TO SECTION 2284, TITLE 28 UNITED STATES CODE

RALPH COLEMAN, et al., Plaintiffs, v. ARNOLD SCHWARZENEGGER, et al., Defendants.	No. 2:90-cv-00520 LKK JFM P **THREE-JUDGE COURT**
MARCIANO PLATA, et al., Plaintiffs, v. ARNOLD SCHWARZENEGGER, et al., Defendants.	No. C01-1351 TEH **THREE-JUDGE COURT** **DEFENDANTS' POPULATION REDUCTION PLAN** **To: Three-Judge Court**

On August 4, 2009, the Three-Judge Court ordered Defendants to "provide the Court with a population reduction plan" within 45 days. (*Plata* Doc. 2197.) Defendants filed a notice of appeal and request for stay in the U.S. Supreme Court. (*Plata* Doc. 2224.) The stay was denied by the U.S. Supreme Court on September 11, 2009; the appeal is still pending and a jurisdictional statement will be filed in due course. Therefore, as required by the Three-Judge Court's order, Defendants submit the attached "population reduction plan." (*See* Exhibit A.) Defendants also submit "California Department of Corrections and Rehabilitation Achievements & Improvements Introduced During Three-Judge Court Proceeding." (*See* Exhibit B.)

The submission of the attached "population reduction plan," as required by the Three-Judge Court, is not an admission that this Court's order meets the requirements of the Prison Litigation Reform Act (PLRA). As will be argued in the U.S. Supreme Court, the Three-Judge Court erred in its rulings and orders. Thus, the submission of this plan does not constitute waiver of any issue previously raised before this Court and which may be raised in the U.S. Supreme Court, including, but not limited to, whether the three-judge court was properly convened; whether the Court misconstrued the PLRA's requirement that crowding is the primary cause of the violation of a federal right; whether the population cap of 137.5% satisfies the PLRA's "least intrusive" and "narrowly drawn" requirements; and whether the Court improperly refused to permit the State from introducing evidence "relevant only to determining whether the constitutional violations found by the *Plata* and *Coleman* courts were 'current and ongoing.'"

Dated: September 18, 2009

Respectfully submitted,

EDMUND G. BROWN JR.
Attorney General of California
JONATHAN L. WOLFF
Senior Assistant Attorney General

/s/ Kyle A. Lewis

KYLE A. LEWIS
Deputy Attorney General
Attorneys for Defendants

HANSON BRIDGETT LLP

/s/ Paul B. Mello

Paul B. Mello
Attorneys for Defendants

EXHIBIT A

September 18, 2009 Plan for Prison Population Management as Required by the August 4, 2009 Court Order

PURPOSE AND BACKGROUND

On August 4, 2009, this Court ordered the *Coleman v. Schwarzenegger* and *Plata v. Schwarzenegger* defendants (State Defendants) to "provide the court with a population reduction plan that will in no more than two years reduce the population of the CDCR's [California Department of Corrections and Rehabilitation's] adult institutions to 137.5% of their combined design capacity." Without waiving any appellate rights, State Defendants present this submission to the Three-Judge Court as required by the August 4, 2009 Order.

This "population reduction plan" (Plan) foremost represents the State's course of action to reform the State's prison policies and system. It also outlines the corresponding decrease in prison population that will occur as a result of the reforms identified in the plan. The following list of reforms, which are described in greater detail below, have either been implemented since the Three-Judge Court trial ended in December 2008, or will be implemented due to recent legislation that the Administration worked with the Legislature to obtain:

- **Implemented the Parole Violation Decision Making Instrument Statewide**. *Using scientific research to make evidenced-based decisions to send low risk offenders to appropriate programs and high risk offenders back to prison.*
- **Discharged Deported Parolees.** *Eliminated the wasteful and costly supervision for over 12,000 offenders who should be prosecuted by federal, not state, authorities if they illegally return.*
- **Parole Reform.** *New legislation aimed at reducing the churning and providing for better, targeted parole supervision of the State's most dangerous offenders.*
- **Enhanced Credit Earning.** *New legislation that encourages the completion of rehabilitative programs.*
- **Community Corrections.** *New legislation will provide fiscal incentives to keep low-level offenders local rather than returning them to prison.*
- **Parole Reentry Courts.** *New legislation that allows for intensive monitoring for parole violators in the community rather than returning them to prison.*
- **Increasing the Number of Inmates Housed Out-Of-State.** *Increasing the total number of inmates housed at out-of-state institutions, which currently stands at approximately 8,000.*
- **AB 900 Amendments.** *Recent legislation allows for funding and construction to start. Defendants prevailed in litigation that tried to stall construction*

- **Developed Bed Plan Which Will Increase Capacity to Address Crowding and Health Care Concerns.** *Includes new level IV infill, new healthcare infill, reception center beds, mental health beds, reentry facilities, and the conversion of Department of Juvenile Justice facilities.*

- **Expanding and Improving Clinical Care at Existing Prisons.** *Addressing health care capacity concerns including clinical and program space by allocating $500 million in AB 900 money.*

Since the time of this Court's tentative ruling and with even greater urgency since August 4, 2009, the State Defendants have studied a variety of measures that would reduce the prison population. The State Defendants believe that reducing the prison population to 137.5% within a two-year period cannot be accomplished without unacceptably compromising public safety. However, the Plan submitted here proposes mechanisms to safely reach a population level of 137.5% over time, and will achieve a more efficient capacity within 2-3 years than there is presently.[1]

The Plan has three parts: (1) the Plan describes recently obtained legislative authority and administrative changes designed to reduce the prison population; (2) the Plan describes the construction projects both underway and planned that will, upon completion, increase housing capacity and services to the severely mentally and/or medically ill populations housed in CDCR's instate adult institutions; and (3) the Plan addresses additional planned legislative reforms. CDCR estimates that when it implements the reforms for which it already has authority, the average daily prison population (ADP) at CDCR's adult instate institutions will be reduced by approximately 28,000 in three years. This reduction will result in an estimated population of approximately 155% at the existing 33 adult institutions. The State Defendants anticipate that in five years, the ADP will be reduced by approximately 34,000 resulting in an estimated population of approximately 147%. Moreover, if the Administration's planned legislative reforms are enacted, the crowding rate at the institutions would fall to 139% after three years, and 132% after five years.

Not only will the State lower its population through smart prison reforms and increase operational capacity through prison construction, the State is also committed to building beds specifically for the *Plata* and *Coleman* class members to accelerate the already dramatic improvements in the delivery of healthcare to CDCR's inmate-patients. In fact, over 5,800 beds

[1] That it is theoretically possible to reduce the prison population to 137.5% within two years says nothing about whether it would satisfy all of the PLRA's requirements to do so. For instance, a plan calling for the release of one in every four inmates at random or that inmates draw lots for their release would allow the 137.5% figure to be achieved within two years, if not instantaneously. But there is no doubt that such measures are not required by, much less would they satisfy, the PLRA because, among other reasons, they would provide no assurance of public safety. Thus, to submit a plan that would achieve the full population reduction within two years, without ensuring that the other requirements of the PLRA are satisfied, would be far less appropriate than the plan submitted here.

will be built with the specific and focused purpose of benefiting the class members of these cases. These beds are in addition to approximately 3,700 beds that will be constructed to meet general population needs at existing prisons, and 8,000 beds in reentry facilities throughout the state. Moreover, the general population and reentry beds will also have a full complement of healthcare space. Additionally, the State plans to spend roughly a half billion dollars in a healthcare improvement project at some of the existing institutions, which will accelerate the already dramatic improvements in healthcare delivery. Finally, these efforts will improve the operable capacity in CDCR's adult instate institutions which will, in turn, improve the rate of capacity in which CDCR can appropriately double cell inmates.

Lastly, this Plan represents current day projections. Future events and circumstances, including, but not limited to, further economic downturns, an increase in crime, voter-approved changes to the criminal justice system, and other unanticipated events, may require changes to this Plan.

I.

LEGISLATIVE AND ADMINISTRATIVE REFORMS

A. PRE-CUSTODY REFORMS: California Community Corrections Performance Incentives Act of 2009

California typically sends about 19,000 probation violators to prison each year, representing approximately 40% of all new prison admissions from the courts.[2] Unfortunately, California's prior funding model encouraged this high rate of probation failure. According to a recent report by the Legislative Analyst's Office, California's funding model provided "an unintended incentive for local agencies to revoke probation failures to state prison instead of utilizing alternative community-based sanctions."[3] That same report recommended that California instead establish a fiscal incentive program for probation success so that California could reduce the number of probationers entering the state prison system by rewarding those probation departments that demonstrate success.

The recent passage of Senate Bill 18 (SB 18)[4] creates exactly such a system of rewards for probation success. It establishes the California Community Corrections Performance Incentives Act of 2009. The community corrections program created by this act will authorize counties to receive funding for implementing and expanding evidence-based programs for felony probationers. Counties will be required to track specific probation outcomes and, depending on the success of those outcomes, may be eligible for "probation failure reduction incentive payments" or "high performance grants."

[2] "Achieving Better Outcomes For Adult Probation," Legislative Analyst's Office (May 29, 2009) at 20.
[3] *Id.* at 3.
[4] Sen. Bill No. 18 (2009 3d Ex. Sess.)

The new funding model created by SB 18 will provide sustainable funding for improved, evidence-based probation supervision practices. By incentivizing probation success, California will lower the number of probationers sent to prison each year.

State Defendants estimate this program will net an approximate 1,915 reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2010-2011.

B. IN-CUSTODY REFORMS: Credit Earning Enhancements

The passage of SB 18 also provides a number of credit earning enhancements. First, it provides one day of sentence credit for every day served in county jail from the time of sentencing. Current law provides one day of credit for every two days served in county jail. Second, it provides eligible inmates up to six weeks of credit per year for completion of approved programs. This approach to incentivizing good behavior for program completions has been suggested by several experts including the Expert Panel Report. Third, it provides that all parole violators returned to custody who are otherwise eligible should receive one day of credit for each day served. Currently, only some violators receive such credit. Fourth, it provides two days of credit for every one day served once the inmate is endorsed to transfer to a fire camp, rather than providing such credit only after the inmate actually participates in the camp. Finally, it provides a consistent rule of one day of credit for every day served for all eligible inmates, whether those inmates are on a waiting list for a full-time assignment, participating in college, or undergoing reception center processing, so long as the inmate is discipline-free during that time. Current law provides a similar credit structure, but does so through the existence, for example, of a "bridging program," whereby inmates in reception centers sign up for self-study programs and receive credit. This legislation makes credit earning consistent while obviating the need for a bridging program.

State Defendants estimate this program will net an approximate 4,556 reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2010-2011.

C. PAROLE REFORMS

1. "Summary Parole"

The enactment of SB 18 creates a new program of "summary parole" whereby CDCR is prohibited from returning to prison, placing a parole hold, or reporting to the Board of Parole Hearings, any parolee who meets all of the following conditions: (1) is not a sex offender[5]; (2) has not been committed to prison for a sexually violent offense[6]; (3) has no prior conviction for a sexually violent offense; (4) has no instant or prior convictions that are violent[7] or serious[8]; (5)

[5] California Penal Code, § 290, et seq. Subsequent references will be to the Penal Code unless otherwise noted.
[6] California Welfare and Institutions Code section 6600, subd. (b).
[7] § 667.5, subd. (c).

has not been found guilty of a serious disciplinary offense as defined by CDCR during his or her current term of imprisonment; (6) is not a validated prison gang member or associate, as defined in CDCR regulations; (7) has not refused to sign any written notification of parole requirements or conditions; and (8) has not been determined to pose a high risk to reoffend pursuant to a validated risk assessment tool.[9] All other offenders will be subject to traditional parole supervision upon release from prison.

The State Defendants anticipate that "summary parole" will reduce CDCR's institutional population because, when fully implemented, CDCR will be precluded from revoking parole and returning approximately 35,000 parolees to prison for parole violations.

Defendants estimate this program will net an approximate 4,180 reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2010-2011.

2. The Parole Violation Decision Making Instrument

SB 18 requires that CDCR employ a parole violation decision making instrument (PVDMI) to determine the most appropriate sanctions for parolees who violate conditions of parole. The instrument standardizes departmental decision-making by properly accounting for both the severity of the parole violation and the offender's risk to reoffend as determined by a validated risk assessment tool. This legislation comports with the recommendations of numerous expert reports, including the Rehabilitation Strike Team Report to the Governor, the California Expert Panel Report, and the Little Hoover Commission.

In fact, CDCR has already developed precisely such a tool and will have it fully deployed and in use throughout the State prior to the effective date of SB 18. CDCR's PVDMI receives risk information from the California Static Risk Assessment (CSRA), a validated risk assessment tool developed by CDCR in conjunction with the University of California, Irvine, Center of Evidence-Based Corrections. The CSRA predicts recidivism based on static demographic and criminal history information received from the California Department of Justice. The use of the PVDMI allows CDCR to preserve correctional resources by maximizing the use of alternative parole violation sanctions while reserving incarceration for only the most dangerous parolees for whom the scientific research dictates such a result. CDCR's pioneering work in both developing the CSRA and employing it as part of the CDCR's PVDMI has been recognized by the California Administrative Office of the Courts, which has asked CDCR to assist in the development of the Courts' own risk assessment tool.

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[8] § 1192.7, subd. (c).
[9] CDCR intends to employ the California Static Risk Assessment tool, a validated tool that predicts an offender's risk to reoffend on the basis of static information received from CDCR and the California Department of Justice.

Although CDCR will not identify a population reduction associated with this reform at this time, the PVDMI is an effective tool in placing parolees in the right programs and returning the high risk parole violators to prisons thereby increasing public safety while decreasing recidivism.

3. Reentry Courts

SB 18 also authorizes CDCR to collaborate with the California Administrative Office of the Courts to establish and expand drug and mental health reentry courts for parolees. These reentry courts will provide an option for parolees with drug and mental health needs to receive highly structured treatment in the community, under the close supervision of their parole agent and the court, rather than being returned to prison for violations that may be related to those needs. The legislation provides that for participating parolees, the court, with the assistance of the parolee's parole agent, "shall have exclusive authority to determine the appropriate conditions of parole, order rehabilitation and treatment services to be provided, determine appropriate incentives, order appropriate sanctions, lift parole holds, and hear and determine appropriate responses to alleged violations." The court proceedings will feature a dedicated calendar, non-adversarial proceedings, and a highly structured approach featuring frequent drug and alcohol testing to ensure the best chance of parole success.

The implementation of the reentry courts should have a significant impact on reducing the number of mentally ill inmates in CDCR because it should reduce the number of parolees with mental illness returning to prison.

State Defendants estimate this program will reduce CDCR's ADP by approximately 435 inmates once fully implemented in or about Fiscal Year 2010-2011.

D. ADMINISTRATIVE CHANGES

1. California's Out-of-State Correctional Facility Expansion

Defendants will expand the California Out-of-State Correctional Facility (COCF) program, which has as its primary purpose removing non-traditional beds and relieving crowding by transferring CDCR inmates to contracting out-of-state facilities. The COCF program has been in place since October 2006 and CDCR currently maintains approximately 8,000 inmates in out-of-state facilities. CDCR intends to expand the program to allow transfer of additional inmates out-of-state. CDCR maintains a robust quality assurance system over the program to ensure all inmates transferred out-of-state are able to obtain all appropriate services.

State Defendants estimate this program will net an additional approximate 1,250 reduction in CDCR's ADP in or about Fiscal Year 2009-2010, a 2,200 total reduction in CDCR's ADP in or about Fiscal Year 2010-2011, and a 2,500 total reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2011-2012.

2. Community Correctional Facilities Utilization

State Defendants intend to better utilize existing private Community Correctional Facilities (CCFs) to assist in the reduction of the prison population. CDCR established thirteen CCFs throughout California to house low-level inmates. CCFs prepare these inmates for their return to the community on parole. Robust oversight of the CCFs is already in place. However, CCFs have been underutilized by CDCR in the past, primarily because appropriate male inmates are also eligible for other types of housing, including minimum security facilities and camps. Yet, there is an abundance of female inmates who are eligible for placement into these facilities. Recognizing this, CDCR intends to increase its use of CCFs by converting three CCFs to female facilities.

State Defendants estimate this program will net an approximate 800 inmate reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2010-2011.

3. Commutations of Sentence

The Governor will review cases of certain deportable inmates under his discretionary constitutional clemency authority. A commutation of sentence would result in an inmate's early release from prison and deportation.

Defendants estimate this program will reduce CDCR's ADP by approximately 600 once fully implemented.

4. Discharge of Deported Parolees

Earlier this year CDCR implemented a new policy to discharge from parole the over 12,000 criminal aliens who have served their full state prison sentences and, upon release to parole, have been deported by the federal government. Previously, California had retained those criminal aliens on parole, even after their deportation. Under CDCR's new policy, those parolees have been discharged and additional parolees will be discharged from parole on an ongoing basis as CDCR receives confirmation of their deportation from the federal government. This new policy has resulted in fewer parolees being returned to state prison for parole violations and provides an incentive for federal prosecution of these offenders.

State Defendants estimate this policy will net an approximate 271 reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2010-2011.

5. Alternative Sanctions for Violations of Parole

CDCR will make greater use of electronic monitoring systems such as global positioning systems (GPS), for parole violators in lieu of revocation and re-incarceration. The expanded use of GPS and other electronic monitoring systems will permit CDCR to monitor those offenders outside of state prison for parole violations.

State Defendants estimate this program will net an approximate 119 reduction in CDCR's ADP in or about Fiscal Year 2009-2010, a 891 reduction in CDCR's ADP in or about Fiscal Year 2010-2011, and a 1,000 reduction in CDCR's ADP once fully implemented in or about Fiscal Year 2011-2012.

II.

INCREASED CAPACITY

Assembly Bill 900 (AB 900) was passed by a bipartisan Legislature and signed into law by Governor Schwarzenegger on May 3, 2007. AB 900 allocates $7.6 billion, of which $6.4 billion is designed to reform CDCR by reducing prison overcrowding, increasing rehabilitation programs, and providing more beds for all inmates, including those requiring medical and mental health care. AB 900's comprehensive plan immediately relieved overcrowding by providing for additional out-of-state transfers, which are authorized to continue until July 1, 2011. AB 900 also provides for new rehabilitation programs and re-entry facilities to ease parolees' transition back into California communities, thereby reducing recidivism, relieving prison overcrowding, and ensuring public safety.

A. INFILL PROJECTS

Construction projects will result in new annex housing units and renovation of existing facilities. These projects will add bed capacity as well as additional office and treatment space to relieve operational pressures throughout CDCR institutions.

Newly constructed facilities are planned in stand-alone units and will operate semi-autonomously from the main institutions, though some space and/or functions, such as administrative services, may be shared by the main institutions to ensure the newly constructed facilities are fully serviced. Each newly constructed facility will have appropriate programming space and staffing for the population to be served.

Renovated facilities primarily represent current or former juvenile correctional facilities that are being repurposed to serve an adult male population. All renovated facilities will also provide for the reduction of nontraditional beds, and will have the requisite amount of programming space and staff for their intended populations. A description of each project follows by phase of funding as outlined in AB 900.[10] There are a few projects that are not funded through the AB 900 appropriation and those projects are noted.

1. Kern Valley State Prison

This project will result in 930 new beds in a Level IV semi-autonomous facility at the existing Kern Valley State Prison site, with the addition of five housing units on 33 acres using the 270 design celled-bed prototype. This construction will include space for rehabilitative programming (i.e., vocational, academic, substance abuse), work opportunities, and a health services building of approximately 22,000 square feet. A portion of these beds will be wheelchair-compliant beds.

This project will be submitted to the Joint Legislative Budget Committee (JLBC) for its approval in Fall 2009 with a request for State Public Works Board (PWB) approval and interim financing from the Pooled Money Investment Board (PMIB) to immediately follow. Necessary environmental impact review (EIR) documents are already underway. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in or about Fiscal Year 2012-2013.

2. Heman G. Stark Conversion

This project renovates an existing 1,200-cell Department of Juvenile Justice facility in Chino. It includes the installation of design elements necessary to house an adult male population (i.e., lethal electrified fence, guard towers, etc.), ADA improvements, expanded or new administrative support buildings, and a new health services building. This plan provides for double-celling a portion of the facility and envisions approximately 1,800 beds. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, 700 beds should come on line in or about Fiscal Year 2009-2010, and 1,100 beds in or about Fiscal Year 2010-2011.

3. Reception Center – Southern California

This project will result in 943 new beds in a cell-design semi-autonomous facility with five housing units, including the support space necessary to house reception center inmates. This project will also include a health services building to accommodate this population. Its location will be at one of the Southern California prisons where CDCR's need for additional reception center beds is greatest. A portion of these beds will be wheelchair-compliant beds.

The Reception Center Prototype initial planning is complete and siting options are underway. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in Fiscal Year 2012-2013.

[10] CDCR is currently pursuing legislation to redirect $1 billion from its infill funding appropriation under AB 900 to the healthcare funding appropriation. The figures set forth in this Plan assume (and require) passage of that legislation and that the proposed consolidated care center facility will be funded with the $1 billion in funds redirected from the infill appropriation.

4. Department of Juvenile Justice Conversion – Paso Robles

This project renovates a former juvenile justice facility located in Paso Robles. This facility currently includes both dorms and an existing 270-celled prototype. The intended capacity is approximately 899 beds which includes some double-celling of the population. This is intended for a general population facility with a health-care mission and will serve elderly inmates with healthcare needs. The scope of work would include a new lethal electrified fence to increase the security level of the facility from a Level 1 to a Level II, as well as building code updates, ADA improvements, and an expanded healthcare facility. A portion of these beds will be wheelchair-compliant beds.

This project will be submitted to the JLBC in Fall 2009 for approval and will subsequently be submitted to the State PWB and the PMIB for approval and financing. The EIR document is already underway. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in Fiscal Year 2011-2012.

5. Wasco State Prison – Level IV Celled Facility

This project builds a 1,896 bed Level IV semi-autonomous celled facility based on CDCR's 180-design prototype. This project includes eight housing units, support and programming space planned for available land located on the unused land at the existing prison in Wasco. This project will also include a Correctional Treatment Clinic (CTC) to serve the population and a portion of the overall beds will be wheelchair-compliant.

This project is currently proposed for funding in Phase 2 of AB 900. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in Fiscal Year 2012-2013.

6. Department of Juvenile Justice Conversion – Northern California

This project renovates a former juvenile justice facility located in Northern California at a site to be determined. The intended capacity is approximately 1,133 beds which includes some double-celling of the population. The facility is intended for a general population facility with a health care mission and will serve inmates with medical outpatient needs and inmates requiring Enhanced Outpatient Program mental health services. CDCR is consulting with the *Plata* Receiver to identify an appropriate site and the appropriate scope for the project.

This project is currently proposed for funding in Phase 2 of AB 900. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in Fiscal Year 2013-2014.

B. HEALTHCARE PROJECTS

The healthcare projects described below include renovation and expansion of existing facilities to add housing, office, and/or treatment space to further meet the healthcare needs of CDCR's adult inmates at its existing prisons. Several of these projects are being constructed pursuant to specific court orders. Also, many of these projects are being planned in consultation with the *Plata* Receiver.

1. <u>Northern Consolidated Care Facility</u>

This project provides for a large healthcare facility serving a medical and mental health population to include specialized housing, treatment, and support space at a location in Northern California to be selected among several sites that have already been identified and for which environmental documents are underway. This facility would provide approximately 1,702 new beds serving high acuity medical and mental health patients. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in or about Fiscal Year 2011-2012.

2. <u>San Quentin State Prison – Correctional Treatment Center (Building 22)</u>

This project is a renovation and replacement of the existing infirmary at San Quentin State Prison and will include a Correctional Treatment Center providing 41 medical and mental health beds. Assuming no obstacles arise, anticipated completion is in or about January 2010.

3. <u>California Men's Colony – Mental Health Crisis Beds</u>

This project builds a 50-bed mental health crisis facility on available land at the California Men's Colony in San Luis Obispo. This project scope and schedule are being coordinated with the Special Master in the *Coleman* case. Assuming no obstacles arise, anticipated completion is in or about October 2012.

4. <u>California State Prison, Lancaster – Enhanced Outpatient Program</u>

This project builds additional treatment and office space to increase by 150 the number of Enhanced Outpatient Program mental health inmate patients served at California State Prison, Lancaster. This project's scope and schedule are being coordinated with the Special Master in the *Coleman* case. Assuming no obstacles arise, anticipated completion is in or about September 2012.

5. <u>California Medical Facility – Intermediate Care Facility</u>

This project builds a 64-bed Intermediate Care Facility to serve mental health patients on the grounds of the California Medical Facility. This project scope and schedule are being coordinated with the Special Master in the *Coleman* case. Assuming no obstacles arise, anticipated completion is in or about November 2012.

6. <u>California Medical Facility – Enhanced Outpatient Program</u>

This project builds office and treatment space to serve 658 Enhanced Outpatient Program mental health inmate patients on the grounds of the California Medical Facility. This project's scope and schedule are being coordinated with the Special Master in the *Coleman* case. Assuming no obstacles arise, anticipated completion is in or about April 2013.

7. California State Prison, Sacramento – Enhanced Outpatient Program

This project builds office and treatment space to serve 192 Enhanced Outpatient Program mental health inmate patients on the grounds of California State Prison, Sacramento. This project scope and schedule are being coordinated with the Special Master in the *Coleman* case. This project is not funded through AB 900. Assuming no obstacles arise, anticipated completion is in or about November 2011.

8. San Quentin State Prison – Condemned Inmate Complex Correctional Treatment Center

This project builds 1,152 beds in a new Condemned Inmate Complex on the grounds of San Quentin. This project will include a Correctional Treatment Center serving the medical and mental health needs of the inmate population. CDCR will submit this project for funding in Fall of 2009 and expects to award contracts and break ground in March 2010. This project is not funded through AB 900. Assuming no obstacles arise, anticipated completion is in or about Fiscal Year 2011-2012.

9. Salinas Valley State Prison – Enhanced Outpatient Program

This project intends to add office and treatment space to serve 96 Enhanced Outpatient Program mental health inmate patients on the grounds of Salinas Valley State Prison. This project's scope and schedule are being coordinated with the Special Master in the *Coleman* case. This project is not funded through AB 900. Assuming no obstacles arise, anticipated completion is in or about April 2013.

10. California Institute for Women – Psychiatric Services Unit

This project intends to renovate existing housing at the California Institute for Women in Chino to provide housing and treatment for a 20-bed Psychiatric Services Unit serving the mentally ill offender population. This project scope and schedule are being coordinated with the Special Master in the *Coleman* case. This project is not funded through AB 900. Assuming no obstacles arise, anticipated completion is in or about February 2011.

11. California State Prison, Sacramento – Psychiatric Services Unit

This project provides office and treatment space to serve 152 Psychiatric Services Unit mental health inmate patients on the grounds of the California State Prison, Sacramento. This project scope and schedule are part of the construction projects proposed in the *Coleman* case.

12. Salinas Valley State Prison – Enhanced Outpatient Program Administrative Segregation Unit

This project was originally planned to add both housing and treatment space to serve approximately 72 Enhanced Outpatient Program mental health inmate patients in the administrative segregation unit at Salinas Valley State Prison. The scope of the project as developed by CDCR has been denied by the Joint Legislative Budget Committee, which directed CDCR to develop an alternative that would provide only office and treatment space for that population. CDCR is currently exploring alternate options to comport with this direction. CDCR will seek relief from the *Coleman* court to modify the project as appropriate.

13. California State Prison, Corcoran – Enhanced Outpatient Program

This project will add office and treatment space to serve an additional 45 Enhanced Outpatient Program mental health inmate patients on the grounds of California State Prison, Corcoran. This project's scope and schedule are being coordinated with the Special Master in the *Coleman* case.

14. Southern California Crisis Beds

This project will site a new 50-bed crisis facility at either the Heman Stark facility in Chino or another Southern California prison. These beds were to be located initially at the Consolidated Care Facility. However, given the need to add additional crisis beds in Southern California, this project is now a stand-alone unit. State Defendants intend to consult with the Special Master in the *Coleman* case. If requisite approvals are obtained, there are no legal challenges, and there are no construction delays, these beds should come on line in or about Fiscal Year 2012-2013.

15. California Institute for Women – 45 Bed Intermediate Care Facility

This project will build a new 45-bed intermediate care facility at the California Institute for Women to serve the mental health population for female adults in the custody of CDCR. Preliminary plans are complete with this project and it is currently in the working drawings phase, with construction to be funded by AB 900 funds. This project's scope and schedule are being coordinated with the Special Master in the *Coleman* case. State Defendants are currently evaluating their long-term need for this project.

C. REENTRY PROJECTS

Pursuant to AB 900, reentry projects provide for the design and operation of secure community reentry facilities located in communities throughout the state. These facilities will hold a maximum of 500 inmates who are within 6-12 months of being released. These facilities will be autonomous facilities and have been designed to facilitate an intensive rehabilitative programming environment and include healthcare treatment space for the population to be served.

To date, eleven counties have agreed to locate a reentry facility to serve their population. The first reentry facilities are being planned in the counties of Kern, Madera, San Joaquin (to also serve Amador and Calaveras), San Luis Obispo (to also serve Santa Barbara and San Benito), and San Bernardino. A reentry facility planned for San Diego is currently being sited. Additional counties have expressed interest in supporting reentry facilities in their communities.

Assuming no obstacles arise, Defendants estimate this program will build approximately 500 beds in or about Fiscal Year 2010-2011, 2,500 additional beds in or about Fiscal Year 2012-2013, 2,500 additional beds in or about Fiscal Year 2013-2014, and 2,500 additional beds in or about Fiscal Year 2014-2015.

California Department of Corrections and Rehabilitation
Population Management Plan: Table I

Fiscal Year		FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
Spring Population Projections[1]		**167,985**	**172,232**	**172,205**	**174,003**	**175,177**	**177,317**	**178,915**
Institution Population Reduction Measures								
	Probation Reform							
	Community Corrections		479	1,915	1,915	1,915	1,915	1,915
	Sentencing Reform							
	Enhanced Credit Earning		660	4,180	4,180	4,180	4,180	4,180
	Executive Authority							
	Expansion of Out-Of-State Placements[2]		1,250	2,200	2,500	2,500	2,500	2,500
	Expanded Utilization of Private Prisons		400	800	800	800	800	800
	ICE Commutations		300	600	600	600	600	600
	Parole Reform							
	Summary Parole		966	4,556	4,556	4,556	4,556	4,556
	Discharge of Deported Parolees		279	271	271	271	271	271
	Alternative Parole Sanctions		119	891	1,000	1,000	1,000	1,000
	Parole Reentry Courts		50	435	435	435	435	435
	New Construction[3]							
	DJJ Renovations		700	1,800	2,700	2,700	3,800	3,800
	Reentry			500	500	3,000	5,500	8,000
	Infill		64	64	704	6,850	6,850	6,850
Total Population Reduction			**5,267**	**18,212**	**20,161**	**28,807**	**32,407**	**34,907**
Institution Population[4]		**150,655**	**149,635**	**132,416**	**132,292**	**123,022**	**120,388**	**117,346**
Institution Crowding Rate		**189%**	**188%**	**166%**	**166%**	**155%**	**151%**	**147%**

The population in FY 08/09 is based on the actual population count on July 1, 2009. The projections in FY 09/10 and thereafter assume the transfer of any backlogged inmates into state custody.

[2] Assumes cooperation from *Plata*, *Coleman*, *Perez*, and *Armstrong* courts.

[3] The beds identified on this table reflect the actual capacity for which they are being built. The double celling rate of these facilities vary by project. However, whatever the double celling rate, the beds or projects are being designed with an appropriate amount of program and clinical space to accommodate that number of inmates.

[4] Excludes inmates in camps, private facilities and out-of-state facilities.

III.

ADDITIONAL LEGISLATIVE REFORMS

This Administration has demonstrated its willingness to reform the State's prisons, and the Administration will continue to push for meaningful reforms like the reforms adopted in SB 18. The following reforms, however, cannot be accomplished administratively, and they will require legislative changes.[11]

A. ADDITIONAL CALIFORNIA OUT-OF-STATE CORRECTIONAL FACILITY EXPANSION

In addition to the 2,500 bed expansion set forth above, State Defendants will work with the Legislature to remove the existing clause that calls for the termination of the COCF program in 2011. With this legislative change, State Defendants estimate they will be able to expand the COCF program by an additional 5,000 inmates reducing its ADP by that amount.

B. PROPERTY CRIME THRESHOLDS

Numerous property crimes in California are punishable alternatively as a misdemeanor or a felony, depending on the dollar amount of the taking. For example, grand theft is punishable as a felony when the amount stolen exceeds $400, but is punishable as a misdemeanor when the amount stolen is $400 or less. In most cases, the threshold for these wobblers (crimes that may be prosecuted as either misdemeanors or felonies) was established over 20 years ago. As time has passed and inflation risen, increasing numbers of these wobblers have become prosecutable as felonies, thereby resulting in greater numbers of offenders eligible for prison sentences rather than jail sentences.

For thirty-nine of these property crimes, SB 18 increased the dollar threshold to present-day values. For example, property crimes where the threshold was set at $400 were increased to $950. The aim was to expose lesser number of offenders to felony prosecution and prison terms and thereby reduce the prison population. However, Senate Bill 18 left the threshold for grand

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[11] The Court's August 4, 2009 order stated, "[s]hould any of defendants' proposed population reduction measures require the waiver of any provisions of state law, the state shall so advise the court, and shall explain why the requested waiver is permissible under 18 U.S.C. § 3626(a)(1)(b)." This Court did not permit Defendants to introduce evidence regarding whether there are any current and ongoing violations of federal rights. Plaintiffs were also not required to prove, nor did they prove, that there are any current and ongoing violations. Thus, the State Defendants do not assert that state law waivers are permissible here, because State Defendants believe that the statutory requirements authorizing such waivers have not been satisfied. Furthermore, because the recent improvements to healthcare and the plans set forth throughout this submission provide a form of relief correcting alleged federal violations, the State Defendants do not seek the waiver of any State law under the PLRA (*see* 18 U.S.C. s 3626(a)(1)(B)(ii)-(iii)).

theft itself unchanged, an omission that does not capture the impact of that offense, and also undermines the effect of having changed many other property crimes because they could alternatively be charged as grand theft. The State Defendants seek legislation to increase the threshold of grand theft to $950. If fully implemented, Defendants estimate this program will net an approximately 2,700 reduction in CDCR's ADP.

C. ALTERNATIVE CUSTODY PROGRAM

The Administration will seek legislation to establish a program of alternative custody options for lower-risk offenders. Certain offenders would be eligible to serve the last 12 months of their sentence under house arrest with GPS monitoring. House arrest may include placement in a residence, local program, hospital, or treatment center. Eligible inmates include inmates with 12 months or less remaining to serve, elderly inmates, and medically infirm inmates. Inmates are ineligible for alternative custody if they have a current or prior conviction for a violent offense, are required to register as a sex offender, have a history of escape, or pose a high risk to reoffend pursuant to the California Static Risk Assessment. If fully implemented, Defendants estimate this program will net an approximately 4,800 reduction in CDCR's ADP.

D. SENTENCING COMMISSION

The Administration will seek legislation creating a permanent, independent sentencing commission that would set sentencing guidelines each year. The guidelines would later go into effect unless rejected by the Legislature and the Governor. The Commission would be a regulatory and research body housed within the Administrative Office of the Courts that would review the entire California Code in light of empirical statewide sentencing data, recidivism rates, risk assessments, and population projections, to accurately forecast public safety impacts and correctional costs for all sentencing proposals. The commission would create coherent and equitable sentence guidelines that rest explicitly on the goal of coordinating sentences with available correctional resources. Many states have sentencing commissions and most experts recommend establishment of sentencing commissions.

Under the Administration's proposal, a sentencing commission would consist of thirteen voting members, subject to staggered 3-year terms, including a balance of law enforcement officials, judges, researchers, and defense lawyers. The Commission would present the Legislature and the Governor with a set of sentencing and parole rules, along with recommended statutory changes, by 2013. The Commission would thereafter publish reports on its sentencing research. In the event any court orders a reduction in inmate population, the Commission would develop recommendations for court compliance.

E. AB 900 CONSTRUCTION ACCELERATION

CDCR has collaborated with the *Plata* Receiver in his part as construction coordinator to develop CDCR's plan for healthcare beds, and has drafted legislation to enable CDCR to accelerate all of its construction authorized under AB 900 using alternative delivery methods. If the Legislature authorizes these amendments, CDCR would be able to expedite the construction of new capacity, including new healthcare facilities, and the construction of treatment and other support spaces to meet the needs of the class members.

California Department of Corrections and Rehabilitation

Population Management Plan: Table II

Fiscal Year		FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14	FY 14/15
Spring Population Projections[1]		**167,985**	**172,232**	**172,205**	**174,003**	**175,177**	**177,317**	**178,915**
Institution Population Reduction Measures								
	Probation Reform							
	Community Corrections		479	1,915	1,915	1,915	1,915	1,915
	Sentencing Reform							
	Enhanced Credit Earning		660	4,180	4,180	4,180	4,180	4,180
	Property Crime Thresholds			2,700	2,700	2,700	2,700	2,700
	Alternative Custody			2,400	4,800	4,800	4,800	4,800
	Executive Authority							
	Expansion of Out-Of-State Placements[2]		1,250	2,200	7,500	7,500	7,500	7,500
	Expanded Utilization of Private Prisons		400	800	800	800	800	800
	ICE Commutations		300	600	600	600	600	600
	Parole Reform							
	Summary Parole		966	4,556	4,556	4,556	4,556	4,556
	Discharge of Deported Parolees		279	271	271	271	271	271
	Alternative Parole Sanctions		119	891	1,000	1,000	1,000	1,000
	Parole Reentry Courts		50	435	435	435	435	435
	New Construction[3]							
	DJJ Renovations		700	1,800	2,700	2,700	3,800	3,800
	Reentry			500	500	3,000	5,500	8,000
	Infill		64	64	704	6,850	6,850	6,850
Total Population Reduction			**5,267**	**23,312**	**32,661**	**41,307**	**44,907**	**47,407**
Institution Population[4]		**150,655**	**149,635**	**127,316**	**119,792**	**110,522**	**107,888**	**104,846**
Institution Crowding Rate		**189%**	**188%**	**160%**	**151%**	**139%**	**136%**	**132%**

[1] The population in FY 08/09 is based on the actual population count on July 1, 2009. The projections in FY 09/10 and thereafter assume the transfer of any backlogged inmates into state custody.
[2] Assumes cooperation from *Plata*, *Coleman*, *Perez*, and *Armstrong* courts.
[3] The beds identified on this table reflect the actual capacity for which they are being built. The double celling rate of these facilities vary by project. However, whatever the double celling rate, the beds or projects are being designed with an appropriate amount of program and clinical space to accommodate that number of inmates.
[4] Excludes inmates in camps, private facilities and out-of-state facilities.

IV.

CONCLUSION

As required by the August 4, 2009 order, but without waiving its appellate rights, the State Defendants submit this Plan to reduce the State's prison population through smart reforms that do not compromise public safety.

EXHIBIT B

California Department of Corrections and Rehabilitation
Achievements & Improvements Introduced During Three-Judge Court Proceeding

During the course of the Three-Judge Court proceeding, Defendants introduced the following evidence detailing the California Department of Corrections and Rehabilitation's (CDCR) achievements and improvements. Those include:

I. Improvements in the Delivery of Medical Care

A. Funding:

1. In FY 1994-95, $344 million was expended for inmate health care or $2,714 per inmate per year (in 1994 dollars). (Trial Aff. of Todd Jerue, 10/30/08, (Jerue Aff.) *Plata v. Schwarzenegger* Dock. No. 1632 at ¶ 6.).

2. In FY 2005-06, $1.252 billion was expended for inmate health care or $7,601 per inmate per year (in 2005 dollars). (*Id.* at ¶ 7.)

3. In FY 2006-07, $1.635 billion was expended for inmate health care or $9,759 per inmate per year (in 2006 dollars). (*Id.*at ¶ 8; Trial Transcript (Trial Tr.), 12/3/08, at 1210:4-13; 1213:17-22; 1215:20-1216:20.)

4. In FY 2007-08, $2.249 billion was expended for inmate health care or $13,778 per inmate per year (in 2007 dollars). (*Id.* at ¶ 9.)

B. Improvements in Death Review and Death Review Programs:

1. The number of alleged preventable asthma deaths went from 6 in 2006 to 0 in 2007. (Trial Tr., 11/20/08, at 450:20-451:2.)

2. The number of alleged preventable deaths went from 18 in 2006 to 3 in 2007. (*Id.* at 486:16-22; 487:2-5; 12/10/07 Deposition of Ronald Shansky (Shansky Dep.) at 74:7:16.)

3. Deaths have trended down in the last 10 quarters. (Trial Tr., 11/20/08, at 454:21-455:12.)

C. Staffing Increases:

1. Physicians: CDCR's physician staffing has increased dramatically, and is within 5% of the Receiver's goal to fill 90% of physician positions. (Trial Tr., 11/20/08, at 445:7-446:14; 447:9-448:5.) Between November 2007 and August 2008, CDCR hired 62 full-time state employed primary care physicians. (Defendants' Trial Exhibit (Defs.' Tr. Ex.) 1235 – Staffing Progress for Medical and Mental Health at 3.)

2. Chief Physicians and Surgeons: Between October 2005 and August 2008, the number of full-time state employed Chief Physicians and Surgeons rose from 10 to 28. (*Id.* at 2.)

3. Physician Assistants: The number of Physician Assistants rose from 1 in April 2006 to 13 in August 2008. (*Id.* at 4.)

4. Nurse Practitioners: The number of Nurse Practitioners rose from 11 in October 2005 to 44 in August 2008. (*Id.* at 5.)

5. Registered Nurses: The number of registered nurses rose from 818 in October 2005 to 1556 in August 2008. Staffing of registered nurses has increased and is now within 2% of the Receiver's statewide goal to fill 90% of nursing positions. (Trial Tr., 11/20/08, at 445:7-446:14; 447:9-448:5.)

6. Licensed Vocational Nurses: The number of licensed vocational nurses rose from 4 in May 2007 to 937 in August 2008. (Defs.' Tr. Ex. 1235 at 7.)

7. Correctional Officers: The number of correctional officers employed by the department rose from 20,741 in October 2005 to more than 24,090 in August 2008. (*Id.* at 8.)

D. During the *Plata v. Schwarzenegger* Receivership, other improvements include:

1. New screening and assessment processes at reception and release;

2. New health care access units -- that include large numbers of correctional officers charged with ensuring inmate access to medical care;

3. Establishing new and better health care scheduling and patient-inmate tracking systems;

4. Redesigning and improving sick call processes, forms, and staffing models;

5. Improved chronic care systems;

6. Improved emergency response plans and systems;

7. Improved provision of and access to specialty care and hospital services;

8. Improved medical clinical leadership and management;

9. Improved peer review and death review programs;

10. Establishment of a comprehensive, safe, and efficient pharmacy program -- including continued development of the drug formulary and the rollout of a

computerized pharmacy operating system designed to improve medication management in CDCR institutions;

11. Establishing standardized health records practices -- ultimately leading to the use of electronic medical records; and

12. Establishing effective radiology and laboratory services.

(Defs.' Tr. Ex. 1100 – Receiver's Ninth Quarterly Report, 09/15/08, *Plata* Dock. No. 1472 at 8-12, 15-24, 33-34, 40-41, 51-58.)

II. Improvements in the Mental Health Care Delivery System

A. Enhanced Screening, Diagnosis, and Treatment Procedures

1. Since 1997, Defendants have used a uniform set of policies and procedures to provide care to mentally ill inmates. (Trial Aff. of Robin Dezember, 10/30/08, (Dezember Aff.) *Plata v. Schwarzenegger* Dock. No. 1715 at ¶ 15.)

2. CDCR now identifies and classifies a significantly greater proportion of its inmates as belonging to the *Coleman* class than it did when the *Coleman* litigation began. In August 2008, CDCR classified 20% of its inmates as severely mentally ill, up from 7.9% in 1994. (*Id.* at ¶¶ 70, 71.)

3. The treatment programs or 'levels of care' provided by Defendants have increased in size and in specificity. Under the Revised Program Guide, Defendants now provide distinct levels of care and programs reflecting the mental health care and housing needs of *Coleman* class members. (Defs'. Trial Ex. 1273—*Coleman* F&Rs, 6/6/94 at 43-44; *see also* Dezember Aff., ¶ 70.)

B. Mental Health Bed Increases

1. In 1994, the CDCR mental health care system was limited to a few institutions and involved some 3,200 designated mental health care beds. (Defs.' Trial Ex. 1273 - *Coleman* F&Rs, 6/6/94, at 43-44; Dezember Aff., ¶ 70.) Now, the CDCR mental health care system extends to each CDCR institution across the State and involves some 30,382 beds across all levels of care. (Dezember Aff., ¶ 75; Defs.' Trial Ex. 1247 - Chart of CDCR Facilities.)

2. There are now three state mental hospitals and two psychiatric programs available for inpatient care. (Trial Tr., 11/21/08, at 758:13-22; 759:9-760: 5.) These facilities include Atascadero, Coalinga, and Patton State Hospitals and psychiatric programs at CDCR's California Medical Facility and Salinas Valley State Prison institutions. (Trial. Aff. of Cynthia Radavsky, 10/30/08 (Radavsky Aff.) *Plata v. Schwarzenegger* Dock. No. 1657 at ¶ 14; Trial Tr., 11/21/08, at 758:13-22, 759:9-760:5.)

3. Defendants have systematically added mental health beds at individual institutions, with a resulting decrease in wait lists for mental health beds. For instance, the activation of 64 Psychiatric Services Unit beds in 2008 resulted in a decrease in the waiting list from 79 to 22. Likewise, the activation of 50 Mental Health Crisis beds in 2008 contributed to a decrease in the waiting list for such beds from 301 to 16. Kern Valley State Prison recently added 96 sensitive need Enhanced Outpatient Program (EOP) beds, which allowed EOP patients to be moved from administrative segregation to those beds. (Dezember Aff., ¶ 74; Defs.' Trial Ex. 1186 - Kern Valley State Prison Activation Mem., Aug. 2008.)

C. Mental Health Staffing Increases

1. CDCR has increased its number of mental health clinicians, including psychiatrists, psychologists, and social workers, from 314 positions in 1994 to 2396 positions in 2008. (Dezember Aff. ¶ 48; *see* Defs.' Ex. 1269 - Chart of 1994 Mental Health Care Positions; Defs.' Trial Ex. 1235 - CDCR 2008 Mental Health Care Positions; Defs.' Trial Ex. 1246, CDCR Chart of Mental Health Positions.)

2. Both CDCR and the Department of Mental Health (DMH) have used new pay parity packages to drive stronger recruiting strategies for mental health clinical staff. (Dezember Aff., ¶¶ 57, 58; Radavsky Aff., ¶ 28; Trial Tr., 11/21/08 at 812:11-813:13.)

3. CDCR now employs approximately 2400 correctional officers in dedicated "access to care" units to provide escort for inmates to their medical and mental health appointments. (Trial Tr., 12/10/08, at 1894:20-1895:6.)

D. Suicide Prevention Program Improvements

1. At the underlying trial, the *Coleman* court found that Defendants' 1990 suicide prevention program for CDCR institutions would have been sufficient if adequately staffed. (Dezember Aff. ¶ 30; Defs.' Trial Ex. 1273 - *Coleman* F & R, 6/6/94, *Coleman* Dock. No. 547 at 75:1-6.) Defendants have significantly increased mental health staffing since the underlying trial. (Dezember Aff., ¶ 48; *see* Defs.' Trial Ex. 1269 - Chart of 1994 Mental Health Care Positions; Defs.' Trial Ex. 1235.)

2. The *Coleman* court found in 2005 that suicides occurred at higher rates within administrative segregation areas. CDCR worked with the *Coleman* Special Master and Plaintiffs' counsel to develop improved suicide prevention strategies for administrative segregation areas. The *Coleman* court approved and Defendants have implemented a multidisciplinary and comprehensive approach to reducing suicides. (Dezember Aff., ¶¶ 32-41; *see* Defs.' Trial Ex. 1279 - *Coleman* Order, 6/9/05, *Coleman* Dock. No. 1668; Defs.' Trial Ex. 1280 - *Coleman* Stipulated Order, 2/13/06, *Coleman* Dock. No. 1760; Defs.' Trial Ex.

1282 -*Coleman* Order, 6/8/06, *Coleman* Dock. No. 1830; Defs.' Trial Ex. 1311 - *Coleman* Stipulated Order, 7/5/06, *Coleman* Dock. No. 1872.)

3. The performance and efficacy of these suicide prevention programs is measured by CDCR's internal investigations and analyses of any inmate suicides within its institutions. (Dezember Aff. ¶¶ 35-36.)

E. Mental Health Records System - Defendants are continuing to work to improve CDCR's mental health recordkeeping systems. According to current estimates, new information technology will be implemented within 18-24 months. (Dezember Aff. ¶¶ 90-91.)

F. Pharmacy System - The Coordinated Courts vested the *Plata* Receiver with leadership responsibility over the pharmacy function of the medical and mental health services delivery system. (Defs.' Trial Ex. 1299, Coordinated Cts' Order, 6/28/07.) The *Plata* Receiver has contracted with Maxor National Pharmacy Services Corporation to install the necessary pharmacy services in each institution. (*Id.*)

III. CDCR Inmate Mortality Rates

A. CDCR had the 14th best mortality rate nationally. (Trial Tr., 11/19/08, at 244:7-27.)

B. From 2001 to 2004, the average annual mortality rate for all illnesses per 100,000 state prisoners was 223 nationwide, 181 for States in the west region, and 170 for California. Thirty-six states had higher mortality rates than California during this period. (Trial Tr., 12/3/08, at 1271:9-1272:21.)

IV. Relevant California Criminal Justice Statistics

A. California does not incarcerate felons at an unusually high rate. Currently, California sends fewer than 20% of convicted felons to prison - the national average is 40%. (Trial Aff. of Mathew Cate, 10/30/08, (Cate Aff.,), *Plata* Dock. No. 1717 at ¶¶ 23-24.) California's incarceration rate - the number of prison inmates per state residents – is only slightly above the national average. California's incarceration rate is about 470 per 100,000. The national average is 445 per 100,000. (Cate Aff. ¶ 22, Defs.' Tr. Ex. 1257 – Prisoners in 2006 Bulletin, Appendix Table No. 6.)

B. California does not keep people in prison longer than average. The average prison sentence imposed in California is 47.2 months and the average amount of time served is 23.9 months. (Cate Aff. ¶ 25.) The average prison sentence imposed nationwide for all state courts is 57 months and the average amount of time served is 32 months. (*Id.*; Defs.' Trial Ex. 1221 – State Court Sentencing of Convicted Felons 2004 – Statistical Tables.)

C. The increase in the prison population from 1997 to 2007 is almost exclusively made up of an increase in the number of inmates convicted of crimes against persons. (Cate

Aff. ¶ 18.) There has been a decrease in the number of drug offenders in California's prisons in the same 10 year period - from 41,459 to 33,738. (Cate Aff. ¶ 18.)

<u>EXHIBIT B</u>

COLEMAN V. SCHWARZENEGGER **LONG RANGE PLAN**

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IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

SACRAMENTO DIVISION

RALPH COLEMAN, et al., Plaintiffs, **v.** **ARNOLD SCHWARZENEGGER, et al.,** Defendants.	2:90-cv-00520 LKK JFM P **DEFENDANTS' RESPONSE TO COURT'S SEPTEMBER 24, 2009 ORDER THAT DEFENDANTS FILE A DETAILED LONG-RANGE PLAN, INCLUDING ACTIVATION SCHEDULES**

On September 24, 2009, this Court ordered that Defendants file with the Court a detailed, long-range plan, including activation schedules. (Docket No. 3686 ¶ 2.) Enclosed as Attachment

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A, with Exhibits 1 through 17, is Defendants' long-range plan, including activation schedules.

Dated: November 6, 2009

Respectfully submitted,

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Attorney General of California
JONATHAN L. WOLFF
Senior Assistant Attorney General

S/ DEBBIE J. VOROUS

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CF1997CS0003

ATTACHMENT A

OFFICE OF LEGAL AFFAIRS
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November 6, 2009

Ms. Debbie Vorous
Deputy Attorney General
Department of Justice
1300 I Street
Sacramento, CA 94244-2550

Dear Ms. Vorous:

Attached please find Defendants' detailed long-range bed plan, with activation schedules, as required by the September 24, 2009 Coleman Court Order.

Sincerely,

BENJAMIN T. RICE
General Counsel, Office of Legal Affairs
California Department of Corrections and Rehabilitation

Attachments

TABLE 1. GLOSSARY OF TERMS

Acronym	Term
AB	Assembly Bill
ADA	Americans With Disabilities Act
A/E	Architectural/Engineering
ASH	Atascadero State Hospital
ASU	Administrative Segregation Unit
CCC	Consolidated Care Center
CCCMS	Correctional Clinical Case Management System
CDCR	California Department of Corrections and Rehabilitation
CEQA	California Environmental Quality Act Compliance
CIC	Condemned Inmate Complex
CIM	California Institution for Men
CIW	California Institution for Women
CMC	California Men's Colony
CMF	California Medical Facility
COR	California State Prison, Corcoran
CPHCS	California Prison Health Care Services
CSH	Coalinga State Hospital
CTC	Correctional Treatment Center
DJJ	Division of Juvenile Justice
DMH	Department of Mental Health
DOF	Department of Finance
DPH	Department of Public Health
EOP	Enhanced Outpatient Program
FPCM	Facilities, Planning, Construction, and Management
GACH	General Acute Care Hospital
GP	General Population
HC-POP	Health Care Placement Oversight Program
HDSP	High Desert State Prison
ICF	Intermediate Care Facility
ICF-H	Intermediate Care Facility – High Custody
JLBC	Joint Legislative Budget Committee
KVSP	Kern Valley State Prison
LAC	California State Prison, Los Angeles County
LOC	Level of Care
LOU	Locked Observation Unit
MCSP	Mule Creek State Prison
MHCB	Mental Health Crisis Bed
NKSP	North Kern State Prison
N.O.D.	Notice of Determination
PBSP	Pelican Bay State Prison
PMIA	Pooled Money Investment Account
PMIB	Pooled Money Investment Board

Acronym	Term
PP	Preliminary Plans
PSU	Psychiatric Services Unit
PWB	Public Works Board
RJD	Richard J. Donovan Correctional Facility
SAC	California State Prison, Sacramento
SATF	Substance Abuse Treatment Facility
SFM	State Fire Marshal
SOL	California State Prison, Solano
SQ	California State Prison, San Quentin
Receiver	*Plata* Federal Receiver
SVSP	Salinas Valley State Prison
WSP	Wasco State Prison

FOR SUBMITTAL TO THE *COLEMAN* COURT

Long-Range Mental Health Bed Plan

PURPOSE AND BACKGROUND

On March 31, 2009, this Court ordered the State defendants to develop concrete proposals that would, in part, meet the long-range bed needs of the plaintiff class. Subsequently, on September 24, 2009, this Court ordered defendants to "file with the court a detailed long-range plan, including activation schedules." This submission and the activation schedules filed concurrently with it, detail defendants' long-range plan to provide outpatient and inpatient mental health treatment beds to the *Coleman* population in the California Department of Corrections and Rehabilitation (CDCR) and the Department of Mental Health (DMH).[1]

MENTAL HEALTH BED NEEDS STUDY

The long-range mental health bed plan is based on the Navigant Consulting Spring 2009 population projections, which provide the most recent and reliable information regarding future mental health bed needs through 2013. However, those projections are not perfect, and subsequent intervening factors will impact the actual bed need. For instance, the Spring 2009 projections do not account for population changes that may result from any CDCR parole, sentencing, and/or credit reforms, including population changes that will result from the recent passage of Senate Bill No. 18 (2009 3d Ex. Sess.). They also do not account for the Three-Judge Court's August 4, 2009 order to reduce the prison population to 137.5% of design capacity within two years. Additionally, the Spring 2009 projections do not reflect the results of the CDCR/DMH modified unmet needs assessment, which is currently ongoing under the direction of the Special Master pursuant to the March 31, 2009 Court order. The results of this modified unmet needs assessment may impact future mental health bed needs.

LONG-RANGE MENTAL HEALTH BED PLANNING

The defendants reported in their May 26, 2009 bed plan that they met with the Special Master and consulted with the *Plata* Receiver to develop their long-range bed plan. Since the Court issued its September 24, 2009 order, CDCR continued to meet with the Special Master and the

[1] The defendants make no representations that the State Legislature will authorize Assembly Bill (AB) 900 lease-revenue financing for any portion of this plan, the Pooled Money Investment Board will authorize loans for interim financing, or that bond counsel will offer an unqualified bond opinion on the validity of the bonds proposed in the plan. The authorization in AB 900 provides the only funding available for most of the projects detailed in this plan, and these steps are necessary to obtain interim financing and to market the bonds authorized by AB 900. Moreover, defendants cannot guarantee the marketability of the bonds. Additionally, the defendants do not believe that the plan satisfies the Prison Litigation Reform Act's requirements that prospective relief be narrowly drawn, extend no further than necessary to correct the alleged violation of the *Coleman* plaintiff class' federal rights, and be the least intrusive means necessary to correct the alleged violation. For instance, the *Coleman* bed needs identified in the plan are based on the Navigant Consulting Spring 2009 population projections. But those projections do not account for population changes that may occur as a result of the recent passage of Senate Bill No. 18 (2009 3d Ex. Sess.), or from the Three-Judge Court's August 4, 2009 order requiring the State to reduce the prison population to 137.5% of design capacity within two years. Additionally, because this plan encompasses construction that is not related to the *Coleman* plaintiff class, the plan extends further than necessary to address the alleged violations of the *Coleman* plaintiff class' federal rights.

Plata Receiver to develop the proposals in this plan to address the long-range mental health bed needs of the plaintiff class.

As a matter of reference, the *Coleman*, *Plata*, *Perez,* and *Armstrong* courts' February 26, 2008 order approved a collaborative construction agreement for medical and mental health beds. According to the agreement, "[g]iven the significant need to coordinate the long-term treatment and care of mentally ill patients who also have serious medical problems, there exist both strong patient care and fiscal incentives to plan, design, and construct health care facilities that will effectuate coordinated medical and mental health treatment." In light of this order, the defendants' long-range mental health bed plan reflects a cooperative effort with the *Plata* Receiver in constructing the Consolidated Care Center (CCC) and renovating three former Division of Juvenile Justice (DJJ) institutions (including the construction of the 60 bed medical/mental health unit).[2]

In order to effectively meet its overall mission and accomplish its multiple complex priorities, CDCR must implement an integrated strategy that takes into consideration:

- Expanded capacity through implementation of AB 900;
- Construction of medical-related facilities;
- Administration's proposed budget and policy reforms;
- Analysis of short and long-term population trends; and
- Three-Judge Court proceedings.

The State began its long-range mental health bed planning with the currently existing permanent and operational programs, including temporary court-ordered beds. Throughout the long-range plan, the term "current capacity" refers to actual beds as of May 2009. "New planned capacity" and "previously planned capacity" are those projects that are in various stages of planning and are intended to remain permanent. "Returned Capacity" refers to currently operational mental health beds that are being returned to alternate uses. "Net capacity" refers to the current capacity, the new planned capacity and the previously planned capacity, less the returned capacity.

The long-range mental health bed plan consists of a combination of currently operating programs; *Coleman* court-ordered projects; three short-term projects that will become permanent; currently planned projects that are not court ordered; and new projects, as outlined in this submission. Projects identified as "long-range proposals" are defined as those projects that involve extensive new construction or renovations, which will require up to five years to complete.

The long-range mental health bed plan is designed to meet the mental health bed need projections to 2013 using Navigant Consulting Spring 2009 population projections. The plan assumes all of the following:

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[2] Although the defendants have appealed the *Plata* District Court's order denying their motion to replace the Receiver with a Special Master and to terminate the Receiver's unilateral construction plans, no court has terminated the receivership or the Receiver's construction plans. Accordingly, the defendants continue to fully cooperate with the Receiver in developing this long-range bed plan.

- One new CCC will be built on the site of the former Karl Holton Juvenile Correctional Facility in Stockton to provide additional capacity for mental health care to meet *Coleman* requirements and medical needs identified by the *Plata* Receiver.
- Three former DJJ institutions will be renovated to provide Enhanced Outpatient Program (EOP) General Population (GP) and EOP Administrative Segregation Unit (ASU) housing and treatment space in addition to providing housing and treatment space for inmate-patients needing specialized medical care services identified by the *Plata* Receiver.
- All *Coleman* court-ordered construction projects will be completed pursuant to the activation plans filed concurrently with this submission.[3]
- All proposed projects will have adequate treatment and office space and will be located in facilities conducive to recruitment and retention of staff.
- All temporary program beds are ultimately decommissioned (returned).
- Most short-term and intermediate-term proposals will be decommissioned.
- No currently operating programs will be decommissioned unless:
    - The space is being converted to another level of mental health care as required by population projections, and
    - There is adequate alternative capacity to accommodate future need at that level of care.
- Continued use of currently designated DMH hospital bed capacity, unless and until those services are no longer required.

Table 1 represents the difference between the existing mental health beds in May 2009 (not including CCCMS) and the projected bed need through 2013 as identified by the Navigant Consulting Spring 2009 population projections. Defendants intend to build to the projected need such that enough capacity is created and wait lists, based on current Navigant projections, for mental health treatment beds are eliminated.

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[3] Exhibits 2, and 4–7 are Activation Schedules for the report period ending October 22, 2009. These Activation Schedules were previously submitted to the Special Master. Exhibit 3 is a proposed Activation Schedule for the report period ending November 6, 2009, and reflects the proposed new Salinas Valley State Prison (SVSP) project. On October 22, 2009, defendants informed the Court that they intend to replace two court-ordered projects—the SVSP 72-Bed EOP-ASU and the SVSP 96-Bed EOP-GP Treatment and Office Space and Housing Unit Conversion Project—with a new project known as the SVSP 300 EOP-GP Treatment and Office Space A-Quad Project. Through this filing, defendants now seek approval from the Court to replace the two SVSP court-ordered projects with the new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project.

TABLE 1. BED NEED THROUGH 2013

LOC	Bed Need 2013[4]	Actual Beds 2009[5]	Gap
Males			
Acute	193	155	38
ICF	301	365	(64)
ICF-H	624	306	318
MHCB	470	314	156
EOP-GP	4,763	3,141	1,622
EOP-ASU	675	474	201
PSU	546	384	162
Totals	7,572	5,139	**2,433**

LOC	Bed Need 2013	Actual Beds 2009	Gap
Females			
Acute/ICF	27	30	(3)
MHCB	18	22	(4)
EOP-GP	199	129	70
EOP-ASU	16	19	(3)
PSU	12	10	(2)
Totals	272	210	**62**

Men's Population Mental Health Bed Plan

The Navigant Consulting Spring 2009 population projections for 2013 show an increased need for 2,433 mental health beds across the various levels of mental health care for the male population. The following discussion describes the various elements that will be combined to meet the projected need, and shows how defendants will achieve ***93 beds over*** the projected population.

One CCC will be constructed in cooperation with the *Plata* Receiver specifically for integrated correctional health care for the higher acuity levels of physical and mental health. This facility will be configured as reflected in Table 2 for the mental health population:

TABLE 2. NEW CONSOLIDATED CARE CENTER

SITE	MHCB	Acute	ICF-H	Total Beds
CCC	137	43	432	612

[4] Based on Navigant Consulting Spring 2009 population projections.
[5] Based upon HC-POP number of actual beds.

(*See* Ex. 1, Activation Schedule for the Consolidated Care Center.)[6]

Additional needed capacity will be met through the previously *Coleman* court-ordered construction projects listed in Table 3.

TABLE 3. *COLEMAN* COURT-ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	ADDITIONAL CAPACITY
CMC	MHCB	50 MHCB
SVSP	New treatment and office space for EOP-GP housing unit conversion (allows increase to 300 EOP-GP beds using re-designated existing housing)	108 EOP-GP beds[7]
SAC	New treatment and office space for existing EOP-GP program	No new bed capacity
CMF	New treatment and office space for existing EOP-GP program plus housing unit conversion (allows increase to 600 EOP-GP beds using re-designated existing housing)	67 EOP-GP beds
LAC	Treatment and office space for	150 EOP-GP beds

[6] The Court's September 24, 2009 Order stated that "Defendants shall identify any waivers of state law that may be required to complete the projects that comprise the long-range plan, either at the time the plan is filed or as the need for such waiver arises." In addition, the order stated that the "timetables for completion of each step described in the plan shall be developed in such a way that all projects in the long-range plan will be fully staffed and activated by the 2013 target date defendants have established." Of the 15 projects that comprise defendants' long-range plan, 12 projects are scheduled to be completed either before or in 2013, consistent with the Navigant Consulting Spring 2009 population projections for 2013. Patient admissions for the CCC are currently scheduled to commence on December 19, 2013, and be completed on September 15, 2014. (Ex. 1.) CDCR recently took over the planning and construction activities of this project from the *Plata* Receiver. Patient admissions for the Stark Conversion are scheduled to commence on December 27, 2013, and be completed on September 23, 2014. (Ex. 10.) These dates are designed to accommodate the short-term occupancy following the riot at CIM, and reflect the most realistic current depiction of the schedule. Admissions for the DeWitt Conversion are currently scheduled for 2014 pending successful completion of the environmental review process for this project. (Ex. 12.) Defendants are currently exploring potential waivers of state law that could apply to accelerate construction and activation of those projects requiring collaboration with the *Plata* Receiver—the CCC and the three former DJJ facilities—and anticipate identifying any such potential waivers in their November 12, 2009 filing in the Three-Judge Court Proceeding.

[7] As noted, defendants informed the Court of their intent to replace the SVSP 72-bed EOP-ASU Project and the SVSP 96-EOP-GP Project with the new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project. The current SVSP 96 EOP-GP Project is designed to provide treatment and office space for the existing 192 EOP-GP inmate-patients, plus an additional 96 inmate-patients, for a total of 288 beds. The new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project is designed to serve 300-inmate-patients, for an increase of 12 beds (108 "new capacity" versus 96 "new capacity").

	new EOP-GP capacity (to be accommodated in re-designated existing housing)	
CMF	ICF-H beds	64 ICF-H beds

(*See* Exs. 2–7, Activation Schedules for Court-Ordered Projects: Ex. 2, 50 MHCBs at CMC; Ex. 3, 108 EOP-GP beds at SVSP; Ex. 4, Additional Treatment and Office Space at SAC; Ex. 5, 67 EOP-GP beds at CMF; Ex. 6, 150 EOP-GP beds at LAC; and Ex. 7, 64 ICF-H beds at CMF.)

Defendants will continue to review the construction timelines set forth in the activation schedules to identify opportunities to shorten the timelines for design and construction.

New projects proposed to meet the mental health population projection needs are as follows:

TABLE 4. NEW PROJECTS TO MEET LONG RANGE PROJECTIONS

SITE	PROJECT DESCRIPTION	CAPACITY
SAC	New treatment and office space for expanded Psychiatric Services Unit (PSU) program with housing unit conversion	152 PSU beds
COR	New treatment and office space for expanded EOP-ASU program with housing unit conversion	Identified in defendants' short term projects as adding 45 EOP-ASU beds[8]
SVSP	Utilization of existing treatment and office space for EOP-ASU (allows increase to 72 EOP-ASU beds using re-designated existing housing)	Identified in defendants' short-term projects as adding 27 EOP-ASU beds[9]
Stark	Retrofitted housing, treatment and office space for EOP-GP, EOP-ASU and MHCBs	775 EOP-GP beds 50 EOP ASU beds 30 MHCBs
Dewitt	New housing, retrofitted office and treatment space for EOP-GP and EOP-ASU	375 EOP-GP beds 50 EOP-ASU beds
Estrella (Paso)	Retrofitted housing, new and retrofitted treatment and office space for EOP-GP and EOP-ASU	150 EOP-GP beds 40 EOP-ASU beds

[8] This project is being implemented according to short-term project timelines using interim temporary office and treatment space. The attached Activation Schedule is for the permanent treatment and office space.
[9] Defendants are not providing an Activation Schedule for this project because it is a programmatic change with future use of existing treatment and office space.

(*See* Exs. 8-13, Activation Schedules for New Projects: Ex. 8, 152 PSU beds at SAC; Ex. 9, 45 EOP-ASU beds at COR; Ex. 10, 775 EOP-GP and 50 EOP-ASU beds at Stark; Ex. 11, 30 MHCBs at Stark; Ex. 12, 375 EOP-GP and 50 EOP-ASU beds at Dewitt; and Ex. 13, 150 EOP-GP and 40 EOP-ASU beds at Estrella.)

The use of these formerly DJJ institutions (Stark, Dewitt, Estrella) allow for the designation of a health care mission through renovations and additional improvements at these existing facilities. Also provided with this mission will be the development of policies, procedures, and training designed to create, foster, and maintain a health care mission. CDCR has begun meeting with the impacted communities where these renovations are planned to ensure any concerns they may have related to these projects are reviewed and addressed appropriately to avoid deleterious impacts to the activation schedules.

The mental health beds that are a part of the *Plata* Receiver's construction activities in Building 22 at SQ will further serve to meet projected need. The Building 22 project is a combination medical/mental health facility. Defendants intend to activate 17 licensed MHCBs in that facility. In addition, defendants will utilize 12 MHCBs in CDCR's Condemned Inmate Complex (CIC) at SQ. Both projects were identified in defendants' December 2006 Bed Plan and their August 2007 Supplemental Bed Plan. These projects increase mental health capacity as follows:

TABLE 5. PREVIOUSLY PLANNED NON-COURT ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	CAPACITY
SQ	CTC within the CIC	12 MHCB
SQ	Building 22 – Medical Building	17 MHCB; noted as one of defendants' short term projects currently under construction

The *Coleman* Court has ordered defendants to establish certain programs as temporary measures. Defendants will request the Court's approval to decommission these programs if: a) the space is converted to another level of mental health care as required by projections; and b) there is adequate alternative capacity to accommodate future need at that level of care. In light of these considerations, the temporary programs that defendants may request approval from the Court to decommission (return) are as follows:

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TABLE 6. TEMPORARY PROGRAMS TO BE DECOMMISSIONED

SITE	PROGRAM	CAPACITY DECOMMISSIONED
CMC	MHCB (LOU)	36 MHCB
CIM	MHCB (GACH)	34 MHCB
SVSP	ICF-H Beds (D-5 and D-6)	112 ICF-H Beds
CMF	MHCB (APP)	20 MHCB; to return to Acute Beds[10]
CMF	ICF-H Beds	66 ICF-H Beds
ASH	Acute Beds	25 Acute Beds, to return to ICF Beds[11]

The following is a cumulative table of current capacity, new planned capacity, returned capacity, and net capacity as compared to bed need projections.

TABLE 7. MEN'S NET CAPACITY

LOC	Current Capacity	New Capacity	Returned Capacity	Net Capacity	Population Projections to 2013	Over/ (Under)
EOP-GP	3,141	1,625	0	4,766	**4,763**	**3**
EOP-ASU	474	212	0	686	**675**	**11**
PSU	384	152	0	536	**546**	**(10)**
MHCB	314	246	-90	470	**470**	**0**
Acute	155	63	-25	193	**193**	**0**
ICF	365	25	0	390	**301**	**89**
ICF-H	306	496	-178	624	**624**	**0**
Total:	5,139	2,819	-293	7,665	**7,572**	**93**

(*See also* Exhibit #14, Spreadsheet on Long-Range Bed Planning, Men)

<u>Women's Population Mental Health Bed Plan</u>

Navigant Consulting Spring 2009 population projections to 2013 show an increased need for 70 EOP-GP beds for the female population. This need will be met through converting existing housing to EOP-GP beds. CDCR is currently working with the *Plata* Receiver on a health care improvement program at the three women's institutions to determine how best to meet these needs.[12]

[10] The decommission of the 20 MHCBs at CMF will create "new capacity" of 20 Acute Beds at CMF.
[11] The decommission of the 25 Acute Beds at ASH will create "new capacity" of 25 ICF Beds at ASH. As noted, this project was identified by defendants as one of their short-term projects. Based on the scheduled approved by the Court, this conversion was completed in June 2009.
[12] Refer to discussion on Mental Health Bed Needs Study. It is anticipated that any parole, sentencing, and/or credit reforms, and the Three-Judge Court's prisoner release order, will significantly impact the female population.

The following *Coleman* court-ordered projects will continue as scheduled:

TABLE 8. CONTINUING *COLEMAN* COURT-ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	CAPACITY
CIW	ICF and Acute	45 ICF/Acute beds
CIW	PSU	20 PSU beds

(*See* Exs. 15–16, Activation Schedules for Court-Ordered Projects: Ex. 15, 45 ICF/Acute Beds at CIW; and Ex. 16, 20 PSU Beds at CIW.)

The temporary programs that defendants may request approval from the Court to decommission (return) are as follows:

TABLE 9. PROGRAMS TO BE DECOMMISSIONED

SITE	PROGRAM	CAPACITY DECOMMISSIONED
CIW	PSU	10 PSU beds
Patton State Hospital	ICF/Acute beds	30 ICF/Acute beds

The following is a cumulative table of current capacity, new planned capacity, returned capacity, and net capacity as compared to bed need projections.

TABLE 10. WOMEN'S NET CAPACITY

LOC	Current Capacity	New Capacity	Returned Capacity	Net Capacity	Population Projections to 2013	Over/ (Under)
EOP-GP	129	70	0	199	**199**	**0**
EOP-ASU	19	0	0	19	**16**	**3**
PSU	10	20	-10	20	**12**	**8**
MHCB	22	0	0	22	**18**	**4**
Acute/ICF	30	45	-30	45	**27**	**18**
Total:	210	135	-40	305	**272**	**33**

(*See also* Ex. 17, Spreadsheet on Long-Range Bed Planning, Women.)

Funding

Defendants plan to fund the *Coleman* court-ordered projects, the short-term projects, and the long-term proposals via a combination of traditional budgeted funding sources and the authorization to issue lease-revenue bonds provided by AB 900. Together, defendants believe that this funding will be sufficient to ensure that the necessary resources can be obtained for defendants to build the needed mental health beds to serve the mental health population in CDCR and DMH. Each action plan filed for the long-range bed plan describes a specific funding source.

Exhibit #1

Consolidated Care Facility

Project: Consolidated Care Center[1]
Responsible Person: Chris Meyer, CDCR
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California
Project Architect: TBD
Location: Stockton, CA
Funding Source: AB 900 (GC 15819.40)

Report Date: November 6, 2009
Jay Sturges, DOF
915 L Street, Sacramento California 95814

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	33	11/6/09			12/9/09				M. Meredith	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	Assumes drafted 30-Day letter is consistent with existing process/format. Assumes basic content is acceptable.
Review Funding Request Package	32	12/10/09			1/11/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/12/10			2/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	114	12/1/09			3/25/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	If a pre-qualified A&E firm is utilized the time to complete the contracting process should be significantly reduced.
Preliminary Plans	150	3/26/10			8/23/10				M. Meredith	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Design is based on using prototypical facilities. PP duration based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	31	10/20/09	10/20/09		11/20/09				M. Meredith	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	NOD was filed 10/20/09, public comment period ends 11/20/09.
JLBC Approval of Preliminary Plans	108	7/26/10			11/11/10				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	108	7/27/10			11/12/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	288	9/11/10			6/26/11				M. Meredith	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award	214	1/24/11			8/26/11				M. Meredith	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Planned Start Date is based on earliest bid package availability and Planned Complete on
Construction[2]	910	6/8/11			12/4/13				M. Meredith Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Preparation of Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	740	8/12/11			8/21/13				M. Meredith Contractor TBD	Including final as-built drawings.	
Self Certification	7	12/5/13			12/12/13				C. Meyer		
Activation Planning/Workforce Development/Hire Staff/Procurement	730	12/19/11			12/18/13				S. Streater C. Radavsky W. Still	Schedule development, policy and procedures, workforce planning, advertise, hire and train staff, group II/III equipment planning and equipment certification, long lead items acquisition, contracts/vendors, labor relations, training. This will impact DMH/CDCR/Receivers office and has to be coordinated between the three departments. DMH does not have the lead on this but will provide technical assistance and comply with the agreed upon dates.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Licensing Application & Approval	**180**	**6/21/13**			**12/18/13**				S. Streater C. Radavsky W. Still	DPH initial licensing survey. Will license entire facility, suspend, then activate beds tied to a staff activation schedule.	Assume sufficient staffing to prepare for licensure and DPH Survey, etc.
Activation	**120**	**8/20/13**			**12/18/13**				S. Streater C. Radavsky W. Still	Transitional training, initial staff occupancy, staff orientation, building acceptance/shakedown, furniture/fixture installation, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	**270**	**12/19/13**			**9/15/14**				S. Streater C. Radavsky W. Still	This will impact DMH/CDCR/CPHCS office and has to be coordinated between the three departments. DMH does not have the lead on this but will provide technical assistance and comply with the agreed upon dates. DMH expects to admit 5 inmate-patients per week for safety reasons.	

[1] This facility is intended to include 137 MHCB, 43 Acute, 432 ICF-H, and 1,110 non-mental health beds.

[2] Special Master shall receive updates on construction every 90 days.

Project: **Consolidated Care Center**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Radavsky	Cindy	DMH	1600 9th Street	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meredith	Michael	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden			

Exhibit #2

California Men's Colony
50 Mental Health Crisis Beds

50 Bed Mental Health Crisis Facility (Licensed Facility)[1] Report Period Ending: October 22, 2009

Responsible Person: Deborah Hysen/CDCR Jay Sturges /DOF

Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814

Project Architect: Nacht and Lewis Architects

Location: California Mens Colony, San Luis Obispo (CMC)

Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package						3/13/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package					3/25/09	3/25/09				DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	Funding request package completed on 3/25/09.
Legislative Approval of Scope, Schedule, and Cost					4/10/09	4/10/09			JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule		4/10/09	4/10/09		4/10/09	4/10/09			C. Lief	Upon legislative approval, obtain PWB recognition of Scope, Cost, and Schedule.	
Request Loan from PMIA		4/1/09	4/1/09		4/1/09	4/1/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA)	
Approval of PMIA Funding		4/15/09	4/15/09		4/15/09	4/15/09		4/23/09	Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Next loan renewal March 2010 and every year thereafter for the duration of the project.
Architectural/Engineering Contracting		4/15/09	4/15/09		4/15/09	4/15/09		4/23/09	J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Notice to Proceed (NTP) issued 4/15/09.
Preliminary Plans	309	4/20/09	4/15/09	(5)	12/27/09				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Preliminary plans are approximately 80% complete.
California Environmental Quality Act Compliance (CEQA)	237	4/20/09	4/15/09	(5)	12/13/09				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Initial Study/Mitigated Negative Declaration public comment period ends 10/31/09.
JLBC Approval of Preliminary Plans	45	12/28/09			2/11/10				JLBC	JLBC Approval. PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans. JLBC responded prior to 45-day review.	Design schedule accelerated 45 days, based on early JLBC package submittal.
PWB Approval of Preliminary Plans	45	12/29/09			2/12/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	187	2/15/10			8/21/10				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	90	8/23/10			11/21/10				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	600	11/22/10			7/14/12				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	The baseline Action Plan dated May 22, 2009, and filed with the Court on May 26, 2009, reflects a reduced construction duration of 120 days. This assumes construction can be completed 4 months earlier than previously built CDCR licensed mental health facilities (i.e. 600 days instead of 720 days). CDCR is evaluating additional opportunities to accelerate construction.
Hire Staff	543	1/10/11			7/6/12				S. Streater J. Marshall	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	600	11/22/10			7/14/12				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start.

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Self Certification	**15**	**7/16/12**			**7/31/12**				D. Hysen		
License Approval	**7**	**8/1/12**			**8/8/12**				S. Streater J. Marshall	DPH Survey, DPH Approval.	
Activation	**56**	**8/9/12**			**10/4/12**				S. Streater J. Marshall	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	**56**	**8/9/12**			**10/4/12**				S. Streater J. Marshall	Assumes Patients will be admitted at a rate of six per week.	

[1] Court Order(s) filed 3/27/07, Docket No. #2173; filed 4/16/08, Docket No. #2757; and filed 10/20/06, Docket No. #1998
[2] Special Master shall receive updates on construction every 90 days.

Project: CMC-50 Bed Mental Health Crisis Facility (Licensed Facility)

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Marshall	John	CDCR/CMC	P.O. Box 8101	San Luis Obispo	93409
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #3

Salinas Valley State Prison
108 Enhanced Outpatient Program-General Population beds

Project:	EOP-GP Mental Health Treatment and Office Space - A Quad		Report Period Ending: November 6, 2009
Responsible Person:	Deborah Hysen/CDCR	Jay Sturges/DOF	
Address of Resp. Person:	9838 Old Placerville Rd., Suite B Sacramento California	915 L Street, Sacramento California 95814	
Project Architect:	TBD		
Location:	Salinas Valley State Prison, Soledad (SVSP)		
Funding Source:	AB 900 (GC 15819.40)		

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Budget for AB 900 30 Day Funding Request Package	111	10/19/09	10/19/09		2/7/10				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	30	2/8/10			3/10/10				C. Lief	DOF review of funding request package. DOF prepares transmittal letter to legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost And PWB Recognition of Project Scope, Schedule, and Budget	30	3/11/10			4/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Budget.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project, Scope, Cost, and Schedule.	
Request loan from PMIA	21	3/30/10			4/20/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit Loan Documents to DOF and Obtain PWB Approval for Loan. Submit Loan application for initial design phase to PMIB for Approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	32	4/22/10			5/24/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	187	5/25/10			11/28/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	205	4/22/10			11/13/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	11/29/10			1/13/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	11/30/10			1/14/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	221	1/18/11			8/27/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	
Bid and Award	70	8/29/11			11/7/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[1]	630	11/8/11			7/30/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	
Hire Staff	153	1/28/13			6/30/13				S. Streater A. Hedgpeth	Advertise, Hire, and Train Staff.	
Activation	63	7/31/13			10/2/13				S. Streater A. Hedgpeth	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **SVSP EOP/GP Housing Unit Conversion & Addition to Mental Health Services Building**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hedgpeth	Anthony	CDCR/SVSP	P.O. Box 1020	Soledad	93960
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #4

California State Prison, Sacramento
Additional Treatment and Office Space

Project: Enhanced Outpatient Program Treatment and Office Space [1]
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California State Prison, Sacramento (SAC)
Funding Source: General Fund

Report Period Ending: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Architectural/Engineering Contracting						**12/16/08**			J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	**131**	**12/17/08**	**12/17/08**		**4/27/09**	**4/27/09**			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)						**11/25/08**			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	**45**	**5/25/09**	**5/26/09**	**1**	**7/9/09**	**7/9/09**			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	**45**	**5/26/09**	**5/26/09**		**7/10/09**	**7/14/09**	**4**		C. Lief	PWB Approval.	PWB meeting rescheduled to July 14. There is no impact to overall schedule.
Working Drawings (Construction Documents)	**154**	**7/13/09**	**7/15/09**	**2**	**12/14/09**				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	Delayed start due to PWB meeting schedule. There is no impact to the working drawing milestone. Working drawings are approximately 95% complete.
Bid and Award	**71**	**12/15/09**			**2/24/10**				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	This planned start date was premised on construction funding being appropriated by the legislature in the 2009/10 Budget Act. The Conference committee on the Budget, however, denied the request for construction funding. Assuming 7/1/10 budget enactment, the new projected Bid and Award period starts 7/1/10 & ends 9/10/10.
Construction [2]	**390**	**2/25/10**			**3/22/11**				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	This planned start date was premised on construction funding being appropriated by the legislature in the 2009/10 Budget Act. The Conference committee on the Budget, however, denied the request for construction funding. Assuming 7/1/10 budget enactment, the new projected construction period starts 9/13/10 & ends 10/8/11. CDCR is evaluating opportunities to accelerate construction.
Hire Staff	**153**	**9/22/10**			**2/22/11**				S. Streater J. Walker	Advertise, Hire, and Train Staff.	Assuming 7/1/10 budget enactment, the new projected Hire Staff starts 4/6/11 & ends 9/6/11.
Activation	**61**	**3/23/11**			**5/23/11**				S. Streater J. Walker	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	Assuming 7/1/10 budget enactment, the new projected Activation starts 9/7/11 & ends 11/7/11.

[1] Court Order(s) filed 7/8/08, Docket No. #2861; Stipulation filed 7/1/08, Docket No. #2860; order filed 10/18/07, Docket No. #2461
[2] Special Master shall receive updates on construction every 90 days.

Project: **SAC Enhanced Outpatient Program Treatment and Office Space**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
Walker	James	CDCR/SAC	P.O. Box 71	Represa	95671

Exhibit #5

California Medical Facility
67 Enhanced Outpatient Program-General Population beds

Project: Mental Health Treatment and Office Space [1]
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California Medical Facility, Vacaville (CMF)
Funding Source: AB 900 (GC 15819.40)

Report Period Ending: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package						3/13/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package						3/25/09			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/25/09	3/25/09		4/24/09	5/7/09	13		C. Lief	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	LAO had concerns with building costs.
PWB Recognition of Project Scope, Cost, and Schedule		5/8/09	5/8/09		5/8/09	5/8/09			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	Reduced costs at PWB per LAO concerns.
Request Loan from PMIA						3/26/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	63	4/15/09	4/15/09		4/15/09	6/12/09	58		Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Loan request was made on 5/20/09 and was denied by PMIB on a 2-1 vote. Executive Order E 08/09-136 authorized General Fund loan for Preliminary Plans (PP). On 7/15/09 PMIB approved the loan for PP funding, and General Fund loan will be retired. There is no impact to design or overall schedule.
Architectural/Engineering Contracting	82	6/18/09	6/18/09		9/8/09	9/17/09	9		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract executed 09/17/09. No impact to overall schedule.
Preliminary Plans	217	9/9/09	9/17/09	8	4/14/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Start date delayed due to contract execution, no impact to PP Phase or overall schedule. PP are approximately 5% complete.
California Environmental Quality Act Compliance (CEQA)	235	9/9/09	8/5/09	(35)	5/2/10	9/21/09	(223)		B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Comment period complete, no protests filed. Accelerated time was gained by completing a less restrictive environmental document (Notice of Exemption vs. Initial Study/ Mitigated Negative Declaration).
JLBC Approval of Preliminary Plans	45	4/26/10			6/10/10				JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	4/27/10			6/11/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	187	6/14/10			12/18/10				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	70	12/20/10			2/28/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [2]	720	3/1/11			2/18/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	153	8/19/12			1/19/13				S. Streater K. Dickinson	Advertise, Hire, and Train Staff.	
Activation	59	2/19/13			4/19/13				S. Streater K. Dickinson	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order's) filed 10/7/08, Docket No. #3072; and filed 10/18/07, Docket No. #2461
[2] Special Master shall receive updates on construction every 90 days.

Project: **CMF Mental Health Treatment and Office Space**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Dickinson	Kathleen	Warden, CMF	1600 California Drive	Vacaville	95696
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #6

California State Prison, Los Angeles County
Treatment Space for
Enhanced Outpatient Program

Project: Enhanced Outpatient Program Treatment and Office Space [1]
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Los Angeles County, Lancaster (LAC)
Funding Source: AB 900 (GC 15819.40)

Report Period Ending: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Cost for AB 900 30 Day Funding Request Package					4/23/09	4/23/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	46	4/24/09	4/24/09		6/9/09	6/9/09			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	6/10/09	6/9/09	(1)	7/9/09	7/9/09			C. Lief	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Cost.	
PWB Recognition of Project Scope, Cost, and Schedule		7/10/09	7/14/09	4	7/10/09	7/14/09	4		C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	PWB meeting rescheduled to July 14. There is no impact to overall schedule.
Request Loan from PMIA	67	5/5/09	5/5/09		7/11/09	7/11/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding		7/15/09	7/15/09		7/15/09	7/15/09			Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	82	7/16/09	7/16/09		10/6/09	10/22/09	16		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract executed 10/22/09. No impact to overall schedule.
Preliminary Plans	229	10/7/09		15	5/24/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Start of PP delayed due to contract execution. There is no impact to design or overall schedule.
California Environmental Quality Act Compliance (CEQA)	235	10/7/09	8/5/09	(63)	5/30/10	9/21/09	(251)		B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Comment period complete, no protests filed. Accelerated time was gained by completing a less restrictive environmental document (Notice of Exemption vs. Initial Study/Mitigated Negative Declaration.
JLBC Approval of Preliminary Plans	45	5/24/10			7/8/10				JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	5/25/10			7/9/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	203	7/12/10			1/31/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	80	2/1/11			4/22/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [2]	440	4/25/11			7/8/12				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	151	1/9/12			6/8/12				S. Streater B. Haws	Advertise, Hire, and Train Staff.	
Activation	65	7/9/12			9/12/12				S. Streater B. Haws	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order(s) filed 10/18/07, Docket No. #2461; filed 10/20/06, Docket No. #1998
[2] Special Master shall receive updates on construction every 90 days.

Project: **LAC Enhanced Outpatient Program Treatment and Office Space**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Haws	Brian	CDCR/LAC	44750 60th Street West	Lancaster	93536
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #7

California Medical Facility
64-bed Intermediate Care Facility
for High Custody Inmates

Project: 64 Bed Intermediate Care Facility (Licensed Facility)[1]
Responsible Person: Deborah Hysen — Jay Sturges, DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California Medical Facility, Vacaville (CMF)
Funding Source: AB 900 (GC 15819.40)

Report Date: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
PWB Recognition of Project Scope, Cost, and Schedule.		4/10/09	4/10/09		4/10/09	4/10/09			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA		4/1/09	4/1/09		4/1/09	4/1/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA).	
Approval of PMIA Funding	63	4/15/09	4/15/09		4/15/09	6/12/09	58		Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Loan request was made on 5/20/09 and was denied by PMIB on a 2-1 vote. Executive Order E 08/09-136 authorized General Fund loan for Preliminary Plans. On 7/15/09 PMIB approved the loan for PP funding, and the General Fund loan will be retired. Design and construction schedule was revised based on 6/12/09 funding. There is no impact to overall schedule.
Architectural/Engineering Contracting	2	6/17/09	6/12/09	(5)	6/19/09	7/9/09	20		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s)	Contract execution delayed due to year end work load issues. There is no impact to overall schedule.
Preliminary Plans	422	9/8/07	9/8/07		11/3/08	11/3/08			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC and PWB Submittal Packages.	Preliminary Plans funded in the 2006-07 Budget Act.
California Environmental Quality Act Compliance (CEQA)					3/5/09	3/5/09			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	10/30/08	10/30/08		12/14/08	12/14/08			JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans		4/10/09	4/10/09		4/10/09	4/10/09			C. Lief	PWB Approval.	Preliminary Plan approval occurred concurrent with the establishment of scope, cost, and schedule.
Working Drawings (Construction Documents)	204	6/22/09	7/10/09	18	1/12/10				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for Approval. Submit loan documents to DOF and obtain PWB approval for loan by the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Contract execution delayed start of working drawings. There is no impact to design or overall schedule. Working drawings are approximately 65% complete.
Bid and Award	90	1/13/10			4/13/10				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	841	4/14/10			8/2/12				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Construction duration will be accelerated 241 days due to facility being constructed outside of existing secure perimeter and comparison with CMC 50-Bed. Other acceleration options will be evaluated during bid phase. New projected construction complete is 12/5/11.
Hire Staff	485	3/6/11			7/3/12				V. Brewer K. Dickinson	Advertise, Hire, and Train Staff.	The new projected Hire Staff start is 7/8/10 & ends 11/5/11.
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	841	4/14/10			8/2/12				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start. New projected OSHPD planned complete is 12/5/11.
Self Certification	15	8/3/12			8/18/12				D. Hysen		New projected Self Certification start is 12/6/11 & will end 12/21/11.
License Approval	7	8/19/12			8/26/12				V. Brewer S. Streater K. Dickinson	DPH Survey, DPH Approval.	New projected License approval start is 12/22/11 & will end 1/6/12.
Activation	92	8/27/12			11/27/12				V. Brewer K. Dickinson	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	Activation duration will be accelerated 22 days. New projected Activation start is 1/9/12 & will end 3/19/12.
Patient Admissions	92	8/27/12			11/27/12				V. Brewer K. Dickinson	Assumes Patients will be admitted at a rate of six per week.	Pateint Admissions will be accelerated 22 days (6 patients per week). New projected Patient Admission start is 1/9/12 & will end 3/19/12.

[1] Court Order filed 3/1/07, Docket No. #2154
[2] Special Master shall receive updates on construction every 90 days.

Project: **CMF 64 Bed Intermediate Care Facility (Licensed Facility)**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Brewer	Victor	DMH	PO Box 1080	Soledad	93960
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Dickinson	Kathleen	CDCR/CMF	1600 California Drive	Vacaville	95896
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Ro.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #8

California State Prison, Sacramento
152 Psychiatric Services Unit beds

Project: 152 Psychiatric Services Unit (PSU) Treatment and Office Space
Report Period Ending: November 6, 2009
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Sacramento
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	114	8/17/09	8/17/09		12/9/09				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	33	12/10/09			1/12/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/13/10			2/12/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	2/18/10			5/19/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	248	5/20/10			1/23/11				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	270	2/18/10			11/15/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	1/24/11			3/10/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	1/25/11			3/11/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	180	3/14/11			9/10/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	80	9/12/11			12/1/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[1]	480	12/2/11			3/26/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	150	9/27/12			2/24/13				S. Streater J. Walker	Advertise, Hire, and Train Staff.	
Activation	60	3/27/13			5/26/13				S. Streater J. Walker	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **Psychiatric Services Unit (PSU) Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
Walker	James	CDCR/SAC	P.O. Box 71	Represa	95671

Exhibit #9

California State Prison, Corcoran
45 Enhanced Outpatient Program-Administrative Segregation Unit beds

Project: EOP-ASU Treatment and Office Space (for 45 bed EOP-ASU)
Responsible Person: Deborah Hysen/CDCR — Jay Sturges /DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Corcoran
Funding Source: AB 900 (GC 15819.40)

Report Period Ending: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	87	9/13/09	9/13/09		12/9/09				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	33	12/10/09			1/12/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/13/10			2/12/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	2/18/10			5/19/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	220	5/20/10			12/26/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	270	2/18/10			11/15/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	12/27/10			2/10/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	12/28/10			2/11/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	203	2/14/11			9/5/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	73	9/6/11			11/18/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[1]	450	11/21/11			2/13/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	150	8/17/12			1/14/13				S. Streater D. Adams	Advertise, Hire, and Train Staff.	
Activation	60	2/14/13			4/15/13				S. Streater D. Adams	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **EOP/ASU Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Adams	Derral	Warden, CSP COR	4001 King Street	Corcoran	93212
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #10

Heman G. Stark
775 Enhanced Outpatient Program– General Population and 50 Enhanced Outpatient Program- Administrative Segregation Unit beds

Project: Stark Conversion[1]
Responsible Person: Chris Meyer/CDCR Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Heman G. Stark, Chino, CA
Funding Source: AB 900 (GC 15819.40)

Report Date: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	89	11/6/09			2/3/10				C. Stevens	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	32	2/4/10			3/8/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/9/10			4/8/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	21	3/30/10			4/20/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	151	11/30/09			4/30/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	If a pre-qualified A&E firm is utilized the time to complete the contracting process should be significantly reduced.
Preliminary Plans	388	5/3/10			5/26/11				C. Stevens	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Design is based on using prototypical facilities. Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	456	1/4/10			4/5/11				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	255	10/25/10			7/7/11				JLBC	JLBC Approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
PWB Approval of Preliminary Plans	255	10/26/10			7/8/11				C. Lief	PWB Approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on
Working Drawings (Construction Documents)	344	4/6/11			3/15/12				C. Stevens	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award	388	6/22/11			7/14/12				C. Stevens	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Construction	849	8/30/11			12/26/13				C. Stevens & Contractor	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Hire Staff	600	3/21/12			11/11/13				W. Still S. Streater Warden	Advertise, Hire, and Train Staff.	
Activation	60	12/27/13			2/25/14				W. Still S. Streater Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	270	12/27/13			9/23/14				W. Still S. Streater Warden		

[1] This facility is intended to include 775 EOP, 50 EOP/ASU, and 977 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **Stark Conversion (1802-Beds)**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Stevens	Chuck	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	15180 Euclid Ave.	Chino	91710

Exhibit #11

Heman G. Stark
30 Mental Health Crisis Beds

Project: Stark 60 BED Correctional Treatment Center[1]
Report Period Ending: November 6, 2009
Responsible Person: Chris Meyer/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Heman G. Stark, Chino, CA
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	94	11/6/09			2/8/10				S. Durham	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	30	2/9/10			3/11/10				C. Stevens	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/12/10			4/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Scope, Cost, and Schedule.	
Request Loan from PMIA	20	3/31/10			4/20/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA)	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	173	11/8/09			4/30/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	330	5/3/10			3/29/11				C. Stevens	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	240	4/22/10			12/18/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	49	2/17/11			4/7/11				JLBC	JLBC Approval. PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.	
PWB Approval of Preliminary Plans	49	2/18/11			4/8/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	209	4/11/11			11/6/11				C. Stevens	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	92	11/7/11			2/7/12				C. Stevens	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	601	2/8/12			10/1/13				C. Stevens Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	600	1/10/12			9/1/13				S. Streater Warden	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	601	2/8/12			10/1/13				Contractor TBD	Including final as-built drawings.	
Self Certification	7	10/2/13			10/9/13				C. Meyer		
License Approval	60	8/12/13			10/10/13				S. Streater W. Still Warden	DPH Survey, DPH Approval.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Activation	**60**	**10/2/13**			**12/1/13**				S. Streater W. Still Warden	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Inmate Occupancy	**60**	**10/11/13**			**12/10/13**				S. Streater W. Still Warden	Assumes Patients will be admitted at a rate of six per week.	

[1] This facility is intended to include 30 MHCB and 30 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **Stark 60 BED Correctional Treatment Center**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Stevens	Chuck	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	15180 Euclid Ave.	Chino	91710

Exhibit #12

Dewitt
375 Enhanced Outpatient Program–General Population and 50 Enhanced Outpatient Program-Administrative Segregation Unit beds

Project: DeWitt Nelson Conversion[1]
Responsible Person: Chris Meyer, CDCR — Jay Sturges, DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: DeWitt Nelson, Stockton
Funding Source: AB 900 (GC 15819.40)

Report Date: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	94	11/6/09			2/8/10				S. Durham	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	Project Director to be identified.
Review Funding Request Package	30	2/9/10			3/11/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/12/10			4/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	21	3/30/10			4/20/10				S. Durham	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	4/22/10			7/21/10				S. Durham	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	248	7/22/10			3/27/11				S. Durham	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Assumes use of prototypical housing unit.
California Environmental Quality Act Compliance (CEQA)	330	4/22/10			3/18/11				S. Durham	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	3/28/11			5/12/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	3/29/11			5/13/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	180	5/16/11			11/12/11				S. Durham	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	90	11/14/11			2/12/12				S. Durham	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	720	2/13/12			2/2/14				S. Durham Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	425	11/4/12			1/3/14				S. Streater W. Still & Warden	Advertise, Hire, and Train Staff.	
Activation	60	2/3/14			4/4/14				S. Streater W. Still & Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	
Inmate Admissions	270	2/12/14			11/9/14				S. Streater W. Still & Warden		

[1] This facility is intended to include 375 EOP, 50 EOP/ASU, and 708 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **DeWitt Nelson Conversion**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Durham	Stephen	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden, DeWitt	7650 So. Newcastle Rd.	Stockton	95213

Exhibit #13

Estrella
150 Enhanced Outpatient Program– General Population and 40 Enhanced Outpatient Program- Administrative Segregation Unit beds

Project: Estrella Health Care Facility "El Paso de Robles Conversion"[1]
Responsible Person: Chris Meyer/CDCR Jay Sturges /DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Paso Robles, CA
Funding Source: AB 900 (GC 15819.40)

Report Period Ending: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package		11/6/09			11/6/09				G. Simcoe	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	30	11/9/09			12/9/09				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	12/10/09			1/9/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	1/11/10			1/11/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	12/30/09			1/19/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	1/20/10			1/20/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	7	1/21/10			1/28/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Assumes contract scope is developed, negotiated, and pending execution.
Preliminary Plans - Bid Package Structure	196	1/29/10			8/13/10				G. Simcoe	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	153	8/3/09			1/3/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	91	7/8/10			10/7/10				JLBC	JLBC Approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
PWB Approval of Preliminary Plans - Bid Package Structure	91	7/9/10			10/8/10				C. Lief	PWB Approval.	Duration is based on multiple bid package structure. Planned Start Date is based on first PWB date of earliest bid package availability and Planned Complete is date of PWB for lastest bid package.
Working Drawings (Construction Documents) - Bid Package Structure	235	7/12/10			3/4/11				G. Simcoe	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award - Bid Package Structure	116	12/8/10			5/20/11				G. Simcoe	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Construction[2-] Bid Package Structure	459	2/8/11			5/12/12				G. Simcoe / Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Hire Staff	153	11/10/11			4/11/12				S. Streater W. Still Warden	Advertise, Hire, and Train Staff.	
Activation	30	5/13/12			6/12/12				S. Streater W. Still Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Patient Admisssions	**120**	**5/13/12**			**9/10/12**				S. Streater W. Still Warden		

[1] This facility is intended to include 150 EOP, 40 EOP/ASU, and 709 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **Estrella Health Care Facility "El Paso de Robles Conversion"**

Lead Person Roster

Name		[redacted]	Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Simcoe	Geoff	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	4545 Aiport Rd.	Paso Robles	

Exhibit #14

Long-Range Bed Planning (Men)

California Department of Corrections and Rehabilitation
Division of Correctional Health Care Services
Mental Health Program

Men's Mental Health Program Capacity Requirements

Long Term Bed Plan

Spring 2009 Projections through 2013

UPDATED -- November 2009

Level of Care:	Current Program Capacity:	+	New Capacity:	-	Returned Capacity:	=	Net Capacity:	Mental Health Bed Need Study - Spring 2009 Population Projections, April 2009 (Navigant Consulting) Need to 2013:	over/ (under) need
EOP	3,141		1,625		0		4,766	4,763	3
ASU	474		212		0		686	675	11
PSU	384		152		0		536	546	(10)
MHCB	314		246		-90		470	470	0
Acute - Total	155		63		-25		193	193	0
ICF (Low Custody) - Total	365		25		0		390	301	89
ICF-High Custody	306		496		-178		624	624	0
Total:	5,139		2,819		-293		7,665	7,572	93

Table #A: Capacity as of May, 2009.
Data sources for number of beds: Health Care Population Oversight Program.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC	384	74	256	24				738
RJD	330	63		14				407
CMC[1]	580	54		36				670
CIM[2]				34				34
LAC	300	54		12				366
SVSP[3]	192	45		10			240	487
CMF[4]	533	58		70	130	84	66	941
PBSP	66		128	10				204
COR	150	54		23				227
MCSP	510	36		8				554
SQ		36						36
HDSP				10				10
KVSP	96			12				108
NKSP				10				10
PVSP				6				6
SATF				20				20
SOL				9				9
WSP				6				6
Sub Total:	3,141	474	384	314	130	84	306	4,833
**Department of Mental Health Hospital Capacity:								
ASH					25	231		256
CSH						50		50
Total:	0	0	0	0	25	281	0	306
Grand Total: (DMH Hospital + CDCR)	3,141	474	384	314	155	365	306	5,139

Table #B: New capacity under development, proposed, converted or returned to original use.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC			152					152
RJD								0
CMC				50				50
CIM								0
LAC[5]	150							150
SVSP[6]	108	27						135
CMF[7]	67				20		64	151
PBSP								0
COR[8]		45						45
MCSP								0
SQ[9]				29				29
HDSP								0
KVSP								0
NKSP								0
PVSP								0
SATF								0
SOL								0
WSP								0
Stark	775	50		30				855
Estrella	150	40						190
Dewitt	375	50						425
CCC-N				137	43		432	612
Sub Total:	1,625	212	152	246	63	0	496	2,794
Department of Mental Health Hospital Capacity:								
ASH						25		25
CSH								0
Total:	0	0	0	0	0	25	0	25
Grand Total: (DMH Hospital + CDCR)	1,625	212	152	246	63	25	496	2,819

Table #C: Capacity to be returned to alternate use when need is eliminated by adding capacity.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC								0
RJD								0
CMC				-36				-36
CIM				-34				-34
LAC								0
SVSP							-112	-112
CMF				-20			-66	-86
PBSP								0
COR								0
MCSP								0
SQ								0
HDSP								0
KVSP								0
NKSP								0
PVSP								0
SATF								0
SOL								0
WSP								0
Sub Total:	0	0	0	-90	0	0	-178	-268
Department of Mental Health Hospital Capacity:								
ASH					-25			-25
CSH								0
Total:	0	0	0	0	-25	0	0	-25
Grand Total: (DMH Hospital + CDCR)	0	0	0	-90	-25	0	-178	-293

Table #D: Net capacity.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC	384	74	408	24	0	0	0	890
RJD	330	63	0	14	0	0	0	407
CMC	580	54	0	50	0	0	0	684
CIM	0	0	0	0	0	0	0	0
LAC	450	54	0	12	0	0	0	516
SVSP	300	72	0	10	0	0	128	510
CMF	600	58	0	50	150	84	64	1,006
PBSP	66	0	128	10	0	0	0	204
COR	150	99	0	23	0	0	0	272
MCSP	510	36	0	8	0	0	0	554
SQ	0	36	0	29	0	0	0	65
HDSP	0	0	0	10	0	0	0	10
KVSP	96	0	0	12	0	0	0	108
NKSP	0	0	0	10	0	0	0	10
PVSP	0	0	0	6	0	0	0	6
SATF	0	0	0	20	0	0	0	20
SOL	0	0	0	9	0	0	0	9
WSP	0	0	0	6	0	0	0	6
Stark	775	50	0	30	0	0	0	855
Estrella	150	40	0	0	0	0	0	190
Dewitt	375	50	0	0	0	0	0	425
CCC-N	0	0	0	137	43	0	432	612
Sub-Total:	4,766	686	536	470	193	84	624	7,359
Department of Mental Health Hospital Capacity:								
ASH						256		256
CSH						50		50
Total:	0	0	0	0	0	306	0	306
Grand Total: (DMH Hospital + CDCR)	4,766	686	536	470	193	390	624	7,665

Legend

- Current program capacity
- New capacity
- Returned capacity
- Net capacity
- Long term plan
- Long term plan/Court ordered
- Proposed change to court order

ASSUMPTIONS:
This plan assumes:

-- In Table A, the base bed number point is May 2009 and does not include the activated or scheduled short term proposals. In Table B, the only short term proposals included are those intended to become permanent. Those short term proposals that are intended to become permanent (as indicated in Table B) are ASH 25 bed ICF from Acute, COR 45 bed EOP-ASU ,SQ 17 MHCB, and SVSP 27 EOP-ASU.

-- Mental health bed need projections to 2013 using Spring 2009 population projections.

-- One new facility is proposed to be built in collaboration with the *Plata* Receiver. This facility will provide mental health care in housing appropriate to patient custody level.

-- All Coleman court ordered projects are completed.

-- As represented in Table C, all "temporary" projects are decommissioned. Court identified temporary projects include the ICF-high custody beds in D-5 and D-6 at SVSP (112 beds), the MHCB at CMC (36 bed), the MHCB at CIM (34 beds), and the ICF- high custody beds at CMF (66 beds). Also, the interim 20 MHCB at CMF APP revert back to Acute beds and, in keeping with the short term proposals, the interim 25 Acute beds at ASH remain ICF beds. Table C does not include the decommissioning of short term and interim proposals since they are not part of the base bed number in Table A.

-- No currently operating programs will be decommissioned unless;
1) the space is being converted to another required level of mental health care; and
2) there is adequate alternative capacity to accommodate future need in that level of care.

-- CDCR inmates will remain in DMH hospital beds, unless and until those services are no longer required.

FOOTNOTES (Men's Program):
1. CMC: The 36 MHCBs are interim and will be decommissioned when there is no wait list.

2. CIM: The 34 MHCBs are interim and will be decommissioned when there is no wait list.

3. SVSP: The base line for the long-term plan includes the following: ICF High Custody beds comprised of 128 permanent ICF beds plus 112 temporary beds (in D-5 and D-6 housing units). The 112 beds in D-5 and D-6 will remain in place with new treatment space until there is no wait list; these are considered temporary by the Coleman Court.

4. CMF: The base line for the long-term plan includes the following: ICF-low custody beds comprised of 44 ICF beds in the A-2 housing unit plus 40 ICF beds in the A-3 housing unit; ICF-high custody beds are comprised of 36 in the P-2 housing unit and 30 in the P-3 housing unit; these are considered temporary by the Court . Not included in the base bed numbers are short-term projects, which include 36 ICF high custody beds in the P-2 housing unit that have been converted to Acute.

5. LAC: Builds, per court order, treatment and office space for a housing unit conversion to 150 EOP beds.

6. SVSP: The 27 additional EOP-ASU beds are created in existing housing as a short term project and will remain permanent as part of the long-term bed plan. In the long-term bed plan, the existing EOP-GP program will be moved to A yard, expanded by 108 beds and have treatment and office space sized and built for that program (300 total EOP beds). The expanded EOP-ASU will then claim vacated existing EOP treatment and office space.

7. CMF: Additional treatment and office space is in planning and design for the CMF EOP (including expanded capacity) and EOP-ASU populations. The interim 20 MHCB at CMF APP revert back to Acute beds.

8. COR: The 45 additional EOP-ASU beds are created in existing housing as a short term project and will remain permanent as part of the long term bed plan. Permanent treatment and office space will be built to support these services.

9. SQ: The 29 MHCBs at SQ are delineated as follows: 17 MHCBs in Building 22 (Receiver's project), and 12 MHCBs within the CTC at the Condemned Inmate Complex project.

Exhibit #15

California Institution for Women
45-bed Intermediate Care Facility

Project: 45 Bed Intermediate Care Facility (Licensed Facility)[1]
Responsible Person: Deborah Hysen/CDCR Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California Institution of Women, Corona (CIW)
Funding Source: AB 900 (GC 15819.40)

Report Period Ending: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Cost for AB 900 30 Day Funding Request Package						4/14/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package		4/15/09	4/15/09		4/29/09	4/29/09			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	4/29/09	4/29/09		5/29/09	5/29/09			JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Cost.	
PWB Recognition of Project Scope, Cost, and Schedule		6/12/09	6/12/09		6/12/09	6/12/09			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	21	4/23/09	4/23/09		5/20/09	5/20/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding		6/17/09	6/17/09		6/17/09	6/17/09			Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	2	6/17/09	6/17/09		6/19/09	7/14/09	25		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract execution delayed due to year end work load issues. There is no impact to overall schedule.
Preliminary Plans	663	11/15/06	11/15/06		9/8/08	9/8/08			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Planned complete date for PP that was originally filed with the court was incorrect. The date listed now, 9/8/08 is the correct date.
California Environmental Quality Act Compliance (CEQA)						9/27/07				Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	9/9/08	9/9/08		10/24/08	10/24/08			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans		6/12/09	6/12/09		6/12/09	6/12/09			C. Lief	PWB Approval.	Preliminary plan approval occured concurrent with the establishment of scope, cost, and schedule.
Working Drawings (Construction Documents)	170	6/22/09	7/15/09	23	12/9/09				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Contract execution delayed start of working drawings. There is no impact to overall schedule. Working Drawings are approximately 50% complete.
Bid and Award	69	12/10/09			2/17/10				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	661	2/18/10			12/11/11				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	364	11/12/10			11/11/11				S. Streater D. Davison	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	661	2/18/10			12/11/11				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start.
Self Certification	15	12/12/11			12/27/11				D. Hysen		
License Approval	9	12/28/11			1/6/12				S. Streater D. Davison	DPH Survey, DPH Approval.	
Activation	60	1/9/12			3/9/12				S. Streater D. Davison	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	60	1/9/12			3/9/12				S. Streater D. Davison	Assumes Patients will be admitted at a rate of six per week.	

[1] Court Order filed 3/1/07, Docket No. #2154
[2] Special Master shall receive updates on construction every 90 days.

Project: **CIW 45 Bed Intermediate Care Facility (Licensed Facility)**

Lead Person Roster

Name			**Address**		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Davison	Dawn	CDCR/CIW	16756 Chino-Corona Rd.	Corona	92878
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Jones-Brown	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #16

California Institution for Women
20-bed Psychiatric Services Unit

Project: 20 Bed Psychiatric Services Unit (PSU)[1]
Responsible Person: Deborah Hysen/CDCR; Jay Sturges /DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California; 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California Institution of Women, Corona (CIW)
Funding Source: General Fund

Report Period Ending: October 22, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Preliminary Plans	103	11/18/08	11/18/08		3/2/09	3/2/09			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)						3/5/08			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	3/24/09	3/24/09		5/8/09	5/8/09			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	3/24/09	3/24/09		5/8/09	5/8/09			C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	161	5/11/09	5/11/09		10/19/09		3		K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	Working drawings for housing renovation are 100% complete and modular treatment & office space are 99% complete. PWB screening approval for use of IWL for housing renovation is targeted for 10/26/09. There is no impact to overall schedule.
Bid and Award	67	10/20/09		2	12/26/09				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	CDCR will mitigate the Bid & Award period by using IWL and housing renovation will commence pending transfer of funds .
Construction[2]	360	12/28/09			12/23/10				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	CDCR anticipates construction will start 11/16/09. PIA construction of modular unit pending completion of WD. There is no impact to overall schedule.
Hire Staff	153	6/23/10			11/23/10				S. Streater D. Davison	Advertise, Hire, and Train Staff.	
Activation	60	12/24/10			2/24/11				S. Streater D. Davison	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order filed 3/28/07, Docket No. #2178
[2] Special Master shall receive updates on construction every 90 days.

Project: **CIW 20 Bed Psychiatric Services Unit (PSU)**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Contractor TBD					
Davison	Dawn	CIW/CDCR	16756 Chino-Corona Rd.	Corona	92878
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #17

Long-Range Bed Planning (Women)

California Department of Corrections and Rehabilitation
Division of Correctional Health Care Services
Mental Health Program

Women's Mental Health Program Capacity Requirements

Spring 2009 Projections through 2013

Updated - November 2009

Level of Care:	Current Program Capacity:	+	New Capacity:	-	Returned Capacity:	=	Net Capacity:	Mental Health Bed Need Study - Spring 2009 Population Projections, April 2009 (Navigant Consulting) Need to 2013:	over/(under) need
EOP	129		70		0		199	199	0
ASU	19		0		0		19	16	3
PSU	10	+	20	-	-10	=	20	12	8
MHCB	22		0		0		22	18	4
Acute/ICF**	30		45		-30		45	27	18
Total:	210		135		-40		305	272	33

Table #A: Capacity as of May, 2009
Data sources for number of beds: Health Care Population Oversight Program, Licensing Unit, and Office of Facilities Management.

	Level of Care					
Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
CCWF	54			12		66
CIW	75	10	10	10		105
VSPW		9				9
Total:	129	19	10	22	0	180
**Department of Mental Health Hospital Capacity:						
PSH					30	30
Total:	0	0	0	0	30	30
Grand Total: (DMH Hospital + CDCR)	129	19	10	22	30	210

Table #B: New capacity under development, proposed or converted.

	Level of Care					
Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
CCWF						0
CIW			20		45	65
VSPW						0
1)	70					70
Total:	70	0	20	0	45	135
Department of Mental Health Hospital Capacity:						
PSH						
Total:	0	0	0	0	0	0
Grand Total: (DMH Hospital + CDCR)	70	0	20	0	45	135

Table #C: Capacity to be returned to alternate use when need is eliminated by adding capacity.

	Level of Care					
Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
CCWF						0
CIW			-10			-10
VSPW						0
Total:	0	0	-10	0	0	-10
Department of Mental Health Hospital Capacity:						
PSH					-30	-30
Total:	0	0	0	0	-30	-30
Grand Total: (DMH Hospital + CDCR)	0	0	-10	0	-30	-40

Table #D: Net capacity.

	Level of Care					
Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
CCWF	54	0	0	12	0	66
CIW	75	10	20	10	45	160
VSPW	0	9	0	0	0	9
	70	0	0	0	0	70
Total:	199	19	20	22	45	305
Department of Mental Health Hospital Capacity:						
PSH					0	0
Total:	0	0	0	0	0	0
Grand Total: (DMH Hospital + CDCR)	199	19	20	22	45	305

Legend
- Current program capacity
- New capacity
- Returned capacity
- Net capacity
- Long term plan
- Long term plan/Court ordered

ASSUMPTIONS:

This plan assumes:

-- Mental health bed need projections to 2013 using Spring 2009 population projections.

-- All proposed projects to meet mental health population projections will have adequate treatment and office space, either temporary or permanent.

-- No currently operating programs will be decommissioned unless;
1) the space is being converted to another required level of mental health care; and
2) there is adequate alternative space to accommodate need.

FOOTNOTES (Women's Program):

1. 70 EOP beds for women will be designated in existing housing at one of the three women's institutions. Specific housing for this purpose is under review.

EXHIBIT C

NOVEMBER 6, 2009 CDCR PRESS RELEASE REGARDING DEWITT

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For Immediate Release
Contact: Gordon Hinkle/ Paul Verke or Peggy Bengs
(916) 445-4950

November 6, 2009

CDCR Finalizes Plan to Convert Former Juvenile Facility

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DeWitt site is one of Several Planned to Satisfy Lawsuits Ordering Increases in Medical/Mental Health Beds

SACRAMENTO - The California Department of Corrections and Rehabilitation (CDCR), working collaboratively with the federal receiver's office, announced that it plans to convert the former DeWitt Nelson Youth Correctional Facility (DeWitt) in Stockton to satisfy court mandates to provide medical and mental health facility for adult males. The decision was made after CDCR and the receiver's office met with Stockton leaders last week to seek their input on the plan.

"Our department will continue to keep an open dialogue with community leaders and elected officials in Stockton as this important project to address inmate medical and mental health needs and reduce overcrowding in our prisons moves forward," said CDCR Secretary Matt Cate.

The conversion of DeWitt is part of the state's overall efforts to increase bed capacity for medical services as required under the court order in the *Coleman v Schwarzenegger* lawsuit. The detailed plan will be included in a comprehensive statewide plan to be filed by CDCR on November 6, as required by the court. This project is one of several being planned for construction statewide to provide additional capacity for the state's prison population.

The DeWitt facility will be converted into a 1,133-bed complex for housing Level II adult males with medical and mental health needs. Level II inmates are considered inmates requiring low-to-medium security custody. DeWitt, which opened in 1971, is located on 40 acres near Stockton and housed as many as 638 youth offenders, closed in July 2008 due to downward trend in the juvenile offender population. Working with the Receiver and a Special Master in the Coleman court, the department determined that DeWitt could be renovated and expanded to meet the mental health beds mandated by the Court and the required medical beds identified by the Receiver.

DeWitt, a 138,000 gross square feet facility, includes four dormitory housing units, a kitchen/dining facility, a warehouse, a central plant, a laundry, medical services, a chapel program services buildings and administrative support buildings. The proposed scope of the plan would renovate any structures necessary to house the new population as well as construct additional secure housing for inmates requiring mental health services. The project also includes strengthening security measures.

CDCR is required to submit an Environmental Impact Report (EIR), which will afford the public and stakeholders an opportunity to review and comment on the specific elements of the planned projects. CDCR anticipates hosting a number of community forums to allow interested community members to

Additional Related Information:

- Coleman Filing (PDF)
- CDCR Files Comprehensive Statewide Plan for Medical and Mental Health Beds in Response to Coleman Lawsuit
- Prison Plans for Chino Include Converting Former Juvenile Facility to House Adult Males

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- Juvenile Justice News
- Reentry News
- Fire Camp News
- Going Green Technology News

services to accommodate up to 1,754 inmates. This facility alone will provide more than 9,000 construction jobs, up to 3,000 staff jobs and have an economic impact of over $1 billion annually.

CDCR also is in the process of converting the former Northern California Women's Facility to a proposed 500-inmate Northern California Reentry Facility in Stockton. This planned facility, which is in the early stages of the environmental review process, is expected to provide intense rehabilitative services for soon-to-be released inmates from San Joaquin, Calaveras and Amador counties. Those three counties, which supported the project along with the state Legislature in 2007, will receive a combined $128 million to expand their local jail capacity.

CDCR is required to provide new beds and treatment space for over 1,400 inmates requiring mental health services enrolled in CDCR's Enhanced Outpatient Program pursuant to an order of the Coleman Court. The federal Receiver requires that CDCR also provide new beds and treatment space for over 1,400 inmates requiring medical services in an outpatient setting.

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EXHIBIT D

INTEGRATED STRATEGY PLAN PROPOSED PROJECTS

CALIFORNIA DEPARTMENT of CORRECTIONS AND REHABILITATION

FACT SHEET

www.CDCR.ca.gov

California Department of Corrections and Rehabilitation (CDCR)
AB 900 Integrated Strategy Plan

Integrated Strategy Plan
Proposed Projects

This list reflects all current proposed projects included in the Integrated Strategy Plan. There are 12 counties with proposed projects included the plan. Cities are indicated after each county, where projects have been identified.

Sacramento County / Folsom
Solano County / Fairfield, Vacaville
Marin County / San Quentin
San Joaquin County / Stockton
Madera County*****
Monterey County / Soledad
Kings County / Corcoran
Kern County / Wasco, Delano
San Luis Obispo County / Paso Robles
Los Angeles County / Lancaster
San Bernardino County / Chino, Apple Valley
San Diego County*****

Proposed Projects:

Sacramento County / Folsom

- California State Prison, Sacramento, Enhanced Outpatient Program (EOP) Treatment and Office Space
- Psychiatric Services Unit (PSU) Treatment and Office Space

Solano County / Fairfield, Vacaville

- California Medical Facility, Vacaville – 64 ICF beds, EOP Treatment and Office space
- 500 bed reentry facility in Fairfield*****

Marin County

- San Quentin State Prison – 50 beds, Building 22 Medical / Mental Health (near completion); 24 Bed Medical / Mental Health with CIC/CTC project (in process)

San Joaquin County / Stockton

- Northern California Consolidated Care Facility (NCCCF) – 1,734 bed medical and mental health facility in Stockton costing $1 billion
- 500 bed reentry facility (NCRF) in Stockton*****
- DeWitt Conversion – 1,133 level II beds (includes 425 mental health treatment beds)

Madera County
- 500 bed reentry facility*****

Monterey County / Soledad
- EOP Treatment and Office Space

Kings County / Corcoran
- EOP Treatment and Office Space

Kern County / Wasco, Delano
- Wasco State Prison 180 design – 1896 level IV beds to be occupied 2012/2013*****
- 24 licensed medical and mental health beds to be occupied by 2012/2013
- Kern Valley State Prison Infill – 930 level IV beds to be occupied by 2012/2013*****
    - Total population will be 6900
    - Adding about 490 staff to bring to 2100
- 500 bed reentry facility in Delano*****

San Luis Obispo County / Paso Robles
- Estrella Correctional Facility Conversion – 899 level II plus 100 level I beds (includes 190 beds for mental health treatment)
- California Men's Colony MHCB – 50 bed mental health facility. Projected occupancy in 2010/2011
- 500 bed reentry facility in Paso Robles*****
- CALFIRE / CDCR Conservation Camp in Paso Robles – 130 beds*****

Los Angeles County / Lancaster
- EOP Treatment and Office Space to be completed by 2012/2013

San Bernardino County / Chino, Apple Valley
- Heman G. Stark Conversion – 1,802 level III adult beds (includes 855 mental health treatment beds)
- Reception Center Facility South – 943 reception beds*****
- CIW – 20 PSU beds and 45 bed acute ICF
- 500 bed reentry facility in Apple Valley*****

San Diego County
- 500 bed reentry facility*****

****Indicates projects not included in the Coleman filing but part of Integrated Strategy Plan for AB 900 projects.***

# # # #

EXHIBIT E

RECOMMENDATIONS FOR COCCIDIOIDOMYCOSIS MITIGATION IN PRISONS IN THE HYPERENDEMIC AREAS OF CALIFORNIA

Recommendations for Coccidioidomycosis Mitigation in Prisons in the Hyperendemic Areas of California

Submitted by

Dwight Winslow, MD
Statewide Medical Director

Contributing Authors

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Health Program Specialist I

June 2007

Contributing Experts

We would like to express our sincere appreciation to the following contributors for providing their scientific evidence and professional opinion that has helped form the basis for our recommendations about how to mitigate the impact of Coccidioidomycosis in California Correctional Institutions.

California Department of Health Services

Division of Communicable Disease Control

Mark Starr, DVM, NPCM
Chief, Infection Control Branch

Local County Health Officers

in the Coccidioidomycosis Hyperendemic Area

B. A. Jinadu, MD, Kern County

Michael MacLean, MD, Kings County

Ed Moreno, MD, Fresno County

Robert Levin, MD, Ventura County

Karen Haught, MD, Tulare County

Karen Furst MD, San Joaquin County

Greg Thomas, MD, San Luis Obispo County

Coccidioidomycosis Academic Experts

Demosthenes Pappagianis, MD, PhD
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Recommendations for Coccidioidomycosis Mitigation in Prisons in the Hyperendemic Areas of California

Executive Summary

This report builds on the information previously provided to the Receiver in the May 21, 2007 memorandum entitled *Prevention and Treatment of Coccidioidomycosis at Pleasant Valley State Prison – Background and Status Report*. This report summarizes the findings from the May 24th 2007 *Valley Fever Symposium* held in Bakersfield by the Kern County Health Department and includes additional recommendations for interventions that will help mitigate risk to patients. At the Symposium, representatives from the CDHS and seven County Health Officers[1] from within the hyperendemic area reported a significant increase in the rate of Cocci in their respective counties over the past several years.

On May 3, 2007, Assembly Bill 900 was chaptered. It authorized the California Department of Corrections and Rehabilitation (CDCR) to design, construct, or renovate prison housing units, prison support buildings, and programming space in order to add 7, 484 beds.[2] Four of the ten prisons identified for expanded construction are in the Coccidioidomycosis (CM) hyperendemic area and include Pleasant Valley State Prison in Fresno County and Kern Valley State Prison, Wasco State Prison, and North Kern State Prison in Kings County. The Administration at CDCR has made reducing prison overcrowding a priority and is already planning an aggressive effort to implement the requirements of this statute.

In consultation with the California Department of Health Services (CDHS), the Division of Correctional Health Care Services has implemented several actions designed to reduce inmate and staff exposure to CM and mitigate its harmful effects. The statutory decision to construct additional prison beds the hyperendemic area creates some urgency in evaluating the current effort and making additional recommendations.

<u>Consensus Recommendations from CDHS, Local County Health Officers, Academic Coccidioidomycosis Experts, and CDCR Medical Care and Public Health Consultants</u>

After this important meeting, extensive discussion ensued to develop recommendations and a plan of action to reduce exposure to at risk inmates and staff and improve outcomes for those who develop Coccidioidomycosis while in the correctional setting.

<u>Key Recommendations from the Local County Health Officers</u>

At the end of the Symposium, the Health Officers made the following recommendations to health professionals within the CDCR:

1. Proceed with environmental mitigation in the prisons through landscaping with ground cover, and placing concrete and other dust reducing materials on the grounds;
2. Continue the diversion and relocation of inmates at high risk for CM:
3. Reinstate the public health system in prisons;
4. Notify the local Health Departments of new cases identified by prison providers;
5. Expand epidemiologic research around CM;
6. Support vaccine research; and
7. Do not expand prison beds in the hyperendemic area, especially at PVSP.

---

[1] The seven Health Officers were: B. A. Jinadu, MD – Kern County, Michael MacLean, MD – Kings County, Ed Moreno, MD – Fresno County, Robert Levin, MD – Ventura County, Karen Haught, MD – Tulare County, Karen Furst, MD – San Joaquin County, and Greg Thomas, MD – San Luis Obispo County

[2] The bill also permits CDCR to acquire land, design construct, and renovate reentry program facilities and to construct and establish new buildings at facilities under the jurisdiction of the department to provide medical, dental, and mental health treatment housing for 6,000, as specified.

Key Recommendations from the CDCR Medical Care and Public Health Consultants

Immediate

1. Implement environmental mitigation techniques at PVSP based upon the best available data; both indoors and outdoors.
2. Consider providing the same outdoor mitigation to Avenal, Corcoran and SATF after determining if the incidence of CM in these prisons warrants this effort.
3. Defer any new construction that will lead to additional prisoners being housed in the hyperendemic area.
   a. Provide indoor recreation area for inmates to use during high wind/dust events;
   b. Any retrofitting must be done using dust mitigating construction methods.
4. Continue to exclude all of the following inmates from being housed in a facility that is in the hyperendemic area[3] including: HIV infected with a T-cell count less than 250, history of lymphoma; status post solid organ transplant; chronic immuno therapy (e.g. severe rheumatoid arthritis); chronic lung disease requiring oxygen therapy; and cancer inmate-patient on chemotherapy.
5. A request has been sent to Dr. Gil Chavez, Deputy Director of the CDHS Division of Preventive Health to ask Dr. Jean Yuan, from CDHS, to return and perform an analysis of the Coccidioidomycosis cases that have been diagnosed in the first quarter of 2007 to see if any new at-risk groups can be identified.
6. Continue to partner with Local Health Officers, CDHS, and subject matter experts on this issue.

Near Future

1. Expand the exclusion criteria to include all inmates who are HIV infected and have moderate and severe Chronic Obstructive Pulmonary Disease.
2. Perform a re-analysis of all new cases to determine the results of prior mitigation efforts.
3. Implement additional control measures as determined by results of ongoing analysis.
4. Provide additional education to all CDCR employees working and/or living in the hyperendemic area.
5. Support the development of a vaccine effective against CM.
6. Have all CM lab specimens sent to either Kern County PH Laboratory or the UC Davis Coccidioidomycosis Serology Laboratory for analysis; provide clinical information to the lab.
7. Establish a Coccidioidomycosis Working Group, including CDCR public health/communicable disease specialists and representatives from the Division of Communicable Disease Control and the Environmental Health Investigation Branch at CDHS, UCSF (Dr. Rutherford – Vaccine Project), and UC Davis Coccidioidomycosis Serology Laboratory (Dr. Pappagianis), and the Local Health Officers from the hyperendemic area to design, develop, implement and evaluate a comprehensive program to contain and reduce the rate of Cocci in inmates and staff at the CDCR.
8. Collaborate with the CDPH and Cal EPA to establish a measure for dust pollution in the air that can be used to indicate when staying indoors or wearing a mask while outdoors is recommended – similar to the air index used to warn those with vulnerable conditions to stay in on high smog pollution days.
9. Collaborate with Cal OSHA and CDPH in identifying staff issues and their mitigation for the hyperendemic area – include unions in this discussion.

Long term goal

1. Work toward the goal of not housing or employing any non-immune individuals in the hyperendemic area. This may depend upon technology that is not yet readily available, including immunization and/or reliable methodologies to determine who has previously been infected.
2. As part of future planning for centralized dialysis services, all dialysis patients will be located outside of the hyperendemic area. Patients will be moved once it can be done safely.
3. Based on the best scientific evidence, determine a minimum acceptable rate of Coccidioidomycosis (e. g. a rate equal to or less than the local community) for prisons in the hyperendemic area.
4. Evaluate the effort to reduce exposure and disease at PVSP. If no significant improvement is made, consider relocating all inmates from this institution to institutions with rates of Coccidioidomycosis equal to or better than their local community rates.

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[3] As per memorandum of August 3, 2006, "INMATE-PATIENTS AT HIGH RISK OF VALLEY FEVER EXCLUDED FROM SPECIFIC CENTRAL VALLEY INSTITUTIONS".

Attachment 1

Reported Cases of Coccidioidomycosis For Fresno and Kings Counties[1] May 24, 2007

Percent of County Cases Reported by State Prisons

FRESNO COUNTY

REPORTED CASES				
YEAR	Fresno County Total	Coalinga-Civilian Total	PVSP Total	Prison % of County Cases
2002	84	4	47	56%
2003	140	23	107	76%
2004	122	6	70	57%
2005	290	42	100	35%
2006	776	154	520	67%
2007*	171	23	79	46%

* Through March 2007

KINGS COUNTY

REPORTED CASES					
YEAR	Kings County Total	Civilian Total	LNAS	Avenal and Corcoran Totals	Prison % of County Cases
2000	11	5	0	6	55%
2001	32	13	1	18	56%
2002	50	24	3	23	46%
2003	42	19	8	15	36%
2004	84	29	17	38	45%
2005	126	54	-	72	57%
2006	168	34	21	113	67%

[1] Provided as a handout at the May 24, 2007 Valley Fever Symposium by the Kern County Health Department in Bakersfield CA. These numbers may vary from the information provided by the UC Davis Coccidioidomycosis Laboratory as they are collected using two different methodologies.

Attachment 2

Coccidioidomycosis* in Inmates of California Correctional Institutions
2000 to Jan-Apr 2007

Prison Bold = Prison in hyperendemic area	Year Opened	2000-2001 **	Mar 2003 to Feb 2004	2005	2006	Jan through Apr 2007	TOTAL by Prison
Pleasant Valley (Coalinga)	**1994**	-	127+1 ****	150	514	137***	929
Avenal	**1987**	36****	22+ 1 ****	47	91	23	220
Corcoran State Prison	**1988**	14	21	23	12	7	77
Corcoran (SATF)	**1997**	-	-	2	22	7	31
CMC – San Luis Obispo		16	7	3	12	5	43
Vacaville (CMF)		8	1	-	2	-	11
CSP Solano		-	-	4	2	1	7
Mule Creek (Ione)		-	-	-	1	2	3
Chowchilla (Women's)		-	1	-	-	-	1
Ironwood (Blythe)		1	3	1	3	-	8
Chuckawalla Valley (Blythe)		1	1	-	1	1	4
Soledad CTF		-	-	5	4	1	10
Susanville		-	-	-	1	-	1
Centinela (El Centro)		-	-	-	-	1	1
CSP Sacramento/Folsom 2		-	-	-	-	1	1
North Kern SP	**1993**	-	-	1	-	-	1
Wasco	**1991**		1	-	-	-	1
Miscellaneous		10	18	8	-	-	36
Camarillo		-	-	-	1	-	1
Ventura Youth Authority		23*****	5	-	6	-	34
TOTAL		**109**	**209**	**244**	**672**	**186**	**1420**

* Using positive serum test for Coccidioidomycosis as bases for diagnosis
** In some instances, onset of disease may have been earlier in 2000
*** April = 23 cases
**** One case in prison employee
***** Note: The CYA cases in 2000 were in inmates who had been assigned to fight grass fires in McKittrick in the highly endemic area of Kern County.

Note 1: CA Correctional Institute (CCI) and Kern Valley State Prison (KVSP) are the two other prisons in the Hyperendemic area and do not have cases documented in this table.
Note 2: Data in this table may vary from the data in Attachment 1 – they are developed using two different data sources.
Note 3: This Attachment was compiled from Tables developed by D. Pappagianis, M. D., for the May 24 2007 Valley Fever Symposium

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       Presented by Mark Starr, DVM, NPVM, Chief, Surveillance and Statistics Section, Infection Control Branch, Division of Communicable Diseases, CDHS.
    b. Local Snapshots – Public Health Departments
        i. B. A. Jinadu, MD – Kern County,
        ii. Michael MacLean, MD – Kings County,
        iii. Ed Moreno, MD – Fresno County,
        iv. Robert Levin, MD – Ventura County,
        v. Karen Haught, MD – Tulare County,
        vi. Karen Furst, MD – San Joaquin County, and
        vii. Greg Thomas, MD – San Luis Obispo County
    c. History of Valley Fever by Hans Einstein, MD, MPH, Kern Medical Center
    d. The Burden of Valley Fever on Individuals by Royce Johnson, MD, Kern Medical Center.
    e. Valley Fever Societal Costs by John Caldwell, Pharm. D., Kern Medical Center.
    f. Vaccine Development, Research and Funding by George Rutherford, MD, MPH
    g. Epidemiology and Testing for Valley Fever – Panel
    h. Epidemiology of Valley Fever by Mark Starr, DVM, NPVM
    i. Valley Fever in Correctional Facilities by Demosthenes Pappagianis, MD, PhD UC Davis
    j. Seventy Years of Skin Testing by Thomas Larwood, MD., Kern County

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ATTACHMENT 3

Coccidioidomycosis in California State Correctional Institutions

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KEYWORDS:

coccidioidomycosis, prisoners, prisons

ABSTRACT

Coccidioidomycosis (CM) has been recognized in inmates of California State prisons since 1919. CM has been diagnosed in inmates of various correctional facilities inside and outside the known endemic areas. In recent years construction of new prisons within endemic areas has led to an increase in the number of cases of CM. In the years 2005 and 2006, particularly affected have been the Pleasant Valley State Prison (PVSP) near Coalinga and Avenal State Prison (ASP) near Avenal on the Western side of the San Joaquin Valley. In 2005, our serologic testing yielded 150 new cases from PVSP, 30 from ASP. The incidence rate in 2005 for PVSP (population approx. 5,000) would be at lest 3,000 per 100,000, greater in 2006. Some cases recognized in 2006 likely began in 2005). Some cases are medically managed on site but very ill inmates have had care in non-prison facilities. Estimates of the cost per patient have varied from $8,000 in the 1990's to $30,000 more recently. Thus, there are important medical, demographic and financial implications to the State.

INTRODUCTION

For many years, coccidioidomycosis (CM) has been encountered in inmates of prisons in the endemic areas of the Southwestern United States. In recent years, new prisons have been constructed in coccidioidal endemic areas of California and this has resulted in an expanded problem with this disease among inmates and employees; a problem which has attracted our attention.

CM apparently was first recognized in an inmate of Folsom Prison in California in 1919.[1] This prison, near Sacramento was not in the area(s) to which this disease is endemic exemplifying how cases of the disease may be encountered outside the endemic zones. This also is exemplified by a prisoner in Boise, Idaho whom we have followed serologically for some years after his acquisition of CM in California.

Other instances of CM in incarcerated persons occurred during World War II among Japanese-Americans forced into a camp near Casa Grande, Arizona, and among German prisoners of war in Florence, Arizona.[2] Among German prisoners of war some complained of mistreatment as a result of lethal and other coccidioidal infections, under the Geneva Convention Rules and this led to discontinuation of the use of the Florence, AZ facility for foreign prisoners; but it has continued to house civilian prisoners. In the 1950's and later, CM was described among young men prisoners who were sent to fight fires in endemic areas of Los Angeles County and elsewhere.[3,4]

For many years, our UC Davis Coccidioidomycosis Serology Laboratory has received serum specimens from incarcerated individuals who have or are suspected of having coccidioidomycosis. For example, sera had been submitted by Dr. D. Smilovitz and others from infected inmates in the California Men's Colony in San Luis Obispo County. In the year 2000, our attention was called to an outbreak of CM among inmates of the California Youth Authority, Paso Robles, who had been assigned to fight grass fires in McKittrick in the highly endemic area of Kern County. This led us into compilation of cases from other State Prisons.[5,6] The occurrence of CM in inmates has important implications—to the State and its citizens: medical, demographic, and financial.

MATERIALS AND METHODS

The cases of coccidioidomycosis were detected by positive serologic tests on serum or other body fluids. Testing was carried out at our UC Davis Coccidioidomycosis Serology Laboratory. Initial testing was carried out by immuno-diffusion of specimens after being concentrated approximately eight-fold by evaporation under reduced pressure.[7,8] Patients were identified by name, date of birth and inmate (California Department of Corrections) identification number. In many instances, for logistical reasons, specimens from several inmates were drawn on the same date rather than in relationship to clinical indications. As a result of this, it was not possible to know the date of onset of illness thus usually precluding recording cases by month. Moreover, on some occasions it was evident that sera from some inmates came by way of some intermediate laboratory obscuring the provenance of the specimen. In Figure 1 we have presented a map of California indicating the location of prisons (name underlined) with respect to recognized areas to which CM is endemic. The more detailed map in Figure 2 indicates the relative positions of three prisons significantly represented among the cases we have tabulated: Coalinga (Pleasant Valley State Prison), Avenal, and Corcoran.

RESULTS

Simply expressed are the numbers of cases recognized serologically: Tables 1, 2, 3 and 4. Note that the data of Table 1 were obtained before Pleasant Valley State Prison (PVSP) was completed. Following its inclusion, PVSP became the largest contributor of cases Figure 3 illustrates the influence of "new construction" (including excavation) for a mental health hospital near (perhaps 200 yards from) PVSP. Construction began in late Summer to early Fall and soon the number of case increased. (As noted in Materials and Methods) some cases recorded for a given month were based on the date of the positive serum, but might have been drawn in an adjacent month. It was evident that PVSP had a higher rate of infections than other institutions some of which had comparable numbers of inmates. By mid-August 2006, PVSP had 300 new cases recognized, far exceeding those recognized (51) of Avenal, the next highest represented. We calculated incidence of 3,000/100,000 for PVSP in 2005; and in 2006 up to mid-August the rate was 6,000/100,000. For comparison, the highest incidence rate of CM was 572/100,000 for Kern County during the epidemic year 1993. By mid-August, the total reported cases of CM in California were approximately 1,300. Thus, the total cases 388, of state prisons (Table 4) represented approximately 30% of the cases reported to the California State Department of

Health Services. In 2005, the state prison cases (244) represented 15% of the total reported case(s) (approximately 1,600) in California.

Based on studies in Kern County during the epidemic years of the 1990's, the cost of care per patient was $8,000.[9] The 388 patients detected in State Prisons, based on the figure of Caldwell et al would have cost $3,104,000.00. Others have calculated that the cost per hospitalized patient (in 1998-2001) was approximately $34,000.[10] Inasmuch as approximately 5 per cent of patients with clinical evidence of coccidioidomycosis undergo metapulmonary dissemination of their disease, of the 388 patients at least 20 would have required hospitalization at a cost of $780,000. Therefore, the fiscal impact to the State is substantial.

DISCUSSION

Incarcerated individuals and employees of correctional institutions in endemic areas may acquire coccidioidomycosis. Because incarcerated individuals have centralized medical care, some compilation of cases is possible. Enumeration of cases among employees is more difficult because they do not have a unified source for medical care.

Coccidioidal infections can be acquired by inmates within the institutions to which they have been confined, or, as illustrated above, by inmates who have been confined in institutions outside the endemic areas but have been assigned to fight fires in endemic areas.

Occasionally prisoners are transferred from one California State Prison to another. In some instances, an individual already afflicted with coccidioidomycosis may baffle an unsuspecting medical staff owing to the mimicry of coccidioidomycosis for other diseases or because the medical staff does not appreciate that the patient/inmate had previously been in the endemic area. One striking example of this is a male prisoner in an institution in a non-endemic Idaho as cited above who acquired his coccidioidal infection in California.

Drastic consequences followed in a former prisoner who acquired his coccidioidal disease in prison in Arizona but who then moved to Alabama where he became moribund cerebrovascular episode deemed to be lethal. His physicians in Alabama were not initially aware of his prior coccidioidomycosis, and donated his kidneys and liver to awaiting recipients. At 19 and 17 days after transplantation respectively the recipient of one kidney and the recipient of the liver died with fulminant coccidioidomycosis.[11] Owing to the varying severity of coccidioidomycosis, the intensity and strategy in the treatment of inmate/prisoners can pose a challenge to prison physicians and their often-limited resources. As a result there are occasions when the inmate/patient's illness requires more complex management modalities that are available at "outside", non-prison referral hospitals. An example, treatment of spinal coccidioidomycosis, provided valuable information ~~of~~ on management of severe coccidioidomycosis.[12]

An additional problem pertains to patient/inmates who acquire coccidioidomycosis and are subsequently discharged after they have completed their sentence. Uncertainty about their clinical status and about how and where to seek medical attention may result in or be followed by recrudescence of coccidioidal disease. At least one such individual died following his belated ~~lower~~ case channeling into a medical care center.

One aspect of coccidioidomycosis that could be defined is the influence of certain intercurrent diseases present among inmates (e.g. hepatitis C) on the course of coccidioidomycosis. Additional valuable information may also accrue from the medical and surgical attention provide to inmates as mentioned above relative to spinal surgery.[12]

Some cases of CM can be anthropogenic, as in the construction of a mental health facility adjacent to Pleasant Valley State Prison, or can result form the expected seasonal/climatic associations which influence the rise and fall of incidence. However, the incarceration of individuals from non-endemic areas, in Federal [13] as well as State prisons within the endemic areas will continue to provide a stream of challenging and costly cases of coccidioidomycosis.

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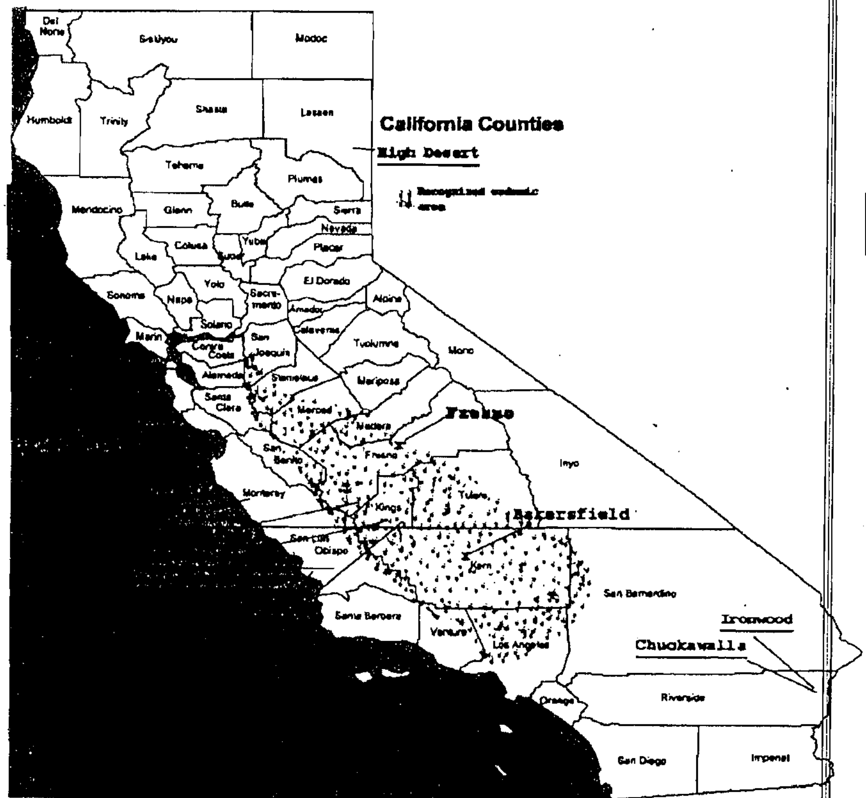
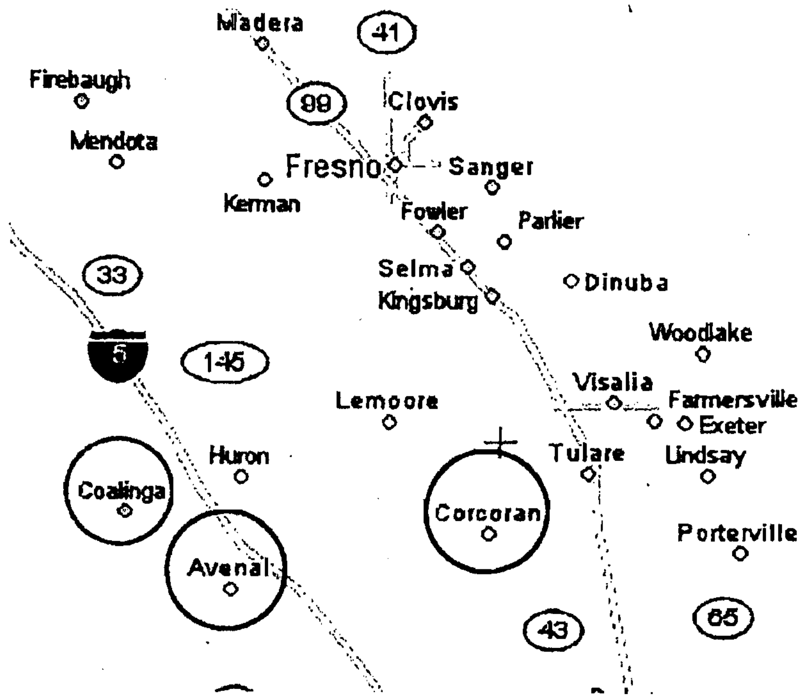
ACKNOWLEDGEMENTS

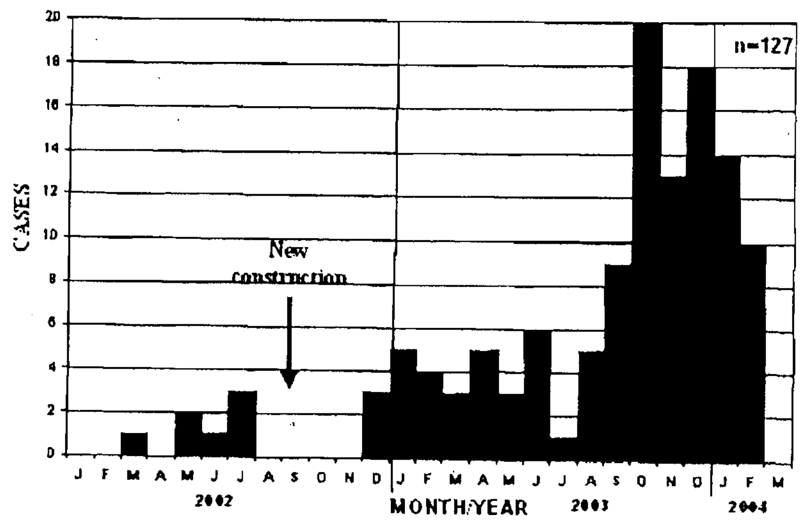
I am very grateful to Dr. Suzanne Johnson for support in the preparation of this report, and to the following members of the UCD Coccidioidomycosis Serology Laboratory for the performance of serologic tests: L. Fortis, D. Griffin, C. MacVean, M. Tamashiro, W. Tsang, and C. Miller.



Map of California and recognized endemic area with prison locations (names underlined).



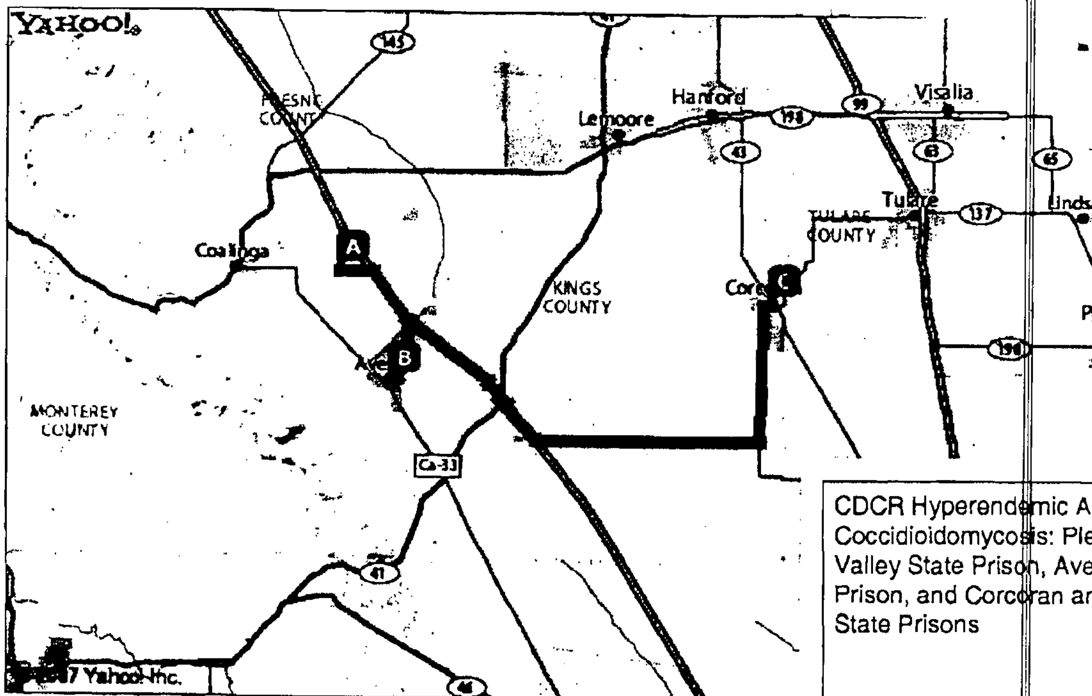
Three State prisons in the western San Joaquin Valley.



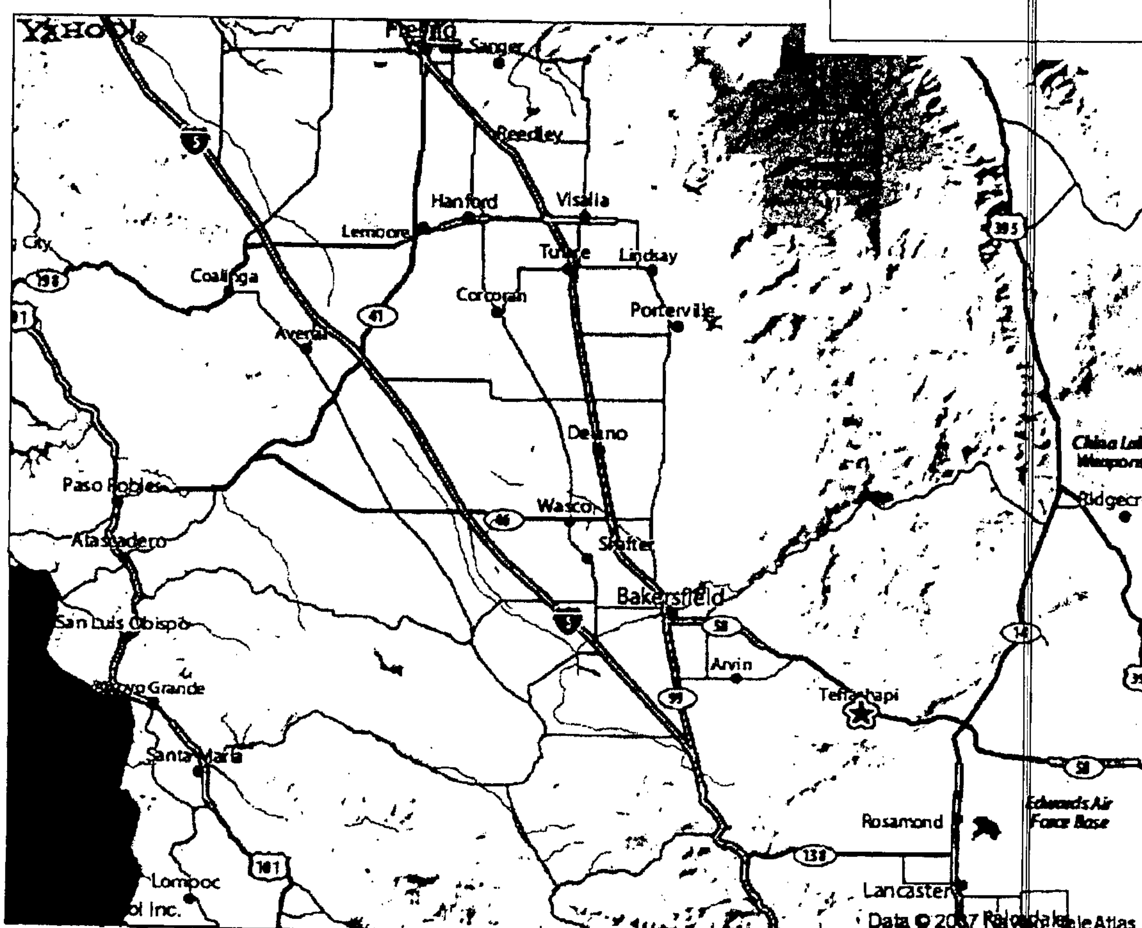
Cases of CM at Pleasant Valley State Prison between January 2002 and March 2004. Approximate time of construction of a mental health hospital near the prison is designated with an arrow.

Attachment 4

CA DEPARTMENT OF CORRECTIONS AND REHAILITATION HYPERENDEMIC AREA FOR COCCIDIOIDOMYCOSIS



CDCR Hyperendemic Area for Coccidioidomycosis: Pleasant Valley State Prison, Avenal State Prison, and Corcoran and SATF State Prisons

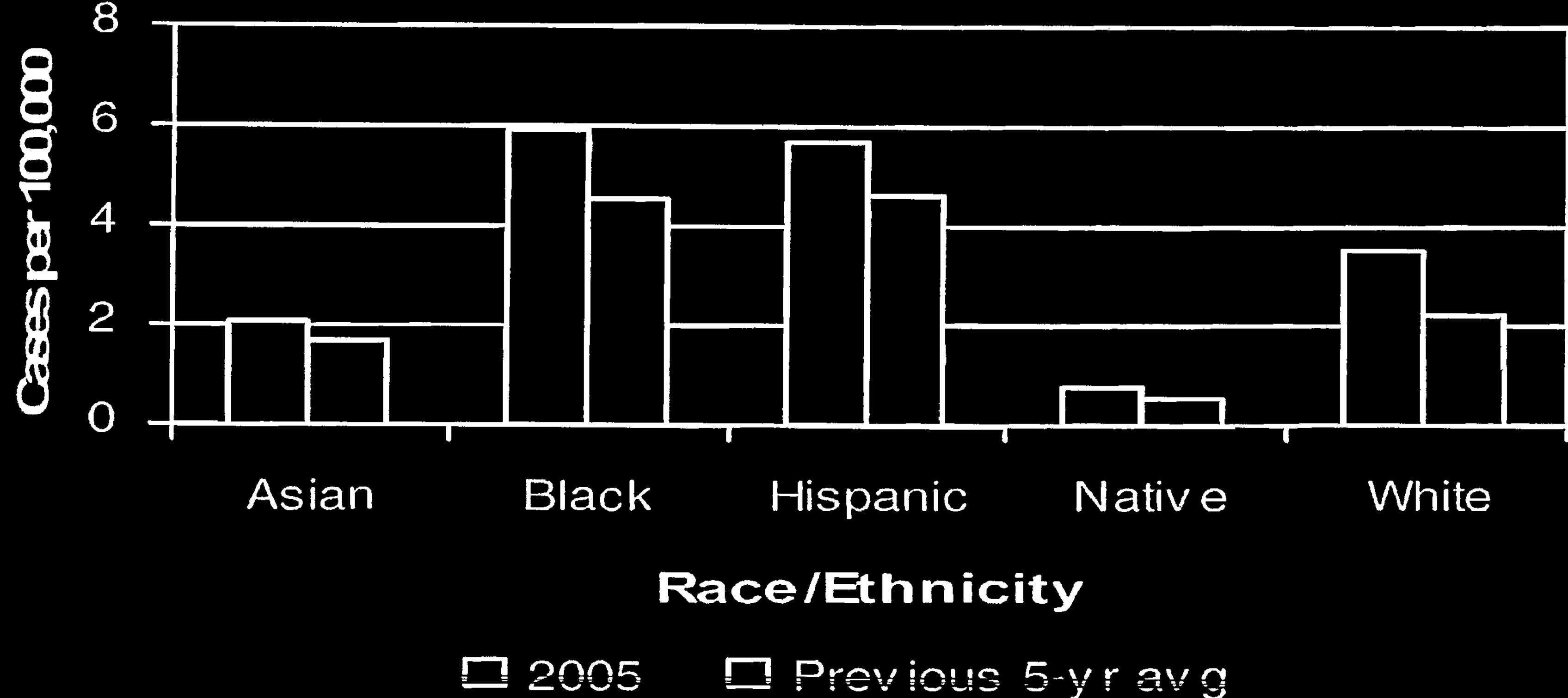


Risk Factors for Coccidioidomycosis

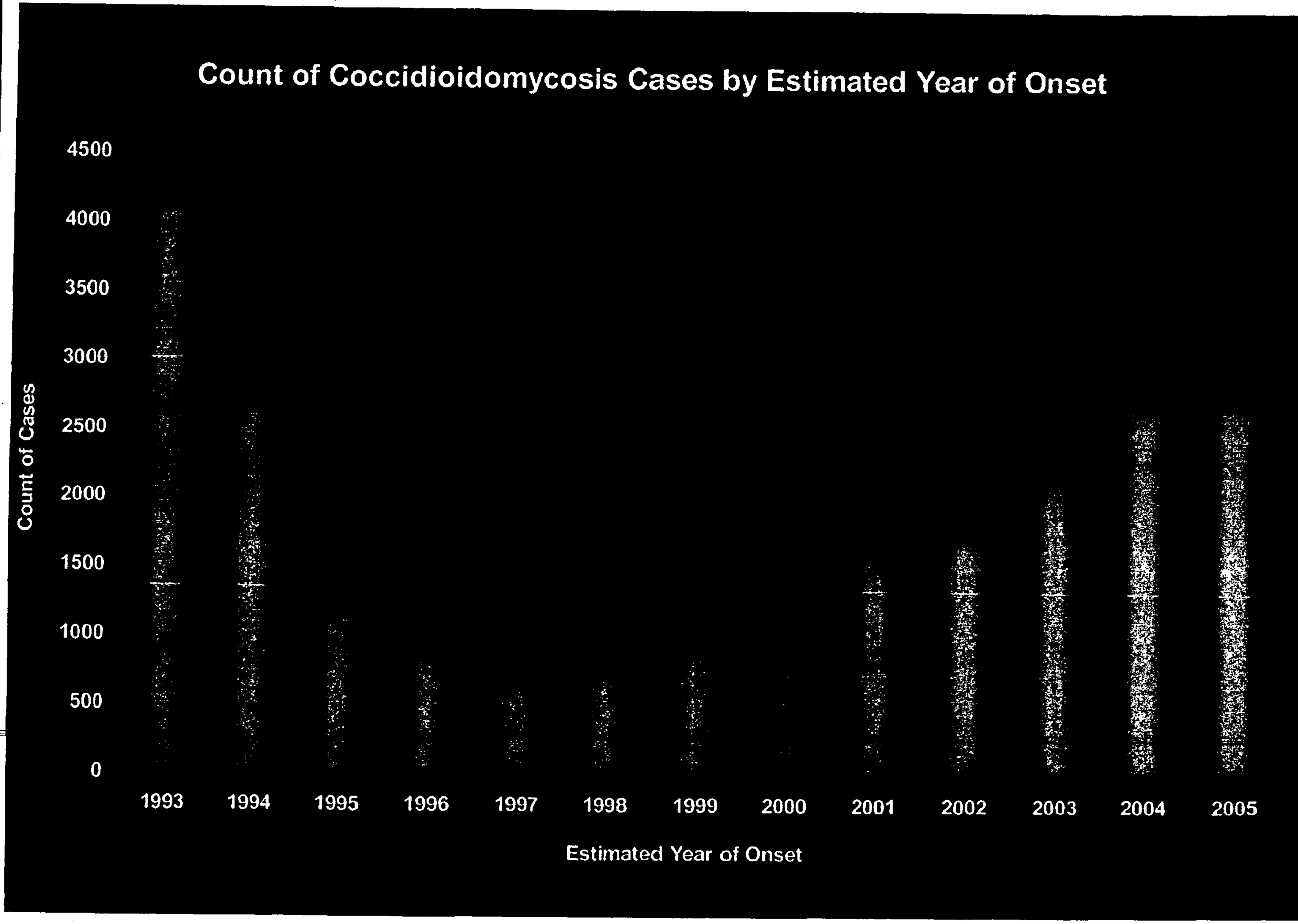
- Region
- Weather
- Soil disturbance
- Lack of prior exposure

- For disseminated disease:
  - Immunosuppression and/or some chronic diseases
  - Male gender (and females in late pregnancy)
  - Race (e.g., Black, Filipino)

COCCIDIOIDOMYCOSIS
Rates by Race/Ethnicity, California, 2005 and Previous 5-year Average

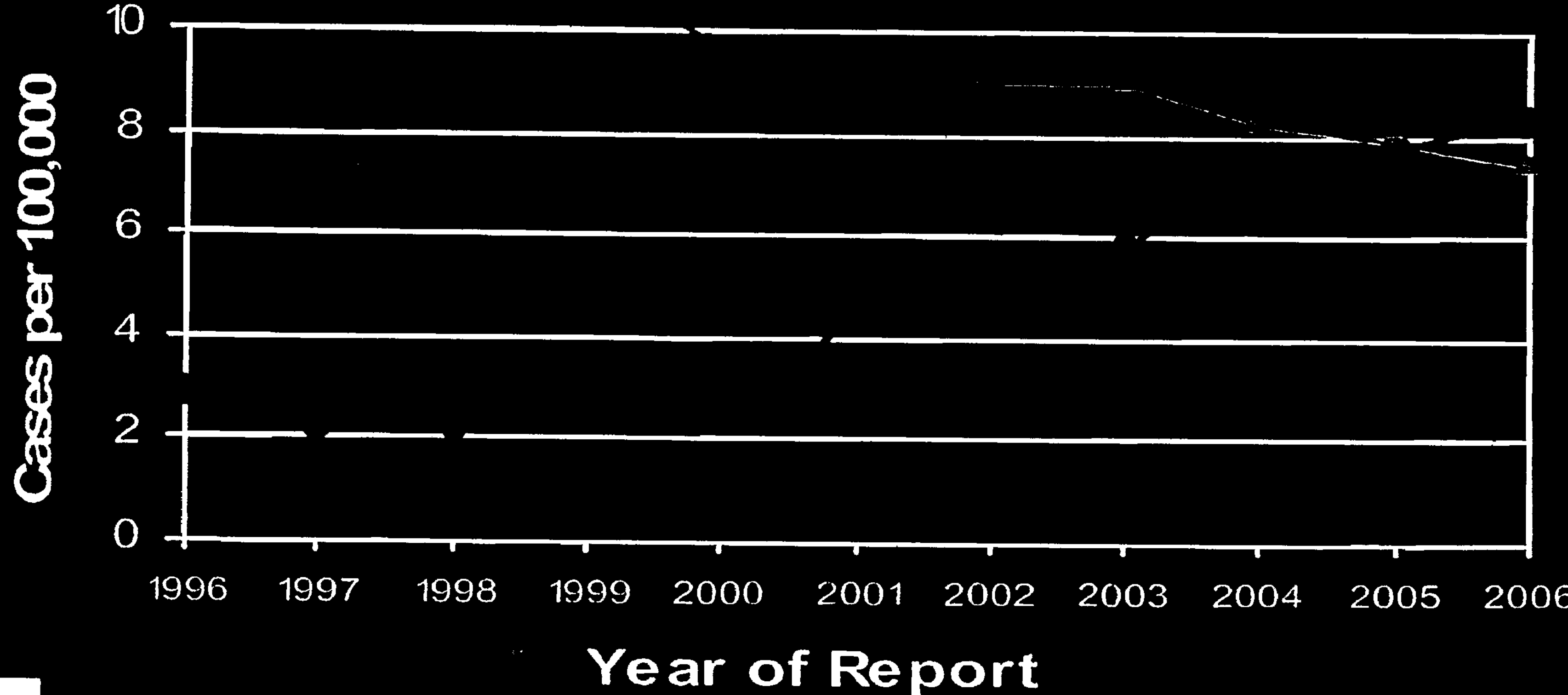


45.9% of 2005 and 38.2% of 2000–2004 cases reported without race/ethnic detail do not contribute to this graph.

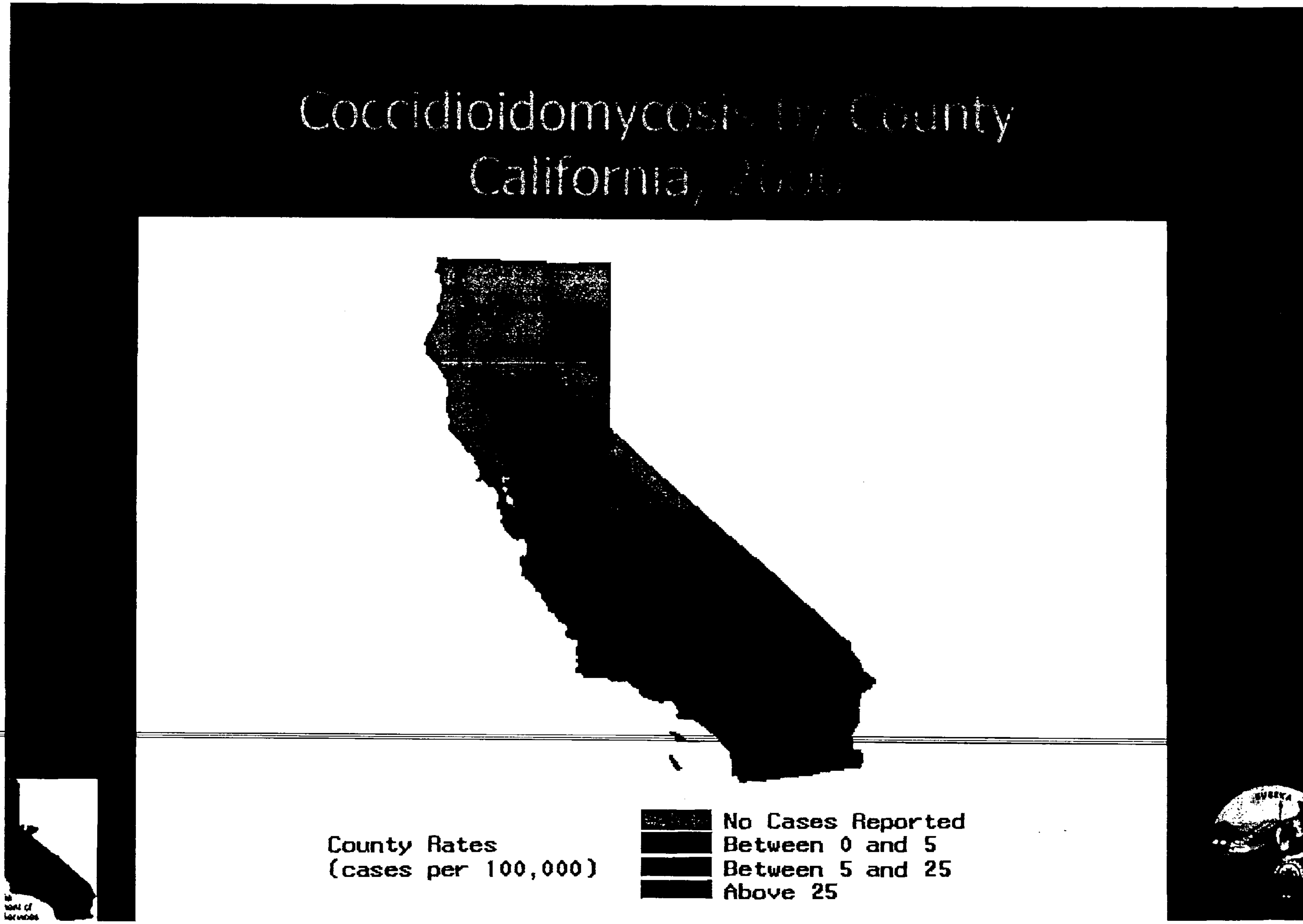

Count of Coccidioidomycosis Cases by Estimated Year of Onset
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Count of Cases
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
Estimated Year of Onset

and

California, 1996 - 2006



Rate by Local Health Jurisdiction ranges from 0 to 223 (Kern County, 2005).


Coccidioidomycosis by County
California, [illegible]
County Rates
(cases per 100,000)
No Cases Reported
Between 0 and 5
Between 5 and 25
Above 25

Roxanne Henriquez, Senior Environmental Planner August 16, 2010
Environmental Planning Section
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Subject: Comments on the third notice of preparation (NOP) for the proposed Northern California Reentry Facility (adding the DeWitt Nelson conversion project to a medical facility)

I am Raul Sanchez and I am a member of the San Joaquin County Mental Health Board.

Attached are my 12-29-09 comments on the second NOP for the proposed Northern California Reentry Facility. The substance of these comments still apply – assess the cumulative impacts of the conversion of the Women's Prison to a Reentry Facility (500 beds), the Dewitt Nelson conversion to a medical facility (1,133 beds), and the Karl Holton conversion to the California Health Care Facility (1,734 beds, California Prison Receiver).

I have failed to find on the Internet the settlement agreement on the California Health Care Facility environmental impact report. Please send a copy of the agreement to Raul Sanchez at raulsanchez3558@yahoo.com.

The following are my additional comments.

A 16,000 square feet single story medical building is proposed for the Reentry Facility. An option is for the Reentry Facility to contract with two adjacent medical facilities for needed inmate medical services.

The settlement agreement on the California Health Care Facility environmental impact report (CHCF EIR) provides for a secure acute care unit at San Joaquin County General Hospital. This secure acute care unit may be an option for inmates at the Reentry Facility.

I read somewhere that the Texas prison system makes extensive use of telemedicine. Consider using the two medical facilities in Stockton as the center for the provision of telemedicine services to the 33 California prisons statewide.

The settlement agreement for the CHCF EIR provides for a local hire outreach plan. Taking a more comprehensive view, what may be needed is to implement a training and educational effort to develop medical, mental health, and criminal justice professional staff. In addition to the three new state prison facilities, the Veterans Administration has announced that it will be constructing a veteran's facility in San Joaquin County. A planning effort could be undertaken with local educational institutions such as Delta College, the University of Pacific, Stanislaus State at Stockton, and Humphreys College (criminal justice and law programs).

The CHCF EIR settlement agreement provides for the California Department of Corrections and Rehabilitation (CDCR) to enter into a deferred annexation agreement which provides that the City of Stockton may apply to the San Joaquin County Local Agency Formation Commission for annexation. This brings to mind the settlement agreement on green house gas issues between the City of Stockton, the California Attorney General, and the Sierra Club. Are there any legal duties or ethical considerations placed on CDCR in assisting the City of Stockton in meeting the provisions of the agreement with the California Attorney General with respect to the three prison projects? The green house gas settlement agreement calls for the reduction of vehicle miles of travel by single occupant vehicles, the provision of additional transit services, and the efficient use of energy resources (carpools and vanpools). The three state prison projects total 3,367 beds and will need approximately 3,200 employees. The new trip demands of these employees and inmate visitors will increase green house gas emissions that need to be mitigated. Attached is a copy of the green house gas settlement agreement.

As to the existing solid waste facilities, the Forward Landfill immediately south of the Reentry Facility issued an EIR on its proposed expansion with comments due March 16, 2010.

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December 29, 2009

Subject: Comments on revised notice of preparation for the proposed Northern California Reentry Facility, 7150 Arch Road, San Joaquin County, California

I am Raul Sanchez and I am a member of the San Joaquin County Mental Health Board.

Attached are my 10-17-08 comments on the California Health Care Facility, Stockton.

In summary:

- The Northern California Reentry Facility (500 beds) is proposed for the site of the former Northern California Women's Facility (closed)
- The California Health Care Facility at Stockton (1,734 beds) is proposed for the site of the former Karl Holten Youth Correctional Facility (closed)
- In October 2009 the California Department of Corrections and Rehabilitation (CDCR) announced a proposed facility for inmate mental and medical health care (1,133 beds) for the site of the former Dewitt Nelson Youth Correctional Facility (closed).

My comments of 10-17-08 stated:
"For the CEQA review process for the health care facility, the cumulative impacts of the health care facility and the re-entry facility need to be considered. Actually, the cumulative impacts should be in the environmental documents for both facilities."

Now, a third facility is proposed for a third site that is contiguous to the site for the Health Care Facility at Stockton which is contiguous to the site for the Reentry Facility. The lead agency (CDCR) is the same for all three projects. I suggest that one environmental document be prepared covering the three projects. The cumulative impacts could then be effectively addressed of a three part multi-phased project. Some of the details of the facility proposed for the former Dewitt Nelson site may not be firmly established, but enough is known (proposal is for 1,133 beds) to make reasonable estimates based on ratios (1133/1734) or on using per-bed factors and multiplying these factors by 1,133 beds.

An environmental document is intended to be a full disclosure document. By including the three projects in one document a more complete picture of the events leading to the present situation could be documented. The events leading to the appointment of a federal receiver would be documented. The State legislation authorizing the reentry facility including funding for a new San Joaquin County Jail would be documented. The selection process for the two medical facilities including the sites evaluated, the selection criteria, the analysis of the pros and cons of the candidate sites, and a timeline for this process would be documented.

In this one environmental document for a three part multi-phased project, a summary of the events leading to the closing of the Women's Facility, Karl Holten, and Dewitt Nelson could be provided. The following questions could be addressed: Where did those inmates go? Are any of those inmates in San Joaquin County facilities? Since the closing of those three state facilities, how many new inmates that would have gone to the state facilities are now in San Joaquin County facilities?

At the December 2009 public hearing for the Reentry Facility, I commented that a summary listing by job category and number of jobs be provided for the three projects. This information would help to assess the issue of the hiring away of local agency staff by the State facilities. About half of the patients at the health care facility are estimated to be mental health patients (see my comments 10-17-08). Staff of San Joaquin County Behavioral Health Services expressed their concern on retaining their staff in view of the higher salaries available from CDCR. J. Clark Kelso, the federal court appointed receiver, pointed out in his interview with Stockton Record staff (latter part of 2009) that he and CDCR are ready to work with the local health care community on the possible hiring away of local employees. San Joaquin County Behavioral Health Services is currently having difficulty hiring and retaining professional staff. Due to budget restrictions, the County has not filled 70 positions (new vacancies continue not to be filled). There are options here that need to be explored.

In 2009, San Joaquin County Supervisor Larry Ruhstaller suggested that the California Department of Corrections and Rehabilitation (CDCR) could contract with San Joaquin County General Hospital for inmate hospital services. J. Clark Kelso, the federal court appointed receiver, pointed out in his interview with Stockton Record staff that the prison medical facilities are not hospitals and that CDCR would look to local hospitals for hospital services. And the State would pay. This seems to be a win-win since the General Hospital is currently facing financial difficulties. However, no mention is made of the need for this type of public service in the initial study for the Reentry Facility. The three State facilities total 3,367 inmate beds. An estimate should be made of the impact on local hospitals.

On Page 4 under Project Background "On March 12, 2009, the Superior Court of San Joaquin County found that the environmental analysis was not adequate and ordered CDCR to set aside its approval of the MND (mitigated negative declaration) and the project." In May 2009, CDCR rescinded its approved documents for the Reentry Facility and it decided to reanalyze the potential environmental consequences of the proposed project in an environmental impact report. It would be helpful to understand the background for the environmental analysis if the Superior Court's reasons for its decision were documented in the Project Background section.

On Page 11 under Initial Study "Although the Initial Study concluded that impacts would either be less than significant or could be reduced to a less-than-significant level CDCR has determined that it is necessary to prepare an environmental impact report for the reentry project." The reasons for this inconsistent conclusion with the findings of the initial study are not stated. Was it because of the Superior Court's decision described in the previous paragraph? Was it because of the potential cumulative impacts of the three State projects at the three contiguous sites?

Page 1 of Initial Study, Environmental Checklist. Should not the initial study and environmental checklist be assessed on the basis of the cumulative impacts of the three State projects at the three contiguous sites?

Page 48 "Based on experience from similar CDCR facilities, CDCR conservatively estimates that approximately 75% of new employment positions at the proposed NCRF would be filled by personnel located outside the local area." For the 350-400 new employees, it would be expected that 88-100 new employees would come from the local area (25%). At the December 2009 public hearing for the Reentry Facility, I commented that a summary listing by job category and number of jobs be provided for the three projects. This more detailed job information for the three facilities would aid in more accurately assessing the jobs impact of the three facilities.

Page 51 "Pixie Woods-Lewis Park, the nearest park to the project site, is located approximately nine miles northwest from the project site on the west side of Interstate 5". Not accurate statement as to the nearest park.

Page 52 "The CDCR is expected to provide on-site services such as counseling, job training, and housing placement services, which would not draw directly from existing services in the surrounding community". San Joaquin County Behavioral Health Services provides counseling, job training and housing placement services to mental health clients and substance abuse clients. It is expected, due to wage differences, the CDCR would likely draw employees away from county employment. Thus, services to mental health clients and substance abuse clients would be directly affected due to a drawdown in qualified county employees.

Under the section on public services, I propose that CDCR assess the cumulative impacts of the three facilities as they relate to the need for bus services. The three facilities will have about 3,400 beds with transportation needs for employees, visitors, and prisoners released from the reentry facility.

Page 58 under “Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?” it is stated “The proposed project would add 381 employees with a maximum of 500 inmates combined with an estimated current population of 1,000 wards at NCYCC (CDCR 2007). Relative to past populations, the difference in wastewater generated by this combined population, following project implementation, would be relatively small.” At a single point in time, what was the largest past combined population at O. H. Close, Karl Holten, N. A. Chaderjian, Dewitt Nelson, and the Women’s Facility? What was the amount of wastewater generated per day for this largest past combined population, associated employees, and visitors? The cumulative impacts of the three proposed projects are not identified. The reentry facility is included (381 employees and 500 inmates), but missing are the impacts of the two health care facilities (1,734 beds plus 1,133 beds plus employees plus visitors). Adding the 1,000 NCYCC wards to the 500 reentry facility inmates equals 1,500 wards/inmates. For the two health care facilities, adding the 1,734 beds to 1,133 beds equals 2,867 beds. The City of Stockton’s Regional Wastewater Control Facility has issued a permit (for the four youth facilities and women’s prison) allowing a maximum wastewater discharge of 800,000 gallons per day. A reassessment needs to be performed of whether or not the cumulative impact of the three proposed facilities (3,367 beds) plus the 1,000 wards at NCYCC would be in compliance with the existing permit.

Page 60 under “Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs?” The analysis presented includes only the 500 bed reentry facility. A cumulative impact analysis would include the combined 3,367 bed facilities (500 plus 1,734 plus 1,133). It is stated that the Forward Landfill in San Joaquin County is expected to reach its capacity in 2020. It is stated that the Forward Landfill has adequate capacity to serve projected waste disposal needs of the community well into the future. But 2020 is only ten years from today.

Page 62 only discuses the possible cumulative impacts on air quality and water quality. No mention is made of the two proposed health care facility projects. I maintain that these two projects fall within the category of other current projects and probable future projects as intended to be included in this statement “Does the project have impacts that are individually limited, but cumulatively considerable? (‘Cumulatively considerable’ means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)” The cumulative impacts I have previously identified include:

- Local hospital care services
- Local services to mental health clients and substance abuse clients due to the hiring away of local agency staff by the State facilities

- Need for bus services
- Wastewater treatment requirements
- Solid waste disposal needs

The Environmental Checklist includes eighteen environmental factors that were evaluated on the basis of the 500 bed reentry facility. These eighteen environmental factors should be reevaluated on the basis of the three proposed State facilities with a total of 3,367 beds. This is probably best accomplished using one environmental document covering the three proposed projects viewed as a multi-phased project. This is reasonable since the lead agency for the three projects is CDCR and the three proposed project sites are contiguous to one another.

Raul R. Sanchez, Member
San Joaquin County Mental Health Board
14 Gold Run Place
Stockton CA 95207
raulsanchez3558@yahoo.com
209-478-7740

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement ("Agreement") is entered into by and between the City of Stockton ("City"), Edmund G. Brown Jr., Attorney General of California, on behalf of the People of the State of California ("Attorney General"), and the Sierra Club, and it is dated and effective as of the date that the last Party signs ("Effective Date"). The City, the Attorney General, and the Sierra Club are referred to as the "Parties."

RECITALS

On December 11, 2007, the City approved the 2035 General Plan, Infrastructure Studies Project, Bicycle Master Plan, Final Environmental Impact Report ("EIR"), and Statement of Overriding Considerations. The General Plan provides direction to the City when making land use and public service decisions. All specific plans, subdivisions, public works projects, and zoning decisions must be consistent with the City's General Plan. As adopted in final form, the General Plan includes Policy HS-4.20, which requires the City to "adopt new policies, in the form of a new ordinance, resolution, or other type of policy document, that will require new development to reduce its greenhouse gas emissions to the extent feasible in a manner consistent with state legislative policy as set forth in Assembly Bill (AB) 32 (Health & Saf. Code, § 38500 et seq.) and with specific mitigation strategies developed by the California Air Resources Board (CARB) pursuant to AB 32[.]" The policy lists the following "potential mitigation strategies," among others, for the City to consider:

(a) Increased density or intensity of land use, as a means of reducing per capita vehicle miles traveled by increasing pedestrian activities, bicycle usage, and public or private transit usage; and

(b) Increased energy conservation through means such as those described in Appendix F of the State Guidelines for the California Environmental Quality Act.

The 2035 General Plan also includes other Policies and goals calling for infill development, increased transit, smart growth, affordable housing, and downtown revitalization.

In December 2006, in accordance with the requirements of the California Environmental Quality Act ("CEQA"), the City prepared and circulated a Draft EIR. Comments were received on the EIR; the City prepared responses to these comments and certified the EIR in December 2007.

On January 10, 2008, the Sierra Club filed a Petition for Writ of Mandate in San Joaquin County Superior Court (Case No. CV 034405, hereinafter "Sierra Club Action"), alleging that the City had violated CEQA in its approval of the 2035 General Plan. In this case, the Sierra Club asked the Court, among other things, to issue a writ directing the City to vacate its approval of the 2035 General Plan and its certification of the EIR, and to award petitioners' attorney's fees and costs.

The Attorney General also raised concerns about the adequacy of the EIR under CEQA, including but not limited to the EIR's failure to incorporate enforceable measures to mitigate the greenhouse gas ("GHG") emission impacts that would result from the General Plan.

The City contends that the General Plan and EIR adequately address the need for local governments to reduce greenhouse gas ("GHG") emissions in accordance with Assembly Bill 32, and associated issues of climate change.

Because the outcome of the Parties' dispute is uncertain, and to allow the Stockton General Plan to go forward while still addressing the concerns of the Attorney General and the Sierra Club, the Parties have agreed to resolve their dispute by agreement, without the need for judicial resolution.

The parties want to ensure that the General Plan and the City's implementing actions address GHG reduction in a meaningful and constructive manner. The parties recognize that development on the urban fringe of the City must be carefully balanced with accompanying infill development to be consistent with the state mandate of reducing GHG emissions, since unbalanced development will cause increased driving and increased motor vehicle GHG emissions. Therefore, the parties want to promote balanced development, including adequate infill development, downtown vitalization, affordable housing, and public transportation. In addition, the parties want to ensure that development on the urban fringe is as revenue-neutral to the City as to infrastructure development and the provision of services as possible.

In light of all the above considerations, the Parties agree as follows, recognizing that any legislative actions contemplated by the Agreement require public input and, in some instances, environmental review prior to City Council actions, which shall reflect such input and environmental information, pursuant to State law:

AGREEMENT

Climate Action Plan

1. Within 24 months of the signing of this Agreement, and in furtherance of General Plan Policy HS-4.20 and other General Plan policies and goals, the City agrees that its staff shall prepare and submit for City Council adoption, a Climate Action Plan, either as a separate element of the General Plan or as a component of an existing General Plan element. The Climate Action Plan, whose adoption will be subject to normal requirements for compliance with CEQA and other controlling state law, shall include, at least, the measures set forth in paragraphs 3 through 8, below.

2. The City shall establish a volunteer Climate Action Plan advisory committee to assist the staff in its preparation and implementation of the Plan and other policies or documents to be adopted pursuant to this Agreement. This committee shall monitor the City's compliance with this Agreement, help identify funding sources to implement this Agreement, review in a timely manner all draft plans and policy statements developed in accordance with this Agreement (including studies prepared pursuant to Paragraph 9, below), and make recommendations to the Planning Commission and City Council regarding its review. The committee shall be comprised of one representative from each of the following interests: (1) environmental, (2) non-profit community organization, (3) labor, (4) business, and (5) developer. The committee members shall be selected by the City Council within 120 days of the Effective Date, and shall serve a one-year term, with no term limits. Vacancies shall be filled in accordance with applicable City policies. The City shall use its best efforts to facilitate the committee's work using available staff resources.

3. The Climate Action Plan shall include the following measures relating to GHG inventories and GHG reduction strategies:

a. Inventories from all public and private sources in the City:

(1) Inventory of current GHG emissions as of the Effective Date;

(2) Estimated inventory of 1990 GHG emissions;

(3) Estimated inventory of 2020 GHG emissions.

The parties recognize that techniques for estimating the 1990 and 2020 inventories are imperfect; the City agrees to use its best efforts, consistent with methodologies developed by ICLEI and the California Air Resources

Board, to produce the most accurate and reliable inventories it can without disproportionate or unreasonable staff commitments or expenditures.

b. Specific targets for reductions of the current and projected 2020 GHG emissions inventory from those sources of emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations. Targets shall be set in accordance with reduction targets in AB 32, other state laws, or applicable local or regional enactments addressing GHG emissions, and with Air Resources Board regulations and strategies adopted to carry out AB 32, if any, including any local or regional targets for GHG reductions adopted pursuant to AB 32 or other state laws. The City may establish goals beyond 2020, consistent with the laws referenced in this paragraph and based on current science.

c. A goal to reduce per capita vehicle miles traveled ("VMT") attributable to activities in Stockton (i.e., not solely due to through trips that neither originate nor end in Stockton) such that the rate of growth of VMT during the General Plan's time frame does not exceed the rate of population growth during that time frame. In addition, the City shall adopt and carry out a method for monitoring VMT growth, and shall report that information to the City Council at least annually. Policies regarding VMT control and monitoring that the City shall consider for adoption in the General Plan are attached to this Agreement in Exhibit A.

d. Specific and general tools and strategies to reduce the current and projected 2020 GHG inventories and to meet the Plan's targets for GHG reductions by 2020, including but not limited to the measures set out in paragraphs 4 through 8, below.

4. The City agrees to take the following actions with respect to a green building program:

a. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption ordinance(s) that require:

(1) All new housing units to obtain Build It Green certification, based on then-current Build It Green standards, or to comply with a green building program that the City after consultation with the Attorney General, determines is of comparable effectiveness;

(2) All new non-residential buildings that exceed 5000 square feet and all new municipal buildings that exceed 5000 square feet to be certified to LEED Silver standards at a minimum, based on the then-current LEED standards, or to comply with a green building program that the City, after consultation with the Attorney General, determines is of comparable effectiveness;

(3) If housing units or non-residential buildings certify to standards other than, but of comparable effectiveness to, Build It Green or LEED Silver, respectively, such housing units or buildings shall demonstrate, using an outside inspector or verifier certified under the California Energy Commission Home Energy Rating System (HERS), or a comparably certified verifier, that they comply with the applicable standards.

(4) The ordinances proposed for adoption pursuant to paragraphs (1) through (3) above may include an appropriate implementation schedule, which, among other things, may provide that LEED Silver requirements (or standards of comparable effectiveness) for non-residential buildings will be implemented first for buildings that exceed 20,000 square feet, and later for non-residential buildings that are less than 20,000 and more than 5,000 square feet.

(5) Nothing in this section shall affect the City's obligation to comply with applicable provisions of state law, including the California Green Building Standards Code (Part 11 of Title 24 of the California Code of Regulations), which, at section 101.7, provides, among other things, that "local government entities retain their discretion to exceed the standards established by [the California Green Building Standards Code]."

b. Within 18 months of the Effective Date, the City staff shall submit for City Council adoption ordinance(s) that will require the reduction of the GHG emissions of existing housing units on any occasion when a permit to make substantial modifications to an existing housing unit is issued by the City.

c. The City shall explore the possibility of creating a local assessment district or other financing mechanism to fund voluntary actions by owners of commercial and residential buildings to undertake energy efficiency measures, install solar rooftop panels, install “cool” (highly reflective) roofs, and take other measures to reduce GHG emissions.

d. The City shall also explore the possibility of requiring GHG-reducing retrofits on existing sources of GHG emissions as potential mitigation measures in CEQA processes.

e. From time to time, but at least every five years, the City shall review its green building requirements for residential, municipal and commercial buildings, and update them to ensure that they achieve performance objectives consistent with those achieved by the top (best-performing) 25% of city green building measures in the state.

5. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption a transit program, based upon a transit gap study. The transit gap study shall include measures to support transit services and operations, including any ordinances or general plan amendments needed to implement the transit program. These measures shall include, but not be limited to, the measures set forth in paragraphs 5.b. through 5.d. In addition, the City shall consider for adoption as part of the transit program the policy and implementation measures regarding the development of Bus Rapid Transit (“BRT”) that are attached to this Agreement in Exhibit B.

a. The transit gap study, which may be coordinated with studies conducted by local and regional transportation agencies, shall analyze, among other things, strategies for increasing transit usage in the City, and shall identify funding sources for BRT and other transit, in order to reduce per capita VMT throughout the City. The study shall be commenced within 120 days of the Effective Date.

b. Any housing or other development projects that are (1) subject to a specific plan or master development plan, as those terms are defined in §§ 16-540 and 16-560 of the Stockton Municipal Code as of the Effective Date (hereafter “SP” or “MDP”), or (2) projects of statewide, regional, or areawide significance, as defined by the CEQA Guidelines (hereafter “projects of significance”), shall be configured, and shall include necessary street design standards, to allow the entire development to be internally accessible by vehicles, transit, bicycles, and pedestrians, and to allow access to adjacent neighborhoods and developments by all such modes of transportation.

c. Any housing or other development projects that are (1) subject to an SP or MDP, or (2) projects of significance, shall provide financial and/or other support for transit use. The imposition of fees shall be sufficient to cover the development's fair share of the transit system and to fairly contribute to the achievement of the overall VMT goals of the Climate Action Plan, in accordance with the transit gap study and the Mitigation Fee Act (Government Code section 66000, *et seq.*), and taking into account the location and type of development. Additional measures to support transit use may include dedication of land for transit corridors, dedication of land for transit stops, or fees to support commute service to distant employment centers the development is expected to serve, such as the East Bay. Nothing in this Agreement precludes the City and a landowner/applicant from entering in an agreement for additional funding for BRT.

d. Any housing or other development projects that are (1) subject to an SP or MDP or (2) projects of significance, must be of sufficient density overall to support the feasible operation of transit, such density to be determined by the City in consultation with San Joaquin Regional Transit District officials.

6. To ensure that the City's development does not undermine the policies that support infill and downtown development, within 12 months of the Effective Date, the City staff shall submit for City Council adoption policies or programs in its General Plan that:

a. Require at least 4400 units of Stockton's new housing growth to be located in Greater Downtown Stockton (defined as land generally bordered by Harding Way, Charter Way (MLK), Pershing Avenue, and Wilson Way), with the goal of approving 3,000 of these units by 2020.

b. Require at least an additional 14,000 of Stockton's new housing units to be located within the City limits as they exist on the Effective Date ("existing City limits").

c. Provide incentives to promote infill development in Greater Downtown Stockton, including but not limited to the following for proposed infill developments: reduced impact fees, including any fees referenced in paragraph 7 below; lower permit fees; less restrictive height limits; less restrictive setback requirements; less restrictive parking requirements; subsidies; and a streamlined permitting process.

d. Provide incentives for infill development within the existing City limits but outside Greater Downtown Stockton and excluding projects of significance. These incentives may be less aggressive than those referenced in paragraph 6.c., above.

7. Within 12 months of the Effective Date, the City staff shall submit for City Council adoption amendments to the General Plan to ensure that development at the City's outskirts, particularly residential, village or mixed use development, does not grow in a manner that is out of balance with development of infill. These proposed amendments shall include, but not be limited to, measures limiting the granting of entitlements for development projects outside the existing City limits and which are (1) subject to an SP or MDP, or (2) projects of significance, until certain criteria are met. These criteria shall include, at a minimum:

a. Minimum levels of transportation efficiency, transit availability (including BRT) and Level of Service, as defined by the San Joaquin Council of Government regulations, City service capacity, water availability, and other urban services performance measures;

b. Firm, effective milestones that will assure that specified levels of infill development, jobs-housing balance goals, and GHG and VMT reduction goals, once established, are met before new entitlements can be granted;

c. Impact fees on new development, or alternative financing mechanisms identified in a project's Fiscal Impact Analysis and/or Public Facilities Financing Plan, that will ensure that the levels and milestones referenced in paragraphs 7.a. and 7.b., above, are met. Any such fees:

   (1) shall be structured, in accordance with controlling law, to ensure that all development outside the infill areas within existing City limits is revenue-neutral to the City (which may necessitate higher fees for development outside this area, depending upon the costs of extending infrastructure);

   (2) may be in addition to mitigation measures required under CEQA;

   (3) shall be based upon a Fiscal Impact Analysis and a Public Facilities Financing Plan.

d. The City shall explore the feasibility of enhancing the financial viability of infill development in Greater Downtown Stockton, through the use of such mechanisms as an infill mitigation bank.

8. The City shall regularly monitor the above strategies and measures to ensure that they are effectively reducing GHG emissions. In addition to the City staff reporting on VMT annually, as provided in paragraph 3.c., the City staff or the advisory committee shall report annually to the City Council on the City's progress in implementing the

strategies and measures of this Agreement. If it appears that the strategies and measures will not result in the City meeting its GHG reduction targets, the City shall, in consultation with the Attorney General and Sierra Club, make appropriate modifications and, if necessary, adopt additional measures to meet its targets.

Early Climate Protection Actions

9. To more fully carry out those provisions of the General Plan, including the policy commitments embodied in those General Plan Policies, such as General Plan Policy HS-4.20, intended to reduce greenhouse gas emissions through reducing commuting distances, supporting transit, increasing the use of alternative vehicle fuels, increasing efficient use of energy, and minimizing air pollution, and to avoid compromising the effectiveness of the measures in Paragraphs 4 through 8, above, until such time as the City formally adopts the Climate Action Plan, before granting approvals for development projects (1) subject to an SP or MDP, or (2) considered projects of significance, and any corresponding development agreements, the City shall take the steps set forth in subsections (a) through (d) below:

(a) City staff shall:

(1) formulate proposed measures necessary for the project to meet any applicable GHG reduction targets;

(2) assess the project's VMT and formulate proposed measures that would reduce the project's VMT;

(3) assess the transit, especially BRT, needs of the project and identify the project's proposed fair share of the cost of meeting such needs;

(4) assess whether project densities support transit, and, if not, identify proposed increases in project density that would support transit service, including BRT service;

(5) assess the project's estimated energy consumption, and identify proposed measures to ensure that the project conserves energy and uses energy efficiently;

(6) formulate proposed measures to ensure that the project is consistent with a balance of growth between land within Greater Downtown Stockton and existing City limits, and land outside the existing City limits;

(7) formulate proposed measures to ensure that City services and infrastructure are in place or will be in place prior to the issuance of new entitlements for the project or will be available at the time of development; and

(8) formulate proposed measures to ensure that the project is configured to allow the entire development to be internally accessible by all modes of transportation.

(b) The City Council shall review and consider the studies and recommendations of City staff required by paragraph 9(a) and conduct at least one public hearing thereon prior to approval of the proposed project (though this hearing may be folded into the hearing on the merits of the project itself).

(c) The City Council shall consider the feasibility of imposing conditions of approval, including mitigation measures pursuant to CEQA, based on the studies and recommendations of City staff prepared pursuant to paragraph 9(a) for each covered development project.

(d) The City Council shall consider including in any development approvals, or development agreements, that the City grants or enters into during the time the City is developing the Climate Action Plan, a requirement that all such approvals and development agreements shall be subject to ordinances and enactments adopted after the effective date of any approvals of such projects or corresponding development agreements, where such ordinances and enactments are part of the Climate Action Plan.

(e) The City shall complete the process described in paragraphs (a) through (d) (hereinafter, "Climate Impact Study Process") prior to the first discretionary approval for a development project. Notwithstanding the foregoing, however, for projects for which a draft environmental impact report has circulated as of the Effective Date, the applicant may request that the City either (i) conduct the Climate Impact Study Process or (ii) complete its consideration of the Climate Action Plan prior to the adoption of the final discretionary approval leading to the project's first phase of construction. In such cases, the applicant making the request shall agree that nothing in the discretionary approvals issued prior to the final discretionary approval (i) precludes the City from imposing on the project conditions of approvals or other measures that may result from the Climate Impact Study Process, or (ii) insulates the project from a decision, if any, by the City to apply any ordinances and/ or enactments that may comprise the Climate Action Plan ultimately adopted by the City.

Attorney General Commitments

10. The Attorney General enters into this Agreement in his independent capacity and not on behalf of any other state agency, commission, or board. In return for the above commitments made by the City, the Attorney General agrees:

a. To refrain from initiating, joining, or filing any brief in any legal challenge to the General Plan adopted on December 11, 2007;

b. To consult with the City and attempt in good faith to reach an agreement as to any future development project whose CEQA compliance the Attorney General considers inadequate. In making this commitment, the Attorney General does not surrender his right and duties under the California Constitution and the Government Code to enforce CEQA as to any proposed development project, nor his duty to represent any state agency as to any project;

c. To make a good faith effort to assist the City in obtaining funding for the development of the Climate Action Plan.

Sierra Club Commitments

11. The Sierra Club agrees to dismiss the Sierra Club Action with prejudice within ten (10) days of the Effective Date. Notwithstanding the foregoing agreement to dismiss the Sierra Club Action, the City and Sierra Club agree that, in the event the City should use the EIR for the 2035 General Plan in connection with any other project approval, the Sierra Club has not waived its right (a) to comment upon the adequacy of that EIR, or (b) to file any action challenging the City's approval of any other project based on its use and/or certification of the EIR.

General Terms and Conditions

12. This Agreement represents the entire agreement of the Parties, and supercedes any prior written or oral representations or agreements of the Parties relating to the subject matter of this Agreement.

13. No modification of this Agreement will be effective unless it is set forth in writing and signed by an authorized representative of each Party.

14. Each Party warrants that it has the authority to execute this Agreement. Each Party warrants that it has given all necessary notices and has obtained all necessary consents to permit it to enter into and execute this Agreement.

15. This Agreement shall be governed by and construed in accordance with the laws of the State of California.

16. This Agreement may be executed in counterparts, each of which shall be deemed an original. This Agreement will be binding upon the receipt of original, facsimile, or electronically communicated signatures.

17. This Agreement has been jointly drafted, and the general rule that it be construed against the drafting party is not applicable.

18. If a court should find any term, covenant, or condition of this Agreement to be invalid or unenforceable, the remainder of the Agreement shall remain in full force and effect.

19. The City agrees to indemnify and defend the Sierra Club, its officers and agents (collectively, "Club") from any claim, action or proceeding ("Proceeding") brought against the Club, whether as defendant/respondent, real party in interest, or in any other capacity, to challenge or set aside this Agreement. This indemnification shall include (a) any damages, fees, or costs awarded against the Club, and (b) any costs of suit, attorneys' fees or expenses incurred in connection with the Proceeding, whether incurred by the Club, the City or the parties bringing such Proceeding. If the Proceeding is brought against both the Club and the City, the Club agrees that it may be defended by counsel for the City, provided that the City selects counsel that is acceptable to the Club; the Club may not unreasonably withhold its approval of such mutual defense counsel.

20. The City shall pay Sierra Club's attorney's fees and costs in the amount of $157,000 to the law firm of Shute, Mihaly & Weinberger LLP as follows: $50,000 within 15 days of dismissal of the Sierra Club Action, and (b) the balance on or before January 30, 2009.

21. Any notice given under this Agreement shall be in writing and shall be delivered as follows with notice deemed given as indicated: (a) by personal delivery when delivered personally; (b) by overnight courier upon written verification of receipt; or (c) by certified or registered mail, return receipt requested, upon verification of receipt. Notice shall be sent as set forth below, or as either party may specify in writing:

City of Stockton: Attorney General's Office

Richard E. Nosky, City Attorney
425 N. El Dorado Street, 2nd Floor
Stockton, CA 95202

Lisa Trankley
Susan Durbin
Deputy Attorneys General
1300 I Street, P.O. Box 944255
Sacramento, CA 94255-2550

Sierra Club:
Aaron Isherwood
Environmental Law Program
85 Second Street, 2nd Floor
San Francisco, CA 94105

Rachel Hooper
Amy Bricker
Shute, Mihaly & Weinberger
396 Hayes Street
San Francisco, CA 94102

22. Nothing in this Agreement shall be construed as requiring the City to relinquish or delegate its land use authority or police power.

(SIGNATURES ON FOLLOWING PAGE)

In witness whereof, this Agreement is executed by the following:

PEOPLE OF THE STATE OF CALIFORNIA
BY AND THROUGH ATTORNEY GENERAL
EDMUND G. BROWN JR.

Lisa Trankley

DATED: 10/14/08

ATTEST:

KATHERINE GONG MEISSNER
City Clerk of the City of Stockton

CITY OF STOCKTON,
a municipal corporation

J. GORDON PALMER, JR.
City Manager

DATED 9/25/08

APPROVED AS TO FORM:

RICHARD E. NOSKY, JR.
City Attorney

DATED 9-9-08

THE SIERRA CLUB

BARBARA WILLIAMS, CHAIR
MOTHER LODE CHAPTER

DATED

In witness whereof, this Agreement is executed by the following:

PEOPLE OF THE STATE OF CALIFORNIA
BY AND THROUGH ATTORNEY GENERAL
EDMUND G. BROWN JR.

____

DATED: ______________________

ATTEST:

____
KATHERINE GONG MEISSNER
City Clerk of the City of Stockton

APPROVED AS TO FORM:

____
RICHARD E. NOSKY, JR.
City Attorney

DATED ______________________

CITY OF STOCKTON,
a municipal corporation

____
J. GORDON PALMER, JR.
City Manager

DATED ______________________

THE SIERRA CLUB

Barbara Williams
BARBARA WILLIAMS, CHAIR
MOTHER LODE CHAPTER

DATED 10/11/08

EXHIBIT A

Policy Re: VMT Monitoring Program

The City's policy is to monitor key City-maintained roadways to estimate Vehicle Miles Traveled (VMT) by single-occupant automobile per capita on an annual basis, to be submitted as an annual report to the City Council. The estimate of citywide VMT should be developed in cooperation with the San Joaquin Council of Governments (**"**SJCOG**"**), by augmenting local City data with VMT estimates from SJCOG and Caltrans for the regional Congestion Management Plan network. The estimated change in annual VMT should be used to measure the effectiveness of jobs/housing balance, greenhouse gas emission reduction, and transit plans and programs.

Implementation Program

In order to develop an annual estimate of citywide VMT, the City should augment local City data with VMT estimates from SJCOG and Caltrans for regional facilities, or adopt other methodologies to estimate citywide VMT that are approved in concept by the two agencies. For purposes of calculating annual changes in VMT, the annual estimate of VMT should subtract out the estimates of regional truck and other through traffic on the major freeways (I-5, SR 4, SR 99).

Policy Re: Reduce Growth in VMT

The City's policy is to achieve the following fundamental goals to regulate vehicle emissions and reduce greenhouse gas emissions, improve jobs/housing balance, and increase transit usage over the duration of this General Plan: Reduce the projected increase in VMT by single-occupant automobile per capita to an annual rate over the planning period that is equal to or less than the population increase (this goal is also required for the City to receive funding through the Measure K/Congestion Management Plan program).

Implementation Program

In order to keep annual increases in VMT to a rate equal to or less than population increases, the following trip reduction programs should be considered by the City: increased transit service (Bus Rapid Transit) funded through new development fees; planning all future housing development to be in the closest possible proximity to existing and planned employment centers; provision of affordable housing; creation of higher density, mixed use and walkable communities and development of bicycle and pedestrian trails; and other proven programs.

Implementation Program

If the City goal of reducing the projected increase in VMT to an amount equal to or less than the population increase, and increase transit usage, is not met for two or more years during each five-year cycle of VMT monitoring, the City should consider adoption of the following programs, among others:

Adopt more vigorous economic development programs with funding for staff; and

Slow the rate of approvals of building permits for housing developments.

EXHIBIT B

Policy Re: Bus Rapid Transit

The City's policy is to vigorously support efforts to develop Bus Rapid Transit (BRT) within and beyond Stockton as a major priority of its General Plan, in order to increase overall transit usage over time. Based on an updated transit study, the City should plan for and provide BRT service running along key north-south routes as a first priority: Pacific Avenue; El Dorado Street; West Lane/Airport Way; Pershing Avenue. BRT service along key east-west corridors should also be provided. Transit use goals should be approved and monitored by the City over the planning period.

Implementation Program

In order to fund the initial capital and operating costs for BRT along major north-south arterials, the City should consider adoption of a comprehensive new development BRT fee program that requires new growth to significantly fund BRT, following a study consistent with the requirements of State law. The new development BRT fee program should ensure that "greenfield" projects approved at the fringe of the City pay a fee that represents the full cost of providing BRT service to the new housing; infill development may be granted a reduced BRT fee based on the reduced distance of service provided to the inner city areas.

Implementation Program

In order to augment the new development funding of the initial capital and operating costs for BRT, the City should strongly advocate for Measure K funding and should seriously consider placing an initiative on the ballot to receive voter approval for additional funding from existing residents and businesses.

Implementation Program

The City should establish transit use goals that set specific targets (e.g., transit mode split percentage of total trips and bus headways) that represent an increase in public transportation ridership and level of service over current levels by 2012 and then another increase by 2018.

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CITY OF STOCKTON
OFFICE OF THE CITY MANAGER
City Hall • 425 N. El Dorado Street • Stockton, CA 95202-1997 • 209/937-8212 • Fax 209/937-7149
www.stocktongov.com

October 7, 2008

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

SETTLEMENT AGREEMENT WITH ATTORNEY GENERAL AND SIERRA CLUB

As you are aware, on September 9, 2008, the City of Stockton approved a Memorandum of Agreement with the Sierra Club and the California Attorney General's Office resolving litigation over the City's 2035 General Plan. The Alliance for Responsible Planning and other interested parties have raised questions about the parties' interpretation of the Agreement and the public process that the City plans to follow in carrying out the Agreement. To help answer these questions, below we clarify our interpretation of the Agreement and also elaborate on the public process that the City will follow in implementing the provisions of the Agreement. We understand that the other parties to the Agreement concur in these views. Note that many of the statements below reiterate points that were made in the City's Resolution adopted in connection with its approval of the Agreement and in statements made by the parties during the August 26, 2008, and September 9, 2008, City Council hearings about the Agreement:

1. The parties understand and acknowledge the importance of public involvement in the process of developing the General Plan, and encourage the continued significant involvement of the public in the development of greenhouse gas reduction polices. The City intends to provide for public involvement in the development of the programs, policies, General Plan amendments and ordinances proposed by the Agreement. The City also will provide reasonable notification to the public of all Advisory Committee, Planning Commission and City Council meetings involving consideration of the issues provided for by the Agreement. It is the City's expectation to expand the composition of the Climate Action Advisory Committee to include a total of two representatives from each of the following interests: (1) environmental, (2) non-profit community organization, (3) labor, (4) business, and (5)

developer. The City will fully comply with CEQA in connection with the development of the programs, policies, General Plan amendments and ordinances proposed by the Agreement.

2. The parties understand and acknowledge that the public review process and compliance with CEQA may require additional time beyond designated time periods to ensure the full involvement of the public in the consideration of the Climate Action Plan, green building program and transit study and to ensure full compliance with CEQA.

3. The parties understand and acknowledge that the adoption of the programs, policies, General Plan amendments and ordinances proposed by the Agreement are discretionary legislative acts and the City is not required by the terms of the Agreement to adopt any particular program, policy, General Plan amendment or ordinance. In addition, nothing in the Agreement shall limit or restrict the right of the City to modify, alter, or rescind any particular program, policy, General Plan amendment or ordinance following the adoption of such program, policy, General Plan amendment or ordinance. Although the Agreement requires City staff to present to the City Council certain programs, policies, General Plan Amendments and ordinances for its consideration, nothing in the Agreement limits or restricts City staff from providing to the City Council additional, alternative recommendations for such programs, policies, General Plan amendments and ordinances based on staff professional judgment, public input and CEQA review.

4. The parties understand and acknowledge that if there is an instance in which the terms of the written Agreement are unclear, the Resolution adopted by the City Council on September 9, 2008, and the statements made by the Attorney General's office, the Sierra Club and our City Attorney and the City's outside counsel at the August 26 and September 9, 2008, City Council hearings provide a legislative history pursuant to which the Agreement should be interpreted.

5. The parties understand and acknowledge that:
   (i) upon consideration of a Climate Action Plan (CAP) by the Council, the City's obligations under Agreement paragraphs 3 through 7 will be discharged,
   (ii) upon adoption of a CAP, the City's obligations under Agreement paragraph 9 will be discharged, and
   (iii) upon inclusion of a program in the CAP to regularly monitor and, if appropriate, modify the City's strategies and measures to meet the Greenhouse Gas reduction targets that may be adopted in the

CAP, the City's obligations under paragraph 8 will be discharged. Nothing in this paragraph 5 is intended to contradict our clarification in paragraph 3, above, that the City retains full legislative discretion with respect to any policies, programs and ordinance it may adopt as part of a CAP.

J. GORDON PALMER, JR.
CITY MANAGER

JGP:REN:cn

cc: Edward J. Chavez
Richard E. Nosky, Jr.
George Mihlsten (Via e-mail)
Cliff Rechtschaffen (Via e-mail)
Rachel Hooper (Via e-mail)

EDMUND G. BROWN JR.
Attorney General

State of California
DEPARTMENT OF JUSTICE

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E-Mail: Cliff.Rechtschaffen@doj.ca.gov

October 7, 2008

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

RE: Stockton General Plan Settlement
Clarification Letters

Dear Alliance Members:

The Attorney General's Office has read the letter from Stockton City Manager Gordon Palmer to the Alliance for Responsible Planning (copy attached). We concur in the City's interpretation and understanding of the Memorandum of Agreement as set forth in the letter.

If you have questions, please contact the undersigned.

Sincerely,

CLIFF RECHTSCHAFFEN
Special Assistant Attorney General

For EDMUND G. BROWN JR.
Attorney General

SHUTE, MIHALY & WEINBERGER LLP
ATTORNEYS AT LAW

E. CLEMENT SHUTE, JR.*
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FRAN M. LAYTON
RACHEL B. HOOPER
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TAMARA S. GALANTER
ANDREW W. SCHWARTZ
ELLISON FOLK
RICHARD S. TAYLOR
WILLIAM J. WHITE
ROBERT S. PERLMUTTER
OSA L. WOLFF
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ERIN B. CHALMERS

LAUREL L. IMPETT, AICP
CARMEN J. BORG, AICP
URBAN PLANNERS

October 7, 2008

Via U.S. Mail

Alliance for Responsible Planning
6507 Pacific Avenue
Box 339
Stockton, CA 95207

Re: Stockton General Plan Settlement
Clarification Letters

Dear Alliance:

On behalf of the Sierra Club, we have read the letter from Stockton City Manager Gordon Palmer to the Alliance for Responsible Planning (copy attached). The Sierra Club concurs in the City's interpretation and understanding of the Memorandum of Agreement as set forth in the letter.

SHUTE, MIHALY, & WEINBERGER LLP

Yours very truly,

Rachel B. Hooper

Rachel B. Hooper

Enclosure
\\Smw\vol1_data\SIERRA\GP\LIT\Sierra Club letter of concurrence.doc

Alliance for Responsible Planning

8507 Pacific Avenue
Box 338
Stockton, CA 95207

October 7, 2008

Honorable Mayor Ed Chavez and City Councilmembers
425 N. El Dorado St, 2nd Floor
Stockton, CA 95202

Honorable Mayor and Councilmembers:

We are pleased to receive a copy of a letter from Gordon Palmer, City Manager, outlining a series of clarifications regarding the Memorandum of Agreement entered into by the City with the Attorney General and the Sierra Club. The letter from Mr. Palmer sets forth important clarifications to the Agreement which have been concurred in by the Attorney General and the Sierra Club.

These clarifications provide clear assurances to the Alliance and the public as to a number of critical issues that have been of concern to the Alliance. In particular, the letter makes very clear the importance of significant public involvement in the consideration of a Climate Action Plan. We strongly support the possible expansion of the number of members of the proposed Advisory Committee and look forward to participating in that process.

In addition, the Alliance agrees that alternative recommendations can be presented to the City Council based on public input and the California Environmental Quality Act. This helps to ensure the credibility of the public process. Lastly, the letter underscores the clear understanding of the parties to the Agreement that the adoption of a Climate Action Plan is in the legislative discretion of the City.

In light of the discussions undertaken in good faith among the parties and the Alliance, the statements made in Mr. Palmer's letter, and the concurrence of the Attorney General and the Sierra Club to the letter from the City Manager, we have decided to withdraw our effort to seek a referendum of the Agreement pursuant to the authorization contained in Section 9604 of the Elections Code. These statements by the City and the other parties address the core issues we have heard from the community. In accordance with section 9604, we will provide written notice to the City Clerk of the withdrawal of the referendum. In addition, we will not be pursuing a legal challenge to the adoption of the Agreement by the City nor will we promote or fund any individuals or entities challenging the adoption of the Agreement or promoting a referendum of the Agreement. We, of course, reserve our rights to challenge the implementation of the Agreement.

We are proud of the 25,000 Stocktonians who participated in this process. We thank the City Manager, the City Attorney, the Attorney General and the Sierra Club for providing these clarifications. It is sincerely appreciated.

We look forward to working with the City and the community in undertaking development of a Climate Action Plan. In addition, the Alliance looks forward to continuing to work with the community and the City on other issues affecting the City's future.

Sincerely,

Gary Podesto

A.G. Spanos Companies

October 7, 2008

Honorable Mayor Ed Chavez and Councilmembers
425 N. El Dorado St., 2nd Floor
Stockton, CA 95202

Honorable Mayor and Councilmembers:

We have had a chance to review the letter from the City Manager dated October 7, 2008 and letters from the Attorney General and the Sierra Club. These letters provide a number of critical clarifications with respect to the Memorandum of Agreement approved by the City on September 9, 2008.

In particular:

- All parties have recognized the need for significant community involvement in the consideration of a Climate Action Plan. The A. G. Spanos Companies strongly supports the City's stated expectation to expand the number of members of the proposed Advisory Committee, and we look forward to participating in that process.

- Second, all parties have it clear that alternative recommendations can be presented to the City Council based on public input and the California Environmental Quality Act. This helps to ensure the credibility of the public process.

- Finally, all parties to the Agreement acknowledge that the adoption of a Climate Action Plan is in the legislative discretion of the City.

In light of these statements by Mr. Palmer and the concurrence of the other parties regarding a significant public process and assurances regarding the independent discretion of the City in developing and considering a Climate Action Plan, we will not be pursuing a legal challenge to the adoption of the Agreement by the City and will not fund or support any efforts by any other individuals or entities to file a legal challenge to the adoption of the Agreement or to seek a referendum with regard to the adoption of the Agreement. We, of course, reserve our rights to challenge the implementation of the Agreement.

We look forward to working with the community and the City in developing a Climate Action Plan. We are prepared to work with the City and the Alliance to develop a comprehensive public outreach program to ensure the community's significant involvement in the process.

Sincerely,

David Nelson
A.G. Spanos Companies

10100 Trinity Parkway, 5th Floor Stockton, California 95219 Telephone: 209.478.7954 Fax: 209.478.3309

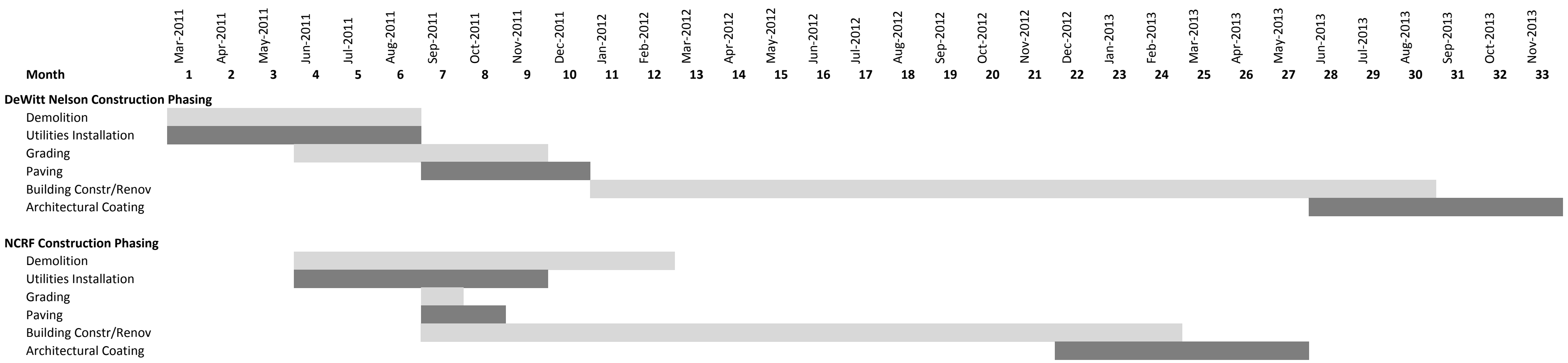
APPENDIX B

Air Quality

Air Quality

Construction-Related Emissions

Construction Schedule Phasing



	Key Parameters	units	NCRF:DeWitt-Nelson Ratio
DeWitt Nelson Construction Phasing			
Demolition	267,222	cu. ft.	
Utilities Installation	6.47	acres	
Grading	23.16	acres	
Paving	9.64	acres	
Building Constr/Renov	229,008	sq. ft.	
Architectural Coating	229,008	sq. ft.	
NCRF Construction Phasing			
Demolition	441,890	cu. ft.	1.65
Utilities Installation	6.47	acres	1.00
Grading	3.25	acres	0.14
Paving	3.86	acres	0.40
Building Constr/Renov	239,323	sq. ft.	1.05
Architectural Coating	239,323	sq. ft.	1.05

Key Statements from Notice of Preparationg and/or Project Description

Construction of this proposed facility [DeWitt Nelson] is anticipated to begin in spring 2011 with an initial activation date of December 2013. Construction work shifts and worker parking arrangements would be the same as described above for the NCRF project, except that construction activities on the proposed DeWitt Nelson facility may extend into evening hours and potentially include weekends.

Construction of the reentry facility [NCRF] is anticipated to begin in summer 2011; there will be an approximately 24 month construction schedule and a tentative activation date of winter 2013. Construction work shifts would generally be between 6 a.m. and 6 p.m., Monday through Friday, for the reentry facility. A construction staging area for NCRF would be located on a roughly 6-acre field west of the existing perimeter fence line and parking lot.

Observations

The grading phase for DeWitt Nelson is longer than the grading phase for NCRF because more grading will be performed, particularly for the new parking lot, new perimeter fence and associated perimeter roads, the firing range and the retrofit of the existing detention basin or construction of a new detention basin.

The number and types of equipment used for DeWitt Nelson and NCRF are generally the same. Differences in the amount of equipment activity among the two projects are primarily accounted for by the length of their respective construction phases.

DeWitt Nelson - Construction Parameters

	value	units	source
project area	70	acres	NOP, Aug 13, 2010
size	1133	beds	NOP, Aug 13, 2010

Facilities to be Renovated	area	units
Existing administration	11,408	sq. ft.
Food service satelite and dining	12,144	sq. ft.
General Visiting	11,285	sq. ft.
4 Housing Units #990-993	54,216	sq. ft.
Classrooms	6,144	sq. ft.
2 Modular Classrooms	3,160	sq. ft.
Arts and crafts	7,392	sq. ft.
Vocational classroom	6,720	sq. ft.
Gymnasium	12,392	sq. ft.
Library	2,488	sq. ft.
Chapel	6,262	sq. ft.
Total Area	133,611	sq. ft.

New Buildings (proposed)	flor area	area of building lot (approx.)	units
270 Housing Unit	28,809	40,000	sq. ft.
270 Housing Unit	28,809	40,000	sq. ft.
270 Housing Unit w/Bump out	29,454	40,000	sq. ft.
8 Guard Towers	1,352	4,000	sq. ft.
2 Gun Posts	162	250	sq. ft.
PABX	1,000	2,000	sq. ft.
Visitor/Staff Entry building	1,834	2,500	sq. ft.
Family Visiting buildings	1,207	1,600	sq. ft.
Vehicle/Pedestrian Sallyport/Officer Station	120	250	sq. ft.
Building Maintenance Satellite	2,550	3,500	sq. ft.
Volatile Storage	100	200	sq. ft.
Sweat Lodge	0	0	sq. ft.
10 Small Management Yards	0	0	sq. ft.
Total Area	95,397	134,300	sq. ft.
		3.08	acres

New Parking lot	length	width	area	units
	600	300	180,000	sq. ft.
			4.13	acres

Perimeter Fence	number	length	total	units
east-west segments	2	1,450	2,900	ft
north-south segments	2	520	1,040	ft
Total perimeter			3,940	ft
width of soil disturbance			10	ft
area of soil distrubance			39,400	sq. ft.
			0.90	acres

Perimeter Roads	number	length	total	units
interior road, short segments	2	1,300	2,600	ft
interior road, long segments	2	1,400	2,800	ft
exterior road, short segments	2	1,500	3,000	ft
exterior road, long segments	2	1,700	3,400	ft
connection to maint. Bldg.	1	200	200	ft
Total perimeter roads			12,000	ft
width of roads			20	ft
total area			240,000	sq. ft.
			5.51	acres

Firing Range	length	width	area	units
firing range, part A	450	300	135,000	sq. ft.
firing range, part B	200	200	40,000	sq. ft.
firing range, part C	200	200	40,000	sq. ft.
Total			215,000	sq. ft.
			4.94	acres

Detention Basin Construction or Renovation	length	width	area	units
dimensions	500	400	200,000	sq. ft.
			4.59	acres

Demolition Prior to Renovation

All of the facilities that will undergo renovation will first be "gutted." To be conservative, the modeling in URBEMIS assumes that the entire building will be demolished and the demolition phase of the construction module is used to estimate these emissions in a separate URBEMIS model run. Also, CDCR may ultimately decide to demolish a few of the buildings and not rebuild new ones at their respective site.

	value	units	source
height of each bulding floor, assumed	20	ft.	conservative asumption
total floor area of renovated buildings	133,611	sq. ft.	Kitchel site plan
total building volume	2,672,220	cu. ft.	calculation
percent of building materials in building volume	10%	%	conservative asumption
total material removed from demolition	267,222	cu. ft.	proportion calculation
Maximum proportion of demolition in one day	10%	%	conservative asumption
Maximum daily demolition	26,722	cu. ft.	proportion calculation

Summary of Areas of Earth Disturbance/Grading	area	units	area	units
New Buildings	134,300	sq. ft.	3.08	acres
New Parking lot	180,000	sq. ft.	4.13	acres
Perimeter Fence	39,400	sq. ft.	0.90	acres
Perimeter Roads	240,000	sq. ft.	5.51	acres
Firing Range	215,000	sq. ft.	4.94	acres
Detention Basin	200,000	sq. ft.	4.59	acres
Total	1,008,700	sq. ft.	23.16	acres
Maximum Area Graded in One Day	240,000	sq. ft.	5.51	acres

Areas to be Paved or Repaved	area	units	area	units
New parking lot	180,000	sq. ft.	4.13	acres
Perimeter roads	240,000	sq. ft.	5.51	acres
Total	420,000	sq. ft.	9.64	acres

Berm Surrounding Firing Range	value	units
length	1,300	ft
height	18	ft
slope	2	ratio
width	36	ft
volume	421,200	cu. ft.
conversion, volume	9	cu. ft./cu. Yd.
volume	46,800	cu. Yd.
truck capacity	20	cu. yd./truck
truck loads	2,340	truck loads

It is assumed that all earthern material used in construction of the berm will be from on-site (according to correspondence with Bob Sleppy on 8/18/2010).

New Construction, Interior Work, and Architectural Coatings	area	units
Facilities to be renovated	133,611	sq. ft.
New Facilities	95,397	sq. ft.
Total	229,008	sq. ft.

Conversion Rate 43,560 sq. ft./acre

Construction Schedule	value	units	source
start date	Spring 2011		NOP, Aug 13, 2010
duration	33	months	NOP, Aug 13, 2010
days per week	7	Mon-Fri	NOP, Aug 13, 2010
work hours	14	6am-6pm	NOP, Aug 13, 2010

Phasing Assumptions

It is assumed that any phases of construction—demolition, site grading, paving, building construction/renovation, application of architectural coatings—could take plance during the first 6 months of the construction period and that the timing of these phases could overlap such that they all take place on the same day.

Sources:

Floor areas are based on the site plan by Kitchel.

Building areas based on dimensions in Exhibit 4, Proposed DeWitt Nelson Site Plan.

10/4/2010 8:53:21 PM

Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\DeWitt Nelson Demolition.urb924

Project Name: DeWitt demolition

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2011	0.89	8.89	4.01	0.00	1.04	0.37	1.41	0.22	0.34	0.56	984.58
Demolition 03/01/2011-08/31/2011	0.89	8.89	4.01	0.00	1.04	0.37	1.41	0.22	0.34	0.56	984.58
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.82	7.90	3.51	0.00	0.00	0.33	0.33	0.00	0.30	0.30	830.64
Demo On Road Diesel	0.06	0.98	0.33	0.00	0.00	0.04	0.04	0.00	0.03	0.04	137.47
Demo Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.47

Phase Assumptions

Phase: Demolition 3/1/2011 - 8/31/2011 - "Gutting" of existing buildings.

Building Volume Total (cubic feet): 267222

Building Volume Daily (cubic feet): 26722

On Road Truck Travel (VMT): 371.14

Off-Road Equipment:

2 Aerial Lifts (60 hp) operating at a 0.46 load factor for 12 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 12 hours per day

1 Generator Sets (549 hp) operating at a 0.74 load factor for 12 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 12 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 12 hours per day

10/4/2010 8:55:48 PM

Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\DeWitt Nelson Grading Erection Paving Coating.urb924

Project Name: DeWitt Grading, Paving, Construction, Coatings

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2011	1.12	8.74	4.64	0.00	10.08	0.48	10.56	2.11	0.44	2.54	838.91
Fine Grading 06/01/2011-11/30/2011	0.79	6.81	3.41	0.00	10.08	0.31	10.39	2.11	0.28	2.39	669.83
Fine Grading Dust	0.00	0.00	0.00	0.00	10.08	0.00	10.08	2.11	0.00	2.11	0.00
Fine Grading Off Road Diesel	0.78	6.81	3.29	0.00	0.00	0.31	0.31	0.00	0.28	0.28	658.13
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.70
Asphalt 09/01/2011-12/31/2011	0.33	1.92	1.23	0.00	0.00	0.17	0.17	0.00	0.15	0.15	169.08
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.31	1.88	1.08	0.00	0.00	0.16	0.16	0.00	0.15	0.15	149.23
Paving On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.80
Paving Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.04
2012	1.54	8.21	8.14	0.00	0.02	0.58	0.59	0.01	0.53	0.53	1,193.17
Building 01/01/2012-08/31/2013	1.54	8.21	8.14	0.00	0.02	0.58	0.59	0.01	0.53	0.53	1,193.17
Building Off Road Diesel	1.44	7.76	5.36	0.00	0.00	0.56	0.56	0.00	0.51	0.51	850.96
Building Vendor Trips	0.03	0.32	0.28	0.00	0.00	0.01	0.01	0.00	0.01	0.01	67.66
Building Worker Trips	0.08	0.13	2.50	0.00	0.01	0.01	0.02	0.00	0.01	0.01	274.55

2013	3.40	5.08	5.19	0.00	0.01	0.34	0.35	0.00	0.31	0.32	795.22
Building 01/01/2012-08/31/2013	0.94	5.08	5.17	0.00	0.01	0.34	0.35	0.00	0.31	0.32	792.28
Building Off Road Diesel	0.87	4.81	3.48	0.00	0.00	0.33	0.33	0.00	0.30	0.30	564.98
Building Vendor Trips	0.02	0.19	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	44.93
Building Worker Trips	0.05	0.08	1.52	0.00	0.01	0.01	0.01	0.00	0.00	0.01	182.36
Coating 06/01/2013-11/30/2013	2.47	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Architectural Coating	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95

Phase Assumptions

Phase: Fine Grading 6/1/2011 - 11/30/2011 - Type Your Description Here

Total Acres Disturbed: 23.16

Maximum Daily Acreage Disturbed: 5.51

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 14 hours per day

1 Scrapers (313 hp) operating at a 0.72 load factor for 14 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 14 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 14 hours per day

Phase: Paving 9/1/2011 - 12/31/2011 - Type Your Description Here

Acres to be Paved: 9.64

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 12 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 12 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 12 hours per day

Phase: Building Construction 1/1/2012 - 8/31/2013 - Type Your Description Here

10/4/2010 8:55:48 PM

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 14 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 14 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 14 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 14 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 14 hours per day

Phase: Architectural Coating 6/1/2013 - 11/30/2013 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Proposed New Utility Lines and Linear Infrastructure

	Total Linear Feet	Breakdown by Segment (ft) (based on exhibits from Kitchel - pgs. 9, 30, 32, 34-36, 46, 47) a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q
Sewer Lines	9,250	1,000	375	2,000	875	1,250	1,875	1,875										
Water Lines	7,850	2,400	4,000	800	650													
Storm Lines																		
Option 1 (channel)	6,100	3,300	1,250	800	750													
Option 2	5,700	400	1,600	300	375	125	2,100	800										
Option 3	4,150	1,750	300	1,000	700	400												
Longest	6,100																	
Irrigation Lines	10,725	125	1,150	400	1,400	400	1,400	1,800	125	100	100	1,900	125	650	50	200	800	1,900
Roadway Infrastructure	2,825	600	500	1,000	375	350												
Methan Gas Lines	3,725	50	350	375	750	2,200												
Gas Lines	6,500	200	625	1,200	550	1,750	500	1,375	150	150								

Total	46,975	feet
	8.90	miles
Avg. trench width (assumed)	6	feet
Affected Area	281,850	square feet
	6.47	acres
Maximum daily distance	2,000	feet
Maximum daily acreage	0.28	acres

<u>Conversion Rates</u>

Distance	5,280 ft/mi
Area	43,560 sq. ft./acre
volume	9 cu. ft./cu. yd.

<u>Imported Gravel - Parameters</u>

It is assumed that one cubic foot of rock will need to be imported for every linear foot of utility laid.

Rate	1	cu. ft./linear ft.
Total	46,975	cu. ft.
Maximum daily	2,000	cu. ft.
	222	cu. yd.

<u>Assumptions</u>

1 It is conservatively assumed that <u>all</u> of this utility installation would accompany development of the proposed DeWitt Nelson <u>and/or</u> NCRF facilities.
2 All utility installation would occur during the first 6 months of the construction period for either project.

Road Construction Emissions Model

Version 6.3.2

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Utilities and Linear Infrastructure	
Construction Start Year	2011	Enter a Year between 2005 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	6.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	8.9	miles
Total Project Area	6.5	acres
Maximum Area Disturbed/Day	0.3	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported	222.0	yd^3/day
Soil Exported	0.0	yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months	2005	%	2006	%	2007	%
Grubbing/Land Clearing		0.60	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		2.40	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade		2.10	0.00	0.00	0.00	0.00	0.00	0.00
Paving		0.90	0.00	0.00	0.00	0.00	0.00	0.00
Totals	0.00	6.00						

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions

User Input	User Override of Soil Hauling Defaults	Default Values
Miles/round trip		30
Round trips/day		11
Vehicle miles traveled/day (calculated)		333

Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	1.02	13.03	6.99	0.49	0.43	1861.89
Emission rate (grams/trip)	11.39	8.02	196.83	0.02	0.01	217.22
Pounds per day	1.3	10.0	14.8	0.4	0.3	1376.3
Tons per contruction period	0.03	0.26	0.39	0.01	0.01	36.33

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions

	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing		25
No. of employees: Grading/Excavation		27
No. of employees: Drainage/Utilities/Sub-Grade		27
No. of employees: Paving		26

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.149	0.263	2.686	0.034	0.019	426.620
Emission rate - Grading/Excavation (grams/mile)	0.149	0.263	2.686	0.034	0.019	426.620
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.149	0.263	2.686	0.034	0.019	426.620
Emission rate - Paving (grams/mile)	0.149	0.263	2.686	0.034	0.019	426.620
Emission rate - Grubbing/Land Clearing (grams/trip)	0.878	0.372	8.574	0.130	0.012	191.860
Emission rate - Grading/Excavation (grams/trip)	0.878	0.372	8.574	0.130	0.012	191.860
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.878	0.372	8.574	0.130	0.012	191.860
Emission rate - Paving (grams/trip)	0.878	0.372	8.574	0.130	0.012	191.860
Pounds per day - Grubbing/Land Clearing	0.516	0.655	7.727	0.102	0.044	972.132
Tons per const. Period - Grub/Land Clear	0.003	0.004	0.051	0.001	0.000	6.416
Pounds per day - Grading/Excavation	0.516	0.655	7.727	0.102	0.044	972.132
Tons per const. Period - Grading/Excavation	0.014	0.017	0.204	0.003	0.001	25.664
Pounds per day - Drainage/Utilities/Sub-Grade	0.516	0.655	7.727	0.102	0.044	972.132
Tons per const. Period - Drain/Util/Sub-Grade	0.012	0.015	0.178	0.002	0.001	22.456
Pounds per day - Paving	0.533	0.655	7.727	0.102	0.044	1019.117
Tons per const. Period - Paving	0.005	0.006	0.076	0.001	0.000	10.089
tons per construction period	0.034	0.043	0.510	0.007	0.003	64.626

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day		
Grubbing/Land Clearing - Exhaust		1		40		
Grading/Excavation - Exhaust		1		40		
Drainage/Utilities/Subgrade		1		40		
	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	1.02	13.03	6.99	0.49	0.43	1861.89
Emission rate - Grading/Excavation (grams/mile)	1.02	13.03	6.99	0.49	0.43	1861.89
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	1.02	13.03	6.99	0.49	0.43	1861.89
Pounds per day - Grubbing/Land Clearing	0.09	1.15	0.62	0.04	0.04	164.04
Tons per const. Period - Grub/Land Clear	0.00	0.03	0.02	0.00	0.00	4.33
Pound per day - Grading/Excavation	0.09	1.15	0.62	0.04	0.04	164.04
Tons per const. Period - Grading/Excavation	0.00	0.03	0.02	0.00	0.00	4.33
Pound per day - Drainage/Utilities/Subgrade	0.09	1.15	0.62	0.04	0.04	164.04
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.03	0.01	0.00	0.00	3.79

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.28	2.8	0.0	0.6	0.0
Fugitive Dust - Grading/Excavation		0.28	2.8	0.1	0.6	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.28	2.8	0.1	0.6	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Dozers	1.70	8.16	15.07	0.64	0.59	1245.79
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.84	7.65	17.29	0.70	0.64	1623.76
4.00	18	Signal Boards	2.03	5.20	5.01	0.49	0.45	491.64
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	5.6	21.0	37.4	1.8	1.7	3361.2
	Grubbing/Land Clearing	tons per phase	0.0	0.1	0.2	0.0	0.0	22.2

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.72	3.27	5.44	0.32	0.30	547.36
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.91	3.87	7.08	0.41	0.38	647.87
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
	0	Other Construction Equipment	0.01	0.05	0.09	0.01	0.01	8.06
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.64	2.73	4.98	0.29	0.26	458.86
	1	Scrapers	1.84	7.65	17.29	0.70	0.64	1623.76
4.00	18	Signal Boards	2.03	5.20	5.01	0.49	0.45	491.64
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
2.00		Trenchers	1.65	5.28	9.90	0.85	0.78	707.67
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	7.8	28.0	49.8	3.1	2.8	4485.2
	Grading	tons per phase	0.2	0.7	1.3	0.1	0.1	118.4

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.91	3.87	7.08	0.41	0.38	647.87
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.02	0.09	0.11	0.01	0.00	14.83
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.84	7.65	17.29	0.70	0.64	1623.76
4.00	18	Signal Boards	2.03	5.20	5.01	0.49	0.45	491.64
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1	Trenchers	1.65	5.28	9.90	0.85	0.78	707.67
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	6.4	22.1	39.4	2.5	2.3	3485.8
	Drainage	tons per phase	0.1	0.5	0.9	0.1	0.1	80.5

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	18	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.4	1.4	2.5	0.1	0.1	221.1

Equipment default values for horsepower, load factor, and hours/day can be overridden in cells C285 through C317, E285 through E317, and G285 through G317.

Equipment		Default Values Horsepower		Default Values Load Factor		Default Values Hours/day
Aerial Lifts		60		0.46		8
Air Compressors		106		0.48		8
Bore/Drill Rigs		291		0.75		8
Cement and Mortar Mixers		10		0.56		8
Concrete/Industrial Saws		19		0.73		8
Cranes		399		0.43		8
Crushing/Proc. Equipment		142		0.78		8
Excavators		168		0.57		8
Forklifts		145		0.30		8
Generator Sets		549		0.74		8
Graders		174		0.61		8
Off-Highway Tractors		267		0.65		8
Off-Highway Trucks		479		0.57		8
Other Construction Equipment		75		0.62		8
Other General Industrial Equipment		238		0.51		8
Other Material Handling Equipment		191		0.59		8
Pavers		100		0.62		8
Paving Equipment		104		0.53		8
Plate Compactors		8		0.43		8
Pressure Washers		1		0.60		8
Pumps		53		0.74		8
Rollers		95		0.56		8
Rough Terrain Forklifts		93		0.60		8
Rubber Tired Dozers		357		0.59		8
Rubber Tired Loaders		157		0.54		8
Scrapers		313		0.72		8
Signal Boards		20		0.78		8
Skid Steer Loaders		44		0.55		8
Surfacing Equipment		362		0.45		8
Sweepers/Scrubbers		91		0.68		8
Tractors/Loaders/Backhoes		108		0.55		8
Trenchers		63		0.75		8
Welders		45		0.45		8

Road Construction Emissions Model, Version 6.3.2

Emission Estimates for -> Utilities and Linear Infrastructure Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	6.2	29.3	39.2	4.8	2.0	2.8	2.4	1.8	0.6	4,497.4
Grading/Excavation	9.7	51.1	61.5	6.4	3.6	2.8	3.8	3.2	0.6	6,997.7
Drainage/Utilities/Sub-Grade	7.1	30.4	41.2	5.4	2.6	2.8	2.9	2.3	0.6	4,621.9
Paving	0.5	7.7	0.7	0.1	0.1	-	0.0	0.0	-	1,019.1
Maximum (pounds/day)	9.7	51.1	61.5	6.4	3.6	2.8	3.8	3.2	0.6	6,997.7
Total (tons/construction project)	0.5	2.3	2.9	0.3	0.2	0.2	0.2	0.2	0.0	334.5

Notes: Project Start Year -> 2011
Project Length (months) -> 6
Total Project Area (acres) -> 6
Maximum Area Disturbed/Day (acres) -> 0
Total Soil Imported/Exported (yd^3/day)-> 222

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Utilities and Linear Infrastructure Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	2.8	13.3	17.8	2.2	0.9	1.3	1.1	0.8	0.3	2,044.3
Grading/Excavation	4.4	23.2	28.0	2.9	1.6	1.3	1.7	1.5	0.3	3,180.8
Drainage/Utilities/Sub-Grade	3.2	13.8	18.7	2.5	1.2	1.3	1.3	1.1	0.3	2,100.9
Paving	0.2	3.5	0.3	0.0	0.0	-	0.0	0.0	-	463.2
Maximum (kilograms/day)	4.4	23.2	28.0	2.9	1.6	1.3	1.7	1.5	0.3	3,180.8
Total (megagrams/construction project)	0.4	2.1	2.6	0.3	0.2	0.1	0.2	0.1	0.0	303.4

Notes: Project Start Year -> 2011
Project Length (months) -> 6
Total Project Area (hectares) -> 3
Maximum Area Disturbed/Day (hectares) -> 0
Total Soil Imported/Exported ($meters^3$/day)-> 170

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sume of exhaust and fugitive dust emissions shown in columns K and L.

Northern California Re-entry Facility - Construction Parameters

	value	units	source
project area	134	acres	NOP, Aug 13, 2010
size	500	beds	NOP, Aug 13, 2010

Facilities to be Renovated		area	units
Administration		13,010	sq. ft.
Entrance Building		2,700	sq. ft.
Programs and Services		55,060	sq. ft.
Family Visiting		1,860	sq. ft.
Housing Unit 1		24,900	sq. ft.
Housing Unit 2		24,900	sq. ft.
Housing Unit 3		24,900	sq. ft.
Orientation/Gnrl Population		24,900	sq. ft.
Receiving and Release/Dining		14,340	sq. ft.
Armory		1,620	sq. ft.
Guardhouse		120	sq. ft.
Emergency Power		375	sq. ft.
Vocational (existing laundry)		22,050	sq. ft.
Electronics		5,010	sq. ft.
Work Change		700	sq. ft.
Maintenance		4,500	sq. ft.
	Total Area	220,945	sq. ft.

New Buildings (proposed)		flor area	area of building lot (approx.)	units
Medical Building		16,110	25,600	sq. ft.
Guard Tower		336	500	sq. ft.
Guard Tower		336	500	sq. ft.
Guard Tower		336	500	sq. ft.
Family Services		1,260	6,400	sq. ft.
Sweat Lodge Area		0	1,000	sq. ft.
	Total Area	18,378	34,500	sq. ft.
			0.79	acres

Perimeter Fence	number	length	total	units
short fence segments	6	120	720	ft
long fence segments	6	520	3,120	ft
Total perimeter distance			3,840	ft
width of soil disturbance			5	ft
area of soil distrubance			19,200	sq. ft.
			0.44	acres

Perimeter Road

The existing perimeter road will be used. No new perimeter road will be constructed.

Demolition Prior to Renovation

All of the facilities that will undergo renovation will first be "gutted." To be conservative, the modeling in URBEMIS assumes that the entire building will be demolished and the demolition phase of the construction module is used to estimate these emissions in a separate URBEMIS model run. Also, CDCR may ultimately decide to demolish a few of the buildings and not rebuild new ones at their respective site.

	value	units	source
height of each bulding floor, assumed	20	ft.	conservative asumption
total floor area of renovated buildings	220,945	sq. ft.	CDCR's 30 Day Lett for Prjo. Leg. Appr. Attach A
total building volume	4,418,900	cu. ft.	calculation
percent of building materials in building volume	10%	%	conservative asumption
total material removed from demolition	441,890	cu. ft.	proportion calculation
Maximum proportion of demolition in one day	10%	%	conservative asumption
Maximum daily demolition	44,189	cu. ft.	proportion calculation

Summary of Areas of Earth Disturbance/Grading	area	units	area	units
West parkging lot, new portion, part A	48,000	sq. ft.	1.10	acres
West parkging lot, new portion, part B	40,000	sq. ft.	0.92	acres
New buildings	34,500	sq. ft.	0.79	acres
Perimeter fence	19,200	sq. ft.	0.44	acres
Total	141,700	sq. ft.	3.25	acres
Max. Area Graded in One Day (full parking lot)	88,000	sq. ft.	2.02	acres

Areas to be Paved or Repaved	width	length	area	units
West parking lot (new and existing)				
existing portion	240	240	57,600	sq. ft.
new portion, part A	400	120	48,000	sq. ft.
new portion, part B	200	200	40,000	sq. ft.
East parking lot (all existing)	150	150	22,500	sq. ft.
Total			168,100	sq. ft.
			3.86	acres

New Construction, Interior Work, and Architectural Coatings	area	units
Facilities to be renovated	220,945	sq. ft.
New Facilities	18,378	sq. ft.
Total	239,323	sq. ft.

Conversion Rate 43,560 sq. ft./acre

Construction Schedule	value	units	source
start date	Summer 2011		NOP, Aug 13, 2010
duration	24	months	NOP, Aug 13, 2010
days per week	5	Mon-Fri	NOP, Aug 13, 2010
work hours	12	6am-6pm	NOP, Aug 13, 2010

Phasing Assumptions

It is assumed that any phases of construction—demolition, site grading, paving, building construction/renovation, application of architectural coatings—could take plance during the first 6 months of the construction period and that the timing of these phases could overlap such that they all take place on the same day.

Sources:

Floor areas are based on Attachment A in 30-Day Letter

Building areas based on dimensions in Exhibit 3, Proposed NCRF Site Plan.

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\NCRF Demolition.urb924

Project Name: NCRF demolition

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2011	0.77	7.93	3.52	0.00	1.43	0.33	1.75	0.30	0.30	0.60	893.42
Demolition 06/01/2011-02/29/2012	0.77	7.93	3.52	0.00	1.43	0.33	1.75	0.30	0.30	0.60	893.42
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.68	6.57	2.92	0.00	0.00	0.28	0.28	0.00	0.25	0.25	690.69
Demo On Road Diesel	0.09	1.35	0.46	0.00	0.01	0.05	0.06	0.00	0.05	0.05	189.02
Demo Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.70
2012	0.20	2.08	0.94	0.00	0.40	0.08	0.49	0.08	0.08	0.16	251.09
Demolition 06/01/2011-02/29/2012	0.20	2.08	0.94	0.00	0.40	0.08	0.49	0.08	0.08	0.16	251.09
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.18	1.73	0.79	0.00	0.00	0.07	0.07	0.00	0.07	0.07	194.12
Demo On Road Diesel	0.02	0.35	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.12
Demo Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.85

Phase Assumptions

Phase: Demolition 6/1/2011 - 2/29/2012 - "Gutting" of existing buildings.

Building Volume Total (cubic feet): 441890

Building Volume Daily (cubic feet): 44189

On Road Truck Travel (VMT): 613.74

Off-Road Equipment:

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2 Aerial Lifts (60 hp) operating at a 0.46 load factor for 12 hours per day

1 Excavators (168 hp) operating at a 0.57 load factor for 12 hours per day

1 Generator Sets (549 hp) operating at a 0.74 load factor for 12 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 12 hours per day

2 Rubber Tired Loaders (164 hp) operating at a 0.54 load factor for 12 hours per day

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\NCRF Grading Erection Paving Coating.urb924

Project Name: NCRF Grading, Erection, Paving, Coating

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2011	0.48	2.92	2.49	0.00	0.45	0.21	0.66	0.09	0.19	0.28	361.57
Asphalt 09/01/2011-10/31/2011	0.13	0.74	0.48	0.00	0.00	0.06	0.06	0.00	0.06	0.06	66.56
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.12	0.72	0.42	0.00	0.00	0.06	0.06	0.00	0.06	0.06	58.76
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.30
Paving Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.50
Building 09/01/2011-02/28/2013	0.29	1.68	1.73	0.00	0.00	0.12	0.12	0.00	0.11	0.11	246.44
Building Off Road Diesel	0.26	1.56	0.99	0.00	0.00	0.11	0.11	0.00	0.10	0.10	161.46
Building Vendor Trips	0.01	0.09	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.80
Building Worker Trips	0.02	0.04	0.67	0.00	0.00	0.00	0.01	0.00	0.00	0.00	68.17
Fine Grading 09/01/2011-09/30/2011	0.06	0.49	0.27	0.00	0.44	0.02	0.47	0.09	0.02	0.12	48.56
Fine Grading Dust	0.00	0.00	0.00	0.00	0.44	0.00	0.44	0.09	0.00	0.09	0.00
Fine Grading Off Road Diesel	0.06	0.49	0.26	0.00	0.00	0.02	0.02	0.00	0.02	0.02	47.16
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41

2012	1.22	4.71	4.96	0.00	0.01	0.32	0.33	0.00	0.29	0.30	739.90
Building 09/01/2011-02/28/2013	0.81	4.71	4.96	0.00	0.01	0.32	0.33	0.00	0.29	0.30	739.40
Building Off Road Diesel	0.73	4.38	2.89	0.00	0.00	0.30	0.30	0.00	0.28	0.28	484.39
Building Vendor Trips	0.02	0.24	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.42
Building Worker Trips	0.06	0.10	1.86	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.60
Coating 12/01/2012-05/31/2013	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Architectural Coating	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.49
2013	2.26	0.72	0.80	0.00	0.00	0.05	0.05	0.00	0.04	0.04	124.38
Building 09/01/2011-02/28/2013	0.12	0.72	0.78	0.00	0.00	0.05	0.05	0.00	0.04	0.04	121.83
Building Off Road Diesel	0.11	0.67	0.47	0.00	0.00	0.04	0.04	0.00	0.04	0.04	79.80
Building Vendor Trips	0.00	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.31
Building Worker Trips	0.01	0.01	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.72
Coating 12/01/2012-05/31/2013	2.13	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55
Architectural Coating	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55

Phase Assumptions

Phase: Fine Grading 9/1/2011 - 9/30/2011 - Type Your Description Here

Total Acres Disturbed: 3.25

Maximum Daily Acreage Disturbed: 2.02

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 12 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 12 hours per day

1 Signal Boards (15 hp) operating at a 0.78 load factor for 12 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 12 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 12 hours per day

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Phase: Paving 9/1/2011 - 10/31/2011 - Type Your Description Here

Acres to be Paved: 3.86

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 12 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 12 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 12 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/1/2011 - 2/28/2013 - Type Your Description Here

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 12 hours per day

3 Forklifts (145 hp) operating at a 0.3 load factor for 12 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 12 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 12 hours per day

1 Welders (45 hp) operating at a 0.45 load factor for 12 hours per day

Phase: Architectural Coating 12/1/2012 - 5/31/2013 - Type Your Description Here

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 130

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Summary of Annual Emissions During Project Construction (tons/year)

2011

	ROG	NO_x	PM_{10} Tota	$PM_{2.5}$	CO	SO_2	CO_2
DeWitt Nelson Construction							
Demolition	0.89	8.89	1.41	0.56	4.01	0.00	984.54
Utilities Installation	0.47	2.86	0.33	0.18	2.34	0.00	334.53
Grading	0.79	6.81	10.39	2.39	3.41	0.00	669.83
Paving	0.33	1.92	0.17	0.15	1.23	0.00	169.08
Building Constr/Renov	—	—	—	—	—	—	—
Architectural Coating	—	—	—	—	—	—	—
Subtotal, Unmitigated	2.5	20.5	12.3	3.3	11.0	0.0	2,158.0
ISR Reduction (approximate)	0.12	4.10	4.09	—	—	—	—
Subtotal, Mitigated by ISR	2.4	16.4	8.2	—	—	—	—
NCRF Construction							
Demolition	0.77	7.93	1.75	0.60	3.52	0.00	893.42
Utilities Installation	0.47	2.86	0.33	0.18	2.34	0.00	334.53
Grading	0.06	0.49	0.47	0.12	0.27	0.00	48.56
Paving	0.13	0.74	0.06	0.06	0.74	0.00	66.56
Building Constr/Renov	0.29	1.68	0.12	0.11	1.73	0.00	246.44
Architectural Coating	—	—	—	—	—	—	—
Subtotal, Unmitigated	1.7	13.7	2.7	1.1	8.6	0.0	1,589.5
ISR Reduction (approximate)	—	2.74	0.91	—	—	—	—
Subtotal, Mitigated by ISR	1.7	11.0	1.8	—	—	—	—
Combined Total							
Unmitigated	4.2	34.2	15.0	4.4	19.6	0.0	3,747.5
Mitigated with ISR	4.1	27.4	10.0	—	—	—	—
SJVAPCD Threshold	10	10	15	—	—	—	—

2012

	ROG	NO_x	PM_{10} Tota	$PM_{2.5}$	CO	SO_2	CO_2
DeWitt Nelson Construction							
Demolition	—	—	—	—	—	—	—
Utilities Installation	—	—	—	—	—	—	—
Grading	—	—	—	—	—	—	—
Paving	—	—	—	—	—	—	—
Building Constr/Renov	1.54	8.21	0.59	0.53	8.14	0.00	1,193.17
Architectural Coating	—	—	—	—	—	—	—
Subtotal, Unmitigated	1.5	8.2	0.6	0.5	8.1	0.0	1,193.2
ISR Reduction (approximate)	0.08	1.64	0.20	—	—	—	—
Subtotal, Mitigated by ISR	1.5	6.6	0.4	0.5	8.1	0.0	1,193.2
NCRF Construction							
Demolition	0.20	2.08	0.49	0.16	0.94	0.00	251.09
Utilities Installation	—	—	—	—	—	—	—
Grading	—	—	—	—	—	—	—
Paving	—	—	—	—	—	—	—
Building Constr/Renov	0.81	4.71	0.32	0.30	4.96	0.00	739.40
Architectural Coating	0.41	0.00	0.00	0.00	0.00	0.00	0.49
Subtotal, Unmitigated	1.4	6.8	0.8	0.5	5.9	0.0	991.0
ISR Reduction (approximate)	—	1.36	0.27	—	—	—	—
Subtotal, Mitigated by ISR	1.4	5.4	0.5	0.5	5.9	0.0	991.0
Combined Total							
Unmitigated	3.0	15.0	1.4	1.0	14.0	0.0	2,184.2
Mitigated with ISR	2.9	12.0	0.9	1.0	14.0	0.0	2,184.2
SJVAPCD Threshold	10	10	15	—	—	—	—

2013

	ROG	NO_x	PM_{10} Tota	$PM_{2.5}$	CO	SO_2	CO_2
DeWitt Nelson Construction							
Demolition	—	—	—	—	—	—	—
Utilities Installation	—	—	—	—	—	—	—
Grading	—	—	—	—	—	—	—
Paving	—	—	—	—	—	—	—
Building Constr/Renov	0.94	5.08	0.35	0.32	5.17	0.00	792.28
Architectural Coating	2.47	0.00	0.00	0.00	0.02	0.00	2.95
Subtotal, Unmitigated	3.4	5.1	0.4	0.3	5.2	0.0	795.2
ISR Reduction (approximate)	0.17	1.02	0.12	—	—	—	—
Subtotal, Mitigated by ISR	3.2	4.1	0.2	0.3	5.2	0.0	795.2
NCRF Construction							
Demolition	—	—	—	—	—	—	—
Utilities Installation	—	—	—	—	—	—	—
Grading	—	—	—	—	—	—	—
Paving	—	—	—	—	—	—	—
Building Constr/Renov	0.12	0.72	0.05	0.04	0.78	0.00	121.83
Architectural Coating	2.13	0.00	0.00	0.00	0.02	0.00	2.55
Subtotal, Unmitigated	2.3	0.7	0.1	0.0	0.8	0.0	124.4
ISR Reduction (approximate)	—	0.14	0.02	—	—	—	—
Subtotal, Mitigated by ISR	2.3	0.6	0.0	0.0	0.8	0.0	124.4
Combined Total							
Unmitigated	5.7	5.8	0.4	0.4	6.0	0.0	919.6
Mitigated with ISR	5.5	4.6	0.3	0.4	6.0	0.0	919.6
SJVAPCD Threshold	10	10	15	—	—	—	—

	NO_x	PM_{10}
Percent reductions required by ISR for construction	20%	33.3%
	ROG	
Percent reduction in ROG achieved by ISR for construction	5%	

Methodology: Emissions for all phases except Utilities Installation were estimated using the ARB-approved URBEMIS model, Version 9.2.4. Emissions from Utilities Installation were estimated using the Road Construction Emisisons Model, Version 6.3.2 developed by SMAQMD.

Estimates for the reduction in emissions of ROG, NOX, and PM10 achieved from compliance with ISR (Rule 9510) are approximate because they are based on the total construction emissions, rather than the portions that are generated by off-road equipiment.

Summary of Construction-Generated GHG Emissions

Year	DeWitt Nelson	NCRF	Combined	units	source
2011	2,157.98	1,589.51	3,747	TPY	wksht: Summary - Annual Constr Emiss
2012	1,193.17	990.98	2,184	TPY	wksht: Summary - Annual Constr Emiss
2013	795.23	124.38	920	TPY	wksht: Summary - Annual Constr Emiss
Total	4,146.38	2,704.87	6,851	TPY	summation
Total	4,570.60	2,981.60	7,552	MT/yr	conversion calculation
Amortized annually	182.82	119.26	302.09	MT/yr	amortization

Conversions	value	units	source
mass conversion rate	0.90718474	ton/MT	onlineconversion.com
Amortization period	25	years	conservative assumption

Air Quality

Operational Emissions

Operational Parameters

DeWitt Nelson

	trips/day	% of total trips
Daily Trips*		
Staff	906	100%
Delivery	0	0%
Visitors	0	0%
Total	906	100%

	value	units
Area of project site	70	acres
Area of buildings	229,008	sq. ft.
Area of buildings	229.01	1,000 sq. ft.
Trip generation rate	3.96	trips/1,000 sq.ft.

	%
Worker Commute Trip	100%
Primary Trips	100%
Diverted Trips	0%
Pass-By Trips	0%

NCRF

	trips/day	% of total trips
Daily Trips*		
Staff	762	84%
Delivery	10	1%
Visitors	100	11%
Total	872	96%

	value	units
Area of project site	134	0
Area of buildings	239,323	0
Area of buildings	239.32	1,000 sq. ft.
Trip generation rate	3.64	trips/1,000 sq.ft.

	%
Worker Commute Trip	84.1%
Primary Trips	98.9%
Diverted Trips	0.0%
Pass-By Trips	1.1%

*Vehicle trip data provided by DKS Associates.

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\DeWitt Nelson Operations.urb924

Project Name: DeWitt Nelson Operations

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.27	0.28	0.37	0.00	0.00	0.00	334.60

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.06	3.42	23.85	0.02	2.11	0.48	2,406.21

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.33	3.70	24.22	0.02	2.11	0.48	2,740.81

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Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: C:\Documents and Settings\austin.kerr\Application Data\Urbemis\Version9a\Projects\NCRF & DeWitt Nelson\NCRF Operations.urb924

Project Name: NCRF Operations

Project Location: San Joaquin County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.29	0.29	0.38	0.00	0.00	0.00	349.66

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	1.86	3.02	21.03	0.02	1.85	0.42	2,109.72

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.15	3.31	21.41	0.02	1.85	0.42	2,459.38

Summary of Annual Operational Emissions (tons/year)

	ROG	NOx	PM10	PM2.5	CO	SO2	CO2
DeWitt Nelson Operations							
Area Source	0.27	0.28	0.00	0.00	0.37	0.00	334.60
Mobile Source	2.06	3.42	2.11	0.48	23.85	0.02	2,406.21
Subtotal, Unmitigated	2.33	3.70	2.11	0.48	24.22	0.02	2,740.81
ISR Reduction	0.12	1.23	1.06	—	—	—	—
Subtotal, Mitigated by ISR	2.21	2.47	1.06	—	—	—	—
NCRF Operations							
Area Source	0.29	0.29	0.00	0.00	0.38	0.00	349.66
Mobile Source	1.86	3.02	1.85	0.42	21.03	0.02	2,109.72
Subtotal, Unmitigated	2.15	3.31	1.85	0.42	21.41	0.02	2,459.38
ISR Reduction	0.11	1.10	0.93	—	—	—	—
Subtotal, Mitigated by ISR	2.15	2.21	0.93	—	—	—	—
Combined Total							
Area Source	0.56	0.57	0.00	0.00	0.75	0.00	684.26
Mobile Source	3.92	6.44	3.96	0.90	44.88	0.04	4,515.93
Total, Unmitigated	4.48	7.01	3.96	0.90	45.63	0.04	5,200.19
Total, Mitigated with ISR	4.36	4.68	1.98	—	—	—	—
SJVAPCD Threshold	10	10	15	—	—	—	—

	ROG	NOx	PM10
Percent reductions required by ISR for operational emissions	0.05	33.3%	50.0%

Methodology: Operational emissions were estimated using the ARB-approved URBEMIS model, Version 9.2.4 and trip generation data provided by DKS Associates.

Greenhouse Gas Emissions Associated with Electricity and Water Consumption

	DeWitt Nelson	NCRF	units	source
Peak load for electricity consumption	0.63	0.76	MW	Table 3.4.1 A, pg 49 of Kitchell report, Aug 2010
Electricity Consumption, annual	5,523	6,662	MWh/yr	calculation
Electricity Consumption, annual	5,522,580	6,662,160	kWh/yr	conversion calculation
GHG Emissions from Electricity Consumption	1,822	2,198	MT/yr	calculation
Water Consumption	198,275	87,500	gal/day	Table 3.2.4 A, pg 25 of Kitchell report, Aug 2010
Water Consumption	72.42	31.96	MG/yr	conversion calculation
Electricity Consumption assoc w/ Water Cons	289,680	127,838	kWh/yr	calculation
GHG Emissions from Water Consumption	96	42		

Conversions	value	units	source
time conversion rate	365	days/yr	
time conversion rate	24	hr/day	
electricity conversion rate	1,000	kWh/MWh	onlineconversion.com
electricity cons. assoc. w/ water cons., NorCal	4,000	kWh/MG	1
volume conversion rate	1,000,000	gal/MG	
mass conversion rate	2,204.62	lb/MT	onlineconversion.com

Greenhouse Gas Emission Factors	CO_2	CH_4	N_2O	units	source
Emisison factors for electricity consumption	724.12	0.0302	0.0081	lb/MWh	Table C.2 of source 2
Emisison factors for electricity consumption	0.72412	0.0000302	0.0000081	lb/kWh	conversion calc.
Global warming potential	1	23	296	CO_2-e	Table C.1 of source 2
CO_2-e emission factors for electricity consumption	0.7272122	of	CO_2e	lb/kWh	GWP calculation

Sources

1 California Energy Commission. 2006 (December). *Refining Estimates of Water-Related Energy Use in California* . Publication CEC-500-2006-118. Available: <http://www.energy.ca.gov/pier/project_reports/CEC-500-2006-118.html>. Accessed August 24, 2010.

2 California Climate Action Registry. 2009 (January). California Climate Action Registry General Reporting Protocol, Version 3.1. Los Angeles, CA. Available: <http://www.climateregistry.org/resources/docs/protocols/grp/GRP_3.1_January2009.pdf>. Accessed August 24, 2010.

Summary of Project Related Greenhouse Gas Emissions

	TPY	MT/Yr	%
DeWitt Nelson			
Construction	—	183	3.6%
Area Sources	334.60	369	7.2%
Mobile Sources	2,406.21	2,652	51.8%
Electricity Consumption	—	1,822	35.6%
Water Consumption	—	96	1.9%
Total	2,740.81	5,121	100.0%
NCRF			
Construction	—	119	2.4%
Area Sources	349.66	385	7.6%
Mobile Sources	2,109.72	2,326	45.9%
Electricity Consumption	—	2,198	43.3%
Water Consumption	—	42	0.8%
Total	—	5,070	100.0%
Combined			
Construction		302	3.0%
Area Sources		754	7.4%
Mobile Sources		4,978	48.8%
Electricity Consumption		4,019	39.4%
Water Consumption		138	1.4%
Combined Total		10,191	100.0%

Conversions	value	units	source
mass conversion rate	0.90718474	ton/MT	onlineconversion.com

APPENDIX C

Air Quality

Stockton Master Plan Report

Northern California Youth Correctional Center, California Health Care Facility, DeWitt Nelson and Northern California Re-entry Facility

Prepared by Kitchell
For

California Department of
Corrections and Rehabilitation
Sacramento, CA

August 26, 2010
Job No. 3270L1
FINAL DRAFT REPORT

KITCHELL

Table of Contents

1.0.0 Executive Summary

Kitchell was charged with the task to create a coordination plan for the property owned by the California Department of Corrections and Rehabilitation (CDCR) in Stockton which is currently occupied by the Northern California Youth Correctional Center (NCYCC) complex and the closed Northern California Women's Facility (NCWF). CDCR is planning to convert the NCWF to the Northern California Reentry Facility (NCRF), demolish the existing Karl Holton Youth Facility and replace it with the California Health Care Facility (CHCF), and to convert DeWitt Nelson (DWN) from a juvenile facility to an adult facility. The coordination plan investigated the impact of the new adult facilities adding 1,934 beds to the existing infrastructure, operations, utility services, traffic circulation, deliveries/shipments, security and inmate movement, and public access.

1.1.0 Issues

This coordination plan considered the integration of institutions operated by the Division of Adult Institutions (DAI) with institutions operated by the Division of Juvenile Justice (DJJ) and the ability to share similar support services. The conclusion was, with the required sight and sound separation required by Penal Code section 290 and the special warehousing needs required by juvenile facilities, the ability to share services was very limited.

The three adult facilities will add 81% additional load onto the existing infrastructure.

The three adult facilities increased the amount of impervious surfaces with the proposed new buildings and the parking areas causing a potential overload of the existing storm water sewer system.

The increased bed capacity and higher staff population had a large impact on the waste water discharge from the adult facilities and the potential for the entire complex to exceed the daily maximum discharge allowed by the City of Stockton.

The existing electrical service and switchgear lacks adequate capacity for the new loads, and the equipment is old and near the end of its useful life.

The existing domestic and fire water distribution system is not adequate to handle the additional demands created by the adult facilities.

The amount of potential change to the existing infrastructure will require compliance with the latest codes and the upgrading of forty year old systems.

The NCRF, CHCF and DWN facilities have been developed based on their individual needs as separate projects. This coordination plan allowed us to look at and compare all three projects for the needs of each facility and consideration of CHCF and DWN as one prison and, what services/programs can be shared and what services need to be added due to overall size based on CDCR policies.

1.2.0 Recommendations

The coordination plan reviewed multiple options for the issues that required study and analysis and, after a comparison of the options and associated cost, we are recommending the following.

- Enclose CHCF and DWN in one secure perimeter. Providing one secure perimeter for both CHCF and DWN will reduce operating, maintenance and staffing costs and save approximately $11,000,000 per year.

- Relocate DJJ support services to provide a straight perimeter fence along the West side of the two facilities, allow CHCF to align with DWN and provide a more compact design for the two facilities. The relocation of the boiler house, vehicle maintenance, plant operations, propane farm, vehicle fueling island and fire house, and domestic water farm has an estimated cost of $12,000,000, or a payback in under two years with the saved operating, maintenance and staffing costs of a single secure perimeter.

- Line the majority of existing sanitary sewer piping in lieu of pipe replacement to meet the demands of the increased bed population. With the use of water saving or water limiting devices and improving the existing waste water sewer pipe system to reduce the resistance to flow, the existing waste water system can handle the discharge from CHCF, DWN, NCRF, O.H. Close Youth Correctional Facility (OHC), N.A. Chaderjian Youth Correctional Facility (CHAD), and NCYCC into the existing city sewer without exceeding the maximum daily flow capacity.

- For the proper operation and longevity of the waste water system at NCYCC, we are recommending replacement of the chopper/grinder pumps at the waste water lift station, new flow monitoring equipment and back-up power source.

- NCRF waste water discharge to NCYCC presently does not meet the current CDCR Design Criteria Guidelines (DCG) for velocity of flow. We are recommending the installation of a waste water lift station after the grinder pumps to provide the proper velocity in the waste water line. The existing grinder pumps should be replaced due to their age and to provide longevity for the system.

- The existing storm water system, with some minor upgrades, can handle the storm water from DWN, NCRF, OHC, CHAD, NCYCC and a portion of CHCF. The balance of CHCF would be routed through a new storm sewer run east of DWN to the existing detention basin.

- For domestic and fire water systems, we are recommending a new tank farm and pumping system sized to supply CHCF, DWN, NCRF, OHC, CHAD and NCYCC. The tank farm would be supplied from the proposed city water main in Newcastle Road and a second connection to the new water main extension in Arch Road.

- The gas service supplying NCYCC complex is more than adequate to serve its present connected load and the new CHCF. Alterations to the existing incoming primary gas main will be required by PG&E to relocate the existing meter to the new steam generation building and secondary gas branch lines will be required for the relocated buildings and service to CHCF central plant.

- We are recommending a new electrical substation to feed CHCF, DWN, NCRF, and to reestablish primary power to NCYCC by feeding the existing switchgear building from the new substation. Secondary back-up power to DJJ shall be run underground from its present source.

In Section 5.0.0 Cost Estimate, Kitchell has provided a summary breakdown for the combined shared services and the infrastructure improvements. The costs represent today's estimated construction cost including contingency and mark-ups. Soft costs would have to be added to these numbers.

2.0.0 Introduction

Kitchell has been charged with the task to coordinate the NCYCC complex for the conversion of the NCWF to the NCRF, incorporation of the CHCF, and the conversion of the DWN Youth Correctional Facility to an adult facility. The coordination planning investigated the utility needs of each facility and their combined impact on the existing NCYCC campus and how the Adult Institutions could be efficiently integrated into the existing infrastructure and services already provided at the site.

This coordination plan also reviewed the support services needed for the three adult institutions to operate and whether the existing services provided at NCYCC can be shared with the adult institutions while at the same time maintaining the sight and physical separation required between juvenile and adult facilities.

2.1.0 Existing Facilities

The CDCR property is located approximately 1.5 miles east of Highway 99 in unincorporated central San Joaquin County, one half mile southeast of the City of Stockton. The property is bound by Arch Road to the north, Newcastle Road to the west, Austin Road to the east, and the Forward Landfill to the south. (Refer to Vicinity Map.)

Within the roadway bounds previously described, there are several privately owned properties bordering the CDCR property. These include a private owner to the north, the San Joaquin County Board of Education to the east, and Forward Landfill to the south. Additionally, a portion of land north of O.H. Close is owned by the state and will be used for the future California Conservation Corp Delta Service District Center Relocation project. See Exhibit A1 for parcel boundaries.

The CDCR property currently houses the Northern California Youth Correctional Center (NCYCC) which consists of four youth correctional facilities and a central services core. The Central Services Core was constructed originally between 1964 and 1966 with later additions in 1989. O. H. Close was the first of four youth facilities to be constructed in 1966, adding 379 beds. In 1967 both Karl Holton and DeWitt Nelson were constructed providing another 821 beds. N. A. Chaderjian was constructed in 1991 adding 600 more beds to the Youth Authority and completing the Youth Correctional Complex.

The NCYCC Central Services Core includes administration, employee dining, hospital, central kitchen and warehouse, laundry and dry cleaning, boiler plant, vehicle maintenance, plant operations, fire station, electrical switchgear, water booster station and water tanks operated off of four wells, sanitary and storm lift stations, and a training center. The training center is not owned by NCYCC, but utilities to the center are served off of NCYCC.

In 1986 the NCWF was added to the northeastern corner of the NCYCC property providing an additional 600 beds (NCWF was designed to have six 270 Housing Units but only four were constructed). NCWF was connected to NCYCC for domestic water, waste water sewer, and storm water sewer. NCWF has separate electrical power off of Arch Road, as well as separate telephone and gas.

Today NCYCC no longer operates a laundry and dry cleaning facility, their vehicle maintenance facility operates below its design capacity, the boiler plant is operating with only one functioning boiler, and Karl Holton and DeWitt Nelson Youth Facilities are closed. This year the water booster station and tanks will be disconnected from the existing four wells and supplied from City water mains.

2.2.0 Proposed Facilities

The existing NCYCC is planned to be divided into a portion for the Division of Juvenile Justice consisting of N.A Chaderjian Youth Correctional Facility, O.H. Close Youth Correctional Facility and the Central Services Core. The balance of the property is planned for the Division of Adult Institutions consisting of Northern California Reentry Facility, California Health Care Facility (replacing Karl Holton Youth Correctional Facility), and DeWitt Nelson Conversion. The DJJ facilities shall be separated from the DAI facilities with a chain link boundary fence with wood slats to provide physical and visual separation of adults from wards. See Exhibit A2 for proposed facility locations.

Northern California Reentry Facility is a 500 bed facility designed to program inmates for reintegration into society and to minimize their chance to reoffend. This project is presently on hold awaiting additional information to the Department of Finance.

California Health Care Facility is a 1722 bed facility specializing in subacute medical care and mental health care. CHCF is one of several facilities being planned by the California Prison Health Care Receivership Corporation (CPR) for the state. CHCF has received approval from the Public Works Board on June 14, 2010 for establishing scope, cost and schedule.

DeWitt Nelson Conversion is a 1133 bed Level II prison facility specializing in outpatient medical care and mental health care for inmates released from CHCF or from other institutions around the state. DWN has received approval from the Public Works Board on June 14, 2010 for establishing scope, cost and schedule.

2.2.1 Development of the Coordination Plan

The development of the coordination plan has seen the three adult facilities adjust as more and more information became available. The Northern California Reentry Facility has remained standalone with its own Assistant Warden due to different reentry standards. CHCF and DWN will follow health care standards under the direction of one Warden.

The further we looked into both CHCF and DWN square footage requirements and staffing needs for two secure perimeters the more obvious it became that we could further reduce square footage, construction and operational costs, and staffing with one secure perimeter. The two perimeters required staff to secure meal carts to move from one secure perimeter to another and distribute to the housing units. In addition, additional staff and vehicles will be required to move inmates from one secure perimeter to another for health care services. Implementing two secure perimeters also required converting old buildings to new uses and increasing the operating cost to maintain them.

The single secure perimeter requires less lineal footage of fencing, fewer towers, demolition of the educational and vocational buildings at DeWitt Nelson, and centrally locating the common support and programming buildings for use by both facilities. The common support and programming allows for easier movement of serves and inmates within one secure fence. The comparison of standalone facilities versus a single secure perimeter has shown that a significant annual savings can be realized in operating cost and reduction in required staffing.

2.2.2 Single Perimeter Impact

For the single perimeter to work efficiently requires the replacement of DJJ support buildings and utility relocation to provide a straight fence line on the west perimeter. The DJJ support buildings requiring replacement are the boiler house, vehicle maintenance, plant operations, vehicle fueling island, propane farm, fire house and domestic water tank farm.

The domestic water tank farm including the domestic water pumps, fire pumps, and hydro-pneumatic tanks will be relocated west of 3rd Street and reconnected to the utility piping. A new steam generation building will be provided adjacent to the kitchen to support the kitchen. The steam generation building will be similar to CDCR design standards steam generation and water treatment building.

The Vehicle maintenance building, plant operations building, and their respective corporation yards, fuel island and propane tank farm will follow the CDCR design standards for serving facilities of this size. These buildings will be located on the same property as the DJJ warehouse/central kitchen. Utilities to the buildings being relocated are routed in McKesson Street and 3rd Street and shall be rerouted as required to maintain service to DJJ as well as the adult institutions.

The fire house being demolished at DJJ shall be replaced with a fire extinguisher building housing fire extinguisher testing, repair and refilling of fire extinguishers, office space for the Fire Captain, meeting/training space, workroom with files, and break room.

2.2.3 Project Delivery Method Coordination

As of the release of this final draft report, a decision on the method of delivery for CHCF and DWN had not been determined. With one secure perimeter it makes sense to have one delivery method to save time, design professional costs, eliminate coordination problems with two design teams, and to simplify activities on the site during construction.

Presently the 30 Day Letters for CHCF and DWN provide for CHCF to be a Design/Build delivery method with bridging documents being developed by the California Prison Receiver (CPR) program management team and transitioned to the design/build team for preparing the working drawings into construction. DWN shall be conventional Design/Bid/Build with an architectural/engineering team preparing working drawings for public bid and award to a general contractor.

2.2.4 Architectural Programming

CHCF and DWN are similar in purpose and should have similar architectural programs. We are recommending the architectural program for DWN be developed with CHCF and the architect for DWN shall verify the program during preliminary plans phase. This will save time and provide continuity between the two facilities.

2.2.5 Type I & II Equipment

With CHCF and DWN contained within one secure perimeter, it is important for security and life safety systems to be the same manufacturers as well as type I & II equipment to be the same in both facilities. One service and maintenance crew will maintain both facilities and the systems need to be similar to minimize parts storage and simplify maintenance procedures. One design team eliminates the potential for multiple manufacturers, different maintenance requirements between the two facilities, and multiple stored parts and supplies.

2.2.6 Utility Routing and Future Development

The utility routing through the DJJ site and serving DAI facilities has been limited to the east/west corridor (McKesson Road) through the DJJ portion of the site and a north/south (3rd Street) direction at the DAI facilities. Limiting the placement or alteration of existing utilities to these utility corridors provides freedom during design for the placement of improvements and future planning.

2.2.7 PG&E Power to Site:

The electrical power to the project site is inadequate to meet the proposed demand and a new electrical service and substation are required. The most reliable source of power for CDCR is to run 115 kV service from the existing PG&E transmission lines approximately three miles to NCYCC. This will require CDCR to acquire a 60 foot wide easement for routing the poles and conductors, CEQA documentation, and filing of an EIR for the transmission power. The 115 KV service will require a new substation and CDCR could realize approximately eight hundred thousand dollars in savings a year with transmission power rates compared to distribution power rates. The approval process and land acquisition could be a long process and may require a back-up plan for a temporary source of power during construction and commissioning of the facilities.

The temporary source of power would require the existing service to be upgraded to provide 5 MW power to the site. The upgrades would include new conductors and new poles for 16 miles and upgrades or additional switchgear to both the Webber and Mormon substations that feed NCYCC. This option is limited to a 12 KV service voltage with a capacity of 5 MW.

2.2.8 City of Stockton Water

A settlement agreement between the City of Stockton and CDCR to provide water to the DAI/DJJ complex has been reached. Under the agreement; CDCR shall extend the existing 16-inch water main easterly on the north side down Arch Road to Austin Road and branch off southerly down the west side of Austin Road to the CDCR entrance gate. CDCR shall be provided two additional points of connection for future water. The settlement agreement further requires compliance with City of Stockton Improvement Standards for the design and layout of the water main extension, which includes fire hydrants located at 300 feet on center along Arch Road and Austin Road, and a fire hydrant located at the dead end of the main in Austin Road.

The City of Stockton is requiring CDCR to disconnect the 12-inch water service line from the 24-inch transmission line in Newcastle Road once the water mains are extended and a second point of connection from the new mains is complete.

The recommended point of connection is from Arch Road running south, parallel to the CDCR west property line to connect to the water main coming from Newcastle Road just prior to well number 4. A new domestic water tank farm would be located just west of CHCF to serve both the adult facilities and juvenile justice facilities. With the new tank farm being sized for both DAI and DJJ, this allows for the removal of the old tank farm, minimizes the interference with the CHCF fence line, and aids in the reduction of the number of guard towers needed due to fence offsets.

The new buildings and the conversion buildings will be fitted with water reducing devices and flow control valves to minimize the use of water and to control how often the inmates can flush their toilets or how long they can shower. A recent CDCR water study reflects an average savings of 26% in domestic water across the 33 adult institutions. For the coordination plan we used a conservative water use reduction of 20% for the adult institutions only. Water reduction was not considered for DJJ at this time.

2.2.9 Waste Water Discharge

The 26% savings in domestic water usage translates in to a 22% reduction in sanitary waste water discharge. For the coordination plan we used a conservative waste water discharge reduction of 16% for the adult institutions only. A waste water reduction was not considered for DJJ at this time. Incorporating the 16% reduction results in an estimated waste water flow out of DAI and DJJ at 641,910 gallons per day. In addition to the wastewater flows from DAI and DJJ there is a contribution from the California Conservation Corp of 28,000 gallons per day for a total estimated discharge of 669,910 gallons per day into the City of Stockton sanitary sewer, well below the City's negotiated allowable discharge of 800,000 gallons per day from NCYCC.

2.2.10 Storm Water Discharge

The existing storm water drainage system will be upsized as required to provide adequate drainage for DJJ facilities, NCRF, DWN, and a proportion of CHCF, Additional improvements include an upgrade in the lift station pumps, detention basin pumps and removal of the pipe culvert restrictions crossing the concrete drainage channel.

The lift station pumps and detention basin pumps are the original pumps and have exceeded their normal life and need to be replaced.

The pipe culvert restrictions at crossover points along the drainage channel drastically reduce the storm carrying capacity of the channel. All three culverts need to be removed and two bridge structures need to be installed that span the drainage channel outside the boundary fence.

2.2.11 Detention Pond Improvements

Over the years since the detention pond was enlarged for the construction of NCWF and N. A. Chaderjian Youth facility, sediment, trees and bushes have accumulated reducing the capacity of the pond. Additionally, analysis of the pond noted that it will not fully accommodate the 100-year storm event of all flows heading towards it, per known site topography. Our recommendation is to remove the trees, bushes and sediment and restore the pond back to its original design grades, as well as provide an additional 10 percent detention capacity to capture the 100-year storm runoff event.

2.2.12 Traffic Mitigation and Circulation

CHCF and DWN will be contributing to an increase in the number of vehicles on Austin Road. As part of the agreement with the City of Stockton, CDCR will widen 4000 lineal feet of Austin Road south from the Arch Road/Austin Road intersection. The traffic lane widening shall include new dedicated right-of-way easements on CDCR property. The lane widening will be from the road centerline westerly 30 feet with an overall right-of-way from centerline west of 30 feet plus an additional 18 feet for an ultimate right-of-way of 48 feet from centerline of roadway. Roadway and right-of-way widening shall be constructed in accordance with the City of Stockton's road improvements design guidelines for "Rural Collector Road" and the Caltrans Highway Design Manual.

As part of the road widening on the westerly half of Austin Road, new street lighting shall be provided to comply with the City's design requirements for "Rural Collector Road".

The City of Stockton is also requiring CDCR to pay its fair share for signalization of the Arch/Austin Roads intersection. CDCR's fair share for signalization would be part of the total fees paid toward the county Regional Transportation Impact Fees. CDCR will also be required to provide a traffic signal at the entrance to the project.

All traffic to and from CHCF and DWN shall enter and leave the site through a single gatehouse off Austin Road. This access point shall be provided with acceleration/deceleration lanes and a left turn lane heading northbound for traffic leaving the site.

3.0.0 Alternatives

3.1.0 Program/Services

3.1.1 California Health Care Facility

The California Health Care Facility was originally planned as a stand-alone facility and over the months CHCF has been required to support the new DeWitt Nelson conversion facility. The DeWitt Nelson conversion will add 1133 beds to the support and programming services at CHCF and require the support and programming areas to grow in size to accommodate the additional bed population. The following square footage adjustments were made:

Diagnostic and Treatment Center	13,524
Inmate-Patient Community	1,102
Administration	5,202
Outside Facility Support	27,372
Perimeter Introduction	111
Total Additional Square Feet:	**47,311**

Additional parking required for the 1133 bed population requires 316 staff spaces for shift 2 and 3 plus 15% for visitors or 170 spaces. Total required parking of 486 spaces or 15,795 square feet added to CHCF parking lot.

3.1.2 Northern California Reentry Facility

The Northern California Reentry Facility also has an impact on CHCF outside facility support services. NCRF is lacking a warehouse and requires an additional 10,583 square feet added to the CHCF/DWN warehouse.

3.1.3 Combined Shared Services

Kitchell, the California Department of Corrections and Rehabilitation, Division of Adult institutions and Division of Juvenile Justice, and URS/Bovis Lend Lease Joint Venture looked into the possibility of sharing spaces with NCYCC, but the separation of wards and inmates and the Montoya Law prevented us from sharing many of the spaces.

Central Warehouse: The central warehouse according to normal SDD prison guidelines is adequate for an institution of this size, but CHCF and DWN have additional functions added to the normal warehouse operations since they are not provided on the housing yards. These functions include sorting and distribution of laundry, bagging and distribution of canteen, pharmacy and increased medical storage. The present warehouse planned for CHCF is 45,531 square feet, but will need an additional 31,456 to serve DWN and NCRF.

Central Kitchen: The central kitchen at CHCF is planned to utilize the Cook/ Chill Individual Tray delivery method for feeding the inmates in their housing units at both CHCF and DWN. Food trays for DWN would be placed in rethermalization carts, delivered to the housing unit and plugged in to retherm the food prior to serving. The carts hold 88 trays each, will require thirteen carts to deliver 1133 meals per feeding and a minimum of twenty-six carts to serve one meal and prepare for the next feeding. In addition, the carts need to be washed and sterilized between feedings. The additional square footage required to handle the DWN population is 6499.

NCRF has a kitchen and dining hall that was recently renovated for the training academy and is a cook/serve design. This kitchen facility is more than adequate to serve the reentry population. Additional cook staff can be saved by converting the kitchen to a rethermalization type kitchen with the food being prepared at CHCF and carted to NCRF for rethermalization in the convection ovens and served in the dining halls.

Visitor Processing/Waiting: The CHCF visitor processing facility will process all visitors to CHCF and DWN. Visitor processing for DWN requires increased queuing lobby space, added parcel lockers, additional office, metal detector, a secure waiting room and additional processing area for the added population. This will increase visitor processing space by approximately 1,663 square feet.

Vehicle Maintenance: The typical SDD prison requires a vehicle maintenance facility for the institutional service and operations vehicles. NCYCC presently has a large vehicle maintenance facility that is no longer operating at its design capacity. It has the ability to service the institution vehicles for CHCF, DWN and NCRF. There is a corporation yard adjacent to vehicle maintenance for storage of vehicles out of service for maintenance or repair. We are recommending a second corporation yard be fenced off at CHCF for storage of institution vehicles in service.

Vehicle Fueling Island: NCYCC presently has a fueling facility consisting of a 750 gallon diesel tank and a 1000 gallon gasoline tank activated by a keycard reader station. The fueling facility does not comply with CDCR's Design Criteria Guidelines in terms of the fuel storage capacity. Additionally, the tanks are above grade type which does not meet with DCG standards. The Fueling island should have a 4,000 gallon tank for Diesel fuel and 10,000 gallon tank for unleaded fuel.

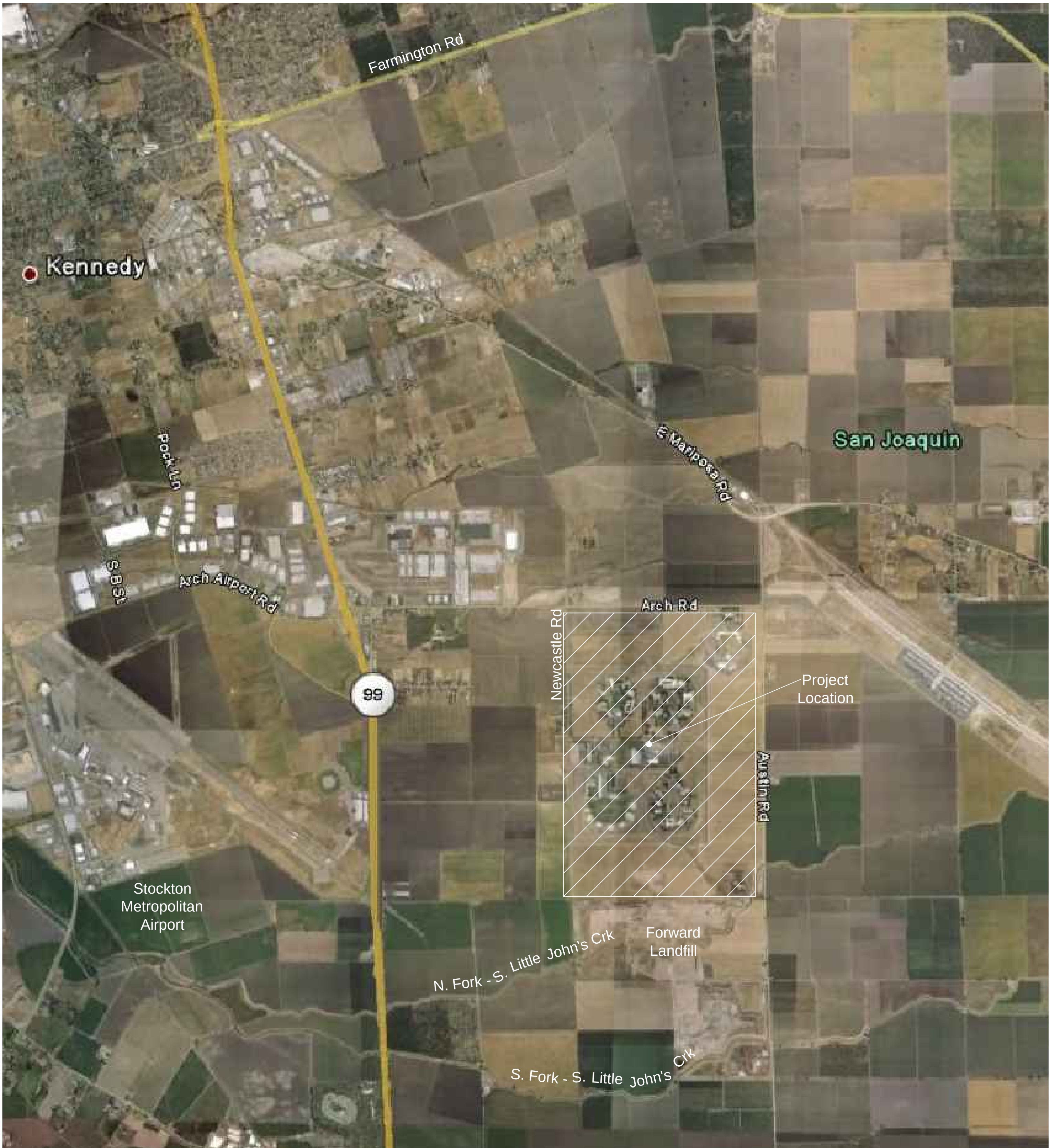
Grounds Maintenance: To maintain the grounds outside the security fencing, a 2,000 square foot Building and Grounds Maintenance facility is needed.

PABX: A new Private Automated Branch Exchange building housing telecommunication equipment and distributed data processing systems will be located adjacent to the CHCF Vehicle Sally Port, centrally located, to feed both CHCF and DWN.

NCRF presently has its own independent PABX that will not require any improvements.

Firing Range: The Division of Adult Institutions will have approximately 1200 custody staff requiring yearly certification at a firing range. Of the 1200 staff requiring recertification, 20 to 30 tower staff would require quarterly recertification and the balance would require yearly recertification. We are recommending the installation of an outdoor firing range adjacent to the detention pond oriented in the north-south direction with a bullet trap located on the south end of the range, oriented toward the land fill.

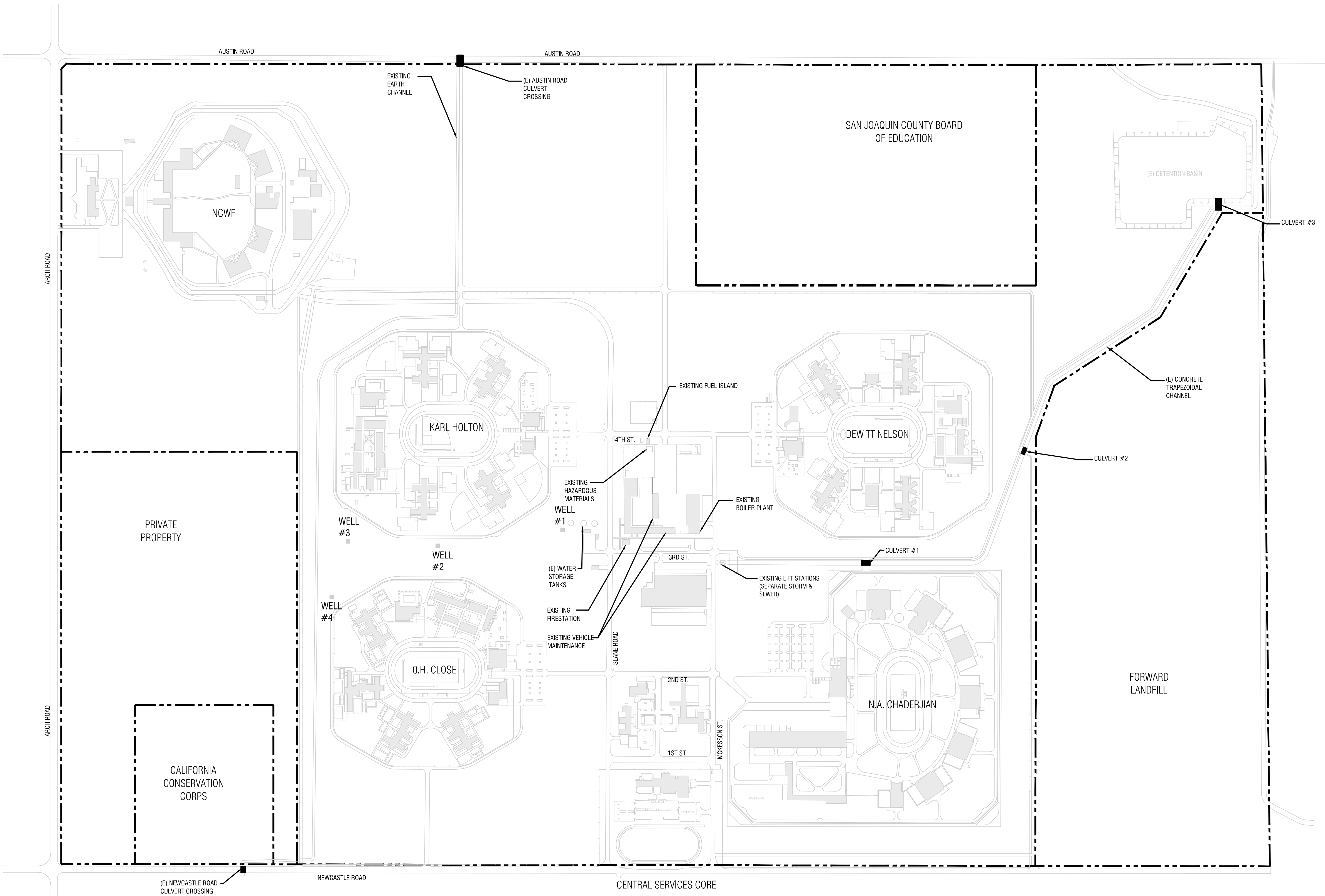
An alternate option to installing a firing range at the Stockton Adult Institutions would be to bus custody staff to an existing firing range at either Mule Creek State Prison or to purchase time at a private firing range in the Town of Galt. We have estimated there would be approximately 102 round trips with overtime of two hours per custody staff per trip plus 204 hours for the drivers or a total overtime of 2784 hours per year.



STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
VICINITY MAP	3270L1	--
	DATE 8-26-10	SCALE: AS SHOWN



NOT FOR CONSTRUCTION

1 EXISTING FACILITIES

NORTH

0 125 250 500

STOCKTON COORDINATION PLAN
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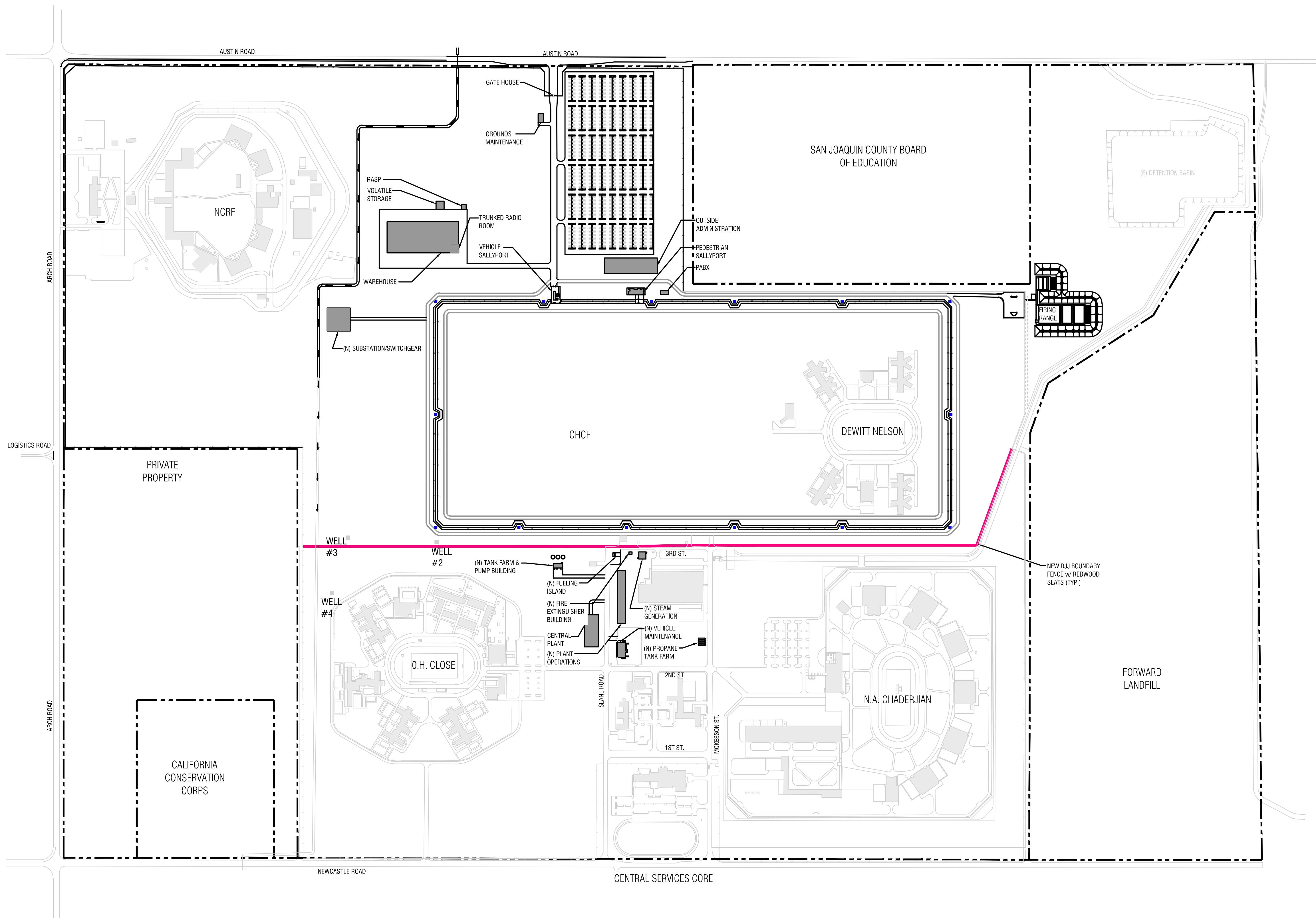
PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING FACILITIES	3270L1	A1
	DATE 8-26-10	SCALE: AS SHOWN



NOT FOR CONSTRUCTION

1
PROPOSED FACILITIES

NORTH

0 125 250 500

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION

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PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED FACILITIES	3270L1	A2
	DATE: 8-26-10	SCALE: AS SHOWN

CHCF COMBINED FENCE_STCKTN MASTER PLAN.DWG

3.2.0 Civil

3.2.1 General Site Overview and Surface Conditions:

According to the United States Geological Survey (USGS) Stockton East Quad Map, the site has gentle slopes (roughly 0 to 2 percent) to the west and south, with an elevation change of roughly 10 feet across the site. NCYCC institutions and NCRF have various landscaping features (trees, grass, planters, etc.) within the secure perimeters. Outside of the secure perimeters, undeveloped areas consist of mainly grasses, trees, and some small indigenous vegetation.

The nearest water conveyance is the North Fork of South Little John Creek, located south of the detention basin (see the Vicinity Map, previously in this report). According to the available Federal Emergency Management Agency (FEMA) floodplain insurance maps, included with Appendix B.1, the NCYCC and NCRF sites are not within the 500-year floodplain. Surface water conveyances on-site consist of mainly roadway ditches and swales along Austin and Newcastle Roads, with one defined earth trapezoidal channel (see Section 3.2.3, “Storm Water System”) for conveyance of off-site flows through the property. All of these conveyances appear to convey seasonal flow only.

Per the USDA Natural Resources Conservation Services and the San Joaquin County Hydrology Manual, on-site soil consists of mostly clays, with a small portion (less than 5 percent) of silty clays consistent with a Soil Conservation Service (SCS) Soil Type “D” classification. Consequently, very little water infiltration is expected onsite.

3.2.2 Waste Water System:

Existing Systems Overview: Sewer flows are conveyed through the NCYCC site through a series of gravity flow pipes and one force main system. Pipes are of the original installation (except for small areas of repairs) and are mostly vitrified clay pipe (VCP). In general, site piping directs flows to the Central Service Core and to a sewer wet well and lift station located just south of the intersection of 3rd and McKesson Streets. Prior to entering the wet well, sewage is run through two “Muffin Monster” grinders and a flume. Sewage is then pumped out using three chopper pumps with a combined rated capacity of 2,600 gpm. Flows from the sewage lift station are sent, via a 12-inch force main, into a 20-inch gravity pipe running parallel to McKesson Street. The pipe runs to the west and ties into a 20-inch City of Stockton main. This main runs parallel and south along Newcastle Road, and crosses beneath Newcastle Road southwest of N. A. Chaderjian (Chad).

According to a permit with the City of Stockton dated October 30, 2007, flows from the NCYCC site are limited to a maximum of 800,000 gallons per day (gpd). (See Appendix B.2 for a copy of the permit.) It is our understanding that CDCR has prepared a memo of understanding in 2006 with the California Conservation Corps (CCC), allowing 100,000 of the 800,000 gpd for CCC use. As of the date of this report, the 100,000 gpd has not yet been fully executed or implemented. The CCC site is planned for use as a potential relief area in the event of a major disaster. Sewer flows from CCC will be pumped via a 4-inch force main parallel to Newcastle Road, and enter the 20-inch main at the NCYCC connection point. See Exhibit C1 for the existing site sewer layout and Exhibit C2 for the location of the proposed CCC force main.

The City of Stockton has estimated this 20-inch main has a full capacity of 2,250 gpm. Since this main also accommodates flows from the Arch Road Business Park, with a peak flow of 450 gpm, a total of 1,800 gpm is available for NCYCC and CCC.

Per an Initial Study / Mitigated Negative Declaration (IS/MND) prepared by the City of Stockton in February 2010, the City is planning to extend sewer service up along Arch Road from an existing pump station approximately 1.5 miles west of the site. The anticipated size of this line in Arch Road from Austin Road to Newcastle Road is 27-inch diameter. A portion of this IS/MND describing the future system is included with Appendix B.3.

Planning and Methodology: To determine anticipated flows, sewer loads were calculated by multiplying each institution's anticipated ward/inmate count at design bed capacity by the Design Criteria Guidelines (DCG) average wastewater flow of 150 gallons per inmate per day (gpid). The 150 gpid was increased to 200 gpid for CHCF, to account for additional medical staff onsite (developed using average flows for hospital facilities and staff from "Wasterwater Engineering" by Metcalf and Eddy). Sewer demands for the Central Services Core buildings to remain and new support buildings were determined using estimated fixture unit counts, with conversion to peak demand loads. Demands for the Food Services building were reduced to account for the reduced amount of staff/wards served for the DJJ. A 16 percent flow reduction was applied to NCRF, CHCF and DWN loads to account for anticipated reduced water consumption.

Peaking factors were analyzed using available existing pump station and flow metering data provided by NCYCC. From this data, a peaking factor of 1.39 was determined, and applied to the calculated sewer loads for pipe sizing. No peaking factor was applied to loads in the Central Services Core and building loads calculated using estimated fixture unit counts, as these flows are already considered "peak". Sewer demands are summarized in Table 3.2.2 A on the next page. (Per a memo of understanding, CCC will be allotted 100,000 gpd; however, per conversations with the Project Director for CCC, 28,000 gpd will be allotted to CCC for the purposes of this report's analysis. Further investigation will be required for final determination of CCC's demand.)

It is anticipated that water-efficient fixtures will be incorporated into new building construction and retrofits as a part of the proposed construction. Research by CDCR has shown that the use of water-efficient fixtures can realize a savings of up to 26 percent of water use, and consequently up to 22 percent of sewer loading. To account for the anticipated water-efficient fixture use, a conservative estimate of a 16 percent reduction in sewer load was applied to the calculated loads for CHCF, NCRF and DWN. No retrofits are planned for the remaining DJJ facilities (O.H. Close and Chad), or the existing Central Services Core buildings; therefore, no load reductions have been applied.

Per conversations with the Project Director for CCC, the site is anticipated to have an average of 100 full-time staff. To account for daily sewer loads from this site, the sewer load was calculated similar to loads from the institutions, conservatively using the DCG average sewer demand of 150 gallons per person per day (a total of 15,000 gpd). An additional 13,000 gpd will be included as estimated for ancillary work, bringing the total anticipated average sewer volume from CCC to 28,000 gpd.

Flows from CCC were not included in the piping system analysis, as they are sent directly into the City of Stockton existing 20-inch line parallel to Newcastle Road and do not impact the NCYCC system. Additionally, flows from the existing Training Facility were not included in the analysis, as it wasn't known at the time of this report if the flows were sent directly into the NCYCC system, or directly into the City of Stockton 20-inch sewer main (similar to CCC). Further investigation will be required to determine the final point of load on the system.

Sewer Flow Summary Table

Institution	Design Capacity Inmate Count	Required flow per DCG	Average Flows and Volumes		Peak Flows
	(number)	(gpid)	(gpd)	(gpm)	(gpm)
CHCF	1722	200	289,300	201	279
NCRF	500	150	63,000	44	61
DWN	1133	150	142,760	99	138
OH Close	379	150	56,850	39	54
Chad	600	150	90,000	63	88
Central Services Core	*n/a*	*n/a*	*n/a*	*n/a*	*258*
Other Support Buildings	*n/a*	*n/a*	*n/a*	*n/a*	*84*

TABLE 3.2.2 A

Since NCYCC sewer flows drain to a City of Stockton sewer line, it is possible that the City may require NCYCC to use its criteria for determining peaking factors. The City peaking factors would require the pipes sized to carry much larger flows than anticipated from the institutions. It is likely that the larger pipes would have a lower velocity than the DCG requirement of 2 feet per second (fps), resulting in increased maintenance costs for cleaning out settled material in the pipes. Kitchell recommends that peaking factors be further discussed with the City of Stockton prior to preparation of design documents.

Existing and proposed pipe sizes were analyzed according to the DCG requirement of maintaining a minimum 2 fps velocity when the pipe is half-full, at peak flow conditions. A limited amount of as-built information was available, including most line sizes and partial manhole rim and invert elevations. Due to this limited information, not all existing pipes could be verified as meeting the DCG requirements. For planning purposes, all existing piping affected by sewer improvements is assumed to be improved. Depending on the condition of the pipes, the pipes may be improved with sliplining, or if required, demolished and replaced with PVC, including the 20-inch sewer line downstream of the lift station (up to the connection with the City of Stockton 20-inch main). Further investigation will be required to establish unknown manhole rim inverts and elevations; this information may confirm that some of the existing piping will not require replacement. For estimating purposes, it is assumed that most of the lines will be able to be sliplined, except those requiring a size increase due to system loading; a contingency for potential pipe replacement will be added.

During the analysis, it was noted that flows through the NCRF line (connecting NCRF to the main sewer system) will produce velocities less than the DCG requirement of 2 feet per second, even with proposed improvements to reduce the interior pipe roughness (e.g. sliplining, replacement with PVC, etc.). This is based on the limited information available, as discussed previously. Further investigation will be required to establish the alignment of this system, and any structures on this system, as they were unknown at the time of this analysis and report. Should this system still be found to be inadequate per DCG standards after field-verification of the line, several options are available to meet the DCG requirements. First, the original system could be re-used by installing a wet-well and pump station at NCRF. The pumps would be calibrated to pump out flows at a minimum velocity of 2 feet per second, satisfying DCG requirements. Second, flows from NCRF could be redirected through a new pump and force main system, running roughly parallel to the existing 10-inch pipe alignment, and connecting into the existing sewer system just east of O.H. Close. As a part of this option, a wet-well and pump station would be installed at NCRF. The existing 10-inch pipe system would be abandoned in place. The option to re-use the old system was chosen, as it was determined that it was most cost-effective.

The City of Stockton has plans to install a future 27-inch sewer main within Arch Road, which will extend up to the intersection of Arch Road and Austin Road. At the time of this report, the date of installation of this main, as well as available capacity and final configuration (depth, exact location within Arch Road, etc.) were unknown. Therefore, we do not recommend connecting a line from NCRF to this future main as a viable option at this time. This option may be explored further after more design development of this 27-inch main (to be implemented by the City of Stockton) has taken place.

With the improvements, the average day sewer flow leaving the site is 669,910 gallons (including the estimated 28,000 gallons for CCC), below the 700,000 gpd limit as previously discussed. (The total volume of flow from the Central Services Core and new support buildings was assumed to be included in the total average day calculated volume from the institutions.)

Recommendations: Sewer flows from CHCF, O.H. Close, DWN and Chad will continue to be conveyed to the existing sewer lift station through the existing piping system, and eventually to the 20-inch City of Stockton main in Newcastle Road. Improvements to the system will be made as required, including the upsizing of several pipes and sliplining / replacement of existing pipes.

Sewer flows from NCRF will also continue through the existing 10-inch line to the main sewer system and out to the existing lift station. In order to meet DCG requirements, a new wet-well and pump station will be installed at NCRF, and the 10-inch pipe will be improved as required (upsizing or sliplining as previously discussed).

3.2.3 Storm Water System

Existing Systems Overview: Storm drainage runoff for the NCYCC site is captured through a series of catch basins and underground gravity pipe systems. Pipes are of the original installation (except for small areas of repairs) and are mostly concrete. In general, site piping directs flows to the Central Services Core and to a drainage wet well and lift station located just south of the intersection of 3rd and McKesson Streets. The lift station has three pumps with a total rated capacity of about 56 cubic feet per second (cfs) (about 25,000 gpm). See Exhibit C3 for the existing storm drainage layout, including location of the lift station.

Drainage flows are pumped out into a trapezoidal concrete channel which runs between Chad and DWN. The concrete channel has an asphalt-concrete access road running parallel on the east side, with two arch-pipe vehicular crossings (see Exhibit C3 for locations, labeled as Culvert #1 and Culvert #2). In addition to the flows from the lift station, the concrete channel also picks up some runoff from adjacent offsite properties (mainly owned by the San Joaquin County Board of Education, just east of DWN). See Appendix B.4 for exhibits showing the property location and United States Geological Survey (USGS) contours from the Stockton East Quad Map.

Flows from the concrete channel enter into an approximately 84-acre-foot capacity earth detention basin, through a 60-inch concrete culvert crossing. The basin is equipped with two pumps to convey runoff out to the adjacent North Fork of South Little John Creek, with a total rated capacity of 28 cfs (about 12,500 gpm). The basin is unlined; due to the soil characteristics (mostly clay), the basin is not expected to have significant percolation and absorption. Information about the basin was obtained through site observations, and calculations performed in a Stormwater Drainage Study prepared by Kimley-Horn and Associates.

Most off-site runoff upstream of the site (north and east) is blocked by Arch and Austin Roads. However, a portion of flows east of Austin crosses onto, and through, the NCYCC site. From site aerials and the USGS map, an approximately 303-acre area drains through agricultural ditches to an 18-inch CMP culvert beneath Austin Road, roughly southeast of NCRF. This area will need a more in-depth study to determine actual watershed tributary to this culvert crossing. Flows from this upstream area run westerly through the site, north of Karl Holton and O.H. Close, through a roughly trapezoidal earth channel (hereinafter referred to as the “North Channel”). Included in the channel are a series of small size culvert crossings. It appears that this system will provide capacity for only minor storm events, with higher frequency storms overflowing the channel banks and following the natural contour patterns to Newcastle Road. This channel turns north at Newcastle Road, flows north and then west from the site through a 30-inch CMP culvert. From site observations and the USGS map contours, the North Channel also picks up some flows from private property just north of O.H. Close, and a small amount of undeveloped area between Karl Holton and O.H. Close. See Exhibit C3 for the general location of the existing channel and culvert crossings beneath Austin and Newcastle.

Except for the pump station at the detention basin and the North Channel, no other conveyances allow runoff from NCYCC to exit the site. There are currently storm drainage systems along Austin and Newcastle Roads. Runoff from these roads enters a series of roadside ditches and mostly flows to the south.

Planning and Methodology: The USGS Map, Stockton East Quad, was used to develop watershed areas and general drainage patterns. Limited topographic information was available for the site. Only information for Karl Holton, land between Karl Holton and Austin Road, and the detention basin was available. Adjustments to the basins were made using the available topographic information.

Watershed analysis was performed using Excel and Hydrologic Engineering Center HEC-1 (Flood Hydrograph Package Version 4.1). One-hundred-year storm events were used for the analysis. Runoff was calculated separately for the existing site layout (all of NCYCC and NCRF), and the proposed site layout (adjustments made for site improvements, including CHCF and DWN). This information was used for the analysis of the existing gravity systems, the concrete channel, storm drainage lift station, and the detention basin. Existing and proposed pipes were analyzed per the

DCG requirements of (1) containing 100-year flows, and (2) maintaining a minimum of 2 fps velocity when the pipe is flowing at 70 percent full. The basin was analyzed for its capacity to hold the existing site's 100-year storm event runoff, and also for its capacity to hold the 100-year storm event runoff for site with the new CHCF and DWN improvements. Rainfall hydrographs for the basin were prepared using criteria from the San Joaquin County Hydrology Manual; 24-hour was used for analysis. See Appendix B.4 for the existing and proposed watershed layouts (Exhibits C9 and C10).

A limited amount of existing system information was available for the piping system, pump station, and basin analysis. This included as-built information (most line sizes and partial manhole rim and invert elevations), the drainage study prepared by Kimley-Horn for NCYCC in December 2008 (including limited lift station, pump, and basin information), and a topographic map of the basin. Due to the limit of information available, not all existing pipes could be verified as meeting the DCG requirements. Additionally, final holding characteristics of the basin and design storm event modeling were not available. Further information will be required to establish manhole inverts and rim elevations to confirm if any existing piping requires replacement, and to confirm basin recommendations provided.

The arch-pipe crossings noted previously in the channel (near Chad and south of DWN) appeared to have been installed and backfilled in place after the channel was constructed. The crossings, as well as the 60-inch concrete culvert at the basin, restrict the full channel flow and create backwater effects. Analyses of the channel were performed to determine both its restricted capacity (with the pipe culverts in place) and full capacity with the culverts and flow restrictions removed.

The storm drainage runoff will be conveyed to the existing basin through two systems. The first system consists of the existing underground piping system, pump station, and concrete trapezoidal channel. This system will be improved to bring its capacity to the DCG-requirement of capturing the 100-year storm event runoff. Improvements to the piping system will consist of upsizing the pipes along their original alignment as required up to the pump station. The pump station will be upgraded to handle the 100-year flows, including increasing pump horsepower and possible expansion of the wet well. Improvements to the channel will consist of the removal of one channel crossing (between DWN and Chad), and the conversion of two channel crossings (to the south of DWN and at the basin) into bridge crossings. This system will convey flows form NCRF, O.H. Close, the Central Services Core Buildings, Chad, and roughly 35 percent of the land within the secure perimeter (containing CHCF and DWN).

The second system will consist of a new series of pipes running parallel to and east of CHCF and DWN, around the Firing Range and eventually emptying into the basin. This piping system will carry flows generated from the anticipated 100-year storm event from the remaining 65 percent of area within the secure perimeter (containing CHCF and DWN), open land south of NCRF, the main parking lot outside of CHCF, all of flows from DWN, and additional offsite flows as discussed below.

It was noted that a portion of the San Joaquin County Board of Education property, located between DWN and Austin Road (see Appendix B.4 for property location and USGS contours), drains towards NCYCC property. (The remainder drains south and west to the concrete channel and basin, away from DWN.) Per site observations, there appears to be no natural "barrier" (e.g. berm, raised roadway, etc.) to prevent flows from the San Joaquin property from crossing onto DWN. In order to mitigate this potential flooding problem, the new pipe located to the east of CHCF and DWN has been sized to carry the portion of the San Joaquin property flows that is headed to

DWN. Further investigation will be required to confirm this property's flow direction; additional information may show that this property's grading directs flows away from DWN, and does not need to be included in the new DAI pipe system.

A preliminary analysis of the basin showed that its existing capacity will not fully hold the 100-year storm event runoff from the site, even with the basin's pumps working during the event. In order to hold this runoff, the detention capacity of the system must be increased by about 10 percent. For the purposes of this analysis, the detention capacity will be achieved by increasing the basin size. Final basin geometry and confirmation of basin holding capacity will be confirmed during the design process. Due to the possibility of environmental concerns with increasing the basin, additional options may be incorporated to retain the flows, such as using parking lots for retention or a separate underground pipe storage system. These options will be dependent on the final layout and grading of the proposed improvements; further investigation will be required during the design process.

A portion of the existing North Channel will be rerouted north of the CHCF site from Austin Road and rejoin the existing channel alignment just northeast of O.H. Close. Since the actual watershed tributary to this channel is unknown, the channel may be required to carry the runoff from the entire estimated area upstream as discussed previously. A preliminary analysis was performed of the existing channel and upstream acreage, which showed that the existing channel will not be able to convey the full amount of flow through the site. Further study will be required to confirm the area tributary to this channel, and the final channel geometry required to carry the determined runoff.

There is an existing roadside ditch running parallel to Austin Road along the west side, which picks up drainage flows and conveys them south to the North Fork of South Little John Creek. Depending on final configuration of the North Channel and site improvements, it may be possible to convey a portion of flows traveling beneath Austin Road south to the Creek as well along this ditch alignment. This potential reconfiguration will require additional hydrologic investigation, including a watershed analysis of the adjoining basins and creek flow analysis for South Little John Creek. Additionally, since a potentially large portion of water would be diverted, additional land purchases from the San Joaquin County Board of Education would be required along their property adjacent to Austin Road to expand the ditch.

Recommendations: Provide improvements to the existing piping system (underground piping, pump station and trapezoidal channel) as well as a new pipe system for flows to the east of CHCF and DWN. Resize the basin to include an additional 10 percent holding capacity. See Exhibit C4 for the proposed storm drainage layout and improvements.

3.2.4 Domestic Water System

Existing System: Water for NCYCC is supplied from an underground aquifer, pumped by two operational wells. Two wells are online (wells #3 and #4). The remaining two wells (#1 and #2) have been shut down due to groundwater contamination. Well water is treated on-site with sodium hypochlorite and stored in three existing above-ground water storage tanks, located roughly to the southwest of Karl Holton, Each storage tank has a maximum capacity of 250,000 gallons. See Exhibit C5 for the existing water system and facility layout.

Water from these tanks is pumped into the existing NCYCC system through two sets of booster pumps. The first set of pumps supplies pressure to NCRF, Karl Holton, DWN and O.H. Close, and includes two 75-HP booster pumps and a 125-HP fire pump with a natural gas backup engine. Pressures in the existing system range from 60 to 75 psi. The second set of pumps supplies pressure to Chad only, and includes one 75-HP booster pump and a 75-HP fire pump with a natural gas backup engine. Pressure in Chad's system is about 110 psi, and is reduced to about 70 psi by regulators at each of the buildings. Each system includes a separate hydropnuematic tank. Site water mains are generally of the original installation except for local areas of repair, and are generally transite (AC) pipe. Irrigation and fire water demands are also provided from the main potable water system.

Several City water distribution lines are located adjacent to the NCYCC site, including an existing 24-inch line and 16-inch line within the Arch Road right-of-way (see Exhibit C6). The City plans to expand water service in this area, with new 16-inch and 24-inch mains down Newcastle Road. See Appendix B.5 for a map of the City's proposed water improvements. The 16-inch and 24-inch mains planned down Newcastle Road are expected to be operational before infrastructure improvements are implemented as discussed with this report. Additionally, the City of Stockton has entered into an agreement with CDCR to construct a 16-inch water main along Arch Road and Austin Road. The main will begin at a connection point within Arch Road at Logistics Road, turn south at Austin Road, and end at the main entrance from Austin Road to CHCF and DWN. As a part of this agreement, fire hydrants will also be constructed along this line per the County of San Joaquin Public Works Improvement Standards. See Exhibit C6 for the layout of the new 16-inch water main and fire hydrant locations.

In order to ensure adequate water supply, Forward Landfill has contracted with the City of Stockton to provide water to the site via two 12-inch supply lines. These water lines will begin at the 16-inch and 24-inch water lines in Newcastle Road, run north of O.H. Close, and tie into the existing NCYCC system at two separate points. A third 12-inch water line will be constructed beginning at the new 16-inch main in Arch Road, run south along the property line west of NCRF, and connect to the NCYCC system. The City of Stockton has plans to remove the 12-inch supply line tying into the 24-inch main after the 12-inch line from Arch Road is constructed and operational. Once all new water supply lines are operational, NCYCC's potable water supply will be disconnected from the well system.

Site Water Supply Planning and Methodology: Water supply for all of the institutions and support buildings will be provided from the same central system. A new tank farm, with new storage tanks, pump house, hydropneumatic tanks, and distribution mains, will be constructed west of CHCF, outside of the secure perimeter. This tank farm will be supplied from the final two 12-inch supply lines as discussed previously.

Water supply to the existing institutions (O.H. Close, Chad, and the Central Services Core) will continue to be served primarily through the existing piping system. New mains will be constructed from the pump house and connect to the existing mains; unused piping, or piping that will interfere with proposed construction, will either be demolished or abandoned in place.

Water supply to NCRF, CHCF, DWN, the Firing Range, and other proposed support services outside of the Central Services Core will be provided through a new distribution system, which will connecting to portions of existing mains servicing DWN. Where possible, existing site piping will be re-used; however, replacement of the existing piping may be required, for two reasons. First, the actual condition of the NCYCC pipes is unknown, but expected to be deteriorating due to age, and may not be able to deliver required flows and pressures. Second, if any pipes did require replacement, additional cost would be incurred from working with the transite pipe (environmental protections, hazardous disposal requirements, etc.). Abandoning the pipe in place and constructing new pipe would thus be more practical.

Potable water demands were estimated by multiplying each institutions' anticipated ward/ inmate count at design bed capacity by the DCG average water demand of 175 gallons per inmate per day (gpid). The 175 gpid was increased to 227 gpid for CHCF, to account for additional medical staff onsite (in proportion to developed wastewater flows; see Section 3.2.2, "Waste Water System", for additional discussion). Peaking factors were applied using the California Code of Regulations (CCR) Section 64554(b)(2). A peaking factor of 1.5 was used for maximum daily demands, and a factor of 2.25 was used for peak hour demands.

Water demands for the Central Services Core buildings to remain and new support buildings were determined using estimated fixture unit counts, with conversion to peak demand. Demands for the Food Services building were reduced to account for the reduced amount of staff/wards served for the DJJ. No peaking factor was applied to loads in the Central Services Core and building loads calculated using estimated fixture unit counts, as these flows are already considered "peak".

As discussed previously under "Sewer: Planning and Methodology", water-efficient fixtures are planned through new construction and retrofits. Similar to a reduction in sewer load, to account for the anticipated water-efficient fixture use, a conservative estimate of a 20 percent reduction in water demand was applied to the calculated loads for CHCF, NCRF and DWN. No retrofits are planned for the remaining DJJ facilities (O.H. Close and Chad), or the existing Central Services Core buildings; therefore, no load reductions have been applied. Potable water demands are summarized in Table 3.2.4 A.

Domestic Water Demands Summary Table

Institution	Design Capacity	DCG flow	Average Daily Flow and Volume		Peak Flow
	(number)	(gpid)	(gpd)	(gpm)	(gpm)
CHCF	1,722	227	312,715	217	488
NCRF	500	175	70,000	49	110
DWN	1,133	175	158,620	110	248
OH Close	379	175	66,325	46	104
Chad	600	175	105,000	73	164
Central Services Core	n/a	n/a	n/a	n/a	372
Other Support Buildings	n/a	n/a	n/a	n/a	126

TABLE 3.2.4 A

Fire flow demands were determined using the 2007 California Fire Code (CFC). Building square footages were obtained from previous assessment reports prepared by Kitchell (for the existing buildings at NCRF and DWN), and from architectural layouts prepared by URS for the new buildings. New and existing buildings are of varying construction types (Type IA, IIA or IIB). For fire flow estimating purposes, new buildings were assumed to be of Type IIA construction, and existing buildings of Type IIB. Sprinklered buildings include an allowable fire flow reduction of 75 percent, per the 2007 CFC. A summary of maximum fire demands for each institution, Central Services Core, and support buildings are included in Table 3.2.4 B.

Fire Water Demand Summary Table

Institution	Maximum Building Size	Required Fire Flow
	(sf)	(gpm)
CHCF	30,042	1,500
NCRF	55,060	1,500
DWN	39,275	1,500
OH Close	30,504	3,000
Chad	52,000	3,000
Central Services Core	36,244	1,500
Other Support Buildings	94,000	1,500

TABLE 3.2.4 B

Potable water systems for the new distribution lines were modeled using Bentley's Water CAD V8 XM Edition. The model contains distribution lines starting from the proposed pump house adjacent to the new water tanks, and includes lines up to the inside of each facility's fence. Fire water and potable water demands will be provided from the same system; no separate fire lines will be provided. Irrigation water will be provided by a separate system (see Section 3.2.5, "Irrigation Water System".) Existing potable water mains were modeled when new building loads were applied, including a distribution line up to the new Vehicle Maintenance and Central Plant Operations building, as well as the Firing Range. No modeling was performed for the existing O.H. Close and Chad water systems, as no water improvements will be implemented except for the connections to the new water supply tanks.

The following criteria were used for developing the water models: 20-psi minimum pressure for the design condition required by the DCG (peak demand plus fire flow), and 10-fps maximum water velocity during the DCG condition. Three scenarios were analyzed in WaterCAD for the criteria and design flows (peak water demand plus fire demand), corresponding to the worst case fire event at each institution.

Recommendations:
Install new water piping from the proposed tank farm up to NCRF, CHCF and DWN, as well as connections to the existing Chad, O.H. Close, and Central Services Core distribution lines. Install replacement piping on the existing system as required to provide capacity for fire flows. See Exhibit C6 for the layout of the proposed water lines and connections to existing.

Water Storage Planning and Methodology: For the new water storage tanks, calculations were performed to determine the required water storage for operational, fire, and reserve based on the DCG, the D&CPG, and the 2007 CFC. The methodology used to size the tanks is described below.

Operational (potable/drinking water) demands were developed using the same process discussed previously in the "Site Water Supply Planning and Methodology." The D&CPG requires that the water storage system have a minimum of 72 hours of potable water storage based on average day demand. Three days of operational (potable/drinking water) storage were calculated based on average day water demands. Storage for buildings within the Central Services Core as well as other support buildings is assumed to be calculated as a part of the DCG flow for each institution. Although irrigation demands will be served off of these tanks for O.H. Close, the Central Services Core and Chad, no storage for irrigation will be included.

No criteria for estimating reserve storage are contained in the DCG or California codes. However, a small amount of reserve storage is included in the estimated storage requirements to account for other water usages/demands such as water line leaks, etc. Operational and reserve storage requirements are summarized in Table 3.2.4 C.

Domestic Water Storage Requirements

Institution	Operational Storage (72 hours)	Reserve Storage	Storage Required	Total Storage
	(MG)	(MG)	(MG)	(MG)
CHCF	0.94	0.08	1.02	2.34
NCRF	0.21	0.02	0.23	
DWN	0.48	0.04	0.52	
OH Close	0.20	0.02	0.22	
Chad	0.32	0.03	0.35	

TABLE 3.2.4 C

It is unlikely that all three institutions will require fire storage at the same time. Therefore, only one fire event, for the worst case scenario, was included in the tank capacity calculation. Fire storage requirements are summarized in Table 3.2.4 D. As shown in the table, the highest fire flow required is for CHAD. An additional storage requirement of 0.72-MG is therefore required with the tank storage calculated volume.

Fire Flow Storage Requirements

Institution	Maximum Building Size	Required Fire Flow	Required Duration	Total Storage Volume
	(sf)	(gpm)	(hours)	(MG)
CHCF	30,042	1,500	2	0.18
NCRF	55,060	1,500	3	0.27
DWN	39,275	1,500	2	0.18
OH Close	30,504	3,000	3	0.54
Chad	52,000	3,000	4	0.72
Central Services Core	36,244	1,500	4	0.36
Other Support Buildings	94,000	1,500	4	0.36

TABLE 3.2.4 D

Recommendations:
Install two 1.53-MG water tanks, with associated paving improvements, grading, and piping. This will include a 10-foot wide concrete access road around each tank, and a 20-foot asphalt concrete access road from the tanks out to Sloan Avenue.

Provide a new pump house with three new booster pumps and one fire pump with a diesel backup generator, per the 2007 CFC. Per the San Joaquin Air Pollution Control District regulations, a natural gas backup system may be required instead of a diesel system (requiring a separate propane tank). Further investigation will be required to confirm.

Provide two 16,400-gallon hydropneumatic tanks to regulate system pressure.

3.2.5 Irrigation Water System

Existing System: Water for irrigation is supplied directly off of the potable water lines for each institution. Irrigated areas include general planting and landscaping within each institution, and areas of land outside the secure perimeters. No areas outside of the NCYCC property are irrigated with water from the NCYCC wells.

Planning and Methodology: To reduce required storage in the tanks and supply requirements from the City of Stockton, a new irrigation distribution system is recommended for NCRF, CHCF and DWN. For this system, irrigation water will be supplied from Well #4, and a new pump house with two booster pumps (one operational, one standby) will be built to provide pressure to the system. Existing irrigation systems will be disconnected from the domestic water systems and reconnected to the new distribution lines as required. Irrigation demands for O.H. Close, the Central Services Core, and Chad will continue to be provided from the existing water system.

Although a cost savings is anticipated by using well water versus City of Stockton water, there will be additional costs for disconnecting the existing system and placing it on the new distribution system. Additionally, the life expectancy of the well #4 is not known; it may also become contaminated similar to the other three wells. Depending on the contaminants and environmental concerns, this irrigation system may require eventual disconnection from well water and connection to the City of Stockton system. Further investigation regarding water quality and well life expectancy will be required.

Irrigation demands were estimated using the following methodology:

The total area requiring irrigation was estimated from aerial images of the site. Identified areas were divided into individual sections of water demand calculations, based upon location (e.g. inside/outside the secure perimeter) and site divisions (e.g. roadways, etc.) These areas included grass areas outside of the institution secure perimeters adjacent to the adult facilities, and small demands estimated for local planter use for NCRF, CHCF and DWN. A map of identified areas (Exhibit C11) is shown in Appendix B.6.

From site investigations, most of the irrigated areas consist of grass with additional indigenous plants and mixed landscaping (e.g. shrubs, etc.). For the purposes of the irrigation model, a demand equal to that of Bermuda grass was assumed for landscaping areas, with a demand of 0.2 inches of water per day. The demand calculated was then applied to the distribution layout. To better simulate multiple connections within the system, each area's water demand was applied to up to two nodes on the irrigation distribution line.

The proposed irrigation water system was modeled using Bentley's WaterCAD V8 XM Edition. The model contains distribution lines starting from the proposed pump house adjacent to Well #4, and includes lines up to the inside of each facility's fence. The following criteria were used for developing the water model: Minimum of 70-psi at the pump house, and a minimum of 40-psi through the system during each simulation. No peaking factor was applied.

In order to simulate a conceptual irrigation schedule, identified irrigated areas were grouped into two zones (areas to be irrigated at the same time, same day, etc.). Zone designations for each area are also shown on the irrigation area map included in Appendix B.6. The model was developed to ensure that pressure and volume as previously discussed would be available for any one of the simulations.

Recommendations:
Subject to additional environmental investigation as discussed previously, install irrigation distribution lines from the pump house to each institution, as shown in Exhibit C7, with a new pump house and booster pump adjacent to Well #4.

3.2.6 Roadway System

Existing System: The main entrance to NCYCC is from Newcastle Road, through a gate house. There are several other gates that provide entrance to the facility, but the gates are locked and monitored. The Central Services Core has two-lane, asphalt-concrete paved roads with curb and gutters, and concrete sidewalks in some areas. Each of the NCYCC institutions has a perimeter all-weather patrol road. Exhibit C8 shows the existing roadways and perimeter roads throughout the site. The main entrance to NCRF is off of Arch Road to the north. Access roads from NCYCC intersect with the patrol roads around NCRF; access into NCRF is restricted by a locked gate.

Planning and Methodology: There is no direct access planned between the DAI and DJJ. In order for personnel from DAI to access the Central Services Core (e.g. for vehicle refueling), staff will exit the DAI site, travel around the site perimeter on Austin and Arch Road, and enter NCYCC through the existing gated access off of Newcastle Road.

The main entrance to NCYCC will remain in place, and will serve the Central Services Core, O.H. Close, and Chad only. A new entrance from Austin Road will be constructed for entrance to CHCF and DWN. An existing access road from Austin Road up to 4th Street will be demolished and removed, as well as perimeter access roads from the southeast corner of Karl Holton running south and east up to the concrete culvert crossing just south of DWN. See Exhibit C8 for locations of new entrances and roads.

The City of Stockton has entered into an agreement with CDCR to expand Austin Road adjacent to the CDCR property line. This expansion includes roadway improvements, and a widening of the right-of-way to 48 feet from the centerline to the CDCR property line. The west side of Austin Road (southbound lane) from the intersection at Arch Road up to the San Joaquin County Board of Education property line will be expanded to meet the County of San Joaquin standards for a rural collector roadway (a distance of roughly 4,000 feet). At the entrance to CHCF and DWN, the roadway will be further expanded to include deceleration and acceleration lanes. Lane lengths were based on a roadway speed of 45 miles per hour, and a preliminary layout of the intersection and lanes was performed using the County of San Joaquin Public Works Improvement Standards as well as the Caltrans Highway Design Manual. As a part of the improvements, street lights will be included along the length of expanded roadway, per the County of San Joaquin Public Works Improvement Standards, as well as signalization the entrance to CHCF and DWN from Austin Road. No improvements to the east side of the roadway (northbound lane) will be included. See Exhibit C12 for the preliminary layout of the roadway improvements.

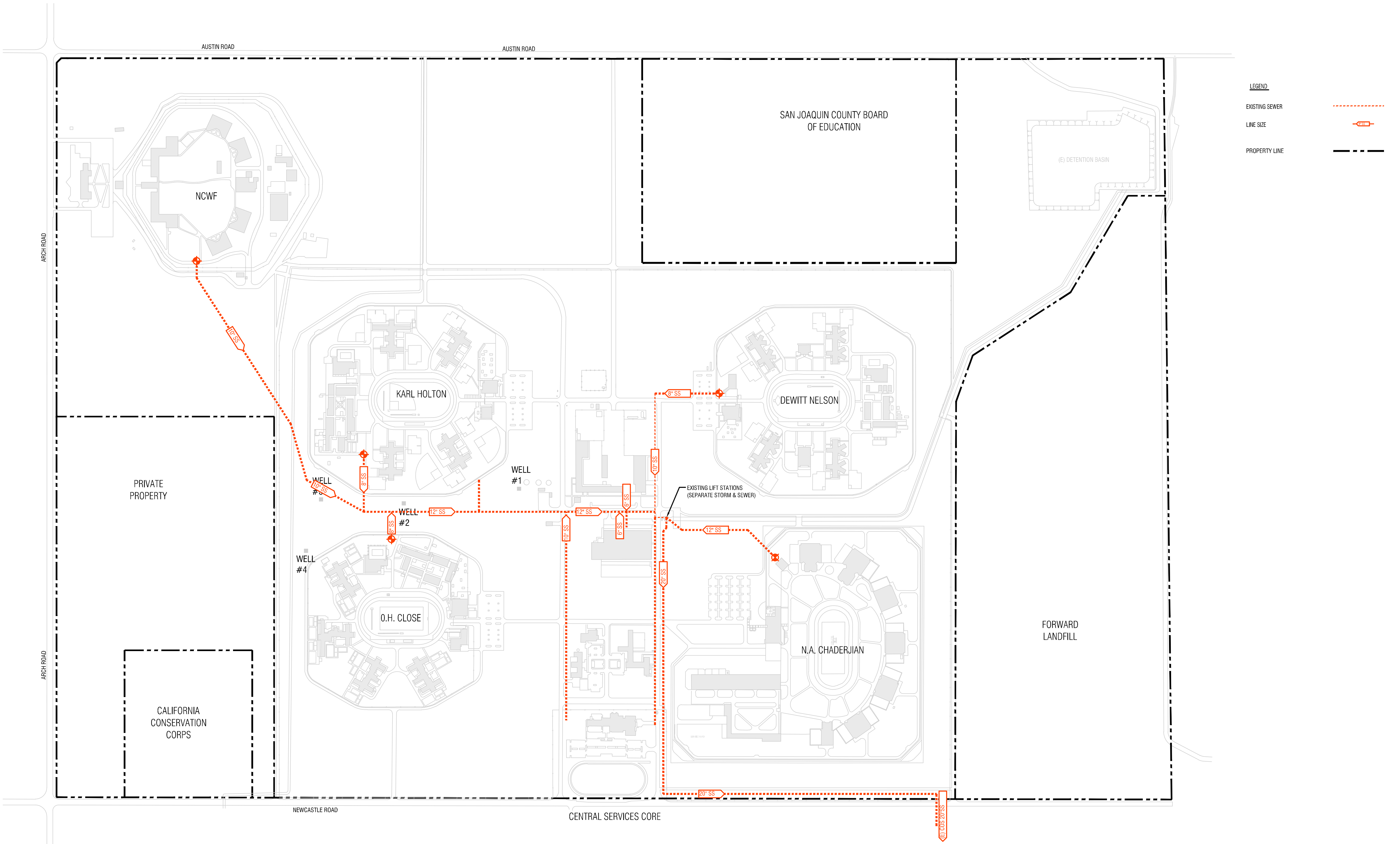
For the new on-site access roads, recommended pavement sections were determined using the DCG and the Caltrans Highway Design Manual. Exhibit C8 shows the extent of proposed roadway improvements, and highlights areas included with this report's cost estimate. (Other improvements to CHCF and DWN are included along with the estimates in their respective 30-day letters.) For planning purposes, all vehicle pavement areas were assumed to be asphalt concrete (AC) over aggregate base (AB).

No geotechnical report was available to determine an R-value for the soil for calculating pavement section thicknesses. Typical R-values, per the Caltrans Highway Design Manual, range from 5 (very soft soils) to 80 (treated subbase). Due to the presence of high amounts of clay soils onsite, it is likely that either additional soil treatment will be required to stabilize the pavement, or a thicker pavement section will be required. At this time, a lower R-value of 25 was selected. Final pavement thicknesses will be dependent upon geotechnical engineering recommendations.

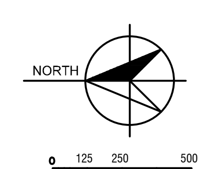
Several of the Central Services Core's facilities are anticipated to be used by both the DAI and DJJ facilities. This includes the fueling area and central plant operations. From site observations, it was noted that access roads within the Central Services Core are of varying conditions; actual pavement section thicknesses for the roads are not known. It was not confirmed if road improvements would be required for the Central Services Core area, to bring them into accordance with DCG requirements.

Recommendations: Per the agreement with the City of Stockton, expand the west side of Austin Road along the CDCR property line to the standard width for a Rural Collector. Construct intersection improvements to the main entrance for CHCF and DWN, and provide signalization at the main entrance and at the intersection of Austin Road and Arch Road.

Demolish and remove the existing access road from Austin Road to 4th Street. Install new pavement as shown on Exhibit C8 for truck and vehicle access.



1 EXISTING SEWER LAYOUT



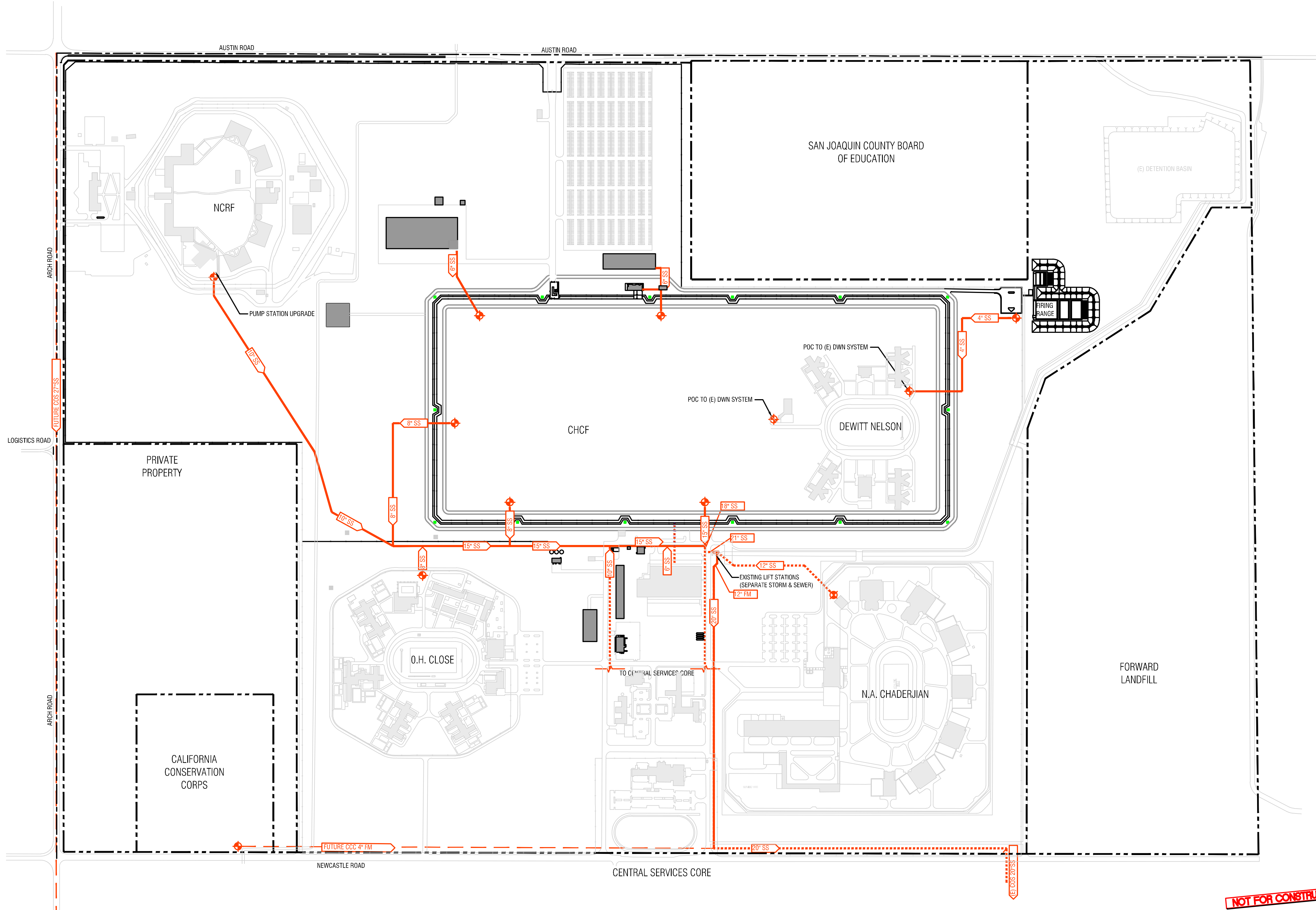
NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING SEWER LAYOUT	3270L1	C1
	DATE: 8-26-10	SCALE: AS SHOWN

_EXISTING_STCKTN MASTER PLAN SITE.DWG



LEGEND

- EXISTING SEWER
- PROPOSED SEWER IMPROVEMENTS
- FUTURE SEWER
- LINE SIZE (8" SS)
- DEMOLISHED LINES
- PROPOSED LIFT STATION
- POINT OF CONNECTION
- PROPERTY LINE

1 PROPOSED SEWER LAYOUT

NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
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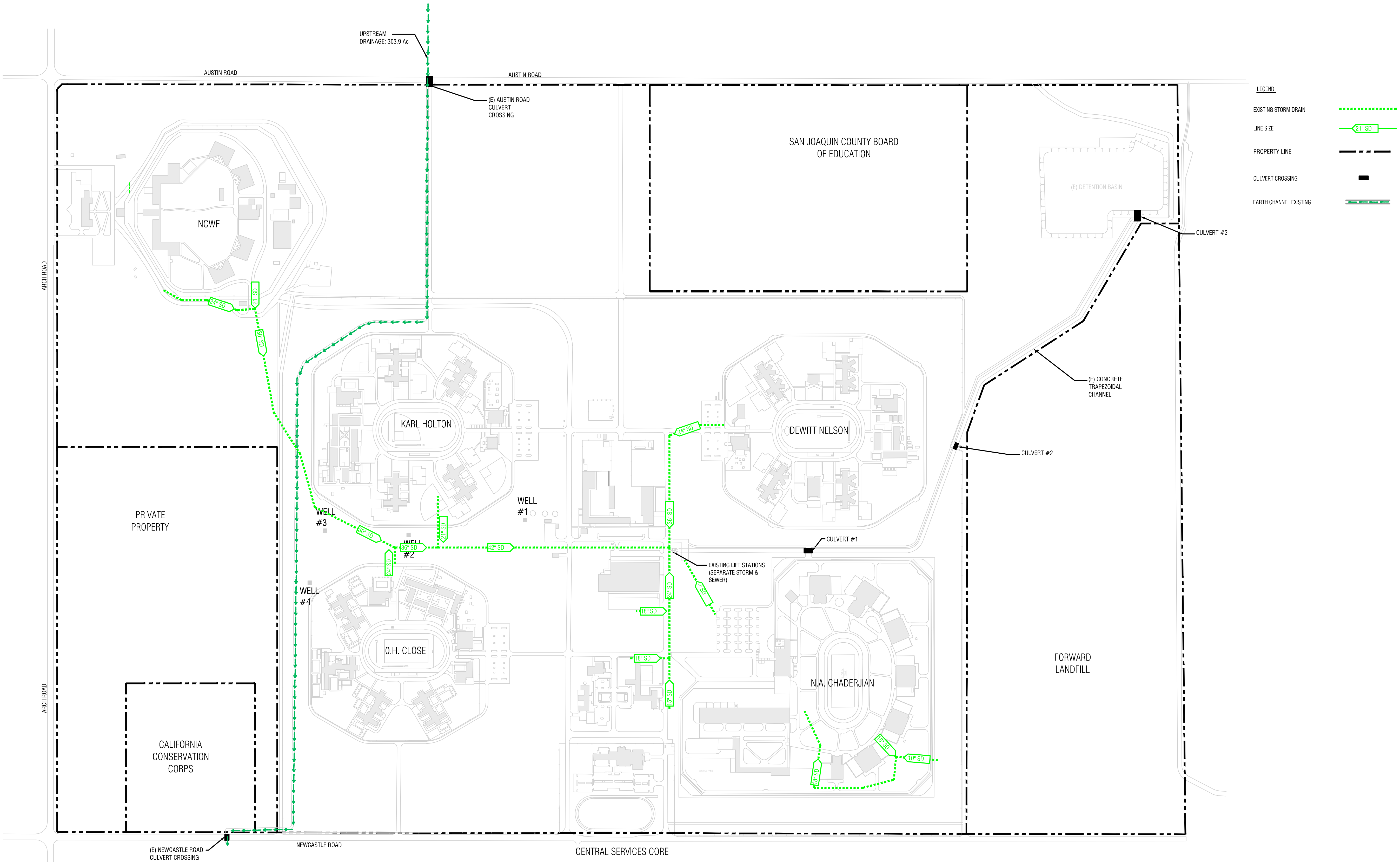
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED SEWER LAYOUT	3270L1	C2
	DATE: 8-26-10	SCALE: AS SHOWN



1 EXISTING STORM DRAIN LAYOUT

NORTH

0 125 250 500

NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

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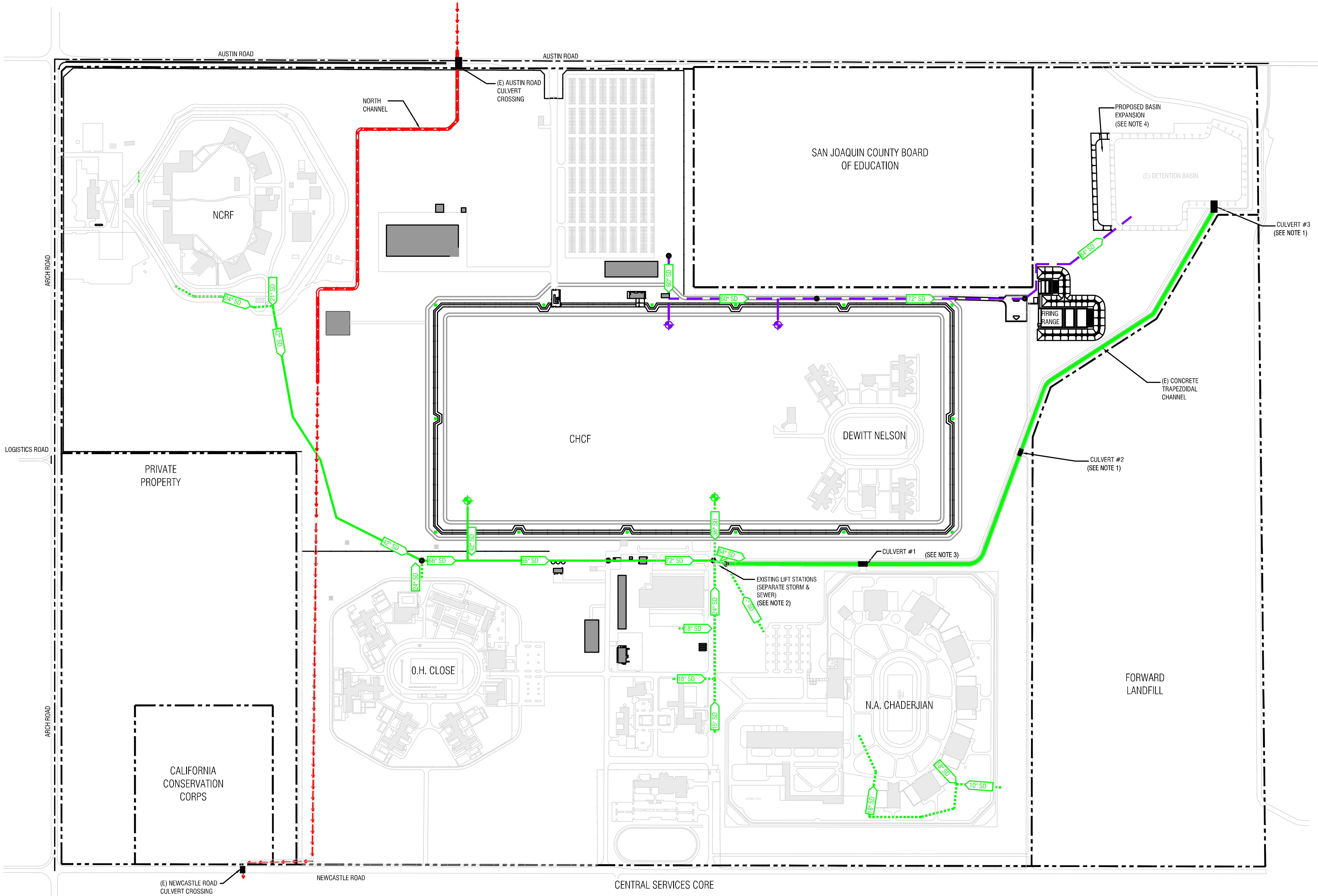
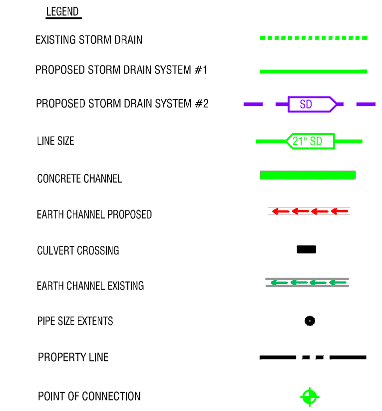
PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING STORM DRAIN LAYOUT	3270L1	C3
	DATE 8-26-10	SCALE: AS SHOWN

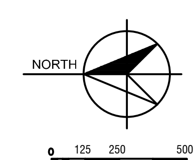




NOTE:

1. REPLACE EXISTING CULVERT CROSSING WITH CLEAR SPAN BRIDGE (25 FEET).
2. UPGRADE STORM DRAIN LIFT STATION.
3. REMOVE EXISTING CULVERT CROSSING.
4. FINAL GEOMETRY OF EXPANSION TO BE DETERMINED DURING DESIGN PHASE. EXPANSION SHOWN IS SCHEMATIC ONLY.

1 - PROPOSED STORM DRAIN LAYOUT



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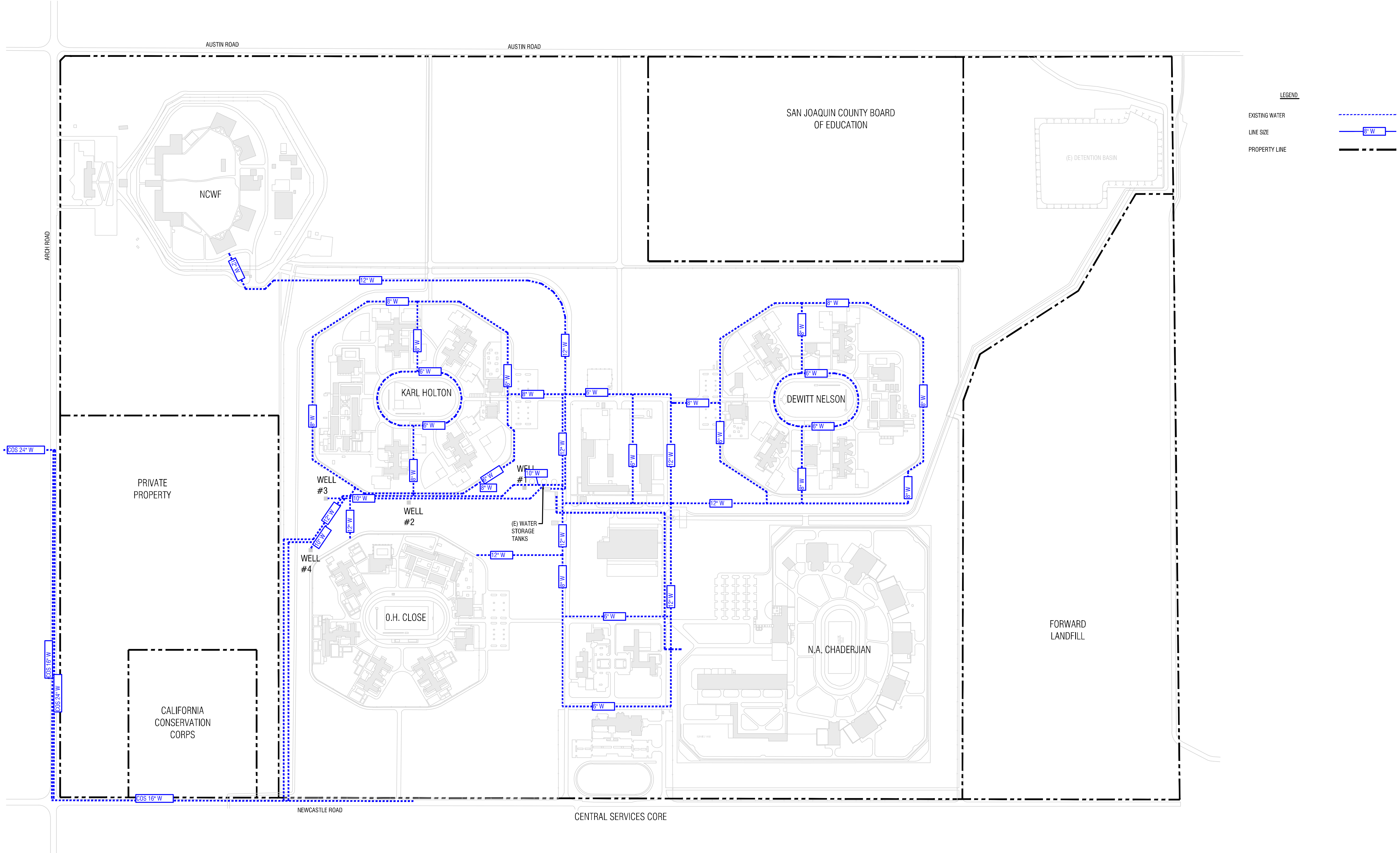
PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED STORM DRAIN LAYOUT	3270L1	C4
	DATE: 8-26-10	SCALE: AS SHOWN

CHCF COMBINED FENCE_STCKTN MASTER PLAN.DWG



1 EXISTING WATER LAYOUT

NOTE:
NOT ALL WATER LINES INSIDE THE INSTITUTIONS ARE SHOWN FOR CLARITY.

NORTH

0 125 250 500

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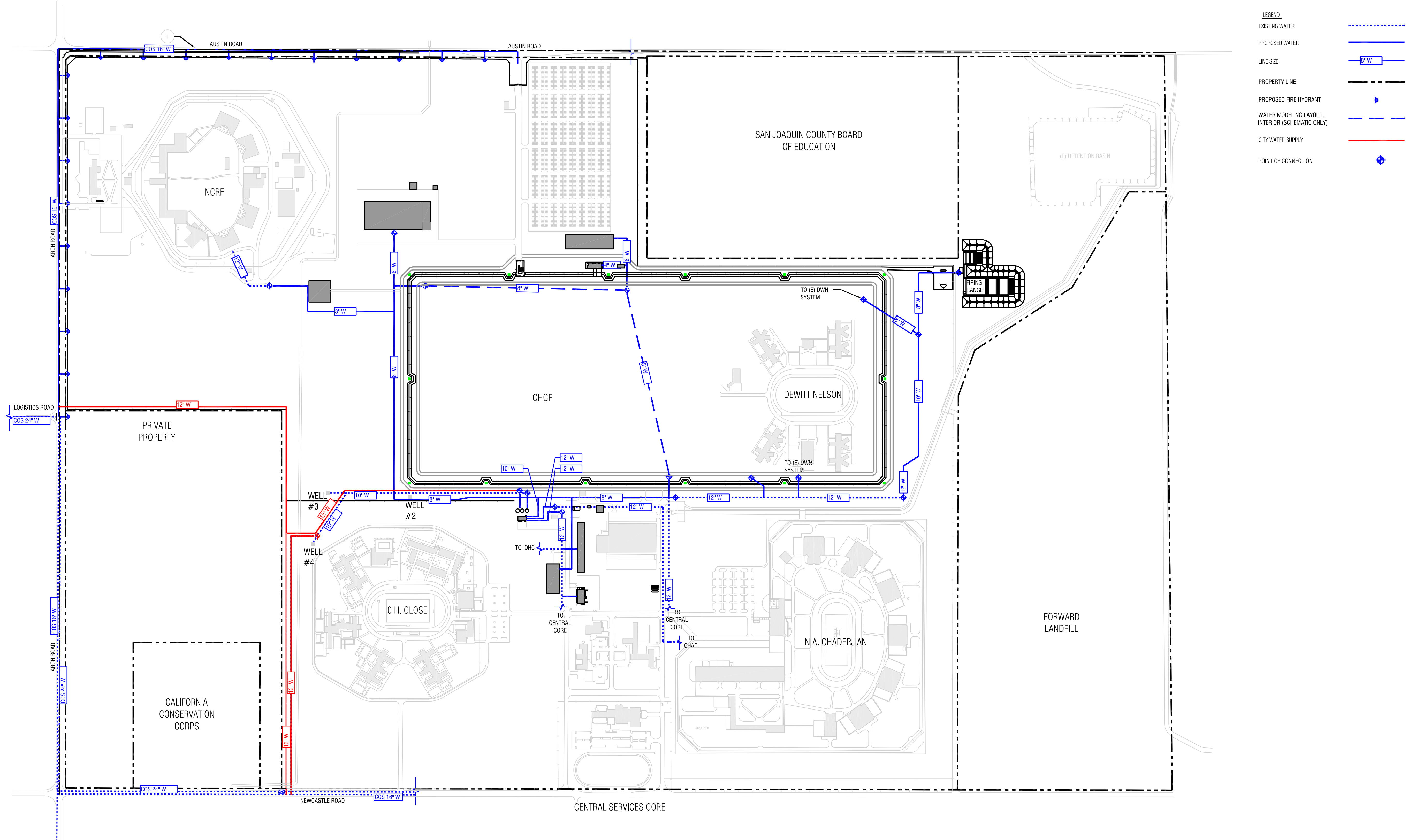
PROJECT NAME: EXISTING WATER LAYOUT
JOB NO. 3270L1
DATE 8-26-10
EXHIBIT C5
SCALE: AS SHOWN



1 PROPOSED WATER LAYOUT

NOTE:
NOT ALL WATER LINES INSIDE THE INSTITUTIONS ARE SHOWN FOR CLARITY.

NORTH

0 125 250 500

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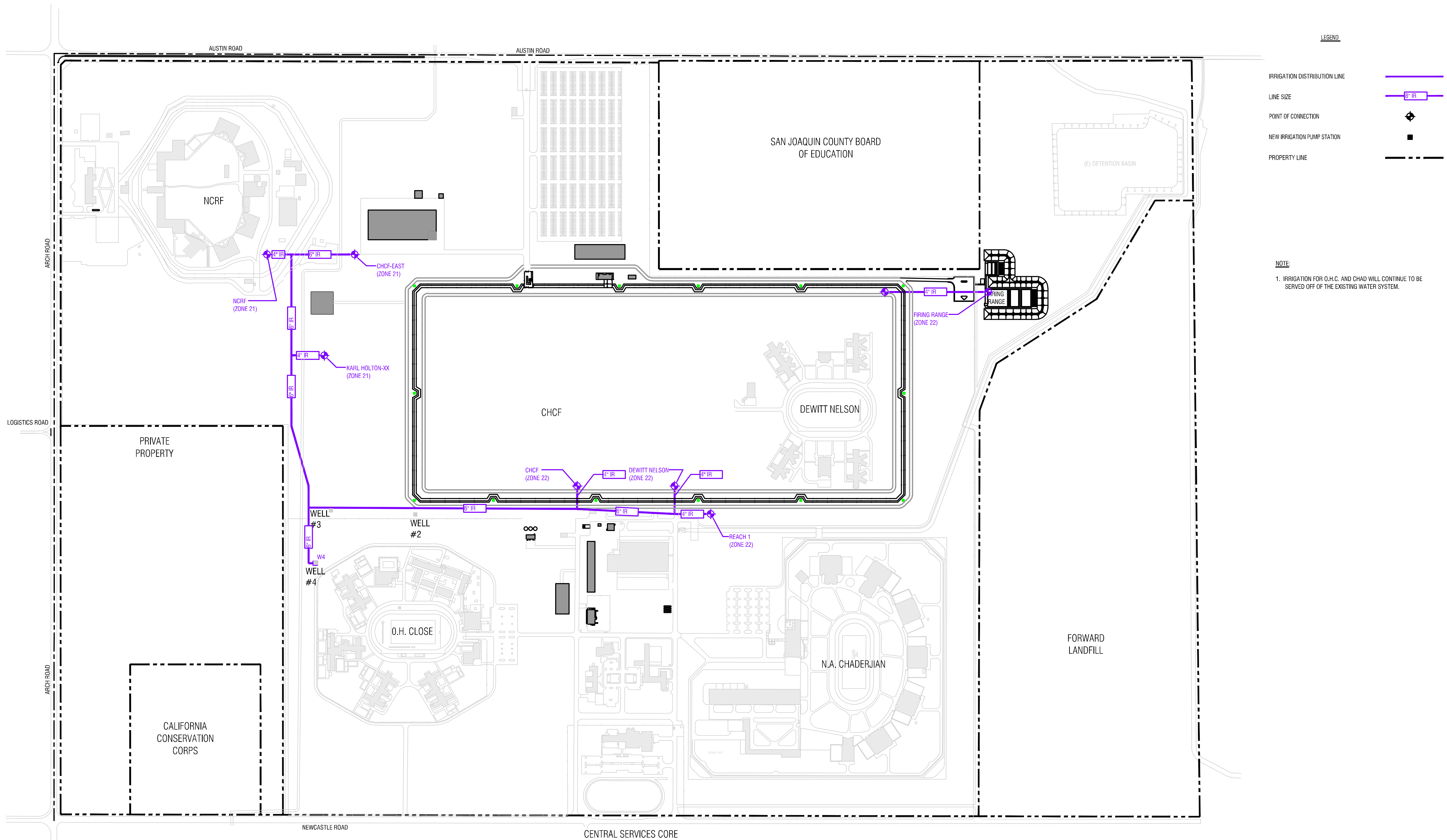
PROJECT NAME: PROPOSED WATER LAYOUT
JOB NO. 3270L1
EXHIBIT C6
DATE 8-26-10
SCALE AS SHOWN



1 - PROPOSED IRRIGATION LAYOUT

NORTH

0 125 250 500

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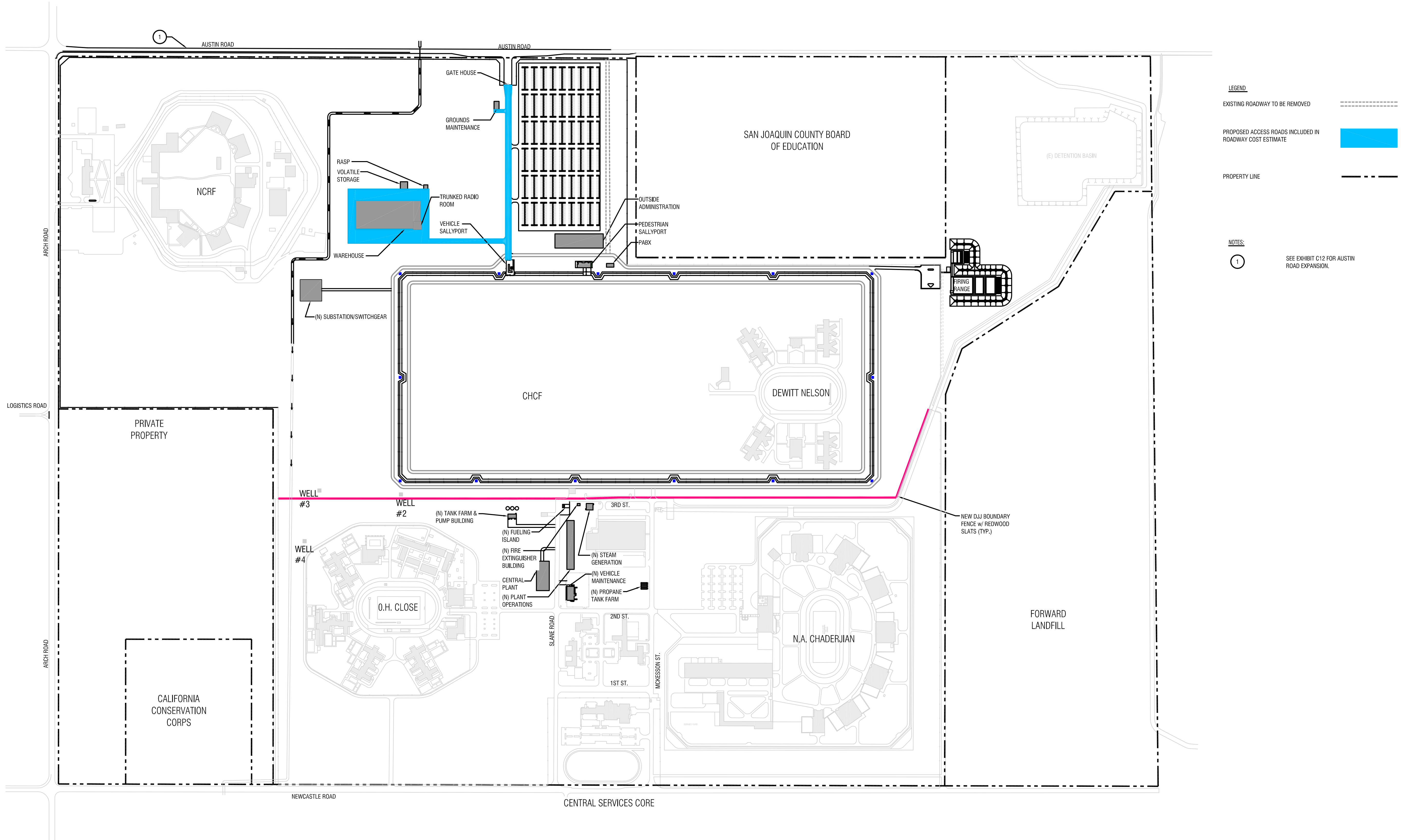
PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED IRRIGATION LAYOUT	3270L1	C7
	DATE: 8-26-10	SCALE: AS SHOWN



1 PROPOSED ROADWAY INFRASTRUCTURE IMPROVEMENTS

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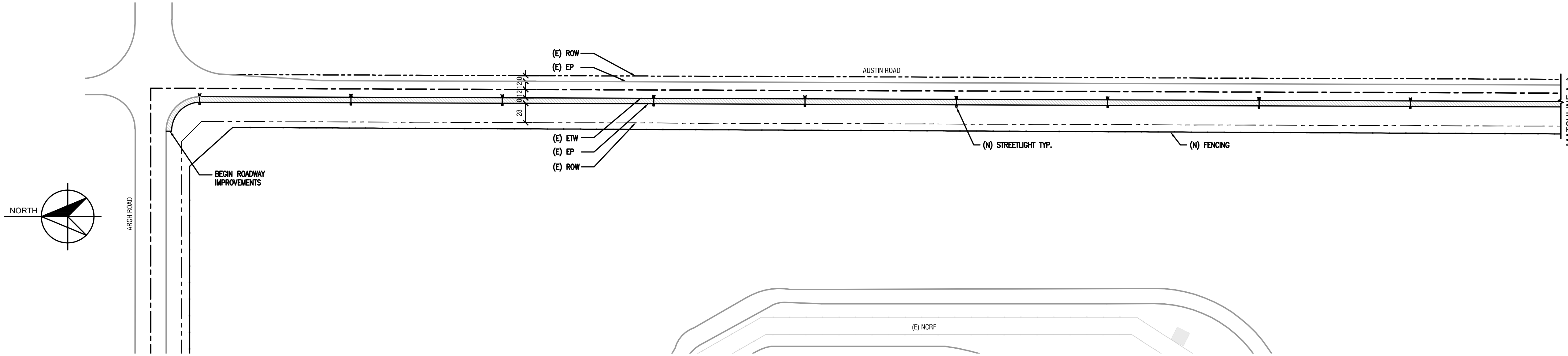
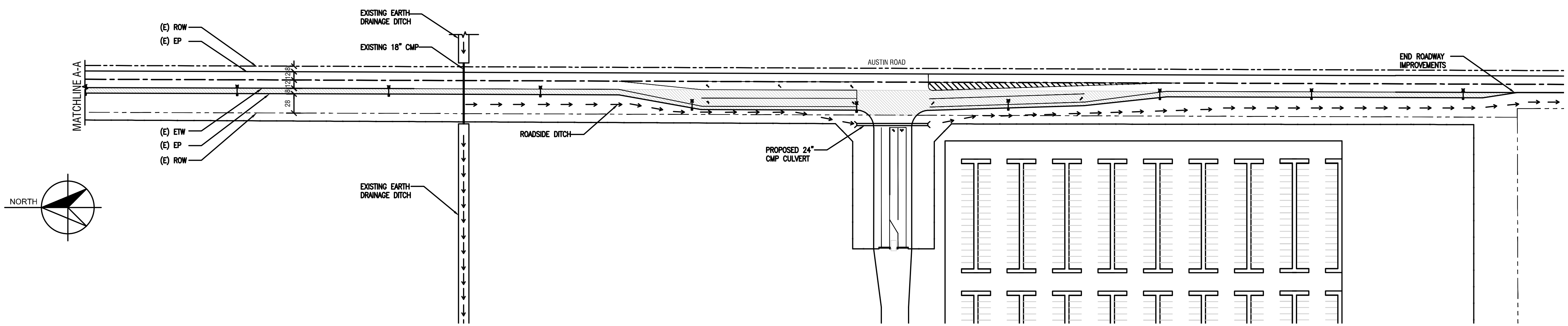
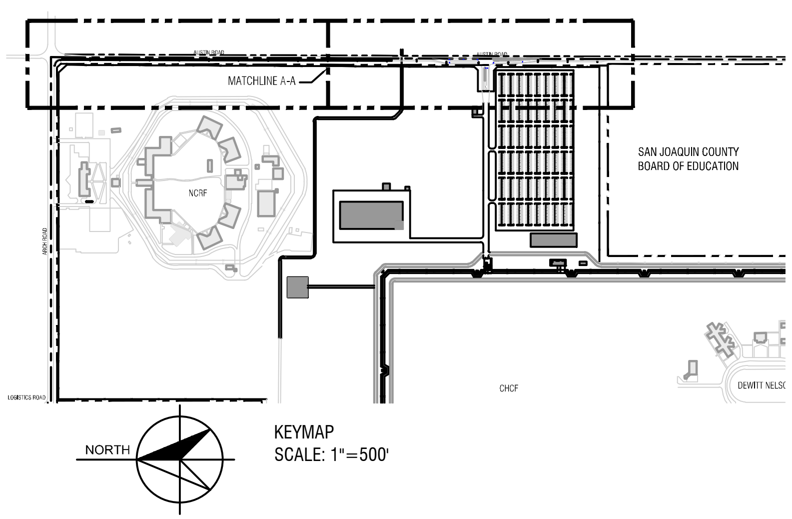
PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED ROADWAY INFRASTRUCTURE IMPROVEMENTS	3270L1	C8
	DATE: 8-26-10	SCALE: AS SHOWN

CHCF COMBINED FENCE_STCKTN MASTER PLAN.DWG







KEYMAP
SCALE: 1"=500'

LEGEND

- ROW
- CENTERLINE
- PROPOSED STRIPING
- EXISTING EDGE OF PAVEMENT
- PROPOSED EDGE OF PAVEMENT
- ROADSIDE DITCH
- FENCELINE
- PROPOSED STREETLIGHT
- ROADWAY EXPANSION

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PROJECT NAME:	JOB NO.	EXHIBIT
AUSTIN ROAD LAYOUT VIEWS	3270L1	C12
	DATE: 8-26-10	SCALE: AS SHOWN

CHCF COMBINED FENCE_STCKTN MASTER PLAN.DWG

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3.3.0 Mechanical

3.3.1 Natural Gas and Liquefied Petroleum Gas (LPG)

Overview of the Natural Gas System: Natural gas is used to fuel the heating hot water generators at CHCF; the steam boilers at NCYCC; the heaters/furnaces at NCRF, O.H. Close, DWN and Chad; and the domestic hot water for all five facilities. Refer to Exhibit M1 for the existing gas layout.

To determine the heating and domestic hot water demands for NCRF, O.H. Close, DWN and Chad we used Exhibit 2 – Gas Requirements by Building within the Kitchell Loads by Region document.

To determine the heating and domestic hot water demands for CHCF we used the Draft Facility Program Statement (April 30, 2008) developed by URS/Bovis.

Based on the above information, we estimate the natural gas demand to be 113,615 MBH (thousand British thermal units per hour) for the five facilities and 59,800 MBTU (thousand British thermal units) for the steam boilers at NCYCC.

Per PG&E the existing natural gas line that serves NCYCC comes from Newcastle Road. This line size is 1-1/4 inches with a service delivery pressure of 10 psig and delivers approximately 94,220 MBH. This pressure will be reduced to 5 psig at the Steam Generation Building and then distributed to CHCF, O.H. Close, DWN, and the Central Services Core area. A separate 2 inch gas line branches off of the PG&E main line to serve Chad.

DWN is served by an existing 3-inch gas line. Based on 4,900 feet from the Steam Generation Building to DWN and a gas demand of 4,244 MBH, the existing gas line is sized adequately. Refer to Table 3.3.1 A for the gas pipe sizing calculation.

The existing 4-inch gas line that served Karl Holton is not large enough to serve CHCF. This 4-inch gas line will be capped just north of O.H. Close. Based on 2,400 feet from the Steam Generation Building and a gas demand of 63,611 a 10-inch gas line will be required to serve the Central Plant at CHCF. Refer to Table 3.3.1 A for the gas pipe sizing calculation. Discussions with PG&E should be held to investigate whether the high pressure line from the street can be brought directly to the central plant. This would significantly reduce the gas pipe sizing. For this report, we have used the conservative number.

The existing gas lines serving O.H. Close and Chad were not evaluated since no service pressure problems have been reported.

Per PG&E the existing gas line that serves NCRF comes from Arch Road. This line size is 3 inches with a service delivery pressure of 5 psig.

Natural Gas Pipe Sizing

Facility	Gas Rqmt (MBH)	Length of Pipe (FT) (1)	Gas Pipe Size (inches) (2)
Northern California Re-entry Facility (NCRF)	16,544	400	Existing 3
California Health Care Facility (CHCF)	63,611	2,400	10 *
Dewitt Nelson Conversion (DWN)	4,244	4,900	Existing 3
N.A. Chaderjian Youth Facility	-	-	Existing 2
O.H. Close Youth Facility	-	-	Existing 3
Central Services Core Area	-	-	-
Total MBH	84,399		

Notes:
1. The length of pipe is the equivalent length. The equivalent length takes into account for various sizes and types of valves and fittings.
2. The gas pipe was sized using Equation 12-2 within the 2007 California Plumbing Code, for gas pressure of 5.0 psi with a drop to 1.5 psi.

* May be reduced in size if the main PG&E line can be extended.

TABLE 3.3.1 A

Overview of the LPG System: Per the D&CPG a LPG backup system will be provided with an air/gas mixing system that produces the same BTU content as natural gas. The LPG system will be sized to provide three days of fuel at full operation.

An air/gas mixing system consists of the following equipment: LPG storage tank(s), LPG liquid pump(s), LP gas vaporizer, LPG gas/air mixer, LPG surge tank, air compressor/after cooler, air receiver tank, and pneumatic safety controls. Refer to Exhibit M3 for a LPG system flow diagram.

The pneumatic safety control consists of two nitrogen cylinders, seismic detection system, seismic (pneumatic) butterfly valve installed on the site gas distribution system, and an actuator (pneumatic) manifold installed on the LPG storage tanks.

There is an existing 30,000 gallon tank located east of the Laundry Distribution Building. This tank is not in use because it does not contain the air/gas mixing system.

Two methods were used to determine the LPG gallons required to serve the five facilities and the Central Services Core. The first method was based on the natural gas demands and the second method was based on the square footage of each facility.

Based on the natural gas demands a total of 90,054 gallons would be required to serve all five facilities and the Central Services Core. Refer to Table 3.3.1 B for the LPG tank sizing using the natural gas demand.

Using the square footage of each facility and the Central Services Core a total of 90,428 gallons would be required to serve all five facilities and the Central Services Core. Refer to Table 3.3.1 C for the LPG tank sizing using square footage. Kern Valley State Prison (KVSP) was used to calculate the LPG requirements based on square footage. KVSP was used since it's the most recent constructed prison using SDD standards, DCG and D&CPG.

Since 90,428 gallons is more conservative than 90,054 gallons, this number was used to generate proposed LPG system.

LPG Tank Sizing by Gas Load Demand

FACILITY	GAS RQMT (MBH)	GAS RQMT (MBTU)
Northern California Re-entry Facility (NCRF)	16,544	0
California Health Care Facility (CHCF)	63,611	0
Dewitt Nelson Conversion (DWN)	4,244	0
N.A. Chaderjian Youth Facility	20,159	0
O.H. Close Youth Facility	9,057	0
Central Services Core	0	59,800
Total MBH	113,615	0
Number of days of fuel at full operation	3	0
Number of hours per day	24	0
Subtotal MBTU	8,180,280	59,800
Total MBTU		8,240,080

1 MBTU = 1,000 BTU		
Total BTU		8,240,080,000

LPG = 91,502 BTU per Gallon (NFPA 58)		
Total LPG Gallons Required		90,054

TABLE 3.3.1 B

LPG Tank Sizing by Facility Square Footage

FACILITY	SQUARE FOOTAGE
Northern California Re-entry Facility (NCRF)	239,323
California Health Care Facility (CHCF)	1,214,954
Dewitt Nelson Conversion (DWN)	83,907
N.A. Chaderjian Youth Facility	298,641
O.H. Close Youth Facility	154,922
Central Services Core	144,344
Total Square Footage	2,136,091
60,000 gallons = 1,417,318 square feet (Note 1 and 2).	
Total LPG Gallons Required	90,428

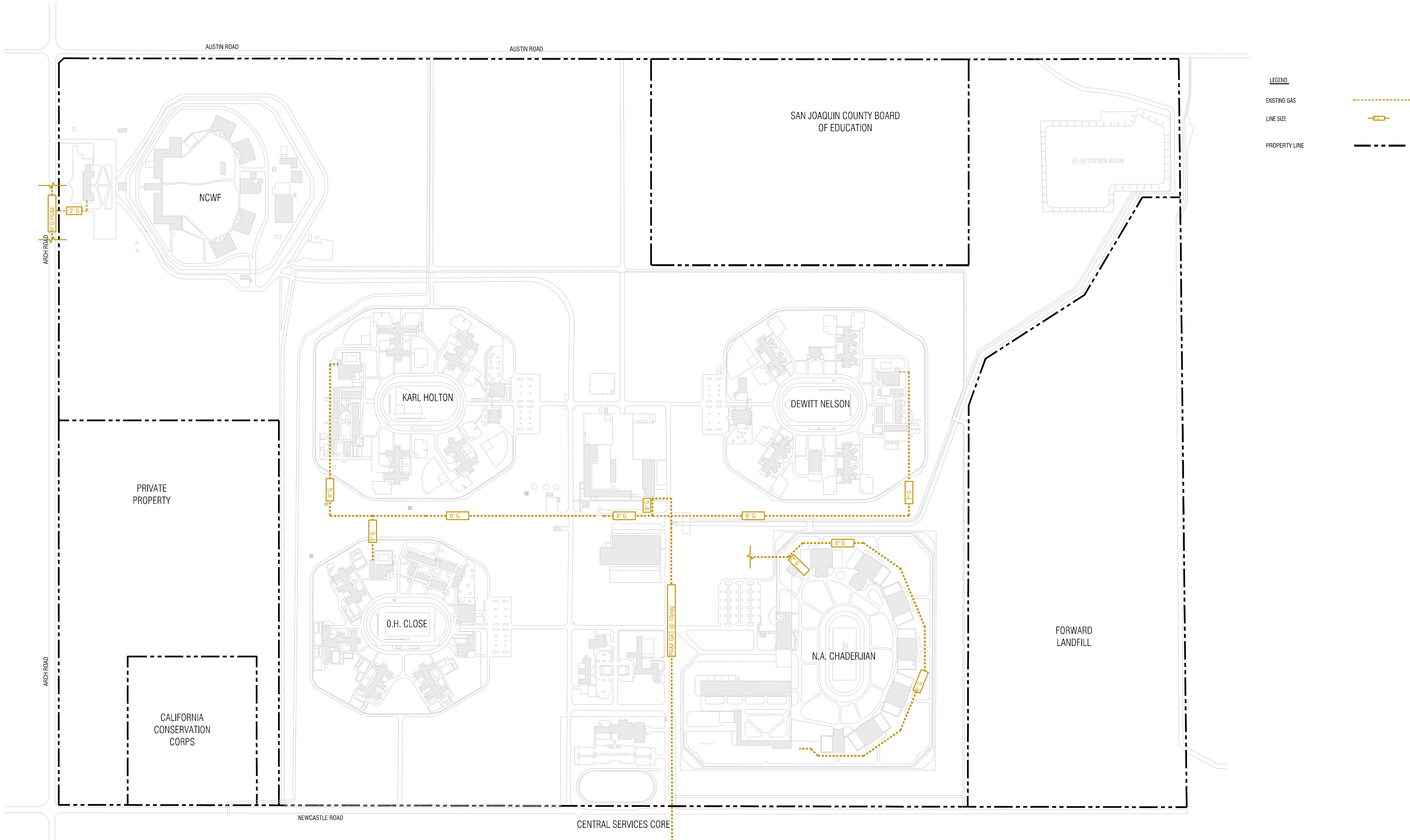
Notes:
1. Kern Valley State Prison (KVSP) has two 30,000 gallon LPG tanks on site.
2. KVSP square footage is 1,417,318.

TABLE 3.3.1 C

Overview of Proposed Systems: The existing PG&E natural gas line that serves NCYCC is going to have an increase in capacity by 16.2% with the addition of CHCF. Per an email received from PG&E dated July 15, 2010, PG&E will be responsible for providing the additional capacity since the increase occurs upstream of the main gas meter. They will make the determination if the existing 1-1/4 inch service natural gas line will need to be resized.

A new 12-inch gas line from the Steam Generation Building will connect to the existing 8-inch gas line serving O.H. Close. A separate 10-inch gas line will branch off the 12-inch line to serve the Central Plant at CHCF. DWN will re-use the existing 3-inch, 5 psig gas line. NCRF will also re-use the existing 3-inch, 5 psig gas line from Arch Road (refer to Exhibit M2).

For the LPG system the existing 30,000 gallon LPG tank at the NCYCC site will be retrofitted and re-used to serve O.H. Close, N.A. Chaderjian and the NCYCC Core Area. A new LPG backup system will be installed adjacent to the existing 30,000 gallon tank at NCYCC, which will be relocated west of the existing Laundry and Dry Cleaning Facility. This system will consist of two new 25,000 gallon LPG storage tanks which manifold with the existing tank and the equipment previously identified (refer to Exhibit M3). Another LPG backup system will be provided at NCRF. This system will consist of a 10,000 gallon LPG tank and all of the necessary air/gas mixing equipment.



1 EXISTING GAS LAYOUT

NOTE:

NOT ALL GAS LINES INSIDE THE INSTITUTIONS ARE SHOWN FOR CLARITY.

NORTH

0 125 250 500

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PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING GAS LAYOUT	3270L1	M1
	DATE: 8-26-10	SCALE: AS SHOWN

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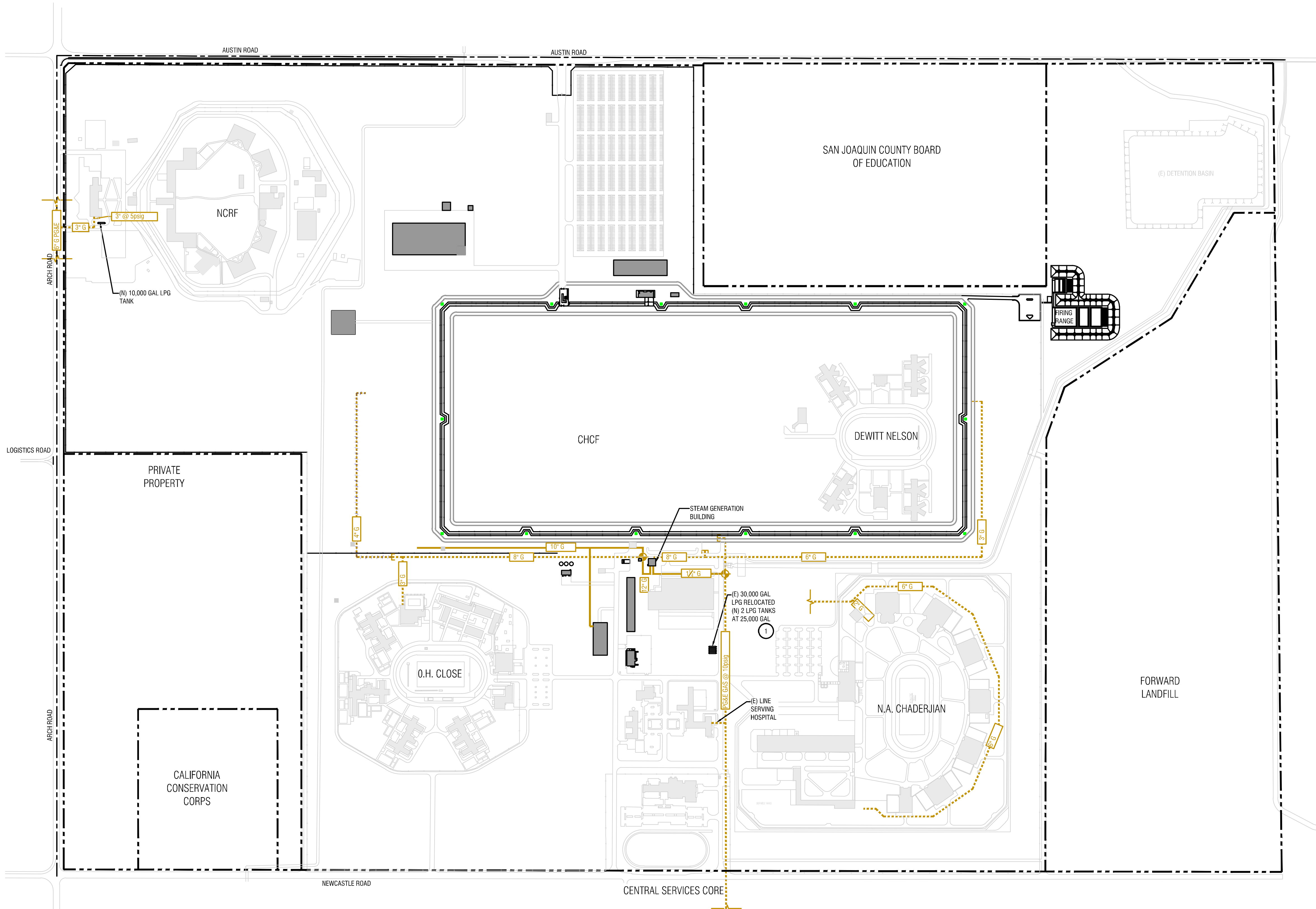

LEGEND

EXISTING GAS	
PROPOSED GAS	
LINE SIZE	8" G
DEMOLISHED LINES	
PROPERTY LINE	
POINT OF CONNECTION	
END CAP	

1 PROPOSED GAS LAYOUT

NOTE:

NOT ALL GAS LINES INSIDE THE INSTITUTIONS ARE SHOWN FOR CLARITY.

SHEET NOTES:

1 PROVIDE A NEW AIR MIX SYSTEM

NORTH

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PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED GAS LAYOUT	3270L1	M2
	DATE: 8-26-10	SCALE: AS SHOWN

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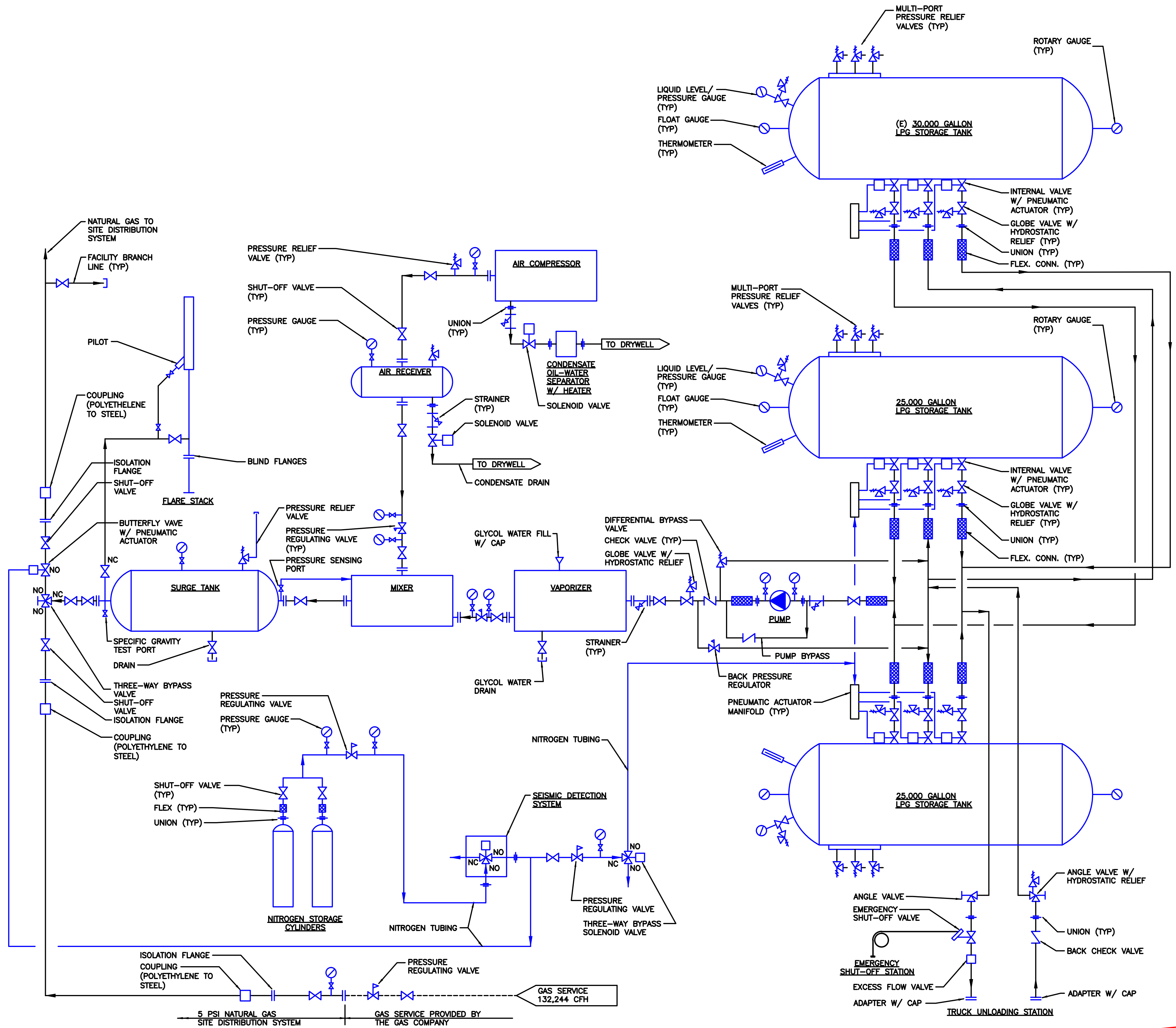

NOT FOR CONSTRUCTION

1 - LPG SYSTEM FLOW DIAGRAM

NTS

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PROJECT NAME: LPG SYSTEM FLOW DIAGRAM	JOB NO. 3270L1	EXHIBIT M3
	DATE 8-26-10	SCALE: AS SHOWN

3.4.0 Electrical

3.4.1 Electrical Power

Existing: Electrical service to NCRF and NCYCC is provided by Pacific Gas and Electric Company (PG&E). Refer to Exhibit E1 for existing electrical information.

For NCRF, a three-phase, 12 kV overhead line comes in from Arch Road and feeds a 1500 KVA transformer which is owned by CDCR. The transformer steps down the 12 kV to 4160V. From the secondary of the transformer, power is provided to the Institution via overhead poles running around the perimeter. The existing electrical service is adequately sized for the existing NCRF loads.

For NCYCC, power comes from two 12 kV overhead lines that are both served from the PG&E Mormon substation. The main power is fed from Arch Road and comes in to the NCYCC Switchgear Building. It can provide approximately 4 MW of power. An alternate source of power comes from the from Austin Road to the NCYCC Switchgear Building. The alternate source of power is sized to handle only a portion of the NCYCC load, approximately 0.5 MW. Transfer of power from the main source to the alternate source must be made manually.

The NCYCC switchgear feeds OH Close, Karl Holton, DWN, Chad, and the NCYCC Central Services Core area. The existing switchgear at NCYCC is approximately 40 years old and is in fair condition. The switchgear is double-ended to allow for the two feeds coming in. It is adequately sized for the existing loads at NCYCC. However, given that the switchgear is past its useful life, it is not recommended to place additional loads on it at this time.

The existing feed to Karl Holton is not adequate to handle the anticipated load of the CHCF. The existing feed to Karl Holton will be disconnected from the switchgear, the conductors pulled, and the conduit either abandoned in place or removed to allow for construction of CHCF.

The existing feed to DeWitt Nelson is adequately sized for the proposed additions. However, the feeder conductors are past their useful life and it is recommended to provide a new feed. The existing feeder will be disconnected from the switchgear, the conductors pulled, and the conduit abandoned in place.

The existing feeders to OH Close, Chad, and the NCYCC Central Services Core area will remain as is.

Proposed: Loads were developed for each of the proposed facilities (NCRF, CHCF, and DeWitt Nelson) using the Loads by Region criteria developed by Kitchell in 1995 for CDCR. The Loads by Region criteria is based on CDCR's Standard Design Documents which were used to build prisons throughout the state over the last 15 years. Additionally, loads for some of the medical buildings at CHCF were developed using the Salinas Valley State Prison 64-bed Mental Health Building. This building was designed to LEED Silver standards and is similar in function to some of the buildings proposed at CHCF.

Loads for SDD buildings can be directly obtained from Kitchell's Loads by Region. Loads for new building designs can be estimated from square footage data and previous experience with buildings of a similar type.

Loads for OH Close, Chad, and the Central Services Core are estimated from square footage data and previous experience with buildings of a similar type.

For each of the proposed facilities, loads were developed for each building on site. These are shown in Tables 3.4.1 B, 3.4.1 C, and 3.4.1 D. The connected loads represent the estimated building load if every electrical device, lighting fixture, HVAC unit, or piece of equipment was on at the same time. The peak demand load is an estimate of what the actual maximum load will be in each building. Observation of utility billing information over the years has shown the peak demand load is typically 40% to 60% of the connected load. For this Plan, 50% will be used for the calculations.

For the overall NCYCC site (including NCRF), the calculations in Table 3.4.1 A show a connected load of approximately 31,500 KVA or 31.5 MVA. Applying various load factors and sitewide diversity factors from Loads by Region results in an estimated 9.35 MVA/7.95 MW peak load for the site.

Note: The loads contained in this report are based on the latest information available regarding the size of the buildings and their proposed usage. As more information becomes available, these loads may change. Additionally, incorporating energy efficiency in the design of the buildings may lead to reduced overall loads.

A new CDCR-owned substation will be required for the NCYCC site. Based on CDCR's Design & Construction Policy Guidelines (D&CPG), the incoming utility feed will need to be a minimum of 69 kV. The Mormon substation provides power at 60 kV which will not meet the D&CPG requirements. Thus, power will need to be obtained from PG&E transmission lines which operate at 115 kV. The substation will be rated for 12.5 MVA to allow for future expansion. The substation will be located at the northeast corner of the CHCF, east of NCRF. The new 115 kV line will come in overhead from Arch Road to the site of the new CDCR substation. The secondary side of the substation will be at 12,470 V.

With a CDCR-owned substation, CDCR would be charged for power based on PG&E's Transmission Voltage rate. (The PG&E Rate Schedule is included in Appendix 6.0.0 C.1.) Tables 3.4.1 E and 3.4.1 F show the expected annual energy costs based on the two rates. For a PG&E-owned substation , the annual energy costs would be approximately $4,715,000. For a CDCR-owned substation, the annual energy costs would be approximately $3,855,000. The CDCR-owned substation would result in lower annual energy costs to CDCR, however the initial construction cost would be higher. Additionally, annual maintenance costs would be higher as CDCR would have to maintain their own substation. Based on the annual energy savings of $860,000, the simple payback on the CDCR-owned substation is 4.3 years ($2,900,000 for substation multiplied by mark-up factors in estimate of 1.51 = $4,379,000).

Recommendations: The incoming PG&E services are not capable of handling these projected loads. Thus, a new service will need to be brought in. A new 115 kV circuit will need to be extended from the NCYCC site to a PG&E transmission line located approximately 3 miles to the north along Mariposa and Austin Roads. The circuit will be run on metal poles and will require a 40' to 60' wide easement along the way. CDCR will be responsible for acquiring the land rights for the easements as well as the costs associated with extending the circuit.

A site switchboard will be provided near the new substation. The secondary of the substation will feed the new switchboard. The switchboard will be rated 2,000 amps at 12,470 V, 3 phase.

From the new switchboard, provide separate feeders to CHCF, DeWitt Nelson, and the existing NCYCC switchgear building. 2-4" conduits will be provided to NCRF for future connection. The feeders are shown on Exhibit E2.

The main PG&E feeder coming into the existing NCYCC switchgear building will be demolished. The alternate feeder from Austin Road will need to be relocated underground and will continue to serve as an alternate feeder for the existing NCYCC switchgear.

PROJECTED ELECTRICAL LOAD SUMMARY NCYCC SITE

	GSF	CONNECTED (KVA)	PEAK DEMAND LOAD (KVA)	PEAK DEMAND LOAD WITH 65% SITEWIDE DIVERSITY FACTOR (KVA)[1]	PEAK DEMAND LOAD WITH 65% SITEWIDE DIVERSITY FACTOR (MW)[2]
Northern California Re-Entry Facility	239,323	3,434	1,374	893	0.76
DeWitt Nelson	185,607	2,836	1,135	737	0.63
California Health Care Facility	1,283,659	17,396	8,726	5,672	4.82
O.H. Close	154,882	1,859	743	483	0.41
N.A. Chaderjian	298,641	3,584	1,433	932	0.79
NCYCC Central	204,800	2,458	983	639	0.54
Total (KVA)	2,366,912	31,567	14,394	9,356	7.95

Notes:
1) Diversity Factor from Loads By Region taking into account that peak loads for each building do not occur simultaneously.
2) Load in MW assuming 0.85 Power Factor.

TABLE 3.4.1 A

PROJECTED ELECTRICAL LOAD NORTHERN CALIFORNIA RE-ENTRY FACILITY

			NORMAL	
BUILDING	GSF	VA/SF	CONNECTED (KVA)	PEAK LOAD (KVA)
Administration	13,010	15	195	78
Entrance Building	2,700	15	41	16
Programs and Services	55,060	15	826	330
Family Visiting	1,860	10	19	7
Housing Unit 1	24,900	10	249	100
Ad-Seg	24,900	10	249	100
Receiving and Release/Dining	14,340	15	215	86
Housing Unit 2	24,900	10	249	100
Housing Unit 3	24,900	10	249	100
Armory	1,620	15	24	10
Guardhouse	120	15	2	1
Emergency Power	375	15	6	2
Vocational (Existing Laundry)	22,050	20	441	176
Electronics	5,010	15	75	30
Work Change	700	15	11	4
Maintenance	4,500	15	68	27
Proposed Medical Building	16,110	30	483	193
Proposed Guard Tower	336	15	5	2
Proposed Guard Tower	336	15	5	2
Proposed Guard Tower	336	15	5	2
Proposed Family Services	1,260	15	19	8
Total:	239,323		3,434	1,374

TABLE 3.4.1 B

PROJECTED ELECTRICAL LOAD CALIFORNIA HEALTH CARE FACILITY

		VA/SF				NORMAL	
BUILDING	GSF	HVAC	Outlets	Lights	Misc	CONNECTED (KVA)	PEAK LOAD (KVA)
Code 100 Housing Cluster A							
Inmate-Patient Care Unit #A1	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A2	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A1 & A2)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A3	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A4	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A3 & A4)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A5	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A6	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A5 & A6)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A7	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A8	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A7 & A8)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A9	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A10	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A9 & A10)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A11	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A12	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A11 & A12)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A13	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A14	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A13 & A14)	3,674	7	3.5	2	1.5	51	26
Inmate-Patient Care Unit #A15	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Care Unit #A16	16,008	7	3.5	2	1.5	224	112
Inmate-Patient Support Unit (A15 & A16)	3,674	7	3.5	2	1.5	51	26
Facility A & B Support	12,787	7	3.5	2	1.5	179	90
Facility A Service	4,860	7	3.5	2	1.5	68	34
SUBTOTAL	303,167					4,244	2,122

PROJECTED ELECTRICAL LOAD CALIFORNIA HEALTH CARE FACILITY

BUILDING	GSF	VA/SF				NORMAL	
		HVAC	Outlets	Lights	Misc	CONNECTED (KVA)	PEAK LOAD (KVA)
Code 100 Housing Cluster B							
Mental Health Crisis Bed #B1	14,092	7	3.5	2	1.5	197	99
Mental Health Crisis Bed #B2	14,092	7	3.5	2	1.5	197	99
Inmate-Patient Support Unit (B1 & B2)	2,676	7	3.5	2	1.5	37	19
Mental Health Crisis Bed #B3	14,092	7	3.5	2	1.5	197	99
Mental Health Crisis Bed #B4	14,092	7	3.5	2	1.5	197	99
Inmate-Patient Support Unit (B3 & B4)	2,676	7	3.5	2	1.5	37	19
Mental Health Crisis Bed #B5	14,092	7	3.5	2	1.5	197	99
Work Crew Housing Unit #B6	21,028	7	3.5	2	1.5	294	147
Facility B Service	3,846	7	3.5	2	1.5	54	27
SUBTOTAL	100,686					1,410	705
Code 100 Housing Cluster C							
Inmate-Patient Care Unit #C1	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Care Unit #C2	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Support Unit (C1 & C2)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #C3	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Care Unit #C4	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Support Unit (C3 & C4)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #C5	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Care Unit #C6	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Support Unit (C5 & C6)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #C7	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Care Unit #C8	17,637	7	3.5	2	1.5	247	123
Inmate-Patient Support Unit (C7 & C8)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #C9	23,589	7	3.5	2	1.5	330	165
Inmate-Patient Care Unit #C10	23,589	7	3.5	2	1.5	330	165
Inmate-Patient Support Unit (C9 & C10)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #C11	23,589	7	3.5	2	1.5	330	165
Inmate-Patient Care Unit #C12	23,589	7	3.5	2	1.5	330	165
Inmate-Patient Support Unit (C11 & C12)	1,944	7	3.5	2	1.5	27	14
Facility C & D Support	13,024	7	3.5	2	1.5	182	91
Facility C Service	5,403	7	3.5	2	1.5	76	38
SUBTOTAL	265,543					3,718	1,859

PROJECTED ELECTRICAL LOAD CALIFORNIA HEALTH CARE FACILITY

BUILDING	GSF	VA/SF HVAC	VA/SF Outlets	VA/SF Lights	VA/SF Misc	NORMAL CONNECTED (KVA)	NORMAL PEAK LOAD (KVA)
Code 100 Housing Cluster D							
Inmate-Patient Care Unit #D1	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D2	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D1 & D2)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D3	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D4	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D3 & D4)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D5	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D6	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D5 & D6)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D7	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D8	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D7 & D8)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D9	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D10	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D9 & D10)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D11	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D12	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D11 & D12)	1,944	7	3.5	2	1.5	27	14
Inmate-Patient Care Unit #D13	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Care Unit #D14	15,146	7	3.5	2	1.5	212	106
Inmate-Patient Support Unit (D13 & D14)	1,944	7	3.5	2	1.5	27	14
Facility D Service	5,403	7	3.5	2	1.5	76	38
SUBTOTAL	231,055					3,235	1,617
Code 200 Diagnostic & Treatment							
D&T Center Management	2,676	7	3.5	2	1	36	18
Diagnostic & Procedure Center	8,714	7	3.5	2	2	126	63
Specimen Collection & Process	1,235	7	3.5	2	2	18	9
Dialysis Clinic	5,532	7	3.5	2	2	80	40
Medical Outpatient Clinic	5,685	7	3.5	2	1	77	38
Mental Health Outpatient Clinic	3,942	7	3.5	2	1	53	27
Central Services	1,558	7	3.5	2	1	21	11
Central Health Records	2,096	7	3.5	2	1	28	14
Dental Clinic	5,210	7	3.5	2	2	76	38
Inmate-Patient Management Unit	17,866	7	3.5	2	1	241	121
Property Storage	4,664	7	3.5	2	0.5	61	30
Triage & Treatment Clinic	5,025	7	3.5	2	2	73	36
Shared Break Rooms	1,004	7	3.5	2	0.5	13	7
EOP	65,000	7	3.5	2	0.5	845	423
SUBTOTAL	130,207					1,748	874

PROJECTED ELECTRICAL LOAD CALIFORNIA HEALTH CARE FACILITY

BUILDING	GSF	VA/SF HVAC	VA/SF Outlets	VA/SF Lights	VA/SF Misc	NORMAL CONNECTED (KVA)	NORMAL PEAK LOAD (KVA)
Code 300 Community Support							
Visiting	8,516	7	1.5	1.5	0.5	89	45
Family Visiting	4,244	7	1.5	1.5	0.5	45	22
Education	14,859	7	1.5	1.5	0.5	156	78
Activity Therapy	4,189	7	1.5	1.5	0.5	44	22
Religious Programs	4,932	7	1.5	1.5	0.5	52	26
Library	4,997	7	1.5	1.5	0.5	52	26
Legal Library	3,249	7	1.5	1.5	0.5	34	17
Programs & Checkpoint	7,554	7	1.5	1.5	0.5	79	40
Other Services	462	7	1.5	1.5	0.5	5	2
Environmental Services	424	7	1.5	1.5	0.5	4	2
Shared Break Rooms	937	7	1.5	1.5	0.5	10	5
SUBTOTAL	54,363					571	285
Code 400 Administration							
Visitor Entry	5,097	7	1.5	1.5	0.5	54	27
Staff Entry	2,095	7	1.5	1.5	0.5	22	11
Central Control Room	1,183	7	2.5	1.5	5	19	9
Executive Admin & Business Services							
Executive Administration	4,315	7	1.5	1.5	0.5	45	23
Business Services	2,252	7	1.5	1.5	0.5	24	12
Human Resources	5,005	7	1.5	1.5	0.5	53	26
Case Records	3,172	7	1.5	1.5		32	16
Staff Services & Professional Dev.							
Staff Services & Professional Dev.	6,319	7	1.5	1.5	0.5	66	33
Staff Dining & Snack Bar	3,979	7	1.5	1.5	0.5	42	21
Information Technology	1,304	7	1.5	1.5	5	20	10
Operational Administration							
Operational Administration	2,429	7	1.5	1.5	0.5	26	13
Security & Investigation	1,308	7	1.5	1.5	0.5	14	7
Board of Parole Hearings (BPH)	2,437	7	1.5	1.5	0.5	26	13
Staff Scheduling	1,829	7	1.5	1.5	0.5	19	10
Shared Break & Conference Rooms	949	7	1.5	1.5	0.5	10	5
SUBTOTAL	43,673					469	235

PROJECTED ELECTRICAL LOAD CALIFORNIA HEALTH CARE FACILITY

BUILDING	GSF	VA/SF HVAC	Outlets	Lights	Misc	NORMAL CONNECTED (KVA)	PEAK LOAD (KVA)
Code 500 Facility Support							
Materials Service Center							
Office Area	2,151	7	2.5	1.5	0.5	25	12
Receiving / Shipping	1,492	7	1.5	1.5	0.5	16	8
General Warehouse	51,518	7	1.5	1.5	1	567	283
Canteen Stores	5,419	7	1.5	1.5	0.5	57	28
Warehouse Support	-						
Volatile Storage	475	7	1.5	1.5	0	5	2
Mail	1,239	7	1.5	1.5	0.5	13	7
Pharmacy	2,865	7	1.5	1.5	0.5	30	15
Laundry Distribution	8,887	7	1.5	1.5	5	133	67
Plant Maintenance	10,362	7	1.5	1.5	2	124	62
Central Power Plant	17,854	7	1.5	1.5	1	196	98
Information & Data Systems	3,882	7	2.5	1.5	5	62	31
Vehicles							
Vehicle Management	288	7	1.5	1.5	1	3	2
Vehicle Parking	-						
Central Kitchen	36,506	7	2.5	1.5	5	584	292
Waste Management Center	3,467	7	1.5	1.5	0.5	36	18
SUBTOTAL	146,405					1,852	926
Code 600 Perimeter							
Entry Gatehouse	191	7	1.5	1.5	0	2	1
Perimeter Fencing	-						
Security Towers	1,389	7	1.5	1.5	1	15	8
Perimeter Towers	3,568	7	1.5	1.5	1	39	20
Armory & Lock Shop	3,221	7	1.5	1.5	1	35	18
Vehicle Sallyport	191	7	1.5	1.5	0	2	1
Site/Perimeter Lighting						56	56
SUBTOTAL	8,560					150	103
Total:	1,283,659					17,396	8,726

TABLE 3.4.1 C

PROJECTED ELECTRICAL LOAD DEWITT NELSON FACILITY

			NORMAL	
BUILDING	GSF	VA/SF	CONNECTED (KVA)	PEAK LOAD (KVA)
Existing Administration	11,408	15	171	68
Healthcare Services Addition	9,853	20	197	79
General Visiting	11,285	15	169	68
Housing Units #990	13,554	15	203	81
Housing Units #991	13,554	15	203	81
Housing Units #992	13,554	15	203	81
Housing Units #993	13,554	15	203	81
New 270 Housing Unit	27,109	15	407	163
New 270 Housing Unit	27,109	15	407	163
New 270 Housing Unit	27,109	15	407	163
Library	2,488	15	37	15
New Small Management Yard				
Education Building	3,160	15	47	19
New Gun Posts #1	169	15	3	1
New Gun Posts #2	169	15	3	1
New PABX	1,600	20	32	13
Chapel	6,262	15	94	38
New Veh. Sallyport/Off. Station	120	15	2	1
New Sweat Lodge	0			
New Bldg Maint Sat	2,550	15	38	15
New Volatile Storage	1,000	10	10	4
Total	185,607		1,135	737

TABLE 3.4.1 D

ESTIMATED ANNUAL ELECTRICAL COSTS PG&E OWNED SUBSTATION								
Distribution Voltage (12 kV)								
Energy Charges				Qty	Unit	Avg Load (kW)	kWh	Energy Charges ($)
SUMMER	(May 1 through October 31)							
	Peak	$ 0.15228	per kWh	750	Hours	7,400	5,550,000	$ 845,154
	Partial-peak	$ 0.10453	per kWh	875	Hours	4,900	4,287,500	$ 448,172
	Off-peak	$ 0.08391	per kWh	2,791	Hours	3,300	9,210,300	$ 772,836
WINTER	(November 1 through April 30)							
	Partial-peak	$ 0.09048	per kWh	1,638	Hours	5,200	8,026,200	$ 726,211
	Off-peak	$ 0.08004	per kWh	2,706	Hours	3,500	8,929,800	$ 714,741
Demand Charges							Peak Load (kW)	Demand Charges ($)
SUMMER	(May 1 through October 31)							
	Maximum Peak Demand	$ 12.10			6	months	7,400	$ 537,240
	Maximum Part-Peak Demand	$ 2.80			6	months	4,900	$ 82,320
	Maximum Demand	$ 7.52			6	months	7,400	$ 333,888
WINTER	(November 1 through April 30)							
	Maximum Part-Peak Demand	$ 0.74			6	months	4,900	$ 27,084
	Maximum Demand	$ 7.52			6	months	4,900	$ 275,232
Customer Charge Mandatory								
	$ per Meter per Day	$ 32.85421		365	Days			$ 11,992
							Total Annual Energy Cost:	$ 4,715,398
DEFINITION OF TIME PERIODS								
SUMMER	(May 1 through October 31)							
Peak	12:00 noon to 6:00 PM	Monday through Friday (except holidays)						
Partial-peak	8:30 AM to 12:00 noon AND 6:00 PM to 9:30 PM	Monday through Friday (except holidays)						
Off-peak	9:30 PM to 8:30 AM	Monday through Friday						
	All day	Saturday, Sunday, and holidays						
WINTER	(November 1 to April 30)							
Partial-peak	8:30 AM to 9:30 PM	Monday through Friday (except holidays)						
Off-peak	9:30 PM to 8:30 AM	Monday through Friday (except holidays)						
	All day	Saturday, Sunday, and holidays						

TABLE 3.4.1 E

ESTIMATED ANNUAL ELECTRICAL COSTS CDCR OWNED SUBSTATION								
Transmission Voltage (115 kV)								
Energy Charges				Qty	Unit	Avg Load (kW)	kWh	Energy Charges ($)
SUMMER	(May 1 through October 31)							
	Peak	$ 0.10822	per kWh	750	Hours	7,400	5,550,000	$ 600,621
	Partial-peak	$ 0.08774	per kWh	875	Hours	4,900	4,287,500	$ 376,185
	Off-peak	$ 0.07552	per kWh	2,791	Hours	3,300	9,210,300	$ 695,562
WINTER	(November 1 through April 30)							
	Partial-peak	$ 0.08032	per kWh	1,638	Hours	5,200	8,026,200	$ 644,664
	Off-peak	$ 0.07189	per kWh	2,706	Hours	3,500	8,929,800	$ 641,963
Demand Charges							Peak Load (kW)	Demand Charges ($)
SUMMER	(May 1 through October 31)							
	Maximum Peak Demand	$ 11.12			6	months	7,400	$ 493,728
	Maximum Part-Peak Demand	$ 2.49			6	months	4,900	$ 73,206
	Maximum Demand	$ 4.28			6	months	7,400	$ 190,032
WINTER	(November 1 through April 30)							
	Maximum Part-Peak Demand	$ -			6	months	4,900	$ -
	Maximum Demand	$ 4.28			6	months	4,900	$ 125,832
Customer Charge Mandatory								
	$ per Meter per Day	$36.99220		365	Days			$ 13,502
							Total Annual Energy Cost:	$3,855,296

DEFINITION OF TIME PERIODS		
SUMMER	(May 1 through October 31)	
Peak	12:00 noon to 6:00 PM	Monday through Friday (except holidays)
Partial-peak	8:30 AM to 12:00 noon AND 6:00 PM to 9:30 PM	Monday through Friday (except holidays)
Off-peak	9:30 PM to 8:30 AM	Monday through Friday
	All day	Saturday, Sunday, and holidays
WINTER	(November 1 through April 30)	
Partial-peak	8:30 AM to 9:30 PM	Monday through Friday (except holidays)
Off-peak	9:30 PM to 8:30 AM	Monday through Friday (except holidays)
	All day	Saturday, Sunday, and holidays

TABLE 3.4.1 F

3.4.2 Standby Power

Existing: NCRF has a generator which provides standby power to the entire Institution in the event of a utility power failure. The generator is in fair condition and is adequately sized for the existing load.

NCYCC is provided an alternate source of power via the PG&E line that comes in from Austin Road. In the event the main PG&E feed from Arch Road goes down, the line that comes in from Austin Road can pick up a portion of the load of NCYCC. Additional stand-by generators are located at various buildings throughout the NCYCC site. These generators provide power to select loads within the buildings in the event both PG&E feeds are down.

Proposed:

Standby power for CHCF and DWN will be provided by generators located in the new Central Plant. The costs for these generators are not a part of this report.

The existing PG&E feed from Austin Road will be relocated from overhead poles to underground conduit and will continue to serve as an alternate source of power.

3.4.3 Photovoltaics:

A photovoltaic system would be a cost-effective option for this project.

CDCR has placed photovoltaic systems at two of its Institutions in Southern California (Chuckawalla Valley State Prison and Ironwood State Prison) through a public-private partnership between it and a private photovoltaic firm.

Under a solar power services agreement, the private photovoltaic firm designs, finances, constructs, and operates a solar power system at the selected Institution. CDCR will purchase solar power from the photovoltaic firm at agreed upon prices equal to or less than those charged by the local utility company (typically a 5% to 10% discount).

A photovoltaic system at NCYCC could be sized at a minimum of 1 MW and deliver approximately 2 million kilowatt hours (kWh) of energy per year. The system would produce no greenhouse gases, no noise and would use no water in its operation.

Recommendations: Contract with a photovoltaic firm to provide a 1 MW photovoltaic system at NCYCC. The photovoltaic field will be located immediately south of the proposed CDCR electrical substation. See Exhibit E2.

Provide a 4” conduit from the photovoltaic field to the new site switchgear. Conductors will be provided as part of the photovoltaic installation.

3.4.4 Telecommunications System:

The existing telephone and data service for NCRF comes in from Arch Road and goes into the PABX room located in NCRF’s Administration Building. The service was upgraded within the last few years and is adequate for the facility. No work is required.

The existing telephone and data service for NCYCC is provided by AT&T and delivered overhead from Newcastle Road to the NCYCC Administration Building. The existing infrastructure is not capable of handling the new CHCF. There is a proposed project to upgrade the existing main switch at the NCYCC Administration Building. If approved, the project would be completed by September of 2010. If this project is completed, there will be adequate capacity to serve CHCF as well as the other facilities.

If the above-mentioned project is not completed, a new service will need to be brought in from AT&T's lines running along either Newcastle Road or Austin Road. For the purposes of this report, we will assume the above-mentioned project will not be completed.

A new PABX building will need to be constructed near the southeast corner of the CHCF. Two 5" conduits will be extended from the PABX building to both Newcastle Road and Arch Road. One of these sets will be the primary feed from AT&T. The other will be a spare.

The new PABX will tie into the existing NCYCC PABX in the Administration Building.

The new PABX will provide service to the CHCF and to DWN.

Recommendations: Refer to Exhibit E3. Construct a new PABX building near the southeast corner of the CHCF.

Provide two 5" conduits from the new PABX to Newcastle Road and to Austin Road. The conduits will terminate in a new manhole at the property line near each road.

Provide two 4" conduits from the new PABX to the existing PABX room at the NCYCC Administration.

Provide two 4" conduits from the new PABX building to DWN.

3.4.5 Fire Alarm System:

CHCF, NCRF, and DWN will have their own campus-wide fire alarm systems. Each building within the facilities will be a stand-alone system with its own fire alarm control panel which will report to a sitewide fire alarm control panel at Central Control, Complex Control, or other location.

CHCF will have a Central Control where the fire alarm signals from the buildings within CHCF will report. DWN will have a Complex Control where the fire alarm signals from the buildings within DWN will report. Additionally, the fire alarm signals from DWN's Complex Control will report to CHCF's Central Control.

Recommendations: None.

3.4.6 Radio System:

NCYCC has a trunked radio room in its Administration Building. The system is not adequate to cover the new configuration of the site.

Recommendations: Provide a new trunked radio room near the new PABX Building. The radio room will be a pre-manufactured building delivered to the site ready to be connected to the required utilities. All required radio equipment will be included in the building.

Provide a foundation and utility connections to the building.

Provide a new 80-foot antenna within ten feet of the new trunked radio room. Provide associated foundation and all required structural support.

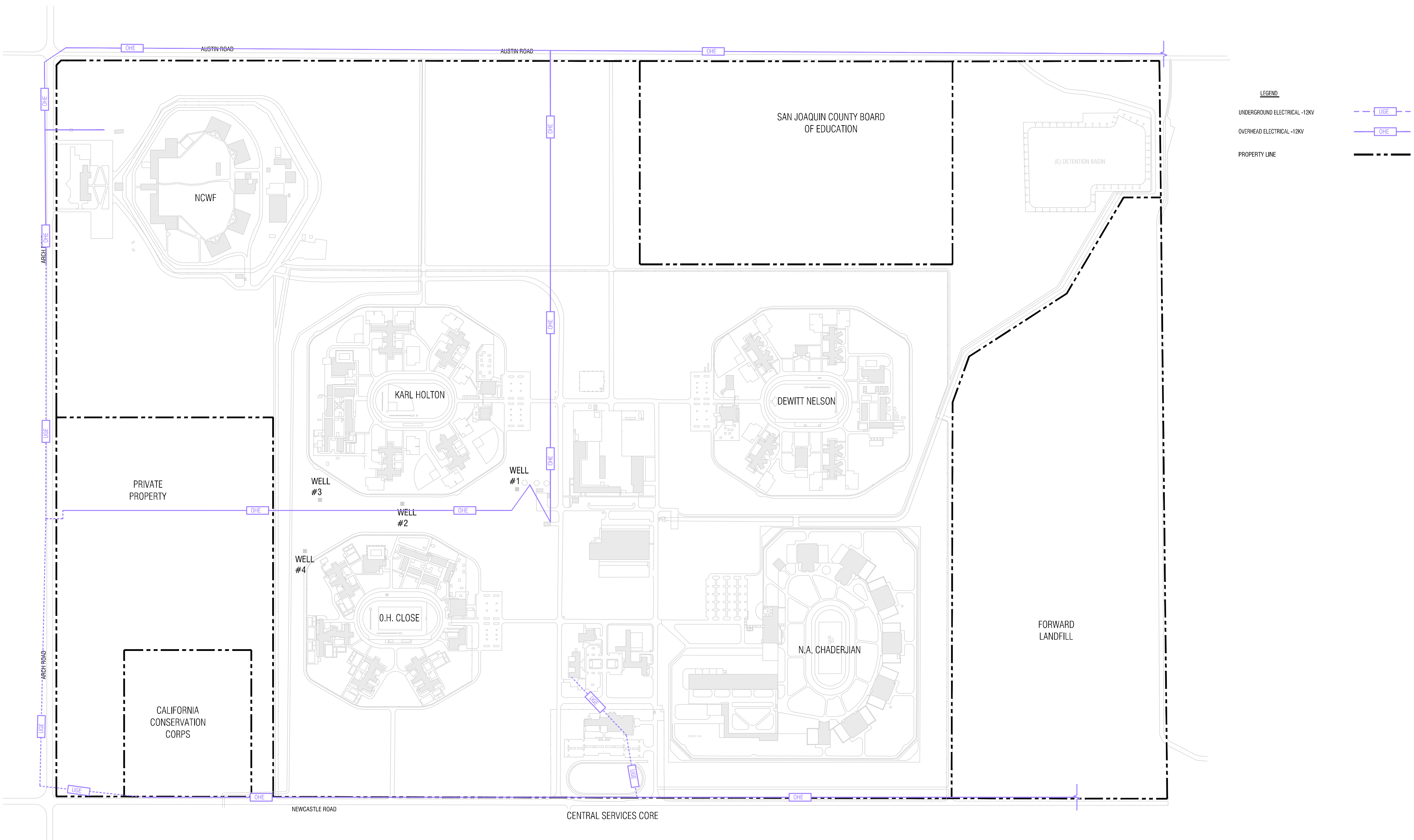
3.4.7 Wind Power System:

The National Renewable Energy Laboratory (NREL) website (www.nrel.gov – operated for the U.S. department of Energy) contains maps of each state showing the average annual wind resource. The map for California is included in Appendix 6.0.0 C.2.

The colored wind resource maps show the wind speeds ranging from the lowest (dark green - below 4 meters/second) to the highest (blue - above 10 meters/second).

Areas with winds speeds above 6.5 meters/second are suitable for most wind turbine applications.

The Stockton area shows winds speeds in the range of 4 meters/second. This is not practical for wind turbine applications.



1
-
EXISTING ELECTRICAL

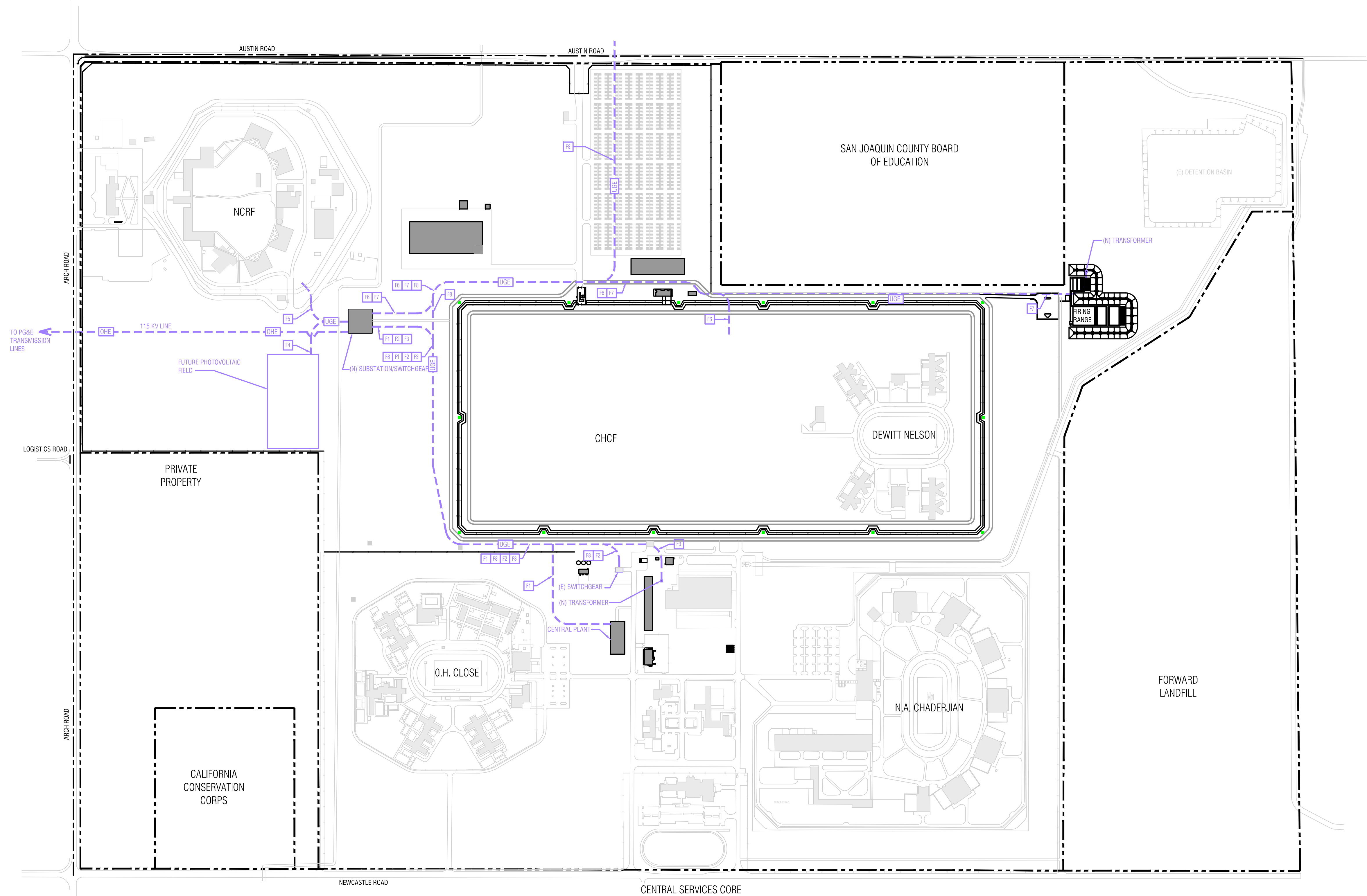
NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING ELECTRICAL	3270L1	E1
	DATE: 8-26-10	SCALE: AS SHOWN

8/23/2010 4:33 PM



LEGEND

UNDERGROUND ELECTRICAL	UGE
OVERHEAD ELECTRICAL	OHE
PROPERTY LINE	

FEEDERS

F1	2 SETS OF 3#500 KCMIL (15KV)+1#3/0 CU GND (600V) EACH IN 4"C
F2	3#750 KCMIL (15KV) + 1#1 CU GND (600V) IN 4"C
F3	3#2 (15KV)+1#6 CU GND (600V) IN 4"C
F4	4"C FOR FUTURE USE
F5	2- 4"C FOR FUTURE USE
F6	3#2/0 (15KV) + 1#4 CU GND (600V) IN 4"C
F7	3 #2 (15KV) + 1#4 CU GND (600V) IN 4"C
F8	3#2/0 (15KV) + 1#4 CU GND (600V) IN 4"C

1 PROPOSED ELECTRICAL

NORTH

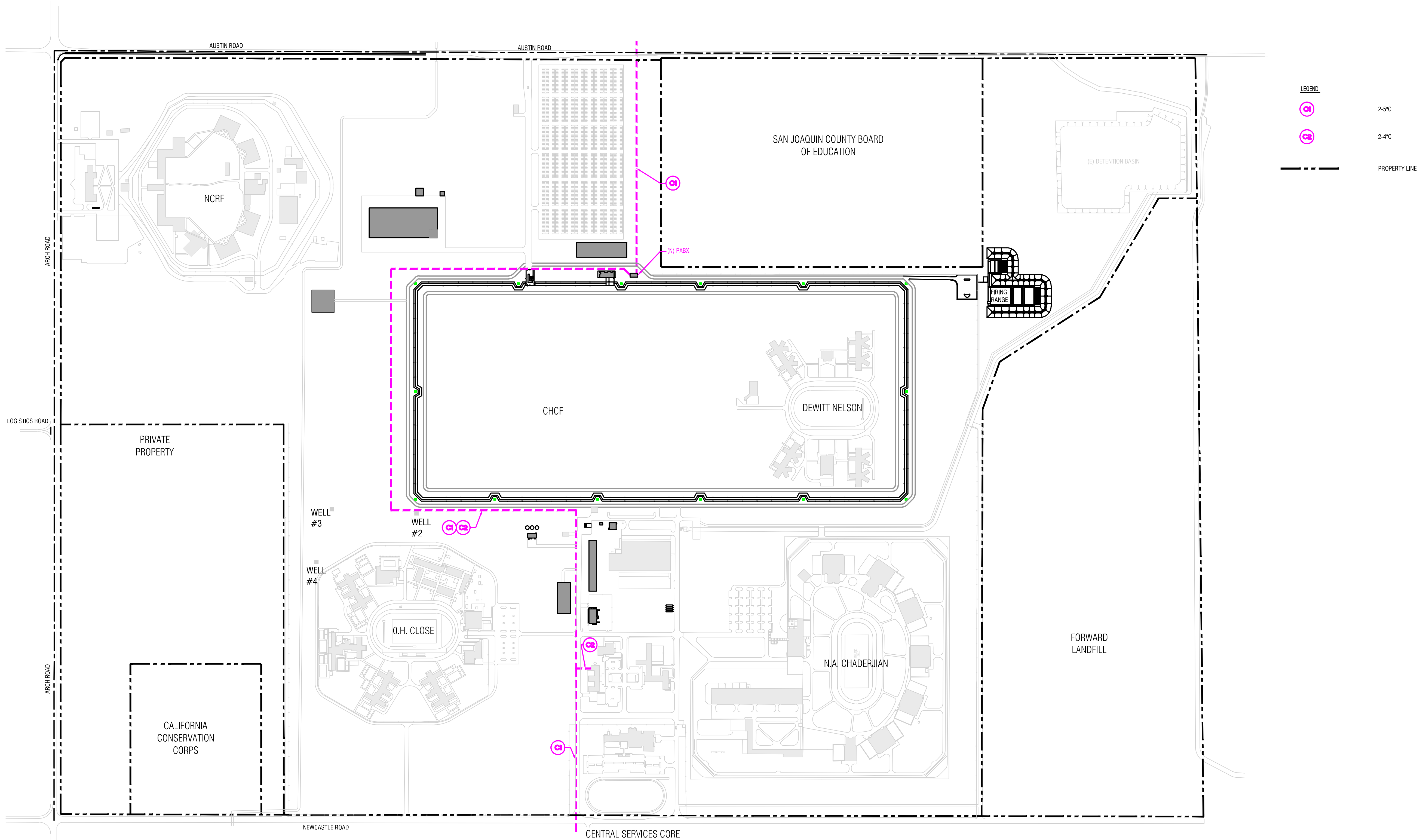
0 125 250 500

NOT FOR CONSTRUCTION

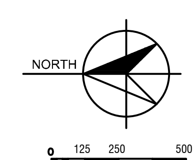
STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED ELECTRICAL	3270L1	E2
	DATE: 8-26-10	SCALE: AS SHOWN



1 PROPOSED COMMUNICATIONS



NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

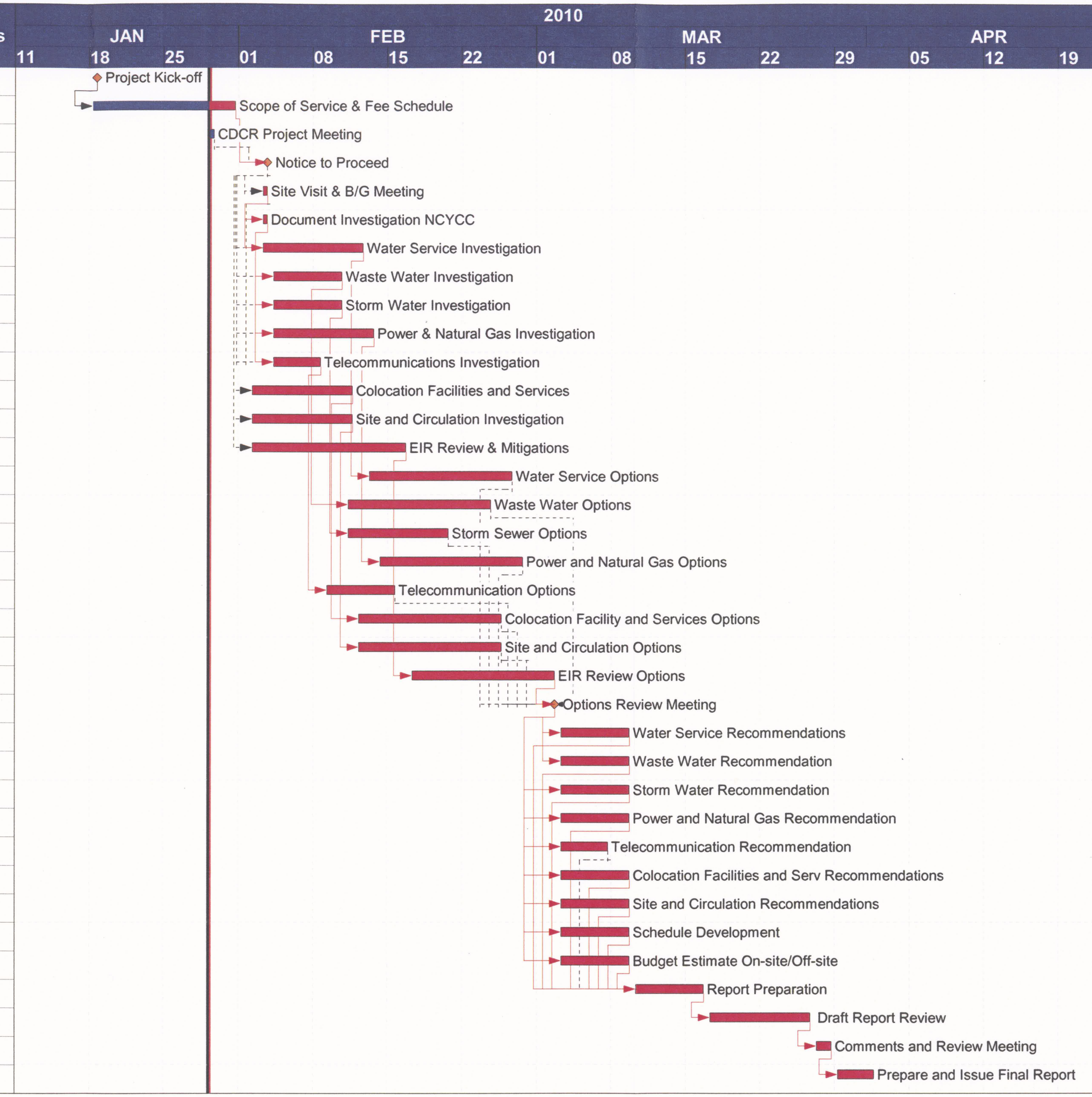
PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED COMMUNICATIONS	3270L1	E3
	DATE: 8–26–10	SCALE: AS SHOWN

4.0.0 Schedule

Kitchell has prepared a master plan schedule incorporating the latest schedules from the thirty day letters from CHCF, DWN and NCRF to determine the critical path for the replacement or upgrading of the existing infrastructure to meet the new bed count. The demolition work for CHCF will remove sections of the infrastructure presently serving NCRF. The infrastructure sections being removed will impact domestic water, waste water sewer, storm sewer and telecommunications.

The composite schedule reflects CHCF starting construction March 2011 and completing construction June 2013. NCRF is planned to start construction August 2011 with completing of construction in December 2012, requiring the infrastructure utilities and shared support buildings to be substantially complete March of 2012. To meet this schedule we are recommending the infrastructure and shared support buildings outside the secure perimeters be designed and bid as a separate bid packages for the services to be completed on time.

Act ID	Description	Orig Dur	Early Start	Early Finish	Total Float	%	Predecessors	Successors
1000	Project Kick-off	0		18JAN10 A		100		1010
1010	Scope of Service & Fee Schedule	15d	18JAN10 A	31JAN10	0	80	1000	1012
1011	CDCR Project Meeting	1d	29JAN10 A	29JAN10 A		100		1012
1012	Notice to Proceed	0		03FEB10	-67d	0	1010, 1011	1021, 1030,
1021	Site Visit & B/G Meeting	1d	03FEB10 A	03FEB10	-64d	0	1012	1022, 1030,
1022	Document Investigation NCYCC	1d	03FEB10	03FEB10	-64d	0	1021	1040, 1050,
1030	Water Service Investigation	10d	03FEB10	12FEB10	-63d	0	1012, 1021	1090
1040	Waste Water Investigation	7d	04FEB10	10FEB10	-61d	0	1012, 1021, 1022	1100
1050	Storm Water Investigation	7d	04FEB10	10FEB10	-57d	0	1012, 1021, 1022	1110
1060	Power & Natural Gas Investigation	10d	04FEB10	13FEB10	-64d	0	1012, 1021, 1022	1120
1070	Telecommunications Investigation	5d	04FEB10	08FEB10	-52d	0	1012, 1021, 1022	1130
1071	Colocation Facilities and Services	10d	02FEB10	11FEB10	-62d	0	1012	1131
1072	Site and Circulation Investigation	10d	02FEB10	11FEB10	-62d	0	1012	1132
1080	EIR Review & Mitigations	15d	02FEB10	16FEB10	-67d	0	1012	1140
1090	Water Service Options	14d	13FEB10	26FEB10	-63d	0	1030	1141
1100	Waste Water Options	14d	11FEB10	24FEB10	-61d	0	1040	1141
1110	Storm Sewer Options	10d	11FEB10	20FEB10	-57d	0	1050	1141
1120	Power and Natural Gas Options	14d	14FEB10	27FEB10	-64d	0	1060	1141
1130	Telecommunication Options	7d	09FEB10	15FEB10	-52d	0	1070	1141
1131	Colocation Facility and Services Options	14d	12FEB10	25FEB10	-62d	0	1071	1141
1132	Site and Circulation Options	14d	12FEB10	25FEB10	-62d	0	1072	1141
1140	EIR Review Options	14d	17FEB10	02MAR10	-67d	0	1080	1141
1141	Options Review Meeting	0		02MAR10	-67d	0	1090, 1100, 1110,	1150, 1160,
1150	Water Service Recommendations	7d	03MAR10	09MAR10	-67d	0	1141	1200
1160	Waste Water Recommendation	7d	03MAR10	09MAR10	-67d	0	1141	1200
1170	Storm Water Recommendation	7d	03MAR10	09MAR10	-67d	0	1141	1200
1180	Power and Natural Gas Recommendation	7d	03MAR10	09MAR10	-67d	0	1141	1200
1190	Telecommunication Recommendation	5d	03MAR10	07MAR10	-65d	0	1141	1200
1191	Colocation Facilities and Serv	7d	03MAR10	09MAR10	-67d	0	1141	1200
1192	Site and Circulation Recommendations	7d	03MAR10	09MAR10	-67d	0	1141	1200
1193	Schedule Development	7d	03MAR10	09MAR10	-67d	0	1141	1200
1194	Budget Estimate On-site/Off-site	7d	03MAR10	09MAR10	-67d	0	1141	1200
1200	Report Preparation	7d	10MAR10	16MAR10	-67d	0	1150, 1160, 1170,	1210
1210	Draft Report Review	10d	17MAR10	26MAR10	-67d	0	1200	1220
1220	Comments and Review Meeting	2d	27MAR10	28MAR10	-67d	0	1210	1230
1230	Prepare and Issue Final Report	4d	29MAR10	01APR10	-67d	0	1220	



Start date	18JAN10
Finish date	01APR10
Data date	29JAN10
Run date	04FEB10
Page number	1A

Kitchell CEM
Stockton Master Plan

- Early bar
- Progress bar
- Critical bar
- Summary bar
- Start milestone point
- Finish milestone point

ESTIMATE SUMMARY

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BID PACKAGE: **N/A** BLDG: **SUMMARY**

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BLDG SF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

		QTY	UNIT	COST	TOTAL
3.1.5	COMBINED SHARED SERVICES	1	LS	$41,445,818	$41,445,818
3.2.2	WASTE WATER SYSTEM	1	LS	$1,213,823	$1,213,823
3.2.3	STORM WATER SYSTEM	1	LS	$4,275,033	$4,275,033
3.2.4	DOMESTIC WATER SYSTEM AND STORAGE TANKS	1	LS	$8,759,795	$8,759,795
3.2.5	IRRIGATION WATER SYSTEM	1	LS	$213,936	$213,936
3.2.6	ROADWAY SYSTEM	1	LS	$3,467,772	$3,467,772
3.3.1	NATURAL GAS AND LIQUEFIED PETROLEUM GAS (LPG)	1	LS	$903,234	$903,234
3.4.1	ELECTRICAL POWER	1	LS	$11,889,100	$11,889,100
3.4.2	EMERGENCY POWER - SCOPE NOT PART OF THIS REPORT				N/A
3.4.3	PHOTOVOLTAIC SYSTEM (CONDUIT ONLY)	1	LS	$32,879	$32,879
3.4.4	TELECOMMUNICATIONS SYSTEM	1	LS	$1,572,604	$1,572,604
3.4.5	FIRE ALARM - SCOPE NOT PART OF THIS REPORT				N/A
3.4.6	RADIO	1	LS	$183,667	$183,667
3.4.7	WIND POWER SYSTEM - SCOPE NOT PART OF THIS REPORT				N/A

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: COMBINED SHARED SERVICES

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**CENTRAL KITCHEN (ADDITION)**	1,000	SF	$408.22	$408,220
B	**CENTRAL WAREHOUSE**	17,000	SF	$180.98	$3,076,660
C	**VISITOR PROCESSING / WAITING (ADDITION)**	400	SF	$251.60	$100,640
D	**VEHICLE MAINTENANCE (SECOND YARD FENCED IN)**	1	LS	$50,000	$50,000
E	**PABX**	1,500	SF	$361.61	$542,415
F	**CENTRAL BUILDING MAINTENANCE**	8,200	SF	$141.15	$1,157,430
	1 CORPORATION YARD	12,500	SF	$6.40	$80,000
G	**BUILDING & GROUNDS MAINTENANCE BUILDING**	2,000	SF	$121.38	$242,760
H	**FIRE STATION**	8,000	SF	$135.36	$1,082,880
I	**MINIMUM SECURITY FACILITY**				
	1 LEVEL I HOUSING (2 EACH)	26,488	SF	$249.40	$6,606,107
	2 LEVEL I PROGRAM SUPPORT SERVICES	12,446	SF	$263.98	$3,285,495
	3 LEVEL I SUPPORT SERVICES	5,374	SF	$185.53	$997,038
	4 SWEAT LODGE	1	EA	$10,000.00	$10,000
	5 SITEWORK				
	A ROUGH / FINISH GRADING	445,900	SF	$2.00	$891,800
	B UTILITIES	1	LS	$100,000	$100,000
	C PAVING (ROADS / PARKING)	117,300	SF	$5.00	$586,500
	D BASKETBALL COURT / ACCESSORIES / STRIPING	5,283	SF	$10.00	$52,830
	E PERIMETER FENCE	1,622	LF	$130.00	$210,860
	F LIGHTING	1	LS	$80,000.00	$80,000
J	**FIRING RANGE (SCC BUDGET STUDY - LESS MARK-UPS (BELOW)**				$5,746,686

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: COMBINED SHARED SERVICES

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$25,308,321**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$5,061,664**
	LEED COSTS	10.00%			**$2,530,832**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$32,900,818**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$3,948,098
	OVERHEAD & PROFIT	10.00%			$3,684,892
	INSURANCE & BONDS	2.25%			$912,011
	SUBTOTAL MARK-UPS				**$8,545,000**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$41,445,818**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$41,445,818**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: WASTE WATER

8/27/2010

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

8:58 AM

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION (ALLOWANCE)**				
	1 REMOVE (E) 12" SANITARY SEWER	1,845	LF	$40.00	$73,800
	2 REMOVE (E) SEWER LINE (VARIOUS SIZES)	1,132	LF	$25.00	$28,300
B	**SANITARY SEWER**				
	1 PIPE (PVC)				
	A 21" (ALLOW 20% FOR REPLACEMENT)	15	LF	$220.00	$3,300
	B 20" (ALLOW 20% FOR REPLACEMENT)	366	LF	$195.00	$71,370
	C 18" (ALLOW 20% FOR REPLACEMENT)	8	LF	$135.00	$1,080
	D 15" (20% ALLOWANCE FOR REPLACEMENT	1,935	LF	$83.00	$160,605
	PLUS UPSIZE FROM 12" TO 15" - SEE DEMO ABOVE)				
	E 12" (ALLOW 20% FOR REPLACEMENT)	80	LF	$73.50	$5,880
	F 10" (ALLOW 20% FOR REPLACEMENT)	438	LF	$62.50	$27,375
	G 8" (ALLOW 20% FOR REPLACEMENT)	135	LF	$55.30	$7,466
	2 SEWER SLIP-LINE				
	A 21"	60	LF	$111.00	$6,660
	B 20"	1,464	LF	$100.00	$146,400
	C 18"	32	LF	$70.00	$2,240
	D 15"	360	LF	$42.00	$15,120
	E 12"	320	LF	$37.00	$11,840
	F 10"	1,752	LF	$33.00	$57,816
	G 8"	540	LF	$26.00	$14,040
C	**MISCELLANEOUS**				
	1 REPLACE GRINDERS AT PUMP STATION	2	EA	$4,500.00	$9,000
	2 CONNECT TO (E) MANHOLES	10	EA	$1,500.00	$15,000
	3 INSTALL NEW 48" MANHOLE	5	EA	$3,500.00	$17,500
	4 IMPROVE (E) MANHOLES	4	EA	$2,500.00	$10,000
	5 INSTALL PUMP STATION AT NCRF	1	EA	$50,000.00	$50,000
	6 REPLACE GRINDERS AT NCRF	2	EA	$4,500.00	$9,000
F	**REMOVE/REPLACE MATERIAL (IN-KIND) ALLOWANCE**	2,959	LF	$20.00	$59,180
	1 CONCRETE SIDEWALK				INCL
	2 CONCRETE CURBS/GUTTERS				INCL
	3 A/C PAVEMENT				INCL
	4 MISC CODE ISSUES				INCL

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: WASTE WATER

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$802,972**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$160,594**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$963,566**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$115,628
	OVERHEAD & PROFIT	10.00%			$107,919
	INSURANCE & BONDS	2.25%			$26,710
	SUBTOTAL MARK-UPS				**$250,257**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$1,213,823**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$1,213,823**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: STORM SEWER

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**PROPOSED STORM DRAIN SYSTEM (SINGLE PIPE SYSTEM)**				
	1 PIPE (RCP)				
	A 84"	1,080	LF	$495.00	$534,600
	B 72"	2,290	LF	$320.00	$732,800
	C 66"	1,210	LF	$280.00	$338,800
	D 60"	1,330	LF	$234.00	$311,220
	E 42"	2,430	LF	$145.00	$352,350
	2 MANHOLES				
	A DEMOLISH (E) MANHOLES	2	EA	$1,500.00	$3,000
	B NEW 72" MANHOLE	3	EA	$5,250.00	$15,750
	C NEW 96" MANHOLE	4	EA	$9,600.00	$38,400
	3 CONNECTIONS TO EXISTING SYSTEM	2	EA	$3,500.00	$7,000
	4 RIP RAP (2' DEEP)	22	CY	$500.00	$11,111
	5 EXPAND (E) STORM DRAIN BASIN				
	A EXCAVATION / REGRADING / RECOMPACTION	13,800	CY	$35.00	$483,000

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: STORM SEWER

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$2,828,031**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$565,606**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$3,393,637**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$407,236
	OVERHEAD & PROFIT	10.00%			$380,087
	INSURANCE & BONDS	2.25%			$94,072
	SUBTOTAL MARK-UPS				**$881,395**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$4,275,033**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$4,275,033**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: DOMESTIC WATER

8/27/2010

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A 8:58 AM

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	NOTE: EXCLUDES CHCF DEMOLITION				
	1 REMOVE (E) WATER LINES	1	LS	$250,000	$250,000
	2 REMOVE (E) WELL #1	1	LS	$4,500.00	$4,500
B	**DOMESTIC WATER LINE - MAIN (ONSITE)**				
	1 PIPE (PVC)				
	A 12"	525	LF	$73.50	$38,588
	B 10"	1,345	LF	$62.50	$84,063
	C 8"	10,395	LF	$55.30	$574,844
	D 6"	189	LF	$37.50	$7,088
	2 VALVES (ALLOWANCE)	1	LS	$150,000	$150,000
C	OFFSITE IMPROVEMENTS				
	1 PIPE (PVC)				
	A 16"	5,899	LF	$100	$589,900
	B 6"	950	LF	$37.50	$35,625
	2 VALVES				
	A 6"	19	EA	$1,700.00	$32,300
	3 FIRE HYDRANTS	19	EA	$3,500.00	$66,500
D	**PUMP HOUSE**				
	1 BUILDING	1,600	SF	$225.00	$360,000
	2 HYDROPNEUMATIC TANK (16,400 GALLON)	2	EA	$40,000	$80,000
	3 BOOSTER PUMPS (15 HP)	3	EA	$26,000	$78,000
	4 FIRE PUMP W/DIESEL GENERATOR	1	EA	$50,000	$50,000
	5 CONCRETE PAD FOR HYDROPNEUMATIC TANK, ETC.	600	SF	$6.00	$3,600

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: DOMESTIC WATER

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$2,405,006**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$481,001**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$2,886,007**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$346,321
	OVERHEAD & PROFIT	10.00%			$323,233
	INSURANCE & BONDS	2.25%			$80,000
	SUBTOTAL MARK-UPS				**$749,554**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$3,635,561**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$3,635,561**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: STORAGE TANK - 2 TANK OPTION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	NOTE: EXCLUDES DEMOLITION				
B	**GENERAL SITE**				
	1 ASPHALT ROADWAY (INCLUDING GRADING)	6,300	SF	$5.00	$31,500
	3" AC ON 12" AB				
C	**WATER STORAGE REQUIREMENTS**				
	1 STEEL WATER STORAGE TANK (1.53-MG)	2	EA	$682,500	$1,365,000
	A FOUNDATION	436	CY	$550.00	$239,976
	B SLAB - 18" THICK	1,963	CY	$550.00	$1,079,891
	C AGGREGATE BASE	53,013	SF	$8.00	$424,103
	D CONCRETE WALKWAY AT PERIMETER OF TANKS	10,053	SF	$10.00	$100,528
	E GRADING (ROUGH/FINISH)	57,600	SF	$0.50	$28,800
	F BOOSTER PUMPS	2	EA	$25,000.00	$50,000
	G PIPING	1,000	LF	$70.00	$70,000

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: STORAGE TANK - 2 TANK OPTION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$3,389,797**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$677,959**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$4,067,756**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$488,131
	OVERHEAD & PROFIT	10.00%			$455,589
	INSURANCE & BONDS	2.25%			$112,758
	SUBTOTAL MARK-UPS				**$1,056,478**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$5,124,234**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$5,124,234**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: IRRIGATION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	NONE				
B	**IRRIGATION LINE**				
	1 PIPE (PVC)				
	A 6"	2,523	LF	$41.35	$104,326
	B 3"	434	LF	$25.80	$11,197
	2 VALVES				
	A 6"	5	EA	$1,700.00	$8,500
	B 4"	10	EA	$1,000.00	$10,000
	3 BACKFLOW PREVENTER	1	EA	$7,500.00	$7,500

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: IRRIGATION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$141,523**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$28,305**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$169,828**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$20,379
	OVERHEAD & PROFIT	10.00%			$19,021
	INSURANCE & BONDS	2.25%			$4,708
	SUBTOTAL MARK-UPS				**$44,108**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$213,936**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$213,936**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: PAVING

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	1 REMOVE (E) ENTRY ROAD	36,037	SF	$0.75	$27,028
	2 REMOVE (E) GRAVEL ROAD	54,600	SF	$0.35	$19,110
B	**BOUNDRY FENCE**				
	1 FENCE WITH REDWOOD SLATS	5,033	LF	$50.00	$251,650
C	**PAVING**				
	1 3" AC ON 12" AB (ACCESS FROM AUSTIN TO SALLYPORT)	203,430	SF	$5.00	$1,017,150
	(INCLUDES MANEUVERING PATH & PAVING FOR MATERIALS BLDG)				
D	**ROADWAY EXPANSION (AUSTIN ROAD)**				
	1 SAWCUT & REMOVE (E) ROADWAY	4,000	EA	$1.00	$4,000
	2 4" AC ON 12" AB	46,160	SF	$5.45	$251,572
	3 STRIPING ALLOWANCE	1	LS	$5,000.00	$5,000
	4 SIGNAGE ALLOWANCE	1	LS	$5,000.00	$5,000
	5 SIGNALIZATION (ALLOWANCE PER INTERSECTION)	2	EA	$295,000	$590,000
	6 STREET LIGHTS - TYPE A, 30', 150W HPS	19	EA	$6,500.00	$123,500

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: PAVING

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$2,294,010**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$458,802**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$2,752,812**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$330,337
	OVERHEAD & PROFIT	10.00%			$308,315
	INSURANCE & BONDS	2.25%			$76,308
	SUBTOTAL MARK-UPS				**$714,960**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$3,467,772**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$3,467,772**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: NATURAL GAS

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	REMOVE (E) GAS LINES	1,275	LF	$16.00	$20,400
B	**GAS LINE**				
	1 PIPE				
	A 12"	594	LF	$150.00	$89,100
	B 10"	1,641	LF	$110.00	$180,510
	C 1.25"	508	LF	$0.00	$0
C	**TANKS**				
	1 REFURBISH / RETROFIT (E) 30,000 GALLON LPG	1	EA	$7,500.00	$7,500
	2 NEW 33,000 GALLON LPG TANK	2	EA	$75,000.00	$150,000
	3 NEW 10,000 GALLON LPG TANK	1	EA	$25,000.00	$25,000
	4 MANIFOLD	1	LS	$15,000.00	$15,000
	5 CONCRETE PAD	10,000	SF	$6.00	$60,000
	6 AIR/GAS MIXING EQUIPMENT	2	EA	$25,000.00	$50,000

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: NATURAL GAS

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$597,510**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$119,502**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$717,012**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$86,041
	OVERHEAD & PROFIT	10.00%			$80,305
	INSURANCE & BONDS	2.25%			$19,876
	SUBTOTAL MARK-UPS				**$186,222**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$903,234**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$903,234**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: ELECTRICAL

8/27/2010

8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**DEMOLITION**				
	1 PG&E TO REMOVE OVERHEAD FEEDERS				
B	**OVERHEAD FEEDERS**				
	1 80' POLES (ASSUME 600' SPACING)	27	EA	$45,000.00	$1,228,500
	2 CONDUCTORS (115KV #1/0 ACSR)	3	MILES	$325,000	$975,000
	3 CLEARING RIGHT-OF-WAY/TREE REMOVAL (80' WIDE EASEMEN	1,108,800	SF	$0.20	$221,760
	4 RESTORATION / SEEDING RIGHT-OF-WAY	1,108,800	SF	$0.15	$166,320
	5 LAND ACQUISITION	25	ACRES	$12,500	$318,182
C	**SUBSTATION (12.5 MVA)**	1	LS	$2,900,000	$2,900,000
D	**FEEDERS**				
	1 CONDUIT				
	A 4"	26,055	LF	$30.00	$781,650
	2 CONDUCTORS				
	A #750 KCMIL (15 KV)	8,814	LF	$39.00	$343,746
	B #500 KCMIL (15 KV)	19,368	LF	$19.50	$377,676
	C #3/0 (600V)	6,456	LF	$7.15	$46,160
	D #2/0 (15 KV)	23,943	LF	$6.76	$161,855
	E #1 (600V)	2,938	LF	$3.85	$11,311
	F #2 (15KV)	23,112	LF	$3.84	$88,635
	G #4 (600V)	12,416	LF	$2.31	$28,681
	H #6 (600V)	3,269	LF	$1.76	$5,753
	3 TRENCHING / BACKFILL / CONCRETE CAP	10,484	LF	$20.00	$209,680

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: ELECTRICAL

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$7,864,909**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$1,572,982**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$9,437,891**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$1,132,547
	OVERHEAD & PROFIT	10.00%			$1,057,044
	INSURANCE & BONDS	2.25%			$261,618
	SUBTOTAL MARK-UPS				**$2,451,209**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$11,889,100**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$11,889,100**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: PHOTOVOLTAIC SYSTEM

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**PHOTOVOLTAIC SYSTEM**				
	1 PHOTOVOLTAIC SYSTEM - BY OTHERS				
	2 4" CONDUIT	435	LF	$30.00	$13,050
	3 TRENCH / BACKFILL / CONCRETE CAP	435	LF	$20.00	$8,700

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: PHOTOVOLTAIC SYSTEM

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$21,750**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$4,350**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$26,100**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$3,132
	OVERHEAD & PROFIT	10.00%			$2,923
	INSURANCE & BONDS	2.25%			$723
	SUBTOTAL MARK-UPS				**$6,779**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$32,879**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$32,879**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: COMMUNICATION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**FEEDERS**				
	1 CONDUIT				
	A 5"	11,626	LF	$40.00	$465,040
	B 4"	16,770	LF	$30.00	$503,100
	2 TRENCHING / BACKFILL	8,491	LF	$8.50	$72,174

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: COMMUNICATION

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$1,040,314**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$208,063**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$1,248,376**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$149,805
	OVERHEAD & PROFIT	10.00%			$139,818
	INSURANCE & BONDS	2.25%			$34,605
	SUBTOTAL MARK-UPS				**$324,228**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$1,572,604**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$1,572,604**

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: TRUNKED RADIO

8/27/2010
8:58 AM

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

Stockton MP infra Total Estimate 8_27_10a.XLS

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
A	**TRUNKED RADIO BUILDING (PRE-MANUFACTURED)**				
	1 BUILDING	200	SF	$350.00	$70,000
	2 BUILDING FOUNDATIONS	200	SF	$15.00	$3,000
	3 UTILITY CONNECTIONS	1	LS	$10,000.00	$10,000
	4 ANTENNA (80')	1	EA	$30,000.00	$30,000
	5 FOUNDATIONS FOR ANTENNA	1	LS	$8,500.00	$8,500
	NOTE: EXCLUDES EQUIPMENT				

ESTIMATE WORKSHEET

CALIFORNIA DEPARTMENT OF CORRECTIONS & REHABILITATION

PROJECT: **STOCKTON MASTER PLAN**

PHASE: **CONCEPTUAL ESTIMATE** BUILDING: TRUNKED RADIO

ESTIMATE DATE: **AUGUST 27, 2010** BUILDING GSF: N/A

PREPARED BY: KITCHELL CEM, J. PRECHEL

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST
	SUBTOTAL HARD COSTS				**$121,500**
	CONTINGENCY				
	ESTIMATING CONTINGENCY	20.00%			**$24,300**
	LEED COSTS	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - BUILDING	0.00%			**$0**
	LEAD/ASBESTOS ABATEMENT - SITE	0.00%			**$0**
	SECURE PERIMETER FACTOR	0.00%			**$0**
	SUBTOTAL CONSTRUCTION COSTS				**$145,800**
	MARK-UPS				
	GENERAL CONDITIONS	12.00%			$17,496
	OVERHEAD & PROFIT	10.00%			$16,330
	INSURANCE & BONDS	2.25%			$4,042
	SUBTOTAL MARK-UPS				**$37,867**
	SUBTOTAL CONSTRUCTION COSTS & MARK-UPS				**$183,667**
	ESCALATION				
	ESCALATION (BY OTHERS - SEE THREE PAGER)	0.00%			**$0**
	KCEM ESTIMATE:				**$183,667**

Appendices

Appendix A: Shared Facilities

Appendix B: Civil

Appendix B.1: Site Information

MAP SCALE 1" = 1000'

0 1000 2000 FEET

0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0490F

FIRM

FLOOD INSURANCE RATE MAP

SAN JOAQUIN COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 490 OF 950

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN JOAQUIN COUNTY	060299	0490	F
STOCKTON, CITY OF	060302	0490	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

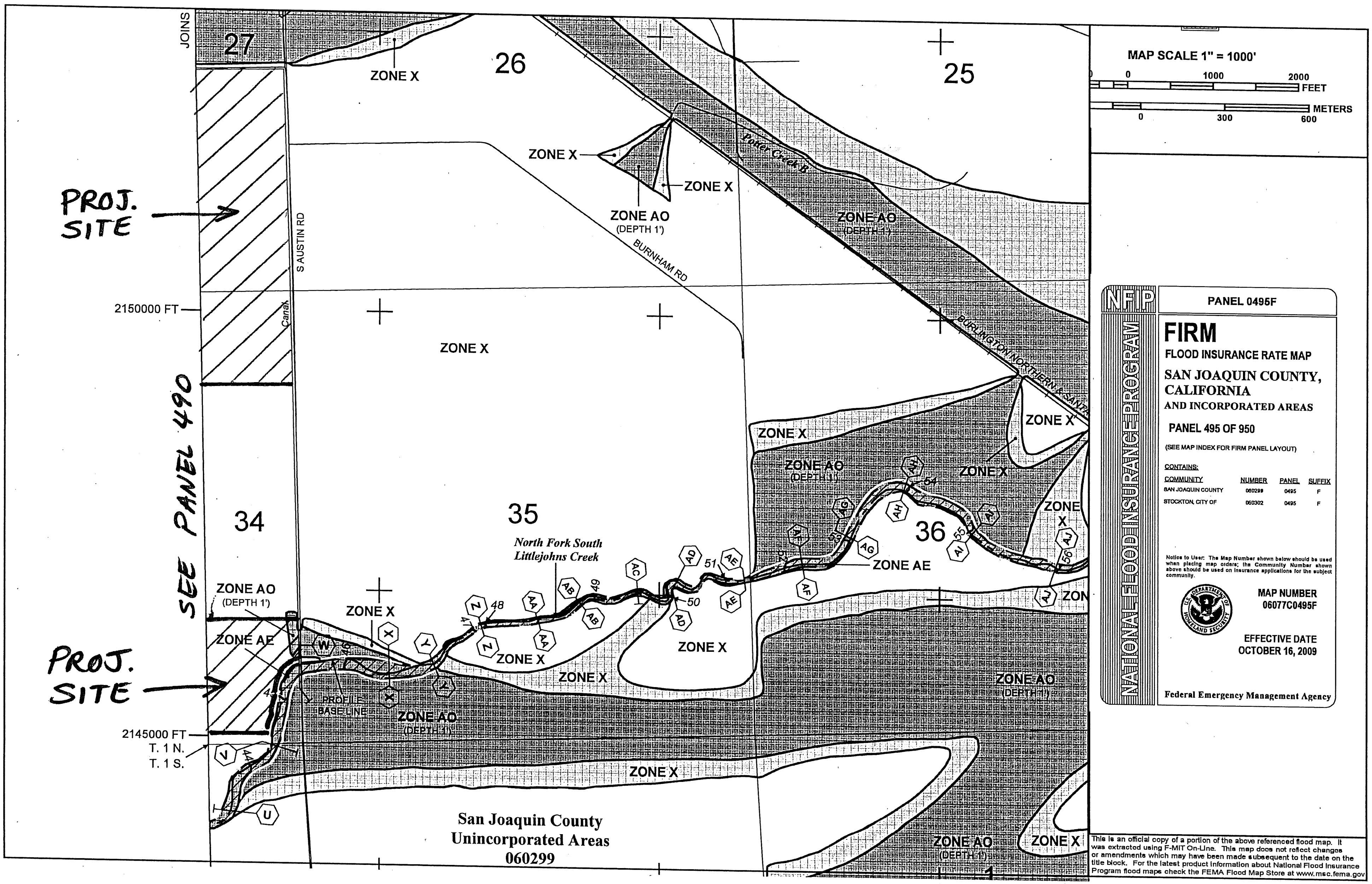
MAP NUMBER
06077C0490F

EFFECTIVE DATE
OCTOBER 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

*BOUNDARIES SHOWN ARE APPROXIMATE.



* BOUNDARIES SHOWN ARE APPROXIMATE.

Appendix B.2: Sewer COP Permit

CITY OF STOCKTON
DEPARTMENT OF MUNICIPAL UTILITIES
2500 Navy Drive • Stockton, CA 95206-1191 • 209/937-8750 • Fax 209/937-8708
www.stocktongov.com

October 30, 2007

CERTIFIED MAIL
RETURN RECEIPT
7160 3901 9845 2006 0243

George Lichty or Rick Jaime
Chief of Plant Operations
Northern California Youth correctional Center
P.O. Box 213004
Stockton, California 95213

WASTEWATER DISCHARGE PERMIT

Attached is your Wastewater Discharge Permit for the period covering January 01, 2008 through December 31, 2012.

Enclosed Are The Following Documents:

- √ Wastewater Discharge Permit Conditions
- √ Specific Wastewater Discharge Limitations
- √ Self Monitoring Sample Program
- √ Stockton Municipal Code
- √ QA/QC Guidance Manual
- √ Resource Conservation Recovery Act (Information)
- √ City Council Revenue Resolution
- √ CFR 40 Part 136

If you have any questions please call the Environmental Control section at (209) 937-8721.

Mark J. Madison

MARK J. MADISON
DIRECTOR OF MUNICIPAL UTILITIES

MJM:FT

Enclosures

Stockton
All-America City
1999

MUNICIPAL UTILITIES DEPARTMENT
REGIONAL WASTEWATER CONTROL FACILITY
2500 NAVY DRIVE STOCKTON, CALIFORNIA 95206
(209) 937-8750 (209) 937-8702- fax

CITY OF STOCKTON

CITY OF STOCKTON
WASTEWATER DISCHARGE PERMIT

AUTHORIZATION:The below named party is hereby authorized to discharge wastewater to the City of Stockton community sewer subject to compliance with the City of stockton waste water control ordinance and the conditions set forth in this permit.

PERMITTEE Northern California Youth Correctional Center

ADDRESS 7650 S Newcastle Rd.

Stockton, CA 95215

ZIP

_ PERMIT CONDITIONS -

Northern California Youth Correctional Center has been classified by the City of Stockton as a "Significant Industrial User".

PERMITTEE SHALL NOT EXCEED THE FOLLOWING LIMITATIONS:
FLOW: 800,000 GALLONS Per Day

Permittee shall comply with all provisions, limitations and requirements of the Stockton Municipal Code and any other applicable local, state or federal code or regulation. Specific Pollutant Limitations sec. 7.089.16SMC, local numerical limits, shall apply to permittee.

Permittee shall fully comply with all provisions, limitations, and requirements of all applicable local, state and federal regulations, including subtitles C and D of the Resource Conservation and Recovery Act, and 40 CFR parts 260 through271.

Permittee shall fully comply with all additional attached permit conditions.

General Industrial Permit Conditions and sample conditions are attached.

The above named shall report to the City of Stockton Regional Wastewater Control Facility, any change, (permanent or temporary) to the premise or operation that significantly change the quality or volume of the wastewater discharge or deviate from the terms and conditions under which this permit is granted.

EFFECTIVE DATE January 1, 2008 EXPIRATION DATE December 31, 2012

10-30-07
DATED

APPROVED BY: [signature]
Director of Municipal Utilities

POST PERMIT IN PLAIN VIEW

GENERAL PRETREATMENT INDUSTRIAL USERS

PERMIT CONDITIONS

1. Permittee shall not allow any materials or any liquid waste to be discharged into the City of Stockton sewage system which could be harmful to the system or create a hazard or nuisance, as defined in Section 7-089.1 through 7-089.18 of the City of Stockton Municipal Code. If the Permittee is found to be responsible for damage to the City of Stockton Storm or Sanitary system or for the excessive deposits of objectionable materials in said systems, Permittee may be required to bear the cost to the City for cleaning, or shall restore the affected part of the system to proper working condition. A violation of any provision of these Permit Conditions, local codes, or the Federal Pretreatment Regulation may result in fines up to $6,000 per day for each violation or civil/criminal action.

2. Industrial User shall not allow any pollutants, including oxygen demanding pollutants (BOD, etc.) to be released at a flow rate and/or pollutant concentration which a User knows, or has reason to know, will cause interference to the POTW. In no case shall a sudden, unexpected discharge have a flow rate or contain concentrations of qualities of pollutants that exceed for any time period longer than 15 minutes more than five times the average 24-hour concentration, quantities, or flow during normal operation (7.089.11 City Code).

3. Permittee shall insure that all pretreatment facilities, including but not limited to flow measuring and sampling equipment, are maintained in proper working order at all times; and that flow measuring devices are calibrated for accuracy by an approved qualified technician not less than twice per year, or upon request of an authorized City of Stockton representative. Seasonal industries will have devices calibrated prior to the start of each season.

4. In the event a required flow measuring or sampling device is found to be inoperative or providing unreliable information, as determined by authorized City of Stockton personnel, maximum quantities for parameters being measured may be used unless a previously negotiated amount can be verified by production statistics and water usage until such time as the equipment is restored to proper working order to the satisfaction of the Department of Municipal Utilities.

5. Notification of Bypass: For the purposes of this Section, Bypass means the intentional diversion of waste streams from any portion of a User's treatment facility.
   A. If a User knows in advance of the need for a bypass, it shall submit prior notice to the City of Stockton, Environmental Control Office, at least ten (10) days before the date of the bypass, if possible.
   B. A User shall submit oral notice to the City of Stockton, Environmental Control Office, of an unanticipated bypass within twenty-four (24) hours from the time it becomes aware of the bypass. A written submission shall also be provided within five (5) days of the time the User becomes aware of the bypass. The written submission shall contain a description of the bypass and its cause; the duration of the

bypass, including exact dates and times, and, if the bypass has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass.

6. Any breakdown or interruption of pretreatment, or any accidental discharge to the City of Stockton storm or sanitary system must be reported immediately. Nonreporting of spill or slug incidents will be cause for administrative permit review and/or revocation of Permit.

7. Permittee is required to self-monitor wastewater generated on site for pollutants specified by the City of Stockton. Sampling procedures and handling must be approved by the City of Stockton and the laboratory utilized must be certified by the State of California Department of Health Services for the specific analysis conducted. Sampling frequency and reporting will be determined on a "case-by-case" basis, but must at least comply with 40 CFR 403.12 (g) "Monitoring and Analysis to Demonstrate Continued Compliance" and any specific categorical requirements.

   Acceptable methods for the analysis of wastewater required in the Wastewater Discharge Permit Self-Monitoring Sample Program shall be limited to those listed in 40 CFR Part 136.

   Self-monitoring sample frequencies of once per 3 months shall mean once per calendar quarter (January through March, April through June, July through September and October through December).

   Self-monitoring sample frequencies of once per 6 months shall mean once per calendar 6 month period (January through June and July through December).

8. Permittee shall perform all required quality assurance and control procedures as contained within Attachment Quality Assurance Manual.

9. If more than the required number of samples are taken for analysis, those results shall also be reported to the City of Stockton. Permittee must report all results (40 CFR 403.12(k)(l).

10. The City may use grab samples for the determination of compliance with local limitations and other applicable limits.

11. The Permittee must notify the City of Stockton, Environmental Control Office at 944-8759, within 24 hours of discovery of any violation with Federal categorical Pretreatment Standards, State, local limitations or any condition contained within this permit. Permittee shall repeat sampling and pollutant analysis for those which exceeded limitation requirements and shall submit, in writing, the results of this second analysis within 30 days after becoming aware of this violation. The report shall also include all steps taken or to be taken to reduce, eliminate, and prevent recurrence of such violations.

12. Permittee shall comply with all reporting requirements contained within the Federal categorical regulations (40 CFR 403.12). At a minimum, unless otherwise specified in your

wastewater discharge permit, semiannual reports must be submitted to the City by January 10th and July 10th (for the previous six month period).

13. Information and data on a permittee obtained from reports, questionnaires, permit applications, permits and monitoring programs and from inspections shall be available to the public or other governmental agency without restrictions unless the permittee specifically requests and is able to demonstrate to the City that release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the permittee.

14. Permittee shall abide by all applicable provisions of the City of Stockton Municipal Code, or any applicable local, state or federal code or regulations, and shall not discharge any waste containing pollutant concentrations in excess of Specific Pollutant Limitations section 7.089.16; and any continuing violation of any provision of said codes or regulations may be just cause for revoking this Permit.

15. Permittee shall maintain all pretreatment records for at least three years. All accidental spills or upsets must be reported to this Department immediately. This shall be accomplished by telephone, and shall be followed by written report within five working days by Permittee to correct the situation and to prevent its recurrence. Failure to report a spill or upset will be grounds for civil or criminal penalties, depending upon circumstances.

16. Permittee must meet all applicable regulations under subtitles C and D of the Resource Conservation and Recovery Act, and 40 CFR Parts 260 through 271, and any applicable State regulations promulgated subsequent to the Federal law.

17. Permittee shall prepare and submit a spill prevention plan within 30 days from the effective date of this Permit to assure that liquid wastes are contained on site at all times.

18. The Permittee shall have a water conservation and hazardous waste minimization plan.

19. The discharge of excess amounts of pollutants specifically limited and deviations of Ph may be subject to fines for each violation.

20. Achieving Permit Conditions of specific pollutant concen-tration limits by dilution is expressly prohibited. Any evidence of this, either willfully or through negligence, will result in Permit Limits being redefined in terms of maximum effluent loadings. Additionally, penalties of a maximum of $6,000 per day may be assessed (City Code 7-091.12).

21. Signatory Requirements: All applications, reports, or information submitted to the City of Stockton must contain the following certification statements and be signed as required in Section (a), (b) and (c) below:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, and accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

1. By a responsible corporate officer, if the Industrial User submitting the reports is a corporation. For the purpose of this paragraph, a responsible corporate officer means:

   a. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy-or decision-making function for the corporation.

   b. By general partner or proprietor if the Industrial User submitting the reports is a partnership or sole proprietorship respectively.

   c. By a duly authorized representative of the individual designated in paragraph (a) or (b) of this section if:

2. The authorization is made in writing by the individual described in paragraph (a) or (b);

3. The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the discharge originates, such as the position of the plant manager, superintendent, or having overall responsibility for environmental matters for the company; and

   a. The written authorization is submitted to the City.

22. Retention of Records: The permittee shall retain records of all monitoring information, including all calibration and maintenance records and original strip chart recordings of all data used to complete the application for this permit, all sampling results including sampling and monitoring results taken for process control data, for a period of at least three years from

the date of the sample, measurement, report or application. This period may be extended by request of the City of Stockton at any time.

1. All records that pertain to matters that are subject of special orders or any other enforcement or litigation activities brought by the City shall be retained and preserved by the permittee until all enforcement activities have concluded and all periods of limitations with respects to any and all appeals have expired.

23. Non-Transferability:

a. Wastewater Discharge Permits shall not be reassigned, transferred to or sold to a new owner, new user, different premises, or a new or changed operation without City approval.

b. In the event of any change in control or ownership of the land or wastewater discharge facility presently owned or controlled by the discharger to whom the Permit was issued, the permittee shall notify the succeeding owner or operator by a letter sent certified mail of the requirement to obtain a new Wastewater Discharge Permit. A copy of the letter must also be immediately forwarded to the City.

Any new or succeeding owner shall also comply with the terms and conditions of the existing permit until a new permit can be issued.

24. Duration:

a. Permits shall be issued for a specified time period, not to exceed 5 years. A permit may be issued for a period less than 5 years or may be stated to expire on a specific date.

b. If the permittee wishes to continue an activity regulated by this permit, the permittee must submit an application for a new permit at least 60 days before the expiration date of this permit.

c. An expired permit will continue to be effective and enforceable as long as one of the following conditions applies:

1. The permittee has submitted a completed permit application at least 60 days prior to the expiration date of the existing permit.

2. The failure to reissue the permit, prior to the expiration of the previous permit, is not due to any act on the part of the permittee.

25. Permittee shall, if necessary, provide, maintain, and operate a pretreatment system capable of meeting all applicable limitations. Permittee shall insure that all pretreatment equipment is in proper working condition at all times. A pretreatment system maintenance schedule shall be submitted with each wastewater discharge application. All maintenance records for pretreatment equipment shall be kept and available to the City. The City may require that when necessary for the safe and proper operation of pretreatment equipment that the permittee shall provide all necessary training and education to permittee's pretreatment plant operators. At a minimum, educational training shall include:

   1. General principles of pretreatment equipment operation.

   2. Basic understanding of the mathematics relating to pretreatment equipment.

   3. Understanding of basic sampling on monitoring techniques.

   4. Basic knowledge of the regulations and limits governing the regulations for waste stream type being discharged.

   5. Proper safety procedures.

   6. Basic knowledge of hazardous waste labeling and storage.

   Documentation of all training and education provided shall be kept and made available to the City.

26. The terms and conditions of this permit may be subject to modification by the City of Stockton during the term of this permit as limitations or requirements are identified or other just cause. The Permittee shall be informed of any proposed changes at least 30 days prior to the effective date of change. Compliance with any changes or new conditions in this permit shall be concluded within 90 days following the effective date of change.

27. If any provision if this permit or the application to any person or circumstances is held invalid, the remainder of this permit or the application of such provisions to other persons or other circumstances shall not be affected.

28. The remedies provided for in this permit shall be cumulative and not exclusive, and shall be in addition to any and all other remedies available to the City.

29. Notification of Changed Conditions: Each User must notify the City of Stockton, Environmental Control Office, of any significant changes to the User's operations or system which might alter the nature, quality, or volume of its wastewater at least ninety (90) days before the change.
    A. The City of Stockton may require the User to submit such information as may be deemed necessary to evaluate the changed condition, including the submission of a wastewater discharge permit application.
    B. The City of Stockton may issue an individual wastewater discharge permit or modify an existing wastewater discharge permit in response to changed conditions or anticipated changed conditions.

30. Specific Pollutant Limitation for Temperature: No person shall discharge wastewater containing a temperature in excess of 140 degrees Fahrenheit at the point of discharge.

31. Notification of Potential Problems:
    A. In the case of any discharge, including, but not limited to, an accidental discharge; a of a non-routine, episodic nature; a non-customary batch discharge; or a slug discharge or slug load that might cause potential problems for the POTW; or any discharge at a flow rate or concentration which could violate the discharge standards set forth in Stockton Municipal Code Section 7-089.1, the User shall immediately telephone and notify the City of Stockton, Environmental Control Office, of the incident. This notification shall include the location of the discharge, type of waste, concentration and volume, if known, and corrective actions taken by the User.
    B. Within five (5) days following such discharge, the User shall submit to the Municipal Utilities Department a detailed written report describing the cause(s) of the discharge and the measures to be taken by the User to prevent similar future occurrences. Such notification shall not relieve the User of any expense, loss, damage, or other liability which might be incurred as a result of damage to the POTW, natural resources, or any other damage to person or property; nor shall such notification relieve the User of any fines, penalties, or other liability which may be imposed pursuant to the Stockton Municipal Code.

CITY OF STOCKTON

DEPARTMENT OF MUNICIPAL UTILITIES
2500 NAVY DRIVE
STOCKTON, CA 95206-1191
(209) 937-8750
FAX (209) 937-8708

Post-it® Fax Note 7671	Date 5/1/95 # of pages ▸ 3
To DOUG MERCER	From RICHARD
Co./Dept. NCYC	Co. COS
Phone #	Phone #
Fax # 948-0824	Fax #

June 20, 1994

Bob Crump, Chief Engineer I
Department of Corrections
Northern California Women's Facility
7150 E. Arch Road
Stockton, CA 95213-9006

CALIFORNIA YOUTH AUTHORITY 20" SANITARY SEWER LINE FLOW CAPACITY

Per your request, we have estimated the available capacity in the California Youth Authority (CYA) sanitary sewer line, commonly referred to as the "CYA line". The following is a summary of our review and findings.

Amendment No. 1 to the original City/State Agreement, dated June 13, 1973, specifies the sewage quantities of which the City is obligated to accept under the terms and conditions of the amendment and the original agreement. Specifically, it states that the City will accept flows, emanating from the CYA property, up to an amount not exceeding 800,000 gallons per day nor 1,400 gallons per minute. These quantities are a modification to those set forth in the original agreement, dated June 10, 1964. In addition, the original agreement stipulated that the State has the right to acquire additional capacity rights in the City's sewage facility based on terms and conditions as set forth in the agreement and the prevailing connection fees.

The capacity of the existing 20" CYA line, based on the available data, is approximately 2,250 gpm. This amount represents the maximum capacity of the gravity sewer without any surcharge.

At present, flows in the CYA line are generated from two separate sources - the Arch Road Industrial Business Park and the California Youth Authority. Including the recent up-grade of the Arch Road Industrial Sanitary Sewer Pump Station, the Arch Road Industrial Business Park contributes approximately 450 gpm of peak flow into the CYA line. Consequently, a maximum peak capacity of approximately 1800 gpm is currently available for the CYA.

Based on flow records from April 1, 1994 to April 30, 1994, the CYA generates an average flow of approximately 360 gpm. However, the peak flow from the CYA facility is equal to the rate of pump discharge from the sanitary pump station at the facility. Information received from Doug Mercer indicates that this rate is approximately 1000 gpm. Consequently, the available peak capacity in the 20" CYA line is about 800 gpm (2,250-450-1000 = 800 gpm).

Bob Crump
June 20, 1994
Page -2-

CALIFORNIA YOUTH AUTHORITY (CYA) 20" GRAVITY SEWER LINE FLOW CAPACITY

Depending on the projected wastewater flows, there may be sufficient peak flow capacity available for a future expansion of the CYA facility. However, if the total peak sanitary flows from the CYA pump station are anticipated to exceed 1,800 gpm, an additional sanitary sewer line may be required.

We have reviewed this possibility and determined that an additional sanitary sewer could be constructed to provide this service. Attached is a sketch showing one potential alignment of this sewer. The line could be extended north on Newcastle Road to Arch Road, West on Arch Road to Frontier Way, and north on Frontier to the City's existing 24" sanitary sewer located at the North-East corner of Arch Road Industrial Park. The length of this line would be approximately 9,000 feet.

[redacted]

If you have any questions, please contact Mark Madison at (209) 937-8782.

MORRIS L. ALLEN
DIRECTOR OF MUNICIPAL UTILITIES

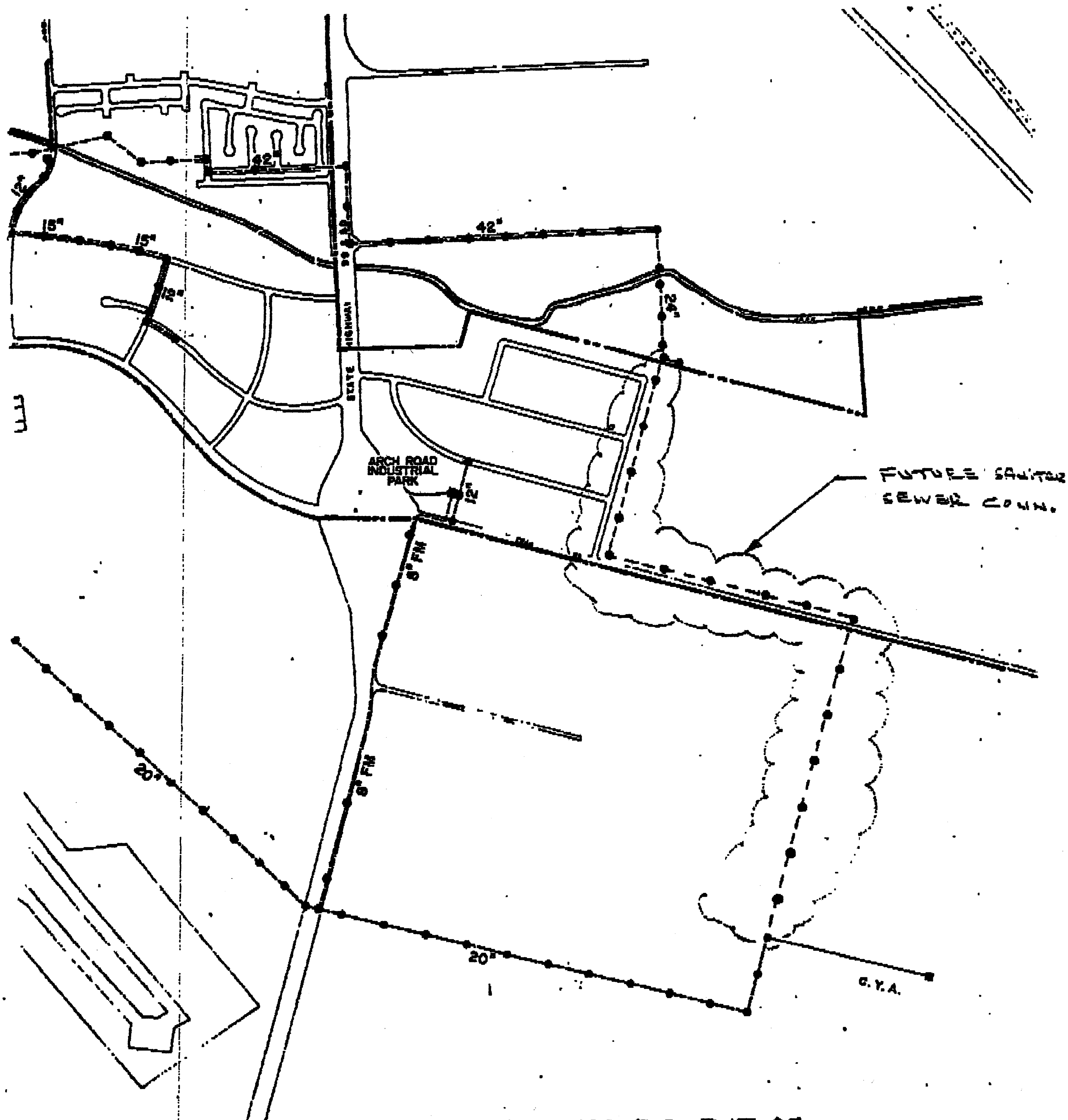
Jeff D. Cameron

JEFF D. CAMERON
SENIOR CIVIL ENGINEER

JDC:AK:ak

Attachment

cc: Mark Madison, Associate Civil Engineer



LOCATION MAP FOR FUTURE
SANITARY SEWER CONNECTION
TO EXISTING 24" SANITARY SEWER

Appendix B.3: Arch Road Trunk Lines IS/MND

PUBLIC REVIEW DRAFT
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

for the

ARCH ROAD
SANITARY SEWER TRUNK LINE
City of Stockton, CA

Initial Study No: MUD IS3-09

February 4, 2010

Prepared for:

CITY OF STOCKTON
Municipal Utilities Department
2500 Navy Drive
Stockton, CA 95206
(209) 937-8750

InSite
environmental, inc.

6653 Embarcadero Drive, Suite Q
Stockton, CA 95219
209.472.8650
Fax 209.472.8654
www.insite-env.com

This chapter of the Initial Study provides a brief summary description of the project followed by project setting and background information and a detailed description of the location and physical elements of the project.

Project Brief

The Arch Road Sanitary Sewer Trunk Line project (the project) involves the placement of a new wastewater trunk line that would expand the existing City wastewater collection system in southeast Stockton. The proposed project includes construction of approximately 2 linear miles (10,600 linear feet) of 36-, 30-, and 27-inch wastewater collection trunk line within the existing Arch Road right-of-way. The proposed collection trunk line would extend a 27-inch collection line from Austin Road to Logistics Drive at which point the collection line would be upsized to 30-inches and continue westerly in Arch Road to the frontage of the existing wastewater pump station. The trunk line will continue approximately 500 feet to the north as a 36-inch pipeline to the existing pump station.

The proposed collection trunk line would increase the capacity of the City's Wastewater System #8 in the southeastern portion of the Stockton Metropolitan Area. Upon ultimate buildout, the proposed project would serve proposed development by First Industrial Inc., and future development in the vicinity. The project is consistent with the City's adopted Wastewater Master Plan.

The project alignment would cross the Weber Slough by a construction method called bore and jack. No disturbance to Weber Slough will occur. The proposed project would be constructed by First Industrial Inc., and owned and operated by the City of Stockton Municipal Utilities Department.

The general location of the project and its major component are shown on Figures 2-1 through 2-5 at the end of this chapter.

Project Setting and Background

The proposed pipeline is located in southeast Stockton in a developing commercial and industrial area. Land uses surrounding the proposed pipeline consist of residential, industrial, commercial, and agricultural lands. Lands adjacent to the eastern portion of the project alignment are primarily agricultural uses and a correctional facility. This project will not serve the correctional facility. Progressing to the west, residential uses are present along the south side of Arch Road, and commercial and industrial uses are located along the north side of Arch Road (Figure 2-4 aerial photo).

The project area as a whole is committed to future industrial, and institutional development in the City of Stockton. This commitment has been expressed in the Stockton General Plan 2035, which extends planned industrial development north to Farmington Road, east to Kaiser Road, and south to French Camp Road. The City is processing development applications for significant portions of these areas, including lands south of

Arch Road. Development of these areas will be preceded by separate environmental review under CEQA.

The existing wastewater system in the project vicinity is reaching maximum capacity and improvements are required to accommodate planned growth in the area. An existing wastewater pump station is located approximately 500 feet east of SR 99 and is proposed to be expanded to accommodated planned growth anticipated by the Stockton General Plan 2035. The Arch Road Sanitary Sewer Trunk Line would take advantage of the capacity in the upgraded pump station by providing a collection line that would divert wastewater from existing uses and extend service to proposed uses to the east and south, to the wastewater pump station. Currently, one eight-inch wastewater line extends east in Arch Road from the existing pump station to Frontier Road. This line would remain in place, collecting wastewater from uses north of Arch Road. The proposed project would expand the existing sewer line to a 36-inch line from Arch Road north to the pump station, a 30-inch line from Arch Road to Logistics Drive, and a 27-inch line between Logistics Drive and Austin Road. This portion of the line extension would provide wastewater connections to future and existing development in the area. The proposed pipeline would provide the ability to serve the remaining undeveloped areas designated in the General Plan 2035.

Project Location

The proposed pipeline alignment is shown on Figures 2-2 through 2-5, and is located within the existing Arch Road rights-of-way between Austin Road and the SR 99 Frontage Road. There are no County Assessor's Parcel Numbers (APNs) assigned to the project site, which is an existing public street.

The proposed facilities are located within Sections 27, and 28 of the C.M. Weber Grant "El Rancho del Campo de los Franceses" land grant area; this portion of the land grant area is within Township 1 North, Range 7 East, Mount Diablo Base and Meridian. The project area is shown on the Stockton East 7.5-minute US Geological Survey topographic quadrangles (Figure 2-3).

Project Details

The proposed project involves the construction of a new wastewater collection trunk line that would extend from Austin Road west along Arch Road to the connection with the existing wastewater pump station located approximately 500-feet east of the SR 99 Frontage Road (Figures 2-4 and 2-5).

Description of Proposed Pipeline

The proposed alignment involves a new gravity wastewater collection trunk line that would extend a 27-inch line approximately one half mile west within Arch Road from Austin Road to Logistics Drive. At Logistics Drive, the proposed line would be expanded to a 30-inch line and would continue west, under Weber Slough and terminate along the frontage of the new pump station. A 36-inch sewer line will be extended approximately

500 feet from Arch Road north to the pump station (Figure 2-4 and 2-5). All proposed lines would be underground and would not impact any existing utility lines in the area.

Stream Crossings

The proposed project would involve a crossing of the Weber Slough within the Arch Road right-of-way. The proposed crossing of the Weber Slough would involve the placement of the proposed 30-inch collection trunk line a minimum of 3 feet below the existing Weber Slough channel bottom which consists of a box concrete culvert. The proposed crossing would be constructed using the bore-and-jack method; this involves excavation of pits on either side of the crossing and jacking a sleeve to conduct the pipeline under the creek bed without disturbance to the resources at the surface. Jacking and receiving pits would be excavated within the existing Arch Road section.

Construction Activities

All sections of the proposed sewer trunk would be constructed using conventional open trench construction, with the exception of the Weber Slough crossing which would be constructed using the bore and jack method.

The entire alignment construction would be within the existing Arch Road right-of-way, and would involve pavement sawing and removal, trench excavation with a backhoe, pipeline placement, and backfill of the trench. Temporary patching or repair of the pavement will occur immediately following line placement to restore normal use of the street. Permanent pavement treatment will follow completion of construction. The proposed gravity collection trunk line would require adequate slope for gravity draining, and would be placed below street grades between 15 and 25 feet, with a minimum cover depth of 15 feet. The typical trench section would comply with the City's standard trench section.

As indicated above, the proposed sewer trunk will cross the Weber Slough using the bore-and-jack method. The proposed crossing would place the proposed 30-inch collection trunk line below the existing Weber Slough channel bottom.

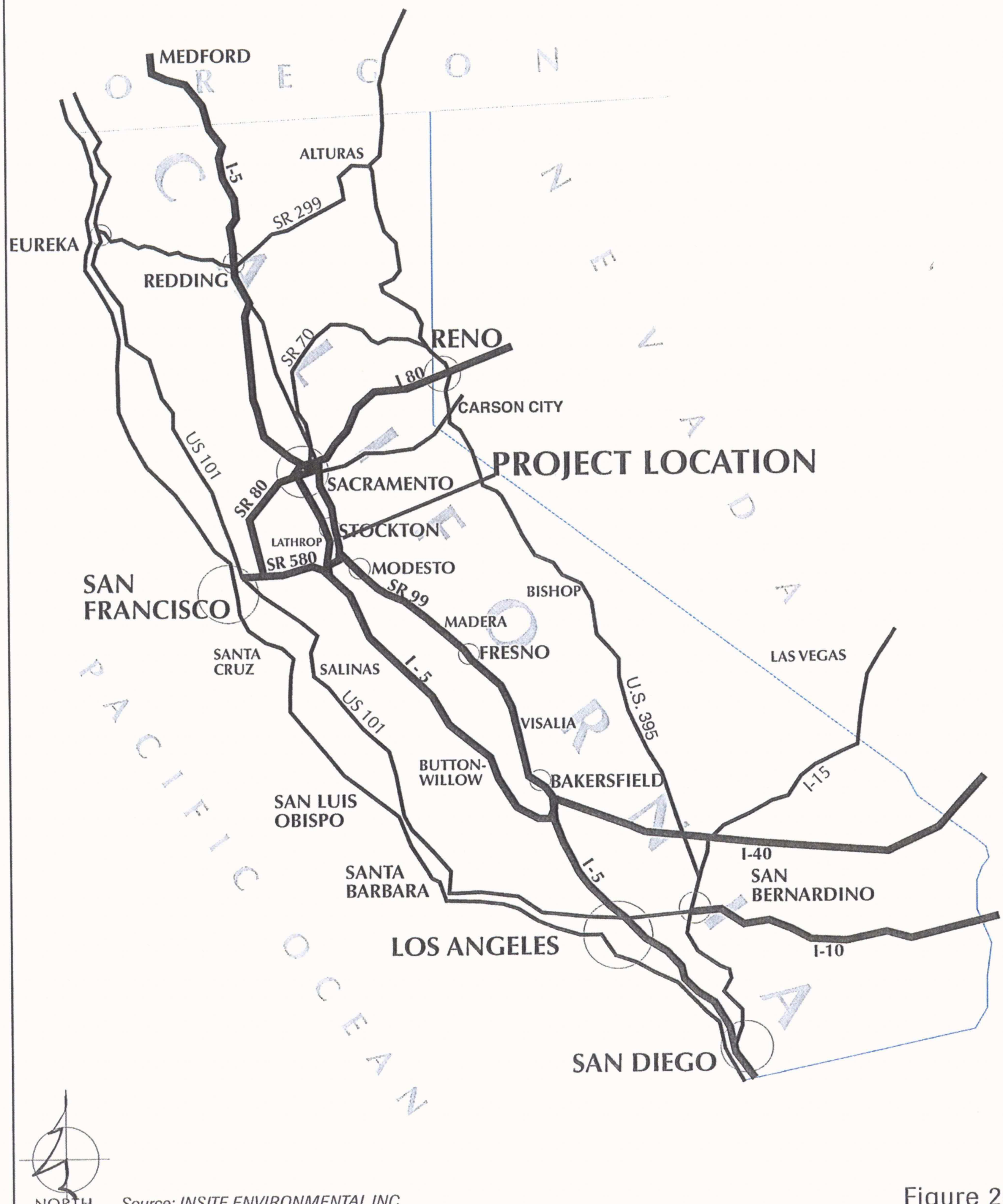
Project construction is not expected to result in street closures, it is anticipated that construction can be managed within a half-street section with traffic control.

Permits and Approvals

The principal discretionary permit and approval associated with the project would be granted by the City of Stockton as project proponent, although other permits and approvals will be required. Due to the location of portions of the project within County roads, portions of the project will need to be coordinated with the County of San Joaquin. Anticipated and potential permits and approvals are identified in Table 2-1.

TABLE 2-1
PERMITS AND APPROVALS
ARCH ROAD SANITARY SEWER TRUNK LINE

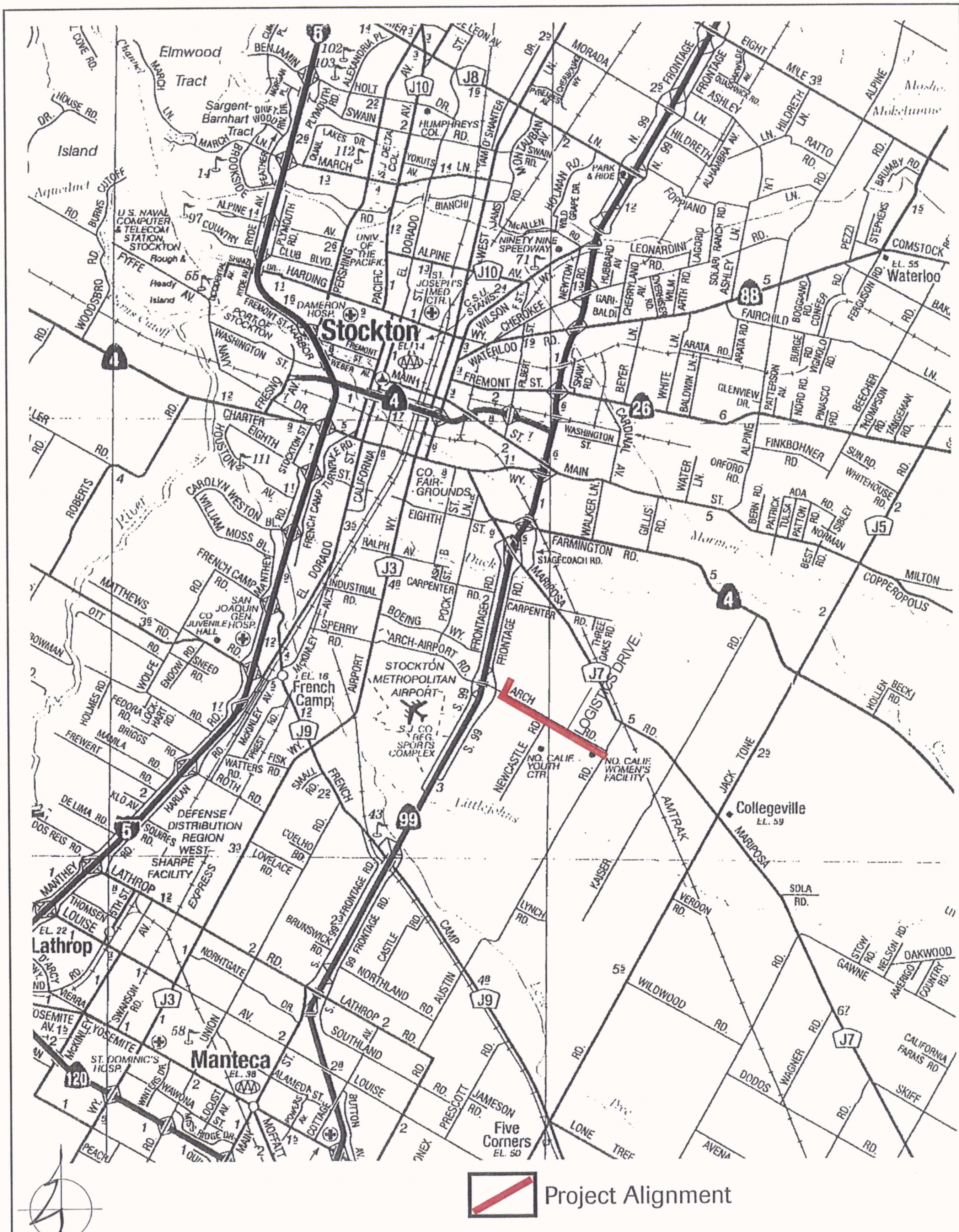
Agency	Permit/Approval
City of Stockton, City Council	Adoption of Mitigated Negative Declaration and Mitigation Monitoring Program.
	Approval of proposed project for construction
San Joaquin County, Department of Public Works	Encroachment permits for lines within and crossing County roads and rights-of-way
California State Reclamation Board	Encroachment Permit for proposed crossing of Weber Slough
California Department of Fish and Game	Stream alteration permit for crossings of Weber Slough
San Joaquin County Council of Governments	Participation in the San Joaquin County Multi-Species Habitat Conservation Plan



Source: INSITE ENVIRONMENTAL, INC.

Figure 2-1
REGIONAL MAP

INSITE ENVIRONMENTAL, INC.

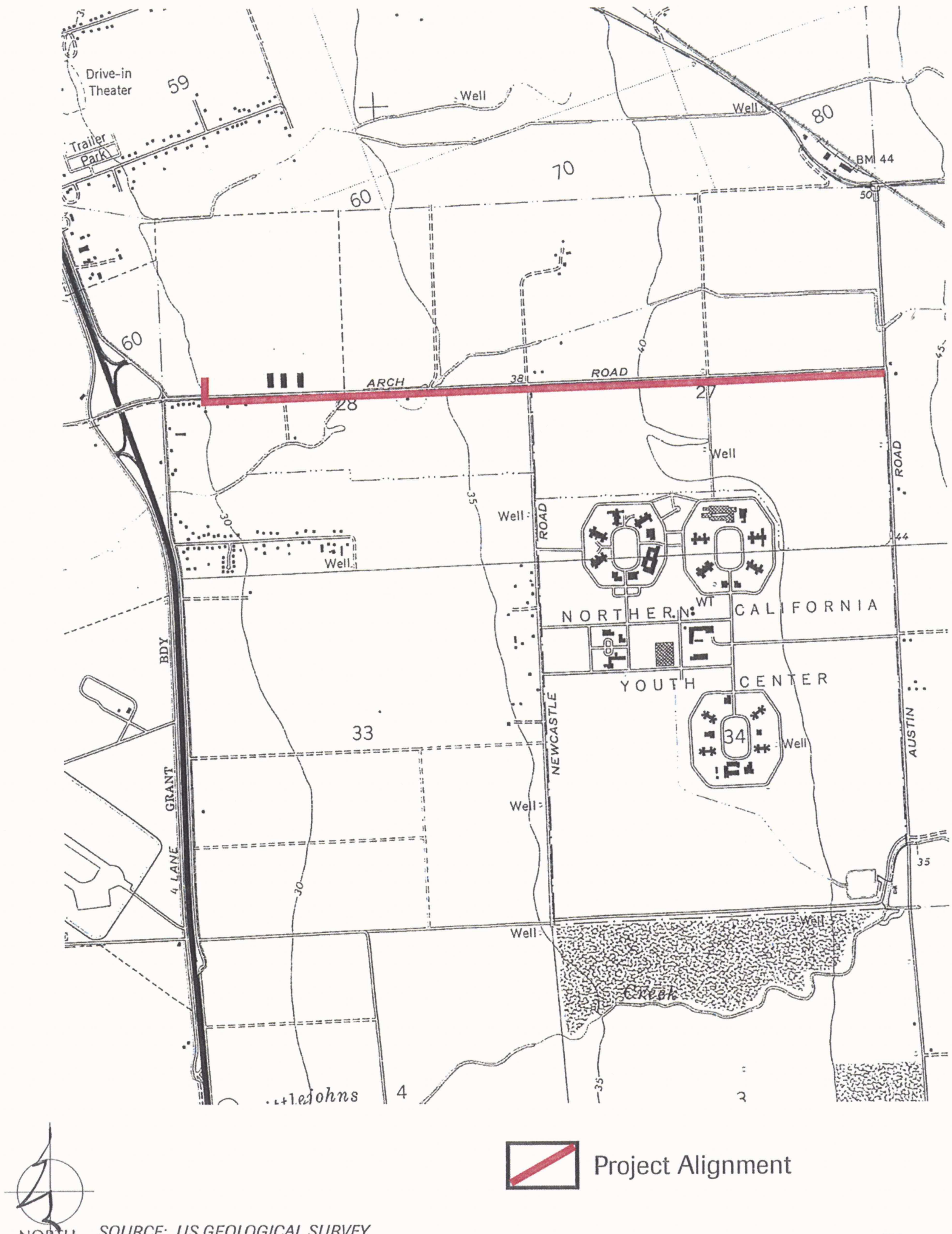


SOURCE: SAN JOAQUIN COUNTY

INSITE ENVIRONMENTAL, INC.

Figure 2-2
VICINITY MAP

September 25, 2008



Project Alignment

SOURCE: US GEOLOGICAL SURVEY
STOCKTON EAST QUADRANGLE

INSITE ENVIRONMENTAL, INC.

Figure 2-3
USGS MAP

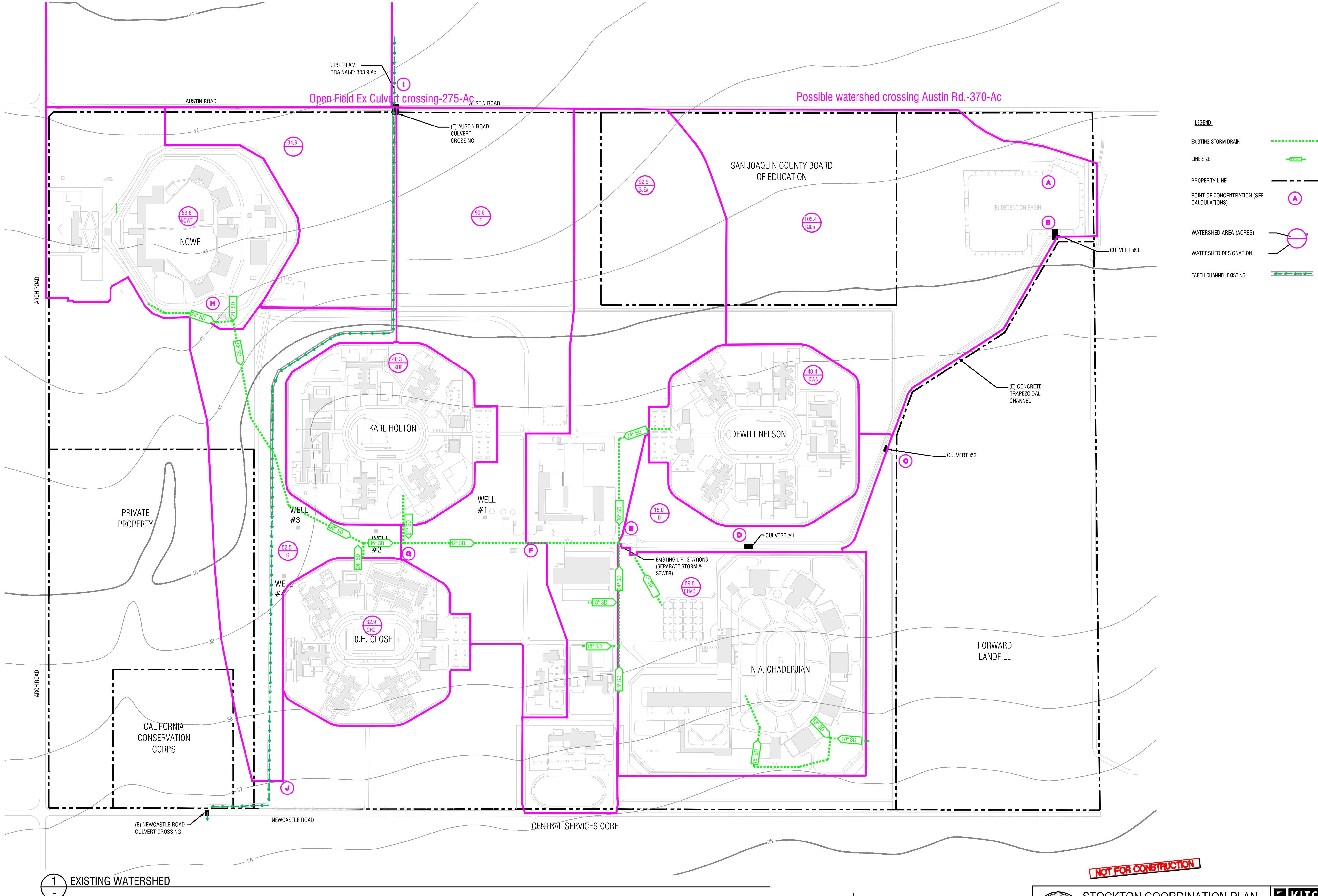
SOURCE: GOOGLE EARTH

Project Alignment

Figure 2-4
AERIAL PHOTO

NSITE ENVIRONMENTAL, INC.

Appendix B.4: Drainage Watershed Maps



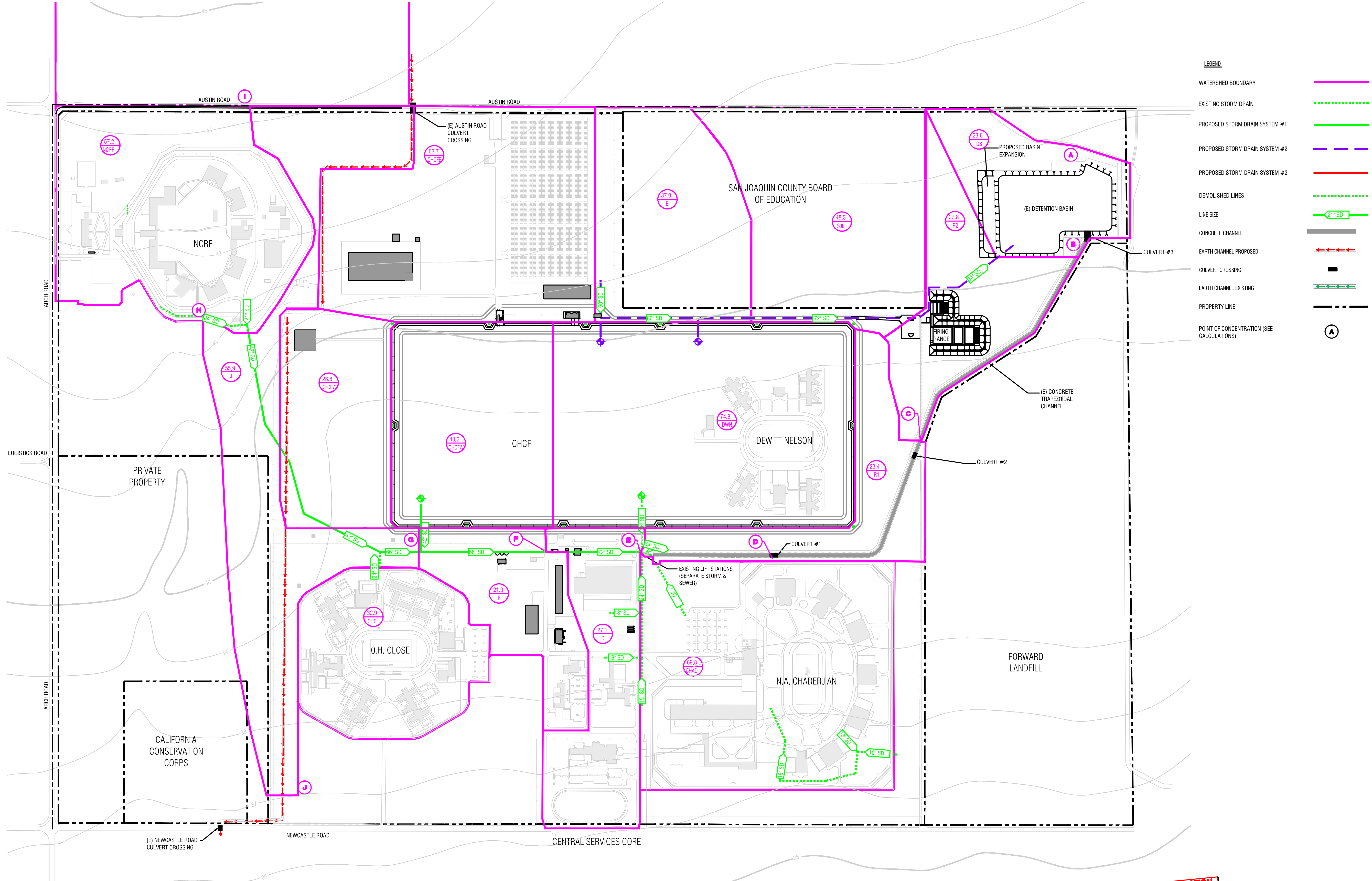
1 EXISTING WATERSHED

NOTE:
MINOR TOPOGRAPHY IS EXTRAPOLATED FROM MAJOR CONTOURS DERIVED FROM USGS MAP STOCKTON EAST CALIF. NW/4 MANTECA 15' QUADRANGLE

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF
CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
EXISTING WATERSHED	3270L1	C9
	DATE 8-26-10	SCALE: AS SHOWN



1 PROPOSED WATERSHED

NOTES:

MINOR TOPOGRAPHY IS EXTRAPOLATED FROM MAJOR CONTOURS DERIVED FROM USGS MAP STOCKTON EAST CALIF. NW/4 MANTECA 15' QUADRANGLE

FINAL GEOMETRY OF EXPANSION TO BE DETERMINED DURING DESIGN PHASE. EXPANSION SHOWN IS SCHEMATIC ONLY.

NORTH

0 125 250 500

NOT FOR CONSTRUCTION

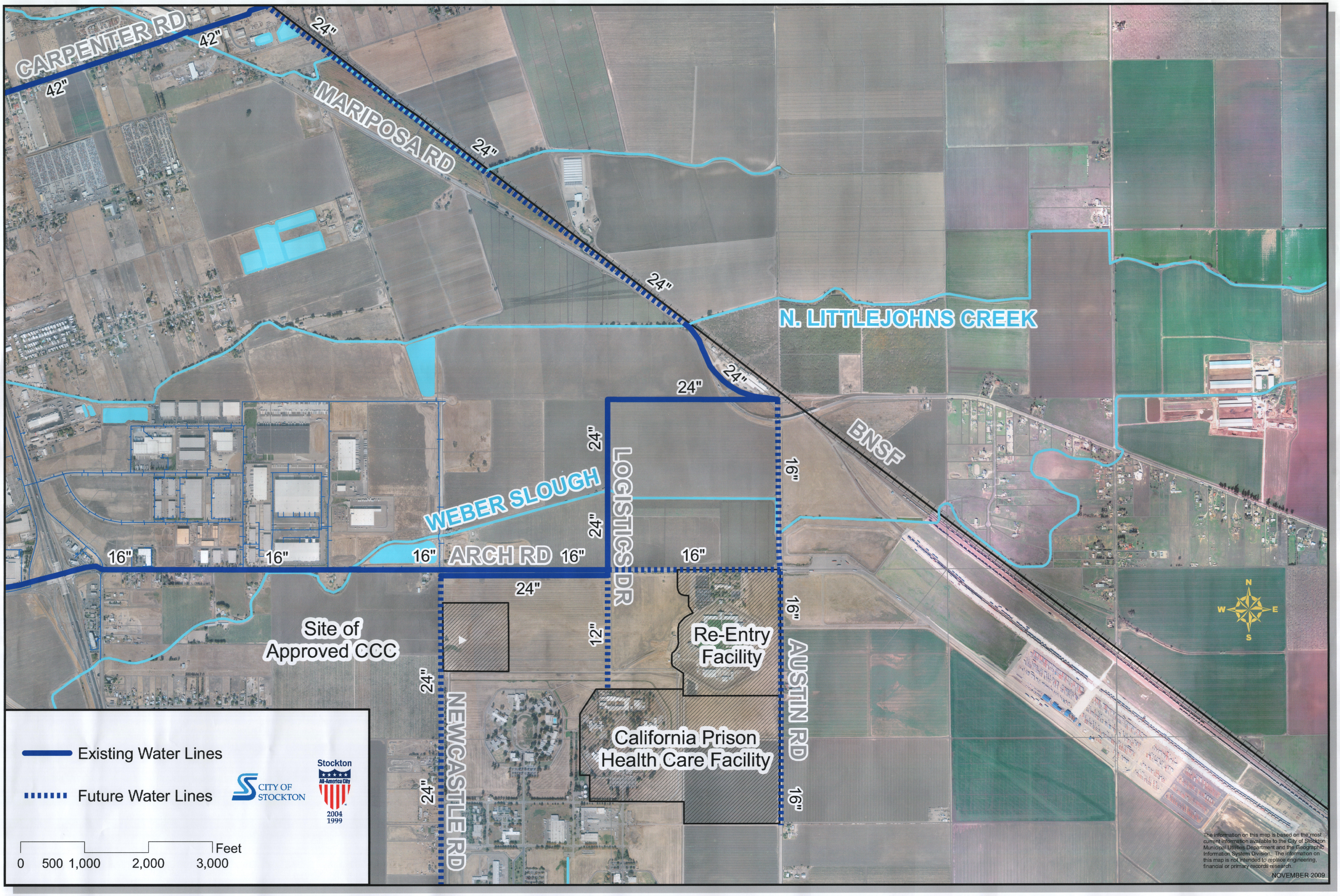
STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED WATERSHED	3270L1	C10
	DATE: 8–26–10	SCALE: AS SHOWN

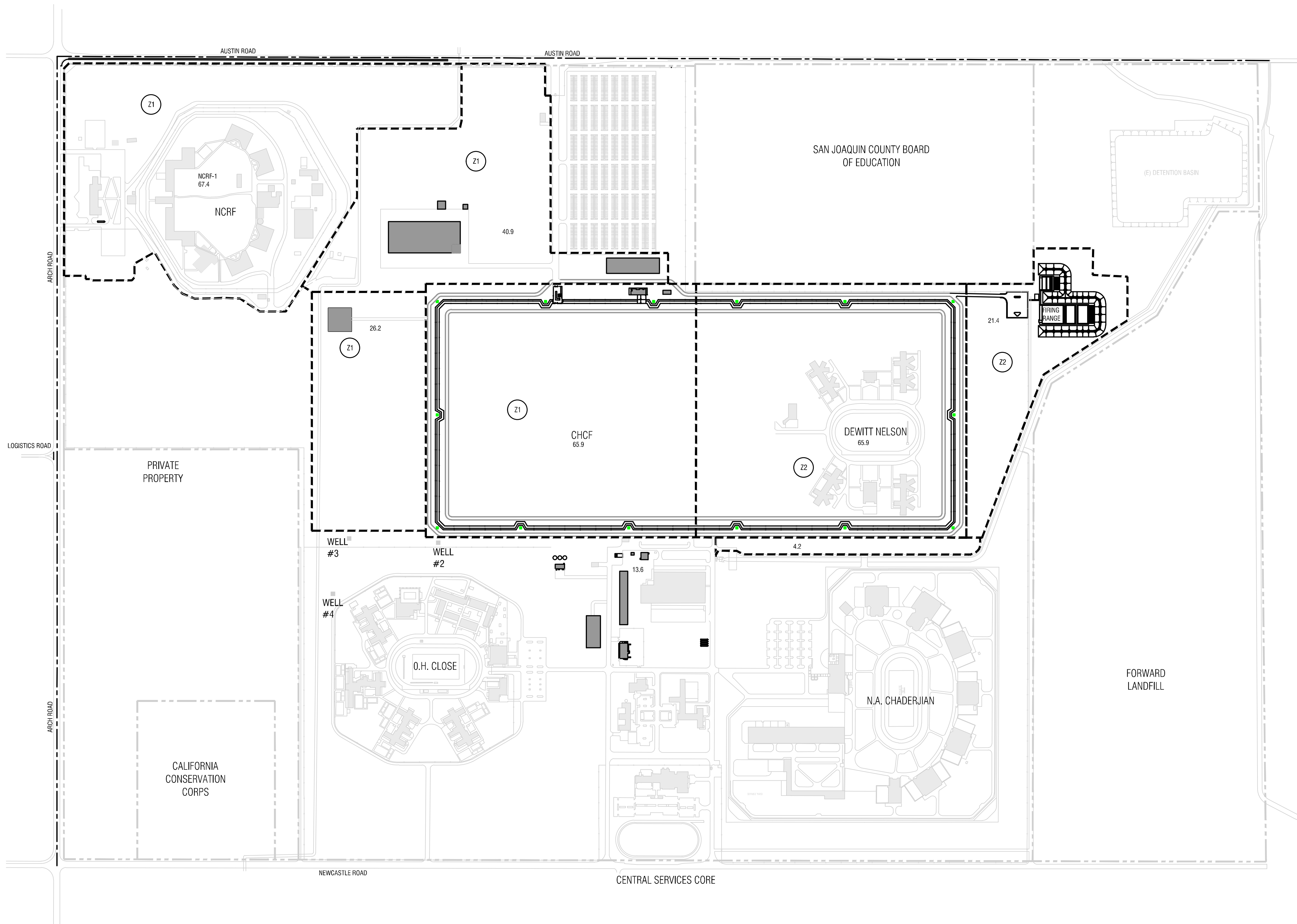
CHCF COMBINED FENCE_STCKTN MASTER PLAN.DWG

Appendix B.5: Water COP Improvements



CARPENTER RD
42"
42"
24"
MARIPOSA RD
24"
24"
N. LITTLEJOHNS CREEK
24"
24"
BNSF
24"
WEBER SLOUGH
LOGISTICS DR
24"
16"
16"
16"
ARCH RD
16"
16"
16"
24"
12"
16"
Site of
Approved CCC
Re-Entry
Facility
AUSTIN RD
24"
NEWCASTLE RD
California Prison
Health Care Facility
24"
16"
N
W
E
S
Existing Water Lines
Future Water Lines
CITY OF
STOCKTON
Stockton
2004
1999
Feet
0 500 1,000 2,000 3,000
The information on this map is based on the most current information available to the City of Stockton Municipal Utilities Department and the Geographic Information System Division. The information on this map is not intended to replace engineering, financial or primary records research.
NOVEMBER 2009

Appendix B.6: Irrigation Area/Zone Map



1 PROPOSED IRRIGATION AREAS & ZONES

LEGEND

PROPERTY LINE	— · —
IRRIGATED AREAS INCLUDED IN THE MODEL	- - -
ZONE DESIGNATION	Z2

NOTE:

1. IRRIGATION FOR O.H.C. AND CHAD WILL CONTINUE TO BE SERVED OFF OF THE EXISTING WATER SYSTEM.

NOT FOR CONSTRUCTION

STOCKTON COORDINATION PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION

KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700

PROJECT NAME:	JOB NO.	EXHIBIT
PROPOSED IRRIGATION AREAS & ZONES	3270L1	C11
	DATE: 8-26-10	SCALE: AS SHOWN

Appendix C: Electrical

Appendix C.1: PG&E Rate Schedule

ELECTRIC SCHEDULE E-20 Sheet 1
SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

CONTENTS: This rate schedule is divided into the following sections:

(D)

1. APPLICABILITY: **Initial Assignment:** A customer is eligible for service under Schedule E-20 if the customer's maximum demand (as defined below) has exceeded 999 kilowatts for at least three consecutive months during the most recent 12-month period. If 70 percent or more of the customer's energy use is for agricultural end-uses, the customer will be served under an agricultural schedule.

Customer accounts which fail to qualify under these requirements will be evaluated for transfer to service under a different applicable rate schedule.

The provisions of Schedule S—Standby Service Special Conditions 1 through 6 shall also apply to customers whose premises are regularly supplied in part (but not in whole) by electric energy from a nonutility source of supply. These customers will pay monthly reservation charges as specified under Section 1 of Schedule S, in addition to all applicable Schedule E-20 charges. Exemptions to standby charges are outlined in the Standby Applicability Section of this rate schedule.

Transfers Off of Schedule E-20: PG&E will review its Schedule E-20 accounts annually. A customer will be eligible for continued service on Schedule E-20 if its maximum demand has either: (1) Exceeded 999 kilowatts for at least 5 of the previous 12 billing months; or (2) Exceeded 999 kilowatts for any 3 consecutive billing months of the previous 14 billing months. If a customer's demand history fails both of these tests, PG&E will transfer that customer's account to service under a different applicable rate schedule.

Assignment of New Customers: If a customer is new and PG&E believes that the customer's maximum demand will exceed 999 kilowatts and that the customer should not be served under a time-of-use agricultural schedule, PG&E will serve the customer's account under Schedule E-20.

(Continued)

ELECTRIC SCHEDULE E-20

Sheet 2

SERVICE TO CUSTOMERS WITH MAXIMUM DEMANDS of 1000 KILOWATTS or MORE

1. APPLICABILITY: (Cont'd.)

Definition of Maximum Demand: Demand will be averaged over 15-minute intervals. "Maximum demand" will be the highest of all the 15-minute averages for the billing month. If the customer's use of electricity is intermittent or subject to severe fluctuations, a 5-minute interval may be used. If the customer has any welding machines, the diversified resistance welder load, calculated in accordance with Section J of Rule 2, will be considered the maximum demand if it exceeds the maximum demand that results from averaging the demand over 15-minute intervals. The customer's maximum-peak-period demand will be the highest of all the 15-minute averages for the peak period during the billing month. (See Section 6 for a definition of "Peak-Period.")

Standby Demand: For customers for whom Schedule S—Standby Service Special Conditions 1 through 6 apply, standby demand is the portion of a customer's maximum demand in any month caused by nonoperation of the customer's alternate source of power, and for which a demand charge is paid under the regular service schedule.

If the customer imposes standby demand in any month, then the regular service maximum demand charge will be reduced by the applicable reservation capacity charge (see Schedule S Special Condition 1).

To qualify for the above reduction in the maximum demand charge, the customer must, within 30 days of the regular meter read date, demonstrate to the satisfaction of PG&E the amount of standby demand in any month. This may be done by submitting to PG&E a completed Electric Standby Service Long Sheet (Form 79-726).

(D)

Solar Generation Demand Adjustment: A customer who installs a solar electric generation facility on or after January 1, 2007 may be eligible to receive a Solar Generation Demand Adjustment. A customer will qualify for a Solar Generation Demand Adjustment if both of the following conditions are met: (1) the customer's solar electric generating facility was installed after January 1, 2007; and (2) the solar electric generation facility reduces the customer's maximum demand to the point that the customer would no longer be eligible for service under this schedule. The Solar Generation Demand Adjustment will be the fixed reduction in demand as determined by PG&E from the customer's interconnection agreement, and will be added to the customer's maximum demand for the sole purpose of determining the customer's eligibility for Schedule E-20. (N)

The Solar Generation Demand Adjustment does not specifically guarantee the customer's continued eligibility for service under this schedule nor will it be applied to the customer's maximum demand for purposes of calculating the monthly maximum demand charge.

The Solar Generation Demand Adjustment will terminate on December 31, 2016. (N)

2. TERRITORY: Schedule E-20 applies everywhere PG&E provides electric service.

(Continued)

ELECTRIC SCHEDULE E-20

Sheet 3

SERVICE TO CUSTOMERS WITH MAXIMUM DEMANDS of 1000 KILOWATTS or MORE

3. RATES: Total bundled service charges are calculated using the total rates shown below. Direct Access (DA) and Community Choice Aggregation (CCA) charges shall be calculated in accordance with the paragraph in this rate schedule titled Billing.

TOTAL RATES

Total Customer/Meter Charge Rates	Secondary Voltage		Primary Voltage		Transmission Voltage	
Customer Charge Mandatory E-20 ($ per meter per day)	$24.64066		$32.85421		$36.99220	
Optional Meter Data Access Charge ($ per meter per day)	$0.98563		$0.98563		$0.98563	
Total Demand Rates ($ per kW)						
Maximum Peak Demand Summer	$12.78		$12.10		$11.12	
Maximum Part-Peak Demand Summer	$2.84		$2.80		$2.49	
Maximum Demand Summer	$9.00	(I)	$7.52	(I)	$4.28	(I)
Maximum Part-Peak Demand Winter	$1.15		$0.74		$0.00	
Maximum Demand Winter	$9.00	(I)	$7.52	(I)	$4.28	(I)
Total Energy Rates ($ per kWh)						
Peak Summer	$0.14889	(I)	$0.15228	(I)	$0.10822	(I)
Part-Peak Summer	$0.10429	(I)	$0.10453	(I)	$0.08774	(I)
Off-Peak Summer	$0.08593	(I)	$0.08391	(I)	$0.07552	(I)
Part-Peak Winter	$0.09372	(I)	$0.09048	(I)	$0.08032	(I)
Off-Peak Winter	$0.08322	(I)	$0.08004	(I)	$0.07189	(I)
Average Rate Limiter ($/kWh in summer months)	$0.24001	(I)	$0.24001	(I)	–	
Power Factor Adjustment Rate ($/kWh/%)	$0.00005		$0.00005		$0.00005	

Total bundled service charges shown on customers' bills are unbundled according to the component rates shown below.

(Continued)

ELECTRIC SCHEDULE E-20 Sheet 4
SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

3. RATES: (Cont'd.)

Customer/Meter Charge Rates: Customer and meter charge rates provided in the Total Rate section above are assigned entirely to the unbundled distribution component.

Demand Rates by Component ($ per kW)	Secondary Voltage		Primary Voltage		Transmission Voltage	
Generation:						
Maximum Peak Demand Summer	$8.74		$9.46		$11.12	
Maximum Part-Peak Demand Summer	$1.79		$2.07		$2.49	
Maximum Demand Summer	$0.00		$0.00		$0.00	
Maximum Part-Peak Demand Winter	$0.00		$0.00		$0.00	
Maximum Demand Winter	$0.00		$0.00		$0.00	
Distribution:						
Maximum Peak Demand Summer	$4.04		$2.64		$0.00	
Maximum Part-Peak Demand Summer	$1.05		$0.73		$0.00	
Maximum Demand Summer	$4.72		$3.24		$0.00	
Maximum Part-Peak Demand Winter	$1.15		$0.74		$0.00	
Maximum Demand Winter	$4.72		$3.24		$0.00	
Transmission Maximum Demand*	$4.06	(I)	$4.06	(I)	$4.06	(I)
Reliability Services Maximum Demand*	$0.22		$0.22		$0.22	
Energy Rates by Component ($ per kWh)						
Generation:						
Peak Summer	$0.11226		$0.12077		$0.08683	
Part-Peak Summer	$0.07528		$0.07813		$0.06635	
Off-Peak Summer	$0.05945		$0.05922		$0.05413	
Part-Peak Winter	$0.06542		$0.06467		$0.05893	
Off-Peak Winter	$0.05636		$0.05517		$0.05050	
Distribution:						
Peak Summer	$0.01269		$0.00851		$0.00000	
Part-Peak Summer	$0.00507		$0.00340		$0.00000	
Off-Peak Summer	$0.00254		$0.00169		$0.00000	
Part-Peak Winter	$0.00436		$0.00281		$0.00000	
Off-Peak Winter	$0.00292		$0.00187		$0.00000	
Transmission Rate Adjustments* (all usage)	$0.00010	(I)	$0.00010	(I)	$0.00010	(I)
Public Purpose Programs (all usage)	$0.01101		$0.01026		$0.00902	
Nuclear Decommissioning (all usage)	$0.00029		$0.00029		$0.00029	
Competition Transition Charge (all usage)	$0.00371		$0.00352		$0.00315	
Energy Cost Recovery Amount (all usage)	$0.00368		$0.00368		$0.00368	
DWR Bond (all usage)	$0.00515		$0.00515		$0.00515	

* Transmission, Transmission Rate Adjustments, and Reliability Service charges are combined for presentation on customer bills.

(Continued)

ELECTRIC SCHEDULE E-20

Sheet 5

SERVICE TO CUSTOMERS WITH MAXIMUM DEMANDS of 1000 KILOWATTS or MORE

3. RATES: (Cont'd.)

a. TYPES OF CHARGES: The customer's monthly charge for service under Schedule E-20 is the sum of a customer charge, demand charges, and energy charges: (T)

The **customer charge** is a flat monthly fee.

– Schedule E-20 has three **demand charges**, a maximum-peak-period-demand charge, a maximum-part-peak-period demand charge, and a maximum-demand charge. The maximum-peak-period-demand charge per kilowatt applies to the maximum demand during the month's peak hours, the maximum-part-peak-demand charge per kilowatt applies to the maximum demand during the month's part-peak hours, and the maximum-demand charge per kilowatt applies to the maximum demand at any time during the month. The bill will include all of these demand charges. (Time periods are defined in Section 6.)

– The **energy charge** is the sum of the energy charges from the peak, partial-peak, and off-peak periods. The customer pays for energy by the kilowatt-hour (kWh), and rates are differentiated according to time of day and time of year.

– The monthly charges may be increased or decreased based upon the power factor. (See Section 7.)

– As shown on the rate chart, which set of customer, demand, and energy charges is paid depends on the voltage at which service is taken. Service voltages are defined in Section 5 below.

(D)

b. AVERAGE RATE LIMITER (applies to bundled service only): If the customer takes service on Schedule E-20, in either the secondary or primary voltage class, bills will be controlled by a "rate limiter" during the summer months. The bill will be reduced if necessary so that the average rate paid for all demand and energy charges during a summer month does not exceed the rate limiter shown on this schedule. This provision will not apply if the customer has elected to receive separate billing for back-up and maintenance service pursuant to Special Condition 8 of Schedule S. (T)

Reductions in revenue resulting from application of the average rate limiter will be reflected as reduced distribution amounts for billing purposes.

(Continued)

ELECTRIC SCHEDULE E-20
Sheet 6

SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

(D)

4. METERING REQUIREMENTS: An interval data meter that measures and registers the amount of electricity a customer uses and can be read remotely by PG&E is required for all customers on this schedule. A Meter Data Management Agent (MDMA) may also read the customer's meter on behalf of the customer's Energy Service Provider (ESP) if a customer is receiving Direct Access Service.

For bundled service customers with a maximum demand of 200 kW or greater for three consecutive months, PG&E will provide and install the interval data meter at no cost to the customer. The installation of an interval data meter for customers taking service under the provisions of Direct Access is the responsibility of the customer's Energy Service Provider, or their Agent, and must be installed in accordance with Electric Rule 22. (T) | (T)

Customers who also request any meter data management services, must also sign an Interval Meter Data Management Service Agreement (Form 79-985) and must have an appropriate interval data meter.

5. DEFINITION OF SERVICE VOLTAGE: The following defines the three voltage classes of Schedule E-20 rates. Standard Service Voltages are listed in Rule 2.

a. Secondary: This is the voltage class if the service voltage is less than 2,400 volts or if the definitions of "primary" and "transmission" do not apply to the service.

b. Primary: This is the voltage class if the customer is served from a "single customer substation" or without transformation from PG&E's serving distribution system at one of the standard primary voltages specified in PG&E's Electric Rule 2, Section B.1.

c. Transmission: This is the voltage class if the customer is served without transformation at one of the standard transmission voltages specified in PG&E's Electric Rule 2, Section B.1.

(Continued)

ELECTRIC SCHEDULE E-20

Sheet 7

SERVICE TO CUSTOMERS WITH MAXIMUM DEMANDS of 1000 KILOWATTS or MORE

6. DEFINITION OF TIME PERIODS:

Times of the year and times of the day are defined as follows:

SUMMER	Period A (Service from May 1 through October 31):	
Peak:	12:00 noon to 6:00 p.m.	Monday through Friday (except holidays)
Partial-peak:	8:30 a.m. to 12:00 noon AND 6:00 p.m. to 9:30 p.m.	Monday through Friday (except holidays)
Off-peak:	9:30 p.m. to 8:30 a.m. All day	Monday through Friday Saturday, Sunday, and holidays
WINTER	Period B (service from November 1 through April 30):	
Partial-Peak:	8:30 a.m. to 9:30 p.m.	Monday through Friday (except holidays)
Off-Peak:	9:30 p.m. to 8:30 a.m. All day	Monday through Friday (except holidays) Saturday, Sunday, and holidays

HOLIDAYS: "Holidays" for the purposes of this rate schedule are New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, and Christmas Day. The dates will be those on which the holidays are legally observed.

DAYLIGHT SAVING TIME ADJUSTMENT: The time periods shown above will begin and end one hour later for the period between the second Sunday in March and the first Sunday in April, and for the period between the last Sunday in October and the first Sunday in November.

CHANGE FROM SUMMER TO WINTER OR WINTER TO SUMMER: When a billing month includes both summer and winter days, PG&E will calculate demand charges as follows. It will consider the applicable maximum demands for the summer and winter portions of the billing month separately, calculate a demand charge for each, and then apply the two according to the number of billing days each represents.

7. POWER FACTOR ADJUSTMENTS:

The bill will be adjusted based upon the power factor. The power factor is computed from the ratio of lagging reactive kilovolt-ampere-hours to the kilowatt-hours consumed in the month. Power factors are rounded to the nearest whole percent.

The rates in this rate schedule are based on a power factor of 85 percent. If the average power factor is greater than 85 percent, the total monthly bill will be reduced by the product of the power factor rate and the kilowatt-hour usage for each percentage point above 85 percent. If the average power factor is below 85 percent, the total monthly bill will be increased by the product of the power factor rate and the kilowatt-hour usage for each percentage point below 85 percent.

Power factor adjustments will be assigned to distribution for billing purposes. (D)

(Continued)

ELECTRIC SCHEDULE E-20 Sheet 8
SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

(L)

8. CHARGES FOR TRANSFORMER AND LINE LOSSES: The demand and energy meter readings used in determining the charges will be adjusted to correct for transformation and line losses in accordance with Section B.4 of Rule 2. (T)

9. STANDARD SERVICE FACILITIES: If PG&E must install any new or additional facilities to provide the customer with service under Schedule E-20, the customer may have to pay some of the cost. Any advance necessary and any monthly charge for the facilities will be specified in a line extension agreement. See Rules 2, 15, and 16 for details. (T)

Facilities installed to serve the customer may be removed when service is discontinued. The customer will then have to repay PG&E for all or some of its investment in the facilities. Terms and conditions for repayment will be set forth in the line extension agreement.

10. SPECIAL FACILITIES: PG&E will normally install only those standard facilities it deems necessary to provide service under Schedule E-20. If the customer requests any additional facilities, those facilities will be treated as “special facilities” in accordance with Section I of Rule 2. (T)

11. ARRANGEMENTS FOR VISUAL-DISPLAY METERING: If the customer wishes to have visual-display metering equipment in addition to the regular metering equipment, and the customer would like PG&E to install that equipment, the customer must submit a written request to PG&E. PG&E will provide and install the equipment within 180 days of receiving the request. The visual-display metering equipment will be installed near the present metering equipment. The customer will be responsible for providing the required space and associated wiring. (T)

PG&E will continue to use the regular metering equipment for billing purposes.

(Continued)

ELECTRIC SCHEDULE E-20
Sheet 9

SERVICE TO CUSTOMERS WITH MAXIMUM DEMANDS of 1000 KILOWATTS or MORE

12. BILLING: A customer's bill is calculated based on the option applicable to the customer.

Bundled Service Customers receive supply and delivery services solely from PG&E. The customer's bill is based on the Total Rates and Conditions set forth in this schedule.

Transitional Bundled Service Customers take transitional bundled service as prescribed in Rules 22.1 and 23.1, or take bundled service prior to the end of the six (6) month advance notice period required to elect bundled portfolio service as prescribed in Rules 22.1 and 23.1. These customers shall pay charges for transmission, transmission rate adjustments, reliability services, distribution, nuclear decommissioning, public purpose programs, the applicable Cost Responsibility Surcharge (CRS) pursuant to Schedule DA CRS or Schedule CCA CRS, and short-term commodity prices as set forth in Schedule TBCC. (T)

Direct Access (DA) and Community Choice Aggregation (CCA) Customers purchase energy from their non-utility provider and continue receiving delivery services from PG&E. Bills are equal to the sum of charges for transmission, transmission rate adjustments, reliability services, distribution, public purpose programs, nuclear decommissioning, the franchise fee surcharge, and the applicable CRS. The CRS is equal to the sum of the individual charges set forth below. Exemptions to the CRS are set forth in Schedules DA CRS and CCA CRS. (T)

DA CRS	Secondary Voltage		Primary Voltage		Transmission Voltage	
Energy Cost Recovery Amount Charge (per kWh)	$0.00368	(I)	$0.00368	(I)	$0.00368	(I)
Power Charge Indifference Adjustment (per kWh)	($0.00367)	(I)	($0.00348)	(I)	($0.00311)	(I)
DWR Bond Charge (per kWh)	$0.00515	(I)	$0.00515	(I)	$0.00515	(I)
CTC Rate (per kWh)	$0.00371	(R)	$0.00352	(R)	$0.00315	(R)
Total DA CRS (per kWh)	$0.00887	(I)	$0.00887	(I)	$0.00887	(I)
CCA CRS						
Energy Cost Recovery Amount Charge (per kWh)	$0.00368	(I)	$0.00368	(I)	$0.00368	(I)
Power Charge Indifference Adjustment (per kWh)	$0.01629	(I)	$0.01648	(I)	$0.01685	(I)
DWR Bond Charge (per kWh)	$0.00515	(I)	$0.00515	(I)	$0.00515	(I)
CTC Rate (per kWh)	$0.00371	(R)	$0.00352	(R)	$0.00315	(R)
Total CCA CRS (per kWh)	$0.02883	(I)	$0.02883	(I)	$0.02883	(I)

(Continued)

ELECTRIC SCHEDULE E-20 Sheet 10
SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

13. CARE DISCOUNT FOR NONPROFIT GROUP-LIVING AND SPECIAL EMPLOYEE HOUSING FACILITIES: Facilities which meet the eligibility criteria in Rule 19.2 or 19.3 are eligible for a California Alternate Rates for Energy discount under Schedule E-CARE. CARE customers are exempt from paying the DWR Bond Charge. For CARE customers, no portion of the rates shall be used to pay the DWR Bond Charge. Generation is calculated residually based on the total rate less the sum of the following: Transmission, Transmission Rate Adjustments, Reliability Services, Distribution, Public Purpose Programs, Nuclear Decommissioning, Competition Transition Charge (CTC), and Energy Cost Recovery Amount. (T)

14. ELECTRIC EMER-GENCY PLAN ROTATING BLOCK OUTAGES: As set forth in CPUC Decision 01-04-006, all transmission level customers except essential use customers, Optional Binding Mandatory Curtailment (OBMC) plan participants, net suppliers to the electrical grid, or others exempt by the Commission, are to be included in rotating outages in the event of an emergency. A transmission level customer who refuses or fails to drop load shall be added to the next rotating outage group so that the customer does not escape curtailment. If the transmission level customer fails to cooperate and drop load at PG&E's request, automatic equipment controlled by PG&E will be installed at the customer's expense per Electric Rule 2. A transmission level customer who refuses to drop load before installation of the equipment shall be subject to a penalty of $6/kWh for all load requested to be curtailed that is not curtailed. The $6/kWh penalty shall not apply if the customer's generation suffers a verified, forced outage and during times of scheduled maintenance. The scheduled maintenance must be approved by both the ISO and PG&E, but approval may not be unreasonably withheld.

15. STANDBY APPLICA-BILITY: SOLAR GENERATION FACILITIES EXEMPTION: Customers who utilize solar generating facilities which are less than or equal to one megawatt to serve load and who do not sell power or make more than incidental export of power into PG&E's power grid and who have not elected service under Schedule NEM, will be exempt from paying the otherwise applicable standby reservation charges.

DISTRIBUTED ENERGY RESOURCES EXEMPTION: Any customer under a time-of-use (TOU) rate schedule using electric generation technology that meets the criteria as defined in Electric Rule 1 for Distributed Energy Resources is exempt from the otherwise applicable standby reservation charges. Customers qualifying for this exemption shall be subject to the following requirements. Customers qualifying for an exemption from standby charges under Public Utilities (PU) Code Sections 353.1 and 353.3, as described above, must take service on a TOU schedule in order to receive this exemption until a real-time pricing program, as described in PU Code 353.3, is made available. Once available, customers qualifying for the standby charge exemption must participate in the real-time program referred to above. Qualification for and receipt of this distributed energy resources exemption does not exempt the customer from metering charges applicable to TOU and real-time pricing, or exempt the customer from reasonable interconnection charges, non-bypassable charges as required in Preliminary Statement BB - *Competition Transition Charge Responsibility for All Customers and CTC Procurement*, or obligations determined by the Commission to result from participation in the purchase of power through the California Department of Water Resources, as provided in PU Code Section 353.7.

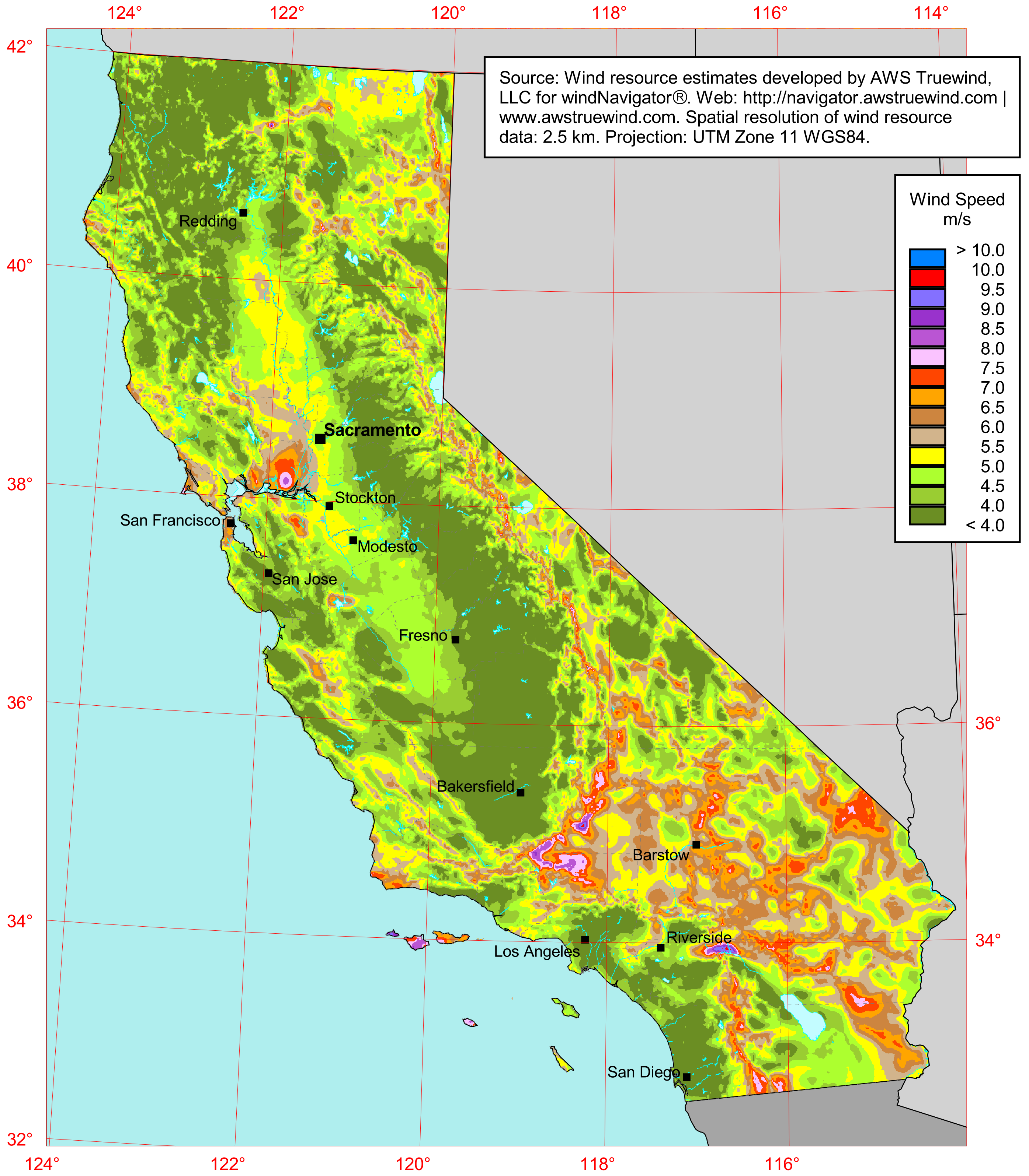
(Continued)

ELECTRIC SCHEDULE E-20 Sheet 11
SERVICE TO CUSTOMERS WITH MAXIMUM
DEMANDS of 1000 KILOWATTS or MORE

16. DWR BOND CHARGE: The Department of Water Resources (DWR) Bond Charge was imposed by California Public Utilities Commission Decision 02-10-063, as modified by Decision 02-12-082, and is property of DWR for all purposes under California law. The Bond Charge applies to all retail sales, excluding CARE and Medical Baseline sales. The DWR Bond Charge (where applicable) is included in customers' total billed amounts. (T)

Appendix C.2: Wind Resource Map

California - Annual Average Wind Speed at 80 m



100 0 100 200 300 Kilometers

50 0 50 100 150 200 Miles

AWS Truewind

NREL National Renewable Energy Laboratory

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Appendix D-1

Project-Generated Construction Source Noise Prediction Model

Northern California Reentry Facility and DeWitt Nelson Youth Correctional Facility Conversion Projects

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	3,238	50.0
	50	86.2
	100	80.2
	150	76.7
	200	74.2
	250	72.2
	300	70.7
	350	69.3
	400	68.2
	450	67.1
	500	66.2
	550	65.4
	600	64.6

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Dozer	85	0.4
Front End Loader	80	0.4
Scraper	85	0.4

Ground Type	Hard
Source Height	8
Receiver Height	5
Ground Factor	0.00

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Dozer	81.0
Front End Loader	76.0
Scraper	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + NCRF
Ground Type : Soft
K Factor : 12
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5101	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	3789	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	5473	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4239	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	4173	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	4008	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	3879	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	3006	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	348	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	348	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	2779	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + NCRF
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	70.6	62.4	64.4	72.1	137	295	636	1371	2953
2	Arch Road	CA-99 SB Off	CA-99 NB Off	69.3	61.1	63.1	70.8	112	242	522	1124	2422
3	Arch Road	CA-99 NB Off	Kingsley	70.9	62.7	64.7	72.4	144	309	667	1436	3095
4	Arch Road	Kingsley	Newcastle	69.8	61.6	63.6	71.2	121	261	562	1211	2610
5	Arch Road	Newcastle	Logistics Dr	69.7	61.6	63.5	71.2	120	258	556	1199	2583
6	Arch Road	Logistics Dr	Driveway 1	69.6	61.4	63.4	71.0	117	251	542	1167	2514
7	Arch Road	Driveway 1	Driveway 2	69.4	61.2	63.2	70.9	114	246	530	1142	2460
8	Arch Road	Driveway 2	Austin Rd	68.3	60.1	62.1	69.8	96	208	447	963	2075
9	Austin Rd	Arch Rd	Driveway 3	58.8	49.8	58.0	61.7	28	60	130	280	604
10	Austin Rd	Driveway 3	South	58.8	49.8	58.0	61.7	28	60	130	280	604
11	Austin Rd	Arch Rd	North	67.8	58.8	67.0	70.7	112	241	520	1121	2414

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + DeWitt
Ground Type : Soft
Metric (**L_{eq}, L_{dn}, CNEL) :** Ldn

K Factor : 12
Traffic Desc. (Peak or ADT) : Peak

AECOM

Segment	Roadway	Segment From	To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5107	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	3808	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	5492	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4258	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	4192	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	4026	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	4026	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	3170	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	348	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	539	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	2780	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + DeWitt
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	70.6	62.4	64.4	72.1	137	295	637	1372	2955
2	Arch Road	CA-99 SB Off	CA-99 NB Off	69.4	61.2	63.1	70.8	113	243	523	1128	2430
3	Arch Road	CA-99 NB Off	Kingsley	70.9	62.7	64.7	72.4	144	310	668	1440	3102
4	Arch Road	Kingsley	Newcastle	69.8	61.6	63.6	71.3	122	262	564	1215	2618
5	Arch Road	Newcastle	Logistics Dr	69.8	61.6	63.6	71.2	120	259	558	1202	2591
6	Arch Road	Logistics Dr	Driveway 1	69.6	61.4	63.4	71.0	117	252	543	1170	2522
7	Arch Road	Driveway 1	Driveway 2	69.6	61.4	63.4	71.0	117	252	543	1170	2522
8	Arch Road	Driveway 2	Austin Rd	68.6	60.4	62.3	70.0	100	215	463	998	2150
9	Austin Rd	Arch Rd	Driveway 3	58.8	49.8	58.0	61.7	28	60	130	280	604
10	Austin Rd	Driveway 3	South	60.7	51.7	59.9	63.6	38	81	174	375	809
11	Austin Rd	Arch Rd	North	67.8	58.8	67.0	70.7	112	241	520	1121	2415

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + NCRF + DeWitt
Ground Type : Soft
K Factor : 12
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5159	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	3973	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	5657	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4423	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	4358	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	4192	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	4063	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	3190	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	356	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	547	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	2793	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Background + NCRF + DeWitt
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	70.7	62.5	64.5	72.1	138	297	641	1381	2975
2	Arch Road	CA-99 SB Off	CA-99 NB Off	69.5	61.3	63.3	71.0	116	250	539	1160	2500
3	Arch Road	CA-99 NB Off	Kingsley	71.1	62.9	64.9	72.5	147	316	682	1468	3163
4	Arch Road	Kingsley	Newcastle	70.0	61.8	63.8	71.4	125	268	578	1246	2685
5	Arch Road	Newcastle	Logistics Dr	69.9	61.7	63.7	71.4	123	266	573	1234	2658
6	Arch Road	Logistics Dr	Driveway 1	69.8	61.6	63.6	71.2	120	259	558	1202	2591
7	Arch Road	Driveway 1	Driveway 2	69.6	61.4	63.4	71.1	118	254	547	1178	2537
8	Arch Road	Driveway 2	Austin Rd	68.6	60.4	62.4	70.0	100	216	465	1002	2159
9	Austin Rd	Arch Rd	Driveway 3	58.9	49.9	58.1	61.8	28	61	132	285	614
10	Austin Rd	Driveway 3	South	60.8	51.8	59.9	63.7	38	82	176	379	817
11	Austin Rd	Arch Rd	North	67.9	58.8	67.0	70.8	112	242	522	1124	2422

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future
Ground Type : Soft
Metric (**L_{eq}, L_{dn}, CNEL**) **:** Ldn

K Factor : 12
Traffic Desc. (Peak or ADT) : Peak

		Segment			Speed	Distance							Offset
Segment	Roadway	From	To	Traffic Vol.	(Mph)	to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	(dB)
1	Arch Road	West	CA-99 SB Off	5605	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	5090	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	6120	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	3855	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	3633	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	3328	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	3306	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	5400	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	2488	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	2532	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	7540	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	71.0	62.8	64.8	72.5	146	314	677	1459	3144
2	Arch Road	CA-99 SB Off	CA-99 NB Off	70.6	62.4	64.4	72.0	137	295	635	1369	2948
3	Arch Road	CA-99 NB Off	Kingsley	71.4	63.2	65.2	72.8	155	333	718	1547	3334
4	Arch Road	Kingsley	Newcastle	69.4	61.2	63.2	70.8	114	245	528	1137	2450
5	Arch Road	Newcastle	Logistics Dr	69.1	60.9	62.9	70.6	109	235	507	1093	2355
6	Arch Road	Logistics Dr	Driveway 1	68.8	60.6	62.6	70.2	103	222	479	1031	2221
7	Arch Road	Driveway 1	Driveway 2	68.7	60.5	62.5	70.2	103	221	476	1026	2211
8	Arch Road	Driveway 2	Austin Rd	70.9	62.7	64.7	72.3	142	307	661	1424	3067
9	Austin Rd	Arch Rd	Driveway 3	67.4	58.3	66.5	70.3	104	224	483	1041	2243
10	Austin Rd	Driveway 3	South	67.4	58.4	66.6	70.3	105	227	489	1053	2269
11	Austin Rd	Arch Rd	North	72.2	63.2	71.3	75.1	218	470	1012	2180	4697

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + NCRF
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Ldn

K Factor : 12
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5658	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	5256	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	6286	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4021	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	3799	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	3456	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	3336	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	5420	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	2495	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	2539	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	7553	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + NCRF
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	71.1	62.9	64.9	72.5	147	316	682	1469	3164
2	Arch Road	CA-99 SB Off	CA-99 NB Off	70.8	62.6	64.5	72.2	140	301	649	1398	3012
3	Arch Road	CA-99 NB Off	Kingsley	71.5	63.3	65.3	73.0	158	339	731	1575	3394
4	Arch Road	Kingsley	Newcastle	69.6	61.4	63.4	71.0	117	252	543	1169	2520
5	Arch Road	Newcastle	Logistics Dr	69.3	61.1	63.1	70.8	113	243	523	1126	2426
6	Arch Road	Logistics Dr	Driveway 1	68.9	60.7	62.7	70.4	106	228	491	1057	2278
7	Arch Road	Driveway 1	Driveway 2	68.8	60.6	62.6	70.2	103	222	479	1033	2225
8	Arch Road	Driveway 2	Austin Rd	70.9	62.7	64.7	72.3	143	307	662	1427	3075
9	Austin Rd	Arch Rd	Driveway 3	67.4	58.3	66.5	70.3	104	225	484	1043	2247
10	Austin Rd	Driveway 3	South	67.5	58.4	66.6	70.3	106	227	490	1055	2273
11	Austin Rd	Arch Rd	North	72.2	63.2	71.3	75.1	218	470	1013	2182	4702

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + DeWitt
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Ldn

K Factor : 12
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5663	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	5275	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	6305	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4040	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	3818	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	3512	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	3490	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	5584	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	2494	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	2685	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	7555	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + DeWitt
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	71.1	62.9	64.9	72.5	147	317	682	1469	3166
2	Arch Road	CA-99 SB Off	CA-99 NB Off	70.8	62.6	64.6	72.2	140	302	651	1401	3019
3	Arch Road	CA-99 NB Off	Kingsley	71.5	63.3	65.3	73.0	158	340	733	1578	3401
4	Arch Road	Kingsley	Newcastle	69.6	61.4	63.4	71.0	117	253	545	1173	2528
5	Arch Road	Newcastle	Logistics Dr	69.4	61.2	63.2	70.8	113	243	524	1130	2434
6	Arch Road	Logistics Dr	Driveway 1	69.0	60.8	62.8	70.4	107	230	496	1069	2302
7	Arch Road	Driveway 1	Driveway 2	69.0	60.8	62.8	70.4	106	229	494	1064	2293
8	Arch Road	Driveway 2	Austin Rd	71.0	62.8	64.8	72.4	146	314	676	1456	3136
9	Austin Rd	Arch Rd	Driveway 3	67.4	58.3	66.5	70.3	104	225	484	1043	2246
10	Austin Rd	Driveway 3	South	67.7	58.7	66.9	70.6	110	236	508	1095	2360
11	Austin Rd	Arch Rd	North	72.2	63.2	71.3	75.1	218	470	1013	2183	4703

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + NCRF + DeWitt
Ground Type : Soft
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
K Factor : 12
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Arch Road	West	CA-99 SB Off	5716	50	100	96	2.5	1.5	85		15	0
2	Arch Road	CA-99 SB Off	CA-99 NB Off	5440	50	100	96	2.5	1.5	85		15	0
3	Arch Road	CA-99 NB Off	Kingsley	6470	50	100	96	2.5	1.5	85		15	0
4	Arch Road	Kingsley	Newcastle	4205	50	100	96	2.5	1.5	85		15	0
5	Arch Road	Newcastle	Logistics Dr	3983	50	100	96	2.5	1.5	85		15	0
6	Arch Road	Logistics Dr	Driveway 1	3640	50	100	96	2.5	1.5	85		15	0
7	Arch Road	Driveway 1	Driveway 2	3520	50	100	96	2.5	1.5	85		15	0
8	Arch Road	Driveway 2	Austin Rd	5604	50	100	96	2.5	1.5	85		15	0
9	Austin Rd	Arch Rd	Driveway 3	2501	50	100	93	2	5	85		15	0
10	Austin Rd	Driveway 3	South	2692	50	100	93	2	5	85		15	0
11	Austin Rd	Arch Rd	North	7568	50	100	93	2	5	85		15	0

Appendix D-2

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

AECOM

Project Name : CDCR DeWitt
Project Number : 08110134.06
Modeling Condition : Future + NCRF + DeWitt
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Arch Road	West	CA-99 SB Off	71.1	62.9	64.9	72.5	148	319	686	1479	3185
2	Arch Road	CA-99 SB Off	CA-99 NB Off	70.9	62.7	64.7	72.3	143	308	664	1431	3082
3	Arch Road	CA-99 NB Off	Kingsley	71.7	63.5	65.4	73.1	161	346	745	1606	3460
4	Arch Road	Kingsley	Newcastle	69.8	61.6	63.6	71.2	120	260	559	1205	2596
5	Arch Road	Newcastle	Logistics Dr	69.5	61.3	63.3	71.0	116	250	539	1162	2504
6	Arch Road	Logistics Dr	Driveway 1	69.2	61.0	62.9	70.6	109	236	508	1094	2358
7	Arch Road	Driveway 1	Driveway 2	69.0	60.8	62.8	70.4	107	231	497	1070	2306
8	Arch Road	Driveway 2	Austin Rd	71.0	62.8	64.8	72.5	146	314	677	1459	3144
9	Austin Rd	Arch Rd	Driveway 3	67.4	58.4	66.5	70.3	104	225	485	1045	2250
10	Austin Rd	Driveway 3	South	67.7	58.7	66.9	70.6	110	236	509	1097	2364
11	Austin Rd	Arch Rd	North	72.2	63.2	71.4	75.1	219	471	1014	2185	4708

Appendix D-3

Packaged HVAC Noise Prediction Model

AECOM

Project Name : CDCR DeWitt
Project Number : 08110134.06
Metric (L_{eq}, L_{dn}) : Leq
Cooling Capacity / 1,000SqFt: 1.2

ID	Building Description	Square footage	Cooling Capacity, Tons	Shielding Offset	L_w	Distance to Reciever	L_p @ Receiver
1	S1	13250	15.9		101.4	1300	41.2
2	S2	13250	16		101.4	1430	40.3
3	S3	13250	15.9		101.4	1630	39.2
4	S4	13250	15.9		101.4	1850	38.1
5	S5	13250	15.9		101.4	2025	37.3
6	S6	13250	15.9		101.4	2200	36.6
7	S7	21167	25.4		103.9	1500	42.4
8	S7	21167	25.4		103.9	1650	41.5
9	S7	21167	25.4		103.9	1900	40.3
10	S8	7500	9		98.5	2200	33.6

Source: Bolt Beranek and Newman Inc. (BBN). 1981. *Noise Control for Buildings and Manufacturing Plants* . Cambridge MA.

Appendix D-4

Project-Generated Construction Source Vibration Prediction Model

CDCR DeWitt

Location	**Distance to Nearest Receiver in feet**	**Predicted Vibration Level (PPV)**	**Predicted Vibration Level (VdB)**	Equipment	Reference Distance	PPV at 25 feet (in/sec)[1]	Approximate Lv (VdB) at 25 feet[2]
On-Site Receiver	1000	0.0004	38.9	Large Bulldozer	25	0.089	87

Sources:

[1] Where PPV is the peak particle velocity

[2] Where Lv is the RMS velocity expressed in vibration decibels (VdB), assuming a crest factor of 4.

Source: Caltrans 2002, FTA 2006

DEWITT LEQ BASELINE.DAT
201009301931
Formatted case file display

Receiver Grid Selection = DEWITT
Metric Selection = LEQ H, A WEIGHTING
Activity Table Selection = DEWITT

RECEIVER GRID
Southwest corner easting (m): 659047
Southwest corner northing (m): 4194692
Overall grid size east-west (m): 4000
Overall grid size north-south (m): 4000
Grid resolution (m): 10

METRIC
LEQ
Assessment period (h): 1.00
Impulsiveness penalty (dB): 0.00
Frequency weighting: A WEIGHTING

RANGES AND THEIR ACTIVITIES

DEWITT
UTM grid zone number: 10
Dist. between shooting lanes: 2.00
FP#1 easting: 660050
Left offset: 4.00
FP#1 northing: 4195800
Right offset: 4.00
FP#1 height: 5.00
Target offset: 3.00
Azimuth from FP#1 to first target: 180.00
Left berm height: 4.00
Dist. from firing point to target: 90.00
Right berm height: 4.00
# of shooting lanes: 30
Target berm height: 5.00

WEAPON&AMMO		DAYRNDS	%DRAPID	NIGHTRNDS	%NRAPID
Rifle M16 5.56 mm / M193 55 gr	375.00	0.00	0.00	0.00	
Pistol .38 sp. Rev / 150 gr	540.00	0.00	0.00	0.00	

DEWITT LEQ MITIGATED.DAT
201009301929
Formatted case file display

Receiver Grid Selection = DEWITT
Metric Selection = LEQ H, A WEIGHTING
Activity Table Selection = DEWITT

RECEIVER GRID
Southwest corner easting (m): 659047
Southwest corner northing (m): 4194692
Overall grid size east-west (m): 4000
Overall grid size north-south (m): 4000
Grid resolution (m): 10

METRIC
LEQ
Assessment period (h): 1.00
Impulsiveness penalty (dB): 0.00
Frequency weighting: A WEIGHTING

RANGES AND THEIR ACTIVITIES

DEWITT
UTM grid zone number: 10
FP#1 easting: 660050
FP#1 northing: 4195800
FP#1 height: 5.00
Azimuth from FP#1 to first target: 180.00
Dist. from firing point to target: 90.00
# of shooting lanes: 30
Dist. between shooting lanes: 2.00
Left offset: 4.00
Right offset: 4.00
Target offset: 3.00
Rear offset: 3.00
Left berm height: 4.00
Right berm height: 4.00
Target berm height: 5.00
Rear wall absorp. coeff.: 0.50
Rear wall height: 7.00

WEAPON&AMMO	DAYRNDS	%DRAPID	NIGHTRNDS	%NRAPID
Rifle M16 5.56 mm / M193 55 gr	375.00	0.00	0.00	0.00
Pistol .38 sp. Rev / 150 gr	540.00	0.00	0.00	0.00

APPENDIX E

Traffic Modeling

APPENDIX E-1

Intersection Turning Movement Counts and Field Sheets

All Traffic Data

(916) 771-8700
F (916) 786-2879

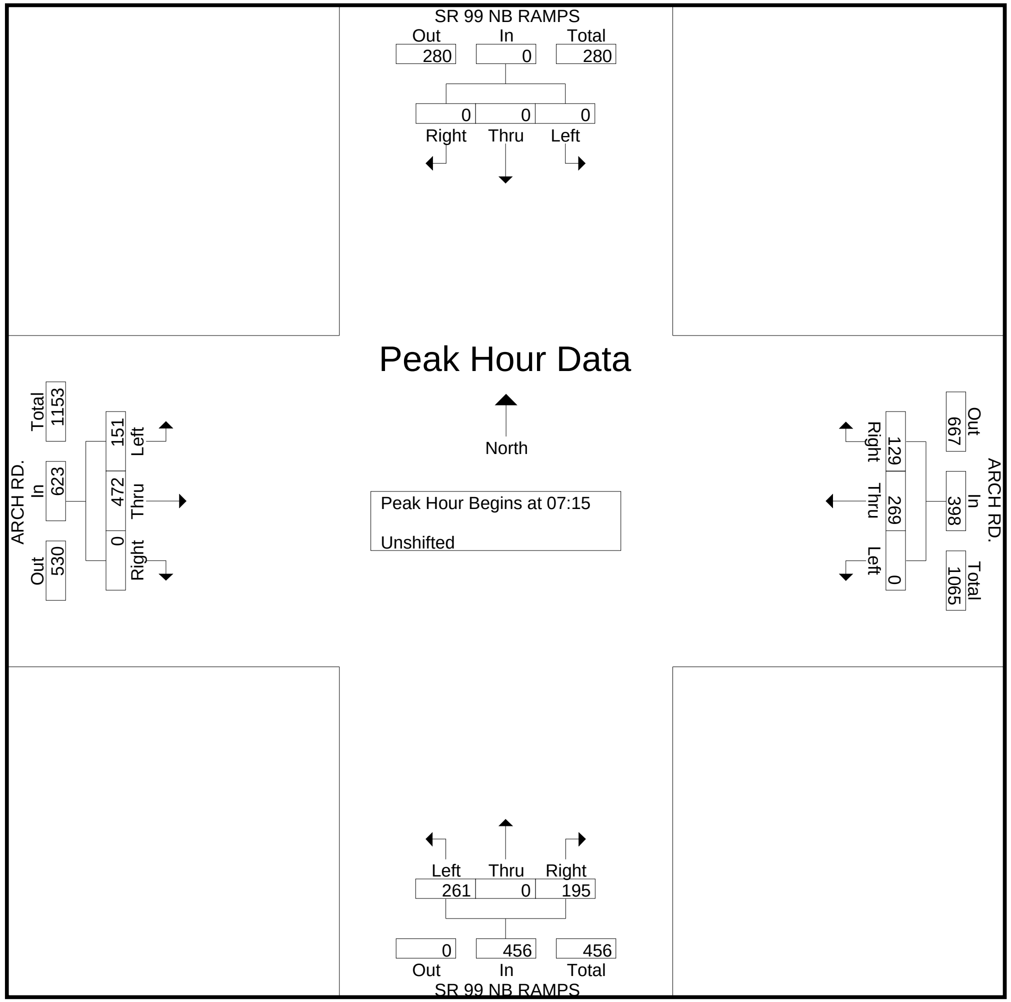
CITY OF STOCKTON

File Name : 09-7379-006 NB 99 - ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 1

Groups Printed- Unshifted

	SR 99 NB RAMPS Southbound				ARCH RD. Westbound				SR 99 NB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	0	66	36	102	35	0	40	75	45	108	0	153	330
07:15	0	0	0	0	0	64	33	97	54	0	49	103	25	107	0	132	332
07:30	0	0	0	0	0	59	32	91	50	0	46	96	38	118	0	156	343
07:45	0	0	0	0	0	85	30	115	103	0	49	152	40	134	0	174	441
Total	0	0	0	0	0	274	131	405	242	0	184	426	148	467	0	615	1446
08:00	0	0	0	0	0	61	34	95	54	0	51	105	48	113	0	161	361
08:15	0	0	0	0	0	77	29	106	46	0	37	83	50	92	0	142	331
08:30	0	0	0	0	0	69	29	98	47	0	43	90	36	84	0	120	308
08:45	0	0	0	0	0	84	30	114	27	0	20	47	31	91	0	122	283
Total	0	0	0	0	0	291	122	413	174	0	151	325	165	380	0	545	1283
16:00	0	0	0	0	0	90	73	163	41	0	41	82	84	91	0	175	420
16:15	0	0	0	0	0	90	49	139	41	0	28	69	69	86	0	155	363
16:30	0	0	0	0	0	85	68	153	41	0	40	81	103	82	0	185	419
16:45	0	0	0	0	0	75	59	134	27	0	28	55	69	82	0	151	340
Total	0	0	0	0	0	340	249	589	150	0	137	287	325	341	0	666	1542
17:00	0	0	0	0	0	94	67	161	28	0	27	55	138	87	0	225	441
17:15	0	0	0	0	0	94	53	147	39	0	25	64	106	85	0	191	402
17:30	0	0	0	0	0	84	70	154	28	0	24	52	60	85	0	145	351
17:45	0	0	0	0	0	72	55	127	26	0	26	52	47	73	0	120	299
Total	0	0	0	0	0	344	245	589	121	0	102	223	351	330	0	681	1493
Grand Total	0	0	0	0	0	1249	747	1996	687	0	574	1261	989	1518	0	2507	5764
Apprch %	0	0	0		0	62.6	37.4		54.5	0	45.5		39.4	60.6	0		
Total %	0	0	0	0	0	21.7	13	34.6	11.9	0	10	21.9	17.2	26.3	0	43.5	

	SR 99 NB RAMPS Southbound				ARCH RD. Westbound				SR 99 NB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	0	0	0	64	33	97	54	0	49	103	25	107	0	132	332
07:30	0	0	0	0	0	59	32	91	50	0	46	96	38	118	0	156	343
07:45	0	0	0	0	0	**85**	30	**115**	**103**	0	49	**152**	40	**134**	0	**174**	**441**
08:00	0	0	0	0	0	61	**34**	95	54	0	**51**	105	**48**	113	0	161	361
Total Volume	0	0	0	0	0	269	129	398	261	0	195	456	151	472	0	623	1477
% App. Total	0	0	0		0	67.6	32.4		57.2	0	42.8		24.2	75.8	0		
PHF	.000	.000	.000	.000	.000	.791	.949	.865	.633	.000	.956	.750	.786	.881	.000	.895	.837



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

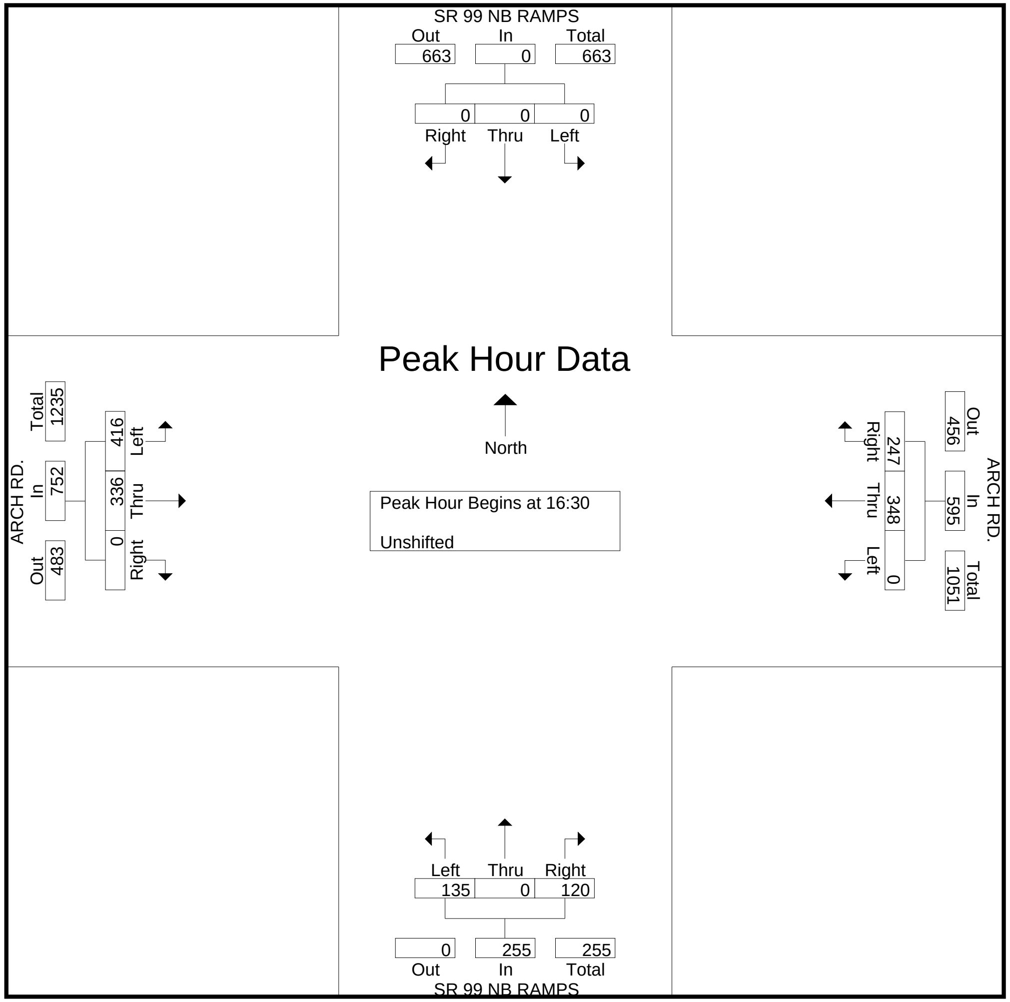
16:30	0	0	0	0	0	85	**68**	153	**41**	0	**40**	**81**	103	82	0	185	419
16:45	0	0	0	0	0	75	59	134	27	0	28	55	69	82	0	151	340
17:00	0	0	0	0	0	**94**	67	**161**	28	0	27	55	**138**	**87**	0	**225**	**441**
17:15	0	0	0	0	0	94	53	147	39	0	25	64	106	85	0	191	402
Total Volume	0	0	0	0	0	348	247	595	135	0	120	255	416	336	0	752	1602
% App. Total	0	0	0		0	58.5	41.5		52.9	0	47.1		55.3	44.7	0		
PHF	.000	.000	.000	.000	.000	.926	.908	.924	.823	.000	.750	.787	.754	.966	.000	.836	.908

All Traffic Data

(916) 771-8700
F (916) 786-2879

CITY OF STOCKTON

File Name : 09-7379-006 NB 99 - ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 3



All Traffic Data

(916) 771-8700
F (916) 786-2879

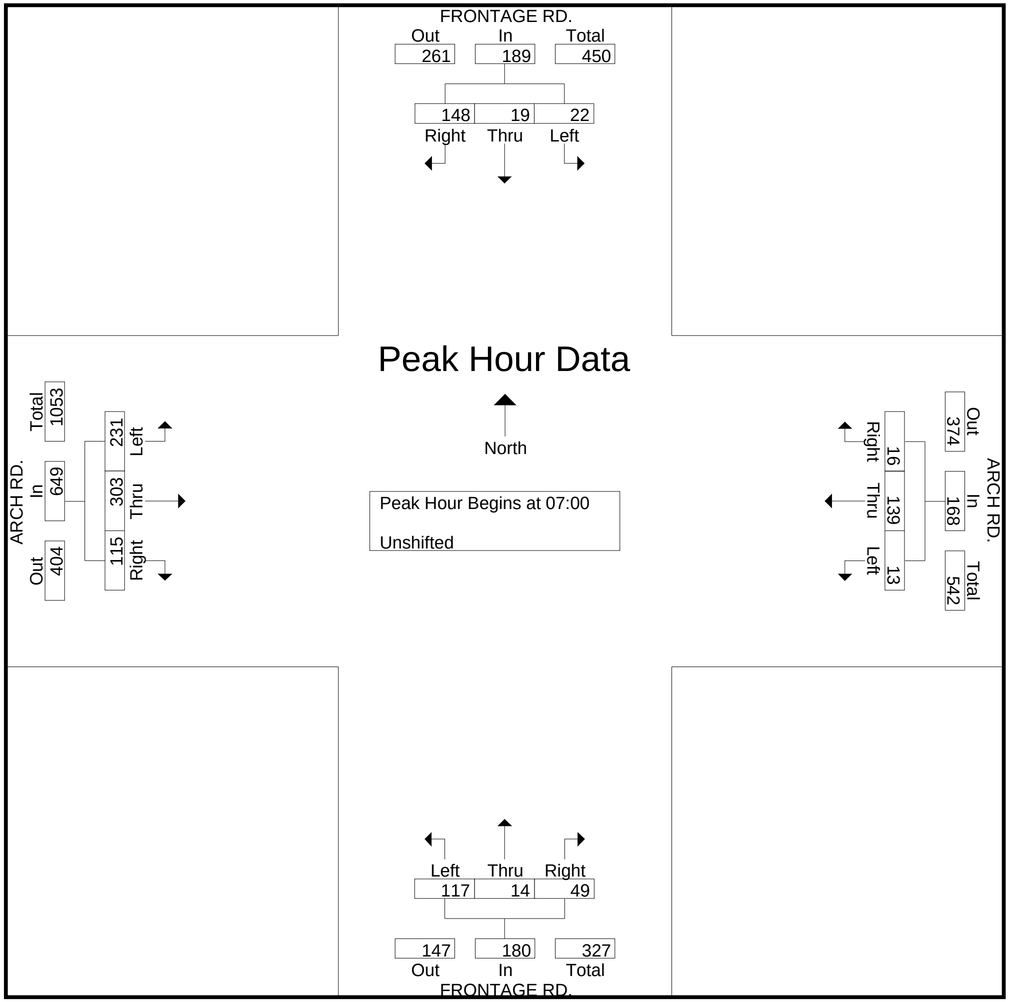
CITY OF STOCKTON

File Name : 09-7379-005 FRONT-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 1

Groups Printed- Unshifted

	FRONTAGE RD. Southbound				ARCH RD. Westbound				FRONTAGE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	2	1	32	35	6	44	7	57	31	3	9	43	46	60	32	138	273
07:15	8	7	42	57	1	26	1	28	26	6	7	39	57	79	23	159	283
07:30	5	5	30	40	3	29	5	37	28	2	16	46	63	79	31	173	296
07:45	7	6	44	57	3	40	3	46	32	3	17	52	65	85	29	179	334
Total	22	19	148	189	13	139	16	168	117	14	49	180	231	303	115	649	1186
08:00	4	3	40	47	4	26	3	33	22	5	3	30	57	69	33	159	269
08:15	8	3	47	58	4	31	2	37	31	5	10	46	56	47	28	131	272
08:30	6	3	48	57	2	31	4	37	23	6	7	36	38	52	31	121	251
08:45	9	3	41	53	3	41	3	47	35	5	6	46	49	46	28	123	269
Total	27	12	176	215	13	129	12	154	111	21	26	158	200	214	120	534	1061
16:00	8	5	65	78	4	84	8	96	35	4	3	42	60	43	35	138	354
16:15	9	3	47	59	1	42	4	47	25	3	0	28	43	42	14	99	233
16:30	6	9	39	54	1	81	6	88	37	4	3	44	31	53	29	113	299
16:45	5	7	50	62	6	48	5	59	33	8	0	41	46	43	28	117	279
Total	28	24	201	253	12	255	23	290	130	19	6	155	180	181	106	467	1165
17:00	1	9	59	69	3	75	8	86	23	9	4	36	36	41	36	113	304
17:15	4	3	49	56	6	62	5	73	35	8	3	46	43	34	35	112	287
17:30	3	7	47	57	3	70	6	79	31	7	2	40	42	31	39	112	288
17:45	7	6	37	50	3	65	4	72	34	9	6	49	39	35	23	97	268
Total	15	25	192	232	15	272	23	310	123	33	15	171	160	141	133	434	1147
Grand Total	92	80	717	889	53	795	74	922	481	87	96	664	771	839	474	2084	4559
Apprch %	10.3	9	80.7		5.7	86.2	8		72.4	13.1	14.5		37	40.3	22.7		
Total %	2	1.8	15.7	19.5	1.2	17.4	1.6	20.2	10.6	1.9	2.1	14.6	16.9	18.4	10.4	45.7	

	FRONTAGE RD. Southbound				ARCH RD. Westbound				FRONTAGE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	2	1	32	35	**6**	**44**	**7**	**57**	31	3	9	43	46	60	**32**	138	273
07:15	**8**	**7**	42	**57**	1	26	1	28	26	**6**	7	39	57	79	23	159	283
07:30	5	5	30	40	3	29	5	37	28	2	16	46	63	79	31	173	296
07:45	7	6	**44**	57	3	40	3	46	**32**	3	**17**	**52**	**65**	**85**	29	**179**	**334**
Total Volume	22	19	148	189	13	139	16	168	117	14	49	180	231	303	115	649	1186
% App. Total	11.6	10.1	78.3		7.7	82.7	9.5		65	7.8	27.2		35.6	46.7	17.7		
PHF	.688	.679	.841	.829	.542	.790	.571	.737	.914	.583	.721	.865	.888	.891	.898	.906	.888



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

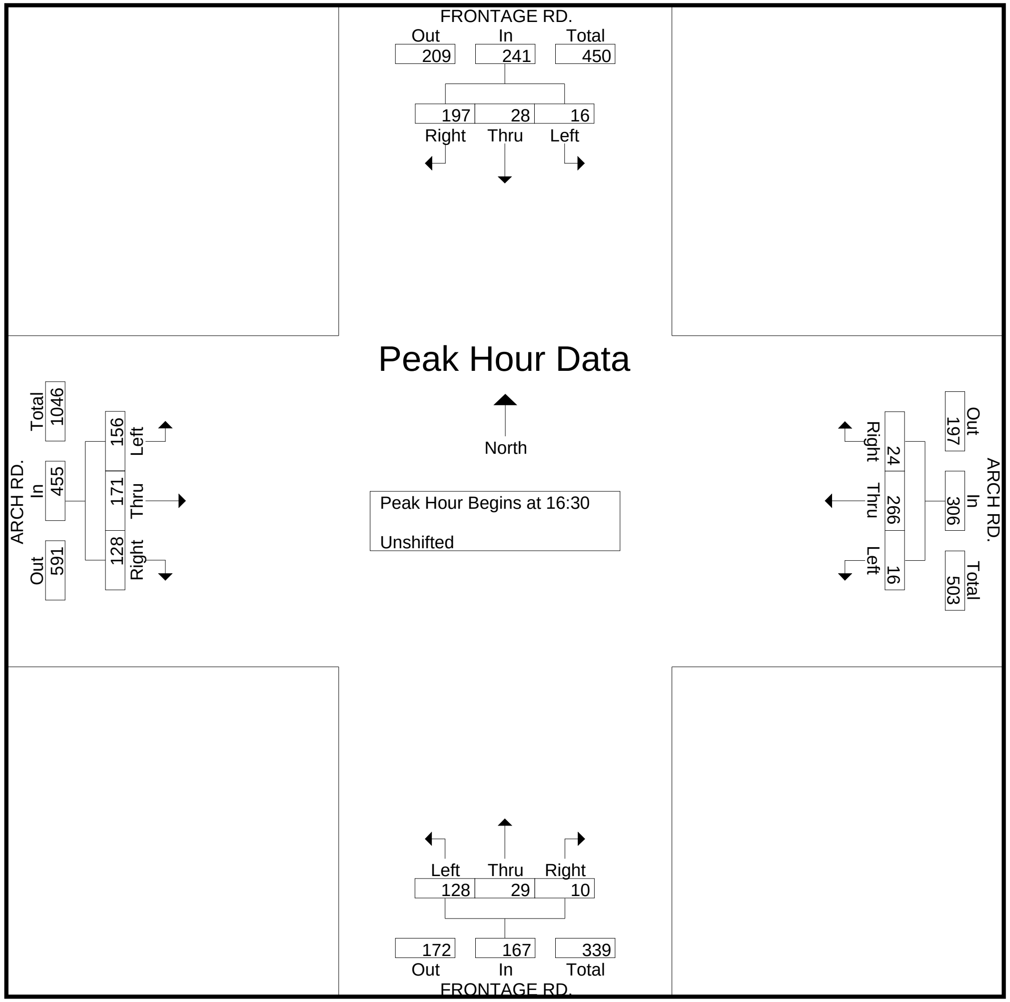
16:30	**6**	**9**	39	54	1	**81**	6	**88**	**37**	4	3	44	31	**53**	29	113	299
16:45	5	7	50	62	**6**	48	5	59	33	8	0	41	**46**	43	28	**117**	279
17:00	1	9	**59**	**69**	3	75	**8**	86	23	**9**	**4**	36	36	41	**36**	113	**304**
17:15	4	3	49	56	6	62	5	73	35	8	3	**46**	43	34	35	112	287
Total Volume	16	28	197	241	16	266	24	306	128	29	10	167	156	171	128	455	1169
% App. Total	6.6	11.6	81.7		5.2	86.9	7.8		76.6	17.4	6		34.3	37.6	28.1		
PHF	.667	.778	.835	.873	.667	.821	.750	.869	.865	.806	.625	.908	.848	.807	.889	.972	.961

All Traffic Data

(916) 771-8700
F (916) 786-2879

CITY OF STOCKTON

File Name : 09-7379-005 FRONT-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 3



All Traffic Data

(916) 771-8700
F (916) 786-2879

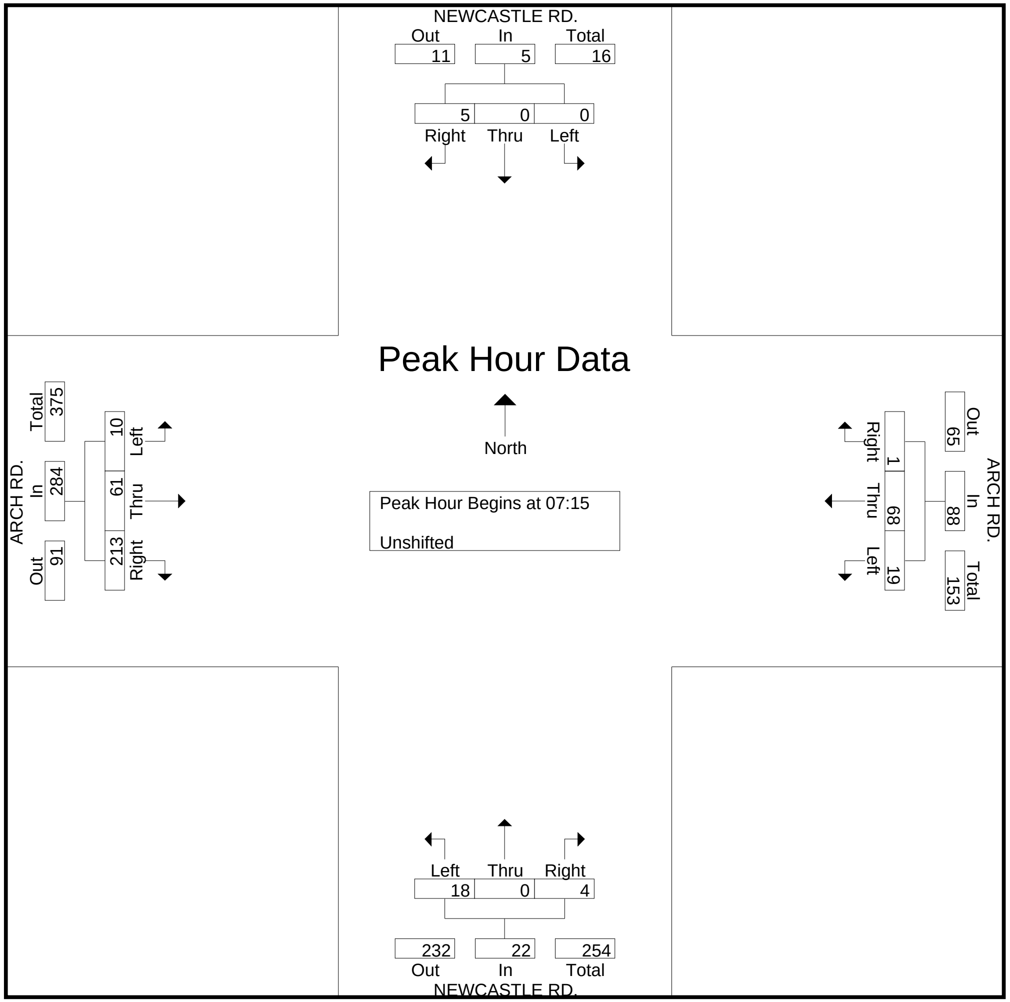
CITY OF STOCKTON

File Name : 09-7379-004 NEWCASTLE-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 1

Groups Printed- Unshifted

	NEWCASTLE RD. Southbound				ARCH RD. Westbound				NEWCASTLE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	1	1	3	26	0	29	3	0	0	3	5	11	28	44	77
07:15	0	0	2	2	3	14	0	17	2	0	1	3	4	11	48	63	85
07:30	0	0	1	1	11	14	0	25	1	0	0	1	1	14	56	71	98
07:45	0	0	1	1	3	24	0	27	8	0	2	10	2	18	73	93	131
Total	0	0	5	5	20	78	0	98	14	0	3	17	12	54	205	271	391
08:00	0	0	1	1	2	16	1	19	7	0	1	8	3	18	36	57	85
08:15	0	0	1	1	2	11	0	13	6	0	0	6	1	17	25	43	63
08:30	1	0	2	3	2	22	0	24	2	0	0	2	6	17	13	36	65
08:45	0	1	1	2	0	17	0	17	3	0	0	3	2	23	15	40	62
Total	1	1	5	7	6	66	1	73	18	0	1	19	12	75	89	176	275
16:00	0	0	0	0	0	12	0	12	51	0	4	55	0	32	1	33	100
16:15	0	0	1	1	0	25	0	25	17	0	0	17	0	28	5	33	76
16:30	0	0	1	1	0	10	0	10	29	0	3	32	0	25	2	27	70
16:45	0	0	0	0	0	13	0	13	21	0	5	26	0	22	6	28	67
Total	0	0	2	2	0	60	0	60	118	0	12	130	0	107	14	121	313
17:00	0	0	0	0	0	15	0	15	51	0	7	58	0	26	3	29	102
17:15	0	0	0	0	0	17	0	17	32	0	2	34	0	21	2	23	74
17:30	0	0	0	0	0	14	0	14	16	0	3	19	0	16	1	17	50
17:45	0	0	0	0	1	10	0	11	20	0	3	23	0	18	1	19	53
Total	0	0	0	0	1	56	0	57	119	0	15	134	0	81	7	88	279
Grand Total	1	1	12	14	27	260	1	288	269	0	31	300	24	317	315	656	1258
Apprch %	7.1	7.1	85.7		9.4	90.3	0.3		89.7	0	10.3		3.7	48.3	48		
Total %	0.1	0.1	1	1.1	2.1	20.7	0.1	22.9	21.4	0	2.5	23.8	1.9	25.2	25	52.1	

	NEWCASTLE RD. Southbound				ARCH RD. Westbound				NEWCASTLE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15																	
07:15	0	0	**2**	**2**	3	14	0	17	2	0	1	3	**4**	11	48	63	85
07:30	0	0	1	1	**11**	14	0	25	1	0	0	1	1	14	56	71	98
07:45	0	0	1	1	3	**24**	0	**27**	**8**	0	**2**	**10**	2	**18**	**73**	**93**	**131**
08:00	0	0	1	1	2	16	**1**	19	7	0	1	8	3	18	36	57	85
Total Volume	0	0	5	5	19	68	1	88	18	0	4	22	10	61	213	284	399
% App. Total	0	0	100		21.6	77.3	1.1		81.8	0	18.2		3.5	21.5	75		
PHF	.000	.000	.625	.625	.432	.708	.250	.815	.563	.000	.500	.550	.625	.847	.729	.763	.761



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:15

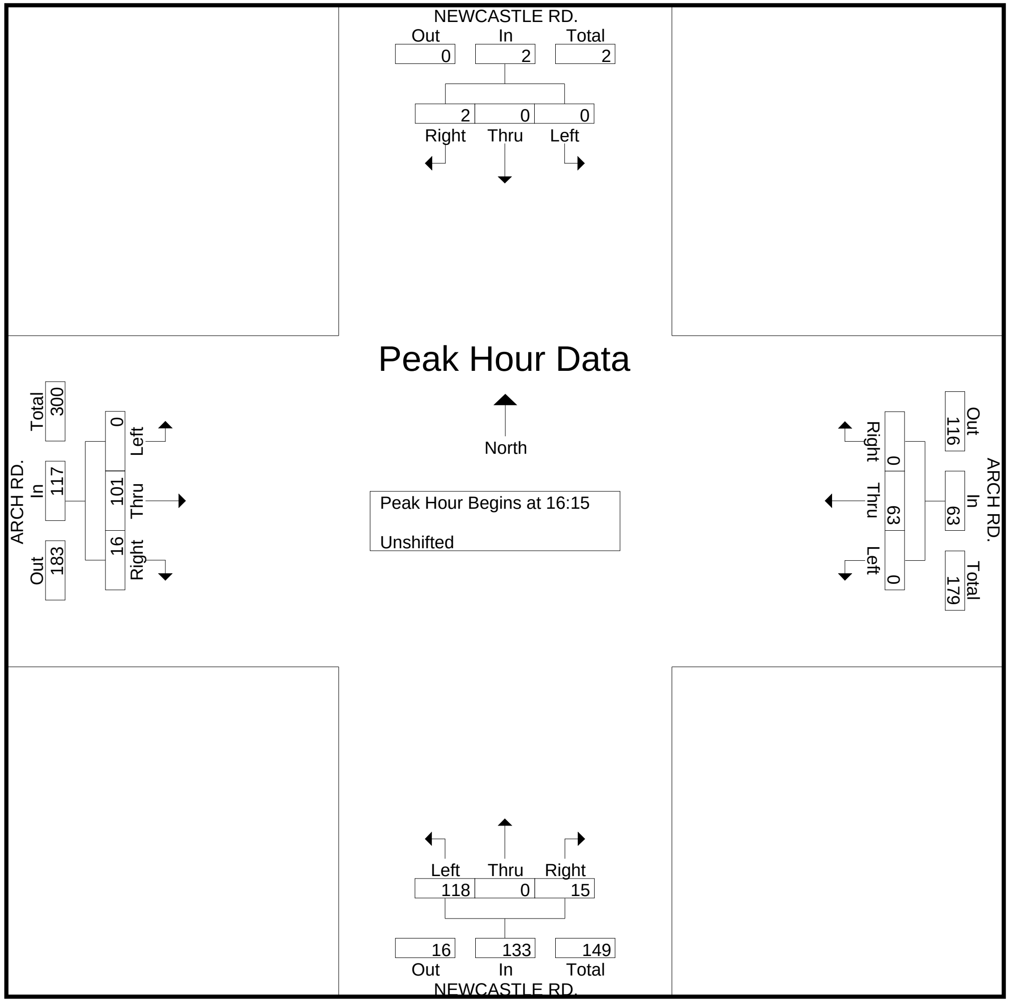
16:15	0	0	**1**	**1**	0	**25**	0	**25**	17	0	0	17	0	**28**	5	**33**	76
16:30	0	0	1	1	0	10	0	10	29	0	3	32	0	25	2	27	70
16:45	0	0	0	0	0	13	0	13	21	0	5	26	0	22	**6**	28	67
17:00	0	0	0	0	0	15	0	15	**51**	0	**7**	**58**	0	26	3	29	**102**
Total Volume	0	0	2	2	0	63	0	63	118	0	15	133	0	101	16	117	315
% App. Total	0	0	100		0	100	0		88.7	0	11.3		0	86.3	13.7		
PHF	.000	.000	.500	.500	.000	.630	.000	.630	.578	.000	.536	.573	.000	.902	.667	.886	.772

All Traffic Data

(916) 771-8700
F (916) 786-2879

CITY OF STOCKTON

File Name : 09-7379-004 NEWCASTLE-ARCH
Site Code : 00000000
Start Date : 09/22/2009



All Traffic Data

(916) 771-8700
F (916) 786-2879

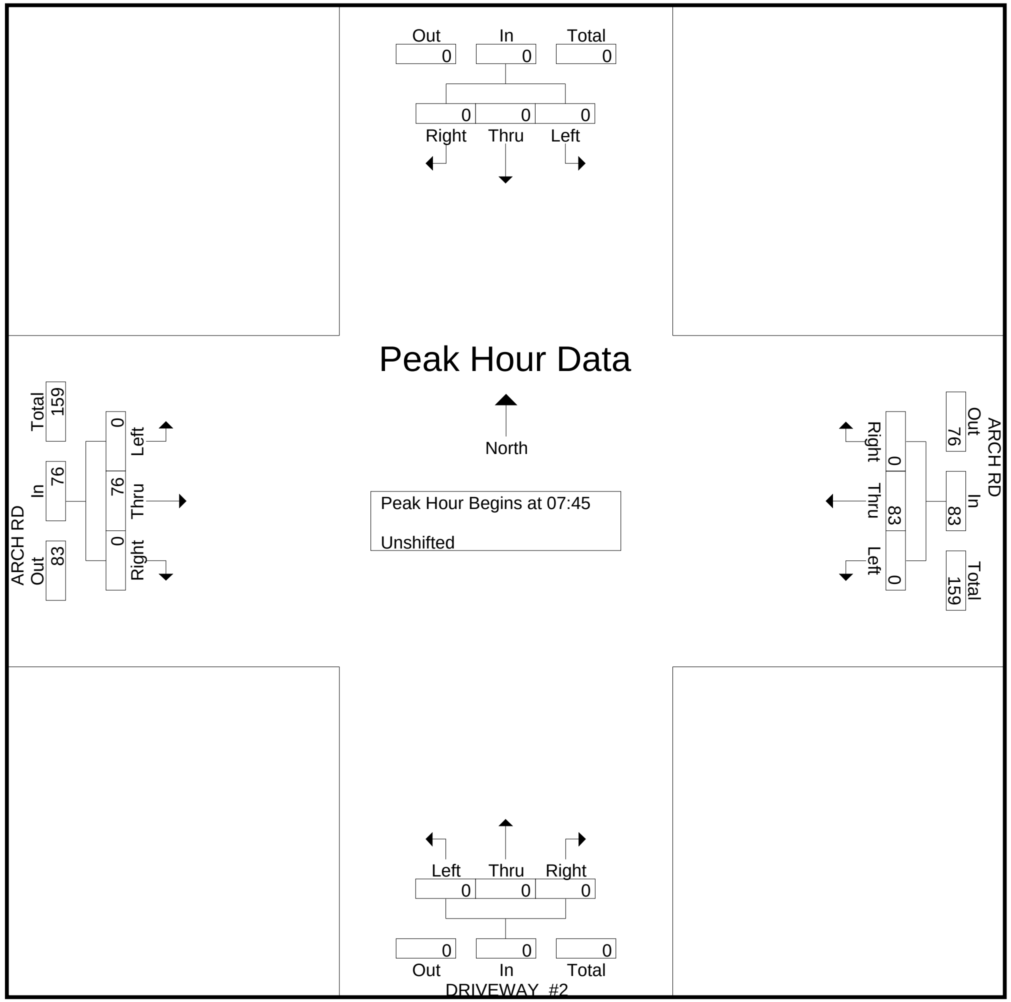
CITY OF STOCKTON

File Name : 09-7379-002 EAST DW-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD Westbound				DRIVEWAY #2 Northbound				ARCH RD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	0	0	0	1	26	0	27	0	0	0	0	0	11	1	12	39
07:15	0	0	0	0	0	19	0	19	1	0	0	1	0	13	0	13	33
07:30	0	0	0	0	0	25	0	25	0	0	0	0	0	13	1	14	39
07:45	0	0	0	0	0	28	0	28	0	0	0	0	0	19	0	19	47
Total	0	0	0	0	1	98	0	99	1	0	0	1	0	56	2	58	158
08:00	0	0	0	0	0	16	0	16	0	0	0	0	0	20	0	20	36
08:15	0	0	0	0	0	15	0	15	0	0	0	0	0	17	0	17	32
08:30	0	0	0	0	0	24	0	24	0	0	0	0	0	20	0	20	44
08:45	0	0	0	0	0	17	0	17	0	0	0	0	0	19	0	19	36
Total	0	0	0	0	0	72	0	72	0	0	0	0	0	76	0	76	148
16:00	0	0	0	0	0	12	0	12	0	0	0	0	0	33	0	33	45
16:15	0	0	0	0	0	24	0	24	0	0	0	0	0	30	0	30	54
16:30	0	0	0	0	0	12	0	12	0	0	0	0	0	30	0	30	42
16:45	0	0	0	0	0	14	0	14	0	0	0	0	0	26	0	26	40
Total	0	0	0	0	0	62	0	62	0	0	0	0	0	119	0	119	181
17:00	0	0	0	0	0	18	0	18	0	0	0	0	0	33	0	33	51
17:15	0	0	0	0	0	15	0	15	0	0	0	0	0	22	0	22	37
17:30	0	0	0	0	0	10	0	10	0	0	0	0	0	20	0	20	30
17:45	0	0	0	0	0	12	0	12	0	0	0	0	0	20	0	20	32
Total	0	0	0	0	0	55	0	55	0	0	0	0	0	95	0	95	150
Grand Total	0	0	0	0	1	287	0	288	1	0	0	1	0	346	2	348	637
Apprch %	0	0	0		0.3	99.7	0		100	0	0		0	99.4	0.6		
Total %	0	0	0	0	0.2	45.1	0	45.2	0.2	0	0	0.2	0	54.3	0.3	54.6	

	Southbound				ARCH RD Westbound				DRIVEWAY #2 Northbound				ARCH RD Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	0	0	0	0	**28**	0	**28**	0	0	0	0	0	19	0	19	**47**
08:00	0	0	0	0	0	16	0	16	0	0	0	0	0	**20**	0	**20**	36
08:15	0	0	0	0	0	15	0	15	0	0	0	0	0	17	0	17	32
08:30	0	0	0	0	0	24	0	24	0	0	0	0	0	20	0	20	44
Total Volume	0	0	0	0	0	83	0	83	0	0	0	0	0	76	0	76	159
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.741	.000	.741	.000	.000	.000	.000	.000	.950	.000	.950	.846



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:15

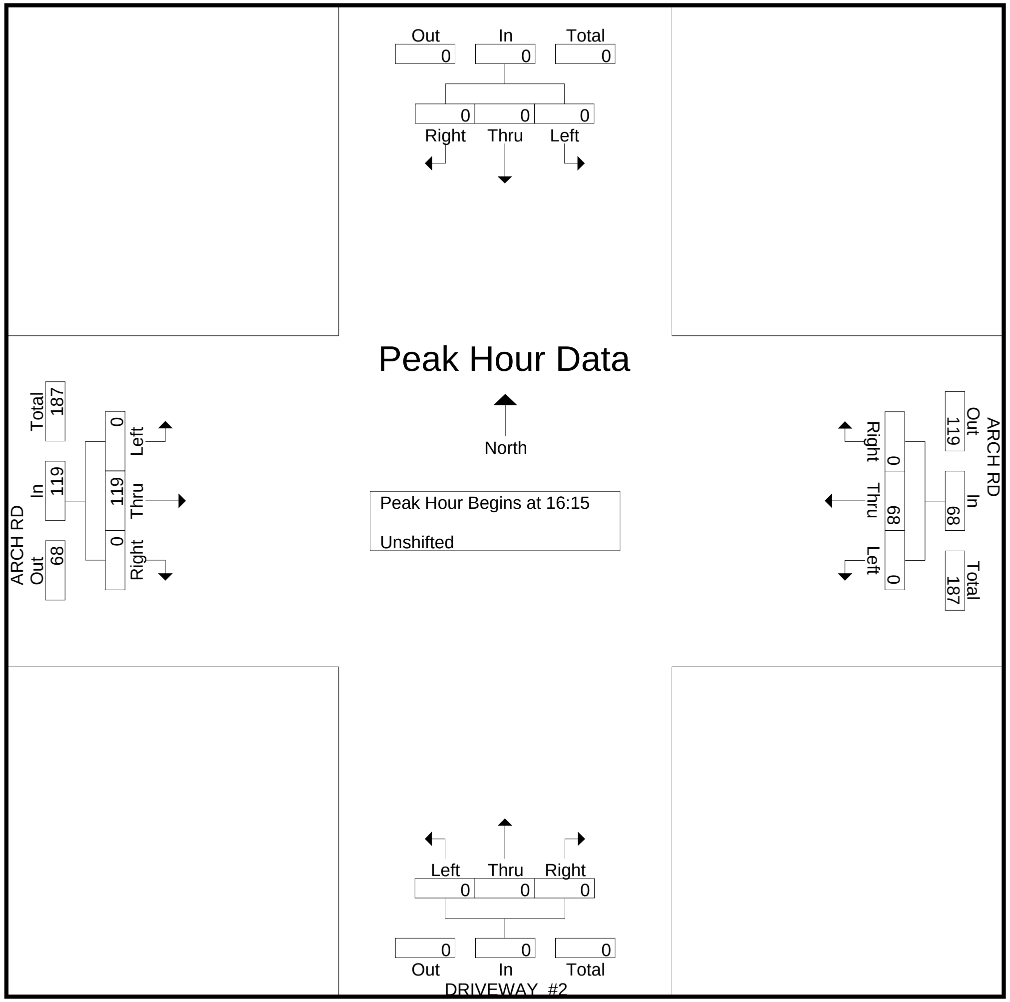
16:15	0	0	0	0	0	**24**	0	**24**	0	0	0	0	0	30	0	30	**54**
16:30	0	0	0	0	0	12	0	12	0	0	0	0	0	30	0	30	42
16:45	0	0	0	0	0	14	0	14	0	0	0	0	0	26	0	26	40
17:00	0	0	0	0	0	18	0	18	0	0	0	0	0	**33**	0	**33**	51
Total Volume	0	0	0	0	0	68	0	68	0	0	0	0	0	119	0	119	187
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.708	.000	.708	.000	.000	.000	.000	.000	.902	.000	.902	.866

All Traffic Data

(916) 771-8700
F (916) 786-2879

CITY OF STOCKTON

File Name : 09-7379-002 EAST DW-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 3



All Traffic Data

(916) 771-8700
F (916) 786-2879

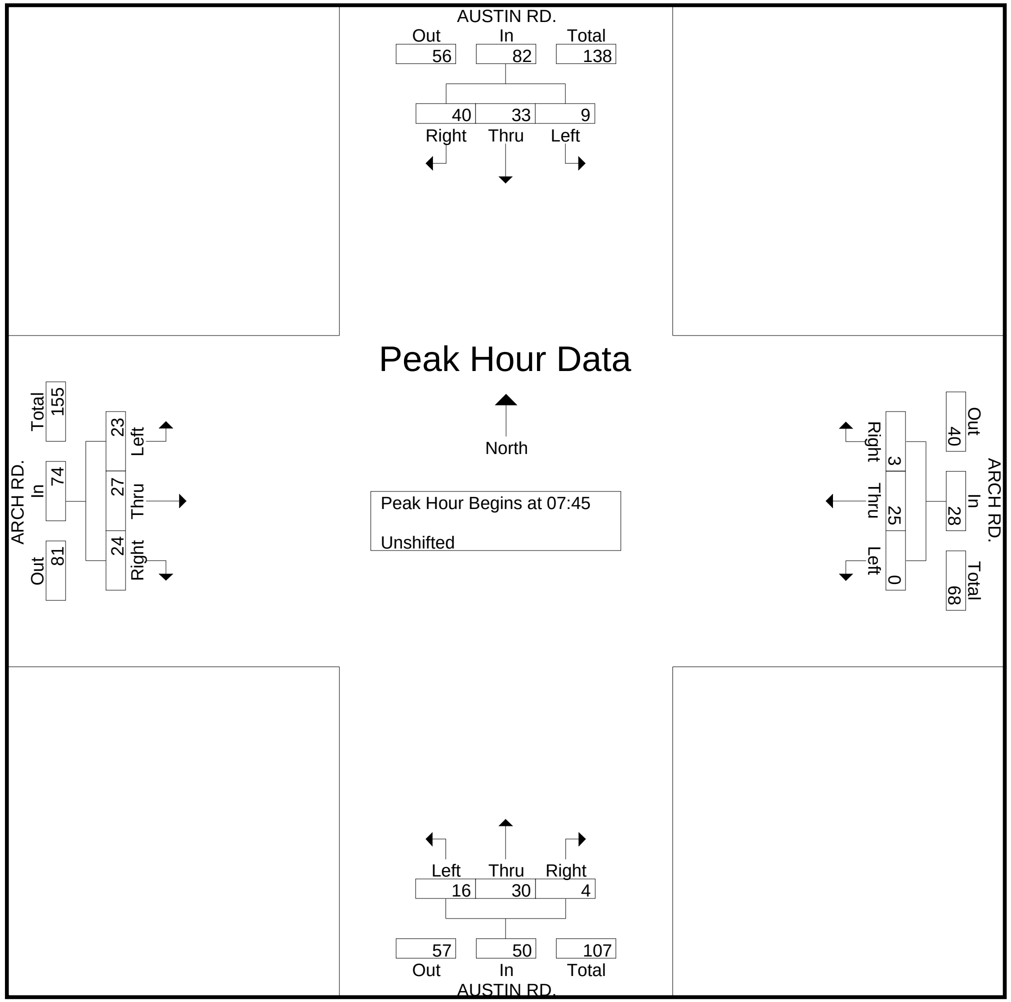
CITY OF STOCKTON

File Name : 09-7379-001 AUSTIN-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 1

Groups Printed- Unshifted

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	3	9	14	26	1	6	0	7	4	9	1	14	3	3	4	10	57
07:15	2	5	11	18	0	4	0	4	3	4	0	7	8	5	1	14	43
07:30	3	9	16	28	0	4	0	4	8	5	0	13	5	4	5	14	59
07:45	5	6	18	29	0	4	0	4	4	8	0	12	9	7	3	19	64
Total	13	29	59	101	1	18	0	19	19	26	1	46	25	19	13	57	223
08:00	3	9	9	21	0	5	1	6	2	7	1	10	5	8	6	19	56
08:15	0	10	6	16	0	7	2	9	3	7	1	11	3	6	9	18	54
08:30	1	8	7	16	0	9	0	9	7	8	2	17	6	6	6	18	60
08:45	2	14	5	21	0	9	4	13	3	6	0	9	3	11	6	20	63
Total	6	41	27	74	0	30	7	37	15	28	4	47	17	31	27	75	233
16:00	5	3	4	12	0	6	3	9	2	4	0	6	13	13	7	33	60
16:15	1	4	6	11	2	14	5	21	5	6	1	12	11	13	7	31	75
16:30	1	2	1	4	0	10	4	14	0	5	0	5	12	10	3	25	48
16:45	3	4	5	12	0	7	4	11	2	8	0	10	16	10	6	32	65
Total	10	13	16	39	2	37	16	55	9	23	1	33	52	46	23	121	248
17:00	1	4	4	9	0	8	5	13	5	6	0	11	12	9	9	30	63
17:15	1	6	4	11	0	8	0	8	3	2	0	5	9	9	6	24	48
17:30	1	3	1	5	2	7	2	11	3	5	2	10	11	4	5	20	46
17:45	1	0	4	5	0	7	2	9	1	3	0	4	8	9	3	20	38
Total	4	13	13	30	2	30	9	41	12	16	2	30	40	31	23	94	195
Grand Total	33	96	115	244	5	115	32	152	55	93	8	156	134	127	86	347	899
Apprch %	13.5	39.3	47.1		3.3	75.7	21.1		35.3	59.6	5.1		38.6	36.6	24.8		
Total %	3.7	10.7	12.8	27.1	0.6	12.8	3.6	16.9	6.1	10.3	0.9	17.4	14.9	14.1	9.6	38.6	

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**5**	6	**18**	**29**	0	4	0	4	4	**8**	0	12	**9**	7	3	**19**	**64**
08:00	3	9	9	21	0	5	1	6	2	7	1	10	5	**8**	6	19	56
08:15	0	**10**	6	16	0	7	**2**	**9**	3	7	1	11	3	6	**9**	18	54
08:30	1	8	7	16	0	**9**	0	9	**7**	8	**2**	**17**	6	6	6	18	60
Total Volume	9	33	40	82	0	25	3	28	16	30	4	50	23	27	24	74	234
% App. Total	11	40.2	48.8		0	89.3	10.7		32	60	8		31.1	36.5	32.4		
PHF	.450	.825	.556	.707	.000	.694	.375	.778	.571	.938	.500	.735	.639	.844	.667	.974	.914



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:15

16:15	1	**4**	**6**	11	**2**	**14**	**5**	**21**	**5**	6	**1**	**12**	11	**13**	7	31	**75**
16:30	1	2	1	4	0	10	4	14	0	5	0	5	12	10	3	25	48
16:45	**3**	4	5	**12**	0	7	4	11	2	**8**	0	10	**16**	10	6	**32**	65
17:00	1	4	4	9	0	8	5	13	5	6	0	11	12	9	**9**	30	63
Total Volume	6	14	16	36	2	39	18	59	12	25	1	38	51	42	25	118	251
% App. Total	16.7	38.9	44.4		3.4	66.1	30.5		31.6	65.8	2.6		43.2	35.6	21.2		
PHF	.500	.875	.667	.750	.250	.696	.900	.702	.600	.781	.250	.792	.797	.808	.694	.922	.837

All Traffic Data

(916) 771-8700
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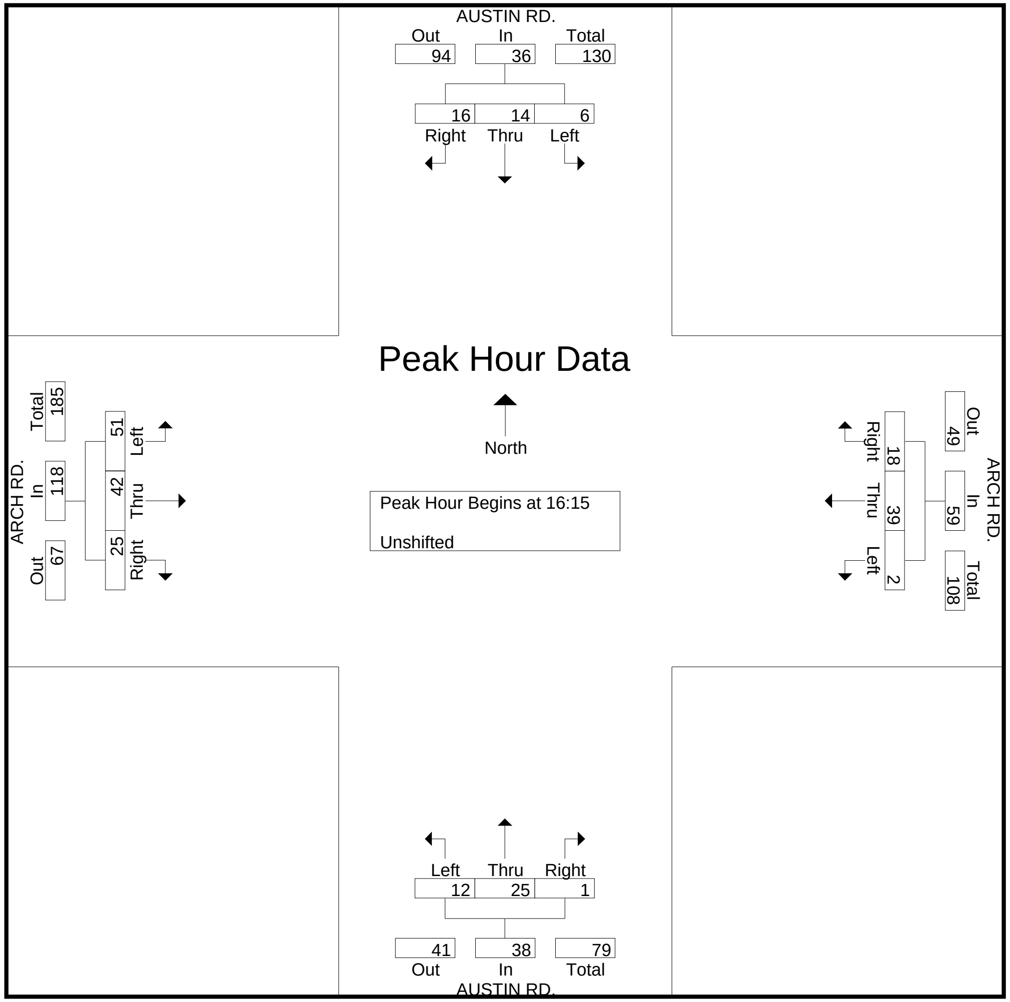
CITY OF STOCKTON

File Name : 09-7379-001 AUSTIN-ARCH
Site Code : 00000000
Start Date : 09/22/2009
Page No : 3



All Traffic Data

(916) 771-8700
F (916) 786-2879

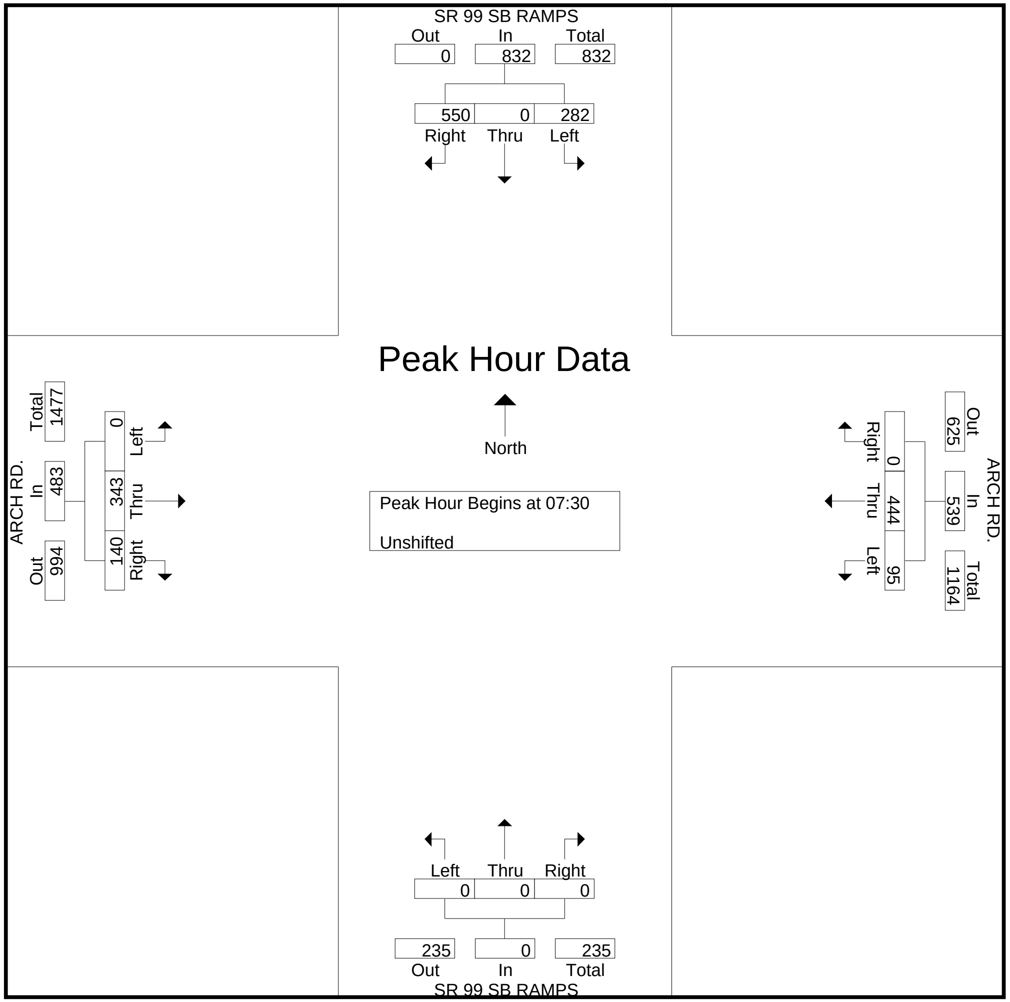
CITY OF STOCKTON

File Name : 09-7379-007 SB 99-ARCH
Site Code : 00000000
Start Date : 09/22/2009

Groups Printed- Unshifted

	SR 99 SB RAMPS Southbound				ARCH RD. Westbound				SR 99 SB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	54	0	62	116	31	74	0	105	0	0	0	0	0	99	51	150	371
07:15	66	0	98	164	25	91	0	116	0	0	0	0	0	66	25	91	371
07:30	73	0	108	181	18	94	0	112	0	0	0	0	0	93	31	124	417
07:45	92	0	198	290	28	160	0	188	0	0	0	0	0	73	40	113	591
Total	285	0	466	751	102	419	0	521	0	0	0	0	0	331	147	478	1750
08:00	67	0	145	212	24	98	0	122	0	0	0	0	0	94	33	127	461
08:15	50	0	99	149	25	92	0	117	0	0	0	0	0	83	36	119	385
08:30	44	0	67	111	30	84	0	114	0	0	0	0	0	76	28	104	329
08:45	41	0	79	120	37	80	0	117	0	0	0	0	0	79	23	102	339
Total	202	0	390	592	116	354	0	470	0	0	0	0	0	332	120	452	1514
16:00	43	0	42	85	47	84	0	131	0	0	0	0	0	134	54	188	404
16:15	35	0	64	99	45	80	0	125	0	0	0	0	0	116	38	154	378
16:30	37	0	44	81	56	71	0	127	0	0	0	0	0	158	73	231	439
16:45	27	0	37	64	34	75	0	109	0	0	0	0	0	118	41	159	332
Total	142	0	187	329	182	310	0	492	0	0	0	0	0	526	206	732	1553
17:00	35	0	27	62	63	59	0	122	0	0	0	0	0	192	60	252	436
17:15	44	0	34	78	59	74	0	133	0	0	0	0	0	148	54	202	413
17:30	36	0	30	66	56	56	0	112	0	0	0	0	0	108	25	133	311
17:45	21	0	43	64	38	54	0	92	0	0	0	0	0	95	24	119	275
Total	136	0	134	270	216	243	0	459	0	0	0	0	0	543	163	706	1435
Grand Total	765	0	1177	1942	616	1326	0	1942	0	0	0	0	0	1732	636	2368	6252
Apprch %	39.4	0	60.6		31.7	68.3	0		0	0	0		0	73.1	26.9		
Total %	12.2	0	18.8	31.1	9.9	21.2	0	31.1	0	0	0	0	0	27.7	10.2	37.9	

	SR 99 SB RAMPS Southbound				ARCH RD. Westbound				SR 99 SB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	73	0	108	181	18	94	0	112	0	0	0	0	0	93	31	124	417
07:45	**92**	0	**198**	**290**	**28**	**160**	0	**188**	0	0	0	0	0	73	**40**	113	**591**
08:00	67	0	145	212	24	98	0	122	0	0	0	0	0	**94**	33	**127**	461
08:15	50	0	99	149	25	92	0	117	0	0	0	0	0	83	36	119	385
Total Volume	282	0	550	832	95	444	0	539	0	0	0	0	0	343	140	483	1854
% App. Total	33.9	0	66.1		17.6	82.4	0		0	0	0		0	71	29		
PHF	.766	.000	.694	.717	.848	.694	.000	.717	.000	.000	.000	.000	.000	.912	.875	.951	.784



Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 16:30

16:30	37	0	**44**	**81**	56	71	0	127	0	0	0	0	0	158	**73**	231	**439**
16:45	27	0	37	64	34	**75**	0	109	0	0	0	0	0	118	41	159	332
17:00	35	0	27	62	**63**	59	0	122	0	0	0	0	0	**192**	60	**252**	436
17:15	**44**	0	34	78	59	74	0	**133**	0	0	0	0	0	148	54	202	413
Total Volume	143	0	142	285	212	279	0	491	0	0	0	0	0	616	228	844	1620
% App. Total	50.2	0	49.8		43.2	56.8	0		0	0	0		0	73	27		
PHF	.813	.000	.807	.880	.841	.930	.000	.923	.000	.000	.000	.000	.000	.802	.781	.837	.923

All Traffic Data

(916) 771-8700
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CITY OF STOCKTON

File Name : 09-7379-007 SB 99-ARCH
Site Code : 00000000
Start Date : 09/22/2009
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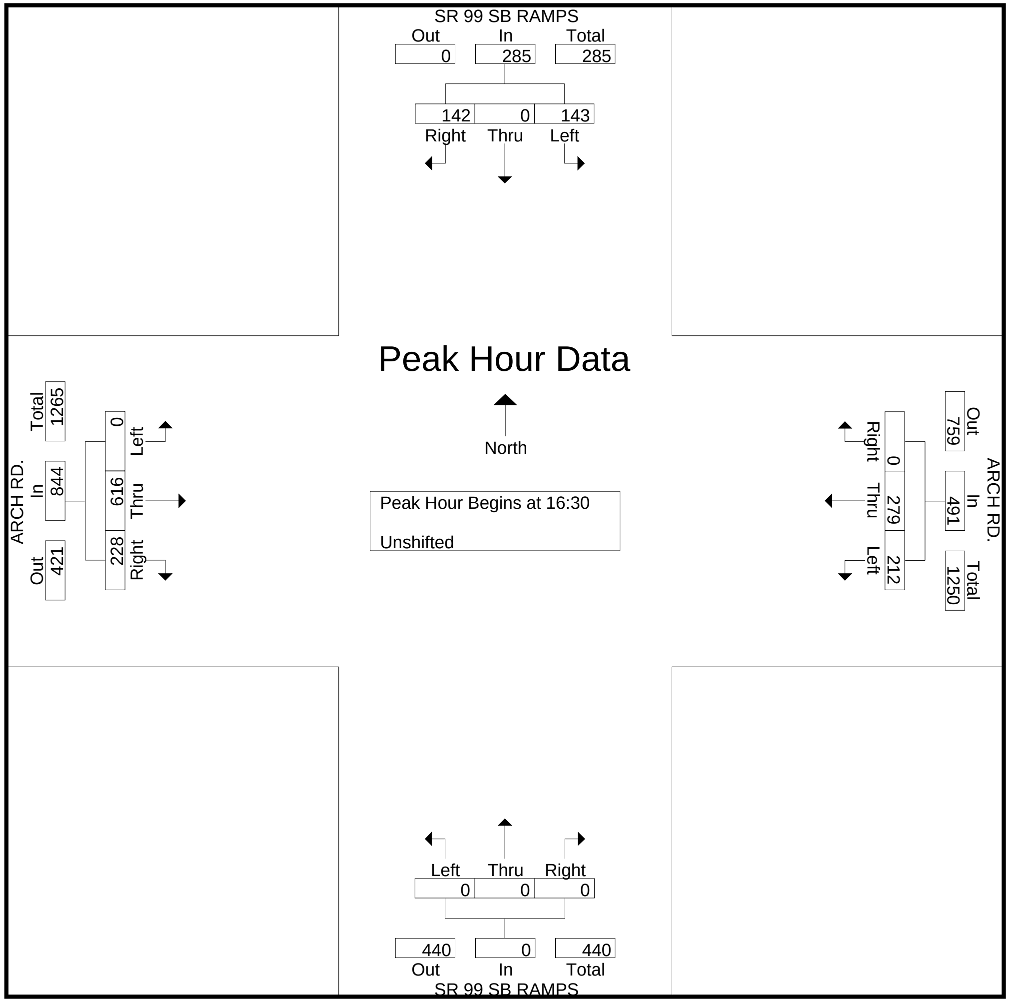


All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-007 NB 99-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	SR 99 NB RAMPS Southbound				ARCH RD. Westbound				SR 99 NB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	0	0	0	0	0	85	47	132	16	0	41	57	37	82	0	119	308
14:15	0	0	0	0	0	74	65	139	33	0	23	56	31	59	0	90	285
14:30	0	0	0	0	0	83	70	153	36	0	31	67	51	61	0	112	332
14:45	0	0	0	0	0	72	56	128	26	0	39	65	43	68	0	111	304
Total	0	0	0	0	0	314	238	552	111	0	134	245	162	270	0	432	1229
15:00	0	0	0	0	0	83	70	153	12	0	49	61	73	66	0	139	353
15:15	0	0	0	0	0	81	64	145	13	0	33	46	49	50	0	99	290
15:30	0	0	0	0	0	69	64	133	20	0	34	54	77	56	0	133	320
15:45	0	0	0	0	0	72	63	135	24	0	42	66	51	60	0	111	312
Total	0	0	0	0	0	305	261	566	69	0	158	227	250	232	0	482	1275
Grand Total	0	0	0	0	0	619	499	1118	180	0	292	472	412	502	0	914	2504
Apprch %	0	0	0		0	55.4	44.6		38.1	0	61.9		45.1	54.9	0		
Total %	0	0	0	0	0	24.7	19.9	44.6	7.2	0	11.7	18.8	16.5	20	0	36.5	

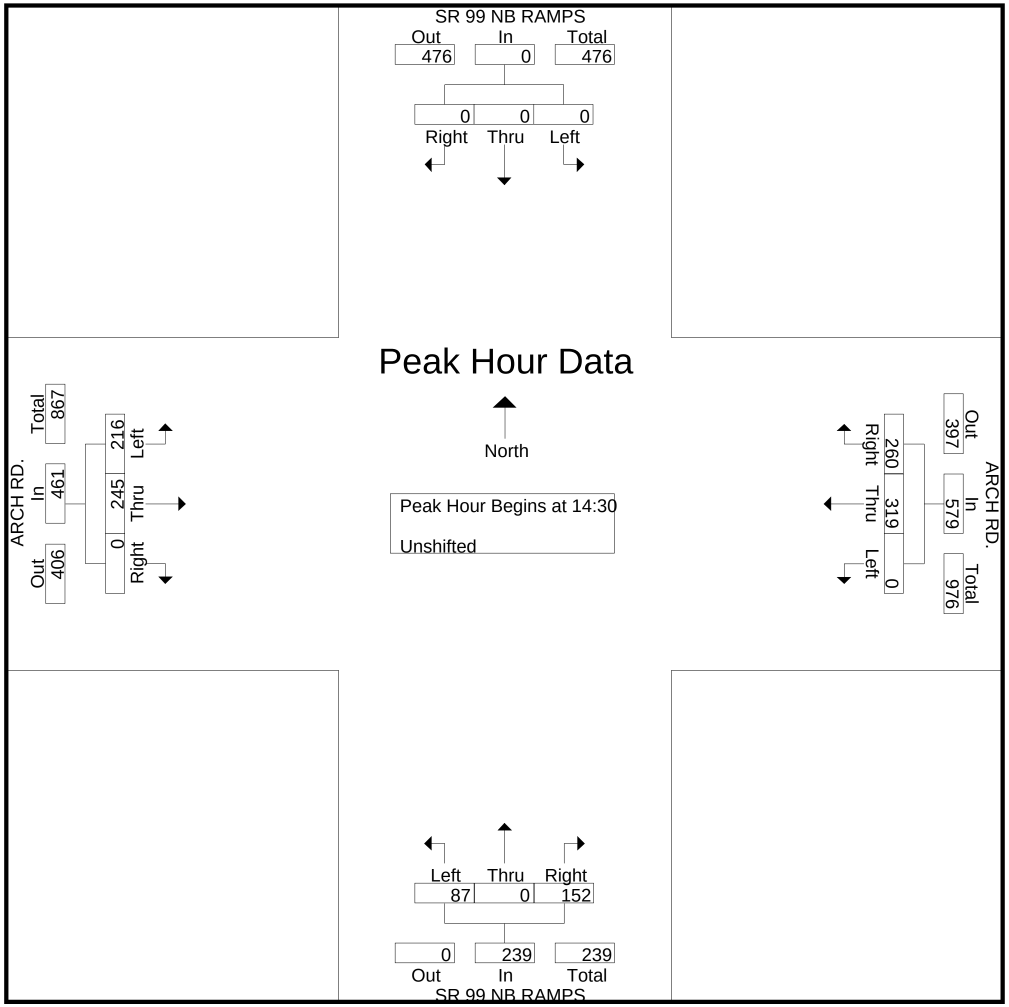
	SR 99 NB RAMPS Southbound				ARCH RD. Westbound				SR 99 NB RAMPS Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 14:30																	
14:30	0	0	0	0	0	**83**	**70**	**153**	**36**	0	31	**67**	51	61	0	112	332
14:45	0	0	0	0	0	72	56	128	26	0	39	65	43	**68**	0	111	304
15:00	0	0	0	0	0	83	70	153	12	0	**49**	61	**73**	66	0	**139**	**353**
15:15	0	0	0	0	0	81	64	145	13	0	33	46	49	50	0	99	290
Total Volume	0	0	0	0	0	319	260	579	87	0	152	239	216	245	0	461	1279
% App. Total	0	0	0		0	55.1	44.9		36.4	0	63.6		46.9	53.1	0		
PHF	.000	.000	.000	.000	.000	.961	.929	.946	.604	.000	.776	.892	.740	.901	.000	.829	.906

All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-007 NB 99-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOC KTON

File Name : 10-7235-006 FRONTAGE RD-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	S CA 99 FRONTAGE RD. Southbound				**ARCH RD. Westbound**				**S CA 99 FRONTAGE RD. Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	1	4	52	57	4	58	10	72	31	4	2	37	41	44	38	123	289
14:15	1	5	45	51	1	59	8	68	36	6	5	47	27	31	20	78	244
14:30	6	5	40	51	4	83	8	95	34	6	5	45	33	39	19	91	282
14:45	2	11	55	68	6	51	5	62	25	6	5	36	39	42	28	109	275
Total	10	25	192	227	15	251	31	297	126	22	17	165	140	156	105	401	1090
15:00	1	3	40	44	4	64	9	77	39	6	6	51	29	39	48	116	288
15:15	5	1	44	50	6	58	8	72	39	8	6	53	30	33	29	92	267
15:30	4	7	38	49	7	62	5	74	25	2	9	36	30	30	29	89	248
15:45	5	9	48	62	3	65	10	78	32	7	2	41	36	35	30	101	282
Total	15	20	170	205	20	249	32	301	135	23	23	181	125	137	136	398	1085
Grand Total	25	45	362	432	35	500	63	598	261	45	40	346	265	293	241	799	2175
Apprch %	5.8	10.4	83.8		5.9	83.6	10.5		75.4	13	11.6		33.2	36.7	30.2		
Total %	1.1	2.1	16.6	19.9	1.6	23	2.9	27.5	12	2.1	1.8	15.9	12.2	13.5	11.1	36.7	

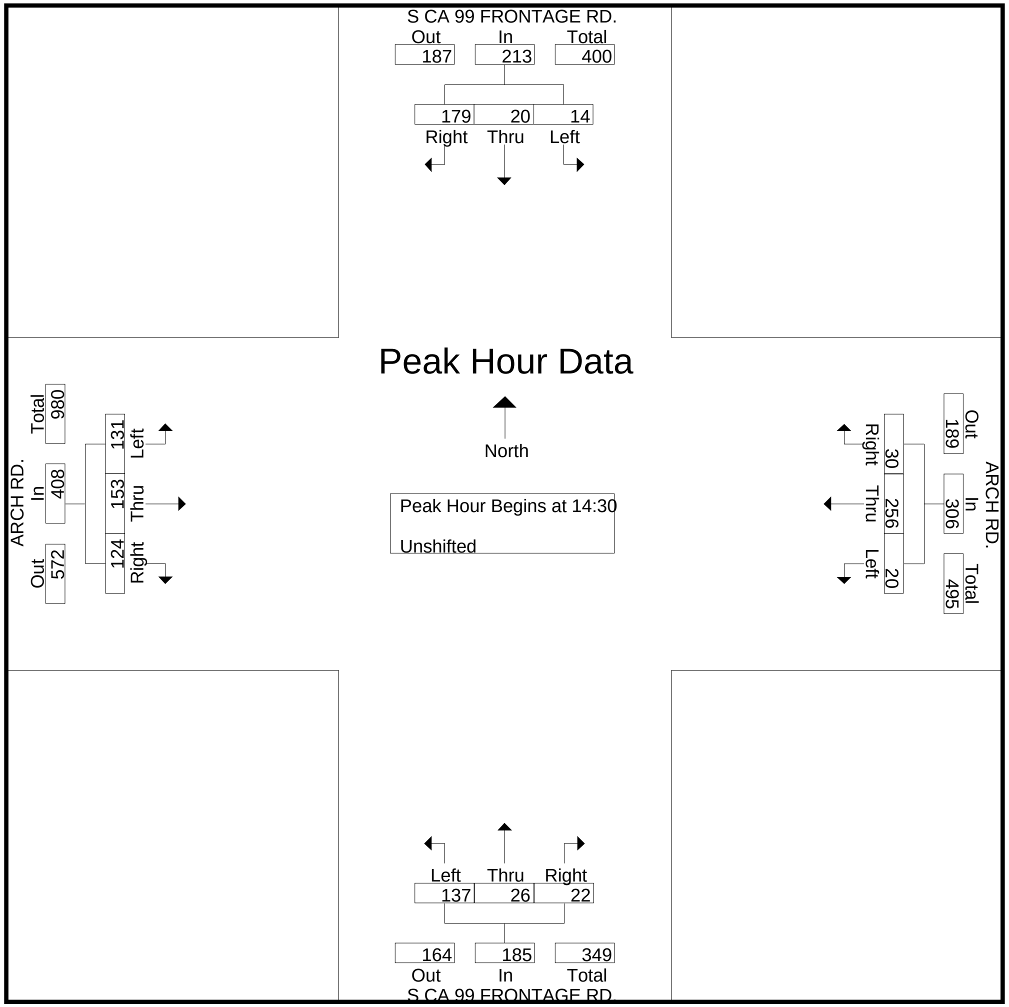
	S CA 99 FRONTAGE RD. Southbound				**ARCH RD. Westbound**				**S CA 99 FRONTAGE RD. Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 14:30																	
14:30	**6**	5	40	51	4	**83**	8	**95**	34	6	5	45	33	39	19	91	282
14:45	2	**11**	**55**	**68**	**6**	51	5	62	25	6	5	36	**39**	**42**	28	109	275
15:00	1	3	40	44	4	64	**9**	77	**39**	6	**6**	51	29	39	**48**	**116**	**288**
15:15	5	1	44	50	6	58	8	72	39	**8**	6	**53**	30	33	29	92	267
Total Volume	14	20	179	213	20	256	30	306	137	26	22	185	131	153	124	408	1112
% App. Total	6.6	9.4	84		6.5	83.7	9.8		74.1	14.1	11.9		32.1	37.5	30.4		
PHF	.583	.455	.814	.783	.833	.771	.833	.805	.878	.813	.917	.873	.840	.911	.646	.879	.965

All Traffic Data

(916) 771-8700

CITY OF STOC KTON

File Name : 10-7235-006 FRONTAGE RD-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-005 NEWCASTLE-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	NEWCASTLE RD. Southbound				ARCH RD. Westbound				NEWCASTLE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	0	0	5	5	0	18	2	20	34	0	4	38	1	17	4	22	85
14:15	1	0	1	2	0	20	0	20	17	0	1	18	1	22	2	25	65
14:30	0	0	6	6	0	15	2	17	12	0	0	12	4	20	4	28	63
14:45	0	0	8	8	2	14	2	18	19	0	1	20	7	24	5	36	82
Total	1	0	20	21	2	67	6	75	82	0	6	88	13	83	15	111	295
15:00	0	0	9	9	2	16	0	18	16	0	1	17	5	20	5	30	74
15:15	0	0	2	2	1	23	2	26	23	0	5	28	3	13	4	20	76
15:30	0	0	15	15	0	26	1	27	19	0	4	23	1	22	2	25	90
15:45	0	0	11	11	0	20	3	23	32	0	3	35	2	19	1	22	91
Total	0	0	37	37	3	85	6	94	90	0	13	103	11	74	12	97	331
Grand Total	1	0	57	58	5	152	12	169	172	0	19	191	24	157	27	208	626
Apprch %	1.7	0	98.3		3	89.9	7.1		90.1	0	9.9		11.5	75.5	13		
Total %	0.2	0	9.1	9.3	0.8	24.3	1.9	27	27.5	0	3	30.5	3.8	25.1	4.3	33.2	

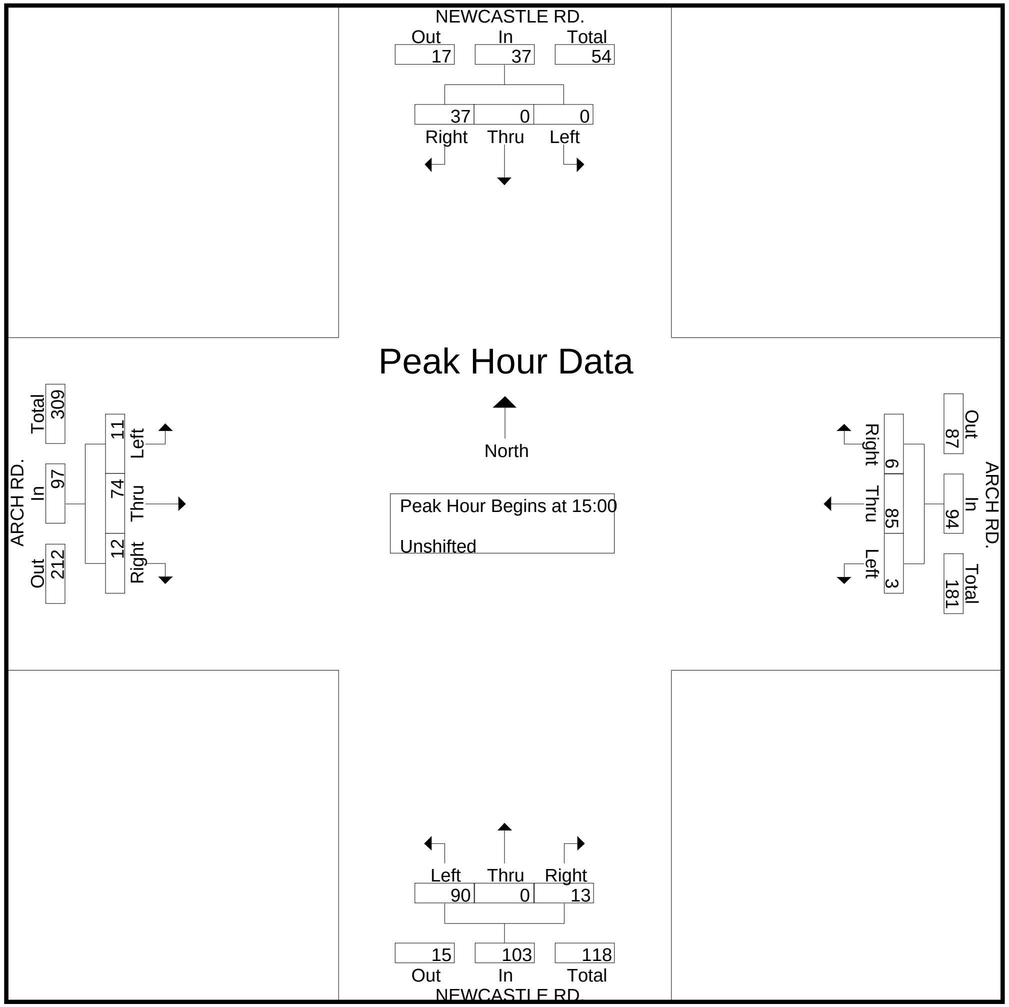
	NEWCASTLE RD. Southbound				ARCH RD. Westbound				NEWCASTLE RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:00																	
15:00	0	0	9	9	**2**	16	0	18	16	0	1	17	**5**	20	**5**	**30**	74
15:15	0	0	2	2	1	23	2	26	23	0	**5**	28	3	13	4	20	76
15:30	0	0	**15**	**15**	0	**26**	1	**27**	19	0	4	23	1	**22**	2	25	90
15:45	0	0	11	11	0	20	**3**	23	**32**	0	3	**35**	2	19	1	22	**91**
Total Volume	0	0	37	37	3	85	6	94	90	0	13	103	11	74	12	97	331
% App. Total	0	0	100		3.2	90.4	6.4		87.4	0	12.6		11.3	76.3	12.4		
PHF	.000	.000	.617	.617	.375	.817	.500	.870	.703	.000	.650	.736	.550	.841	.600	.808	.909

All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-005 NEWCASTLE-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-004 LOGISTICS-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	LOGISTICS DR. Southbound				ARCH RD. Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	0	0	0	0	0	20	0	20	0	0	0	0	0	20	0	20	40
14:15	0	0	0	0	0	19	0	19	0	0	0	0	0	25	0	25	44
14:30	0	0	0	0	0	16	0	16	0	0	0	0	0	20	0	20	36
14:45	0	0	0	0	0	18	0	18	0	0	0	0	0	23	0	23	41
Total	0	0	0	0	0	73	0	73	0	0	0	0	0	88	0	88	161
15:00	0	0	0	0	0	16	0	16	0	0	0	0	0	21	0	21	37
15:15	0	0	1	1	0	27	0	27	0	0	0	0	1	20	0	21	49
15:30	0	0	0	0	0	26	0	26	0	0	0	0	0	26	0	26	52
15:45	0	0	1	1	0	21	0	21	0	0	0	0	0	24	0	24	46
Total	0	0	2	2	0	90	0	90	0	0	0	0	1	91	0	92	184
Grand Total	0	0	2	2	0	163	0	163	0	0	0	0	1	179	0	180	345
Apprch %	0	0	100		0	100	0		0	0	0		0.6	99.4	0		
Total %	0	0	0.6	0.6	0	47.2	0	47.2	0	0	0	0	0.3	51.9	0	52.2	

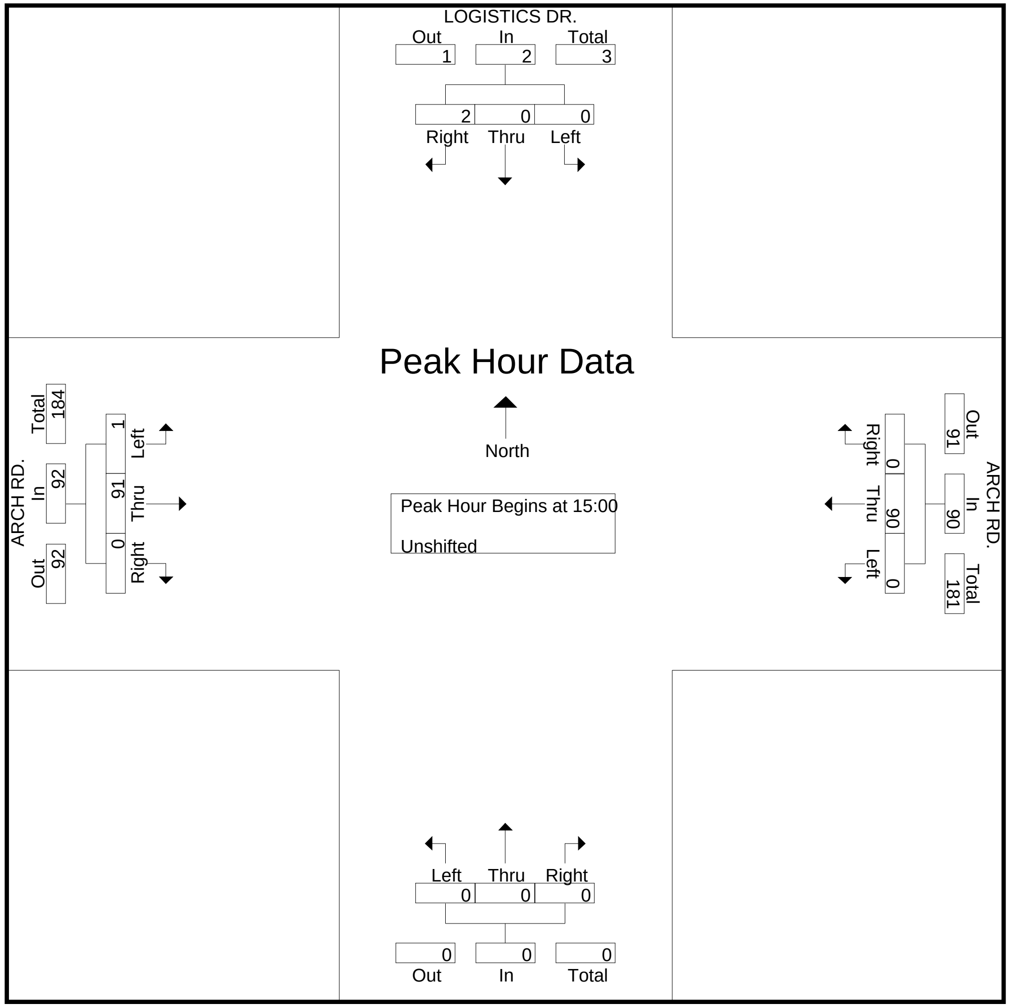
	LOGISTICS DR. Southbound				ARCH RD. Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:00																	
15:00	0	0	0	0	0	16	0	16	0	0	0	0	0	21	0	21	37
15:15	0	0	**1**	**1**	0	**27**	0	**27**	0	0	0	0	**1**	20	0	21	49
15:30	0	0	0	0	0	26	0	26	0	0	0	0	0	**26**	0	**26**	**52**
15:45	0	0	1	1	0	21	0	21	0	0	0	0	0	24	0	24	46
Total Volume	0	0	2	2	0	90	0	90	0	0	0	0	1	91	0	92	184
% App. Total	0	0	100		0	100	0		0	0	0		1.1	98.9	0		
PHF	.000	.000	.500	.500	.000	.833	.000	.833	.000	.000	.000	.000	.250	.875	.000	.885	.885

All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-004 LOGISTICS-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOCKTON
West Driveway had zero activity.

File Name : 10-7235-002-003 NCWF DRIVEWAYS-ARCH RD
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	NCWF EAST DRIVEWAY Southbound				**ARCH RD. Westbound**				**NCWF EAST DRIVEWAY Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	0	0	0	0	0	19	0	19	0	0	0	0	0	20	0	20	39
14:15	0	0	0	0	0	20	0	20	0	0	0	0	0	24	0	24	44
14:30	0	0	0	0	0	15	0	15	0	0	0	0	0	21	0	21	36
14:45	0	0	0	0	0	19	0	19	0	0	0	0	0	23	0	23	42
Total	0	0	0	0	0	73	0	73	0	0	0	0	0	88	0	88	161
15:00	0	0	0	0	0	18	0	18	0	0	0	0	0	20	0	20	38
15:15	0	0	0	0	1	26	0	27	1	0	0	1	0	21	0	21	49
15:30	0	0	0	0	0	25	0	25	0	0	0	0	0	25	0	25	50
15:45	0	0	0	0	0	22	0	22	0	0	0	0	0	25	0	25	47
Total	0	0	0	0	1	91	0	92	1	0	0	1	0	91	0	91	184
Grand Total	0	0	0	0	1	164	0	165	1	0	0	1	0	179	0	179	345
Apprch %	0	0	0		0.6	99.4	0		100	0	0		0	100	0		
Total %	0	0	0	0	0.3	47.5	0	47.8	0.3	0	0	0.3	0	51.9	0	51.9	

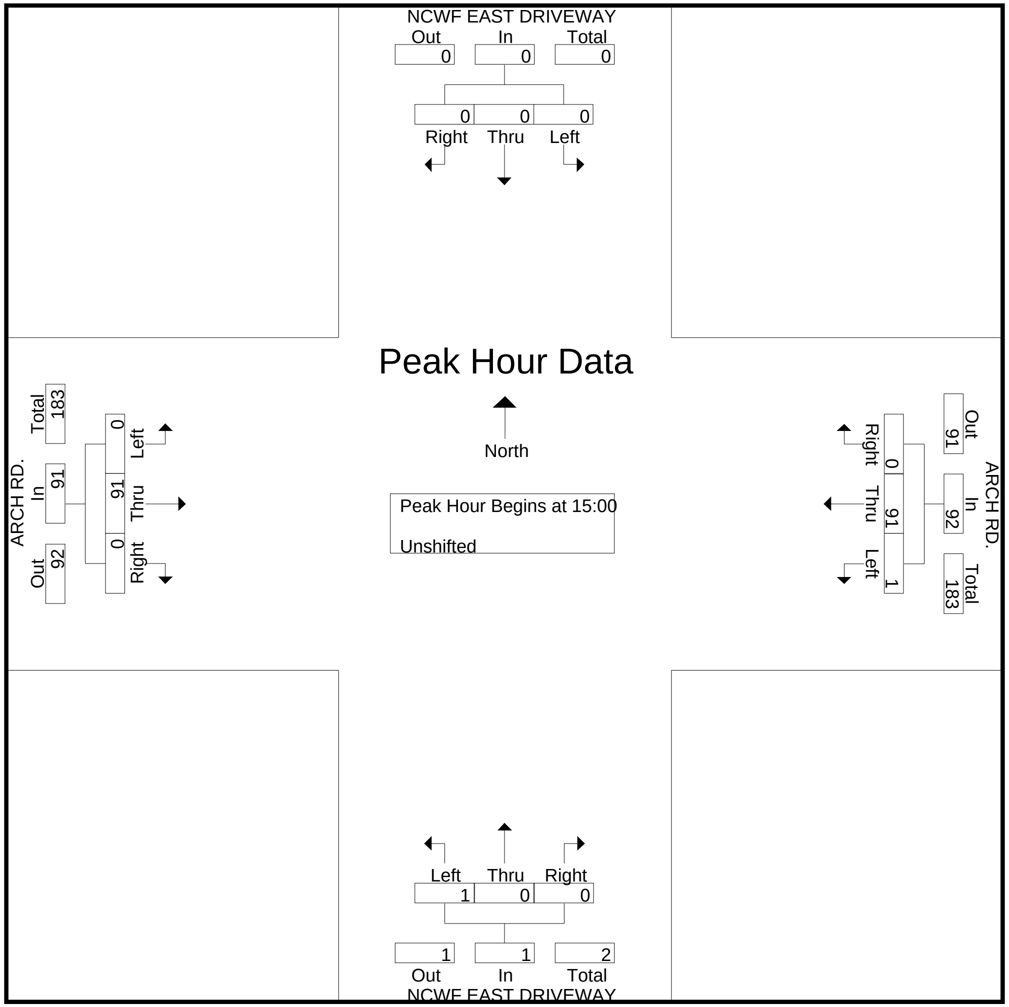
	NCWF EAST DRIVEWAY Southbound				**ARCH RD. Westbound**				**NCWF EAST DRIVEWAY Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:00																	
15:00	0	0	0	0	0	18	0	18	0	0	0	0	0	20	0	20	38
15:15	0	0	0	0	**1**	**26**	0	**27**	**1**	0	0	**1**	0	21	0	21	49
15:30	0	0	0	0	0	25	0	25	0	0	0	0	0	**25**	0	**25**	**50**
15:45	0	0	0	0	0	22	0	22	0	0	0	0	0	25	0	25	47
Total Volume	0	0	0	0	1	91	0	92	1	0	0	1	0	91	0	91	184
% App. Total	0	0	0		1.1	98.9	0		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.250	.875	.000	.852	.250	.000	.000	.250	.000	.910	.000	.910	.920

All Traffic Data

(916) 771-8700

CITY OF STOCKTON
West Driveway had zero activity.

File Name : 10-7235-002-003 NCWF DRIVEWAYS-ARCH RD
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-001 AUSTIN-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	0	8	3	11	1	12	3	16	4	7	1	12	4	13	5	22	61
14:15	3	5	7	15	0	12	5	17	1	1	3	5	7	16	3	26	63
14:30	2	4	2	8	1	11	5	17	1	7	1	9	2	12	5	19	53
14:45	3	6	6	15	0	12	7	19	2	7	6	15	1	13	8	22	71
Total	8	23	18	49	2	47	20	69	8	22	11	41	14	54	21	89	248
15:00	3	6	1	10	0	8	6	14	7	10	0	17	2	11	5	18	59
15:15	3	4	10	17	2	12	5	19	5	7	1	13	6	9	7	22	71
15:30	1	2	6	9	1	16	2	19	3	10	1	14	9	11	5	25	67
15:45	6	4	7	17	0	11	10	21	4	3	0	7	11	14	5	30	75
Total	13	16	24	53	3	47	23	73	19	30	2	51	28	45	22	95	272
Grand Total	21	39	42	102	5	94	43	142	27	52	13	92	42	99	43	184	520
Apprch %	20.6	38.2	41.2		3.5	66.2	30.3		29.3	56.5	14.1		22.8	53.8	23.4		
Total %	4	7.5	8.1	19.6	1	18.1	8.3	27.3	5.2	10	2.5	17.7	8.1	19	8.3	35.4	

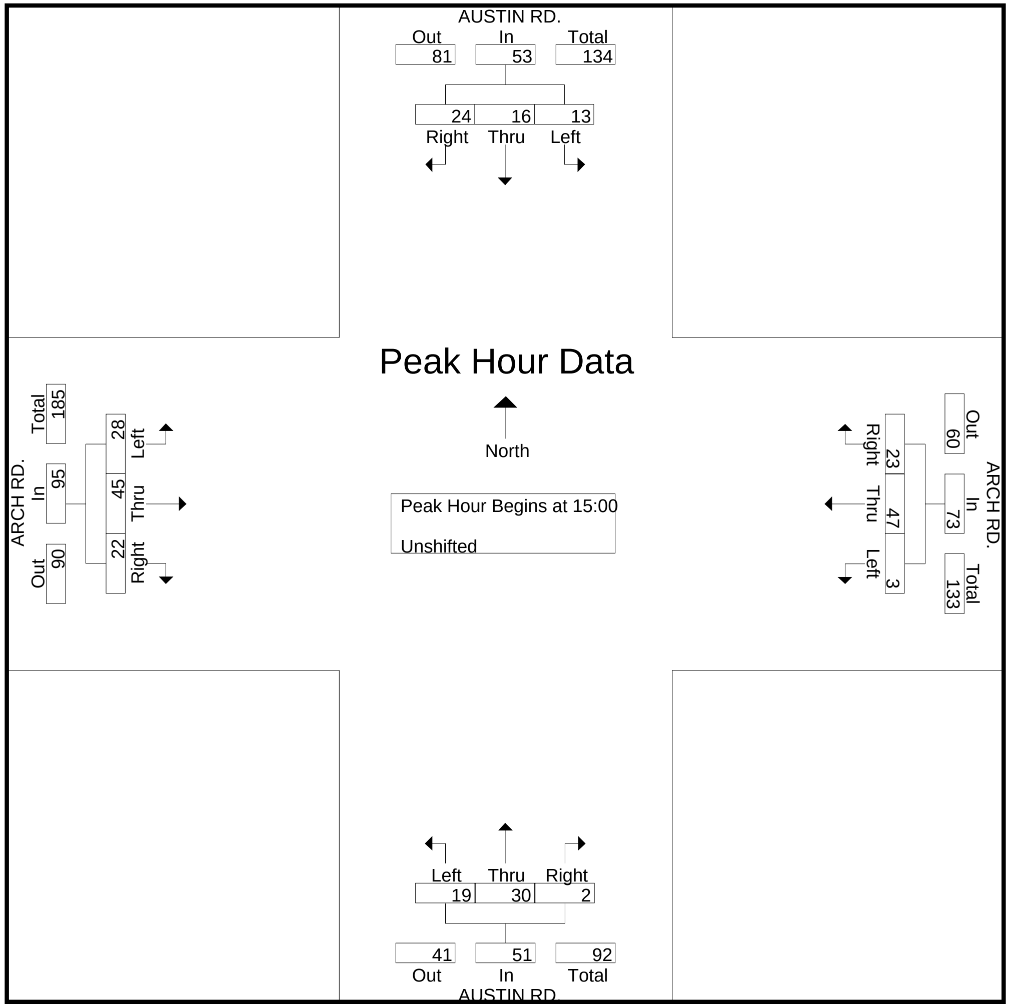
	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 15:00																	
15:00	3	**6**	1	10	0	8	6	14	**7**	**10**	0	**17**	2	11	5	18	59
15:15	3	4	**10**	**17**	**2**	12	5	19	5	7	**1**	13	6	9	**7**	22	71
15:30	1	2	6	9	1	**16**	2	19	3	10	1	14	9	11	5	25	67
15:45	**6**	4	7	17	0	11	**10**	**21**	4	3	0	7	**11**	**14**	5	**30**	**75**
Total Volume	13	16	24	53	3	47	23	73	19	30	2	51	28	45	22	95	272
% App. Total	24.5	30.2	45.3		4.1	64.4	31.5		37.3	58.8	3.9		29.5	47.4	23.2		
PHF	.542	.667	.600	.779	.375	.734	.575	.869	.679	.750	.500	.750	.636	.804	.786	.792	.907

All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-001 AUSTIN-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2



All Traffic Data

(916) 771-8700

CITY OF STOCKTON

File Name : 10-7235-008 SB 99-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 1

Groups Printed- Unshifted

	SR 99 SB RAMPS Southbound				**ARCH RD. Westbound**				**SR 99 SB RAMPS Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
14:00	42	0	28	70	42	59	0	101	0	0	0	0	0	77	22	99	270
14:15	28	0	30	58	35	72	0	107	0	0	0	0	0	62	29	91	256
14:30	34	0	53	87	47	72	0	119	0	0	0	0	0	78	54	132	338
14:45	42	0	35	77	38	60	0	98	0	0	0	0	0	69	39	108	283
Total	146	0	146	292	162	263	0	425	0	0	0	0	0	286	144	430	1147
15:00	36	0	40	76	48	47	0	95	0	0	0	0	0	103	41	144	315
15:15	33	0	42	75	49	45	0	94	0	0	0	0	0	66	40	106	275
15:30	26	0	28	54	44	45	0	89	0	0	0	0	0	107	50	157	300
15:45	35	0	43	78	51	45	0	96	0	0	0	0	0	76	35	111	285
Total	130	0	153	283	192	182	0	374	0	0	0	0	0	352	166	518	1175
Grand Total	276	0	299	575	354	445	0	799	0	0	0	0	0	638	310	948	2322
Apprch %	48	0	52		44.3	55.7	0		0	0	0		0	67.3	32.7		
Total %	11.9	0	12.9	24.8	15.2	19.2	0	34.4	0	0	0	0	0	27.5	13.4	40.8	

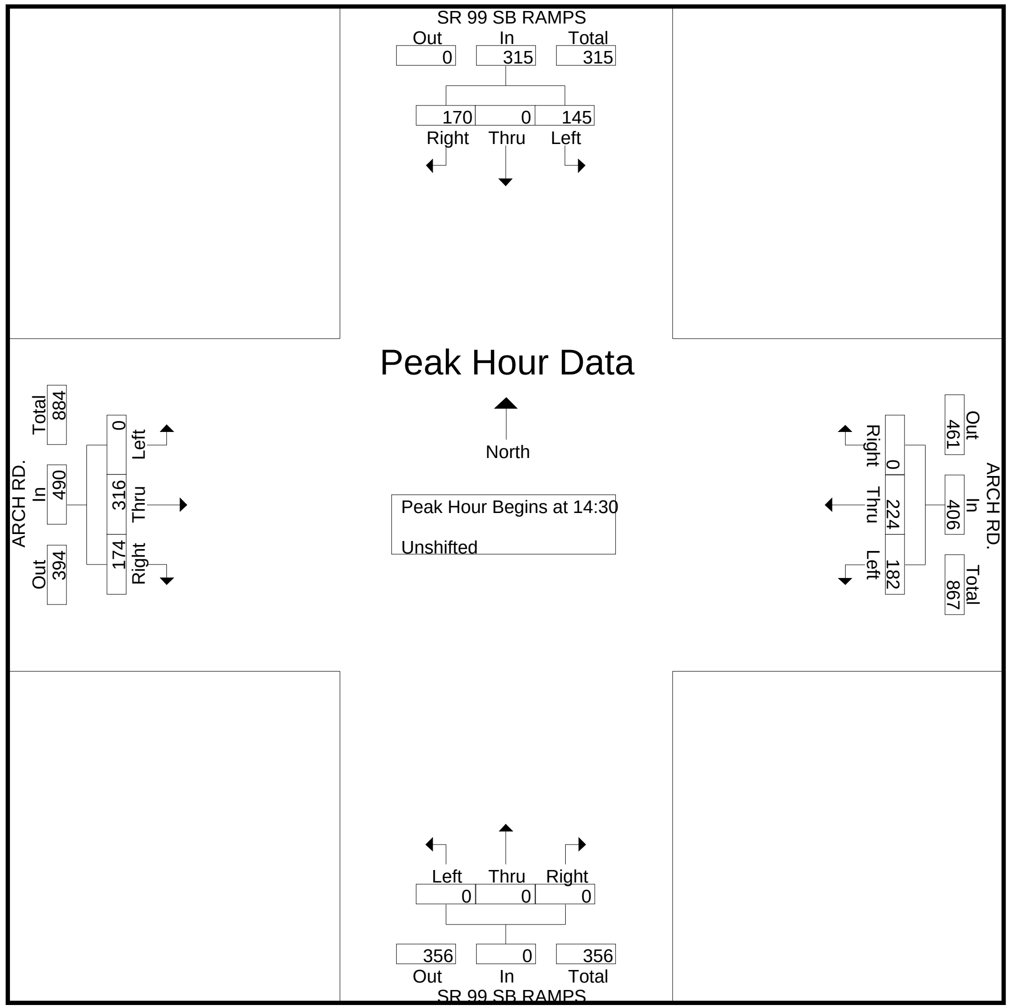
	SR 99 SB RAMPS Southbound				**ARCH RD. Westbound**				**SR 99 SB RAMPS Northbound**				**ARCH RD. Eastbound**				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 14:00 to 15:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 14:30																	
14:30	34	0	**53**	**87**	47	**72**	0	**119**	0	0	0	0	0	78	**54**	132	**338**
14:45	**42**	0	35	77	38	60	0	98	0	0	0	0	0	69	39	108	283
15:00	36	0	40	76	48	47	0	95	0	0	0	0	0	**103**	41	**144**	315
15:15	33	0	42	75	**49**	45	0	94	0	0	0	0	0	66	40	106	275
Total Volume	145	0	170	315	182	224	0	406	0	0	0	0	0	316	174	490	1211
% App. Total	46	0	54		44.8	55.2	0		0	0	0		0	64.5	35.5		
PHF	.863	.000	.802	.905	.929	.778	.000	.853	.000	.000	.000	.000	.000	.767	.806	.851	.896

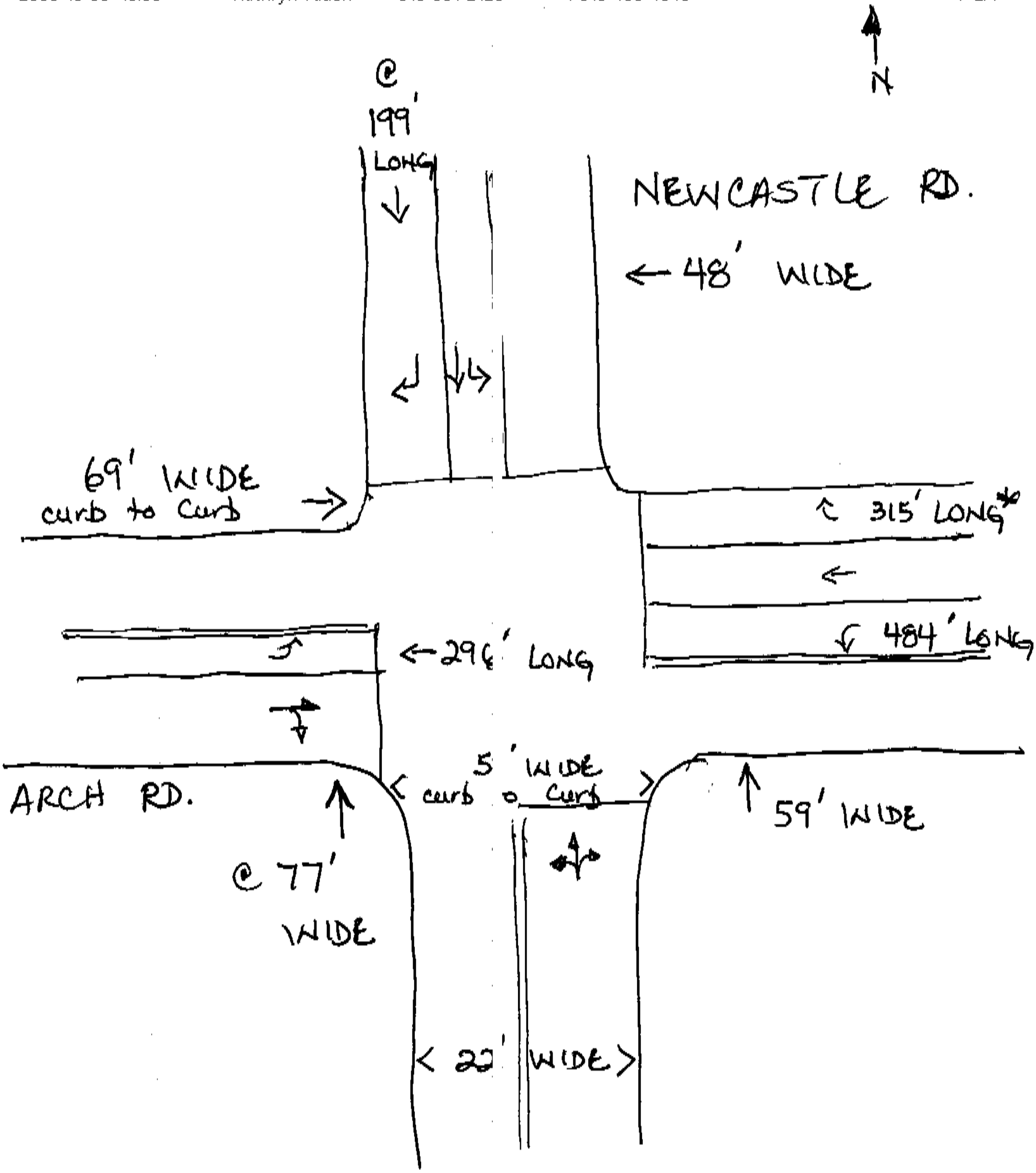
All Traffic Data

(916) 771-8700

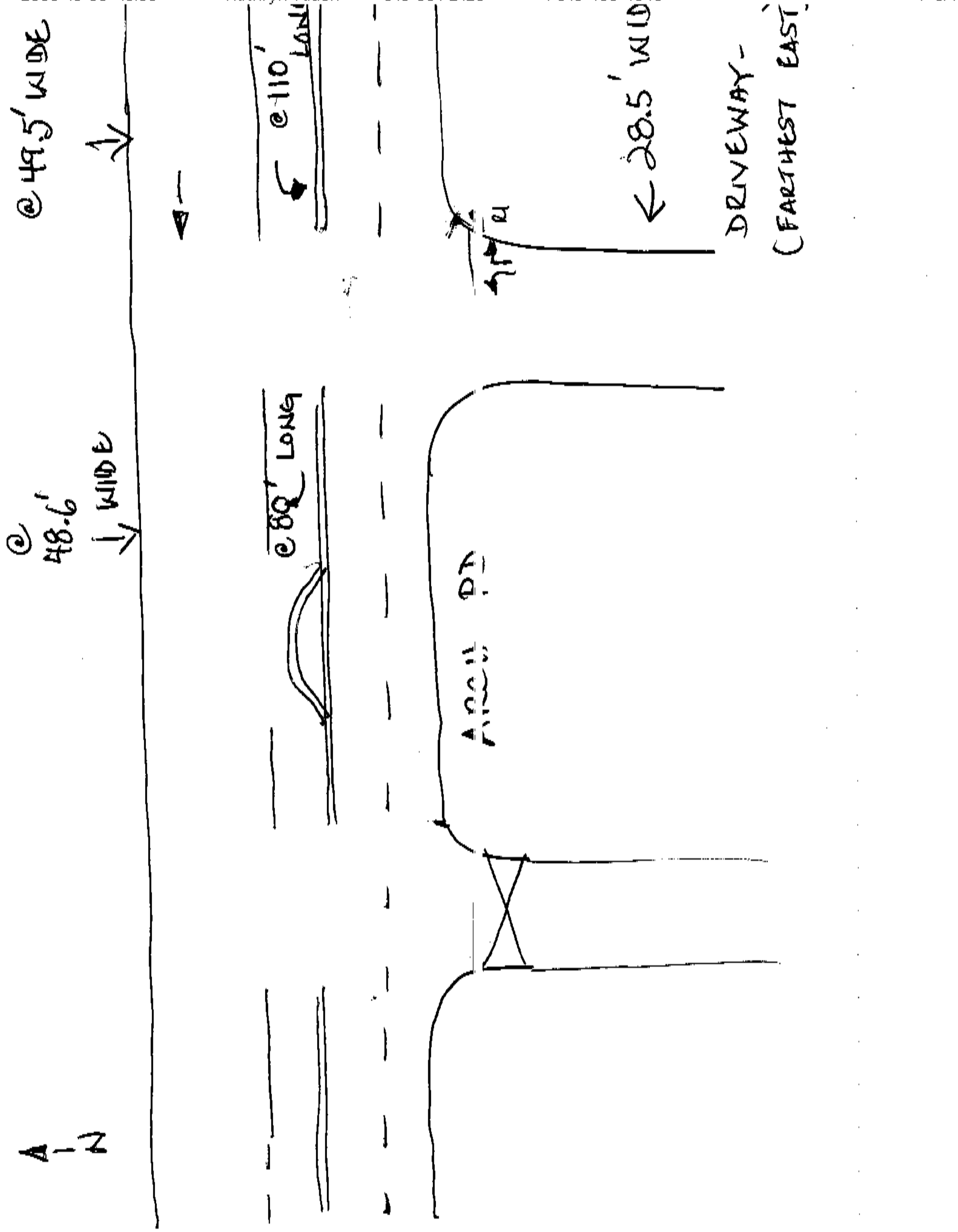
CITY OF STOCKTON

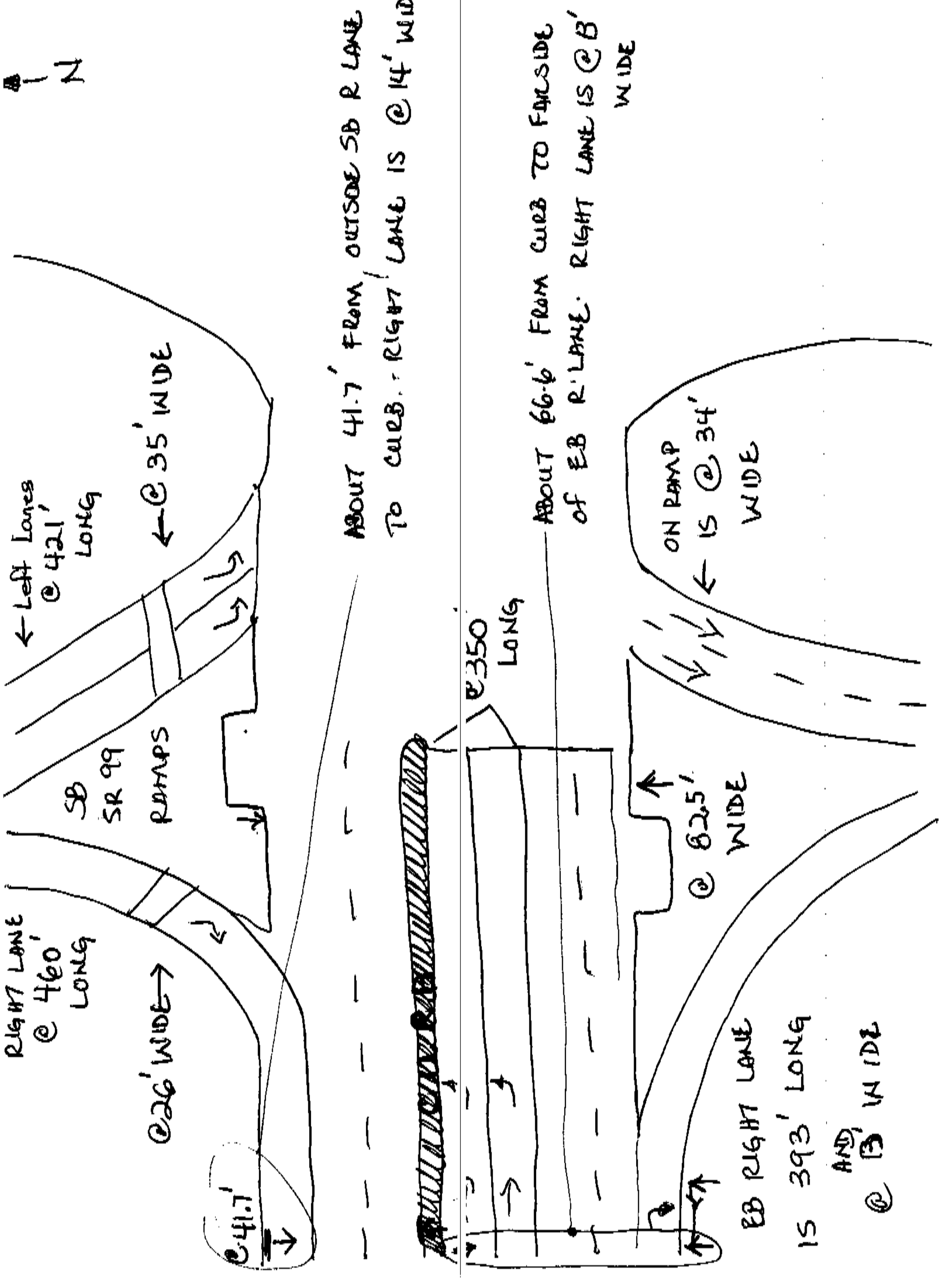
File Name : 10-7235-008 SB 99-ARCH
Site Code : 00000000
Start Date : 6/16/2010
Page No : 2

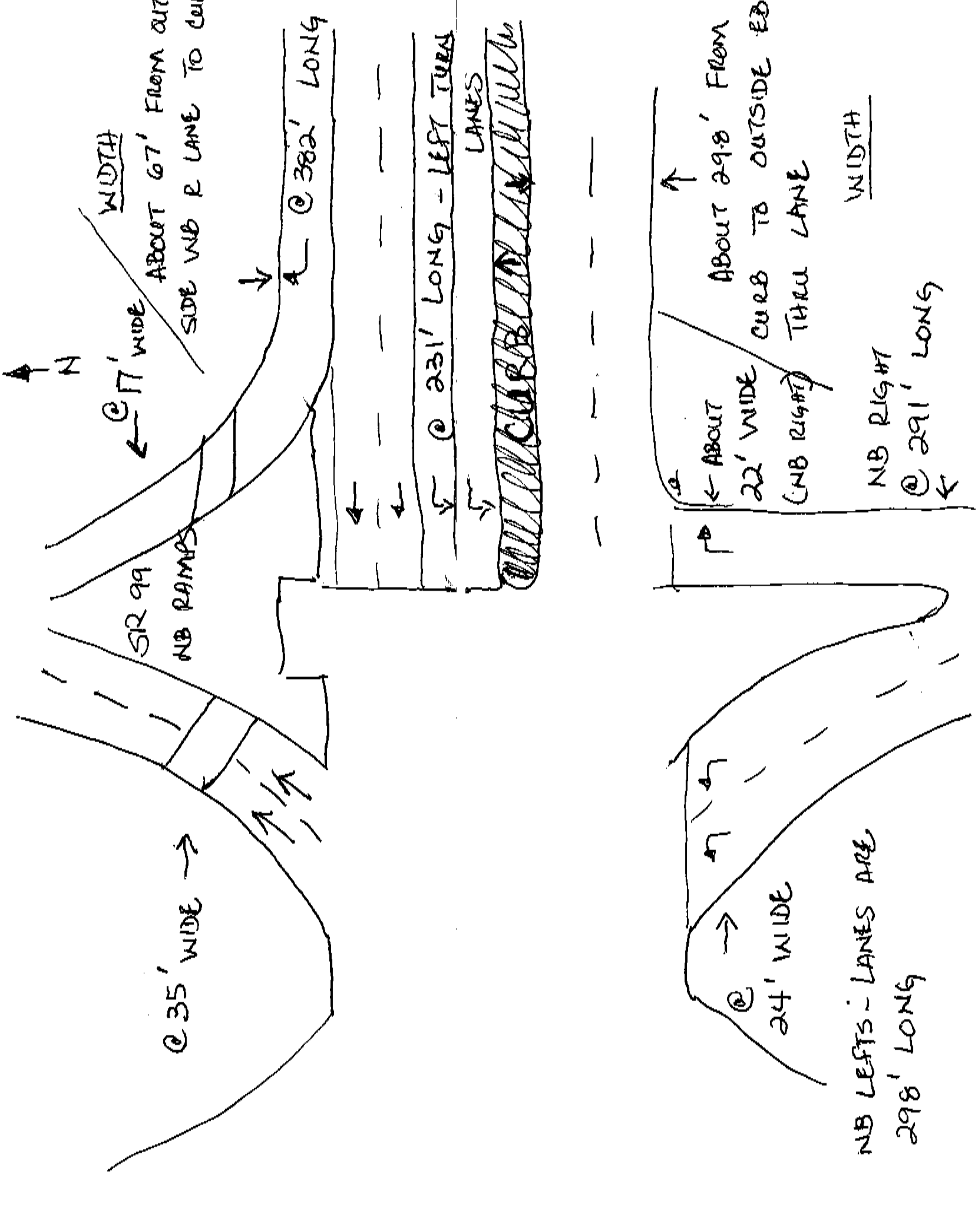


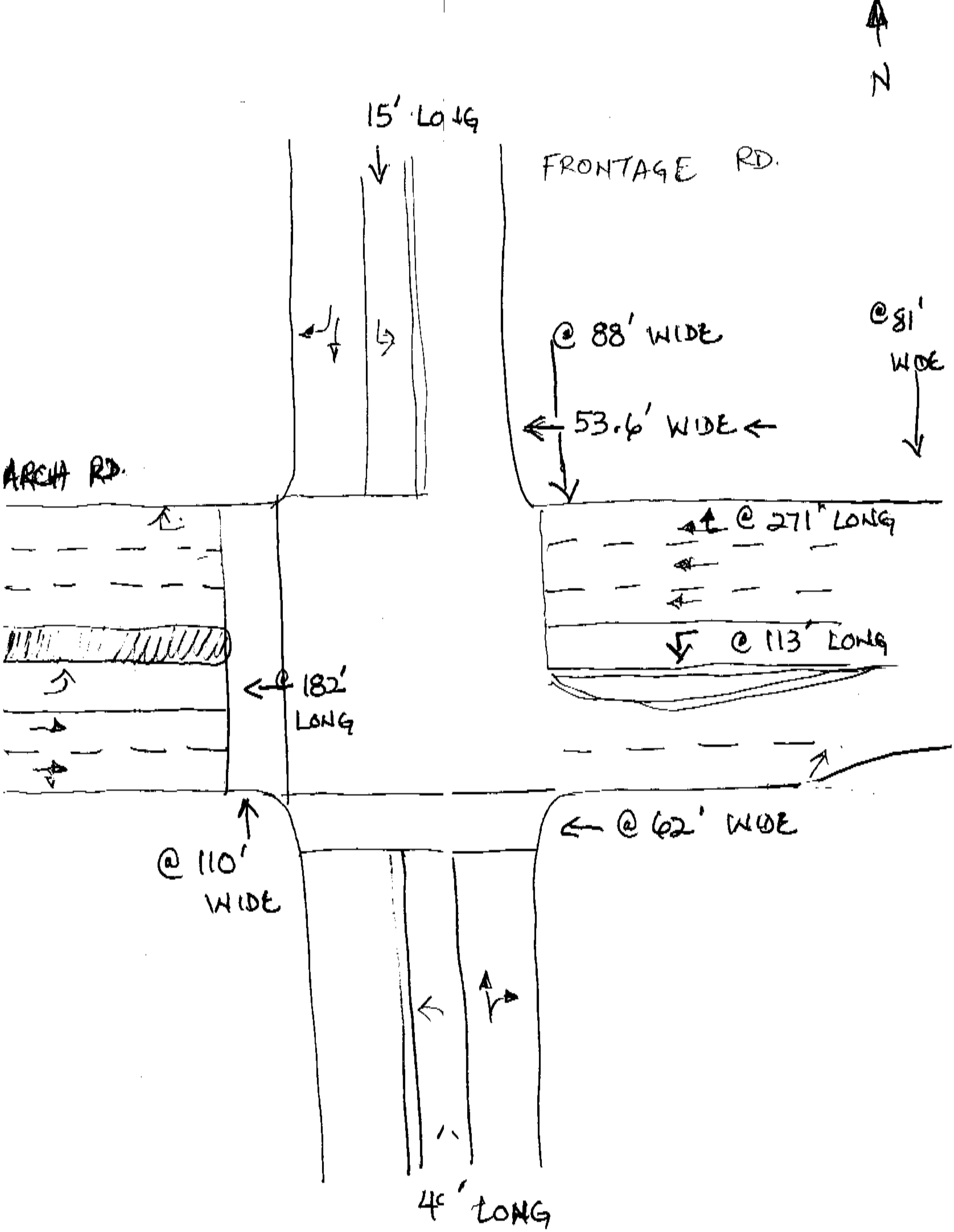


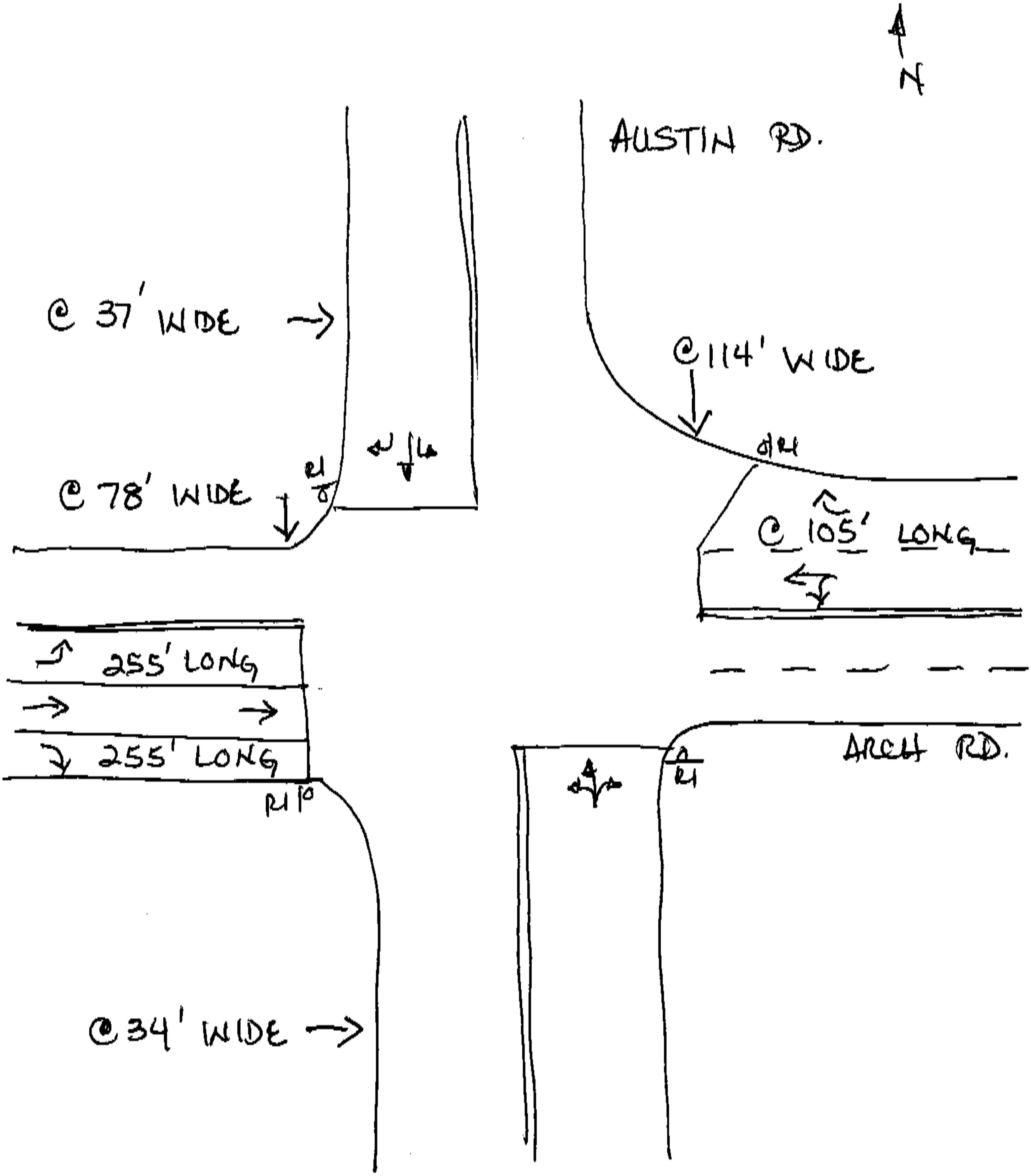
* WB RIGHT LANE IS NOT OPEN YET


@ 49.5' WIDE
@110' LONG
28.5' WIDE
DRIVEWAY - (FARTHEST EAST)
@ 48.6' WIDE
@80' LONG
N


N
← Left Lanes @ 421' LONG
← @ 35' WIDE
ABOUT 41.7' FROM OUTSIDE SB R LANE TO CURB. RIGHT LANE IS @ 14' WIDE
ABOUT 66.6' FROM CURB TO FARSIDE OF EB R' LANE. RIGHT LANE IS @ 13' WIDE
ON RAMP ← IS @ 34' WIDE
@ 350 LONG
SB SR 99 RAMPS
RIGHT LANE @ 460' LONG
@ 26' WIDE →
@ 82.5' WIDE
@ 41.7'
EB RIGHT LANE IS 393' LONG AND @ 13' WIDE


N
@ 17' WIDE
WIDTH
ABOUT 67' FROM OUTSIDE WB R LANE TO CURB
@ 382' LONG
@ 231' LONG - LEFT TURN LANES
CURB
ABOUT 29.8' FROM CURB TO OUTSIDE EB THRU LANE
WIDTH
ABOUT 22' WIDE (NB RIGHT)
NB RIGHT @ 291' LONG
SR 99 NB RAMPS
@ 35' WIDE
@ 24' WIDE
NB LEFTS - LANES ARE 298' LONG


N
15' LONG
FRONTAGE RD.
@ 88' WIDE
@ 81' WIDE
53.6' WIDE
ARCH RD.
@ 271' LONG
@ 113' LONG
@ 182' LONG
@ 110' WIDE
@ 62' WIDE
LONG


N
AUSTIN RD.
@ 37' WIDE
@ 114' WIDE
@ 78' WIDE
@ 105' LONG
255' LONG
255' LONG
ARCH RD.
@ 34' WIDE

APPENDIX E-2

Intersection Level of Service Analysis

Existing Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	176	167	95	187	282	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	182	103	203	307	275
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	191	182	103	203	307	275
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.2	12.2	5.8	9.8	9.6	9.6
Effective Green, g (s)	11.2	15.2	8.8	12.8	12.6	12.6
Actuated g/C Ratio	0.24	0.33	0.19	0.28	0.27	0.27
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	818	1044	581	928	825	847
v/s Ratio Prot	c0.06	0.06	0.03	c0.06		0.09
v/s Ratio Perm					c0.10	
v/c Ratio	0.23	0.17	0.18	0.22	0.37	0.32
Uniform Delay, d1	14.0	11.0	15.6	12.8	13.6	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.1	0.1	0.1	0.2	0.2
Delay (s)	14.2	11.0	15.8	12.9	13.8	13.5
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.6		13.9		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	46.1	Sum of lost time (s)	9.5
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	449	0	0	282	0	183
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	488	0	0	307	0	199
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			488		565	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			360		441	104
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	76
cM capacity (veh/h)			1137		519	820

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	244	244	77	77	77	77	199
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	199
cSH	1700	1700	1700	1700	1700	1700	820
Volume to Capacity	0.14	0.14	0.05	0.05	0.05	0.05	0.24
Queue Length 95th (ft)	0	0	0	0	0	0	24
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.8
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.8
Approach LOS							B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	303	115	13	139	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3046		1641	3847		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	3046		1641	3847		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	329	125	14	151	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	27	0	0	13	0	0	41	0	0	143	0
Lane Group Flow (vph)	251	427	0	14	155	0	127	27	0	24	39	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	17.3	23.4		1.8	7.9		9.9	14.2		2.5	6.8	
Effective Green, g (s)	17.3	23.4		1.8	7.9		9.9	14.2		2.5	6.8	
Actuated g/C Ratio	0.29	0.39		0.03	0.13		0.16	0.23		0.04	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	478	1178		49	502		279	386		53	178	
v/s Ratio Prot	c0.15	c0.14		0.01	0.04		c0.07	0.02		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	0.53	0.36		0.29	0.31		0.46	0.07		0.45	0.22	
Uniform Delay, d1	18.1	13.2		28.7	23.8		22.9	18.0		28.3	24.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.2	0.3		0.4	0.0		2.2	0.2	
Delay (s)	18.6	13.4		29.9	24.1		23.3	18.0		30.6	24.7	
Level of Service	B	B		C	C		C	B		C	C	
Approach Delay (s)		15.2			24.5			21.5			25.3	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	60.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	61	213	19	68	1	18	0	4	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.88		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1645		1770	1863	1583		1748				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.85				1.00
Satd. Flow (perm)	1770	1645		1770	1863	1583		1543				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	66	232	21	74	1	20	0	4	0	0	5
RTOR Reduction (vph)	0	82	0	0	0	0	0	3	0	0	0	4
Lane Group Flow (vph)	11	216	0	21	74	1	0	21	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Effective Green, g (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.03	0.55	0.55		0.26				0.26
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	21	881		48	1026	872		406				416
v/s Ratio Prot	0.01	c0.13		c0.01	0.04							
v/s Ratio Perm						0.00		c0.01				0.00
v/c Ratio	0.52	0.25		0.44	0.07	0.00		0.05				0.00
Uniform Delay, d1	45.0	11.4		43.9	9.6	9.3		25.3				24.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	10.4	0.7		2.3	0.1	0.0		0.2				0.0
Delay (s)	55.5	12.1		46.2	9.8	9.3		25.5				24.9
Level of Service	E	B		D	A	A		C				C
Approach Delay (s)		13.6			17.7			25.5			24.9	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	48	105	0	0	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	52	114	0	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				177	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				177	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1475				810	938

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	52	114	3
Volume Left	5	0	0	0
Volume Right	0	0	0	3
cSH	1475	1700	1700	938
Volume to Capacity	0.00	0.03	0.07	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	7.4	0.0	0.0	8.8
Lane LOS	A			A
Approach Delay (s)	0.7		0.0	8.8
Approach LOS				A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	76	0	0	83	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	0	0	90	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			83		128	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			83		128	41
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1513		854	1021

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	55	28	30	60	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1513	1700	1700
Volume to Capacity	0.03	0.02	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	76	0	0	83	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	0	0	90	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			83		128	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			83		128	41
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1513		854	1021

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	55	28	0	45	45	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.02	0.00	0.03	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):        0.105
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):        7.9
Optimal Cycle:         0                Level Of Service:                 A
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   30     4     9   33    40    23   27    24     0   25     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16   30     4     9   33    40    23   27    24     0   25     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    16   30     4     9   33    40    23   27    24     0   25     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   16   30     4     9   33    40    23   27    24     0   25     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   16   30     4     9   33    40    23   27    24     0   25     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.35 0.65  1.00  0.11 0.40  0.49  1.00 1.00  1.00  0.00 1.00  1.00
Final Sat.:   247  462   855    85  313   380   650  715   831     0  718   835
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.00  0.11 0.11  0.11  0.04 0.04  0.03  xxxx 0.03  0.00
Crit Moves:       ****                   ****        ****              ****
Delay/Veh:    8.0  8.0   6.8   8.0  8.0   8.0   8.3  7.8   7.0   0.0  7.7   6.9
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.0  8.0   6.8   8.0  8.0   8.0   8.3  7.8   7.0   0.0  7.7   6.9
LOS by Move:   A    A     A     A    A     A     A    A     A     *    A     A
ApproachDel:       7.9              8.0               7.7              7.6
Delay Adj:        1.00             1.00              1.00             1.00
ApprAdjDel:        7.9              8.0               7.7              7.6
LOS by Appr:        A                A                 A                A
AllWayAvgQ:   0.1  0.1   0.0   0.1  0.1   0.1   0.0  0.0   0.0   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	50	57	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	54	62	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	62	62			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	62	62			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	880	1003	1541			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	54	62
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.03	0.04
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	216	245	182	224	142	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	266	198	243	154	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	235	266	198	243	154	95
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.6	9.2	8.4	9.0	7.3	7.3
Effective Green, g (s)	11.6	12.2	11.4	12.0	10.3	10.3
Actuated g/C Ratio	0.27	0.28	0.26	0.28	0.24	0.24
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	900	890	800	924	716	735
v/s Ratio Prot	c0.07	c0.08	0.07	0.07		0.03
v/s Ratio Perm					c0.05	
v/c Ratio	0.26	0.30	0.25	0.26	0.22	0.13
Uniform Delay, d1	12.5	12.2	12.6	12.2	13.3	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.1	0.1
Delay (s)	12.7	12.4	12.8	12.4	13.4	13.1
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.5		12.5		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	5.2
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	387	0	0	406	0	152
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	0	0	441	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			421		531	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			338		452	121
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	80
cM capacity (veh/h)			1180		519	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	210	210	110	110	110	110	165
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	165
cSH	1700	1700	1700	1700	1700	1700	813
Volume to Capacity	0.12	0.12	0.06	0.06	0.06	0.06	0.20
Queue Length 95th (ft)	0	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.6
Approach LOS							B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	153	124	20	256	30	137	26	22	14	20	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2986		1641	3848		1703	1734		1289	1584	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2986		1641	3848		1703	1734		1289	1584	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	166	135	22	278	33	149	28	24	15	22	195
RTOR Reduction (vph)	0	94	0	0	13	0	0	17	0	0	172	0
Lane Group Flow (vph)	142	207	0	22	298	0	149	35	0	15	45	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Effective Green, g (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Actuated g/C Ratio	0.17	0.30		0.04	0.17		0.23	0.30		0.05	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	898		61	640		398	527		58	184	
v/s Ratio Prot	c0.08	0.07		0.01	c0.08		c0.09	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.50	0.23		0.36	0.47		0.37	0.07		0.26	0.24	
Uniform Delay, d1	22.3	15.6		28.0	22.4		19.1	14.7		27.4	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.3	0.4		0.2	0.0		0.9	0.3	
Delay (s)	22.8	15.7		29.3	22.8		19.4	14.7		28.3	24.2	
Level of Service	C	B		C	C		B	B		C	C	
Approach Delay (s)		18.0			23.2			18.2			24.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	74	12	3	85	6	99	0	13	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1824		1770	1863	1583		1756				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.75				1.00
Satd. Flow (perm)	1770	1824		1770	1863	1583		1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	80	13	3	92	7	108	0	14	0	0	40
RTOR Reduction (vph)	0	4	0	0	0	3	0	4	0	0	0	29
Lane Group Flow (vph)	12	89	0	3	92	4	0	118	0	0	0	11
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Effective Green, g (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.01	0.54	0.54		0.27				0.27
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	22	987		18	1003	853		371				427
v/s Ratio Prot	c0.01	0.05		0.00	c0.05							
v/s Ratio Perm						0.00		c0.09				0.01
v/c Ratio	0.55	0.09		0.17	0.09	0.00		0.32				0.03
Uniform Delay, d1	43.9	9.9		43.8	10.0	9.5		26.0				24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	14.0	0.2		1.6	0.2	0.0		2.3				0.0
Delay (s)	57.8	10.1		45.4	10.2	9.5		28.3				24.0
Level of Service	E	B		D	B	A		C				C
Approach Delay (s)		15.5			11.2			28.3			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	91	90	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0		5.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00		0.86	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	1863	1863		1611	
Flt Permitted	0.95	1.00	1.00		1.00	
Satd. Flow (perm)	1770	1863	1863		1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	99	98	0	0	2
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1	99	98	0	0	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	115.9	109.7		1.1	
Effective Green, g (s)	1.2	115.9	109.7		1.1	
Actuated g/C Ratio	0.01	0.91	0.86		0.01	
Clearance Time (s)	5.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	17	1687	1597		14	
v/s Ratio Prot	0.00	c0.05	c0.05		c0.00	
v/s Ratio Perm						
v/c Ratio	0.06	0.06	0.06		0.00	
Uniform Delay, d1	62.8	0.6	1.4		62.9	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.5	0.1	0.1		0.0	
Delay (s)	64.3	0.7	1.5		62.9	
Level of Service	E	A	A		E	
Approach Delay (s)		1.3	1.5		62.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	0	92	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	0	100	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		149	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		149	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		828	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	66	33	33	67	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1492	1700	1700
Volume to Capacity	0.04	0.02	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	1	91	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	1	99	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		151	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		151	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		826	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	66	33	1	49	49	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1492	1700	1700	826
Volume to Capacity	0.04	0.02	0.00	0.03	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	7.4	0.0	0.0	9.4
Lane LOS			A			A
Approach Delay (s)	0.0		0.1			9.4
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #8 Austin/Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.072
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 0 1! 0 0			1 0 1 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	19	30	2	13	16	24	28	45	22	3	47	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	30	2	13	16	24	28	45	22	3	47	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	30	2	13	16	24	28	45	22	3	47	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	30	2	13	16	24	28	45	22	3	47	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	30	2	13	16	24	28	45	22	3	47	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.61	1.00	0.25	0.30	0.45	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	264	417	818	181	223	334	650	715	830	43	679	847
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.07	0.07	0.07	0.04	0.06	0.03	0.07	0.07	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.2			8.1			7.9			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			8.1			7.9			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	51	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	55	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	899	1025	1564			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	55	45
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	416	200	212	136	143	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	217	230	148	155	147
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	452	217	230	148	155	147
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	11.5	10.8	9.0	8.3	7.5	7.5
Effective Green, g (s)	14.5	13.8	12.0	11.3	10.5	10.5
Actuated g/C Ratio	0.32	0.30	0.26	0.25	0.23	0.23
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1066	954	798	825	692	710
v/s Ratio Prot	c0.13	c0.07	0.08	0.04		0.05
v/s Ratio Perm					c0.05	
v/c Ratio	0.42	0.23	0.29	0.18	0.22	0.21
Uniform Delay, d1	12.4	12.0	13.5	13.6	14.3	14.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.2	0.1	0.1	0.1
Delay (s)	12.6	12.1	13.7	13.7	14.5	14.4
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.5		13.7		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	5.2
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	343	0	0	354	0	120
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	373	0	0	385	0	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.99		0.99	0.99
vC, conflicting volume			373		469	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			337		434	148
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	84
cM capacity (veh/h)			1203		543	794

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	186	186	96	96	96	96	130
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	130
cSH	1700	1700	1700	1700	1700	1700	794
Volume to Capacity	0.11	0.11	0.06	0.06	0.06	0.06	0.16
Queue Length 95th (ft)	0	0	0	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.4
Approach LOS							B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	171	128	16	266	24	128	29	10	16	28	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2993		1641	3846		1703	1791		1289	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2993		1641	3846		1703	1791		1289	1587	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	186	139	17	289	26	139	32	11	17	30	214
RTOR Reduction (vph)	0	88	0	0	10	0	0	8	0	0	188	0
Lane Group Flow (vph)	170	237	0	17	305	0	139	35	0	17	56	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	14.7	22.6		2.4	10.3		10.3	14.8		2.8	7.3	
Effective Green, g (s)	14.7	22.6		2.4	10.3		10.3	14.8		2.8	7.3	
Actuated g/C Ratio	0.24	0.37		0.04	0.17		0.17	0.24		0.05	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	401	1105		64	647		287	433		59	189	
v/s Ratio Prot	c0.10	0.08		0.01	c0.08		c0.08	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.42	0.21		0.27	0.47		0.48	0.08		0.29	0.29	
Uniform Delay, d1	19.7	13.2		28.5	23.0		23.0	17.9		28.2	24.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.1		0.8	0.4		0.5	0.0		1.0	0.3	
Delay (s)	19.9	13.3		29.4	23.4		23.5	18.0		29.2	24.9	
Level of Service	B	B		C	C		C	B		C	C	
Approach Delay (s)		15.6			23.7			22.2			25.2	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	61.2	Sum of lost time (s)	18.6
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	101	16	0	63	0	118	0	15	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0				5.0
Lane Util. Factor		1.00			1.00			1.00				1.00
Frt		0.98			1.00			0.98				0.85
Flt Protected		1.00			1.00			0.96				1.00
Satd. Flow (prot)		1825			1863			1757				1583
Flt Permitted		1.00			1.00			0.75				1.00
Satd. Flow (perm)		1825			1863			1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	110	17	0	68	0	128	0	16	0	0	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	4	0	0	0	1
Lane Group Flow (vph)	0	124	0	0	68	0	0	140	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)		48.0			48.0			24.0				24.0
Effective Green, g (s)		48.0			48.0			24.0				24.0
Actuated g/C Ratio		0.58			0.58			0.29				0.29
Clearance Time (s)		6.0			6.0			5.0				5.0
Vehicle Extension (s)		6.0			6.0			2.0				2.0
Lane Grp Cap (vph)		1055			1077			398				458
v/s Ratio Prot		c0.07			0.04							
v/s Ratio Perm								c0.10				0.00
v/c Ratio		0.12			0.06			0.35				0.00
Uniform Delay, d1		7.9			7.7			23.4				21.0
Progression Factor		1.00			1.00			1.00				1.00
Incremental Delay, d2		0.2			0.1			2.4				0.0
Delay (s)		8.1			7.8			25.8				21.0
Level of Service		A			A			C				C
Approach Delay (s)		8.1			7.8			25.8			21.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.20		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	121	83	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	132	90	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	90				222	90
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	90				222	90
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1505				766	968

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	0	132	90	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.08	0.05	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0		0.0	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	0	0	68	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	0	0	74	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			129		166	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			129		166	65
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1454		808	986

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	86	43	25	49	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1454	1700	1700
Volume to Capacity	0.05	0.03	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	0	0	68	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	129	0	0	74	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			129		166	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			129		166	65
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1454		808	986

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	86	43	0	37	37	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.03	0.00	0.02	0.02	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

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                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):        0.076
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):        7.8
Optimal Cycle:          0                 Level Of Service:                 A
********************************************************************************
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:            Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:         0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12   25     1     6   14    16    51   42    25     2   39    18
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12   25     1     6   14    16    51   42    25     2   39    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12   25     1     6   14    16    51   42    25     2   39    18
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   12   25     1     6   14    16    51   42    25     2   39    18
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   12   25     1     6   14    16    51   42    25     2   39    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.32 0.68  1.00  0.17 0.39  0.44  1.00 1.00  1.00  0.05 0.95  1.00
Final Sat.:   222  462   816   123  287   327   668  735   858    36  699   863
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.05  0.00  0.05 0.05  0.05  0.08 0.06  0.03  0.06 0.06  0.02
Crit Moves:       ****        ****              ****                   ****
Delay/Veh:    8.1  8.1   6.9   8.0  8.0   8.0   8.4  7.8   6.9   7.8  7.8   6.9
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   8.1  8.1   6.9   8.0  8.0   8.0   8.4  7.8   6.9   7.8  7.8   6.9
LOS by Move:    A    A     A     A    A     A     A    A     A     A    A     A
ApproachDel:       8.1              8.0              7.9              7.5
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:        8.1              8.0              7.9              7.5
LOS by Appr:         A                A                A                A
AllWayAvgQ:   0.1  0.1   0.0   0.0  0.0   0.0   0.1  0.1   0.0   0.1  0.1   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	38	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	41	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	86	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	86	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	915	1025	1564			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	41	45
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.02	0.03
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Background Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	335	872	247	1063	1465	818
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	948	268	1155	1592	889
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	364	948	268	1155	1592	889
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	27.3	12.0	25.7	20.4	20.4
Effective Green, g (s)	16.6	30.3	15.0	28.7	23.4	23.4
Actuated g/C Ratio	0.21	0.39	0.19	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	715	1227	584	1227	903	927
v/s Ratio Prot	c0.11	0.30	0.09	c0.35		0.29
v/s Ratio Perm					c0.53	
v/c Ratio	0.51	0.77	0.46	0.94	1.76	0.96
Uniform Delay, d1	27.2	20.9	28.0	23.9	27.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	3.0	0.6	13.9	347.9	20.0
Delay (s)	27.8	23.9	28.6	37.9	375.3	47.0
Level of Service	C	C	C	D	F	D
Approach Delay (s)		25.0		36.1		
Approach LOS		C		D		

Intersection Summary			
HCM Average Control Delay	138.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	9.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2337	0	0	1316	0	384
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2540	0	0	1430	0	417
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.46		0.46	0.46
vC, conflicting volume			2540		2898	1270
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2005		2779	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	11
cM capacity (veh/h)			130		7	469

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1270	1270	358	358	358	358	417
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	417
cSH	1700	1700	1700	1700	1700	1700	469
Volume to Capacity	0.75	0.75	0.21	0.21	0.21	0.21	0.89
Queue Length 95th (ft)	0	0	0	0	0	0	243
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	48.7
Lane LOS							E
Approach Delay (s)	0.0		0.0				48.7
Approach LOS							E

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2415	8	13	1810	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4509		1641	3843		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4509		1641	3843		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	2625	9	14	1967	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	1	0	0	46	0	0	149	0
Lane Group Flow (vph)	341	2634	0	14	1983	0	127	22	0	24	33	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Effective Green, g (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Actuated g/C Ratio	0.20	0.64		0.01	0.45		0.09	0.13		0.03	0.07	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	329	2889		15	1741		148	208		43	117	
v/s Ratio Prot	c0.20	0.58		0.01	c0.52		c0.07	0.01		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	1.04	0.91		0.93	1.14		0.86	0.10		0.56	0.28	
Uniform Delay, d1	39.4	15.2		48.5	26.8		44.2	37.9		46.6	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.4	4.9		195.4	70.2		34.8	0.1		8.6	0.5	
Delay (s)	98.7	20.1		243.9	97.0		78.9	38.0		55.2	43.4	
Level of Service	F	C		F	F		E	D		E	D	
Approach Delay (s)		29.1			98.0			64.6			44.8	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	56.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1834	237	23	1643	21	39	20	22	20	20	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)	1770	3478		1770	3532			1752			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.75	1.00
Satd. Flow (perm)	1770	3478		1770	3532			1482			1390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	1993	258	25	1786	23	42	22	24	22	22	27
RTOR Reduction (vph)	0	8	0	0	1	0	0	11	0	0	0	25
Lane Group Flow (vph)	33	2243	0	25	1808	0	0	77	0	0	44	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2735		34	2742			88			82	94
v/s Ratio Prot	c0.02	c0.64		0.01	0.51							
v/s Ratio Perm								c0.05			0.03	0.00
v/c Ratio	0.63	0.82		0.74	0.66			0.87			0.54	0.02
Uniform Delay, d1	56.9	7.6		57.8	6.1			55.3			54.2	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.1	2.9		51.4	1.3			65.2			3.4	0.0
Delay (s)	74.0	10.5		109.2	7.3			120.5			57.5	52.5
Level of Service	E	B		F	A			F			E	D
Approach Delay (s)		11.4			8.7			120.5			55.6	
Approach LOS		B			A			F			E	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1757	91	17	1636	0	58	0	11	0	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3513			3537			1749			1611	
Flt Permitted	0.95	1.00			0.90			0.76			1.00	
Satd. Flow (perm)	1770	3513			3192			1382			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1910	99	18	1778	0	63	0	12	0	0	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	6	0	0	3	0
Lane Group Flow (vph)	29	2006	0	0	1796	0	0	69	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	2.9	88.1			80.2			10.1			10.1	
Effective Green, g (s)	2.9	88.1			80.2			10.1			10.1	
Actuated g/C Ratio	0.03	0.81			0.73			0.09			0.09	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	47	2834			2344			128			149	
v/s Ratio Prot	0.02	c0.57									0.00	
v/s Ratio Perm					c0.56			c0.05				
v/c Ratio	0.62	0.71			0.77			0.54			0.00	
Uniform Delay, d1	52.6	4.8			8.8			47.3			45.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	21.7	1.5			2.5			4.3			0.0	
Delay (s)	74.3	6.3			11.3			51.6			45.0	
Level of Service	E	A			B			D			D	
Approach Delay (s)		7.2			11.3			51.6			45.0	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	109.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1807	0	0	1641	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1964	0	0	1784	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1964		2856	982
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1964		2856	982
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			292		13	248

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1309	655	595	1189	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	292	1700	1700
Volume to Capacity	0.77	0.39	0.00	0.70	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1807	0	0	1641	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1964	0	0	1784	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1964		2856	982
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1964		2856	982
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			292		13	248

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1309	655	0	892	892	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.77	0.39	0.00	0.52	0.52	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2499	269	154	0	161	48	243	94	11	190	94	3273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.95			0.97			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.97			0.97	1.00
Satd. Flow (prot)	3433	1761			1799			1792			1802	1583
Flt Permitted	0.95	1.00			1.00			0.51			0.63	1.00
Satd. Flow (perm)	3433	1761			1799			951			1183	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2716	292	167	0	175	52	264	102	12	207	102	3558
RTOR Reduction (vph)	0	17	0	0	9	0	0	1	0	0	0	434
Lane Group Flow (vph)	2716	442	0	0	218	0	0	377	0	0	309	3124
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	55.9			15.9			56.0			56.0	56.0
Effective Green, g (s)	36.0	55.9			15.9			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47			0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1031	821			239			444			553	739
v/s Ratio Prot	c0.79	0.25			c0.12							
v/s Ratio Perm								0.40			0.26	c1.97
v/c Ratio	2.63	0.54			0.91			0.85			0.56	4.23
Uniform Delay, d1	42.0	22.8			51.3			28.2			23.0	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	738.3	0.7			35.6			14.0			1.2	1455.3
Delay (s)	780.2	23.5			86.9			42.3			24.3	1487.2
Level of Service	F	C			F			D			C	F
Approach Delay (s)		670.8			86.9			42.3			1370.3	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	976.1	HCM Level of Service	F
HCM Volume to Capacity ratio	3.21		
Actuated Cycle Length (s)	119.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	243.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	177	114	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	192	124	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	316	124	124			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316	124	124			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	677	927	1463			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	192	124
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.11	0.07
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	12.6%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	975	1253	416	1057	959	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1362	452	1149	1042	383
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	1362	452	1149	1042	383
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.3	17.8	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.3	20.8	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1277	704	1066	785	806
v/s Ratio Prot	c0.31	c0.43	0.15	0.34		0.12
v/s Ratio Perm					c0.35	
v/c Ratio	1.00	1.07	0.64	1.08	1.33	0.48
Uniform Delay, d1	30.8	26.9	31.2	30.6	33.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	45.0	2.0	51.1	156.1	0.3
Delay (s)	57.7	71.8	33.2	81.7	189.4	28.4
Level of Service	E	E	C	F	F	C
Approach Delay (s)		65.7		68.0		
Approach LOS		E		E		

Intersection Summary			
HCM Average Control Delay	87.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2211	0	0	1477	0	483
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2403	0	0	1605	0	525
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.36		0.36	0.36
vC, conflicting volume			2403		2805	1202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1356		2462	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			183		9	368

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1202	1202	401	401	401	401	525
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	525
cSH	1700	1700	1700	1700	1700	1700	368
Volume to Capacity	0.71	0.71	0.24	0.24	0.24	0.24	1.43
Queue Length 95th (ft)	0	0	0	0	0	0	673
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	235.0
Lane LOS							F
Approach Delay (s)	0.0		0.0				235.0
Approach LOS							F

Intersection Summary			
Average Delay	27.2		
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2313	124	20	2454	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4486		1641	3843		1703	1734		1289	1580	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4486		1641	3843		1703	1734		1289	1580	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2514	135	22	2667	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	4	0	0	1	0	0	21	0	0	208	0
Lane Group Flow (vph)	24	2645	0	22	2699	0	41	31	0	15	76	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Effective Green, g (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Actuated g/C Ratio	0.06	0.63		0.02	0.58		0.05	0.12		0.03	0.10	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	101	2811		31	2248		91	217		34	154	
v/s Ratio Prot	c0.01	0.59		c0.01	c0.70		c0.02	0.02		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.24	0.94		0.71	1.20		0.45	0.14		0.44	0.50	
Uniform Delay, d1	40.9	15.5		44.6	18.9		41.9	35.6		43.8	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	7.3		46.1	94.9		1.3	0.1		3.3	0.9	
Delay (s)	41.3	22.8		90.7	113.8		43.2	35.7		47.1	40.0	
Level of Service	D	C		F	F		D	D		D	D	
Approach Delay (s)		22.9			113.6			39.0			40.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	66.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1824	31	27	2033	26	74	20	22	20	20	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3530		1770	3533			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.79	1.00
Satd. Flow (perm)	1770	3530		1770	3533			1417			1473	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	1983	34	29	2210	28	80	22	24	22	22	62
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	0	58
Lane Group Flow (vph)	34	2016	0	29	2237	0	0	119	0	0	44	4
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2776		34	2743			84			87	94
v/s Ratio Prot	c0.02	0.57		0.02	c0.63							
v/s Ratio Perm								c0.08			0.03	0.00
v/c Ratio	0.65	0.73		0.85	0.82			1.42			0.51	0.04
Uniform Delay, d1	56.9	6.3		57.9	8.1			55.8			54.1	52.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	20.3	1.7		93.1	2.8			245.5			1.7	0.1
Delay (s)	77.2	8.0		151.1	10.9			301.3			55.8	52.6
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		9.1			12.7			301.3			53.9	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	20.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1789	66	12	1954	0	118	0	22	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3520			3538			1749			1611	
Flt Permitted	0.95	1.00			0.93			0.76			1.00	
Satd. Flow (perm)	1770	3520			3276			1383			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	1945	72	13	2124	0	128	0	24	0	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	2	0
Lane Group Flow (vph)	15	2015	0	0	2137	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	88.0			81.4			13.5			13.5	
Effective Green, g (s)	1.6	88.0			81.4			13.5			13.5	
Actuated g/C Ratio	0.01	0.78			0.72			0.12			0.12	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	25	2753			2370			166			193	
v/s Ratio Prot	0.01	c0.57									0.00	
v/s Ratio Perm					c0.65			c0.11				
v/c Ratio	0.60	0.73			0.90			0.88			0.00	
Uniform Delay, d1	55.1	6.2			12.4			48.7			43.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	33.2	1.8			6.1			37.0			0.0	
Delay (s)	88.3	8.0			18.5			85.7			43.6	
Level of Service	F	A			B			F			D	
Approach Delay (s)		8.6			18.5			85.7			43.6	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1818	0	0	1975	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1976	0	0	2147	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1976		3049	988
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1976		3049	988
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			289		10	246

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1317	659	716	1431	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	289	1700	1700
Volume to Capacity	0.77	0.39	0.00	0.84	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1818	0	1	1974	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1976	0	1	2146	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1976		3051	988
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1976		3051	988
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		89	100
cM capacity (veh/h)			289		10	246

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1317	659	1	1073	1073	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	289	1700	1700	10
Volume to Capacity	0.77	0.39	0.00	0.63	0.63	0.11
Queue Length 95th (ft)	0	0	0	0	0	7
Control Delay (s)	0.0	0.0	17.5	0.0	0.0	417.5
Lane LOS			C			F
Approach Delay (s)	0.0		0.0			417.5
Approach LOS						F

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1320	117	140	3	149	111	100	35	2	71	73	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1711		1770	1743			1794			1818	1583
Flt Permitted	0.95	1.00		0.59	1.00			0.71			0.80	1.00
Satd. Flow (perm)	3433	1711		1096	1743			1320			1492	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1435	127	152	3	162	121	109	38	2	77	79	1225
RTOR Reduction (vph)	0	36	0	0	23	0	0	1	0	0	0	439
Lane Group Flow (vph)	1435	243	0	3	260	0	0	148	0	0	156	786
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	798		146	232			616			696	739
v/s Ratio Prot	c0.42	0.14			c0.15							
v/s Ratio Perm				0.00				0.11			0.10	c0.50
v/c Ratio	1.39	0.30		0.02	1.12			0.24			0.22	1.06
Uniform Delay, d1	42.0	19.9		45.2	52.0			19.2			19.1	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	182.9	0.2		0.1	96.0			0.2			0.2	51.1
Delay (s)	224.9	20.1		45.2	148.0			19.4			19.2	83.1
Level of Service	F	C		D	F			B			B	F
Approach Delay (s)		191.6			147.0			19.4			75.9	
Approach LOS		F			F			B			E	

Intersection Summary			
HCM Average Control Delay	135.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	136	216	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	148	235	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	383	235	235			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	383	235	235			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	620	804	1333			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	148	235
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.09	0.14
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	1177	1217	449	978	971	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	488	1063	1055	437
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1279	1323	488	1063	1055	437
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.7	18.4	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.7	21.4	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.24	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1256	724	1066	785	806
v/s Ratio Prot	c0.38	c0.42	0.16	0.32		0.14
v/s Ratio Perm					c0.35	
v/c Ratio	1.20	1.05	0.67	1.00	1.34	0.54
Uniform Delay, d1	30.8	27.1	31.1	30.6	33.3	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	101.0	40.7	2.5	26.7	163.3	0.6
Delay (s)	131.8	67.8	33.6	57.3	196.6	29.3
Level of Service	F	E	C	E	F	C
Approach Delay (s)		99.3		49.8		
Approach LOS		F		D		

Intersection Summary			
HCM Average Control Delay	98.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2187	0	0	1437	0	455
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2377	0	0	1562	0	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.37		0.37	0.37
vC, conflicting volume			2377		2768	1189
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1315		2372	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			193		11	375

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1189	1189	390	390	390	390	495
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	495
cSH	1700	1700	1700	1700	1700	1700	375
Volume to Capacity	0.70	0.70	0.23	0.23	0.23	0.23	1.32
Queue Length 95th (ft)	0	0	0	0	0	0	575
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	190.6
Lane LOS							F
Approach Delay (s)	0.0		0.0				190.6
Approach LOS							F

Intersection Summary			
Average Delay	21.3		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2356	128	16	2491	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4486		1641	3843		1703	1791		1289	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4486		1641	3843		1703	1791		1289	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2561	139	17	2708	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	0	0	0	10	0	0	215	0
Lane Group Flow (vph)	49	2696	0	17	2734	0	30	33	0	17	98	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Effective Green, g (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Actuated g/C Ratio	0.09	0.64		0.02	0.57		0.02	0.08		0.05	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	146	2868		31	2195		38	142		69	175	
v/s Ratio Prot	c0.03	c0.60		0.01	c0.71		c0.02	0.02		c0.01	c0.06	
v/s Ratio Perm												
v/c Ratio	0.34	0.94		0.55	1.25		0.79	0.23		0.25	0.56	
Uniform Delay, d1	38.3	14.6		43.4	19.1		43.4	38.5		40.5	37.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	7.1		10.2	114.4		63.7	0.3		0.7	2.2	
Delay (s)	38.8	21.6		53.6	133.6		107.2	38.8		41.2	39.8	
Level of Service	D	C		D	F		F	D		D	D	
Approach Delay (s)		21.9			133.1			66.9			39.9	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	75.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1870	35	24	2035	20	92	20	24	20	20	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3529		1770	3534			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.82	1.00
Satd. Flow (perm)	1770	3529		1770	3534			1401			1520	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2033	38	26	2212	22	100	22	26	22	22	24
RTOR Reduction (vph)	0	1	0	0	0	0	0	7	0	0	0	23
Lane Group Flow (vph)	22	2070	0	26	2234	0	0	141	0	0	44	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2776		34	2744			83			90	94
v/s Ratio Prot	0.01	0.59		c0.01	c0.63							
v/s Ratio Perm								c0.10			0.03	0.00
v/c Ratio	0.42	0.75		0.76	0.81			1.70			0.49	0.02
Uniform Delay, d1	56.5	6.5		57.8	8.1			55.8			54.0	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.0	1.9		61.1	2.8			362.6			1.5	0.0
Delay (s)	58.5	8.4		118.9	10.8			418.3			55.5	52.5
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		8.9			12.1			418.3			54.5	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1839	66	12	1972	0	118	0	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			1.00				
Frt	1.00	0.99			1.00			0.98				
Flt Protected	0.95	1.00			1.00			0.96				
Satd. Flow (prot)	1770	3521			3538			1749				
Flt Permitted	0.95	1.00			0.92			0.95				
Satd. Flow (perm)	1770	3521			3272			1732				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1999	72	13	2143	0	128	0	24	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	14	2069	0	0	2156	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	88.0			81.4			13.5				
Effective Green, g (s)	1.6	88.0			81.4			13.5				
Actuated g/C Ratio	0.01	0.78			0.72			0.12				
Clearance Time (s)	5.0	6.0			6.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	25	2754			2367			208				
v/s Ratio Prot	0.01	c0.59										
v/s Ratio Perm					c0.66			c0.08				
v/c Ratio	0.56	0.75			0.91			0.70				
Uniform Delay, d1	55.1	6.5			12.6			47.6				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	25.6	1.9			6.7			10.2				
Delay (s)	80.7	8.4			19.3			57.8				
Level of Service	F	A			B			E				
Approach Delay (s)		8.9			19.3			57.8			0.0	
Approach LOS		A			B			E			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	0	0	1976	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	0	0	2148	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2028		3102	1014
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2028		3102	1014
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			276		9	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1352	676	716	1432	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	276	1700	1700
Volume to Capacity	0.80	0.40	0.00	0.84	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	0	0	1976	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	0	0	2148	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2028		3102	1014
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2028		3102	1014
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			276		9	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1352	676	0	1074	1074	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.80	0.40	0.00	0.63	0.63	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1359	115	143	2	142	107	94	30	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1708		1770	1743			1794			1819	1583
Flt Permitted	0.95	1.00		0.59	1.00			0.71			0.82	1.00
Satd. Flow (perm)	3433	1708		1095	1743			1326			1519	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1477	125	155	2	154	116	102	33	1	71	78	1232
RTOR Reduction (vph)	0	37	0	0	23	0	0	0	0	0	0	443
Lane Group Flow (vph)	1477	243	0	2	247	0	0	136	0	0	149	789
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	797		146	232			619			709	739
v/s Ratio Prot	c0.43	0.14			c0.14							
v/s Ratio Perm				0.00				0.10			0.10	c0.50
v/c Ratio	1.43	0.30		0.01	1.07			0.22			0.21	1.07
Uniform Delay, d1	42.0	19.9		45.1	52.0			19.0			18.9	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	200.9	0.2		0.0	77.8			0.2			0.1	52.8
Delay (s)	242.9	20.1		45.2	129.8			19.2			19.1	84.8
Level of Service	F	C		D	F			B			B	F
Approach Delay (s)		207.4			129.2			19.2			77.7	
Approach LOS		F			F			B			E	

Intersection Summary			
HCM Average Control Delay	143.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	124	216	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	135	235	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	370	235	235			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	235	235			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	631	804	1333			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	135	235
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.08	0.14
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	14.7%	ICU Level of Service	A
Analysis Period (min)	15		

NCRF Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	335	923	253	1068	1530	818
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1003	275	1161	1663	889
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	364	1003	275	1161	1663	889
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	27.1	12.2	25.7	20.4	20.4
Effective Green, g (s)	16.6	30.1	15.2	28.7	23.4	23.4
Actuated g/C Ratio	0.21	0.38	0.19	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	715	1219	592	1227	903	927
v/s Ratio Prot	c0.11	0.32	0.09	c0.35		0.29
v/s Ratio Perm					c0.55	
v/c Ratio	0.51	0.82	0.46	0.95	1.84	0.96
Uniform Delay, d1	27.2	21.6	27.9	24.0	27.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	4.5	0.6	14.6	383.1	20.0
Delay (s)	27.8	26.2	28.5	38.6	410.5	47.0
Level of Service	C	C	C	D	F	D
Approach Delay (s)		26.6		36.6		
Approach LOS		C		D		

Intersection Summary			
HCM Average Control Delay	151.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	9.5
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2453	0	0	1334	0	433
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2666	0	0	1450	0	471
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.44		0.44	0.44
vC, conflicting volume			2666		3029	1333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2238		3066	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			100		4	444

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1333	1333	362	362	362	362	471
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	471
cSH	1700	1700	1700	1700	1700	1700	444
Volume to Capacity	0.78	0.78	0.21	0.21	0.21	0.21	1.06
Queue Length 95th (ft)	0	0	0	0	0	0	376
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	90.0
Lane LOS							F
Approach Delay (s)	0.0		0.0				90.0
Approach LOS							F

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2580	8	13	1828	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4509		1641	3843		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4509		1641	3843		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	2804	9	14	1987	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	1	0	0	46	0	0	149	0
Lane Group Flow (vph)	341	2813	0	14	2003	0	127	22	0	24	33	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Effective Green, g (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Actuated g/C Ratio	0.20	0.64		0.01	0.45		0.09	0.13		0.03	0.07	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	329	2889		15	1741		148	208		43	117	
v/s Ratio Prot	c0.20	0.62		0.01	c0.52		c0.07	0.01		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	1.04	0.97		0.93	1.15		0.86	0.10		0.56	0.28	
Uniform Delay, d1	39.4	16.8		48.5	26.8		44.2	37.9		46.6	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.4	11.2		195.4	75.0		34.8	0.1		8.6	0.5	
Delay (s)	98.7	28.0		243.9	101.8		78.9	38.0		55.2	43.4	
Level of Service	F	C		F	F		E	D		E	D	
Approach Delay (s)		35.7			102.8			64.6			44.8	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM Average Control Delay	61.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1999	237	23	1661	21	39	20	22	20	20	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)	1770	3483		1770	3533			1752			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.75	1.00
Satd. Flow (perm)	1770	3483		1770	3533			1482			1390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	2173	258	25	1805	23	42	22	24	22	22	27
RTOR Reduction (vph)	0	7	0	0	1	0	0	11	0	0	0	25
Lane Group Flow (vph)	33	2424	0	25	1827	0	0	77	0	0	44	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2739		34	2743			88			82	94
v/s Ratio Prot	c0.02	c0.70		0.01	0.52							
v/s Ratio Perm								c0.05			0.03	0.00
v/c Ratio	0.63	0.88		0.74	0.67			0.87			0.54	0.02
Uniform Delay, d1	56.9	8.9		57.8	6.1			55.3			54.2	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.1	4.6		51.4	1.3			65.2			3.4	0.0
Delay (s)	74.0	13.5		109.2	7.4			120.5			57.5	52.5
Level of Service	E	B		F	A			F			E	D
Approach Delay (s)		14.3			8.8			120.5			55.6	
Approach LOS		B			A			F			E	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1922	91	17	1653	0	58	0	11	0	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3515			3537			1749			1611	
Flt Permitted	0.95	1.00			0.89			0.76			1.00	
Satd. Flow (perm)	1770	3515			3161			1382			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	2089	99	18	1797	0	63	0	12	0	0	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	6	0	0	3	0
Lane Group Flow (vph)	29	2185	0	0	1815	0	0	69	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	3.0	89.1			81.1			9.8			9.8	
Effective Green, g (s)	3.0	89.1			81.1			9.8			9.8	
Actuated g/C Ratio	0.03	0.81			0.74			0.09			0.09	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	48	2850			2333			123			144	
v/s Ratio Prot	0.02	c0.62									0.00	
v/s Ratio Perm					0.57			c0.05				
v/c Ratio	0.60	0.77			0.78			0.56			0.00	
Uniform Delay, d1	52.9	5.2			8.9			48.0			45.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	19.6	2.0			2.6			5.4			0.0	
Delay (s)	72.5	7.2			11.5			53.4			45.6	
Level of Service	E	A			B			D			D	
Approach Delay (s)		8.1			11.5			53.4			45.6	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1835	137	0	1644	15	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1995	149	0	1787	16	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2143		2962	1072
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2143		2962	1072
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	99
cM capacity (veh/h)			248		11	216

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1330	814	596	1191	17
Volume Left	0	0	0	0	16
Volume Right	0	149	0	0	1
cSH	1700	1700	248	1700	12
Volume to Capacity	0.78	0.48	0.00	0.70	1.45
Queue Length 95th (ft)	0	0	0	0	73
Control Delay (s)	0.0	0.0	0.0	0.0	862.1
Lane LOS					F
Approach Delay (s)	0.0		0.0		862.1
Approach LOS					F

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1808	28	20	1641	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1965	30	22	1784	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1996		2916	998
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1996		2916	998
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		71	100
cM capacity (veh/h)			284		11	242

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1310	686	22	892	892	4
Volume Left	0	0	22	0	0	3
Volume Right	0	30	0	0	0	1
cSH	1700	1700	284	1700	1700	15
Volume to Capacity	0.77	0.40	0.08	0.52	0.52	0.30
Queue Length 95th (ft)	0	0	6	0	0	20
Control Delay (s)	0.0	0.0	18.7	0.0	0.0	330.7
Lane LOS			C			F
Approach Delay (s)	0.0		0.2			330.7
Approach LOS						F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2501	269	155	0	161	48	250	94	11	190	94	3286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.95			0.97			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.97			0.97	1.00
Satd. Flow (prot)	3433	1761			1799			1792			1802	1583
Flt Permitted	0.95	1.00			1.00			0.51			0.63	1.00
Satd. Flow (perm)	3433	1761			1799			948			1181	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2718	292	168	0	175	52	272	102	12	207	102	3572
RTOR Reduction (vph)	0	17	0	0	9	0	0	1	0	0	0	434
Lane Group Flow (vph)	2718	443	0	0	218	0	0	385	0	0	309	3138
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	55.9			15.9			56.0			56.0	56.0
Effective Green, g (s)	36.0	55.9			15.9			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47			0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1031	821			239			443			552	739
v/s Ratio Prot	c0.79	0.25			c0.12							
v/s Ratio Perm								0.41			0.26	c1.98
v/c Ratio	2.64	0.54			0.91			0.87			0.56	4.25
Uniform Delay, d1	42.0	22.8			51.3			28.7			23.1	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	739.1	0.7			35.6			16.4			1.2	1463.8
Delay (s)	781.1	23.5			86.9			45.0			24.3	1495.7
Level of Service	F	C			F			D			C	F
Approach Delay (s)		671.4			86.9			45.0			1378.6	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	980.3	HCM Level of Service	F
HCM Volume to Capacity ratio	3.22		
Actuated Cycle Length (s)	119.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	244.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	185	115	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	201	125	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	326	125	125			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	326	125	125			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	668	926	1462			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	201	125
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.12	0.07
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	13.1%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	975	1273	445	1089	985	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1384	484	1184	1071	383
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	1384	484	1184	1071	383
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.8	18.3	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.8	21.3	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.24	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1260	721	1066	785	806
v/s Ratio Prot	c0.31	c0.44	0.16	0.35		0.12
v/s Ratio Perm					c0.35	
v/c Ratio	1.00	1.10	0.67	1.11	1.36	0.48
Uniform Delay, d1	30.8	27.1	31.2	30.6	33.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	56.7	2.5	63.2	172.1	0.3
Delay (s)	57.7	83.8	33.6	93.8	205.4	28.4
Level of Service	E	F	C	F	F	C
Approach Delay (s)		72.5		76.4		
Approach LOS		E		E		

Intersection Summary			
HCM Average Control Delay	96.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2258	0	0	1577	0	502
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2454	0	0	1714	0	546
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.37		0.37	0.37
vC, conflicting volume			2454		2883	1227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1520		2682	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			160		7	374

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1227	1227	429	429	429	429	546
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	546
cSH	1700	1700	1700	1700	1700	1700	374
Volume to Capacity	0.72	0.72	0.25	0.25	0.25	0.25	1.46
Queue Length 95th (ft)	0	0	0	0	0	0	716
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	248.6
Lane LOS							F
Approach Delay (s)	0.0		0.0				248.6
Approach LOS							F

Intersection Summary			
Average Delay	28.8		
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2379	124	20	2554	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4487		1641	3843		1703	1734		1289	1580	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4487		1641	3843		1703	1734		1289	1580	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2586	135	22	2776	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	3	0	0	1	0	0	21	0	0	208	0
Lane Group Flow (vph)	24	2718	0	22	2808	0	41	31	0	15	76	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Effective Green, g (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Actuated g/C Ratio	0.06	0.63		0.02	0.58		0.05	0.12		0.03	0.10	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	101	2811		31	2248		91	217		34	154	
v/s Ratio Prot	c0.01	0.61		c0.01	c0.73		c0.02	0.02		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.24	0.97		0.71	1.25		0.45	0.14		0.44	0.50	
Uniform Delay, d1	40.9	16.2		44.6	18.9		41.9	35.6		43.8	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	10.3		46.1	116.0		1.3	0.1		3.3	0.9	
Delay (s)	41.3	26.5		90.7	135.0		43.2	35.7		47.1	40.0	
Level of Service	D	C		F	F		D	D		D	D	
Approach Delay (s)		26.6			134.6			39.0			40.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	78.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1890	31	27	2133	26	74	20	22	20	20	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3531		1770	3533			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.79	1.00
Satd. Flow (perm)	1770	3531		1770	3533			1417			1473	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2054	34	29	2318	28	80	22	24	22	22	62
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	0	58
Lane Group Flow (vph)	34	2087	0	29	2345	0	0	119	0	0	44	4
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2777		34	2743			84			87	94
v/s Ratio Prot	c0.02	0.59		0.02	c0.66							
v/s Ratio Perm								c0.08			0.03	0.00
v/c Ratio	0.65	0.75		0.85	0.86			1.42			0.51	0.04
Uniform Delay, d1	56.9	6.6		57.9	8.8			55.8			54.1	52.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	20.3	1.9		93.1	3.7			245.5			1.7	0.1
Delay (s)	77.2	8.5		151.1	12.5			301.3			55.8	52.6
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		9.6			14.2			301.3			53.9	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1855	66	12	2054	0	118	0	22	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3521			3538			1749			1611	
Flt Permitted	0.95	1.00			0.92			0.76			1.00	
Satd. Flow (perm)	1770	3521			3274			1383			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	2016	72	13	2233	0	128	0	24	0	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	2	0
Lane Group Flow (vph)	15	2086	0	0	2246	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	89.0			82.4			12.9			12.9	
Effective Green, g (s)	1.6	89.0			82.4			12.9			12.9	
Actuated g/C Ratio	0.01	0.79			0.73			0.11			0.11	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	25	2776			2390			158			184	
v/s Ratio Prot	0.01	c0.59									0.00	
v/s Ratio Perm					c0.69			c0.11				
v/c Ratio	0.60	0.75			0.94			0.92			0.00	
Uniform Delay, d1	55.3	6.2			13.1			49.5			44.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	33.2	1.9			8.9			49.2			0.0	
Delay (s)	88.5	8.1			22.0			98.7			44.3	
Level of Service	F	A			C			F			D	
Approach Delay (s)		8.7			22.0			98.7			44.3	
Approach LOS		A			C			F			D	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1829	55	0	1992	83	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1988	60	0	2165	90	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2048		3101	1024
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2048		3101	1024
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	97
cM capacity (veh/h)			271		9	233

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1325	722	722	1443	97
Volume Left	0	0	0	0	90
Volume Right	0	60	0	0	7
cSH	1700	1700	271	1700	10
Volume to Capacity	0.78	0.42	0.00	0.85	10.05
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	224.4		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1824	11	9	1974	18	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1983	12	10	2146	20	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1995		3081	997
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1995		3081	997
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		0	97
cM capacity (veh/h)			284		9	243

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1322	673	10	1073	1073	27
Volume Left	0	0	10	0	0	20
Volume Right	0	12	0	0	0	8
cSH	1700	1700	284	1700	1700	12
Volume to Capacity	0.78	0.40	0.03	0.63	0.63	2.21
Queue Length 95th (ft)	0	0	3	0	0	106
Control Delay (s)	0.0	0.0	18.1	0.0	0.0	1175.2
Lane LOS			C			F
Approach Delay (s)	0.0		0.1			1175.2
Approach LOS						F

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1328	117	144	3	149	111	103	35	2	71	73	1132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1708		1770	1743			1793			1818	1583
Flt Permitted	0.95	1.00		0.59	1.00			0.71			0.80	1.00
Satd. Flow (perm)	3433	1708		1091	1743			1315			1489	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1443	127	157	3	162	121	112	38	2	77	79	1230
RTOR Reduction (vph)	0	37	0	0	23	0	0	1	0	0	0	439
Lane Group Flow (vph)	1443	247	0	3	260	0	0	151	0	0	156	791
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	797		145	232			614			695	739
v/s Ratio Prot	c0.42	0.14			c0.15							
v/s Ratio Perm				0.00				0.12			0.10	c0.50
v/c Ratio	1.40	0.31		0.02	1.12			0.25			0.22	1.07
Uniform Delay, d1	42.0	19.9		45.2	52.0			19.3			19.1	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	186.3	0.2		0.1	96.0			0.2			0.2	53.4
Delay (s)	228.3	20.2		45.2	148.0			19.5			19.2	85.4
Level of Service	F	C		D	F			B			B	F
Approach Delay (s)		194.1			147.0			19.5			77.9	
Approach LOS		F			F			B			E	

Intersection Summary			
HCM Average Control Delay	137.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	139	221	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	151	240	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	391	240	240			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	391	240	240			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	613	799	1326			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	151	240
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.09	0.14
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	15.0%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	1177	1217	497	1030	971	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	540	1120	1055	437
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1279	1323	540	1120	1055	437
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.0	19.1	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.0	22.1	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.39	0.25	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1232	748	1066	785	806
v/s Ratio Prot	c0.38	c0.42	0.18	0.34		0.14
v/s Ratio Perm					c0.35	
v/c Ratio	1.20	1.07	0.72	1.05	1.34	0.54
Uniform Delay, d1	30.8	27.5	31.1	30.6	33.3	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	101.0	48.0	3.5	41.9	163.3	0.6
Delay (s)	131.8	75.5	34.6	72.5	196.6	29.3
Level of Service	F	E	C	E	F	C
Approach Delay (s)		103.2		60.2		
Approach LOS		F		E		

Intersection Summary			
HCM Average Control Delay	102.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	100.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2188	0	0	1601	0	455
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2378	0	0	1740	0	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.38		0.38	0.38
vC, conflicting volume			2378		2813	1189
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1353		2505	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			190		9	383

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1189	1189	435	435	435	435	495
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	495
cSH	1700	1700	1700	1700	1700	1700	383
Volume to Capacity	0.70	0.70	0.26	0.26	0.26	0.26	1.29
Queue Length 95th (ft)	0	0	0	0	0	0	557
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	179.0
Lane LOS							F
Approach Delay (s)	0.0		0.0				179.0
Approach LOS							F

Intersection Summary			
Average Delay	19.2		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2357	128	16	2655	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4486		1641	3843		1703	1791		1289	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4486		1641	3843		1703	1791		1289	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2562	139	17	2886	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	0	0	0	10	0	0	215	0
Lane Group Flow (vph)	49	2697	0	17	2912	0	30	33	0	17	98	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Effective Green, g (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Actuated g/C Ratio	0.09	0.64		0.02	0.57		0.02	0.08		0.05	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	146	2868		31	2195		38	142		69	175	
v/s Ratio Prot	c0.03	c0.60		0.01	c0.76		c0.02	0.02		c0.01	c0.06	
v/s Ratio Perm												
v/c Ratio	0.34	0.94		0.55	1.33		0.79	0.23		0.25	0.56	
Uniform Delay, d1	38.3	14.6		43.4	19.1		43.4	38.5		40.5	37.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	7.1		10.2	150.2		63.7	0.3		0.7	2.2	
Delay (s)	38.8	21.7		53.6	169.3		107.2	38.8		41.2	39.8	
Level of Service	D	C		D	F		F	D		D	D	
Approach Delay (s)		22.0			168.6			66.9			39.9	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	94.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1871	35	24	2199	20	92	20	24	20	20	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3529		1770	3534			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.82	1.00
Satd. Flow (perm)	1770	3529		1770	3534			1401			1520	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2034	38	26	2390	22	100	22	26	22	22	24
RTOR Reduction (vph)	0	1	0	0	0	0	0	7	0	0	0	23
Lane Group Flow (vph)	22	2071	0	26	2412	0	0	141	0	0	44	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2776		34	2744			83			90	94
v/s Ratio Prot	0.01	0.59		c0.01	c0.68							
v/s Ratio Perm								c0.10			0.03	0.00
v/c Ratio	0.42	0.75		0.76	0.88			1.70			0.49	0.02
Uniform Delay, d1	56.5	6.5		57.8	9.3			55.8			54.0	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.0	1.9		61.1	4.4			362.6			1.5	0.0
Delay (s)	58.5	8.4		118.9	13.7			418.3			55.5	52.5
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		8.9			14.9			418.3			54.5	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	25.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1840	66	12	2136	0	118	0	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			1.00				
Frt	1.00	0.99			1.00			0.98				
Flt Protected	0.95	1.00			1.00			0.96				
Satd. Flow (prot)	1770	3521			3538			1749				
Flt Permitted	0.95	1.00			0.93			0.95				
Satd. Flow (perm)	1770	3521			3279			1732				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2000	72	13	2322	0	128	0	24	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	14	2070	0	0	2335	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	91.0			84.4			11.0				
Effective Green, g (s)	1.6	91.0			84.4			11.0				
Actuated g/C Ratio	0.01	0.81			0.75			0.10				
Clearance Time (s)	5.0	6.0			6.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	25	2835			2449			169				
v/s Ratio Prot	0.01	c0.59										
v/s Ratio Perm					c0.71			c0.08				
v/c Ratio	0.56	0.73			0.95			0.86				
Uniform Delay, d1	55.4	5.2			12.6			50.3				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	25.6	1.7			10.1			33.5				
Delay (s)	81.0	6.9			22.7			83.8				
Level of Service	F	A			C			F				
Approach Delay (s)		7.4			22.7			83.8			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM Average Control Delay	17.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	1	0	2004	137	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	1	0	2178	149	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2029		3118	1015
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2029		3118	1015
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	96
cM capacity (veh/h)			276		9	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1352	677	726	1452	159
Volume Left	0	0	0	0	149
Volume Right	0	1	0	0	10
cSH	1700	1700	276	1700	9
Volume to Capacity	0.80	0.40	0.00	0.85	17.05
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	363.4		
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1875	0	0	1976	28	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2038	0	0	2148	30	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2038		3112	1019
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2038		3112	1019
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	95
cM capacity (veh/h)			273		9	235

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1359	679	0	1074	1074	42
Volume Left	0	0	0	0	0	30
Volume Right	0	0	0	0	0	12
cSH	1700	1700	1700	1700	1700	12
Volume to Capacity	0.80	0.40	0.00	0.63	0.63	3.49
Queue Length 95th (ft)	0	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS						F
Approach Delay (s)	0.0		0.0			Err
Approach LOS						F

Intersection Summary			
Average Delay	100.2		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1372	115	150	2	142	107	94	30	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1705		1770	1743			1794			1819	1583
Flt Permitted	0.95	1.00		0.58	1.00			0.71			0.82	1.00
Satd. Flow (perm)	3433	1705		1087	1743			1326			1519	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1491	125	163	2	154	116	102	33	1	71	78	1232
RTOR Reduction (vph)	0	39	0	0	23	0	0	0	0	0	0	443
Lane Group Flow (vph)	1491	249	0	2	247	0	0	136	0	0	149	789
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	796		145	232			619			709	739
v/s Ratio Prot	c0.43	0.15			c0.14							
v/s Ratio Perm				0.00				0.10			0.10	c0.50
v/c Ratio	1.45	0.31		0.01	1.07			0.22			0.21	1.07
Uniform Delay, d1	42.0	20.0		45.1	52.0			19.0			18.9	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	206.9	0.2		0.0	77.8			0.2			0.1	52.8
Delay (s)	248.9	20.2		45.2	129.8			19.2			19.1	84.8
Level of Service	F	C		D	F			B			B	F
Approach Delay (s)		211.9			129.2			19.2			77.7	
Approach LOS		F			F			B			E	

Intersection Summary			
HCM Average Control Delay	146.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	124	224	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	135	243	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	378	243	243			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	243	243			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	624	795	1323			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	135	243
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.08	0.14
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

DeWitt Nelson YCF
Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	335	930	253	1068	1538	818
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1011	275	1161	1672	889
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	364	1011	275	1161	1672	889
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	27.1	12.2	25.7	20.4	20.4
Effective Green, g (s)	16.6	30.1	15.2	28.7	23.4	23.4
Actuated g/C Ratio	0.21	0.38	0.19	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	715	1219	592	1227	903	927
v/s Ratio Prot	c0.11	0.32	0.09	c0.35		0.29
v/s Ratio Perm					c0.55	
v/c Ratio	0.51	0.83	0.46	0.95	1.85	0.96
Uniform Delay, d1	27.2	21.7	27.9	24.0	27.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	4.7	0.6	14.6	387.5	20.0
Delay (s)	27.8	26.4	28.5	38.6	414.9	47.0
Level of Service	C	C	C	D	F	D
Approach Delay (s)		26.8		36.6		
Approach LOS		C		D		

Intersection Summary			
HCM Average Control Delay	153.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	9.5
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2467	0	0	1334	0	438
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2682	0	0	1450	0	476
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.43		0.43	0.43
vC, conflicting volume			2682		3044	1341
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2267		3101	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			97		4	441

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1341	1341	362	362	362	362	476
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	476
cSH	1700	1700	1700	1700	1700	1700	441
Volume to Capacity	0.79	0.79	0.21	0.21	0.21	0.21	1.08
Queue Length 95th (ft)	0	0	0	0	0	0	394
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	96.7
Lane LOS							F
Approach Delay (s)	0.0		0.0				96.7
Approach LOS							F

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	102.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2599	8	13	1828	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4509		1641	3843		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4509		1641	3843		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	2825	9	14	1987	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	1	0	0	46	0	0	149	0
Lane Group Flow (vph)	341	2834	0	14	2003	0	127	22	0	24	33	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Effective Green, g (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Actuated g/C Ratio	0.20	0.64		0.01	0.45		0.09	0.13		0.03	0.07	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	329	2889		15	1741		148	208		43	117	
v/s Ratio Prot	c0.20	0.63		0.01	c0.52		c0.07	0.01		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	1.04	0.98		0.93	1.15		0.86	0.10		0.56	0.28	
Uniform Delay, d1	39.4	17.0		48.5	26.8		44.2	37.9		46.6	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.4	12.6		195.4	75.0		34.8	0.1		8.6	0.5	
Delay (s)	98.7	29.6		243.9	101.8		78.9	38.0		55.2	43.4	
Level of Service	F	C		F	F		E	D		E	D	
Approach Delay (s)		37.0			102.8			64.6			44.8	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM Average Control Delay	62.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	2018	237	23	1661	21	39	20	22	20	20	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.98		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)	1770	3483		1770	3533			1752			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.75	1.00
Satd. Flow (perm)	1770	3483		1770	3533			1482			1390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	2193	258	25	1805	23	42	22	24	22	22	27
RTOR Reduction (vph)	0	7	0	0	1	0	0	11	0	0	0	25
Lane Group Flow (vph)	33	2444	0	25	1827	0	0	77	0	0	44	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2739		34	2743			88			82	94
v/s Ratio Prot	c0.02	c0.70		0.01	0.52							
v/s Ratio Perm								c0.05			0.03	0.00
v/c Ratio	0.63	0.89		0.74	0.67			0.87			0.54	0.02
Uniform Delay, d1	56.9	9.1		57.8	6.1			55.3			54.2	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.1	4.9		51.4	1.3			65.2			3.4	0.0
Delay (s)	74.0	14.0		109.2	7.4			120.5			57.5	52.5
Level of Service	E	B		F	A			F			E	D
Approach Delay (s)		14.8			8.8			120.5			55.6	
Approach LOS		B			A			F			E	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	1942	91	17	1653	0	58	0	11	0	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3515			3537			1749			1611	
Flt Permitted	0.95	1.00			0.89			0.76			1.00	
Satd. Flow (perm)	1770	3515			3157			1382			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	2111	99	18	1797	0	63	0	12	0	0	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	6	0	0	3	0
Lane Group Flow (vph)	29	2207	0	0	1815	0	0	69	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	3.0	89.1			81.1			9.8			9.8	
Effective Green, g (s)	3.0	89.1			81.1			9.8			9.8	
Actuated g/C Ratio	0.03	0.81			0.74			0.09			0.09	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	48	2850			2330			123			144	
v/s Ratio Prot	0.02	c0.63									0.00	
v/s Ratio Perm					0.57			c0.05				
v/c Ratio	0.60	0.77			0.78			0.56			0.00	
Uniform Delay, d1	52.9	5.3			8.9			48.0			45.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	19.6	2.1			2.7			5.4			0.0	
Delay (s)	72.5	7.4			11.5			53.4			45.6	
Level of Service	E	A			B			D			D	
Approach Delay (s)		8.3			11.5			53.4			45.6	
Approach LOS		A			B			D			D	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1991	0	0	1659	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2164	0	0	1803	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2164		3066	1082
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2164		3066	1082
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			244		10	213

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1443	721	601	1202	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	244	1700	1700
Volume to Capacity	0.85	0.42	0.00	0.71	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1991	0	0	1659	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2164	0	0	1803	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2164		3066	1082
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2164		3066	1082
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			244		10	213

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1443	721	0	902	902	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.85	0.42	0.00	0.53	0.53	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2499	269	338	0	161	48	261	96	11	190	109	3273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.92			0.97			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.97			0.97	1.00
Satd. Flow (prot)	3433	1707			1799			1792			1805	1583
Flt Permitted	0.95	1.00			1.00			0.49			0.64	1.00
Satd. Flow (perm)	3433	1707			1799			916			1198	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2716	292	367	0	175	52	284	104	12	207	118	3558
RTOR Reduction (vph)	0	38	0	0	9	0	0	1	0	0	0	434
Lane Group Flow (vph)	2716	621	0	0	218	0	0	399	0	0	325	3124
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	55.9			15.9			56.0			56.0	56.0
Effective Green, g (s)	36.0	55.9			15.9			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47			0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1031	796			239			428			560	739
v/s Ratio Prot	c0.79	0.36			c0.12							
v/s Ratio Perm								0.44			0.27	c1.97
v/c Ratio	2.63	0.78			0.91			0.93			0.58	4.23
Uniform Delay, d1	42.0	26.8			51.3			30.2			23.4	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	738.3	5.0			35.6			27.1			1.5	1455.3
Delay (s)	780.2	31.8			86.9			57.3			24.9	1487.2
Level of Service	F	C			F			E			C	F
Approach Delay (s)		634.1			86.9			57.3			1364.8	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	948.9	HCM Level of Service	F
HCM Volume to Capacity ratio	3.21		
Actuated Cycle Length (s)	119.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	244.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	1	8	177	114	199
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1	9	192	124	216
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	442	232	340			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442	232	340			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	99			
cM capacity (veh/h)	569	807	1219			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	22	9	192	340
Volume Left	21	9	0	0
Volume Right	1	0	0	216
cSH	577	1219	1700	1700
Volume to Capacity	0.04	0.01	0.11	0.20
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	11.5	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.5	0.3		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	975	1282	440	1084	996	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1393	478	1178	1083	383
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	1393	478	1178	1083	383
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.9	18.2	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.9	21.2	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.24	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1263	717	1066	785	806
v/s Ratio Prot	c0.31	c0.44	0.16	0.35		0.12
v/s Ratio Perm					c0.36	
v/c Ratio	1.00	1.10	0.67	1.11	1.38	0.48
Uniform Delay, d1	30.8	27.1	31.2	30.6	33.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	58.4	2.4	61.0	178.8	0.3
Delay (s)	57.7	85.5	33.5	91.7	212.1	28.4
Level of Service	E	F	C	F	F	C
Approach Delay (s)		73.5		74.9		
Approach LOS		E		E		

Intersection Summary			
HCM Average Control Delay	97.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2278	0	0	1561	0	510
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2476	0	0	1697	0	554
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.37		0.37	0.37
vC, conflicting volume			2476		2900	1238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1574		2729	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			152		6	373

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1238	1238	424	424	424	424	554
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	554
cSH	1700	1700	1700	1700	1700	1700	373
Volume to Capacity	0.73	0.73	0.25	0.25	0.25	0.25	1.49
Queue Length 95th (ft)	0	0	0	0	0	0	743
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	260.4
Lane LOS							F
Approach Delay (s)	0.0		0.0				260.4
Approach LOS							F

Intersection Summary			
Average Delay	30.5		
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2407	124	20	2538	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4487		1641	3843		1703	1734		1289	1580	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4487		1641	3843		1703	1734		1289	1580	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2616	135	22	2759	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	3	0	0	1	0	0	21	0	0	208	0
Lane Group Flow (vph)	24	2748	0	22	2791	0	41	31	0	15	76	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Effective Green, g (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Actuated g/C Ratio	0.06	0.63		0.02	0.58		0.05	0.12		0.03	0.10	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	101	2811		31	2248		91	217		34	154	
v/s Ratio Prot	c0.01	0.61		c0.01	c0.73		c0.02	0.02		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.24	0.98		0.71	1.24		0.45	0.14		0.44	0.50	
Uniform Delay, d1	40.9	16.4		44.6	18.9		41.9	35.6		43.8	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	12.1		46.1	112.7		1.3	0.1		3.3	0.9	
Delay (s)	41.3	28.5		90.7	131.7		43.2	35.7		47.1	40.0	
Level of Service	D	C		F	F		D	D		D	D	
Approach Delay (s)		28.6			131.3			39.0			40.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	77.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1918	31	27	2117	26	74	20	22	20	20	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3531		1770	3533			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.79	1.00
Satd. Flow (perm)	1770	3531		1770	3533			1417			1473	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2085	34	29	2301	28	80	22	24	22	22	62
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	0	58
Lane Group Flow (vph)	34	2118	0	29	2328	0	0	119	0	0	44	4
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2777		34	2743			84			87	94
v/s Ratio Prot	c0.02	0.60		0.02	c0.66							
v/s Ratio Perm								c0.08			0.03	0.00
v/c Ratio	0.65	0.76		0.85	0.85			1.42			0.51	0.04
Uniform Delay, d1	56.9	6.8		57.9	8.7			55.8			54.1	52.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	20.3	2.0		93.1	3.5			245.5			1.7	0.1
Delay (s)	77.2	8.8		151.1	12.2			301.3			55.8	52.6
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		9.9			13.9			301.3			53.9	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1884	66	12	2038	0	118	0	22	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3521			3538			1749			1611	
Flt Permitted	0.95	1.00			0.92			0.76			1.00	
Satd. Flow (perm)	1770	3521			3269			1383			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	2048	72	13	2215	0	128	0	24	0	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	2	0
Lane Group Flow (vph)	15	2118	0	0	2228	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	89.0			82.4			12.9			12.9	
Effective Green, g (s)	1.6	89.0			82.4			12.9			12.9	
Actuated g/C Ratio	0.01	0.79			0.73			0.11			0.11	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	25	2776			2386			158			184	
v/s Ratio Prot	0.01	c0.60									0.00	
v/s Ratio Perm					c0.68			c0.11				
v/c Ratio	0.60	0.76			0.93			0.92			0.00	
Uniform Delay, d1	55.3	6.3			12.9			49.5			44.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	33.2	2.0			8.3			49.2			0.0	
Delay (s)	88.5	8.4			21.3			98.7			44.3	
Level of Service	F	A			C			F			D	
Approach Delay (s)		9.0			21.3			98.7			44.3	
Approach LOS		A			C			F			D	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	112.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1912	0	0	2059	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2078	0	0	2238	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2078		3197	1039
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2078		3197	1039
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			264		8	227

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1386	693	746	1492	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	264	1700	1700
Volume to Capacity	0.82	0.41	0.00	0.88	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1912	0	1	2058	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2078	0	1	2237	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2078		3199	1039
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2078		3199	1039
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	100
cM capacity (veh/h)			264		8	227

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1386	693	1	1118	1118	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	264	1700	1700	8
Volume to Capacity	0.82	0.41	0.00	0.66	0.66	0.14
Queue Length 95th (ft)	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	18.7	0.0	0.0	542.9
Lane LOS			C			F
Approach Delay (s)	0.0		0.0			542.9
Approach LOS						F

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1320	117	234	3	149	111	184	41	2	71	80	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.90		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1676		1770	1743			1788			1820	1583
Flt Permitted	0.95	1.00		0.54	1.00			0.63			0.78	1.00
Satd. Flow (perm)	3433	1676		998	1743			1175			1446	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1435	127	254	3	162	121	200	45	2	77	87	1225
RTOR Reduction (vph)	0	60	0	0	23	0	0	0	0	0	0	439
Lane Group Flow (vph)	1435	321	0	3	260	0	0	247	0	0	164	786
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	782		133	232			548			675	739
v/s Ratio Prot	c0.42	0.19			c0.15							
v/s Ratio Perm				0.00				0.21			0.11	c0.50
v/c Ratio	1.39	0.41		0.02	1.12			0.45			0.24	1.06
Uniform Delay, d1	42.0	21.1		45.2	52.0			21.6			19.2	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	182.9	0.4		0.1	96.0			0.6			0.2	51.1
Delay (s)	224.9	21.5		45.3	148.0			22.2			19.4	83.1
Level of Service	F	C		D	F			C			B	F
Approach Delay (s)		182.2			147.0			22.2			75.6	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	129.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	91	4	4	136	216	102
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	4	4	148	235	111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	447	290	346			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	447	290	346			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	99	100			
cM capacity (veh/h)	567	749	1213			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	103	4	148	346
Volume Left	99	4	0	0
Volume Right	4	0	0	111
cSH	573	1213	1700	1700
Volume to Capacity	0.18	0.00	0.09	0.20
Queue Length 95th (ft)	16	0	0	0
Control Delay (s)	12.7	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.7	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	1177	1217	503	1036	971	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	547	1126	1055	437
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1279	1323	547	1126	1055	437
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	31.9	19.2	25.7	20.4	20.4
Effective Green, g (s)	28.4	34.9	22.2	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.39	0.25	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1228	751	1066	785	806
v/s Ratio Prot	c0.38	c0.42	0.18	0.34		0.14
v/s Ratio Perm					c0.35	
v/c Ratio	1.20	1.08	0.73	1.06	1.34	0.54
Uniform Delay, d1	30.8	27.6	31.1	30.6	33.3	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	101.0	49.2	3.5	43.7	163.3	0.6
Delay (s)	131.8	76.8	34.7	74.3	196.6	29.3
Level of Service	F	E	C	E	F	C
Approach Delay (s)		103.9		61.4		
Approach LOS		F		E		

Intersection Summary			
HCM Average Control Delay	102.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2187	0	0	1621	0	455
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2377	0	0	1762	0	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.38		0.38	0.38
vC, conflicting volume			2377		2818	1189
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1355		2518	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			191		9	384

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1189	1189	440	440	440	440	495
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	495
cSH	1700	1700	1700	1700	1700	1700	384
Volume to Capacity	0.70	0.70	0.26	0.26	0.26	0.26	1.29
Queue Length 95th (ft)	0	0	0	0	0	0	555
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	177.4
Lane LOS							F
Approach Delay (s)	0.0		0.0				177.4
Approach LOS							F

Intersection Summary			
Average Delay	18.9		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2356	128	16	2675	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4486		1641	3843		1703	1791		1289	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4486		1641	3843		1703	1791		1289	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2561	139	17	2908	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	0	0	0	10	0	0	215	0
Lane Group Flow (vph)	49	2696	0	17	2934	0	30	33	0	17	98	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Effective Green, g (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Actuated g/C Ratio	0.09	0.64		0.02	0.57		0.02	0.08		0.05	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	146	2868		31	2195		38	142		69	175	
v/s Ratio Prot	c0.03	c0.60		0.01	c0.76		c0.02	0.02		c0.01	c0.06	
v/s Ratio Perm												
v/c Ratio	0.34	0.94		0.55	1.34		0.79	0.23		0.25	0.56	
Uniform Delay, d1	38.3	14.6		43.4	19.1		43.4	38.5		40.5	37.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	7.1		10.2	154.6		63.7	0.3		0.7	2.2	
Delay (s)	38.8	21.6		53.6	173.8		107.2	38.8		41.2	39.8	
Level of Service	D	C		D	F		F	D		D	D	
Approach Delay (s)		21.9			173.1			66.9			39.9	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	96.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1870	35	24	2219	20	92	20	24	20	20	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3529		1770	3534			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.82	1.00
Satd. Flow (perm)	1770	3529		1770	3534			1401			1520	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2033	38	26	2412	22	100	22	26	22	22	24
RTOR Reduction (vph)	0	1	0	0	0	0	0	7	0	0	0	23
Lane Group Flow (vph)	22	2070	0	26	2434	0	0	141	0	0	44	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2776		34	2744			83			90	94
v/s Ratio Prot	0.01	0.59		c0.01	c0.69							
v/s Ratio Perm								c0.10			0.03	0.00
v/c Ratio	0.42	0.75		0.76	0.89			1.70			0.49	0.02
Uniform Delay, d1	56.5	6.5		57.8	9.5			55.8			54.0	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.0	1.9		61.1	4.7			362.6			1.5	0.0
Delay (s)	58.5	8.4		118.9	14.2			418.3			55.5	52.5
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		8.9			15.3			418.3			54.5	
Approach LOS		A			B			F			D	

Intersection Summary			
HCM Average Control Delay	25.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1839	66	12	2156	0	118	0	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			1.00				
Frt	1.00	0.99			1.00			0.98				
Flt Protected	0.95	1.00			1.00			0.96				
Satd. Flow (prot)	1770	3521			3538			1749				
Flt Permitted	0.95	1.00			0.93			0.95				
Satd. Flow (perm)	1770	3521			3280			1732				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	1999	72	13	2343	0	128	0	24	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	14	2069	0	0	2356	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	91.0			84.4			11.0				
Effective Green, g (s)	1.6	91.0			84.4			11.0				
Actuated g/C Ratio	0.01	0.81			0.75			0.10				
Clearance Time (s)	5.0	6.0			6.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	25	2835			2450			169				
v/s Ratio Prot	0.01	c0.59										
v/s Ratio Perm					c0.72			c0.08				
v/c Ratio	0.56	0.73			0.96			0.86				
Uniform Delay, d1	55.4	5.2			12.8			50.3				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	25.6	1.7			11.2			33.5				
Delay (s)	81.0	6.9			24.0			83.8				
Level of Service	F	A			C			F				
Approach Delay (s)		7.4			24.0			83.8			0.0	
Approach LOS		A			C			F			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	0	0	2160	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	0	0	2348	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2028		3202	1014
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2028		3202	1014
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			276		8	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1352	676	783	1565	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	276	1700	1700
Volume to Capacity	0.80	0.40	0.00	0.92	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	0	0	2160	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	0	0	2348	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2028		3202	1014
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2028		3202	1014
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			276		8	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1352	676	0	1174	1174	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.80	0.40	0.00	0.69	0.69	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1359	115	143	2	142	107	278	44	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1708		1770	1743			1785			1819	1583
Flt Permitted	0.95	1.00		0.59	1.00			0.63			0.75	1.00
Satd. Flow (perm)	3433	1708		1095	1743			1182			1395	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1477	125	155	2	154	116	302	48	1	71	78	1232
RTOR Reduction (vph)	0	37	0	0	23	0	0	0	0	0	0	443
Lane Group Flow (vph)	1477	243	0	2	247	0	0	351	0	0	149	789
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	797		146	232			552			651	739
v/s Ratio Prot	c0.43	0.14			c0.14							
v/s Ratio Perm				0.00				0.30			0.11	c0.50
v/c Ratio	1.43	0.30		0.01	1.07			0.64			0.23	1.07
Uniform Delay, d1	42.0	19.9		45.1	52.0			24.3			19.1	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	200.9	0.2		0.0	77.8			2.4			0.2	52.8
Delay (s)	242.9	20.1		45.2	129.8			26.7			19.3	84.8
Level of Service	F	C		D	F			C			B	F
Approach Delay (s)		207.4			129.2			26.7			77.7	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	137.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	199	8	0	124	216	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	216	9	0	135	235	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	370	235	235			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370	235	235			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	99	100			
cM capacity (veh/h)	631	804	1333			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	225	0	135	235
Volume Left	216	0	0	0
Volume Right	9	0	0	0
cSH	636	1700	1700	1700
Volume to Capacity	0.35	0.00	0.08	0.14
Queue Length 95th (ft)	40	0	0	0
Control Delay (s)	13.7	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	13.7	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	29.5%	ICU Level of Service	A
Analysis Period (min)	15		

NCRF/DeWitt Nelson YCF Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	335	981	258	1074	1602	818
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1066	280	1167	1741	889
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	364	1066	280	1167	1741	889
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	27.0	12.3	25.7	20.4	20.4
Effective Green, g (s)	16.6	30.0	15.3	28.7	23.4	23.4
Actuated g/C Ratio	0.21	0.38	0.20	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	715	1215	596	1227	903	927
v/s Ratio Prot	c0.11	0.34	0.09	c0.35		0.29
v/s Ratio Perm					c0.58	
v/c Ratio	0.51	0.88	0.47	0.95	1.93	0.96
Uniform Delay, d1	27.2	22.4	27.9	24.1	27.4	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	7.4	0.6	15.4	421.7	20.0
Delay (s)	27.8	29.7	28.4	39.5	449.1	47.0
Level of Service	C	C	C	D	F	D
Approach Delay (s)		29.2		37.4		
Approach LOS		C		D		

Intersection Summary			
HCM Average Control Delay	167.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	9.5
Intersection Capacity Utilization	95.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2584	0	0	1352	0	486
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2809	0	0	1470	0	528
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.41		0.41	0.41
vC, conflicting volume			2809		3176	1404
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2533		3430	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			71		2	415

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1404	1404	367	367	367	367	528
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	528
cSH	1700	1700	1700	1700	1700	1700	415
Volume to Capacity	0.83	0.83	0.22	0.22	0.22	0.22	1.27
Queue Length 95th (ft)	0	0	0	0	0	0	570
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	168.1
Lane LOS							F
Approach Delay (s)	0.0		0.0				168.1
Approach LOS							F

Intersection Summary			
Average Delay	18.5		
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2764	8	13	1846	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4509		1641	3843		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4509		1641	3843		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	3004	9	14	2007	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	1	0	0	46	0	0	149	0
Lane Group Flow (vph)	341	3013	0	14	2023	0	127	22	0	24	33	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Effective Green, g (s)	19.3	62.8		0.9	44.4		8.5	12.4		3.3	7.2	
Actuated g/C Ratio	0.20	0.64		0.01	0.45		0.09	0.13		0.03	0.07	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	329	2889		15	1741		148	208		43	117	
v/s Ratio Prot	c0.20	0.67		0.01	c0.53		c0.07	0.01		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	1.04	1.04		0.93	1.16		0.86	0.10		0.56	0.28	
Uniform Delay, d1	39.4	17.6		48.5	26.8		44.2	37.9		46.6	42.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	59.4	29.3		195.4	79.8		34.8	0.1		8.6	0.5	
Delay (s)	98.7	46.9		243.9	106.6		78.9	38.0		55.2	43.4	
Level of Service	F	D		F	F		E	D		E	D	
Approach Delay (s)		52.2			107.5			64.6			44.8	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM Average Control Delay	71.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	18.6
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	2183	237	23	1679	21	39	20	22	20	20	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	0.99		1.00	1.00			0.96			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.98	1.00
Satd. Flow (prot)	1770	3487		1770	3533			1752			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.83			0.75	1.00
Satd. Flow (perm)	1770	3487		1770	3533			1482			1390	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	2373	258	25	1825	23	42	22	24	22	22	27
RTOR Reduction (vph)	0	7	0	0	1	0	0	11	0	0	0	25
Lane Group Flow (vph)	33	2624	0	25	1847	0	0	77	0	0	44	2
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2743		34	2743			88			82	94
v/s Ratio Prot	c0.02	c0.75		0.01	0.52							
v/s Ratio Perm								c0.05			0.03	0.00
v/c Ratio	0.63	0.96		0.74	0.67			0.87			0.54	0.02
Uniform Delay, d1	56.9	10.9		57.8	6.2			55.3			54.2	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	17.1	9.7		51.4	1.3			65.2			3.4	0.0
Delay (s)	74.0	20.6		109.2	7.6			120.5			57.5	52.5
Level of Service	E	C		F	A			F			E	D
Approach Delay (s)		21.3			8.9			120.5			55.6	
Approach LOS		C			A			F			E	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	2106	91	17	1671	0	58	0	11	0	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	0.99			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3517			3537			1749			1611	
Flt Permitted	0.95	1.00			0.88			0.76			1.00	
Satd. Flow (perm)	1770	3517			3123			1382			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	2289	99	18	1816	0	63	0	12	0	0	3
RTOR Reduction (vph)	0	3	0	0	0	0	0	6	0	0	3	0
Lane Group Flow (vph)	29	2385	0	0	1834	0	0	69	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	2.4	90.1			82.7			9.4			9.4	
Effective Green, g (s)	2.4	90.1			82.7			9.4			9.4	
Actuated g/C Ratio	0.02	0.82			0.75			0.09			0.09	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	38	2868			2337			118			137	
v/s Ratio Prot	0.02	c0.68									0.00	
v/s Ratio Perm					0.59			c0.05				
v/c Ratio	0.76	0.83			0.78			0.58			0.00	
Uniform Delay, d1	53.8	5.9			8.5			48.7			46.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	60.7	3.0			2.7			7.1			0.0	
Delay (s)	114.5	8.8			11.2			55.8			46.3	
Level of Service	F	A			B			E			D	
Approach Delay (s)		10.1			11.2			55.8			46.3	
Approach LOS		B			B			E			D	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.5	Sum of lost time (s)	11.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2019	137	0	1662	15	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2195	149	0	1807	16	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2343		3172	1172
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2343		3172	1172
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	99
cM capacity (veh/h)			207		8	185

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1463	880	602	1204	17
Volume Left	0	0	0	0	16
Volume Right	0	149	0	0	1
cSH	1700	1700	207	1700	9
Volume to Capacity	0.86	0.52	0.00	0.71	2.04
Queue Length 95th (ft)	0	0	0	0	79
Control Delay (s)	0.0	0.0	0.0	0.0	1327.2
Lane LOS					F
Approach Delay (s)	0.0		0.0		1327.2
Approach LOS					F

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1992	28	20	1659	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2165	30	22	1803	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2196		3126	1098
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2196		3126	1098
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		58	99
cM capacity (veh/h)			237		8	208

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1443	752	22	902	902	4
Volume Left	0	0	22	0	0	3
Volume Right	0	30	0	0	0	1
cSH	1700	1700	237	1700	1700	10
Volume to Capacity	0.85	0.44	0.09	0.53	0.53	0.42
Queue Length 95th (ft)	0	0	7	0	0	24
Control Delay (s)	0.0	0.0	21.7	0.0	0.0	510.7
Lane LOS			C			F
Approach Delay (s)	0.0		0.3			510.7
Approach LOS						F

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2501	269	339	0	161	48	268	96	11	190	109	3286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00			1.00			1.00			1.00	1.00
Frt	1.00	0.92			0.97			1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00			0.97			0.97	1.00
Satd. Flow (prot)	3433	1707			1799			1791			1805	1583
Flt Permitted	0.95	1.00			1.00			0.49			0.64	1.00
Satd. Flow (perm)	3433	1707			1799			914			1197	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2718	292	368	0	175	52	291	104	12	207	118	3572
RTOR Reduction (vph)	0	38	0	0	9	0	0	1	0	0	0	434
Lane Group Flow (vph)	2718	622	0	0	218	0	0	406	0	0	325	3138
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	55.9			15.9			56.0			56.0	56.0
Effective Green, g (s)	36.0	55.9			15.9			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47			0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0			4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1031	796			239			427			559	739
v/s Ratio Prot	c0.79	0.36			c0.12							
v/s Ratio Perm								0.44			0.27	c1.98
v/c Ratio	2.64	0.78			0.91			0.95			0.58	4.25
Uniform Delay, d1	42.0	26.9			51.3			30.6			23.4	32.0
Progression Factor	1.00	1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2	739.1	5.0			35.6			31.1			1.5	1463.8
Delay (s)	781.1	31.9			86.9			61.7			24.9	1495.7
Level of Service	F	C			F			E			C	F
Approach Delay (s)		634.7			86.9			61.7			1373.1	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM Average Control Delay	953.3	HCM Level of Service	F
HCM Volume to Capacity ratio	3.22		
Actuated Cycle Length (s)	119.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	245.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	1	8	185	115	199
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	1	9	201	125	216
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	452	233	341			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452	233	341			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	99			
cM capacity (veh/h)	562	806	1218			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	22	9	201	341
Volume Left	21	9	0	0
Volume Right	1	0	0	216
cSH	570	1218	1700	1700
Volume to Capacity	0.04	0.01	0.12	0.20
Queue Length 95th (ft)	3	1	0	0
Control Delay (s)	11.6	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.6	0.3		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	975	1303	470	1115	1022	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1416	511	1212	1111	383
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	1416	511	1212	1111	383
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.3	18.8	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.3	21.8	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.39	0.24	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1242	738	1066	785	806
v/s Ratio Prot	c0.31	c0.45	0.17	0.36		0.12
v/s Ratio Perm					c0.37	
v/c Ratio	1.00	1.14	0.69	1.14	1.42	0.48
Uniform Delay, d1	30.8	27.4	31.0	30.6	33.3	28.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.9	73.2	2.8	73.4	194.4	0.3
Delay (s)	57.7	100.6	33.9	104.1	227.7	28.4
Level of Service	E	F	C	F	F	C
Approach Delay (s)		82.2		83.2		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	107.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2325	0	0	1662	0	530
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2527	0	0	1807	0	576
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.37		0.37	0.37
vC, conflicting volume			2527		2979	1264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1736		2943	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			134		4	379

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1264	1264	452	452	452	452	576
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	576
cSH	1700	1700	1700	1700	1700	1700	379
Volume to Capacity	0.74	0.74	0.27	0.27	0.27	0.27	1.52
Queue Length 95th (ft)	0	0	0	0	0	0	786
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	272.8
Lane LOS							F
Approach Delay (s)	0.0		0.0				272.8
Approach LOS							F

Intersection Summary			
Average Delay	32.0		
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2473	124	20	2639	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4487		1641	3843		1703	1734		1289	1580	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4487		1641	3843		1703	1734		1289	1580	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2688	135	22	2868	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	3	0	0	1	0	0	21	0	0	208	0
Lane Group Flow (vph)	24	2820	0	22	2900	0	41	31	0	15	76	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Effective Green, g (s)	5.5	57.2		1.7	53.4		4.9	11.4		2.4	8.9	
Actuated g/C Ratio	0.06	0.63		0.02	0.58		0.05	0.12		0.03	0.10	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	101	2811		31	2248		91	217		34	154	
v/s Ratio Prot	c0.01	0.63		c0.01	c0.75		c0.02	0.02		0.01	c0.05	
v/s Ratio Perm												
v/c Ratio	0.24	1.00		0.71	1.29		0.45	0.14		0.44	0.50	
Uniform Delay, d1	40.9	17.0		44.6	18.9		41.9	35.6		43.8	39.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	17.7		46.1	134.0		1.3	0.1		3.3	0.9	
Delay (s)	41.3	34.8		90.7	153.0		43.2	35.7		47.1	40.0	
Level of Service	D	C		F	F		D	D		D	D	
Approach Delay (s)		34.8			152.5			39.0			40.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	91.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	1984	31	27	2218	26	74	20	22	20	20	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3531		1770	3533			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.78			0.79	1.00
Satd. Flow (perm)	1770	3531		1770	3533			1417			1473	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	2157	34	29	2411	28	80	22	24	22	22	62
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	0	56
Lane Group Flow (vph)	34	2190	0	29	2438	0	0	119	0	0	44	6
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2777		34	2743			84			87	94
v/s Ratio Prot	c0.02	0.62		0.02	c0.69							
v/s Ratio Perm								c0.08			0.03	0.00
v/c Ratio	0.65	0.79		0.85	0.89			1.42			0.51	0.07
Uniform Delay, d1	56.9	7.1		57.9	9.6			55.8			54.1	52.7
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	20.3	2.4		93.1	4.8			245.5			1.7	0.1
Delay (s)	77.2	9.5		151.1	14.4			301.3			55.8	52.8
Level of Service	E	A		F	B			F			E	D
Approach Delay (s)		10.5			16.0			301.3			54.0	
Approach LOS		B			B			F			D	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	1950	66	12	2139	0	118	0	22	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frt	1.00	1.00			1.00			0.98			0.86	
Flt Protected	0.95	1.00			1.00			0.96			1.00	
Satd. Flow (prot)	1770	3522			3538			1749			1611	
Flt Permitted	0.95	1.00			0.92			0.76			1.00	
Satd. Flow (perm)	1770	3522			3267			1383			1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	2120	72	13	2325	0	128	0	24	0	0	2
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	2	0
Lane Group Flow (vph)	15	2190	0	0	2338	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	91.0			84.4			11.0			11.0	
Effective Green, g (s)	1.6	91.0			84.4			11.0			11.0	
Actuated g/C Ratio	0.01	0.81			0.75			0.10			0.10	
Clearance Time (s)	5.0	6.0			6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	25	2836			2440			135			157	
v/s Ratio Prot	0.01	c0.62									0.00	
v/s Ratio Perm					c0.72			c0.11				
v/c Ratio	0.60	0.77			0.96			1.08			0.00	
Uniform Delay, d1	55.4	5.7			12.7			51.0			46.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	33.2	2.1			10.8			100.2			0.0	
Delay (s)	88.6	7.8			23.5			151.2			46.0	
Level of Service	F	A			C			F			D	
Approach Delay (s)		8.3			23.5			151.2			46.0	
Approach LOS		A			C			F			D	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	113.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1924	55	0	2076	83	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2091	60	0	2257	90	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2151		3249	1076
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2151		3249	1076
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	97
cM capacity (veh/h)			247		7	215

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1394	757	752	1504	97
Volume Left	0	0	0	0	90
Volume Right	0	60	0	0	7
cSH	1700	1700	247	1700	8
Volume to Capacity	0.82	0.45	0.00	0.88	12.80
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	214.7		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1918	11	9	2058	18	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2085	12	10	2237	20	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2097		3229	1048
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2097		3229	1048
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		0	97
cM capacity (veh/h)			259		7	224

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1390	707	10	1118	1118	27
Volume Left	0	0	10	0	0	20
Volume Right	0	12	0	0	0	8
cSH	1700	1700	259	1700	1700	10
Volume to Capacity	0.82	0.42	0.04	0.66	0.66	2.82
Queue Length 95th (ft)	0	0	3	0	0	112
Control Delay (s)	0.0	0.0	19.4	0.0	0.0	1587.3
Lane LOS			C			F
Approach Delay (s)	0.0		0.1			1587.3
Approach LOS						F

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1328	117	239	3	149	111	187	41	2	71	80	1132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.90		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1675		1770	1743			1788			1820	1583
Flt Permitted	0.95	1.00		0.53	1.00			0.63			0.78	1.00
Satd. Flow (perm)	3433	1675		992	1743			1174			1444	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1443	127	260	3	162	121	203	45	2	77	87	1230
RTOR Reduction (vph)	0	61	0	0	23	0	0	0	0	0	0	439
Lane Group Flow (vph)	1443	326	0	3	260	0	0	250	0	0	164	791
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	782		132	232			548			674	739
v/s Ratio Prot	c0.42	0.19			c0.15							
v/s Ratio Perm				0.00				0.21			0.11	c0.50
v/c Ratio	1.40	0.42		0.02	1.12			0.46			0.24	1.07
Uniform Delay, d1	42.0	21.2		45.2	52.0			21.7			19.3	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	186.3	0.4		0.1	96.0			0.6			0.2	53.4
Delay (s)	228.3	21.5		45.3	148.0			22.3			19.4	85.4
Level of Service	F	C		D	F			C			B	F
Approach Delay (s)		184.6			147.0			22.3			77.6	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	131.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	91	4	4	139	221	102
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	4	4	151	240	111
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	455	296	351			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455	296	351			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	99	100			
cM capacity (veh/h)	561	744	1208			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	103	4	151	351
Volume Left	99	4	0	0
Volume Right	4	0	0	111
cSH	567	1208	1700	1700
Volume to Capacity	0.18	0.00	0.09	0.21
Queue Length 95th (ft)	17	0	0	0
Control Delay (s)	12.8	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.8	0.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	1177	1217	551	1088	971	402
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	599	1183	1055	437
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1279	1323	599	1183	1055	437
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	31.4	19.7	25.7	20.4	20.4
Effective Green, g (s)	28.4	34.4	22.7	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.38	0.25	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1210	768	1066	785	806
v/s Ratio Prot	c0.38	c0.42	0.20	0.35		0.14
v/s Ratio Perm					c0.35	
v/c Ratio	1.20	1.09	0.78	1.11	1.34	0.54
Uniform Delay, d1	30.8	27.8	31.3	30.6	33.3	28.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	101.0	55.3	5.0	62.8	163.3	0.6
Delay (s)	131.8	83.1	36.4	93.5	196.6	29.3
Level of Service	F	F	D	F	F	C
Approach Delay (s)		107.0		74.3		
Approach LOS		F		E		

Intersection Summary			
HCM Average Control Delay	107.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	5.2
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2188	0	0	1785	0	455
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2378	0	0	1940	0	495
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.38		0.38	0.38
vC, conflicting volume			2378		2863	1189
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1382		2644	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			189		7	390

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1189	1189	485	485	485	485	495
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	495
cSH	1700	1700	1700	1700	1700	1700	390
Volume to Capacity	0.70	0.70	0.29	0.29	0.29	0.29	1.27
Queue Length 95th (ft)	0	0	0	0	0	0	542
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	169.5
Lane LOS							F
Approach Delay (s)	0.0		0.0				169.5
Approach LOS							F

Intersection Summary			
Average Delay	17.4		
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2357	128	16	2839	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	4486		1641	3843		1703	1791		1289	1583	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	4486		1641	3843		1703	1791		1289	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2562	139	17	3086	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	0	0	0	10	0	0	215	0
Lane Group Flow (vph)	49	2697	0	17	3112	0	30	33	0	17	98	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Effective Green, g (s)	7.8	57.1		1.7	51.0		2.0	7.1		4.8	9.9	
Actuated g/C Ratio	0.09	0.64		0.02	0.57		0.02	0.08		0.05	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	146	2868		31	2195		38	142		69	175	
v/s Ratio Prot	c0.03	c0.60		0.01	c0.81		c0.02	0.02		c0.01	c0.06	
v/s Ratio Perm												
v/c Ratio	0.34	0.94		0.55	1.42		0.79	0.23		0.25	0.56	
Uniform Delay, d1	38.3	14.6		43.4	19.1		43.4	38.5		40.5	37.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	7.1		10.2	190.7		63.7	0.3		0.7	2.2	
Delay (s)	38.8	21.7		53.6	209.8		107.2	38.8		41.2	39.8	
Level of Service	D	C		D	F		F	D		D	D	
Approach Delay (s)		22.0			209.0			66.9			39.9	
Approach LOS		C			F			E			D	

Intersection Summary			
HCM Average Control Delay	116.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	18.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	1871	35	24	2383	20	92	20	24	20	20	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.98	1.00
Satd. Flow (prot)	1770	3529		1770	3535			1759			1817	1583
Flt Permitted	0.95	1.00		0.95	1.00			0.77			0.82	1.00
Satd. Flow (perm)	1770	3529		1770	3535			1401			1520	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	2034	38	26	2590	22	100	22	26	22	22	24
RTOR Reduction (vph)	0	1	0	0	0	0	0	7	0	0	0	23
Lane Group Flow (vph)	22	2071	0	26	2612	0	0	141	0	0	44	1
Turn Type	Prot			Prot			Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		8
Actuated Green, G (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Effective Green, g (s)	3.5	93.2		2.3	92.0			7.0			7.0	7.0
Actuated g/C Ratio	0.03	0.79		0.02	0.78			0.06			0.06	0.06
Clearance Time (s)	5.0	6.0		5.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0			2.0			2.0	2.0
Lane Grp Cap (vph)	52	2776		34	2744			83			90	94
v/s Ratio Prot	0.01	0.59		c0.01	c0.74							
v/s Ratio Perm								c0.10			0.03	0.00
v/c Ratio	0.42	0.75		0.76	0.95			1.70			0.49	0.02
Uniform Delay, d1	56.5	6.5		57.8	11.3			55.8			54.0	52.5
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	2.0	1.9		61.1	9.1			362.6			1.5	0.0
Delay (s)	58.5	8.4		118.9	20.5			418.3			55.5	52.5
Level of Service	E	A		F	C			F			E	D
Approach Delay (s)		8.9			21.4			418.3			54.5	
Approach LOS		A			C			F			D	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	118.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	1840	66	12	2321	0	118	0	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0			6.0			5.0				
Lane Util. Factor	1.00	0.95			0.95			1.00				
Frt	1.00	0.99			1.00			0.98				
Flt Protected	0.95	1.00			1.00			0.96				
Satd. Flow (prot)	1770	3521			3538			1749				
Flt Permitted	0.95	1.00			0.93			0.95				
Satd. Flow (perm)	1770	3521			3286			1732				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	2000	72	13	2523	0	128	0	24	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	14	2070	0	0	2536	0	0	146	0	0	0	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	1.6	86.1			79.5			14.5				
Effective Green, g (s)	1.6	86.1			79.5			14.5				
Actuated g/C Ratio	0.01	0.77			0.71			0.13				
Clearance Time (s)	5.0	6.0			6.0			5.0				
Vehicle Extension (s)	3.0	3.0			3.0			3.0				
Lane Grp Cap (vph)	25	2716			2341			225				
v/s Ratio Prot	0.01	c0.59										
v/s Ratio Perm					c0.77			c0.08				
v/c Ratio	0.56	0.76			1.08			0.65				
Uniform Delay, d1	54.7	7.1			16.0			46.1				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	25.6	2.1			45.7			6.3				
Delay (s)	80.3	9.2			61.7			52.4				
Level of Service	F	A			E			D				
Approach Delay (s)		9.6			61.7			52.4			0.0	
Approach LOS		A			E			D			A	

Intersection Summary			
HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1866	1	0	2188	137	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2028	1	0	2378	149	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2029		3218	1015
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2029		3218	1015
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	96
cM capacity (veh/h)			276		7	236

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1352	677	793	1586	159
Volume Left	0	0	0	0	149
Volume Right	0	1	0	0	10
cSH	1700	1700	276	1700	8
Volume to Capacity	0.80	0.40	0.00	0.93	20.07
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	347.5		
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1875	0	0	2160	28	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2038	0	0	2348	30	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2038		3212	1019
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2038		3212	1019
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	95
cM capacity (veh/h)			273		8	235

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1359	679	0	1174	1174	42
Volume Left	0	0	0	0	0	30
Volume Right	0	0	0	0	0	12
cSH	1700	1700	1700	1700	1700	10
Volume to Capacity	0.80	0.40	0.00	0.69	0.69	4.10
Queue Length 95th (ft)	0	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS						F
Approach Delay (s)	0.0		0.0			Err
Approach LOS						F

Intersection Summary			
Average Delay	95.7		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1372	115	150	2	142	107	278	44	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	0.97	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.92		1.00	0.94			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.98	1.00
Satd. Flow (prot)	3433	1705		1770	1743			1785			1819	1583
Flt Permitted	0.95	1.00		0.58	1.00			0.63			0.75	1.00
Satd. Flow (perm)	3433	1705		1087	1743			1182			1395	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1491	125	163	2	154	116	302	48	1	71	78	1232
RTOR Reduction (vph)	0	39	0	0	23	0	0	0	0	0	0	443
Lane Group Flow (vph)	1491	249	0	2	247	0	0	351	0	0	149	789
Turn Type	Prot			Perm			Perm			Perm		Perm
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		6
Actuated Green, G (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Effective Green, g (s)	36.0	56.0		16.0	16.0			56.0			56.0	56.0
Actuated g/C Ratio	0.30	0.47		0.13	0.13			0.47			0.47	0.47
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	1030	796		145	232			552			651	739
v/s Ratio Prot	c0.43	0.15			c0.14							
v/s Ratio Perm				0.00				0.30			0.11	c0.50
v/c Ratio	1.45	0.31		0.01	1.07			0.64			0.23	1.07
Uniform Delay, d1	42.0	20.0		45.1	52.0			24.3			19.1	32.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	206.9	0.2		0.0	77.8			2.4			0.2	52.8
Delay (s)	248.9	20.2		45.2	129.8			26.7			19.3	84.8
Level of Service	F	C		D	F			C			B	F
Approach Delay (s)		211.9			129.2			26.7			77.7	
Approach LOS		F			F			C			E	

Intersection Summary			
HCM Average Control Delay	139.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	199	8	0	124	224	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	216	9	0	135	243	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	378	243	243			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	378	243	243			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	99	100			
cM capacity (veh/h)	624	795	1323			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	225	0	135	243
Volume Left	216	0	0	0
Volume Right	9	0	0	0
cSH	629	1700	1700	1700
Volume to Capacity	0.36	0.00	0.08	0.14
Queue Length 95th (ft)	40	0	0	0
Control Delay (s)	13.9	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	13.9	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Year 2035 General Plan Baseline “No Project” Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	330	1928	295	1467	1406	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2096	321	1595	1528	350
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	359	2096	321	1595	1528	350
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.5	25.9	13.4	25.8	20.4	20.4
Effective Green, g (s)	16.5	28.9	16.4	28.8	23.4	23.4
Actuated g/C Ratio	0.21	0.37	0.21	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	710	1170	639	1231	903	927
v/s Ratio Prot	c0.11	c0.66	0.11	0.48		0.11
v/s Ratio Perm					c0.51	
v/c Ratio	0.51	1.79	0.50	1.30	1.69	0.38
Uniform Delay, d1	27.2	24.7	27.3	24.7	27.4	21.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	359.6	0.6	139.2	316.3	0.2
Delay (s)	27.8	384.3	27.9	163.9	343.7	21.8
Level of Service	C	F	C	F	F	C
Approach Delay (s)		332.1		141.1		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	259.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	5.2
Intersection Capacity Utilization	112.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	3334	0	0	1721	0	352
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3624	0	0	1871	0	383
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.50	0.36
vC, conflicting volume			3624		4092	1812
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			4726		1007	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			8		119	367

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1812	1812	468	468	468	468	383
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	383
cSH	1700	1700	1700	1700	1700	1700	367
Volume to Capacity	1.07	1.07	0.28	0.28	0.28	0.28	1.04
Queue Length 95th (ft)	0	0	0	0	0	0	325
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	93.2
Lane LOS							F
Approach Delay (s)	0.0		0.0				93.2
Approach LOS							F

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	120.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2381	310	3	1802	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2588	337	3	1959	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	52	0	0	0	0	12	0	0	54	110
Lane Group Flow (vph)	1080	2588	285	3	1961	0	73	74	0	22	4	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Effective Green, g (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Actuated g/C Ratio	0.29	0.66	0.66	0.01	0.38		0.08	0.11		0.03	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	948	2977	969	15	1825		262	201		35	85	170
v/s Ratio Prot	c0.33	0.57		0.00	c0.41		c0.02	c0.04		c0.02	0.00	
v/s Ratio Perm			0.19									0.00
v/c Ratio	1.14	0.87	0.29	0.20	1.07		0.28	0.37		0.63	0.05	0.04
Uniform Delay, d1	34.4	13.2	7.0	47.7	30.2		42.1	39.9		46.8	43.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.5	2.9	0.1	2.4	44.3		0.2	0.4		22.7	0.1	0.0
Delay (s)	109.9	16.1	7.1	50.1	74.5		42.3	40.3		69.5	43.1	43.1
Level of Service	F	B	A	D	E		D	D		E	D	D
Approach Delay (s)		40.6			74.5			41.2			46.0	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	51.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	22.6
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1495	219	111	1323	164	118	38	48	45	62	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.92		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4988		1770	5001		1770	1707		1770	1658	
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.70	1.00	
Satd. Flow (perm)	1770	4988		1770	5001		821	1707		1298	1658	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1625	238	121	1438	178	128	41	52	49	67	184
RTOR Reduction (vph)	0	15	0	0	13	0	0	38	0	0	82	0
Lane Group Flow (vph)	54	1848	0	121	1603	0	128	55	0	49	169	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Effective Green, g (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.05	0.49		0.10	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	95	2429		177	2667		228	475		361	461	
v/s Ratio Prot	0.03	c0.37		c0.07	0.32			0.03			0.10	
v/s Ratio Perm							c0.16			0.04		
v/c Ratio	0.57	0.76		0.68	0.60		0.56	0.12		0.14	0.37	
Uniform Delay, d1	54.8	24.8		51.6	19.0		36.7	32.0		32.2	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	2.3		8.4	1.0		9.6	0.5		0.1	0.2	
Delay (s)	59.4	27.1		60.0	20.0		46.3	32.5		32.2	34.6	
Level of Service	E	C		E	C		D	C		C	C	
Approach Delay (s)		28.0			22.8			40.5			34.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	819	65	26	1310	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3500		1770	3508			1741			1636	
Flt Permitted	0.95	1.00		0.30	1.00			0.32			0.97	
Satd. Flow (perm)	1770	3500		555	3508			584			1589	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	890	71	28	1424	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	5	0	0	4	0	0	11	0	0	134	0
Lane Group Flow (vph)	729	956	0	28	1510	0	0	57	0	0	38	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	41.0	88.0		42.0	42.0			11.0			11.0	
Effective Green, g (s)	41.0	88.0		42.0	42.0			11.0			11.0	
Actuated g/C Ratio	0.37	0.80		0.38	0.38			0.10			0.10	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	660	2800		212	1339			58			159	
v/s Ratio Prot	c0.41	0.27			c0.43							
v/s Ratio Perm				0.05				c0.10			0.02	
v/c Ratio	1.10	0.34		0.13	1.13			0.99			0.24	
Uniform Delay, d1	34.5	3.0		22.1	34.0			49.4			45.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	67.2	0.3		1.3	67.5			112.4			0.8	
Delay (s)	101.7	3.4		23.4	101.5			161.8			46.4	
Level of Service	F	A		C	F			F			D	
Approach Delay (s)		45.8			100.1			161.8			46.4	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM Average Control Delay	72.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	905	0	0	1633	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	984	0	0	1775	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			984		1871	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			984		1871	492
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			698		64	523

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	656	328	592	1183	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	698	1700	1700
Volume to Capacity	0.39	0.19	0.00	0.70	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	911	0	0	1642	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	990	0	0	1785	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			990		1883	495
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			990		1883	495
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			694		63	520

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	660	330	0	892	892	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.39	0.19	0.00	0.52	0.52	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	730	20	158	20	20	20	69	385	20	20	734	1547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.87			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1615			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.74	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1615			1386	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	793	22	172	22	22	22	75	418	22	22	798	1682
RTOR Reduction (vph)	0	101	0	0	0	21	0	3	0	0	0	965
Lane Group Flow (vph)	793	93	0	0	44	1	75	437	0	22	798	717
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	28.4	39.1			6.7	6.7	6.3	47.2		1.7	42.6	42.6
Effective Green, g (s)	28.4	39.1			6.7	6.7	6.3	47.2		1.7	42.6	42.6
Actuated g/C Ratio	0.28	0.39			0.07	0.07	0.06	0.47		0.02	0.43	0.43
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	975	631			93	106	112	1658		30	1508	1187
v/s Ratio Prot	c0.23	0.06					c0.04	0.12		0.01	0.23	
v/s Ratio Perm					c0.03	0.00						c0.26
v/c Ratio	0.81	0.15			0.47	0.01	0.67	0.26		0.73	0.53	0.60
Uniform Delay, d1	33.3	19.7			44.9	43.6	45.8	15.9		48.9	21.3	22.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	5.3	0.1			3.8	0.1	14.2	0.1		63.0	0.3	0.9
Delay (s)	38.6	19.8			48.7	43.6	60.0	16.0		111.9	21.6	23.0
Level of Service	D	B			D	D	E	B		F	C	C
Approach Delay (s)		34.9			47.0			22.4			23.4	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	26.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	529	967	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	575	1051	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1339	526	1051			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1339	526	1051			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	144	497	658			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	288	288	701	350
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.17	0.17	0.41	0.21
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	907	2052	368	1942	674	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2230	400	2111	733	347
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	986	2230	400	2111	733	347
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	34.4	16.7	25.7	20.4	20.4
Effective Green, g (s)	28.4	37.4	19.7	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.42	0.22	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1316	667	1066	785	806
v/s Ratio Prot	c0.29	c0.70	0.13	c0.63		0.11
v/s Ratio Perm					c0.24	
v/c Ratio	0.93	1.69	0.60	1.98	0.93	0.43
Uniform Delay, d1	29.8	26.3	31.6	30.6	32.5	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	315.8	1.5	444.5	17.9	0.3
Delay (s)	43.3	342.1	33.1	475.2	50.5	28.0
Level of Service	D	F	C	F	D	C
Approach Delay (s)		250.5		404.7		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	274.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	109.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2726	0	0	2292	0	346
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2963	0	0	2491	0	376
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.37		0.51	0.37
vC, conflicting volume			2963		3586	1482
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2900		0	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			46		524	375

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1482	1482	623	623	623	623	376
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	376
cSH	1700	1700	1700	1700	1700	1700	375
Volume to Capacity	0.87	0.87	0.37	0.37	0.37	0.37	1.00
Queue Length 95th (ft)	0	0	0	0	0	0	299
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	81.2
Lane LOS							F
Approach Delay (s)	0.0		0.0				81.2
Approach LOS							F

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2168	161	4	2430	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2357	175	4	2641	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	34	0	0	0	0	20	0	0	54	109
Lane Group Flow (vph)	810	2357	141	4	2645	0	405	270	0	22	5	6
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	872	2737	891	14	1676		506	328		30	81	161
v/s Ratio Prot	c0.25	0.52		0.00	c0.55		c0.12	c0.15		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.93	0.86	0.16	0.29	1.58		0.80	0.82		0.73	0.06	0.04
Uniform Delay, d1	37.9	17.2	9.1	52.4	34.8		43.4	41.6		51.6	47.5	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.5	3.0	0.1	4.1	263.1		8.4	14.5		56.2	0.1	0.0
Delay (s)	53.4	20.2	9.2	56.4	297.8		51.8	56.1		107.8	47.6	47.5
Level of Service	D	C	A	E	F		D	E		F	D	D
Approach Delay (s)		27.7			297.5			53.6			54.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	134.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1435	174	123	1673	162	257	142	178	156	91	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5003		1770	5018		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.29	1.00	
Satd. Flow (perm)	1770	5003		1770	5018		901	1707		537	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1560	189	134	1818	176	279	154	193	170	99	123
RTOR Reduction (vph)	0	12	0	0	10	0	0	38	0	0	37	0
Lane Group Flow (vph)	161	1737	0	134	1984	0	279	309	0	170	185	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2439		184	2593		248	469		148	470	
v/s Ratio Prot	c0.09	0.35		0.08	c0.40			0.18			0.11	
v/s Ratio Perm							0.31			c0.32		
v/c Ratio	1.21	0.71		0.73	0.77		1.12	0.66		1.15	0.39	
Uniform Delay, d1	55.5	24.1		52.1	23.2		43.5	38.5		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	145.4	1.8		11.5	2.2		94.9	7.1		119.5	0.2	
Delay (s)	200.9	25.9		63.6	25.4		138.4	45.6		163.0	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		40.7			27.8			87.0			90.8	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1442	47	19	1224	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3522		1770	3530			1734			1632	
Flt Permitted	0.95	1.00		0.10	1.00			0.32			0.95	
Satd. Flow (perm)	1770	3522		177	3530			571			1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1567	51	21	1330	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	158	0
Lane Group Flow (vph)	187	1616	0	21	1352	0	0	120	0	0	592	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Effective Green, g (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Actuated g/C Ratio	0.11	0.54		0.38	0.38			0.36			0.36	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	193	1889		68	1348			208			565	
v/s Ratio Prot	0.11	c0.46			c0.38							
v/s Ratio Perm				0.12				0.21			c0.38	
v/c Ratio	0.97	0.86		0.31	1.00			0.58			1.05	
Uniform Delay, d1	48.8	21.8		23.8	34.0			28.2			35.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	55.1	5.2		11.4	25.2			3.8			50.7	
Delay (s)	103.9	27.1		35.2	59.2			32.0			85.7	
Level of Service	F	C		D	E			C			F	
Approach Delay (s)		35.0			58.8			32.0			85.7	
Approach LOS		D			E			C			F	

Intersection Summary			
HCM Average Control Delay	52.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1817	0	0	1429	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1975	0	0	1553	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1975		2752	988
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1975		2752	988
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			289		16	246

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1317	658	518	1036	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	289	1700	1700
Volume to Capacity	0.77	0.39	0.00	0.61	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1819	0	0	1433	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1977	0	0	1558	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1977		2756	989
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1977		2756	989
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			289		16	246

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1318	659	0	779	779	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.78	0.39	0.00	0.46	0.46	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1540	20	258	20	20	20	270	1047	20	20	791	1140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1604			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.69	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1604			1291	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1674	22	280	22	22	22	293	1138	22	22	860	1239
RTOR Reduction (vph)	0	89	0	0	0	20	0	1	0	0	0	769
Lane Group Flow (vph)	1674	213	0	0	44	2	293	1159	0	22	860	470
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.6	46.0			7.4	7.4	9.2	48.5		1.8	41.1	41.1
Effective Green, g (s)	34.6	46.0			7.4	7.4	9.2	48.5		1.8	41.1	41.1
Actuated g/C Ratio	0.32	0.42			0.07	0.07	0.08	0.45		0.02	0.38	0.38
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1097	681			88	108	150	1580		29	1343	1058
v/s Ratio Prot	c0.49	0.13					c0.17	c0.33		0.01	0.24	
v/s Ratio Perm					c0.03	0.00						0.17
v/c Ratio	1.53	0.31			0.50	0.01	1.95	0.73		0.76	0.64	0.44
Uniform Delay, d1	36.9	20.7			48.7	47.0	49.5	24.6		53.0	27.5	25.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	241.4	0.3			4.4	0.1	452.3	1.8		71.7	1.1	0.3
Delay (s)	278.2	20.9			53.1	47.1	501.9	26.4		124.7	28.6	25.4
Level of Service	F	C			D	D	F	C		F	C	C
Approach Delay (s)		238.9			51.1			122.3			27.7	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	126.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	108.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1360	1092	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1478	1187	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1926	593	1187			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1926	593	1187			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	58	448	584			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	739	739	791	396
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.43	0.43	0.47	0.23
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	920	2081	373	1969	684	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2262	405	2140	743	351
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1000	2262	405	2140	743	351
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	34.3	16.8	25.7	20.4	20.4
Effective Green, g (s)	28.4	37.3	19.8	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.41	0.22	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1313	670	1066	785	806
v/s Ratio Prot	c0.30	c0.71	0.13	c0.64		0.11
v/s Ratio Perm					c0.25	
v/c Ratio	0.94	1.72	0.60	2.01	0.95	0.44
Uniform Delay, d1	30.0	26.4	31.6	30.6	32.7	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.5	328.5	1.5	456.7	20.0	0.3
Delay (s)	45.5	354.8	33.1	487.4	52.7	28.1
Level of Service	D	F	C	F	D	C
Approach Delay (s)		260.0		415.1		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	283.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	110.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2765	0	0	2325	0	351
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3005	0	0	2527	0	382
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.37		0.51	0.37
vC, conflicting volume			3005		3637	1503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3015		56	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			41		481	372

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1503	1503	632	632	632	632	382
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	382
cSH	1700	1700	1700	1700	1700	1700	372
Volume to Capacity	0.88	0.88	0.37	0.37	0.37	0.37	1.03
Queue Length 95th (ft)	0	0	0	0	0	0	315
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	87.9
Lane LOS							F
Approach Delay (s)	0.0		0.0				87.9
Approach LOS							F

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2199	163	4	2465	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2390	177	4	2679	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	34	0	0	0	0	20	0	0	54	110
Lane Group Flow (vph)	821	2390	143	4	2683	0	411	273	0	22	5	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	871	2734	890	14	1675		506	329		30	82	164
v/s Ratio Prot	c0.25	0.53		0.00	c0.55		c0.12	c0.16		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.94	0.87	0.16	0.29	1.60		0.81	0.83		0.73	0.06	0.04
Uniform Delay, d1	38.1	17.6	9.1	52.4	34.8		43.6	41.6		51.6	47.4	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.9	3.4	0.1	4.1	273.6		9.1	15.0		56.2	0.1	0.0
Delay (s)	56.0	20.9	9.2	56.5	308.4		52.7	56.6		107.8	47.6	47.4
Level of Service	E	C	A	E	F		D	E		F	D	D
Approach Delay (s)		28.8			308.1			54.3			54.2	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	139.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1456	176	125	1697	164	261	144	181	158	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5003		1770	5018		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.28	1.00	
Satd. Flow (perm)	1770	5003		1770	5018		892	1707		518	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1583	191	136	1845	178	284	157	197	172	100	125
RTOR Reduction (vph)	0	12	0	0	10	0	0	38	0	0	38	0
Lane Group Flow (vph)	163	1762	0	136	2013	0	284	316	0	172	187	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2435		186	2593		245	469		142	470	
v/s Ratio Prot	c0.09	0.35		0.08	c0.40			0.19			0.11	
v/s Ratio Perm							0.32			c0.33		
v/c Ratio	1.23	0.72		0.73	0.78		1.16	0.67		1.21	0.40	
Uniform Delay, d1	55.5	24.4		52.1	23.4		43.5	38.7		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	151.0	1.9		12.0	2.4		107.3	7.6		143.3	0.2	
Delay (s)	206.5	26.3		64.0	25.8		150.8	46.3		186.8	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.5			28.2			92.8			101.1	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1468	47	19	1252	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3530			1734			1632	
Flt Permitted	0.95	1.00		0.10	1.00			0.32			0.95	
Satd. Flow (perm)	1770	3523		177	3530			571			1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1596	51	21	1361	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	158	0
Lane Group Flow (vph)	187	1645	0	21	1383	0	0	120	0	0	592	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Effective Green, g (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Actuated g/C Ratio	0.11	0.54		0.38	0.38			0.36			0.36	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	193	1890		68	1348			208			565	
v/s Ratio Prot	0.11	c0.47			c0.39							
v/s Ratio Perm				0.12				0.21			c0.38	
v/c Ratio	0.97	0.87		0.31	1.03			0.58			1.05	
Uniform Delay, d1	48.8	22.2		23.8	34.0			28.2			35.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	55.1	5.8		11.4	31.3			3.8			50.7	
Delay (s)	103.9	28.0		35.2	65.3			32.0			85.7	
Level of Service	F	C		D	E			C			F	
Approach Delay (s)		35.7			64.8			32.0			85.7	
Approach LOS		D			E			C			F	

Intersection Summary			
HCM Average Control Delay	54.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1843	0	0	1449	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2003	0	0	1575	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2003		2791	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2003		2791	1002
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			282		15	241

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1336	668	525	1050	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	282	1700	1700
Volume to Capacity	0.79	0.39	0.00	0.62	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1845	0	0	1453	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2005	0	0	1579	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2005		2795	1003
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2005		2795	1003
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			282		15	240

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1337	668	0	790	790	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.79	0.39	0.00	0.46	0.46	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2547	33	441	33	33	33	460	1732	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.60	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1118	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2768	36	479	36	36	36	500	1883	36	36	1423	2050
RTOR Reduction (vph)	0	67	0	0	0	33	0	1	0	0	0	861
Lane Group Flow (vph)	2768	448	0	0	72	3	500	1918	0	36	1423	1189
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Effective Green, g (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Actuated g/C Ratio	0.29	0.42			0.09	0.09	0.08	0.46		0.02	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1007	666			98	139	137	1611		44	1430	1126
v/s Ratio Prot	c0.81	c0.28					c0.28	c0.54		0.02	0.40	
v/s Ratio Perm					0.06	0.00						0.43
v/c Ratio	2.75	0.67			0.73	0.02	3.65	1.19		0.82	1.00	1.06
Uniform Delay, d1	41.1	27.6			51.7	48.5	53.6	31.6		56.4	34.5	34.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	789.7	2.7			24.6	0.1	1210.2	92.2		69.3	22.5	42.9
Delay (s)	830.8	30.3			76.3	48.6	1263.8	123.8		125.8	57.0	77.5
Level of Service	F	C			E	D	F	F		F	E	E
Approach Delay (s)		705.3			67.0			359.5			69.7	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM Average Control Delay	368.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.79		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	151.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1379	1107	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1499	1203	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1953	602	1203			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1953	602	1203			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	56	443	576			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	749	749	802	401
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.44	0.44	0.47	0.24
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Year 2035 General Plan Baseline with NRCF Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	330	1980	300	1473	1471	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2152	326	1601	1599	350
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	359	2152	326	1601	1599	350
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	25.9	13.5	25.8	20.4	20.4
Effective Green, g (s)	16.6	28.9	16.5	28.8	23.4	23.4
Actuated g/C Ratio	0.21	0.37	0.21	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	714	1169	642	1230	902	926
v/s Ratio Prot	0.11	c0.68	c0.11	0.48		0.11
v/s Ratio Perm					c0.53	
v/c Ratio	0.50	1.84	0.51	1.30	1.77	0.38
Uniform Delay, d1	27.2	24.7	27.3	24.8	27.4	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	381.7	0.6	141.8	352.2	0.2
Delay (s)	27.8	406.4	27.9	166.5	379.7	21.9
Level of Service	C	F	C	F	F	C
Approach Delay (s)		352.3		143.1		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	277.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	5.2
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	3451	0	0	1739	0	400
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3751	0	0	1890	0	435
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.50	0.36
vC, conflicting volume			3751		4224	1876
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			5073		1211	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			6		88	367

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1876	1876	473	473	473	473	435
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	435
cSH	1700	1700	1700	1700	1700	1700	367
Volume to Capacity	1.10	1.10	0.28	0.28	0.28	0.28	1.18
Queue Length 95th (ft)	0	0	0	0	0	0	441
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	139.1
Lane LOS							F
Approach Delay (s)	0.0		0.0				139.1
Approach LOS							F

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	126.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2546	310	3	1820	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2767	337	3	1978	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	49	0	0	0	0	12	0	0	54	110
Lane Group Flow (vph)	1080	2767	288	3	1980	0	73	74	0	22	4	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Effective Green, g (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Actuated g/C Ratio	0.29	0.66	0.66	0.01	0.38		0.08	0.11		0.03	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	948	2977	969	15	1825		262	201		35	85	170
v/s Ratio Prot	c0.33	0.61		0.00	c0.41		c0.02	c0.04		c0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.14	0.93	0.30	0.20	1.08		0.28	0.37		0.63	0.05	0.04
Uniform Delay, d1	34.4	14.5	7.0	47.7	30.2		42.1	39.9		46.8	43.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.5	5.9	0.1	2.4	48.2		0.2	0.4		22.7	0.1	0.0
Delay (s)	109.9	20.4	7.1	50.1	78.5		42.3	40.3		69.5	43.1	43.1
Level of Service	F	C	A	D	E		D	D		E	D	D
Approach Delay (s)		42.4			78.4			41.2			46.0	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	53.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	22.6
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1660	219	111	1341	164	118	38	48	45	62	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.92		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4996		1770	5002		1770	1707		1770	1658	
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.70	1.00	
Satd. Flow (perm)	1770	4996		1770	5002		821	1707		1298	1658	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1804	238	121	1458	178	128	41	52	49	67	184
RTOR Reduction (vph)	0	13	0	0	12	0	0	38	0	0	82	0
Lane Group Flow (vph)	54	2029	0	121	1624	0	128	55	0	49	169	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Effective Green, g (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.05	0.49		0.10	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	95	2433		177	2667		228	475		361	461	
v/s Ratio Prot	0.03	c0.41		c0.07	0.32			0.03			0.10	
v/s Ratio Perm							c0.16			0.04		
v/c Ratio	0.57	0.83		0.68	0.61		0.56	0.12		0.14	0.37	
Uniform Delay, d1	54.8	26.3		51.6	19.1		36.7	32.0		32.2	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	3.5		8.4	1.0		9.6	0.5		0.1	0.2	
Delay (s)	59.4	29.8		60.0	20.2		46.3	32.5		32.2	34.6	
Level of Service	E	C		E	C		D	C		C	C	
Approach Delay (s)		30.6			22.9			40.5			34.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	28.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	984	65	26	1328	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3506		1770	3508			1741			1636	
Flt Permitted	0.95	1.00		0.25	1.00			0.34			0.96	
Satd. Flow (perm)	1770	3506		464	3508			603			1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1070	71	28	1443	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	4	0	0	11	0	0	135	0
Lane Group Flow (vph)	729	1137	0	28	1529	0	0	57	0	0	37	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Effective Green, g (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Actuated g/C Ratio	0.37	0.81		0.39	0.39			0.09			0.09	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	660	2837		181	1371			55			144	
v/s Ratio Prot	c0.41	0.32			c0.44							
v/s Ratio Perm				0.06				c0.09			0.02	
v/c Ratio	1.10	0.40		0.15	1.12			1.04			0.25	
Uniform Delay, d1	34.5	3.0		21.7	33.5			50.0			46.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	67.2	0.4		1.8	62.3			132.5			0.9	
Delay (s)	101.7	3.4		23.5	95.8			182.5			47.5	
Level of Service	F	A		C	F			F			D	
Approach Delay (s)		41.7			94.5			182.5			47.5	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM Average Control Delay	67.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	933	92	0	1636	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1014	100	0	1778	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1114		1953	557
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1114		1953	557
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			623		56	474

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	676	438	593	1186	0
Volume Left	0	0	0	0	0
Volume Right	0	100	0	0	0
cSH	1700	1700	623	1700	1700
Volume to Capacity	0.40	0.26	0.00	0.70	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	912	19	14	1642	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	991	21	15	1785	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1012		1924	506
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1012		1924	506
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			681		57	512

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	661	351	15	892	892	0
Volume Left	0	0	15	0	0	0
Volume Right	0	21	0	0	0	0
cSH	1700	1700	681	1700	1700	1700
Volume to Capacity	0.39	0.21	0.02	0.52	0.52	0.00
Queue Length 95th (ft)	0	0	2	0	0	0
Control Delay (s)	0.0	0.0	10.4	0.0	0.0	0.0
Lane LOS			B			A
Approach Delay (s)	0.0		0.1			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	731	20	159	20	20	20	76	385	20	20	734	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.87			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1615			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.74	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1615			1385	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	795	22	173	22	22	22	83	418	22	22	798	1696
RTOR Reduction (vph)	0	101	0	0	0	21	0	3	0	0	0	968
Lane Group Flow (vph)	795	94	0	0	44	1	83	437	0	22	798	728
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	29.0	39.8			6.8	6.8	6.5	47.7		1.7	42.9	42.9
Effective Green, g (s)	29.0	39.8			6.8	6.8	6.5	47.7		1.7	42.9	42.9
Actuated g/C Ratio	0.29	0.39			0.07	0.07	0.06	0.47		0.02	0.42	0.42
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	984	635			93	106	114	1656		30	1500	1181
v/s Ratio Prot	c0.23	0.06					c0.05	0.12		0.01	0.23	
v/s Ratio Perm					c0.03	0.00						c0.26
v/c Ratio	0.81	0.15			0.47	0.01	0.73	0.26		0.73	0.53	0.62
Uniform Delay, d1	33.5	19.8			45.5	44.1	46.5	16.2		49.5	21.7	22.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.9	0.1			3.8	0.1	20.6	0.1		63.0	0.4	1.0
Delay (s)	38.5	19.9			49.2	44.1	67.0	16.2		112.5	22.0	23.7
Level of Service	D	B			D	D	E	B		F	C	C
Approach Delay (s)		34.8			47.5			24.3			23.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	101.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	536	967	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	583	1051	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1342	526	1051			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1342	526	1051			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	143	497	658			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	291	291	701	350
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.17	0.17	0.41	0.21
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	907	2073	398	1974	700	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2253	433	2146	761	347
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	986	2253	433	2146	761	347
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.7	17.4	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.7	20.4	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.41	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1291	690	1066	785	806
v/s Ratio Prot	c0.29	c0.71	0.14	c0.64		0.11
v/s Ratio Perm					c0.25	
v/c Ratio	0.93	1.75	0.63	2.01	0.97	0.43
Uniform Delay, d1	29.8	26.6	31.4	30.6	32.9	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	338.6	1.8	459.2	24.5	0.3
Delay (s)	43.3	365.2	33.2	489.9	57.4	28.0
Level of Service	D	F	C	F	E	C
Approach Delay (s)		267.2		413.2		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	286.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	110.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2773	0	0	2393	0	365
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3014	0	0	2601	0	397
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.37		0.51	0.37
vC, conflicting volume			3014		3664	1507
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3039		104	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			40		449	371

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1507	1507	650	650	650	650	397
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	397
cSH	1700	1700	1700	1700	1700	1700	371
Volume to Capacity	0.89	0.89	0.38	0.38	0.38	0.38	1.07
Queue Length 95th (ft)	0	0	0	0	0	0	347
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	100.2
Lane LOS							F
Approach Delay (s)	0.0		0.0				100.2
Approach LOS							F

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	105.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2234	161	4	2531	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2428	175	4	2751	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	33	0	0	0	0	20	0	0	54	109
Lane Group Flow (vph)	810	2428	142	4	2755	0	405	270	0	22	5	6
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	872	2737	891	14	1676		506	328		30	81	161
v/s Ratio Prot	c0.25	0.54		0.00	c0.57		c0.12	c0.15		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.93	0.89	0.16	0.29	1.64		0.80	0.82		0.73	0.06	0.04
Uniform Delay, d1	37.9	17.8	9.1	52.4	34.8		43.4	41.6		51.6	47.5	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.5	3.9	0.1	4.1	292.4		8.4	14.5		56.2	0.1	0.0
Delay (s)	53.4	21.7	9.2	56.4	327.2		51.8	56.1		107.8	47.6	47.5
Level of Service	D	C	A	E	F		D	E		F	D	D
Approach Delay (s)		28.6			326.8			53.6			54.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	148.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1501	174	123	1774	162	257	142	178	156	91	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5006		1770	5021		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.29	1.00	
Satd. Flow (perm)	1770	5006		1770	5021		901	1707		537	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1632	189	134	1928	176	279	154	193	170	99	123
RTOR Reduction (vph)	0	11	0	0	9	0	0	38	0	0	37	0
Lane Group Flow (vph)	161	1810	0	134	2095	0	279	309	0	170	185	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2440		184	2594		248	469		148	470	
v/s Ratio Prot	c0.09	0.36		0.08	c0.42			0.18			0.11	
v/s Ratio Perm							0.31			c0.32		
v/c Ratio	1.21	0.74		0.73	0.81		1.12	0.66		1.15	0.39	
Uniform Delay, d1	55.5	24.7		52.1	24.1		43.5	38.5		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	145.4	2.1		11.5	2.8		94.9	7.1		119.5	0.2	
Delay (s)	200.9	26.8		63.6	26.9		138.4	45.6		163.0	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		40.9			29.1			87.0			90.8	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1508	47	19	1325	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3531			1734			1632	
Flt Permitted	0.95	1.00		0.09	1.00			0.31			0.95	
Satd. Flow (perm)	1770	3523		173	3531			551			1554	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1639	51	21	1440	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	157	0
Lane Group Flow (vph)	187	1688	0	21	1462	0	0	120	0	0	593	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	12.0	60.0		43.0	43.0			39.0			39.0	
Effective Green, g (s)	12.0	60.0		43.0	43.0			39.0			39.0	
Actuated g/C Ratio	0.11	0.55		0.39	0.39			0.35			0.35	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	193	1922		68	1380			195			551	
v/s Ratio Prot	0.11	c0.48			c0.41							
v/s Ratio Perm				0.12				0.22			c0.38	
v/c Ratio	0.97	0.88		0.31	1.06			0.62			1.08	
Uniform Delay, d1	48.8	21.8		23.2	33.5			29.3			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	55.1	6.1		11.4	41.6			5.7			60.6	
Delay (s)	103.9	27.9		34.6	75.1			35.0			96.1	
Level of Service	F	C		C	E			D			F	
Approach Delay (s)		35.5			74.5			35.0			96.1	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM Average Control Delay	59.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1828	36	0	1446	65	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1987	39	0	1572	71	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2026		2792	1013
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2026		2792	1013
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	98
cM capacity (veh/h)			276		15	237

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1325	701	524	1048	75
Volume Left	0	0	0	0	71
Volume Right	0	39	0	0	4
cSH	1700	1700	276	1700	16
Volume to Capacity	0.78	0.41	0.00	0.62	4.78
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	204.2		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1825	7	5	1433	13	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1984	8	5	1558	14	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1991		2777	996
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1991		2777	996
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		5	98
cM capacity (veh/h)			285		15	243

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1322	669	5	779	779	20
Volume Left	0	0	5	0	0	14
Volume Right	0	8	0	0	0	5
cSH	1700	1700	285	1700	1700	20
Volume to Capacity	0.78	0.39	0.02	0.46	0.46	0.97
Queue Length 95th (ft)	0	0	1	0	0	67
Control Delay (s)	0.0	0.0	17.9	0.0	0.0	456.1
Lane LOS			C			F
Approach Delay (s)	0.0		0.1			456.1
Approach LOS						F

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1548	20	262	20	20	20	273	1047	20	20	791	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.69	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1287	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1683	22	285	22	22	22	297	1138	22	22	860	1245
RTOR Reduction (vph)	0	89	0	0	0	20	0	1	0	0	0	773
Lane Group Flow (vph)	1683	218	0	0	44	2	297	1159	0	22	860	472
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.6	46.0			7.4	7.4	9.2	48.5		1.8	41.1	41.1
Effective Green, g (s)	34.6	46.0			7.4	7.4	9.2	48.5		1.8	41.1	41.1
Actuated g/C Ratio	0.32	0.42			0.07	0.07	0.08	0.45		0.02	0.38	0.38
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1097	681			88	108	150	1580		29	1343	1058
v/s Ratio Prot	c0.49	0.14					c0.17	c0.33		0.01	0.24	
v/s Ratio Perm					c0.03	0.00						0.17
v/c Ratio	1.53	0.32			0.50	0.01	1.98	0.73		0.76	0.64	0.45
Uniform Delay, d1	36.9	20.7			48.7	47.0	49.5	24.6		53.0	27.5	25.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	245.0	0.3			4.4	0.1	464.0	1.8		71.7	1.1	0.3
Delay (s)	281.9	21.0			53.1	47.1	513.6	26.4		124.7	28.6	25.4
Level of Service	F	C			D	D	F	C		F	C	C
Approach Delay (s)		241.6			51.1			125.7			27.7	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	128.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	108.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1363	1097	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1482	1192	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1933	596	1192			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1933	596	1192			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	58	447	581			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	741	741	795	397
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.44	0.44	0.47	0.23
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	920	2082	421	2021	684	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2263	458	2197	743	351
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1000	2263	458	2197	743	351
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.2	17.9	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.2	20.9	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1274	707	1066	785	806
v/s Ratio Prot	c0.30	c0.71	0.15	c0.66		0.11
v/s Ratio Perm					c0.25	
v/c Ratio	0.94	1.78	0.65	2.06	0.95	0.44
Uniform Delay, d1	30.0	26.9	31.2	30.6	32.7	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.5	352.5	2.1	480.7	20.0	0.3
Delay (s)	45.5	379.4	33.3	511.3	52.7	28.1
Level of Service	D	F	C	F	D	C
Approach Delay (s)		277.1		428.9		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	298.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2766	0	0	2490	0	352
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3007	0	0	2707	0	383
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.38		0.52	0.38
vC, conflicting volume			3007		3683	1503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3017		213	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			42		394	384

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1503	1503	677	677	677	677	383
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	383
cSH	1700	1700	1700	1700	1700	1700	384
Volume to Capacity	0.88	0.88	0.40	0.40	0.40	0.40	1.00
Queue Length 95th (ft)	0	0	0	0	0	0	297
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	78.4
Lane LOS							F
Approach Delay (s)	0.0		0.0				78.4
Approach LOS							F

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2200	163	4	2630	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2391	177	4	2859	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	34	0	0	0	0	20	0	0	54	110
Lane Group Flow (vph)	821	2391	143	4	2863	0	411	273	0	22	5	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	871	2734	890	14	1675		506	329		30	82	164
v/s Ratio Prot	c0.25	0.53		0.00	c0.59		c0.12	c0.16		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.94	0.87	0.16	0.29	1.71		0.81	0.83		0.73	0.06	0.04
Uniform Delay, d1	38.1	17.6	9.1	52.4	34.8		43.6	41.6		51.6	47.4	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.9	3.4	0.1	4.1	321.7		9.1	15.0		56.2	0.1	0.0
Delay (s)	56.0	21.0	9.2	56.5	356.5		52.7	56.6		107.8	47.6	47.4
Level of Service	E	C	A	E	F		D	E		F	D	D
Approach Delay (s)		28.8			356.1			54.3			54.2	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	163.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1457	176	125	1862	164	261	144	181	158	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5003		1770	5024		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.28	1.00	
Satd. Flow (perm)	1770	5003		1770	5024		892	1707		518	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1584	191	136	2024	178	284	157	197	172	100	125
RTOR Reduction (vph)	0	12	0	0	9	0	0	38	0	0	38	0
Lane Group Flow (vph)	163	1763	0	136	2193	0	284	316	0	172	187	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2435		186	2596		245	469		142	470	
v/s Ratio Prot	c0.09	0.35		0.08	c0.44			0.19			0.11	
v/s Ratio Perm							0.32			c0.33		
v/c Ratio	1.23	0.72		0.73	0.84		1.16	0.67		1.21	0.40	
Uniform Delay, d1	55.5	24.4		52.1	24.9		43.5	38.7		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	151.0	1.9		12.0	3.6		107.3	7.6		143.3	0.2	
Delay (s)	206.5	26.3		64.0	28.5		150.8	46.3		186.8	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.5			30.5			92.8			101.1	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	47.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1469	47	19	1417	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3531			1734			1632	
Flt Permitted	0.95	1.00		0.09	1.00			0.31			0.95	
Satd. Flow (perm)	1770	3523		169	3531			551			1554	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1597	51	21	1540	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	143	0
Lane Group Flow (vph)	187	1646	0	21	1562	0	0	120	0	0	607	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Effective Green, g (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Actuated g/C Ratio	0.10	0.55		0.40	0.40			0.35			0.35	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	177	1922		68	1412			195			551	
v/s Ratio Prot	c0.11	0.47			c0.44							
v/s Ratio Perm				0.12				0.22			c0.39	
v/c Ratio	1.06	0.86		0.31	1.11			0.61			1.10	
Uniform Delay, d1	49.5	21.3		22.6	33.0			29.3			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	83.4	5.2		11.4	58.6			5.6			69.0	
Delay (s)	132.9	26.5		34.0	91.6			34.9			104.5	
Level of Service	F	C		C	F			C			F	
Approach Delay (s)		37.3			90.8			34.9			104.5	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	68.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1843	0	0	1477	118	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2003	0	0	1605	128	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2003		2806	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2003		2806	1002
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	96
cM capacity (veh/h)			282		15	241

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1336	668	535	1070	137
Volume Left	0	0	0	0	128
Volume Right	0	0	0	0	9
cSH	1700	1700	282	1700	15
Volume to Capacity	0.79	0.39	0.00	0.63	8.88
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	365.6		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1855	0	0	1453	24	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2016	0	0	1579	26	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2016		2806	1008
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2016		2806	1008
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	95
cM capacity (veh/h)			279		15	238

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1344	672	0	790	790	37
Volume Left	0	0	0	0	0	26
Volume Right	0	0	0	0	0	11
cSH	1700	1700	1700	1700	1700	20
Volume to Capacity	0.79	0.40	0.00	0.46	0.46	1.84
Queue Length 95th (ft)	0	0	0	0	0	123
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	804.6
Lane LOS						F
Approach Delay (s)	0.0		0.0			804.6
Approach LOS						F

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2560	33	448	33	33	33	460	1732	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.60	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1111	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	36	487	36	36	36	500	1883	36	36	1423	2050
RTOR Reduction (vph)	0	67	0	0	0	33	0	1	0	0	0	861
Lane Group Flow (vph)	2783	456	0	0	72	3	500	1918	0	36	1423	1189
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Effective Green, g (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Actuated g/C Ratio	0.29	0.42			0.09	0.09	0.08	0.46		0.02	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1007	666			97	139	137	1611		44	1430	1126
v/s Ratio Prot	c0.81	c0.28					c0.28	c0.54		0.02	0.40	
v/s Ratio Perm					0.06	0.00						0.43
v/c Ratio	2.76	0.69			0.74	0.02	3.65	1.19		0.82	1.00	1.06
Uniform Delay, d1	41.1	27.8			51.8	48.5	53.6	31.6		56.4	34.5	34.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	796.4	2.9			26.0	0.1	1210.2	92.2		69.3	22.5	42.9
Delay (s)	837.5	30.7			77.8	48.6	1263.8	123.8		125.8	57.0	77.5
Level of Service	F	C			E	D	F	F		F	E	E
Approach Delay (s)		709.9			68.0			359.5			69.7	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM Average Control Delay	371.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.80		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	151.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1379	1114	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1499	1211	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1960	605	1211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1960	605	1211			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	55	440	572			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	0	749	749	807	404
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.44	0.44	0.47	0.24
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

Year 2035 General Plan Baseline with DeWitt Nelson YCF Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	330	1986	300	1473	1479	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2159	326	1601	1608	350
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	359	2159	326	1601	1608	350
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	25.9	13.5	25.8	20.4	20.4
Effective Green, g (s)	16.6	28.9	16.5	28.8	23.4	23.4
Actuated g/C Ratio	0.21	0.37	0.21	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	714	1169	642	1230	902	926
v/s Ratio Prot	0.11	c0.68	c0.11	0.48		0.11
v/s Ratio Perm					c0.53	
v/c Ratio	0.50	1.85	0.51	1.30	1.78	0.38
Uniform Delay, d1	27.2	24.7	27.3	24.8	27.4	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	384.4	0.6	141.8	356.7	0.2
Delay (s)	27.8	409.1	27.9	166.5	384.2	21.9
Level of Service	C	F	C	F	F	C
Approach Delay (s)		354.8		143.1		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	280.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	5.2
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	3465	0	0	1739	0	405
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3766	0	0	1890	0	440
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.50	0.36
vC, conflicting volume			3766		4239	1883
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			5115		1241	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			5		84	367

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1883	1883	473	473	473	473	440
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	440
cSH	1700	1700	1700	1700	1700	1700	367
Volume to Capacity	1.11	1.11	0.28	0.28	0.28	0.28	1.20
Queue Length 95th (ft)	0	0	0	0	0	0	454
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	144.6
Lane LOS							F
Approach Delay (s)	0.0		0.0				144.6
Approach LOS							F

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	127.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2565	310	3	1820	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2788	337	3	1978	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	48	0	0	0	0	12	0	0	54	110
Lane Group Flow (vph)	1080	2788	289	3	1980	0	73	74	0	22	4	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Effective Green, g (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Actuated g/C Ratio	0.29	0.66	0.66	0.01	0.38		0.08	0.11		0.03	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	948	2977	969	15	1825		262	201		35	85	170
v/s Ratio Prot	c0.33	0.62		0.00	c0.41		c0.02	c0.04		c0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.14	0.94	0.30	0.20	1.08		0.28	0.37		0.63	0.05	0.04
Uniform Delay, d1	34.4	14.7	7.0	47.7	30.2		42.1	39.9		46.8	43.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.5	6.5	0.1	2.4	48.2		0.2	0.4		22.7	0.1	0.0
Delay (s)	109.9	21.1	7.1	50.1	78.5		42.3	40.3		69.5	43.1	43.1
Level of Service	F	C	A	D	E		D	D		E	D	D
Approach Delay (s)		42.8			78.4			41.2			46.0	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	53.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	22.6
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1679	219	111	1341	164	118	38	48	45	62	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.92		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	4997		1770	5002		1770	1707		1770	1658	
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.70	1.00	
Satd. Flow (perm)	1770	4997		1770	5002		821	1707		1298	1658	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	1825	238	121	1458	178	128	41	52	49	67	184
RTOR Reduction (vph)	0	13	0	0	12	0	0	38	0	0	82	0
Lane Group Flow (vph)	54	2050	0	121	1624	0	128	55	0	49	169	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Effective Green, g (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.05	0.49		0.10	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	95	2433		177	2667		228	475		361	461	
v/s Ratio Prot	0.03	c0.41		c0.07	0.32			0.03			0.10	
v/s Ratio Perm							c0.16			0.04		
v/c Ratio	0.57	0.84		0.68	0.61		0.56	0.12		0.14	0.37	
Uniform Delay, d1	54.8	26.5		51.6	19.1		36.7	32.0		32.2	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	3.8		8.4	1.0		9.6	0.5		0.1	0.2	
Delay (s)	59.4	30.2		60.0	20.2		46.3	32.5		32.2	34.6	
Level of Service	E	C		E	C		D	C		C	C	
Approach Delay (s)		31.0			22.9			40.5			34.2	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	28.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	1003	65	26	1328	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3507		1770	3508			1741			1636	
Flt Permitted	0.95	1.00		0.24	1.00			0.34			0.96	
Satd. Flow (perm)	1770	3507		455	3508			603			1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1090	71	28	1443	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	4	0	0	11	0	0	135	0
Lane Group Flow (vph)	729	1157	0	28	1529	0	0	57	0	0	37	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Effective Green, g (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Actuated g/C Ratio	0.37	0.81		0.39	0.39			0.09			0.09	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	660	2837		178	1371			55			144	
v/s Ratio Prot	c0.41	0.33			c0.44							
v/s Ratio Perm				0.06				c0.09			0.02	
v/c Ratio	1.10	0.41		0.16	1.12			1.04			0.25	
Uniform Delay, d1	34.5	3.0		21.7	33.5			50.0			46.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	67.2	0.4		1.9	62.3			132.5			0.9	
Delay (s)	101.7	3.4		23.6	95.8			182.5			47.5	
Level of Service	F	A		C	F			F			D	
Approach Delay (s)		41.3			94.5			182.5			47.5	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM Average Control Delay	66.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1089	0	0	1651	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1184	0	0	1795	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1184		2081	592
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1184		2081	592
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			586		46	450

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	789	395	598	1196	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	586	1700	1700
Volume to Capacity	0.46	0.23	0.00	0.70	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1096	0	0	1660	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1191	0	0	1804	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1191		2093	596
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1191		2093	596
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			582		45	447

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	794	397	0	902	902	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.23	0.00	0.53	0.53	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	730	20	342	20	20	20	87	386	20	20	749	1547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1214	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	793	22	372	22	22	22	95	420	22	22	814	1682
RTOR Reduction (vph)	0	101	0	0	0	20	0	3	0	0	0	975
Lane Group Flow (vph)	793	293	0	0	44	2	95	439	0	22	814	707
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	28.6	39.8			7.2	7.2	8.9	50.7		1.7	43.5	43.5
Effective Green, g (s)	28.6	39.8			7.2	7.2	8.9	50.7		1.7	43.5	43.5
Actuated g/C Ratio	0.27	0.38			0.07	0.07	0.09	0.49		0.02	0.42	0.42
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	942	611			84	109	151	1709		29	1477	1163
v/s Ratio Prot	c0.23	c0.18					c0.05	0.13		0.01	0.23	
v/s Ratio Perm					0.04	0.00						c0.25
v/c Ratio	0.84	0.48			0.52	0.01	0.63	0.26		0.76	0.55	0.61
Uniform Delay, d1	35.7	24.4			46.8	45.2	46.1	15.7		51.0	23.0	23.7
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.9	0.6			5.8	0.1	8.0	0.1		71.7	0.4	0.9
Delay (s)	42.6	25.0			52.6	45.2	54.0	15.8		122.7	23.4	24.6
Level of Service	D	C			D	D	D	B		F	C	C
Approach Delay (s)		36.7			50.2			22.5			25.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	6	529	967	144
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	7	575	1051	157
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1430	604	1208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1430	604	1208			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	124	442	574			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	7	288	288	701	507
Volume Left	0	7	0	0	0	0
Volume Right	0	0	0	0	0	157
cSH	1700	574	1700	1700	1700	1700
Volume to Capacity	0.00	0.01	0.17	0.17	0.41	0.30
Queue Length 95th (ft)	0	1	0	0	0	0
Control Delay (s)	0.0	11.3	0.0	0.0	0.0	0.0
Lane LOS	A	B				
Approach Delay (s)	0.0	0.1			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	907	2082	393	1969	711	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2263	427	2140	773	347
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	986	2263	427	2140	773	347
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.8	17.3	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.8	20.3	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.41	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1295	687	1066	785	806
v/s Ratio Prot	c0.29	c0.71	0.14	c0.64		0.11
v/s Ratio Perm					c0.26	
v/c Ratio	0.93	1.75	0.62	2.01	0.98	0.43
Uniform Delay, d1	29.8	26.6	31.4	30.6	33.1	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	339.6	1.8	456.7	28.1	0.3
Delay (s)	43.3	366.2	33.1	487.4	61.2	28.0
Level of Service	D	F	C	F	E	C
Approach Delay (s)		268.2		411.8		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	286.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2793	0	0	2377	0	374
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3036	0	0	2584	0	407
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.50	0.36
vC, conflicting volume			3036		3682	1518
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3099		111	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			37		440	366

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1518	1518	646	646	646	646	407
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	407
cSH	1700	1700	1700	1700	1700	1700	366
Volume to Capacity	0.89	0.89	0.38	0.38	0.38	0.38	1.11
Queue Length 95th (ft)	0	0	0	0	0	0	378
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	113.7
Lane LOS							F
Approach Delay (s)	0.0		0.0				113.7
Approach LOS							F

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2263	161	4	2515	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2460	175	4	2734	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	33	0	0	0	0	20	0	0	54	109
Lane Group Flow (vph)	810	2460	142	4	2738	0	405	270	0	22	5	6
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	872	2737	891	14	1676		506	328		30	81	161
v/s Ratio Prot	c0.25	0.55		0.00	c0.57		c0.12	c0.15		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.93	0.90	0.16	0.29	1.63		0.80	0.82		0.73	0.06	0.04
Uniform Delay, d1	37.9	18.1	9.1	52.4	34.8		43.4	41.6		51.6	47.5	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.5	4.4	0.1	4.1	287.9		8.4	14.5		56.2	0.1	0.0
Delay (s)	53.4	22.5	9.2	56.4	322.6		51.8	56.1		107.8	47.6	47.5
Level of Service	D	C	A	E	F		D	E		F	D	D
Approach Delay (s)		29.1			322.2			53.6			54.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	145.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1530	174	123	1758	162	257	142	178	156	91	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5007		1770	5021		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.29	1.00	
Satd. Flow (perm)	1770	5007		1770	5021		901	1707		537	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1663	189	134	1911	176	279	154	193	170	99	123
RTOR Reduction (vph)	0	11	0	0	9	0	0	38	0	0	37	0
Lane Group Flow (vph)	161	1841	0	134	2078	0	279	309	0	170	185	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2441		184	2594		248	469		148	470	
v/s Ratio Prot	c0.09	0.37		0.08	c0.41			0.18			0.11	
v/s Ratio Perm							0.31			c0.32		
v/c Ratio	1.21	0.75		0.73	0.80		1.12	0.66		1.15	0.39	
Uniform Delay, d1	55.5	24.9		52.1	23.9		43.5	38.5		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	145.4	2.2		11.5	2.7		94.9	7.1		119.5	0.2	
Delay (s)	200.9	27.1		63.6	26.6		138.4	45.6		163.0	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.0			28.9			87.0			90.8	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1537	47	19	1309	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3531			1734			1632	
Flt Permitted	0.95	1.00		0.10	1.00			0.32			0.95	
Satd. Flow (perm)	1770	3523		177	3531			571			1553	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1671	51	21	1423	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	10	0	0	157	0
Lane Group Flow (vph)	187	1720	0	21	1445	0	0	122	0	0	593	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Effective Green, g (s)	12.0	59.0		42.0	42.0			40.0			40.0	
Actuated g/C Ratio	0.11	0.54		0.38	0.38			0.36			0.36	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	193	1890		68	1348			208			565	
v/s Ratio Prot	0.11	c0.49			c0.41							
v/s Ratio Perm				0.12				0.21			c0.38	
v/c Ratio	0.97	0.91		0.31	1.07			0.59			1.05	
Uniform Delay, d1	48.8	23.1		23.8	34.0			28.3			35.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	55.1	8.0		11.4	46.2			4.2			51.4	
Delay (s)	103.9	31.1		35.2	80.2			32.6			86.4	
Level of Service	F	C		D	F			C			F	
Approach Delay (s)		38.3			79.6			32.6			86.4	
Approach LOS		D			E			C			F	

Intersection Summary			
HCM Average Control Delay	60.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1911	0	0	1513	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2077	0	0	1645	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2077		2899	1039
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2077		2899	1039
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			264		12	228

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1385	692	548	1096	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	264	1700	1700
Volume to Capacity	0.81	0.41	0.00	0.64	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1914	0	0	1517	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2080	0	0	1649	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2080		2905	1040
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2080		2905	1040
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			263		12	227

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1387	693	0	824	824	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.82	0.41	0.00	0.48	0.48	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1540	20	352	20	20	20	354	1054	20	20	799	1140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1205	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1674	22	383	22	22	22	385	1146	22	22	868	1239
RTOR Reduction (vph)	0	88	0	0	0	20	0	1	0	0	0	768
Lane Group Flow (vph)	1674	317	0	0	44	2	385	1167	0	22	868	471
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.6	46.1			7.5	7.5	9.2	48.7		1.8	41.3	41.3
Effective Green, g (s)	34.6	46.1			7.5	7.5	9.2	48.7		1.8	41.3	41.3
Actuated g/C Ratio	0.32	0.42			0.07	0.07	0.08	0.45		0.02	0.38	0.38
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1094	679			83	109	150	1583		29	1346	1060
v/s Ratio Prot	c0.49	c0.20					c0.22	c0.33		0.01	0.25	
v/s Ratio Perm					0.04	0.00						0.17
v/c Ratio	1.53	0.47			0.53	0.01	2.57	0.74		0.76	0.64	0.44
Uniform Delay, d1	37.0	22.4			48.8	47.1	49.7	24.7		53.2	27.6	25.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	243.2	0.5			6.4	0.1	724.1	1.8		71.7	1.1	0.3
Delay (s)	280.2	22.9			55.2	47.2	773.8	26.5		124.9	28.7	25.4
Level of Service	F	C			E	D	F	C		F	C	C
Approach Delay (s)		230.1			52.5			211.8			27.8	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	149.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	108.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	68	3	3	1360	1092	79
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	3	3	1478	1187	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1976	636	1273			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1976	636	1273			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	99			
cM capacity (veh/h)	54	420	542			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	77	3	739	739	791	482
Volume Left	74	3	0	0	0	0
Volume Right	3	0	0	0	0	86
cSH	56	542	1700	1700	1700	1700
Volume to Capacity	1.38	0.01	0.43	0.43	0.47	0.28
Queue Length 95th (ft)	172	0	0	0	0	0
Control Delay (s)	372.9	11.7	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	372.9	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	920	2081	427	2027	684	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2262	464	2203	743	351
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1000	2262	464	2203	743	351
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.1	18.0	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.1	21.0	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1270	711	1066	785	806
v/s Ratio Prot	c0.30	c0.71	0.15	c0.66		0.11
v/s Ratio Perm					c0.25	
v/c Ratio	0.94	1.78	0.65	2.07	0.95	0.44
Uniform Delay, d1	30.0	26.9	31.2	30.6	32.7	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.5	354.7	2.2	483.2	20.0	0.3
Delay (s)	45.5	381.6	33.4	513.9	52.7	28.1
Level of Service	D	F	C	F	D	C
Approach Delay (s)		278.6		430.3		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	299.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2765	0	0	2510	0	351
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3005	0	0	2728	0	382
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.38		0.52	0.38
vC, conflicting volume			3005		3688	1503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3014		227	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	1
cM capacity (veh/h)			42		387	385

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1503	1503	682	682	682	682	382
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	382
cSH	1700	1700	1700	1700	1700	1700	385
Volume to Capacity	0.88	0.88	0.40	0.40	0.40	0.40	0.99
Queue Length 95th (ft)	0	0	0	0	0	0	294
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	76.9
Lane LOS							F
Approach Delay (s)	0.0		0.0				76.9
Approach LOS							F

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2199	163	4	2650	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2390	177	4	2880	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	34	0	0	0	0	20	0	0	54	110
Lane Group Flow (vph)	821	2390	143	4	2884	0	411	273	0	22	5	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	871	2734	890	14	1675		506	329		30	82	164
v/s Ratio Prot	c0.25	0.53		0.00	c0.60		c0.12	c0.16		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.94	0.87	0.16	0.29	1.72		0.81	0.83		0.73	0.06	0.04
Uniform Delay, d1	38.1	17.6	9.1	52.4	34.8		43.6	41.6		51.6	47.4	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.9	3.4	0.1	4.1	327.3		9.1	15.0		56.2	0.1	0.0
Delay (s)	56.0	20.9	9.2	56.5	362.1		52.7	56.6		107.8	47.6	47.4
Level of Service	E	C	A	E	F		D	E		F	D	D
Approach Delay (s)		28.8			361.7			54.3			54.2	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	166.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1456	176	125	1882	164	261	144	181	158	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5003		1770	5024		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.28	1.00	
Satd. Flow (perm)	1770	5003		1770	5024		892	1707		518	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1583	191	136	2046	178	284	157	197	172	100	125
RTOR Reduction (vph)	0	12	0	0	8	0	0	38	0	0	38	0
Lane Group Flow (vph)	163	1762	0	136	2216	0	284	316	0	172	187	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2435		186	2596		245	469		142	470	
v/s Ratio Prot	c0.09	0.35		0.08	c0.44			0.19			0.11	
v/s Ratio Perm							0.32			c0.33		
v/c Ratio	1.23	0.72		0.73	0.85		1.16	0.67		1.21	0.40	
Uniform Delay, d1	55.5	24.4		52.1	25.1		43.5	38.7		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	151.0	1.9		12.0	3.8		107.3	7.6		143.3	0.2	
Delay (s)	206.5	26.3		64.0	28.9		150.8	46.3		186.8	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.5			30.9			92.8			101.1	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1468	47	19	1437	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3532			1734			1632	
Flt Permitted	0.95	1.00		0.09	1.00			0.31			0.95	
Satd. Flow (perm)	1770	3523		169	3532			551			1554	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1596	51	21	1562	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	143	0
Lane Group Flow (vph)	187	1645	0	21	1584	0	0	120	0	0	607	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Effective Green, g (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Actuated g/C Ratio	0.10	0.55		0.40	0.40			0.35			0.35	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	177	1922		68	1413			195			551	
v/s Ratio Prot	c0.11	0.47			c0.45							
v/s Ratio Perm				0.12				0.22			c0.39	
v/c Ratio	1.06	0.86		0.31	1.12			0.61			1.10	
Uniform Delay, d1	49.5	21.3		22.6	33.0			29.3			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	83.4	5.2		11.4	64.4			5.6			69.0	
Delay (s)	132.9	26.5		34.0	97.4			34.9			104.5	
Level of Service	F	C		C	F			C			F	
Approach Delay (s)		37.3			96.5			34.9			104.5	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	70.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1843	0	0	1633	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2003	0	0	1775	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2003		2891	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2003		2891	1002
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			282		13	241

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1336	668	592	1183	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	282	1700	1700
Volume to Capacity	0.79	0.39	0.00	0.70	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1845	0	0	1637	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2005	0	0	1779	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2005		2895	1003
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2005		2895	1003
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			282		13	240

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1337	668	0	890	890	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.79	0.39	0.00	0.52	0.52	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2547	33	441	33	33	33	644	1747	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.60	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1118	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2768	36	479	36	36	36	700	1899	36	36	1423	2050
RTOR Reduction (vph)	0	67	0	0	0	33	0	1	0	0	0	861
Lane Group Flow (vph)	2768	448	0	0	72	3	700	1934	0	36	1423	1189
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Effective Green, g (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Actuated g/C Ratio	0.29	0.42			0.09	0.09	0.08	0.46		0.02	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1007	666			98	139	137	1611		44	1430	1126
v/s Ratio Prot	c0.81	c0.28					c0.40	c0.55		0.02	0.40	
v/s Ratio Perm					0.06	0.00						0.43
v/c Ratio	2.75	0.67			0.73	0.02	5.11	1.20		0.82	1.00	1.06
Uniform Delay, d1	41.1	27.6			51.7	48.5	53.6	31.6		56.4	34.5	34.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	789.7	2.7			24.6	0.1	1865.5	96.5		69.3	22.5	42.9
Delay (s)	830.8	30.3			76.3	48.6	1919.1	128.1		125.8	57.0	77.5
Level of Service	F	C			E	D	F	F		F	E	E
Approach Delay (s)		705.3			67.0			603.9			69.7	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM Average Control Delay	436.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	161.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	176	7	0	1379	1107	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	191	8	0	1499	1203	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1953	602	1203			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1953	602	1203			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	98	100			
cM capacity (veh/h)	56	443	576			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	199	0	749	749	802	401
Volume Left	191	0	0	0	0	0
Volume Right	8	0	0	0	0	0
cSH	58	1700	1700	1700	1700	1700
Volume to Capacity	3.43	0.00	0.44	0.44	0.47	0.24
Queue Length 95th (ft)	Err	0	0	0	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	Err	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	685.6		
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

Year 2035 General Plan Baseline with NRCF/Dewitt Nelson YCF Project Condition

A.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	330	2038	305	1478	1543	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2215	332	1607	1677	350
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	359	2215	332	1607	1677	350
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	13.6	25.7	13.7	25.8	20.4	20.4
Effective Green, g (s)	16.6	28.7	16.7	28.8	23.4	23.4
Actuated g/C Ratio	0.21	0.37	0.21	0.37	0.30	0.30
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	714	1161	649	1230	902	926
v/s Ratio Prot	0.11	c0.70	c0.11	0.48		0.11
v/s Ratio Perm					c0.56	
v/c Ratio	0.50	1.91	0.51	1.31	1.86	0.38
Uniform Delay, d1	27.2	24.8	27.2	24.8	27.4	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	411.8	0.7	143.9	390.9	0.2
Delay (s)	27.8	436.6	27.9	168.7	418.4	21.9
Level of Service	C	F	C	F	F	C
Approach Delay (s)		379.5		144.6		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	300.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.55		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	9.5
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	3581	0	0	1756	0	454
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3892	0	0	1909	0	493
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.51	0.36
vC, conflicting volume			3892		4370	1946
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			5445		1449	112
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			4		62	310

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1946	1946	477	477	477	477	493
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	493
cSH	1700	1700	1700	1700	1700	1700	310
Volume to Capacity	1.14	1.14	0.28	0.28	0.28	0.28	1.59
Queue Length 95th (ft)	0	0	0	0	0	0	731
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	310.4
Lane LOS							F
Approach Delay (s)	0.0		0.0				310.4
Approach LOS							F

Intersection Summary			
Average Delay	24.3		
Intersection Capacity Utilization	133.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2730	310	3	1837	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2967	337	3	1997	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	45	0	0	0	0	12	0	0	54	110
Lane Group Flow (vph)	1080	2967	292	3	1999	0	73	74	0	22	4	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Effective Green, g (s)	28.4	64.1	64.1	0.9	36.6		7.7	10.9		2.6	5.8	5.8
Actuated g/C Ratio	0.29	0.66	0.66	0.01	0.38		0.08	0.11		0.03	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	948	2977	969	15	1825		262	201		35	85	170
v/s Ratio Prot	c0.33	0.66		0.00	c0.41		c0.02	c0.04		c0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.14	1.00	0.30	0.20	1.10		0.28	0.37		0.63	0.05	0.04
Uniform Delay, d1	34.4	16.4	7.0	47.7	30.2		42.1	39.9		46.8	43.1	43.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	75.5	15.6	0.1	2.4	52.2		0.2	0.4		22.7	0.1	0.0
Delay (s)	109.9	32.0	7.1	50.1	82.5		42.3	40.3		69.5	43.1	43.1
Level of Service	F	C	A	D	F		D	D		E	D	D
Approach Delay (s)		49.3			82.4			41.2			46.0	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	97.1	Sum of lost time (s)	22.6
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	1844	219	111	1358	164	118	38	48	45	62	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.92		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5004		1770	5003		1770	1707		1770	1658	
Flt Permitted	0.95	1.00		0.95	1.00		0.44	1.00		0.70	1.00	
Satd. Flow (perm)	1770	5004		1770	5003		821	1707		1298	1658	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	2004	238	121	1476	178	128	41	52	49	67	184
RTOR Reduction (vph)	0	12	0	0	12	0	0	38	0	0	82	0
Lane Group Flow (vph)	54	2230	0	121	1642	0	128	55	0	49	169	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Effective Green, g (s)	6.4	57.8		11.9	63.3		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.05	0.49		0.10	0.53		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	95	2437		177	2668		228	475		361	461	
v/s Ratio Prot	0.03	c0.45		c0.07	0.33			0.03			0.10	
v/s Ratio Perm							c0.16			0.04		
v/c Ratio	0.57	0.92		0.68	0.62		0.56	0.12		0.14	0.37	
Uniform Delay, d1	54.8	28.2		51.6	19.2		36.7	32.0		32.2	34.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.6	6.8		8.4	1.1		9.6	0.5		0.1	0.2	
Delay (s)	59.4	34.9		60.0	20.3		46.3	32.5		32.2	34.6	
Level of Service	E	C		E	C		D	C		C	C	
Approach Delay (s)		35.5			23.0			40.5			34.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	118.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	1168	65	26	1345	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.97			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3511		1770	3508			1741			1636	
Flt Permitted	0.95	1.00		0.20	1.00			0.34			0.96	
Satd. Flow (perm)	1770	3511		379	3508			603			1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1270	71	28	1462	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	4	0	0	11	0	0	135	0
Lane Group Flow (vph)	729	1337	0	28	1548	0	0	57	0	0	37	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Effective Green, g (s)	41.0	89.0		43.0	43.0			10.0			10.0	
Actuated g/C Ratio	0.37	0.81		0.39	0.39			0.09			0.09	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	660	2841		148	1371			55			144	
v/s Ratio Prot	c0.41	0.38			c0.44							
v/s Ratio Perm				0.07				c0.09			0.02	
v/c Ratio	1.10	0.47		0.19	1.13			1.04			0.25	
Uniform Delay, d1	34.5	3.2		22.0	33.5			50.0			46.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	67.2	0.6		2.8	67.8			132.5			0.9	
Delay (s)	101.7	3.8		24.9	101.3			182.5			47.5	
Level of Service	F	A		C	F			F			D	
Approach Delay (s)		38.3			100.0			182.5			47.5	
Approach LOS		D			F			F			D	

Intersection Summary			
HCM Average Control Delay	66.3	HCM Level of Service	E
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1117	92	0	1654	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1214	100	0	1798	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			1314		2163	657
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1314		2163	657
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			522		40	407

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	809	505	599	1199	0
Volume Left	0	0	0	0	0
Volume Right	0	100	0	0	0
cSH	1700	1700	522	1700	1700
Volume to Capacity	0.48	0.30	0.00	0.71	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1097	19	14	1660	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1192	21	15	1804	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			1213		2135	607
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1213		2135	607
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	100
cM capacity (veh/h)			571		41	440

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	795	418	15	902	902	0
Volume Left	0	0	15	0	0	0
Volume Right	0	21	0	0	0	0
cSH	1700	1700	571	1700	1700	1700
Volume to Capacity	0.47	0.25	0.03	0.53	0.53	0.00
Queue Length 95th (ft)	0	0	2	0	0	0
Control Delay (s)	0.0	0.0	11.5	0.0	0.0	0.0
Lane LOS			B			A
Approach Delay (s)	0.0		0.1			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	731	20	343	20	20	20	94	386	20	20	749	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1213	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	795	22	373	22	22	22	102	420	22	22	814	1696
RTOR Reduction (vph)	0	101	0	0	0	20	0	3	0	0	0	971
Lane Group Flow (vph)	795	294	0	0	44	2	102	439	0	22	814	725
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	28.7	40.0			7.3	7.3	9.0	51.0		1.8	43.8	43.8
Effective Green, g (s)	28.7	40.0			7.3	7.3	9.0	51.0		1.8	43.8	43.8
Actuated g/C Ratio	0.27	0.38			0.07	0.07	0.09	0.49		0.02	0.42	0.42
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	940	610			84	110	152	1710		30	1479	1165
v/s Ratio Prot	c0.23	c0.18					c0.06	0.13		0.01	0.23	
v/s Ratio Perm					0.04	0.00						c0.26
v/c Ratio	0.85	0.48			0.52	0.01	0.67	0.26		0.73	0.55	0.62
Uniform Delay, d1	36.0	24.6			47.1	45.4	46.5	15.8		51.3	23.1	24.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.1	0.6			5.8	0.1	11.1	0.1		63.0	0.4	1.0
Delay (s)	43.0	25.2			52.9	45.4	57.5	15.9		114.2	23.5	25.0
Level of Service	D	C			D	D	E	B		F	C	C
Approach Delay (s)		37.1			50.4			23.7			25.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	6	536	967	144
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	7	583	1051	157
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1434	604	1208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1434	604	1208			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	123	442	574			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	7	291	291	701	507
Volume Left	0	7	0	0	0	0
Volume Right	0	0	0	0	0	157
cSH	1700	574	1700	1700	1700	1700
Volume to Capacity	0.00	0.01	0.17	0.17	0.41	0.30
Queue Length 95th (ft)	0	1	0	0	0	0
Control Delay (s)	0.0	11.3	0.0	0.0	0.0	0.0
Lane LOS	A	B				
Approach Delay (s)	0.0	0.1			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

MIDDAY PEAK

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	907	2103	422	2001	737	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2286	459	2175	801	347
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	986	2286	459	2175	801	347
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	33.2	17.9	25.7	20.4	20.4
Effective Green, g (s)	28.4	36.2	20.9	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.40	0.23	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1274	707	1066	785	806
v/s Ratio Prot	c0.29	c0.72	0.15	c0.65		0.11
v/s Ratio Perm					c0.27	
v/c Ratio	0.93	1.79	0.65	2.04	1.02	0.43
Uniform Delay, d1	29.8	26.9	31.2	30.6	33.3	27.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	360.6	2.1	471.4	37.4	0.3
Delay (s)	43.3	387.5	33.3	502.1	70.7	28.0
Level of Service	D	F	C	F	E	C
Approach Delay (s)		283.8		420.4		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	298.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2840	0	0	2478	0	393
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3087	0	0	2693	0	427
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.36		0.51	0.36
vC, conflicting volume			3087		3760	1543
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3239		282	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	0
cM capacity (veh/h)			33		347	369

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1543	1543	673	673	673	673	427
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	427
cSH	1700	1700	1700	1700	1700	1700	369
Volume to Capacity	0.91	0.91	0.40	0.40	0.40	0.40	1.16
Queue Length 95th (ft)	0	0	0	0	0	0	420
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	129.5
Lane LOS							F
Approach Delay (s)	0.0		0.0				129.5
Approach LOS							F

Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	109.5%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2329	161	4	2616	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2532	175	4	2843	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	32	0	0	0	0	20	0	0	54	109
Lane Group Flow (vph)	810	2532	143	4	2847	0	405	270	0	22	5	6
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.8		2.5	6.0	6.0
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	872	2737	891	14	1676		506	328		30	81	161
v/s Ratio Prot	c0.25	0.56		0.00	c0.59		c0.12	c0.15		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.93	0.93	0.16	0.29	1.70		0.80	0.82		0.73	0.06	0.04
Uniform Delay, d1	37.9	18.7	9.1	52.4	34.8		43.4	41.6		51.6	47.5	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.5	6.0	0.1	4.1	317.0		8.4	14.5		56.2	0.1	0.0
Delay (s)	53.4	24.7	9.2	56.4	351.7		51.8	56.1		107.8	47.6	47.5
Level of Service	D	C	A	E	F		D	E		F	D	D
Approach Delay (s)		30.6			351.3			53.6			54.3	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	159.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	106.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	1596	174	123	1859	162	257	142	178	156	91	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5010		1770	5024		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.29	1.00	
Satd. Flow (perm)	1770	5010		1770	5024		901	1707		537	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	161	1735	189	134	2021	176	279	154	193	170	99	123
RTOR Reduction (vph)	0	11	0	0	8	0	0	38	0	0	37	0
Lane Group Flow (vph)	161	1913	0	134	2189	0	279	309	0	170	185	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.5		12.5	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2442		184	2596		248	469		148	470	
v/s Ratio Prot	c0.09	0.38		0.08	c0.44			0.18			0.11	
v/s Ratio Perm							0.31			c0.32		
v/c Ratio	1.21	0.78		0.73	0.84		1.12	0.66		1.15	0.39	
Uniform Delay, d1	55.5	25.5		52.1	24.8		43.5	38.5		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	145.4	2.6		11.5	3.5		94.9	7.1		119.5	0.2	
Delay (s)	200.9	28.1		63.6	28.4		138.4	45.6		163.0	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.4			30.4			87.0			90.8	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1603	47	19	1410	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3524		1770	3531			1734			1632	
Flt Permitted	0.95	1.00		0.09	1.00			0.31			0.95	
Satd. Flow (perm)	1770	3524		169	3531			551			1554	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1742	51	21	1533	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	9	0	0	143	0
Lane Group Flow (vph)	187	1791	0	21	1555	0	0	123	0	0	607	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Effective Green, g (s)	11.0	60.0		44.0	44.0			39.0			39.0	
Actuated g/C Ratio	0.10	0.55		0.40	0.40			0.35			0.35	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	177	1922		68	1412			195			551	
v/s Ratio Prot	0.11	c0.51			c0.44							
v/s Ratio Perm				0.12				0.22			c0.39	
v/c Ratio	1.06	0.93		0.31	1.10			0.63			1.10	
Uniform Delay, d1	49.5	23.1		22.6	33.0			29.5			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	83.4	9.7		11.4	56.7			6.5			69.0	
Delay (s)	132.9	32.8		34.0	89.7			36.0			104.5	
Level of Service	F	C		C	F			D			F	
Approach Delay (s)		42.3			88.9			36.0			104.5	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM Average Control Delay	69.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1922	36	0	1531	65	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2089	39	0	1664	71	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2128		2941	1064
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2128		2941	1064
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	98
cM capacity (veh/h)			252		12	219

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1393	736	555	1109	75
Volume Left	0	0	0	0	71
Volume Right	0	39	0	0	4
cSH	1700	1700	252	1700	12
Volume to Capacity	0.82	0.43	0.00	0.65	6.07
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	193.9		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1919	7	5	1517	13	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2086	8	5	1649	14	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2093		2925	1047
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2093		2925	1047
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		0	98
cM capacity (veh/h)			260		12	225

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1391	703	5	824	824	20
Volume Left	0	0	5	0	0	14
Volume Right	0	8	0	0	0	5
cSH	1700	1700	260	1700	1700	16
Volume to Capacity	0.82	0.41	0.02	0.48	0.48	1.23
Queue Length 95th (ft)	0	0	2	0	0	74
Control Delay (s)	0.0	0.0	19.1	0.0	0.0	640.6
Lane LOS			C			F
Approach Delay (s)	0.0		0.1			640.6
Approach LOS						F

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1548	20	357	20	20	20	357	1054	20	20	799	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1598			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.64	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1598			1201	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1683	22	388	22	22	22	388	1146	22	22	868	1245
RTOR Reduction (vph)	0	88	0	0	0	20	0	1	0	0	0	772
Lane Group Flow (vph)	1683	322	0	0	44	2	388	1167	0	22	868	473
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.6	46.1			7.5	7.5	9.2	48.7		1.8	41.3	41.3
Effective Green, g (s)	34.6	46.1			7.5	7.5	9.2	48.7		1.8	41.3	41.3
Actuated g/C Ratio	0.32	0.42			0.07	0.07	0.08	0.45		0.02	0.38	0.38
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1094	678			83	109	150	1583		29	1346	1060
v/s Ratio Prot	c0.49	c0.20					c0.22	c0.33		0.01	0.25	
v/s Ratio Perm					0.04	0.00						0.17
v/c Ratio	1.54	0.47			0.53	0.01	2.59	0.74		0.76	0.64	0.45
Uniform Delay, d1	37.0	22.5			48.8	47.1	49.7	24.7		53.2	27.6	25.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	246.9	0.5			6.4	0.1	733.1	1.8		71.7	1.1	0.3
Delay (s)	283.9	23.1			55.2	47.2	782.8	26.5		124.9	28.7	25.4
Level of Service	F	C			E	D	F	C		F	C	C
Approach Delay (s)		232.8			52.5			215.1			27.8	
Approach LOS		F			D			F			C	

Intersection Summary			
HCM Average Control Delay	151.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	108.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	68	3	3	1363	1097	79
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	3	3	1482	1192	86
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1983	639	1278			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1983	639	1278			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	99			
cM capacity (veh/h)	53	419	539			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	77	3	741	741	795	483
Volume Left	74	3	0	0	0	0
Volume Right	3	0	0	0	0	86
cSH	55	539	1700	1700	1700	1700
Volume to Capacity	1.40	0.01	0.44	0.44	0.47	0.28
Queue Length 95th (ft)	173	0	0	0	0	0
Control Delay (s)	380.5	11.7	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	380.5	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

P.M. Peak

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	920	2082	475	2079	684	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2263	516	2260	743	351
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1000	2263	516	2260	743	351
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	25.4	32.3	18.8	25.7	20.4	20.4
Effective Green, g (s)	28.4	35.3	21.8	28.7	23.4	23.4
Actuated g/C Ratio	0.32	0.39	0.24	0.32	0.26	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1062	1242	738	1066	785	806
v/s Ratio Prot	c0.30	c0.71	0.17	c0.68		0.11
v/s Ratio Perm					c0.25	
v/c Ratio	0.94	1.82	0.70	2.12	0.95	0.44
Uniform Delay, d1	30.0	27.4	31.1	30.6	32.7	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.5	373.1	2.9	507.2	20.0	0.3
Delay (s)	45.5	400.5	34.0	537.9	52.7	28.1
Level of Service	D	F	C	F	D	C
Approach Delay (s)		291.7		444.2		
Approach LOS		F		F		

Intersection Summary			
HCM Average Control Delay	313.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.8
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	2766	0	0	2674	0	352
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3007	0	0	2907	0	383
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			489		
pX, platoon unblocked			0.39		0.53	0.39
vC, conflicting volume			3007		3733	1503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3017		360	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	3
cM capacity (veh/h)			43		325	394

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	1503	1503	727	727	727	727	383
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	383
cSH	1700	1700	1700	1700	1700	1700	394
Volume to Capacity	0.88	0.88	0.43	0.43	0.43	0.43	0.97
Queue Length 95th (ft)	0	0	0	0	0	0	282
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	71.1
Lane LOS							F
Approach Delay (s)	0.0		0.0				71.1
Approach LOS							F

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2200	163	4	2814	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2391	177	4	3059	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	34	0	0	0	0	20	0	0	54	110
Lane Group Flow (vph)	821	2391	143	4	3063	0	411	273	0	22	5	7
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Effective Green, g (s)	28.6	64.5	64.5	0.9	36.8		16.3	19.9		2.5	6.1	6.1
Actuated g/C Ratio	0.27	0.61	0.61	0.01	0.35		0.15	0.19		0.02	0.06	0.06
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	871	2734	890	14	1675		506	329		30	82	164
v/s Ratio Prot	c0.25	0.53		0.00	c0.63		c0.12	c0.16		0.02	0.00	
v/s Ratio Perm			0.10									0.00
v/c Ratio	0.94	0.87	0.16	0.29	1.83		0.81	0.83		0.73	0.06	0.04
Uniform Delay, d1	38.1	17.6	9.1	52.4	34.8		43.6	41.6		51.6	47.4	47.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	17.9	3.4	0.1	4.1	375.3		9.1	15.0		56.2	0.1	0.0
Delay (s)	56.0	21.0	9.2	56.5	410.1		52.7	56.6		107.8	47.6	47.4
Level of Service	E	C	A	E	F		D	E		F	D	D
Approach Delay (s)		28.8			409.6			54.3			54.2	
Approach LOS		C			F			D			D	

Intersection Summary			
HCM Average Control Delay	190.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	18.6
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	1457	176	125	2046	164	261	144	181	158	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5003		1770	5029		1770	1707		1770	1708	
Flt Permitted	0.95	1.00		0.95	1.00		0.48	1.00		0.28	1.00	
Satd. Flow (perm)	1770	5003		1770	5029		892	1707		518	1708	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1584	191	136	2224	178	284	157	197	172	100	125
RTOR Reduction (vph)	0	12	0	0	8	0	0	38	0	0	38	0
Lane Group Flow (vph)	163	1763	0	136	2394	0	284	316	0	172	187	0
Turn Type	Prot			Prot			Perm			Perm		
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Effective Green, g (s)	9.0	58.4		12.6	62.0		33.0	33.0		33.0	33.0	
Actuated g/C Ratio	0.08	0.49		0.10	0.52		0.28	0.28		0.28	0.28	
Clearance Time (s)	5.0	6.0		5.0	6.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	6.0		2.0	6.0		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	133	2435		186	2598		245	469		142	470	
v/s Ratio Prot	c0.09	0.35		0.08	c0.48			0.19			0.11	
v/s Ratio Perm							0.32			c0.33		
v/c Ratio	1.23	0.72		0.73	0.92		1.16	0.67		1.21	0.40	
Uniform Delay, d1	55.5	24.4		52.1	26.8		43.5	38.7		43.5	35.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	151.0	1.9		12.0	6.8		107.3	7.6		143.3	0.2	
Delay (s)	206.5	26.3		64.0	33.6		150.8	46.3		186.8	35.6	
Level of Service	F	C		E	C		F	D		F	D	
Approach Delay (s)		41.5			35.2			92.8			101.1	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1469	47	19	1601	21	84	5	33	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frt	1.00	1.00		1.00	1.00			0.96			0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.99	
Satd. Flow (prot)	1770	3523		1770	3532			1734			1632	
Flt Permitted	0.95	1.00		0.09	1.00			0.31			0.95	
Satd. Flow (perm)	1770	3523		162	3532			551			1554	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1597	51	21	1740	23	91	5	36	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	12	0	0	117	0
Lane Group Flow (vph)	187	1646	0	21	1762	0	0	120	0	0	633	0
Turn Type	Prot			Perm			Perm			Perm		
Protected Phases	7	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)	9.0	60.0		46.0	46.0			39.0			39.0	
Effective Green, g (s)	9.0	60.0		46.0	46.0			39.0			39.0	
Actuated g/C Ratio	0.08	0.55		0.42	0.42			0.35			0.35	
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	145	1922		68	1477			195			551	
v/s Ratio Prot	c0.11	0.47			c0.50							
v/s Ratio Perm				0.13				0.22			c0.41	
v/c Ratio	1.29	0.86		0.31	1.19			0.61			1.15	
Uniform Delay, d1	50.5	21.3		21.4	32.0			29.3			35.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	172.2	5.2		11.4	93.9			5.6			86.6	
Delay (s)	222.7	26.5		32.8	125.9			34.9			122.1	
Level of Service	F	C		C	F			C			F	
Approach Delay (s)		46.5			124.8			34.9			122.1	
Approach LOS		D			F			C			F	

Intersection Summary			
HCM Average Control Delay	89.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1843	0	0	1661	118	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2003	0	0	1805	128	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1072		
pX, platoon unblocked						
vC, conflicting volume			2003		2906	1002
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2003		2906	1002
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	96
cM capacity (veh/h)			282		12	241

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1336	668	602	1204	137
Volume Left	0	0	0	0	128
Volume Right	0	0	0	0	9
cSH	1700	1700	282	1700	13
Volume to Capacity	0.79	0.39	0.00	0.71	10.43
Queue Length 95th (ft)	0	0	0	0	Err
Control Delay (s)	0.0	0.0	0.0	0.0	Err
Lane LOS					F
Approach Delay (s)	0.0		0.0		Err
Approach LOS					F

Intersection Summary			
Average Delay	347.1		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1855	0	0	1637	24	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2016	0	0	1779	26	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume			2016		2906	1008
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2016		2906	1008
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		0	95
cM capacity (veh/h)			279		12	238

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1344	672	0	890	890	37
Volume Left	0	0	0	0	0	26
Volume Right	0	0	0	0	0	11
cSH	1700	1700	1700	1700	1700	17
Volume to Capacity	0.79	0.40	0.00	0.52	0.52	2.16
Queue Length 95th (ft)	0	0	0	0	0	129
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	997.7
Lane LOS						F
Approach Delay (s)	0.0		0.0			997.7
Approach LOS						F

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2560	33	448	33	33	33	644	1747	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.60	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1111	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	36	487	36	36	36	700	1899	36	36	1423	2050
RTOR Reduction (vph)	0	67	0	0	0	33	0	1	0	0	0	861
Lane Group Flow (vph)	2783	456	0	0	72	3	700	1934	0	36	1423	1189
Turn Type	Prot			Perm		Perm	Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases				8		8						6
Actuated Green, G (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Effective Green, g (s)	34.1	48.3			10.2	10.2	9.0	53.1		2.9	47.0	47.0
Actuated g/C Ratio	0.29	0.42			0.09	0.09	0.08	0.46		0.02	0.40	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1007	666			97	139	137	1611		44	1430	1126
v/s Ratio Prot	c0.81	c0.28					c0.40	c0.55		0.02	0.40	
v/s Ratio Perm					0.06	0.00						0.43
v/c Ratio	2.76	0.69			0.74	0.02	5.11	1.20		0.82	1.00	1.06
Uniform Delay, d1	41.1	27.8			51.8	48.5	53.6	31.6		56.4	34.5	34.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	796.4	2.9			26.0	0.1	1865.5	96.5		69.3	22.5	42.9
Delay (s)	837.5	30.7			77.8	48.6	1919.1	128.1		125.8	57.0	77.5
Level of Service	F	C			E	D	F	F		F	E	E
Approach Delay (s)		709.9			68.0			603.9			69.7	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM Average Control Delay	438.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.92		
Actuated Cycle Length (s)	116.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	161.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	176	7	0	1379	1114	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	191	8	0	1499	1211	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1960	605	1211			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1960	605	1211			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	98	100			
cM capacity (veh/h)	55	440	572			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	199	0	749	749	807	404
Volume Left	191	0	0	0	0	0
Volume Right	8	0	0	0	0	0
cSH	57	1700	1700	1700	1700	1700
Volume to Capacity	3.47	0.00	0.44	0.44	0.47	0.24
Queue Length 95th (ft)	Err	0	0	0	0	0
Control Delay (s)	Err	0.0	0.0	0.0	0.0	0.0
Lane LOS	F					
Approach Delay (s)	Err	0.0			0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	683.8		
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX E-3

Mitigation and Improvement Measures

NCRF PROJECT CONDITION

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	335	923	253	1068	768	1530	818	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1003	275	1161	835	1663	889	471
RTOR Reduction (vph)	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	364	1003	275	1161	835	1663	889	467
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	37.7	34.4	54.1	150.0	59.4	59.4	34.4
Effective Green, g (s)	21.0	40.7	37.4	57.1	150.0	62.4	62.4	34.4
Actuated g/C Ratio	0.14	0.27	0.25	0.38	1.00	0.42	0.42	0.23
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	859	759	1273	1583	1256	1289	363
v/s Ratio Prot	0.11	c0.32	0.09	0.35			0.29	c0.30
v/s Ratio Perm					0.53	c0.55		
v/c Ratio	0.77	1.17	0.36	0.91	0.53	1.32	0.69	1.29
Uniform Delay, d1	62.2	54.6	46.5	44.1	0.0	43.8	35.9	57.8
Progression Factor	1.00	1.00	1.00	1.35	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	88.0	0.2	8.8	0.9	151.5	1.4	148.5
Delay (s)	69.9	142.6	46.8	68.1	0.9	195.3	37.3	206.3
Level of Service	E	F	D	E	A	F	D	F
Approach Delay (s)		123.2		40.8				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	107.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	107.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2580	8	13	1828	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5682		1641	4842		1703	1645		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.53	1.00		0.71	1.00	1.00
Satd. Flow (perm)	3242	5682		1641	4842		944	1645		967	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	2804	9	14	1987	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	1	0	0	47	0	0	0	137
Lane Group Flow (vph)	341	2813	0	14	2003	0	127	21	0	24	21	24
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	24.7	101.7		6.8	83.8		26.9	18.0		14.6	9.7	9.7
Effective Green, g (s)	24.7	101.7		6.8	83.8		26.9	18.0		14.6	9.7	9.7
Actuated g/C Ratio	0.16	0.68		0.05	0.56		0.18	0.12		0.10	0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	534	3852		74	2705		236	197		105	111	101
v/s Ratio Prot	c0.11	c0.50		0.01	0.41		c0.05	0.01		0.01	0.01	
v/s Ratio Perm							c0.05			0.01		0.02
v/c Ratio	0.64	0.73		0.19	0.74		0.54	0.11		0.23	0.19	0.24
Uniform Delay, d1	58.5	15.4		68.9	24.9		54.6	58.8		62.3	66.4	66.7
Progression Factor	0.93	0.62		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1		0.5	1.9		1.2	0.1		0.4	0.3	0.5
Delay (s)	54.4	9.7		69.4	26.8		55.8	58.9		62.7	66.7	67.1
Level of Service	D	A		E	C		E	E		E	E	E
Approach Delay (s)		14.5			27.1			56.9			66.6	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2501	269	155	0	161	48	250	94	11	190	94	3286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00			0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.95			0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1761			3418		3433	3483		3433	3539	3610
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1761			3418		3433	3483		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2718	292	168	0	175	52	272	102	12	207	102	3572
RTOR Reduction (vph)	0	10	0	0	19	0	0	7	0	0	0	383
Lane Group Flow (vph)	2718	450	0	0	208	0	272	107	0	207	102	3189
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	92.1	109.5			13.4		9.0	9.7		9.0	9.7	92.1
Effective Green, g (s)	92.1	109.5			13.4		9.0	9.7		9.0	9.7	92.1
Actuated g/C Ratio	0.66	0.78			0.10		0.06	0.07		0.06	0.07	0.66
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	3278	1375			327		220	241		220	245	2371
v/s Ratio Prot	0.54	0.26			c0.06		c0.08	c0.03		0.06	0.03	c0.88
v/s Ratio Perm												
v/c Ratio	0.83	0.33			0.64		1.24	0.45		0.94	0.42	1.34
Uniform Delay, d1	18.1	4.5			61.1		65.6	62.7		65.3	62.5	24.0
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1			4.0		139.1	1.3		44.2	1.1	158.1
Delay (s)	20.7	4.7			65.1		204.7	64.0		109.6	63.7	182.2
Level of Service	C	A			E		F	E		F	E	F
Approach Delay (s)		18.4			65.1			163.1			175.2	
Approach LOS		B			E			F			F	

Intersection Summary			
HCM Average Control Delay	106.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	140.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	975	1273	445	1089	1370	985	352	502
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1384	484	1184	1489	1071	383	546
RTOR Reduction (vph)	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	1060	1384	484	1184	1489	1071	383	542
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	40.4	51.7	39.4	50.7	150.0	40.4	40.4	39.4
Effective Green, g (s)	43.4	54.7	42.4	53.7	150.0	43.4	43.4	39.4
Actuated g/C Ratio	0.29	0.36	0.28	0.36	1.00	0.29	0.29	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	974	1155	861	1197	1583	873	897	416
v/s Ratio Prot	0.31	c0.44	0.16	0.35			0.12	c0.34
v/s Ratio Perm					0.94	c0.35		
v/c Ratio	1.09	1.20	0.56	0.99	0.94	1.23	0.43	1.30
Uniform Delay, d1	53.3	47.6	45.9	47.9	0.0	53.3	43.2	55.3
Progression Factor	1.00	1.00	0.79	1.02	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.9	97.8	0.5	18.1	8.5	112.2	0.2	152.5
Delay (s)	109.2	145.5	36.7	66.9	8.5	165.5	43.5	207.8
Level of Service	F	F	D	E	A	F	D	F
Approach Delay (s)		129.7		34.7				
Approach LOS		F		C				

Intersection Summary			
HCM Average Control Delay	96.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2379	124	20	2554	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5653		1641	4842		1703	1734		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3242	5653		1641	4842		1105	1734		981	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2586	135	22	2776	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	4	0	0	1	0	0	21	0	0	0	146
Lane Group Flow (vph)	24	2717	0	22	2808	0	41	31	0	15	22	116
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	5.3	100.2		8.6	103.5		26.0	20.0		19.2	16.6	16.6
Effective Green, g (s)	5.3	100.2		8.6	103.5		26.0	20.0		19.2	16.6	16.6
Actuated g/C Ratio	0.04	0.67		0.06	0.69		0.17	0.13		0.13	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	115	3776		94	3341		215	231		131	189	174
v/s Ratio Prot	0.01	0.48		c0.01	c0.58		c0.01	0.02		0.00	0.01	
v/s Ratio Perm							0.03			0.01		c0.07
v/c Ratio	0.21	0.72		0.23	0.84		0.19	0.14		0.11	0.12	0.67
Uniform Delay, d1	70.3	15.9		67.6	17.2		52.6	57.4		57.7	60.1	64.1
Progression Factor	0.99	0.72		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.5	2.7		0.2	0.1		0.1	0.1	7.3
Delay (s)	69.6	11.6		68.0	19.9		52.7	57.5		57.8	60.2	71.3
Level of Service	E	B		E	B		D	E		E	E	E
Approach Delay (s)		12.1			20.3			55.4			69.8	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1328	117	144	3	149	111	103	35	2	71	73	1132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1708		1770	3312		3433	3513		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1708		1770	3312		3433	3513		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1443	127	157	3	162	121	112	38	2	77	79	1230
RTOR Reduction (vph)	0	23	0	0	89	0	0	2	0	0	0	422
Lane Group Flow (vph)	1443	261	0	3	194	0	112	38	0	77	79	808
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	92.1	109.4		0.8	18.1		8.6	9.0		8.1	8.5	92.1
Effective Green, g (s)	92.1	109.4		0.8	18.1		8.6	9.0		8.1	8.5	92.1
Actuated g/C Ratio	0.64	0.76		0.01	0.13		0.06	0.06		0.06	0.06	0.64
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	3207	1304		10	418		206	221		194	210	2320
v/s Ratio Prot	c0.29	0.15		0.00	c0.06		c0.03	0.01		0.02	c0.02	0.22
v/s Ratio Perm												
v/c Ratio	0.45	0.20		0.30	0.46		0.54	0.17		0.40	0.38	0.35
Uniform Delay, d1	12.9	4.7		71.0	58.1		65.4	63.6		65.2	64.8	11.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.1		16.1	0.8		2.9	0.4		1.3	1.1	0.4
Delay (s)	13.3	4.8		87.1	58.9		68.4	64.0		66.6	66.0	12.2
Level of Service	B	A		F	E		E	E		E	E	B
Approach Delay (s)		11.9			59.2			67.2			18.3	
Approach LOS		B			E			E			B	

Intersection Summary			
HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	143.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	1177	1217	497	1030	1397	971	402	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	540	1120	1518	1055	437	495
RTOR Reduction (vph)	0	0	0	0	0	0	0	6
Lane Group Flow (vph)	1279	1323	540	1120	1518	1055	437	489
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	45.4	51.7	38.4	44.7	150.0	41.4	41.4	38.4
Effective Green, g (s)	48.4	54.7	41.4	47.7	150.0	44.4	44.4	38.4
Actuated g/C Ratio	0.32	0.36	0.28	0.32	1.00	0.30	0.30	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	1086	1155	840	1063	1583	894	917	405
v/s Ratio Prot	c0.38	0.42	0.18	0.34			0.14	c0.31
v/s Ratio Perm					c0.96	c0.35		
v/c Ratio	1.18	1.15	0.64	1.05	0.96	1.18	0.48	1.21
Uniform Delay, d1	50.8	47.6	47.8	51.1	0.0	52.8	43.3	55.8
Progression Factor	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	89.8	76.0	0.9	36.1	9.5	92.6	0.3	114.5
Delay (s)	140.6	123.7	41.4	87.1	9.5	145.4	43.6	170.3
Level of Service	F	F	D	F	A	F	D	F
Approach Delay (s)		132.0		42.2				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	94.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2357	128	16	2655	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5652		1641	4842		1703	1791		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3242	5652		1641	4842		1211	1791		989	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2562	139	17	2886	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	1	0	0	9	0	0	0	149
Lane Group Flow (vph)	49	2697	0	17	2911	0	30	34	0	17	30	134
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Effective Green, g (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Actuated g/C Ratio	0.06	0.71		0.03	0.67		0.15	0.13		0.13	0.12	0.12
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	192	3990		45	3264		199	227		135	199	182
v/s Ratio Prot	c0.02	0.48		0.01	c0.60		c0.00	0.02		0.00	0.02	
v/s Ratio Perm							0.02			0.01		c0.09
v/c Ratio	0.26	0.68		0.38	0.89		0.15	0.15		0.13	0.15	0.74
Uniform Delay, d1	67.4	12.4		71.7	20.0		54.7	58.3		57.3	59.7	64.1
Progression Factor	0.96	0.70		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		1.9	4.2		0.1	0.1		0.2	0.1	12.6
Delay (s)	65.0	8.8		73.6	24.2		54.9	58.4		57.4	59.8	76.7
Level of Service	E	A		E	C		D	E		E	E	E
Approach Delay (s)		9.8			24.5			57.0			74.2	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1372	115	150	2	142	107	94	30	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92		1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1705		1770	3311		3433	3524		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1705		1770	3311		3433	3524		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1491	125	163	2	154	116	102	33	1	71	78	1232
RTOR Reduction (vph)	0	24	0	0	97	0	0	1	0	0	0	477
Lane Group Flow (vph)	1491	264	0	2	173	0	102	33	0	71	78	755
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	77.2	90.8		1.1	14.7		9.0	11.4		6.6	9.0	77.2
Effective Green, g (s)	77.2	90.8		1.1	14.7		9.0	11.4		6.6	9.0	77.2
Actuated g/C Ratio	0.61	0.72		0.01	0.12		0.07	0.09		0.05	0.07	0.61
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	3060	1230		15	387		245	319		180	253	2214
v/s Ratio Prot	c0.30	0.16		0.00	c0.05		c0.03	0.01		0.02	c0.02	0.21
v/s Ratio Perm												
v/c Ratio	0.49	0.21		0.13	0.45		0.42	0.10		0.39	0.31	0.34
Uniform Delay, d1	13.4	5.8		61.9	51.8		55.9	52.6		57.7	55.5	11.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1		4.0	0.8		1.1	0.1		1.4	0.7	0.4
Delay (s)	14.0	5.9		65.9	52.6		57.1	52.7		59.1	56.2	12.3
Level of Service	B	A		E	D		E	D		E	E	B
Approach Delay (s)		12.7			52.7			56.0			17.2	
Approach LOS		B			D			E			B	

Intersection Summary			
HCM Average Control Delay	19.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	125.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

DeWitt Nelson YCF Project Condition

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	335	930	253	1068	768	1538	818	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1011	275	1161	835	1672	889	476
RTOR Reduction (vph)	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	364	1011	275	1161	835	1672	889	472
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	37.7	34.4	54.1	150.0	59.4	59.4	34.4
Effective Green, g (s)	21.0	40.7	37.4	57.1	150.0	62.4	62.4	34.4
Actuated g/C Ratio	0.14	0.27	0.25	0.38	1.00	0.42	0.42	0.23
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	859	759	1273	1583	1256	1289	363
v/s Ratio Prot	0.11	c0.32	0.09	0.35			0.29	c0.30
v/s Ratio Perm					0.53	c0.55		
v/c Ratio	0.77	1.18	0.36	0.91	0.53	1.33	0.69	1.30
Uniform Delay, d1	62.2	54.6	46.5	44.1	0.0	43.8	35.9	57.8
Progression Factor	1.00	1.00	0.95	1.29	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	91.7	0.2	9.0	0.9	154.6	1.4	154.1
Delay (s)	69.9	146.4	44.3	65.7	0.9	198.4	37.3	211.9
Level of Service	E	F	D	E	A	F	D	F
Approach Delay (s)		126.1		39.3				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	109.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	108.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2599	8	13	1828	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5682		1641	4842		1703	1645		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.52	1.00		0.71	1.00	1.00
Satd. Flow (perm)	3242	5682		1641	4842		926	1645		967	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	2825	9	14	1987	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	47	0	0	0	151
Lane Group Flow (vph)	341	2834	0	14	2004	0	127	21	0	24	21	10
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	22.5	103.1		6.0	86.6		26.3	17.4		14.0	9.1	9.1
Effective Green, g (s)	22.5	103.1		6.0	86.6		26.3	17.4		14.0	9.1	9.1
Actuated g/C Ratio	0.15	0.69		0.04	0.58		0.18	0.12		0.09	0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	486	3905		66	2795		231	191		101	104	95
v/s Ratio Prot	c0.11	c0.50		0.01	0.41		c0.05	0.01		0.01	0.01	
v/s Ratio Perm							c0.05			0.01		0.01
v/c Ratio	0.70	0.73		0.21	0.72		0.55	0.11		0.24	0.20	0.10
Uniform Delay, d1	60.6	14.6		69.7	22.9		55.2	59.4		62.8	67.0	66.6
Progression Factor	0.95	0.68		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		0.6	1.6		1.4	0.1		0.4	0.3	0.2
Delay (s)	57.7	10.1		70.3	24.5		56.6	59.5		63.3	67.3	66.8
Level of Service	E	B		E	C		E	E		E	E	E
Approach Delay (s)		15.2			24.8			57.6			66.4	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2499	269	338	0	161	48	261	96	11	190	109	3273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00			0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92			0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1707			3418		3433	3484		3433	3539	3610
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1707			3418		3433	3484		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2716	292	367	0	175	52	284	104	12	207	118	3558
RTOR Reduction (vph)	0	22	0	0	19	0	0	6	0	0	0	384
Lane Group Flow (vph)	2716	637	0	0	208	0	284	110	0	207	118	3174
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	91.1	108.5			13.4		10.0	10.1		10.0	10.1	91.1
Effective Green, g (s)	91.1	108.5			13.4		10.0	10.1		10.0	10.1	91.1
Actuated g/C Ratio	0.65	0.77			0.10		0.07	0.07		0.07	0.07	0.65
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	3233	1317			326		244	250		244	254	2339
v/s Ratio Prot	0.54	0.37			c0.06		c0.08	0.03		0.06	c0.03	c0.88
v/s Ratio Perm												
v/c Ratio	0.84	0.48			0.64		1.16	0.44		0.85	0.46	1.36
Uniform Delay, d1	19.1	5.8			61.3		65.3	62.5		64.6	62.7	24.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.3			4.1		109.2	1.2		23.0	1.3	163.5
Delay (s)	21.9	6.1			65.3		174.5	63.8		87.5	64.0	188.3
Level of Service	C	A			E		F	E		F	E	F
Approach Delay (s)		18.9			65.3			142.4			179.1	
Approach LOS		B			E			F			F	

Intersection Summary			
HCM Average Control Delay	105.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	140.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	975	1282	440	1084	1364	996	352	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1393	478	1178	1483	1083	383	554
RTOR Reduction (vph)	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	1060	1393	478	1178	1483	1083	383	550
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	40.4	51.7	39.4	50.7	150.0	40.4	40.4	39.4
Effective Green, g (s)	43.4	54.7	42.4	53.7	150.0	43.4	43.4	39.4
Actuated g/C Ratio	0.29	0.36	0.28	0.36	1.00	0.29	0.29	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	974	1155	861	1197	1583	873	897	416
v/s Ratio Prot	0.31	c0.44	0.16	0.35			0.12	c0.35
v/s Ratio Perm					0.94	c0.36		
v/c Ratio	1.09	1.21	0.56	0.98	0.94	1.24	0.43	1.32
Uniform Delay, d1	53.3	47.6	45.8	47.7	0.0	53.3	43.2	55.3
Progression Factor	1.00	1.00	0.79	1.02	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.9	101.1	0.5	17.2	8.2	118.0	0.2	160.5
Delay (s)	109.2	148.7	36.6	65.9	8.2	171.3	43.5	215.8
Level of Service	F	F	D	E	A	F	D	F
Approach Delay (s)		131.7		34.2				
Approach LOS		F		C				

Intersection Summary			
HCM Average Control Delay	98.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2407	124	20	2538	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5654		1641	4842		1703	1734		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3242	5654		1641	4842		1112	1734		981	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2616	135	22	2759	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	4	0	0	1	0	0	21	0	0	0	146
Lane Group Flow (vph)	24	2747	0	22	2791	0	41	31	0	15	22	116
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	5.2	100.1		8.6	103.5		26.0	20.0		19.4	16.7	16.7
Effective Green, g (s)	5.2	100.1		8.6	103.5		26.0	20.0		19.4	16.7	16.7
Actuated g/C Ratio	0.03	0.67		0.06	0.69		0.17	0.13		0.13	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	112	3773		94	3341		216	231		132	191	175
v/s Ratio Prot	0.01	0.49		c0.01	c0.58		c0.01	0.02		0.00	0.01	
v/s Ratio Perm							0.03			0.01		c0.07
v/c Ratio	0.21	0.73		0.23	0.84		0.19	0.14		0.11	0.12	0.66
Uniform Delay, d1	70.4	16.1		67.6	17.0		52.6	57.4		57.5	60.0	64.0
Progression Factor	0.99	0.72		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.5	2.6		0.2	0.1		0.1	0.1	7.2
Delay (s)	69.7	11.8		68.0	19.7		52.7	57.5		57.7	60.1	71.1
Level of Service	E	B		E	B		D	E		E	E	E
Approach Delay (s)		12.3			20.0			55.4			69.6	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1320	117	234	3	149	111	184	41	2	71	80	1127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.90		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1676		1770	3312		3433	3517		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1676		1770	3312		3433	3517		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1435	127	254	3	162	121	200	45	2	77	87	1225
RTOR Reduction (vph)	0	36	0	0	93	0	0	2	0	0	0	511
Lane Group Flow (vph)	1435	345	0	3	190	0	200	45	0	77	87	714
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	71.3	85.5		1.1	15.3		12.4	15.1		6.5	9.2	71.3
Effective Green, g (s)	71.3	85.5		1.1	15.3		12.4	15.1		6.5	9.2	71.3
Actuated g/C Ratio	0.57	0.69		0.01	0.12		0.10	0.12		0.05	0.07	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2865	1154		16	408		343	428		180	262	2072
v/s Ratio Prot	c0.29	0.21		0.00	c0.06		c0.06	0.01		0.02	c0.02	0.20
v/s Ratio Perm												
v/c Ratio	0.50	0.30		0.19	0.47		0.58	0.11		0.43	0.33	0.34
Uniform Delay, d1	15.8	7.6		61.1	50.6		53.4	48.5		57.0	54.6	14.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1		5.6	0.8		2.5	0.1		1.6	0.7	0.5
Delay (s)	16.4	7.7		66.7	51.5		55.9	48.7		58.7	55.3	14.5
Level of Service	B	A		E	D		E	D		E	E	B
Approach Delay (s)		14.6			51.7			54.6			19.5	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	124.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	1177	1217	503	1036	1404	971	402	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	547	1126	1526	1055	437	495
RTOR Reduction (vph)	0	0	0	0	0	0	0	6
Lane Group Flow (vph)	1279	1323	547	1126	1526	1055	437	489
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	45.4	51.7	38.4	44.7	150.0	41.4	41.4	38.4
Effective Green, g (s)	48.4	54.7	41.4	47.7	150.0	44.4	44.4	38.4
Actuated g/C Ratio	0.32	0.36	0.28	0.32	1.00	0.30	0.30	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	1086	1155	840	1063	1583	894	917	405
v/s Ratio Prot	c0.38	0.42	0.18	0.34			0.14	c0.31
v/s Ratio Perm					c0.96	c0.35		
v/c Ratio	1.18	1.15	0.65	1.06	0.96	1.18	0.48	1.21
Uniform Delay, d1	50.8	47.6	47.9	51.1	0.0	52.8	43.3	55.8
Progression Factor	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	89.8	76.0	1.0	37.9	10.0	92.6	0.3	114.5
Delay (s)	140.6	123.7	41.5	88.9	10.0	145.4	43.6	170.3
Level of Service	F	F	D	F	A	F	D	F
Approach Delay (s)		132.0		43.1				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	94.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2356	128	16	2675	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5652		1641	4842		1703	1791		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3242	5652		1641	4842		1211	1791		989	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2561	139	17	2908	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	1	0	0	9	0	0	0	149
Lane Group Flow (vph)	49	2696	0	17	2933	0	30	34	0	17	30	134
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Effective Green, g (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Actuated g/C Ratio	0.06	0.71		0.03	0.67		0.15	0.13		0.13	0.12	0.12
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	192	3990		45	3264		199	227		135	199	182
v/s Ratio Prot	c0.02	0.48		0.01	c0.61		c0.00	0.02		0.00	0.02	
v/s Ratio Perm							0.02			0.01		c0.09
v/c Ratio	0.26	0.68		0.38	0.90		0.15	0.15		0.13	0.15	0.74
Uniform Delay, d1	67.4	12.4		71.7	20.2		54.7	58.3		57.3	59.7	64.1
Progression Factor	0.96	0.70		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		1.9	4.5		0.1	0.1		0.2	0.1	12.6
Delay (s)	65.0	8.8		73.6	24.7		54.9	58.4		57.4	59.8	76.7
Level of Service	E	A		E	C		D	E		E	E	E
Approach Delay (s)		9.8			25.0			57.0			74.2	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1359	115	143	2	142	107	278	44	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92		1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1708		1770	3311		3433	3528		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1708		1770	3311		3433	3528		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1477	125	155	2	154	116	302	48	1	71	78	1232
RTOR Reduction (vph)	0	22	0	0	93	0	0	1	0	0	0	488
Lane Group Flow (vph)	1477	258	0	2	177	0	302	48	0	71	78	744
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	68.3	82.4		0.7	14.8		15.9	18.8		6.1	9.0	68.3
Effective Green, g (s)	68.3	82.4		0.7	14.8		15.9	18.8		6.1	9.0	68.3
Actuated g/C Ratio	0.55	0.66		0.01	0.12		0.13	0.15		0.05	0.07	0.55
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2749	1135		10	395		440	535		169	257	1988
v/s Ratio Prot	c0.30	0.15		0.00	c0.05		c0.09	0.01		0.02	c0.02	0.21
v/s Ratio Perm												
v/c Ratio	0.54	0.23		0.20	0.45		0.69	0.09		0.42	0.30	0.37
Uniform Delay, d1	17.8	8.2		61.4	50.8		51.7	45.2		57.2	54.5	15.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1		9.6	0.8		4.4	0.1		1.7	0.7	0.5
Delay (s)	18.5	8.3		71.0	51.6		56.1	45.3		58.9	55.2	16.3
Level of Service	B	A		E	D		E	D		E	E	B
Approach Delay (s)		16.9			51.7			54.6			20.7	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

NCRF/DeWitt Nelson YCF Project Condition

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	335	981	258	1074	775	1602	818	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1066	280	1167	842	1741	889	528
RTOR Reduction (vph)	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	364	1066	280	1167	842	1741	889	525
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	37.7	34.4	54.1	150.0	59.4	59.4	34.4
Effective Green, g (s)	21.0	40.7	37.4	57.1	150.0	62.4	62.4	34.4
Actuated g/C Ratio	0.14	0.27	0.25	0.38	1.00	0.42	0.42	0.23
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	859	759	1273	1583	1256	1289	363
v/s Ratio Prot	0.11	c0.34	0.09	0.35			0.29	c0.33
v/s Ratio Perm					0.53	c0.58		
v/c Ratio	0.77	1.24	0.37	0.92	0.53	1.39	0.69	1.45
Uniform Delay, d1	62.2	54.6	46.5	44.2	0.0	43.8	35.9	57.8
Progression Factor	1.00	1.00	0.94	1.28	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	118.3	0.2	9.3	1.0	178.8	1.4	215.7
Delay (s)	69.9	173.0	44.1	66.0	1.0	222.6	37.3	273.5
Level of Service	E	F	D	E	A	F	D	F
Approach Delay (s)		146.7		39.4				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	125.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	314	2764	8	13	1846	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00		1.00	0.88		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5682		1641	4842		1703	1645		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.52	1.00		0.71	1.00	1.00
Satd. Flow (perm)	3242	5682		1641	4842		926	1645		967	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	341	3004	9	14	2007	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	0	0	0	0	0	0	47	0	0	0	151
Lane Group Flow (vph)	341	3013	0	14	2024	0	127	21	0	24	21	10
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	22.5	105.0		4.3	86.8		26.1	17.4		13.8	9.1	9.1
Effective Green, g (s)	22.5	105.0		4.3	86.8		26.1	17.4		13.8	9.1	9.1
Actuated g/C Ratio	0.15	0.70		0.03	0.58		0.17	0.12		0.09	0.06	0.06
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	486	3977		47	2802		228	191		99	104	95
v/s Ratio Prot	c0.11	c0.53		0.01	0.42		c0.05	0.01		0.01	0.01	
v/s Ratio Perm							c0.05			0.01		0.01
v/c Ratio	0.70	0.76		0.30	0.72		0.56	0.11		0.24	0.20	0.10
Uniform Delay, d1	60.6	14.4		71.4	22.9		55.4	59.4		63.0	67.0	66.6
Progression Factor	0.95	0.72		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1		1.3	1.6		1.7	0.1		0.5	0.3	0.2
Delay (s)	58.0	10.4		72.7	24.5		57.0	59.5		63.5	67.3	66.8
Level of Service	E	B		E	C		E	E		E	E	E
Approach Delay (s)		15.3			24.9			57.9			66.4	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2501	269	339	0	161	48	268	96	11	190	109	3286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00			0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92			0.97		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1707			3418		3433	3484		3433	3539	3610
Flt Permitted	0.95	1.00			1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1707			3418		3433	3484		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2718	292	368	0	175	52	291	104	12	207	118	3572
RTOR Reduction (vph)	0	22	0	0	19	0	0	6	0	0	0	384
Lane Group Flow (vph)	2718	638	0	0	208	0	291	110	0	207	118	3188
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	91.1	108.5			13.4		10.0	10.1		10.0	10.1	91.1
Effective Green, g (s)	91.1	108.5			13.4		10.0	10.1		10.0	10.1	91.1
Actuated g/C Ratio	0.65	0.77			0.10		0.07	0.07		0.07	0.07	0.65
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	3233	1317			326		244	250		244	254	2339
v/s Ratio Prot	0.54	0.37			c0.06		c0.08	0.03		0.06	c0.03	c0.88
v/s Ratio Perm												
v/c Ratio	0.84	0.48			0.64		1.19	0.44		0.85	0.46	1.36
Uniform Delay, d1	19.1	5.9			61.3		65.3	62.5		64.6	62.7	24.8
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.3			4.1		119.7	1.2		23.0	1.3	166.2
Delay (s)	22.0	6.1			65.3		185.0	63.8		87.5	64.0	190.9
Level of Service	C	A			E		F	E		F	E	F
Approach Delay (s)		18.9			65.3			150.5			181.6	
Approach LOS		B			E			F			F	

Intersection Summary			
HCM Average Control Delay	107.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.6	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	975	1303	470	1115	1404	1022	352	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	1416	511	1212	1526	1111	383	576
RTOR Reduction (vph)	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	1060	1416	511	1212	1526	1111	383	572
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	40.4	51.7	39.4	50.7	150.0	40.4	40.4	39.4
Effective Green, g (s)	43.4	54.7	42.4	53.7	150.0	43.4	43.4	39.4
Actuated g/C Ratio	0.29	0.36	0.28	0.36	1.00	0.29	0.29	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	974	1155	861	1197	1583	873	897	416
v/s Ratio Prot	0.31	c0.45	0.17	0.36			0.12	c0.36
v/s Ratio Perm					0.96	c0.37		
v/c Ratio	1.09	1.23	0.59	1.01	0.96	1.27	0.43	1.38
Uniform Delay, d1	53.3	47.6	46.4	48.1	0.0	53.3	43.2	55.3
Progression Factor	1.00	1.00	0.78	1.01	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.9	109.5	0.7	23.1	10.8	131.6	0.2	183.7
Delay (s)	109.2	157.2	36.9	71.8	10.8	184.9	43.5	239.0
Level of Service	F	F	D	E	B	F	D	F
Approach Delay (s)		136.7		37.6				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	105.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	2473	124	20	2639	30	38	26	22	14	20	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5654		1641	4842		1703	1734		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00		0.72	1.00	1.00
Satd. Flow (perm)	3242	5654		1641	4842		1105	1734		981	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2688	135	22	2868	33	41	28	24	15	22	262
RTOR Reduction (vph)	0	4	0	0	1	0	0	21	0	0	0	146
Lane Group Flow (vph)	24	2819	0	22	2900	0	41	31	0	15	22	116
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	5.4	100.6		8.3	103.5		25.9	20.0		19.1	16.6	16.6
Effective Green, g (s)	5.4	100.6		8.3	103.5		25.9	20.0		19.1	16.6	16.6
Actuated g/C Ratio	0.04	0.67		0.06	0.69		0.17	0.13		0.13	0.11	0.11
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	117	3792		91	3341		214	231		130	189	174
v/s Ratio Prot	0.01	0.50		c0.01	c0.60		c0.01	0.02		0.00	0.01	
v/s Ratio Perm							0.03			0.01		c0.07
v/c Ratio	0.21	0.74		0.24	0.87		0.19	0.14		0.12	0.12	0.67
Uniform Delay, d1	70.2	16.2		67.8	18.0		52.6	57.4		57.8	60.1	64.1
Progression Factor	0.99	0.74		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		0.5	3.4		0.2	0.1		0.1	0.1	7.3
Delay (s)	69.5	12.1		68.3	21.3		52.8	57.5		57.9	60.2	71.3
Level of Service	E	B		E	C		D	E		E	E	E
Approach Delay (s)		12.6			21.7			55.4			69.8	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1328	117	239	3	149	111	187	41	2	71	80	1132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.90		1.00	0.94		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1675		1770	3312		3433	3517		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1675		1770	3312		3433	3517		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1443	127	260	3	162	121	203	45	2	77	87	1230
RTOR Reduction (vph)	0	37	0	0	93	0	0	2	0	0	0	510
Lane Group Flow (vph)	1443	350	0	3	190	0	203	45	0	77	87	720
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	71.3	85.5		1.1	15.3		12.5	15.2		6.5	9.2	71.3
Effective Green, g (s)	71.3	85.5		1.1	15.3		12.5	15.2		6.5	9.2	71.3
Actuated g/C Ratio	0.57	0.69		0.01	0.12		0.10	0.12		0.05	0.07	0.57
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2862	1152		16	408		345	430		180	262	2071
v/s Ratio Prot	c0.29	0.21		0.00	c0.06		c0.06	0.01		0.02	c0.02	0.20
v/s Ratio Perm												
v/c Ratio	0.50	0.30		0.19	0.47		0.59	0.11		0.43	0.33	0.35
Uniform Delay, d1	15.9	7.7		61.2	50.7		53.4	48.5		57.1	54.6	14.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2		5.6	0.8		2.6	0.1		1.6	0.7	0.5
Delay (s)	16.5	7.8		66.8	51.5		56.0	48.6		58.7	55.4	14.6
Level of Service	B	A		E	D		E	D		E	E	B
Approach Delay (s)		14.7			51.7			54.6			19.6	
Approach LOS		B			D			D			B	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	124.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	1177	1217	551	1088	1469	971	402	455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1279	1323	599	1183	1597	1055	437	495
RTOR Reduction (vph)	0	0	0	0	0	0	0	6
Lane Group Flow (vph)	1279	1323	599	1183	1597	1055	437	489
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	45.4	51.7	38.4	44.7	150.0	41.4	41.4	38.4
Effective Green, g (s)	48.4	54.7	41.4	47.7	150.0	44.4	44.4	38.4
Actuated g/C Ratio	0.32	0.36	0.28	0.32	1.00	0.30	0.30	0.26
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	1086	1155	840	1063	1583	894	917	405
v/s Ratio Prot	c0.38	0.42	0.20	0.35			0.14	c0.31
v/s Ratio Perm					c1.01	c0.35		
v/c Ratio	1.18	1.15	0.71	1.11	1.01	1.18	0.48	1.21
Uniform Delay, d1	50.8	47.6	48.9	51.1	75.0	52.8	43.3	55.8
Progression Factor	1.00	1.00	0.84	0.99	1.00	1.00	1.00	1.00
Incremental Delay, d2	89.8	76.0	1.3	57.5	17.4	92.6	0.3	114.5
Delay (s)	140.6	123.7	42.5	108.0	92.4	145.4	43.6	170.3
Level of Service	F	F	D	F	F	F	D	F
Approach Delay (s)		132.0		89.0				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	113.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	2357	128	16	2839	24	28	29	10	16	28	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.86		1.00	0.86		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	5652		1641	4842		1703	1791		1289	1712	1568
Flt Permitted	0.95	1.00		0.95	1.00		0.68	1.00		0.73	1.00	1.00
Satd. Flow (perm)	3242	5652		1641	4842		1211	1791		989	1712	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2562	139	17	3086	26	30	32	11	17	30	283
RTOR Reduction (vph)	0	4	0	0	1	0	0	9	0	0	0	149
Lane Group Flow (vph)	49	2697	0	17	3111	0	30	34	0	17	30	134
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			pm+pt			pm+pt		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases							4			8		8
Actuated Green, G (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Effective Green, g (s)	8.9	105.9		4.1	101.1		23.0	19.0		19.8	17.4	17.4
Actuated g/C Ratio	0.06	0.71		0.03	0.67		0.15	0.13		0.13	0.12	0.12
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	192	3990		45	3264		199	227		135	199	182
v/s Ratio Prot	c0.02	0.48		0.01	c0.64		c0.00	0.02		0.00	0.02	
v/s Ratio Perm							0.02			0.01		c0.09
v/c Ratio	0.26	0.68		0.38	0.95		0.15	0.15		0.13	0.15	0.74
Uniform Delay, d1	67.4	12.4		71.7	22.3		54.7	58.3		57.3	59.7	64.1
Progression Factor	0.96	0.70		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.0	0.1		1.9	8.1		0.1	0.1		0.2	0.1	12.6
Delay (s)	65.0	8.8		73.6	30.4		54.9	58.4		57.4	59.8	76.7
Level of Service	E	A		E	C		D	E		E	E	E
Approach Delay (s)		9.8			30.6			57.0			74.2	
Approach LOS		A			C			E			E	

Intersection Summary			
HCM Average Control Delay	24.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.6
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1372	115	150	2	142	107	278	44	1	65	72	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.94	1.00		1.00	0.95		0.97	0.95		0.97	0.95	0.76
Frt	1.00	0.92		1.00	0.94		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	4990	1705		1770	3311		3433	3528		3433	3539	3610
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	4990	1705		1770	3311		3433	3528		3433	3539	3610
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1491	125	163	2	154	116	302	48	1	71	78	1232
RTOR Reduction (vph)	0	23	0	0	93	0	0	1	0	0	0	488
Lane Group Flow (vph)	1491	265	0	2	177	0	302	48	0	71	78	744
Turn Type	Prot			Prot			Prot			Prot		Over
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												
Actuated Green, G (s)	68.3	82.4		0.7	14.8		15.9	18.8		6.1	9.0	68.3
Effective Green, g (s)	68.3	82.4		0.7	14.8		15.9	18.8		6.1	9.0	68.3
Actuated g/C Ratio	0.55	0.66		0.01	0.12		0.13	0.15		0.05	0.07	0.55
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	2749	1133		10	395		440	535		169	257	1988
v/s Ratio Prot	c0.30	0.16		0.00	c0.05		c0.09	0.01		0.02	c0.02	0.21
v/s Ratio Perm												
v/c Ratio	0.54	0.23		0.20	0.45		0.69	0.09		0.42	0.30	0.37
Uniform Delay, d1	17.8	8.3		61.4	50.8		51.7	45.2		57.2	54.5	15.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1		9.6	0.8		4.4	0.1		1.7	0.7	0.5
Delay (s)	18.6	8.4		71.0	51.6		56.1	45.3		58.9	55.2	16.3
Level of Service	B	A		E	D		E	D		E	E	B
Approach Delay (s)		17.0			51.7			54.6			20.7	
Approach LOS		B			D			D			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

YEAR 2035 GENERAL PLAN BASELINE

WITH NCRF PROJECT CONDITION

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	330	1980	300	1473	275	1471	322	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2152	326	1601	299	1599	350	435
RTOR Reduction (vph)	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	359	2152	326	1601	299	1599	350	434
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	58.7	27.4	68.1	150.0	45.4	45.4	27.4
Effective Green, g (s)	21.0	61.7	30.4	71.1	150.0	48.4	48.4	27.4
Actuated g/C Ratio	0.14	0.41	0.20	0.47	1.00	0.32	0.32	0.18
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	1303	617	1585	1583	974	1000	289
v/s Ratio Prot	0.11	c0.68	0.11	0.48			0.11	c0.27
v/s Ratio Perm					0.19	c0.53		
v/c Ratio	0.76	1.65	0.53	1.01	0.19	1.64	0.35	1.50
Uniform Delay, d1	62.1	44.1	53.4	39.5	0.0	50.8	38.8	61.3
Progression Factor	1.11	0.87	1.02	0.45	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	294.5	0.5	20.0	0.2	293.4	0.2	243.4
Delay (s)	71.6	333.1	54.8	37.6	0.2	344.2	38.9	304.7
Level of Service	E	F	D	D	A	F	D	F
Approach Delay (s)		295.7		35.1				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	213.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	133.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2546	310	3	1820	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2767	337	3	1978	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	46	0	0	0	0	9	0	0	52	107
Lane Group Flow (vph)	1080	2767	291	3	1980	0	73	77	0	22	6	10
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Effective Green, g (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Actuated g/C Ratio	0.30	0.75	0.75	0.01	0.45		0.03	0.09		0.03	0.09	0.09
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	977	3376	1099	11	2198		110	161		40	125	249
v/s Ratio Prot	c0.33	0.61		0.00	c0.41		c0.02	c0.04		0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.11	0.82	0.26	0.27	0.90		0.66	0.48		0.55	0.05	0.04
Uniform Delay, d1	52.4	12.3	5.9	74.1	37.8		71.7	64.9		71.7	62.7	62.7
Progression Factor	0.96	0.65	0.25	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.1	0.2	0.1	4.8	6.5		11.1	0.8		9.0	0.1	0.0
Delay (s)	99.6	8.1	1.5	79.0	44.3		82.7	65.7		80.6	62.8	62.7
Level of Service	F	A	A	E	D		F	E		F	E	E
Approach Delay (s)		31.2			44.4			73.5			64.7	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	37.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	984	65	26	1328	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	0.99		1.00	0.99			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	3433	3506		1770	3508			1741			1793	2787
Flt Permitted	0.95	1.00		0.25	1.00			0.78			0.81	1.00
Satd. Flow (perm)	3433	3506		464	3508			1409			1513	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1070	71	28	1443	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	5	0	0	14	0	0	0	114
Lane Group Flow (vph)	729	1137	0	28	1528	0	0	54	0	0	23	35
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Effective Green, g (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Actuated g/C Ratio	0.24	0.77		0.47	0.47			0.10			0.10	0.24
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	816	2685		217	1643			145			155	663
v/s Ratio Prot	c0.21	0.32			c0.44							0.01
v/s Ratio Perm				0.06				c0.04			0.02	
v/c Ratio	0.89	0.42		0.13	0.93			0.37			0.15	0.05
Uniform Delay, d1	30.9	3.4		12.6	21.0			35.0			34.2	24.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	12.2	0.5		1.2	10.8			1.6			0.4	0.0
Delay (s)	43.0	3.9		13.8	31.8			36.6			34.7	24.7
Level of Service	D	A		B	C			D			C	C
Approach Delay (s)		19.1			31.5			36.6			26.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	731	20	159	20	20	20	76	385	20	20	734	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.87			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1615			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.74	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1615			1385	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	795	22	173	22	22	22	83	418	22	22	798	1696
RTOR Reduction (vph)	0	81	0	0	0	21	0	3	0	0	0	938
Lane Group Flow (vph)	795	114	0	0	44	1	83	437	0	22	798	758
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	50.5	61.9			7.4	7.4	8.0	39.9		3.0	34.9	50.5
Effective Green, g (s)	50.5	61.9			7.4	7.4	8.0	39.9		3.0	34.9	50.5
Actuated g/C Ratio	0.43	0.53			0.06	0.06	0.07	0.34		0.03	0.30	0.43
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1484	856			88	100	121	1200		45	1057	1205
v/s Ratio Prot	0.23	0.07					c0.05	0.12		0.01	c0.23	c0.27
v/s Ratio Perm					c0.03	0.00						
v/c Ratio	0.54	0.13			0.50	0.01	0.69	0.36		0.49	0.75	0.63
Uniform Delay, d1	24.5	13.9			52.9	51.3	53.2	28.9		56.1	37.1	25.8
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1			4.4	0.1	14.9	0.2		8.1	3.1	1.0
Delay (s)	24.9	14.0			57.3	51.3	68.1	29.1		64.3	40.2	26.9
Level of Service	C	B			E	D	E	C		E	D	C
Approach Delay (s)		22.7			55.3			35.3			31.4	
Approach LOS		C			E			D			C	

Intersection Summary			
HCM Average Control Delay	30.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	116.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	907	2073	398	1974	692	700	319	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2253	433	2146	752	761	347	397
RTOR Reduction (vph)	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	986	2253	433	2146	752	761	347	394
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	31.4	75.7	28.4	72.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	34.4	78.7	31.4	75.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.23	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	772	1662	637	1687	1583	612	628	300
v/s Ratio Prot	c0.29	c0.71	0.14	0.64			0.11	0.25
v/s Ratio Perm					c0.47	c0.25		
v/c Ratio	1.28	1.36	0.68	1.27	0.48	1.24	0.55	1.31
Uniform Delay, d1	57.8	35.6	54.7	37.1	0.0	59.8	53.7	60.8
Progression Factor	1.10	0.78	1.09	0.34	1.00	1.00	1.00	1.00
Incremental Delay, d2	125.7	160.4	0.3	122.9	0.1	122.9	0.8	162.5
Delay (s)	189.1	188.2	60.0	135.5	0.1	182.7	54.5	223.3
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		188.5		95.1				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	145.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2234	161	4	2531	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2428	175	4	2751	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	33	0	0	0	0	15	0	0	50	101
Lane Group Flow (vph)	810	2428	142	4	2755	0	405	275	0	22	9	14
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.2	99.0	99.0	1.0	71.8		13.0	28.4		3.0	18.4	18.4
Effective Green, g (s)	28.2	99.0	99.0	1.0	71.8		13.0	28.4		3.0	18.4	18.4
Actuated g/C Ratio	0.19	0.66	0.66	0.01	0.48		0.09	0.19		0.02	0.12	0.12
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	609	2977	969	11	2318		286	333		26	176	350
v/s Ratio Prot	c0.25	0.54		0.00	c0.57		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.00
v/c Ratio	1.33	0.82	0.15	0.36	1.19		1.42	0.82		0.85	0.05	0.04
Uniform Delay, d1	60.9	18.8	9.6	74.2	39.1		68.5	58.4		73.3	58.1	58.0
Progression Factor	0.82	0.59	0.45	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	149.6	0.2	0.0	7.3	89.5		206.6	14.5		106.7	0.0	0.0
Delay (s)	199.4	11.3	4.3	81.5	128.6		275.1	72.9		180.0	58.1	58.0
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		55.6			128.5			190.8			71.7	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	97.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1525	47	19	1325	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3523		1770	3531			1754			1779	2787
Flt Permitted	0.95	1.00		0.14	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3523		261	3531			1294			1347	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1658	51	21	1440	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	7	0	0	0	222
Lane Group Flow (vph)	187	1707	0	21	1462	0	0	106	0	0	87	441
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	16.5	64.1		42.6	42.6			11.6			11.6	16.5
Effective Green, g (s)	16.5	64.1		42.6	42.6			11.6			11.6	16.5
Actuated g/C Ratio	0.19	0.74		0.49	0.49			0.13			0.13	0.19
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	653	2605		128	1735			173			180	530
v/s Ratio Prot	0.05	0.48			c0.41							c0.16
v/s Ratio Perm				0.08				c0.08			0.06	
v/c Ratio	0.29	0.66		0.16	0.84			0.61			0.48	0.83
Uniform Delay, d1	30.1	5.7		12.2	19.1			35.4			34.8	33.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.2	1.3		2.7	5.2			6.3			2.0	10.7
Delay (s)	30.3	7.0		14.9	24.3			41.7			36.8	44.5
Level of Service	C	A		B	C			D			D	D
Approach Delay (s)		9.3			24.2			41.7			43.6	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1548	20	262	20	20	20	273	1047	20	20	791	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.69	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1287	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1683	22	285	22	22	22	297	1138	22	22	860	1245
RTOR Reduction (vph)	0	136	0	0	0	21	0	1	0	0	0	701
Lane Group Flow (vph)	1683	171	0	0	44	1	297	1159	0	22	860	544
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	63.1	75.7			8.6	8.6	21.0	54.5		2.3	35.8	63.1
Effective Green, g (s)	63.1	75.7			8.6	8.6	21.0	54.5		2.3	35.8	63.1
Actuated g/C Ratio	0.44	0.52			0.06	0.06	0.15	0.38		0.02	0.25	0.44
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1499	840			77	94	257	1331		28	877	1217
v/s Ratio Prot	c0.49	0.11					c0.17	0.33		0.01	c0.24	0.20
v/s Ratio Perm					c0.03	0.00						
v/c Ratio	1.12	0.20			0.57	0.01	1.16	0.87		0.79	0.98	0.45
Uniform Delay, d1	40.7	18.3			66.2	64.0	61.8	41.7		70.9	54.0	28.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	64.6	0.1			9.8	0.1	104.8	6.5		82.7	25.6	0.3
Delay (s)	105.3	18.5			76.0	64.0	166.5	48.2		153.6	79.6	28.7
Level of Service	F	B			E	E	F	D		F	E	C
Approach Delay (s)		91.9			72.0			72.4			50.6	
Approach LOS		F			E			E			D	

Intersection Summary			
HCM Average Control Delay	71.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	144.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	920	2082	421	2021	727	684	323	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2263	458	2197	790	743	351	383
RTOR Reduction (vph)	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	1000	2263	458	2197	790	743	351	380
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	32.4	75.7	28.4	71.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	35.4	78.7	31.4	74.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.24	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	795	1662	637	1665	1583	612	628	300
v/s Ratio Prot	c0.30	c0.71	0.15	0.66			0.11	0.24
v/s Ratio Perm					c0.50	c0.25		
v/c Ratio	1.26	1.36	0.72	1.32	0.50	1.21	0.56	1.27
Uniform Delay, d1	57.3	35.6	55.2	37.6	0.0	59.8	53.8	60.8
Progression Factor	1.09	0.81	1.08	0.33	1.00	1.00	1.00	1.00
Incremental Delay, d2	117.0	163.1	0.4	144.2	0.1	110.8	0.9	143.5
Delay (s)	179.7	191.9	59.8	156.6	0.1	170.6	54.6	204.3
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		188.2		107.8				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	147.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2200	163	4	2630	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2391	177	4	2859	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	33	0	0	0	0	15	0	0	50	102
Lane Group Flow (vph)	821	2391	144	4	2863	0	411	278	0	22	9	15
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.2	98.8	98.8	1.0	71.6		13.0	28.6		3.0	18.6	18.6
Effective Green, g (s)	28.2	98.8	98.8	1.0	71.6		13.0	28.6		3.0	18.6	18.6
Actuated g/C Ratio	0.19	0.66	0.66	0.01	0.48		0.09	0.19		0.02	0.12	0.12
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	609	2971	967	11	2311		286	335		26	178	354
v/s Ratio Prot	c0.25	0.53		0.00	c0.59		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.01
v/c Ratio	1.35	0.80	0.15	0.36	1.24		1.44	0.83		0.85	0.05	0.04
Uniform Delay, d1	60.9	18.6	9.7	74.2	39.2		68.5	58.3		73.3	57.9	57.8
Progression Factor	0.81	0.59	0.46	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	157.7	0.2	0.0	7.3	111.4		215.6	14.8		106.7	0.0	0.0
Delay (s)	207.3	11.2	4.5	81.5	150.6		284.1	73.1		180.0	58.0	57.9
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		58.4			150.5			196.3			71.5	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	109.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1486	47	19	1417	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3523		1770	3531			1754			1779	2787
Flt Permitted	0.95	1.00		0.15	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3523		273	3531			1294			1347	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1615	51	21	1540	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	7	0	0	0	216
Lane Group Flow (vph)	187	1664	0	21	1562	0	0	106	0	0	87	447
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	16.2	64.1		42.9	42.9			11.6			11.6	16.2
Effective Green, g (s)	16.2	64.1		42.9	42.9			11.6			11.6	16.2
Actuated g/C Ratio	0.19	0.74		0.49	0.49			0.13			0.13	0.19
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	641	2605		135	1747			173			180	521
v/s Ratio Prot	0.05	0.47			c0.44							c0.16
v/s Ratio Perm				0.08				c0.08			0.06	
v/c Ratio	0.29	0.64		0.16	0.89			0.61			0.48	0.86
Uniform Delay, d1	30.3	5.6		12.0	19.8			35.4			34.8	34.1
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	1.2		2.4	7.5			6.3			2.0	13.1
Delay (s)	30.6	6.8		14.4	27.4			41.7			36.8	47.2
Level of Service	C	A		B	C			D			D	D
Approach Delay (s)		9.2			27.2			41.7			46.0	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2560	33	448	33	33	33	460	1732	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.61	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1132	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	36	487	36	36	36	500	1883	36	36	1423	2050
RTOR Reduction (vph)	0	164	0	0	0	33	0	1	0	0	0	716
Lane Group Flow (vph)	2783	359	0	0	72	3	500	1918	0	36	1423	1334
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	59.0	76.1			13.1	13.1	21.0	56.7		3.2	38.9	59.0
Effective Green, g (s)	59.0	76.1			13.1	13.1	21.0	56.7		3.2	38.9	59.0
Actuated g/C Ratio	0.40	0.51			0.09	0.09	0.14	0.38		0.02	0.26	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1369	824			100	140	251	1352		38	930	1111
v/s Ratio Prot	c0.81	0.22					c0.28	0.54		0.02	c0.40	0.48
v/s Ratio Perm					c0.06	0.00						
v/c Ratio	2.03	0.44			0.72	0.02	1.99	1.42		0.95	1.53	1.20
Uniform Delay, d1	44.5	22.5			65.7	61.6	63.5	45.6		72.3	54.5	44.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	467.4	0.4			21.9	0.1	460.4	192.9		123.8	244.0	99.1
Delay (s)	511.9	22.9			87.5	61.7	523.9	238.6		196.1	298.6	143.6
Level of Service	F	C			F	E	F	F		F	F	F
Approach Delay (s)		434.5			78.9			297.5			207.0	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	309.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.75		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	151.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Year 2035 General Plan Baseline

with DeWitt Project Condition

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	330	1986	300	1473	275	1479	322	405
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2159	326	1601	299	1608	350	440
RTOR Reduction (vph)	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	359	2159	326	1601	299	1608	350	439
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	57.7	28.4	68.1	150.0	45.4	45.4	28.4
Effective Green, g (s)	21.0	60.7	31.4	71.1	150.0	48.4	48.4	28.4
Actuated g/C Ratio	0.14	0.40	0.21	0.47	1.00	0.32	0.32	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	1282	637	1585	1583	974	1000	300
v/s Ratio Prot	0.11	c0.68	0.11	0.48			0.11	c0.28
v/s Ratio Perm					0.19	c0.53		
v/c Ratio	0.76	1.68	0.51	1.01	0.19	1.65	0.35	1.46
Uniform Delay, d1	62.1	44.6	52.5	39.5	0.0	50.8	38.8	60.8
Progression Factor	1.10	0.88	1.03	0.47	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	309.1	0.4	20.0	0.2	297.5	0.2	226.3
Delay (s)	71.3	348.2	54.6	38.6	0.2	348.3	38.9	287.1
Level of Service	E	F	D	D	A	F	D	F
Approach Delay (s)		308.7		35.8				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	218.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	133.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2565	310	3	1820	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2788	337	3	1978	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	46	0	0	0	0	9	0	0	52	107
Lane Group Flow (vph)	1080	2788	291	3	1980	0	73	77	0	22	6	10
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Effective Green, g (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Actuated g/C Ratio	0.30	0.75	0.75	0.01	0.45		0.03	0.09		0.03	0.09	0.09
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	977	3376	1099	11	2198		110	161		40	125	249
v/s Ratio Prot	c0.33	0.62		0.00	c0.41		c0.02	c0.04		0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.11	0.83	0.27	0.27	0.90		0.66	0.48		0.55	0.05	0.04
Uniform Delay, d1	52.4	12.4	5.9	74.1	37.8		71.7	64.9		71.7	62.7	62.7
Progression Factor	0.96	0.62	0.22	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.1	0.2	0.1	4.8	6.5		11.1	0.8		9.0	0.1	0.0
Delay (s)	99.3	7.9	1.4	79.0	44.3		82.7	65.7		80.6	62.8	62.7
Level of Service	F	A	A	E	D		F	E		F	E	E
Approach Delay (s)		30.8			44.4			73.5			64.7	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	1003	65	26	1328	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	0.99		1.00	0.99			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	3433	3507		1770	3508			1741			1793	2787
Flt Permitted	0.95	1.00		0.24	1.00			0.78			0.81	1.00
Satd. Flow (perm)	3433	3507		455	3508			1409			1513	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1090	71	28	1443	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	5	0	0	14	0	0	0	114
Lane Group Flow (vph)	729	1157	0	28	1528	0	0	54	0	0	23	35
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Effective Green, g (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Actuated g/C Ratio	0.24	0.77		0.47	0.47			0.10			0.10	0.24
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	816	2686		213	1643			145			155	663
v/s Ratio Prot	c0.21	0.33			c0.44							0.01
v/s Ratio Perm				0.06				c0.04			0.02	
v/c Ratio	0.89	0.43		0.13	0.93			0.37			0.15	0.05
Uniform Delay, d1	30.9	3.4		12.6	21.0			35.0			34.2	24.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	12.2	0.5		1.3	10.8			1.6			0.4	0.0
Delay (s)	43.0	3.9		13.9	31.8			36.6			34.7	24.7
Level of Service	D	A		B	C			D			C	C
Approach Delay (s)		19.0			31.5			36.6			26.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	730	20	342	20	20	20	87	386	20	20	749	1547
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1214	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	793	22	372	22	22	22	95	420	22	22	814	1682
RTOR Reduction (vph)	0	101	0	0	0	21	0	3	0	0	0	973
Lane Group Flow (vph)	793	293	0	0	44	1	95	439	0	22	814	709
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	48.9	60.8			7.9	7.9	11.3	44.8		3.1	36.6	48.9
Effective Green, g (s)	48.9	60.8			7.9	7.9	11.3	44.8		3.1	36.6	48.9
Actuated g/C Ratio	0.41	0.50			0.07	0.07	0.09	0.37		0.03	0.30	0.41
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1391	805			79	104	166	1304		45	1073	1129
v/s Ratio Prot	0.23	0.18					c0.05	0.13		0.01	c0.23	c0.25
v/s Ratio Perm					c0.04	0.00						
v/c Ratio	0.57	0.36			0.56	0.01	0.57	0.34		0.49	0.76	0.63
Uniform Delay, d1	27.8	18.2			54.7	52.8	52.4	27.3		58.0	38.1	28.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3			8.3	0.1	4.7	0.2		8.1	3.1	1.1
Delay (s)	28.3	18.5			63.0	52.8	57.1	27.4		66.1	41.2	29.8
Level of Service	C	B			E	D	E	C		E	D	C
Approach Delay (s)		25.1			59.6			32.7			33.8	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	907	2082	393	1969	686	711	319	374
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2263	427	2140	746	773	347	407
RTOR Reduction (vph)	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	986	2263	427	2140	746	773	347	405
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	32.4	75.7	28.4	71.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	35.4	78.7	31.4	74.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.24	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	795	1662	637	1665	1583	612	628	300
v/s Ratio Prot	c0.29	c0.71	0.14	0.64			0.11	0.26
v/s Ratio Perm					c0.47	c0.26		
v/c Ratio	1.24	1.36	0.67	1.29	0.47	1.26	0.55	1.35
Uniform Delay, d1	57.3	35.6	54.5	37.6	0.0	59.8	53.7	60.8
Progression Factor	1.09	0.81	1.10	0.33	1.00	1.00	1.00	1.00
Incremental Delay, d2	109.2	163.1	0.3	128.8	0.1	131.1	0.8	177.4
Delay (s)	171.9	191.9	60.2	141.4	0.1	190.9	54.5	238.2
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		185.8		99.1				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	147.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2263	161	4	2515	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2460	175	4	2734	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	32	0	0	0	0	15	0	0	50	101
Lane Group Flow (vph)	810	2460	143	4	2738	0	405	275	0	22	9	14
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	29.2	99.0	99.0	1.0	70.8		13.0	28.4		3.0	18.4	18.4
Effective Green, g (s)	29.2	99.0	99.0	1.0	70.8		13.0	28.4		3.0	18.4	18.4
Actuated g/C Ratio	0.19	0.66	0.66	0.01	0.47		0.09	0.19		0.02	0.12	0.12
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	631	2977	969	11	2285		286	333		26	176	350
v/s Ratio Prot	c0.25	0.55		0.00	c0.57		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.00
v/c Ratio	1.28	0.83	0.15	0.36	1.20		1.42	0.82		0.85	0.05	0.04
Uniform Delay, d1	60.4	19.1	9.6	74.2	39.6		68.5	58.4		73.3	58.1	58.0
Progression Factor	0.82	0.59	0.46	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	128.8	0.3	0.0	7.3	93.7		206.6	14.5		106.7	0.0	0.0
Delay (s)	178.3	11.6	4.4	81.5	133.3		275.1	72.9		180.0	58.1	58.0
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		50.4			133.3			190.8			71.7	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM Average Control Delay	96.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1554	47	19	1309	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3524		1770	3531			1754			1779	2787
Flt Permitted	0.95	1.00		0.14	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3524		253	3531			1294			1345	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1689	51	21	1423	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	8	0	0	0	245
Lane Group Flow (vph)	187	1738	0	21	1445	0	0	105	0	0	87	418
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	16.1	63.1		42.0	42.0			11.7			11.7	16.1
Effective Green, g (s)	16.1	63.1		42.0	42.0			11.7			11.7	16.1
Actuated g/C Ratio	0.19	0.74		0.49	0.49			0.14			0.14	0.19
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	644	2592		124	1728			176			183	523
v/s Ratio Prot	0.05	0.49			c0.41							c0.15
v/s Ratio Perm				0.08				c0.08			0.06	
v/c Ratio	0.29	0.67		0.17	0.84			0.60			0.48	0.80
Uniform Delay, d1	29.9	5.9		12.2	18.9			34.8			34.2	33.3
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	1.4		2.9	5.0			5.4			1.9	8.3
Delay (s)	30.2	7.3		15.1	23.9			40.2			36.2	41.6
Level of Service	C	A		B	C			D			D	D
Approach Delay (s)		9.5			23.8			40.2			41.0	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	20.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1540	20	352	20	20	20	354	1054	20	20	799	1140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1205	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1674	22	383	22	22	22	385	1146	22	22	868	1239
RTOR Reduction (vph)	0	193	0	0	0	21	0	1	0	0	0	698
Lane Group Flow (vph)	1674	212	0	0	44	1	385	1167	0	22	868	541
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	59.1	71.9			8.8	8.8	26.1	58.5		2.3	34.7	59.1
Effective Green, g (s)	59.1	71.9			8.8	8.8	26.1	58.5		2.3	34.7	59.1
Actuated g/C Ratio	0.41	0.50			0.06	0.06	0.18	0.40		0.02	0.24	0.41
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1402	795			73	96	319	1427		28	849	1138
v/s Ratio Prot	c0.49	0.13					c0.22	0.33		0.01	c0.25	0.19
v/s Ratio Perm					c0.04	0.00						
v/c Ratio	1.19	0.27			0.60	0.01	1.21	0.82		0.79	1.02	0.48
Uniform Delay, d1	42.8	21.1			66.2	63.9	59.3	38.4		71.0	55.0	31.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	94.6	0.2			13.2	0.1	118.9	3.8		82.7	36.7	0.3
Delay (s)	137.4	21.3			79.5	63.9	178.2	42.1		153.7	91.7	31.7
Level of Service	F	C			E	E	F	D		F	F	C
Approach Delay (s)		114.8			74.3			75.9			57.4	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM Average Control Delay	83.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	144.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	920	2081	427	2027	734	684	323	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2262	464	2203	798	743	351	382
RTOR Reduction (vph)	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	1000	2262	464	2203	798	743	351	379
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	32.4	75.7	28.4	71.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	35.4	78.7	31.4	74.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.24	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	795	1662	637	1665	1583	612	628	300
v/s Ratio Prot	c0.30	c0.71	0.15	0.66			0.11	0.24
v/s Ratio Perm					c0.50	c0.25		
v/c Ratio	1.26	1.36	0.73	1.32	0.50	1.21	0.56	1.26
Uniform Delay, d1	57.3	35.6	55.3	37.6	0.0	59.8	53.8	60.8
Progression Factor	1.09	0.81	1.07	0.32	1.00	1.00	1.00	1.00
Incremental Delay, d2	117.0	162.8	0.4	145.8	0.1	110.8	0.9	142.1
Delay (s)	179.7	191.6	59.8	158.0	0.1	170.6	54.6	202.9
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		188.0		108.5				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	147.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2199	163	4	2650	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2390	177	4	2880	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	33	0	0	0	0	15	0	0	50	102
Lane Group Flow (vph)	821	2390	144	4	2884	0	411	278	0	22	9	15
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	28.2	98.8	98.8	1.0	71.6		13.0	28.6		3.0	18.6	18.6
Effective Green, g (s)	28.2	98.8	98.8	1.0	71.6		13.0	28.6		3.0	18.6	18.6
Actuated g/C Ratio	0.19	0.66	0.66	0.01	0.48		0.09	0.19		0.02	0.12	0.12
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	609	2971	967	11	2311		286	335		26	178	354
v/s Ratio Prot	c0.25	0.53		0.00	c0.60		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.01
v/c Ratio	1.35	0.80	0.15	0.36	1.25		1.44	0.83		0.85	0.05	0.04
Uniform Delay, d1	60.9	18.6	9.7	74.2	39.2		68.5	58.3		73.3	57.9	57.8
Progression Factor	0.81	0.59	0.46	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	157.7	0.2	0.0	7.3	115.4		215.6	14.8		106.7	0.0	0.0
Delay (s)	207.3	11.2	4.5	81.5	154.6		284.1	73.1		180.0	58.0	57.9
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		58.4			154.5			196.3			71.5	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	110.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1485	47	19	1437	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3523		1770	3532			1754			1779	2787
Flt Permitted	0.95	1.00		0.15	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3523		273	3532			1294			1345	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1614	51	21	1562	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	8	0	0	0	237
Lane Group Flow (vph)	187	1663	0	21	1584	0	0	105	0	0	87	426
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	15.3	63.1		42.8	42.8			11.7			11.7	15.3
Effective Green, g (s)	15.3	63.1		42.8	42.8			11.7			11.7	15.3
Actuated g/C Ratio	0.18	0.74		0.50	0.50			0.14			0.14	0.18
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	612	2591		136	1762			176			183	497
v/s Ratio Prot	0.05	0.47			c0.45							c0.15
v/s Ratio Perm				0.08				c0.08			0.06	
v/c Ratio	0.31	0.64		0.15	0.90			0.60			0.48	0.86
Uniform Delay, d1	30.6	5.7		11.7	19.5			34.8			34.2	34.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	1.2		2.4	7.8			5.4			1.9	13.6
Delay (s)	30.9	6.9		14.1	27.3			40.2			36.2	47.7
Level of Service	C	A		B	C			D			D	D
Approach Delay (s)		9.3			27.1			40.2			46.4	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	85.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2547	33	441	33	33	33	644	1747	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.61	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1138	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2768	36	479	36	36	36	700	1899	36	36	1423	2050
RTOR Reduction (vph)	0	227	0	0	0	33	0	1	0	0	0	717
Lane Group Flow (vph)	2768	288	0	0	72	3	700	1934	0	36	1423	1333
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	54.0	71.1			13.1	13.1	28.0	61.7		3.2	36.9	54.0
Effective Green, g (s)	54.0	71.1			13.1	13.1	28.0	61.7		3.2	36.9	54.0
Actuated g/C Ratio	0.36	0.48			0.09	0.09	0.19	0.42		0.02	0.25	0.36
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1253	770			101	140	335	1471		38	882	1017
v/s Ratio Prot	c0.81	0.18					c0.40	0.55		0.02	c0.40	0.48
v/s Ratio Perm					c0.06	0.00						
v/c Ratio	2.21	0.37			0.71	0.02	2.09	1.32		0.95	1.61	1.31
Uniform Delay, d1	47.0	24.4			65.6	61.6	60.0	43.1		72.3	55.5	47.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	546.7	0.3			21.1	0.1	500.4	146.7		123.8	281.3	146.9
Delay (s)	593.7	24.7			86.7	61.7	560.4	189.9		196.1	336.8	193.9
Level of Service	F	C			F	E	F	F		F	F	F
Approach Delay (s)		504.4			78.4			288.3			251.9	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	346.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.87		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	161.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

YEAR 2035 GENERAL PLAN BASELINE

WITH NCRF/DEWITT NELSON YCF PROJECT CONDITION

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	330	2038	305	1478	282	1543	322	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	359	2215	332	1607	307	1677	350	493
RTOR Reduction (vph)	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	359	2215	332	1607	307	1677	350	492
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	18.0	56.7	29.4	68.1	150.0	45.4	45.4	29.4
Effective Green, g (s)	21.0	59.7	32.4	71.1	150.0	48.4	48.4	29.4
Actuated g/C Ratio	0.14	0.40	0.22	0.47	1.00	0.32	0.32	0.20
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	471	1260	658	1585	1583	974	1000	310
v/s Ratio Prot	0.11	c0.70	0.11	0.48			0.11	c0.31
v/s Ratio Perm					0.19	c0.56		
v/c Ratio	0.76	1.76	0.50	1.01	0.19	1.72	0.35	1.59
Uniform Delay, d1	62.1	45.1	51.7	39.5	0.0	50.8	38.8	60.3
Progression Factor	1.10	0.87	1.05	0.49	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	342.2	0.4	20.8	0.2	329.1	0.2	279.3
Delay (s)	70.9	381.5	54.5	40.2	0.2	379.9	38.9	339.6
Level of Service	E	F	D	D	A	F	D	F
Approach Delay (s)		338.2		36.9				
Approach LOS		F		D				

Intersection Summary			
HCM Average Control Delay	241.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.71		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	140.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	994	2730	310	3	1837	2	67	59	20	20	1	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.96		1.00	0.85	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1791		1289	1429	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1080	2967	337	3	1997	2	73	64	22	22	1	174
RTOR Reduction (vph)	0	0	43	0	0	0	0	9	0	0	52	107
Lane Group Flow (vph)	1080	2967	294	3	1999	0	73	77	0	22	6	10
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Effective Green, g (s)	45.2	112.3	112.3	1.0	68.1		5.0	13.5		4.6	13.1	13.1
Actuated g/C Ratio	0.30	0.75	0.75	0.01	0.45		0.03	0.09		0.03	0.09	0.09
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	977	3376	1099	11	2198		110	161		40	125	249
v/s Ratio Prot	c0.33	c0.66		0.00	0.41		c0.02	c0.04		0.02	0.00	
v/s Ratio Perm			0.20									0.00
v/c Ratio	1.11	0.88	0.27	0.27	0.91		0.66	0.48		0.55	0.05	0.04
Uniform Delay, d1	52.4	13.9	5.9	74.1	38.1		71.7	64.9		71.7	62.7	62.7
Progression Factor	0.95	0.63	0.24	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	49.1	0.3	0.1	4.8	7.0		11.1	0.8		9.0	0.1	0.0
Delay (s)	99.1	9.1	1.5	79.0	45.1		82.7	65.7		80.6	62.8	62.7
Level of Service	F	A	A	E	D		F	E		F	E	E
Approach Delay (s)		30.7			45.2			73.5			64.7	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM Average Control Delay	37.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	671	1168	65	26	1345	83	42	5	16	17	5	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	0.99		1.00	0.99			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	1.00
Satd. Flow (prot)	3433	3511		1770	3508			1741			1793	2787
Flt Permitted	0.95	1.00		0.20	1.00			0.78			0.81	1.00
Satd. Flow (perm)	3433	3511		379	3508			1409			1513	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	1270	71	28	1462	90	46	5	17	18	5	149
RTOR Reduction (vph)	0	4	0	0	5	0	0	14	0	0	0	114
Lane Group Flow (vph)	729	1337	0	28	1547	0	0	54	0	0	23	35
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Effective Green, g (s)	19.9	64.1		39.2	39.2			8.6			8.6	19.9
Actuated g/C Ratio	0.24	0.77		0.47	0.47			0.10			0.10	0.24
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	816	2689		178	1643			145			155	663
v/s Ratio Prot	c0.21	0.38			c0.44							0.01
v/s Ratio Perm				0.07				c0.04			0.02	
v/c Ratio	0.89	0.50		0.16	0.94			0.37			0.15	0.05
Uniform Delay, d1	30.9	3.7		12.8	21.2			35.0			34.2	24.6
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	12.2	0.7		1.9	12.1			1.6			0.4	0.0
Delay (s)	43.0	4.4		14.6	33.3			36.6			34.7	24.7
Level of Service	D	A		B	C			D			C	C
Approach Delay (s)		18.0			32.9			36.6			26.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	24.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	731	20	343	20	20	20	94	386	20	20	749	1560
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1599			1817	1583	1770	3513		1770	3539	2787
Flt Permitted	0.95	1.00			0.65	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1599			1213	1583	1770	3513		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	795	22	373	22	22	22	102	420	22	22	814	1696
RTOR Reduction (vph)	0	110	0	0	0	21	0	2	0	0	0	967
Lane Group Flow (vph)	795	285	0	0	44	1	102	440	0	22	814	729
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	48.9	60.8			7.9	7.9	11.8	45.6		3.1	36.9	48.9
Effective Green, g (s)	48.9	60.8			7.9	7.9	11.8	45.6		3.1	36.9	48.9
Actuated g/C Ratio	0.40	0.50			0.07	0.07	0.10	0.38		0.03	0.30	0.40
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1382	800			79	103	172	1318		45	1075	1122
v/s Ratio Prot	0.23	0.18					c0.06	0.13		0.01	c0.23	c0.26
v/s Ratio Perm					c0.04	0.00						
v/c Ratio	0.58	0.36			0.56	0.01	0.59	0.33		0.49	0.76	0.65
Uniform Delay, d1	28.2	18.5			55.1	53.2	52.5	27.1		58.4	38.2	29.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.6	0.3			8.3	0.1	5.4	0.2		8.1	3.1	1.3
Delay (s)	28.8	18.7			63.4	53.2	57.9	27.2		66.5	41.3	30.7
Level of Service	C	B			E	D	E	C		E	D	C
Approach Delay (s)		25.5			60.0			33.0			34.4	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	121.5	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	907	2103	422	2001	726	737	319	393
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	986	2286	459	2175	789	801	347	427
RTOR Reduction (vph)	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	986	2286	459	2175	789	801	347	425
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	32.4	75.7	28.4	71.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	35.4	78.7	31.4	74.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.24	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	795	1662	637	1665	1583	612	628	300
v/s Ratio Prot	c0.29	c0.72	0.15	0.65			0.11	0.27
v/s Ratio Perm					c0.50	c0.27		
v/c Ratio	1.24	1.38	0.72	1.31	0.50	1.31	0.55	1.42
Uniform Delay, d1	57.3	35.6	55.2	37.6	0.0	59.8	53.7	60.8
Progression Factor	1.09	0.81	1.07	0.35	1.00	1.00	1.00	1.00
Incremental Delay, d2	109.2	169.3	0.4	138.3	0.1	150.5	0.8	205.5
Delay (s)	171.9	198.1	59.3	151.4	0.1	210.3	54.5	266.3
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		190.2		104.2				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	154.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	745	2329	161	4	2616	4	373	167	99	20	2	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	810	2532	175	4	2843	4	405	182	108	22	2	172
RTOR Reduction (vph)	0	0	31	0	0	0	0	15	0	0	50	101
Lane Group Flow (vph)	810	2532	144	4	2847	0	405	275	0	22	9	14
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	27.2	99.0	99.0	1.0	72.8		13.0	28.4		3.0	18.4	18.4
Effective Green, g (s)	27.2	99.0	99.0	1.0	72.8		13.0	28.4		3.0	18.4	18.4
Actuated g/C Ratio	0.18	0.66	0.66	0.01	0.49		0.09	0.19		0.02	0.12	0.12
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	588	2977	969	11	2350		286	333		26	176	350
v/s Ratio Prot	c0.25	0.56		0.00	c0.59		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.00
v/c Ratio	1.38	0.85	0.15	0.36	1.21		1.42	0.82		0.85	0.05	0.04
Uniform Delay, d1	61.4	19.8	9.6	74.2	38.6		68.5	58.4		73.3	58.1	58.0
Progression Factor	0.84	0.63	0.54	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	170.9	0.3	0.0	7.3	99.4		206.6	14.5		106.7	0.0	0.0
Delay (s)	222.3	12.7	5.2	81.5	138.0		275.1	72.9		180.0	58.1	58.0
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		60.6			137.9			190.8			71.7	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	103.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1620	47	19	1410	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3524		1770	3531			1754			1779	2787
Flt Permitted	0.95	1.00		0.13	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3524		235	3531			1294			1347	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1761	51	21	1533	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	7	0	0	0	217
Lane Group Flow (vph)	187	1810	0	21	1555	0	0	106	0	0	87	446
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	16.2	64.1		42.9	42.9			11.6			11.6	16.2
Effective Green, g (s)	16.2	64.1		42.9	42.9			11.6			11.6	16.2
Actuated g/C Ratio	0.19	0.74		0.49	0.49			0.13			0.13	0.19
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	641	2605		116	1747			173			180	521
v/s Ratio Prot	0.05	0.51			c0.44							c0.16
v/s Ratio Perm				0.09				c0.08			0.06	
v/c Ratio	0.29	0.69		0.18	0.89			0.61			0.48	0.86
Uniform Delay, d1	30.3	6.1		12.2	19.8			35.4			34.8	34.1
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	1.6		3.4	7.3			6.3			2.0	13.0
Delay (s)	30.6	7.6		15.6	27.0			41.7			36.8	47.1
Level of Service	C	A		B	C			D			D	D
Approach Delay (s)		9.8			26.9			41.7			45.9	
Approach LOS		A			C			D			D	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1548	20	357	20	20	20	357	1054	20	20	799	1145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1598			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.64	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1598			1201	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1683	22	388	22	22	22	388	1146	22	22	868	1245
RTOR Reduction (vph)	0	195	0	0	0	21	0	1	0	0	0	702
Lane Group Flow (vph)	1683	215	0	0	44	1	388	1167	0	22	868	543
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	59.1	71.9			8.8	8.8	26.1	58.5		2.3	34.7	59.1
Effective Green, g (s)	59.1	71.9			8.8	8.8	26.1	58.5		2.3	34.7	59.1
Actuated g/C Ratio	0.41	0.50			0.06	0.06	0.18	0.40		0.02	0.24	0.41
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1402	794			73	96	319	1427		28	849	1138
v/s Ratio Prot	c0.49	0.13					c0.22	0.33		0.01	c0.25	0.19
v/s Ratio Perm					c0.04	0.00						
v/c Ratio	1.20	0.27			0.60	0.01	1.22	0.82		0.79	1.02	0.48
Uniform Delay, d1	42.8	21.2			66.2	63.9	59.3	38.4		71.0	55.0	31.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	97.3	0.2			13.2	0.1	122.5	3.8		82.7	36.7	0.3
Delay (s)	140.1	21.3			79.5	63.9	181.8	42.1		153.7	91.7	31.8
Level of Service	F	C			E	E	F	D		F	F	C
Approach Delay (s)		116.9			74.3			77.0			57.4	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM Average Control Delay	84.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	144.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBL	WBT	WBR2	SEL	NWL	NWR2
Lane Configurations								
Volume (vph)	920	2082	475	2079	799	684	323	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	4.0	2.6	2.6	5.6
Lane Util. Factor	0.97	0.95	0.97	0.95	1.00	0.97	0.97	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	3367	3167	3045	3343	1583	3019	3099	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	3367	3167	3045	3343	1583	3019	3099	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1000	2263	516	2260	868	743	351	383
RTOR Reduction (vph)	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	1000	2263	516	2260	868	743	351	380
Heavy Vehicles (%)	4%	14%	15%	8%	2%	16%	13%	2%
Turn Type	Prot		Prot		Free	custom	custom	custom
Protected Phases	5	2	1	6			3	1
Permitted Phases					Free	7	3	
Actuated Green, G (s)	32.4	75.7	28.4	71.7	150.0	27.4	27.4	28.4
Effective Green, g (s)	35.4	78.7	31.4	74.7	150.0	30.4	30.4	28.4
Actuated g/C Ratio	0.24	0.52	0.21	0.50	1.00	0.20	0.20	0.19
Clearance Time (s)	5.6	7.3	5.6	7.3		5.6	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5		2.5	2.5	3.0
Lane Grp Cap (vph)	795	1662	637	1665	1583	612	628	300
v/s Ratio Prot	c0.30	c0.71	0.17	0.68			0.11	0.24
v/s Ratio Perm					c0.55	c0.25		
v/c Ratio	1.26	1.36	0.81	1.36	0.55	1.21	0.56	1.27
Uniform Delay, d1	57.3	35.6	56.5	37.6	0.0	59.8	53.8	60.8
Progression Factor	1.09	0.81	1.05	0.32	1.00	1.00	1.00	1.00
Incremental Delay, d2	117.0	163.1	0.7	161.2	0.1	110.8	0.9	143.5
Delay (s)	179.7	191.9	59.9	173.3	0.1	170.6	54.6	204.3
Level of Service	F	F	E	F	A	F	D	F
Approach Delay (s)		188.2		116.0				
Approach LOS		F		F				

Intersection Summary			
HCM Average Control Delay	150.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.9
Intersection Capacity Utilization	113.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	755	2200	163	4	2814	4	378	169	100	20	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Lane Util. Factor	0.97	0.91	1.00	1.00	0.86		0.97	1.00		1.00	0.91	0.91
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.94		1.00	0.86	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3242	4510	1468	1641	4842		3303	1759		1289	1432	2854
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	821	2391	177	4	3059	4	411	184	109	22	2	174
RTOR Reduction (vph)	0	0	34	0	0	0	0	15	0	0	50	102
Lane Group Flow (vph)	821	2391	143	4	3063	0	411	278	0	22	9	15
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot		Perm	Prot			Prot			Prot		Perm
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6									8
Actuated Green, G (s)	27.2	99.0	99.0	1.0	72.8		12.0	28.4		3.0	19.4	19.4
Effective Green, g (s)	27.2	99.0	99.0	1.0	72.8		12.0	28.4		3.0	19.4	19.4
Actuated g/C Ratio	0.18	0.66	0.66	0.01	0.49		0.08	0.19		0.02	0.13	0.13
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3		4.0	5.3		4.0	5.3	5.3
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	588	2977	969	11	2350		264	333		26	185	369
v/s Ratio Prot	c0.25	0.53		0.00	c0.63		c0.12	c0.16		0.02	0.01	
v/s Ratio Perm			0.10									0.01
v/c Ratio	1.40	0.80	0.15	0.36	1.30		1.56	0.83		0.85	0.05	0.04
Uniform Delay, d1	61.4	18.5	9.6	74.2	38.6		69.0	58.5		73.3	57.2	57.2
Progression Factor	0.82	0.61	0.49	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	179.3	0.2	0.0	7.3	139.7		268.4	15.6		106.7	0.0	0.0
Delay (s)	229.7	11.4	4.8	81.5	178.3		337.4	74.1		180.0	57.3	57.2
Level of Service	F	B	A	F	F		F	E		F	E	E
Approach Delay (s)		64.0			178.2			227.8			70.8	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM Average Control Delay	127.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.3
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	1486	47	19	1601	21	84	5	16	75	5	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Lane Util. Factor	0.97	0.95		1.00	0.95			1.00			1.00	0.88
Frt	1.00	1.00		1.00	1.00			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.95	1.00
Satd. Flow (prot)	3433	3523		1770	3532			1754			1779	2787
Flt Permitted	0.95	1.00		0.15	1.00			0.71			0.72	1.00
Satd. Flow (perm)	3433	3523		273	3532			1294			1347	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	1615	51	21	1740	23	91	5	17	82	5	663
RTOR Reduction (vph)	0	2	0	0	1	0	0	7	0	0	0	209
Lane Group Flow (vph)	187	1664	0	21	1762	0	0	106	0	0	87	454
Turn Type	Prot			Perm			Perm			Perm		Over
Protected Phases	7	4			8			2			6	7
Permitted Phases				8			2			6		
Actuated Green, G (s)	15.0	64.1		44.1	44.1			11.6			11.6	15.0
Effective Green, g (s)	15.0	64.1		44.1	44.1			11.6			11.6	15.0
Actuated g/C Ratio	0.17	0.74		0.51	0.51			0.13			0.13	0.17
Clearance Time (s)	5.0	6.0		6.0	6.0			5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	594	2605		139	1797			173			180	482
v/s Ratio Prot	0.05	0.47			c0.50							c0.16
v/s Ratio Perm				0.08				c0.08			0.06	
v/c Ratio	0.31	0.64		0.15	0.98			0.61			0.48	0.94
Uniform Delay, d1	31.4	5.6		11.3	20.9			35.4			34.8	35.4
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.3	1.2		2.3	17.1			6.3			2.0	26.9
Delay (s)	31.7	6.8		13.6	38.0			41.7			36.8	62.3
Level of Service	C	A		B	D			D			D	E
Approach Delay (s)		9.3			37.7			41.7			59.3	
Approach LOS		A			D			D			E	

Intersection Summary			
HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	86.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2560	33	448	33	33	33	644	1747	33	33	1309	1886
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	1.00			1.00	1.00	1.00	0.95		1.00	0.95	0.88
Frt	1.00	0.86			1.00	0.85	1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1603			1817	1583	1770	3529		1770	3539	2787
Flt Permitted	0.95	1.00			0.61	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3433	1603			1132	1583	1770	3529		1770	3539	2787
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2783	36	487	36	36	36	700	1899	36	36	1423	2050
RTOR Reduction (vph)	0	227	0	0	0	33	0	1	0	0	0	717
Lane Group Flow (vph)	2783	296	0	0	72	3	700	1934	0	36	1423	1333
Turn Type	Prot			Perm		Perm	Prot			Prot		Over
Protected Phases	7	4			8		5	2		1	6	7
Permitted Phases				8		8						
Actuated Green, G (s)	54.0	71.1			13.1	13.1	28.0	61.7		3.2	36.9	54.0
Effective Green, g (s)	54.0	71.1			13.1	13.1	28.0	61.7		3.2	36.9	54.0
Actuated g/C Ratio	0.36	0.48			0.09	0.09	0.19	0.42		0.02	0.25	0.36
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	1253	770			100	140	335	1471		38	882	1017
v/s Ratio Prot	c0.81	0.18					c0.40	0.55		0.02	c0.40	0.48
v/s Ratio Perm					c0.06	0.00						
v/c Ratio	2.22	0.39			0.72	0.02	2.09	1.32		0.95	1.61	1.31
Uniform Delay, d1	47.0	24.5			65.7	61.6	60.0	43.1		72.3	55.5	47.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	552.1	0.3			21.9	0.1	500.4	146.7		123.8	281.3	146.9
Delay (s)	599.1	24.8			87.5	61.7	560.4	189.9		196.1	336.8	193.9
Level of Service	F	C			F	E	F	F		F	F	F
Approach Delay (s)		508.2			78.9			288.3			251.9	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM Average Control Delay	348.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.87		
Actuated Cycle Length (s)	148.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	161.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX E-4

Significance Threshold Criteria Analysis

NCRF PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing Avg. Delay	Existing LOS	Background Avg. Delay	Background LOS	Project Avg. Delay	Project LOS	▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1): A-D (background to E or F (proj)	City of Stockton Int (Trigger 2): if E/F (back), proj causes int delay > 5sec	For County Study Intersections: if E/F (back), proj causes int delay > ex condition delay	For Caltrans Int: if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	138.7	**F**	151.9	**F**	13.2	NO IMPACT			NO IMPACT
		Midday	12.7	B	87.4	**F**	96.2	**F**	8.8	NO IMPACT			NO IMPACT
		P.M.	13.2	B	98.5	**F**	102.3	**F**	3.8	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	48.7	**E**	90.0	**F**	41.3	NO IMPACT			IMPACT
		Midday	10.6	B	235.0	**F**	248.6	**F**	13.6	NO IMPACT			NO IMPACT
		P.M.	10.4	B	190.6	**F**	179.0	**F**	-11.6	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	56.6	**E**	61.3	**E**	4.7	NO IMPACT			NO IMPACT
		Midday	20.5	C	66.8	**E**	78.7	**E**	11.9	NO IMPACT			NO IMPACT
		P.M.	20.6	C	75.3	**E**	94.1	**F**	18.8	NO IMPACT			IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	13.2	B	14.8	B	1.6	NO IMPACT	NO IMPACT		
		Midday	19.5	B	20.0	C	20.7	C	0.7	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	24.4	C	25.4	C	1.0	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	10.0	A	10.4	B	0.4	NO IMPACT	NO IMPACT		
		Midday	2.0	A	16.2	B	18.4	B	2.2	NO IMPACT	NO IMPACT		
		P.M.	0.0	A	15.7	B	17.8	B	2.1	NO IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	862.1	**F**	862.1	IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A		**F**	0.0	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	363.4	**F**	363.4	IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	330.7	**F**	330.7	IMPACT		NO IMPACT	
		Midday	9.4	A	417.5	**F**	1175.2	**F**	757.7	NO IMPACT		IMPACT	
		P.M.	0.0	A	0.0	A		**F**	0.0	IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	976.1	**F**	980.3	**F**	4.2	NO IMPACT		IMPACT	
		Midday	7.9	A	135.5	**F**	137.5	**F**	2.0	NO IMPACT		IMPACT	
		P.M.	7.8	A	143.7	**F**	146.3	**F**	2.6	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	

DEWITT PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing		Background		Project		▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1)	City of Stockton Int (Trigger 2)	For County Study Intersections	For Caltrans Int
			Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS		D (background to E or F (proj)	if E/F (back), proj causes int delay > 5sec	if E/F (back), proj causes int delay > ex condition delay	if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	138.7	F	153.6	**F**	14.9	NO IMPACT			NO IMPACT
		Midday	12.7	B	87.4	F	97.7	**F**	10.3	NO IMPACT			NO IMPACT
		P.M.	13.2	B	98.5	F	102.8	**F**	4.3	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	48.7	E	96.7	**F**	48.0	NO IMPACT			IMPACT
		Midday	10.6	B	235.0	F	260.4	**F**	25.4	NO IMPACT			NO IMPACT
		P.M.	10.4	B	190.6	F	177.4	**F**	-13.2	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	56.6	E	62.0	**E**	5.4	NO IMPACT			NO IMPACT
		Midday	20.5	C	66.8	E	77.7	**E**	10.9	NO IMPACT			NO IMPACT
		P.M.	20.6	C	75.3	E	96.5	**F**	21.2	NO IMPACT			IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	13.2	B	15.0	B	1.8	NO IMPACT	NO IMPACT		
		Midday	19.5	B	20.0	C	20.6	C	0.6	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	24.4	C	25.6	C	1.2	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	10.0	A	10.5	B	0.5	NO IMPACT	NO IMPACT		
		Midday	2.0	A	16.2	B	18.1	B	1.9	NO IMPACT	NO IMPACT		
		P.M.	0.0	A	15.7	B	18.4	B	2.7	NO IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	9.4	A	417.5	F	542.9	**F**	125.4	NO IMPACT		IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	976.1	F	948.9	**F**	-27.2	NO IMPACT		IMPACT	
		Midday	7.9	A	135.5	F	129.3	**F**	-6.2	NO IMPACT		IMPACT	
		P.M.	7.8	A	143.7	F	137.3	**F**	-6.4	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	11.5	B	11.5	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	12.7	B	12.7	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	13.7	B	13.7	NO IMPACT		NO IMPACT	

NCRF & DEWITT PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing		Background		Project		▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1)	City of Stockton Int (Trigger 2)	For County Study Intersections	For Caltrans Int
			Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS		D (background to E or F (proj)	if E/F (back), proj causes int delay > 5sec	if E/F (back), proj causes int delay > ex condition delay	if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	138.7	**F**	167.0	F	28.3	NO IMPACT			NO IMPACT
		Midday	12.7	B	87.4	**F**	107.3	F	19.9	NO IMPACT			NO IMPACT
		P.M.	13.2	B	98.5	**F**	107.4	F	8.9	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	48.7	**E**	168.1	F	119.4	NO IMPACT			IMPACT
		Midday	10.6	B	235.0	**F**	272.8	F	37.8	NO IMPACT			NO IMPACT
		P.M.	10.4	B	21.3	**F**	169.5	F	148.2	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	56.6	**E**	71.8	E	15.2	NO IMPACT			NO IMPACT
		Midday	20.5	C	78.7	**E**	91.0	F	12.3	NO IMPACT			IMPACT
		P.M.	20.6	C	103.3	**F**	116.6	F	13.3	NO IMPACT			NO IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	13.2	B	18.7	B	5.5	NO IMPACT	NO IMPACT		
		Midday	19.5	B	20.0	C	21.6	C	1.6	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	24.4	C	28.5	C	4.1	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	10.0	A	11.4	B	1.4	NO IMPACT	NO IMPACT		
		Midday	2.0	A	16.2	B	20.5	C	4.3	NO IMPACT	NO IMPACT		
		P.M.	0.0	A	15.7	B	38.7	D	23.0	NO IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	1327.2	F	1327.2	IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	510.7	F	510.7	IMPACT		NO IMPACT	
		Midday	9.7	A	417.5	**F**	1587.3	F	1169.8	NO IMPACT		IMPACT	
		P.M.	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	976.1	**F**	953.3	F	-22.8	NO IMPACT		IMPACT	
		Midday	7.9	A	135.5	**F**	131.3	F	-4.2	NO IMPACT		IMPACT	
		P.M.	7.8	A	143.7	**F**	139.8	F	-3.9	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	11.6	B	11.6	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	12.8	B	12.8	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	13.9	B	13.9	NO IMPACT		NO IMPACT	

2035 WITH NCRF PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing		2035 No Project		2035 with NCRF Project		▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1)	City of Stockton Int (Trigger 2)	For County Study Intersections	For Caltrans Int
			Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS		D (background to E or F (proj)	if E/F (back), proj causes int delay > 5sec	if E/F (back), proj causes int delay > ex condition delay	if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	259.0	F	277.9	F	18.9	NO IMPACT			NO IMPACT
		Midday	12.7	B	274.5	F	286.5	F	12.0	NO IMPACT			NO IMPACT
		P.M.	13.2	B	283.1	F	298.3	F	15.2	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	93.2	F	139.1	F	45.9	NO IMPACT			NO IMPACT
		Midday	10.6	B	81.2	F	100.2	F	19.0	NO IMPACT			NO IMPACT
		P.M.	10.4	B	87.9	F	78.4	F	-9.5	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	51.3	D	53.4	D	2.1	NO IMPACT			NO IMPACT
		Midday	20.5	C	134.9	F	148.2	F	13.3	NO IMPACT			NO IMPACT
		P.M.	20.6	C	139.7	F	163.1	F	23.4	NO IMPACT			NO IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	27.0	C	28.3	C	1.3	NO IMPACT	NO IMPACT		
		Midday	19.5	B	44.9	D	45.1	D	0.2	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	46.9	D	47.3	D	0.4	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	72.2	E	67.1	E	-5.1	NO IMPACT	NO IMPACT		
		Midday	2.0	A	52.3	D	59.8	E	7.5	IMPACT	NO IMPACT		
		P.M.	0.0	A	54.6	D	68.7	E	14.1	IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	0.0	F	0.0	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	F	0.0	IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	9.4	A	0.0	A	456.1	F	456.1	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	804.6	F	804.6	IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	26.4	C	27.0	C	0.6	NO IMPACT		NO IMPACT	
		Midday	7.9	A	126.8	F	128.8	F	2.0	NO IMPACT		IMPACT	
		P.M.	7.8	A	368.8	F	371.3	F	2.5	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	

2035 WITH DEWITT PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing		2035 No Project		2035 with Dewitt Nelson Project		▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1)	City of Stockton Int (Trigger 2)	For County Study Intersections	For Caltrans Int
			Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS		D (background to E or F (proj)	if E/F (back), proj causes int delay > 5sec	if E/F (back), proj causes int delay > ex condition delay	if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	259.0	F	280.2	F	21.2	NO IMPACT			NO IMPACT
		Midday	12.7	B	274.5	F	286.3	F	11.8	NO IMPACT			NO IMPACT
		P.M.	13.2	B	283.1	F	299.8	F	16.7	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	93.2	F	144.6	F	51.4	NO IMPACT			NO IMPACT
		Midday	10.6	B	81.2	F	113.7	F	32.5	NO IMPACT			NO IMPACT
		P.M.	10.4	B	87.9	F	76.9	F	-11.0	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	51.3	D	53.7	D	2.4	NO IMPACT			NO IMPACT
		Midday	20.5	C	134.9	F	145.7	F	10.8	NO IMPACT			NO IMPACT
		P.M.	20.6	C	139.7	F	166.0	F	26.3	NO IMPACT			NO IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	27.0	C	28.5	C	1.5	NO IMPACT	NO IMPACT		
		Midday	19.5	B	44.9	D	45.1	D	0.2	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	46.9	D	47.4	D	0.5	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	72.2	E	66.7	**E**	-5.5	NO IMPACT	NO IMPACT		
		Midday	2.0	A	52.3	D	60.8	**E**	8.5	IMPACT	NO IMPACT		
		P.M.	0.0	A	54.6	D	70.9	**E**	16.3	IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	9.4	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	26.4	C	28.4	C	2.0	NO IMPACT		NO IMPACT	
		Midday	7.9	A	126.8	F	149.3	F	22.5	NO IMPACT		IMPACT	
		P.M.	7.8	A	368.8	F	436.1	F	67.3	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	0.0	B	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	372.9	F	372.9	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	

2035 WITH NCRF & DEWITT PROJECT LOS COMPARISON

#	Intersection Name	Traffic Control	Existing		2035 No Project		2035 with NCRF-DeWitt Nelson Project		▲ Avg Delay	City of Stockton/County and Caltrans Int (Trigger 1)	City of Stockton Int (Trigger 2)	For County Study Intersections	For Caltrans Int
			Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	LOS		D (background to E or F (proj)	if E/F (back), proj causes int delay > 5sec	if E/F (back), proj causes int delay > ex condition delay	if E/F (back), LOS must be maintained
1	SR 99 & Arch Road[c]	A.M.	13.4	B	259.0	F	300.7	F	41.7	NO IMPACT			NO IMPACT
		Midday	12.7	B	274.5	F	298.0	F	23.5	NO IMPACT			NO IMPACT
		P.M.	13.2	B	283.1	F	313.2	F	30.1	NO IMPACT			NO IMPACT
2	SR 99 Northbound off-ramp & Arch Road[c]	A.M.	10.8	B	93.2	F	310.4	F	217.2	NO IMPACT			NO IMPACT
		Midday	10.6	B	81.2	F	129.5	F	48.3	NO IMPACT			NO IMPACT
		P.M.	10.4	B	87.9	F	71.1	F	-16.8	NO IMPACT			NO IMPACT
3	Kingsley Road – SR 99 Frontage Road & Arch Road[c]	A.M.	19.1	B	51.3	D	58.8	E	7.5	IMPACT			NO IMPACT
		Midday	20.5	C	134.9	F	159.4	F	24.5	NO IMPACT			NO IMPACT
		P.M.	20.6	C	139.7	F	190.7	F	51.0	NO IMPACT			NO IMPACT
4	Newcastle Road & Arch Road[c]	A.M.	15.3	B	27.0	C	30.8	C	3.8	NO IMPACT	NO IMPACT		
		Midday	19.5	B	44.9	D	45.5	D	0.6	NO IMPACT	NO IMPACT		
		P.M.	15.6	B	46.9	D	48.8	D	1.9	NO IMPACT	NO IMPACT		
5	Logistics Drive & Arch Road[c]	A.M.	8.8	A	72.2	E	66.3	E	-5.9	NO IMPACT	NO IMPACT		
		Midday	2.0	A	52.3	D	69.2	E	16.9	IMPACT	NO IMPACT		
		P.M.	0.0	A	54.6	D	89.8	F	35.2	IMPACT	NO IMPACT		
6	NCRF West Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	
7	NCRF East Driveway & Arch Road[c]	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	9.4	A	0.0	A	640.6	F	640.6	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A	997.7	F	997.7	IMPACT		NO IMPACT	
8	Austin Road & Arch Road[c]	A.M.	7.9	A	26.4	C	28.7	C	2.3	NO IMPACT		NO IMPACT	
		Midday	7.9	A	126.8	F	151.2	F	24.4	NO IMPACT		IMPACT	
		P.M.	7.8	A	368.8	F	438.4	F	69.6	NO IMPACT		IMPACT	
9	Austin Road & Project Access Driveway (CHCF & DeWitt Nelson)	A.M.	0.0	A	0.0	A	0.0	A	0.0	NO IMPACT		NO IMPACT	
		Midday	0.0	A	0.0	A	380.5	F	380.5	IMPACT		NO IMPACT	
		P.M.	0.0	A	0.0	A		F	0.0	IMPACT		NO IMPACT	

APPENDIX E-5

Construction Peak Period – Intersection LOS Analysis

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	176	419	95	187	640	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	455	103	203	696	275
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	191	455	103	203	696	275
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.9	15.9	6.1	13.1	18.2	18.2
Effective Green, g (s)	11.9	18.9	9.1	16.1	21.2	21.2
Actuated g/C Ratio	0.20	0.32	0.16	0.27	0.36	0.36
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	683	1020	472	917	1090	1119
v/s Ratio Prot	c0.06	c0.14	0.03	0.06		0.09
v/s Ratio Perm					c0.23	
v/c Ratio	0.28	0.45	0.22	0.22	0.64	0.25
Uniform Delay, d1	19.8	15.8	21.7	16.5	15.6	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.2	0.2	0.1	1.1	0.1
Delay (s)	20.0	16.0	21.9	16.5	16.7	13.2
Level of Service	C	B	C	B	B	B
Approach Delay (s)		17.2		18.4		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	5.2
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1059	0	0	282	0	460
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1151	0	0	307	0	500
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.73		0.73	0.73
vC, conflicting volume			1151		1228	576
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			460		565	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	32
cM capacity (veh/h)			799		331	738

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	576	576	77	77	77	77	500
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	500
cSH	1700	1700	1700	1700	1700	1700	738
Volume to Capacity	0.34	0.34	0.05	0.05	0.05	0.05	0.68
Queue Length 95th (ft)	0	0	0	0	0	0	134
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	19.5
Lane LOS							C
Approach Delay (s)	0.0		0.0				19.5
Approach LOS							C

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	1190	115	13	139	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3110		1641	3847		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	3110		1641	3847		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	1293	125	14	151	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	5	0	0	13	0	0	41	0	0	144	0
Lane Group Flow (vph)	251	1413	0	14	155	0	127	27	0	24	38	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Effective Green, g (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Actuated g/C Ratio	0.32	0.43		0.02	0.12		0.16	0.22		0.04	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	538	1333		26	471		270	367		53	167	
v/s Ratio Prot	c0.15	c0.45		0.01	0.04		c0.07	0.02		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	0.47	1.06		0.54	0.33		0.47	0.07		0.45	0.23	
Uniform Delay, d1	17.2	18.2		31.1	25.6		24.4	19.6		29.9	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	42.4		10.3	0.3		0.5	0.0		2.2	0.3	
Delay (s)	17.5	60.6		41.4	25.9		24.8	19.6		32.1	26.4	
Level of Service	B	E		D	C		C	B		C	C	
Approach Delay (s)		54.1			27.1			23.0			27.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	46.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.6
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	948	213	19	68	1	18	0	4	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.97		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1811		1770	1863	1583		1748				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.85				1.00
Satd. Flow (perm)	1770	1811		1770	1863	1583		1543				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1030	232	21	74	1	20	0	4	0	0	5
RTOR Reduction (vph)	0	5	0	0	0	0	0	3	0	0	0	4
Lane Group Flow (vph)	11	1257	0	21	74	1	0	21	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Effective Green, g (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.03	0.55	0.55		0.26				0.26
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	21	970		48	1026	872		406				416
v/s Ratio Prot	0.01	c0.69		c0.01	0.04							
v/s Ratio Perm						0.00		c0.01				0.00
v/c Ratio	0.52	1.30		0.44	0.07	0.00		0.05				0.00
Uniform Delay, d1	45.0	21.3		43.9	9.6	9.3		25.3				24.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	10.4	140.8		2.3	0.1	0.0		0.2				0.0
Delay (s)	55.5	162.1		46.2	9.8	9.3		25.5				24.9
Level of Service	E	F		D	A	A		C				C
Approach Delay (s)		161.2			17.7			25.5			24.9	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	148.5	HCM Level of Service	F
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	935	105	0	0	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1016	114	0	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				1141	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				1141	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1475				221	938

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	1016	114	3
Volume Left	5	0	0	0
Volume Right	0	0	0	3
cSH	1475	1700	1700	938
Volume to Capacity	0.00	0.60	0.07	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	7.4	0.0	0.0	8.8
Lane LOS	A			A
Approach Delay (s)	0.0		0.0	8.8
Approach LOS				A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	630	0	0	119	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	685	0	0	129	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			685		749	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			685		749	342
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			905		347	654

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	457	228	43	86	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	905	1700	1700
Volume to Capacity	0.27	0.13	0.00	0.05	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	630	0	0	119	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	685	0	0	129	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			685		749	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			685		749	342
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			905		347	654

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	457	228	0	65	65	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.27	0.13	0.00	0.04	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         0.740
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):        15.7
Optimal Cycle:          0                 Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   30     4     9   33    40    23   27    24     0   25     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16   30     4     9   33    40    23   27    24     0   25     3
Added Vol:     13    0     0     0   40    23     0    0   554     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   29   30     4     9   73    63    23   27   578     0   25     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    29   30     4     9   73    63    23   27   578     0   25     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   29   30     4     9   73    63    23   27   578     0   25     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   29   30     4     9   73    63    23   27   578     0   25     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.49 0.51  1.00  0.06 0.51  0.43  1.00 1.00  1.00  0.00 1.00  1.00
Final Sat.:   251  260   590    35  288   248   617  675   781     0  589   665
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.12  0.01  0.25 0.25  0.25  0.04 0.04  0.74  xxxx 0.04  0.00
Crit Moves:       ****             ****                    ****        ****
Delay/Veh:    9.9  9.9   8.2  10.6 10.6  10.6   8.7  8.2  18.6   0.0  8.6   7.7
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   9.9  9.9   8.2  10.6 10.6  10.6   8.7  8.2  18.6   0.0  8.6   7.7
LOS by Move:   A    A     A     B    B     B     A    A     C     *    A     A
ApproachDel:        9.8             10.6              17.8              8.5
Delay Adj:         1.00             1.00              1.00             1.00
ApprAdjDel:         9.8             10.6              17.8              8.5
LOS by Appr:         A                B                 C                 A
AllWayAvgQ:   0.1  0.1   0.0   0.3  0.3   0.3   0.0  0.0   2.5   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	74	354	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	80	385	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	465	385	385			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	465	385	385			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	556	663	1174			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	80	385
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.05	0.23
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	216	245	182	224	142	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	266	198	243	154	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	235	266	198	243	154	95
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.6	9.2	8.4	9.0	7.3	7.3
Effective Green, g (s)	11.6	12.2	11.4	12.0	10.3	10.3
Actuated g/C Ratio	0.27	0.28	0.26	0.28	0.24	0.24
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	900	890	800	924	716	735
v/s Ratio Prot	c0.07	c0.08	0.07	0.07		0.03
v/s Ratio Perm					c0.05	
v/c Ratio	0.26	0.30	0.25	0.26	0.22	0.13
Uniform Delay, d1	12.5	12.2	12.6	12.2	13.3	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.1	0.1
Delay (s)	12.7	12.4	12.8	12.4	13.4	13.1
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.5		12.5		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	5.2
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	387	0	0	406	0	152
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	0	0	441	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			421		531	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			338		452	121
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	80
cM capacity (veh/h)			1180		519	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	210	210	110	110	110	110	165
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	165
cSH	1700	1700	1700	1700	1700	1700	813
Volume to Capacity	0.12	0.12	0.06	0.06	0.06	0.06	0.20
Queue Length 95th (ft)	0	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.6
Approach LOS							B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	153	124	20	256	30	137	26	22	14	20	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2986		1641	3848		1703	1734		1289	1584	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2986		1641	3848		1703	1734		1289	1584	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	166	135	22	278	33	149	28	24	15	22	195
RTOR Reduction (vph)	0	94	0	0	13	0	0	17	0	0	172	0
Lane Group Flow (vph)	142	207	0	22	298	0	149	35	0	15	45	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Effective Green, g (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Actuated g/C Ratio	0.17	0.30		0.04	0.17		0.23	0.30		0.05	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	898		61	640		398	527		58	184	
v/s Ratio Prot	c0.08	0.07		0.01	c0.08		c0.09	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.50	0.23		0.36	0.47		0.37	0.07		0.26	0.24	
Uniform Delay, d1	22.3	15.6		28.0	22.4		19.1	14.7		27.4	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.3	0.4		0.2	0.0		0.9	0.3	
Delay (s)	22.8	15.7		29.3	22.8		19.4	14.7		28.3	24.2	
Level of Service	C	B		C	C		B	B		C	C	
Approach Delay (s)		18.0			23.2			18.2			24.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	74	12	3	85	6	99	0	13	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1824		1770	1863	1583		1756				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.75				1.00
Satd. Flow (perm)	1770	1824		1770	1863	1583		1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	80	13	3	92	7	108	0	14	0	0	40
RTOR Reduction (vph)	0	4	0	0	0	3	0	4	0	0	0	29
Lane Group Flow (vph)	12	89	0	3	92	4	0	118	0	0	0	11
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Effective Green, g (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.01	0.54	0.54		0.27				0.27
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	22	987		18	1003	853		371				427
v/s Ratio Prot	c0.01	0.05		0.00	c0.05							
v/s Ratio Perm						0.00		c0.09				0.01
v/c Ratio	0.55	0.09		0.17	0.09	0.00		0.32				0.03
Uniform Delay, d1	43.9	9.9		43.8	10.0	9.5		26.0				24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	14.0	0.2		1.6	0.2	0.0		2.3				0.0
Delay (s)	57.8	10.1		45.4	10.2	9.5		28.3				24.0
Level of Service	E	B		D	B	A		C				C
Approach Delay (s)		15.5			11.2			28.3			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	91	90	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0		5.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00		0.86	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	1863	1863		1611	
Flt Permitted	0.95	1.00	1.00		1.00	
Satd. Flow (perm)	1770	1863	1863		1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	99	98	0	0	2
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1	99	98	0	0	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	115.9	109.7		1.1	
Effective Green, g (s)	1.2	115.9	109.7		1.1	
Actuated g/C Ratio	0.01	0.91	0.86		0.01	
Clearance Time (s)	5.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	17	1687	1597		14	
v/s Ratio Prot	0.00	c0.05	c0.05		c0.00	
v/s Ratio Perm						
v/c Ratio	0.06	0.06	0.06		0.00	
Uniform Delay, d1	62.8	0.6	1.4		62.9	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.5	0.1	0.1		0.0	
Delay (s)	64.3	0.7	1.5		62.9	
Level of Service	E	A	A		E	
Approach Delay (s)		1.3	1.5		62.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	0	92	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	0	100	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		149	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		149	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		828	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	66	33	33	67	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1492	1700	1700
Volume to Capacity	0.04	0.02	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	1	91	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	1	99	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		151	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		151	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		826	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	66	33	1	49	49	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1492	1700	1700	826
Volume to Capacity	0.04	0.02	0.00	0.03	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	7.4	0.0	0.0	9.4
Lane LOS			A			A
Approach Delay (s)	0.0		0.1			9.4
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Austin/Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.072
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Stop Sign			Stop Sign			Stop Sign			Stop Sign	
Rights:		Include			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 0 1! 0 0			1 0 1 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	19	30	2	13	16	24	28	45	22	3	47	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	30	2	13	16	24	28	45	22	3	47	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	30	2	13	16	24	28	45	22	3	47	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	30	2	13	16	24	28	45	22	3	47	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	30	2	13	16	24	28	45	22	3	47	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	30	2	13	16	24	28	45	22	3	47	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.61	1.00	0.25	0.30	0.45	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	264	417	818	181	223	334	650	715	830	43	679	847
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.07	0.07	0.07	0.04	0.06	0.03	0.07	0.07	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.2			8.1			7.9			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			8.1			7.9			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	51	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	55	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	899	1025	1564			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	55	45
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	416	200	489	388	143	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	217	532	422	155	147
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	452	217	532	422	155	147
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	12.6	10.1	14.4	11.9	7.8	7.8
Effective Green, g (s)	15.6	13.1	17.4	14.9	10.8	10.8
Actuated g/C Ratio	0.31	0.26	0.34	0.29	0.21	0.21
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1034	817	1043	981	642	659
v/s Ratio Prot	0.13	0.07	c0.17	c0.13		0.05
v/s Ratio Perm					c0.05	
v/c Ratio	0.44	0.27	0.51	0.43	0.24	0.22
Uniform Delay, d1	14.1	15.0	13.3	14.5	16.6	16.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.4	0.2	0.1	0.1
Delay (s)	14.4	15.1	13.7	14.7	16.7	16.7
Level of Service	B	B	B	B	B	B
Approach Delay (s)		14.6		14.2		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	5.2
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	343	0	0	1241	0	120
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	373	0	0	1349	0	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			373		710	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			305		651	114
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	84
cM capacity (veh/h)			1221		391	827

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	186	186	337	337	337	337	130
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	130
cSH	1700	1700	1700	1700	1700	1700	827
Volume to Capacity	0.11	0.11	0.20	0.20	0.20	0.20	0.16
Queue Length 95th (ft)	0	0	0	0	0	0	14
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.2
Approach LOS							B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	171	128	16	1153	24	128	29	10	16	28	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2993		1641	3843		1703	1791		1289	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2993		1641	3843		1703	1791		1289	1587	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	186	139	17	1253	26	139	32	11	17	30	214
RTOR Reduction (vph)	0	76	0	0	1	0	0	9	0	0	194	0
Lane Group Flow (vph)	170	249	0	17	1278	0	139	34	0	17	50	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Effective Green, g (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Actuated g/C Ratio	0.19	0.45		0.06	0.32		0.17	0.22		0.04	0.09	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	318	1352		96	1229		289	396		54	147	
v/s Ratio Prot	c0.10	0.08		0.01	c0.33		c0.08	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.53	0.18		0.18	1.04		0.48	0.09		0.31	0.34	
Uniform Delay, d1	29.9	13.4		36.7	27.9		30.7	25.3		38.1	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0		0.3	36.6		0.5	0.0		1.2	0.5	
Delay (s)	30.7	13.5		37.0	64.4		31.2	25.4		39.3	35.3	
Level of Service	C	B		D	E		C	C		D	D	
Approach Delay (s)		19.4			64.0			29.8			35.6	
Approach LOS		B			E			C			D	

Intersection Summary			
HCM Average Control Delay	48.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	101	16	0	950	0	118	0	15	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0				5.0
Lane Util. Factor		1.00			1.00			1.00				1.00
Frt		0.98			1.00			0.98				0.85
Flt Protected		1.00			1.00			0.96				1.00
Satd. Flow (prot)		1825			1863			1757				1583
Flt Permitted		1.00			1.00			0.75				1.00
Satd. Flow (perm)		1825			1863			1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	110	17	0	1033	0	128	0	16	0	0	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	4	0	0	0	1
Lane Group Flow (vph)	0	124	0	0	1033	0	0	140	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)		48.0			48.0			24.0				24.0
Effective Green, g (s)		48.0			48.0			24.0				24.0
Actuated g/C Ratio		0.58			0.58			0.29				0.29
Clearance Time (s)		6.0			6.0			5.0				5.0
Vehicle Extension (s)		6.0			6.0			2.0				2.0
Lane Grp Cap (vph)		1055			1077			398				458
v/s Ratio Prot		0.07			c0.55							
v/s Ratio Perm								c0.10				0.00
v/c Ratio		0.12			0.96			0.35				0.00
Uniform Delay, d1		7.9			16.6			23.4				21.0
Progression Factor		1.00			1.00			1.00				1.00
Incremental Delay, d2		0.2			19.2			2.4				0.0
Delay (s)		8.1			35.8			25.8				21.0
Level of Service		A			D			C				C
Approach Delay (s)		8.1			35.8			25.8			21.0	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	121	970	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	132	1054	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1054				1186	1054
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1054				1186	1054
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	660				209	274

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	0	132	1054	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.08	0.62	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0		0.0	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	155	0	0	622	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	168	0	0	676	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		507	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		507	84
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1407		495	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	112	56	225	451	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1407	1700	1700
Volume to Capacity	0.07	0.03	0.00	0.27	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	155	0	0	622	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	168	0	0	676	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		507	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		507	84
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1407		495	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	112	56	0	338	338	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.03	0.00	0.20	0.20	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.994
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):        43.9
Optimal Cycle:          0                Level Of Service:                  E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12   25     1     6   14    16    51   42    25     2   39    18
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12   25     1     6   14    16    51   42    25     2   39    18
Added Vol:    554   40     0     0    0     0    23    0    13     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  566   65     1     6   14    16    74   42    38     2   39    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   566   65     1     6   14    16    74   42    38     2   39    18
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  566   65     1     6   14    16    74   42    38     2   39    18
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  566   65     1     6   14    16    74   42    38     2   39    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.90 0.10  1.00  0.17 0.39  0.44  1.00 1.00  1.00  0.05 0.95  1.00
Final Sat.:   570   65   785   100  233   266   492  528   588    26  501   590
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.99 0.99  0.00  0.06 0.06  0.06  0.15 0.08  0.06  0.08 0.08  0.03
Crit Moves:       ****                    ****  ****                   ****
Delay/Veh:   57.3 57.3   7.2   9.2  9.2   9.2  11.2 10.0   9.2  10.0 10.0   8.9
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  57.3 57.3   7.2   9.2  9.2   9.2  11.2 10.0   9.2  10.0 10.0   8.9
LOS by Move:   F    F     A     A    A     A     B    B     A     A    A     A
ApproachDel:      57.2              9.2              10.4              9.7
Delay Adj:        1.00             1.00              1.00             1.00
ApprAdjDel:       57.2              9.2              10.4              9.7
LOS by Appr:        F                A                 B                 A
AllWayAvgQ:   8.6  8.6   0.0   0.1  0.1   0.1   0.2  0.1   0.1   0.1  0.1   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	335	65	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	364	71	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	435	71	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	435	71	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	578	992	1530			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	364	71
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.21	0.04
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	176	472	95	187	711	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	513	103	203	773	275
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	191	513	103	203	773	275
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	9.0	16.8	6.2	14.0	20.3	20.3
Effective Green, g (s)	12.0	19.8	9.2	17.0	23.3	23.3
Actuated g/C Ratio	0.19	0.32	0.15	0.28	0.38	0.38
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	654	1015	453	920	1138	1168
v/s Ratio Prot	c0.06	c0.16	0.03	0.06		0.09
v/s Ratio Perm					c0.26	
v/c Ratio	0.29	0.51	0.23	0.22	0.68	0.24
Uniform Delay, d1	21.3	17.0	23.2	17.3	16.1	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	0.3	0.1	1.5	0.1
Delay (s)	21.5	17.3	23.4	17.4	17.6	13.2
Level of Service	C	B	C	B	B	B
Approach Delay (s)		18.5		19.4		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	5.2
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1183	0	0	282	0	514
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1286	0	0	307	0	559
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.68		0.68	0.68
vC, conflicting volume			1286		1362	643
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			492		604	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	19
cM capacity (veh/h)			730		294	693

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	643	643	77	77	77	77	559
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	559
cSH	1700	1700	1700	1700	1700	1700	693
Volume to Capacity	0.38	0.38	0.05	0.05	0.05	0.05	0.81
Queue Length 95th (ft)	0	0	0	0	0	0	208
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	28.1
Lane LOS							D
Approach Delay (s)	0.0		0.0				28.1
Approach LOS							D

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	1368	115	13	139	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3113		1641	3847		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	3113		1641	3847		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	1487	125	14	151	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	4	0	0	13	0	0	41	0	0	144	0
Lane Group Flow (vph)	251	1608	0	14	155	0	127	27	0	24	38	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Effective Green, g (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Actuated g/C Ratio	0.32	0.43		0.02	0.12		0.16	0.22		0.04	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	538	1334		26	471		270	367		53	167	
v/s Ratio Prot	c0.15	c0.52		0.01	0.04		c0.07	0.02		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	0.47	1.21		0.54	0.33		0.47	0.07		0.45	0.23	
Uniform Delay, d1	17.2	18.2		31.1	25.6		24.4	19.6		29.9	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	99.8		10.3	0.3		0.5	0.0		2.2	0.3	
Delay (s)	17.5	118.0		41.4	25.9		24.8	19.6		32.1	26.4	
Level of Service	B	F		D	C		C	B		C	C	
Approach Delay (s)		104.4			27.1			23.0			27.0	
Approach LOS		F			C			C			C	

Intersection Summary			
HCM Average Control Delay	85.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.6
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1126	213	19	68	1	18	0	4	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1818		1770	1863	1583		1748				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.85				1.00
Satd. Flow (perm)	1770	1818		1770	1863	1583		1543				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1224	232	21	74	1	20	0	4	0	0	5
RTOR Reduction (vph)	0	4	0	0	0	0	0	3	0	0	0	4
Lane Group Flow (vph)	11	1452	0	21	74	1	0	21	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Effective Green, g (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.03	0.55	0.55		0.26				0.26
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	21	973		48	1026	872		406				416
v/s Ratio Prot	0.01	c0.80		c0.01	0.04							
v/s Ratio Perm						0.00		c0.01				0.00
v/c Ratio	0.52	1.49		0.44	0.07	0.00		0.05				0.00
Uniform Delay, d1	45.0	21.3		43.9	9.6	9.3		25.3				24.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	10.4	226.9		2.3	0.1	0.0		0.2				0.0
Delay (s)	55.5	248.2		46.2	9.8	9.3		25.5				24.9
Level of Service	E	F		D	A	A		C				C
Approach Delay (s)		246.8			17.7			25.5			24.9	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	228.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	1113	105	0	0	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1210	114	0	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				1335	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				1335	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1475				169	938

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	1210	114	3
Volume Left	5	0	0	0
Volume Right	0	0	0	3
cSH	1475	1700	1700	938
Volume to Capacity	0.00	0.71	0.07	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	7.4	0.0	0.0	8.8
Lane LOS	A			A
Approach Delay (s)	0.0		0.0	8.8
Approach LOS				A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	856	0	0	114	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	930	0	0	124	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			930		992	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			930		992	465
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			731		242	544

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	620	310	41	83	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	731	1700	1700
Volume to Capacity	0.36	0.18	0.00	0.05	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	856	0	0	114	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	930	0	0	124	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			930		992	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			930		992	465
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			731		242	544

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	620	310	0	62	62	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.18	0.00	0.04	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

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--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):        1.040
Loss Time (sec):        0 (Y+R=4.0 sec) Average Delay (sec/veh):       49.5
Optimal Cycle:          0               Level Of Service:                 E
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   30     4     9   33    40    23   27    24     0   25     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16   30     4     9   33    40    23   27    24     0   25     3
Added Vol:     11    0     0     0   57    20     0    0   780     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   27   30     4     9   90    60    23   27   804     0   25     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    27   30     4     9   90    60    23   27   804     0   25     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   27   30     4     9   90    60    23   27   804     0   25     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   27   30     4     9   90    60    23   27   804     0   25     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.47 0.53  1.00  0.06 0.56  0.38  1.00 1.00  1.00  0.00 1.00  1.00
Final Sat.:   241  268   587    32  321   214   611  668   773     0  582   655
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.11  0.01  0.28 0.28  0.28  0.04 0.04  1.04  xxxx 0.04  0.00
Crit Moves:  ****                  ****                   ****        ****
Delay/Veh:   10.5 10.5   8.8  11.8 11.8  11.8   8.8  8.3  63.9   0.0  9.0   8.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  10.5 10.5   8.8  11.8 11.8  11.8   8.8  8.3  63.9   0.0  9.0   8.0
LOS by Move:   B    B     A     B    B     B     A    A     F     *    A     A
ApproachDel:      10.4             11.8              60.6              8.9
Delay Adj:        1.00             1.00              1.00             1.00
ApprAdjDel:       10.4             11.8              60.6              8.9
LOS by Appr:        B                B                 F                A
AllWayAvgQ:   0.1  0.1   0.0   0.4  0.4   0.4   0.0  0.0  12.1   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	72	596	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	78	648	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	648	648			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	648	648			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	391	470	938			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	78	648
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.05	0.38
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	216	245	182	224	142	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	266	198	243	154	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	235	266	198	243	154	95
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.6	9.2	8.4	9.0	7.3	7.3
Effective Green, g (s)	11.6	12.2	11.4	12.0	10.3	10.3
Actuated g/C Ratio	0.27	0.28	0.26	0.28	0.24	0.24
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	900	890	800	924	716	735
v/s Ratio Prot	c0.07	c0.08	0.07	0.07		0.03
v/s Ratio Perm					c0.05	
v/c Ratio	0.26	0.30	0.25	0.26	0.22	0.13
Uniform Delay, d1	12.5	12.2	12.6	12.2	13.3	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.1	0.1
Delay (s)	12.7	12.4	12.8	12.4	13.4	13.1
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.5		12.5		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	5.2
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑↑		↱
Volume (veh/h)	387	0	0	406	0	152
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	0	0	441	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			421		531	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			338		452	121
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	80
cM capacity (veh/h)			1180		519	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	210	210	110	110	110	110	165
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	165
cSH	1700	1700	1700	1700	1700	1700	813
Volume to Capacity	0.12	0.12	0.06	0.06	0.06	0.06	0.20
Queue Length 95th (ft)	0	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.6
Approach LOS							B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	153	124	20	256	30	137	26	22	14	20	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2986		1641	3848		1703	1734		1289	1584	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2986		1641	3848		1703	1734		1289	1584	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	166	135	22	278	33	149	28	24	15	22	195
RTOR Reduction (vph)	0	94	0	0	13	0	0	17	0	0	172	0
Lane Group Flow (vph)	142	207	0	22	298	0	149	35	0	15	45	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Effective Green, g (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Actuated g/C Ratio	0.17	0.30		0.04	0.17		0.23	0.30		0.05	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	898		61	640		398	527		58	184	
v/s Ratio Prot	c0.08	0.07		0.01	c0.08		c0.09	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.50	0.23		0.36	0.47		0.37	0.07		0.26	0.24	
Uniform Delay, d1	22.3	15.6		28.0	22.4		19.1	14.7		27.4	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.3	0.4		0.2	0.0		0.9	0.3	
Delay (s)	22.8	15.7		29.3	22.8		19.4	14.7		28.3	24.2	
Level of Service	C	B		C	C		B	B		C	C	
Approach Delay (s)		18.0			23.2			18.2			24.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	74	12	3	85	6	99	0	13	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1824		1770	1863	1583		1756				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.75				1.00
Satd. Flow (perm)	1770	1824		1770	1863	1583		1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	80	13	3	92	7	108	0	14	0	0	40
RTOR Reduction (vph)	0	4	0	0	0	3	0	4	0	0	0	29
Lane Group Flow (vph)	12	89	0	3	92	4	0	118	0	0	0	11
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Effective Green, g (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.01	0.54	0.54		0.27				0.27
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	22	987		18	1003	853		371				427
v/s Ratio Prot	c0.01	0.05		0.00	c0.05							
v/s Ratio Perm						0.00		c0.09				0.01
v/c Ratio	0.55	0.09		0.17	0.09	0.00		0.32				0.03
Uniform Delay, d1	43.9	9.9		43.8	10.0	9.5		26.0				24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	14.0	0.2		1.6	0.2	0.0		2.3				0.0
Delay (s)	57.8	10.1		45.4	10.2	9.5		28.3				24.0
Level of Service	E	B		D	B	A		C				C
Approach Delay (s)		15.5			11.2			28.3			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	91	90	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0		5.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00		0.86	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	1863	1863		1611	
Flt Permitted	0.95	1.00	1.00		1.00	
Satd. Flow (perm)	1770	1863	1863		1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	99	98	0	0	2
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1	99	98	0	0	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	115.9	109.7		1.1	
Effective Green, g (s)	1.2	115.9	109.7		1.1	
Actuated g/C Ratio	0.01	0.91	0.86		0.01	
Clearance Time (s)	5.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	17	1687	1597		14	
v/s Ratio Prot	0.00	c0.05	c0.05		c0.00	
v/s Ratio Perm						
v/c Ratio	0.06	0.06	0.06		0.00	
Uniform Delay, d1	62.8	0.6	1.4		62.9	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.5	0.1	0.1		0.0	
Delay (s)	64.3	0.7	1.5		62.9	
Level of Service	E	A	A		E	
Approach Delay (s)		1.3	1.5		62.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	0	92	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	0	100	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		149	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		149	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		828	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	66	33	33	67	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1492	1700	1700
Volume to Capacity	0.04	0.02	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	1	91	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	1	99	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		151	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		151	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		826	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	66	33	1	49	49	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1492	1700	1700	826
Volume to Capacity	0.04	0.02	0.00	0.03	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	7.4	0.0	0.0	9.4
Lane LOS			A			A
Approach Delay (s)	0.0		0.1			9.4
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	51	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	55	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	899	1025	1564			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	55	45
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Austin/Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.072
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0	0 1	0 0	1!	0 0	1 0	1	0 1	0 1	0	0 1
Volume Module:												
Base Vol:	19	30	2	13	16	24	28	45	22	3	47	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	30	2	13	16	24	28	45	22	3	47	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	30	2	13	16	24	28	45	22	3	47	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	30	2	13	16	24	28	45	22	3	47	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	30	2	13	16	24	28	45	22	3	47	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	30	2	13	16	24	28	45	22	3	47	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.61	1.00	0.25	0.30	0.45	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	264	417	818	181	223	334	650	715	830	43	679	847
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.07	0.07	0.07	0.04	0.06	0.03	0.07	0.07	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.2			8.1			7.9			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			8.1			7.9			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	416	200	543	441	143	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	217	590	479	155	147
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	452	217	590	479	155	147
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	12.8	10.4	15.4	13.0	8.0	8.0
Effective Green, g (s)	15.8	13.4	18.4	16.0	11.0	11.0
Actuated g/C Ratio	0.30	0.26	0.35	0.31	0.21	0.21
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1017	811	1071	1023	635	652
v/s Ratio Prot	0.13	0.07	c0.19	c0.14		0.05
v/s Ratio Perm					c0.05	
v/c Ratio	0.44	0.27	0.55	0.47	0.24	0.23
Uniform Delay, d1	14.7	15.5	13.6	14.7	17.2	17.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.6	0.2	0.1	0.1
Delay (s)	15.0	15.7	14.2	15.0	17.3	17.2
Level of Service	B	B	B	B	B	B
Approach Delay (s)		15.2		14.6		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	52.3	Sum of lost time (s)	9.5
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	343	0	0	1419	0	120
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	373	0	0	1542	0	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			373		758	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			295		692	103
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	84
cM capacity (veh/h)			1227		367	838

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	186	186	386	386	386	386	130
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	130
cSH	1700	1700	1700	1700	1700	1700	838
Volume to Capacity	0.11	0.11	0.23	0.23	0.23	0.23	0.16
Queue Length 95th (ft)	0	0	0	0	0	0	14
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.1
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.1
Approach LOS							B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	171	128	16	1331	24	128	29	10	16	28	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2993		1641	3843		1703	1791		1289	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2993		1641	3843		1703	1791		1289	1587	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	186	139	17	1447	26	139	32	11	17	30	214
RTOR Reduction (vph)	0	76	0	0	1	0	0	9	0	0	194	0
Lane Group Flow (vph)	170	249	0	17	1472	0	139	34	0	17	50	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Effective Green, g (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Actuated g/C Ratio	0.19	0.45		0.06	0.32		0.17	0.22		0.04	0.09	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	318	1352		96	1229		289	396		54	147	
v/s Ratio Prot	c0.10	0.08		0.01	c0.38		c0.08	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.53	0.18		0.18	1.20		0.48	0.09		0.31	0.34	
Uniform Delay, d1	29.9	13.4		36.7	27.9		30.7	25.3		38.1	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0		0.3	97.0		0.5	0.0		1.2	0.5	
Delay (s)	30.7	13.5		37.0	124.8		31.2	25.4		39.3	35.3	
Level of Service	C	B		D	F		C	C		D	D	
Approach Delay (s)		19.4			123.8			29.8			35.6	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM Average Control Delay	86.0	HCM Level of Service	F
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	101	16	0	1128	0	118	0	15	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0				5.0
Lane Util. Factor		1.00			1.00			1.00				1.00
Frt		0.98			1.00			0.98				0.85
Flt Protected		1.00			1.00			0.96				1.00
Satd. Flow (prot)		1825			1863			1757				1583
Flt Permitted		1.00			1.00			0.75				1.00
Satd. Flow (perm)		1825			1863			1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	110	17	0	1226	0	128	0	16	0	0	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	4	0	0	0	1
Lane Group Flow (vph)	0	124	0	0	1226	0	0	140	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)		48.0			48.0			24.0				24.0
Effective Green, g (s)		48.0			48.0			24.0				24.0
Actuated g/C Ratio		0.58			0.58			0.29				0.29
Clearance Time (s)		6.0			6.0			5.0				5.0
Vehicle Extension (s)		6.0			6.0			2.0				2.0
Lane Grp Cap (vph)		1055			1077			398				458
v/s Ratio Prot		0.07			c0.66							
v/s Ratio Perm								c0.10				0.00
v/c Ratio		0.12			1.14			0.35				0.00
Uniform Delay, d1		7.9			17.5			23.4				21.0
Progression Factor		1.00			1.00			1.00				1.00
Incremental Delay, d2		0.2			73.8			2.4				0.0
Delay (s)		8.1			91.3			25.8				21.0
Level of Service		A			F			C				C
Approach Delay (s)		8.1			91.3			25.8			21.0	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM Average Control Delay	77.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	121	1148	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	132	1248	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1248				1379	1248
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1248				1379	1248
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	558				159	211

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	0	132	1248	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.08	0.73	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0		0.0	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	150	0	0	848	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	0	922	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			163		624	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			163		624	82
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1413		418	962

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	109	54	307	614	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1413	1700	1700
Volume to Capacity	0.06	0.03	0.00	0.36	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	150	0	0	848	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	0	922	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			163		624	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			163		624	82
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1413		418	962

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	109	54	0	461	461	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.06	0.03	0.00	0.27	0.27	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	176	486	95	187	730	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	528	103	203	793	275
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	191	528	103	203	793	275
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	9.0	17.1	6.3	14.4	20.5	20.5
Effective Green, g (s)	12.0	20.1	9.3	17.4	23.5	23.5
Actuated g/C Ratio	0.19	0.32	0.15	0.28	0.38	0.38
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	648	1020	454	932	1137	1167
v/s Ratio Prot	c0.06	c0.17	0.03	0.06		0.09
v/s Ratio Perm					c0.26	
v/c Ratio	0.29	0.52	0.23	0.22	0.70	0.24
Uniform Delay, d1	21.6	17.2	23.4	17.3	16.4	13.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.3	0.1	1.7	0.1
Delay (s)	21.8	17.5	23.6	17.4	18.2	13.4
Level of Service	C	B	C	B	B	B
Approach Delay (s)		18.7		19.5		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	62.4	Sum of lost time (s)	5.2
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1216	0	0	282	0	528
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1322	0	0	307	0	574
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.67		0.67	0.67
vC, conflicting volume			1322		1398	661
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			498		612	0
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	16
cM capacity (veh/h)			713		285	680

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	661	661	77	77	77	77	574
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	574
cSH	1700	1700	1700	1700	1700	1700	680
Volume to Capacity	0.39	0.39	0.05	0.05	0.05	0.05	0.84
Queue Length 95th (ft)	0	0	0	0	0	0	237
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	32.1
Lane LOS							D
Approach Delay (s)	0.0		0.0				32.1
Approach LOS							D

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	1416	115	13	139	16	117	14	49	22	19	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.88		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	3114		1641	3847		1703	1645		1289	1586	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	3114		1641	3847		1703	1645		1289	1586	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	251	1539	125	14	151	17	127	15	53	24	21	161
RTOR Reduction (vph)	0	4	0	0	13	0	0	41	0	0	144	0
Lane Group Flow (vph)	251	1660	0	14	155	0	127	27	0	24	38	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Effective Green, g (s)	20.5	27.3		1.0	7.8		10.1	14.2		2.6	6.7	
Actuated g/C Ratio	0.32	0.43		0.02	0.12		0.16	0.22		0.04	0.11	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	538	1335		26	471		270	367		53	167	
v/s Ratio Prot	c0.15	c0.53		0.01	0.04		c0.07	0.02		0.02	c0.02	
v/s Ratio Perm												
v/c Ratio	0.47	1.24		0.54	0.33		0.47	0.07		0.45	0.23	
Uniform Delay, d1	17.2	18.2		31.1	25.6		24.4	19.6		29.9	26.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	116.1		10.3	0.3		0.5	0.0		2.2	0.3	
Delay (s)	17.5	134.3		41.4	25.9		24.8	19.6		32.1	26.4	
Level of Service	B	F		D	C		C	B		C	C	
Approach Delay (s)		118.9			27.1			23.0			27.0	
Approach LOS		F			C			C			C	

Intersection Summary			
HCM Average Control Delay	97.2	HCM Level of Service	F
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.6
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	1174	213	19	68	1	18	0	4	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1820		1770	1863	1583		1748				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.85				1.00
Satd. Flow (perm)	1770	1820		1770	1863	1583		1543				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1276	232	21	74	1	20	0	4	0	0	5
RTOR Reduction (vph)	0	4	0	0	0	0	0	3	0	0	0	4
Lane Group Flow (vph)	11	1504	0	21	74	1	0	21	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Effective Green, g (s)	1.1	49.1		2.5	50.5	50.5		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.03	0.55	0.55		0.26				0.26
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	21	975		48	1026	872		406				416
v/s Ratio Prot	0.01	c0.83		c0.01	0.04							
v/s Ratio Perm						0.00		c0.01				0.00
v/c Ratio	0.52	1.54		0.44	0.07	0.00		0.05				0.00
Uniform Delay, d1	45.0	21.3		43.9	9.6	9.3		25.3				24.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	10.4	249.2		2.3	0.1	0.0		0.2				0.0
Delay (s)	55.5	270.5		46.2	9.8	9.3		25.5				24.9
Level of Service	E	F		D	A	A		C				C
Approach Delay (s)		269.0			17.7			25.5			24.9	
Approach LOS		F			B			C			C	

Intersection Summary			
HCM Average Control Delay	250.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	91.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	1161	105	0	0	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1262	114	0	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	114				1387	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	114				1387	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1475				157	938

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	5	1262	114	3
Volume Left	5	0	0	0
Volume Right	0	0	0	3
cSH	1475	1700	1700	938
Volume to Capacity	0.00	0.74	0.07	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	7.4	0.0	0.0	8.8
Lane LOS	A			A
Approach Delay (s)	0.0		0.0	8.8
Approach LOS				A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	856	0	0	119	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	930	0	0	129	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			930		995	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			930		995	465
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			731		242	544

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	620	310	43	86	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	731	1700	1700
Volume to Capacity	0.36	0.18	0.00	0.05	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	856	0	0	119	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	930	0	0	129	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			930		995	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			930		995	465
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			731		242	544

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	620	310	0	65	65	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.18	0.00	0.04	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.
HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	74	596	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	80	648	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	728	648	648			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	728	648	648			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	390	470	938			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	80	648
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.05	0.38
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

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                    Level Of Service Computation Report
           2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        1.044
Loss Time (sec):       0 (Y+R=4.0 sec) Average Delay (sec/veh):       50.2
Optimal Cycle:         0               Level Of Service:                 F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      16   30     4     9   33    40    23   27    24     0   25     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   16   30     4     9   33    40    23   27    24     0   25     3
Added Vol:     13    0     0     0   57    23     0    0   780     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   29   30     4     9   90    63    23   27   804     0   25     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    29   30     4     9   90    63    23   27   804     0   25     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   29   30     4     9   90    63    23   27   804     0   25     3
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   29   30     4     9   90    63    23   27   804     0   25     3
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.49 0.51  1.00  0.05 0.56  0.39  1.00 1.00  1.00  0.00 1.00  1.00
Final Sat.:   250  258   587    31  315   220   609  666   770     0  579   653
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.12  0.01  0.29 0.29  0.29  0.04 0.04  1.04  xxxx 0.04  0.00
Crit Moves:       ****             ****                   ****        ****
Delay/Veh:   10.6 10.6   8.8  11.8 11.8  11.8   8.8  8.3  65.1   0.0  9.0   8.0
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  10.6 10.6   8.8  11.8 11.8  11.8   8.8  8.3  65.1   0.0  9.0   8.0
LOS by Move:   B    B     A     B    B     B     A    A     F     *    A     A
ApproachDel:      10.5             11.8             61.8              8.9
Delay Adj:        1.00             1.00             1.00             1.00
ApprAdjDel:       10.5             11.8             61.8              8.9
LOS by Appr:        B                B                F                A
AllWayAvgQ:   0.1  0.1   0.0   0.4  0.4   0.4   0.0  0.0  12.4   0.0  0.0   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
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Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	577	63	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	627	68	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	696	68	68			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696	68	68			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	408	995	1533			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	627	68
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.37	0.04
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	216	245	182	224	142	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	235	266	198	243	154	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	235	266	198	243	154	95
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	8.6	9.2	8.4	9.0	7.3	7.3
Effective Green, g (s)	11.6	12.2	11.4	12.0	10.3	10.3
Actuated g/C Ratio	0.27	0.28	0.26	0.28	0.24	0.24
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	900	890	800	924	716	735
v/s Ratio Prot	c0.07	c0.08	0.07	0.07		0.03
v/s Ratio Perm					c0.05	
v/c Ratio	0.26	0.30	0.25	0.26	0.22	0.13
Uniform Delay, d1	12.5	12.2	12.6	12.2	13.3	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.1	0.1
Delay (s)	12.7	12.4	12.8	12.4	13.4	13.1
Level of Service	B	B	B	B	B	B
Approach Delay (s)		12.5		12.5		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	43.4	Sum of lost time (s)	5.2
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	387	0	0	406	0	152
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	421	0	0	441	0	165
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			421		531	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			338		452	121
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	80
cM capacity (veh/h)			1180		519	813

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	210	210	110	110	110	110	165
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	165
cSH	1700	1700	1700	1700	1700	1700	813
Volume to Capacity	0.12	0.12	0.06	0.06	0.06	0.06	0.20
Queue Length 95th (ft)	0	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.6
Approach LOS							B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	131	153	124	20	256	30	137	26	22	14	20	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2986		1641	3848		1703	1734		1289	1584	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2986		1641	3848		1703	1734		1289	1584	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	142	166	135	22	278	33	149	28	24	15	22	195
RTOR Reduction (vph)	0	94	0	0	13	0	0	17	0	0	172	0
Lane Group Flow (vph)	142	207	0	22	298	0	149	35	0	15	45	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Effective Green, g (s)	10.2	17.9		2.2	9.9		13.9	18.1		2.7	6.9	
Actuated g/C Ratio	0.17	0.30		0.04	0.17		0.23	0.30		0.05	0.12	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	898		61	640		398	527		58	184	
v/s Ratio Prot	c0.08	0.07		0.01	c0.08		c0.09	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.50	0.23		0.36	0.47		0.37	0.07		0.26	0.24	
Uniform Delay, d1	22.3	15.6		28.0	22.4		19.1	14.7		27.4	23.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.1		1.3	0.4		0.2	0.0		0.9	0.3	
Delay (s)	22.8	15.7		29.3	22.8		19.4	14.7		28.3	24.2	
Level of Service	C	B		C	C		B	B		C	C	
Approach Delay (s)		18.0			23.2			18.2			24.4	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	59.5	Sum of lost time (s)	18.6
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	74	12	3	85	6	99	0	13	0	0	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Frt	1.00	0.98		1.00	1.00	0.85		0.98				0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96				1.00
Satd. Flow (prot)	1770	1824		1770	1863	1583		1756				1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.75				1.00
Satd. Flow (perm)	1770	1824		1770	1863	1583		1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	80	13	3	92	7	108	0	14	0	0	40
RTOR Reduction (vph)	0	4	0	0	0	3	0	4	0	0	0	29
Lane Group Flow (vph)	12	89	0	3	92	4	0	118	0	0	0	11
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Effective Green, g (s)	1.1	48.3		0.9	48.1	48.1		24.1				24.1
Actuated g/C Ratio	0.01	0.54		0.01	0.54	0.54		0.27				0.27
Clearance Time (s)	5.0	6.0		5.0	6.0	6.0		5.0				5.0
Vehicle Extension (s)	2.0	6.0		2.0	6.0	6.0		2.0				2.0
Lane Grp Cap (vph)	22	987		18	1003	853		371				427
v/s Ratio Prot	c0.01	0.05		0.00	c0.05							
v/s Ratio Perm						0.00		c0.09				0.01
v/c Ratio	0.55	0.09		0.17	0.09	0.00		0.32				0.03
Uniform Delay, d1	43.9	9.9		43.8	10.0	9.5		26.0				24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00				1.00
Incremental Delay, d2	14.0	0.2		1.6	0.2	0.0		2.3				0.0
Delay (s)	57.8	10.1		45.4	10.2	9.5		28.3				24.0
Level of Service	E	B		D	B	A		C				C
Approach Delay (s)		15.5			11.2			28.3			24.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	27.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	1	91	90	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.0	6.0		5.0	
Lane Util. Factor	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	1.00		0.86	
Flt Protected	0.95	1.00	1.00		1.00	
Satd. Flow (prot)	1770	1863	1863		1611	
Flt Permitted	0.95	1.00	1.00		1.00	
Satd. Flow (perm)	1770	1863	1863		1611	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	99	98	0	0	2
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	1	99	98	0	0	0
Turn Type	Prot					
Protected Phases	7	4	8		6	
Permitted Phases						
Actuated Green, G (s)	1.2	115.9	109.7		1.1	
Effective Green, g (s)	1.2	115.9	109.7		1.1	
Actuated g/C Ratio	0.01	0.91	0.86		0.01	
Clearance Time (s)	5.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	17	1687	1597		14	
v/s Ratio Prot	0.00	c0.05	c0.05		c0.00	
v/s Ratio Perm						
v/c Ratio	0.06	0.06	0.06		0.00	
Uniform Delay, d1	62.8	0.6	1.4		62.9	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.5	0.1	0.1		0.0	
Delay (s)	64.3	0.7	1.5		62.9	
Level of Service	E	A	A		E	
Approach Delay (s)		1.3	1.5		62.9	
Approach LOS		A	A		E	

Intersection Summary			
HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.06		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	0	92	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	0	100	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		149	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		149	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		828	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	66	33	33	67	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1492	1700	1700
Volume to Capacity	0.04	0.02	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBL	WBT	SEL	NWL
Lane Configurations						
Volume (vph)	416	200	557	455	143	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	2.6	4.3	2.6	4.3	2.6	2.6
Lane Util. Factor	0.97	0.95	0.97	0.95	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (prot)	3367	3167	3045	3343	3019	3099
Flt Permitted	0.95	1.00	0.95	1.00	0.95	0.95
Satd. Flow (perm)	3367	3167	3045	3343	3019	3099
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	452	217	605	495	155	147
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	452	217	605	495	155	147
Heavy Vehicles (%)	4%	14%	15%	8%	16%	13%
Turn Type	Prot		Prot		custom	custom
Protected Phases	5	2	1	6		3
Permitted Phases					7	3
Actuated Green, G (s)	12.9	10.4	15.8	13.3	8.0	8.0
Effective Green, g (s)	15.9	13.4	18.8	16.3	11.0	11.0
Actuated g/C Ratio	0.30	0.25	0.36	0.31	0.21	0.21
Clearance Time (s)	5.6	7.3	5.6	7.3	5.6	5.6
Vehicle Extension (s)	3.0	2.5	3.0	2.5	2.5	2.5
Lane Grp Cap (vph)	1016	805	1086	1034	630	647
v/s Ratio Prot	0.13	0.07	c0.20	c0.15		0.05
v/s Ratio Perm					c0.05	
v/c Ratio	0.44	0.27	0.56	0.48	0.25	0.23
Uniform Delay, d1	14.8	15.7	13.6	14.8	17.4	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.1	0.6	0.3	0.1	0.1
Delay (s)	15.2	15.9	14.2	15.0	17.5	17.5
Level of Service	B	B	B	B	B	B
Approach Delay (s)		15.4		14.6		
Approach LOS		B		B		

Intersection Summary			
HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	5.2
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	343	0	0	1467	0	120
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	373	0	0	1595	0	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	196			488		
pX, platoon unblocked			0.97		0.97	0.97
vC, conflicting volume			373		771	186
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			292		703	100
tC, single (s)			4.1		6.8	7.4
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.5
p0 queue free %			100		100	84
cM capacity (veh/h)			1229		361	841

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	186	186	399	399	399	399	130
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	130
cSH	1700	1700	1700	1700	1700	1700	841
Volume to Capacity	0.11	0.11	0.23	0.23	0.23	0.23	0.16
Queue Length 95th (ft)	0	0	0	0	0	0	14
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.1
Lane LOS							B
Approach Delay (s)	0.0		0.0				10.1
Approach LOS							B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	156	171	128	16	1379	24	128	29	10	16	28	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Lane Util. Factor	1.00	0.95		1.00	0.91		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00		1.00	0.96		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	2993		1641	3843		1703	1791		1289	1587	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	2993		1641	3843		1703	1791		1289	1587	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	186	139	17	1499	26	139	32	11	17	30	214
RTOR Reduction (vph)	0	76	0	0	1	0	0	9	0	0	194	0
Lane Group Flow (vph)	170	249	0	17	1524	0	139	34	0	17	50	0
Heavy Vehicles (%)	8%	15%	10%	10%	35%	13%	6%	2%	2%	40%	11%	3%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases												
Actuated Green, G (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Effective Green, g (s)	15.6	37.0		4.8	26.2		13.9	18.1		3.4	7.6	
Actuated g/C Ratio	0.19	0.45		0.06	0.32		0.17	0.22		0.04	0.09	
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	5.3		4.0	5.3	
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	318	1352		96	1229		289	396		54	147	
v/s Ratio Prot	c0.10	0.08		0.01	c0.40		c0.08	0.02		0.01	c0.03	
v/s Ratio Perm												
v/c Ratio	0.53	0.18		0.18	1.24		0.48	0.09		0.31	0.34	
Uniform Delay, d1	29.9	13.4		36.7	27.9		30.7	25.3		38.1	34.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.0		0.3	115.0		0.5	0.0		1.2	0.5	
Delay (s)	30.7	13.5		37.0	142.8		31.2	25.4		39.3	35.3	
Level of Service	C	B		D	F		C	C		D	D	
Approach Delay (s)		19.4			141.7			29.8			35.6	
Approach LOS		B			F			C			D	

Intersection Summary			
HCM Average Control Delay	97.9	HCM Level of Service	F
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	18.6
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	101	16	0	1176	0	118	0	15	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.0				5.0
Lane Util. Factor		1.00			1.00			1.00				1.00
Frt		0.98			1.00			0.98				0.85
Flt Protected		1.00			1.00			0.96				1.00
Satd. Flow (prot)		1825			1863			1757				1583
Flt Permitted		1.00			1.00			0.75				1.00
Satd. Flow (perm)		1825			1863			1375				1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	110	17	0	1278	0	128	0	16	0	0	2
RTOR Reduction (vph)	0	3	0	0	0	0	0	4	0	0	0	1
Lane Group Flow (vph)	0	124	0	0	1278	0	0	140	0	0	0	1
Turn Type	Prot			Prot		Perm	Perm			Perm		Perm
Protected Phases	1	6		5	2			4			8	
Permitted Phases						2	4			8		8
Actuated Green, G (s)		48.0			48.0			24.0				24.0
Effective Green, g (s)		48.0			48.0			24.0				24.0
Actuated g/C Ratio		0.58			0.58			0.29				0.29
Clearance Time (s)		6.0			6.0			5.0				5.0
Vehicle Extension (s)		6.0			6.0			2.0				2.0
Lane Grp Cap (vph)		1055			1077			398				458
v/s Ratio Prot		0.07			c0.69							
v/s Ratio Perm								c0.10				0.00
v/c Ratio		0.12			1.19			0.35				0.00
Uniform Delay, d1		7.9			17.5			23.4				21.0
Progression Factor		1.00			1.00			1.00				1.00
Incremental Delay, d2		0.2			93.5			2.4				0.0
Delay (s)		8.1			111.0			25.8				21.0
Level of Service		A			F			C				C
Approach Delay (s)		8.1			111.0			25.8			21.0	
Approach LOS		A			F			C			C	

Intersection Summary			
HCM Average Control Delay	94.6	HCM Level of Service	F
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	83.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	121	1196	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	132	1300	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1300				1432	1300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1300				1432	1300
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	533				148	197

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	0	132	1300	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.08	0.76	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS				A
Approach Delay (s)	0.0		0.0	0.0
Approach LOS				A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	155	0	0	848	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	168	0	0	922	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		629	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		629	84
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1407		414	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	112	56	307	614	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1407	1700	1700
Volume to Capacity	0.07	0.03	0.00	0.36	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	155	0	0	848	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	168	0	0	922	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			168		629	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		629	84
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1407		414	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	112	56	0	461	461	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.07	0.03	0.00	0.27	0.27	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0		0.0			0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.
HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	577	65	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	627	71	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	698	71	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	698	71	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	407	992	1530			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	627	71
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.37	0.04
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

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                      Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap.(X):         1.378
Loss Time (sec):       0 (Y+R=4.0 sec)  Average Delay (sec/veh):       155.5
Optimal Cycle:         0                Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign        Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12   25     1    6   14    16   51   42    25    2   39    18
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   12   25     1    6   14    16   51   42    25    2   39    18
Added Vol:    780   57     0    0    0     0   23    0    13    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  792   82     1    6   14    16   74   42    38    2   39    18
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   792   82     1    6   14    16   74   42    38    2   39    18
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  792   82     1    6   14    16   74   42    38    2   39    18
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  792   82     1    6   14    16   74   42    38    2   39    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.91 0.09  1.00 0.17 0.39  0.44 1.00 1.00  1.00 0.05 0.95  1.00
Final Sat.:   575   60   785  100  233   266  491  527   588   26  502   590
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     1.38 1.38  0.00 0.06 0.06  0.06 0.15 0.08  0.06 0.08 0.08  0.03
Crit Moves:  ****                       ****  ****                  ****
Delay/Veh:  197.1  197   7.2  9.2  9.2   9.2 11.3 10.1   9.2 10.0 10.0   8.9
Delay Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh: 197.1  197   7.2  9.2  9.2   9.2 11.3 10.1   9.2 10.0 10.0   8.9
LOS by Move:    F    F     A    A    A     A    B    B     A    B    B     A
ApproachDel:      196.9              9.2             10.4              9.7
Delay Adj:         1.00             1.00             1.00             1.00
ApprAdjDel:       196.9              9.2             10.4              9.7
LOS by Appr:         F                A                B                A
AllWayAvgQ:  33.3 33.3   0.0  0.1  0.1   0.1  0.2  0.1   0.1  0.1  0.1   0.0
********************************************************************************
Note: Queue reported is the number of cars per lane.
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	91	0	1	91	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	0	1	99	1	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		151	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		151	49
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1492		826	1008

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	66	33	1	49	49	1
Volume Left	0	0	1	0	0	1
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1492	1700	1700	826
Volume to Capacity	0.04	0.02	0.00	0.03	0.03	0.00
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	7.4	0.0	0.0	9.4
Lane LOS			A			A
Approach Delay (s)	0.0		0.1			9.4
Approach LOS						A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection has too many lanes per leg.
HCM All-Way analysis is limited to two lanes per leg.
Channelized right turn lanes are not counted.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	51	41	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	55	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100	45	45			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100	45	45			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	899	1025	1564			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	0	55	45
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Austin/Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.072
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	7.9
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 0 1! 0 0			1 0 1 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	19	30	2	13	16	24	28	45	22	3	47	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	30	2	13	16	24	28	45	22	3	47	23
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	30	2	13	16	24	28	45	22	3	47	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	30	2	13	16	24	28	45	22	3	47	23
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	30	2	13	16	24	28	45	22	3	47	23
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	30	2	13	16	24	28	45	22	3	47	23
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.39	0.61	1.00	0.25	0.30	0.45	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	264	417	818	181	223	334	650	715	830	43	679	847
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.07	0.07	0.07	0.04	0.06	0.03	0.07	0.07	0.03
Crit Moves:		****			****			****			****	
Delay/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	6.9	8.1	8.1	8.1	8.4	7.9	7.0	7.9	7.9	6.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:		8.2			8.1			7.9			7.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		8.2			8.1			7.9			7.6	
LOS by Appr:		A			A			A			A	
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

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                      Level Of Service Computation Report
            2000 HCM 4-Way Stop Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Austin/Arch
********************************************************************************
Cycle (sec):          100                 Critical Vol./Cap.(X):         1.374
Loss Time (sec):        0 (Y+R=4.0 sec)  Average Delay (sec/veh):       154.8
Optimal Cycle:          0                 Level Of Service:                  F
********************************************************************************
Approach:      North Bound       South Bound        East Bound        West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign         Stop Sign         Stop Sign
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        0  1  0  0  1    0  0  1! 0  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12    25     1     6    14    16    51    42    25     2    39    18
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12    25     1     6    14    16    51    42    25     2    39    18
Added Vol:    780    57     0     0     0     0    20     0    11     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  792    82     1     6    14    16    71    42    36     2    39    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   792    82     1     6    14    16    71    42    36     2    39    18
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  792    82     1     6    14    16    71    42    36     2    39    18
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  792    82     1     6    14    16    71    42    36     2    39    18
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.91 0.09  1.00  0.17 0.39  0.44  1.00 1.00  1.00  0.05 0.95  1.00
Final Sat.:   576    60   788   100   234   267   491   527   588    26   503   591
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     1.37 1.37  0.00  0.06 0.06  0.06  0.14 0.08  0.06  0.08 0.08  0.03
Crit Moves:  ****                        ****  ****                   ****
Delay/Veh:  195.4  195   7.2   9.2  9.2   9.2  11.2 10.1   9.2  10.0 10.0   8.9
Delay Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 195.4  195   7.2   9.2  9.2   9.2  11.2 10.1   9.2  10.0 10.0   8.9
LOS by Move:    F    F     A     A    A     A     B    B     A     A    A     A
ApproachDel:     195.2              9.2              10.4               9.7
Delay Adj:        1.00             1.00              1.00              1.00
ApprAdjDel:      195.2              9.2              10.4               9.7
LOS by Appr:        F                A                 B                 A
AllWayAvgQ:  33.1 33.1   0.0   0.1  0.1   0.1   0.2  0.1   0.1   0.1  0.1   0.0
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Note: Queue reported is the number of cars per lane.
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APPENDIX F

Settlement Agreement and Mutual Release

SETTLEMENT AGREEMENT AND MUTUAL RELEASE

This Settlement Agreement and Mutual Release ("Agreement") is made and entered into by and between: (1) Greater Stockton Chamber of Commerce, a California non-profit corporation ("Chamber"), County of San Joaquin ("County"), and City of Stockton ("City"), all of which are collectively referred to herein as "Petitioners"; and (2) J. Clark Kelso, in his capacity as Receiver ("Receiver"), the California Prison Healthcare Receivership Corporation ("CPR"), and the California Department of Corrections and Rehabilitation ("CDCR"), all of which are referred to collectively herein as "Respondents**.**" All of Respondents and Petitioners are referred to in this Agreement individually as a "Party" and collectively as the "Parties."

RECITALS

A. In 2005, Judge Thelton H. Henderson of the United States District Court for the Northern District of California, in the class action *Plata v. Schwarzenegger*, U.S. Dist. Ct., N.D. Cal., No. C01-01351 ("*Plata*"), placed California's prison medical health care system in receivership finding a number of serious problems and constitutionally inadequate care provided to California inmates;

B. On February 14, 2006, the *Plata* court appointed Robert Sillen as Receiver, with an effective date of April 17, 2006. On January 23, 2008, the *Plata* court appointed J. Clark Kelso to replace Sillen as the Receiver, and Kelso has served in that capacity to date. The *Plata* "Order Appointing Receiver" authorizes the Receiver "to exercise all powers vested by law in the Secretary of CDCR as they relate to the administration, control, management, operation, and financing of the California prison medical health care system";

C. On April 23, 1990, a class of plaintiffs filed an action entitled, *Coleman v. Schwarzenegger*, U.S. Dist. Ct. (E.D. Cal.) No. 2:90-cv-00520-LKK ("*Coleman*"), alleging that the mental health care system in California prisons violated the Eighth Amendment. Plaintiffs filed a first amended complaint on July 25, 1991. Subsequently, the *Coleman* court appointed a Special Master to implement a remedial plan and the *Coleman* court has issued a number of orders requiring the construction of additional mental health care bed space;

D. On February 26, 2008, the judges in *Plata* (medical care), *Coleman* (mental health care) and other class actions challenging various aspects of the prison health care system, approved a construction coordination agreement, regarding (among other projects) the construction of approximately 5,000 additional CDCR medical beds and 5,000 CDCR mental health beds;

E. On October 12, 2009, pursuant to the California Environmental Quality Act ("CEQA"), the Receiver adopted a resolution certifying the Final Environmental Impact Report ("Final EIR") for a proposed California Health Care Facility, in San Joaquin County, just outside of the City of Stockton ("Project") which would provide subacute medical and mental health care for CDCR inmates in furtherance of the orders in *Plata* and *Coleman*;

F. The Project would result in Respondents constructing a subacute medical and mental health care facility on the Project site with up to 1,734 beds for CDCR inmates. The facility would consist of approximately 1.2 million square feet and would include housing clusters, diagnostic and treatment centers, outdoor recreation fields, and other amenities;

G. On October 12, 2009, pursuant to the Order Appointing Receiver in *Plata*, the Receiver also adopted a resolution exercising authority of the Secretary of CDCR for purposes of approving the Project, adopting the CEQA findings of fact and statement of overriding considerations, adopting the mitigation monitoring and reporting program and adopting the conditions of approval;

H. The Secretary of CDCR, Matthew L. Cate, concurred in the Receiver's October 12, 2009 resolutions certifying the Final EIR for the Project;

I. The Receiver and the Secretary of CDCR filed a Notice of Determination for the Project on October 19, 2009;

J. With respect to the Project, the Receiver contends that he acted (i) pursuant to the powers and duties conferred by the *Plata* court; (ii) in furtherance of the remedial plans proposed by Receiver Kelso and adopted by the *Plata* court; (iii) in cooperation with the Special Master appointed by, and pursuant to authorization from, the Court in *Coleman*; and (iv) in accordance with the February 26, 2008 Order approving a construction coordination agreement in *Plata*, *Coleman* and other related actions;

K. On November 17, 2009, Petitioners filed a petition for writ of mandate in the Superior Court of San Joaquin County (*Greater Stockton Chamber of Commerce, et al. v. J.*

Clark Kelso, et al., Case No. 39-2009-230310-CU-WM-STK) alleging that Respondents' certification of the Final EIR and approval of the Project violated CEQA. In particular, Petitioners alleged that Respondents failed adequately to mitigate Project impacts, including but not limited to impacts on County and City public facilities, such as roadways, police and fire services, and hospitals ("Petition");

L. Respondents removed the Petition to the United States District Court, Eastern District of California on November 25, 2009 and Judge Lawrence K. Karlton issued a Related Case Order on December 4, 2009 finding that the *Coleman* case and the Petition were related, resulting in re-assignment of the Petition to Judge Karlton for all further proceedings (Case No. 2:09-cv-03308-LKK-JFM);

M. Petitioners filed a Motion to Remand the Petition to state court on December 22, 2009 which Judge Karlton denied on April 2, 2010;

N. The Parties, without any admission of liability, desire to settle the Litigation according to the terms set forth in this Agreement, the basic outline of which was agreed to in principle during settlement conferences held between the Parties during the week of April 5, 2010;

O. The County's Board of Supervisors shall considered approval of this Agreement at its June 8, 2010 meeting;

P. The City Council of the City of Stockton shall considered the approval of this Agreement at its June 8, 2010 meeting.

AGREEMENTS

NOW THEREFORE, in consideration of the execution of this Agreement, and other good and valuable consideration, the receipt and sufficiency of which is acknowledged, and subject to the terms and conditions hereof, the Parties hereby agree as follows:

1. Incorporation of Recitals. The recitals set forth above, and all defined terms set forth in such recitals and in the introductory paragraph preceding the recitals, are hereby incorporated into this Agreement as if set forth herein in full.

2. Settlement Measures. The Parties agree to implement the measures listed herein within the time frames set forth.

I. TRAFFIC RELATED AGREEMENTS

1. Project-Related Traffic Mitigation.

A. Frontage on Austin Road. CDCR will dedicate to the County right-of-way ("ROW") easements on CDCR property[1] from the intersection of Arch and Austin Roads to the project's southerly boundary to allow the widening of Austin Road to the road width identified in the County General Plan or other applicable governing plan (approximately thirty (30) feet in width from the centerline of Austin Road plus an additional eighteen (18) feet for the ultimate road width). CDCR and the Receiver will construct lighting, if needed, and paving of that portion of Austin Road from its current centerline to 30 feet west thereof, to County specifications, as a Rural Collector Road, for the length of the above described segment of Austin Road (approximately 4,000 lineal feet). In the alternative, CDCR and/or the Receiver and County may agree that CDCR will pay County the sum of $1,077,670, as the estimated reasonable cost of the street improvements required to upgrade and expand the western half of Austin Road from 12 feet to 30 feet from the centerline of the road, and, if it is determined that the street lighting is needed, the sum of $440,734 as the estimated cost of installing street lights along Austin Road. County shall use such funds for the construction of the Austin Road improvements. CDCR and/or the Receiver and the County shall agree on whether street lighting is necessary to be installed based on whether lighting from the correctional facility will sufficiently illuminate Austin Road, and on whether CDCR and/or the Receiver will construct the improvements or pay the County, as set forth herein, no later than sixty (60) days after the execution of the Design/Build contract. The Standard County Conditions set forth in Exhibit 1 shall apply to the dedication of ROW and construction within the ROW.

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[1] As used in this Agreement, the "CDCR Property" means that property owned by CDCR agencies generally bounded by Arch and Austin Roads and includes the two currently operating Division of Juvenile Justice (DJJ) facilities (O.H. Close Youth Correctional Facility and N.A. Chaderjian Youth Correctional Facility) and the new or re-purposed facilities, (the CHCF, the re-purposed De Witt Nelson facility and the re-purposed Northern California Women's Facility [NCWF] facility [the new Northern California Re-Entry Facility]). The CDCR Property also includes the existing state-owned property designated for the construction of a future facility for the California Conservation Corps.

B. Arch/Austin Road Intersection. Based on the County plan to install the signal at this intersection in the near term to enhance safety and improve conditions for the CHCF and other planned correctional facilities, the Receiver and CDCR agree to pay their fair share amount towards installation of a traffic signal at the intersection of Arch Road and Austin Road, with turn lanes consistent with the County circulation plan. The fair share amount has been determined and agreed to be $171,000. This payment will be credited against any payment/contribution required under the San Joaquin Council of Governments' ("SJ COG") Regional Transportation Impact Fee ("RTIF") if the traffic signal and turn lanes described herein are included in the Regional Transportation Improvement Plan. The County will be responsible for securing any right of way needed for signalization that is not already on State-owned property. This payment will be made within sixty (60) days of CDCR or the Receiver, as the case may be, issuing the notice to proceed with construction of the CHCF buildings pursuant to the Design/Build contract.

C. Maintenance and Operation Costs of Street Lighting. The Receiver and CDCR agree that CDCR will be responsible for the costs of maintenance, repair, replacement and operation (*e.g.* electricity costs) for the street lights along the Austin Road frontage abutting the CDCR Property, if such street lighting is determined to be necessary and is installed. These street lights will be connected to the electric service for the CDCR property and electricity costs will be paid directly by CDCR. The Receiver and CDCR agree that, if direct payment by CDCR as set forth herein is not feasible or the parties determine that it would be beneficial to provide for the County to operate and maintain these street lights, CDCR will pay the costs of maintenance, repair, replacement and operation to the County either through a contractual agreement or through participation in a county service area, landscaping and lighting act assessment district, or similar financing mechanism, provided that CDCR shall pay only for the direct and actual costs of maintenance, repair, replacement and operation of the street lights abutting the CDCR Property.

D. Regional Fair-Share Transportation Improvements - Fees.

(1) County Traffic Impact Mitigation Fee ("TIMF"). CDCR, the Receiver and the County agree that the TIMF for the CHCF shall be $679,794.24. This fee shall be paid to the County within sixty (60) days of CDCR or the Receiver, as the case may be, issuing the notice to proceed with construction of the CHCF buildings pursuant to the Design/Build contract.

(2) SJ COG RTIF. CDCR and the Receiver agree that CDCR and the Receiver shall pay RTIF fees for the CHCF in the amount of $1,229,196.93. The fair share payment for the Arch and Austin Road intersection traffic signalization set forth in section I.1.B, above, shall be credited against any payment/contribution required under the SJ COG RTIF if the traffic signal and turn lanes are included in the Regional Transportation Improvement Plan. Any payments or the costs of any improvements made by the Receiver and/or CDCR related to the State Route 99/Arch Road Interchange shall be credited against the total amount due from the Receiver and/or CDCR for the RTIF, if these improvements are included in the Regional Transportation Improvement Plan. This payment shall be made within sixty (60) days of CDCR or the Receiver, as the case may be, issuing the notice to proceed with construction of the CHCF buildings pursuant to the Design/Build contract.

E. City Traffic Impact Fees and Traffic Signal Fees. CDCR and the Receiver shall not be required to pay any traffic impact fees or traffic signal fees to the City of Stockton for the CHCF.

II. SALES TAX/DIRECT PAYMENT PROCESS FOR DELIVERED CONSTRUCTION MATERIALS

Prior to beginning the CHCF project and thereafter as appropriate, all contractors for the construction of the CHCF and their subcontractors providing materials or equipment for the same construction, and any related activities will be required to review the use tax direct payment permit process established under California Revenue and Taxation Code section 7051.3. It is CDCR's intent to require the contractors and subcontractors to participate in the sales tax allocation program to the full extent permitted by law. Accordingly, CDCR will require all qualifying contractors and subcontractors to exercise the option to obtain a Board of Equalization sub-permit for the job site and allocate all eligible sales and use tax payments to the County of San Joaquin (pursuant to the Direct Payment Process established under State Revenue and Taxation Code section 7051.3). Prior to commencement of any construction activity, and thereafter as appropriate, all contractors and subcontractors shall provide CDCR and the County of San Joaquin with either a copy of their Board of Equalization ("BOE") account number and sub-permit, or a statement certifying that use tax does not apply to their portion of the project. As needed, CDCR and/or CDCR's contractors and their subcontractors will request the County of San Joaquin to provide the information and materials necessary to exercise the above use tax option. Upon request of the County of San Joaquin, CDCR and/or CDCR's Prime Contractors and their subcontractors will make purchase records available for third-party review to verify that allocation of all eligible sales and use tax payments are recorded in accordance with the Direct Payment Permit Process.

This provision applies only to the construction of CHCF and does not apply to operation of the CHCF.

III. <u>COUNTY SERVICES</u>

1. <u>San Joaquin County Coroner's Office</u>. The parties agree that CDCR shall pay for all services provided by the Coroner's Office to CHCF at the reasonable, nondiscriminatory, and customary rates applicable to all persons or entities that may utilize the Coroner's services as established by the San Joaquin County Board of Supervisors for Coroner Services, from time to time.

2. <u>County Hospital Secured Ward and other items related to San Joaquin General Hospital ("SJGH")</u>. The Receiver and/or CDCR and SJGH shall enter into one or more agreements for a secured ward or medical guarded unit ("MGU") at SJGH. The agreement(s) shall be substantially in the form attached hereto as Exhibit 2.

IV. <u>CITY OF STOCKTON ANNEXATION, WATER AND SEWER AGREEMENTS</u>

A. <u>San Joaquin Local Agency Formation Commission ("SJLAFCO"): Out of Agency Water Agreement and Annexation</u>.

CDCR has agreed to seek SJLAFCO approval in order to facilitate the water delivery infrastructure originally proposed by Forward Landfill Inc. in its effort to comply with the Central Valley Regional Water Quality Control Board Cleanup and Abatement Order No. 5-2008-0714, dated December 8, 2008 directing Forward Landfill to provide the CDCR Property with drinking water.

1.a. Water Service: CDCR shall apply to the City for an Out of Agency water extension from SJLAFCO for authorization to allow the City to provide water service to the CDCR Property. CDCR will be responsible to pay for the City's application fee and the applicable SJLAFCO processing fee. These fees will be based on the administrative costs of such actions by the respective agencies. The respective applications will be filed not later than 30 days after project approval by the State Public Works Board ("PWB"). However, the applications may be filed at any earlier time that CDCR and the Receiver determine is appropriate. The City agrees to diligently pursue SJLAFCO approval of the authority to provide the water service. The City will support and advocate for the application to SJLAFCO for the Out of Agency water service extension approval. San Joaquin County will not oppose the Out of Agency water service extension.

At CDCR's request, SJLAFCO has determined that the processing fees and other costs that SJLAFCO may charge CDCR for the Out of Agency water extension shall not exceed $13,500. The total cost of all fees and costs for the City processing of the Out of Agency water extension set forth in this section 1.a, shall not exceed $35,000 in total (the $35,000 includes only the City's processing fees and costs for the Out of Agency water extension application to SJLAFCO, and does not include SJLAFCO's fees and costs, as set forth above). If the City's costs for the Out of Agency water extension application and approval exceed $35,000 in total, the City shall pay any amount in excess of $35,000. Except as provided in this Paragraph 1.a, no additional fees or charges or impact fees shall be incurred by CDCR for the Out of Agency water extension.

Notwithstanding the foregoing, if SJLAFCO denies the Out of Agency water service extension, then CDCR and the Receiver shall have the option, at their discretion, (1) to terminate this Agreement as to the City, in which case the City's lawsuit (*Greater Stockton Chamber, et al v. J. Clark Kelso, et al.* Eastern District of California, Case No. 2:09-cv-03308-LKK-JFM) may proceed as to the City only, and the City, CDCR and the Receiver shall have no further obligations to one another hereunder; or (2) to instruct the City to extend water service as set forth herein. If CDCR or the Receiver so instructs the City, then the City shall extend the identified water service pursuant to the terms of this Agreement without regard to whether the Out of Agency water service extension has been granted. If any litigation is filed naming the City as a party and challenging the City's right to extend the identified water service without the Out of Agency water extension approval, then CDCR and the Receiver shall defend, indemnify and hold the City harmless with respect to such litigation. The City agrees to cooperate with CDCR and the Receiver in any such litigation.

1.b. Annexation: Concurrently with application for approval of Out-of-Agency water service to the CDCR Property, CDCR shall enter into a Deferred Annexation Agreement with the City in the form attached hereto as Exhibit 3, in implementation of City's Policy 900-1, to facilitate the provision of water service to the CDCR Property and to facilitate the City's policy of requiring annexation, when feasible, as a condition of agreeing to provide new water service to properties outside of the City. The Deferred Annexation Agreement shall provide that (1) the City, at its option, may apply to SJLAFCO for annexation of the CDCR Property at any time, but no sooner than five (5) years following the full occupancy of the CHCF. The term "full occupancy" is defined as the operation of the facility at 80% of total bed capacity (or 1585 beds of the total 1,722 beds); (2) the CDCR Property may only be prezoned to a “Public Facilities” (PF zone) or other similar use in recognition that the entire CDCR Property will be committed to correctional and other state uses for the foreseeable future; (3) CDCR agrees to address the environmental consequences, if any, of the potential annexation of the CDCR Property to the City in its Environmental Impact Report (EIR) for the Northern California Re-entry Facility (NCRF) and DeWitt Nelson projects; (4) CDCR will pay the City, not later than ninety (90) days after the full execution of the Design/Build contract for the CHCF, the sum of $235,000, which sum shall be the total cost of all fees and costs for the respective SJLAFCO and City processing of prezoning and annexation and all fees and costs associated with the annexation of the CDCR Property to the City regardless of when such annexation occurs, if ever, and regardless of what environmental review costs, processing fees, impact fees, or exactions the City may require or determine necessary for annexation of the CDCR Property. Except for fees and charges contemplated in Section 2.c and Section 2.f of this Agreement, no additional fees or charges or impact fees shall be incurred by CDCR for the water service and/or annexation; and (5) the City acknowledges and accepts that the CDCR will advocate that the SJLAFCO refrain from detaching the CDCR property from the Montezuma Fire District and/or the Collegeville Fire District. Regardless of the determination of the fire service issue, CDCR shall not be required to pay any fees, costs or other impact fees to the City related to the provision of fire service to the CDCR property other than those fees and costs being paid to the fire district(s), at the time of annexation application, if any.

City further agrees that, in consideration of the terms of the Deferred Annexation Agreement as set forth above, and in further consideration for the settlement of the Litigation, the City will not comment on, or challenge, in any manner or in any judicial or administrative proceeding or forum, the adequacy of, or legal sufficiency of, the EIR for the NCRF and DeWitt Nelson projects, as such EIR relates to the annexation of the CDCR Property to the City and shall not sponsor, encourage, authorize, solicit, finance or otherwise assist the filing of an action by any third party, in any judicial or administrative forum challenging the adequacy of, or legal sufficiency of, such EIR. Nothing in this Agreement shall preclude the City from submitting comments pursuant to CEQA or challenging the legal sufficiency of the EIR for the NCRF and DeWitt Nelson Projects concerning physical environmental impacts of the NCRF and DeWitt Nelson Projects not related to the annexation of the CDCR Property to the City and the resultant boundary change of the City.

2. City Water.

2.a. City shall cooperate with Forward Landfill, Inc. in the construction of two water lines and installation of two water meters in Newcastle Road, one 24" diameter line ("Line A") and associated 12" diameter meter ("Meter 1") and one 16" diameter line ("Line B") and associated 12" diameter meter ("Meter 2"), to supply water for the CDCR Property, as depicted on Exhibit 4. The construction and meters shall be at no cost to CDCR.

2.b. All on-site water system infrastructure on the CDCR Property shall be owned and maintained by CDCR.

2.c. CDCR will not pay the City for any water service for a period of one year from the time of commencement of City water usage by CDCR on the CDCR Property. "Commencement" shall be deemed to occur when CDCR requests connection to the meter and the meter is installed. For years two and three CDCR will pay 20% and 30%, respectively, of the City's monthly water usage charges, in accordance with City's Water Rate Fees and Regulations at that time. For year four, CDCR shall pay 50% of the City's' monthly water usage charges. Thereafter, payment shall escalate 10% per year for the next five years such that at the beginning of the ninth year CDCR will pay 100% of the applicable rate thereafter. The monthly water usage charges (or the applicable percentage thereof as discussed above under this paragraph) shall be based on the standard user charge for applicable municipal customers as established by

City Ordinance, Resolution, or Policy. The City Ordinance, Resolution or Policy shall not be amended to establish discriminatory rates. The monthly water usage charges shall not be adjusted more frequently than once in any twelve month period.

2.d. Unless the Water Board directs that the three contaminated wells (Wells #1, #2 and #3) must remain operable for monitoring purposes, CDCR will abandon and destroy these contaminated on-site water wells at no cost to the City. The City shall assist CDCR in securing well closure permits from the County.

2.e. CDCR retains the right to continue use of the existing well (Well #4) which is currently uncontaminated and will retain the right to drill, install, and operate new wells on the property in the event that CDCR, in its sole discretion, determines that additional wells are necessary for the operation of its facilities on the CDCR Property. CDCR acknowledges that if water from the remaining well, or from additional wells, is used on the Property, CDCR will be solely responsible for preventing, through the use of mechanical (e.g. air gaps) and operational means, any co-mixed City-supplied and well-supplied water, and/or any well supplied water from entering the City's water supply system. This will be accomplished through use of a backflow preventer located where the city municipal water line enters the CDCR property. This Agreement (or the provision of water by the City to the CDCR Property) does not prevent CDCR from mixing City water and CDCR well water for use on the CDCR Property, provided that the resultant mixed water meets applicable water quality standards and provided further that CDCR and the City have agreed that the CDCR backflow preventer is adequately designed to prevent any mixed water from entering the City's water supply system, which agreement will not be unreasonably withheld. All improvements made to the existing water distribution systems on the CDCR Property will be in conformance with Title 24 or City's applicable building code and other applicable codes and standards.

2.f. CDCR shall construct and pay for a 16" diameter water main in Arch Road and Austin Road (approximately 6,300 linear feet, traveling from the intersection of Logistics Drive with Arch Road and continuing eastward to Austin Road, and turning south to the point of the utility entrance to the CHCF site) ("Line C") with one water meter ("Meter 3") to provide for a looped system to serve the CDCR Property. Meter 3 will be sized as necessary to serve the CDCR Property (including, without limitation, the existing or planned facilities on the

CDCR Property) but shall be no larger than a 12" diameter meter and will be located near the entrance of the CHCF on Austin Road and/or in close proximity to the property line of the adjacent non-state-owned parcel immediately south of the CHCF. The City will reimburse CDCR for any oversizing of Line C (over 12 inches) per City policy. CDCR will pay the standard rates for connection fees as established by the Stockton Municipal Utilities Department Water Fee Schedule in effect at the time application for water service is made based upon the necessary meter size to serve the water demand for the facilities (the "Connection Fees"). It is agreed that the cost of the Connection Fees will be conclusively deemed to include any and all meters, surcharges for the recovery of capital fees and water distribution costs for regional water distribution systems and all other customary, nondiscriminatory charges and fees applicable to connection to the City's water system, including but not limited to, the City's standard connection fee, the Surface Water Fee (also known as the New Melones Water Conveyance Project Fee and the Water Supply Impact Mitigation Fee) and the Delta Water Supply Project Fee. Based on the City's current fee schedule, the estimated cost for the Connection Fees for a 12"diameter meter is approximately $1.3 million dollars. CDCR shall pay the Connection Fees when the application for water service connection is submitted by CDCR to the City. City shall provide written confirmation to the County and CDCR that the Surface Water Fee, as defined above, has been paid in full to the agencies that receive that Fee. City and CDCR shall indemnify the County against any claim against the County that the Surface Water Fee, as defined above, has not been paid.

2.g. Upon installation of Line C, and installation of Meter 3 at the Austin Road connection as described above, the City may remove Meter 1 and associated connection to Line A (the 24 inch water main in Newcastle Road). At the election of CDCR and with CDCR's determination that the CDCR property and facilities located on the CDCR property require an additional meter and connection from Line C in Arch Road ("Meter 4"), the City will charge and CDCR will pay one-half of the cost of the customary Connection Fees at the time this water service connection is submitted by CDCR to the City.

3. **<u>City Sewer Service to the CDCR Property</u>.** The City commits to continue providing sewer service to the CDCR Property pursuant to the existing sewer service agreement through the duration of that agreement (through 2018). Beyond the date of expiration of that agreement, City commits to continue to provide sewer service to the CDCR Property at 800,000 gallons per day provided that CDCR pays the monthly user charge established for applicable municipal customers as lawfully established by City Ordinance, Resolution, or Policy. The City Ordinance, Resolution or Policy shall not be amended to establish discriminatory rates. The user charge shall not be adjusted more frequently than once in any twelve month period. The City and CDCR agree that sewer service to the CDCR Property predates the adoption of City Policy 900-1 and any requirement for SJLAFCO approval of Out of Agency service extensions and that, therefore, no additional approvals are required to continue City sewer service to the CDCR property.

If, as part of the construction planning for CDCR facilities on the CDCR Property, or during the subsequent operation of the CDCR facilities, it is established that the sewer service demand for the CDCR facilities exceeds 800,000 gallons per day, then CDCR shall apply to the City for the additional necessary capacity and pay the non-discriminatory sewer connection charges for the additional necessary capacity over 800,000 gallons per day and construct any necessary infrastructure imposed according to the City's ordinances, policies and standards in effect at the time of the request for the additional capacity. The City shall apply the fee schedule in effect at that time to determine the connection fees. CDCR shall be subject to any and all adjustments adopted City wide. It will be deemed established that the sewer service demand for the CDCR facilities during operation of the facilities exceeds 800,000 gallons per day if the City so determines based on substantial evidence provided through the flow recording meter(s) maintained by the City's Department of Municipal Utilities in accordance with the then existing permit.

V. CHCF LOCAL HIRE OUTREACH PLAN

A. During Construction. The Receiver and CDCR agree to require that Design/Build contract proposers include in their proposals a Contractor’s Local Hire Outreach Program ("CLHOP") and require participation therein by all of their subcontractors. The Receiver and CDCR agree to require, as part of the request for proposals for the CHCF that the Design/Build proposers submit CLHOPs that show how the Design/Build proposer will implement the local hire provisions (and, thereafter, to require monitoring, reporting and auditing on the implementation of the CLHOP), as follows:

(1) The Design/Build proposers shall be required to prepare and comply with a CLHOP, which shall include the provisions set forth herein.

(2) The CLHOP shall constitute 5% of the total points that each proposal may receive as part of the evaluation process to selecting the Design/Build contractor.

(3) The Receiver and CDCR agree to include a non-voting member of the Request for Proposal Review Technical Advisory Sub-Committee that will be responsible for the review and ranking of proposals from the Design/Build proposers, including the CLHOP. This non-voting member shall be selected by the Petitioners. The non-voting member selected by the Petitioners shall be entitled to participate in any and all meetings and deliberations, except voting, of the Technical Advisory Sub-Committee. This non-voting member shall be subject to all rules applicable to the other members of the Technical Advisory Sub-Committee related to the review and ranking of proposals, including, but not limited to, confidentiality provisions.

(4) The CLHOP presented by the selected Design/Build proposer will be included in the Design/Build contract and will be monitored. The CLHOP will be a pay item or contract deliverable. The Design/Build contractor will be paid that certain amount if the Design/Build contractor fulfills the provisions of the CLHOP. In order to determine the amount of the pay item or contract deliverable, CDCR will do an evaluation of the level of effort it will take to do the mandatory requirements and then double that amount (for more efforts that are expected to come from the proposal) but in no event will the pay item or contract deliverable be more than $500,000.

(5) At a minimum, the CLHOP shall include the following mandatory elements:

(i) Designate Local Hire Administrator responsible for implementing local contracting, procurement and hiring plan.

(ii) Coordinate with local and regional contractor associations including, but not limited to, the Builders Exchange of Stockton, the Building Industry of the Delta, and the Greater Stockton Chamber of Commerce, the City of Stockton and San Joaquin County to improve the likelihood of receiving proposals from qualified local trade contractors.

(iii) Provide local contractors with easy and timely access to plans, specifications and contract requirements to assist them in responding to solicitations.

(iv) In coordination with the Greater Stockton Area Chamber of Commerce, conduct job information meetings in Stockton and San Joaquin County.

(v) Provide ongoing assistance to San Joaquin County residents in completing job application forms.

(vi) Conduct job application workshops in Stockton and San Joaquin County.

(vii) Advertise jobs, job information meetings, workshops, job application centers in local public places such as Stockton City Hall, San Joaquin County Administrative Offices, libraries and post offices, and in local media including television, newspapers of general circulation and trade papers.

(viii) Solicit known local subcontractors by telephone.

(6) Reporting. The Design/Build Contractor will report local hire statistics to CDCR monthly. CDCR will provide the local hire statistics to the Construction Oversight Committee at its monthly meeting.

(7) Construction Oversight Committee ("COC"). CDCR shall establish a COC, which shall consist of at least three (3) persons, with one member selected by each of the Petitioners. The COC may include other participants at the election of CDCR. The COC shall meet monthly with the Design/Build Contractor to monitor the Contractor's performance of the CLHOP. The COC shall terminate upon completion of the CHCF.

B. Vendor Outreach. CDCR shall provide training to Greater Stockton Chamber of Commerce (Chamber) staff regarding accessing the State's existing procurement website. CDCR and the Chamber shall sponsor a yearly vendor fair during construction and for a minimum of five years after construction of the CHCF, the re-purposed DeWitt-Nelson facility and the planned Northern California Re-entry Facility (the re-purposed NCWF) are completed. Continuation of the vendor fair shall be reviewed every five years by the Citizen's Advisory Committee ("CAC"). (See Section VI, below.) The vendor fair will be continued for an additional five years unless the CAC and the Chamber vote in the affirmative to discontinue it. The vendor fair shall be coordinated with the Chamber which shall be an active participant in the organization and implementation of the vendor fair.

C. **Employee Outreach.** For Local Outreach during the Operation of the CHCF:

(1) CDCR will follow the "San Joaquin Local Human Resources Plan" ("Plan") as follows:

(a) Conduct civil service job information and application workshops in Stockton and San Joaquin County.

(b) Provide Institution tours.

(c) Provide periodic job information releases to local newspapers and media outlets.

(d) Visit local schools to provide information and assistance in how to apply for state civil service positions.

(e) Attend local job fairs in order to provide information and assistance to prospective job candidates.

(f) Conduct spot testing for open (non-promotional) civil service examinations in the Stockton/San Joaquin County area.

(g) Designate a Community Resource Manager for implementation of local outreach and education.

(h) Work with local community colleges to establish training programs to supply licensed applicants to the state for hire (*i.e.*, Psychiatric Technician, LVN, RN, etc.).

(i) Establish working partnership with the Stockton Employment Development Department (EDD) office in order to enhance local recruitment efforts.

(j) Establish a working partnership with city and county officials and community-based organizations, including the Greater Stockton Chamber of Commerce, in developing a localized recruitment effort.

(2) The Plan shall continue for five years after construction of the CHCF, the re-purposed DeWitt-Nelson facility and the planned Northern California Re-entry Facility (the re-purposed NCWF) are completed, at which time the continuation of the Plan shall be reviewed by the CAC. (See below.) The Plan will be continued for an additional five years unless the CAC votes in the affirmative to discontinue it. Thereafter, the Plan shall be reviewed at least every five years by the CAC and will be continued for an additional five year periods, unless the CAC votes in the affirmative to discontinue it.

VI. CITIZENS ADVISORY COMMITTEE ("CAC"); ANNUAL MEETING

1. The CDCR shall establish and maintain one CAC pursuant to Department Operations Manual ("DOM") section 101090.11.3 for the CHCF, the re-purposed DeWitt-Nelson facility and the Repurposed NCWF also called the Northern California Re-entry Facility ("NCRF") at the CDCR Property. The Chamber shall nominate at least three individuals to serve on the CAC. The Warden will select one of the Chamber nominees to fill one of the Warden's appointments to the CAC. As set forth in the DOM, the CAC will also include individuals nominated by the Board of Supervisors and the City Council, among others. The CAC, which shall meet quarterly, and will initiate its meeting schedule at the beginning of construction of the CHCF. Local legislators will be invited to attend the meetings. In each of the four years following the opening of a facility, CDCR will provide an analysis showing the distribution of employees' residences by zip code. CDCR will also provide an analysis of the value of goods and services purchased from vendors within the County with the goal of showing the distribution, by zip code, of where goods and services for the facilities were purchased. In addition to the other functions of the CAC stated in the DOM and in this Agreement, the CAC shall consider any community concerns and issues related to the CDCR facilities, as may be raised by any member of the CAC and provide advice and input on responding to and improving community relationships between the CDCR facilities and the community.

VII. AB 900 COMMUNITY IMPACT MITIGATION FUNDS

Upon the initiation of construction, CDCR will make available a one-time distribution of community impact funds pursuant to Penal Code section 7005.5. This funding is based on $800 for each bed within the design capacity of the proposed medical care facility, which is a total of 1,734 beds for a total payment of $1,387,200. In accordance with the Penal Code section 7005.5, half of this amount will be provided to the "impacted local education agency" (San Joaquin County Board of Education for distribution at its discretion to district schools). The other half will be distributed to the impacted City and County after the appropriate resolutions are passed and agreements reached. Impacted local entity is defined as one "whose current approved sphere of influence includes the site." It is the Receiver/CDCR's understanding that the site is within the City of Stockton's sphere of influence. The approximately $700,000 will be distributed consistent with an agreement reached by San Joaquin County and the City of Stockton. The school district funds will be available upon the initiation of construction; the balance of funds will be released once the two local agencies have reached a distribution agreement and, if necessary, appropriate resolutions are passed.

VIII. CONTRACT WITH THE FIRE PROTECTION DISTRICT

The Receiver and CDCR are determining whether fire protection services will be provided to the CDCR Property through an on site fire station staffed by CDCR or through agreement with the applicable fire protection district. If the Receiver and CDCR agree that fire protection services will be provided through a fire protection district, the Receiver and CDCR will work with the applicable fire protection district to provide fire protection services to CHCF and the remainder of the CDCR Property. The appropriate District for CHCF appears to be the Montezuma Fire District. Fire prevention services to the CDCR Property will be provided by CDCR utilizing CDCR staff, including a fire captain or equivalent position, unless CDCR and the applicable fire protection district agree otherwise.

IX. CHAMBER'S ATTORNEYS' FEES; COVENANT NOT TO SUE

CDCR or the Receiver shall pay the Chamber of Commerce's portion of Petitioners' reasonable attorney's fees in connection with the Action, not to exceed seventy thousand dollars ($70,000) from the 2009/2010 Budget Act, Item 5225-002-0001—Schedule 3 (For support of Department of Corrections and Rehabilitation: Schedule: (3) 50.10-Medical Services—Adult). The Respondents shall not pay any other parties' attorneys fees and shall not pay any of Petitioners' costs. The payment of fees to the Chamber is contingent upon the Chamber fully executing an Agreement and Covenant Not to Sue with CDCR and/or the Receiver with respect to CDCR's other two proposed projects in Stockton, which are (1) the re-purposed DeWitt Nelson facility and (2) the re-purposed Northern California Women's Facility (NCWF), also known as the new Re-Entry Facility or the Northern California Re-Entry Facility (NCRF), in the form attached hereto as Exhibit 5 and delivering such Agreement and Covenant to CDCR and the Receiver. Respondents will waive the approximate $85,000 in costs for preparing the administrative record as to all Petitioners. Respondents will make the payment as set forth in this section within fifteen (15) days after this Settlement Agreement is executed by all the Parties, the request for dismissal with prejudice is executed by all the Petitioners, and the Covenant Not to Sue is executed by the Chamber and delivered to Respondents.

3. Dismissal of Action**.** Subject to continuing jurisdiction of the Court to enforce this Agreement, Petitioners shall prepare a Dismissal of the Litigation with prejudice ("Dismissal"). The Dismissal shall be filed with the Court within ten (10) days following the Effective Date of this Agreement.

4. Releases**.** Immediately upon execution of this Agreement, the General Release provided for herein shall become effective and legally binding.

a. General Release and Waiver. Each Petitioner hereby releases each and every Respondent and each Respondent hereby releases each and every Petitioner to and from any and all claims, actions, causes of action, obligations, costs, damages, losses, liabilities and demands, of whatever kind and nature, in law or equity, in contract, tort or otherwise, past, present, future, known or unknown, contingent or non-contingent, anticipated or unanticipated, suspected or unsuspected, which any such party now has, ever had, or may have in the future arising directly or indirectly out of, based on, relating to or connected in any way with the approval of the CHCF Project and its EIR, the Petition, and the causes of action raised in the Petition (collectively, the "Litigation"), subject to paragraph 6.

b. The Parties acknowledge and agree that this Agreement is a complete general release of the Litigation. Each party understands that it is possible that an unknown injury, damage, diminution or loss, action, suit, lien, theory of recovery, lawsuit, claim, or cause of action arising out of or related to the Litigation may exist which, if known by any of the Parties, would have materially affected their decision to release and discharge the unknown claim as set forth herein. Each of the Parties expressly acknowledges that it took that possibility into account in determining the consideration given and accepted for entering into this Agreement and each expressly waives California Civil Code § 1542, which provides:

> A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which if known by him or her must have materially affected his or her settlement with the debtor.

5. <u>Counterparts</u>**.** This Agreement may be executed in counterparts, and together the counterparts shall be deemed as one original Agreement.

6. <u>Exception to Release</u>**.** Nothing herein shall be construed as a release by any Party of any obligation or claim that arises out of a breach of this Agreement. Nothing contained herein shall be deemed to release, discharge or otherwise affect any of the rights or duties of the parties hereto under this Agreement or any document executed in connection with or incorporated into this Agreement. Nothing herein shall be construed to release, discharge or otherwise affect any rights or claims of the parties hereto against non-parties to this Agreement, including, but not limited to any rights or claims of any of the Respondents against Forward Landfill, Inc. under the Regional Water Quality Control Board's cleanup and abatement order and/or any law or regulations applicable to the groundwater contamination, remediation, and/or the provision of potable water to the CDCR Property.

7. <u>Warranty of Authority</u>**.** Each individual signing this Agreement represents and warrants that he or she has the power and authority to bind the entity or individual on behalf of whom he or she is signing. The Parties each understand that the other is relying on this representation in entering into this Agreement.

8. California Law. This Agreement shall be construed and enforced pursuant to the laws of the State of California. This document shall not presumptively be construed against any Party preparing it.

9. Written Modifications Only. The terms of this Agreement shall not be modified or amended except in writing, signed by all parties or their designated representatives for such purpose.

10. Enforcement**.** The terms of this Agreement are contractual, not merely recitals. This Agreement is the result of negotiations between the Parties. In any action or proceeding arising out of, or based upon, this Agreement, the prevailing party shall be entitled to recover, in addition to costs and other expenses, its reasonable attorneys' fees incurred in connection with such action or proceeding.

11. Retention of Jurisdiction**.** The United States District Court, Eastern District of California, shall retain jurisdiction to adjudicate any matters which may arise as a result of disputes over the terms, conditions, enforcement of, or interpretation of this Agreement.

12. Integrated Agreement. It is understood and agreed that this Agreement contains the entire agreement among the parties. The terms of this Agreement comprise the final expression of the understanding of the Parties with respect to its terms. This Agreement comprises a completely integrated contract.

13. Effective Date**.** This Agreement shall become effective immediately following execution by all of the Parties on the latest date appearing below.

14. Time is of the Essence**.** Time is of the essence in this Agreement.

15. No Admission of Liability**.** It is understood and agreed that this Agreement is the compromise of disputed claims made by Petitioners, and that the terms of this Agreement are not to be construed as an admission of liability on the part of Respondents, who expressly deny any such liability.

16. Advice of Counsel**.** Each Party has been represented by the attorney of that Party's choice with respect to the matters that are the subject of this Agreement and has been advised with respect to the rights and obligations that the Party assumes by executing this Agreement and is aware of the content and legal effect of this Agreement.

IT IS HEREBY AGREED:

Dated:_____________, 2010

Greater Stockton Chamber of Commerce

By:__________________________________
Rich Goucher
President

Dated:_____________, 2010

City of Stockton

By:__________________________________

Dated:_____________, 2010

County of San Joaquin

By:__________________________________

Dated:_____________, 2010

Receiver

By:__________________________________
J. Clark Kelso, Receiver

Dated:_____________, 2010

California Prison Healthcare Receivership Corp.

By:__________________________________
J. Clark Kelso, President

Dated:_____________, 2010

State of California Department of Corrections and Rehabilitation

By:__________________________________
Matthew L. Cate, Secretary

Approved as to Form:

Herum Crabtree

By:__________________________________
Steven A. Herum

Attorney for Petitioners Greater Stockton Chamber of Commerce, County of San Joaquin and City of Stockton

County of San Joaquin, Office of the County Counsel

By:__________________________________

David E. Wooten

County Counsel

City of Stockton, Office of the City Attorney

By:__________________________________

John M. Luebberke

Interim City Attorney

McDonough, Holland & Allen, PC

By:__________________________________

Harriet A Steiner

Attorney for Respondents J. Clark Kelso, Receiver,
and California Prison Healthcare Receivership, Corp.

Receiver's Office of Legal Affairs

By:__________________________________

Evelyn M. Matteucci

Chief Counsel, Construction
Office of the Receiver

Miller Starr Regalia

By:__________________________________

Arthur F. Coon

Attorney for Respondent State of California Department
of Corrections and Rehabilitation

EXHIBIT 1

County Rights of Way Technical Items

1. An encroachment permit shall be required for all work within road right-of-way. Standard adopted county Plan Check fees and an Field Inspection Fees shall be paid for work in the county rights of way.

2. Dedication to result in a 30-foot wide right-of-way from the centerline of Austin Road to the property line shall be required in conformance with the standards for one half of a 60-foot right-of-way Rural Collector, plus an additional eighteen (18') foot irrevocable offer of dedication based on the City of Stockton's General Plan ultimate right-of-way for Austin Road, shall be required from the Arch Road-Austin Road intersection to the project's southerly boundary.

3. Frontage improvements on Austin Road shall be constructed in conformance with the standards for one half of a 60-foot right of way Rural Collector Road including streetlights, if required, from the Arch Road-Austin Road intersection to the project's southerly boundary.

4. Additional requirements on Austin Road to include:

   - A traffic signal at the project entrance.

   - Acceleration/deceleration and northbound turn lanes at the project entrance.

   - Dedication of sufficient right-of-way to accommodate these improvements.

5. Building setbacks shall be based upon required dedications along Austin Road.

6. The driveway approaches on Austin Road shall be improved in accordance with the requirements of San Joaquin County Standards R-17.

7. All offsite improvements shall be in conformance with the current Improvement Standards and Specifications of the County of San Joaquin. The improvement plans and specifications are subject to plan check, field inspection fees (per Attachment A) and must be approved by the County of San Joaquin Department of Public Works. (Development Title Section 9-240, Section 9-910, Section 9-1100 and R-92-814).

8. All traffic signs and markings shall conform to the latest version of the Manual on Uniform Traffic Control Devices, and/or San Joaquin County Standards and shall be shown on the improvement plans. Improvement plans shall specifically show signing and striping on Austin Road and at the intersection of Austin Road and Arch Road. (Development Title Section 9-1150.2) (Development Title Section 9-1150.2)

9. Prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) meeting the requirements of the current State Water Resources Control Board (SWRCB) Waste Discharge Requirements (WDRs) for Discharges of Stormwater Runoff Associated with Construction activity (General Permit). Developer shall submit the SWPPP to San Joaquin County Public Works for approval. A copy of the approved SWPPP and all required records, updates, test results and inspection reports shall be maintained on the construction site and be available for review by any County, State or Federal employee on demand. Developer shall file a Notice of Intent (NOI) with the State Water Resources Control Board (SWRCB). The Waste Discharge Identification Number (WDID), issued by the SWRCB shall be submitted to San Joaquin County Public Works.

ATTACHMENT A

Plan Check Fees			
Plan Check Fees (1st $150,000)	7.22%	% of Project Cost	7.22%
Plan Check Fees ($150,001 to $400,000)	4.20%	% of Project Cost	4.20%
Plan Check Fees (Over $400,000)	1.95%	% of Project Cost	1.95%
Field Inspection Fees			
Field Inspection Fees (up to $200,000)	8.86%	% of Project Cost	8.86%
Field Inspection Fees ($200,001 to $500,000)	3.85%	% of Project Cost	3.85%
Field Inspection Fees ($500,001 to $1,000,000)	2.75%	% of Project Cost	2.75%
Field Inspection Fees (over $1,000,000)	2.25%	% of Project Cost	2.25%

Plan check and inspection fees are based on the costs of offsite improvements.

EXHIBIT 2

Exhibit 2 of this Settlement Agreement, San Joaquin General Hospital Agreement, No. 10-01088, between the San Joaquin County and the California Department of Corrections and Rehabilitation ("CDCR") is exempt from disclosure to the public under the California Public Records Act, Government Code section 6254.14.

For more information or inquiries regarding this Agreement, please contact the CDCR Public Records Act Unit or the Clerk of the Board of Supervisors of San Joaquin County.

EXHIBIT 3

When recorded return to:
Carolyn Avra
City of Stockton
Municipal Utilities Department
2500 Navy Drive
Stockton, CA 95206

MUNICIPAL UTILITIES DEPARTMENT
After signing Transmit Copy to:

___ CDCR
___ Community Development Director
___ Public Works Director
____City Clerk (Original)

OWNER NAME(S) ______________________________
(as shown on deed)
____

MAILING ADDRESS ______________________________
____

PROPERTY ADDRESS ______________________________

ASSESSOR PARCEL NUMBER ______________________________

CITY OF STOCKTON

DEFERRED ANNEXATION AGREEMENT

This Deferred Annexation Agreement is entered into this ________ day of ___________, 2010, by and between the State of California, acting through the Department of Corrections and Rehabilitation, hereinafter referred to as "CDCR" and the City of Stockton, hereinafter referred to as "CITY."

WHEREAS, CDCR is the owner of certain real property located within the unincorporated area of San Joaquin County, as shown on the attached Exhibit A; and

WHEREAS, CDCR and CITY have agreed that CITY will provide CITY water service to the CDCR property as set forth in that certain Settlement Agreement dated __________ (Settlement Agreement) ; and

WHEREAS, the CITY has provided sewer service to the CDCR Property since 1964, and will continue to provide sewer service to the CDCR Property; and

WHEREAS, in furtherance of the Settlement Agreement and the provision of water service, CDCR has filed an application with the CITY for water service outside the corporate boundaries of the CITY; and

WHEREAS, as set forth in the Settlement Agreement, CDCR has agreed that CITY may annex the CDCR Property if it is feasible to do so; and

WHEREAS, the City and CDCR have agreed that the City will not pursue annexation of the CDCR Property for at least five (5) years from the date of full occupancy of the CHCF, as defined in the Settlement Agreement, and thereafter, may determine if or when, the CITY would annex the CDCR Property to the CITY; and

WHEREAS, water service to the CDCR property is necessary in the interest of the public health at this time; and.

NOW, THEREFORE, the parties have agreed as follows:

1. As set forth in the Settlement Agreement, the relevant portions of which are attached hereto as Exhibit B , CITY will connect the CDCR Property to the City water system and provide CITY water service to the CDCR Property, upon CDCR's request for connection.

2. In accordance with the Settlement Agreement, after commencement of CITY water service, CDCR will pay CITY monthly water usage charges, or portions thereof, for CITY water delivered to the CDCR Property.

3. CDCR will notify CITY in writing if the CDCR Property undergoes a transfer in ownership. Notification shall be made by depositing a written notice in the U. S. Mail, postage prepaid, addressed as follows: Director of Municipal Utilities, City of Stockton, 425 North El Dorado Street, Stockton, CA 95202.

4. Subject to, and in accordance with, the terms and conditions of the Settlement Agreement and this Agreement, CDCR hereby consents to the annexation of the CDCR Property to the City of Stockton. CDCR hereby waives any right to protest the annexation and assigns to the CITY any right to vote on the annexation. As set forth in the Settlement Agreement, CDCR makes this consent and waiver on the express condition that CDCR is not, and shall not be, subject to any charges, fees, impact fees or exactions by reason of this consent and/or to the annexation of the property to the CITY.

5. The City, at its option, may apply to San Joaquin Local Agency Formation Commission (SJLAFCO) for annexation of the CDCR Property at any time, but no sooner than

five (5) years following the full occupancy of the CHCF. The term "full occupancy" is defined as the operation of the facility at 80% of total bed capacity (or 1585 beds of the total 1,722 beds).

6, The CDCR Property may only be prezoned to a "Public Facilities" (PF Zone) or other similar use in recognition that the entire CDCR Property will be committed to correctional or other state uses for the foreseeable future.

7. The City acknowledges and accepts that the CDCR will advocate that the SJLAFCO refrain from detaching the CDCR property from the Montezuma Fire District and/or the Collegeville Fire District. Regardless of the determination of the fire service issue, CDCR shall not be required to pay any fees, costs or other impact fees to the City related to the provision of fire service to the CDCR property other than those fees and costs paid to the fire district(s), at the time of annexation application.

8. As set forth in the Settlement Agreement and subject the provisions and conditions set forth therein, CDCR agrees to address the environmental consequences, if any, of the potential annexation of the CDCR Property to the City in its Environmental Impact Report (EIR) for the NCRF and DeWitt Nelson projects;

9. This agreement shall be binding upon, and inure to the benefit of, all heirs, assignees, or successors-in-interest of the above named parties as a covenant that runs with the land.

10. In the event of any conflict between the terms of this Agreement and the Settlement Agreement, the terms of the Settlement Agreement shall prevail.

IN WITNESS WHEREOF, the parties hereto have affixed their signatures as of the date first written above.

APPROVED AS TO FORM: CITY OF STOCKTON

By__________________________
DEPUTY CITY ATTORNEY

____
KEVIN O'ROURKE
INTERIM CITY MANAGER

CITY ACKNOWLEDGMENT

STATE OF CALIFORNIA)
)ss
COUNTY OF SAN JOAQUIN)

On ______________before me, ____
(Name, Title of Officer)

personally appeared ________________________, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

____
Signature of Notary

CDCR(S)

____________________________ _________________________________

<u>CDCR ACKNOWLEDGMENT</u>

STATE OF CALIFORNIA)
) ss
COUNTY OF SAN JOAQUIN)

On _______________before me, ____
(Name, Title of Officer)

personally appeared _________________________, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

____
Signature of Notary

EXHIBIT A

LEGAL DESCRIPTION

EXHIBIT B

EXCERPTS FROM SETTLEMENT AGREEMENT

I. CITY OF STOCKTON ANNEXATION, WATER AND SEWER AGREEMENTS

A. San Joaquin Local Agency Formation Commission ("SJLAFCO"): Out of Agency Water Agreement and Annexation.

CDCR has agreed to seek SJLAFCO approval in order to facilitate the water delivery infrastructure originally proposed by Forward Landfill Inc. in its effort to comply with the Central Valley Regional Water Quality Control Board Cleanup and Abatement Order No. 5-2008-0714, dated December 8, 2008 directing Forward Landfill to provide the CDCR Property with drinking water.

1.a. Water Service: CDCR shall apply to the City for an Out of Agency water extension from SJLAFCO for authorization to allow the City to provide water service to the CDCR Property. CDCR will be responsible to pay for the City's application fee and the applicable SJLAFCO processing fee. These fees will be based on the administrative costs of such actions by the respective agencies. The respective applications will be filed not later than 30 days after project approval by the State Public Works Board ("PWB"). However, the applications may be filed at any earlier time that CDCR and the Receiver determine is appropriate. The City agrees to diligently pursue SJLAFCO approval of the authority to provide the water service. The City will support and advocate for the application to SJLAFCO for the Out of Agency water service extension approval. San Joaquin County will not oppose the Out of Agency water service extension.

At CDCR's request, SJLAFCO has determined that the processing fees and other costs that SJLAFCO may charge CDCR for the Out of Agency water extension shall not exceed $13,500. The total cost of all fees and costs for the City processing of the Out of Agency water extension set forth in this section 1.a, shall not exceed $35,000 in total (the $35,000 includes only the City's processing fees and costs for the Out of Agency water extension application to SJLAFCO, and does not include SJLAFCO's fees and costs, as set forth above). If the City's costs for the Out of Agency water extension application and approval exceed $35,000 in total, the City shall pay any amount in excess of $35,000. Except as provided in this Paragraph 1.a, no additional fees or charges or impact fees shall be incurred by CDCR for the Out of Agency water extension.

Notwithstanding the foregoing, if SJLAFCO denies the Out of Agency water service extension, then CDCR and the Receiver shall have the option, at their discretion, (1) to terminate this Agreement as to the City, in which case the City's lawsuit (*Greater Stockton Chamber, et al v. J. Clark Kelso, et al.* Eastern District of California, Case No. 2:09-cv-03308-LKK-JFM) may proceed as to the City only, and the City, CDCR and the Receiver shall have no further obligations to one another hereunder; or (2) to instruct the City to extend water service as set forth herein. If CDCR or the Receiver so instructs the City, then the City shall extend the identified water service pursuant to the terms of this Agreement without regard to whether the Out of Agency water service extension has been granted. If any litigation is filed naming the City as a party and challenging the City's right to extend the identified water service without the Out of Agency water extension approval, then CDCR and the Receiver shall defend, indemnify and hold the City harmless with respect to such litigation. The City agrees to cooperate with CDCR and the Receiver in any such litigation.

1.b. Annexation: Concurrently with application for approval of Out-of-Agency water service to the CDCR Property, CDCR shall enter into a Deferred Annexation Agreement with the City in the form attached hereto as Exhibit 3, in implementation of City's Policy 900-1, to facilitate the provision of water service to the CDCR Property and to facilitate the City's policy of requiring annexation, when feasible, as a condition of agreeing to provide new water service to properties outside of the City. The Deferred Annexation Agreement shall provide that (1) the City, at its option, may apply to SJLAFCO for annexation of the CDCR Property at any time, but no sooner than five (5) years following the full occupancy of the CHCF. The term "full occupancy" is defined as the operation of the facility at 80% of total bed capacity (or 1585 beds of the total 1,722 beds); (2) the CDCR Property may only be prezoned to a "Public Facilities" (PF zone) or other similar use in recognition that the entire CDCR Property will be committed to correctional and other state uses for the foreseeable future; (3) CDCR agrees to address the environmental consequences, if any, of the potential annexation of the CDCR Property to the City in its Environmental Impact Report (EIR) for the Northern California Re-entry Facility (NCRF) and DeWitt Nelson projects; (4) CDCR will pay the City, not later than ninety (90) days after the full execution of the Design/Build contract for the CHCF, the sum of $235,000, which sum shall be the total cost of all fees and costs for the respective SJLAFCO and City processing of prezoning and annexation and all fees and costs associated with the annexation of the CDCR Property to the City regardless of when such annexation occurs, if ever, and regardless of what environmental review costs, processing fees, impact fees, or exactions the City may require or determine necessary for annexation of the CDCR Property. Except for fees and charges contemplated in Section 2.c and Section 2.f of this Agreement, no additional fees or charges or impact fees shall be incurred by CDCR for the water service and/or annexation; and (5) the City acknowledges and accepts that the CDCR will advocate that the SJLAFCO refrain from detaching the CDCR property from the Montezuma Fire District and/or the Collegeville Fire District. Regardless of the determination of the fire service issue, CDCR shall not be required to pay any fees, costs or other impact fees to the City related to the provision of fire service to the CDCR property other than those fees and costs being paid to the fire district(s), at the time of annexation application, if any.

City further agrees that, in consideration of the terms of the Deferred Annexation Agreement as set forth above, and in further consideration for the settlement of the Litigation, the City will not comment on, or challenge, in any manner or in any judicial or administrative proceeding or forum, the adequacy of, or legal sufficiency of, the EIR for the NCRF and DeWitt Nelson projects, as such EIR relates to the annexation of the CDCR Property to the City and shall not sponsor, encourage, authorize, solicit, finance or otherwise assist the filing of an action by any third party, in any judicial or administrative forum challenging the adequacy of, or legal sufficiency of, such EIR. Nothing in this Agreement shall preclude the City from submitting comments pursuant to CEQA or challenging the legal sufficiency of the EIR for the NCRF and DeWitt Nelson Projects concerning physical environmental impacts of the NCRF and DeWitt Nelson Projects not related to the annexation of the CDCR Property to the City and the resultant boundary change of the City.

2. City Water.

2.a. City shall cooperate with Forward Landfill, Inc. in the construction of two water lines and installation of two water meters in Newcastle Road, one 24" diameter line ("Line A") and associated 12" diameter meter ("Meter 1") and one 16" diameter line ("Line B") and associated 12" diameter meter ("Meter 2"), to supply water for the CDCR Property, as depicted on Exhibit 4. The construction and meters shall be at no cost to CDCR.

2.b. All on-site water system infrastructure on the CDCR Property shall be owned and maintained by CDCR.

2.c. CDCR will not pay the City for any water service for a period of one year from the time of commencement of City water usage by CDCR on the CDCR Property. "Commencement" shall be deemed to occur when CDCR requests connection to the meter and the meter is installed. For years two and three CDCR will pay 20% and 30%, respectively, of the City's monthly water usage charges, in accordance with City's Water Rate Fees and Regulations at that time. For year four, CDCR shall pay 50% of the City's' monthly water usage charges. Thereafter, payment shall escalate 10% per year for the next five years such that at the beginning of the ninth year CDCR will pay 100% of the applicable rate thereafter. The monthly water usage charges (or the applicable percentage thereof as discussed above under this paragraph) shall be based on the standard user charge for applicable municipal customers as established by City Ordinance, Resolution, or Policy. The City Ordinance, Resolution or Policy shall not be amended to establish discriminatory rates. The monthly water usage charges shall not be adjusted more frequently than once in any twelve month period.

2.d. Unless the Water Board directs that the three contaminated wells (Wells #1, #2 and #3) must remain operable for monitoring purposes, CDCR will abandon and destroy these contaminated on-site water wells at no cost to the City. The City shall assist CDCR in securing well closure permits from the County.

2.e. CDCR retains the right to continue use of the existing well (Well #4) which is currently uncontaminated and will retain the right to drill, install, and operate new wells on the property in the event that CDCR, in its sole discretion, determines that additional wells are necessary for the operation of its facilities on the CDCR Property. CDCR acknowledges that if water from the remaining well, or from additional wells, is used on the Property, CDCR will be solely responsible for preventing, through the use of mechanical (e.g. air gaps) and operational means, any co-mixed City-supplied and well-supplied water, and/or any well supplied water from entering the City's water supply system. This will be accomplished through use of a backflow preventer located where the city municipal water line enters the

CDCR property. This Agreement (or the provision of water by the City to the CDCR Property) does not prevent CDCR from mixing City water and CDCR well water for use on the CDCR Property, provided that the resultant mixed water meets applicable water quality standards and provided further that CDCR and the City have agreed that the CDCR backflow preventer is adequately designed to prevent any mixed water from entering the City's water supply system, which agreement will not be unreasonably withheld. All improvements made to the existing water distribution systems on the CDCR Property will be in conformance with Title 24 or City's applicable building code and other applicable codes and standards.

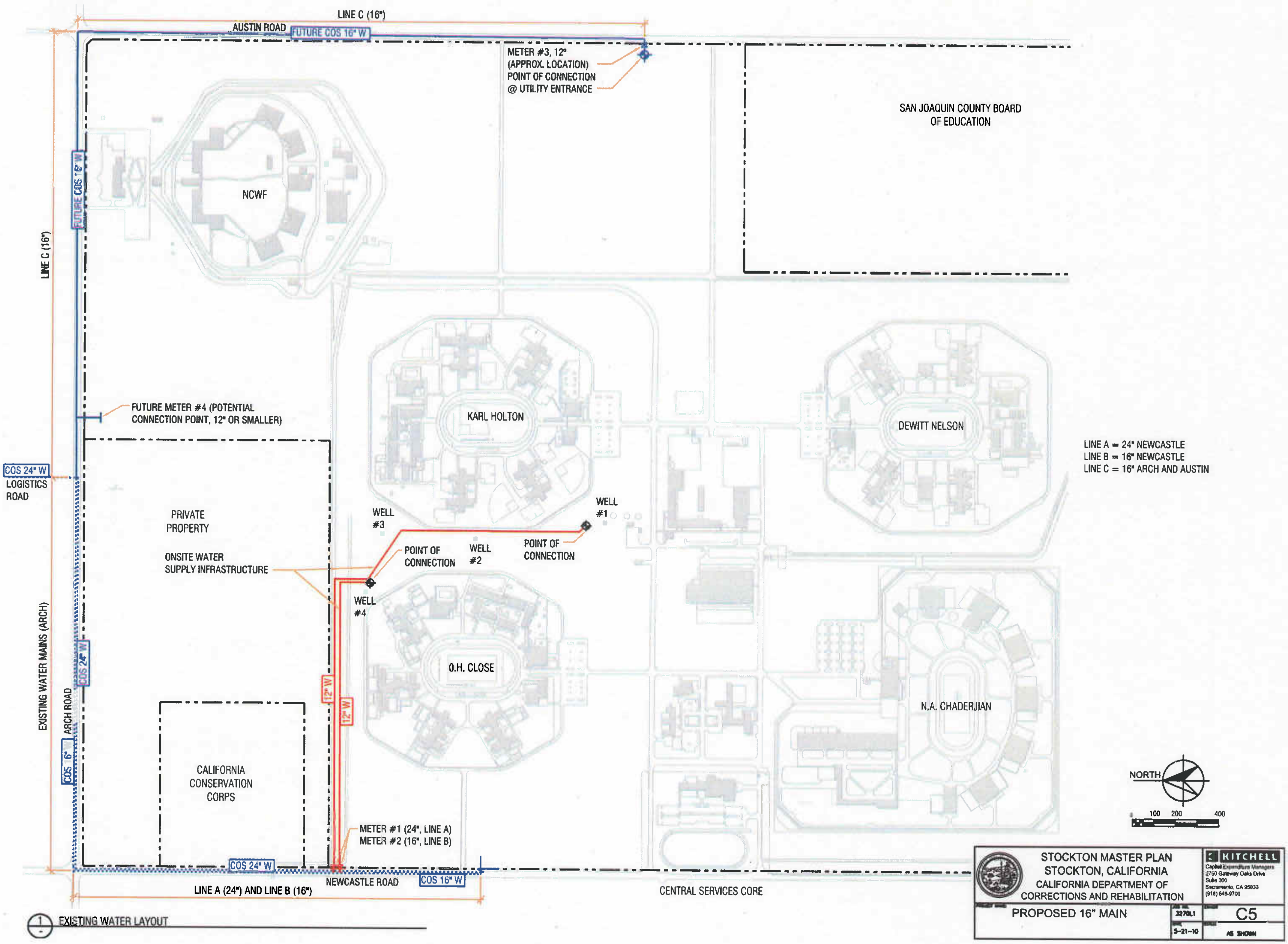
2.f. CDCR shall construct and pay for a 16" diameter water main in Arch Road and Austin Road (approximately 6,300 linear feet, traveling from the intersection of Logistics Drive with Arch Road and continuing eastward to Austin Road, and turning south to the point of the utility entrance to the CHCF site) ("Line C") with one water meter ("Meter 3") to provide for a looped system to serve the CDCR Property. Meter 3 will be sized as necessary to serve the CDCR Property (including, without limitation, the existing or planned facilities on the CDCR Property) but shall be no larger than a 12" diameter meter and will be located near the entrance of the CHCF on Austin Road and/or in close proximity to the property line of the adjacent non-state-owned parcel immediately south of the CHCF. The City will reimburse CDCR for any oversizing of Line C (over 12 inches) per City policy. CDCR will pay the standard rates for connection fees as established by the Stockton Municipal Utilities Department Water Fee Schedule in effect at the time application for water service is made based upon the necessary meter size to serve the water demand for the facilities (the "Connection Fees"). It is agreed that the cost of the Connection Fees will be conclusively deemed to include any and all meters, surcharges for the recovery of capital fees and water distribution costs for regional water distribution systems and all other customary, nondiscriminatory charges and fees applicable to connection to the City's water system, including but not limited to, the City's standard connection fee, the Surface Water Fee (also known as the New Melones Water Conveyance Project Fee and the Water Supply Impact Mitigation Fee) and the Delta Water Supply Project Fee. Based on the City's current fee schedule, the estimated cost for the Connection Fees for a 12"diameter meter is approximately $1.3 million dollars. CDCR shall pay the Connection Fees when the application for water service connection is submitted by CDCR to the City. City shall provide written confirmation to the County and CDCR that the Surface Water Fee, as defined above, has been paid in full to the agencies that receive that Fee. City and CDCR shall indemnify the County against any claim against the County that the Surface Water Fee, as defined above, has not been paid.

2.g. Upon installation of Line C, and installation of Meter 3 at the Austin Road connection as described above, the City may remove Meter 1 and associated connection to Line A (the 24 inch water main in Newcastle Road). At the election of CDCR and with CDCR's determination that the CDCR property and facilities located on the CDCR property require an additional meter and connection from Line C in Arch Road ("Meter 4"), the City will charge and CDCR will pay one-half of the cost of the customary Connection Fees at the time this water service connection is submitted by CDCR to the City.

3. City Sewer Service to the CDCR Property. The City commits to continue providing sewer service to the CDCR Property pursuant to the existing sewer service agreement through the duration of that agreement (through 2018). Beyond the date of expiration of that agreement, City commits to continue to provide sewer service to the CDCR Property at 800,000 gallons per day provided that CDCR pays the monthly user charge established for applicable municipal customers as lawfully established by City Ordinance, Resolution, or Policy. The City Ordinance, Resolution or Policy shall not be amended to establish discriminatory rates. The user charge shall not be adjusted more frequently than once in any twelve month period. The City and CDCR agree that sewer service to the CDCR Property predates the adoption of City Policy 900-1 and any requirement for SJLAFCO approval of Out of Agency service extensions and that, therefore, no additional approvals are required to continue City sewer service to the CDCR property.

If, as part of the construction planning for CDCR facilities on the CDCR Property, or during the subsequent operation of the CDCR facilities, it is established that the sewer service demand for the CDCR facilities exceeds 800,000 gallons per day, then CDCR shall apply to the City for the additional necessary capacity and pay the non-discriminatory sewer connection charges for the additional necessary capacity over 800,000 gallons per day and construct any necessary infrastructure imposed according to the City's ordinances, policies and standards in effect at the time of the request for the additional capacity. The City shall apply the fee schedule in effect at that time to determine the connection fees. CDCR shall be subject to any and all adjustments adopted City wide. It will be deemed established that the sewer service demand for the CDCR facilities during operation of the facilities exceeds 800,000 gallons per day if the City so determines based on substantial evidence provided through the flow recording meter(s) maintained by the City's Department of Municipal Utilities in accordance with the then existing permit.

EXHIBIT 4



LINE C (16")
AUSTIN ROAD
FUTURE COS 16" W
METER #3, 12" (APPROX. LOCATION) POINT OF CONNECTION @ UTILITY ENTRANCE
SAN JOAQUIN COUNTY BOARD OF EDUCATION
NCWF
LINE C (16")
FUTURE METER #4 (POTENTIAL CONNECTION POINT, 12" OR SMALLER)
KARL HOLTON
DEWITT NELSON
LINE A = 24" NEWCASTLE
LINE B = 16" NEWCASTLE
LINE C = 16" ARCH AND AUSTIN
COS 24" W
LOGISTICS ROAD
PRIVATE PROPERTY
ONSITE WATER SUPPLY INFRASTRUCTURE
WELL #3
WELL #1
POINT OF CONNECTION
WELL #2
POINT OF CONNECTION
WELL #4
EXISTING WATER MAINS (ARCH)
ARCH ROAD
COS 6" W
COS 24" W
12" W
12" W
O.H. CLOSE
N.A. CHADERJIAN
CALIFORNIA CONSERVATION CORPS
NORTH
100 200 400
METER #1 (24", LINE A)
METER #2 (16", LINE B)
COS 24" W
NEWCASTLE ROAD
COS 16" W
LINE A (24") AND LINE B (16")
CENTRAL SERVICES CORE
1 EXISTING WATER LAYOUT
STOCKTON MASTER PLAN
STOCKTON, CALIFORNIA
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION
PROPOSED 16" MAIN
KITCHELL
Capital Expenditure Managers
2750 Gateway Oaks Drive
Suite 300
Sacramento, CA 95833
(916) 648-9700
3270L1
C5
5-21-10
AS SHOWN

EXHIBIT 5

COVENANT NOT TO SUE

This Covenant Not to Sue is entered into this ______ day of _____, 2010 by and among the Greater Stockton Chamber of Commerce, J. Clark Kelso, in his capacity as Receiver, the California Prison Healthcare Receivership Corporation, and the California Department of Corrections and Rehabilitation who agree as follows:

RECITALS

A. WHEREAS, the Greater Stockton Chamber of Commerce ("Chamber'), the City of Stockton and the County of San Joaquin (collectively "Petitioners") filed a petition for writ of mandate against J. Clark Kelso, in his capacity as Receiver ("Receiver"), the California Prison Healthcare Receivership Corporation ("CPR"), and the California Department of Corrections and Rehabilitation ("CDCR") (referred to collectively as Respondents) in the Superior Court of San Joaquin County (*Greater Stockton Chamber of Commerce, et al. v. J. Clark Kelso, et al.,* Case No. 39-2009-230310-CU-WM-STK), alleging that Respondents' certification of the Final EIR and approval of the CHCF Project violated CEQA and Respondents thereafter removed the case to the United States District Court, Eastern District of California and the case is now before Judge Lawrence K. Karlton for all further proceedings (Case No. 2:09-cv-03308-LKK-JFM) (the "Litigition"); and

B. WHEREAS, the Parties (the Petitioners and the Respondents, collectively) have agreed to settle the Litigation and the Parties have entered into a Settlement Agreement; and

C. WHEREAS, the Settlement Agreement provides that the Chamber will provide a covenant not to sue, as set forth herein; and

D. WHEREAS, the Settlement Agreement provides that CDCR and/or the Receiver, upon receipt of an executed Covenant Not to Sue from the Chamber, shall proceed to pay to the

Chamber, the Chamber's portion of Petitioners' reasonable attorney's fees, not to exceed seventy thousand dollars ($70,000.00).

Now, therefore, the Chamber ("Covenantor"), CDCR, CPR and the Receiver (collectively "Covenantees") hereby covenant as follows:

SECTION ONE

COVENANT NOT TO SUE

Covenantor will not institute, prosecute, or pursue or threaten to institute, prosecute or pursue any action, suit or other proceeding, whether judicial or administrative, at law or in equity, against any, or all, of the Covenantees, jointly or severally, nor institute, prosecute or pursue or in any way aid in the institution, prosecution or pursuit of any claim, demand, action, or cause of action for injunctive or declaratory relief, damages, costs, loss of services, expenses, or compensation for or on account of any damage, loss or injury either to person or property, or both, whether developed or undeveloped, resulting or to result, known or unknown, past, present or future, which is based upon, arises out of, or is in any way related to the Environmental Impact Report (EIR) for, and/or the approval of, either, or both, of the two new and/or re-purposed facilities: 1) the re-purposed De Witt Nelson facility and 2) the re-purposed Northern California Women's Facility (NCWF) facility, also know as the new Re-Entry facility or the Northern California Re-Entry Facility (NCRF).

SECTION TWO

PAYMENT NOT AN ADMISSION

It is understood by Covenantor that the payment made hereunder is in compromise of the Litigation, described above, and in consideration of the covenant not to sue contained herein, and is not to be construed as an admission of liability on the part of Covenantees, or any of them, which liability has been expressly denied.

SECTION THREE

RESERVATION OF RIGHTS

Except as provided in the Settlement Agreement, Covenantor expressly reserves all rights of action, claims and demands against any and all persons other than Covenantees. This instrument is a covenant not to sue, and not a release.

SECTION FOUR

BINDING EFFECT OF COVENANT

This covenant shall inure to the benefit of Covenantees, jointly and severally, and their legal representatives, agents, assignees and successors, including, but not limited to, any future receiver, director, secretary, or other person appointed to oversee the operations of CDCR or to oversee medical services provided to inmates under the jurisdiction of CDCR. This covenant shall bind Covenantor, and its legal representatives, agents, assignees, and successors.

SECTION FIVE

ENTIRETY CLAUSE

This instrument reflects the entire covenant between Covenantor and Covenantees, and no statements, promises or inducements made by Covenantee or any agent of any Covenantee which are not contained in this covenant not to sue shall be valid or binding. This covenant supplements but does not replace the Settlement Agreement, which shall remain in full force and binding against and among the parties to the Settlement Agreement.

SECTION SIX

COVENANT UNDERSTOOD BY COVENANTOR

Covenantor has carefully read the foregoing covenant not to sue and knows and understands the content thereof.

SECTION SEVEN

AUTHORITY TO EXECUTE

Covenantor warrants that the person or persons signing below have the full and complete authority to bind the Covenantor to this Covenant.

SECTION EIGHT

COMMENTS ON THE EIR AND PROJECT APPROVAL FOR DE WITT NELSON AND NCRF

Except as provided in this Covenant, this Covenant shall not prevent, limit or restrict the right of the Covenantor from participating in the administrative process regarding review of the EIR by providing oral or written comments on the EIR and/or on the approval of the re-purposed De Witt Nelson facility and/or the re-purposed Northern California Women's Facility (NCWF) facility, also know as the new Re-Entry facility or the Northern California Re-Entry Facility (NCRF), either individually or collectively.

SECTION NINE

PAYMENT

In consideration of this Covenant, Covenantees shall pay to the Covenantor the sum of seventy thousand dollars ($70,000) within 15 days of receipt by Covenantee of execution of this Covenant by Covenantor, execution of the Settlement Agreement by all the Parties to the Litigation and receipt by the Covenantees of a request for dismissal of the Litigation with prejudice executed by the Parties, whichever occurs last.

In witness whereof, Covenantor has executed this Agreement and Covenant at ______________________________ (designate place of execution) and CDCR, CPR and the Receiver have executed this Agreement and Covenant at Sacramento, California, as of the day and year stated below.

Dated:____________, 2010

Greater Stockton Chamber of Commerce

By:______________________________
Rich Goucher, President

Dated:____________, 2010

Receiver

By:______________________________
J. Clark Kelso, Receiver

Dated:____________, 2010

California Prison Healthcare Receivership Corp.

By:______________________________
J. Clark Kelso, President

Dated:____________, 2010

State of California Department of Corrections and Rehabilitation

By:______________________________
Matthew L. Cate, Secretary

Approved as to Form:

Herum Crabtree

By:______________________________
Steven A. Herum

Attorney for Petitioner Greater Stockton Chamber of Commerce,

McDonough, Holland & Allen, PC

By:____________________________
Harriet A Steiner

Attorney for Respondents J. Clark Kelso, Receiver,
and California Prison Healthcare Receivership, Corp.

Receiver's Office of Legal Affairs

By:____________________________
Evelyn M. Matteucci

Chief Counsel, Construction
Office of the Receiver

Miller Starr Regalia

By:____________________________
Arthur F. Coon

Attorney for Respondent State of California Department
of Corrections and Rehabilitation

**State of California Department
of Corrections and Rehabilitation**

By:____________________________
Benjamin Rice

General Counsel

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AMENDMENT NO. 1
TO
AGREEMENT FOR SEWAGE DISPOSAL

THIS AMENDMENT TO AGREEMENT, made and entered into this 13th day of June, 1973, by and between the STATE OF CALIFORNIA, by and through its duly appointed, qualified and acting Director of Youth Authority, hereinafter referred to as "State", and the CITY OF STOCKTON, a Municipal Corporation, hereinafter referred to as "City".

W I T N E S S E T H:

WHEREAS, the State of California, acting by and through its duly appointed, qualified and acting Director of Youth Authority, hereinafter referred as "State" and the City of Stockton, a Municipal Corporation, hereinafter referred to as "City", entered into an agreement on the 10th day of June 1964, whereby the City agreed to provide sewage capacity rights to the State on terms and conditions and for consideration therein set forth, and

WHEREAS, terms of said agreement anticipated a greater expected capacity than that now experienced and forecast for the future, due to decreased construction plans, and

WHEREAS, State desires to reduce the maximum capacity and eliminate the final payment, and

WHEREAS, City, in consideration of State's dedication to the City of a certain portion of the sewer line, has agreed to waive final payment.

NOW THEREFORE, the parties hereto do mutually agree to amend said agreement as follows:

A portion of the first sentence of Article 1, page two, now reading "for the transportation, treatment and disposal of one million two hundred thousand (1,200,000) gallons of sewage daily flow from said property of State or any addition thereto or portions thereof" shall be amended to read "for the transportation, treatment and disposal of eight hundred thousand (800,000) gallons of sewage daily flow from said property of State or any addition thereto or portions thereof".

Article 2, page two, now reading "State shall pay to City the sum of $423,100.00, which parties agree is an equitable portion of the cost of existing improvements to City's Sewage Facility to provide the sewage capacity for the use of the State as set forth above" shall be amended to read "State shall pay to the City the sum of $282,100.00, which parties agree is an equitable portion of the cost of existing improvements to City's Sewage Facility to provide the sewage capacity for the use of the State as set forth above".

Article 3(a), on page 2, now reading "(a) City shall adequately accept, transport, treat and dispose of all sewage emanating from the said property of the State, or any addition thereto or portion thereof, in the City's Sewage Facility, in an amount not to exceed 1,200,000 gallons per day, nor 2,100 gallons per minute." shall be amended to read "(a) City shall adequately accept, transport, treat and dispose of all sewage emanating from the said property of State, or any additions thereto or portion thereof, in the City's Sewage Facility, in an amount not to exceed 800,000 gallons per day nor 1,400 gallons per minute." peak flow (not ave day)

2.5 factor

2.5 factor

M-FILM 73-74

Article 3(e), on page 3, now reading "(3) The third payment in the sum of $141,000.00 to be paid at the time the State first disposes of eight hundred thousand (800,000) gallons of sewage, daily flow, in the City's Sewage Facility or on January 1, 1975, whichever is sooner." shall be deleted in its entirety.

In consideration of the amended articles hereinbefore mentioned, State agrees to initiate separate documents whereby ownership of said sewer line shall be vested in the City to operate and maintain, from the entry point of State property to the connection with the City's sewer line, and to assign State's perpetual easement rights for the sewer line for its crossing certain private and county property to the City.

All other terms of the agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their respective officers thereunto duly authorized the day and year first above written.

CITY OF STOCKTON, a Municipal Corporation,

By [signature]
Mayor

"CITY"

ATTEST: JOHN M. JARRETT

BY: [signature]
Asst. City Clerk

Approved as to form:

[signature]
City Attorney

STATE OF CALIFORNIA
DEPARTMENT OF YOUTH AUTHORITY

By [signature]

"STATE"

APPROVED

Frank E. Oliver

BY

I hereby certify that all conditions for exemption set forth in State Administrative Manual section 1231.13 have been complied with and this document is exempt from review by the Department of Finance.

[signature]

M-FILM 73-74

6-4-64

AGREEMENT FOR SEWAGE DISPOSAL

THIS AGREEMENT, made and entered into this 10th day of June, 1964, by and between the STATE OF CALIFORNIA, by and through its duly appointed, qualified and acting Director of Youth Authority, hereinafter referred to as "State", and the CITY OF STOCKTON, a Municipal Corporation, hereinafter referred to as "City".

W I T N E S S E T H:

WHEREAS, City owns and operates certain sewage treatment and disposal systems, with sewage lines and other facilities used in connection therewith, the same being hereinafter referred to as "City's Sewage Facility", and

WHEREAS, City is agreeable to provide facilities to dispose of the sewage emanating from State property and is agreeable to constructing other facilities as may be required to provide sewage capacity rights in its sewage facilities for the use of the State as hereinafter set forth, and

WHEREAS, State owns and operates certain premises known as The Northern California Youth Center, located in San Joaquin County, California, and more particularly described as follows:

> The south half of Section 27 and all of Section 34, Township 1 North, Range 7 East, M.D.B. & M., containing approximately 960 acres, more or less,

and

WHEREAS, State is in need of sewage facilities to serve the said Youth Center and desires to obtain sewage capacity rights in the City's Sewage Facility, and

WHEREAS, it is to the mutual benefit of the parties that City provide sewage facilities to process and dispose of the State's sewage, that City reserve capacity for State, and that State pay the equitable cost of this reserved capacity in the City's Sewage Facility, and

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WHEREAS, the within agreement is in the mutual best interests of the parties;

NOW, THEREFORE, IT IS MUTUALLY AGREED that City will provide sewage capacity rights to State on the terms and conditions, and for the consideration herein set forth, to wit:

1. City has constructed, or shall within a reasonable time hereafter construct, such improvements to City's Sewage Facility as will provide sewage capacity for the use of State; its successors or assigns, for the transportation, treatment, and disposal of one million two hundred thousand (1,200,000) gallons of sewage daily flow from the said property of State or any additions thereto or portions thereof, but in no event to exceed a maximum hourly rate of flow of 2,100 gallons per minute.

2. State shall pay to City the sum of $423,100.00, which the parties agree is an equitable portion of the cost of existing improvements to City's Sewage Facility to provide the sewage capacity for the use of the State as set forth above.

3. City hereby grants to State the herein described sewage capacity rights in its sewage facilities for a continual period of fifty (50) years, commencing on the date the State first disposes of any sewage in the City's Sewage Facility, on the terms and conditions hereinafter set forth:

(a) City shall adequately accept, transport, treat, and dispose of all sewage emanating from the said property of State, or any additions thereto or portion thereof, in the City's Sewage Facility, in an amount not to exceed 1,200,000 gallons per day, nor 2,100 gallons per minute.

(b) The point of acceptance of said sewage by City shall be at the intersection of Airport Way and

Sperry Road, near the northwesterly corner of the Stockton Metropolitan Airport at a manhole to be constructed by State (City of Stockton datum 88.0 feet), at an invert elevation of 3.40 feet (U.S.G.S. datum).

(c) State shall construct at its expense the necessary sewage collection system on State property and the outfall sewer from the State property to said connection point as set forth above.

(d) City agrees to operate and maintain its Sewage Facility, during the said 50-year term, in accordance with all applicable laws, ordinances and regulations.

(e) On condition that City will have constructed by January 1, 1965, the necessary improvements to its Sewage Facility to dispose of sewage emanating from the State property, State shall make payment to the City for capacity in the City's Sewage Facility in the following manner:

(1) The first payment in the sum of $141,100.00 to be paid on January 1, 1965.

(2) The second payment in the sum of $141,000.00 to be paid at the time the State first disposes of sewage waste into the City's sewage facility.

(3) The third payment in the sum of $141,000.00 to be paid at the time the State first disposes of eight hundred thousand (800,000) gallons of sewage, daily flow, in the City's Sewage Facility, or on January 1, 1975, whichever is sooner.

(f) In addition to the payments to be made by State to City as hereinabove set forth, and in the event that City hereafter adopts a sewer service charge applicable throughout the City of Stockton, State agrees to pay said sewer service charge to City upon the same basis as other connections of like size and character.

(g) State shall, at its cost, install a bar rack and measuring and metering device at an appropriate location on the State's property, and shall maintain periodic or continuous recordings and records of the average daily flow of sewage emanating from State property. Such measuring and metering device shall be accessible to the City. State shall make available to the City the recordings thereof sufficient to determine total monthly volume and rate of average daily and peak flow of sewage emanating from the said State property. Said bar rack and measuring and metering device shall be constructed and in operation at the time the State first disposes of its sewage in the City's Sewage Facility and shall be of a type and design approved by the City.

(h) Each party shall have the right from time to time to inspect the measuring and recording methods and records of the other party.

(i) The City and State shall each independently maintain, manage, operate, and control their respectively owned sewage facilities. It is agreed that neither party shall be considered the agent of the other, but that the parties shall bear the relationship to one another of independent contractors. City will indemnify and hold State harmless from any and all claims, demands, or causes of action of any person or entity which may arise or be alleged to arise as a result of City's transportation, treatment, or disposal of sewage emanating from State, except that City shall have no responsibility for any such claims, demands, or causes of action resulting from transportation of sewage to said hook-up point at the Stockton Metropolitan Airport.

4. In the event the State should desire disposal of sewage from State at a rate in excess of the quantity herein provided, State shall have the right from time to time to acquire additional capacity rights in the City's Sewage Facility based on the same terms and conditions as set forth in this agreement.

5. City anticipates that the normal strength sewage emanating from State's facility will not exceed an average five-day B.O.D. (Biochemical Oxygen Demand) of more than four hundred parts per million. In the event that the quality of the sewage from the State facility exceeds the above normal strength, the quality of which shall be determined by sewage samples average from ten random samples taken over a 30 day period; an extra charge, to be determined by City may be imposed upon State, or pretreatment of sewage originating from the State may be required by City.

6. State shall have the right to terminate this agreement upon one year's written notice to City. City shall be required to honor this entire agreement and the capacity rights granted hereunder to State for the entire term of this agreement. In the event of termination of this agreement by State, City shall not be required to return any money paid to City by State pursuant to Section 3 hereof.

7. The City shall maintain accurate, complete, and current cost records concerning the City's Sewage Facility, and such records shall be available for the inspection and copying by State at all reasonable times.

8. All capacity rights, or other rights of State under the terms and conditions of this agreement, shall be for the benefit of the said above described State property known as The Northern California Youth Center, and all such rights shall extend to such property, or any additions thereto or any portions thereof, subject to flow

limitations as in this agreement set forth. This agreement shall inure to the benefit of, and bind, the successors or assigns of the parties hereto.

9. Annexation of the hereinbefore described State property to the City of Stockton may become possible in the future. In the event that City desires in the future to annex said property to the City of Stockton, State agrees that it will express no opposition to said annexation.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their respective officers thereunto duly authorized the day and year first above written.

CITY OF STOCKTON, a Municipal Corporation,

By _______________
Mayor

"City"

ATTEST:

____
City Clerk

Approved as to form:

____
City Attorney

APPROVED BY

____

STATE OF CALIFORNIA
DEPARTMENT OF YOUTH AUTHORITY

By _______________

"State"

APPROVED

DEPUTY DIRECTOR

D a

AMENDMENT NO. 1
TO
AGREEMENT FOR SEWAGE DISPOSAL

THIS AMENDMENT TO AGREEMENT, made and entered into this 13th day of June, 1973, by and between the STATE OF CALIFORNIA, by and through its duly appointed, qualified and acting Director of Youth Authority, hereinafter referred to as "State", and the CITY OF STOCKTON, a Municipal Corporation, hereinafter referred to as "City".

W I T N E S S E T H:

WHEREAS, the State of California, acting by and through its duly appointed, qualified and acting Director of Youth Authority, hereinafter referred as "State" and the City of Stockton, a Municipal Corporation, hereinafter referred to as "City", entered into an agreement on the 10th day of June 1964, whereby the City agreed to provide sewage capacity rights to the State on terms and conditions and for consideration therein set forth, and

WHEREAS, terms of said agreement anticipated a greater expected capacity than that now experienced and forecast for the future, due to decreased construction plans, and

WHEREAS, State desires to reduce the maximum capacity and eliminate the final payment, and

WHEREAS, City, in consideration of State's dedication to the City of a certain portion of the sewer line, has agreed to waive final payment.

NOW THEREFORE, the parties hereto do mutually agree to amend said agreement as follows:

A portion of the first sentence of Article 1, page two, now reading "for the transportation, treatment and disposal of one million two hundred thousand (1,200,000) gallons of sewage daily flow from said property of State or any addition thereto or portions thereof" shall be amended to read "for the transportation, treatment and disposal of eight hundred thousand (800,000) gallons of sewage daily flow from said property of State or any addition thereto or portions thereof".

Article 2, page two, now reading "State shall pay to City the sum of $423,100.00, which parties agree is an equitable portion of the cost of existing improvements to City's Sewage Facility to provide the sewage capacity for the use of the State as set forth above" shall be amended to read "State shall pay to the City the sum of $282,100.00, which parties agree is an equitable portion of the cost of existing improvements to City's Sewage Facility to provide the sewage capacity for the use of the State as set forth above".

Article 3(a), on page 2, now reading "(a) City shall adequately accept, transport, treat and dispose of all sewage emanating from the said property of the State, or any addition thereto or portion thereof, in the City's Sewage Facility, in an amount not to exceed 1,200,000 gallons per day, nor 2,100 gallons per minute." shall be amended to read "(a) City shall adequately accept, transport, treat and dispose of all sewage emanating from the said property of State, or any additions thereto or portion thereof, in the City's Sewage Facility, in an amount not to exceed 800,000 gallons per day nor 1,400 gallons per minute." peak flow (not all day)

2.5 factor

2.5 factor

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Article 3(e), on page 3, now reading "(3) The third payment in the sum of $141,000.00 to be paid at the time the State first disposes of eight hundred thousand (800,000) gallons of sewage, daily flow, in the City's Sewage Facility or on January 1, 1975, whichever is sooner." shall be deleted in its entirety.

In consideration of the amended articles hereinbefore mentioned, State agrees to initiate separate documents whereby ownership of said sewer line shall be vested in the City to operate and maintain, from the entry point of State property to the connection with the City's sewer line, and to assign State's perpetual easement rights for the sewer line for its crossing certain private and county property to the City.

All other terms of the agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their respective officers thereunto duly authorized the day and year first above written.

CITY OF STOCKTON, a Municipal Corporation,

By [signature]
Mayor

"CITY"

ATTEST: JOHN M. JARRETT
BY: Mary B. Kidd
Asst. City Clerk

Approved as to form:
[signature]
City Attorney

STATE OF CALIFORNIA
DEPARTMENT OF YOUTH AUTHORITY

By R. H. Mabbutt

"STATE"

COD
APPROVED
Frank E. Oliver
BY

I hereby certify that all conditions for exemption set forth in State Administrative Manual section 1211.13 have been complied with and this document is exempt from review by the Department of Finance.

James W. Becker

APPENDIX G

Coleman Order

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

RALPH COLEMAN, et al.,

Plaintiffs, No. CIV S-90-0520 LKK JFM P

vs.

ARNOLD SCHWARZENEGGER, et al.,

Defendants. ORDER

/

Following a hearing on September 22, 2009, defendants were directed to file within forty-five days a detailed long-range bed plan, including activation schedules. See Sept. 24, 2009 Order, at 3. On November 6, 2009, defendants filed a long-range bed plan. On November 30, 2009, plaintiffs filed a response to defendants' plan and a request for evidentiary hearing on certain aspects of the plan. On December 11, 2009, defendants filed a response to plaintiffs' response, and on December 18, 2009, plaintiffs filed a reply and a renewed request for evidentiary hearing. The court has reviewed all of the papers filed by the parties, and has consulted with the special master.

Several areas of defendants' plan are not in dispute and will be approved by the court. Three areas of dispute require resolution. First, pursuant to the court's September 24, 2009 order, all projects in the long-range plan are to be "fully staffed and activated by the 2013 target date" previously established by defendants. Sept. 24, 2009 Order, at 3. The activation schedules for three of the projects in the long-range plan, the Consolidated Care Center (CCC)[1], that part of the Stark conversion project that plans for additional enhanced outpatient program (EOP) beds for both general population (GP) and administrative segregation unit (ASU) inmates (hereafter referred to as the Stark EOP conversion project), and the DeWitt conversion project, reflect "activation" dates in 2013 or 2014, with patient admissions not completed at any of these sites until 2014. For the reasons set forth infra, the court will not approve the Stark EOP conversion project at this time. The special master reports that the mental health crisis bed project proposed for Stark is adequate and recommends its approval. That will be the order of the court. The CCC and the DeWitt conversion project will be approved subject to submission within thirty days of new activation schedules that reflect patient admissions completed to full occupancy for each of these projects by 2013.[2]

With respect to the Stark EOP conversion project, the papers before the court give rise to a concern that this project may not be sufficient to meet the needs of the plaintiff class. The special master reports that this project will require either an increase in the amount of out of cell time for class members housed in that program, or reduction in the number of admissions, or some combination of the two. Defendants report that they "expect[] to double cell up to 141% capacity" in the EOP program at Stark. Declaration of Deborah Hysen in Support of Defendants' Responses to Plaintiffs' Response to Defendants' Long-Range Mental Health Bed Plan and Request for Evidentiary Hearing, filed December 11, 2009, at ¶ 11. The three judge court has ordered defendants to "reduce the population of the CDCR's adult institutions to 137.5% of their

---

[1] Defendants also refer to this facility as the Consolidated Care Facility (CCF). See Cover Sheet to Exhibit # 1 to defendants' Long-Range Mental Health Bed Plan.

[2] In their December 11, 2009 response, defendants represent that on December 7, 2009, the California Department of Finance authorized the California Department of Corrections and Rehabilitation to use a procurement process for the CCC that will enable defendants to complete patient admissions to the CCC by December 24, 2013. Defendants' Response, filed December 11, 2009, at 5.

combined design capacity" as a necessary prerequisite to the provision of constitutionally adequate medical and mental health care. See Opinion and Order filed Aug. 4, 2009. This court will not approve the Stark EOP conversion project as long as the project calls for a projected population in excess of 137.5% of the facility's design capacity. Defendants will be directed to file, within forty-five days, an amended proposal for the Stark EOP conversion project that limits the population accordingly and that meets the concerns for this project identified by the special master.

Finally, defendants have failed to provide a detailed plan to meet the identified need for the female EOP population. Defendants' plan is described generally as a plan to convert existing inmate housing to EOP beds, and defendants represent that they are "currently working with the *Plata* Receiver on a health care improvement program at the three women's institutions to determine how best to meet" the needs of this female inmate population. Defendants also indicate that they anticipate that "any parole, sentencing, and/or credit reforms, and the Three-Judge Court's prisoner release order, will significantly impact the female population." Defendants' Long-Range Plan, filed Nov. 6, 2009, at 10. The court will consider proposed revisions to the long-range plan should reductions in the inmate population warrant such consideration. Until the population is reduced, however, defendants will be required to comply with this court's orders concerning long-range planning. For that reason, defendants will be directed to file, within forty-five days, a detailed plan with activation schedules to meet the long-range bed needs of female EOP inmates identified in the Navigant 2009 spring population projections.

Defendants include in their long-range bed plan a request for approval of their plan to replace two court-ordered projects, the Salinas Valley State Prison (SVSP) 72-Bed EOP-ASU project and the SVSP 96-Bed EOP-GP Treatment and Office Space and Housing Unit Conversion Project, with one project identified as the SVSP 300 EOP-GP Treatment and Office Space A-Quad Project. Defendants' request will be granted.

Finally, the special master reports that the parties have agreed that defendants should not be required to describe departures from timeframes, as required by paragraph 2 of the court's June 18, 2009 order, or to report impediments to timely completion of a project, as required by paragraph 6 of the court's September 24, 2009 order, unless a departure or an impediment will delay completion of a project by more than thirty days. That interpretation is hereby approved for both the June 18, 2009 order and the September 24, 2009 order, and incorporated in the requirements of this order, infra.

In accordance with the above, IT IS HEREBY ORDERED that:

1. All projects in defendants' long-range plan, including the mental health crisis bed project at Stark, are approved with the following exceptions:

a. Defendants' proposed Consolidated Care Center is approved subject to submission within thirty days of a new activation schedule for this project that reflects patient admissions completed to full occupancy by 2013.

b. Defendants' proposed DeWitt conversion project is approved subject to submission within thirty days of a new activation schedule for this project that reflects patient admissions completed to full occupancy by 2013.

c. Defendants' proposed Stark EOP conversion project is not approved. Within forty-five days from the date of this order, defendants shall file an amended proposal for the Stark EOP conversion project that limits the population for that facility to no more 137.5% of the facility's design capacity and that meets the concerns identified by the special master.

d. Defendants have not adequately described their plan to meet the projected needs of the female EOP population. Within forty-five days from the date of this order defendants shall file a detailed plan with activation schedules to meet the long-range bed needs of female EOP inmates identified in the Navigant 2009 spring population projections.

2. Beginning on March 1, 2010, defendants shall report to the special master on a monthly basis all action taken on each project and whether each project remains on schedule or

has been or can be accelerated. Defendants' report shall be in the form of updates to the activation schedules for these projects. For any project that has departed from the promised timeframes defendants shall describe with specificity the reason or reasons for the departure and shall identify individuals or agencies whose acts or failures to act contributed to the departure. These projects shall be reviewed quarterly in conjunction with the court-ordered projects approved by this court on June 18, 2009.

3. Defendants are not required to describe departures from timeframes, as required by paragraph 2 of the court's June 18, 2009 order and paragraph 2 of this order, or to report impediments to timely completion of a project, as required by paragraph 6 of the court's September 24, 2009 order, unless a departure or an impediment will delay completion of a project by more than thirty days.

4. Defendants' request to replace the two court-ordered projects, the SVSP 72-Bed EOP-ASU project and the SVSP 96-Bed EOP-GP Treatment and Office Space and Housing Unit Conversion Project, with one project identified as the SVSP 300 EOP-GP Treatment and Office Space A-Quad Project is granted. The provisions of this court's June 18, 2009 order that governed the replaced projects shall apply in full to the new project.

5. Plaintiffs' request for evidentiary hearing is denied.

DATED: January 4, 2010

Lawrence K Karlton

LAWRENCE K. KARLTON
SENIOR JUDGE
UNITED STATES DISTRICT COURT

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

RALPH COLEMAN, et al.,

Plaintiffs, No. CIV S-90-0520 LKK JFM P

vs.

ARNOLD SCHWARZENEGGER, et al.,

Defendants. ORDER

______________________________/

On January 4, 2010, the court ordered defendants to submit a new activation schedule for the proposed DeWitt conversion project, which would reflect "patient admissions completed to full occupancy by 2013." Order Filed Jan. 4, 2010, ¶ 1.b. Said schedule was to be submitted within 30 days. Defendants moved for reconsideration of this order, and the court stayed the 30 day timeline for submission of a new activation schedule. Motion filed February 1, 2010 and Order filed February 12, 2010.

Defendants now withdraw their motion for reconsideration, and seek an additional seven days in which to submit the DeWitt activation schedule required by the January 4 order. Withdrawal filed March 22, 2010. Defendants represent that they will be able to achieve full occupancy by 2013 by treating the DeWitt project "as part of a larger facility rather than as a stand-alone facility." Id. at 4. Counsel for defendants has informed the Special Master that the "larger facility" refers to the California Health Care Facility ("CHCF") proposed for construction in unincorporated San Joaquin county. As the parties are aware, this facility is the subject of a pending California Environmental Quality Act ("CEQA") suit. Greater Stockton Chamber of Commerce, et al., v. Kelso, et al., No. Civ. 09-3308 (E.D. Cal.). Defendants are cautioned that the activation schedule called for by the January 4, 2010 order must account for the possibility of such a delay. In other words, the court expects DeWitt to be fully occupied by 2013 regardless of what befalls the CHCF proposal.

With this warning, the court grants defendants' request for an additional seven days. Accordingly, the hearing on the motion for reconsideration filed February 1, 2010 is VACATED. Defendants SHALL, within seven (7) days of this order, submit the DeWitt activation schedule required by this court's order filed January 4, 2010. The status conference set by this court's January 27, 2010 order remains on calendar.

DATED: March 24, 2010

/s/ Lawrence K. Karlton
LAWRENCE K. KARLTON
SENIOR JUDGE
UNITED STATES DISTRICT COURT

IN THE UNITED STATES DISTRICT COURTS
FOR THE EASTERN DISTRICT OF CALIFORNIA
AND THE NORTHERN DISTRICT OF CALIFORNIA
UNITED STATES DISTRICT COURT COMPOSED OF THREE JUDGES
PURSUANT TO SECTION 2284, TITLE 28 UNITED STATES CODE

RALPH COLEMAN, et al., Plaintiffs, v. ARNOLD SCHWARZENEGGER, et al., Defendants.	NO. CIV S-90-0520 LKK JFM P **THREE-JUDGE COURT**
MARCIANO PLATA, et al., Plaintiffs, v. ARNOLD SCHWARZENEGGER, et al., Defendants.	NO. C01-1351 TEH **THREE-JUDGE COURT** OPINION AND ORDER

TABLE OF CONTENTS

I. INTRODUCTION

"California's correctional system is in a tailspin," the state's independent oversight agency has reported. Ex. P3 at i (Jan. 2007 Little Hoover Commission Report, "Solving California's Corrections Crisis: Time Is Running Out").[1] Tough-on-crime politics have increased the population of California's prisons dramatically while making necessary reforms impossible. *Id.* at ii, 2-5, 9, 20. As a result, the state's prisons have become places "of extreme peril to the safety of persons" they house, Ex. P1 at 7-8 (Governor Schwarzenegger's Oct. 4, 2006 Prison Overcrowding State of Emergency Declaration), while contributing little to the safety of California's residents, Ex. P3 at ii. California "spends more on corrections than most countries in the world," but the state "reaps fewer public safety benefits." *Id.* at 14. Although California's existing prison system serves neither the public nor the inmates well, the state has for years been unable or unwilling to implement the reforms necessary to reverse its continuing deterioration.

In this proceeding, we address two particular problems that every day threaten the lives and health of California prisoners. First, the medical and mental health care available to inmates in the California prison system is woefully and constitutionally inadequate, and has been for more than a decade. The United States Constitution does not require that the state provide its inmates with state-of-the-art medical and mental health care, nor does it require that prison conditions be comfortable. California must simply provide care consistent with "the minimal civilized measure of life's necessities," *Rhodes v. Chapman*, 452 U.S. 337, 347 (1981) – care sufficient to prevent the unnecessary and wanton infliction of pain or death, *Estelle v. Gamble*, 429 U.S. 97, 103-04 (1976). Tragically, California's inmates have long been denied even that minimal level of medical and mental health care, with consequences that have been serious, and often fatal. Inmates are forced to wait months or years for medically necessary appointments and examinations, and many receive inadequate medical care in substandard facilities that lack the medical equipment required to conduct routine

[1]The Little Hoover Commission is a state agency charged with preparing reports and recommendations regarding the structure and operation of state government in order to improve its economy, efficiency, and service. Cal. Gov't. Code §§ 8501, 8521-8522.

examinations or afford essential medical treatment. Seriously mentally ill inmates languish in horrific conditions without access to necessary mental health care, raising the acuity of mental illness throughout the system and increasing the risk of inmate suicide. A significant number of inmates have died as a result of the state's failure to provide constitutionally adequate medical care. As of mid-2005, a California inmate was dying needlessly *every six or seven days*.

California's inmates face a second everyday threat to their health and safety: the unprecedented overcrowding of California's prisons. Since reaching an all-time population record of more than 160,000 in October 2006, the state's adult prison institutions have operated at almost double their intended capacity. As Governor Schwarzenegger observed in declaring a prison state of emergency that continues to this day, this creates "conditions of extreme peril" that threaten "the health and safety of the men and women who work inside [severely overcrowded] prisons and the inmates housed in them . . . ." Ex. P1 at 1, 8. Thousands of prisoners are assigned to "bad beds," such as triple-bunked beds placed in gymnasiums or day rooms, and some institutions have populations approaching 300% of their intended capacity. In these overcrowded conditions, inmate-on-inmate violence is almost impossible to prevent, infectious diseases spread more easily, and lockdowns are sometimes the only means by which to maintain control. In short, California's prisons are bursting at the seams and are impossible to manage.

It is the relationship between these two critical problems that lies at the heart of the cases before us. We must answer the question whether overcrowding is the primary cause of the unconstitutional medical and mental health care to which California prison inmates are currently subjected. Two federal lawsuits have brought the crisis in California's prisons to this three-judge court. Plaintiffs in the two lawsuits contend that a reduction in the prison population is necessary to bring the California prison system's medical and mental health care into constitutional compliance. In both *Plata v. Schwarzenegger* and *Coleman* *v. Schwarzenegger*,[2] the federal courts initially issued narrow orders requiring California to develop and implement remedial plans to meet this objective. However, as the state time and again failed to meet its own remedial targets – let alone to achieve constitutional compliance – both courts were forced to adopt increasingly drastic remedies, culminating in the *Plata* court's 2005 appointment of a receiver to manage the prison medical system. Ultimately, by late 2006 it became apparent that the overcrowding in California's prisons rendered the efforts of the courts, the *Coleman* Special Master, and the *Plata* Receiver utterly insufficient. At the request of the *Plata* and *Coleman* courts, the Chief Judge of the United States Court of Appeals for the Ninth Circuit convened this three-judge court to consider the plaintiffs' request for a court-ordered reduction in the California prison population.

During the pendency of this proceeding, the outlook for California's prisons has only grown dimmer. The state is now in the throes of a fiscal crisis that renders it unable or unwilling to commit the necessary resources to fix the problems in its prisons. As Matthew Cate, Secretary of the California Department of Corrections and Rehabilitation[3] and a defendant here, recently put it, California "cannot at this time become further indebted for correctional healthcare."[4] Ex. 1 to Defs.' July 1, 2009 Response to Court's June 18, 2009 Order, filed in *Coleman*, at 1.

Federal law makes any prisoner release order, including the population reduction order requested by plaintiffs, a "remedy of last resort," H.R. Rep. No. 104-21, at 25 (1995)

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[2]*Plata* involves the prison system's constitutionally inadequate medical care, while *Coleman* involves the constitutional deficiencies in mental health care provided to California inmates.

[3]Until 2005, California's adult prisons were run by the California Department of Corrections, which was a department within the state's Youth and Corrections Agency. On July 1, 2005, the agency was reorganized and renamed the California Department of Corrections and Rehabilitation ("the CDCR"). Ex. P5 at ix. In this opinion and order, we refer to the agency as the CDCR except when quoting orders issued prior to the reorganization.

[4]California has reduced spending on education, health care, the social safety net, and services for the needy, the blind, and children to the breaking point. Under these circumstances, we would be reluctant to direct the state to allocate additional funds to its prisons or to rehabilitative services at the expense of others to whom it has a legal and moral obligation.

(report of the House Committee on the Judiciary on the Violent Criminal Incarceration Act of 1995), and imposes various conditions upon the issuance of such an order. *See* 18 U.S.C. § 3626(a)(3). As we explain below, those conditions have been met here: (1) crowding is the primary cause of the state's failure to provide its inmates with constitutionally sufficient medical and mental health care; (2) no relief besides a prisoner release order can bring the California prison system into constitutional compliance; (3) an order requiring the state to reduce the population of its adult institutions to a lower percentage of their combined design capacity than presently exists – a population cap – is narrowly tailored to the constitutional violations identified by the *Plata* and *Coleman* courts, extends no further than necessary to remedy those violations, and is the least intrusive possible remedy; and (4) the state can comply with such an order with little or no impact on public safety and the operation of the criminal justice system. There are numerous means by which the state can reduce the prison population, from parole reform and the diversion of technical parole violators and low-risk offenders to sentencing reform and the expansion of good time credits and rehabilitative programming. There is no need for the state to release presently incarcerated inmates indiscriminately in order to comply with our order. Much of the relief can be achieved instead by reducing prison intake in a manner recommended by the state's own experts.

We recognize the gravity of the population reduction order we issue herein, and we do not intervene in matters of prison population lightly. Nonetheless, when federal court intervention becomes the only means by which to enforce rights guaranteed by the Constitution, federal courts are obligated to act. "Without this, all the reservations of particular rights or privileges would amount to nothing." *The Federalist* No. 78 (Alexander Hamilton). California's prisoners have long been denied constitutionally adequate medical and mental health care, often with tragic consequences, and the overcrowding in California's prisons, which have become criminogenic, must be reduced if the prison system is to achieve constitutional compliance. California's prisoners, present and future, (and the state's population as a whole) can wait no longer.

II. FACTUAL AND PROCEDURAL BACKGROUND

Because the courts' prior remedial efforts are of profound relevance in understanding the effect of prison overcrowding and the inadequacy of forms of relief that do not address that problem, we begin with a detailed history of the individual *Plata* and *Coleman* cases. We then describe the crowded conditions in California's prison system and the history of the three-judge court proceeding before turning to the legal questions before us.

A. *Plata* (Medical Care)

The history of *Plata* involves extensive remedial efforts over the last seven years that have faltered because of the severe overcrowding in California's prisons.

The *Plata* class action was filed on April 5, 2001, and plaintiffs filed an amended complaint on August 20, 2001, alleging constitutional violations in the delivery of medical care to inmates confined in California state prisons, as well as violations of the Americans with Disabilities Act and § 504 of the Rehabilitation Act. Ex. D1059. Plaintiffs asserted that the "unconstitutional conditions" caused by defendants' failure to "properly care for and treat the prisoners in [their] custody . . . caused widespread harm, including severe and unnecessary pain, injury and death." *Id.* ¶ 1. The *Plata* plaintiffs and defendants negotiated a stipulation for injunctive relief, which the *Plata* court approved by court order.[5]

However, defendants proved incapable of or unwilling to provide the stipulated relief. Three years after approving the stipulation as an order of the court, the *Plata* court conducted an evidentiary hearing that revealed the continued existence of appalling conditions arising from defendants' failure to provide adequate medical care to California inmates. The Court found that defendants had been given "every reasonable opportunity to bring [the] prison medical system up to constitutional standards, and it [was] beyond reasonable dispute that the State ha[d] failed." Oct. 3, 2005 Findings of Fact & Conclusions of Law Re: Appointment of Receiver ("FF&CL"), 2005 WL 2932253, at *1 (Ex. D1063).[6] Following that hearing, the

[5] The stipulation resolved all of plaintiffs' claims, including their Rehabilitation Act and ADA claims.

[6] All references to court orders in this section of our opinion and order are to orders filed in the district court in *Plata*.

Plata court concluded that it had no choice but to place the CDCR's medical health care delivery system in receivership. The *Plata* Receivership continues to this date, but, as we explain below, severe crowding throughout California's prison system renders the Receiver unable to resolve the constitutional violations at issue in *Plata*.

1. Complaint, Stipulation, and Order for Injunctive Relief

In their amended complaint, the *Plata* plaintiffs alleged that a number of specific deficiencies in the CDCR's prison medical care system rendered the system as a whole unconstitutional. The alleged deficiencies included inadequate medical screening of incoming prisoners; delays in or failure to provide access to medical care, including specialist care; untimely responses to medical emergencies; the interference of custodial staff with the provision of medical care; the failure to recruit and retain sufficient numbers of competent medical staff; disorganized and incomplete medical records; a "lack of quality control procedures, including lack of physician peer review, quality assurance and death reviews"; a lack of protocols to deal with chronic illnesses, including diabetes, heart disease, hepatitis, and HIV; and the failure of the administrative grievance system to provide timely or adequate responses to complaints concerning medical care. Ex. D1059 ¶ 192.[7]

Prior to filing suit, the *Plata* plaintiffs had been in informal negotiations with defendants since July 1999. Ex. D1060 ¶ 3 (June 13, 2002 Stip. & Order). After *Plata* was filed, the parties ultimately agreed to a stipulation for injunctive relief, which the *Plata* court entered as an order on June 13, 2002. Defendants agreed to and were ordered to implement certain policies and procedures on a staggered basis, with seven prisons to complete implementation in 2003. *Id.* ¶¶ 4-5. In each subsequent year, defendants were to complete

[7]As we explain below, *infra* Section II.A.2, it became apparent early in the *Plata* litigation that, given the size of their populations, California's prisons lacked the space and facilities required to deliver constitutionally adequate medical care or to remedy the above deficiencies.

implementation at five additional prisons, such that statewide implementation would be achieved by the end of 2008. *Id.* ¶ 5.[8]

The stipulated policies and procedures, which defendants filed with the *Plata* court on February 15, 2002, and supplemented on May 30, 2002, "are approximately 800 pages long and contained in 11 volumes." Mar. 10, 2003 Order at 2. Although the stipulated policies and procedures were "designed to meet or exceed the minimum level of care necessary to fulfill the defendants' obligation to plaintiffs under the Eighth Amendment of the United States Constitution," the stipulation "require[s] defendants to provide only the minimum level of medical care required under the Eighth Amendment." Ex. D1060 ¶ 4.

The stipulation for injunctive relief provided *inter alia* for regular audits of defendants' compliance. *Id.* ¶¶ 19-23. These audits were to include a review of no less than 180 inmate health records at each prison. *Id.* ¶ 21(a). Medical assessments or treatment plans contained in those records would be deemed substantially in compliance with the settlement agreement if they were consistent with the policies and procedures or with the community standard of care "imposed under the laws of the State of California upon health care providers licensed to practice in California." *Id.* ¶ 22(b) & at 11 n.3. Compliance with the agreement would also require "conducting minimally adequate death reviews and quality management proceedings," having "tracking, scheduling and medication administration systems adequately in place," and the absence of any "pattern or practice that is likely to result in serious problems [where] those problems are not being adequately addressed." *Id.* ¶¶ 22(c)-(e).

Had the stipulated policies and procedures been implemented, they would have resulted in comprehensive improvements to nearly all aspects of the medical delivery system in California's prisons, including quality management; health records management;

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[8]This roll-out plan did not include Pelican Bay State Prison, which was under the *Plata* court's jurisdiction in a separate action, *Madrid v. Cate*, Case No. C90-3094 TEH (N.D. Cal.), and was not included in the *Plata* case. However, on June 6, 2008, the parties stipulated, and the court ordered, that prisoners housed at Pelican Bay State Prison be included in the *Plata* class. Thus, the *Plata* case now includes all thirty-three adult institutions within the CDCR.

infectious disease control; staffing; inter-institution transfers; and the timing and manner in which inmates are provided with physician and nurse care, as well as with necessary medications. Unfortunately, defendants utterly failed to comply with the implementation schedule to which they had stipulated. As of May 10, 2005, when implementation should have been completed at twelve prisons, "not a single prison ha[d] successfully completed implementation." May 10, 2005 Order to Show Cause ("OSC"), 2005 WL 2932243, at *2 (Ex. D1062). The same remains true now, more than seven years after the court approved the parties' settlement agreement. As we explain below, this is due in large part to the severe overcrowding in California's prisons.

2. Appointment of Court Experts and Their Findings

In addition to stipulating to an implementation schedule, the parties agreed to the appointment of medical and nursing experts "to advise the Court on the adequacy and implementation of defendants' Policies and Procedures and any other matter that appropriately may be the subject of the experts' testimony." Ex. D1060 ¶¶ 16-17. The experts routinely reviewed defendants' progress towards implementing the stipulated injunctive relief and periodically communicated their findings and recommendations to the *Plata* court.

In their July 16, 2004 report to the court, the experts identified a pattern of serious deficiencies relating to physician quality at California prisons, and defendants agreed to address those deficiencies in a stipulation entered as an order of the court on September 17, 2004 ("Patient Care Order"), Ex. D1061.

> The Patient Care Order required defendants to engage an independent entity to (a) evaluate the competency of physicians employed by the CDCR and (b) provide training to those physicians found to be deficient. It also required defendants to undertake certain measures with respect to the treatment of high-risk patients, to develop proposals regarding physician and nursing classifications and supervision, and to fund and fill Quality Management Assistance Teams ("QMAT") and other support positions.

Oct. 3, 2005 FF&CL, 2005 WL 2932253, at *2. However, "[d]efendants failed to come close to meeting the terms of the Patient Care Order, even with generous extensions of time from the Court." *Id.* The experts noted one example of defendants' failure to comply after visits to the Substance Abuse and Treatment Facility in February and March 2005:

> [N]ot only has little progress been made in the implementation of *Plata*, but the initial morale and enthusiasm in utilizing QMAT has evaporated in large part because of the inability of the California Department of Corrections to provide the necessary staff and support to this process. This has delivered an unspoken message that no change will occur.

May 16, 2005 Experts' Report on Substance Abuse Treatment Center, at 3 (filed in *Plata* on May 19, 2005).

The experts' reports following visits to San Quentin State Prison were no better. Following a February 2005 visit to that facility, the court's nursing experts observed that clinics in housing areas were sometimes "nothing more than an office used by correctional officers" and "lacked basic medical equipment and supplies." Apr. 9, 2005 Nursing Experts' Report on San Quentin, at 2 (filed in *Plata* on May 10, 2005). The "[m]ost disturbing" conditions were in one unit where

> [t]he area used for nursing triage [was] a small room at the end of the tier that the nurse accesses by walking through a gate and into the men's showers. . . . Because of a clogged shower drain, standing water was present outside the clinic door. Inside, the room was filthy. The furniture was old and in disrepair. There was no examination table, medical equipment or supplies, or handwashing facilities. According to staff, equipment (otoscope [an instrument used to examine the ear]) requested for this area had been denied. As well, there was no telephone or computer access. Prior to this room being used, a broom closet on the fourth tier was used for nurse triage.
>
> These conditions are deplorable and have no resemblance to a medical setting whatsoever.

Id. at 2-3. Following their visits to San Quentin in January and February 2005, the medical experts noted that "[m]edical record reviews demonstrate[d] multiple instances of incompetence, indifference, cruelty, and neglect. Ten deaths were reviewed. All showed serious problems; most deaths were preventable. . . . Routine medical care [was] replete with numerous errors resulting from both system failures as well as physician mistakes." Apr. 8, 2005 Medical Experts' Report on San Quentin, at 13 (filed in *Plata* on May 10, 2005).

Perhaps most damning was the medical experts' conclusion that "overall compliance with the Stipulated Order and subsequent Court Orders was non-existent [at San Quentin]. In fact, it was clear that for most areas we reviewed there has been indifference to beginning the process required in the Stipulated Order," *id.* at 2 – despite the fact that the prison was to have *completed* that process by the time of the experts' site visit. The experts ultimately concluded that San Quentin was "so old, antiquated, dirty, poorly staffed, poorly maintained, with inadequate medical space and equipment and over-crowded that it is our opinion that it is dangerous to house people there with certain medical conditions and is also dangerous to use this facility as an intake facility." *Id.* According to the experts, "the overcrowding and facility life-safety and hygiene conditions create a public health and life-safety risk to inmates who are housed there." *Id.*

3. <u>Periodic Status Conferences</u>

Beyond receiving periodic reports from the experts, the *Plata* court also conducted regular status conferences with the parties to help monitor and facilitate implementation of the stipulated injunctive relief, as well as to assess defendants' ability and willingness to comply with the court order approving such relief. Based on the experts' dismal reports of defendants' progress, the court increased the frequency of these conferences and, in February 2005, started meeting with the parties on a monthly basis. To facilitate these meetings, which typically involved large numbers of CDCR staff housed in Sacramento, the court rotated the location of these meetings between San Francisco and Sacramento.

> The Court invited the parties during [the] monthly status conferences to contribute ideas as to possible remedies, and the Court especially encouraged defendants to consider ways in which they could take the actions necessary to solve the medical care problems through measures within their own control, including use of the extraordinary powers of the Governor. The Court went to the length of requesting that defendants present it with a series of proposed orders so that the Court could help empower them to overcome some of their bureaucratic hurdles on their own. Defendants did not submit a single proposed order.

Oct. 3, 2005 FF&CL, 2005 WL 2932253, at *26 (citation omitted).

4. Proceedings To Determine Whether a Receiver Should Be Appointed

Ultimately, the *Plata* court found itself with no alternative but to issue an order to show cause ("OSC") why defendants should not be found in civil contempt and why a receiver should not be appointed to manage medical care delivery for the CDCR. As the court noted when it issued the OSC on May 10, 2005:

> In the four years since this case was filed, which includes the year and a half that this Court has been meeting with the parties on a regular basis, two things have become ever increasingly clear: (1) the Governor has appointed, and the State has hired, a number of dedicated individuals to tackle the difficult task of addressing the crisis in the delivery of health care in the California Department of Corrections ("CDC"), and, (2) despite the best efforts of these individuals, little real progress is being made. The problem of a highly dysfunctional, largely decrepit, overly bureaucratic, and politically driven prison system, which these defendants have inherited from past administrations, is too far gone to be corrected by conventional methods.
>
> The prison medical delivery system is in such a blatant state of crisis that in recent days defendants have publicly conceded their inability to find and implement on their own solutions that will meet constitutional standards. The State's failure has created a vacuum of leadership, and utter disarray in the management, supervision, and delivery of care in the Department of Corrections' medical system.
>
> Defendants have devised a long-term strategy to contract out health care management and much of the delivery of care. However, full implementation of that plan is, by defendants' own estimates, years away. In the meantime, roughly 162,000 prisoners are being subjected to an unconstitutional system fraught with medical neglect and malfeasance. Defendants themselves have conceded that a significant number of prisoners have died as a direct result of this lack of care, and it is clear to the Court that more are sure to suffer and die if the system is not immediately overhauled.
>
> . . . .
>
> Since the entry of the Stipulated Injunction in June 2002, the most notable characteristic of this case has been defendants' failure to achieve any substantial progress in bringing the medical care system even close to minimal constitutional standards.

May 10, 2005 OSC, 2005 WL 2932243, at *1-2. "Even following issuance of the OSC – on the brink of possible contempt and the imposition of a Receivership – defendants were able to enact only very limited and piece-meal measures, with no prospect for system-wide reform or restructuring." Oct. 3, 2005 FF&CL, 2005 WL 2932253, at *26.

Beginning on May 31, 2005, and concluding on June 9, 2005, the *Plata* court conducted a six-day evidentiary hearing concerning the OSC. *Id.* at *2. The court considered eighty-two exhibits, *id.*, and heard testimony from the court experts; relevant state officials, including Undersecretary of Corrections Kevin Carruth and Dr. Renee Kanan, the Acting Director of Health Care Services for the CDCR; and defendants' medical expert Dr. Ronald Shansky.[9] Following the hearing, the parties submitted legal briefs addressing both contempt and the appointment of a receiver, and several unions representing state prison medical personnel filed an amicus brief. *Id.* Defendants did not dispute that the *Plata* court had the power to appoint a receiver; instead, they argued only that a receivership was an extraordinary remedy to be used only if less intrusive remedies had failed or were likely to fail. Defs.' June 20, 2005 Response to OSC at 2, 25.

On June 30, 2005, the *Plata* court heard argument on the OSC. Oct. 3, 2005 FF&CL, 2005 WL 2932253, at *2. "Based on the arguments of counsel, the evidence presented, the full record in this case, and the Court's own observations on prison tours [of two facilities, accompanied by counsel for the parties], the Court delivered an oral ruling at the conclusion of the hearing that it would take control of the medical delivery system of the CDCR and place it under the auspices of a Receivership." *Id.*

5. Findings of Fact and Conclusions of Law Concerning Continuing Failure To Meet Constitutional Standards and Necessity of a Receivership

On October 3, 2005, the court issued findings of fact and conclusions of law setting forth the detailed reasoning behind its oral ruling. As the court noted in its written decision:

> By all accounts, the California prison medical care system is broken beyond repair. The harm already done in this case to California's prison inmate population could not be more grave,

[9]As noted in our discussion below, although Dr. Shansky testified as defendants' expert witness in the proceedings before the *Plata* court, he testified as plaintiffs' expert witness in the proceedings before this three-judge court.

> and the threat of future injury and death is virtually guaranteed in the absence of drastic action. The Court has given defendants every reasonable opportunity to bring its prison medical system up to constitutional standards, and it is beyond reasonable dispute that the State has failed. Indeed, it is an uncontested fact that, on average, an inmate in one of California's prisons needlessly dies every six to seven days due to constitutional deficiencies in the CDCR's medical delivery system. This statistic, awful as it is, barely provides a window into the waste of human life occurring behind California's prison walls due to the gross failures of the medical delivery system.
>
> It is clear to the Court that this unconscionable degree of suffering and death is sure to continue if the system is not dramatically overhauled. Decades of neglecting medical care while vastly expanding the size of the prison system has led to a state of institutional paralysis. The prison system is unable to function effectively and suffers a lack of will with respect to prisoner medical care.

Id. at *1.

In its order, the court identified a number of serious problems in the care provided to inmates. The court found that the CDCR failed to follow its own policies regarding access to medical care, and inmates routinely lacked timely access to care, both in terms of screening requests and in receiving care once it was determined that an appointment with a physician was warranted. *Id.* at *13. Inmates needing specialty services to treat serious medical problems were forced to wait inordinate and inexcusable amounts of time for appointments; at one prison, inmates with consultation referrals from early 2004 had yet to be seen in May 2005. *Id.* at *16. In addition, the CDCR had failed to develop or implement a system to track and treat inmates with chronic care needs, *id.* at *14, and the court's nursing expert found that CDCR nurses often "fail[ed] to perform basic functions," such as taking vital signs, conducting examinations, and identifying urgent medical issues requiring immediate referral to a physician. *Id.* at *9.

Not unexpectedly, death reviews revealed "repeated gross departures from even minimal standards of care." *Id.* at *7. The lack of adequate care also resulted in "an inordinately high level of morbidity," defined as "any significant injury, harm or medical complication that falls short of death," among CDCR inmates. *Id.* at *8-9. For example:

> [I]n 2004 a San Quentin prisoner with hypertension, diabetes and renal failure was prescribed two different medications that actually served to exacerbate his renal failure. An optometrist noted the patient's retinal bleeding due to very high blood pressure and referred him for immediate evaluation, but this evaluation never took place. It was not until a year later that the patient's renal failure was recognized, at which point he was referred to a nephrologist on an urgent basis; he should have been seen by the specialist within 14 days but the consultation never happened and the patient died three months later.

Id. (citations omitted). This incident was simply a "representative example[]" of the grossly inadequate care that could be found throughout the prison system. *Id.* at *6. Many prisoners were the victims of similar treatment, or worse.

Beyond these quality of care problems, the court noted a number of additional deficiencies in the prison medical system. Prison medical facilities "lack[ed] the necessary medical equipment to conduct routine examinations and to respond to emergencies," *id.* at *15, and were also "completely inadequate for the provision of medical care":

> Many clinics [did] not meet basic sanitation standards. Exam tables and counter tops, where prisoners with infections such as Methicillin-Resistant Staph Aureus (MRSA) and other communicable diseases are treated, [were] not routinely disinfected or sanitized. Many medical facilities require[d] fundamental repairs, installation of adequate lighting and such basic sanitary facilities as sinks for hand-washing. In fact, lack of adequate hygiene ha[d] forced the closure of some operating rooms.

Id. at *14 (citations omitted). Likewise, the management of prison pharmacy operations was "unbelievably poor." *Id.* at *16. No statewide coordination between pharmacies existed, and there were "serious, long-standing problems with dispensing medication, renewing prescriptions, and tracking expired prescriptions." *Id.* Medical records in most CDCR prisons were "either in a shambles or non-existent. . . . mak[ing] even mediocre medical care impossible," *id.* at *14 (citation omitted), and the resulting lack of access to inmates' medical histories "result[ed] in dangerous mistakes, delay in patient care, and severe harm." *Id.* Furthermore, the reception center intake process, which was designed to allow medical staff to identify inmates' medical issues, including communicable diseases posing a risk of transmission to other inmates and staff, was woefully inadequate. *Id.* at *12-13.

The court also noted a number of serious personnel problems. Qualified medical staff were sorely lacking at every level. According to one court expert, "20-50% of physicians at the prisons provide[d] poor quality of care." *Id.* at *5. However, the CDCR was incapable of recruiting qualified personnel to fill the significant vacancies that existed throughout the system, *id.* at *11, and the CDCR's lack of a medical credentialing policy resulted in many CDCR clinicians' practicing outside of their areas of medical expertise. *Id.* at *21. The CDCR also lacked medical leadership, both at the central office and at individual prisons, and the resulting lack of supervision "foster[ed] a culture of non-accountability and non-professionalism whereby the acceptance of degrading and humiliating conditions bec[ame] routine and permissible." *Id.* at *10 (internal quotations, citation, and alteration omitted).

Bases on these findings, the *Plata* court concluded that "the establishment of a Receivership, along with those actions necessary to effectuate its establishment, are narrowly drawn to remedy the constitutional violations at issue, extend no further than necessary to correct a current and ongoing violation of a federal right, and are the least intrusive means to correct these violations." *Id.* at *33. The court recognized that:

> the imposition of a Receivership is a drastic measure. But it is not a measure that the Court has sought, nor is it one the Court relishes. Rather, the Court is simply at the end of the road with nowhere else to turn. Indeed, it would be fair to say that the Receivership is being imposed on the Court, rather than on the State, for it is the State's abdication of responsibility that has led to the current crisis. Since the Court has jurisdiction over this matter, it has no choice but to step in and fill the void.

Id. at *31 (citation omitted). The court held the contempt remedy in abeyance after concluding that a finding of contempt was not a prerequisite to the appointment of a receiver. *Id.* at *33. Nevertheless, it sought to employ all feasible means other than a prisoner release to remedy the constitutional violations.

6. <u>Interim Remedies</u>

On plaintiffs' motion, the court considered appointing a temporary receiver but ultimately opted instead to appoint a correctional expert pending the search for and appointment of a receiver. *Id.* at *34-35. On November 14, 2005, the Correctional Expert filed a report and recommendations on interim remedies concerning clinical staffing and death reviews. "[T]he Correctional Expert's report powerfully underscore[d] the depth of the crisis in the delivery of health care services in the CDCR . . . ." Ex. D1065 at 1 (Dec. 1, 2005 Order). Over defendants' objections, the court ordered a series of "discrete, urgently needed, remedial measures that could be undertaken immediately" to improve recruitment and retention of clinical staff. *Id.* at 1, 6-15.

7. Appointment of the *Plata* Receiver

With the parties' participation, the *Plata* court engaged in a national search for a receiver. On February 14, 2006, the court appointed Robert Sillen as Receiver, with an effective date of April 17, 2006. In its order of appointment, the court conferred broad authority on the Receiver to "provide leadership and executive management of the California prison medical health care delivery system with the goals of restructuring day-to-day operations and developing, implementing, and validating a new, sustainable system that provides constitutionally adequate medical care to all class members as soon as practicable." Ex. P313 at 2 (Feb. 14, 2006 Order). The Receiver was assigned "the duty to control, oversee, supervise, and direct all administrative, personnel, financial, accounting, contractual, legal, and other operational functions of the medical delivery component of the CDCR," *id.*, and was granted "all powers vested by law in the Secretary of the CDCR as they relate to the administration, control, management, operation, and financing of the California prison medical health care system." *Id.* at 4. On January 23, 2008, the Court appointed J. Clark Kelso to replace Sillen as Receiver, and he has served in that capacity to date.

The Receivers have implemented substantial changes in the CDCR's prison medical care system and have issued regular reports documenting their progress. For example, the Receiver has increased recruitment and retention of clinical staff, implemented a new pharmacy system, and instituted pilot programs to improve medical screening at reception centers and management of chronic care. Nonetheless, as we describe below, fundamental unconstitutional deficiencies, caused primarily by overcrowding, continue to exist and prevent the delivery of constitutionally adequate medical care to California's inmates.

B. ***Coleman* (Mental Health Care)**

While the *Plata* court has struggled to bring the CDCR's medical system into constitutional compliance for more than seven years, the *Coleman* action has lasted even longer – almost two decades. The first five years of litigation culminated in a finding that the CDCR was violating the Eighth Amendment by failing to provide constitutionally adequate mental health care to inmates with serious mental disorders. The past fourteen years have involved continual efforts to remedy the constitutional violations.

At the time of the *Coleman* trial, the Eighth Amendment violations stemmed in large part from the state's complete failure to identify with any accuracy the number of mentally ill inmates in the prison population, despite several expert reports addressing the issue. Early in *Coleman*'s remedial phase, the state developed a screening mechanism to identify mentally ill inmates and plans for a system that could deliver mental health care to the thousands of inmates suffering from serious mental disorders. There are currently over 34,000 inmates identified as seriously mentally ill in the state's prisons. Ex. P243 at 900124 (collection of monthly CDCR mental health population placement reports, dated between December 2006 and August 2008). However, California remains unable to deliver constitutionally adequate mental health care for these inmates.

After fourteen years of remedial efforts under the supervision of a special master and well over seventy orders by the *Coleman* court, the California prison system still cannot provide thousands of mentally ill inmates with constitutionally adequate mental health care, and "critically mentally ill inmates [are] languishing in horrific conditions without access to immediate necessary mental health care." May 2, 2006 Order at 2.[10] The relentless growth of the inmate population has prevented the state from meeting its obligations under the Eighth Amendment and has led, inexorably, to the proceeding before this court.

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[10]All references to court orders in this section of our opinion and order are to orders filed in the district court in *Coleman*. *Coleman* docket numbers are listed when multiple, untitled orders were issued on the same day.

1. Findings of Eighth Amendment Violations

The *Coleman* action was filed on April 23, 1990. On July 25, 1991, plaintiffs filed an amended complaint, Ex. D1036, raising claims under the Eighth and Fourteenth Amendments to the United States Constitution and the Rehabilitation Act, 29 U.S.C. § 794. These claims were based on serious inadequacies in the delivery of mental health care to inmates in the California adult prison system. *Id.* The *Coleman* court subsequently certified a class consisting of inmates with serious mental disorders.[11] Nov. 14, 1991 Order at 4-5. The matter proceeded to trial before a United States Magistrate Judge, and in June 1994 the magistrate judge found that defendants' delivery of mental health care to class members violated the Eighth Amendment. On September 13, 1995, the district court adopted the magistrate judge's decision, with modifications. *Coleman v. Wilson*, 912 F. Supp. 1282 (E.D. Cal. 1995).[12]

In adopting the magistrate's findings, the *Coleman* court identified several significant deficiencies in the delivery of mental health care to California's inmates. First, the court found delays in access to necessary mental health care "at each level of the mental health care delivery system as it exist[ed] in the CDC," which "result[ed] in exacerbation of illness and patient suffering." *Id.* at 1308, 1309. Evidence specifically noted by the *Coleman* court

[11]The class certified in 1991 consisted of "all inmates with serious mental disorders who are now or who will in the future be confined within the California Department of Corrections (except the San Quentin State Prison, the Northern Reception Center at Vacaville and the California Medical Facility-Main at Vacaville)." Nov. 14, 1991 Order at 4-5. On July 12, 1995, the *Coleman* class was decertified as to the Rehabilitation Act claim, which was dismissed with prejudice. July 12, 1995 Order at 2. The class definition was subsequently amended to include "all inmates with serious mental disorders who are now, or who will in the future, be confined within the California Department of Corrections." July 23, 1999 Order & Stip. & Order Amending Plaintiff Class & Application of Remedy appended thereto at 2.

Inmates suffering from "serious mental disorders" include those with "Organic Brain-Syndrome-Severe, Schizophrenia, Major Depression [or] the Bipolar Disorders," those who "currently or within the last three years . . . [have] had a significant disorder of thought or mood which substantially impairs or substantially impaired reality testing, judgment or behavior," and those who "currently do[] not have the ability to meet the functional requirements of prison life without psychiatric intervention, including psychotropic medication." *Coleman*, 912 F. Supp. at 1300 nn.15-16 (internal quotations and citations omitted).

[12]The district court's order was issued following *de novo* review by that court of the magistrate judge's findings and recommendations. *Coleman*, 912 F. Supp. at 1293, 1297.

included "backlogs of 300-400 inmates awaiting transfer to enhanced outpatient programs at California Men's Colony [('CMC')] or California Medical Facility [('CMF')]" and a defense exhibit describing "the problem of the backlog of male inmates awaiting transfer to CMF and CMC for mental health services" as "approaching the crisis level." *Id.* at 1309 (internal quotations omitted).

In addition, defendants did not have "a systematic program for screening and evaluating inmates for mental illness." *Id.* at 1305. Instead, they relied on mechanisms that were "either used haphazardly, or depend[ed] for efficacy on incomplete or non-existent medical records, self-reporting, or the observations of custodial staff inadequately trained in the signs and symptoms of mental illness." *Id*. at 1305-06. As a result, "thousands of inmates suffering from mental illness [were] either undetected, untreated, or both." *Id*. at 1306.

Furthermore, the *Coleman* court found that "defendants' supervision of the use of medication [was] completely inadequate; prescriptions [were] not timely refilled, there [was] no adequate system to prevent hoarding of medication, . . . inmates on psychotropic medication [were] not adequately monitored, and it appear[ed] that some very useful medications [were] not available because there [was] not enough staff to do necessary post-medication monitoring." *Id.* (internal quotations and citation omitted); *see also id.* at 1310. The court also found violations of a constitutional magnitude in the involuntary medication of inmates. *Id.* at 1313. In addition, the court found significant deficiencies in medical record keeping, "including disorganized, untimely and incomplete filing of medical records, insufficient charting, and incomplete or nonexistent treatment plans" at most prisons. *Id.* at 1314 (internal quotations and citation omitted); *see also id.* at 1315. The court found that "inmates [were] typically transferred between prisons without even such medical records as might exist." *Id.* at 1314 (internal quotations and citation omitted); *see also id.* at 1315.

The *Coleman* court also found that "the California Department of Corrections [was] significantly and chronically understaffed in the area of mental health care services." *Id.* at 1307. Relying on the testimony of a defense expert, the *Coleman* court further found that "defendants [could not] provide adequate mental health care without some form of quality assurance" program to ensure the competence of their mental health care staff, but that the CDCR lacked any such program. *Id.* at 1308.

These findings led the *Coleman* court to conclude that defendants lacked all of the "basic, essentially common sense, components of a minimally adequate prison mental health care delivery system," *id.* at 1298 (citing *Balla v. Idaho State Bd. of Corr.*, 595 F. Supp. 1558, 1577 (D. Idaho 1984) (citing *Ruiz v. Estelle*, 503 F. Supp. 1265, 1339 (S.D. Tex. 1980)), including proper screening; timely access to appropriate levels of care; an adequate medical record system; proper administration of psychotropic medication; competent staff in sufficient numbers; and a basic suicide prevention program. *Id.* at 1298 n.10. The *Coleman* court found that the CDCR was seriously deficient in each of the first five components and that the CDCR's suicide prevention program was adequate in design but inadequately implemented due to severe and chronic understaffing throughout the CDCR. *Id*. at 1305-15.[13]

On the basis of its findings, the *Coleman* court entered an order for injunctive relief requiring defendants to develop plans to remedy the constitutional violations under the supervision of a special master. *Id.* at 1323-24; *see also* Fact #5, Nov. 17, 2008 Joint Statement of Undisputed Facts.

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[13]In addition, the *Coleman* court found "inappropriate use of disciplinary and behavioral control measures directed towards the members of plaintiff class." *Id.* at 1319-20. Seriously mentally ill inmates were "being treated with punitive measures by the custody staff to control the inmates' behavior without regard to the cause of the behavior" because custody staff was "inadequately trained in the signs and symptoms of serious mental illness." *Id.* at 1320. Defendants' placement of *Coleman* class members in administrative segregation and segregated housing units ("SHUs") was found to violate the Eighth Amendment because mentally ill inmates were placed in such units "without any evaluation of their mental status, because such placement [caused] further decompensation, and because inmates [were] denied access to necessary mental health care while they [were] housed in administrative segregation and/or segregated housing." *Id.* at 1320 (internal quotations and citation omitted). The court also found unconstitutional defendants' policy permitting the use of tasers and 37mm guns on *Coleman* class members without consideration of the impact of such measures on mental illness. *Id.* at 1321-23.

2. Remedial Orders

On December 11, 1995, the *Coleman* court appointed a special master to oversee the remedial phase of the action. Dec. 11, 1995 Order Appointing a Special Master at 2. The specific duties of the Special Master included working with defendants to develop a remedial plan to address the constitutional violations identified by the court, monitoring defendants' implementation of and compliance with the remedial plan, and submitting interim reports on the progress of the remedial plan and defendants' compliance. Dec. 11, 1995 Order of Reference at 3-4.

Eighteen months later, the Special Master submitted a report to the court accompanied by remedial plans, policies, procedures, and forms collectively identified as the Mental Health Services Delivery System Program Guides (hereafter "Program Guides"). June 6, 1997 Special Master's Report on Plans, at 1-2.[14] The court accepted the Special Master's report, ordered two specific modifications recommended by the Special Master, gave provisional approval to the Program Guides, and directed the Special Master to "forthwith commence monitoring defendants' implementation of and compliance with" the delivery of mental health care services as set forth in the Program Guides. June 27, 1997 Order at 2-3.

Following the court's provisional approval of the Program Guides, defendants continued to work with the Special Master to implement and revise the guides.[15] In early 2006, the Special Master submitted a report and recommendations regarding a Revised Program Guide that defendants concurrently submitted for final approval. *See* Jan. 2006 Revised Program Guide (*Coleman* docket # 1753). On March 3, 2006, the *Coleman* court

[14]A reformatted copy of the Program Guides was filed in January 1998. *Coleman* docket # 913.

[15]As the *Coleman* Special Master explained when defendants' Revised Program Guide was submitted for final approval, at the start of the remedial phase "the basic program guides were a work in progress, hence their provisional adoption. Many of the programmatic components of the defendant's mental health system were still embryonic and needed much nurturing. . . . All agreed that their implementation needed close scrutiny and analysis over the next several years. During the subsequent implementation process, many aspects of the provisionally approved plans, policies, and protocols were revisited and amended by the court, while some other provisions were modified and upgraded by the defendants on their own initiative." Feb. 3, 2006 Special Master's Report & Recommendations on Defs.' Revised Program Guide at 2.

gave final approval to all undisputed provisions of the Revised Program Guide and ordered their immediate implementation. Mar. 3, 2006 Order at 1-2.[16]

Operating under the framework established by the Program Guides, the *Coleman* court has engaged in extensive efforts to address the identified constitutional violations through means other than a prisoner release order. Since June 1997, the *Coleman* Special Master has filed twenty monitoring reports and fifty-six other reports. During the same period, the *Coleman* court has issued well over seventy orders concerning the matters at the core of the remedial process. As discussed in detail below, the vast majority of the orders by the *Coleman* court have been directed at accurately projecting short-, medium-, and long-range bed needs; creating a sufficient number of beds at the higher levels of the mental health care delivery system; reducing delays in transfers to necessary levels of care; and ensuring adequate staffing.[17] In addition, the court has issued several orders addressing deficiencies at

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[16]The Revised Program Guide approved by the *Coleman* court in March 2006 contains specific provisions for an annual revision process. *See* Jan. 2006 Revised Program Guide (*Coleman* docket # 1753-2) at 12-1-14; *see also* Dezember Trial Aff. ¶ 24 ("The Program Guide is now subject only to an annual revision process."). The *Coleman* court has specifically approved at least one additional modification to the Revised Program Guide. *See* Sept. 11, 2006 Stip. & Order at 3.

The parties have offered three separate versions of the Revised Program Guide into evidence. Defendants have offered as Exhibit D1147 a document they represent to be the Revised Program Guide approved by the *Coleman* court in March 2006. *See* Dezember Trial Aff. ¶ 16. Plaintiffs have offered as Exhibit P9 a document identified as the September 2006 Revised Program Guide. Defendants have also offered as Exhibit D1148 a version of the 2008 Revised Program Guide to which is appended a redline document showing edits from a Draft August 2008 revision. Defendants represent that at the time of filing the 2008 Revised Program Guide had been through "the annual revision process to enable [its] publication" and that "distribution of the final 2008 Revised Program Guide to the field [was] in the offing." Dezember Trial Aff. ¶ 24. Unless otherwise noted, all citations in this opinion and order are to the 2008 Revised Program Guide, Ex. D1148.

[17]At the earliest stages of the remedial phase, the Special Master reported that defendants' plan for screening inmates at reception centers represented a "vast improvement" over the screening procedures that existed at the time of trial, and that defendants had chosen an effective screening instrument. Mar. 12, 1996 First Report of the Special Master on the Remedial Plan at 6-7. Implementation of screening practices was slow at the start of the remedial phase, but by mid-1997 defendants' screening process had improved. Evidence offered at the *Coleman* trial showed that, in July 1987, approximately 2,966 inmates had been identified with a psychiatric classification and/or placement in psychiatric facilities used by the CDCR, while, conservatively, over 4,000 inmates with serious mental disorders were undetected. *See Coleman*, 912 F. Supp. at 1306 n.29. By July 1997, 14,293 inmates with serious mental disorders had been identified. *See* Feb. 3, 2006 Special Master's Report & Recommendations on Defs.' Revised Program Guide at 2. The Special Master's second monitoring report, filed in October 1998, reflected increasing institutionalization of, and

specific institutions.[18] Finally, the court has issued several orders concerning suicide prevention efforts, including, in the last five years, orders addressing a rising number of inmate suicides, particularly in administrative segregation units.[19]

a. Mental Health Care Beds and Treatment Space

As the remedial phase of *Coleman* began and thousands of inmates with serious mental disorders were identified, the need for additional treatment space at every level of the mental health care delivery system became manifest. *See* Ex. D1292 (Special Master's Response to Court's May 17, 2007 Request for Information) at 5 (noting emergence in mid- and late-1990s of a "need for much expanded mental health care and the space needed to provide it").[20]

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compliance with, the mental health screening system, *see* Ex. D1108 (compilation of summaries and recommendations from the *Coleman* Special Master's twenty monitoring reports) at DEFS059840-DEFS059849. By August 2008, there were 34,319 inmates with serious mental disorders identified in California's prison system. Ex. P243 at 900124.

[18] *E.g.*, Nov. 19, 1998 Order at 1-2 (regarding California Rehabilitation Center ("CRC"), Mule Creek State Prison ("Mule Creek"), Salinas Valley State Prison ("SVSP"), Wasco State Prison ("Wasco"), Deuel Vocational Institution ("DVI"), California Institution for Men ("CIM"), California Institution for Women ("CIW"), and California State Prison-Solano ("CSP-Solano")); Oct. 26, 2001 Order at 1-2 (regarding California Substance Abuse Training Facility ("SATF") and California State Prison-Los Angeles County ("CSP-LAC")); Apr. 25, 2002 Order at 2-3 (regarding CSP-LAC); June 13, 2002 Order (*Coleman* docket # 1384) at 1-2 (regarding CIM, SATF, California State Prison-Corcoran ("CSP-Corcoran"), CSP-LAC, CSP-Solano, San Quentin State Prison ("San Quentin"), and SVSP); Mar. 8, 2005 Order at 3-4 (regarding CSP-Corcoran, San Quentin, and Richard J. Donovan Correctional Facility ("R.J. Donovan")).

[19] *E.g.*, Dec. 22, 2000 Order at 4 (requiring Special Master to report on whether defendants have adequate mechanisms for disciplining staff whose conduct contributes to inmate suicide); Oct. 1, 2001 Order at 2 (directing implementation of Suicide Reporting and Review Policy); Jan. 12, 2004 Order at 2-3 (requiring several training and planning measures for suicide prevention); June 10, 2005 Order at 1-2 (*Coleman* docket # 1668) (requiring implementation of several suicide prevention measures); June 8, 2006 Order at 2-3 (requiring defendants to develop a plan to deal within rising percentage of suicides in administrative segregation and a budget and implementation schedule); Aug. 8, 2006 Stip. & Order at 1-2 (regarding use of video-monitoring for suicide watch observation); Sept. 11, 2006 Stip. & Order at 3 (extending time to submit final plan regarding suicides in administrative segregation).

[20] Plaintiffs also offered this document into evidence as Exhibit P35. Because we discuss the reports of the *Coleman* Special Master and the *Plata* Receiver throughout this opinion and order, we note that, at trial, both plaintiffs and defendants introduced various reports from the Receiver and the Special Master without objection.

At the time of the *Coleman* trial, mental health care delivery to inmates in California's prison system was "limited to a few institutions and involved some 3,200 designated mental health care beds," Defs.' Proposed Finding of Fact # 45 (citing Ex. D1273 at 43-44; Dezember Trial Aff. ¶ 70), including beds for inpatient hospital care provided by the Department of Mental Health ("DMH") at CMF and Atascadero State Hospital. Dezember Trial Aff. ¶ 70. After the *Coleman* trial, defendants undertook to implement plans

> for the delivery of a continuum of mental health services, including long-term inpatient care (provided through the department's contract with the California Department of Mental Health), short-term inpatient care (the department's Mental Health Crisis Bed program), intensive outpatient care (the Enhanced Outpatient Program) and routine outpatient care (the Correctional Clinical Case Management program).

Mar. 12, 1996 First Report of the Special Master on the Remedial Plan at 2-3. Defendants planned regional mental health care service areas, with "[i]nitial entry to the service continuum . . . provided primarily through a uniform screening process" at each of the CDCR's reception centers.[21] *Id.* at 3.

Defendants' remedial plans were built around the Mental Health Services Delivery System ("MHSDS") set forth in the original Program Guides and the Revised Program Guide. The MHSDS is designed to provide mental health care to all inmates with current symptoms of any of the Axis I serious mental disorders identified in the current Diagnostic and Statistical Manual,[22] inmates who need mental health treatment "to protect life and/or treat significant disability/dysfunction" resulting from a diagnosed or suspected mental disorder, and inmates with a diagnosis or recent episode of exhibitionism. Ex. D1148 at

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[21]We describe reception centers in more detail below when we discuss whether crowding is the primary cause of the constitutional violations at issue. *See infra* Section IV.B.1.

[22]As listed in the Revised Program Guide, these are: Schizophrenia (all subtypes); Delusional Disorder; Schizophreniform Disorder; Schizoaffective Disorder; Brief Psychotic Disorder; Substance-Induced Psychotic Disorder (excluding intoxication and withdrawal); Psychotic Disorder Due to a General Medical Condition; Psychotic Disorder Not Otherwise Specified; Major Depressive Disorders; and Bipolar Disorders I and II. Ex. D1148 at 12-1-6.

12-1-6. The MHSDS has the same basic structure as the "embryonic"[23] system first reported by the *Coleman* Special Master in March 1996. The system is designed around four levels of care: the Correctional Clinical Case Management Services program ("CCCMS" or "3CMS"), the Enhanced Outpatient Program ("EOP"), Mental Health Crisis Bed ("MHCB") Placement, and DMH Inpatient Hospital Care. Ex. D1148 at 12-1-7 to 12-1-9.[24]

A significant amount of remedial effort in *Coleman* has been spent on the as yet unsuccessful endeavor to develop a sufficient number of mental health care beds at the EOP, MHCB, and inpatient levels of care,[25] as well as to provide adequate treatment space for all inmates with serious mental health disorders.[26] The *Coleman* court has issued numerous orders addressing the need for mental health care beds and treatment space, including orders

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[23]Feb. 3, 2006 Special Master's Report & Recommendations on Defs.' Revised Program Guide at 2.

[24]The CCCMS level of care is for inmates whose symptoms are under control or in partial remission and can function in the general prison population, administrative segregation, or segregated housing units. Ex. D1148 at 12-1-7. The EOP level of care is for inmates who suffer "Acute Onset or Significant Decompensation of a serious mental disorder characterized by increased delusional thinking, hallucinatory experiences, marked changes in affect, and vegetative signs with definitive impairment of reality testing and/or judgment," and who are unable to function in the general prison population but do not require twenty-four hour nursing care or inpatient hospitalization. *Id.* at 12-1-7 to 12-1-8. MHCBs are for inmates who are markedly impaired and/or dangerous to others as a result of mental illness, or who are suicidal, and who require 24-hour nursing care. *Id.* at 12-1-8 to 12-1-9. The MHCB level of care is also for inmates "awaiting transfer to a hospital program" and for inmates "being stabilized on medication prior to transfer" to a lower level of care. *Id.* Finally, DMH inpatient care is for inmates who "cannot be successfully treated" at a lower level of care; both intermediate and acute levels of inpatient care are to be provided. *Id.* at 12-1-9.

[25]CCCMS inmates are housed in the general prison population.

[26]At a relatively early stage in the remedial process, defendants recognized the need to develop an adequate method of forecasting the need for such beds. However, according to Robin Dezember, Chief Deputy Secretary of CDCR's Correctional Healthcare Services Division at the time of trial, there was a period of several years prior to 2006 "where there seemed to be a lack of continuous attention to this program." Rep. Tr. at 862:12-14. In 2002, a health care consulting firm "designed a mental health bed demand forecast methodology for the CDCR. . . . This method projects future bed needs based on several variables that drive bed usage, including total overall prison population, length of stay and discharge rates of patients in inpatient status, and growth in outpatient demand proportional to the historical prevalence of outpatients in the total prison population." Defs.' Statewide Mental Health Bed Plan, April 2006, filed April 17, 2006, at 3. In 2006, defendants acknowledged that the forecasting methodology developed in 2002 needed to be updated. May 2, 2006 Order at 2 n.1.

directing defendants to assess the need for beds and treatment space throughout the mental health care delivery system and to plan for and develop the necessary number of beds as well as sufficient space at each level of care.[27]

When the state's growing prison population reached a record of more than 160,000 in 2006, the shortage of beds and space reached a crisis level. In March 2006, defendants were ordered to submit a plan to meet both the immediate and long-term need for mental health care beds. Mar. 3, 2006 Order at 3-4. During a subsequent hearing on the adequacy of defendants' proposed plan, the CDCR's then-Director of Health Care Services reported a shortage of 75 MHCBs and 125 intermediate inpatient beds and "repeatedly referred to the shortage as a 'crisis.'" May 2, 2006 Order at 2. The *Coleman* court found that defendants' plan entirely failed to address the CDCR's immediate bed needs:

> The special master reports, the record reflects, and defendants admit, that the plan presented to the court in no way adequately responds to the severe shortage of intermediate care facility beds and mental health crisis beds that currently exists in the CDCR. It is undisputed that the shortage is leaving critically mentally ill inmates languishing in horrific conditions without access to immediately necessary mental health care.

Id. The court further found that defendants' long-range plan for the provision of acute and intermediate care beds and mental health crisis beds appeared "sound in principle," but required revision because it was based on population figures that were "already out of date." *Id.* Defendants' plan for EOP beds was not approved because it "describe[d] a shortfall of over 1000 such beds in the year 2011." *Id.* at 4. Following the hearing, the court ordered defendants to file an amended long-term plan and to include with that plan a list of any projects that could be accelerated; to file a plan for the interim provision of intermediate inpatient beds and mental health crisis beds; and to maintain, open, or create intermediate inpatient and mental health crisis beds at specific prison locations. *Id.* at 4-6. The *Coleman* court has subsequently issued several orders concerning the provision of EOP, MHCB, and

[27] *E.g.*, May 21, 1998 Stip. & Order at 4; Sept. 14, 2000 Order at 2; Apr. 4, 2001 Order at 4; June 27, 2001 Order at 2; Dec. 20, 2001 Order at 1-2; Mar. 4, 2002 Order at 1; May 7, 2002 Order at 1-2; Oct. 8, 2002 Order at 2; Jan. 12, 2004 Order at 2; Apr. 5, 2004 Order at 3; July 9, 2004 Order at 3-4; Oct. 5, 2004 Order at 2; Jan. 27, 2005 Order at 2; Mar. 3, 2006 Order (*Coleman* docket # 1772) at 3-4.

inpatient beds, all of which are in critically short supply, including an extensive order concerning defendants' long-range and interim plans for the provision of these beds.[28] However, providing the beds is obviously infeasible without the necessary space in which to locate them, especially in light of the constantly increasing need for such beds as a result of the substantial, if unanticipated, growth in the prison population.

b. Transfers to Appropriate Level of Care

Throughout *Coleman*'s remedial phase, the state's delivery of mental health care to its inmates has been plagued by delays in the transfer of inmates to higher levels of care. Both the original Program Guides and the Revised Program Guide include timelines for post-referral transfers to EOP programs, mental health care crisis beds, and DMH inpatient beds. *See Coleman* docket # 913 at 1-4, 4-13, 5-13, 6-4; Ex. D1148 at 12-1-16.[29] Unfortunately, the state remains unable to transfer inmates to required care in a timely fashion, and the

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[28]Oct. 20, 2006 Order; *see also* July 20, 2006 Order (*Coleman* docket # 1904) at 1; Aug. 23 2006 Order.

[29]The timelines in the Revised Program Guide are as follows:

> Reception Centers: EOP transfers should occur within 60 days, or 30 days if clinically indicated. CCCMS transfers should occur within 90 days, or 60 days if clinically indicated.
>
> MHCB: MHCB transfers should occur within 24 hours of referral.
>
> DMH: Transfers to DMH acute placements should occur within 10 days of referral, if accepted to DMH. Referral must be completed within 2 working days of identification. Transfers to DMH intermediate care placements should occur within 30 days of referral, if accepted to DMH. Referral must be completed within 5-10 working days.
>
> EOP: Transfers to general population ("GP") EOP programs should occur within 60 days, or 30 days if clinically indicated.
>
> EOP Administrative Segregation Unit ("ASU") Hub: EOP inmates housed in the regular ASU should transfer to an EOP ASU Hub within 30 days of placement in the regular ASU or within 30 days of referral to EOP level of care.
>
> PSU: EOP inmates housed in the ASU who are endorsed for the PSU must be transferred within 60 days of endorsement.

Stewart Expert Report ¶ 153; *see* Ex. D1148 at 12-1-16.

Coleman court has issued numerous orders directed at expediting transfers and reducing delays.[30]

c. Staffing

A final focus of the remedial effort in *Coleman* over the last decade has been the development and retention of sufficient numbers of competent mental health care clinicians. In June 1998, the *Coleman* court issued the first of numerous orders aimed at remedying the substantial understaffing of the CDCR's mental health care system, directing defendants to show improvement in the "quality and quantity of contracted psychiatric services and/or" the implementation of a "recruitment program sufficient[] to fill vacancies in presently authorized positions." June 16, 1998 Order at 1. In the same order, the court directed the *Coleman* Special Master to recommend the staffing ratios necessary to a constitutionally adequate mental health care delivery system. *Id*. at 2.[31] Since then, the court has repeatedly ordered defendants to create the necessary positions and to hire staff to fill those positions.[32] In addition, the court has issued orders designed to assure the competence of staff, primarily by requiring the state to develop and implement a quality assurance and peer review process.[33]

After two years of compliance monitoring, it became apparent that orders setting staffing ratios and requiring defendants to fill clinical positions would not be sufficient to

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[30] *E.g.*, July 26, 1999 Order at 5-6; Jan. 13, 2000 Order (*Coleman* docket # 1111) at 4; Apr. 27, 2000 Order at 5; July 3, 2000 Order at 6; Sept. 14, 2000 Order at 2; Apr. 4, 2001 Order at 3-4; Jan. 12, 2004 Order at 2; Mar. 25, 2004 Order at 2-3; Mar. 8, 2005 Order at 2; Oct. 20, 2006 Order at 3.

[31] In July 1999, the court approved several mental health staffing ratios and required defendants to adopt and implement specific mental health care staffing ratios for administrative segregation units. July 26, 1999 Order at 4-5.

[32] *E.g.*, Aug. 25, 1998 Order at 1; Jan. 19, 1999 Order at 2; July 26, 1999 Order at 4; Jan. 13, 2000 Order (*Coleman* docket # 1111) at 4; Apr. 27, 2000 Order at 5; July 3, 2000 Order; Aug. 28, 2000 Order (*Coleman* docket # 1198) at 3; Apr. 4, 2001 Order at 4; Oct. 26, 2001 Order at 1; June 13, 2002 Order (*Coleman* docket # 1383) at 4; June 13, 2002 Order (*Coleman* docket # 1384) at 2; Mar. 3, 2006 Order (*Coleman* docket # 1772) at 3; Mar. 9, 2006 Order (*Coleman* docket # 1774) at 1-2.

[33] *E.g.*, June 16, 1998 Order at 2; Aug. 12, 1998 Order at 1-2; June 13, 2002 Order (*Coleman* docket # 1384) at 2.

remedy the constitutional violations. Accordingly, the *Coleman* court ordered defendants to develop a plan to retain CDCR psychiatrists. July 26, 1999 Order at 4. Over the next eight years, as part of its ongoing effort to ensure that California hires and retains sufficient clinical staff, the court issued several orders concerning recruitment and retention bonuses, as well as salary increases for mental health clinicians.[34]

3. Special Master's 2006 Monitoring Reports

By the end of the first decade of remedial work in *Coleman*, the state had made some progress but still had not met its constitutional obligation to provide *Coleman* class members with adequate mental health care. July 23, 2007 Order, 2007 WL 2122636, at *3. Worse, two monitoring reports filed by the *Coleman* Special Master in 2006 reflected a troubling reversal in the progress of the remedial efforts of the preceding decade and demonstrated the profound impact of population growth on the state's ability to meet its constitutional obligations to seriously mentally ill inmates.

On January 23, 2006, the *Coleman* Special Master filed his Fifteenth Monitoring Report, which included findings made at monitoring visits to all CDCR institutions between early August 2004 and late May 2005. Jan. 23, 2006 Fifteenth Monitoring Report at 2-3. The report was grim. The Special Master reported rising vacancy rates in staffing, as well as a "growing crisis in accessibility to a MHCB level of care and the continuing inadequacy of access to DMH programs highlighted by the unmet needs assessment that was conducted and concluded during the period." Ex. D1108 (compilation of summaries and recommendations from the *Coleman* Special Master's twenty monitoring reports) at DEFS060221-DEFS060222. The Special Master also reported that "suicides in CDCR escalated significantly during the monitoring period for reasons that are just beginning to be subjected to analysis." *Id.* at DEFS060222.

[34] *E.g.*, Jan. 13, 2000 Order (*Coleman* docket # 1111) at 4-5; July 25, 2003 Order at 6; Mar. 8, 2005 Order at 1-2; June 10, 2005 Order (*Coleman* docket # 1667) at 1-2; Mar. 9, 2006 Order (*Coleman* docket # 1774) at 1-2; Dec. 15, 2006 Order at 1-2; Feb. 7, 2007 Order at 2; May 23, 2007 Order (*Coleman* docket # 2236) at 5; June 28, 2007 Order (*Coleman* docket # 2301) at 3.

The Special Master further reported that "transfers to more intensive levels of mental health programming and treatment" had "deteriorated sharply and widely." *Id.* at DEFS060252. The availability of MHCBs, "the department's sole internal resource for providing short-term crisis care for unstable and suicidal inmates," had declined to the point that it "became by mid-2005 a critical issue with severe impact on CDCR's most seriously mentally disordered inmates." *Id.* In addition, "the waiting list for the admission to Psychiatric Service Units (PSUs) for EOPs with a SHU [Segregated Housing Unit] term, imposed on inmates who are viewed as a danger to themselves or others, expanded steadily, and mental health caseload inmates continued to spend long periods in reception awaiting transfer to EOP and 3CMS general population programs." *Id.* at DEFS060252-DEFS060253.

Taken together, the expanding wait lists, critical shortage of beds, and identification of hundreds of inmates in need of clinical referrals "meant that a growing number of the most seriously mentally ill inmates in the CDCR were not receiving in a timely fashion the levels of care they needed." *Id.* at DEFS060253. To explain this backward slide in the progress made under the *Coleman* court's supervision, the Special Master pointed to the prison system's expanding population. For example, "none of the [CDCR's] planning documents . . . addressed the department's need to expand its capacity to provide acute inpatient DMH care to meet the expanding need being pushed, among other causes, by an inexorably rising MHSDS population commensurate with CDCR's growing overall population." *Id.* at DEFS060258. Likewise, progress in the timely transfer of mentally ill inmates from reception centers into general population programs had "been largely cancelled by the recently escalating growth in the overall CDCR population and the concomitantly increasing number of MHSDS inmates in reception." *Id.* at DEFS060272-DEFS060273.

Defendants did not object to the Special Master's Fifteenth Monitoring Report or the recommendations contained therein, including the Special Master's finding as to the role played by the rapidly growing prison population and the resulting lack of space necessary to provide the requisite care to mentally ill inmates. Mar. 3, 2006 Order (*Coleman* docket # 1772) at 1.

As compliance work continued in 2006, the population pressures identified by the Special Master in his Fifteenth Monitoring Report were evident: Compliance became more difficult and the gains made by defendants in the first decade receded. On December 14, 2006, the *Coleman* Special Master filed his Sixteenth Monitoring Report. That report, which covered a monitoring period from the summer of 2005 until March 2006, Ex. D1108 at DEFS060302, revealed that serious shortages in staffing and bed space, as well as substantial delays in transfers to necessary levels of care, continued unabated.

Among other findings, the Special Master reported that "the inexorably expanding demand for services resulting from the bulging population" had caused a "continuing deterioration of mental health staffing." *Id.* at DEFS060303. According to the Special Master, "[t]welve years after the determination that mental health treatment in CDCR was unconstitutional, the defendants still lacked clinical resources to meet the needs of some 25 to 30 percent of inmates identified as seriously mentally disordered." *Id*. at DEFS060304.

Furthermore, the Special Master reported that

> [t]he general breakdown in transfers was another transcendent issue in the 16th round of review. As the overall caseload population continued to increase, so too did the percentage of the caseload in need of program beds with intensive care and high security, including specifically DMH inpatient beds, MHCBs, PSU beds and EOP administrative segregation placements.

id. at DEFS060306. "[A]ccess to appropriate levels of care for seriously mentally ill inmates remained a problem in almost every CDCR institution." *Id.* at DEFS060307.

Although Defendants filed a response to two recommendations contained in the Sixteenth Monitoring Report, they did not object to any of the above findings, once more including the Special Master's determination that the "escalating growth in the overall CDCR population" was a major cause of the CDCR's reversal of progress. *Id.* at DEFS060273; *see* Defs.' Dec. 7, 2006 Response to Special Master's Sixteenth Report.

C. **Crowding in California's Prison System**

1. The Increasing California Prison Population

Since the mid-1970s, California's prison population has increased by over 750 percent, rising from approximately 20,000 inmates to an "all-time high" in October 2006 of over 170,000 inmates, with more than 160,000 housed in the state's adult prison institutions. Ex. P1 at 1 (Governor Schwarzenegger's Oct. 4, 2006 Prison Overcrowding State of Emergency Declaration); Ex. P5 at 62 (May 2006 California Policy Research Center Report, "Understanding California Corrections"); Fact # 9, Nov. 17, 2008 Joint Statement of Undisputed Facts; Ex. D1259-1. Much of this population expansion occurred during the time in which the *Plata* and *Coleman* courts have monitored the medical and mental health care in California's prisons. In 1991, when the *Coleman* plaintiffs filed their amended complaint, the state's prison system housed approximately 100,000 inmates. Ex. P410 at 2 (CDCR Offender Information Services Branch Data Analysis Unit, Institution and Camp Design Bed Capacity and Population, June 30, 1987 - June 30, 2007). As of August 27, 2008, 156,352 inmates were housed in in-state prison institutions. Fact # 10, Nov. 17, 2008 Joint Statement of Undisputed Facts.[35]

The expansive growth of the prison population in California is due, in part, to the state's adoption of determinate sentencing in the 1970s, Ex. P5 at 61-62, and the "countless increases in criminal sentences" enacted by the legislature or in initiative measures in succeeding years, Ex. P3 at 68 (Jan. 2007 Little Hoover Commission Report, "Solving California's Corrections Crisis: Time Is Running Out") (detailing increases in California sentencing since the Determinate Sentencing Act became effective in 1977). In addition, California's prison population has increased because of its post-sentencing practices. "The state has [] been widely criticized for not doing a better job of preparing inmates to return to

[35]In this opinion and order, we will hereafter consider only figures and percentages relating to the CDCR's thirty-three in-state adult prison institutions. We do not consider camps, community correction centers, or Department of Mental Health state hospitals, all of which also house CDCR inmates. It is the thirty-three in-state adult prison institutions that are the subject of the Governor's Prison Overcrowding State of Emergency Proclamation and were the focus of the evidence at trial before this court. All references to "system" and "systemwide" encompass only those thirty-three adult institutions.

society." Ex. P4 at 121 (June 2004 Corrections Independent Review Panel Report, "Reforming Corrections").

> Approximately 90 percent of state prison inmates are eventually released on parole, and at present, more than half return to prison. A 2003 study by the Little Hoover Commission concluded that inmates are not prepared for their release from prison. Department of Corrections reports show that 43 percent of inmates released from prison in 1999 were sent back to prison within a year and that 56 percent returned within two years. Many of those returned to prison are parolees who are sent back for violating the conditions of parole, rather than for committing new crimes, and many of those go back for relatively short periods of time – an average of 5½ months.

Id. The consequences of the state's failure to prepare inmates for re-entry are significant: "The vast numbers of parolees returning to prison help drive both the size of the prison population and the cost of the system. In 2001 more than 74,000 (47 percent) of the average daily prison inmate population of 157,000 was made up of parole violators." *Id.* Finally, also significant are the actions of the parole board and the Governor in declining to release prisoners serving terms of 15 or 25 years to life who have served their minimum sentence or more with unblemished records and are determined by prison officials not to constitute a risk to society.

2. <u>Studies Commissioned by the State of California To Examine Prison Crowding</u>

The California legislature has recognized prison crowding as a serious problem since at least 1987, when it convened a Blue Ribbon Commission on Inmate Population Management. *See* Ex. P2 at 78. The commission issued its final report in 1990, with thirty-eight recommendations, including "alternative sanctions, and more programming [and] reentry programs." *Id.* Between 1990 and 2006, more than a dozen commissions and other groups issued reports with proposals to solve the overcrowding problem in California's prison system. *Id.* at 3, 10, 78-79. As Joan Petersilia, co-chair of the expert panel convened by the CDCR in 2007, noted, "all of the reports recommended essentially the same ten things," including diverting non-violent, non-serious offenders and technical parole violators from prison; using a risk and needs assessment tool to match inmates with resources and programming; expanding rehabilitative programs; reforming California's determinate sentencing system; transferring low-risk prisoners in the later part of their sentences to community-based reintegration facilities; establishing a sentencing commission; reforming parole; creating partnerships between state and local corrections agencies; requiring that all programs be based on solid research evidence; and promoting public awareness regarding California's prison system. *Id.* at 77.

One of the most exhaustive reports completed during this period was the June 2004 report of the Corrections Independent Review Panel, which was appointed by Governor Schwarzenegger; chaired by former California Governor and Attorney General George Deukmejian, who had a reputation as tough on crime; and composed of forty independent correctional consultants and representatives from state agencies. Ex. P4 at i. The Panel noted that California's "correctional system has grown to become the largest in the nation, rivaling in size and numbers even those of most other countries," and that "[n]ot surprisingly, this massive system shows the strains of both its age and its decades-long growth." *Id.* at 199. The Panel found that "[a]dult prisons are severely overcrowded, imperiling the safety of both correctional employees and inmates." *Id.* Consequently, a number of the Panel's 237 recommendations, including the enhancement of earned credits, the expansion of rehabilitative programming, the identification of older inmates for early release, and the diversion of certain parole violators, were aimed at inmate population reduction. *See id.* at 122-61.

3. <u>Defining the Capacity of California Prisons</u>

In its report, the Corrections Independent Review Panel discussed three distinct measures of prison capacity: "design capacity," "operable capacity," and "maximum safe and reasonable capacity." Ex. P4 at 123-124. First:

> "Design capacity" is the term used for the past 50 years to designate the number of inmates a prison is designed to accommodate according to standards developed by the Commission on Accreditation and the American Correctional Association. [Footnote omitted.] The number can be based on any combination of single-occupancy cells, double-occupancy

> cells, single- or double-bunked multiple occupancy rooms, or dormitories. The standards take into account the need for humane conditions, as well as the need to prevent violence and move inmates to and from programs, such as mental health care, education classes, and drug abuse treatment.

Id. at 123. "In California, design capacity is based on one inmate per cell, single bunks in dormitories, and no beds in space not designed for housing." *Id.*

California has never limited its prison population to 100% design capacity, *id*. at 123 n.1, and has in some respects planned for inmate population levels that exceed 100% design capacity. The "staffing packages" for California's prison facilities have two parts: the "initial staffing package," which is based on population at 100% design capacity, or one inmate per cell, and the "overcrowding package which, depending on the level of the facility being built, could be 150 percent, 175 percent, 190 percent or 200 percent." Rep. Tr. at 540:24-541:4 (Raymond). The "overcrowding package" is "a staff enhancement of the design bed package." *Id.* at 548:4-7. The combined staffing package shows the size of the staff necessary for a facility at 100% design capacity and the additional staff required as the facility becomes more crowded. *Id.* at 545:10-13.

Similarly, prisons built between 1985 and 1998, when the design capacity of the CDCR's adult institutions and camps increased from 29,042 to near its present level of approximately 80,000 inmates, Ex. P212 at Table 10, "were designed and built to accommodate population growth" with respect to some infrastructure components – specifically the "'water, wastewater, electrical and mechanical components, needed to meet anticipated overcrowding of as much as 190 percent in cells and 140 percent in dormitories.'" Dezember Trial Aff. ¶ 72 (quoting Ex. D1292, *Coleman* Special Master's May 31, 2007 Response to Court's May 17, 2007 Request for Information, at 5). However, "these same prisons were not designed and made 'no provision' for any expansion of medical care space beyond the initial 100% of [design] capacity." *Id.* (quoting Ex. D1292 at 4-5). "Even worse, 'none of the 19 CDCR institutions planned and built in the boom of the 80s and 90s gave any thought to the space that might be needed for mental health purposes.'" *Id.*

(quoting Ex. D1292 at 5).[36] "A similar failure in design vision occurred with the Department of Mental Health," the sole provider of inpatient mental health care for CDCR inmates, "which discovered in 1998 that it had 'no facilities of its own in which to provide the level of inpatient care needed by CDCR for high custody inmates with a history of violence or escape.'" *Id.* (quoting Ex. D1292 at 8). Thus, even though the infrastructure of California's newer prisons was built to accommodate inmate populations greater than 100% design capacity, no similar accommodation was made for the provision of medical and mental health care in California's prisons.

The second measure of prison capacity, "operable capacity," refers to "the maximum capacity of the prisons to house inmates safely and securely while providing effective education, training, and treatment." Ex. P4 at 122. "Operable capacity . . . takes into account space needed for effective programming in addition to safety and security." *Id.* at 124. Based on input from a "group of experienced California prison wardens," the Corrections Independent Review Panel determined that the operable capacity of California's prison system is 145% design capacity. *Id.* Notably, however, operable capacity does not take into account the space required to provide medical and mental health care. *See id.* at 161 n.3; Nov. 9, 2007 Scott Report ¶ 46.

The third measure, "maximum 'safe and reasonable' capacity," refers to "the maximum number of inmates who can safely and reasonably be housed in the prison system." Ex. P4 at 124. This definition takes into account only "the 'safe and reasonable' capacity of individual housing units according to inmate custody levels, staffing levels, and the physical structure of the units." *Id.* Units for inmates at higher custody levels have a

[36] *But see* Sept. 3, 2008 Tilton Dep. at 60:10-61:17 (testifying that in the 1980s and 1990s, the CDCR would "make sure [it] provided programs based on the population," and that this testimony referred to prisons at somewhere between 100% and 140% design capacity). We do not credit Tilton's testimony on this point because he also testified that the CDCR operated "fully-programmed facilities at that time." *Id.* at 61:16-17. As is clear from our discussion of the history of the *Plata* and *Coleman* cases, the CDCR was not operating fully-programmed facilities with regard to medical and mental health care. Moreover, even if Tilton's testimony were to be credited, he acknowledged that "certain facilities lost the ability, in terms of space, to deliver adequate programs to the inmates" when populations exceeded 140% design capacity. *Id.* at 62:14-19. As we note below, the California prison population well exceeds 140% design capacity, and indeed is approaching 200%.

lower maximum safe and reasonable capacity than units for inmates who present a lower security risk. *Id.* at 124.

> The Department of Corrections has determined the maximum safe and reasonable capacity of the general population and reception center housing to be 190 percent of design capacity, while other housing can be filled only to between 100 and 160 percent of design capacity. Overall, the Department has determined that the maximum safe and reasonable capacity of the state's male prisons is . . . 179 percent of design capacity.

Id. "Maximum 'safe and reasonable' capacity" does not take into account "the need for humane conditions" incorporated into design capacity, or the need for programming space incorporated into both design and operable capacity. *See id.* at 123-124. More important for present purposes, that classification does not take into account the space or facilities required to provide medical or mental health care.

4. Crowding in Relation to Capacity

California's inmate population has far exceeded the design capacity of the state's prison system for over twenty-five years. *See, e.g.,* Ex. P268 at 2 (Institution and Camp Design Bed Capacity and Population, June 30, 1983 - June 30, 2003); Ex. P410 at 2; Ex. D1259-1. By October 2006, the state's adult prisons, excluding camps, were operating at 200.2% design capacity with 162,792 inmates.[37] Ex. D1149 at 1 (CDCR weekly population report as of October 25, 2006). As of August 27, 2008, the population of these institutions was reduced to 195.9% design capacity with 156,352 inmates, largely as a result of shipping several thousand prisoners to Mississippi and other contract states. Ex. P135 at 1 (CDCR weekly population report as of August 27, 2008). The current level of crowding far exceeds even the maximum safe and reasonable capacity of the California prison system, which, by CDCR's own determination, is 179% design capacity for prisons holding male prisoners. Ex. P4 at 124.

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[37]The state also operates several prison camps, housing just over 4000 inmates. These camps are less crowded than the adult institutions and operate at between 100% and 110% design capacity. Ex. P20 at 1; Ex. P21 at 1.

D. <u>Governor Schwarzenegger's Emergency Proclamation</u>

In response to the severity of the prison crowding problem, Governor Arnold Schwarzenegger, a primary defendant in both *Plata* and *Coleman,* declared a state of emergency on October 4, 2006. Ex. P1. In his Prison Overcrowding State of Emergency Proclamation, the Governor declared that "all 33 of CDCR's prisons are now at or above maximum operational capacity, and 29 of the prisons are so overcrowded that the CDCR is required to house more than 15,000 inmates in conditions that pose substantial safety risks"; that "the severe overcrowding in 29 CDCR prisons has caused substantial risk to the health and safety of the men and women who work inside these prisons and the inmates housed in them"; that "the overcrowding crisis gets worse with each passing day, creating an emergency in the California prison system"; and that "immediate action is necessary to prevent death and harm caused by California's severe prison overcrowding." *Id.* at 1, 6, 8.

The risks enumerated by the Governor in his Proclamation include "increased, substantial risk for transmission of infectious illness"; security risks caused by line-of-sight problems for correctional officers, particularly in areas where inmates are triple-bunked and in "tight quarters"; and "thousands of gallons of sewage spills and environmental contamination" from overloading the prisons' sewage and wastewater systems. *Id.* at 2. Governor Schwarzenegger also declared that the suicide rate in the 29 severely overcrowded prisons "[was] approaching an average of one per week." *Id.* at 6.

In addition, the Proclamation described three separate proposals by the Governor to address the overcrowding crisis, including a proposal for "two new prisons and space for 83,000 prisoners to address California's current and future incarceration needs." *Id.* at 7. The California Legislature rejected all of these proposals. *Id.* As a result, the Governor invoked his powers under the California Emergency Services Act to call for immediate efforts to transfer inmates to out-of-state correctional facilities, as well as the suspension of state contracting laws so that the CDCR could contract for all goods and services "needed to immediately mitigate the severe overcrowding and the resulting impacts within California." *Id.* at 8-9.

The California Correctional Peace Officers' Association ("CCPOA"), a plaintiff-intervenor in this case, challenged the validity of the Proclamation in state court. On June 4, 2008, the California Court of Appeal upheld the Proclamation, finding that the Governor acted within his authority, in part because the declaration of emergency was based on conditions that presented extreme peril to the safety of persons and property. *CCPOA v. Schwarzenegger*, 163 Cal. App. 4th 802 (2008). The Proclamation declaring a state of emergency remains in effect. Fact # 12, Nov. 17, 2008 Joint Statement of Undisputed Facts.

E. <u>Motions To Convene Three-Judge Court and Subsequent Prison Studies by the State of California</u>

1. <u>Motions To Convene and Initial Proceedings</u>

Following the Governor's issuance of the State of Emergency Proclamation, the plaintiffs in *Plata* and *Coleman* filed motions to convene a three-judge court to limit the prison population.[38] The *Plata* court continued the hearing on its motion to provide defendants with an opportunity to outline specific measures they were taking or planned to take to alleviate crowding, as well as to allow the *Plata* Receiver to analyze the effects of crowding on his remedial efforts. Feb. 15, 2007 Order in *Plata* at 4-5. Similarly, the *Coleman* court, after oral argument, continued the hearing for six months to permit defendants to demonstrate sufficient progress in their remedial efforts and in relieving prison overcrowding such that convening a three-judge court would not be necessary. Dec. 11, 2006 Rep. Tr. in *Coleman*, *passim*; Dec. 12, 2006 Order in *Coleman* at 1.

2. <u>Intervening Reports on Prison Crowding</u>

During the period in which the motions to convene a three-judge court were pending, two more reports concerning prison overcrowding were presented to the California Legislature. First, in January 2007, the Little Hoover Commission, a bipartisan and independent state body charged with conducting research and preparing recommendations to

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[38]The Prison Litigation Reform Act of 1996 ("PLRA") provides that a prisoner release order may be issued only by a three-judge court. 18 U.S.C. § 3626(a)(3)(B). We discuss in more detail below, *infra* Section III, the meaning of the term "prisoner release order" and other relevant provisions of the PLRA.

improve the economy, efficiency, and service of California state government, Cal. Gov't. Code §§ 8501, 8521-8522, echoed the concerns in the Governor's State of Emergency Proclamation, stating that "California's prisons are out of space and running out of time." Ex. P3 at 1. In its report, entitled "Solving California's Corrections Crisis: Time Is Running Out," the Commission, which had previously issued a series of reports on California's prisons, *id.* at 13, again offered "comprehensive recommendations" to reduce the prison population, improve public safety, and manage public dollars, *id.* at 1. Second, in June 2007, the Expert Panel on Adult Offender Recidivism Reduction Programming – a panel convened by the CDCR and consisting of the CDCR's Chief Deputy Secretary for Adult Programs and a number of academic experts, consultants, and former and current secretaries of corrections in Pennsylvania, Arizona, Washington, Ohio, and Maine,[39] Ex. P2 at ii – issued a report recommending a course of action to reduce the prison population while at the same time reducing recidivism and generating savings. Ex. P2.

The first recommendation of both the Little Hoover Commission and the CDCR Expert Panel was to reduce prison overcrowding. Ex. P3 at iv; Ex. P2 at 10. Both panels noted that the state had received numerous reports over the past two decades containing recommendations for reducing the state's prison population. Ex. P3 at iv; Ex. P2 at 10 & App. A. Although the Expert Panel was convened to make recommendations for reducing California's high recidivism rate and "improving the programming in California's prison and parole system," Ex. P2 at vii, and not for "solving the overcrowding problem," *id.* at 10, the panel nonetheless found that California's prisons were "dangerously overcrowded" and that reducing overcrowding was a "'pre-condition' to [the] success" of its mission, *id.* at viii.

3. Final Hearing and Rulings

On June 27, 2007, the *Plata* and *Coleman* courts jointly heard oral argument on plaintiffs' motions to convene a three-judge court. Persuaded that the state had not

[39]Several members of the Expert Panel appointed by defendants, including James Austin, Ph.D., Jeffrey Beard, Ph.D., Joseph Lehman, and Barry Krisberg, Ph.D., testified for plaintiffs at the trial of this matter. Another member of the Expert Panel, James Gomez, was the Director of the California Department of Corrections from 1991 to 1996, during the merits phase of the *Coleman* action.

adequately addressed its prison overcrowding crisis so as to make possible the remedying of the constitutional violations, and that consideration of a population reduction order was necessary in order to achieve that objective in both cases, both courts granted plaintiffs' motions. July 23, 2007 Order in *Plata*, 2007 WL 2122657; July 23, 2007 Order in *Coleman*, 2007 WL 2122636.

The *Plata* court found that although "the Receiver has made much progress since his appointment," the establishment of the *Plata* Receivership did not require the court "to wait more time, potentially years, to see whether the Receiver's plans will succeed or fail." July 23, 2007 Order in *Plata*, 2007 WL 2122657, at *3. It found that the unconstitutional conditions that led to the Receiver's appointment continued to exist. The *Plata* court explained:

> Had the Receiver reported to the Court that he did not view overcrowding to be a substantial impediment to implementing the reforms required in this case, the Court may well have reached a different conclusion regarding the appropriateness of convening a three-judge court to consider a prisoner release order. However, quite to the contrary, the Receiver's reports indicate that overcrowding is a serious problem that impacts, for example, his ability to develop adequate reception centers and health facilities because of the high numbers of inmate transfers and the inadequate amount of available health care beds and other physical space. Receiver's Report Re: Overcrowding [Ex. D1092] at 26-28. Overcrowding also negatively impacts the Receiver's ability to hire and retain competent medical and managerial staff. *Id.* at 24-26. Beyond that, the Receiver reports that:
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>> Every element of the Plan of Action faces crowding related obstacles. Furthermore, overcrowding does not only adversely impact the Receiver's substantive plans, it also adversely impacts on the very process of implementing remedies because overcrowding, and the resulting day to day operational chaos of the CDCR, creates regular "crisis" situations which call for action on the part of the Receivership and take time, energy, and person power away from important remedial programs.
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> *Id.* at 28-29. . . .
>
> Tellingly, the Receiver's concerns about the impacts of overcrowding on his ability to reform the medical health care

> delivery system became even stronger in the weeks following his initial report. In his supplemental report, filed just four weeks after his initial report, the Receiver concluded that: "Mission changes, yard flips, and prison-to-prison transfers, aggravated by the limited alternatives imposed by overcrowding, are now assuming a size, scope and frequency that will *clearly* extend the timeframes and costs of the receivership and *may render adequate medical care impossible,* especially for patients who require longer term chronic care." Receiver's Suppl. Report Re: Overcrowding [Ex. D1094] at 10 (emphases added). While the Court appreciates Defendants' statements that greater coordination between the State and the Receiver will alleviate some of the Receiver's concerns, such sentiments only underscore the Receiver's expressed concerns that overcrowding presents serious problems not only because of the substantive ways in which it interferes with delivery of medical care, but also because of the amount of time and attention the Receiver must devote to dealing with crowding-related issues. *It is clear to the Court that the crowded conditions of California's prisons, which are now packed well beyond their intended capacity, are having – and in the absence of any intervening remedial action, will continue to have – a serious impact on the Receiver's ability to complete the job for which he was appointed: namely, to eliminate the unconstitutional conditions surrounding delivery of inmate medical health care.*

Id. at *4 (last emphasis added).

The *Coleman* court found that between 1997 and 2005, defendants had made "slow but evident progress toward constitutional compliance," but that, "[i]n spite of the commendable progress . . ., defendants' mental health care delivery system has not come into compliance with the Eighth Amendment at any point since this action began." July 23, 2007 Order in *Coleman*, 2007 WL 2122636, at *3. The *Coleman* court further found that:

> Several prisons remain notable exceptions to the progress made at others, and delays in access to care at the highest level of need – mental health crisis beds, acute inpatient care, and intermediate inpatient care – have plagued the CDCR throughout the course of this litigation. Moreover, defendants' efforts at long-range planning for the delivery of mental health care continues to be hampered by inadequacies in the capture and collection of data and the use of outdated methodologies to interpret that data.
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> . . . [O]n May 31, 2007, the Special Master reported that programming space, beds for mentally ill inmates, and staffing levels have all been "impacted seriously by overcrowding." Special Master's Response to Court's May 17, 2007 Request for Information, filed May 31, 2007, at 4-14 ("Special Master's May 31, 2007 Response"). The staffing shortages alone mean that the CDCR only has enough staff "to provide full mental

> health services to roughly two-thirds of its mental health caseload, or two-thirds of required services to its full caseload, or, probably more realistically, some combination of reduced services to some segments of the caseload that can be covered with a third less clinicians than required." *Id.* at 11-12. While acknowledging the difficulties in quantifying precisely the scope of the unmet mental health needs, the Special Master reports that,
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>> defendants cannot meet at least a substantial portion, amounting in some loose amalgam to about 33 percent, of acknowledged mental health needs with current staffing resources. Insufficient intensive mental health treatment beds and a chronic lack of programming space for mental health treatment contribute further to defendants' inability to meet required mental health services. All three deficiencies are unquestionably exacerbated by overcrowding.
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> *Id.* at 14. With a mental health caseload of almost 33,000 inmates, *id.* at 2, this level of unmet needs is unconscionable.

Id. at *3-*4 (footnote omitted).

In their orders granting plaintiffs' motions, the *Plata* and *Coleman* courts recommended that the cases be assigned to the same three-judge court "[f]or purposes of judicial economy and avoiding the risk of inconsistent judgments." July 23, 2007 Order in *Plata*, 2007 WL 2122657, at *6; *see also* July 23, 2007 Order in *Coleman*, 2007 WL 2122636, at *8. The Chief Judge of the United States Court of Appeals for the Ninth Circuit agreed and, on July 26, 2007, convened the instant three-judge district court pursuant to 28 U.S.C. § 2284.

F. <u>Proceedings Before this Three-Judge Court</u>

In August and September 2007, this court granted motions to intervene on behalf of defendants filed by groups of district attorneys; sheriffs, police chiefs, and probation officers (collectively "law enforcement intervenors"); counties; and Republican state Senators and Republican Assembly Members. We note that the Republican state Senators and Republican Assembly Members constitute just over a third of the membership of each respective body. We also granted the CCPOA's motion to intervene on behalf of plaintiffs.

On November 1, 2007, we appointed a settlement referee, former state Court of Appeal Justice Elwood Lui, and a settlement consultant, current state Court of Appeal Justice and former Legal Affairs Secretary to Governor Schwarzenegger, Peter Siggins, to aid the parties and intervenors in settlement discussions. Nov. 1, 2007 Order at 1-2. However, the settlement efforts ultimately proved unsuccessful, as Justices Lui and Siggins reported to the three-judge court on June 25, 2008.

On September 15, 2008, defendants filed a motion for summary judgment, which we denied by written order on November 3, 2008. Trial commenced on November 18, 2008, and concluded on December 19, 2008, after fourteen court days in which we heard testimony from nearly fifty witnesses, received written testimony from several additional witnesses, and received hundreds of exhibits into evidence. Following the close of evidence, we received proposed findings of fact and conclusions of law from the parties and intervenors and heard final argument on February 3 and 4, 2009.

To assist the parties in planning their further actions, we issued a tentative ruling on February 9, 2009, explaining that plaintiffs had met their burden of proof and that a population reduction order was necessary to remedy the constitutional violations concerning the provision of medical and mental health care in California's prisons. We even gave the state an indication of the range within which the population cap would fall. In our tentative ruling, we once again asked whether a court-appointed settlement referee would be of assistance. Plaintiffs and intervenors expressed a willingness to engage in further settlement discussions, but the state defendants responded that they did not believe such efforts would be fruitful.

After carefully reviewing all of the evidence and oral and written arguments presented in this proceeding, we make the following findings of fact and conclusions of law and issue the following order. This opinion and order supersedes the tentative ruling in its entirety.

III. LEGAL FRAMEWORK

Federal courts have long recognized that population reduction orders may sometimes be necessary to ensure constitutional prison conditions. For example, in *Duran v. Elrod*, 713 F.2d 292 (7th Cir. 1983), the Seventh Circuit upheld a district court's order requiring a reduction in the population of the Cook County Department of Corrections, finding that the order was "sensitive to[] . . . the principles of federalism," *id.* at 297, and that the district court "acted fairly and reasonably to ease a critical problem" of overcrowding in the face of "substantial noncompliance" by Cook County, *id.* at 298. Likewise, in *Newman v. Alabama*, 683 F.2d 1312 (11th Cir. 1982), the Eleventh Circuit found that, where Alabama's county jails were unconstitutionally overcrowded, a cap on the state inmate population in the county jails "represent[ed] the proper balance between the duty of the district court to remedy constitutional violations and the right of the State to administer its prison and parole systems," *id.* at 1321. There are other examples as well, including a continuing cap on Los Angeles County's jail population stipulated to by the parties in *Rutherford v. Pitchess*, No. CV 75-4111 (C.D. Cal.).

Until 1996, federal courts relied upon general principles of equitable relief and federalism in deciding whether to enter a population reduction order to remedy constitutional violations. However, in 1996 Congress enacted the Prison Litigation Reform Act ("PLRA"), Pub. L. No. 104-134, 110 Stat. 1321 (codified in relevant part at 18 U.S.C. § 3626). The PLRA established "a comprehensive set of [statutory] standards to govern prospective relief in prison conditions cases." *Gilmore v. California*, 220 F.3d 987, 998 (9th Cir. 2000). Because there is no dispute that both the *Plata* and *Coleman* lawsuits are "civil action[s] with respect to prison conditions," the matter before us is governed by the statutory requirements of the PLRA. 18 U.S.C. § 3626(a)(1).

The PLRA contains two sets of requirements that are relevant here: one applicable to all forms of "prospective relief" in federal prison conditions lawsuits, *see id.*, and another applicable only to "prisoner release orders," *see id.* § 3626(a)(3). The PLRA defines a "prisoner release order" as "any order . . . that has the purpose or effect of reducing or limiting the prison population, or that directs the release from or nonadmission of prisoners to a prison." *Id.* § 3626(g)(4). Under this definition, a "prisoner release order" includes not only an order requiring the release of presently incarcerated inmates, but also an order requiring the diversion of convicted persons from prison, changing the treatment of parole violators in order to prevent their return to overcrowded prisons, or imposing a cap on the prison population or any part of it. *See, e.g.*, *Tyler v. Murphy*, 135 F.3d 594, 595-96 (8th Cir. 1998) (finding a cap on the number of technical probation violators who could be admitted to a particular facility to be a "prisoner release order"). There is no dispute that the population reduction order requested by the plaintiffs falls within the PLRA's definition of "prisoner release order" because the order would have the "purpose" of "limiting the prison population." 18 U.S.C. § 3626(g)(4). Accordingly, this court can grant the plaintiffs' request for a population reduction order only if the proposed order meets both the PLRA's specific standard for prisoner release orders and its general standard for prospective relief in prison conditions cases.

A. <u>The PLRA Standard for Prisoner Release Orders: Primary Cause and No Other Relief</u>

The PLRA does not prohibit courts from entering an order requiring a reduction in the population of a prison or prison system. To the contrary, in enacting the PLRA, Congress was clear to state that "a court still retains the power to order [a population reduction order]" when such an order "is truly necessary to prevent an actual violation of a prisoner's federal rights." H.R. Rep. No. 104-21, at 25 (1995); *cf.* 141 Cong. Rec. S14419 (daily ed. Sept. 27, 1995) (statement of Sen. Abraham) (noting that the PLRA permits "narrowly tailored order[s] to correct" constitutional violations and that the PLRA "allows the courts to step in where they are needed").[40] Rather than barring "prisoner release orders" altogether, the PLRA simply makes such orders, including population caps and other population reduction orders, "the remedy of last resort." H.R. Rep. No. 104-21, at 25.

It does so by imposing a number of restrictions on the entry of prisoner release orders. First, a court considering such an order must find that "a court has previously entered an

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[40]In fact, a number of courts have entered consent decrees for prisoner release since the enactment of the PLRA – decrees that must meet the same set of requirements as any order entered by a court. *See* 18 U.S.C. §3626(c)(1); *Roberts v. Mahoning County*, 495 F. Supp. 2d 719 (N.D. Ohio 2007); John Boston, *The Prison Litigation Reform Act*, 67 Brook. L. Rev. 429, 446 n.67 (2001) (collecting orders for overcrowding relief entered by consent decree after the enactment of the PLRA).

order for less intrusive relief that has failed to remedy the deprivation of the Federal right sought to be remedied through the prisoner release order," and that "the defendant has had a reasonable amount of time to comply with the previous court orders." 18 U.S.C. § 3626(a)(3)(A). If both of these requirements are met, the court must request that a three-judge district court be convened to consider the propriety of the proposed order. *Id.* § 3626(a)(3)(B). Finally, the three-judge court must find by clear and convincing evidence (1) that "crowding is the primary cause of the violation of the Federal right," and (2) that "no other relief will remedy the violation of the Federal right." *Id.* § 3626(a)(3)(E).

Before convening the present three-judge court, the *Plata* and *Coleman* courts found that their prior orders for less intrusive relief had failed to remedy the unconstitutional denial of adequate medical and mental health care to prisoners in California's prisons, and that the defendants have had a more than reasonable amount of time to comply with those prior orders. *See* July 23, 2007 Order in *Plata*, 2007 WL 2122657, at *3; July 23, 2007 Order in *Coleman*, 2007 WL 2122636, at *2. Accordingly, the findings required by § 3626(a)(3)(A) have been made. The procedural history described above clearly establishes that the *Plata* and *Coleman* courts have previously entered orders for less intrusive relief that have failed to remedy the constitutional deprivations at issue in each case despite the reasonable time given to defendants to comply with those orders. In this opinion and order, we primarily consider the requirements of § 3626(a)(3)(E) – whether crowding is the "primary cause" of the unconstitutional denial of adequate medical and mental health care to California's prisoners, *see infra* Section IV, and whether any other form of relief could remedy those constitutional violations, *see infra* Section V.

B. <u>The PLRA Standard for All Prospective Relief: Need-Narrowness-Intrusiveness and Consideration of Public Safety</u>

In addition to these specific limitations on the entrance of prisoner release orders, the PLRA establishes a standard applicable to all forms of prospective relief in prison conditions lawsuits. First, the PLRA requires that such relief "[be] narrowly drawn, extend[] no further than necessary to correct the violation of the Federal right, and [be] the least intrusive means necessary to correct the violation of the Federal right." 18 U.S.C. § 3626(a)(1)(A). Rather than imposing any new limitations on federal authority, this provision codifies the common-law standard for injunctive relief, generally referred to as the "need-narrowness-intrusiveness" standard. *See* H.R. Rep. 104-21, at 24 n.2 (1995) (explaining that the "dictates of [18 U.S.C. §3626(a)(1)] are not a departure from current jurisprudence concerning injunctive relief"); *see also Armstrong v. Davis*, 275 F.3d 849, 872 (9th Cir. 2001); *Smith v. Ark. Dep't of Corr.*, 103 F.3d 637, 647 (8th Cir. 1996); *Williams v. Edwards*, 87 F.3d 126, 133 n.21 (5th Cir. 1996).[41] Likewise, the PLRA requires that any prospective relief "extend no further than necessary to correct the violation of the Federal right of a particular plaintiff or plaintiffs." 18 U.S.C. § 3626(a)(1)(A); *cf. Lewis v. Casey*, 518 U.S. 343, 357-360 (1996) (holding that the remedy in a prison conditions case must remedy actual injuries that have been identified by the court and suffered by the plaintiffs). In class action lawsuits such as *Plata* and *Coleman*, the PLRA requires that the remedy be tailored to the actual injuries suffered by class members. *See Armstrong*, 275 F.3d at 870-73.

Second, the PLRA requires that any court considering the entry of prospective relief give "substantial weight" to any adverse impact the order might have on public safety or the operation of the criminal justice system. 18 U.S.C. § 3626(a)(1)(A); *see also* H.R. Rep. No. 104-21, at 24 (1995) (stating that courts must give "appropriate consideration" to "any potential impact on public safety or the criminal justice system"). This requirement codifies the longstanding common law requirement that federal courts "pay particular regard for [] public consequences in employing the extraordinary remedy of injunction." *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982); *see also Yakus v. United States*, 321 U.S. 414, 440 (1944).

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[41] In lieu of changing the general standard for prospective relief in prison conditions cases, the PLRA limits federal court authority in matters relating to prison conditions primarily by applying the "need-narrowness-intrusiveness" standard to consent decrees as well as court orders, 18 U.S.C. § 3626(c)(1); by making it easier to terminate existing court orders or consent decrees, 18 U.S.C. § 3626(b); and by imposing distinct limitations on prisoner release orders, 18 U.S.C. § 3626(a)(3).

We address the "need-narrowness-intrusiveness" standard in Section VI and consider the impact of the order we adopt on public safety and the operation of the criminal justice system in Section VII.

C. The Remedial Nature of the Three-Judge Court Proceeding

The question before this three-judge court is whether the remedy requested by the plaintiffs is proper as a matter of federal law. The *Plata* and *Coleman* courts years ago identified the constitutional deficiencies underlying this proceeding. Since that time, both cases have been in their remedial phase. After prior remedial efforts failed, the *Plata* and *Coleman* courts both faced the question whether an order requiring a reduction in the population of California's prisons was necessary to remedy the previously identified constitutional violations, and both concluded that such an order should be considered by a three-judge court.

We need not yet again evaluate the state's continuing constitutional violations. In requesting that this three-judge court be convened, the *Plata* and *Coleman* courts both found, without objection from defendants, that the constitutional violations were ongoing. *See* July 23, 2007 Order in *Plata*, 2007 WL 2122657, at *3; July 23, 2007 Order in *Coleman*, 2007 WL 2122636, at *4. That is sufficient under the PLRA. In addition, defendants have never filed a motion to terminate under § 3626(b), the proper means for any challenge to the existence of "current and ongoing" constitutional violations relating to the provision of medical and mental health care in the California prisons. Moreover, even if we were required to find independently that the requirements of § 3626(a)(3)(A) – including its requirement that prior orders have "failed to remedy the deprivation of the Federal right" – have been met, we did so in denying defendants' motion for summary judgment, Nov. 3, 2008 Order at 6-7. Accordingly, the question we must answer in this opinion and order is entirely remedial, i.e., whether the plaintiffs' proposed remedy meets the imposing standards established by the PLRA.[42]

[42]Because this proceeding deals only with the plaintiffs' requested remedy, we did not permit the introduction of evidence relevant only to determining whether the constitutional violations found by the *Plata* and *Coleman* courts were "current and ongoing."

IV. CROWDING AS PRIMARY CAUSE

The extent of overcrowding in the California prison system, approximately 190% of systemwide design capacity, is "extraordinary" and "almost unheard of." Rep. Tr. at 297:1-17, 298:19-20 (Haney). The problem is "widespread" and "not restricted to just a few institutions. It's occurred throughout the system." *Id.* at 297:23-25. There would seem to be no dispute about the egregious nature of the overcrowding in this case. Under the PLRA, however, the question is whether clear and convincing evidence establishes that the overcrowding is the primary cause of the unconstitutional denial of adequate medical and mental health care to California's prisoners. 18 U.S.C. § 3626(a)(3)(E)(i). Only if it is may the court – a three-judge court – enter a population reduction order. Defendants do not contest that prison crowding impedes the delivery of constitutionally adequate medical and mental health care in the California prison system. They claim only that crowding is not the *primary* cause of the violations of plaintiffs' constitutional rights. *E.g.*, Rep. Tr. at 2953:6-11 (closing argument by defendants' counsel).

We accept defendants' proposed definition of "primary cause" as the cause that is "first or highest in rank or importance; chief; principal." *Random House Webster's Unabridged Dictionary* 1537 (2d ed. 1998) (defining "primary").[43] We note, however, that the PLRA does not require that crowding be the *only* cause of the constitutional violations at issue. "Probably it cannot be said of any event that it has a single causal antecedent; usually there are many." 4 Harper, James and Gray on Torts § 20.2 (3d ed. 2007). The PLRA's "primary cause" standard incorporates this basic aspect of causation. By requiring only that crowding be the *primary* cause of the constitutional violations at issue, the PLRA's language explicitly contemplates that *secondary* causes may exist. Had Congress intended to require that crowding be the only cause, it would have used language to that effect – for example, "exclusive" or "only" instead of "primary."

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[43]Unfortunately, the legislative history of the PLRA is sparse and provides no meaningful insight into the meaning of "primary cause" or "crowding."

As all of the parties to this proceeding have recognized, in the context of prison conditions litigation "crowding" refers to the presence in a facility or prison system of a prisoner population exceeding that facility or system's capacity. *See, e.g.*, *Doty v. County of Lassen*, 37 F.3d 540, 543 (9th Cir. 1994) (finding overcrowding where a jail's actual population exceeded its design capacity by an average of approximately fifty percent); *Hoptowit v. Ray*, 682 F.2d 1237, 1248-49 (9th Cir. 1982) (finding a penitentiary overcrowded where its population exceeded its design capacity); *see also Lareau v. Manson*, 651 F.2d 96, 99-100 (2d Cir. 1981); *cf. Random House Webster's Unabridged Dictionary* 482 (2d ed. 1998) (defining "crowded" as "filled to excess"). In other contexts, the term "overcrowding" would ordinarily be used. Here, the words crowding and overcrowding have the same meaning, and we use them interchangeably.

A prison system's capacity is not defined by square footage alone; it is also determined by the system's resources and its ability to provide inmates with essential services such as food, air, and temperature and noise control. Following the parties' lead, we will discuss the capacity of the California prison system primarily in terms of design capacity. As the Corrections Independent Review Panel explained, design capacity "designate[s] the number of inmates a prison is designed to accommodate according to standards developed by the Commission on Accreditation and the American Correctional Association." Ex. P4 at 123. These standards "take into account the need for humane conditions, as well as the need to prevent violence and move inmates to and from programs, such as mental health care, education classes, and drug abuse treatment." *Id.*

Taking into account the meaning of "primary cause" and the criteria governing "crowding," we must determine whether the presence in California's prison system of a prison population almost double the system's design capacity is the principal cause of the failure to provide constitutionally adequate medical and mental health care to the members of the *Plata* and *Coleman* classes.

As we discuss below, the evidence presented at trial, including testimony from defendants' experts, admissions by defendants and their agents, and data maintained by defendants, overwhelmingly establishes not only that crowding adversely affects every aspect of prison administration, forcing a constant state of crisis management, but also that crowding creates numerous barriers to the provision of medical and mental health care that result in the constitutional violations we consider here. These barriers include severe space and other shortages that prevent inmates from receiving the care they require. Crowding also renders the state incapable of maintaining an adequate staff and an adequate medical records system. In addition, crowding causes prisons to rely on lockdowns, which further restrict inmates' access to care, and it forces prisons to house inmates in non-traditional settings, such as triple-bunks in gyms and dayrooms not designed for housing, that contribute to the lack of care and the spread of infectious disease and that increase the incidence and severity of mental illness among prisoners.

Multiple experts testified that crowding is the primary cause of the constitutional violations at issue in *Plata* and *Coleman*. Most impressive, four current or former prison administrators so testified. These four correctional experts had, collectively, administered the correctional systems of five different states, including California.[44] Three had never before testified on behalf of a prisoner, and two were not paid for their time as experts. A number of medical and mental health experts also testified that crowding is the primary cause of the constitutional violations, and even defendants' own mental health expert testified that crowding is the primary cause of defendants' inability to provide adequate care to the *Coleman* class at reception centers. Dec. 10, 2007 Packer Report at 20. As the Secretary of the Pennsylvania Department of Corrections testified, "the biggest inhibiting factor right now in California being able to deliver appropriate mental health and medical care is the severe overcrowding of [the] system." Rep. Tr. at 219:7-10 (Beard). We agree. For the reasons we discuss below, we conclude that clear and convincing evidence establishes that crowding is

[44]The experts included Jeanne Woodford, former warden at San Quentin and former acting Secretary of the CDCR; Doyle Wayne Scott, former Executive Director of the Texas Department of Criminal Justice; Joseph Lehman, former head of corrections in Pennsylvania, Washington, and Maine; and Jeffrey Beard, current Secretary of the Pennsylvania Department of Corrections.

the primary cause of the unconstitutional denial of medical and mental health care to California's prisoners.

A. General Problems in the Delivery of Medical and Mental Health Care Caused by Crowding

Correctional experts agree that crowding "affects virtually every aspect of a prison's operation." Aug. 15, 2008 Lehman Report ¶ 10 (expert report from former head of corrections in Pennsylvania, Washington, and Maine). Jeanne Woodford, the former head of corrections in California, testified that, under crowded conditions, there "are simply too many issues that arise from such a large number of prisoners and staff. One result of this is that management spends virtually all of its time fighting fires instead of engaging in thoughtful decision-making and planning. This results in short-sighted decisions that create even more crises." Nov. 9, 2007 Woodford Report ¶ 12. Doyle Wayne Scott, a thirty-year employee of the Texas Department of Criminal Justice who served as its Executive Director for five years, explained:

> Overcrowding has burdened CDCR's inadequate management systems that underlie health care delivery. The excessive population leads to management failures in two ways. First, overcrowding engenders a state of perpetual crisis that causes management failures. Administrators spend their time doing damage control, rather than making sure the prison is operating properly and prisoners are getting the services that they need. . . . A population of 7,000 or more, as is found in some California prisons, is not manageable at all. The sheer size and complexities of managing a prison that size would be overwhelming for one manager especially with the limited resources in the areas of staffing and inadequate space for services to the offenders that I observed at all of the prisons I toured in California. One warden simply cannot know what he/she needs to know on a daily basis to make good informed management decisions.
>
> Second, overcrowding overwhelms management infrastructure. As I have read in numerous reports of the Receiver, the CDCR lacks the management information systems needed to adequately organize and track prisoner transfers for specialized medical and mental health care and public health related needs (for example, people with compromised immune systems not going to Valley Fever risk areas) in the severely overcrowded conditions.

Nov. 9, 2007 Scott Report ¶¶ 1, 76-77. Secretary Woodford concluded that crowding makes it "virtually impossible for the organization to develop, much less implement, a plan to provide prisoners with adequate care"; "[i]n [her] opinion, it is all but impossible to safely and humanely incarcerate this many prisoners within the existing facilities." Nov. 9, 2007 Woodford Report ¶¶ 10, 12.

As put in the most simple terms by Secretary Woodford, who recently administered the California prison system and who shortly before that was the warden at San Quentin, "[o]vercrowding in the CDCR is extreme, its effects are pervasive and it is preventing the Department from providing adequate mental and medical health care to prisoners." Aug. 15, 2008 Woodford Supp. Report ¶ 31. While defendants dispute that crowding is the primary cause of the ongoing constitutional violations in *Plata* and *Coleman*, they do not dispute that crowding makes the delivery of adequate medical and mental health care in the California prison system extremely difficult. Matthew Cate, the current head of the CDCR and a defendant in this proceeding, stated that "overpopulation makes everything we do more difficult," Rep. Tr. at 1683:19-20, and further agreed that crowding continues to "severely hamper[]" the Department's ability "to provide inmates with adequate medical care in a fiscally sound manner," *id.* at 1683:3-19 (testimony that statements in the Office of the Inspector General's 2006 audit of the CDCR, issued when Cate was the Inspector General, continue to be true today); Ex. P46 at ES-1 (April 2006 Office of the Inspector General Accountability Audit, Review of Audits of the California Department of Corrections and Rehabilitation Adult Operations and Adult Programs, 2000-2004). James Tilton, Cate's predecessor as Secretary of the CDCR, likewise explained that it "was clear" to him that crowding, and the resulting lack of space, adversely affected the delivery of medical and mental health care. Sept. 3, 2008 Tilton Dep. at 80:5-25. Similarly, John Dovey, a former CDCR official, testified before a state Senate committee in August 2006 that "the risk of catastrophic failure in a system strained from severe overcrowding is a constant threat. As the Director of the Division of Adult Institutions [for the CDCR], it is my professional opinion this level of overcrowding is unsafe and we are operating on borrowed time." Ex. P72 at 15 (Aug. 15, 2006 CDCR Presentation to Senate Select Committee on Prison Population Management and Capacity). Before this court, Robin Dezember, then the Chief

Deputy Secretary of the Correctional Healthcare Services Division of the CDCR, stated his "belief that we are terribly overcrowded in our prison system," and that crowding adversely affects the delivery of mental health care services. Rep. Tr. at 853:13-15, 21-24. Even defendants' expert Dr. Ira Packer opined that "the overcrowding in CDCR significantly contributes to the difficulties in providing adequate mental health services." Dec. 10, 2007 Packer Report at 8.

B. Space Issues Affecting the Delivery of Care

The evidence before us demonstrates that crowding causes a number of specific problems central to the ongoing violation of California inmates' constitutional right to adequate medical and mental health care. One of the clearest effects of crowding is that the current prison system lacks the physical space necessary to deliver minimally adequate care to inmates. This manifests itself in a variety of areas, each of which we discuss below.

1. Reception Centers

The medical and mental-health related problems caused by crowding are immediately apparent at the state's reception centers. Each year, California admits approximately 140,000 inmates into the state prison system. Rep. Tr. at 224:17-18 (Beard); *see also* Aug. 15, 2008 Austin Report ¶¶ 45-46 & Table 3; Ex. P18 at 3; Ex. P19 at 2; Ex. P75 at 3.[45] The CDCR's reception centers are the locus of the intake and classification functions for all of these inmates. *See* Nov. 9, 2007 Austin Report ¶¶ 27-28; Aug. 15, 2008 Austin Report ¶ 97. The CDCR has reception centers at twelve prisons, nine at male institutions and one at each of the state's three female prison institutions. Ex. P135 at 3-4. As of August 2008, all but one of these reception centers were near or over 200% design capacity, and two were over 300% design capacity. *Id.* This severe crowding at the reception centers makes it impossible to provide adequate medical and mental health services to inmates entering the California

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[45]As Dr. Austin explained, "[t]here are two major types of prison admissions for the CDCR – new court commitments and parole violators." Aug. 15, 2008 Austin Report ¶ 45. At the cited pages, Exhibits P18, P19, and P75 set forth data on new admissions, felon parole violators returned with a new term, and felon parole violators returned to custody during periods specified in each exhibit. The aggregation of these three numbers in each of the exhibits ranges from 141,288 (Ex. P18) to 139,399 (Ex. P19) to 140,560 (Ex. P75).

prison system. In addition, severe crowding throughout the system forces prisons to house inmates in these reception centers without adequate care for extended periods of time.

As the *Plata* Receiver explained, reception centers "must be staffed and have the appropriate clinical space to provide a level of medical care and clinical evaluations above that of the general population institutions." Ex. D1092 at 19 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding).[46] Each time an individual is admitted to the CDCR, whether for the first time, by re-offending, or on a parole violation:

> he or she returns to the CDCR through a reception center where a medical/mental health/dental health care appraisal must be performed. Once that appraisal is completed the newly received prisoner is transferred to an open bed at a prison which has been designated for his or her classification. However, none of the CDCR's designated reception centers were designed or constructed with adequate clinical space [to perform these functions].

Id.; *see also, e.g.*, Aug. 15, 2008 Haney Report ¶¶ 246-247 (describing space shortages at the California Correctional Institution reception center, including a holding room containing three holding cells that "were originally intended to hold disciplinary cases but now have been converted to mental health use"). "To make matters worse, as the original prisons designated for reception became overwhelmed by the influx of parole violators, the CDCR was forced to 'convert' general population prisons into reception centers. These 'conversions,' however, were not accompanied by adequate additions to clinical staff or clinical space." Ex. D1092 at 19; *see also, e.g.*, Nov. 9, 2007 Stewart Report ¶ 48 (because reception center at DVI "was not designed as a reception center, it has been difficult to find space for various reception center functions").

Without sufficient space, reception centers are unable to screen or treat inmates adequately. For instance, as plaintiffs' medical expert Dr. Ronald Shansky explained, the number of prisoners who must be processed at the reception center at CIM "exceeds the number of patients that can be adequately treated," thereby forcing the prison to "squeeze[] too many prisoners and too many providers into the available treatment area." Nov. 9, 2007

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[46] Plaintiffs also offered this document into evidence as Exhibit P26.

Shansky Report ¶ 12. Exams are conducted in areas separated only by "a thin white fabric folding screen that is approximately five to six feet tall" and conversations between physicians and inmates can be overheard on the other side of the screen. *Id.* Similarly, at North Kern State Prison, inmate health interviews are conducted in a small office, "with prisoners sitting back to back, separated only by a shoulder-high divider." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 23. Such conditions do not allow for appropriate confidentiality, causing prisoners to be "less likely to provide accurate information about sensitive medical and psychiatric conditions." *Id.* ¶ 24; *see also* Aug. 15, 2008 Haney Report ¶ 280 (psychiatrist and psychologist who work in the North Kern reception center "must share a converted cell that serves as their office"); Nov. 9, 2007 Stewart Report ¶ 48 (describing observations of small classroom at DVI reception center "where at any time six psychologists simultaneously conduct reception center mental health assessments for new arrivals"); *id.* ¶ 82 (noting that the "[l]ack of adequate and appropriate space for reception center psychological screening was also apparent at DVI").

Moreover, at North Kern, follow-up physical examinations are conducted in rooms that "are so small that it would be very difficult if not impossible to perform an actual physical examination in them," so that the "'exams' that take place are in fact simply medical interviews, primarily for the purpose of determining what type of housing is appropriate for the prisoner." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 25. This violates the "basic principle that incoming prisoners must undergo a comprehensive exam upon arrival so that an adequate treatment plan may be developed and implemented. A physical exam, as opposed to a medical interview, is necessary because some conditions can be identified and confirmed only through physical examination of the patient." *Id.* ¶ 26; *see also* Rep. Tr. at 224:10-225:15 (Beard) (testifying that the number of people coming in through reception centers may cause prisons to "miss people who have certain needs and certain care needs that aren't being dealt with"). The medical facilities at North Kern are also so "inadequate" that defendants cannot comply with the *Plata* policies and procedures they agreed to implement, which provide for a complete history and physical examination of inmates within fourteen days of arrival at a reception center. Sept. 10, 2008 Shansky 2d Supp. Report ¶ 22.

The consequences of the state's inability to screen inmates properly at the reception centers are obvious: If an inmate's health needs are not identified, they cannot be treated. In addition, inmates whose needs are not identified may be placed in a setting that will exacerbate existing but unidentified health problems. Likewise, if the lack of confidentiality in the screening centers prevents inmates from reporting infectious diseases, the failure to diagnose them at the reception center may result in their being spread throughout the prison population.

In addition to preventing the reception centers from properly screening newly admitted inmates, crowding at the reception centers prevents the provision of adequate care to the inmates housed there. As numerous experts, including defendants' own mental health expert, testified, the number and types of inmates in the centers overwhelms their capacity to provide adequate medical or mental health care services. Rep. Tr. at 1121:16-19 (Packer); Rep. Tr. at 368:12-369:4 (Woodford) (mentally ill inmates did not receive "really any treatment" at San Quentin reception center beyond identification as CCCMS or EOP and certainly not anything "to prevent further deterioration of people's mental illness"); Aug. 15, 2008 Stewart Supp. Report ¶ 136 ("CDCR's Reception Centers are dangerously overcrowded and do not and cannot provide appropriate mental health care for anyone"); Sept. 10, 2008 Shansky 2d Supp. Report ¶ 79 ("acute staffing shortage, coupled with the lack of clinical exam space" prevents North Kern State Prison from providing incoming inmates with comprehensive physical examination or follow-up appointments with primary care providers); Rep Tr. at 368:12-22 (Woodford) (at San Quentin reception center, due to vacancies and "just the sheer numbers and lack of space," medical staff "were unable to keep up with physicals or providing any kind of chronic care follow-up").

If California's inmates spent only a brief time at the reception centers before being placed in other facilities, the centers' inability to provide adequate medical and mental health care to the inmates housed there would constitute a less substantial aspect of the constitutional violations at issue in this proceeding. However, inmates in California are "tend[ing] to spend significantly longer periods of time in reception centers." Nov. 9, 2007 Stewart Report ¶ 24; *see also* Nov. 9, 2007 Austin Report ¶ 27 (reporting that the CDCR routinely fails to meet its mandate to transfer inmates from reception centers to mainline institutions within sixty days). As one of plaintiffs' experts Dr. James Gilligan explained, "The dramatic levels of prison overcrowding through the state mean that individuals coming into prison are housed in 'Reception Centers' for extended periods of time, far longer than intended." Aug. 15, 2008 Gilligan Report ¶ 26 (footnotes omitted).

The consequences of the increased lengths of stay at the reception centers along with the lack of space in those centers are particularly grave for *Coleman* class members. Dr. Packer, defendants' mental health expert, reported that mentally ill individuals "often enter[] the prison system with a more acute mental health presentation, not having received adequate treatment in the community and/or having abused substances there." Dec. 10, 2007 Packer Report at 20. These inmates are "disproportionately represented" among the parole violators returning to custody for short sentences, *id.*, and are thus likely to spend their entire sentence at the reception center. *Id.* Because their sentences are so short, they are frequently discharged before receiving treatment and fall into "a vicious cycle, as they decompensate in the community and quickly return . . . ." *Id.*; *see also* Aug. 15, 2008 Haney Report ¶¶ 358-59. ("[M]entally ill parolees often do not receive meaningful mental health treatment when they are on parole. . . . Frequently as a result of their decompensation, many are returned to prison, often for technical or minor violations. Thus, many of the parole violations that return them to prison are directly related to their unmet mental health needs. When they return to prison, these vulnerable prisoners are then packed into overcrowded reception centers.").

The absence of adequate mental health care at reception centers also has significant adverse consequences for mentally ill inmates admitted to serve longer sentences in state prison. The shortage of mental health care beds throughout the prison system – which we discuss in more detail below – means that these inmates often spend months in a reception center with little or no access to necessary mental health care while waiting for a bed to open up. *See, e.g.*, Nov. 9, 2007 Stewart Report ¶ 166 (discussing impact of delays in transfer of mentally ill inmates from reception centers to necessary level of care); Aug. 15, 2008 Haney Report ¶ 105 (discussing delays in transfer of EOP inmates out of CIM reception center); *id.* ¶ 129 (discussing prolonged reception center stays and minimal treatment provided for EOP and CCCMS inmates at CIM reported by *Coleman* Special Master). For example, the number of inmates in reception centers needing an EOP level of care[47] continues to grow, *see* Ex. P243 at 900004-06, 900121-23, but the EOP program provided to these inmates falls far below the care mandated by the Program Guide for EOP patients. Aug. 15, 2008 Haney Report ¶ 29 (citing September 2006 Program Guide, Ex. P9 at 12-4-1); *see also* Nov. 9, 2007 Stewart Report ¶ 167. This is not surprising, given that the conditions in these reception centers have been described as "toxic, noxious, psychologically and medically unhealthy," Rep. Tr. at 953:13-14 (Haney), and that a lack of treatment space severely impedes efforts to provide even the most rudimentary forms of mental health care in reception centers. *E.g.*, Nov. 9, 2007 Stewart Report ¶ 80; Aug. 15, 2008 Haney Report ¶¶ 246, 247.

2. Treatment Space

The severe shortage of treatment space evident at CDCR reception centers affects the provision of medical and mental health care throughout the state prison system. Dr. Stewart reported that the "problem of adequate office and treatment space is endemic in the CDCR," Nov. 9, 2007 Stewart Report ¶ 190, and the *Plata* Receiver noted in his Turnaround Plan of Action that "investments in health care facilities have significantly lagged behind growing inmate populations, so much so that available clinical space is less than half of what is necessary for daily operations." Ex. D1133 at 25. In part, this is due to the CDCR's policy and practice of anticipating that prisons will be filled beyond their design capacity, but not including sufficient health care space to serve the anticipated population. Ex. D1092 at 20 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding). Compounding problems caused by the lack of space, the space that does exist to provide health care services is often

[47]The various levels of mental health care are defined *supra* note 24.

"woefully inadequate. Through years of neglect, the facilities have long since passed the time when modest investments could remedy the problem. We are dealing not with deferred maintenance, but with some facilities that are literally falling apart." Ex. D1133 at 25.

The court received evidence of inadequate treatment space at a variety of prisons statewide. At Avenal State Prison, staff must attempt to provide care for 7,525 inmates in space designed for less than one-third of that number. Ex. D1233 at 25 (*Plata* Receiver's Nov. 3, 2008 Analysis of Year 2007 Death Reviews).[48] At Mule Creek State Prison, a *Plata* Receivership team found that "[a]ll of the Facility Clinics are undersized for the quantity of inmate/patients seen on a daily basis and lack[] appropriate holding/waiting space for inmate/patients ducated [scheduled] to be seen by health care providers." Ex. P101 at 7 (*Plata* Receiver's Custody/Security Assessment for Health Care Access at Mule Creek State Prison).

One expert who testified at trial explained that crowding has so "over-taxed" the clinical facilities at California Institution for Men that, as with the reception center at the same prison, "fundamental medical confidentiality rights are routinely ignored" in the space used to provide care to inmates housed at the prison:

> In the West facility clinic at CIM, two PCPs [primary care physicians] share one room and simultaneously see patients for sick call and other encounters. A thin fabric folding screen separates the area in which the doctors see patients from a single exam table which the PCPs must share, as the room is not large enough to accommodate a second table. In the same clinic, the registered nurse conducts face-to-face triage appointments with patients in a large room that is shared by another nurse (who may be seeing patients) and an office technician. These arrangements cannot provide for minimally adequate patient-provider privacy. Moreover, the medical treatment area is so small that there is no medically appropriate waiting area, so sick patients must wait for appointments on a small bleacher outside the clinic, exposed to the elements.

Nov. 9, 2007 Shansky Report ¶ 24. Dr. Shansky also testified about the shortage of clinical space he observed at several other prisons. *Id.* ¶¶ 16-23 (Valley State Prison for Women, Avenal State Prison, and San Quentin); Sept. 10, 2008 Shansky 2d Supp. Report ¶¶ 31-46

[48]Plaintiffs also offered this document into evidence as Exhibit G to Exhibit P413.

(North Kern State Prison, Substance Abuse and Treatment Facility, Pleasant Valley State Prison, and California State Prison-Solano); *see also* Rep. Tr. at 663:22-665:10 (Rowlett) (testifying about clinical space shortage at California State Prison-Solano). Similarly, Secretary Woodford testified that "space represents a serious obstacle to the delivery of health care." Aug. 15, 2008 Woodford Supp. Report ¶ 27; *see also id.* ¶¶ 27-29 (discussing space issues encountered on tours of the Correctional Training Facility ("CTF") and California State Prison-Los Angeles County (Lancaster)).

As the *Plata* Receiver concluded in his supplemental report on overcrowding, "[t]here is a dire need for additional clinical space . . . in the prisons because the existing capacity has been swamped by the number of inmates in the system." Ex. D1094 at 2 (*Plata* Receiver's June 11, 2007 Supp. Report Re: Overcrowding). On the basis of all of the evidence received at trial, there is no doubt that crowding renders the existing clinical space in California's prisons grossly inadequate.

3. Inability To House Inmates by Classification

Crowding also negatively impacts the state's ability to house inmates according to their proper classification, which in turn creates inadequacies in the medical and mental health care that the system is capable of providing to inmates.

A prison classification system is "an objective tool" that allows correctional staff to consider individual factors, including "age, criminal history, educational levels or deficiencies, mental health issues, [and] medical issues" so that inmates can be placed "in the appropriate custody housing level." Rep. Tr. at 149:18-24 (Scott). Prisoners in California are assigned to one of four levels of classification "based on the length of their sentence, their disciplinary history and other objective factors." Nov. 9, 2007 Woodford Report ¶ 13.

In an overcrowded system, this classification system breaks down. A "well-functioning" system of classification should have no more than 10% of prisoners housed outside their classification level. Nov. 9, 2007 Scott Report ¶ 69. In California, population pressures have forced the CDCR to house an estimated 25% of inmates outside their classification levels. *Id.* This failure to house inmates within such levels "mak[es] it harder to provide for their medical and mental health care needs," *id.* ¶ 68, and deprives the overcrowded system of "the flexibility needed to respond to inevitable crises." *Id.* As Director Scott explained, this "widespread rejection of CDCR's classification system has a significant impact on medical and mental health care":

> [I]t is harder to get health care appointments within the prison as well as out-of-prison specialty appointments, and more limited staff contact means that staff are less responsive to emergencies due to distrust, lack of understanding and compassion, and simple logistics: it is harder to get staff attention in a high-pressure, high-security unit. In addition, prisoners are subject to increased degrees of danger and potential for violence because they are placed with more dangerous and violent prisoners than their classification scores would warrant.

Id. ¶ 71. Similarly, Secretary Woodford testified that crowding makes it "impossible to move inmates where they need[] to be" to address inmates' medical and mental health needs. Rep. Tr. at 375:4-6; *see also id.* at 227:4-13 (Beard) ("[H]uge overcrowding creates a problem, because you have an individual who needs to go to Institution A, and Institution A is full. So where do you put him. . . . [Y]ou end up having to put them somewhere that maybe is not the most appropriate for that individual."). Dr. Shansky likewise agreed "that the CDCR is currently unable to accommodate the housing needs of medical patients requiring specialized placement." Nov. 9, 2007 Shansky Report ¶ 126.

4. Beds for Mentally Ill Inmates[49]

Crowding has also created severe bed shortages at every level of the CDCR's mental health care system, causing inmates in need of higher levels of care to languish in clinically inappropriate settings. It is not simply the beds themselves that the state does not possess, but the space in which to place them. The need for such space is rapidly growing. From December 2006 to August 2008, for example, the shortage of EOP beds more than tripled to almost 1,000. Ex. P243 at 900007, 900124. Likewise, between June and September 2008,

[49]Throughout this section, we cite evidence offered at trial on the number of mental health beds at each level of the mental health care delivery system above CCCMS. The *Coleman* court recently approved several projects planned by defendants to increase, in the near term, the number of such beds. June 17, 2009 Order in *Coleman*. Nonetheless, it remains to be seen whether and when defendants will comply with the *Coleman* court's June 17, 2009 order, and, in any event, compliance with that order alone will not suffice to meet defendants' constitutional obligations to the *Coleman* class. *Id.* at 5.

the CDCR's severe shortage of mental health crisis beds prevented more than two-thirds of the inmates referred to such beds from actually being transferred.[50] *See* Exs. P555, P586, P587, P585 (mental health crisis bed referral data from June 2008 through September 2008 showing 391 transfers out of a total of 1,424 referrals). At the level of care reserved for the most mentally ill, inmates sometimes wait as much as a year before being transferred to inpatient beds. Aug. 15, 2008 Stewart Supp. Report ¶ 20.

The shortage of mental health beds throughout the system means that large numbers of inmates in need of care cannot be transferred and do not receive the treatment their mental illness requires. *See, e.g.*, Aug. 15, 2008 Haney Report ¶ 216. Inmates requiring an EOP placement often remain in general population yards receiving only "limited mental health treatment." *Id.* Many of them decompensate and require one or more admissions to a mental health crisis bed for stabilization. *Id.* Because of the severe shortage of available mental health crisis beds, however, inmates in need of such care are frequently placed "in a variety of temporary housing alternatives" ranging from infirmaries to "telephone-booth-sized interview stalls typically placed in corridors." Ex. D1292 at 3. "Most of these alternative placements lack suitable staffing and/or the physical configuration needed for the continuous monitoring or intensive treatment provided in a MHCB unit." *Id.* at 3-4. Suicidal inmates referred to mental health crisis beds have spent "from Thursday evening to . . . Monday morning" being transferred between so-called "dry cells," which are "tiny, freestanding upright cages with mesh wiring surrounding them (and no toilet)," during the day and so-called "wet cells," which are holding cells that have toilets, at night. Aug. 15, 2008 Haney Report ¶ 156. In several instances, inmates referred to mental health crisis beds have committed suicide while awaiting transfer. *E.g.*, Nov. 9, 2007 Stewart Report ¶¶ 173-75 (inmate referred to crisis bed hanged himself after several days on a "suicide precaution protocol" in a mental health outpatient housing unit); Aug. 15, 2008 Stewart Supp. Report ¶ 100 (after determination that neither restraint room nor crisis beds were available, an

[50] All inmates referred to mental health crisis beds "are suffering from severe decompensation or are a danger to themselves or others. A substantial proportion of these inmate/patients are at a high risk for suicide." Ex. D1292 at 3; *see also* Ex. D1148 at 12-1-8.

inmate referred to mental health crisis bed and for possible involuntary medication returned to administrative segregation cell where he hanged himself); *id.* ¶ 109 (inmate identified as "high suicide risk" and referred to crisis bed hanged himself two days later in unlicensed infirmary at CTF).

These shortages at every level, which are caused by the lack of space resulting from overcrowding, have created a destructive feedback loop that is now endemic to the CDCR's mental health care delivery system. Inmates denied necessary mental health placements "are decompensating and are ending up in mental health conditions far more acute than necessary . . . . creat[ing] a cycle of sicker people being admitted, with greater resources necessary to treat them, which then creates even further backlog in an already overwhelmed system." Aug. 15, 2008 Stewart Supp. Report ¶ 92; *see also* Nov. 9, 2007 Stewart Report ¶¶ 31, 32; Ex. D1292 at 9-10; Dec. 10, 2007 Packer Report at 11. Because overcrowding has led to a significant, unaddressed demand for mental health services that only becomes more acute over time, new mental health beds cannot be added quickly enough to address the system's problems. "[D]ue to the effects of overcrowding on the delivery of mental health care, any reduction in the waitlists for higher levels of care will be temporary due to the pentup demands in the system." Aug. 15, 2008 Haney Report ¶ 33.

C. <u>Conditions of Confinement</u>

The severe overcrowding in California's prisons has also affected the conditions under which members of the *Plata* and *Coleman* classes are confined. One consequence of the growing gap between the size of the CDCR population and the capacity of its prisons has been a significant increase in the use of "non-traditional" or so-called "ugly" or "bad" beds. Ex. P4 at 200; Rep. Tr. at 1912:8-14 (Kernan) (CDCR Undersecretary of Operations). These include triple bunks, housing two inmates in cells designed for one inmate, and "beds for both low- and medium-risk inmates . . . crammed into gyms and dayrooms that were never meant to be used for housing." Ex. P4 at 200; *see also* Rep. Tr. at 1912:15-17 (Kernan). The court heard testimony and saw photographic and videographic evidence of these beds. *See, e.g.*, Rep. Tr. at 148:9-149:1 (Scott); *id.* at 269:11-25 (Lehman); Exs. P336, P339, P348, P363. Director Scott, the former head of corrections in Texas, described some of the ugly beds he saw on his tours of California prisons as "truly appalling" and reported that, "[i]n more than 35 years of prison work experience, I have never seen anything like it." Nov. 9, 2007 Scott Report ¶ 11. In the October 2006 Prison Overcrowding State of Emergency Proclamation, Governor Schwarzenegger found that the CDCR was housing "more than 15,000 inmates" in these beds. Ex. P1 at 1. By August 2007, the number of inmates housed in non-traditional beds had increased to approximately 19,600. Rep. Tr. at 1893:11-19 (Kernan); *see also* Ex. D1252-2 at 2. At the time of trial, the department was using approximately 14,000 such beds. Rep. Tr. at 1911:9-14 (Kernan).

The use of non-traditional housing raises serious safety concerns, contributes to the spread of infectious disease, and exacerbates mental illness. First, as Secretary Woodford, former head of the CDCR, testified, the number of custodial staff is often "grossly inadequate" to meet "basic needs" with "often only two officers to supervise 200 prisoners in a gym or a dorm. This is extremely dangerous for both the prisoners and the staff because line of sight supervision is impossible under these circumstances and it does not permit the staff the time to recognize that prisoners are in trouble from any number of causes, including medical or mental illnesses."[51] Nov. 9, 2007 Woodford Report ¶ 17. One of her successors, Secretary Tilton, similarly reported that because of overcrowded conditions, including the high use of non-traditional beds, "the risk of catastrophic failure in a system strained from severe overcrowding is a constant threat." Ex. P104 at 15.

Second, crowding generates unsanitary conditions, overwhelms the infrastructure of existing prisons, and increases the risk that infectious diseases will spread. *See, e.g.,* Nov. 9, 2007 Scott Report ¶¶ 17-24. The Governor recognized such dangers when he issued his emergency proclamation on crowding, declaring that "current severe overcrowding in 29 CDCR prisons" has caused "substantial risk to the health and safety of CDCR staff, inmates, and the public." Ex. P1 at 1-2. Similarly, Scott Kernan, then the Chief Deputy Secretary of

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[51]We discuss additional problems related to inadequate staffing below, *infra* Section IV.D.1.

the Division of Adult Institutions for the CDCR, declared that overcrowding "has led to increased numbers of infectious disease outbreaks and riots and disturbances system-wide." Ex. P11 ¶ 3 (May 16, 2007 Decl. of Scott Kernan filed in *Plata*) (noting eleven different outbreaks, possible outbreaks, or exposure to tuberculosis at seven prisons). As plaintiffs' medical expert testified, "the overcrowded housing conditions, and in particular, the conditions in the non-traditional beds, including the converted gyms, create potential breeding grounds for disease." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 118; *see also* Rep. Tr. at 270:7-12 (Lehman) (crowding "contributes to the difficulties of healthcare delivery by virtue of the fact that it increases the incidence of illnesses, [and] infectious disease"); *id.* at 257:15-22 (Beard) (while prisons may not always be incubators for disease, "they could be if your population densities get so intense," like "if you have a gymnasium that you triple bunk and put hundreds and hundreds of people in a closed dense area"); *id.* at 88:25-89:3 (Stewart) (interviewed two *Coleman* class members who "were suffering from staph infections that they got while living in these unhealthy conditions"); Ex. P4 at 200 (non-traditional beds "create difficult, unsanitary living conditions where ventilation is poor, toilet access is limited, and as many as 200 people might share six showers"). "Until CDCR reduces its population, it will remain highly vulnerable to outbreaks of communicable diseases, including staph infections, tuberculosis and influenza." Nov. 9, 2007 Shansky Report ¶ 135.

Third, plaintiffs' mental health experts also reported on the toxicity of non-traditional housing for members of the *Coleman* class and other inmates. As Dr. Stewart explained, "[p]lacing inmates in overcrowded gym and dorm settings is often inappropriate for people with mental health issues and can either exacerbate existing symptoms or, in some cases, trigger symptoms in people who would not otherwise display them." Aug. 15, 2008 Stewart Supp. Report ¶ 66; *see also id.* ¶ 52 (crowded dorm "settings also may exacerbate mental health conditions such as paranoia and create stressful environments for people who are otherwise vulnerable due to mental health issues, including cognitive impairment"); Aug. 15, 2008 Haney Report ¶ 291 (reporting on "extensive use of 'non-traditional' or 'bad' beds" at North Kern State Prison, which was operating at 200% design capacity, and describing housing conditions as "especially inappropriate for the confinement of mentally ill prisoners").

Finally, non-traditional beds are frequently created by "converting activity space into inmate housing areas," which adversely impacts all inmates by reducing the amount of space available for programs. Ex. P4 at 124. As the *Coleman* Special Master has explained:

> The inevitable result of severe overcrowding is that everyone also spends more and more time in their cells. General yards are more crowded, less well supervised and increasingly dangerous. There are not nearly enough walk-alone yards to provide statutorily required amounts of exercise for those who by choice or need require them. Gyms are no longer an option for time out of one's cell. Dayrooms share many of the same problems. Work or vocational opportunities shrink in the expanding population. Disturbances occur more frequently, with resulting increases in the number and duration of lockdowns. All inmates must spend increasingly larger chunks of their days in their cells, or much more dangerously, in one of those triple-bunked "non-traditional" spaces. None of this is conducive to the health and well-being of any inmate, much less a seriously mentally disordered inmate/patient . . . .

Ex. D1292 at 7-8. Instead, these conditions "inevitably escalate[] the incidence of mental illness and exacerbate[] the condition of those already mentally fragile and vulnerable." *Id.* at 8.

D. <u>Other Access to Care Issues</u>

Beyond the issues arising from critical space shortages, crowding has other severe impacts on access to medical and mental health care.

1. <u>Staffing</u>

The level of crowding has rendered current staffing levels insufficient to handle the health care needs of the overpopulated system:

> Many CDCR prisons are unable to sustain the basic delivery of medical, mental health, and dental services because of limited staffing (clinical and custody) and an overwhelming number of prisoner/patients who require care. Every day, many California prison wardens and health care managers make the difficult decision as to which of the class actions, *Coleman*, *Perez*, *Armstrong* or *Plata* they will fail to comply with because of staff shortages and patient loads.

Ex. D1092 at 30 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding).[52] Crowding also makes it impossible for the CDCR to hire the additional staff necessary to provide constitutionally adequate medical and mental health care to the current population.

a. Medical Staff

Defendants' own data demonstrates significant vacancy rates for medical staff. As of August 2008, 20 percent of chief physician and surgeon positions, 25 percent of physician positions, 19 percent of physician assistant positions, 39 percent of nurse practitioner positions, 10 percent of registered nurse positions, and 18 percent of licensed vocational nurse positions remained vacant. Ex. D1235-2 (charts summarizing staffing trends and indicating number of positions and number of positions filled by full-time employees). The statewide vacancy rate for primary care provider positions, which include physicians and surgeons, nurse practitioners, and physician assistants, was 27 percent. *Id.*; Nov. 9, 2007 Shansky Report ¶ 37 (explaining positions that are considered primary care providers). Some prisons have attempted to fill these vacancies with registry (contract) physicians, but this practice is insufficient as a long-term solution. "Because registry physicians tend to turn over quickly, the prisons end up spending time doing extensive on-the-job training repeatedly, which is time-consuming and detracts from patient care delivery." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 66; *see also* Nov. 9, 2007 Shansky Report ¶ 45.

"In any system, inadequate medical staffing, whether due to unfillable vacancies or insufficient allocation of positions, will result in delayed care. In a dramatically overcrowded system like the CDCR's the treatment delays become more acute." Nov. 9, 2007 Shansky Report ¶ 46. In overcrowded systems, prisoners experience "significant appointment delays," *id.*, both in terms of seeing a primary care physician and even in being triaged by a nurse to determine whether an appointment with a physician is necessary. *E.g.*, *id.* ¶¶ 46-49; Sept. 10, 2008 Shansky 2d Supp. Report ¶¶ 67-77. In addition, "[w]ith too few

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[52] *Perez v. Cate*, Case No. C05-5241 JSW (N.D. Cal.), is a statewide class action concerning dental care in California prisons. *Armstrong v. Schwarzenegger*, Case No. C94-2307 CW (N.D. Cal.), is a statewide class action concerning California prisoners and parolees with hearing, vision, mobility, kidney, and learning impairments.

primary care providers to meet the most immediate needs of the current population, some prisons are unable to develop required medical programs," including the chronic and preventive care programs required by the *Plata* policies and procedures to which defendants have committed themselves. Nov. 9, 2007 Shansky Report ¶¶ 51-53. "Even the remedies the state uses to alleviate crowding cause problems for an already overburdened staff. For example, at CTF the medical department was swamped with work because they had been ordered to review 1,500 medical files to determine which prisoners were eligible for transfer to out-of-state prisons." Aug. 15, 2008 Woodford Supp. Report ¶ 6.

In addition to rendering current medical staffing levels seriously inadequate, crowding makes it impossible for the CDCR to increase the number of clinical positions to the level needed to provide adequate care to inmates. Staffing and space issues are inextricably intertwined such that, given the overcrowding, hiring staff alone could not solve the problem. As Secretary Lehman asked, "[W]here are the providers going to work and how"? Rep. Tr. at 272:1-13. A number of chief medical officers expressed the opinion that they would not have sufficient space for clinical staff if all of the clinical positions currently budgeted were filled, *id.* at 501:3-7 (Shansky), let alone if new positions were created and filled.

Moreover, crowding negatively impacts the recruitment and retention of clinical staff. *See, e.g.,* Nov. 9, 2007 Shansky Report ¶¶ 16, 20. Dr. Shansky explained that "[t]he clinical space allocated at San Quentin is so substandard and creates such a stressful environment that . . . the prison's capacity to retain physicians is seriously jeopardized by both the physicians' perception of personal safety issues and the unprofessional conditions." Nov. 9, 2007 Shansky Report ¶ 23. More broadly, Dr. Shansky testified:

> I believe that the hiring gains for clinicians made in the past year will be lost if these systemic issues [concerning overcrowding] are not addressed, because many newly-hired clinicians will be unwilling to risk their professional credentials and reputations by practicing in an environment where their patients are at risk of harm because among other things adequate clinical space is scarce, appointments are not scheduled, complete medical records are unavailable, and medications are not delivered.

Id. ¶ 136. The *Plata* Receiver likewise reported that crowding interferes with the "ability to recruit, hire and retain competent medical personnel. The overwhelming number of prisoners needing care at the prisons, existing staffing shortages and inadequate clinical space are just a few of the consequences that make developing a competent medical staff a daunting challenge." Ex. D1094 at 2 (*Plata* Receiver's June 11, 2007 Supp. Report Re: Overcrowding).

b. Mental Health Staff

There are also staffing shortages "at all clinical levels" of the CDCR's mental health care delivery system, and overcrowding in California's prisons has "a profound impact" on mental health staffing levels. Rep. Tr. at 309:3-22 (Haney). Between March 2008 and August 2008, for example, the total vacancy rate among existing mental health care positions ranged from 22 percent to 36.1 percent, while the vacancy rate in psychiatrist positions was particularly high, ranging from 30.6 percent to 54.1 percent. Ex. P245 at 1. Moreover, CDCR "significantly underestimated the staffing needed to implement critical portions of the *Coleman* Program Guide requirements" in its 2008-09 staffing requests. Aug. 15, 2008 Haney Report ¶ 336 (citing Ex. P485, July 12, 2008 letter from *Coleman* Special Master to Robin Dezember and *Coleman* defense counsel reporting review of CDCR workload study). Accordingly, these high vacancy rates understate the actual level of mental health understaffing. Dr. Haney reported on the "significant staff shortages" at the eight facilities he visited, all of which he described as "[s]everely [o]vercrowded." Aug. 15, 2008 Haney Report at 56 & ¶ 335.

As Dr. Haney explained, these shortages have a serious adverse effect upon the mental health care provided to inmates.

> [S]erious staffing shortages all translate into inadequacies in the mental health delivery system and, in some instances, an outright denial of needed and mandated mental health services. In many of the units this means that professional staff are doubling up on duties, performing more tasks than they should be called upon to handle, and managing far larger caseloads than is appropriate or effective. One psychologist at CIM told me "I can't keep up with

> everything. I've been doing too much. We hired new staff, but that hasn't helped." He also told me "in my opinion, we are doing about 50% of what we should be doing."

Id. ¶ 335.

Although defendants need additional clinical staffing to implement necessary mental health programs, the CDCR "ha[s] been unable to recruit and retain staff even to meet the budgeted levels." *Id.* ¶ 336. This inability is directly related to the overcrowding in California's prisons. "[T]he serious deficiencies in office and treatment spaces I observed throughout the system are themselves an obstacle to ever achieving appropriate clinical staffing. The working conditions are terrible and there is no space, in any event, for more clinicians." *Id.* Dr. Stewart explained that "it is extremely difficult to recruit and retain good clinical staff in a correctional environment in the best of times," but that, "[i]n overcrowded systems, with the attended violence, high acuity, [and] shortage of office space, these ordinary recruitment problems are compounded and become significantly more difficult to overcome." Nov. 9, 2007 Stewart Report ¶ 41.

c. Custodial Staff

Crowding has also caused significant custodial staffing shortages in the CDCR that have a direct impact on defendants' ability to deliver constitutionally adequate medical and mental health care to prison inmates. "Custodial staff are essential to providing health care to prisoners because they supervise prisoner movement to and from medical appointments, they escort prisoners to services within an institution and they provide supervision when prisoners are taken out of the prison to medical appointments, hospitals or they are transferred to another institution." Nov. 9, 2007 Woodford Report ¶ 15. In addition, custodial staff are "responsible for alerting health care staff when prisoners complain of an immediate serious problem and also are supposed to observe prisoners periodically to identify actual or potential problems." Aug. 15, 2008 Woodford Supp. Report ¶ 25.

The California prison system lacks sufficient custodial staff "to keep prisoners safe from harm," *id.*, or "to provide prisoners with timely access to care and still perform other essential functions," Nov. 9, 2007 Woodford Report ¶ 15. The "paucity of correctional officers in California, due to the low staffing rate and high number of vacancies, is dangerous." Nov. 9, 2007 Scott Report ¶ 26 (footnote omitted). In fact, Director Scott testified that "every institution I toured had inadequate custodial staff on the ground to address the needs of the prisoner population, including ensuring that health care services are provided." *Id.* at 14 n.3. This "is particularly dangerous for prisoners in need of medical care . . . not just because staff are not available to escort prisoners or clinicians to appointments, but because short-staffing can lead to forced overtime and burnout, such that staff make poor decisions, particularly in health care emergencies." *Id.* ¶ 26; *see also* Nov. 9, 2007 Woodford Report ¶¶ 16-23 (discussing dangers of understaffing correctional officer positions). As Director Scott testified:

> [O]verworked staff without adequate back-up are less able to respond to emergencies and more likely to downplay prisoners' concerns. In a housing unit such as San Quentin's H Unit Dorm 2 (one officer for 200 prisoners) or CIM's West Facility Cleveland Hall (two officers for 198 prisoners) or East Facility gym (two officers for 202 prisoners), staff in an emergency can only sound the alarm, make frantic telephone or radio calls, and hope for backup. An officer alone with several hundred inmates is unlikely, for example, to perform emergency first aid or CPR – it is simply unsafe to do so with no backup, when prisoners could easily simulate an emergency as a diversion. The inability to perform basic lifesaving functions could have potentially devastating consequences on the life and health of a prisoner undergoing a medical or mental health emergency. This situation presents an unacceptable risk of harm to prisoners.

Nov. 9, 2007 Scott Report ¶ 59.

In addition, the *Plata* Receiver has explained that, "[s]ystem-wide, CDCR lacks the custody staff and organizational structure and processes to ensure that patient-inmates are reliably escorted and/or transported to medical appointments." Ex. D1133 at 5 (*Plata* Receiver's June 6, 2008 Turnaround Plan of Action). This results in denial of "timely access to health care services" and "substantially increas[es] the risk that patient-inmates' health will further deteriorate." *Id.* Dr. Shansky also concluded that lack of adequate custodial staff causes "significant delays in treatment . . . because there are not enough custody officers to move the prisoners in and out of the clinics on a timely basis." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 107. Similarly, defendants' own mental health expert testified that the shortage of correctional officers statewide impedes the delivery of mental health care to members of the *Coleman* class, particularly CCCMS inmates. Dec. 10, 2007 Packer Report at 15-16. A reduction in the crowding of California's prisons would help ease the burden on the custodial staff and permit staff members to better monitor inmates for medical or mental health problems and to deliver inmates for necessary care.

2. Medication Management

Next, crowding prevents defendants from achieving an adequate medication delivery system that is marked by "the timely delivery of the correct medication to the correct patient, with accurate documentation of what has been administered." Nov. 9, 2007 Shansky Report ¶ 79. "Defendants' medication delivery systems are inadequate for the size of the population they serve, and are plagued by short-staffing at a number of prisons. . . . [Consequently,] prisoners receive their medications late or not at all, and suffer as a result." *Id.* ¶ 80. "The shortcomings in the medication delivery system are rooted in overcrowding – quite simply, there are more patients requiring medications than the prison has the resources or staffing to address." *Id.* ¶ 81.

Overcrowding affects the administration of both traditional medications to *Plata* class members and psychotropic medications to *Coleman* class members. *See, e.g.*, Rep. Tr. at 77:21-79:24 (Stewart); Aug. 15, 2008 Stewart Supp. Report ¶ 96. As Dr. Stewart testified, "[t]here are just too many people that are prescribed too many medications" for the system to handle. Rep. Tr. at 77:19-20. Following tours of Salinas Valley State Prison, California Medical Facility, and Mule Creek State Prison, Dr. Stewart reported that:

> First, due to the lack of adequate staff to distribute medications and the overwhelming number of inmates prescribed medications, staff members do not have sufficient time to adequately monitor whether inmates are taking medications properly. . . . Second, the clinical staff members who distribute medications are too understaffed to evaluate the efficacy and potential side effects of the prescribed medications. Every patient I talked to about the medication distribution system described the same drive-by process – they received their medications in pill lines or at their cell doors from staff members who spent only a few seconds with them. The staff members never ask the patients about the efficacy of the medications or whether they are causing side effects. Third, psychiatrists are also overburdened and may

> consist largely of contract employees that are unable to maintain consistent relationships with their patients due to constant movements between units or even prisons.

Aug. 15, 2008 Stewart Supp. Report ¶ 96; s*ee also id.* ¶ 95; Rep. Tr. at 670:9-673:10 (Rowlett) (correctional officer discussing similar problems based on her experience at California State Prison-Solano).

The failure of the CDCR's medication delivery systems results in not only traditional medical problems, but also high medication non-compliance rates among patients with serious mental illness. Blood samples taken of seriously mentally ill CDCR inmates admitted to DMH inpatient care units over more than two years show that the vast majority of such inmates have little or no psychotropic medication in their systems. *See* Brewer Dep. at 135:5-137:25; *see also* Aug. 15, 2008 Stewart Supp. Report ¶¶ 98-99 (reporting information provided by Drs. Neill and Gandhi, DMH Program Directors for Salinas Valley and CMF, respectively). The Executive Director of the DMH inpatient psychiatric programs at Salinas Valley and CMF testified that this is a "serious problem," Sept. 4, 2008 Brewer Dep. at 127:17-18, the consequence of which is that acuity levels in mentally ill inmates admitted to DMH units are rising, inmates admitted to inpatient care "are taking longer to stabilize on medications" and often require orders for involuntary medication, and, upon discharge, the inmates "are then returned to the same system that fails to adequately monitor medication compliance, thereby starting the cycle all over again." Aug. 15, 2008 Stewart Supp. Report ¶ 100.

3. <u>Specialty Medical Care</u>

The CDCR is also unable to provide access to "specialty [medical] services, including in urgent (high priority) cases, in accord with [its own] policy requirements." Nov. 9, 2007 Shansky Report ¶ 56. As a "result of overcrowding, the number of prisoners who need such services exceeds the capacity of the providers available to CDCR, and/or is so great that CDCR cannot adequately track and schedule such cases." *Id.* For example, at Avenal State Prison, Dr. Shansky reviewed two reports printed the day of his visit in the fall of 2007. *Id.* ¶ 61. Those reports showed 1,293 pending specialty referrals, 316 urgent and 977 routine.

Id. Of the 316 pending urgent referrals, only approximately 105 had an appointment date, with only 2 of the 316 urgent referrals – a dismal 0.6 percent – scheduled to take place within the fourteen-day period required by CDCR policy for such appointments. *Id.* Of the 977 pending routine referrals, only approximately 285 had a scheduled appointment date, and only approximately 135 of the 977 routine referrals – approximately fourteen percent – were scheduled to occur within the three-month period required by CDCR policy for such appointments. *Id.* ¶ 62. While Avenal provides the starkest numbers, the problem exists at other prisons as well. *E.g., id.* ¶ 65 (more than 50 percent of urgent referrals on pending list at High Desert State Prison were pending for longer than fourteen-day period required by CDCR policy); Sept. 10, 2008 Shansky 2d Supp. Report ¶¶ 88-94 (discussing specialty care problems at four prisons and concluding that "[t]he demand for care, particularly for the high priority cases, continues to overwhelm the resources available to the defendants").

Prison staff at Avenal indicated that "they were not confident that the reports [of pending specialty care referrals] were entirely accurate," and that some referrals that appeared as pending may have actually taken place but were not yet closed out in the system as having been completed. Nov. 9, 2007 Shansky Report ¶ 63. However,

> to the extent that the aging report data is incorrect, then it reflects that the prison has more patient data than it is capable of processing, leaving [Avenal State Prison] unable to determine who actually needs the services, with the distinct possibility of prisoners being double-scheduled (and thus delaying specialty services for other prisoners still actually in need of an appointment).

Id. ¶ 64. Put simply, even if the specialty care numbers are not as dire as the reports indicate – and it would be difficult to do worse than having only 0.6 percent of pending urgent referrals scheduled within the fourteen-day period mandated by CDCR policy – "[Avenal's] population exceeds its capacity for scheduling and tracking." *Id.*

4. Lockdowns

Delays in access to care are even more acute during periods when prisons are in lockdowns. *See, e.g.*, Sept. 10, 2008 Shansky 2d Supp. Report ¶¶ 108-11 (discussing impact of lockdowns at Pleasant Valley State Prison and High Desert State Prison). Because of crowding, the California prison officials who administer the state's thirty-three adult prison institutions

> rely largely on lockdowns to control their system. . . . [I]n 2006, they had 449 lockdowns, which averaged 12 days a lockdown. And they had 20 or so of those lockdowns that were over 60 days. Those things impact upon your ability to properly deliver any service within an institution, including mental health and medical services.

Rep. Tr. at 218:18-25 (Beard); *see also* Nov. 9, 2007 Scott Report ¶ 63 ("Overcrowding engenders a state of perpetual crisis that shuts down non-emergency prison functions."). As Dr. Haney explained:

> Lockdowns are used in the California Department of Corrections, I believe, in large part because of the profound level of overcrowding at a level that is unheard of in corrections departments across the United States with which I'm familiar.
>
> Lockdowns mean that prisoners, including EOP prisoners, if they are in a unit that is locked down, are essentially without programs during the periods of time that the lockdown is in place.
>
> There are housing units in the California Department of Corrections that are locked down more often than they are unlocked.

Rep. Tr. at 316:23-317:9; *see also id.* at 70:4-6 (Stewart) ("The fact that there's too many inmates at the Salinas Valley State Prison in the general population yard . . . resulted in an almost continuous lockdown.").

Lockdowns require a "radically different form of medical delivery than the services provided under normal general population conditions." Ex. D1092 at 29 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding). When a prison is in lockdown, inmates housed in the general population are unable to "leave their housing units to go to yard clinics" to access medical care; instead, "clinical staff must go from cell to cell to see the prisoner/patient, or small groups or individual prisoners must be escorted by correctional officers to and from clinic areas." *Id.* at 29-30. California prisons "are not staffed" for this type of situation, where staff "must escort prisoners to every service or bring the service to them." Nov. 9, 2007 Woodford Report ¶ 25.

Likewise, lockdowns affect the delivery of mental health care in several ways. Inmates frequently cannot leave their cells to attend necessary treatment programs. Rep. Tr. at 881:4-10 (Dezember); Nov. 9, 2007 Stewart Report ¶ 138; Aug. 15, 2008 Stewart Supp. Report ¶¶ 34, 38. Additionally, lockdowns prevent staff from supervising the intake of psychotropic medications. Aug. 15, 2008 Stewart Supp. Report ¶ 96 (noting that lockdowns "result[] in distributions of medications through food ports or otherwise at cell doors, where it is difficult to monitor compliance with medication regimens"). Finally, some mentally ill prisoners "cannot handle the severe stress of locked-down confinement" and "may decompensate or become suicidal as a result." Aug. 15, 2008 Haney Report ¶ 166.

E. <u>Medical Records</u>

Another deficiency in the delivery of medical and mental health care to California inmates concerns medical records. For example, Director Scott testified that the CDCR "cannot track and transfer essential health care records, because the record system lacks the capacity to deliver records regarding this many prisoners." Nov. 9, 2007 Scott Report ¶ 78. As he explained,

> given the extraordinary number of prisoners in these facilities, it is simply impossible to manually file so many records on a timely basis. In my experience, such extraordinary pressure on staff also leads to serious filing errors, which means that even records that have been filed might not be available to clinicians, and might be impossible ever to locate.

Id.

Dr. Shansky's observations similarly revealed medical records that were "dangerously incomplete." Nov. 9, 2007 Shansky Report ¶ 101; *see also id.* ¶ 106 (at Avenal State Prison, "the amount of documents generated had simply overwhelmed the staff's capacity to timely and properly place documents in prisoners' [unit health records]"); *id.* ¶ 107 (at High Desert State Prison, 107 inches of loose filing remained, and even those documents that are filed are only placed rather than fastened into inmates' health files, which "greatly increases the chance of documents being lost or misplaced"); *cf.* Nov. 9, 2007 Scott Report ¶ 78 (noting observation of "four feet of loose filing waiting to be placed in prisoners' health records" at

Avenal, a prison at over 200% of design capacity). Dr. Shansky summarized his observations as follows:

> At each of the prisons I inspected, I found that the medical records were unwieldy, rarely organized chronologically and, in general, poorly maintained. Retrieving useful information from the files invariably requires considerable time sifting through extraneous reports, misfiled documents and outdated materials. At the same time, certain documents that would be extremely useful, such as an updated "Problem List" for each file, which is required by the court-ordered *Plata* Policies and Procedures [to which defendants stipulated], are typically missing.

Sept. 10, 2008 Shansky 2d Supp. Report ¶ 99. Dr. Shansky further testified that "CDCR's tracking and information systems cannot keep up with the overwhelming data requirements in the system's overcrowded prisons." *Id.* ¶ 102; *see also* Nov. 9, 2007 Shansky Report ¶ 110 (noting that adequate care requires timely appointments, which in turn requires an effective scheduling and tracking system, something that "CDCR has proven itself incapable of developing . . . due in large part to the sheer numbers of patients and their vast and growing need for coordinated appointments").

The deficiencies in the management of medical records extend to mental health care as well. Defendants' mental health expert Dr. Packer described several such deficiencies:

> In several institutions there were difficulties in clinical staff obtaining charts in a timely manner (that is, the charts were not available when needed for a clinical assessment) as well as difficulties in updating the charts (that is, delays in notes being placed in the records). Staff referred to a category of "Flimsy" charts, meaning that they sometimes had limited information available when doing an assessment. The documentation I reviewed also described institutions in which there were significant numbers of charts unfiled.

Dec. 10, 2007 Packer Report at 19. Dr. Packer opined that the medical records problem "is a direct effect of overcrowding," and that "[t]his problem does impact directly on the ability to provide timely and appropriate care." *Id.* at 19-20; *see also* Rep. Tr. at 1119:2-5 (expressing his "opinion that the sheer number of inmates in the system is the most direct cause resulting in the difficulty of CDCR to manage their medical records appropriately").

Plaintiffs' expert Dr. Stewart reviewed approximately sixty medical records during his tours and reported that he "consistently found the records to be unwieldy, disorganized and bulky, with loose papers floating around in the files," and that "[i]t was exceedingly difficult to follow the clinical course of treatment of the patients because of the size and disorganization of the files." Aug. 15, 2008 Stewart Supp. Report ¶ 102. He also reported "a few instances where [he] found other patients' records in the files [he] reviewed." *Id.* He described these problems as "typical in an overwhelmed and overcrowded system." *Id.*

As Dr. Stewart explained,

> [a]ccurate well organized medical records are a critical element of medical and mental health care. They are even more essential in a complex and overcrowded system such as the CDCR which is characterized by frequent transfers of patients, high turnover of clinical staff and overuse of contract clinicians who lack familiarity with the patients and the system itself.

Id. According to Dr. Shansky, "[u]nless medical records and scheduling information are managed, organized, and maintained effectively, appropriate health care services cannot be provided. *Overcrowding makes it impossible* for CDCR to perform these essential functions." Nov. 9, 2007 Shansky Report ¶ 97 (emphasis added).

F. <u>Increasing Acuity of Mental Illness</u>

Finally, and alarmingly, the evidence shows that crowded conditions, and the bed and staffing shortages and delays in access to necessary care that result from crowding, intensify the acuity of mental illness among inmates throughout the California prison system. As Dr. Stewart explained:

> [I]nsufficient access to higher levels of care has created a system which is overwhelmed by the acuity of its patients at every level of care. EOP units house many patients in need of inpatient care, MHCB's house patients in need of inpatient hospitalization, intermediate care facility units house many patients in need of acute hospital care and so on. When and if these patients finally reach the level of care they require, their mental health conditions may be far more serious, resulting in longer stays and more resources in order to stabilize and get well.

Aug. 15, 2008 Stewart Supp. Report ¶ 43 (footnote omitted); *see also id.* ¶ 88 ("It was clear that the severe shortage of mental health beds has created a system that houses a significant portion of *Coleman* class members at lower levels of care than the patients clinically require."). Dr. Stewart reported that he was "struck by the very high acuity of the patients

[he] encountered during [his] tours because they were much sicker, as a whole, than the *Coleman* class members [he] encountered between 1990 and 2000," when he served as a court-appointed monitor at CMF. *Id.* ¶ 88. Dr. Stewart attributed this directly to overcrowding:

> The reality of the current MHSDS system, as demonstrated by my interviews with these class members and the admitted shortage of EOP, MHCB and inpatient beds, is that too many people are housed in places that simply cannot provide them with the level of mental health care they require. This is a direct result of overcrowding – there are too many people in the system and too few resources to treat them. This in turn means that the acuity level at every level of care is higher than it would be in a system that has sufficient inpatient beds.

Id. ¶ 91.

Dr. Haney similarly reported that "there is evidence that the *worsening* prison overcrowding crisis has had a *corresponding* effect on the quality of mental health care." Aug. 15, 2008 Haney Report ¶ 373 (emphasis in original). At trial, he testified that mentally ill inmates in need of higher levels of mental health care are "getting sicker as a result of their inability to get the appropriate level of care," Rep. Tr. at 304:16-19, and he agreed that overcrowding in California's prisons is resulting in more significant mental illness than one would find at a "properly run prison with proper population" and "an adequately functioning mental health care delivery system." *Id.* at 305:24-306:5.

G. <u>Extreme Departures from the Standard of Care and Preventable or Possibly Preventable Deaths, Including Suicides</u>

All of the above problems, caused by crowded conditions, ultimately contribute to unacceptably high numbers of both preventable or possibly preventable deaths, including suicides, and extreme departures from the standard of care.

In 2006, California had a prisoner suicide rate of 25.1 suicides per 100,000 inmates, compared to the national average of 14 per 100,000. Ex. P58 at 9 (*Coleman* Special Master's Report on Suicides Completed in the CDCR in Calendar Year 2006).[53] In reviewing these

[53]Because the record does not contain evidence of the number of suicides in 2007 or 2008, it is unclear from the record whether California's inmate suicide rate has risen or declined since 2006. It appears, however, that the suicide rate is not appreciably lower, as

suicides, the Special Master found that "72.1 percent of completed suicides in 2006 involved some measure of inadequate treatment or intervention and were, therefore, most probably foreseeable and/or preventable." *Id.* at 8. Since 2003, the percentage of suicides found to be foreseeable or preventable each year has remained relatively constant at around 75 percent, representing "marked increases over the 45 percent rate of inadequate treatment that was found for suicides that occurred in 2002." *Id.* at 8. While we do not suggest that crowded conditions are the sole cause of the increase in the suicide rate among California inmates, the evidence demonstrates that crowding throughout the prison system has a significant effect on many of the risk factors that contribute to inmate suicides. "Major contributing factors" to foreseeable and preventable suicides include "inadequate clinical assessments, inappropriate interventions, incomplete referrals, missed appointments and appointments that were not rescheduled, unsupported diagnoses, failure to review records, assignments to inappropriate levels of mental health care, failure to provide protective housing, and the provision of inadequate or untimely resuscitation efforts." Ex. D1281 at 680. As our discussion above makes clear, crowding is a major cause of nearly all of these factors.

The *Plata* Receiver also reviews inmate deaths to determine whether any deaths were preventable or possibly preventable. In 2007, of the 110 deaths considered to be unexpected and not the result of homicide or self-inflicted injuries, 44 deaths (40 percent) were found to be preventable or possibly preventable, Ex. D1233 at 8 (*Plata* Receiver's Nov. 3, 2008 Analysis of Year 2007 Death Reviews), meaning that "better medical management or a better system of care would likely have" or "may have prevented the patient's death," *id.* at 5. Dr. Shansky testified that this rate was "extremely high." Rep. Tr. at 428:23-429:7. The Receiver also examined "extreme departures from the standard of care," defined as "lapse[s] in care that a reasonable and competent clinician would not render under the same or similar circumstances." Ex. D1233 at 5, 15. He found extreme lapses in nearly 60 percent of the

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the CDCR reported 31 apparent suicides to the *Coleman* Special Master during the first ten months of 2008. *See* Ex. P171-R; Ex. P506. If annualized, this equates to approximately twenty-four suicides per 100,000 inmates for calendar year 2008, based on an in-state inmate population of 156,352.

inmate deaths he reviewed. *See id.* at 9-13. Dr. Shansky testified that this is an extraordinarily high rate, and that in the Illinois prison system he would see extreme departures from the standard of care in only five to ten percent of inmate deaths. Rep. Tr. at 428:9-17. According to Dr. Shansky, there was no question that a number of the lapses were "related to crowding." *Id.* at 427:17-428:4, 430:21-431:3.

Defendants presented evidence that California had the fourteenth lowest "average annual illness mortality [rate] per 100,000 state prisoners from 2001 to 2004" in the United States. Rep. Tr. at 1272:12-21 (Mumola). However, these statistics failed to control for demographics of each state's inmate population; the statistics are therefore of limited value in comparing states. Aug. 27, 2008 Reingold Report ¶¶ 10-11, 15, 24. Furthermore, California has the fourth lowest death rate among all fifty states, and the fifth lowest after controlling for age. *Id.* ¶ 12. "Thus, while California has a very low death rate for its general population, its death rate for state prisoners is relatively higher." *Id.* ¶ 14. In any event, serious deficiencies continue to exist in the California prison system such that California inmates are not receiving adequate care. This is true regardless of where California might rank in a valid comparison of inmate death rates among the states.

H. <u>Expert Opinions Regarding Causation</u>

Based on their observations of crowded conditions in California's prisons, including those discussed above, as well as on their extensive experience in working in or managing crowded prisons,[54] seven experts testified that crowding is the primary cause of California's inability to provide constitutionally adequate medical and mental health care to its inmates.[55] Four of the experts are current or former state prison system administrators who have led correctional agencies in five states, including California. Jeanne Woodford – who worked for the CDCR for twenty-seven years in various capacities, including as warden at San

[54] *E.g.*, Nov. 9, 2007 Woodford Report ¶ 7; Nov. 9, 2007 Scott Report ¶¶ 4-5; Aug. 15, 2008 Lehman Report ¶ 7; Rep. Tr. at 263:24-267:12 (Lehman); *id.* at 209:9-14 (Beard).

[55] As we have previously explained, while "the primary cause issue is ultimately a question of law for the three-judge court to decide, the Federal Rules of Evidence allow experts to express opinions that embrace the ultimate issue in a case," including the issue of causation. Nov. 3, 2008 Order at 10-11 (citing Fed. R. Evid. 704(a) and other authority).

Quentin and as acting Secretary of the CDCR, Nov. 9, 2007 Woodford Report ¶ 1 – testified that she "absolutely believe[s] the primary cause is overcrowding." Rep. Tr. at 376:3-9; *see also id.* at 383:4-10; Nov. 9, 2007 Woodford Report ¶ 6. Doyle Wayne Scott – who worked for thirty years for the Texas Department of Criminal Justice, the second largest prison system in the United States after California, including five years as its Executive Director, and has served as an expert consultant to the National Institute of Corrections and seven prison systems throughout the United States and Puerto Rico, Nov. 9, 2007 Scott Report ¶¶ 1, 4 – similarly testified that:

> Everything revolves around overcrowding. The deficiencies in the classification plan, the deficiencies in the unavailability of staff because they are doing other tasks associated with overcrowding problems to do onsite medical appointments or offsite medical appointments, the wear and tear on the infrastructure. I know there have been electrical outages because of the overload that the large number of offenders is causing at institutions. There's also been water problems at a number of the institutions, and I think the Governor's proclamation clearly described a lot of those issues.

Rep. Tr. at 152:6-15. Director Scott therefore opined that "overcrowding is the primary cause of the medical and mental health care violations in California prisons." *Id.* at 152:1-6; *see also* Nov. 9, 2007 Scott Report ¶ 80. Joseph Lehman – who has over thirty-five years of experience in corrections, including fifteen combined years as head of corrections in Pennsylvania, Washington, and Maine, Aug. 15, 2008 Lehman Report ¶ 1 – also rendered his expert opinion that crowding "is the primary cause of the inability to provide [medical and mental health] services. It's overwhelming the system both in terms of sheer numbers, in terms of the space available, in terms of providing healthcare." Rep. Tr. at 270:25-271:6. Likewise, Jeffrey Beard – a licensed psychologist who has worked for the Pennsylvania Department of Corrections for over thirty-six years, including serving as its Secretary since 2001, *id.* at 200:15-201:7 – testified that, in his opinion, "the biggest inhibiting factor right now in California being able to deliver appropriate mental health and medical care is the severe overcrowding of [the] system." *Id.* at 219:7-10.

At least three of these four experts who had headed state prison systems had never before testified on behalf of a prisoner, and at least two of them were not paid for their time as experts in this case. Rep. Tr. at 153:12-14 (Scott) (never testified on behalf of a prisoner or class of prisoners); *id.* at 230:2-10 (Beard) (never testified for plaintiffs in thirty-six years as a corrections professional, and not paid for testimony in this case); *id.* at 273:6-10 (Lehman) (never testified on behalf of prisoners in thirty-five years of experience); *id.* at 385:12-14 (Woodford) (not paid for testimony in this case). They decided to testify on plaintiffs' behalf in this case because "the situation in California is so egregious," *id.* at 273:11-12 (Lehman); and because "the prisons aren't safe," "nobody seems to be willing to step up to the plate and fix the problem," and "if there's anything I can do to help see that California moves in [the right] direction . . . that's why I'm here today," *id.* at 231:13-20 (Beard). Secretary Woodford, the former warden at San Quentin and acting Secretary of the CDCR, explained that she testified:

> because I truly believe that we can do better than we are in California. I think it's unbelievable that in this state that we have the kind of overcrowded conditions that we have; that we do little or nothing to prepare people for the return to society in spite of the fact that we parole 10,000 people a month from our prison system.
>
> And I absolutely believe that we make people worse, and that we are not meeting public safety by the way we treat people.
>
> And that I believe overcrowding is prohibiting us from providing quality medical care and mental healthcare to inmates in our system.
>
> And for California to be in the shape that it's in is just unbelievable.

Id. at 385:17-386:5 (Woodford).

In addition to these present or former heads of state prison systems, three other experts testified on plaintiffs' behalf that crowding is the primary cause of the constitutional violations at issue in *Plata* and *Coleman*. Dr. Ronald Shansky – a physician who has worked primarily in correctional health care for over thirty-six years, including twelve years as Medical Director of the Illinois Department of Corrections and five years as a medical consultant to the CDCR, and who has been involved "with over two dozen other correctional systems as either a court-appointed expert/monitor/special master or as a consultant retained by the correctional system," including five years as a court-appointed receiver of the District of Columbia Jail Medical and Mental Health Program, Nov. 9, 2007 Shansky Report ¶¶ 2-3 – explained that:

> the CDCR's medical care delivery system cannot provide a constitutional level of care because the prison system incarcerates far more prisoners than can be adequately treated with the resources, staffing and facilities available in the CDCR. In short, it is my opinion that overcrowding is the primary cause of the constitutional violations in the CDCR for *Plata* class members.

Sept. 10, 2008 Shansky 2d Supp. Report ¶ 7; *see also* Nov. 9, 2007 Shansky Report ¶¶ 136-38. Dr. Shansky is "confident" in his conclusion. Rep. Tr. at 423:8-14.

Dr. Craig Haney – a professor of psychology at the University of California, Santa Cruz, who has studied "the psychological effects of living and working in institutional environments" for thirty-five years and has toured, inspected, and analyzed conditions of confinement in prisons in twenty states, three maximum security federal prisons, and prisons in five other countries, Aug. 15, 2008 Haney Report ¶¶ 1-3 – similarly testified that:

> Because of the tremendous importance of overcrowding and its impact on virtually every aspect of prison life, it is my opinion that it is the primary cause of the continuing constitutional violations that plague the California prison system, including the CDCR's inability to provide medical and mental health care for state prisoners that meets the relevant constitutional minimum standards.

Id. ¶ 17; *see also id.* ¶ 364 (overcrowding is a crisis "that now consumes the CDCR and prevents it from discharging its constitutional responsibilities"). Dr. Haney further explained that:

> I don't believe in a system this overcrowded at this magnitude of overcrowding with overcrowding as widespread as it has been in California for as long a period that it has been that there's any other plausible or credible explanation for the failure of the system to provide constitutionally-adequate mental healthcare.
>
> The court's been monitoring this issue for many, many years. There have been many, many court orders, and there have been

> many activities that have been engaged in in trying to bring this system's mental health care delivery into constitutional compliance.
>
> In the face of all of those efforts there has been this overwhelming overcrowding problem of such a degree, magnitude and duration that it has incapacitated the system's ability to deliver constitutionally-adequate care.

Rep. Tr. at 317:18-318:7.

Dr. Pablo Stewart – a licensed psychiatrist and clinical professor of psychiatry at the University of California, San Francisco, with over twenty years of experience in correctional psychiatry, including service as a court-appointed expert in several federal class action lawsuits concerning the delivery of mental health care in prisons and jails, Nov. 9, 2007 Stewart Report ¶¶ 1-15 – testified that the "conclusion that overcrowding is the primary cause" of the constitutional violations in *Coleman* is "inescapable." *See id.* ¶ 196; Aug. 15, 2008 Stewart Supp. Report ¶ 111. Dr. Stewart's opinion is predicated on the persistent nature of the constitutional violations in *Coleman*:

> [T]aken together, the range of Constitutional violations . . . including inadequate suicide monitoring and prevention, inability to timely access appropriate levels of care, inability to timely access mental health clinicians due to staffing shortage, and inadequate medication management practices are unusual in a system that has been under Court supervision for more than ten years. These serious, dangerous violations this late in the remedial process are typical indicators of a system plagued by severe overcrowding. In a non-crowded system, the Constitutional violations are more readily addressed by such interventions as increased staff and increased programming. However, in a system overwhelmed by crowding, these traditional remedies are woefully inadequate. This appears to be the case in the CDCR where remedial efforts have resulted in significant expansions of staffing and programming activities, yet the constitutional violations persist or even worsen.

Id. ¶ 112. Dr. Stewart's opinion is also based on "the fact that the percentage of persons with serious mental illness in the CDCR is increasing faster than the overall CDCR population," a phenomenon that "is typical of overcrowded systems because . . . overcrowding creates new mental health needs and exacerbates existing mental health needs." *Id.* ¶¶ 114, 116. Finally, Dr. Stewart found that:

> The causal link between overcrowding and unconstitutional mental health care is clear and direct in the many CDCR housing units where space shortages from overcrowding directly result in long-term living arrangements that are harmful to the mental health of *Coleman* class members. . . . These same harsh conditions, as discussed earlier, also increase the demand for mental health services in the general population who, in a properly operating, not overcrowded system, would not need mental health services. Isolation, seclusion, idleness, violence, fear and stress plague the prisoners in the CDCR as a direct result of overcrowding. These conditions exacerbate mental illness and are serious barriers to the provision of minimally adequate mental health and medical care.

Id. ¶ 117.

Defendants' expert Dr. David Thomas – an ophthalmologist for almost forty years who served in various capacities at the Florida Department of Corrections for nine years, most recently as Assistant Secretary for Health Services and Director of Health Services, and who now serves as a professor of surgery and correctional medicine at Nova Southeastern University in Fort Lauderdale, Florida, Nov. 9, 2007 Thomas Report ¶¶ 1-2 – was the only expert who testified that crowding was not the primary cause of constitutional deficiencies in the delivery of medical care in California's prisons. *See, e.g.*, Rep. Tr. at 1217:11-13. Instead, Dr. Thomas testified that "the single most important item in achieving a sound Constitutional level of care is a culture that fosters providing care at that level." Nov. 9, 2007 Thomas Report ¶ 11 (emphasis omitted). In his opinion, the "empowerment of [health care] staff" – unlike in the past, when "security services dominated the prison system and program services existed only at the whim of security services" – is "the crux of having a constitutional level of health care." Addendum to Thomas Report ¶ 1. He further explained that:

> The culture was such prior to appointing of the Receiver that this was a security-driven system without regard for any other programs or any other constitutional requirements. Since the Receiver has been appointed, . . . there is clear indication that the culture is shifting in the department to understand the need for a correctional healthcare system that works on a constitutional level of healthcare.

Rep. Tr. at 1215:21-1216:3. According to Dr. Thomas, a constitutional system of delivering medical care cannot be developed without the change away from a custody-oriented culture that is now underway, and a reduction in crowding might make it easier to develop such a system, but it is not necessary and will not, without more, lead to a constitutionally adequate system of care. *See, e.g.*, Addendum to Thomas Report ¶ 4.

We find the testimony of Dr. Thomas to be unpersuasive for several reasons. First, Dr. Thomas's testimony that reducing crowding will not, without more, remedy the constitutional violations at issue in *Plata* does not mean that crowding is not the primary cause of those violations. Indeed, we find that reducing crowding is a necessary but not sufficient condition for eliminating the constitutional deficiencies in the provision of medical care to California's inmate population. Other steps will be necessary to fully remedy the deficiencies in the CDCR's medical and mental health care services. Nonetheless, a problem that has multiple causes will ordinarily still have a primary cause. As Dr. Shansky explained, "Reducing overcrowding is not a panacea, but crowding is the primary cause of the ongoing inadequate medical care in the CDCR system. Overcrowding is the one factor that negatively impacts almost every other matter that must be addressed to create a minimally adequate medical care delivery system for California's prisons." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 9; *see also supra* Section IV.A.

Second, as Dr. Beard testified, a culture that allows "custodial interference with the delivery of care" is problematic, but "you have to realize that the culture grew out of the overcrowding." Rep. Tr. at 221:17-222:9. Crowded conditions force prison administrators "to take a strong custodial approach. . . . They have to rely on the lockdowns. They have to rely on guns, gas, those kinds of things, to control the prisons so they're safe for the staff and for their inmates." *Id.* at 222:14-21. Thus, although we agree with Dr. Thomas that a custody-dominated culture is a barrier to delivering constitutionally adequate care, we also agree with Dr. Beard that "[i]f you try to change the culture, you can't. You can't change the culture until you reduce the population and can make the institution safe." *Id.* at 222:22-24. Consequently, it is crowding and not culture that is the primary cause of the unconstitutional system of health care delivery in California's prisons.

Third, we give less weight to the testimony of Dr. Thomas because he formed his opinions and drafted his initial report before visiting even a single prison in California. *Id.* at 1220:20-22 (Thomas). Although he subsequently visited eight prisons and opined that those visits supported his initial views, he took no notes during or after those tours; did not make any audio or video recordings during the tours; reviewed fewer than ten medical records at each prison and could not recall any details of any of the medical files he reviewed; and did not recall how many staff members he talked to at each prison or whether he asked the staff members at each prison any of the same questions. *Id.* at 1228:17-1229:3, 1229:21-1231:9, 1236:1-4, 1240:2-14 (Thomas).

Fourth, some of the testimony by Dr. Thomas was both internally inconsistent and patently incredible. For instance, Dr. Thomas testified that he believed all eight prisons he visited were "richly staffed," yet he earlier testified that "outcome measurements of work study programs" should be used to determine staffing ratios and he had not conducted or seen any such studies of the California prison system. *Id.* at 1197:18-1198:6, 1251:2-17. He also suggested that providing treatment in a men's restroom would be appropriate because "one has to be creative . . . in corrections," and that treatment could also be provided in closets, *id.* at 1223:7-12, 1226:8-15, although he provided other, more plausible suggestions, such as using space more frequently on weekends or adding modular buildings.

Finally, even if we were to credit Dr. Thomas's opinions in their entirety, we find such opinions to be overwhelmingly outweighed by the testimony of the numerous other, more qualified experts cited above. Defendants argue that the opinions of some of plaintiffs' experts must be discounted because of the role played by plaintiffs' counsel in drafting the expert reports. However, upon review of all of the relevant testimony, we are convinced that the opinions contained in the expert reports are those of the experts themselves, and that plaintiffs' counsel did not impermissibly influence any of the experts' opinions. *See, e.g., id.* at 181:16-182:5 (Scott) (testifying that the opinions in his expert report were "mine and only mine" and that, before signing his reports, he reviewed every word, "[a]ll the way down to the grammatical remarks," to ensure that they accurately reflected his opinions); Pls.' Opp'n to Defs.' Mot. in Limine No. 9 to Exclude Expert Reports at 2-5 (citing deposition testimony by Director Scott, Dr. Shansky, Dr. Stewart, Secretary Lehman, and Secretary Woodford concerning the preparation of their expert reports, including that counsel never asked the experts to change any of their opinions); *Marek v. Moore*, 171 F.R.D. 298, 300-302 (D. Kan. 1997) (counsel's assistance in the preparation of expert reports is proper as long as the reports reflect the testimony of the expert and are signed by the experts).

Defendants also suggest that the court should discredit the testimony of experts who lack medical training and have never practiced correctional medicine. However, a medical background is not required to opine on the cause of constitutional violations in the delivery of medical care in a correctional environment, and plaintiffs' experts' wealth of experience in managing prisons and prison systems, including experience in doing so under crowded conditions, establishes their ability to form an expert opinion on that subject. In fact, the CDCR has previously recognized the expertise of several of plaintiffs' experts. In addition to employing Secretary Woodford for twenty-seven years, culminating in her appointment as acting Secretary, Nov. 9, 2007 Woodford Report ¶ 1, the CDCR named Dr. Beard and Secretary Lehman to its Expert Panel on Adult Offender and Recidivism Reduction Programming and employed Dr. Shansky as a medical consultant for five years. Ex. P2 at ii; Rep. Tr. at 210:15-25 (Beard); Aug. 15, 2008 Lehman Report ¶ 4; Nov. 9, 2007 Shansky Report ¶ 2. As noted earlier in this opinion and order, the CDCR employed Dr. Shansky as its own medical expert during the *Plata* evidentiary hearings regarding whether a receivership was necessary. Thus, we reject defendants' suggestion that plaintiffs' experts are not qualified. To the contrary, we find their expertise far outweighs that of Dr. Thomas.

Defendants also offered mental health expert Dr. Ira Packer in support of their position in *Coleman*. Dr. Packer – who is board-certified in forensic psychology and has worked for over twenty-eight years in correctional and forensic psychology, including as Deputy Mental Health Program Director for the Massachusetts Department of Corrections and as Assistant Commissioner for Forensic Mental Health in the Massachusetts Department of Mental Health, Dec. 10, 2007 Packer Report at 4-6 – testified that, with one exception, crowding was not the primary cause of the constitutional violations with respect to mental health care. *Id.* at 23-24. The exception was that, like all of plaintiffs' experts, Dr. Packer concluded that "crowding is the primary cause of the particular difficulties in providing services to the *Coleman* class at the reception centers," *id.* at 20; that issue is therefore undisputed. As to mental health care delivery in other settings, Dr. Packer opined that "overcrowding in CDCR significantly contributes to the difficulties in providing adequate mental health services, but is not the *primary* cause of the deficiencies." *Id.* at 8 (emphasis in original). In Dr. Packer's opinion, the primary cause of the constitutionally inadequate mental health care in California's prisons is that California "now has many more acutely mentally ill individuals and at a level of more severity than had been anticipated when the prisons were built," and that the existing prison space was "not designed to meet the needs" of a mentally ill population. Rep. Tr. at 1079:11-1080:4; *see also* Dec. 10, 2007 Packer Report at 8-9.[56]

What Dr. Packer is actually saying is that lack of planning is the cause of the overcrowding in California's prisons – but that is not the question before us. Regardless of the cause of the overcrowding, that condition is defined in terms of the capacity of the prisons, and that capacity simply is not there. Dr. Packer's testimony principally supports our conclusion that crowding is the primary cause of the constitutional violations in the delivery of mental health care. For example, Dr. Packer testified that if crowding were defined as not having enough mental health beds to serve the current population, then crowding would be the primary cause of the ongoing mental health care violations in California's prisons. Rep. Tr. at 1093:25-1094:6. Clear evidence establishes that, due to crowding, there is insufficient room in California's prisons for necessary additional mental health care beds and treatment space. Accordingly, Dr. Packer's opinion is congruent with

[56]Dr. Packer also opined that difficulties with maintaining adequate medical records are a "direct effect of overcrowding, as the number of charts in the institutions is proportional to the population," Dec. 10, 2007 Packer Report at 19, and he testified that "the medical record system is a paper system, and the prison is simply not able to keep up with the amount of work and volume that's required in order to maintain an appropriate medical record system without going to an electronic process, which is not yet in place," Rep. Tr. at 1080:7-11.

our finding that crowding is the primary cause of the ongoing constitutional violations in *Coleman*.

Additionally, while Dr. Packer's opinion on the unanticipated nature of the influx of mentally ill prisoners into the correctional system might have had some merit at the time of the *Coleman* trial in 1993, or even at the beginning of the *Coleman* remedial phase in 1996, it is less persuasive at this late stage in the *Coleman* remedial process. The *Coleman* court has, for almost a decade, directed defendants to make adequate projections of the size of the mentally ill inmate population so that they can appropriately plan for that population's needs. The fact that it has taken defendants years to comply with those orders does not render the increasing size of the *Coleman* class unanticipated. As we explained when we denied defendants' motion for summary judgment:

> Defendants' inability or unwillingness to tackle the problem of the increasing prison population does not support the contention that overcrowding is not the primary cause of the unconstitutional delivery of medical or mental health care. It simply helps explain why overcrowding exists and has now become a problem that may be the primary cause of the constitutional violation.

Nov. 3, 2008 Order at 9-10. In fact, the efforts defendants have made since the *Coleman* remedial process began, combined with the serious ongoing problems we have discussed in this opinion, only bolster the inescapable conclusion that crowding is the primary cause of defendants' failure to deliver constitutionally adequate mental health care in their prison system.

All of the steps defendants have taken under the *Plata* court's supervision, as well as the steps taken under the *Coleman* court's supervision, have failed to remedy the constitutional deficiencies. The crushing inmate population has strained already severely limited space resources to the breaking point, and crowding is causing an increasing demand for medical and mental health care services, a demand with which defendants are simply unable to keep pace. It also, as the expert witnesses repeatedly told us, has created numerous barriers to the delivery of constitutionally adequate medical and mental health care.

I. **Findings and Conclusions**

On the basis of the clear and convincing, indeed overwhelming and overwhelmingly persuasive, evidence described above, we conclude that crowding is the primary cause of the state's unconstitutional failure to provide adequate medical and mental health care to California prisoners. Such is the opinion as well of some of the nation's foremost prison administrators, who testified that they have never previously witnessed such appalling prison conditions and that overcrowding is not only the primary cause of the constitutionally inadequate medical and mental health care in California's prisons, but also that until the problem of overcrowding is overcome it will be impossible to provide constitutionally compliant care to California's prison population. No credible evidence to the contrary was presented by defendants.

The evidence conclusively demonstrates the many ways in which crowding prevents the state from providing constitutionally adequate medical and mental health care in its prison system. Prison overcrowding has created a state of emergency in California's prisons, as the Governor has proclaimed. It forces prison administrators to devote most of their energy to addressing crises and has overwhelmed the prison system's management infrastructure. Crowding of reception centers at levels approaching 300% design capacity prevents the state from identifying the medical problems of entering inmates, and makes it impossible to provide necessary medical and mental health care to incoming inmates, who routinely remain in reception centers for more than sixty days and may serve their entire sentence there. Crowding has also left the California prison system without the space, beds, and medical, mental health, and custodial staff required to provide constitutionally adequate medical and mental health care in all parts of the prison system, and has prevented proper classification of inmates and appropriate housing according to their needs. Furthermore, crowding has created conditions of confinement that contribute to the spread of disease, and it requires the increased use of lockdowns as a method of prison control, further impeding the prison authorities' ability to provide needed medical and mental health care. In addition, crowding has prevented the development of an adequate medical records system. The consequences of crowding are often dangerous, and on many occasions fatal. Crowding contributes to an alarming number of extreme departures from the standard of care and an unacceptably high number of inmate deaths that are preventable or possibly preventable. Likewise, crowding worsens many of the risk factors for suicide among California inmates and increases the prevalence and acuity of mental illness throughout the prison system.

The history of the individual *Plata* and *Coleman* cases further demonstrates the role of crowding in causing the constitutional violations at issue here. The extensive remedial efforts in *Plata* over the last seven years, beginning with the stipulated relief and culminating in the Receivership, have failed to bring the California prison system's medical care into constitutional compliance. Likewise, fourteen years of remedial efforts in *Coleman*, directed at every aspect of the mental health care problem, except crowding, have failed to ensure that California prisoners have access to constitutionally adequate mental health care. In fact, by 2006, the progress that had been achieved during more than a decade of remedial work in *Coleman* was being lost because of "the inexorably expanding demand for services resulting from the bulging population." Ex. D1108 at DEFS060303.

The only conclusion that can be drawn from the wealth of clear and convincing evidence before this court is that the unconstitutional denial of adequate medical and mental health care to California's inmates is caused, first and foremost, by the unprecedented crowding in California's prisons. In reaching this conclusion, we need not, and do not, conclude that crowding is the exclusive cause of those violations. We recognize that other factors contribute to California's failure to provide its inmates with constitutionally adequate medical and mental health care, and that reducing crowding in the prisons will not, without more, completely cure the constitutional violations the *Plata* and *Coleman* courts have sought to remedy. We need not find that crowding is the *only* cause, but simply that it is the *primary* one. *See supra* Sections IV, IV.H. In the end, we agree with the former Executive Director of the Texas Department of Corrections Doyle Wayne Scott, who testified that "[e]verything revolves around overcrowding," Rep. Tr. at 152:6.

In short, while other factors contribute to the unconstitutional state of the California prisons' medical and mental health care system, and while there are other steps the state must take to meet its constitutional obligations, clear and convincing evidence establishes that crowding is the primary cause of the constitutional violations, and that, therefore, this court must consider, as we do below, what actions we may order be taken to remedy that condition.

V. NO OTHER RELIEF

The Governor has proclaimed that crowding in prisons constitutes an emergency that poses a substantial risk to CDCR staff, inmates, and the general public, and that "immediate action is necessary to prevent death and harm caused by California's severe prison overcrowding." Ex. P1 at 1-2, 6. Because crowding is the primary cause of the state's inability to provide its inmates with constitutionally adequate medical and mental health care, an order requiring a reduction in prison population is the most obvious and direct method by which to bring the California prison system into constitutional compliance.

However, the PLRA makes such an order "the remedy of last resort." H.R. Rep. No. 104-21, at 25 (1995). Before entering any prisoner release order, we must find that no other relief could remedy the constitutional violations at issue here. 18 U.S.C. § 3626(a)(3)(E)(ii). In context, it is clear that "other relief" refers to any form of relief other than a prisoner release order. *See id.* § 3626(a)(3)(E) ("The three-judge court shall enter a prisoner release order only if . . . no other relief will remedy the violation of the Federal right."). In other words, we must first determine whether the unconstitutional denial of adequate medical and mental health care to California's prisoners can be remedied through an order that does not have "the purpose or effect of reducing or limiting the prison population" and that does not "direct[] the release from or nonadmission of prisoners to a prison." *Id.* § 3626(g)(4). The PLRA does not require that a prisoner release order, on its own, will necessarily resolve the constitutional deficiencies found to exist in *Plata* and *Coleman*. All that the PLRA requires is that a prisoner release order be a necessary part of any successful remedy. If all other potential remedies will be futile in the absence of a prisoner release order, "no other relief will remedy the violation." *Id.* § 3626(a)(3)(E)(ii).

We conclude that the constitutional deficiencies in the California prison system's medical and mental health system cannot be resolved in the absence of a prisoner release order. Clear and convincing evidence establishes that none of the available alternatives to such an order, including the continued efforts of the *Plata* Receiver and the *Coleman* Special Master, can bring the California prison system into constitutional compliance within a reasonable period of time. We agree with the numerous experts who testified that a prisoner release order is a prerequisite to providing constitutionally adequate medical and mental health care to California prisoners. Although the CDCR and the Receiver have implemented a number of remedial programs as a result of the *Plata* and *Coleman* litigation, and defendants have sought in various ways to improve the medical and mental health care provided in California's prisons, these efforts cannot succeed in the absence of a prisoner release order.

A. Alternatives to a Prisoner Release Order

1. Inadequacy of Construction as a Remedy

a. Prison Construction

In considering other alternatives to a prisoner release order, we first look to whether the state has a feasible prison construction plan that would render a prisoner release order unnecessary; if so, equity, if not law, would require that we refrain from entering that order. In a case involving overcrowding, the construction of additional prisons always provides a theoretical remedy because more prisons would necessarily reduce or eliminate overcrowding. To construe the PLRA to preclude the entry of a prisoner release order based on no more than such a theoretical remedy, however, would transform the conditions under which the PLRA permits prisoner release orders into an absolute bar on such orders. In short, it would eliminate overcrowding as a basis for a prisoner release order, and thus prisoner release orders themselves, because the state could, in theory, always build more prisons. Thus, what we must determine is not whether building prisons *could* solve the problem, but whether prison construction offers an actual, feasible, sufficiently timely remedy for the unconstitutional state of medical and mental health care in California's prisons. Here, California has no plans to construct additional prisons in the near future and has not suggested that it does. As a result, we need not consider further the construction of additional prisons as an alternative remedy.

b. Construction of Re-entry Facilities

The next question is whether building re-entry facilities could serve to reduce prison overcrowding. The answer is that it could, if enough were constructed and if enough prisoners were transferred to them. Thus, whether the state determined to build such facilities voluntarily, or whether a court ordered or approved such construction, we would not issue the type of order plaintiffs seek if the planned construction, like any prison-related construction, offered an actual, feasible, and timely remedy that would render the relief sought here unnecessary. Defendants point to only one existing proposal that might offer such a partial remedy: construction of the additional re-entry facilities authorized by Assembly Bill 900 ("AB 900"). However, as we explain below, this construction plan does not provide a feasible alternative to the order sought here. More than two years after AB 900 was signed into law, any reduction in the crowding of California's prisons resulting from the construction of the AB 900 re-entry facilities remains years away and would in any event likely not provide adequate relief.

In the first place, AB 900 construction has already been delayed for more than two years due to the absence of funding. At the start of trial not a single facility had been constructed under AB 900. *E.g.*, Rep. Tr. at 1679:18-23 (Cate); *id.* at 2460:25-2465:7 (Spitzer); Ex. P750 (Sept. 17, 2008 CDCR press release following legislature's failure to pass clean-up language to AB 900); Sept. 3, 2008 Hysen Dep. at 31:15-20 (state has not even reached the "preliminary-plan" stage for any in-fill or re-entry construction under AB 900). As far as we are aware, it remains the case today, eight months later, that there is no funding for AB 900 and no ground has been broken on the AB 900-authorized re-entry facilities.

Second, even if funding were secured in the near future, other practical concerns would lead to significant additional delays. Deborah Hysen, the CDCR's chief deputy secretary for facility planning and construction management, Sept. 3, 2008 Hysen Dep. at 14:11-14, explained that environmental impact reviews, which have not yet been completed for any of the proposed building sites, "could potentially hang up projects for years," *id.* at 38:8-16, 56:1-2. Delays would also result from the need to obtain necessary construction materials, *id.* at 38:17-25; permit public comment at each phase of construction, *id.* at 111:9-15; and provide for seismic retrofitting, *id.* at 112:16-21. Challenges in locating space for re-entry facilities are also likely to significantly delay or prevent full implementation of AB 900. Only one location, for 500 re-entering prisoners, has been secured, *id.* at 118:19-21, but many obstacles to construction remain, and securing sites for other re-entry facilities is likely to prove more difficult because of community opposition. *E.g.*, Rep. Tr. at 221:11-16 (Beard); *id.* at 2750:16-2751:10 (Runner); *id.* at 2793:8-2794:3 (Meyer); Nov. 9, 2007 Woodford Report ¶ 36. Moreover, although some sites may "offer up a renovation alternative," most of the sites under consideration by the CDCR are "raw land." Sept. 3, 2008 Hysen Dep. at 120:13-15. As to the latter sites, the CDCR itself estimates that "we could be looking at several years between the time that we make this recommendation to acquire the land, and occupancy." *Id.* at 120:15-18.

Accordingly, it will be years before any re-entry facility construction pursuant to AB 900 will be completed. It is thus clear that the proposed construction of re-entry facilities cannot bring the sort of "immediate action" that the Governor has conceded is necessary to resolve the present crisis caused by prison crowding. Ex. P1 at 6. As Dr. Haney explained, prisoners in California's prisons with medical and mental health needs face "emergency-like conditions." Rep. Tr. at 945:25.

> There are people, prisoners, suffering throughout the entire prison system, mentally ill and medically ill prisoners who are not able to get the level of care they need. . . . Those things are urgent problems, and only a solution which can be brought to fruition quickly can address the kind of immediate suffering which is taking place throughout the system which I saw and other experts saw as well.

Id. at 946:1-9. Any beneficial effects of defendants' planned re-entry facility construction are simply too distant to make such construction a meaningful remedy for the emergency-like conditions in California's prisons. Moreover, it is unlikely that the number of re-entry facilities that would be constructed would be sufficient to remedy the overcrowding problems in any event. A prisoner release order would thus be necessary as well.

Given the serious inadequacy of the state's only existing facilities construction plan, it is also clear that no other, yet-to-be-developed plan could remedy the constitutional violations here within a reasonable period of time. The evidence before the court is thus clear and convincing that the state has no feasible plan to remedy the constitutional violations at issue in *Plata* and *Coleman* through either prison construction or re-entry facility construction, and that such construction does not provide a meaningful alternative to the type of order sought by plaintiffs in this case.

c. Medical Facilities and Prison Expansion

Besides re-entry facility construction, defendants identify two additional proposals to increase the capacity of the prison system: the *Plata* Receiver's medical facility construction plan and prison expansion through the construction of space for in-fill beds, as authorized by AB 900. Rep. Tr. at 1689:10-18 (Cate). For reasons similar to those discussed above, we conclude that neither the Receiver's medical facility construction plans nor the proposed AB 900 in-fill beds – prison expansion – can remedy the constitutional violations at issue in *Plata* and *Coleman*. Like the AB 900 re-entry facilities, these proposed facilities will not be realized at any point in the near future. Furthermore, their funding is threatened by the present fiscal crisis, and the proposed construction would in any event likely fall far short of remedying the problems created by the crowding of California's prisons.

As with the proposed re-entry facilities, any overcrowding relief resulting from the construction of medical facilities or the addition of in-fill bed space as a result of prison expansion is years away, at best. The *Plata* Receiver initially planned to start construction of the first site in February 2009 and to complete construction of necessary additional facilities by July 2013. Ex. D1100 at 64-65 (*Plata* Receiver's Sept. 15, 2008 Ninth Quarterly Report).

To date, however, no construction has started and no funding has been secured. Likewise, as noted already, there is no available funding for AB 900, no ground has been broken on AB 900 construction, and no new beds – in-fill *or* re-entry – have been made available.

The delays are compounded by the fiscal crisis now facing the state, which makes the completion of any new construction even more distant and unlikely. The Receiver and the CDCR were until a month or so ago "negotiating a potential agreement concerning the construction of health-care-focused prison facilities" that would have provided funding for necessary healthcare construction through the California Infrastructure and Economic Development Bank (I-Bank). However, the state ultimately declined to sign the agreement. Ex. 1 to Defs.' July 1, 2009 Response to Court's June 18, 2009 Order, filed in *Coleman*, at 1. Because the fiscal crisis has required "severe and significant cuts to vital State programs," the state refused to enter into any agreement that would "require[] the State to seek I-Bank funding, or any other additional funding not previously appropriated by the California Legislature." *Id.* Although defendants did state that they would use a "significant" but unspecified portion of the funds allocated by the legislature in AB 900 "to build appropriate beds for inmates with disabilities and/or other health needs," *id.* at 2, there is no indication as to when such funds will be made available; when construction might begin; or what part, if any, of the constitutional inadequacies in delivering medical and mental health care to California inmates might be remedied by such construction. Because we have received no evidence on any of these questions, we cannot conclude that the state has any actual, feasible, timely plans for such construction, which in any event would be unlikely to render a prisoner release order unnecessary.

As the state's failure to sign the agreement demonstrates, the present fiscal crisis makes any remedy that requires significant additional spending by the state chimerical – the state has said that it will not procure *any* new funds for prison hospital construction. Even if AB 900 funding were secured in the near future, however, the practical concerns described above in relation to re-entry facilities – environmental impact reviews, materials procurement, public comment, and seismic retrofitting – would lead to delays in the construction of medical facilities and prison expansion. Accordingly, like the proposed re-entry facilities, neither the Receiver's constructions plan nor AB 900 prison expansion will provide inmates with relief from the emergency conditions in California's prisons in a timely fashion.

Beyond any funding and timeliness issues, we have no reason to believe that defendants' proposed expansion of prison facilities would reduce crowding significantly or lead to any improvements in the delivery of medical and mental health care to California inmates. The *Plata* Receiver has found that the in-fill bed plan proposed by the CDCR includes allocations of clinical space that "are wildly disparate and, in many cases obviously inadequate," and that the CDCR's plan "ignor[es] the real life differences in clinical requirement[s] based on the characteristics of the patient population, security level and escort officers requirements, the need for clinical privacy, equipment requirements, and other critical factors." Ex. D1092 at 37 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding). On a more fundamental level, the AB 900 in-fill construction plan "essentially is a prison expansion measure which increases the number of prison cells without addressing the fundamental structural issues that have caused the crisis and that have created unconstitutional conditions within the prisons." Nov. 9, 2007 Woodford Report ¶ 31. According to Secretary Woodford:

> [t]he so-called "in-fill" beds will cause more problems than they will solve. Many of California's prisons are so big that they are effectively unmanageable. Wardens and other administrators spend much of their time responding to crises, rather than fulfilling their responsibilities to provide adequate medical and mental health care. Unless these in-fill beds stand alone with their own administrative and support facilities, adding thousands of additional prisoners to already overburdened facilities will only compound the burdens imposed on prison administrators and line staff.

Id. ¶ 39. Similarly, Director Scott explained that, because the in-fill bed numbers in defendants' construction plan are based on "housing overcrowding capacity" rather than "design build capacity,"

> [p]risoners in the new facilities . . . might not initially be living in gymnasiums or hallways, as they are now, but they will still be overcrowded. California will be in the same position with the new beds as with the old, replicating the same conditions that led to inadequate staffing and treatment space, inadequate out-of-cell time, and overworked and overstressed staff and violent, frustrated prisoners.

Aug. 13, 2008 Scott Supp. Report ¶ 17. Thus, while the construction of in-fill beds would reduce the use of "bad beds," the principal effects of the overcrowding in California's prisons would remain unaddressed.

d. Construction as a Means of Compliance

Given all of the above problems, we are convinced that neither prison expansion, nor re-entry or medical facilities construction, nor any other construction effort offers a meaningful and timely remedy for the constitutional deficiencies in the delivery of prison medical and mental health care caused by crowding. Although it might be theoretically possible for California to build its way out of its prison overcrowding problem, it is not practical to anticipate that the state will do so in a timely manner, if ever, given "the time that it takes and . . . the huge costs that it takes to do things like this." Rep. Tr. at 254:25-255:12 (Beard). Dr. Beard concluded that although construction "should be part of a plan, if you try to rely on that alone, you are probably never going to get there, because they haven't been able to get there over the last 20 years." *Id.* at 256:4-8; *see also, e.g., id.* at 219:11-25 (Beard).

Nonetheless, because our order requires defendants to reduce the prison population to a specified percentage of the prison system's design capacity, any additional capacity provided by completed construction could help the state meets its obligations and might allow it to increase the number of prisoners who could constitutionally be housed in the prison system. In such case an adjustment as to the specific terms of the population reduction order, although not to the percentage cap itself, might conceivably be appropriate.[57] We see little prospect for such an occurrence, however, in the reasonably near future, and

[57]Likewise, should for some reason the design capacity of California's adult prison institutions *decrease*, the CDCR would be required to reduce the absolute population of its adult prison institutions by a greater number.

thus no prospect of remedying the constitutional violations in a timely manner, other than in accordance with the order we issue below.

2. Inadequacy of Additional Hiring

Defendants do not suggest that the constitutional deficiencies in the CDCR's system of medical and mental health care could be remedied by hiring additional medical, mental health, and custodial staff. This is not surprising, given the serious and ongoing difficulty in filling vacant positions encountered in both the *Plata* and *Coleman* remedial proceedings. *See supra* Sections II.A.5, II.B.2.c. Furthermore, as noted already, crowding itself seriously impedes the recruitment and retention of medical and mental health care staff. The working conditions for such personnel in California's overcrowded prisons are uninviting, and many potential staff members are unwilling to work under them. *See, e.g.*, Nov. 9, 2007 Stewart Report ¶ 41; Nov. 9, 2007 Shansky Report ¶ 23. Even if staff could be hired, they would have almost nowhere to work because CDCR's facilities lack the physical space required to provide medical and mental health care. *See, e.g.*, Rep. Tr. at 272:1-13 (Lehman); *id.* at 501:3-7 (Shansky). Thus, the evidence is clear and convincing that hiring additional staff could not bring the CDCR's medical and mental health care into constitutional compliance in the absence of a reduction in prison crowding.

3. Insufficiency of the *Plata* Receivership and *Coleman* Special Mastership

We next consider whether the existing remedial efforts of the *Plata* and *Coleman* courts provide an alternative form of relief that could remedy the constitutional violations at issue in *Plata* and *Coleman*. Defendants argue that the delivery of medical and mental health care has improved and continues to improve under the direction of the *Plata* Receiver and the oversight of the *Coleman* Special Master. However, the *Plata* and *Coleman* courts are barred by the PLRA from ordering any remedy that involves a reduction in the prison population, 18 U.S.C. § 3626(a)(3)(B), and the *Plata* Receiver and *Coleman* Special Master therefore lack the most direct and effective means of eliminating the fundamental problems that result from overcrowding, *see supra* Section IV. While improvements have been and continue to be made, and the *Plata* and *Coleman* courts have continued their efforts during this three-judge court proceeding, it is clear that the Receiver and the Special Master cannot remedy the constitutional violations in the absence of a prisoner release order.

The *Plata* Receiver has determined that adequate care cannot be provided for the current number of inmates at existing prisons and that additional capacity is required to remedy the medical care deficiencies that exist in California's prison system. *See, e.g.*, Ex. D1133 at 27-28 (*Plata* Receiver's June 6, 2008 Turnaround Plan of Action). Defendants correctly note that the *Plata* Receiver has stated that "[f]ailure is not an option" and that "[o]ver time the CDCR's medical delivery system will be raised to constitutional levels." Ex. D1092 at 41 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding). However, the Receiver also noted that "the time this process will take, and the cost and the scope of intrusion by the Federal Court cannot help but increase, and increase in a very significant manner, if the scope and characteristics of CDCR overcrowding continue." *Id.* According to the Receiver, the creation of a system that could adequately deliver medical care to all of the inmates moving through the reception center at the California Institution for Men under the present level of overcrowding could "all but bankrupt the State of California and create a medical delivery problem in [surrounding] counties because there may not be enough competent clinicians to provide medical care for an unlimited number of State prisoners and for the public also." *Id.* Even assuming that the Receiver's comments are somewhat overstated, relying on the authority that he possesses to resolve the medical care crisis in the absence of a population reduction order does not offer a feasible alternative. There is no question that in the absence of a population reduction order a fair number of new prisons and medical facilities would be required. We have already explained that such construction could not be completed in a timely manner, even if the legislature were willing to fund it.

The history of the *Coleman* case demonstrates even more starkly the impossibility of establishing a constitutionally adequate mental health care delivery system at current levels of crowding. For almost a decade the *Coleman* court has issued specific orders directing defendants to develop sufficient beds for the delivery of mental health care at each level of the mental health care delivery system. Despite all of those orders, defendants have far too few mental health care beds to meet present demand. The CDCR's recent refusal to sign the agreement it negotiated with the Receiver makes compliance even more unlikely, as the state had previously offered the agreement as its primary method of developing the needed mental health beds. Likewise, the *Coleman* court has issued numerous orders directing defendants to decrease the time required to transfer seriously mentally ill inmates, including those who are suicidal or otherwise in crisis, to appropriate levels of supervised care, but wait lists remain at every level. These are but two examples of the *Coleman* court's ongoing inability, despite tremendous effort, to bring the prison mental health care system into constitutional compliance. In light of this history, the evidence is clear and convincing that defendants are simply unable to meet the escalating demand for resources caused by the overcrowding in California's prisons.

Defendants argue that a prisoner release order will not fix the constitutional violations in the delivery of mental health care because they will need to develop appropriate treatment space and hire sufficient staff even if the total inmate population is reduced. Defendants point to the *Coleman* Special Master's findings that "[e]ven the release of 100,000 inmates would likely leave the defendants with a largely unmitigated need to provide intensive mental health services to program populations that would remain undiminished by a reduction of some 19,000 [CCCMS] inmates," and that the release of 50,000 inmates "would probably not raise staffing resources into equilibrium with the mental health caseload." Ex. D1292 at 15.

We agree with the Special Master that the population reduction order sought by plaintiffs is not by itself a panacea, and that defendants' efforts to provide constitutionally adequate mental health care must go beyond reducing prison overcrowding. Obviously, simply creating additional space would not solve the problem; prison authorities would be required to ensure that the space is used to provide prisoners with professionally sound medical and mental health treatment, to administer necessary medications to prisoners, and to remove the other barriers to constitutionally adequate medical and mental health care created by overcrowding. However, the defendants cannot remedy the ongoing constitutional violations without significant relief from the overcrowded conditions. We find the Special Master's statement about 100,000 inmates somewhat hyperbolic. The comment about 50,000 inmates more nearly approximates the remedy we deem appropriate given our obligation to adopt the least intrusive remedy. Nevertheless, as he and we have both noted, additional steps will be required after the prison population is reduced. We believe that the Special Master will be able to provide significant assistance to the state in that respect.

It is apparent from the extraordinary efforts undertaken by the Special Master and the Receiver, as well as the fundamental constitutional inadequacies in medical and mental health care, that a reduction in the present crowding of the California prisons is necessary if the efforts of the *Plata* Receiver and the *Coleman* Special Master to bring the medical and mental health care in California's prisons into constitutional compliance are ever to succeed. In the absence of a prisoner release order, all other remedial efforts will inevitably fail.

4. Other Proposals

As noted in our discussion of prison construction, equitable concerns would prevent us from entering a prisoner release order if the state had plans in place that would reduce the crowding of California's prisons sufficiently to allow the remedying of the constitutional violations in the near future. However, the evidence at trial was clear and convincing that none of the state's existing plans can reduce the prisoner population to the extent necessary to permit the CDCR to bring its prison medical and mental health systems into constitutional compliance.

The state and one of the defendant-intervenors have suggested two different means of reducing the prison population. The first is already being implemented by the state through its program to transfer California inmates to facilities in other states. *E.g.*, Kernan Trial Aff. ¶¶ 16-17.[58] We do not comment on the merits of this program, although we have doubts

[58]Defendants' out-of-state transfer program, if ordered by the court, would fall within the PLRA's definition of a prisoner release order, because it "directs the release [of inmates] from . . . *a* prison," 18 U.S.C. § 3626(g)(4) (emphasis added). An order requiring the transfer of prisoners from California's adult prison institutions to out-of-state prisons would be functionally identical to an order requiring the transfer of prisoners from a single prison or

about its efficacy as applied to the mentally ill and question its possible adverse effect on prisoners moved to a location far removed from their families and friends. Still, as of August 29, 2008, approximately 4852 California inmates had been housed in out-of-state institutions, and the CDCR had plans to transfer up to a total of 3000 additional inmates to such sites. Cate Trial Aff. ¶ 47.

Given the severely overcrowded conditions we have already described, this planned additional reduction of 3,000 prisoners in the in-state inmate population is too small to significantly affect the provision of medical and mental health care to California's inmates.[59] Not surprisingly, defendants do not suggest that the transfer of even more additional inmates to out-of-state facilities would provide a meaningful alternative to the population reduction order proposed by plaintiffs. Furthermore, despite the small size of the existing transfer program, the need to monitor out-of-state facilities to ensure that all California inmates are receiving constitutionally adequate medical care has already hampered the in-state remedial process. Ex. D1100 at 48-49 (*Plata* Receiver's Sept. 15, 2008 Ninth Quarterly Report) (discussing on-site investigation and corresponding corrective action plan following the death of a California inmate being housed at a private prison in Mississippi). As the Receiver noted, out-of-state monitoring

> has had a serious negative impact on the Office of the Receiver, drawing critical clinical personnel away from other important projects and delaying "in-state" remedial efforts. In essence, thousands of dollars of valuable clinical hours have been devoted to helping a private prison organization rework its medical delivery system (at the request of CDCR and State officials) in order to keep the out of state transfer process from collapsing.

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jail to other institutions, and an order of that type has been held to be a prisoner release order, notwithstanding that the state, county, or city could move the affected prisoners into other institutions rather than releasing them from incarceration. *See Tyler*, 135 F.3d at 595-98 (finding that injunction limiting the number of technical probation violators that could be housed in the city jail, thereby forcing the city to pay for their confinement elsewhere, was a prisoner release order under the PLRA).

[59]Defendants stated that "CDCR will also seek authorization to transfer [additional] inmates out-of-state, if necessary," Cate Trial Aff. ¶ 47, but there is no evidence regarding how difficult this authorization is to obtain; how long the authorization process or transfer process takes; what the cost of such a transfer would be; or how many additional inmates could realistically be dispatched to out-of-state facilities.

Id. at 49.

Based on this clear and convincing evidence regarding the operation of the existing out-of-state transfer program, we conclude that the transfer of inmates to out-of-state facilities would not on its own begin to provide an adequate remedy for the constitutional deficiencies in the medical and mental health care provided to California's inmates. Moreover, given the need to ensure constitutionally adequate medical and mental health care in states as distant as Mississippi, the program may be of questionable efficacy, given the comparatively small number of prisoners who might be included.

A defendant-intervenor has suggested that the prison population might be reduced by transferring inmates who do not have legal status in the United States to federal custody. Runner Trial Decl. ¶ 19. However, the intervenor introduced no evidence suggesting that this transfer program could soon be implemented, that the federal government would agree to such an arrangement, or that any implementation of this program would result in a population reduction sizable enough to allow the CDCR to remedy the constitutional violations in *Plata* and *Coleman*.[60] The program is thus too speculative to suggest that we should abstain from entering the type of prisoner release order set forth below.

B. Expert Testimony

The testimony we received from the experts overwhelmingly rejected the claim that alternatives such as construction of prisons or other facilities or the transfer of small numbers of prisoners could render a prisoner release order unnecessary. Director Scott succinctly and persuasively summarized the testimony of the experts in stating that "unless the population is [substantially] reduced, the state will remain in crisis verging on catastrophe and will remain utterly unable to provide adequate medical and mental health care to the prisoners in its custody." Nov. 9, 2007 Scott Report ¶ 6; *see also id.* ¶ 3 ("[W]ithout substantially reducing its prisoner population, California will never be able to generate the custodial support services necessary to provide prisoners with basic medical and mental health care."). Secretary Woodford, the former head of the CDCR who also served as warden at San

[60] *See infra* note 82.

Quentin State Prison, Nov. 9, 2007 Woodford Report ¶ 1, similarly testified that, "[u]ntil the population is reduced substantially there is no realistic hope that the unconstitutional conditions will be eliminated," *id.* ¶ 46; *see also id.* ¶ 6 ("[N]othing short of a reduction in the prison population will effectively address these issues."). Woodford explained that, in her experience as a manager of both an individual institution and the entire department:

> [W]e would come up with wonderful ideas and have great planning, but overcrowding interfered with our ability to implement any of those ideas, to bring resolution to any of the problems that we're facing in both [*Plata* and *Coleman*]. And the overcrowding was every day, more and more inmates coming into the system.

Rep. Tr. at 376:3-15. Thus, according to Woodford, "without addressing the issue of overcrowding, the Department of Corrections will never be able to provide appropriate medical or mental healthcare and . . . sustain any kind of quality constitutionally-adequate medical or mental healthcare." *Id.* at 385:6-10.

Other experts also agreed with Secretary Woodford's and Director Scott's opinions. For example, Dr. Beard opined that, while he believes CDCR staff and leadership generally "want to do the right thing," he does not believe they are capable of providing constitutionally adequate care under the current crowded conditions. *Id.* at 251:12-23, 259:5-12. Similarly, Secretary Lehman testified that "you cannot provide adequate healthcare and mental healthcare under the current situation of crowding within the State of California," *id.* at 271:22-25, and that "a reduction in the population is a necessary condition" for providing such care. Aug. 15, 2008 Lehman Report ¶ 11. And Dr. Shansky testified that:

> The CDCR, in concert with the Receiver, cannot simultaneously develop a competent medical care delivery system in facilities that lack necessary space and staffing, and address the growing needs of an ever-increasing number of patients. Until the existing overcrowding situation is addressed, CDCR is locked into a "crisis-response" approach where it can focus only on putting out "fires" rather than system-building.

Nov. 9, 2007 Shansky Report ¶ 138. "The limitations on the CDCR, including staffing, administrative resources and especially treatment space, are so severe that the only avenue for building a constitutional health care delivery system is to reduce the demand on the system by lowering the number of patients it serves." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 8. One of defendant-intervenors' experts agreed that "the necessary constitutional medical and mental health services can't be provided with today's overcrowding." Rep. Tr. at 2202:4-6 (Bennett).

The mental health experts who testified also agreed that a reduction in crowding is a prerequisite to providing constitutionally adequate care. Dr. Stewart testified that, "due to the extreme nature of the overcrowding, which negatively impacts all aspects of the mental health and medical care system that is currently causing *Coleman* class members needless suffering, as well as death, . . . the only remedy that would help the system move into constitutional compliance" is reducing the population. *Id.* at 2207:22-2208:2. Dr. Stewart based his conclusion on "the persistence of the [Eighth Amendment] violations [in *Coleman*] after years of very close court monitoring," and on statements by the *Coleman* Special Master "in several places that the progress that was made early on in the *Coleman* matter has been undermined by current population pressures that exist." *Id.* at 2208:12-19. Dr. Stewart testified that defendants' plans to remedy the persistent problems that pose barriers to constitutional compliance are inadequate mainly because the plans "will take years to implement, if they are even able to be implemented at all, given the current degree of the population pressures." *Id.* at 2208:21-2209:4.

Dr. Haney also concluded that the only remedy for the ongoing Eighth Amendment violations in the delivery of mental health and medical care is a substantial reduction of the CDCR inmate population, Aug. 15, 2008 Haney Report ¶¶ 364-378; Rep. Tr. at 945:14-19, and provided several reasons for his conclusion. The first was "the urgency of the problem itself, and the unacceptably time-consuming nature of alternative solutions." Aug. 15, 2008 Haney Report ¶ 367. As Dr. Haney testified, mentally ill inmates suffering in the "emergency-like conditions" of California's prisons cannot await relief for an additional four or five years, the time projected by defendants' best-case scenario for the construction of additional mental health facilities. Rep. Tr. at 945:22-946:16; *see also* Aug. 15, 2008 Haney Report ¶ 367. Dr. Haney also identified other problems with the proposed construction plans: They are insufficient, by themselves, to address the range of mental health care delivery problems caused by crowding; do not take into account the conditions in which CCCMS inmates are housed; do not provide sufficient EOP space; and do not "realistically address" the "massive" staffing increases that will be required. Rep. Tr. at 947:16-948:14. Finally, Dr. Haney opined that, for the past twenty-eight years, the CDCR has taken the same basic approach to overcrowding and its impacts on mental health and medical care and, while conditions have occasionally improved over that period, "the system has gotten worse not better." *Id.* at 948:18-949:8. Delivery of services is now so stressed by the "overwhelming press of the numbers in the system" that the CDCR's method of addressing it "has finally run its course, and it is time . . . to address the issue at its cause, and the cause of it is overcrowding." *Id.* at 949:13-17 (Haney).

Defendants emphasize testimony that it is possible to provide constitutionally adequate care in a crowded prison system. *E.g.*, Rep. Tr. at 286:15-18 (Lehman) (testifying that it is possible to provide adequate care "at some level" of overcrowding); *id.* at 1216:21-1217:3 (Thomas) (testifying that such care can be provided in "extremely overcrowded conditions"); Nov. 9, 2007 Thomas Report ¶ 6 (same); Rep. Tr. at 1080:12-24 (Packer) (testifying that, "although overcrowding exacerbates the problems" in providing appropriate mental health care, such care can be provided "if appropriate facilities and programs are developed"). Although for the reasons previously stated we are skeptical of Dr. Thomas's testimony, we credit the remaining testimony to the extent that it states that the inmate population need not be reduced to 100% design capacity before constitutional levels of care can be provided. We find, however, that California's prison system is now so overcrowded that it is impossible to provide adequate care without a substantial reduction in crowding. As Secretary Lehman persuasively explained, no state "has experienced anything close" to the level of crowding in California – a level that makes it impossible to provide constitutionally adequate medical and mental health care. *Id.* at 286:19-287:1; *see also id.* at 297:1-17 (Haney) (testifying that California has been operating at 190% design capacity, which is "an unheard of amount of overcrowding"); Nov. 9, 2007 Scott Report ¶ 3 (overcrowding crisis in

California is “unprecedented in scope”). Moreover, Dr. Packer’s opinion that constitutionally adequate mental health care can be provided in an overcrowded prison setting is significantly qualified by his testimony that the provision of constitutionally adequate care in such settings is contingent upon the development of “appropriate facilities,” and that simply retrofitting prison space that was not originally designed for delivery of mental health care is unlikely to lead to “a program that is sufficient.” *See* Rep. Tr. at 1080:18-1082:12.

Additionally, although defendants’ two experts testified that adequate care can be provided in overcrowded settings and that they themselves have been able to do so, the systems in which they worked had prison population controls in place. Dr. Packer testified that he was able to provide appropriate mental health care in the overcrowded Massachusetts jail facilities he supervised. *Id.* at 1086:6-12. However, he admitted that “there was some effort on the part of the courts to not send in some of the mentally ill inmates into the system. And, frankly, in my opinion the most effective procedure we had was that we provided mental health services at the courts, and we diverted mentally ill people away from the jail.” *Id.* at 1086:17-23. Thus, he explicitly opined that the diversion of mentally ill prisoners – a remedy falling within the PLRA’s definition of a prisoner release order – would be the most effective interim remedy. *Id.* at 1086:25-1087:14; *cf. id.* at 1084:17-18 (testifying that new construction is required to get the level of mental health care “to the level that really needs to be”). Similarly, during the time in which Dr. Thomas served as a physician with the Florida Department of Corrections, the department operated under statutory population controls that capped the population at prison hospitals and infirmaries at 100% design capacity and the general prison population at 150% design capacity. *Id.* at 1250:1-1251:1. Consequently, in light of the overwhelming expert testimony to the contrary, we do not find persuasive the testimony by either Dr. Packer or Dr. Thomas that constitutional levels of medical and mental health care can be established in California’s prisons without first reducing the California prisoner population to well below 190% design capacity.

C. <u>Findings and Conclusions</u>

The evidence establishes that "[r]educing the population in the system to a manageable level is the only way to create an environment in which other reform efforts, including strengthening medical management, hiring additional medical and custody staffing, and improving medical records and tracking systems, can take root in the foreseeable future." Sept. 10, 2008 Shansky 2d Supp. Report ¶ 10. Other forms of relief are either unrealistic or depend upon a reduction in prison overcrowding for their success. Accordingly, we find, by clear and convincing evidence, that no relief other than a prisoner release order is capable of remedying the constitutional deficiencies at the heart of these two cases.

VI. NARROWLY DRAWN, LEAST INTRUSIVE REMEDY THAT EXTENDS NO FURTHER THAN NECESSARY

Plaintiffs have demonstrated that crowding is the primary cause of the unconstitutional denial of medical and mental health care to California prisoners, and that no relief other than a prisoner release order can remedy those constitutional violations. Accordingly, plaintiffs have met the PLRA's requirements for the entry of a prisoner release order. *See* 18 U.S.C. §§ 3626(a)(3)(E)(i), (ii). However, any relief this court orders must also meet the PLRA's general standard for prospective relief. Specifically, the relief must be "narrowly drawn, extend[] no further than necessary to correct the violation of the Federal right, and [be] the least intrusive means necessary to correct the violation of the Federal right." *Id.* § 3626(a)(1)(A). Plaintiffs seek an order requiring the state to reduce the population of its adult institutions to 130% of their combined design capacity. We find that the scope and form of the relief proposed by plaintiffs comports with the PLRA. Although we believe that plaintiffs' request for a cap of 130% is reasonable and finds considerable support in the record, there is some evidence that a reduction in the population to a level somewhat higher than 130% of the system's design capacity but lower than 145% might provide the relief from overcrowding necessary for the state to correct the constitutional violations at issue. Notwithstanding the weight of the evidence, we cannot say with certainty that a cap as low as 130% is necessary, although we are persuaded that the cap must not be much higher. Because any relief we order must extend no further than necessary, and because we are convinced that a cap of no higher than 137.5% is necessary, we order defendants to reduce the prisoner population to 137.5% of the adult institutions' total design capacity.[61]

A. Scope of Relief

Our remedy "must of course be limited to the inadequac[ies] that produced the injur[ies] in fact that the plaintiff[s] ha[ve] established." *Lewis*, 518 U.S. at 357. In this proceeding, those injuries involve the state's longstanding and knowing failure to provide its prisoners with the minimal level of medical and mental health care required by the Constitution. The *Plata* court found that "the California prison medical system is broken beyond repair"; that the "future injury and death" of California prisoners is "virtually guaranteed in the absence of drastic action"; and that the state had failed to address those problems despite having "every reasonable opportunity" to do so. Oct. 3, 2005 FF&CL in *Plata*, 2005 WL 2932253, at *1. Likewise, the *Coleman* court found that the state was deliberately indifferent to the fact that

> seriously mentally ill inmates in the California Department of Corrections daily face an objectively intolerable risk of harm as a result of the gross systemic deficiencies that obtain throughout the Department. . . . [I]nmates have in fact suffered significant harm as a result of those deficiencies; seriously mentally ill inmates have languished for months, or even years, without access to necessary care. They suffer from severe hallucinations, they decompensate into catatonic states, and they suffer the other sequela to untreated mental disease.

Coleman, 912 F. Supp. at 1316, 1319.

With the identified constitutional violations in mind, we first consider the propriety of plaintiffs' request for a systemwide cap. "'The scope of injunctive relief is dictated by the extent of the violation established.' The key question . . . is whether the inadequacy complained of is in fact 'widespread enough to justify system wide relief.'" *Armstrong*, 275

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[61]As noted already, our opinion and order is limited to the CDCR's thirty-three adult prison institutions and does not include camps, community correction centers, or Department of Mental Health state hospitals.

F.3d at 870 (quoting *Lewis*, 518 U.S. at 359). In other words, a systemwide remedy like that requested by plaintiffs is appropriate only if plaintiffs have established systemwide injury and impact. *See, e.g.*, *Columbus Bd. of Educ. v. Penick*, 443 U.S. 449, 463-65 (1979); *Armstrong*, 275 F.3d at 871; *Smith v. Ark. Dep't. of Corr.*, 103 F.3d 637, 645-46 (8th Cir. 1996). "[I]solated violations affecting a narrow range of plaintiffs" cannot support systemwide relief. *Armstrong*, 275 F.3d at 870; *see also Lewis*, 518 U.S. at 359 (finding systemwide relief inappropriate where plaintiffs had shown only two violations).

There can be no serious dispute that a systemwide remedy is appropriate in this case. As we have already noted, the constitutional violations identified by the *Plata* and *Coleman* courts exist throughout the California prison system and are the result of systemic failures in the California prison system. *See* Nov. 3, 2008 Order at 7. Numerous reports issued by the *Plata* Receiver and the *Coleman* Special Master document the systemic nature of those problems. Not surprisingly, defendants have never contended that the problems at issue in *Plata* and *Coleman* are institution-specific. Accordingly, a systemwide remedy is appropriate.

Similarly, we conclude that a single systemwide cap rather than a series of institution-specific caps or a combination of systemwide and institution-specific caps is appropriate. Although institution-specific caps would be tailored to each institution's needs and limitations, an institution-by-institution approach to population reduction would interfere with the state's management of its prisons more than a single systemwide cap, which permits the state to continue determining the proper population of individual institutions. Unless and until it is demonstrated that a single systemwide cap provides inadequate relief, we will limit the relief we order to that form of order.

To be certain, the relief sought by plaintiffs extends further than the identified constitutional violations in one regard: Any population reduction plan developed by the state is likely to affect inmates without medical conditions or serious mental illness. However, there is no feasible prisoner release order that would reduce overcrowding without affecting some inmates outside the *Plata* and *Coleman* classes. Thus, we have no doubt that the relief we order contravenes no principle of law or equity in that regard.

Accordingly, the systemwide scope of plaintiffs' requested relief is properly tailored to the identified constitutional violations, at least at this first stage of the court's attempt to bring the system into compliance with the Constitution's mandate.

B. Form of Relief

We next consider the form of relief proposed by plaintiffs. Plaintiffs seek an order requiring the state to reduce its prison population to a specified percentage of the system's design capacity within two years. Initially, the state would be required to develop a plan to reduce the population to the designated percentage. After considering the proposed plan and any objections from plaintiffs or intervenors, we would enter a final order incorporating the state's proposal if it is feasible, with any appropriate modifications or amendments we may deem necessary. We would then retain jurisdiction to ensure compliance with the order or make further changes as necessary in order to allow the state to attain the actual reduction in the prison population set forth in our order within the specified time.

The Supreme Court described the nearly identical procedure used in *Bounds v. Smith*, 430 U.S. 817 (1977), as an "exemplar of what should be done" in crafting systemwide prospective relief. *Lewis*, 518 U.S. at 363. In *Bounds*, the district court found that the state's failure to provide legal research facilities unconstitutionally denied its inmates access to the courts. *Bounds*, 430 U.S. at 818. However,

> [r]ather than attempting to dictate precisely what course the State should follow [to remedy the constitutional violation], the court charged the Department of Correction with the task of devising a Constitutionally sound program to assure inmates access to the courts. It left to the State the choice of what alternative would most easily and economically fulfill this duty.

Id. at 818-19 (internal quotations omitted). "The State responded with a proposal, which the District Court ultimately approved with minor changes, after considering objections raised by the inmates." *Lewis*, 518 U.S. at 362-63 (citing *Bounds*, 430 U.S. at 819-20).

In both *Bounds* and *Lewis*, the Supreme Court praised the *Bounds* lower court's remedial approach, finding that it "scrupulously respected the limits on [the court's] role" and preserved the prison administrators' "wide discretion within the bounds of constitutional requirements." *Bounds*, 430 U.S. at 832-33; *Lewis*, 518 U.S. at 363. The relief requested by plaintiffs here demonstrates the same respect for this court's limited role and for the need to preserve the state's "wide discretion" in managing its prisons. As in *Bounds*, plaintiffs' proposal would permit the state to develop the necessary population reduction plan in the first instance. As we describe *infra*, the state would not be required to throw open the doors of its prisons, but could instead choose among many different options or combinations of options for reducing the prison population. The state's options include, *inter alia*, the following: enhancing good time and program participation credits; diverting technical parole violators and certain offenders with short sentences; reducing the length of parole supervision; implementing evidence-based rehabilitative programming; or implementing sentencing reforms, perhaps by means of a sentencing commission or by otherwise changing outmoded or counterproductive sentencing practices. Many of these options have already been proposed at various times by defendants themselves. *See, e.g.*, Rep. Tr. at 1694:19-1699:15 (Cate) (discussing Governor Schwarzenegger's proposed reforms, including the elimination of parole supervision and enhanced good time and program participation credits); *see also* Ex. P3 at 77 (noting that fifteen reports presented to the state between 1990 and 2007, some of which were prepared by state-established commissions or committees, recommended sentencing reform and the establishment of a sentencing commission).

Plaintiffs' proposed order would permit the state to choose among many available means of achieving the prescribed population reduction, thereby maximizing the state's flexibility and permitting the state to comply with the cap in a manner that best accords with the state's penal priorities. For this reason, an order requiring a systemwide population reduction to a specified percentage is preferable to an order or series of orders requiring particular methods of population reduction, such as the reform of the parole system or the overhaul of the state's sentencing policies. By asking the state to develop a remedial plan in the first instance, the relief sought by plaintiffs exhibits the deference to state expertise required by the PLRA and *Lewis* and limits this court's intrusion into "'the minutiae of prison operations.'" *Lewis*, 518 U.S. at 362 (quoting *Bell v. Wolfish*, 441 U.S. 520, 562 (1979)). The population reduction order sought by plaintiffs is thus "the least intrusive means necessary to correct the [constitutional] violation[s]" at issue in this proceeding. 18 U.S.C. § 3626(a)(1)(A).[62]

C. The Required Population Reduction

Finally, we consider plaintiffs' specific request that we order defendants to reduce California's prisoner population to 130% of the system's design capacity. At the outset, we note that choosing the percentage of design capacity to which the prison population should be reduced is "not an exact science." Rep. Tr. at 976:3-4 (Haney). As plaintiffs' expert Dr. Craig Haney explained, "there's nothing magical" about any specific percentage, including 100%, *id.* at 976:7-8, but the likelihood of bringing the system into constitutional compliance increases as the prison population nears 100% design capacity, *id.* at 976:8-15. Our task is further complicated by the fact that defendants have not presented any evidence or arguments suggesting that we should adopt a percentage other than 130% design capacity. Nonetheless, both the PLRA and general equitable principles require this court to ensure that the population reduction sought by plaintiffs extends no further than necessary to rectify the unconstitutional denial of medical and mental health care to California's prisoners.

Although plaintiffs seek a cap at 130% design capacity, the evidence at trial demonstrated that even a prison system operating at or near only 100% design capacity faces serious difficulties in providing inmates with constitutionally sufficient medical and mental health care. First, California's prisons were not designed to provide medical and mental health care for the numbers now housed therein. Instead, the physical space for health care

[62]Of course, *Bounds* involved the initial remedial response to a recently identified constitutional violation, whereas *Plata* and *Coleman* have been in their remedial phases for a number of years. We do not believe this distinction would justify a departure from the remedial model praised in *Bounds* and *Lewis*, in which the state is given the first opportunity to develop a remedial plan. It may, however, along with the nature of the constitutional violations and of plaintiffs' injuries, affect the length of time in which the state is required to develop and implement the plan.

in California's prisons was devised on the assumption that the prisons' populations would not exceed 100% of their design capacity. Rep. Tr. at 271:8-10 (Lehman) ("The physical space provided [in each institution] is based on the hundred percent population as opposed to 200 percent."). As defendants' witness Robin Dezember noted, the state's prisons "were not designed and made no provision for any expansion of medical care space beyond the initial 100% of capacity," and "none of the 19 CDCR institutions planned and built in the boom of the 80s and 90s gave any thought to the space that might be needed for mental health purposes." Dezember Trial Aff. ¶ 72 (internal quotations omitted). Shockingly, this failure to account for the effect of overcrowding on the ability of prisons to deliver medical and mental health continued even after the state knew that they would be filled to 200% of their design capacity. Ex. D1092 at 21-22 (*Plata* Receiver's May 15, 2007 Report Re: Overcrowding) (noting that a new prison built in 2005 was designed to provide medical care for a population equal to 100% design capacity notwithstanding the CDCR's existing plan to house a population equal to 200% design capacity in the new prison).

The mismatch between the physical design of the prisons and their present overcrowding accounts for many of the space-related obstacles to the provision of constitutionally sufficient medical and mental health care. According to Secretary Lehman, the former head of corrections in Washington, Maine, and Pennsylvania, this mismatch leaves California's prisons without the physical space to provide medical and mental health care to the number of prisoners now housed in those overcrowded institutions. In the absence of sufficient space the prisons are "simply not able to provide the [healthcare] services that [are] required." Rep. Tr. at 271:10-11.

More generally, any prison operating at 100% design capacity stretches the limits of its physical design. According to Dr. Haney, "prisons were virtually always designed sparsely . . . so that a prison that was reaching 100% of its capacity really was pushing against the limits of the number of prisoners that it could safely and humanely hold." Aug. 15, 2008 Haney Report ¶ 380. This is especially true in the context of space allocated for purposes other than housing, including medical and mental health care. "[P]rison design traditionally maximized housing capacities and minimized space allocated to programming needs, opportunities, and demands." *Id.* As a result, "[w]hen a prison beg[ins] to operate at or near its [design] capacity, there [is] typically little or no space available to pursue all but the most basic programming options." *Id.*

Finally, numerous witnesses testified that a prison system must operate *below* 100% design capacity to function properly. Secretary Woodford, former head of CDCR and warden at San Quentin, stated that a five percent vacancy rate is necessary "[t]o manage the movement of prisoners appropriately." Nov. 9, 2007 Woodford Report ¶ 14. "Without the flexibility that this vacancy rate provides, it is very difficult to ensure that prisoners are housed appropriately for their medical and mental health needs." *Id.* In addition, three witnesses for the defendant-intervenors testified that jails require a vacancy rate of at least five or ten percent to operate properly. According to San Mateo County Sheriff Gregory Munks, jails operate properly only when at or below their "functional capacity," which is five to ten percent lower than their design capacity. *See* Rep. Tr. at 1776:15-20 (Munks); *see also id.* at 1776:20-23 (functional capacity "takes account [of] having the room for classification, being able to move inmates around, [and] keep[ing] them separated based on classification, based on needs, based on gang affiliation"). Lieutenant Stephen Smith of the Los Angeles County Sheriff's Department testified that jails cannot operate safely or properly if every bed is filled, and that he would expect the same result in prisons. *Id.* at 1837:5-1838:6 (Smith). According to Lieutenant Smith, "A hundred percent of your capacity is really a misnomer. . . . [Y]ou're at a hundred percent capacity when you are at 90 percent. You need a ten percent vacancy factor to just facilitate movement, and those type of issues because of the margins." *Id.* at 1845:16-21. Likewise, Gary Graves, the acting County Executive for Santa Clara County, testified that a fifteen percent vacancy rate is generally necessary in Santa Clara County's jail system. *Id.* at 2275:3-6.

This testimony establishes that, when a prison or jail's population reaches 100% design capacity, its administrators lose the flexibility required to classify inmates and to move prisoners in accordance with their needs. We have already noted that overcrowding prevents the state from providing constitutionally adequate medical and mental health care in part by preventing the proper classification of inmate medical and mental health needs, limiting the state's ability to bring inmates to required appointments and services, and preventing the state from transferring inmates into necessary clinical placements. Accordingly, the testimony suggests that the state's ability to provide constitutionally adequate medical and mental health care is hampered at 100% design capacity.

Despite this evidence, plaintiffs do not seek an order capping the prison system's population at 100% design capacity. Instead, they seek a cap at 130% design capacity, acknowledging that constitutionally adequate medical and mental health care can be provided in such circumstances. Plaintiffs' proposed population limit is drawn from a recommendation by the Governor's own prison reform personnel. To implement the prison building and prison reform projects authorized by AB 900, the Governor established a series of strike teams, and Deborah Hysen became head of the Facilities Strike Team in May 2007. Sept. 3, 2008 Hysen Dep. at 12:8-10, 15-17. In that role, Ms. Hysen suggested that the CDCR impose two limits on the state prison population. First, she suggested that new prison beds built pursuant to AB 900 be allocated in a manner that would limit overcrowding to no more than 145% design capacity. Ex. P128 at 1, 6 (Aug. 13, 2007 AB 900 Strike Team memo). Hysen acknowledged that housing prisoners at 145% design capacity "does not meet federal guidelines nor national standards," but she nonetheless believed that a reduction in overcrowding to 145% design capacity would "begin to moderate and control the department's overcrowding practices." *Id.* at 6. As a long-term goal, however, Hysen suggested that the prison system's population should not exceed 130% design capacity, the federal standard for prison overcrowding. *Id.*; Hysen Dep. at 94:13-24. Ms. Hysen also suggested that the CDCR consider "establishing planning capacity and oversight mechanisms to prevent the occurrence of exceeding this [130%] threshold." Ex. P128 at 6.

Plaintiffs' experts testified that the 130% cap recommended by Ms. Hysen would be sufficient to remedy the constitutional violations here. Secretary Lehman testified that "housing California prisoners at 130% design capacity will give prison officials and staff the ability to provide the necessary programs and services for California's prisoners." Aug. 15, 2008 Lehman Report ¶ 20. Doyle Wayne Scott, the former executive director of the Texas Department of Criminal Justice, testified that Ms. Hysen's 130% recommendation was "a realistic and appropriate place for CDCR to be, to ensure that its prisons are safe and provide legally required services," Aug. 13, 2008 Scott Supp. Report ¶ 18. Secretary Woodford also agreed with Ms. Hysen's recommended 130% cap. Aug. 15, 2008 Woodford Supp. Report ¶ 3.

Notably, however, both Director Scott and Secretary Woodford qualified their endorsement of the 130% cap by stating that certain facilities could not provide constitutionally sufficient medical and mental health care when filled to 130% design capacity. Woodford noted that "different (and particularly older) facilities might require slightly lower population limitations, based on the quality of infrastructure and availability of treatment space, for example." *Id.* According to Scott, "[W]hile [130%] might be appropriate for new construction, it should be used carefully in CDCR's old, decaying facilities, with their failing infrastructure. Crowding prisoners at 130% is an appropriate goal for CDCR, speaking broadly, but some facilities might only be able to support and provide appropriate health care for smaller numbers." Aug. 13, 2008 Scott Supp. Report ¶ 18.

Although Director Scott and Secretary Woodford suggested that a 130% limit might be too high in certain instances, other evidence suggested that a cap above 130% might be sufficient. For example, Dr. Ronald Shansky testified that the Illinois prison medical system was brought into constitutional compliance at 140% design capacity. Rep. Tr. at 479:2-16. Similarly, the Corrections Independent Review Panel determined in 2004 that the California prison system's "operable capacity" was 145% of its design capacity. Ex. P4 at 124. The Panel's estimate was prepared by a group of experienced California prison wardens, who suggested that a system operating at 145% design capacity could "support full inmate programming in a safe and secure environment." *Id.*

Numerous witnesses testified, however, that the Panel's operable capacity estimate suffers from a potentially fatal flaw for purposes of measuring the constitutional requirements relating to medical and mental health care. Operable capacity does not take into account the ability to provide that care. Thus, the wardens did not consider prisoner medical or mental health needs in reaching their estimate. *See* Ex. P4 at 161 n.3; Nov. 9, 2007 Scott Report ¶ 46 ("[The expert panel's] definitions [of design capacity, operational capacity, and maximum safe and reasonable capacity], however, still fail to look at the capability of a system or individual facility to adequately and legally care for the medical and mental health needs of its population . . . ."). According to Dr. Stewart, "The [maximum operable capacity] incorporated educational, vocational, substance abuse, and other rehabilitation programming, but did not account for programming associated with mental health or medical treatment. . . . When mental health treatment needs are taken into account, the maximum operable capacity will be lower." Aug. 15, 2008 Stewart Supp. Report ¶¶ 126-27. Likewise, Dr. Haney reported that

> the Panel's estimate of [maximum operable capacity] did *not* specifically contemplate, take into account, or attempt to calculate the *additional* space and staffing levels that would be required to provide constitutionally adequate mental health and medical care. . . . When these crucial mental health and medical treatment needs are taken into account – as they must be in any calculation aimed at addressing the primary cause of these continuing constitutional violations – then the appropriate percentage for maximum operable capacity would certainly be lower than the Panel's and wardens' estimates of 145%.

Aug. 15, 2008 Haney Report ¶¶ 383, 385.

Plaintiffs' experts convincingly demonstrated that, in light of the wardens' failure to consider the provision of medical and mental health care to California's inmates and in light of their reliance on maximum operable capacity, which does not consider the ability to provide such care, the Panel's 145% estimate clearly exceeds the maximum level at which the state could provide constitutionally adequate medical and mental health care in its prisons. Unfortunately, plaintiffs' experts did not calculate the extent to which the operable capacity of California's prisons exceeds the percentage necessary for the provision of constitutionally adequate medical and mental health care. *See* Aug. 15, 2008 Stewart Supp. Report ¶ 127 (stating only that the maximum operable capacity of California's prisons is lower than 145%); Aug. 15, 2008 Haney Report ¶ 385 (same); *see also* Aug. 15, 2008 Haney Report ¶ 385 (describing 145% as "a very conservative estimate of [maximum operable capacity]" that is "the outer limit or maximum capacity *in a range* that is intended to eliminate the constitutional violations that are at issue here" (last emphasis added)). Even more unfortunately, as noted earlier, defendants introduced no evidence suggesting that the population of California's prisons should be reduced to some level above 130%.

Although there is strong evidence that a prison system operating at even 100% design capacity will have difficulty providing adequate medical and mental health care to its inmates, the evidence before the court establishes that California's prisoner population *must* be reduced to some level between 130% and 145% design capacity if the CDCR's medical and mental health services are ever to attain constitutional compliance. The evidence in support of a 130% limit is strong: Both national standards and the Governor's own strike team, which adopted those standards, suggest 130% design capacity as a reasonable upper limit on the prison system's population. However, we cannot determine from the evidence whether the national standard selected by the Governor's strike team represents a judgment regarding the mandates of the Constitution or whether it merely reflects a policy that ensures desirable prison conditions. Other, far less persuasive evidence at trial suggested that California might be able to remedy the constitutional violations at issue in *Plata* and *Coleman* if the population of the CDCR's adult institutions were reduced to 140% or somewhere else lower than 145% design capacity. Exercising the caution and restraint required by the PLRA, we credit this evidence to the extent it suggests that the limit on California's prison population should be somewhat higher than 130% but lower than 145%. Rather than adopting the 130% limit requested by plaintiffs, we will out of caution require a reduction in the population of California's adult prison institutions to only 137.5% of their combined design capacity – a population reduction halfway between the cap requested by plaintiffs and the wardens' estimate of the California prison system's maximum operable capacity absent consideration of the need for medical and mental health care. At the adult institutions' present design capacity of 79,828, Ex. P135 (CDCR weekly population report as of August 27, 2008), this equates to a population of just below 110,000.[63] Should the state prove unable to provide constitutionally adequate medical and mental health care after the prison population is reduced to 137.5% design capacity, plaintiffs may ask this court to impose a lower cap.[64] Similarly, should it appear that the provisions set forth in the plan adopted by the court will not achieve the expected population reduction, plaintiffs may seek to have the plan amended.

VII. POTENTIAL POPULATION REDUCTION MEASURES AND THEIR IMPACT ON PUBLIC SAFETY AND THE OPERATION OF THE CRIMINAL JUSTICE SYSTEM

Before we enter a population reduction order, we must give "substantial weight to any adverse impact on public safety or the operation of a criminal justice system caused by the relief." 18 U.S.C. § 3626(a)(1)(A). To aid us in meeting this requirement, the parties devoted nearly ten days of trial to this issue and submitted hundreds of exhibits. The impressive collection of evidence before the court included testimony from former and current heads of corrections of five states; top academic researchers in the field of incarceration and crime; CDCR officials; and county officials, district attorneys, probation officers, and sheriffs from across California. We also had the benefit of many state-commissioned reports that proposed various measures for safely reducing the overcrowding in California's prison system. Indeed, four of plaintiffs' experts – Dr. Austin, Dr. Beard, Dr. Krisberg, and Secretary Lehman – had previously been appointed by the CDCR to serve as members of the Expert Panel on Adult Offender Recidivism Reduction Programming. We give substantial consideration to the report from this panel, which recommended a number of

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[63] Of course, our order is based on a percentage of design capacity. If the CDCR closes existing prisons or constructs new prisons or prison beds, the system's design capacity will change, and our order will therefore require a prison population than just below 110,000. *See supra* Section V.A.1.d.

[64] We recognize that certain institutions and programs in the system require a population far below 137.5% design capacity. We trust that any population reduction plan developed by the state in response to our opinion and order will properly account for the particular limitations and needs of individual institutions and programs.

measures that it believed would help to safely reduce overcrowding in California's prisons, as a necessary first step to reducing recidivism; it included a list of ten related reforms that have been repeatedly recommended to the state, Ex. P2 at 77, some of which we discuss below.

We begin by emphasizing the nature of the order this court issues herein. The order requires the state to reduce California's prison population to 137.5% design capacity within two years and to submit a plan within 45 days to implement our order. As we discuss below, there are a number of population reduction measures that will not have an adverse impact on public safety and that in fact may improve public safety, all of which have been previously recommended to the state, in various reports, by experts it retained to examine ways to reduce California's high recidivism rate.[65] Any or all of these measures may be included in the state's plan. Whichever solutions it ultimately chooses, the evidence is clear that the state can comply with our order in a manner that will not adversely affect public safety. Indeed, the evidence is clear that the state's continued failure to address the severe crowding in California's prisons would perpetuate a criminogenic prison system that itself threatens public safety.

In addressing the potential impact on public safety of our population reduction order, we do not ignore the serious fiscal crisis presently facing the state of California. We are aware that California will not through its ordinary budget process increase its expenditures in order to ameliorate or resolve the constitutional issues it confronts. However, as we explain below, a reduction in California's prison population would produce significant savings, some of which, even with a budget reduction, could be used to fund effective rehabilitative and re-entry programming in the prisons and to help county and local governments meet any additional costs resulting from their expansion of existing programs in order to meet the

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[65]The state recidivism rate is the ratio of the number of felons returned to prison during a specific period to the number of felons paroled during the same period, times one hundred. Ex. DI-600 at 4. The CDCR's statistics on recidivism show return-to-prison rates within three years, and they include returns for technical parole violations. Rep. Tr. at 1373:3-20 (Woodford). California's recidivism rate is one of the highest in the country. *See* Aug. 15, 2008 Bennett Report ¶ 58; Aug. 15, 2008 Austin Report ¶¶ 9-11; Ex. P2 at 88.

needs of persons affected by a population reduction order who may require county or local services. Even if the state were not to use any savings for such purposes, population reduction could be accomplished without any significant adverse impact on public safety or the operation of the criminal justice system. A number of the population reduction measures that have been recommended by the various expert committees do not require any substantial additional expenditures, and, in many instances, any additional burdens on county and local governments resulting from the prison population reduction would fall within current fluctuations in the demand for existing services.

In any event, we cannot now determine with finality whether the population reduction plan the state will propose in response to our order would have an adverse impact upon public safety or the operation of the criminal justice system. We do know, however, that the state *could* comply with our population reduction order without a significant adverse impact upon public safety or the criminal justice system's operation; the evidence before us clearly establishes its ability to do so. We will consider the impact of the state's actual population reduction plan before approving it or any modified or substitute plan. Whatever plan we do adopt will be consistent with our obligation to accord substantial weight to any adverse impact involved.

A. Criminogenic Nature of Overcrowded Prisons

As an initial matter, we conclude that the current combination of overcrowding and inadequate rehabilitation or re-entry programming in California's prison system itself has a substantial adverse impact on public safety and the operation of the criminal justice system. A reduction in the crowding of California's prisons will have a significant positive effect on public safety by reducing the criminogenic aspects of California's prisons.

Defendants do not credibly dispute the above conclusion, although they argue that California's criminal justice system is no different from that of other jurisdictions. In a certain sense they are correct. For example, California's incarceration rate for prisoners sentenced to more than one year in state or federal prisons is about 475 per 100,000 residents, close to the national average. Cate Trial Aff. ¶ 22. California does not incarcerate felons at an unusually high rate, *id.* ¶¶ 23-24, and the average prison sentence imposed and served in California is lower than the national average, *id.* ¶ 25. However, as convincingly explained by Professor Joan Petersilia, an expert on the California prison system and a member of the CDCR's Rehabilitation Strike Team,[66] "the similarities end once an individual has been sentenced to prison. California truly is different when it comes to the way inmates are housed, the way they are treated while incarcerated, the way they are released, and the way their parole is handled and revoked." Ex. P5 at 9 (May 2006 California Policy Research Center Report, "Understanding California Corrections"). As a consequence, although California spends billions of dollars on its prison system, it has "one of the highest return-to-prison rates in the nation." *Id*. at ix. In 2005, 66% of offenders released from the California prison system returned to prison within three years. *Id*. At least two experts reported that California's recidivism rate is at 70 percent. Aug. 15, 2008 Bennett Report ¶ 58; Nov. 9, 2007 Austin Report ¶ 42.

The evidence clearly establishes that, because of overcrowding, the state is limited in its capacity to classify inmates properly according to their security risk or programming needs. *See, e.g.*, Rep. Tr. at 2013:21-23 (Lehman); *id.* at 145:15-18 (Scott); *id.* at 225:21-227:13 (Beard); Aug. 15, 2008 Lehman Report ¶ 8; Nov. 9, 2007 Woodford Report ¶ 13. In addition, a December 2007 report from the CDCR's Rehabilitation Strike Team found that "fully 50% of all exiting California prisoners did not participate in *any* rehabilitation or work program nor did they have a work assignment, during their entire prison term . . . ." Ex. P113 at 13 (December 2007 report, "Meeting the Challenges of Rehabilitation in California's Prison and Parole System: A Report from Governor Schwarzenegger's Rehabilitation Strike Team") (hereinafter "Rehabilitation Strike Team Report") (emphasis in original); *see also* Sept. 22, 2008 Marquart Supp. Report ¶ 5 ("[O]f the 134,000 prisoners who exited California's prisons in 2006, only 7% participated in substance abuse programs and only 10% participated in vocational education while incarcerated."). The CDCR's

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[66]The Rehabilitation Strike Team was established by Governor Schwarzenegger to develop and implement prison and parole programs for the CDCR. Ex. P113 at 10.

Undersecretary of Programs Kathryn Jett believed that the same remained true as of August 2008. Rep. Tr. at 1731:4-8.

Witnesses for plaintiffs and defendant-intervenors with substantial experience administering or studying correctional and law enforcement systems testified that, in such conditions, high-risk inmates do not rehabilitate and low-risk inmates learn new criminal behavior.[67] *E.g.*, Rep. Tr. at 1580:5-9 (Beard) ("They are probably getting worse with the environment that they're in, associating with the higher risk people and with the overcrowding, with the violence, those lower risk people are probably going to be more likely to reoffend."); *id.* at 1052:19-1053:9 (Powers) (Stanislaus County Chief Probation Officer) (testifying that, as a probation officer, he would prefer to treat offenders in the community because offenders come out of prison worse than when they went in); *id.* at 2777:2-19 (Meyer) (Yolo County Chief Probation Officer) ("When I toured the prisons with the intervenors some time ago, I was actually shocked about how almost nothing positive is going on, how crowded it was. It's an issue that – that it seems like they produce additional criminal behavior."); *see also id.* at 385:23-25 (Woodford) ("I absolutely believe that we make people worse, and that we are not meeting public safety by the way we treat people."). California's prisons, in other words, are serving as "crime school[s]." *Id.* at 2014:1 (Lehman).

According to Secretary Lehman, the former head of corrections in Washington, Maine, and Pennsylvania, "there's only one term you can use" to describe California's overcrowded prisons: "criminogenic."[68] *Id.* at 2013:18-2014:1. The criminogenic environment in the prison system means that "[e]ach year, California communities are burdened with absorbing 123,000 offenders returning from prison, often more dangerous than when they left." Ex. P3 at 17 (Jan. 2007 Little Hoover Commission Report, "Solving California's Corrections Crisis: Time is Running Out"). This situation presents a clear threat

[67]Low-risk inmates are those with low risks of reoffending, whereas high-risk inmates are those with high risks of reoffending. *See* Rep. Tr. at 1170:25-1171:22 (Powers).

[68]Something that is "criminogenic" contributes to the occurrence of crime. *See* Rep. Tr. at 2013:19-20 (Lehman).

to public safety and the operation of the criminal justice system. *See* Rep. Tr. at 1580:17-19 (Beard); *id.* at 974:11-22 (Haney).

The state has recently attempted to reduce these criminogenic effects by implementing a new case management system. However, the CDCR is still in the preliminary stages of implementing this new programming. As of August 2008, there was no system in the prisons "'to deliver the right inmate to the right program,'" Rep. Tr. at 1727:23-24 (quoting Jett Dep.), and, at the time of trial, the case management system was in "its infancy," *id.* at 1713:3-5 (Jett).

Defendants do not dispute the overwhelming evidence that overcrowding in prisons itself threatens public safety, nor could they. In fact, in his 2006 Prison Overcrowding State of Emergency Proclamation, Governor Schwarzenegger found that "overcrowding causes harm to people and property, leads to inmate unrest and misconduct, reduces or eliminates programs, and increases recidivism as shown within this state and in others." Ex. P1 at 2. The contention by defendants' expert Dr. James Marquart that "there is no clear evidence that overcrowding by itself automatically leads to violence," Aug. 14, 2008 Marquart Prelim. Report at 7-8, is unpersuasive, but in any event, it does not directly contradict the evidence that crowding increases recidivism. Moreover, even if Dr. Marquart is correct that there is no "systematic empirical investigation" confirming the "pernicious effects" of overcrowding, Aug. 27, 2008 Marquart Rebuttal Report ¶ 3, we credit the testimony of correctional and law enforcement experts who have seen and studied the conditions in California prisons and convincingly opined that they do adversely affect public safety.

Accordingly, we find that California's overcrowded prisons are criminogenic and, as the Governor declared in his State of Emergency Proclamation, Ex. P1 at 2, have an adverse effect on public safety. Mitigating prison overcrowding could improve public safety by rendering possible the proper classification of inmates and the expansion and targeting of rehabilitation programming. *See* Ex. P2 at 9-10 (June 2007 CDCR Expert Panel on Adult Offender Recidivism Reduction Programming Report to the California State Legislature, "A

Roadmap for Effective Offender Programming in California") (recommending population reduction measures in order to reduce recidivism rates).

B. <u>Potential Population Reduction Measures</u>

There was overwhelming agreement among experts for plaintiffs, defendants, and defendant-intervenors that it is "absolutely" possible to reduce the prison population in California safely and effectively. Rep. Tr. at 2189:9-23 (Bennett) (Sonoma County corrections expert); *see, e.g.*, *id.* at 2101:24-2102:1 (Krisberg) (plaintiffs' expert); *id.* at 1995:8-20 (Marquart) (defendants' expert); *id.* at 2012:20-25 (Lehman) (plaintiffs' expert); *id.* at 1327:3-6 (Woodford) (plaintiffs' expert).

Plaintiffs proposed several measures to reduce the prison population. The first, the expansion of the good time credits system, would allow eligible low- to moderate-risk inmates to be released a few months early in exchange for complying with prison rules and participating in rehabilitative, education, or work programs. The second and third, the diversion of technical parole violators and of low-risk offenders with short sentences, would keep low-risk offenders in community correctional systems rather than incarcerating them in prison for a few months. The fourth, the expansion of evidence-based rehabilitative programming, would reduce the prison population by addressing offenders' rehabilitative needs, thus lowering their likelihood of reoffending.[69]

Many of the witnesses presented by defendant-intervenors objected to simply throwing open the prison doors and releasing inmates early in a generic manner, erroneously assuming that such a remedy might be contemplated or ordered by the court. *See, e.g.*, Rep. Tr. at 1087:16-22 (Packer) ("When they said 'prison release,' I thought they were literally releasing people from the prison."); *id.* at 1052:8-12 (Powers) (stating that he prefers his population reduction proposal to "let's throw the door open, and in six months from now we will be there"); Aug. 15, 2008 Bennett Report ¶ 13 ("The wholesale release of inmates would

[69]Plaintiffs also propose shortening the length of parole supervision, which would have a more immediate and direct impact on the distribution of parole resources than on the prison population. For that reason, we discuss this proposal separately. *See infra* Section VII.C.3.

only shift the crowding problem to the counties and provide nothing more than temporary relief to the state."); Bay Stip. ¶ 7 (Director of San Mateo County Department of Housing) ("I am assuming that the prisoner release order is a one-time event and not part of a pattern of shorter sentences for a class of prisoners."). However, many of the same witnesses, as well as others presented by defendants and defendant-intervenors, testified that they supported other measures for reducing the prison population, including measures substantially similar to those proposed by plaintiffs. *E.g.*, Rep. Tr. at 1086:20-1087:22 (Packer) (recommending diversion of mentally ill inmates from the prisons); *id.* at 1041:12-1045:11 (Powers) (stating that a prison population reduction could be achieved safely by investing in probation); Aug. 15, 2008 Bennett Report ¶¶ 68-71, 75-76 (recommending systemic changes, including reducing return to incarceration as a sanction for technical parole violations and enhancing community-based sanctions programs); *see also* Buddress Trial Decl. ¶ 3 (San Mateo County Chief Probation Officer) (supporting population reduction measures proposed by plaintiffs' expert Dr. Krisberg); Dalton Am. Trial Decl. ¶¶ 17-26 (Los Angeles County Sheriffs' Department, Director of Bureau of Operations for Bureau of Offender Programs and Services) (recommending diversion to community corrections, sentencing reform, diversion of technical parole violators, and re-entry programming); Rep. Tr. at 2770:23-2771:10 (Meyer) (testifying that, if appropriate programs were funded, the population could be reduced by about 30% while crime was also reduced); Dumanis Trial Decl. ¶¶ 16-20 (San Diego District Attorney) (supporting re-entry programming and rehabilitative and diversion programs); Boesch Trial Decl. at 13 (San Mateo County Assistant County Manager) (supporting rehabilitation programs and graduated sanctions).

We do not suggest that plaintiffs' proposed methods are the only ways to reduce the prison population without adversely affecting public safety and the criminal justice system. We have discussed some other methods earlier, *supra* Section V.A.4 (discussing the state's proposals to transfer inmates out of state or into federal custody), and will discuss others later, *supra* Section VII.B.5 (discussing, *inter alia*, sentencing reform and modifications of criminal statutes). There are other proposals as well that have been recommended by various state commissions or bodies that may be worthy of consideration. Our discussion here is not necessarily exhaustive.

First, we consider plaintiffs' four proposed population reduction measures. They are substantially similar to those proposed by the Governor and many correctional experts. We find credible the evidence that these measures, properly implemented, would not adversely impact public safety or the operation of the criminal justice system. We also find that these measures are feasible, and that they could achieve the population reduction required to achieve constitutional levels of medical and mental health care delivery.

1. Early Release Through Expansion of Good Time Credits

California, like the federal government and nearly every other state, has a system through which inmates can earn credits to reduce their prison sentences by complying with prison rules or by participating in rehabilitative, education, or work programs. *See, e.g.*, Rep. Tr. at 1398:6-15 (Austin); *id.* at 1549:23-1550:14 (Beard). California's inmates can earn credits off their prison sentences through "participation in work, educational, vocational, therapeutic or other prison activities" and for good behavior. Cal. Penal Code §§ 2931, 2933.[70] CDCR Undersecretary Jett testified that the purpose of California's good time credits system is to provide an incentive for inmates to participate in education and work programs because those programs can reduce recidivism. Rep. Tr. at 1724:6-16.

Experts presented by plaintiffs, defendants, and defendant-intervenors all supported the expansion of this good time credits system. Secretary Lehman and Secretary Woodford both recommended the expansion of the credit system as a way to reduce the prison population without adversely affecting public safety. *See* Aug. 15, 2008 Lehman Report ¶ 13; Rep. Tr. 1326:21-1327:2, 1361:2-13 (Woodford). The public safety experts for defendants and defendant-intervenors criticized generic early release programs but testified that they were not opposed to the good time credits system. *See* Rep. Tr. at 1991:22-25

[70]These credits are referred to, variously, as earned good time credits, good time credits, earned credits, time credits, or earned time credits.

(Marquart) (stating that he is not opposed to granting earned credits for compliance with prison rules);[71] Aug. 15, 2008 Bennett Report ¶ 79; Rep. Tr. at 1015:21-1016:2 (Rodriguez).

Defendants themselves have proposed the expansion of earned good time credits, and they would "[o]f course not" propose plans that would endanger public safety. *Id.* at 1685:3-15 (Cate); *id.* at 1921:14-1922:1 (Kernan). The Governor's 2008 and 2009 budget proposals included an enhancement in the award of good time credits for up to four months for each program successfully completed by an eligible inmate, reasoning that "[i]ncentivizing program participation and completion will reduce inmate violence within the CDCR and will facilitate the inmate's reintegration into society." Ex. P780 at 18 (Governor's Budget, Special Session 2008-09); Jan. 16, 2009 Sturges Decl., Ex. A at 28 (2009-10 Governor's Budget).[72] The Corrections Independent Review Panel chaired by former Governor Deukmejian also recommended the expansion of the earned time credits system as one component of comprehensive reform of the prison system. Ex. P4 at 122, 130. The CDCR Expert Panel made the same recommendation. *See* Ex. P2 at ix, 92.

Expansion of the good time credits system would reduce the prison population by allowing inmates to shorten their lengths of stay in prison by a few months. The evidence indicates that such moderate reductions in prison sentences do not adversely affect either recidivism rates or the deterrence value of imprisonment. According to Dr. Austin, a correctional sociologist and plaintiffs' expert, criminologists have known "for many, many, many years" that generally "there is no difference in recidivism rates by length of stay" in prison, so reducing the length of stay by a "very moderate period of time" – four to six months – would have no effect on recidivism rates. Rep. Tr. at 1387:1-11. Other experts, including an expert for defendants and an expert for defendant-intervenors, agreed with the

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[71]Dr. Marquart criticized the earned credit system implemented in Texas in his expert report, *see* Aug. 14, 2008 Marquart Report at 19, but testified that he was not opposed to earned credits more generally. As we discuss below, Dr. Marquart's testimony on this issue is contradictory and unreliable.

[72]We do not consider here other proposed measures in budget messages submitted by the Governor post-trial. We are aware, however, that they contain additional proposals for reducing the prison population safely.

proposition that there is no statistically significant relationship between an individual's length of stay in prison and his recidivism rate. *E.g.*, *id.* at 1325:11-16 (Woodford); *id.* at 1995:21-24 (Marquart); *id.* at 1154:18-24 (Powers); *see also* Ex. DI-204 at 1 (April 2007 National Council on Crime and Delinquency report, "Effect of Early Release from Prison on Public Safety: A Review of the Literature"). Dr. Austin's study of the CDCR data confirmed that this is true of inmates in California's prisons. Aug. 27, 2008 Austin Supp. Report ¶¶ 4-8.[73] Similarly, a moderate reduction in an inmate's length of stay in prison would not affect the deterrence value of imprisonment. According to two correctional experts, including one presented by a defendant-intervenor, "certainty of punishment" and "the quickness with which penalties are brought to bear" have a much bigger effect on deterrence than a marginal difference in the level of sanctions. Rep. Tr. at 2106:2-7 (Krisberg) ("There's a pretty large consensus that minor reductions [in sanctions] are not going to make a big difference."); *id.* at 2194:19-2195:18 (Bennett) (testifying that "[i]t's not the severity of the sanction that's important" but "the certainty and the immediacy of it").

Defendants' expert Dr. Marquart opined as a general proposition that shortening the length of stay in prison by "advancing good time credits" could negatively impact recidivism because it might reduce the opportunity for inmates to complete rehabilitation programming. *E.g.*, Aug. 14, 2008 Marquart Prelim. Report at 20-21.[74] Dr. Marquart's opinion amounts, at most, to a note about the factors that should be considered in designing an effective expanded good time credits system. It is entitled to little, if any, weight as an observation about the possible negative effect on public safety of such a system. First, as noted above, approximately 50% of the 134,000 inmates released from California's prisons annually are currently released without the benefit of any rehabilitation programming and, in fact,

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[73]In fact, some evidence suggests that properly targeted early release programs can actually reduce recidivism rates. *E.g.*, Sept. 8, 2008 Krisberg Report at 5.

[74]Dr. Marquart stated that shortening the inmates' lengths of stay might present a particular problem with respect to inmates in conservation camps who are trained to fight fires. Aug. 14, 2008 Marquart Prelim. Report at 21. It appears, however, that his concern with respect to these inmates is not that their recidivism rates would increase but that "their release could severely impact the services these inmates render to the state." *Id.*

evidence shows that inmates with shorter sentences are especially unlikely to benefit from such programming at this time.[75] *See* Ex. P113 at 13 (Rehabilitation Strike Team Report); Ex. P5 at 76. Thus, for at least 50% of the inmates released from California's prisons each year, an expanded good time credits program would not, at present, reduce their opportunities to complete rehabilitation programs.

More important, defendants are at the beginning stages of expanding rehabilitation programming in the state's prison system. The CDCR has recently begun to implement an evidence-based system of rehabilitation programming to reduce recidivism, and it has also taken steps to increase utilization of existing educational, vocational, and substance abuse programs. Rep. Tr. at 1710:20-1711:19, 1714:19-1715:1 (Jett). The evidence is clear that expanded rehabilitation programming, and expanded inmate participation in such programming, is a necessary component of California's goal of reducing its high recidivism rate. One of the proposals advanced by Defendant Governor Schwarzenegger in his 2008-09 budget would authorize the CDCR to provide "up to four months of earned credit for each program successfully completed by an eligible inmate." Ex. P780 at 18. Thus, the Governor contemplates *completion* of rehabilitation programs as one of the foundations of an expanded earned good time credits system.

We also reject the testimony that inmates released early from prison would commit additional new crimes. Even aside from the fact that many of these individuals would be less likely to reoffend because they benefitted from completing rehabilitative programs, the weight of the evidence showed that, because length of stay is unrelated to recidivism, all else being equal the likelihood that a person who is released a few months before his original release date will reoffend is the same as if he were released on his original release date. *See, e.g.*, Rep. Tr. at 1966:20 -1967:5 (Marquart); *id.* at 2653:2-15 (Yim) (Chief of Correctional

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[75] Inmates with short sentences who participate in San Diego County's community re-entry program are receiving some rehabilitation programming in prison. San Diego, however, is the only county that has implemented such a program since the 2005 passage of Senate Bill 618, which authorized them. At the time of the trial, San Diego's program had only 389 inmate-participants. Rep. Tr. at 987:9-16 (Rodriguez) (San Diego County Deputy District Attorney).

Services Division of the Los Angeles County Sheriff's Department). Shortening the length of stay in prison thus affects only the timing and circumstances of the crime, if any, committed by a released inmate – i.e., whether it happens a few months earlier or a few months later. *Id.* at 1329:16-19 (Woodford); *id.* at 2319:1-23 (Dyer) (City of Fresno Police Chief); *id.* 1569:11-20 (Beard); *id.* 2163:12-19 (Krisberg); *see also id.* at 1769:5-13 (Hoffman) (CDCR's Director of Adult Parole Operations) (testifying that returning technical parole violators to prison only postpones victimization and crime). Although there might be an increase in arrests in the initial months of an early release, *see*, *e.g.*, Austin Aug. 15, 2008 Report ¶¶ 93-95; Austin Aug. 27, 2008 Report ¶ 9, this increase represents only a concentration in the number of arrests that would have happened in any event and does not affect the total number of arrests. While the victims of crimes may be different, and we do not underestimate the significance of early release to those victims, our concern under the PLRA is to consider the overall impact on public safety, which we find would be no different.

Thus, the testimony by defendant-intervenors regarding the increased arrests that followed early releases in two counties and one city does not undermine our conclusion that early release through an expanded good time credits program could be implemented without adversely affecting public safety. Defendant-intervenors' witnesses offered the following testimony. In Orange County in the 1990s inmates were released early due to court-ordered population caps, and a number were rearrested for crimes committed during the time they would otherwise have been in custody. Ex. DI-628 (July 1, 1997 Sheriff's Presentation on Theo Lacy [Jail] Expansion to Orange County Board of Supervisors); *see also* Dostal Decl. ¶ 11 (Executive Director of Administrative Services for Orange County Sheriff's Department); Dostal Supp. Decl. ¶ 2. In Los Angeles County, 10% of those released from jail pursuant to an early release program were rearrested during the period of early release, including 16 for murder, over a five-year period. Rep. Tr. 1811:18-1812:4, 1824:14-15 (Smith) (Lieutenant in Los Angeles County Sheriff's Department Custody Support Services Division). While this evidence may suggest an accelerated arrest pattern, it does not show an increase in the overall crime rate. Chief Dyer of the Fresno Police Department testified that when an increased number of parolees were released in 2005 as part of an earned credits program, the city experienced an increase in crime, *id.* at 2329:20-2330:11, but his testimony again did not reveal whether the crime represented only a temporary bulge, whether other factors affecting crime remained unchanged, or whether a risk assessment tool – which measures the probability that an offender will recidivate, *see id.* at 2128:24-2129:1, 2132:6-2134:13 (Krisberg) – was used to target low- to moderate-risk inmates for release.

In fact, empirical evidence from California's communities demonstrates that early release programs – as well as diversion, a population reduction measure we discuss in more detail below – do not increase crime. Dr. Krisberg reviewed data provided by California and the FBI and concluded that such programs, which were instituted in twenty-one California counties between 1996 to 2006, resulted in approximately 1.7 million inmates released by court order but did not result in a higher crime rate. Sept. 8, 2008 Krisberg Report at 10. This is persuasive evidence that the early release program proposed by plaintiffs poses no threat to public safety or the operation of the criminal justice system.

Furthermore, if the good time credits system is expanded and programming enhanced, it is likely that recidivism will decrease. Expansion of the good time credits system could include an "increase in the number of credits that prisoners can earn for participation in programs, or being in compliance with a case management plan." Rep. Tr. at 1387:16-18 (Austin). Such an incentive contributes to a decline in recidivism because "it gives [inmates] what they need [in order] to keep them out of prison in the future," *id.* at 1549:21-22 (Beard), as determined by an evidence-based assessment of the underlying factors, such as addiction or lack of vocational skills, that may have driven the inmate's criminal behavior. *Id.* at 1550:18-1551:19 (Beard); *see also id.* at 1398:21-1399:1 (Austin) (reducing sentence length due to inmate's completion of an education program is a "win-win" because it lowers the length, and therefore the cost, of incarceration and lowers the likelihood of the inmate's recidivism upon release). The evidence tendered thus confirms the conclusion of the CDCR Expert Panel that "the public safety benefits of [expanding good time credits] will be a vast improvement over California's current practice of releasing offenders who have not completed rehabilitation programming." Ex. P2 at 12.

Based on all of the above, we conclude that shortening an inmate's length of stay in prison would not increase recidivism rates, and that shortening the length of stay through earned credits would give inmates incentives to participate in programming designed to lower recidivism. We credit the opinions of the numerous correctional experts that the expansion of good time credits would not adversely affect but rather would benefit the public safety and the operation of the criminal justice system. We also note that this is the view of the Governor, who has recommended the adoption of an earned credit program as a means to better "facilitate the inmate[s'] reintegration into society." Ex. P780 at 18 (Governor's Budget, Special Session 2008-09).

2. Diversion of Technical Parole Violators

California has a "very abnormal practice" of sending a high number of technical parole violators to prison for a short of amount of time.[76] Rep. Tr. 1434:12-14 (Austin); Aug. 15, 2008 Austin Report ¶ 13 (explaining that California's re-arrest rate for parolees is similar to other states, but the high use of imprisonment for parole violations produces a high return to prison rate). In California, more than 70,000 parolees are returned to prison each year for technical parole violations, approximately 17,000 of whom are "pure technical violators" who have not been arrested for a new crime but have only violated a term or condition of their parole. Ex. P5 at 72-74; Rep. Tr. at 1739:18-19 (Hoffman).

Evidence – including testimony from Thomas Hoffman, Director of the CDCR's Division of Adult Parole Operations – overwhelmingly showed that California's practice of sending parole violators back into the state prison system for an average of four months and incarcerating them during that time in crowded reception centers endangers public safety and burdens the criminal justice system. *See, e.g.*, Rep. Tr. at 1769:5-13 (Hoffman) (agreeing

[76]Technical parole violators are those parolees who have violated their conditions of supervised release but have not been convicted of new crimes. Aug. 15, 2008 Austin Report ¶ 12. The category includes those who have been arrested for new crimes but were not prosecuted or convicted. *Id.*

that "this churning pattern just postpones victimization and crime" and testifying that "we know it's not working"); Ex. P113 at 78 (Rehabilitation Strike Team Report) ("This system of 'catch and release' makes little sense from either a deterrence, incapacitation, treatment, or economic standpoint."). According to research by Professor Petersilia, this high return-to-prison rate for parole violators "is creating a destructive situation by constantly cycling offenders in and out of prison and their home communities in a way that blurs the distinction between the two and combines the worst elements of each." Ex. P5 at 75. Professor Petersilia found that, among other negative effects, this "churning" or "catch-and-release" disrupts the inmate's ability to participate in community-based rehabilitative programs, encourages the spread of prison-gang culture in communities, wastes parole processing resources, and reduces the deterrent value of prison by "transform[ing] a trip to prison into . . . a trivial and short-lived intrusion on day-to-day criminality." *Id.* at 76. Secretary Woodford, the former acting Secretary of the CDCR, agreed with this assessment, based on her experience administering California prisons in various capacities, including as warden at San Quentin. Rep. Tr. at 1316:23-1317:11; *see also* Ex. D1196 at DEFS021721 (Integrated Strategy to Address Overcrowding in CDCR's Adult Institutions) ("[C]hurning is costly, does little or nothing to promote public safety and frustrates real efforts at rehabilitation."). Dr. Gilligan, plaintiffs' mental health expert, testified that this practice has a particularly adverse impact on the mentally ill, who are not given adequate treatment or transition plans because of the short length of their return to prison. Aug. 15, 2008 Gilligan Report ¶ 33.

This churning, and its adverse effects, could be stopped in several ways. One is to use a parole revocation instrument to determine whether parole violators should be sent back to prison. Rep. Tr. at 1385:11-21 (Austin); Aug. 15, 2008 Austin Report ¶ 52. Such an instrument has been implemented in a number of states, including Pennsylvania, South Carolina, New Jersey, Oregon, Georgia, Iowa, Kansas, South Dakota, and Texas.[77] *Id.*; Rep. Tr. at 1564:4-1565:8 (Beard). The CDCR has already started implementing reform of the

[77] Washington State has a law that prevents technical parole violators from being returned to prison. Aug. 15, 2008 Lehman Report ¶ 16.

parole system and has developed a "Parole Violation Decision Making Instrument." *Id.* at 1678:15-25 (Cate); Hoffman Trial Aff. ¶¶ 8-13; Ex. D1198 (Sept. 30, 2008 Letter from Jessica R. Devencenzi, Deputy Attorney General, to Michael Bien, Rosen Bien & Galvan, LLP). Secretary Cate called the use of the parole revocation instrument one of the "best practices" in the area of parole reform. Rep. Tr. at 1706:9-14 (Cate). Dr. Austin noted a number of other ways to reduce the return of technical parole violators to prison, including prohibiting parole violators from being readmitted to prison for technical violations, reducing the period of parole supervision, and instituting an incentive program for parole agents. Aug. 15, 2008 Austin Report ¶¶ 51-54. The Governor has proposed placing all "non-serious, non-violent, non-sex offenders" on summary parole. *See* Ex. P780 at 18 (Governor's Budget, Special Session 2008-09); Jan. 16, 2009 Sturges Decl. ¶ 2 & Ex. A at 28 (2009-10 Governor's Budget); Ex. P328 at 178 (Governor's Budget Summary 2008-09). All of these options may be considered by the state and implemented in a manner that would be consistent with its ultimate objectives.

The use of a "best practices" instrument, as well as other methods referred to above, to reduce the number of parole violators returned to the state prison system, if properly implemented, would not have an adverse impact on public safety or on the criminal justice system. At the very least, slowing the flow of technical parole violators to prison would mitigate the dangerous crowding at reception centers and ease the burden on the parole processing system. It would free up space in the reception centers so that those centers could be used for their original purpose: sorting inmates into the right correctional settings. It would give parolees a better opportunity to participate in continued rehabilitative programming in the community, and it would likely improve a system that currently "undercut[s] the deterrent effect of serving prison time." Ex. P5 at 76. We agree, for example, with the assertion of the CDCR's Director of Adult Parole Operations that the use of a parole revocation instrument in California would "reduce future victimization, increase public safety, and enhance the ability of offenders to become more productive members of the community." Hoffman Trial Aff. ¶ 10.

Additionally, public safety would improve if technical parole violators who are not returned to prison were diverted to alternative sanctions in the community, including drug treatment, day reporting centers, electronic monitoring, and, if necessary, county jail.[78] *See* Rep. Tr. at 1318:21-1319:2 (Woodford). The CDCR already has alternative sanctions programs and is working on expanding the scope and availability of such programs. Hoffman Trial Aff. ¶¶ 19-25. Many of these programs address the offender's criminogenic factors and can thus reduce recidivism. *Id.* The use of graduated sanctions would serve the same deterrent purpose as imprisonment while effectively reducing recidivism. *See* Woodford Aug. 15, 2008 Supp. Report ¶ 32 ("Sanctions other than incarceration are effective in punishing many prisoners and at the same time reducing the risk of recidivism."); Rep. Tr. at 2194:19-2195:18 (Bennett) ("We need to have meaningful, immediate, certain sanctions. And it doesn't have to be a return to prison. We can develop sanctions at the local level. . . . We can have a more effective sanction without interrupting individuals' lives and returning them to prison."). Former CDCR Secretary James Tilton stated that he believed that these alternative community sanctions programs would improve public safety over time. Sept. 3, 2008 Tilton Dep. at 153:4-154:3.

CDCR officials and experts overwhelmingly supported the use of the parole revocation instrument and the diversion of technical parole violators to alternative sanctions in the community. Scott Kernan, the CDCR's Undersecretary of Operations, stated that "[t]hese efforts have proven to reduce prison population while maintaining public safety." Kernan Trial Aff. ¶ 23. Experts for plaintiffs, defendants, and defendant-intervenors testified in favor of the diversion of technical parole violators. *E.g.*, Aug. 15, 2008 Lehman Report ¶ 16; Rep. Tr. at 1993:6-8 (Marquart); *id.* at 2194:19-2195:18 (Bennett); Buddress Trial Decl. ¶ 3. The Governor's Rehabilitation Strike Team urged the use of the parole violation instrument and diversion, concluding that "[s]imilar 'best practices' proposals have worked in other states to better prepare inmates for re-entry, reduce prison returns, protect public safety, and reduce the costs of corrections." Ex. P113 at 17, 89-90. The three reports of

[78] We discuss the likely impact of these measures on the counties *infra* Section VII.C.

independent commissions presented to the state – the CDCR Expert Panel Report, the Corrections Independent Review Panel Report, and the Little Hoover Commission Report – also recommended the diversion of technical parole violators. *See* Ex. P2 at 47-49; Ex. P3 at 31; Ex. P4 at 154, 158-59. In fact, according to the CDCR Expert Panel, fifteen reports published since 1990 on California's prison crisis have recommended the diversion of technical parole violators. Ex. P2 at 77.

We conclude that simply slowing the flow of technical parole violators to prison, thereby substantially reducing the churning of parolees, would by itself improve both the prison and parole systems, and public safety. Diversion of parole violators to community alternative sanctions programs would serve to significantly reduce recidivism. We therefore find that diverting parole violators to alternative community sanctions programs would reduce the prison population while having a positive rather than a negative effect on public safety and the operation of the criminal justice system.

3. Diversion of Low-Risk Offenders with Short Sentences

Plaintiffs also propose reducing the prison population by diverting low-risk offenders with short sentences for community sanctions. Rep. Tr. 1385:22-1386:21 (Austin); Aug. 15, 2008 Austin Supp. Report ¶¶ 58-61.

According to Dr. Austin, a substantial number of inmates enter the California prison system with sentences of less than twenty-four months, the largest group of which are those with a sixteen-month sentence, many of whom have already served up to seven months of their sentence in a county jail. Rep. Tr. 1386:2-1386:12; Aug. 15, 2008 Austin Supp. Report ¶ 60 & tbl. 5. Under current policies, these inmates can halve the remaining periods of their sentences by earning work credits, with the result that these inmates serve only a few months in state institutions – an amount comparable to that served by technical parole violators. Rep. Tr. 1386:2-1386:12. Like the technical parole violators, these inmates are unlikely to participate in any meaningful programming during their short term of imprisonment. *See* Aug. 15, 2008 Austin Report ¶ 60 ("A diversion program would eliminate a short period of imprisonment within the CDCR (during which the prisoner is unlikely to become involved in any meaningful programming). . . .”).

Instead of incarcerating all of these offenders, the CDCR could use risk assessment instruments to identify low-risk offenders and divert these offenders to community correctional programs to serve their sentences. *See* Rep. Tr. 1386:13-21 (Austin). The state might also consider implementing incentive-based funding for community corrections, similar to that adopted by California in the 1960s, when the state provided fiscal rewards to counties that reduced the number of people being sent to prison. *See* Rep. Tr. at 1042:4-14 (Powers). This would require the diversion of only a portion of the funds that adoption of the reforms discussed herein would save the state.

A number of correctional and law enforcement experts opined that the diversion of low-risk offenders would not have an adverse impact on public safety or the operation of the criminal justice system. Secretary Woodford stated, based on her prior experiences as the chief probation officer of San Francisco, warden of San Quentin, and acting Secretary of the CDCR, that California “incarcerates many more prisoners than is necessary for the safety of the public.” Aug. 15, 2008 Woodford Supp. Report ¶ 32. She stated that there are intermediate sanctions available, and that California would have safer communities if it used those sanctions rather than incarceration in appropriate circumstances. *Id.* The use of such intermediate sanctions would not significantly affect deterrence, as sanctions short of imprisonment have deterrent value so long as they are “meaningful, immediate, and certain.” *See, e.g.*, Rep. Tr. at 2194:19-2195:18 (Bennett).

Law enforcement officials from the counties also testified that diversion could improve public safety if implemented correctly. *See, e.g.*, James Trial Decl. ¶¶ 6-7 (Orange County Assistant Sheriff); Rep. Tr. at 2369:5-12 (Dyer); Buddress Trial Decl. ¶¶ 10-11. According to these local law enforcement officials, offenders who have not been to prison “are easier to program [and] treat . . . before they have been exposed to (and potentially trained by) more hardened and experienced criminals in the state prison system.” James Trial Decl. ¶ 20; *see also* Rep. Tr. at 1052:16-1053:10 (Powers) (“[S]o you put someone who is a low risk, low level person into an environment[] with high risk individuals, they don't naturally get better. They gravitate up. So when they come out, they are worse off."). According to the testimony of law enforcement and county officials, many counties now successfully divert offenders from jail to substance abuse programs, correctional day reporting centers, and electronic monitoring. *See*, *e.g.*, *id.* at 2276:19-2277:1 (Graves); *id.* at 2798:3-24 (Hennessey) (City and County of San Francisco Sheriff); Dalton Am. Trial Decl. ¶¶ 33-35. Thus, successful models for community corrections are already in place, and, although the characteristics of the populations that they currently serve may be different from the prison population, they can be expanded to serve an increase in diverted offenders with proper funding and coordination between the state and the counties. *See, e.g.,* Aug. 15, 2008 Garner Report at 6 (Director of Santa Clara County Department of Alcohol and Drug Services) ("Local treatment systems exist in every county and with adequate state funding they can be expanded to accommodate the proposed increase in clients resulting from early release of prisoners."); Meyer Am. Trial Decl. ¶ 69. An expert for the law enforcement intervenors testified that if the state were to establish such programs on a statewide or county-by-county level, the prison population could be reduced, by that reform alone, by about 30%, as a conservative estimate, in two to five years. Rep. Tr. at 2771:4-10 (Meyer).[79]

The opinion of these California correctional and law enforcement experts was confirmed by Dr. Beard, the Secretary of the Pennsylvania Department of Corrections, who testified regarding Pennsylvania's success in implementing an intermediate punishment program that diverts offenders from jails and prisons to substance abuse programs. *Id.* at 1554:20-1556:20. A study of that program found that inmates in the program had lower recidivism rates than those sent to county jails or state prisons. *Id.* at 1555:2-5. Dr. Beard testified that "the research is really clear out there that community-based programming is actually more effective than prison-based programming." *Id.* at 1555:21-23. Such programming can contribute to rehabilitation without taking the offender away from the

[79]The witnesses for defendant-intervenors expressed concern that neither the state nor the counties have the funds to expand the community correctional system. We address this concern below. *Infra* Section VII.C.

community and creating the problems of re-entry upon release from prison. *Id.* at 1556:1-14. According to Dr. Austin, other states, including Ohio and Michigan, have also successfully adopted diversion programs without an adverse effect on crime. *E.g.*, *id.* at 1399:2-15.

There was testimony that some individuals on electronic monitoring or in other alternative programs have committed crimes, *e.g.*, *id.* at 1179:23-1180:3 (Powers), and we acknowledge that diversion programs cannot stop all crime. But, again, the individuals to be diverted are those who would have been released from prison a few months later in any event, after being exposed to "more hardened and experienced criminals." James Trial Decl. ¶ 20. Thus, the incidents that have occurred during participation in alternative programs do not undermine the weight of the testimony that diversion programs have an overall positive effect on public safety and the operation of the criminal justice system.

We therefore conclude that the diversion of offenders to community correctional programs has significant beneficial effects on public safety and the operation of the criminal justice system as compared to the current system, including preventing the exposure of offenders to criminogenic conditions, providing effective rehabilitation, and avoiding a disruption in the offender's life that creates re-entry problems upon release.

4. <u>Expansion of Evidence-Based Rehabilitative Programming in Prisons or Communities</u>

Every witness, from the CDCR's Undersecretary of Programming to law enforcement officers and former heads of correctional systems, testified that an increase in the availability of evidence-based rehabilitative programming – i.e., programs that research has proven to be effective in reducing recidivism, Rep. Tr. at 1042:19-1043:14 (Powers) – in the prisons or in the communities would reduce the prison population and have a positive impact on public safety. *See, e.g.*, *id.* at 1721:16-22 (Jett); *id.* at 1159:14-19 (Powers); *id.* at 1962:15-23 (Marquart); *id.* at 2009:15-2010:1 (Lehman); *id.* at 2728:6-18 (Runner); *id.* at 2385:2-14 (Pacheco) (Riverside County District Attorney); Meyer Am. Trial Decl. ¶¶ 46-52. Research from Washington State concluded that an expansion of evidence-based programming would reduce the prison population, while leading to a net decrease in the crime rate. *See*

Ex. D1331 at 15 (Oct. 2006 Washington State Institute for Public Policy report, "Evidence-Based Public Policy Options to Reduce Future Prison Construction, Criminal Justice Costs, and Crime Rates").

Experience demonstrates the benefits of evidence-based programming. Missouri and Washington have successfully and safely reduced prison populations through such programming. *See* Rep. Tr. at 2767: 21-2768:11 (Meyer). Moreover, the evidence from the law enforcement intervenors and county intervenors overwhelmingly showed that there are already models for successful evidence-based programs all over California, from Yolo County to San Diego County, that have reduced recidivism and thus improved public safety in those communities. *See, e.g., id.* at 2784:25-2785:4 (Meyer); *id.* at 2803:19-2804:1 (Hennessey); Rodriguez Trial Decl. ¶¶ 20-21; Aug. 15, 2008 Bennett Report app. C ch.3 ("Chapter Three: Alternatives to Incarceration" from July 2007 "Sonoma County, California: Corrections Master Plan"). As Chief Probation Officer Meyer stated, successful models "are on the shelf" and ready to be implemented. Rep. Tr. 2784:25-2785:4.

As discussed above, the CDCR has also already begun to design and implement an expansion of rehabilitation services for inmates and parolees. *See* Jett Trial Aff. ¶¶ 6-13; Ex. P79 (July 15, 2008 California Rehabilitation Oversight Board Biannual Report). We agree with Undersecretary Jett, who oversees this process, that its successful implementation would lead to a reduction in recidivism and a reduction in the prison population. *See* Jett Trial Aff. ¶ 13.[80] Improvements in the implementation of the process will become increasingly likely as the reduction in the prison population occurs. The two functions are, in practicality, related.

Based on the overwhelming and uncontroverted evidence, we find that additional rehabilitative programming would result in a significant population reduction while improving public safety and reducing the burden on the criminal justice system. If implemented in conjunction with any or all of the population reduction measures described

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[80]Successful implementation of such programming will, of course, require space that is currently not available in California's prisons.

above, such programming would enhance the likelihood that recidivism will decline as the prison population is decreased. Moreover, if implemented within the state prison institutions, such programming would have a synergistic effect on the ability of inmates to reduce their sentences by earning good time credits.

5. Sentencing Reform and Other Potential Population Reduction Measures

The evidence at trial focused primarily on the potential effects of the population reduction measures proposed by plaintiffs. However, there are other means as well by which the state could reduce its prisoner population, and the state is in no way bound by plaintiffs' proposals. For example, Expert Panel co-chair Professor Joan Petersilia reported that fifteen studies have been issued regarding California prisons since 1990, all containing essentially the same ten recommendations. Ex. P2 at 77-79. Those recommendations include not only the four population reduction measures proposed by plaintiffs, but also reformation of the state's determinate sentencing regime "to reward prisoners for participating in rehabilitation programs and allow the system to retain prisoners who represent a continued public safety risk," the creation of a sentencing reform commission "authorized to design new sentencing statues into a workable system that balances uniformity of sentencing with flexibility of individualization," and the release or diversion of certain "[s]ub-populations, such as women, the elderly and the sick" from prison to community-based facilities. *Id.* at 77. Also, as noted above, the state has suggested that its prison population might be reduced through the transfer of inmates out of state or into federal custody. The state is certainly free to include any of these alternatives in its proposed population reduction plan should it be able to establish the feasibility and the positive effects of such programs, especially their compatibility with public safety.

Like plaintiffs' proposed population reduction measures, the other measures discussed by Professor Petersilia generally would have a positive effect on public safety. In particular, the repeated recommendation that the state establish a sentencing commission and reform its determinate sentencing regime reflects an urgent need for the state to reconsider its counterproductive sentencing practices. As the Little Hoover Commission reported, California's present sentencing regime is a "chaotic labyrinth of [sentencing] laws with no cohesive philosophy or strategy." Ex. P3 at 35. The state's sentencing laws promote certainty in the length of sentences at the expense of public safety: Because release at a particular date is certain, offenders have little incentive to improve themselves in prison or while on parole,[81] and offenders must be released even if they pose a serious threat to the community. *Id.* at 34. In addition, sentencing judges and prison authorities have little ability to ensure that sentences and conditions of incarceration reflect the circumstances of a particular crime and offender. Similarly, characteristics suggesting that the offender presents a low-risk of recidivism or would more effectively serve his sentence in a correctional setting besides prison, including the fact that the offender is elderly or infirm, cannot be considered. "[California sentencing] law treats many crimes alike, even when the circumstances of an individual case or the characteristics of the offender might warrant a different resolution that would better benefit victims and the community." *Id.* at 36. Furthermore, the present system leads to "overreliance on the most expensive sanction – state prison – instead of local correctional alternatives that could provide more effective and efficient punishment." *Id.* Finally, the "countless increases in the length of criminal sentences" over the last few decades do not reflect a coherent sentencing policy and also may not serve the state's sentencing goals. *Id.* at 33, 35, 48. Public safety is not benefitted by blindly approving of the continued incarceration of prisoners who pose little threat of committing further crimes. Like a number of other official bodies, the Little Hoover Commission recommended that a sentencing commission be established to "develop sentencing guidelines, as well as post release supervision and revocation guidelines that [would] become law unless rejected by a majority vote of the Legislature," *id.* at 48.

The establishment of a sentencing commission is but one approach to addressing the problems in the state's sentencing laws; there are undoubtedly others. Regardless of the approach adopted by the state, however, it is clear that California's sentencing regime ill-

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[81]However, according to the Commission, "incentives can be built into the existing sentencing structure to improve public safety and offender outcomes." *Id.* at 37.

serves the state's interests, and that the overcrowding crisis in California's prisons provides an opportunity for the state to reconsider its sentencing practices. Numerous reports have recommended sentencing reform and established that such reform would, if implemented, have a positive impact upon public safety. *See id.* at 38-42 (describing the positive public safety effects in various states of their use of a sentencing commission). Given the fact that legislative bodies tend to vote only to increase sentences and not to reduce them, however, and given the questionable nature of California's initiative process, there appears to be little or no hope of a serious review of sentencing laws or policies in the absence of some extraordinary state action.

The state might also consider changing the criminal law itself. For example, the Governor has proposed adjusting the threshold value at which certain property crimes become felonies to reflect inflation since 1982. Ex. P780 at 18 (Governor's Budget: Special Session 2008-09); Jan. 16, 2009 Sturges Decl. Ex. A at 28 (2009-10 Governor's Budget). Such a change would reclassify crimes falling below the adjusted threshold as misdemeanors. Likewise, the state might consider permitting low-risk offenders, such as the elderly or the infirm, to serve the latter portions of their sentences in community corrections facilities or on house arrest. Both of these proposals would reduce the prison population by diverting certain offenders to alternative placements rather than prison. Both have also been endorsed by state officials, a strong indication that the proposals would not have an adverse effect on public safety.

The parties introduced no evidence as to the effect on public safety of the transfer of inmates out-of-state or into federal custody, so we cannot consider those measures in detail at this time. As we have already explained, however, the out-of-state transfer program proposed by defendants is far too small, by itself, to make more than a dent in the problem of overcrowding, and the additional resources required to monitor the medical and mental health care provided to transferred inmates could eliminate any benefits that otherwise result from such transfers. Furthermore, by moving inmates far away from their places of residence and making contact with families and friends unavailable, such transfers may reduce the inmates' prospects for rehabilitation. The transfer of undocumented aliens to federal custody might involve a larger number of inmates, but this suggestion was not sufficiently developed to permit any extended analysis of its effect upon public safety and the operation of the criminal justice system.[82]

C. **Impact of Proposed Measures on Communities**

Law enforcement and other witnesses from the communities testified that plaintiffs' proposed prisoner release order would result in an overwhelming increase in the number of crimes, arrests, and jail inmates, thus adversely affecting their ability to investigate, prosecute, and punish crime. We cannot accept their opinions, however, to the extent that they are based on the assumption that a "prisoner release order" would involve such drastic measures as a mass early release and/or a ban on the admission of new offenders to prison. We credit the concern of some witnesses, however, that resources at the community level are strained, particularly because of the current fiscal crisis. *See, e.g.,* Cogbill Trial Decl. ¶¶ 29-38 (Sonoma County Sheriff-Coroner); Boesch Trial Decl. at 8-9 (San Mateo County Assistant County Manager); Aug. 15, 2008 Graves Report at 3-4. Nonetheless, as we discuss below, the evidence demonstrates that the fears regarding increased crime, arrests, and jail populations are largely unjustified, and that there are ways to achieve a reduction in California's prison population without unduly burdening the already limited resources of local communities.

1. Investigation and Prosecution of Crime

Defendant-intervenors presented credible evidence that California's local law enforcement resources are currently overtaxed. There are not enough judges, prosecutors, public defenders, police officers, or resources to support their necessary work, and the

[82] The only evidence in the record on this proposal is testimony from one witness, California State Senator George Runner, that California prisons house roughly 30,000 illegal aliens, which is disproportionately high when compared to other states, and that federal reimbursement is insufficient to cover the costs of housing these inmates. Runner Trial Decl. ¶¶ 6, 19; Rep. Tr. at 2728:19-2729:12. We received no testimony on the feasibility of transferring all or even a portion of these inmates to federal custody, and no testimony regarding any potential impact on public safety or the operation of the criminal justice system of such a transfer, including whether the prisoners might be swiftly deported and just as swiftly re-cross the border into California shortly thereafter.

situation has worsened with the economic downturn. *See, e.g.*, Rep. Tr. at 2197:5-2199:9 (Bennett); *id.* at 1856:13-21 (Word) (City of Vacaville Police Chief); Word Trial Decl. ¶ 25. The courts are severely clogged with cases and are several years behind on trials. *See* Meyer Am. Trial Decl. ¶ 43; Ryan Trial Decl. ¶ 28 (Amador County Sheriff-Coroner). Any significant increase or concentration in crime would likely further hamper investigations and prosecutions. *See, e.g.*, Ryan Trial Decl. ¶¶ 27-28; Dumanis Trial Decl. ¶ 33; Dyer Am. Report ¶ 28; Rep. Tr. at 1179:5-17 (Powers).

The population reduction measures described above, however, would not result in the significant increase in crime that many witnesses opposed to the measures believe would occur. As explained above, many witnesses wrongly assumed that this court would require a sudden mass release of one-third of California's prisoners or a ban on accepting new or returned prisoners. *See, e.g.*, Rep. Tr. at 1052:8-12 (Powers); Aug. 15, 2008 Bennett Report ¶¶ 13,18. That approach was not proposed by any party, nor would it be approved by the court.

Many witnesses also testified that, at present, a large number of crimes are committed by parolees, *see, e.g.*, Rep. Tr. at 2331:1-8 (Dyer); parolees have a high rate of recidivism, *e.g.*, Meyer Am. Trial Decl. ¶¶ 39-40;[83] and more crimes occur than are reported to the police, *e.g.*, Rep. Tr. at 1506:21-1507:20, 1508:11-19 (Austin). The parolees who would be released early to communities under the proposed measures, however, are the ones who are least likely to commit further offenses and who along with their fellow parolees would be released in any event a few months later. Indeed, the evidence describing the criminogenic nature of the California prisons suggests that the longer an inmate remains incarcerated, the more likely he is to reoffend upon release. *See, e.g.*, Rep. Tr. at 1580:5-9 (Beard); *id.* at 2013:14-2014:1 (Lehman); Ex. P3 at 17. The relevant question for us to examine is not the absolute impact of the current population of parolees on local criminal justice systems, but

[83]This testimony does not take into account that the recidivism rate for parolees is high in California in part because the state returns most technical parole violators to prison. *See* Aug. 15, 2008 Austin Report ¶13.

the relative impact on the criminal justice system of the additional parolees in the community because of the proposed population reduction order.

The evidence shows that any such impact would be small. The expanded award of good time credits proposed by Dr. Austin, for example, would result in only a temporary increase in the return of parolees to communities during the initial period of implementation. Rep. Tr. at 1408:13-21 (Austin); Aug. 15, 2008 Austin Report ¶¶ 93-94. Although the increase in parolees could result in a temporary increase in arrests during the initial period of accelerated release, these arrests would represent an increase of only approximately 0.3% during that period. Rep. Tr. at 1490:17-1491:25; *see also* Aug. 27, 2008 Austin Supp. Report at 10; Rep. Tr. at 1479:13-1480:5. Similarly, the impact of the proposed diversion of technical parole violators and low-risk offenders on the total number of arrests in each county, and statewide, would be an increase of less than 1%. *See* Aug. 27, 2008 Austin Supp. Report at 10. All of these individuals would in any event be released to the community after a fairly short period of incarceration, following their going through the churning process, in which they are subjected to criminogenic influences. Further, all of the figures noted above are consistent with the testimony described earlier that plaintiffs' proposed population reduction measures do not threaten public safety or the operation of the criminal justice system.

Any increase in the arrests of parolees resulting from the population reduction measures would actually be smaller than that calculated by Dr. Austin and by many defendant-intervenors. These witnesses assumed that prisoners released due to good time credits or diverted to alternative sanctions would recidivate at a rate of 70% over a three-year period, the average recidivism rate for all prisoners in California. *See, e.g.*, Rep. Tr. at 2628:8-25 (Austin); Dyer Am. Report ¶ 18; Dostal Trial Decl. ¶ 14. However, if a risk assessment instrument were used to implement such measures, the CDCR would be able to identify low-risk inmates whose likelihood of recidivism would be considerably lower than that of the average inmate. Rep. Tr. at 2628:8-25 (Austin); *id.* at 2133:8-11 (Krisberg) ("If one is selecting low risk inmates, you would expect the recidivism rate would be lower because that 70 percent rate consists of people with much higher risk and people with lower risk."). According to Director Hoffman, low-risk inmates have an average recidivism rate of just 17%. Rep. Tr. at 1750:1-6. Furthermore, as we found above, it is likely that recidivism rates would begin to drop as plaintiffs' proposed measures were implemented. The proposed population reduction measures would therefore not result in a significant additional burden on the ability of law enforcement officers to investigate or prosecute crime.

2. Effect on Jail Population

Defendant-intervenors also presented credible evidence that California's jails are, for the most part, already overcrowded, resulting in adverse public safety and criminal justice effects. Thirty-two of California's county jails are under some type of court-ordered population cap, Rep. Tr. at 2198:3-9 (Bennett); Ex. DI-774,[84] and many that are not have inmate populations close to or above their design capacity. *E.g.*, Rep. Tr. at 2684:22-23, 2686:15-22 (Ryan); Boesch Trial Decl. at 12. As expected, this overcrowding – even at levels much lower than in the state prison system – has limited the counties' capacity to provide services in the jails or to maintain a safe correctional environment for the detainees, the staff, and the community. *See*, *e.g.*, Boesch Trial Decl. at 12; Munks Trial Decl. ¶¶ 7-9; Rep. Tr. at 2702:5-17 (Ryan); Dostal Trial Decl. ¶¶ 15, 17.

As a result of this crowding problem, counties already routinely engage in the early release of jail inmates. *See, e.g.*, Rep. Tr. 1803:23-1804:9 (Smith) (stating that in 2007, Los Angeles County released about 50,000 inmates early from its jails); Rep. Tr. at 2364:17-19 (Dyer); Rep. Tr. at 2378:13-18 (Pacheco); James Trial Decl. ¶ 19; Ingrassia Trial Decl. ¶¶ 12-13 (Sheriff's Commander assigned to San Diego County Sheriff's Detention Services Bureau). County law enforcement officials testified that any significant limit on the prison population would force them to initiate the early release of jail inmates or to expand extant early release programs to include higher-risk inmates. *See, e.g.*, Rep. Tr. at 2388:8-2391:16 (Pacheco); *id.* at 2668:7-14 (Christianson) (Stanislaus County Sheriff-Coroner); Munks Trial

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[84]Many of the caps for the county jails are set at or near 100% design capacity. *See* Ex. DI-774.

Decl. ¶¶ 11-12; Ingrassia Trial Decl. ¶ 12. According to these witnesses, such early releases lower the deterrence value of incarceration, increase crime, reduce incentives for offenders to participate in programming, and result in a high failure-to-appear rate for pre-trial defendants who are not incarcerated. *See, e.g.*, Aug. 15, 2008 Bennett Report ¶ 27; Rep. Tr. at 1179:18-1180:3 (Powers); *id.* at 1819:9-1821:19 (Smith).

We need not determine whether an acceleration of early release from jails would have the pernicious effects anticipated by the law enforcement witnesses because evidence shows that any increase in parolees and probationers resulting from plaintiffs' proposed population reduction measures would not have a significant effect on the population of the county jails. These measures would adversely affect the jail population only if the additional parolees or probationers in the community were incarcerated in jail for arrests for new crimes or as a sanction for failing to complete community-based diversion programs. As Sheriff Munks of San Mateo County noted, however, only "a very, very small percentage of th[e] overcrowding [in jails] is attributable to parolees who have been arrested and returned to [the] jail." *Id.* at 1790:16-17 (Munks). Given the small adverse effect that the increase in parolees and probationers would have on the total arrests in each county, this increase is not likely to have a significant effect on the county jail population.[85] *See id.* at 1409:2-23 (Austin); *see also id.* at 1830:21-1831:23 (Smith) (population reduction order of 52,000 inmates, even when calculated using the high 67.5% recidivism rate, would result in an increase of only 20 admissions a day in the Los Angeles County jail system, which books from 300 to 1,100 inmates every day). The diversion of technical parole violators could even serve to reduce the jail population because those offenders would no longer have to be kept in county jail pending their transfer to CDCR facilities. Aug. 15, 2008 Austin Report ¶ 88.

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[85]We reject some of the witnesses' calculations of the impact of a population reduction order on the county jails. Sheriff Munks, for example, agreed during trial that the method he used to calculate the impact of a population reduction order on the jail population was inconsistent with the county's current experience with parolees. Rep. Tr. at 1794:19-22. Sheriff-Coroner Christianson admitted that he did not know how his staff calculated the estimated impact on his jail population. *Id.* at 2680:4-7.

In any event, the implementation of plaintiffs' proposed population reduction measures would not significantly exacerbate overcrowding in the various county jails.

3. Effect on Parole Supervision Resources

Plaintiffs' proposed population reduction measures would result in an increase in the population of parolees in the community at any given moment. Defendant-intervenors argue that the parole departments would not be able to supervise the increased number of parolees, and that inadequate supervision would lead to an increase in recidivism. They presented evidence that, even at present, parole departments are overburdened and cannot adequately supervise the parolees, leading to parolees' failure to integrate into society. *See, e.g.*, Dyer Am. Report ¶¶ 6, 32; Rep. Tr. at 1856:13-21 (Word).

The evidence shows, however, that many of the current problems with parole supervision are created by the poor allocation of resources. California's parole system is significantly out of step with that of the other states. California is the only state that puts every inmate leaving the prison system on parole, usually for one to three years. Rep. Tr. at 1756:16-22 (Hoffman); Ex. P113 at 75 (Rehabilitation Strike Team Report). "The upshot is that California's parole system is so overburdened that parolees who represent a serious public safety risk are not watched closely enough, and those who wish to go straight cannot get the help they need." Ex. P113 at 15.

The evidence conclusively showed that public safety would not be adversely affected by releasing low-risk, nonserious, nonviolent offenders from the prison system without placing them on parole supervision. Such individuals can be identified using a risk assessment tool. *See* Rep. Tr. at 1406:6-1407:10 (Austin). Hoffman, the CDCR's Director of Adult Parole Operations, testified that "the science and evidence . . . do[] support a conclusion that there is a percentage of the parole population that shouldn't be supervised or supervised very little; that at the low end of the spectrum supervision is counter productive." *Id.* at 1758:6-10. Secretary Woodford also opined that reducing the supervision of low-risk offenders would reduce recidivism and crime, *see id.* at 1323:9-24 (Woodford), and the Rehabilitation Strike Team's report reached the same conclusion, Ex. P113 at 15-17. Most of the states in the country do not supervise low-risk offenders at all. Rep. Tr. at 1759:23-1760:7 (Hoffman).

Parole could also be shortened to one year for those who comply with their terms of release and meet certain other criteria. This "earned discharge" strategy for parolees would provide incentives for parolees to conform to their parole supervision requirements or to participate in programming. Ex. P2 at 13 (CDCR Expert Panel Report); Ex. P113 at 82-84 (Rehabilitation Strike Team Report); Ex. P600 at CDCR015633 (CDCR Division of Adult Parole Operations, "White Paper: Earned Discharge"); *see also* Aug. 15, 2008 Austin Report ¶ 53. At the same time, it would not adversely affect recidivism because there is no proven relationship between time on parole and recidivism. Aug. 15, 2008 Austin Report ¶ 77. It would also allow the CDCR to reallocate resources to moderate- and high-risk offenders "who require, and benefit from, improved supervision and evidence based programming." Ex. P600 at CDCR015633. Such strategies have been successful across the nation in lowering recidivism rates. *Id.* Both the Governor's Rehabilitation Strike Team and the CDCR Expert Panel recommended implementing the earned discharge strategy for parolees as a way to improve the parole system and reduce recidivism. Ex. P2 at 13; Ex. P113 at 16-17.

Based on this evidence, we find that shortening the length of parole or limiting the use of parole for certain offenders would ease the present burden on the parole system. These reform efforts would also improve the public safety impact of the parole system by concentrating resources on high-risk offenders who need supervision and by offering incentives to all offenders to participate in rehabilitative programming.

Both Dr. Austin and the CDCR Expert Panel included parole reform along the lines described above in their packages of measures to reduce the prison population without adversely affecting public safety or the operation of the criminal justice system. We find their recommendations persuasive, and conclude that the implementation of parole reform – which is already in progress – would allow local parole systems to safely absorb any increase in the number of parolees resulting from the proposed population reduction measures.

4. Impact on Community Corrections, Rehabilitative Services, and Re-entry Programs

Defendant-intervenors also argued that the influx of parolees and probationers in communities as a result of plaintiffs' proposed population reduction measures would strain the community corrections system, rehabilitative services, and re-entry programs. They presented evidence that there are not enough community correctional resources to supervise or provide services to offenders who are diverted from the prison system to the communities.[86] *E.g.*, Rep. Tr. at 2384:3-14 (Pacheco); *id.* at 1030:3-21 (Powers); Cogbill Trial Aff. ¶¶ 35-36. The caseload for probation officers in Los Angeles County, for example, is upwards of 1000:1, while the recommended caseload is between 30:1 and 50:1. Dalton Am. Trial Decl. ¶ 32; *see also* Meyer Am. Trial Decl. ¶¶ 18, 20. Many cases are largely unsupervised, so that the officers can focus on cases that require more intense supervision or on emergency situations. *E.g.*, Meyer Am. Trial Decl. ¶¶ 20, 24; Rep. Tr. at 1030:7-21 (Powers).

Defendant-intervenors also presented evidence that both diverted offenders and offenders coming out of California's prisons and reentering the communities have significant needs in the areas of mental health, substance abuse treatment, other medical services, family services, employment, and housing. *See, e.g.*, Cogbill Trial Decl. ¶ 29; Dalton Am. Trial Decl. ¶¶ 30-31; Johnson Trial Decl. ¶ 2 (Director of San Mateo County Human Services Agency); Oct. 16, 2008 Bennett Supp. Report at 2-4; Ex. DI-218 at 1 (Report of the Re-Entry Policy Council). Evidence shows that counties lack the resources to meet those needs even now. *See* Rep. Tr. at 2073:15-2074:14 (Conklin) (San Diego County Sheriff's Department Detentions Chief Mental Health Clinician); *id.* at 2456:7-14 (Pena) (Santa Clara County Director of Mental Health); *id.* at 2492:13-22 (Garner); *id.* at 2511:25-2512:5 (Bataille) (defendants' expert); Aug. 15, 2008 Graves Report at 5-6; Cogbill Trial Decl. ¶ 7; Pena Trial

[86]The increase in the population of probationers would not occur as a result of the expansion of earned credits or the diversion of technical parole violators. It would occur only if the state decides to reduce the prison population by diverting low-risk offenders to probation.

Decl. ¶¶ 11, 15; Aug. 15, 2008 Pena Report at 3-5; Word Trial Decl. ¶ 26; James Trial Decl. ¶ 34.[87] The gap between the needs and availability of services contributes to the high level of recidivism among parolees. Cogbill Trial Decl. ¶ 7.

Because the community re-entry and rehabilitation services in most counties, if not all, are inadequate to serve the current population, those released into the communities as a result of the proposed population reduction measures would either not receive services in the community promptly or would displace other people who are currently receiving services. *See* Rep. Tr. at 2495:5-13 (Garner); *id.* at 2699:23-2700:3 (Ryan). Such a result could be mitigated, however, through a population reduction plan that created only a gradual increase in the number of parolees or probationers in each county. Moreover, the increased needs in each county resulting from the population reduction measures proposed by plaintiffs are likely to fall within normal fluctuations in the number of people served by the counties. *See, e.g.*, Rep. Tr. at 2442:2-8 (Pena) (stating that the Santa Clara mental health system serves a dynamic population of between 17,000 and 19,000 clients each year); Pena Trial Decl. ¶ 18 (estimating that the proposed population reduction order would result in an additional 100 to 700 individuals in Santa Clara County needing mental health services).

Furthermore, overwhelming evidence establishes that diversion would be successful and that the proposed population reduction measures would have no adverse effect – and would in fact improve public safety – if the state were to divert some portion of the savings generated by the population reduction to community corrections, rehabilitation, and re-entry resources. *See, e.g.*, Rep. Tr. at 1828:2-19 (Smith) (opining that his concerns would be ameliorated if the state redirected funding to the counties); *id.* at 1573:1-1574:3 (Beard) (testifying that funding community services could compensate for the 0.3% increase in arrests of parolees). The programs are already in place, and better coordination between the

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[87]Although community public mental health programs are not intended to serve parolees, Rep. Tr. at 2550:9-19 (Bataille), parolees still rely on county services at times. *See, e.g.*, *id.* at 2432:16-22 (Pena) (testifying that in Santa Clara, approximately 60% of parolees receiving state outpatient services also accessed county services); *id.* at 2550:24-25 (Bataille) (testifying that county systems still triage parolees in need of psychiatric emergency services).

state and the counties, alongside additional funding, could make these services available to a larger portion of the population. *See*, *e.g.*, Aug. 15, 2008 Garner Report at 6; Meyer Am. Trial Decl. ¶ 69. In any event, as noted already, the additional demand for community resources created by a population reduction is likely to fall within existing fluctuations in demand, and thus would not result in any significant changes at the county or local level.

We have no question that the entire criminal justice system and the state itself, as well as the local communities, would be well-served if the state would help fund some of the county programs that are designed to help parolees, probationers, and other persons convicted of criminal offenses with problems such as drug and alcohol addiction, mental illness, job training, and rehabilitation generally. Such programs would certainly help to reduce the crime rate and make the local communities safer places in which to live. Whether to do so, however, is a question as to how the state wishes to expend its resources that must be answered by the state's elected officials and not by this court. We can only note that should the officeholders of California and their constituents wish to raise the level of safety of the state's communities by increasing the availability of programs that facilitate the orderly re-entry into society by former prisoners, they are free to appropriate the necessary funds to do so in a manner that will not divert such funds from other important societal needs. There is no bar to the people's financing of projects they deem desirable through new tax revenues or the issuance of additional state bonds.

5. Impact on Integrity of Criminal Justice System

David Bennett, a criminal justice consultant and expert witness for Defendant-Intervenor Sonoma County, opined that "[t]he closing of the front door to the prisons and resulting jail overcrowding, combined with a reduced capacity to locally sentence lower level offenders (such as misdemeanants) will *compromise the criminal justice system's ability to hold offenders accountable*." Aug. 15, 2008 Bennett Report ¶ 30 (emphasis in original). He anticipated that this would result in a loss of system integrity because, among other negative effects, offenders would not be held accountable for criminal behavior, district attorneys might stop prosecuting certain crimes, and judges might modify sentences to accommodate the overcrowding in jails. *Id.* ¶¶ 35-37.

Bennett's opinion was based on the assumption that a population reduction order would involve closing the front door of the prisons. *Id.* ¶ 30. None of the measures proposed by plaintiffs or considered here would require such an extreme result. Moreover, as illustrated above, the measures would not result in a loss of deterrence or cause an increase in jail overcrowding; they would simply affect where offenders serve their sentences and whether they might be released a few months earlier, with no effect on the state's ability or incentive to arrest, prosecute, or imprison new offenders. We thus find that a prison population reduction could be achieved without the negative impact on the integrity of the criminal justice system predicted by Bennett.

6. Weight To Be Given Public Safety

As demonstrated above, we have given substantial weight to the question of the effect of our order upon public safety and the operation of the criminal justice system. While we conclude that there is no adverse effect, were we in error and were there in fact some adverse effect, it would be small, given the number and types of individuals to be released early or diverted to non-prison settings, and given the number of counties, and the size of the state and its population. Even considering the possibility of a minor adverse effect, we would, in view of the extremely serious injuries that continue to result from the long-standing constitutional violations at issue, be required to grant (with the modification set forth in our order) the relief that plaintiffs seek.

D. Feasibility Notwithstanding the Present Fiscal Crisis

In concluding that the plaintiffs' proposed population reduction measures could safely reduce the population of California's prisons, and that such a reduction would not have a significant adverse effect in California's communities, we do not ignore the state's current economic difficulties. The fiscal crisis does not, however, alter our conclusions.

There will be a substantial fiscal savings to the state as a result of the reduction in the size of the prison population. According to Deputy Cabinet Secretary Robert Gore, the approximate cost of housing a prisoner is $43,000 per year. Ex. P163 at DEFS036906 (Jan. 10, 2008 Mem. from Robert Gore re: Governor's CDCR Rehabilitation Strike Team Final Report). Under the order establishing a population cap, the size of the prison population will be reduced by approximately 46,000. The changes leading to that reduction recommended by plaintiffs, such as an increase in good time credits followed by early release, diverting technical parole violators and modifying parole requirements, and diverting low-risk offenders with short sentences, involve no fiscal cost. Other changes recommended by various state commissions and committees can also be adopted without any state funding. There are other state actions that all agree would help reduce crime significantly on both a short- and a long-term basis if taken along with the prisoner reduction measures. They involve helping fund community re-entry programs, such as drug and alcohol treatment, job training, mental health therapy, and half-way houses. Although California's prison population could be reduced without adopting or strengthening such local programs, the benefit to the state of investing in them would be considerable. Whether or not to make such an investment, however, is, as we observed previously, a matter for state officials, not the court, to decide. In any event, the present fiscal crisis would be alleviated rather than worsened by a prisoner release order.

E. <u>Inclusion of Mentally Ill Inmates in Any Population Reduction Order</u>

The state has suggested that, should we issue a population reduction order, we should nonetheless exempt seriously mentally ill inmates from release pursuant to our order. However, there is no public safety reason to treat mentally ill inmates differently from other inmates as a categorical matter.

Under the current system, mentally ill inmates are regularly released when their prison sentences end. Although these inmates reportedly have higher recidivism rates than non-mentally ill inmates, evidence shows that mentally ill inmates who are released do not, by virtue of their mental illness, present any higher risk than other released inmates. Much of the high recidivism is attributable to noncompliance with parole conditions related to the disorganization produced by mental illness. Ex. P715 at 5 (July 2007 CDCR Division of

Adult Parole Operations report entitled "Mentally Ill Parolee Population"). Dr. Gilligan, a psychiatrist and an expert on mentally ill offenders, testified that, based on research throughout the United States and also in California specifically, mentally ill parolees are not more likely to commit violent crimes after discharge than are non-mentally ill parolees. Aug. 15, 2008 Gilligan Report ¶¶ 34, 36-39; Rep. Tr. at 1608:12-25 (Gilligan). Rather, the risk factors for violence, such as substance abuse, family dysfunction, and character disorders, are comparable for the mentally ill and non-mentally ill. Aug. 15, 2008 Gilligan Report ¶ 40. Defendants' expert Dr. Packer agreed that "the research literature does not suggest that mentally ill offenders pose a higher risk of violence than their non-mentally ill counterparts." Oct. 1, 2008 Packer Addendum at 1. Another expert for defendants Gale Bataille, the former director of the of Behavioral Health and Recovery Services for San Mateo County, testified that mental illness has a high rate of co-occurrence with substance abuse, which is a predictor of violence, but agreed that mental illness by itself is not a significant indicator of violence. Bataille Rebuttal Report at 2; Rep. Tr. at 2514:6-20; *see also* Oct. 1, 2008 Packer Addendum at 2 (stating that "mental illness is a risk factor for violence, particularly if the individual also abuses substances and has acute psychotic symptoms," but opining that "[t]his does *not* mean that mentally ill inmates should, by virtue of their mental illness, be considered higher risk than other inmates" (emphasis in original)).

The testimony from the mental health care experts was unanimous that mentally ill people who are receiving proper mental health treatment pose no greater risk to the community than those who are not mentally ill. Rep. Tr. at 2209:25-2210:23 (Stewart); Oct. 1, 2008 Packer Addendum at 1-2; Rep. Tr. at 1640:4-10 (Gilligan); Bataille Rebuttal Report at 2; *see also* Ex. DI-219 at 6 (June 2006 UCLA Integrated Substance Abuse Program Neuropsychiatric Institute report entitled "Final Report on the Mental Health Services Continuum Program of the California Department of Corrections and Rehabilitation – Parole Division"). Therefore, population reduction measures involving the successful diversion of offenders and technical parole violators to community mental health programs instead of prison would not have a negative impact on public safety. The diversion of mentally ill technical parole violators might even improve public safety because the current churning of mentally ill parole violators in and out of crowded prison reception centers is especially disruptive to their treatment needs and re-entry success. Aug. 15, 2008 Gilligan Report ¶¶ 32-33; Aug. 15, 2008 Stewart Supp. Report ¶ 136.

Numerous witnesses for defendants supported the diversion of mentally ill offenders. Dr. Packer, defendants' mental health expert, did not support the mass early release of the mentally ill but recommended diversion of mentally ill offenders to community-based programs as an effective population reduction measure. Rep. Tr. at 1086:15-1087:22. Director Bataille also supported community diversion. *See* Aug. 15, 2008 Bataille Prelim. Report at 19. Director Hoffman testified that the CDCR has, consistent with public safety, already stopped returning parolees to custody for technical violations resulting from their mental illness when programs are available. Rep. Tr. at 1766:15- 1767:19; Hoffman Trial Aff. ¶ 29; Ex. D1195 (Jan. 12, 2007 Mem. from CDCR Secretary James E. Tilton to the Division of Adult Parole Operations). He also stated that, like all other parolees, mentally ill parole violators can be given intermediate sanctions using the "Parole Violation Decision Making Instrument." Hoffman Trial Aff. ¶ 30.

The disagreement among the experts centered not on whether diversion would be harmful to public safety, but on whether California's communities had sufficient community mental health programs to support the early release or diversion of mentally ill parolees. Plaintiffs' experts testified that the impact of the inclusion of some *Coleman* class members in the population reduction measures would not be significant. Dr. Stewart calculated that, assuming a reduction in the prison population by 50,000 inmates, there would be about 10,000 more *Coleman* class members in the community over a period of time. Out of that group, about 8,500 people would be at the CCCMS level and would need minimal care in the community. Rep. Tr. at 2211:3-15. About 650 additional people per year would need enhanced outpatient care, but that would not pose a significant burden on the current system, which serves 69,000 people. *Id.* at 2211:18-2212:7. Finally, only 100 additional people each year would need DMH-level care, which would not be a significant additional burden on a system that currently treats 43,000 people annually. *Id.* at 2212:8-21. Dr. Stewart also testified that the number of people needing care may be lower because the class members' mental health conditions would improve once they left prison. *id.* at 2211:18-2212:21; *see also* Aug. 27, 2008 Gilligan Rebuttal Report ¶¶ 10-11.

Defendants' experts contested these numbers and their significance. Dr. Packer stated that it is not necessarily true that mentally ill inmates will do better outside of prisons and opined that it is more common for some mentally ill individuals to function at a higher level while in prison. Oct. 1, 2008 Packer Addendum at 3. Dr. Packer also testified that elements for successful release – pre-release planning, coordination with community providers, access to systems of care in the community, and availability of community programs – are not currently fully functioning within the CDCR, and that an accelerated release of mentally ill prisoners would exacerbate those problems. *Id.* at 2. Director Bataille opined that most California communities are not prepared for, or capable of, providing the community mental health and treatment services necessary to support an accelerated release of mentally ill inmates, and that the problem is not only funding but also a lack of trained professional staff. *See* Aug. 15, 2008 Bataille Prelim. Report at 5-18. Other witnesses testified that counties are unable to serve their mentally ill populations now. *See, e.g.*, Rep. Tr. at 2456:7-17 (Pena); Dalton Trial Decl. ¶ 31; Conklin Trial Decl. ¶ 41; Meyer Am. Trial Decl. ¶¶ 64-65.

We credit the testimony that community mental health programs are overburdened in many, if not most, California communities. Still, the *Coleman* class may safely be included in the state's population reduction measures in any number of ways. For example, as Director Bataille suggested, a diversion or earned credits program could be structured so that only those mentally ill individuals with the greatest level of psychiatric stability and the greatest potential to "voluntarily" follow up on outpatient care would be eligible, at least until appropriate community programming is in place. Aug. 15, 2008 Bataille Prelim. Report at 4.

Moreover, credible evidence demonstrates that treating mentally ill offenders outside prison is more effective and less costly than treating them in prison. *See* Gilligan Rebuttal

Report ¶ 11 (stating that "mental health treatment in the community is more likely to be successful and effective than similar treatment would be in the social environment of the prison"); Rep. Tr. at 1747:9-16, 1753:24-1755:5 (Hoffman) (affirming that providing mental health care for parolees is cheaper than providing it for inmates); *id.* at 2450:14-2451:7 (Pena) (acknowledging that it costs about $24,000 less per year to provide a therapeutic bed in the community than to incarcerate a mentally ill person). There was also unrebutted testimony that it is easier to recruit and hire qualified mental health professionals in civil hospital and clinic settings than in prisons. Aug. 27, 2008 Gilligan Rebuttal Report ¶ 17. In light of the abysmal qualify of the mental health care presently available to California's inmates, it is unlikely that any mentally ill inmates released by the state will find their mental health treatment seriously compromised by their release from prison.

We recognize that expanding community programming would require an increase in professional staff at the community level; however, as with other types of programming, this would require a shift in, rather than an infusion of, resources. The state has already begun to expand parolee services, *see* Hoffman Trial Aff. ¶ 32, and also has a roadmap for further expansion of programming in the CDCR Expert Panel Report. Defendants' expert Director Bataille agreed that a population reduction could be achieved and sustained by following the recommendations contained in the CDCR Expert Panel Report, including its recommendation for expanding the communities' capacity to provide programming. Aug. 15, 2008 Bataille Prelim. Report at 19. Collaboration between the mental health and criminal justice systems could also begin to address the resource gap. *See* Rep. Tr. at 2534:7-2535:11 (Bataille).

On the basis of this evidence, we conclude that mentally ill inmates could, under appropriate conditions, be included in the proposed population reduction measures without any adverse effect on public safety or the operation of the criminal justice system.

F. <u>Empirical Evidence on Incarceration and Crime Rates</u>

We acknowledge the concern of some law enforcement officials that incarceration serves the interest of incapacitation over the life of a repeat offender. *See, e.g.*, *id.* at

1181:5-13 (Powers). To that extent, there is likely some correlation between incarceration rates and crime rates. Indeed, according to plaintiffs' experts, some studies have concluded that every ten percent increase in the incarceration rate results in a two to four percent decrease in the crime rate, *id.* at 1582:1-3 (Beard); *id.* at 2032:4-12 (Lehman), and that massive incarceration rates have contributed to a 25% reduction in violent crime across the United States, *id.* at 1447:18-1450:23 (Austin).

This testimony does not, however, persuade us that California's prison population could not be reduced without adversely affecting public safety.[88] First, even if we credit these studies, population reduction measures could still have a net positive impact on the crime rate. For example, defendants introduced Exhibit D1331, a report by the Washington State Institute for Public Policy, for the proposition that incarceration rates and crime rates correlate. *See* Rep. Tr. 2030:14- 2032:12 (questioning of Dr. Lehman by defendants' counsel and related colloquy with the court). That same report, however, concluded that the decrease in recidivism resulting from an expansion of evidence-based programming would outweigh any potential adverse impact on crime rates resulting from decreased incarceration rates. *See* Ex. D1331 at 15.

Second, the evidence supported Dr. Austin's testimony that there is still disagreement as to the validity of the research connecting incarceration rates to crime rates, Rep. Tr. at 1450:20-23, and that "[r]esearch on crime and incarceration does not consistently indicate that the massive use of incarceration has reduced crime rates," Aug. 15, 2008 Austin Report ¶ 20. In fact, with regard to the relationship between incarceration and crime in California, both defendants' expert Dr. Marquart and Professor Petersilia concluded that the decline in violent crime in California in the past decade "is not likely to be a function of the state's approach to corrections." Rep. Tr. 2001:9-2002:18 (Marquart) (agreeing that "it would be a

[88]We also note that the same studies referred to by plaintiffs' experts found that increasing the incarceration rate becomes counterproductive once the incarceration rate reaches a certain inflection point. *E.g.*, Rep. Tr. at 1582:1-13 (Beard); *see also id.* at 1447:18-1450:23 (Austin). At its present incarceration rate of 470 per 100,000, California is close to the inflection point at which further incarceration would not be productive. *Id.* at 1582:1-13 (Beard).

mistake to conclude that the decline in the California crime rate is a result of its incarceration policies"); Ex. P5 at 2. As we have already noted, it is likely that "[t]he overwhelming and undisputed negative side effects of incarceration and crowding far outweigh the potential, unproven benefits of incarceration" in California. Aug. 15, 2008 Austin Report ¶ 23.

Moreover, Dr. Austin and Dr. Krisberg testified that the historical data and empirical research regarding early release programs across the country show no significant relationship between crime rates and early releases. Aug. 15, 2008 Austin Report ¶¶ 19, 27-42; Rep. Tr. at 2159:20-2162:7 (Krisberg); *see also* Ex. DI-204 at 1. Their testimony, like that of Dr. Beard and Secretary Lehman, who both implemented prison population reduction measures in other prison systems, confirms that it is possible to lower the prison population without an adverse impact on crime or public safety. For example, in Washington, the state legislature prohibited sending technical parole violators to prison, instituted graduated sanctions, and expanded good time credits. Rep. Tr. at 2004:24-2005:14, 2006:23-2007:18 (Lehman). Secretary Lehman, the former secretary of corrections in Washington, testified that these measures did not have any "deleterious effect on crime" or public safety. *Id.* at 2008:18-2009:14.

Secretary Lehman further testified that, during his tenure as secretary of corrections in Pennsylvania, sentencing reforms that made it more likely for an offender to be diverted into the community did not have any adverse impact on public safety. *Id.* at 2007:19-2008:24. Dr. Beard, the current secretary of corrections in Pennsylvania, testified that he had "spent a lot of time in the last seven years studying what other states have done and looking for ways that we can better manage our population from a public safety perspective, from a population control perspective, and from a cost perspective." *Id.* at 1552:19-24. He played a role in passing legislation in Pennsylvania that allowed for, among other things, intermediate punishment instead of incarceration, incentive credits for evidence-based programming, and parole reform. *Id.* at 1549:10-1550:14, 1552:1-18. Rather than having an adverse impact, these reform measures have served to improve public safety. *Id.* at 1552:19-1553:3.

Dr. Austin – who has thirty years of experience in correctional planning and research and has personally worked with correctional systems in eight states to reduce their prisoner populations, Nov. 9, 2007 Austin Report ¶¶ 2, 5 – similarly testified that a number of population reduction measures have been adopted in various states without an adverse impact on public safety: diversion of technical violators in Kansas and Washington, Rep. Tr. at 1392:21-1393:5, 1399:11-15; good time credits in Illinois,[89] Nevada, Maryland, and Indiana, *id.* at 1398:11-1399:1, 1399:11-15;[90] and implementation of "large community corrections diversion programs" in Ohio and Michigan, where "the state basically is paying the counties to hold people at the county level who otherwise would go to prison," *id.* at 1399:5-15. In Nevada, the legislature expanded the award of good time credits to prisoners, probationers, and parolees in 2007, which reduced the prison population without any known increase in crime, arrests, or court filings as of July 2008. Aug. 15, 2008 Austin Report ¶ 36. In New York, the prison population decreased due in part to the expansion of programs awarding good time credits, and not only did the crime rate not increase, it "declined substantially." *Id.* ¶¶ 27-28.

Dr. Krisberg also reviewed empirical research analyzing early release programs over the past twenty years in Canada, California, Washington, Wisconsin, Illinois, Texas, Colorado, Montana, Michigan, and Florida, and found that such programs do not endanger public safety. Sept. 8, 2008 Krisberg Report at 4-5. Dr. Krisberg reported that early release produced lower recidivism rates for released inmates when the release targeted low-risk offenders and made provisions for community-based supportive services. *Id.*

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[89]Dr. Austin's report regarding Illinois stated his opinion that early release should only be used as a short-term measure for prison overcrowding. Ex. DI-785 at 3614 (James Austin, *Using Early Release to Relieve Prison Crowding: A Dilemma for Public Policy*, 32 Crime Delinquency 404 (1986)). Nonetheless, the article concluded that there was an overall cost savings to the state as a result of early release, with "relatively lower costs to local public criminal justice agencies stemming from arrests of the early releases." *Id.* at 3700. This is not inconsistent with Dr. Austin's testimony in this case.

[90]Although Dr. Austin stated that he did not endorse early release as a long-term remedy, Rep. Tr. 2610: 8-2611:1, it was not clear whether his testimony on that point related to the expansion of good time credits or generic release. In any event, he testified that the prison population could be lowered safely through the expansion of good time credits and other measures. Aug. 15, 2008 Austin Report ¶ 43.

District Attorney Pacheco of Riverside County opined that a generic early release program from California prisons would increase crime, as it had in other jurisdictions like Florida, Illinois, Philadelphia, and Los Angeles. Rep. Tr. at 2380:20-2381:9. His opinion, however, appeared to be based largely on newspaper articles reporting specific crimes that occurred during the early release period, and not on a broader analysis of crime rates. *See* Pacheco Decl. ¶ 23 & Ex. C. Moreover, Mr. Pacheco discussed only a generic early release and failed to consider whether some of the adverse impacts he fears would be mitigated by basing early release decisions on an improved system of earned credits or by instituting a diversion program or other measures proposed by plaintiffs. *See* Rep. Tr. at 2379:17-23 (discussing only generic early release).

Dr. Marquart, defendants' sole witness on population reduction measures and public safety, stated that he opposed any prisoner release order in part because the early release measures implemented in Texas in the 1980s to meet a 95% population cap caused an increase in crime.[91] *Id.* at 1956:14-20, 23-24, 1957:12-18. However, he also testified that he did not know how much of the increase in crime was attributable to the early release program, as opposed to other factors. *Id.* at 1984:16-1985:9. Indeed, the basis for Dr. Marquart's opposition to any reduction in the prison population appeared to be not the Texas experience but, instead, his opinion that he "didn't know what the consequences would be, not that it would be a disaster," *id.* at 1990:22-24. According to Dr. Marquart, reducing the prison population could have a negative impact on public safety, it could have no impact, or it could have a positive impact. *Compare id.* at 1990:17-24; *with id.* at 1995:8-20. Such equivocal testimony is not helpful to the court. In any event, Dr. Marquart stated that he was not opposed to the expansion of good time credits, parole reform, or evidence-based programming, and further stated that the prison population could be reduced in a safe manner through proper programming. *Id.* at 1991:22-1993:18, 1994:17-25. The Texas prison

[91]Neither the number of inmates who were released early nor the length of time by which their incarceration was shortened is apparent from Dr. Marquart's testimony. Dr. Austin, however, stated that his recommended amount of good time credits is less than the amount awarded to Texas prisoners between 1980 and 1989, and the amount presently awarded in that state. Aug. 27, 2008 Austin Supp. Report ¶ 20(e).

population, in fact, has recently been reduced safely by diverting technical parole violators and increasing the state's parole grant rate using risk-based guidelines. Aug. 27, 2008 Austin Supp. Report ¶ 20.

To the extent that District Attorney Pacheco, Dr. Marquart, or any other witness opined that *any* population reduction measure applied to California prisons would result in an adverse public safety impact, we reject that opinion. If anything, such testimony shows only that the CDCR should implement population reduction measures mirroring those of the jurisdictions that have successfully and safely reduced their inmate populations. We credit the testimony from experts who, through careful study and experience in a number of jurisdictions, arrived at the opinion that a population reduction, through a combination of earned credits, parole reform, and diversion, could be accomplished in a manner that preserves public safety and the operation of the criminal justice system. Moreover, California's present system of churning inmates into and out of overcrowded and criminogenic prisons itself poses a threat to public safety. Thus, any increase in the crime rate associated with lowered incarceration rates could be substantially offset, and perhaps entirely eliminated, by the public safety benefits of ridding the system of churning and reducing the criminogenic effect of spending time in California prisons.

G. <u>Findings and Conclusions</u>

We take seriously our duty to consider public safety, and we have done so. We do not construe this PLRA requirement, however, to preclude a population reduction order based on a possibility that the order *might* have an adverse impact on public safety or the operation of the criminal justice system, no matter how small. If that were enough to prevent the court from ordering a population cap, no court would ever be able to impose such a remedy, thus contravening the congressional intent that a population cap be ordered if "it is truly necessary to prevent an actual violation of a prisoner's federal rights." H.R. Rep. No. 104-21, at 25.

Based on our detailed findings examining the evidence from correctional and public safety experts around the state and across the country, we are confident that a prison population reduction to 137.5% design capacity can be achieved in California without a meaningful adverse impact on public safety or the operation of the criminal justice system.[92] The evidence and testimony from plaintiffs, defendants, and defendant-intervenors overwhelmingly showed that there are ways for California to reduce its prison population without such an adverse impact, and that a less crowded prison system would in fact benefit public safety and the proper operation of the criminal justice system.

The population reduction measures that we specifically considered include the expansion of earned credits, the diversion of technical parole violators, the diversion of low-risk offenders to community corrections, and the expansion of evidence-based programming. These measures were recommended not only by plaintiffs' experts but also by experts for defendants and defendant-intervenors, the Governor, CDCR officials, and the CDCR Expert Panel. Because these measures either have no impact on or reduce the recidivism rate, they would not adversely affect public safety. Furthermore, unlike measures such as indiscriminately and suddenly releasing inmates or closing prison doors to further admission, the measures we considered would not have a significant adverse impact on the operation of the criminal justice system. Any adverse impact on community resources resulting from these measures could readily be mitigated by parole reform and the reallocation of funding and resources. It follows from the many reports we have discussed that other methods of reducing the prison population such as sentencing reform and the release of members of groups that are least likely to recidivate, such as the aged and the infirm as well as low-risk prisoners nearing the end of their sentences, do not pose any threat to public safety.

Other jurisdictions have successfully reduced their prison populations through measures similar to those proposed by plaintiffs and the other reforms discussed herein, and we find that California could also do so. In fact, California could do so perhaps more easily

[92]*Duran*, 760 F.2d 756, a pre-PLRA case, does not suggest a different outcome. In *Duran*, the court of appeals vacated the district court's order directing the release of pretrial detainees after finding that the order would adversely affect the public interest. *Duran* involved the release of detainees without the use of any risk-based instrument, and the uncontested evidence before that court showed that many of the released inmates would become fugitives or commit felonies while awaiting trial. *See id.* at 757-58. By contrast, the evidence before this court establishes that California could reduce its prison population without any adverse effect on public safety or the operation of the criminal justice system. Accordingly, the balance of interests in this case differs substantially from that in *Duran*.

than other jurisdictions because of its current, unproductive incarceration policies, such as returning most technical parole violators to prison and denying judges the ability to tailor sentences to the risks and needs of particular offenders.

One of the most persuasive pieces of evidence before us is the report of the Expert Panel on Adult Offender Recidivism Reduction Programming, which was convened by the CDCR in 2007 to suggest strategies for reducing California's high recidivism rate. Ex. P2 at vii. The panel consisted of CDCR's Chief Deputy Secretary for Adult Programs, academic researchers, consultants, and former and current secretaries of corrections in Pennsylvania, Arizona, Washington, Ohio, and Maine. *Id.* at ii. The report recommended a comprehensive set of measures that would reduce California's prison population while also reducing recidivism.

The CDCR Expert Panel concluded that, if the CDCR were to follow its recommendations to divert technical parole violators, implement parole reform, and expand good time credits, these changes alone would serve to reduce the prison population by between 38,500 and 43,500 inmates, and the parole population would be reduced by 6,500 to 11,500. *Id.* at 95. The panel expected an additional reduction in the prison population of about 2,194 to 4,388 from evidence-based programming initiatives. *Id.* at 97.[93] After accounting for the costs of the additional programming recommended by the panel, full implementation of its recommendations would still save the state between $561 and $684 million a year.[94] *Id.* at 99. The proposed reduction resulting from the above measures alone would fall within the range necessary to comply with a 137.5% population cap. Other means suggested by the state and others, including the expert committees and the numerous other official committees, could reduce the prison population even further.

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[93]As of August 27, 2008, the CDCR was housing 156,352 inmates in prison institutions designed to hold 79,828 inmates. Ex. P135 (CDCR weekly population report as of August 27, 2008).

[94]James Tilton, then the CDCR Secretary, endorsed the CDCR Expert Panel's recommendations, but with a reservation as to the estimated impact on the prison population. Rep. Tr. at 2614:20-2615:2 (Austin); Ex. P49 (Sept. 25, 2007 Letter from Secretary James E. Tilton, California Department of Corrections and Rehabilitation, to the Hon. Denise Ducheny).

Secretary Lehman, who was a member of the CDCR Expert Panel, testified that use of the measures proposed in the Panel report could reduce California's prison population without causing any adverse impact. Rep. Tr. at 2012:20-25. Secretary Woodford and Dr. Austin testified that it is possible to reach 130% design capacity without adversely impacting public safety. *Id.* at 1321:19-1322:5 (Woodford); *id.* at 1384:3-12 (Austin). Dr. Austin called this a "moderate" reduction in the state's prison population, because California "has got this big bulge" of unnecessary and unproductive incarceration, which is "an easier target" for reduction. *Id.* at 1434:9-1435:4. Although Dr. Austin recommended that, to achieve a reduction of 50,000 prisoners, California should change its sentencing laws so that second strikers serve 65% to 70% of their sentences rather than 80% as required currently, *id.* at 1436:18-20, 2568:2-3, he also stated that there are other ways to achieve that reduction, *id.* at 2570:14-25, a reduction somewhat larger than that which we order.

Next, some law enforcement officials testified that the prison population could be reduced safely by about 30% – approximately the same size reduction we order here – simply by offering incentives for the communities to expand their local correctional systems. *Id.* at 2771:4-10 (Meyer); *see also id.* at 1042:4-14 (Powers). Their opinion was based on the state's experience in the 1960s, when the state paid counties to reduce the number of people being sent to prison, and the counties were able to achieve a 30% general reduction in the state prison population through the expansion of community-level programming and probation resources. *See id.* at 1042:4-14 (Powers).

We should note finally that, regardless of the conclusion of the overwhelming majority of the experts that adoption of the population control measures described above would not adversely affect public safety, they all strongly recommend that the state, in addition to strengthening its own rehabilitative programs, should help establish or improve local community programs designed to assist probationers, parolees, and released prisoners (whether released as the result of the expiration of their terms or otherwise) to re-enter society. Such programs, as noted earlier, should include drug and alcohol rehabilitation, mental health treatment, and job training.

There is no doubt that the adoption of these programs would help increase public safety above its current level, including after issuance of our population reduction order. Clearly, a failure by the state to comply with the experts' recommendations to take these steps would be regrettable and would be contrary to the interests of public safety. Still, unlike the population cap we order here, which our analysis shows is required by the United States Constitution, the decision whether to adopt these rehabilitative measures is left to the Governor and the Legislature. Whether a failure to adopt them would be acceptable, in view of the effect on public safety, is a question that ultimately the people of California will be required to answer.

In sum, the four recommendations in the CDCR Expert Panel report adopted as proposals by plaintiffs provide a means for the state to safely reduce the prison population to 137.5% design capacity. The population could be reduced even further with the reform of California's antiquated sentencing policies and other related changes to the laws. We are therefore satisfied that the state has available methods by which it could readily reduce the prison population to 137.5% design capacity or less without an adverse impact on public safety or the operation of the criminal justice system. Accordingly, even after giving "substantial weight to any [potential] adverse impact on public safety or the operation of a criminal justice system caused by" our population reduction order, 18 U.S.C. § 3626(a)(1)(A), we conclude that our order meets the requirements of the PLRA.

VIII. CONCLUSION

The massive 750% increase in the California prison population since the mid-1970s is the result of political decisions made over three decades, including the shift to inflexible determinate sentencing and the passage of harsh mandatory minimum and three-strikes laws, as well as the state's counterproductive parole system. Unfortunately, as California's prison population has grown, California's political decision-makers have failed to provide the resources and facilities required to meet the additional need for space and for other necessities of prison existence. Likewise, although state-appointed experts have repeatedly provided numerous methods by which the state could safely reduce its prison population, their recommendations have been ignored, underfunded, or postponed indefinitely. The convergence of tough-on-crime policies and an unwillingness to expend the necessary funds to support the population growth has brought California's prisons to the breaking point. The state of emergency declared by Governor Schwarzenegger almost three years ago continues to this day, California's prisons remain severely overcrowded, and inmates in the California prison system continue to languish without constitutionally adequate medical and mental health care.

Federal courts do not intervene in state affairs lightly. Principles of federalism, comity, and separation of powers require federal courts to refrain from addressing matters of state government in all but the most pressing of circumstances. Even then, federal courts must proceed cautiously, giving the states every opportunity to meet their federal constitutional and statutory obligations voluntarily. Unfortunately, during the 8 years of the *Plata* litigation and the 19 years of the *Coleman* litigation, the political branches of California government charged with addressing the crisis in the state's prisons have failed to do so. Instead, the rights of California's prisoners have repeatedly been ignored. Where the political process has utterly failed to protect the constitutional rights of a minority, the courts can, and must, vindicate those rights. *See* John Hart Ely, *Democracy and Distrust* 103, 173 (1980). We do so here, recognizing the seriousness of our action and with the hope that California's leadership will act constructively and cooperatively, and follow the mandate of this court and the PLRA, so as to ultimately eliminate the need for further federal intervention.

ORDER

Within 45 days, defendants shall provide the court with a population reduction plan that will in no more than two years reduce the population of the CDCR's adult institutions to 137.5% of their combined design capacity. Should any of defendants' proposed population reduction measures require the waiver of any provisions of state law, the state shall so advise the court, and shall explain why the requested waiver is permissible under 18 U.S.C. § 3626(a)(1)(B). In preparing their plan, defendants shall consult with plaintiffs, intervenors, and other relevant stakeholders, including the *Coleman* Special Master and the *Plata* Receiver. Should such consultation fail to resolve any objections to the proposed population reduction plan, plaintiffs and intervenors shall file their objections no more than 20 days after defendants file their proposed plan, and defendants shall file responses to such objections no more than 10 days thereafter. Defendants shall set forth in their proposal the effective dates of the various actions they propose to undertake and their estimate of the reduction in population they expect to achieve after six, twelve, eighteen, and twenty-four months. The court will consider all of the written submissions and make any necessary modifications or changes to defendants' proposed plan before issuing a population reduction plan as an order of the court. The court may before doing so request clarification on any matters and conduct any further hearings it deems necessary. However, given that this court issued a preliminary ruling on this matter almost six months ago so as to "give the parties notice of the likely nature of [this] opinion, and [] allow them to plan accordingly," Feb. 9, 2009 Tentative Ruling at 1, the court will look with disfavor upon any effort to postpone or delay an expeditious resolution of the terms of the population reduction plan, including the submission of a proposed plan by the state and the issuance of the order adopting the final plan. The court will not grant any stay of the proceedings prior to the issuance of the final population reduction plan, but will entertain motions to stay implementation of that plan pending the resolution of any appeal to the Supreme Court. We will retain jurisdiction over this matter to ensure compliance with the population reduction plan and to consider any subsequent modifications made necessary by changed circumstances.

IT IS SO ORDERED.

Dated: 08/04/09

Stephen Reinhardt

STEPHEN REINHARDT
UNITED STATES CIRCUIT JUDGE
NINTH CIRCUIT COURT OF APPEALS

Dated: 08/04/09

Lawrence K Karlton

LAWRENCE K. KARLTON
SENIOR UNITED STATES DISTRICT JUDGE
EASTERN DISTRICT OF CALIFORNIA

Dated: 08/04/09

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IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

SACRAMENTO DIVISION

RALPH COLEMAN, et al., Plaintiffs, **v.** **ARNOLD SCHWARZENEGGER, et al.,** Defendants.	2:90-cv-00520 LKK JFM P **DEFENDANTS' RESPONSE TO COURT'S SEPTEMBER 24, 2009 ORDER THAT DEFENDANTS FILE A DETAILED LONG-RANGE PLAN, INCLUDING ACTIVATION SCHEDULES**

On September 24, 2009, this Court ordered that Defendants file with the Court a detailed, long-range plan, including activation schedules. (Docket No. 3686 ¶ 2.) Enclosed as Attachment

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A, with Exhibits 1 through 17, is Defendants' long-range plan, including activation schedules.

Dated: November 6, 2009

Respectfully submitted,

EDMUND G. BROWN JR.
Attorney General of California
JONATHAN L. WOLFF
Senior Assistant Attorney General

s/ DEBBIE J. VOROUS

DEBBIE J. VOROUS
Deputy Attorney General
Attorneys for Defendants

CF1997CS0003

ATTACHMENT A

STATE OF CALIFORNIA —DEPARTMENT OF CORRECTIONS AND REHABILITATION ARNOLD SCHWARZENEGGER, GOVERNOR

OFFICE OF LEGAL AFFAIRS
Benjamin T. Rice
General Counsel
P.O. Box 942883
Sacramento, CA 94283-0001

November 6, 2009

Ms. Debbie Vorous
Deputy Attorney General
Department of Justice
1300 I Street
Sacramento, CA 94244-2550

Dear Ms. Vorous:

Attached please find Defendants' detailed long-range bed plan, with activation schedules, as required by the September 24, 2009 Coleman Court Order.

Sincerely,

BENJAMIN T. RICE
General Counsel, Office of Legal Affairs
California Department of Corrections and Rehabilitation

Attachments

TABLE 1. GLOSSARY OF TERMS

Acronym	Term
AB	Assembly Bill
ADA	Americans With Disabilities Act
A/E	Architectural/Engineering
ASH	Atascadero State Hospital
ASU	Administrative Segregation Unit
CCC	Consolidated Care Center
CCCMS	Correctional Clinical Case Management System
CDCR	California Department of Corrections and Rehabilitation
CEQA	California Environmental Quality Act Compliance
CIC	Condemned Inmate Complex
CIM	California Institution for Men
CIW	California Institution for Women
CMC	California Men’s Colony
CMF	California Medical Facility
COR	California State Prison, Corcoran
CPHCS	California Prison Health Care Services
CSH	Coalinga State Hospital
CTC	Correctional Treatment Center
DJJ	Division of Juvenile Justice
DMH	Department of Mental Health
DOF	Department of Finance
DPH	Department of Public Health
EOP	Enhanced Outpatient Program
FPCM	Facilities, Planning, Construction, and Management
GACH	General Acute Care Hospital
GP	General Population
HC-POP	Health Care Placement Oversight Program
HDSP	High Desert State Prison
ICF	Intermediate Care Facility
ICF-H	Intermediate Care Facility – High Custody
JLBC	Joint Legislative Budget Committee
KVSP	Kern Valley State Prison
LAC	California State Prison, Los Angeles County
LOC	Level of Care
LOU	Locked Observation Unit
MCSP	Mule Creek State Prison
MHCB	Mental Health Crisis Bed
NKSP	North Kern State Prison
N.O.D.	Notice of Determination
PBSP	Pelican Bay State Prison
PMIA	Pooled Money Investment Account
PMIB	Pooled Money Investment Board

Acronym	**Term**
PP	Preliminary Plans
PSU	Psychiatric Services Unit
PWB	Public Works Board
RJD	Richard J. Donovan Correctional Facility
SAC	California State Prison, Sacramento
SATF	Substance Abuse Treatment Facility
SFM	State Fire Marshal
SOL	California State Prison, Solano
SQ	California State Prison, San Quentin
Receiver	*Plata* Federal Receiver
SVSP	Salinas Valley State Prison
WSP	Wasco State Prison

FOR SUBMITTAL TO THE *COLEMAN* COURT

Long-Range Mental Health Bed Plan

PURPOSE AND BACKGROUND

On March 31, 2009, this Court ordered the State defendants to develop concrete proposals that would, in part, meet the long-range bed needs of the plaintiff class. Subsequently, on September 24, 2009, this Court ordered defendants to "file with the court a detailed long-range plan, including activation schedules." This submission and the activation schedules filed concurrently with it, detail defendants' long-range plan to provide outpatient and inpatient mental health treatment beds to the *Coleman* population in the California Department of Corrections and Rehabilitation (CDCR) and the Department of Mental Health (DMH).[1]

MENTAL HEALTH BED NEEDS STUDY

The long-range mental health bed plan is based on the Navigant Consulting Spring 2009 population projections, which provide the most recent and reliable information regarding future mental health bed needs through 2013. However, those projections are not perfect, and subsequent intervening factors will impact the actual bed need. For instance, the Spring 2009 projections do not account for population changes that may result from any CDCR parole, sentencing, and/or credit reforms, including population changes that will result from the recent passage of Senate Bill No. 18 (2009 3d Ex. Sess.). They also do not account for the Three-Judge Court's August 4, 2009 order to reduce the prison population to 137.5% of design capacity within two years. Additionally, the Spring 2009 projections do not reflect the results of the CDCR/DMH modified unmet needs assessment, which is currently ongoing under the direction of the Special Master pursuant to the March 31, 2009 Court order. The results of this modified unmet needs assessment may impact future mental health bed needs.

LONG-RANGE MENTAL HEALTH BED PLANNING

The defendants reported in their May 26, 2009 bed plan that they met with the Special Master and consulted with the *Plata* Receiver to develop their long-range bed plan. Since the Court issued its September 24, 2009 order, CDCR continued to meet with the Special Master and the

[1] The defendants make no representations that the State Legislature will authorize Assembly Bill (AB) 900 lease-revenue financing for any portion of this plan, the Pooled Money Investment Board will authorize loans for interim financing, or that bond counsel will offer an unqualified bond opinion on the validity of the bonds proposed in the plan. The authorization in AB 900 provides the only funding available for most of the projects detailed in this plan, and these steps are necessary to obtain interim financing and to market the bonds authorized by AB 900. Moreover, defendants cannot guarantee the marketability of the bonds. Additionally, the defendants do not believe that the plan satisfies the Prison Litigation Reform Act's requirements that prospective relief be narrowly drawn, extend no further than necessary to correct the alleged violation of the *Coleman* plaintiff class' federal rights, and be the least intrusive means necessary to correct the alleged violation. For instance, the *Coleman* bed needs identified in the plan are based on the Navigant Consulting Spring 2009 population projections. But those projections do not account for population changes that may occur as a result of the recent passage of Senate Bill No. 18 (2009 3d Ex. Sess.), or from the Three-Judge Court's August 4, 2009 order requiring the State to reduce the prison population to 137.5% of design capacity within two years. Additionally, because this plan encompasses construction that is not related to the *Coleman* plaintiff class, the plan extends further than necessary to address the alleged violations of the *Coleman* plaintiff class' federal rights.

Plata Receiver to develop the proposals in this plan to address the long-range mental health bed needs of the plaintiff class.

As a matter of reference, the *Coleman*, *Plata*, *Perez,* and *Armstrong* courts' February 26, 2008 order approved a collaborative construction agreement for medical and mental health beds. According to the agreement, "[g]iven the significant need to coordinate the long-term treatment and care of mentally ill patients who also have serious medical problems, there exist both strong patient care and fiscal incentives to plan, design, and construct health care facilities that will effectuate coordinated medical and mental health treatment." In light of this order, the defendants' long-range mental health bed plan reflects a cooperative effort with the *Plata* Receiver in constructing the Consolidated Care Center (CCC) and renovating three former Division of Juvenile Justice (DJJ) institutions (including the construction of the 60 bed medical/mental health unit).[2]

In order to effectively meet its overall mission and accomplish its multiple complex priorities, CDCR must implement an integrated strategy that takes into consideration:

- Expanded capacity through implementation of AB 900;
- Construction of medical-related facilities;
- Administration's proposed budget and policy reforms;
- Analysis of short and long-term population trends; and
- Three-Judge Court proceedings.

The State began its long-range mental health bed planning with the currently existing permanent and operational programs, including temporary court-ordered beds. Throughout the long-range plan, the term "current capacity" refers to actual beds as of May 2009. "New planned capacity" and "previously planned capacity" are those projects that are in various stages of planning and are intended to remain permanent. "Returned Capacity" refers to currently operational mental health beds that are being returned to alternate uses. "Net capacity" refers to the current capacity, the new planned capacity and the previously planned capacity, less the returned capacity.

The long-range mental health bed plan consists of a combination of currently operating programs; *Coleman* court-ordered projects; three short-term projects that will become permanent; currently planned projects that are not court ordered; and new projects, as outlined in this submission. Projects identified as "long-range proposals" are defined as those projects that involve extensive new construction or renovations, which will require up to five years to complete.

The long-range mental health bed plan is designed to meet the mental health bed need projections to 2013 using Navigant Consulting Spring 2009 population projections. The plan assumes all of the following:

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[2] Although the defendants have appealed the *Plata* District Court's order denying their motion to replace the Receiver with a Special Master and to terminate the Receiver's unilateral construction plans, no court has terminated the receivership or the Receiver's construction plans. Accordingly, the defendants continue to fully cooperate with the Receiver in developing this long-range bed plan.

- One new CCC will be built on the site of the former Karl Holton Juvenile Correctional Facility in Stockton to provide additional capacity for mental health care to meet *Coleman* requirements and medical needs identified by the *Plata* Receiver.
- Three former DJJ institutions will be renovated to provide Enhanced Outpatient Program (EOP) General Population (GP) and EOP Administrative Segregation Unit (ASU) housing and treatment space in addition to providing housing and treatment space for inmate-patients needing specialized medical care services identified by the *Plata* Receiver.
- All *Coleman* court-ordered construction projects will be completed pursuant to the activation plans filed concurrently with this submission.[3]
- All proposed projects will have adequate treatment and office space and will be located in facilities conducive to recruitment and retention of staff.
- All temporary program beds are ultimately decommissioned (returned).
- Most short-term and intermediate-term proposals will be decommissioned.
- No currently operating programs will be decommissioned unless:
    - The space is being converted to another level of mental health care as required by population projections, and
    - There is adequate alternative capacity to accommodate future need at that level of care.
- Continued use of currently designated DMH hospital bed capacity, unless and until those services are no longer required.

Table 1 represents the difference between the existing mental health beds in May 2009 (not including CCCMS) and the projected bed need through 2013 as identified by the Navigant Consulting Spring 2009 population projections. Defendants intend to build to the projected need such that enough capacity is created and wait lists, based on current Navigant projections, for mental health treatment beds are eliminated.

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[3] Exhibits 2, and 4–7 are Activation Schedules for the report period ending October 22, 2009. These Activation Schedules were previously submitted to the Special Master. Exhibit 3 is a proposed Activation Schedule for the report period ending November 6, 2009, and reflects the proposed new Salinas Valley State Prison (SVSP) project. On October 22, 2009, defendants informed the Court that they intend to replace two court-ordered projects—the SVSP 72-Bed EOP-ASU and the SVSP 96-Bed EOP-GP Treatment and Office Space and Housing Unit Conversion Project—with a new project known as the SVSP 300 EOP-GP Treatment and Office Space A-Quad Project. Through this filing, defendants now seek approval from the Court to replace the two SVSP court-ordered projects with the new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project.

TABLE 1. BED NEED THROUGH 2013

LOC	Bed Need 2013[4]	Actual Beds 2009[5]	Gap
Males			
Acute	193	155	38
ICF	301	365	(64)
ICF-H	624	306	318
MHCB	470	314	156
EOP-GP	4,763	3,141	1,622
EOP-ASU	675	474	201
PSU	546	384	162
Totals	7,572	5,139	**2,433**

LOC	Bed Need 2013	Actual Beds 2009	Gap
Females			
Acute/ICF	27	30	(3)
MHCB	18	22	(4)
EOP-GP	199	129	70
EOP-ASU	16	19	(3)
PSU	12	10	(2)
Totals	272	210	**62**

Men's Population Mental Health Bed Plan

The Navigant Consulting Spring 2009 population projections for 2013 show an increased need for 2,433 mental health beds across the various levels of mental health care for the male population. The following discussion describes the various elements that will be combined to meet the projected need, and shows how defendants will achieve ***93 beds over*** the projected population.

One CCC will be constructed in cooperation with the *Plata* Receiver specifically for integrated correctional health care for the higher acuity levels of physical and mental health. This facility will be configured as reflected in Table 2 for the mental health population:

TABLE 2. NEW CONSOLIDATED CARE CENTER

SITE	MHCB	Acute	ICF-H	Total Beds
CCC	137	43	432	612

[4] Based on Navigant Consulting Spring 2009 population projections.
[5] Based upon HC-POP number of actual beds.

(*See* Ex. 1, Activation Schedule for the Consolidated Care Center.)[6]

Additional needed capacity will be met through the previously *Coleman* court-ordered construction projects listed in Table 3.

TABLE 3. *COLEMAN* COURT-ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	ADDITIONAL CAPACITY
CMC	MHCB	50 MHCB
SVSP	New treatment and office space for EOP-GP housing unit conversion (allows increase to 300 EOP-GP beds using re-designated existing housing)	108 EOP-GP beds[7]
SAC	New treatment and office space for existing EOP-GP program	No new bed capacity
CMF	New treatment and office space for existing EOP-GP program plus housing unit conversion (allows increase to 600 EOP-GP beds using re-designated existing housing)	67 EOP-GP beds
LAC	Treatment and office space for	150 EOP-GP beds

[6] The Court's September 24, 2009 Order stated that "Defendants shall identify any waivers of state law that may be required to complete the projects that comprise the long-range plan, either at the time the plan is filed or as the need for such waiver arises." In addition, the order stated that the "timetables for completion of each step described in the plan shall be developed in such a way that all projects in the long-range plan will be fully staffed and activated by the 2013 target date defendants have established." Of the 15 projects that comprise defendants' long-range plan, 12 projects are scheduled to be completed either before or in 2013, consistent with the Navigant Consulting Spring 2009 population projections for 2013. Patient admissions for the CCC are currently scheduled to commence on December 19, 2013, and be completed on September 15, 2014. (Ex. 1.) CDCR recently took over the planning and construction activities of this project from the *Plata* Receiver. Patient admissions for the Stark Conversion are scheduled to commence on December 27, 2013, and be completed on September 23, 2014. (Ex. 10.) These dates are designed to accommodate the short-term occupancy following the riot at CIM, and reflect the most realistic current depiction of the schedule. Admissions for the DeWitt Conversion are currently scheduled for 2014 pending successful completion of the environmental review process for this project. (Ex. 12.) Defendants are currently exploring potential waivers of state law that could apply to accelerate construction and activation of those projects requiring collaboration with the *Plata* Receiver—the CCC and the three former DJJ facilities—and anticipate identifying any such potential waivers in their November 12, 2009 filing in the Three-Judge Court Proceeding.

[7] As noted, defendants informed the Court of their intent to replace the SVSP 72-bed EOP-ASU Project and the SVSP 96-EOP-GP Project with the new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project. The current SVSP 96 EOP-GP Project is designed to provide treatment and office space for the existing 192 EOP-GP inmate-patients, plus an additional 96 inmate-patients, for a total of 288 beds. The new SVSP 300 EOP-GP Treatment and Office Space A-Quad Project is designed to serve 300-inmate-patients, for an increase of 12 beds (108 "new capacity" versus 96 "new capacity").

	new EOP-GP capacity (to be accommodated in re-designated existing housing)	
CMF	ICF-H beds	64 ICF-H beds

(*See* Exs. 2–7, Activation Schedules for Court-Ordered Projects: Ex. 2, 50 MHCBs at CMC; Ex. 3, 108 EOP-GP beds at SVSP; Ex. 4, Additional Treatment and Office Space at SAC; Ex. 5, 67 EOP-GP beds at CMF; Ex. 6, 150 EOP-GP beds at LAC; and Ex. 7, 64 ICF-H beds at CMF.)

Defendants will continue to review the construction timelines set forth in the activation schedules to identify opportunities to shorten the timelines for design and construction.

New projects proposed to meet the mental health population projection needs are as follows:

TABLE 4. NEW PROJECTS TO MEET LONG RANGE PROJECTIONS

SITE	PROJECT DESCRIPTION	CAPACITY
SAC	New treatment and office space for expanded Psychiatric Services Unit (PSU) program with housing unit conversion	152 PSU beds
COR	New treatment and office space for expanded EOP-ASU program with housing unit conversion	Identified in defendants' short term projects as adding 45 EOP-ASU beds[8]
SVSP	Utilization of existing treatment and office space for EOP-ASU (allows increase to 72 EOP-ASU beds using re-designated existing housing)	Identified in defendants' short-term projects as adding 27 EOP-ASU beds[9]
Stark	Retrofitted housing, treatment and office space for EOP-GP, EOP-ASU and MHCBs	775 EOP-GP beds 50 EOP ASU beds 30 MHCBs
Dewitt	New housing, retrofitted office and treatment space for EOP-GP and EOP-ASU	375 EOP-GP beds 50 EOP-ASU beds
Estrella (Paso)	Retrofitted housing, new and retrofitted treatment and office space for EOP-GP and EOP-ASU	150 EOP-GP beds 40 EOP-ASU beds

[8] This project is being implemented according to short-term project timelines using interim temporary office and treatment space. The attached Activation Schedule is for the permanent treatment and office space.
[9] Defendants are not providing an Activation Schedule for this project because it is a programmatic change with future use of existing treatment and office space.

(*See* Exs. 8-13, Activation Schedules for New Projects: Ex. 8, 152 PSU beds at SAC; Ex. 9, 45 EOP-ASU beds at COR; Ex. 10, 775 EOP-GP and 50 EOP-ASU beds at Stark; Ex. 11, 30 MHCBs at Stark; Ex. 12, 375 EOP-GP and 50 EOP-ASU beds at Dewitt; and Ex. 13, 150 EOP-GP and 40 EOP-ASU beds at Estrella.)

The use of these formerly DJJ institutions (Stark, Dewitt, Estrella) allow for the designation of a health care mission through renovations and additional improvements at these existing facilities. Also provided with this mission will be the development of policies, procedures, and training designed to create, foster, and maintain a health care mission. CDCR has begun meeting with the impacted communities where these renovations are planned to ensure any concerns they may have related to these projects are reviewed and addressed appropriately to avoid deleterious impacts to the activation schedules.

The mental health beds that are a part of the *Plata* Receiver's construction activities in Building 22 at SQ will further serve to meet projected need. The Building 22 project is a combination medical/mental health facility. Defendants intend to activate 17 licensed MHCBs in that facility. In addition, defendants will utilize 12 MHCBs in CDCR's Condemned Inmate Complex (CIC) at SQ. Both projects were identified in defendants' December 2006 Bed Plan and their August 2007 Supplemental Bed Plan. These projects increase mental health capacity as follows:

TABLE 5. PREVIOUSLY PLANNED NON-COURT ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	CAPACITY
SQ	CTC within the CIC	12 MHCB
SQ	Building 22 – Medical Building	17 MHCB; noted as one of defendants' short term projects currently under construction

The *Coleman* Court has ordered defendants to establish certain programs as temporary measures. Defendants will request the Court's approval to decommission these programs if: a) the space is converted to another level of mental health care as required by projections; and b) there is adequate alternative capacity to accommodate future need at that level of care. In light of these considerations, the temporary programs that defendants may request approval from the Court to decommission (return) are as follows:

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TABLE 6. TEMPORARY PROGRAMS TO BE DECOMMISSIONED

SITE	PROGRAM	CAPACITY DECOMMISSIONED
CMC	MHCB (LOU)	36 MHCB
CIM	MHCB (GACH)	34 MHCB
SVSP	ICF-H Beds (D-5 and D-6)	112 ICF-H Beds
CMF	MHCB (APP)	20 MHCB; to return to Acute Beds[10]
CMF	ICF-H Beds	66 ICF-H Beds
ASH	Acute Beds	25 Acute Beds, to return to ICF Beds[11]

The following is a cumulative table of current capacity, new planned capacity, returned capacity, and net capacity as compared to bed need projections.

TABLE 7. MEN'S NET CAPACITY

LOC	Current Capacity	New Capacity	Returned Capacity	Net Capacity	Population Projections to 2013	Over/ (Under)
EOP-GP	3,141	1,625	0	4,766	**4,763**	**3**
EOP-ASU	474	212	0	686	**675**	**11**
PSU	384	152	0	536	**546**	**(10)**
MHCB	314	246	-90	470	**470**	**0**
Acute	155	63	-25	193	**193**	**0**
ICF	365	25	0	390	**301**	**89**
ICF-H	306	496	-178	624	**624**	**0**
Total:	5,139	2,819	-293	7,665	**7,572**	**93**

(*See also* Exhibit #14, Spreadsheet on Long-Range Bed Planning, Men)

Women's Population Mental Health Bed Plan

Navigant Consulting Spring 2009 population projections to 2013 show an increased need for 70 EOP-GP beds for the female population. This need will be met through converting existing housing to EOP-GP beds. CDCR is currently working with the *Plata* Receiver on a health care improvement program at the three women's institutions to determine how best to meet these needs.[12]

[10] The decommission of the 20 MHCBs at CMF will create "new capacity" of 20 Acute Beds at CMF.
[11] The decommission of the 25 Acute Beds at ASH will create "new capacity" of 25 ICF Beds at ASH. As noted, this project was identified by defendants as one of their short-term projects. Based on the scheduled approved by the Court, this conversion was completed in June 2009.
[12] Refer to discussion on Mental Health Bed Needs Study. It is anticipated that any parole, sentencing, and/or credit reforms, and the Three-Judge Court's prisoner release order, will significantly impact the female population.

The following *Coleman* court-ordered projects will continue as scheduled:

TABLE 8. CONTINUING *COLEMAN* COURT-ORDERED PROJECTS

SITE	PROJECT DESCRIPTION	CAPACITY
CIW	ICF and Acute	45 ICF/Acute beds
CIW	PSU	20 PSU beds

(*See* Exs. 15–16, Activation Schedules for Court-Ordered Projects: Ex. 15, 45 ICF/Acute Beds at CIW; and Ex. 16, 20 PSU Beds at CIW.)

The temporary programs that defendants may request approval from the Court to decommission (return) are as follows:

TABLE 9. PROGRAMS TO BE DECOMMISSIONED

SITE	PROGRAM	CAPACITY DECOMMISSIONED
CIW	PSU	10 PSU beds
Patton State Hospital	ICF/Acute beds	30 ICF/Acute beds

The following is a cumulative table of current capacity, new planned capacity, returned capacity, and net capacity as compared to bed need projections.

TABLE 10. WOMEN'S NET CAPACITY

LOC	Current Capacity	New Capacity	Returned Capacity	Net Capacity	Population Projections to 2013	Over/ (Under)
EOP-GP	129	70	0	199	**199**	**0**
EOP-ASU	19	0	0	19	**16**	**3**
PSU	10	20	-10	20	**12**	**8**
MHCB	22	0	0	22	**18**	**4**
Acute/ICF	30	45	-30	45	**27**	**18**
Total:	210	135	-40	305	**272**	**33**

(*See also* Ex. 17, Spreadsheet on Long-Range Bed Planning, Women.)

Funding

Defendants plan to fund the *Coleman* court-ordered projects, the short-term projects, and the long-term proposals via a combination of traditional budgeted funding sources and the authorization to issue lease-revenue bonds provided by AB 900. Together, defendants believe that this funding will be sufficient to ensure that the necessary resources can be obtained for defendants to build the needed mental health beds to serve the mental health population in CDCR and DMH. Each action plan filed for the long-range bed plan describes a specific funding source.

Exhibit #1

Consolidated Care Facility

Project: Consolidated Care Center[1]
Responsible Person: Chris Meyer, CDCR — Jay Sturges, DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Stockton, CA
Funding Source: AB 900 (GC 15819.40)

Report Date: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	33	11/6/09			12/9/09				M. Meredith	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	Assumes drafted 30-Day letter is consistent with existing process/format. Assumes basic content is acceptable.
Review Funding Request Package	32	12/10/09			1/11/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/12/10			2/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	114	12/1/09			3/25/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	If a pre-qualified A&E firm is utilized the time to complete the contracting process should be significantly reduced.
Preliminary Plans	150	3/26/10			8/23/10				M. Meredith	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Design is based on using prototypical facilities. PP duration based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	31	10/20/09	10/20/09		11/20/09				M. Meredith	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	NOD was filed 10/20/09, public comment period ends 11/20/09.
JLBC Approval of Preliminary Plans	108	7/26/10			11/11/10				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	108	7/27/10			11/12/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	288	9/11/10			6/26/11				M. Meredith	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award	214	1/24/11			8/26/11				M. Meredith	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Planned Start Date is based on earliest bid package availability and Planned Complete on
Construction[2]	910	6/8/11			12/4/13				M. Meredith Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Preparation of Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	740	8/12/11			8/21/13				M. Meredith Contractor TBD	Including final as-built drawings.	
Self Certification	7	12/5/13			12/12/13				C. Meyer		
Activation Planning/Workforce Development/Hire Staff/Procurement	730	12/19/11			12/18/13				S. Streater C. Radavsky W. Still	Schedule development, policy and procedures, workforce planning, advertise, hire and train staff, group II/III equipment planning and equipment certification, long lead items acquisition, contracts/vendors, labor relations, training. This will impact DMH/CDCR/Receivers office and has to be coordinated between the three departments. DMH does not have the lead on this but will provide technical assistance and comply with the agreed upon dates.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Licensing Application & Approval	**180**	**6/21/13**			**12/18/13**				S. Streater C. Radavsky W. Still	DPH initial licensing survey. Will license entire facility, suspend, then activate beds tied to a staff activation schedule.	Assume sufficient staffing to prepare for licensure and DPH Survey, etc.
Activation	**120**	**8/20/13**			**12/18/13**				S. Streater C. Radavsky W. Still	Transitional training, initial staff occupancy, staff orientation, building acceptance/shakedown, furniture/fixture installation, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	**270**	**12/19/13**			**9/15/14**				S. Streater C. Radavsky W. Still	This will impact DMH/CDCR/CPHCS office and has to be coordinated between the three departments. DMH does not have the lead on this but will provide technical assistance and comply with the agreed upon dates. DMH expects to admit 5 inmate-patients per week for safety reasons.	

[1] This facility is intended to include 137 MHCB, 43 Acute, 432 ICF-H, and 1,110 non-mental health beds.

[2] Special Master shall receive updates on construction every 90 days.

Project: **Consolidated Care Center**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Radavsky	Cindy	DMH	1600 9th Street	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meredith	Michael	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden			

Exhibit #2

California Men's Colony
50 Mental Health Crisis Beds

50 Bed Mental Health Crisis Facility (Licensed Facility) [1] **Report Period Ending: October 22, 2009**

Responsible Person:	**Deborah Hysen/CDCR**	**Jay Sturges /DOF**
Address of Resp. Person:	**9838 Old Placerville Rd., Suite B Sacramento California**	**915 L Street, Sacramento California 95814**
Project Architect:	**Nacht and Lewis Architects**	
Location:	**California Mens Colony, San Luis Obispo (CMC)**	
Funding Source:	**AB 900 (GC 15819.40)**	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package						**3/13/09**				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package					**3/25/09**	**3/25/09**				DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	Funding request package completed on 3/25/09.
Legislative Approval of Scope, Schedule, and Cost					**4/10/09**	**4/10/09**			JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule		**4/10/09**	**4/10/09**		**4/10/09**	**4/10/09**			C. Lief	Upon legislative approval, obtain PWB recognition of Scope, Cost, and Schedule.	
Request Loan from PMIA		**4/1/09**	**4/1/09**		**4/1/09**	**4/1/09**			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA)	
Approval of PMIA Funding		**4/15/09**	**4/15/09**		**4/15/09**	**4/15/09**		**4/23/09**	Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Next loan renewal March 2010 and every year thereafter for the duration of the project.
Architectural/Engineering Contracting		**4/15/09**	**4/15/09**		**4/15/09**	**4/15/09**		**4/23/09**	J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Notice to Proceed (NTP) issued 4/15/09.
Preliminary Plans	**309**	**4/20/09**	**4/15/09**	**(5)**	**12/27/09**				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Preliminary plans are approximately 80% complete.
California Environmental Quality Act Compliance (CEQA)	**237**	**4/20/09**	**4/15/09**	**(5)**	**12/13/09**				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Initial Study/Mitigated Negative Declaration public comment period ends 10/31/09.
JLBC Approval of Preliminary Plans	**45**	**12/28/09**			**2/11/10**				JLBC	JLBC Approval. PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans. JLBC responded prior to 45-day review.	Design schedule accelerated 45 days, based on early JLBC package submittal.
PWB Approval of Preliminary Plans	**45**	**12/29/09**			**2/12/10**				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	**187**	**2/15/10**			**8/21/10**				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	**90**	**8/23/10**			**11/21/10**				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [2]	**600**	**11/22/10**			**7/14/12**				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	The baseline Action Plan dated May 22, 2009, and filed with the Court on May 26, 2009, reflects a reduced construction duration of 120 days. This assumes construction can be completed 4 months earlier than previously built CDCR licensed mental health facilities (i.e. 600 days instead of 720 days). CDCR is evaluating additional opportunities to accelerate construction.
Hire Staff	**543**	**1/10/11**			**7/6/12**				S. Streater J. Marshall	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	**600**	**11/22/10**			**7/14/12**				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start.

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Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Self Certification	**15**	**7/16/12**			**7/31/12**				D. Hysen		
License Approval	**7**	**8/1/12**			**8/8/12**				S. Streater J. Marshall	DPH Survey, DPH Approval.	
Activation	**56**	**8/9/12**			**10/4/12**				S. Streater J. Marshall	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	**56**	**8/9/12**			**10/4/12**				S. Streater J. Marshall	Assumes Patients will be admitted at a rate of six per week.	

[1] Court Order(s) filed 3/27/07, Docket No. #2173; filed 4/16/08, Docket No. #2757; and filed 10/20/06, Docket No. #1998
[2] Special Master shall receive updates on construction every 90 days.

Project: CMC-50 Bed Mental Health Crisis Facility (Licensed Facility)

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Marshall	John	CDCR/CMC	P.O. Box 8101	San Luis Obispo	93409
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #3

Salinas Valley State Prison
108 Enhanced Outpatient Program-
General Population beds

Project: EOP-GP Mental Health Treatment and Office Space - A Quad
Report Period Ending: November 6, 2009
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Salinas Valley State Prison, Soledad (SVSP)
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Budget for AB 900 30 Day Funding Request Package	111	10/19/09	10/19/09		2/7/10				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	30	2/8/10			3/10/10				C. Lief	DOF review of funding request package. DOF prepares transmittal letter to legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost And PWB Recognition of Project Scope, Schedule, and Budget	30	3/11/10			4/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Budget.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project, Scope, Cost, and Schedule.	
Request loan from PMIA	21	3/30/10			4/20/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit Loan Documents to DOF and Obtain PWB Approval for Loan. Submit Loan application for initial design phase to PMIB for Approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	32	4/22/10			5/24/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	187	5/25/10			11/28/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	205	4/22/10			11/13/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	11/29/10			1/13/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	11/30/10			1/14/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	221	1/18/11			8/27/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	
Bid and Award	70	8/29/11			11/7/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[1]	630	11/8/11			7/30/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	
Hire Staff	153	1/28/13			6/30/13				S. Streater A. Hedgpeth	Advertise, Hire, and Train Staff.	
Activation	63	7/31/13			10/2/13				S. Streater A. Hedgpeth	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **SVSP EOP/GP Housing Unit Conversion & Addition to Mental Health Services Building**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hedgpeth	Anthony	CDCR/SVSP	P.O. Box 1020	Soledad	93960
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #4

California State Prison, Sacramento
Additional Treatment and Office Space

Project: Enhanced Outpatient Program Treatment and Office Space [1] — **Report Period Ending: October 22, 2009**
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California State Prison, Sacramento (SAC)
Funding Source: General Fund

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Architectural/Engineering Contracting						**12/16/08**			J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	**131**	**12/17/08**	**12/17/08**		**4/27/09**	**4/27/09**			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)						**11/25/08**			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	**45**	**5/25/09**	**5/26/09**	**1**	**7/9/09**	**7/9/09**			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	**45**	**5/26/09**	**5/26/09**		**7/10/09**	**7/14/09**	**4**		C. Lief	PWB Approval.	PWB meeting rescheduled to July 14. There is no impact to overall schedule.
Working Drawings (Construction Documents)	**154**	**7/13/09**	**7/15/09**	**2**	**12/14/09**				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	Delayed start due to PWB meeting schedule. There is no impact to the working drawing milestone. Working drawings are approximately 95% complete.
Bid and Award	**71**	**12/15/09**			**2/24/10**				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	This planned start date was premised on construction funding being appropriated by the legislature in the 2009/10 Budget Act. The Conference committee on the Budget, however, denied the request for construction funding. Assuming 7/1/10 budget enactment, the new projected Bid and Award period starts 7/1/10 & ends 9/10/10.
Construction [2]	**390**	**2/25/10**			**3/22/11**				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	This planned start date was premised on construction funding being appropriated by the legislature in the 2009/10 Budget Act. The Conference committee on the Budget, however, denied the request for construction funding. Assuming 7/1/10 budget enactment, the new projected construction period starts 9/13/10 & ends 10/8/11. CDCR is evaluating opportunities to accelerate construction.
Hire Staff	**153**	**9/22/10**			**2/22/11**				S. Streater J. Walker	Advertise, Hire, and Train Staff.	Assuming 7/1/10 budget enactment, the new projected Hire Staff starts 4/6/11 & ends 9/6/11.
Activation	**61**	**3/23/11**			**5/23/11**				S. Streater J. Walker	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	Assuming 7/1/10 budget enactment, the new projected Activation starts 9/7/11 & ends 11/7/11.

[1] Court Order(s) filed 7/8/08, Docket No. #2861; Stipulation filed 7/1/08, Docket No. #2860; order filed 10/18/07, Docket No. #2461
[2] Special Master shall receive updates on construction every 90 days.

Project: **SAC Enhanced Outpatient Program Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
Walker	James	CDCR/SAC	P.O. Box 71	Represa	95671

Exhibit #5

California Medical Facility
67 Enhanced Outpatient Program-General Population beds

Project: Mental Health Treatment and Office Space [1]
Report Period Ending: October 22, 2009
Responsible Person: Deborah Hysen/CDCR — Jay Sturges /DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California Medical Facility, Vacaville (CMF)
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package						3/13/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package						3/25/09			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/25/09	3/25/09		4/24/09	5/7/09	13		C. Lief	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	LAO had concerns with building costs.
PWB Recognition of Project Scope, Cost, and Schedule		5/8/09	5/8/09		5/8/09	5/8/09			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	Reduced costs at PWB per LAO concerns.
Request Loan from PMIA						3/26/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	63	4/15/09	4/15/09		4/15/09	6/12/09	58		Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Loan request was made on 5/20/09 and was denied by PMIB on a 2-1 vote. Executive Order E 08/09-136 authorized General Fund loan for Preliminary Plans (PP). On 7/15/09 PMIB approved the loan for PP funding, and General Fund loan will be retired. There is no impact to design or overall schedule.
Architectural/Engineering Contracting	82	6/18/09	6/18/09		9/8/09	9/17/09	9		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract executed 09/17/09. No impact to overall schedule.
Preliminary Plans	217	9/9/09	9/17/09	8	4/14/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Start date delayed due to contract execution, no impact to PP Phase or overall schedule. PP are approximately 5% complete.
California Environmental Quality Act Compliance (CEQA)	235	9/9/09	8/5/09	(35)	5/2/10	9/21/09	(223)		B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Comment period complete, no protests filed. Accelerated time was gained by completing a less restrictive environmental document (Notice of Exemption vs. Initial Study/ Mitigated Negative Declaration).
JLBC Approval of Preliminary Plans	45	4/26/10			6/10/10				JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	4/27/10			6/11/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	187	6/14/10			12/18/10				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	70	12/20/10			2/28/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [2]	720	3/1/11			2/18/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	153	8/19/12			1/19/13				S. Streater K. Dickinson	Advertise, Hire, and Train Staff.	
Activation	59	2/19/13			4/19/13				S. Streater K. Dickinson	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order's) filed 10/7/08, Docket No. #3072; and filed 10/18/07, Docket No. #2461

[2] Special Master shall receive updates on construction every 90 days.

Project: **CMF Mental Health Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Dickinson	Kathleen	Warden, CMF	1600 California Drive	Vacaville	95696
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #6

California State Prison, Los Angeles County
Treatment Space for
Enhanced Outpatient Program

Project: Enhanced Outpatient Program Treatment and Office Space [1]
Report Period Ending: October 22, 2009
Responsible Person: Deborah Hysen/CDCR; Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California; 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Los Angeles County, Lancaster (LAC)
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Cost for AB 900 30 Day Funding Request Package					4/23/09	4/23/09				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	46	4/24/09	4/24/09		6/9/09	6/9/09			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	6/10/09	6/9/09	(1)	7/9/09	7/9/09			C. Lief	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Cost.	
PWB Recognition of Project Scope, Cost, and Schedule		7/10/09	7/14/09	4	7/10/09	7/14/09	4		C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	PWB meeting rescheduled to July 14. There is no impact to overall schedule.
Request Loan from PMIA	67	5/5/09	5/5/09		7/11/09	7/11/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding		7/15/09	7/15/09		7/15/09	7/15/09			Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	82	7/16/09	7/16/09		10/6/09	10/22/09	16		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract executed 10/22/09. No impact to overall schedule.
Preliminary Plans	229	10/7/09		15	5/24/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Start of PP delayed due to contract execution. There is no impact to design or overall schedule.
California Environmental Quality Act Compliance (CEQA)	235	10/7/09	8/5/09	(63)	5/30/10	9/21/09	(251)		B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	Comment period complete, no protests filed. Accelerated time was gained by completing a less restrictive environmental document (Notice of Exemption vs. Initial Study/Mitigated Negative Declaration.
JLBC Approval of Preliminary Plans	45	5/24/10			7/8/10				JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	5/25/10			7/9/10				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	203	7/12/10			1/31/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	80	2/1/11			4/22/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [2]	440	4/25/11			7/8/12				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	151	1/9/12			6/8/12				S. Streater B. Haws	Advertise, Hire, and Train Staff.	
Activation	65	7/9/12			9/12/12				S. Streater B. Haws	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order(s) filed 10/18/07, Docket No. #2461; filed 10/20/06, Docket No. #1998
[2] Special Master shall receive updates on construction every 90 days.

Project: **LAC Enhanced Outpatient Program Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Haws	Brian	CDCR/LAC	44750 60th Street West	Lancaster	93536
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #7

California Medical Facility
64-bed Intermediate Care Facility for High Custody Inmates

Project: 64 Bed Intermediate Care Facility (Licensed Facility)[1] **Report Date:** October 22, 2009
Responsible Person: Deborah Hysen Jay Sturges, DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California Medical Facility, Vacaville (CMF)
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
PWB Recognition of Project Scope, Cost, and Schedule.		4/10/09	4/10/09		4/10/09	4/10/09			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA		4/1/09	4/1/09		4/1/09	4/1/09			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA).	
Approval of PMIA Funding	63	4/15/09	4/15/09		4/15/09	6/12/09	58		Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	Loan request was made on 5/20/09 and was denied by PMIB on a 2-1 vote. Executive Order E 08/09-136 authorized General Fund loan for Preliminary Plans. On 7/15/09 PMIB approved the loan for PP funding, and the General Fund loan will be retired. Design and construction schedule was revised based on 6/12/09 funding. There is no impact to overall schedule.
Architectural/Engineering Contracting	2	6/17/09	6/12/09	(5)	6/19/09	7/9/09	20		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s)	Contract execution delayed due to year end work load issues. There is no impact to overall schedule.
Preliminary Plans	422	9/8/07	9/8/07		11/3/08	11/3/08			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC and PWB Submittal Packages.	Preliminary Plans funded in the 2006-07 Budget Act.
California Environmental Quality Act Compliance (CEQA)					3/5/09	3/5/09			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	10/30/08	10/30/08		12/14/08	12/14/08			JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans		4/10/09	4/10/09		4/10/09	4/10/09			C. Lief	PWB Approval.	Preliminary Plan approval occurred concurrent with the establishment of scope, cost, and schedule.
Working Drawings (Construction Documents)	204	6/22/09	7/10/09	18	1/12/10				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for Approval. Submit loan documents to DOF and obtain PWB approval for loan by the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Contract execution delayed start of working drawings. There is no impact to design or overall schedule. Working drawings are approximately 65% complete.
Bid and Award	90	1/13/10			4/13/10				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	841	4/14/10			8/2/12				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Construction duration will be accelerated 241 days due to facility being constructed outside of existing secure perimeter and comparison with CMC 50-Bed. Other acceleration options will be evaluated during bid phase. New projected construction complete is 12/5/11.
Hire Staff	485	3/6/11			7/3/12				V. Brewer K. Dickinson	Advertise, Hire, and Train Staff.	The new projected Hire Staff start is 7/8/10 & ends 11/5/11.
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	841	4/14/10			8/2/12				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start. New projected OSHPD planned complete is 12/5/11.
Self Certification	15	8/3/12			8/18/12				D. Hysen		New projected Self Certification start is 12/6/11 & will end 12/21/11.
License Approval	7	8/19/12			8/26/12				V. Brewer S. Streater K. Dickinson	DPH Survey, DPH Approval.	New projected License approval start is 12/22/11 & will end 1/6/12.
Activation	92	8/27/12			11/27/12				V. Brewer K. Dickinson	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	Activation duration will be accelerated 22 days. New projected Activation start is 1/9/12 & will end 3/19/12.
Patient Admissions	92	8/27/12			11/27/12				V. Brewer K. Dickinson	Assumes Patients will be admitted at a rate of six per week.	Pateint Admissions will be accelerated 22 days (6 patients per week). New projected Patient Admission start is 1/9/12 & will end 3/19/12.

[1] Court Order filed 3/1/07, Docket No. #2154
[2] Special Master shall receive updates on construction every 90 days.

Project: **CMF 64 Bed Intermediate Care Facility (Licensed Facility)**

Lead Person Roster

Name			**Address**		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Brewer	Victor	DMH	PO Box 1080	Soledad	93960
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Dickinson	Kathleen	CDCR/CMF	1600 California Drive	Vacaville	95896
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Ro.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #8

California State Prison, Sacramento
152 Psychiatric Services Unit beds

Project: 152 Psychiatric Services Unit (PSU) Treatment and Office Space
Report Period Ending: November 6, 2009
Responsible Person: Deborah Hysen/CDCR Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Sacramento
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	114	8/17/09	8/17/09		12/9/09				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	33	12/10/09			1/12/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/13/10			2/12/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	2/18/10			5/19/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	248	5/20/10			1/23/11				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	270	2/18/10			11/15/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	1/24/11			3/10/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	1/25/11			3/11/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	180	3/14/11			9/10/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	80	9/12/11			12/1/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[1]	480	12/2/11			3/26/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	150	9/27/12			2/24/13				S. Streater J. Walker	Advertise, Hire, and Train Staff.	
Activation	60	3/27/13			5/26/13				S. Streater J. Walker	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **Psychiatric Services Unit (PSU) Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 18	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
Walker	James	CDCR/SAC	P.O. Box 71	Represa	95671

Exhibit #9

California State Prison, Corcoran
45 Enhanced Outpatient Program-Administrative Segregation Unit beds

Project: EOP-ASU Treatment and Office Space (for 45 bed EOP-ASU) | Report Period Ending: November 6, 2009
Responsible Person: Deborah Hysen/CDCR | Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California | 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: California State Prison, Corcoran
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	87	9/13/09	9/13/09		12/9/09				K. Beland	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	33	12/10/09			1/12/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	1/13/10			2/12/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	2/16/10			2/16/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	1/27/10			2/16/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	2/17/10			2/17/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	2/18/10			5/19/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	220	5/20/10			12/26/10				K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	270	2/18/10			11/15/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	12/27/10			2/10/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	12/28/10			2/11/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	203	2/14/11			9/5/11				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	73	9/6/11			11/18/11				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction [1]	450	11/21/11			2/13/13				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	150	8/17/12			1/14/13				S. Streater D. Adams	Advertise, Hire, and Train Staff.	
Activation	60	2/14/13			4/15/13				S. Streater D. Adams	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Special Master shall receive updates on construction every 90 days.

Project: **EOP/ASU Treatment and Office Space**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Adams	Derral	Warden, CSP COR	4001 King Street	Corcoran	93212
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #10

Heman G. Stark
775 Enhanced Outpatient Program–
General Population and
50 Enhanced Outpatient Program-
Administrative Segregation Unit beds

Project: Stark Conversion[1]
Responsible Person: Chris Meyer/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Heman G. Stark, Chino, CA
Funding Source: AB 900 (GC 15819.40)

Report Date: November 6, 2009

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	89	11/6/09			2/3/10				C. Stevens	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	32	2/4/10			3/8/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/9/10			4/8/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	21	3/30/10			4/20/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	151	11/30/09			4/30/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	If a pre-qualified A&E firm is utilized the time to complete the contracting process should be significantly reduced.
Preliminary Plans	388	5/3/10			5/26/11				C. Stevens	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Design is based on using prototypical facilities. Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	456	1/4/10			4/5/11				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	255	10/25/10			7/7/11				JLBC	JLBC Approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
PWB Approval of Preliminary Plans	255	10/26/10			7/8/11				C. Lief	PWB Approval.	Planned Start Date is based on earliest bid package availability and Planned Complete on
Working Drawings (Construction Documents)	344	4/6/11			3/15/12				C. Stevens	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award	388	6/22/11			7/14/12				C. Stevens	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Construction	849	8/30/11			12/26/13				C. Stevens & Contractor	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Hire Staff	600	3/21/12			11/11/13				W. Still S. Streater Warden	Advertise, Hire, and Train Staff.	
Activation	60	12/27/13			2/25/14				W. Still S. Streater Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	270	12/27/13			9/23/14				W. Still S. Streater Warden		

[1] This facility is intended to include 775 EOP, 50 EOP/ASU, and 977 non-mental health beds.

[2] Special Master shall receive updates on construction every 90 days.

Project: **Stark Conversion (1802-Beds)**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Stevens	Chuck	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	15180 Euclid Ave.	Chino	91710

Exhibit #11

Heman G. Stark
30 Mental Health Crisis Beds

Project:	**Stark 60 BED Correctional Treatment Center**[1]		**Report Period Ending: November 6, 2009**
Responsible Person:	**Chris Meyer/CDCR**	**Jay Sturges/DOF**	
Address of Resp. Person:	**9838 Old Placerville Rd., Suite B Sacramento California**	**915 L Street, Sacramento California 95814**	
Project Architect:	**TBD**		
Location:	**Heman G. Stark, Chino, CA**		
Funding Source:	**AB 900 (GC 15819.40)**		

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	**94**	**11/6/09**			**2/8/10**				S. Durham	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	**30**	**2/9/10**			**3/11/10**				C. Stevens	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	**30**	**3/12/10**			**4/11/10**				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	**1**	**4/12/10**			**4/12/10**				C. Lief	Upon legislative approval, obtain PWB recognition of Scope, Cost, and Schedule.	
Request Loan from PMIA	**20**	**3/31/10**			**4/20/10**				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account. (PMIA)	
Approval of PMIA Funding	**1**	**4/21/10**			**4/21/10**				Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	**173**	**11/8/09**			**4/30/10**				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	**330**	**5/3/10**			**3/29/11**				C. Stevens	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)	**240**	**4/22/10**			**12/18/10**				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	**49**	**2/17/11**			**4/7/11**				JLBC	JLBC Approval. PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.	
PWB Approval of Preliminary Plans	**49**	**2/18/11**			**4/8/11**				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	**209**	**4/11/11**			**11/6/11**				C. Stevens	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	**92**	**11/7/11**			**2/7/12**				C. Stevens	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	**601**	**2/8/12**			**10/1/13**				C. Stevens Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	**600**	**1/10/12**			**9/1/13**				S. Streater Warden	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	**601**	**2/8/12**			**10/1/13**				Contractor TBD	Including final as-built drawings.	
Self Certification	**7**	**10/2/13**			**10/9/13**				C. Meyer		
License Approval	**60**	**8/12/13**			**10/10/13**				S. Streater W. Still Warden	DPH Survey, DPH Approval.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Activation	**60**	**10/2/13**			**12/1/13**				S. Streater W. Still Warden	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Inmate Occupancy	**60**	**10/11/13**			**12/10/13**				S. Streater W. Still Warden	Assumes Patients will be admitted at a rate of six per week.	

[1] This facility is intended to include 30 MHCB and 30 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **Stark 60 BED Correctional Treatment Center**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Stevens	Chuck	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	15180 Euclid Ave.	Chino	91710

Exhibit #12

Dewitt
375 Enhanced Outpatient Program–
General Population and
50 Enhanced Outpatient Program-
Administrative Segregation Unit beds

Project: DeWitt Nelson Conversion[1] — **Report Date:** November 6, 2009
Responsible Person: Chris Meyer, CDCR — Jay Sturges, DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: DeWitt Nelson, Stockton
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package	94	11/6/09			2/8/10				S. Durham	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	Project Director to be identified.
Review Funding Request Package	30	2/9/10			3/11/10				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	3/12/10			4/11/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	4/12/10			4/12/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	21	3/30/10			4/20/10				S. Durham	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	4/21/10			4/21/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	90	4/22/10			7/21/10				S. Durham	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	
Preliminary Plans	248	7/22/10			3/27/11				S. Durham	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Assumes use of prototypical housing unit.
California Environmental Quality Act Compliance (CEQA)	330	4/22/10			3/18/11				S. Durham	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	3/28/11			5/12/11				JLBC	JLBC Approval.	
PWB Approval of Preliminary Plans	45	3/29/11			5/13/11				C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	180	5/16/11			11/12/11				S. Durham	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Bid and Award	90	11/14/11			2/12/12				S. Durham	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	720	2/13/12			2/2/14				S. Durham Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	
Hire Staff	425	11/4/12			1/3/14				S. Streater W. Still & Warden	Advertise, Hire, and Train Staff.	
Activation	60	2/3/14			4/4/14				S. Streater W. Still & Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	
Inmate Admissions	270	2/12/14			11/9/14				S. Streater W. Still & Warden		

[1] This facility is intended to include 375 EOP, 50 EOP/ASU, and 708 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **DeWitt Nelson Conversion**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Durham	Stephen	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden, DeWitt	7650 So. Newcastle Rd.	Stockton	95213

Exhibit #13

Estrella
150 Enhanced Outpatient Program–
General Population and
40 Enhanced Outpatient Program-
Administrative Segregation Unit beds

Project: Estrella Health Care Facility "El Paso de Robles Conversion"[1]
Report Period Ending: November 6, 2009
Responsible Person: Chris Meyer CDCR — Jay Sturges /DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: TBD
Location: Paso Robles, CA
Funding Source: AB 900 (GC 15819.40)

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Cost, and Schedule for AB 900 30 Day Funding Request Package		11/6/09			11/6/09				G. Simcoe	Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package	30	11/9/09			12/9/09				C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	30	12/10/09			1/9/10				JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Cost, and Schedule.	
PWB Recognition of Project Scope, Cost, and Schedule	1	1/11/10			1/11/10				C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	20	12/30/09			1/19/10				D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding	1	1/20/10			1/20/10				Director of Finance, State Controller and State Treasurer	Submit loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	7	1/21/10			1/28/10				J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Assumes contract scope is developed, negotiated, and pending execution.
Preliminary Plans - Bid Package Structure	196	1/29/10			8/13/10				G. Simcoe	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
California Environmental Quality Act Compliance (CEQA)	153	8/3/09			1/3/10				B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	91	7/8/10			10/7/10				JLBC	JLBC Approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
PWB Approval of Preliminary Plans - Bid Package Structure	91	7/9/10			10/8/10				C. Lief	PWB Approval.	Duration is based on multiple bid package structure. Planned Start Date is based on first PWB date of earliest bid package availability and Planned Complete is date of PWB for lastest bid package.
Working Drawings (Construction Documents) - Bid Package Structure	235	7/12/10			3/4/11				G. Simcoe	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Bid and Award - Bid Package Structure	116	12/8/10			5/20/11				G. Simcoe	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Construction[2-] Bid Package Structure	459	2/8/11			5/12/12				G. Simcoe / Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Duration is based on multiple bid package structure. Planned Start Date is based on earliest bid package availability and Planned Complete on end of last bid package.
Hire Staff	153	11/10/11			4/11/12				S. Streater W. Still Warden	Advertise, Hire, and Train Staff.	
Activation	30	5/13/12			6/12/12				S. Streater W. Still Warden	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification SM	Lead Person	Key Sub-Tasks	Status
Patient Admisssions	**120**	**5/13/12**			**9/10/12**				S. Streater W. Still Warden		

[1] This facility is intended to include 150 EOP, 40 EOP/ASU, and 709 non-mental health beds.
[2] Special Master shall receive updates on construction every 90 days.

Project: **Estrella Health Care Facility "El Paso de Robles Conversion"**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jackson	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Meyer	Chris	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Simcoe	Geoff	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Still	Wendy	CPHCS-Receiver's Representative	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814
TBD		Warden	4545 Aiport Rd.	Paso Robles	

Exhibit #14

Long-Range Bed Planning (Men)

California Department of Corrections and Rehabilitation
Division of Correctional Health Care Services
Mental Health Program

Men's Mental Health Program Capacity Requirements

Long Term Bed Plan

Spring 2009 Projections through 2013

UPDATED -- November 2009

Level of Care:	Current Program Capacity:	+	New Capacity:	-	Returned Capacity:	=	Net Capacity:	Mental Health Bed Need Study - Spring 2009 Population Projections, April 2009 (Navigant Consulting) Need to 2013:	over/ (under) need
EOP	3,141		1,625		0		4,766	4,763	3
ASU	474		212		0		686	675	11
PSU	384		152		0		536	546	(10)
MHCB	314		246		-90		470	470	0
Acute - Total	155		63		-25		193	193	0
ICF (Low Custody) - Total	365		25		0		390	301	89
ICF-High Custody	306		496		-178		624	624	0
Total:	5,139		2,819		-293		7,665	7,572	93

Table #A: Capacity as of May, 2009.
Data sources for number of beds: Health Care Population Oversight Program.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC	384	74	256	24				738
RJD	330	63		14				407
CMC[1]	580	54		36				670
CIM[2]				34				34
LAC	300	54		12				366
SVSP[3]	192	45		10			240	487
CMF[4]	533	58		70	130	84	66	941
PBSP	66		128	10				204
COR	150	54		23				227
MCSP	510	36		8				554
SQ		36						36
HDSP				10				10
KVSP	96			12				108
NKSP				10				10
PVSP				6				6
SATF				20				20
SOL				9				9
WSP				6				6
Sub Total:	3,141	474	384	314	130	84	306	4,833

**Department of Mental Health Hospital Capacity:	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
ASH					25	231		256
CSH						50		50
Total:	0	0	0	0	25	281	0	306
Grand Total: (DMH Hospital + CDCR)	3,141	474	384	314	155	365	306	5,139

Table #B: New capacity under development, proposed, converted or returned to original use.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC			152					152
RJD								0
CMC				50				50
CIM								0
LAC[5]	150							150
SVSP[6]	108	27						135
CMF[7]	67				20		64	151
PBSP								0
COR[8]		45						45
MCSP								0
SQ[9]				29				29
HDSP								0
KVSP								0
NKSP								0
PVSP								0
SATF								0
SOL								0
WSP								0
Stark	775	50		30				855
Estrella	150	40						190
Dewitt	375	50						425
CCC-N				137	43		432	612
Sub Total:	1,625	212	152	246	63	0	496	2,794

Department of Mental Health Hospital Capacity:	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
ASH						25		25
CSH								0
Total:	0	0	0	0	0	25	0	25
Grand Total: (DMH Hospital + CDCR)	1,625	212	152	246	63	25	496	2,819

Table #C: Capacity to be returned to alternate use when need is eliminated by adding capacity.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC								0
RJD								0
CMC				-36				-36
CIM				-34				-34
LAC								0
SVSP							-112	-112
CMF				-20			-66	-86
PBSP								0
COR								0
MCSP								0
SQ								0
HDSP								0
KVSP								0
NKSP								0
PVSP								0
SATF								0
SOL								0
WSP								0
Sub Total:	0	0	0	-90	0	0	-178	-268

Department of Mental Health Hospital Capacity:	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
ASH					-25			-25
CSH								0
Total:	0	0	0	0	-25	0	0	-25
Grand Total: (DMH Hospital + CDCR)	0	0	0	-90	-25	0	-178	-293

Table #D: Net capacity.

Institution	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
	Level of Care							
SAC	384	74	408	24	0	0	0	890
RJD	330	63	0	14	0	0	0	407
CMC	580	54	0	50	0	0	0	684
CIM	0	0	0	0	0	0	0	0
LAC	450	54	0	12	0	0	0	516
SVSP	300	72	0	10	0	0	128	510
CMF	600	58	0	50	150	84	64	1,006
PBSP	66	0	128	10	0	0	0	204
COR	150	99	0	23	0	0	0	272
MCSP	510	36	0	8	0	0	0	554
SQ	0	36	0	29	0	0	0	65
HDSP	0	0	0	10	0	0	0	10
KVSP	96	0	0	12	0	0	0	108
NKSP	0	0	0	10	0	0	0	10
PVSP	0	0	0	6	0	0	0	6
SATF	0	0	0	20	0	0	0	20
SOL	0	0	0	9	0	0	0	9
WSP	0	0	0	6	0	0	0	6
Stark	775	50	0	30	0	0	0	855
Estrella	150	40	0	0	0	0	0	190
Dewitt	375	50	0	0	0	0	0	425
CCC-N	0	0	0	137	43	0	432	612
Sub-Total:	4,766	686	536	470	193	84	624	7,359

Department of Mental Health Hospital Capacity:	EOP	ASU	PSU	MHCB	Acute	ICF	ICF-H	Total
ASH						256		256
CSH						50		50
Total:	0	0	0	0	0	306	0	306
Grand Total: (DMH Hospital + CDCR)	4,766	686	536	470	193	390	624	7,665

Legend
- Current program capacity
- New capacity
- Returned capacity
- Net capacity
- Long term plan
- Long term plan/Court ordered
- Proposed change to court order

ASSUMPTIONS:
This plan assumes:

-- **In Table A, the base bed number point is May 2009 and does not include the activated or scheduled short term proposals. In Table B, the only short term proposals included are those intended to become permanent. Those short term proposals that are intended to become permanent (as indicated in Table B) are ASH 25 bed ICF from Acute, COR 45 bed EOP-ASU ,SQ 17 MHCB, and SVSP 27 EOP-ASU.**

-- Mental health bed need projections to 2013 using Spring 2009 population projections.

-- One new facility is proposed to be built in collaboration with the *Plata* Receiver. This facility will provide mental health care in housing appropriate to patient custody level.

-- All Coleman court ordered projects are completed.

-- As represented in Table C, all "temporary" projects are decommissioned. Court identified temporary projects include the ICF-high custody beds in D-5 and D-6 at SVSP (112 beds), the MHCB at CMC (36 bed), the MHCB at CIM (34 beds), and the ICF- high custody beds at CMF (66 beds). Also, the interim 20 MHCB at CMF APP revert back to Acute beds and, in keeping with the short term proposals, the interim 25 Acute beds at ASH remain ICF beds. Table C does not include the decommissioning of short term and interim proposals since they are not part of the base bed number in Table A.

-- No currently operating programs will be decommissioned unless;
1) the space is being converted to another required level of mental health care; and
2) there is adequate alternative capacity to accommodate future need in that level of care.

-- CDCR inmates will remain in DMH hospital beds, unless and until those services are no longer required.

FOOTNOTES (Men's Program):
1. CMC: The 36 MHCBs are interim and will be decommissioned when there is no wait list.

2. CIM: The 34 MHCBs are interim and will be decommissioned when there is no wait list.

3. SVSP: The base line for the long-term plan includes the following: ICF High Custody beds comprised of 128 permanent ICF beds plus 112 temporary beds (in D-5 and D-6 housing units). The 112 beds in D-5 and D-6 will remain in place with new treatment space until there is no wait list; these are considered temporary by the Coleman Court.

4. CMF: The base line for the long-term plan includes the following: ICF-low custody beds comprised of 44 ICF beds in the A-2 housing unit plus 40 ICF beds in the A-3 housing unit; ICF-high custody beds are comprised of 36 in the P-2 housing unit and 30 in the P-3 housing unit; these are considered temporary by the Court . Not included in the base bed numbers are short-term projects, which include 36 ICF high custody beds in the P-2 housing unit that have been converted to Acute.

5. LAC: Builds, per court order, treatment and office space for a housing unit conversion to 150 EOP beds.

6. SVSP: The 27 additional EOP-ASU beds are created in existing housing as a short term project and will remain permanent as part of the long-term bed plan. In the long-term bed plan, the existing EOP-GP program will be moved to A yard, expanded by 108 beds and have treatment and office space sized and built for that program (300 total EOP beds). The expanded EOP-ASU will then claim vacated existing EOP treatment and office space.

7. CMF: Additional treatment and office space is in planning and design for the CMF EOP (including expanded capacity) and EOP-ASU populations. The interim 20 MHCB at CMF APP revert back to Acute beds.

8. COR: The 45 additional EOP-ASU beds are created in existing housing as a short term project and will remain permanent as part of the long term bed plan. Permanent treatment and office space will be built to support these services.

9. SQ: The 29 MHCBs at SQ are delineated as follows: 17 MHCBs in Building 22 (Receiver's project), and 12 MHCBs within the CTC at the Condemned Inmate Complex project.

Exhibit #15

California Institution for Women
45-bed Intermediate Care Facility

Project:	**45 Bed Intermediate Care Facility (Licensed Facility)[1]**		**Report Period Ending: October 22, 2009**
Responsible Person:	**Deborah Hysen/CDCR**	**Jay Sturges/DOF**	
Address of Resp. Person:	**9838 Old Placerville Rd., Suite B Sacramento California**	**915 L Street, Sacramento California 95814**	
Project Architect:	**Nacht and Lewis Architects**		
Location:	**California Institution of Women, Corona (CIW)**		
Funding Source:	**AB 900 (GC 15819.40)**		

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Develop Scope, Schedule and Cost for AB 900 30 Day Funding Request Package						**4/14/09**				Develop Preliminary Program, Conceptual Scope, Schedule, and Cost. Develop Preliminary Staffing Requirements. Prepare 30 Day Letter Funding Request. Submit to DOF for approval.	
Review Funding Request Package		**4/15/09**	**4/15/09**		**4/29/09**	**4/29/09**			C. Lief	DOF review of funding request package. If package complies with applicable laws, the DOF prepares transmittal letter to the Legislature for approval.	
Legislative Approval of Scope, Schedule, and Cost	**30**	**4/29/09**	**4/29/09**		**5/29/09**	**5/29/09**			JLBC	DOF Review and Submission to the Legislature. Legislative Approval of Scope, Schedule, Cost.	
PWB Recognition of Project Scope, Cost, and Schedule		**6/12/09**	**6/12/09**		**6/12/09**	**6/12/09**			C. Lief	Upon legislative approval, obtain PWB recognition of Project Scope, Cost, and Schedule.	
Request Loan from PMIA	**21**	**4/23/09**	**4/23/09**		**5/20/09**	**5/20/09**			D. Borg	Submit Loan Documents to request loan from the Pooled Money Investment Account (PMIA).	
Approval of PMIA Funding		**6/17/09**	**6/17/09**		**6/17/09**	**6/17/09**			Director of Finance, State Controller and State Treasurer	Submit Loan application for initial design phase to Pooled Money Investment Board (PMIB) for approval. Note that PMIA loans are for the project's cash needs for the next 12 months and are renewed annually or more often, until the sale of lease revenue bonds.	
Architectural/Engineering Contracting	**2**	**6/17/09**	**6/17/09**		**6/19/09**	**7/14/09**	**25**		J. Cummings	Select A/E firm, Negotiate Scope and Fee, Execute Contract(s).	Contract execution delayed due to year end work load issues. There is no impact to overall schedule.
Preliminary Plans	**663**	**11/15/06**	**11/15/06**		**9/8/08**	**9/8/08**			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	Planned complete date for PP that was originally filed with the court was incorrect. The date listed now, 9/8/08 is the correct date.
California Environmental Quality Act Compliance (CEQA)						**9/27/07**				Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	**45**	**9/9/08**	**9/9/08**		**10/24/08**	**10/24/08**			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans		**6/12/09**	**6/12/09**		**6/12/09**	**6/12/09**			C. Lief	PWB Approval.	Preliminary plan approval occured concurrent with the establishment of scope, cost, and schedule.
Working Drawings (Construction Documents)	**170**	**6/22/09**	**7/15/09**	**23**	**12/9/09**				K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	Contract execution delayed start of working drawings. There is no impact to overall schedule. Working Drawings are approximately 50% complete.
Bid and Award	**69**	**12/10/09**			**2/17/10**				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	
Construction[2]	**661**	**2/18/10**			**12/11/11**				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy. Submit loan documents to DOF and obtain PWB approval for loan for the project's cash needs for the next 12 months. Submit loan application to PMIB for approval.	CDCR is evaluating opportunities to accelerate construction.
Hire Staff	**364**	**11/12/10**			**11/11/11**				S. Streater D. Davison	Advertise, Hire, and Train Staff.	
Prepare Final Verified Office of Statewide Health Planning and Development (OSHPD) Reports	**661**	**2/18/10**			**12/11/11**				TBD	Including final as-built drawings.	Construction Manager and Inspector of Record to be identified prior to construction start.
Self Certification	**15**	**12/12/11**			**12/27/11**				D. Hysen		
License Approval	**9**	**12/28/11**			**1/6/12**				S. Streater D. Davison	DPH Survey, DPH Approval.	
Activation	**60**	**1/9/12**			**3/9/12**				S. Streater D. Davison	Initial staff occupancy, staff orientation, develop policies and procedures, stock supplies/inventory, placement of Group II equipment.	
Patient Admissions	**60**	**1/9/12**			**3/9/12**				S. Streater D. Davison	Assumes Patients will be admitted at a rate of six per week.	

[1] Court Order filed 3/1/07, Docket No. #2154

[2] Special Master shall receive updates on construction every 90 days.

Project: **CIW 45 Bed Intermediate Care Facility (Licensed Facility)**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Borg	Dean	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Chang	John	State Controller	300 Capitol Mall, Suite 1850	Sacramento	95814
Contractor TBD					
Cummings	Jack	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Davison	Dawn	CDCR/CIW	16756 Chino-Corona Rd.	Corona	92878
Genest	Michael	Director, DOF	915 L Street	Sacramento	95814
Hysen	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Jones-Brown	Deborah	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Lockyer	Bill	State Treasurer	915 Capitol Mall C-15	Sacramento	94209
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #16

California Institution for Women
20-bed Psychiatric Services Unit

Project: 20 Bed Psychiatric Services Unit (PSU)[1]
Report Period Ending: October 22, 2009
Responsible Person: Deborah Hysen/CDCR — Jay Sturges/DOF
Address of Resp. Person: 9838 Old Placerville Rd., Suite B Sacramento California — 915 L Street, Sacramento California 95814
Project Architect: Nacht and Lewis Architects
Location: California Institution of Women, Corona (CIW)
Funding Source: General Fund

Primary Tasks	Duration (Cal. Days)	Planned Start	Actual Start	Days (Ahead) Behind	Planned Complete	Actual Complete	Days (Ahead) Behind	Completion Certification to SM	Lead Person	Key Sub-Tasks	Status
Preliminary Plans	103	11/18/08	11/18/08		3/2/09	3/2/09			K. Beland	Clinical/Architectural Programming, Schematic Design, Design Development, Design Review, Develop Initial Group II Equipment List, Update Staffing Requirements, Update Project Cost and Schedule, Prepare JLBC 45-day notice and PWB Preliminary Plan approval Submittal Package.	
California Environmental Quality Act Compliance (CEQA)						3/5/08			B. Sleppy	Select Consultant, Negotiate/Execute Contract, Prepare CEQA Documents, Circulate/Comment Period, File Notice of Determination (N. O. D.), Litigation Period.	
JLBC Approval of Preliminary Plans	45	3/24/09	3/24/09		5/8/09	5/8/09			JLBC	JLBC Approval.	PC 7000 provides the JLBC a 45-day review period before PWB can approve preliminary plans.
PWB Approval of Preliminary Plans	45	3/24/09	3/24/09		5/8/09	5/8/09			C. Lief	PWB Approval.	
Working Drawings (Construction Documents)	161	5/11/09	5/11/09		10/19/09		3		K. Beland	Complete Construction Documents, Obtain Regulatory Reviews (SFM, ADA, etc.), Finalize Group II Equipment List, Update Project Schedule and Cost, Prepare Approval of Working Drawings and Proceed to Bid Package and submit to DOF for approval.	Working drawings for housing renovation are 100% complete and modular treatment & office space are 99% complete. PWB screening approval for use of IWL for housing renovation is targeted for 10/26/09. There is no impact to overall schedule.
Bid and Award	67	10/20/09		2	12/26/09				K. Beland	Advertise for Bids, Hold Pre-Bid Conference, Receive Bids, Verify Lowest Responsive Bidder, Request DOF Approval to Award, Award Contract.	CDCR will mitigate the Bid & Award period by using IWL and housing renovation will commence pending transfer of funds .
Construction[2]	360	12/28/09			12/23/10				K. Beland Contractor TBD	Mobilize Construction Contractor, Construction Manager, Inspector of Record, Construct Project, Purchase and Install Group II Equipment, Testing of Systems (Fire alarm, Nurse Call, etc.), Punch list, SFM Temporary Certificate of Occupancy and Final Certificate of Occupancy.	CDCR anticipates construction will start 11/16/09. PIA construction of modular unit pending completion of WD. There is no impact to overall schedule.
Hire Staff	153	6/23/10			11/23/10				S. Streater D. Davison	Advertise, Hire, and Train Staff.	
Activation	60	12/24/10			2/24/11				S. Streater D. Davison	Initial staff occupancy, staff orientation, stock supplies/inventory, placement of Group II equipment.	

[1] Court Order filed 3/28/07, Docket No. #2178
[2] Special Master shall receive updates on construction every 90 days.

Project: **CIW 20 Bed Psychiatric Services Unit (PSU)**

Lead Person Roster

Name			Address		
Last	**First**	**Agency/Dept.**	**Street**	**City**	**Zip**
Beland	Keith	CDCR/FPC&M	9839 Old Placerville Rd.	Sacramento	95827
Contractor TBD					
Davison	Dawn	CIW/CDCR	16756 Chino-Corona Rd.	Corona	92878
Lief	Christopher	DOF	915 L Street	Sacramento	95814
Sleppy	Bob	CDCR/FPC&M	9838 Old Placerville Rd.	Sacramento	95827
Streater	Suzanne	CDCR/DCHCS	501 J Street	Sacramento	95814

Exhibit #17

Long-Range Bed Planning (Women)

California Department of Corrections and Rehabilitation
Division of Correctional Health Care Services
Mental Health Program

Women's Mental Health Program Capacity Requirements

Spring 2009 Projections through 2013

Updated - November 2009

Level of Care:	Current Program Capacity:	+	New Capacity:	-	Returned Capacity:	=	Net Capacity:	Mental Health Bed Need Study - Spring 2009 Population Projections, April 2009 (Navigant Consulting) Need to 2013:	over/(under) need
EOP	129		70		0		199	199	0
ASU	19		0		0		19	16	3
PSU	10	+	20	-	-10	=	20	12	8
MHCB	22		0		0		22	18	4
Acute/ICF**	30		45		-30		45	27	18
Total:	210		135		-40		305	272	33

Table #A: Capacity as of May, 2009
Data sources for number of beds: Health Care Population Oversight Program, Licensing Unit, and Office of Facilities Management.

Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
	Level of Care					
CCWF	54			12		66
CIW	75	10	10	10		105
VSPW		9				9
Total:	129	19	10	22	0	180
**Department of Mental Health Hospital Capacity:						
PSH					30	30
Total:	0	0	0	0	30	30
Grand Total: (DMH Hospital + CDCR)	129	19	10	22	30	210

Table #B: New capacity under development, proposed or converted.

Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
	Level of Care					
CCWF						0
CIW			20		45	65
VSPW						0
1)	70					70
Total:	70	0	20	0	45	135
Department of Mental Health Hospital Capacity:						
PSH						
Total:	0	0	0	0	0	0
Grand Total: (DMH Hospital + CDCR)	70	0	20	0	45	135

Table #C: Capacity to be returned to alternate use when need is eliminated by adding capacity.

Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
	Level of Care					
CCWF						0
CIW			-10			-10
VSPW						0
Total:	0	0	-10	0	0	-10
Department of Mental Health Hospital Capacity:						
PSH					-30	-30
Total:	0	0	0	0	-30	-30
Grand Total: (DMH Hospital + CDCR)	0	0	-10	0	-30	-40

Table #D: Net capacity.

Institution	EOP	ASU	PSU	MHCB	Acute/ ICF	Total
	Level of Care					
CCWF	54	0	0	12	0	66
CIW	75	10	20	10	45	160
VSPW	0	9	0	0	0	9
	70	0	0	0	0	70
Total:	199	19	20	22	45	305
Department of Mental Health Hospital Capacity:						
PSH					0	0
Total:	0	0	0	0	0	0
Grand Total: (DMH Hospital + CDCR)	199	19	20	22	45	305

Legend

- Current program capacity
- New capacity
- Returned capacity
- Net capacity
- Long term plan
- Long term plan/Court ordered

ASSUMPTIONS:

This plan assumes:

-- Mental health bed need projections to 2013 using Spring 2009 population projections.

-- All proposed projects to meet mental health population projections will have adequate treatment and office space, either temporary or permanent.

-- No currently operating programs will be decommissioned unless;
1) the space is being converted to another required level of mental health care; and
2) there is adequate alternative space to accommodate need.

FOOTNOTES (Women's Program):

1. 70 EOP beds for women will be designated in existing housing at one of the three women's institutions. Specific housing for this purpose is under review.