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STATE HIGHWAY 1 & DOLAN ROAD FEASIBILITY STUDY

MONTEREY COUNTY, CALIFORNIA

Final Report

Prepared For

Monterey County Resource Management Agency
Department of Public Works
Salinas, California

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EXECUTIVE SUMMARY

The State Highway 1 & Dolan Road Feasibility Study evaluates potential safety and operational improvements at the State Route 1 / Dolan Road intersection in Moss Landing, California. This feasibility study was commissioned by the Monterey County Resource Management Agency – Department of Public Works to review the potential improvement options, including their benefits, physical and environmental challenges, and any related issues that may hinder or prevent their ultimate implementation.

The intent of the Feasibility Study is to analyze shorter-term safety and operational improvements and cost effective solutions. The Study does not preclude or analyze in detail the need for longer-term improvements along the Highway 1 corridor between Castroville to Moss Landing and as such should be analyzed in a corridor study. Longer-term solutions should incorporate a corridor study to include the other intersections of Highway 1 in the Moss Landing area. These long term solutions include but are not limited to a roundabout, consolidating intersections and driveways and connection of Dolan Road and Moss Landing Road via a new overpass.

This feasibility study is just the first step in a process to implement safety and capacity improvements at the State Route 1 / Dolan Road intersection. Its aim is to identify the preferred feasible improvements for further evaluation. As the intersection is under the jurisdiction of Caltrans, further analysis and design work will need to be prepared prior to implementation, including a formal Project Study Report.

The project approach and analysis contained herein has been structured akin to the recently adopted Caltrans Traffic Operations Policy Directive 13-02, "Intersection Control Evaluation (ICE)," which governs analysis of potential intersection traffic control improvements. Although Caltrans District 5 has yet to announce its guidelines for implementation of that new policy, the analysis contained within this report was established with the goal of being consistent with said future guidelines.

Existing Conditions:

Study Area:

The State Route 1 (SR 1) / Dolan Road intersection is located in Moss Landing, California. Major uses in the Moss Landing Area are the Moss Landing Harbor, the Monterey Bay Aquarium Research Institute (MBAR), the Moss Landing Marine Laboratories (MLML), the Moss Landing Power Plant, and the Moss Landing Commercial Park (a.k.a. Moss Landing Business Park). Of those uses, the Moss Landing Harbor fronts the study intersection to the west, the Moss Landing Power Plant is located at the northeast corner of the intersection, and the Moss Landing Commercial Park is located at the southeast corner of the intersection.

Current and Past Studies of the Area:

The draft Moss Landing Community Plan update, which governs the study area, contains the

following policies and recommendations regarding State Route 1:

1. Installation of roundabouts at key intersections with State Route 1 (e.g. Dolan Road and Moss Landing Road);

2. Minimize new direct access points to State Route 1;

3. Preparation of a Project Study Report for the State Route 1 corridor through Moss Landing area, with potential improvements to include the consolidation of the State Route 1 intersections with Dolan Road and Moss Landing Road (North).

The *State Routes 1 & 183 Corridor System Management Plan* (CSMP) by Caltrans District 5 notes that, between 2006 and 2009, SR 1 at Dolan Road had a collision rate of more than three times the statewide average for similar intersections. The document also includes the following general recommendations that could be applied as improvements within the study area:

1. Add auxiliary lanes, intersection improvements and other system refinements, in order to reduce delay preserve and enhance existing services, while noting that operational improvements alone do not solve corridor capacity needs.

2. Redesign and modernize the intersections to reduce delay and maximize throughput on State Route 1 and parallel routes. These upgrades may include improving the parallel local road network, adding turn-movement storage, deceleration and/or acceleration lanes to the intersection, and converting at-grade intersections into grade-separated interchanges.

3. Increase the capacity, operational efficiency and connection on the parallel road network to reduce local traffic demand on SR 1.

<u>Existing Transportation Network:</u>

The **SR 1/Dolan Road intersection** is a "T" intersection, with SR 1 in a north-south alignment and Dolan Road in a roughly east-west alignment. Traffic on Dolan Road is stop controlled, while SR 1 traffic is free-flow through the intersection. Left and right turn lanes are present on both SR 1 and Dolan Road at the intersection. A median acceleration lane is also present along southbound SR 1 for use by traffic turning left from Dolan Road. Note that a Moss Landing Power Plant gated driveway forms a fourth approach to the intersection.

Monterey-Salinas Transit (MST) operates three fixed-route lines through Moss Landing – Lines 27, 28 and 78, which together serve Marina, Watsonville, Castroville, Salinas, Santa Cruz and the Presidio of Monterey. All three lines stop at bus stops located alongside each direction of SR 1 south of Dolan Road.

No bicycle lanes are formally marked in the study area, although the paved shoulders of both SR 1 and Dolan Road are used by bicyclists as bicycle lanes. Although these shoulders are

generally adequate for use by bicyclists, the shoulder along northbound SR 1 narrows to only four feet in advance of its intersection with Dolan Road.

Formal bicycle lanes are proposed along Dolan Road between SR 1 and Castroville Boulevard. Design is underway on a new joint-use pedestrian and bike path (the "Monterey Bay Sanctuary Scenic Trail – Moss Landing Segment") to be located alongside SR 1 and Moss Landing Road between the northern and southern ends of Moss Landing Harbor.

No sidewalks, crosswalks, or other pedestrian facilities are present in the vicinity of the SR 1/Dolan Road intersection. No new pedestrian improvements are proposed in the area other than the aforementioned Monterey Bay Sanctuary Scenic Trail.

A number of aboveground and underground utilities are present near the SR 1/Dolan Road intersection, including utility poles fronting both sides of SR 1 and the southern frontage of Dolan Road, telephone vaults are located along the frontages of both SR 1 and Dolan Road near the southeastern corner of their intersection, and various manholes accessing underground potable water pipelines located along the western side of the intersection.

The foliage present near the SR 1/Dolan intersection is composed of trees and bushes. Both eucalyptus and Monterey cypress trees front SR 1, with clusters of both tree types located along both sides of the highway. Various small trees and bushes are scattered along the eastern frontage of SR 1 against the security fence for the Moss Landing Commercial Park.

Geotechnical Report:

A geotechnical report was prepared, documenting past geotechnical investigations in the site vicinity, a field visit, testing of field samples, and preliminary pavement design sections. The report concluded that roadway widening in this area was feasible from a geotechnical pavement engineering standpoint; however, a thicker pavement section was recommended for any widening south of Dolan Road. Further investigation of subgrade soils requiring this thicker section was also recommended. The full geotechnical report can be found within **Appendix A**.

Environmental Constraints Assessment:

An environmental constraints assessment was prepared, identifying the potential existing environmental constraints adjacent to the SR 1/Dolan Road intersection and in the surrounding area. The assessment identified various potential issues that could limit – to varying degrees – the ability to implement potential roadway improvement options, as well as a few methods by which the effects of these issues can be minimized if not fully abated. These issues included removal of adjacent trees, the potential presence of endangered plants, nearby archeological sites, potentially historic buildings at the Moss Landing Commercial Park, potentially hazardous soil and water contamination at the Moss Landing Power Plant and Moss Landing Commercial Park, the proximity of the proposed Monterey Bay Sanctuary Trail to the intersection, and the potential relocations of overhead and above ground utilities. The full environmental constraints assessment can be found within **Appendix B**.

Collision Data:

Collision data between 2007 and 2011 was evaluated by collision type and location. A total of 61 collisions occurred within this period, 54 of which occurred within 500 feet of the SR 1/Dolan intersection. The two most prevalent types were rear-end and "failure to yield" collisions. Speeding was considered a primary collision factor in ten of these collisions. Thirty-seven people were injured in the 54 intersection collisions, while no fatalities were reported. The overall collision rate for the intersection is 0.839 collisions per million entering vehicles, nearly three times the statewide average for similar intersections.

Travel Speeds:

Travel speeds along SR 1 were collected via travel time runs conducted in April 2013. Speeds through the study intersection and the immediate vicinity were found to be within 5 MPH of the posted speed limit.

Intersection Operations:

Level of service calculations were performed at the study intersection using intersection volumes collected in March 2011 as part of the Moss Landing Community Plan environmental analysis. The SR 1/Dolan Road intersection currently operates at an acceptable LOS A during both the AM and PM peak hours. However, side street operations on Dolan Road are at LOS E (AM) and LOS F (PM).

Improvement Alternative Analysis:

A total of 12 improvement alternatives were developed to improve safety and operations at the SR 1/Dolan Road intersection. These alternatives vary from simple striping and signing improvements to more complicated roadway widening projects. The improvement alternatives are:

1. No Build
2. Flashing Beacons, Signs, Channelizers & Striping
3. Improve Sight Distance
4. Add Northbound SR 1 Right Turn Acceleration Lane
5. Prohibit Turning Movements
6. Widen Shoulder Widths to Caltrans Standards
7. Widen Lane Widths to Caltrans Standards
8. Full Signal
    a. Single Through Lane
    b. Two Through Lanes
9. Half Signal
    a. Single Through Lane
    b. Two Northbound Through Lanes
10. Roundabout
    a. Single-Lane

b. Two Lane
11. Widen SR 1 to Two Lanes in Each Direction
12. Relocate SR 1/Dolan Intersection to the South

Note: Two other improvement alternatives are also included within this analysis but are not fully evaluated. They are both long-term improvements that are more extensive improvements that those previously mentioned. The long-term improvements are:

13. Consolidate Intersections and Driveways
14. Connect Dolan and Moss Landing Roads via New Overpass

An operational analysis was performed of each of the first twelve alternatives, using the 2010 Highway Capacity Manual methodologies, as part of the overall initial evaluation of each improvement alternative.

A design criteria matrix (**Exhibit 19**) was used to evaluate the improvement alternatives. The individual criteria used in this evaluation included reduction in vehicle delay; improvement of vehicle, pedestrian and bicycle safety; minimization of environmental impacts, right-of-way acquisition, project costs, and project duration; ability to construct in phases or increments; and potential acceptability to Caltrans. Each criterion had a point range, with a perfect total score of 100 points. Each improvement alternative was individually rated, then ranked from highest score to lowest score.

After evaluation, eight of the original fourteen improvement alternatives were rejected from further consideration. The remaining six improvement alternatives were found to have major safety and/or capacity benefits and were further evaluated; those improvement alternatives are:

2. Flashing Beacons, Signs, Channelizers and Striping
3. Improved Sight Distance
4. Add Northbound SR 1 Right Turn Acceleration Lane

8a. Full Signal, One Through Lane
9a. Half Signal, Single Northbound Through Lane
9b. Half Signal, Two Northbound Through Lanes

Improvement Alternative Feasibility Study:

Prior to performing the further analysis, Improvement Alternatives 2, 3 and 4 were combined together into a unified alternative named Improvement Alternative 2-3-4. The other three improvement alternatives remained unchanged.

Unsignalized Improvement Alternative:

Improvement Alternative 2-3-4 is the only improvement alternative that retains the existing side-street stop control. A conceptual design of this improvement is included within **Appendix I**. The improvements include new flashing beacons, signs and street lighting; refreshing of existing pavement striping; trimming of roadside foliage; and a new northbound SR 1 acceleration lane.

Signalized Improvement Alternatives:

Signal warrants were evaluated at the SR 1/Dolan Road intersection under both Existing and Year 2035 Conditions. Of the six signal warrants evaluated, three warrants were found to be met, including the four-hour (Warrant 2) and peak hour (Warrant 3). Based upon these results, a traffic signal is considered warranted.

There are three improvement alternatives that include traffic signals. Conceptual designs of these improvements are included within **Appendix I**.

Improvement Alternative 8a is a standard traffic signal, with all intersection movements (including to and from the gated Moss Landing Power Plant equipment driveway) controlled by the signal. No additional pavement is required with this improvement alternative.

Improvement Alternative 9a is a half signal, whereby one of the through movements on the major street (southbound SR 1, in this case) has a continuous green signal, regardless of the operations of the other signal phases. This improvement alternative does not signalize the power plant driveway, instead leaving it as stop controlled and limiting access to right turns in and out only. No additional pavement is required with this improvement alternative.

Improvement Alternative 9b is also a half signal and treats the power plant driveway in a similar fashion. Unlike the other half-signal alternative, Improvement Alternative 9b adds a second northbound SR 1 through lane at the intersection. This is achieved via a conversion of the existing northbound right turn lane into a shared through-right lane and the addition of a second northbound through lane leaving the intersection. (SR 1 narrows back to a single northbound through lane before reaching the bridge over Elkhorn Slough.) As such, this improvement alternative does require additional pavement north of Dolan Road.

Improvement Alternative Cost Estimates:

Programming estimates have been developed for each of the four improvement alternatives. The estimates range between $700,000 to $1,300,000, depending upon the improvement alternative. Note the programming estimates include construction and all soft costs (design, environmental, right-of-way, utilities construction management and permitting). Programming estimates are plus or minus 35 percent accurate.

Initial Study Results:

An Initial Study was prepared, assessing the potential environmental impacts of Improvement Alternatives 2-3-4, 8a, 9a, and 9b. This Initial Study concluded that a mitigated negative declaration can be declared for all four improvement alternatives. All of the identified potentially significant impacts can be reduced to less-than-significant status through the implementation of various mitigation measures both prior to and during construction. The full Initial Study, including each detailed mitigation measure, is located within **Appendix M**.

Feasibility Assessment:

Accounting for all of the design and environmental analysis, all four improvements (Improvement Alternatives 2-3-4, 8a, 9a, and 9b) appear to be feasible to construct. While there are a number of required mitigation measures that must be followed prior to and during construction, none would preclude the construction of any of the improvement alternatives. However, these mitigation measures will likely increase the construction time and cost.

Improvement Alternatives Recommended for Further Study:

All four of the improvement alternatives discussed in Section 4 – Improvement Alternatives 2-3-4, 8a, 9a, and 9b – appear to be feasible to construct and are not environmentally precluded from construction. It is therefore recommended that all four improvements be considered for future implementation. Further analysis and design is recommended prior to selection of a single improvement alternative for implementation.

Next Steps

The likely next step would be a formal Project Study Report (PSR), which would be the gateway to state approval and funding. A likely PSR component would be the new Intersection Control Evaluation (ICE) process implemented by Caltrans in August 2013, which is a process to analyze potential intersection and interchange improvement alternatives on a Caltrans facility. This includes improvements such as stop signs, traffic signals, roundabouts and improvements deviating from Caltrans design standards. Implementation of the ICE process is left to each individual Caltrans district.

The County of Monterey should also consider long-term improvements, such as intersection consolidation and grade separation improvements (i.e. Improvement Alternatives 13 and 14). These improvements will require considerably more analysis, design, and stakeholder collaboration than was performed as part of this report. These improvements will also be more expensive and will take longer to build; however, they will be more consistent with the stated long-term goals of Caltrans and the Moss Landing Community Plan for the SR 1 corridor through Moss Landing. Note that it is possible that such an improvement may be incorporated into an ICE analysis of the SR 1/Dolan Road intersection.

1 INTRODUCTION

The State Route 1 / Dolan Road intersection in Moss Landing, California is an important component of both the local and regional transportation system in Monterey County. Traffic safety and operations at this intersection have been concerns for both the County of Monterey and the California Department of Transportation (Caltrans) for many years. To begin the process towards implementing roadway improvements at this intersection, the Monterey County Resource Management Agency – Public Works Department has commissioned Hatch Mott MacDonald to prepare this feasibility study to review the potential improvement options, including their benefits, physical and environmental challenges, and any related issues that may hinder or prevent their ultimate implementation. **Exhibit 1** shows the location of the study intersection.

This feasibility study is just the first step in a process to implement safety and capacity improvements at the State Route 1 / Dolan Road intersection. Its aim is to identify the preferred feasible improvements for further evaluation. As the intersection is under the jurisdiction of Caltrans, further analysis and design work will need to be prepared prior to implementation, including a formal Project Study Report.

This report and its contained analysis have been prepared in collaboration with the County of Monterey Department of Public Works staff, principally Ms. Patricia A. Lopez who served as project manager for the County. Considerable interaction between HMM and County staff was an integral component of this project, keeping County staff informed of the results and ensuring that the final report meets County needs. All of the environmental analysis has been prepared by EMC Planning Group under contract with HMM. Finally, HMM has performed all of the transportation and geotechnical analysis, prepared this report and managed the overall analysis and report preparation.

The project approach and analysis contained herein has been structured akin to the recently adopted Caltrans Traffic Operations Policy Directive 13-02, "Intersection Control Evaluation (ICE)," which governs analysis of potential intersection traffic control improvements. Although Caltrans District 5 has yet to announce its guidelines for implementation of that new policy, the analysis contained within this report was established with the goal of being consistent with said future guidelines.

The contents of this report have been split into two pieces – Existing Conditions and Improvement Alternative Analysis.

- Existing Conditions summarizes the existing area, known environmental issues and constraints, intersection and roadway operations, and collision history.

- Improvement Alternative Analysis summarizes the improvement alternatives evaluated in this analysis, the evaluation criteria used in the analysis, the preferred alternatives selected for further analysis, and the results of said further analysis (including conceptual design and more specific environmental analysis).


N.T.S
JENSEN RD
1
CABRILLO HWY
SPRINGFIELD RD.
STRUVE RD
ELKHORN SLOUGH
JETTY RD
STUDY INTERSECTION
MONTEREY BAY
MOSS LANDING
DOLAN RD
1
CABRILLO HWY
MOLERA RD
CASTROVILLE BLVD
Hatch Mott MacDonald
EXHIBIT 1
LOCATION OF STUDY AREA

2 EXISTING CONDITIONS

This chapter presents a description of the surrounding area, current and past studies of the study area, existing road network, existing traffic volumes, known environmental issues, area collision history, and existing traffic operations within the study area.

2.1 Study Area

The State Route 1 / Dolan Road intersection (SR 1/Dolan) is located in Moss Landing, California, a small unincorporated community in northern Monterey County of approximately 200 people[1]. The community is located at nearly the midpoint of Monterey Bay, where Elkhorn Slough empties into the bay. Currently, the primary commercial and industrial uses in the area are related to the Monterey Bay – the harbor and educational research. In addition, a regional electrical power plant and a commercial park front the study intersection. Each use is described on the following pages. See **Exhibit 2** for the location of these uses relative to the SR 1/Dolan intersection.

[1]Moss Landing population taken from 2010 US Census web page, (http://www.census.gov/2010census). Accessed August 6, 2013.


N.T.S
CABRILLO HWY
JETTY RD
ELKHORN SLOUGH
MOSS LANDING HARBOR
STUDY INTERSECTION
MONTEREY BAY
MOSS LANDING
MOSS LANDING POWER PLANT
SAND HOLDT RD
DOLAN RD
MONTEREY BAY AQUARIUM RESEARCH INSTITUTE
MOSS LANDING COMMERCIAL PARK
1
MOSS LANDING RD
MOSS LANDING MARINE LABORATORIES
POTRERO RD
Hatch Mott MacDonald
EXHIBIT 2
AREA LAND USES

2.1.1 Moss Landing Harbor

Exhibit 3 – Moss Landing Harbor

Moss Landing Harbor (**Exhibit 3**) is centered around Elkhorn Slough and its opening into the Monterey Bay. The harbor is home to hundreds of individual slips for recreational boaters and commercial vessels, as well as restaurants, commercial retail and other harbor-related uses. Its southern half sits along the western side of the State Route 1 / Dolan Road intersection. Access to the south harbor is via Moss Landing Road, which connects to SR 1 approximately 1,600 feet south of the SR 1/Dolan intersection. Access to the north harbor is via driveways directly off of State Route 1, north of Elkhorn Slough.

2.1.2 Educational Research

Two non-profit and educational organizations call Moss Landing home – the Monterey Bay Aquarium Research Institute (MBARI) and the Moss Landing Marine Laboratories (MLML). Both organizations perform research about the Monterey Bay ecosystem and its inhabitants. MBARI, the research arm of the Monterey Bay Aquarium, is located on a spit of partially developed land separating the Moss Landing Harbor from the Monterey Bay. Moss Landing Marine Laboratories is operated by the California State University system, and is located approximately a third of a mile to the south of the harbor. Both are accessible from State Highway 1 via Moss Landing Road.

2.1.3 Moss Landing Power Plant

Exhibit 4 – Moss Landing Power Plant

The Moss Landing Power Plant (**Exhibit 4**) is located at the northeastern corner of the SR 1/Dolan intersection. Originally built in the 1950s to burn oil, today the plant uses natural gas to generate electrical power for the greater Monterey Bay Area and Northern California. Primary access to the plant is via Dolan Road, although there is a little-used driveway off of State Route 1 approximately 600 feet north of Dolan Road. A gated emergency access to plant equipment

adjacent to Moss Landing Harbor is located immediately opposite the SR 1/Dolan intersection, forming a fourth leg to the intersection (**Exhibit 5**).

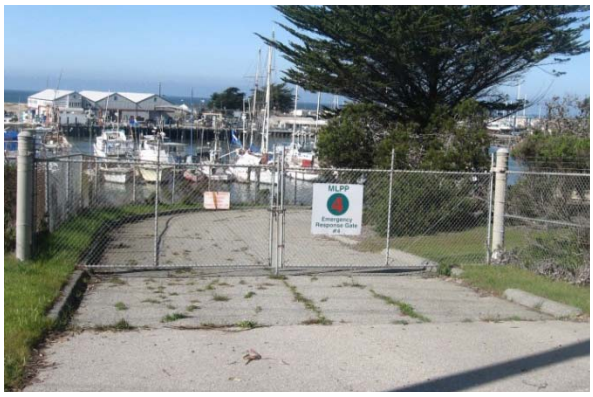


Exhibit 5 – Moss Landing Power Plant Emergency Gate

2.1.4 Moss Landing Commercial Park

The Moss Landing Commercial Park (also known as the Moss Landing Business Park – **Exhibit 6**) is an underutilized business park located at the southeastern corner of the SR 1/Dolan intersection. Although a few industrial businesses do populate the facility, the majority of the site's buildings are currently vacant. A citizens group has proposed to construct a water desalinization plant within a portion of the site; as of this writing, no date has yet been set for its construction.

Exhibit 6 – Moss Landing Commercial Park

The business park was previously used for various industrial uses. The site was originally developed to produce refractory bricks for use in large industrial furnaces. In the 1950s, storage tanks for oil and gasoline were added; many of the original fuel tanks remain on the project site (**Exhibit 7**). In addition, piping is still present between those tanks and a fuel loading/unloading dock located within the southern Moss Landing Harbor. One of these pipelines is encased in redwood, while the other is made of metal. Access to this dock is via a dirt road off of State Route 1 south of Dolan Road.

Primary access to the Moss Landing Commercial Park is via Dolan Road, although gated driveways do exist off of State Route 1 south of Dolan Road.

2.2 Moss Landing Community Plan

As of this writing, the Monterey County Resource Management Agency – Planning Department is preparing a Draft Environmental Impact Report evaluating the environmental impacts of the Draft Moss Landing Community Plan. The Community Plan itself will be an amendment to the Monterey County General Plan and the North County Land Use Plan governing the Moss Landing area. It has been prepared to provide a comprehensive planning framework to improve and enhance the Moss Landing community. Components of the Community Plan include land use, transportation, public services, conservation and open space, public access, and specific projects. The level of proposed growth is limited and is focused upon marine research, commercial fishing, visitor-serving and industrial uses that enhance the existing area and provide future economic opportunities to the area.

Exhibit 7 – Unused Oil Storage and Pumping Systems at Moss Landing Commercial Park:
Top: Existing Oil Tank
Middle: Existing Piping along SR 1
Bottom: Existing Oil Loading Dock within Moss Landing Harbor

With respect to the study area, the draft Moss Landing Community Plan includes the following policies and recommendations regarding State Route 1:

1. Installation of roundabouts at key intersections with State Route 1 (e.g. Dolan Road and Moss Landing Road);

2. Minimize new direct access points to State Route 1;

3. Preparation of a Project Study Report for the State Route 1 corridor through Moss Landing area, with potential improvements to include the consolidation of the State Route 1 intersections with Dolan Road and Moss Landing Road (North).

2.3 SR 1 & 183 Corridor System Management Plan

The *State Routes 1 & 183 Corridor System Management Plan* (CSMP), released in October 2011 by Caltrans District 5, is a document meant to guide future improvements along the State Routes 1 and 183 corridors and prioritize funding strategies and mechanisms. The CSMP objectives are to reduce travel time and delay for all travel modes, reduce traffic congestion, improve connectivity between different transportation modes and facilities, and expand mobility options across both corridors.

The State Route 1 corridor through Moss Landing is included within the CSMP as part of Segment 2. The CSMP notes that, for the period between 2006 and 2009, the SR 1/Dolan Road intersection had a collision rate of more than 3 times the state average for similar intersections (i.e. rate of 0.66 collisions per million vehicle miles, compared to the then-statewide average of 0.20 collisions per million vehicle miles).

The CSMP does not include any specific recommendations for improvements to State Route 1 within the study area or to the SR 1/Dolan Road intersection in particular. However, the following general recommendations could be applied as improvements within the study area:

1. Add auxiliary lanes, intersection improvements and other system refinements, in order to reduce delay preserve and enhance existing services, while noting that operational improvements alone do not solve corridor capacity needs.

2. Redesign and modernize the intersections to reduce delay and maximize throughput on State Route 1 and parallel routes. These upgrades may include improving the parallel local road network, adding turn-movement storage, deceleration and/or acceleration lanes to the intersection, and converting at-grade intersections into grade-separated interchanges.

3. Increase the capacity, operational efficiency and connection on the parallel road network to reduce local traffic demand on SR 1.

2.4 Existing Traffic Network

The primary regional access to Moss Landing is provided by State Route 1 (SR 1). Other streets relevant to this study are Dolan Road and Moss Landing Road. **Exhibit 1** depicts the study area. A brief description of these streets follows, with the state highway and study corridor first, followed by the remaining roadways in alphabetical order.

State Route 1 is a state highway within Monterey County, extending north-south throughout the coastal region of the county through Moss Landing, Marina, Seaside, Monterey, and Carmel. The highway continues northward into Santa Cruz County en route to San Francisco and southward into San Luis Obispo County en route to Los Angeles. In the greater Moss Landing area, SR 1 is a two-lane highway with turn lanes at intersections and major driveways. Caltrans has designated SR 1 through Moss Landing as a "Terminal Route," meaning that the largest truck allowed on California state highways (i.e. the STAA standard truck) is allowed to travel the highway. The speed limit on SR 1 is 50 miles per hour (MPH) through the southern portion of Moss Landing (i.e. between Moss Landing Road (South) and Jetty Road), including at Dolan Road.

Dolan Road is a two-lane east-west roadway within northern Monterey County. It connects SR 1 with Castroville Boulevard, providing part of the link between US 101 in Prunedale and SR 1 in Moss Landing. The speed limit on Dolan Road is 55 MPH.

Moss Landing Road is a two-lane, largely rural roadway providing direct access to central Moss Landing, the Moss Landing Harbor and the beachfront. It forms a loop that connects to SR 1 at each end. Through its connection to Sandholdt Road, Moss Landing Road provides access to various businesses and organizations located between the harbor and the Monterey Bay. The speed limit on Moss Landing Road is 25 MPH.

The **SR 1/Dolan intersection** is a "T" intersection, with SR 1 in a north-south alignment and Dolan Road in a roughly east-west alignment. Traffic on Dolan Road is stop controlled, while SR 1 traffic is free-flow through the intersection. Left and right turn lanes are present on both SR 1 and Dolan Road at the intersection. A median acceleration lane is also present along southbound SR 1 for use by traffic turning left from Dolan Road. Note that the Moss Landing Power Plant gated driveway is located directly opposite this intersection, effectively forming a fourth approach to the intersection.

2.5 Existing Transit Systems

Monterey-Salinas Transit (MST) operates three fixed-route lines through Moss Landing – Lines 27, 28 and 78. Line 27 connects Marina and Watsonville via Castroville every two hours on weekdays only. Line 28 connects Salinas and Watsonville via Castroville a minimum of once every hour on weekdays and weekends. Line 78 is an express line connecting Santa Cruz and the Presidio of Monterey, operating three round trips per day on weekdays and four round trips per day on weekends All three lines stop at bus stops located alongside each direction of SR 1 south of Dolan Road.

2.6 Existing and Proposed Bikeway and Pedestrian Facilities

2.6.1 Bikeways

No bicycle lanes are formally marked in the study area, although the paved shoulders of both SR 1 and Dolan Road are used by bicyclists as bicycle lanes. Although these shoulders are generally adequate for use by bicyclists, the shoulder along northbound SR 1 narrows to only four feet in advance of its intersection with Dolan Road (**Exhibit 8**).

Exhibit 8 – Narrow Northbound SR 1 Shoulder near Intersection

The SR 1 corridor is also part of the Pacific Coast Route, which is a system of state and local roadways facilitating bicycle travel that extend along the coastlines of Washington, Oregon and California.

Few bicyclists were observed along the SR 1 corridor during field observations in February 2013. Most bicyclists appeared to be bicycling purely for recreation rather than commuting.

According to the *2008 Monterey County General Bikeways Plan*, formal bicycle lanes are proposed along Dolan Road between SR 1 and Castroville Boulevard. In addition, the County of Monterey is currently designing a new joint-use pedestrian and bike path adjacent to SR 1 within Moss Landing. Named the "Monterey Bay Sanctuary Scenic Trail – Moss Landing Segment," the path would compose a small portion of the planned bicycle and pedestrian trail that will eventually connect Santa Cruz and Monterey. The path would connect the northern and southern ends of Moss Landing Harbor alongside the western frontage of SR 1 and the northern frontage of Moss Landing Road.

2.6.2 Pedestrian Facilities

No sidewalks, crosswalks, or other pedestrian facilities are present in the vicinity of the SR 1/Dolan Road intersection. No pedestrian activity was observed during field observations in February 2013. No new pedestrian improvements are proposed in the area other than the aforementioned Monterey Bay Sanctuary Scenic Trail.

2.7 Existing Utilities

A number of aboveground and underground utilities are present near the SR 1/Dolan Road intersection. Utility poles carrying electrical lines front both sides of SR 1, especially to the south of the intersection. Utility poles are also present along the southern frontage of Dolan Road. Telephone vaults are located along the frontages of both SR 1 and Dolan Road near the southeastern corner of their intersection. Underground potable water pipelines are accessible via various manholes located along the western side of the intersection (**Exhibit 9**).

Exhibit 9 – Existing Overhead Utilities along SR 1

2.8 Existing Foliage

The foliage present near the SR 1/Dolan Road intersection is generally of two types – trees and bushes. Both eucalyptus and Monterey cypress trees front SR 1, with both tree types located along both sides of the highway north of Dolan Road (**Exhibit 10**). While the trees east of SR 1 form a cohesive canopy against the eastern frontage of the roadway, the trees west of SR 1 have more variation in height and are in two distinct clusters – one just north of Dolan Road and one a couple of hundred feet to south of Dolan Road (closer to Moss Landing Road).

Exhibit 10 – Existing Foliage North of Dolan Road

Various small trees and bushes are scattered along the eastern frontage of SR 1 against the security fence for the Moss Landing Commercial Park (**Exhibit 11**). Most of these plants are located within the Caltrans right-of-way, although some are located within the Moss Landing Commercial Park.

Exhibit 11 – Existing Foliage South of Dolan Road

2.9 Geotechnical Report

Hatch Mott MacDonald has prepared a geotechnical review of existing subsurface conditions in the vicinity of the SR 1/Dolan Road intersection and the immediate surrounding area. This review, *State Highway 1 & Dolan Road Feasibility Study, Monterey County, California – Geotechnical Letter Report*, is summarized below and

within **Exhibit 12**; **Appendix A** contains the full geotechnical review report and appendices.

Note: This geotechnical review has been prepared in support of intersection-level improvements only, primarily pavement widening. Also, no hazardous materials review was performed as part of this review; see Sections 2.10 Environmental Constraints Assessment and 4.3 Initial Study Results for more information about potentially hazardous materials within the study area.

The geotechnical review included a review of past geotechnical investigations in the site vicinity (specifically in 2000 and 2010), a field visit, testing of field samples, and preliminary pavement design sections. **Exhibit 12** summarizes the overall findings from the geotechnical review, alongside the potential limiting impact of each finding upon future intersection improvements.

Exhibit 12 – Summary of Overall Findings from Geotechnical Review

Finding	Limiting of Improvement Options?
1 Widening of road is feasible from a geotechnical pavement engineering standpoint	No
2 A thicker pavement section is recommended south of Dolan Road, unless subgrade soils are replaced	Possibly – would require additional construction time and budget
3 Further investigation is recommended of subgrade soils with low R-values (i.e. soils requiring thicker pavement sections) such as south of Dolan Road.	Unlikely, but would require additional construction time and budget
4 Construction shall conform to Caltrans standard specifications, latest edition	No
5 If full-depth hot asphalt mix (HMA), or HMA with asphalt treated permeable base (TPB) are used for design, use working table for placing construction equipment to meet construction requirement and subtract its Gravel Equivalent from the surface layer for design.	No

2.10 Environmental Constraints Assessment

An environmental constraints assessment has been prepared by EMC Planning Group of the potential existing environmental constrains adjacent to the SR 1/Dolan Road intersection and the immediately surrounding area. This assessment – *Environmental Constraints Report – State Route 1 / Dolan Road* – is summarized within **Exhibit 13**, alongside the potential limiting impact of each finding upon future intersection improvements. The full environmental assessment is contained within **Appendix B**.

The environmental constraints assessment identified a number of issues that may limit – to varying degrees – the ability to implement roadway improvements to the intersection. Further evaluation of these issues will be necessary to determine the extent to which the issues could directly affect specific improvement alternatives. The assessment also

identifies a few methods by which the effects of these issues can be minimized if not fully abated. These methods should be considered during the design and construction phases of the project.

Exhibit 13 – Summary of Overall Findings from Environmental Constraints Assessment

Finding		Limiting of Improvement Options?
A	*Biological Resources*	
1	Groves of planted Monterey cypress and gum (i.e. eucalyptus) trees are present within the study area. Removal of any of these trees with diameters of 36 inches or larger at breast height will require a coastal development permit. Removal of any other type of tree with diameters of 24 inches or larger will also require a coastal development permit.	Possibly, if improvement involves removal of existing trees.
2	No sensitive habitats are located within the study area – only low-quality habitats are present.	No
3	A pre-construction survey of nesting birds should occur if construction will involve site disturbance occurring between February 1st and September 15th of any year.	Unlikely, but could limit construction times during the year
4	Construction noise could cause temporary disruption to marine animals in the harbor; however, this disruption would be a less than significant impact.	No
5	The Congdon's tarplant, a special-status plant, has been previously recorded as occurring very close to the study area. The construction area should be surveyed in the plant's bloom period (typically September) to verify if the plant is indeed within the construction area.	Likely, if found to be within construction area.
B	*Archaeological Resources*	
1	Two known archaeological sites are located near the study intersection:	
	a State Route 1 at Elkhorn Slough (CA-MNT-229)	Possibly, if near construction area
	b State Route 1 south of Moss Landing Road (CA-MNT-235)	Possibly, if near construction area
2	Further study of potential archaeological resources in the area is recommended, especially as the exact location of site CA-MNT-235 could not be verified in the field.	Possibly, if near construction area
C	*Historical Resources*	
1	No officially designated historic places are located in or adjacent to the study area	No

	Finding	Limiting of Improvement Options?
2	Some buildings on the Moss Landing Commercial Park property are over 45 years old, and as such could potentially be deemed historic	Possibly, if construction area would encroach upon said buildings
3	A historic evaluation should be conducted if any of the buildings on the Moss Landing Commercial Park property or the redwood pipeline should be removed or altered.	Possibly, if construction area would encroach upon said buildings
D	*Hazardous Materials*	
1	The Moss Landing Power Plant is an active cleanup site, due to past groundwater contamination from historical storage of fuel oil. Monitoring wells are located both on and off of the Power Plant property, including some near State Route 1.	Possibly, if construction area is adjacent to Moss Landing Power Plant
2	Both soil and groundwater contamination (chromium) is also present at the Moss Landing Commercial Park site, but the extent of contamination is unknown.	Possibly, if construction area is adjacent to or includes Moss Landing Commercial Park property
3	The groundwater and soil toxicity is not likely to constrain any transportation improvements, but some construction worker safety precautions may be necessary.	No, if proper safety precautions are followed.
4	The precise locations of the groundwater monitoring wells should be verified to ensure that any proposed transportation improvements won't affect them.	Possibly, if construction area is located near any monitoring wells.
E	*Hydrology*	
1	Groundwater is approximately 26 feet below the surface of the SR 1/Dolan intersection.	No – construction should not require reaching groundwater depth.
2	The intersection and surrounding area has no significant flood potential.	No
3	Construction activities would have an elevated effect upon water quality, due to proximity to the Moss Landing Harbor.	No, if standard design and construction practices are followed
4	Standard design and construction practices should adequately address any hydrological issues.	No
F	*Transportation*	
1	The proposed Monterey Bay Sanctuary Scenic Trail may constrain the construction of any improvements to the west of SR 1.	Possibly, if construction includes any roadway widening west of existing paved shoulder

Finding	Limiting of Improvement Options?
2 The design of any transportation improvements should not preclude the continued use of existing bus stops along SR 1. This is not likely a significant constraint.	No
G Utilities	
1 Overhead power lines:	
a No high voltage lines are present near the SR 1/Dolan Road intersection.	No
b Additional roadway widening along SR 1 and/or Dolan Road may require relocation of existing overhead power lines.	Possibly, if construction requires relocation of existing overhead utility lines or poles.
2 Two sets of underground water intake pipelines cross SR 1:	
a Moss Landing Power Plant – travels between Moss Landing Harbor and the power plant approximately 250 feet north of Dolan Road.	Unlikely – construction should not require reaching pipeline depth.
b Moss Landing Commercial Park – travels between Moss Landing Harbor and the commercial park approximately in line with the southern right-of-way line for Dolan Road. After crossing underneath SR 1, travels above ground parallel to SR 1 en route to tanks located approximately opposite the SR 1/Moss Landing Road intersection.	Possibly, if construction includes acquisition of additional right-of-way east of SR 1 and south of Dolan Road.
i The aboveground portion of the Moss Landing Commercial Park pipelines constitute a significant constraint upon any roadway widening to the east of the existing SR 1 right-of-way.	Likely, if construction includes acquisition of additional right-of-way east of SR 1 and south of Dolan Road.
3 Potable water pipelines run along Dolan Road en route to storage tanks above Moss Landing Road.	Unlikely, but should be verified prior to construction.
4 Sewer pipelines are assumed to travel underneath SR 1 en route to areas north of Elkhorn Slough (but not verified).	Unlikely, but should be verified prior to construction.
5 Regional natural gas pipelines service the Moss Landing Power Plant to the east; however, these pipelines are not located near the SR 1/Dolan intersection. Local natural gas pipelines are presumed to exist in the study area.	Unlikely, but should be verified prior to construction.

2.11 Existing Collision Data

Collision data at the SR 1/Dolan Road intersection was obtained from the California Highway Patrol through the County of Monterey Department of Public Works staff. **Exhibit 14** summarizes the obtained collision data by collision type and location, while **Exhibit 15** depicts a collision diagram for the intersection. The obtained collision data spans for the five most-recent years available – from January 1, 2007 to December 31, 2011 (see **Appendix C**).

Exhibit 14 – Collision History Summary – State Route 1/Dolan Road

Type	Total	Frequency (per year)	Injuries (Total)	Fatalities (Total)
Rear End				
SR 1	8	1.6	7	0
Dolan Road	16	3.2	5	0
Yield/Right-of-Way Violations				
Broadside				
SR 1	6	1.2	2	0
Dolan Road	12	2.4	11	0
Head-On				
SR 1	1	0.2	0	0
Dolan Road	1	0.2	0	0
Sideswipe				
SR 1	1	0.2	0	0
Dolan Road	2	0.4	1	0
Speeding as PCF[3]				
SR 1	7	1.4	7	0
Dolan Road	3	0.6	3	0
Collisions between Dolan Rd. left and right turning vehicles	3	0.6	1	0
Collisions with Wrong-Way Driver				
SR 1	4	0.8	0	0
Dolan Road	0	0	0	0

Notes:

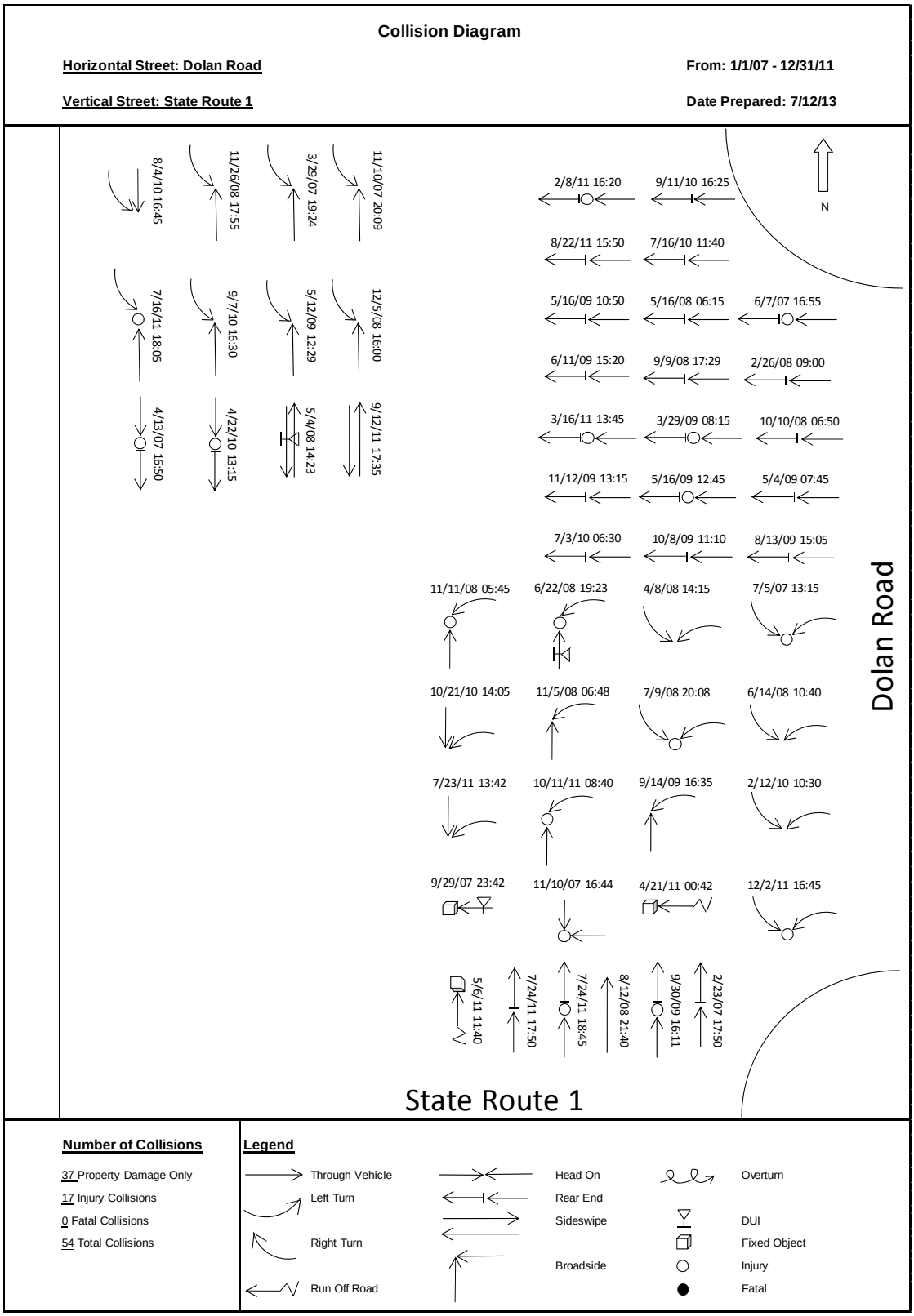
1. Include collisions that occurred at or near the SR 1/Dolan intersection.
2. Some individual collisions are repeated under multiple categories.
3. PCF = Primary Collision Factor, as determined by the investigating officer.
4. State Average Collision Rate taken from *2009 Collision Data on California State Highways*, California Department of Transportation, 2009.

A total of 61 collisions have occurred within this period, 54 of which occurred within 500 feet of the intersection. The two most prevalent collision types at the SR 1/Dolan Road intersection were rear-end collisions (8 on SR 1, 16 on Dolan Road, 24 total) and collisions where drivers failed to yield right-of-way (8 on SR 1, 15 on Dolan Road, 23 total). All of the "failure to yield" collisions involved vehicles turning left from SR 1 and/or Dolan Road. Speeding was considered a primary collision factor in ten of all intersection collisions during this period. Collisions were not concentrated in any one month, time of day, or weather condition. Lack of intersection lighting was only cited in one collision. Driving Under the Influence (DUI) was only cited in three of the collisions.

Thirty-seven people were injured in the 54 intersection collisions. Injuries were most prevalent in the rear-end collisions and those collisions where speeding was a primary collision factor. No fatalities were reported during this period.

The overall collision rate at the SR 1/Dolan Road intersection is 0.839 collisions per million entering vehicles (collisions/MEV). This is nearly three times the state average of 0.300 collisions/MEV for similar intersections.

Exhibit 15 – Collision Diagram – State Route 1/Dolan Road



Note: Diagram contains collisions between 1/1/2007 and 12/31/2011 that were within 500 feet of the intersection.

2.12 Existing Travel Speeds

Existing travel speeds along the SR 1 corridor through Moss Landing during the AM and PM peak hours were obtained through weekday travel time runs conducted in April 2013. **Exhibit 16** summarizes the average speeds incurred along the corridor in each direction. Travel speeds were found to be within 5 MPH of the posted speed limit along the majority of the corridor, including at Dolan Road. The areas with the slowest travel speeds were at each end of the corridor, namely north of Struve Road (north) and near Merritt Street (State Route 183). The travel time data is included within **Appendix D**.

Exhibit 16 – Existing Travel Speeds on State Route 1

AM (6:30 AM - 8:30 AM)

Northbound:

Location	Travel Speed	Speed Limit
Merritt to Molera	**47.8 mph**	55 mph
Molera to Moss Landing (S)	53.6 mph	55 mph
Moss Landing (S) to Dwy #2	54.0 mph	50 mph
Dwy #2 to Moss Landing (N)	54.2 mph	50 mph
Moss Landing (N) to Dolan	51.4 mph	50 mph
Dolan to Dwy #1	49.6 mph	50 mph
Dwy #1 to Elkhorn Slough	54.4 mph	50 mph
Elkhorn Slough to Jetty	55.2 mph	50 mph
Jetty to Struve (S)	54.7 mph	55 mph
Struve (S) to Struve (N)	57.4 mph	55 mph
Struve (N) to Springfield	51.2 mph	55 mph
Springfield to Jensen	54.2 mph	55 mph

Southbound:

Location	Travel Speed	Speed Limit
Jensen to Springfield	51.6 mph	55 mph
Springfield to Struve (N)	51.0 mph	55 mph
Struve (N) to Struve (S)	53.0 mph	55 mph
Struve (S) to Jetty	50.2 mph	55 mph
Jetty to Elkhorn Slough	47.3 mph	50 mph
Elkhorn Slough to Dwy #1	46.4 mph	50 mph
Dwy #1 to Dolan	49.6 mph	50 mph
Dolan to Moss Landing (N)	49.4 mph	50 mph
Moss Landing (N) to Dwy #2	49.8 mph	50 mph
Dwy #2 to Moss Landing (S)	50.2 mph	50 mph
Moss Landing (S) to Molera	53.1 mph	55 mph
Molera to Merritt	**46.6 mph**	55 mph

PM (3:30 - 5:30 PM)

Northbound:

Location	Travel Speed	Speed Limit
Merritt to Molera	**42.2 mph**	55 mph
Molera to Moss Landing (S)	**44.2 mph**	55 mph
Moss Landing (S) to Dwy #2	48.6 mph	50 mph
Dwy #2 to Moss Landing (N)	48.0 mph	50 mph
Moss Landing (N) to Dolan	46.6 mph	50 mph
Dolan to Dwy #1	46.8 mph	50 mph
Dwy #1 to Elkhorn Slough	48.4 mph	50 mph
Elkhorn Slough to Jetty	49.0 mph	50 mph
Jetty to Struve (S)	50.6 mph	55 mph
Struve (S) to Struve (N)	51.4 mph	55 mph
Struve (N) to Springfield	**38.0 mph**	55 mph
Springfield to Jensen	**41.1 mph**	55 mph

Southbound:

Location	Travel Speed	Speed Limit
Jensen to Springfield	54.0 mph	55 mph
Springfield to Struve (N)	51.5 mph	55 mph
Struve (N) to Struve (S)	50.8 mph	55 mph
Struve (S) to Jetty	50.5 mph	55 mph
Jetty to Elkhorn Slough	46.2 mph	50 mph
Elkhorn Slough to Dwy #1	46.2 mph	50 mph
Dwy #1 to Dolan	47.4 mph	50 mph
Dolan to Moss Landing (N)	49.8 mph	50 mph
Moss Landing (N) to Dwy #2	48.4 mph	50 mph
Dwy #2 to Moss Landing (S)	51.2 mph	50 mph
Moss Landing (S) to Molera	**47.0 mph**	55 mph
Molera to Merritt	**33.0 mph**	55 mph

Notes:

1. Dwy #1 is the Moss Landing Power Plant driveway north of Dolan Road. Dwy #2 is the southernmost driveway into the commercial area at SR 1 and Moss Landing Road (N).
2. Travel speeds in **bold** indicate speeds more than 5.0 mph below speed limit.

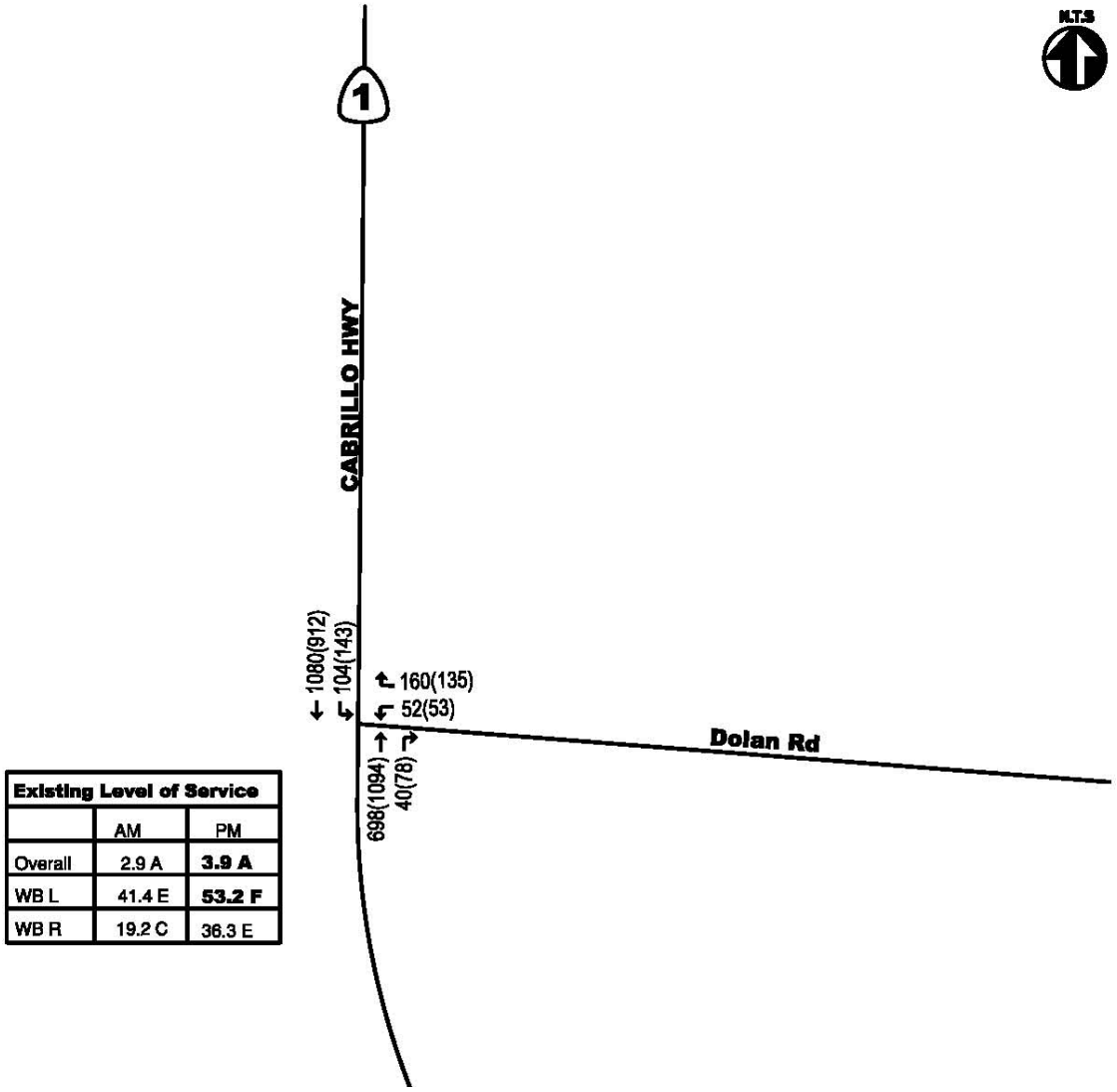
2.13 Existing Conditions Intersection Operations

Exhibit 17 depicts the existing AM and PM peak hour traffic volumes at the SR 1/Dolan Road intersection. These volumes were collected in March 2011 and were provided by the consultant team assisting the County of Monterey in the preparation of the environmental analysis for the Moss Landing Community Plan update (see **Appendix E**).

Exhibit 17 also summarizes the existing levels of service at the SR 1/Dolan Road intersection. Intersection operations were evaluated using technical procedures documented in the *2010 Highway Capacity Manual* (HCM). The SR 1/Dolan Road intersection is under the jurisdiction of the California Department of Transportation ("Caltrans"), which has established a Level of Service (LOS) standard of the transition between LOS C and LOS D.

The SR 1/Dolan Road intersection currently operates at an overall LOS A during both the AM and PM peak hours. However, side-street operations on Dolan Road are currently at LOS E (AM) and LOS F (PM). Level of service calculations are within **Appendix F**.

Exhibit 17 – Existing Volumes and Levels of Service



Existing Level of Service		
	AM	PM
Overall	2.9 A	**3.9 A**
WB L	41.4 E	**53.2 F**
WB R	19.2 C	36.3 E

Legend:
XX (YY) = AM Peak Hour (PM Peak Hour)
WB L = Westbound Dolan Rd. Left Turn
WB R = Westbound Dolan Rd. Right Turn

3 IMPROVEMENT ALTERNATIVE ANALYSIS

An analysis has been performed to identify potential safety and capacity improvements at the SR 1/Dolan Road intersection and evaluate their feasibility to be implemented. The following section summarizes the analysis process undertaken and corresponding results.

3.1 Improvement Alternatives

A total of 12 improvement alternatives were developed to improve safety and operations at the SR 1/Dolan Road intersection. These alternatives vary from simple striping and signing improvements to more complicated roadway widening projects. The improvement alternatives are:

1. No Build
2. Flashing Beacons, Signs, Channelizers & Striping
3. Improve Sight Distance
4. Add Northbound SR 1 Right Turn Acceleration Lane
5. Prohibit Turning Movements
6. Widen Shoulder Widths to Caltrans Standards
7. Widen Lane Widths to Caltrans Standards
8. Full Signal
   a. Single Through Lane
   b. Two Through Lanes
9. Half Signal
   a. Single Through Lane
   b. Two Northbound Through Lanes
10. Roundabout
    a. Single-Lane
    b. Two Lane
11. Widen SR 1 to Two Lanes in Each Direction
12. Relocate SR 1/Dolan Road Intersection to the South

Each improvement alternative is described below, along with the reasons why it was selected for evaluation.

1. <u>No Build</u>
   No Build represents the existing intersection geometry and traffic control, with no changes. This improvement alternative represents a benchmark against which all of the other improvement alternatives can be compared.

2. <u>Flashing Beacons, Signs, Channelizers & Striping</u>
   This improvement alternative would implement additional signs, pavement striping, channelizers and flashing beacons, both at an in advance of the SR 1/Dolan Road intersection. These would be simple, inexpensive safety improvements that could be implemented quickly if funding was secured.

3. Improve Sight Distance
   This improvement alternative would improve sight distance of vehicles, signs, and the overall intersection by trimming foliage and removing or relocating obstructions within the driver sight lines at the intersection. Improving sight distance would improve safety by indicating the presence of the upcoming intersection and by providing additional stopping distance for conflicting traffic entering the intersection.

4. Add Northbound SR 1 Right Turn Acceleration Lane
   This improvement alternative would add a new northbound acceleration lane along SR 1 directly in front of the Moss Landing Power Plant, for use by vehicles turning right from Dolan Road onto northbound SR 1. A new acceleration lane would allow vehicles turning onto northbound SR 1 to accelerate up to or near through traffic speeds prior to merging onto the highway.

5. Prohibit Turning Movements
   With this improvement alternative, one or more turning movements would be prohibited at this intersection. The most likely movement that could be prohibited would be the westbound Dolan Road left turn movement onto southbound SR 1. Prohibition of this movement would eliminate some traffic conflicts at the intersection, but would require some vehicles to detour considerably out of their way in order to continue to reach their intended destinations.

6. Widen Shoulder Widths to Caltrans Standards
   This improvement alternative would widen the existing paved shoulders along SR 1 to meet current Caltrans standards. This improvement would primary focus upon the northbound SR 1 shoulder just south of Dolan Road, which narrows to approximately four feet in width in advance of the intersection. Widening the shoulder would provide additional refuge space for vehicles during emergencies as well as a larger buffer for bicyclists from through traffic on SR 1.

7. Widen Lane Widths to Caltrans Standards
   This improvement alternative would widen all lanes along SR 1 at the intersection to meet current Caltrans standards. Currently, all travel lanes on SR 1 are within a half-foot or less of the Caltrans standard width of 12 feet. This improvement would add the additional pavement necessary to achieve full standard width for all lanes

8. Full Signal
   a. Single Through Lane
   b. Two Through Lanes

   These improvement alternatives would construct a new traffic signal at the SR 1/Dolan Road intersection. Improvement Alternative 8a would keep the single through lane in each direction of SR 1, while Alternative 8b would add a second through lane in each direction of SR 1 through the intersection. Changing the intersection control to a traffic signal would minimize the number of "failure to yield" collisions, but could increase the number of rear-end collisions on SR 1. The addition of second through lanes would also minimize vehicle queue lengths on SR 1.

9. Half Signal
    a. Single Through Lane
    b. Two Northbound Through Lanes

    A variation to Improvement Alternatives 8a and 8b, these improvement alternatives would construct a half signal, whereby only northbound SR 1, westbound Dolan Road, and the southbound SR 1 left turn movement would be controlled by the signal. Southbound SR 1 through traffic would continue to operate free-flow through the intersection, and would be shown a continuous green light. Existing examples of half signals in Monterey County include SR 156 at Castroville Boulevard and SR 156 at Prunedale North Road. As with the full signal, changing the intersection control to a half signal would minimize the number of "failure to yield" collisions, but could increase the number of rear-end collisions on SR 1. The addition of a second northbound through lane would also minimize vehicle queue lengths on SR 1. The primary benefit of a half-signal over a standard signal is that the southbound SR 1 movement would never stop, thereby reducing overall delay at the intersection compared to a standard traffic signal. The downside of a half-signal is that pedestrians and bicyclists cannot cross all of SR 1 at a controlled crossing.

10. Roundabout
    a. Single-Lane
    b. Two Lane

    These improvement alternatives would convert the existing SR 1/Dolan intersection into a roundabout. Improvement Alternative 10a would construct a roundabout with a single circulating lane, while Alternative 10b would have two circulating lanes. As noted previously, a roundabout is the suggested improvement at this intersection within the draft Moss Landing Community Plan. Roundabouts slow traffic and reduce conflict points, thereby minimizing the severity and frequency of collisions.

11. Widen SR 1 to Two Lanes in Each Direction

    Similar to Improvement Alternative 8b, this improvement would add a second through lane in each direction of SR 1 through the SR 1/Dolan intersection. However, unlike Alternative 8b, the intersection would not be signalized. Instead, it would remain as free-flow on SR 1 and stop control on Dolan Road. Widening SR 1 to two lanes in each direction would reduce vehicle platoon size along SR 1.

12. Relocate SR 1/Dolan Road Intersection to the South

    This improvement alternative would relocate the SR 1/Dolan Road intersection further to the south of the existing intersection. This would be accomplished through the realignment of Dolan Road into the northern edge of the Moss Landing Commercial Park. Such a relocation would improve sight distance and allow for the existing westbound Dolan Road right turn lane to be lengthened.

Note: Two other improvement alternatives are also included within this analysis but are not fully evaluated. They are both long-term improvements that are more extensive improvements that those previously mentioned. The long-term improvements are:

13. Consolidate Intersections and Driveways
    This improvement alternative would consolidate the existing intersections and driveways along this section of SR 1 in two ways. First, all of the existing driveways along SR 1 into the Moss Landing Commercial Park would be closed. Second, Dolan Road would be realigned to travel through the Moss Landing Commercial Park, intersecting SR 1 as a fourth approach to the existing SR 1/Moss Landing Road (North) intersection. In this configuration, Dolan Road would also serve as the primary entrance into the Moss Landing Commercial Park from SR 1. The consolidation would improve operations by reducing the number of conflict points along SR 1 in this area. It is also consistent with multiple policies and recommendations identified within the Draft Moss Landing Community Plan. Note that this improvement alternative would require considerable coordination with the ownership of the Moss Landing Commercial Park, hence its exclusion from full analysis in this report.

14. Connect Dolan and Moss Landing Roads via New Overpass
    This improvement alternative, consistent with the aforementioned *State Routes 1 & 183 Corridor System Management Plan* and previously recommended within the *Moss Landing Economic Development Strategy* report published in 2010, would create a new roadway connecting Dolan Road and Moss Landing Road (North). This roadway would loop around the outside of the Moss Landing Commercial Park, crossing SR 1 south of Moss Landing Road on a grade-separated bridge. This improvement alternative would substantially improve vehicle, pedestrian and bicycle safety by allowing all three modes of travel to cross the highway without conflicting with SR 1 traffic. This improvement would likely cost multiple millions of dollars to construct and will require extensive future analysis in order to assess its full feasibility, hence its exclusion from full analysis in this report.

3.2 Operations of Improvement Alternatives

As part of their evaluation, operational analyses have been prepared of each of the improvement alternatives described above (with the lone exceptions of the two long-term improvements, i.e. #13 and #14). **Exhibit 18** summarizes the AM and PM peak hour operations of each improvement alternative, both under existing and Year 2035 conditions[2]. (See **Appendix F** for the level of service calculations.) Note that traffic operations is but one of the categories used to compare the improvement alternatives. The following section identifies all of the categories used to evaluate each improvement alternative.

[2]Year 2035 Conditions include projected traffic growth from the Moss Landing Community Plan. See **Appendix G** for the Year 2035 volumes analyzed here.

Exhibit 18 – Level of Service Comparison Table

Alternative	Traffic Control Type		Existing Conditions (Year 2011)				Year 2035 Conditions			
			AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. No Build	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
2. Flashing Beacons, Signs, Channelizers & Striping	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
3. Improve Sight Distance (trim foliage, remove obstructions, etc.)	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
4. Add NB SR 1 Right Turn Acceleration Lane	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
5. Prohibit Turning Movements (WB Left)	One-Way Stop Control	Overall:	2.0	A	2.9	A	2.6	A	6.3	A
		WB L:[4]	-	-	-	-	-	-	-	-
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
		Diversion Delay:[5]	**360.0**	**F**	**360.0**	**F**	**360.0**	**F**	**360.0**	**F**
6. Widen Shoulder Widths to Caltrans Standards	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
7. Widen Lane Widths to Caltrans Standards	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**
8. Full Signal										
a. Single Through Lanes	Full Signal	Overall:	13.7	B	19.8	B	20.8	C	53.2	D
b. Two Through Lanes	Full Signal	Overall:	8.3	A	9.2	A	9.0	A	10.6	B
9. Half Signal (SB does not stop)[6]										
a. Single NB Thru Lane	Half Signal	Overall:	13.9	B	33.9	C	17.3	B	**91.3**	**F**
b. Two NB Thru Lanes	Half Signal	Overall:	10.7	B	12.1	B	11.6	B	14.7	B
10. Roundabout										
a. Single-Lane	Roundabout	Overall:	**94.5**	**F**	**134.9**	**F**	**179.3**	**F**	**257.3**	**F**
b. Two-Lane	Roundabout	Overall:	11.2	B	13.1	B	13.2	B	20.0	C
11. Widen SR 1 to Two Through Lanes in Each Direction	One-Way Stop Control	Overall:	2.1	A	2.6	A	2.5	A	3.7	A
		WB L:	26.7	D	41.1	E	39.4	E	**79.6**	**F**
		WB R:	12.8	B	15.9	C	14.8	B	20.8	C
12. Relocate SR 1/Dolan Intersection to the South	One-Way Stop Control	Overall:	3.0	A	4.0	A	4.4	A	8.8	A
		WB L:	41.8	E	**54.5**	**F**	**81.2**	**F**	**124.6**	**F**
		WB R:	19.2	C	36.3	E	28.9	D	**100.0**	**F**

Notes:
1. NB, SB, WB = Northbound, Southbound, Westbound
2. L, R = Left Turn, Right Turn
3. SR 1 = State Route 1
4. With prohibition of westbound Dolan Road left turn movement, left turn delay is non-existant. However, such a prohibition would add an additional "diversion" delay to rerouted traffic; see Note 5, below.
5. "Diversion Delay" refers to additional delays from vehicle rerouting created by movement prohibition, assuming 100% of the prohibited vehicles, are proceeding to Moss Landing Road.
6. Incorporates zero delay from the freeflow southbound through movements that are not controlled by the half-signal.
7. Delays and levels of service in **bold** indicate deficient operations.

3.3 Improvement Alternative Evaluations

Initial evaluations of the improvement alternatives were performed using a design criteria matrix, which ranks each project in a number of categories. **Exhibit 19** depicts the design criteria matrix used in this analysis.

Exhibit 19 – Design Criteria Matrix Template

Project Goal: Identify cost-effective solution(s) that improve safety and operations

	Options	Total Points	Evaluation Criteria									Notes
			Reduces Vehicle Delays	Improves Vehicle Safety	Improves Pedestrian and Bicyclist Safety	Minimizes Environmental Impacts	Minimizes Right-of-Way Acquisitions	Minimizes Project Costs	Minimizes Project Duration	Constructible in Phases/ Increments	Likely Acceptable to Caltrans	
		(0-100)	(0-10)	(0-15)	(0-10)	(0-10)	(0-10)	(0-20)	(0-10)	(0-5)	(0-10)	
1	No Build											
2	Flashing Beacons, Signs, Channelizers & Striping											
3	Improve Sight Distance (relocate utilities, trim foliage, remove obstructions, etc.)											
4	Add NB SR 1 Right Turn Acceleration Lane											
5	Prohibit Turning Movements (WB Dolan Left Turn)											
6	Widen Shoulder Widths to Caltrans Standards											
7	Widen Lane Widths to Caltrans Standards											
8	Full Signal											
	a. One Through Lane											
	b. Two Through Lanes											
9	Half Signal (SB does not stop)											
	a. Single NB Thru Lane											
	b. Two NB Thru Lanes											
10	Roundabout											
	a. Single-Lane											
	b. Two-Lane											
11	Widen SR 1 to Two Lanes in Each Direction											
12	Relocate SR 1/Dolan Intersection to the South											
13	Consolidate Intersections and Driveways (including SR 1/ Dolan and SR 1/Moss Landing)											
14	Connect Dolan and Moss Landing Roads via New Overpass											

Notes:
1. NB, SB, EB, WB = Northbound, Southbound, Eastbound and Westbound).
2. Higher scores reflect more feasible and beneficial improvements.

A number of different categories were used to evaluate each improvement alternative. Those categories, including their scoring range, are identified within **Exhibit 20**.

Exhibit 20 – Design Criteria Matrix Evaluation Categories

Design Criteria Matrix Category	Point Range
Reduces Vehicle Delays	0-10 points
Improves Vehicle Safety	0-15 points
Improves Pedestrian and Bicyclist Safety	0-10 points
Minimizes Environmental Impacts	0-10 points
Minimizes Right-of-Way Acquisition	0-10 points
Minimizes Project Costs	0-20 points
Minimizes Project Duration	0-10 points
Constructible in Phases/Increments	0-5 points
Likely Acceptable to Caltrans	0-10 points
Total:	**100 points**

Each improvement alternative was ranked in each category based upon its relative potential to meet that category's goal, with 0 ("zero") representing no potential and 10 ("ten") representing full achievement. The maximum score possible is 100 points, with a median score (the "No Build" alternative) of 65 points.

Exhibits 21A and 21B contain the completed design criteria matrix, including the score and relative ranking of each improvement alternative. **Exhibit 21A** organizes the improvement alternatives by improvement alternative number, while **Exhibit 21B** organizes the improvement alternatives by their relative ranking. The rankings were then used to help either reject improvement alternatives from further consideration or select them for further analysis. The following sections identify which improvements fall under either category.

Exhibit 21A – Completed Design Criteria Matrix (by Improvement Alternative Number)

Project Goal: Identify cost-effective solution(s) that improve safety and operations

	Options	Relative Ranking	Total Points	Evaluation Criteria									Notes
				Reduces Vehicle Delays	Improves Vehicle Safety	Improves Pedestrian and Bicyclist Safety	Minimizes Environmental Impacts	Minimizes Right-of-Way Acquisitions	Minimizes Project Costs	Minimizes Project Duration	Constructible in Phases/ Increments	Likely Acceptable to Caltrans	
			(0-100)	(0-10)	(0-15)	(0-10)	(0-10)	(0-10)	(0-20)	(0-10)	(0-5)	(0-10)	
1	No Build	- 2 -	65	0	0	0	10	10	20	10	5	10	No improvements
2	Flashing Beacons, Signs, Channelizers & Striping	- 1 -	74	0	10	3	10	10	17	9	5	10	Improves driver awareness
3	Improve Sight Distance (relocate utilities, trim foliage, remove obstructions, etc.)	- 4 (T) -	57	1	10	3	8	10	5	5	5	10	Improves driver, bicyclist and pedestrian visibility
4	Add NB SR 1 Right Turn Acceleration Lane	- 3 -	62	1	10	5	7	9	15	7	0	8	Improves sight distance; Minimal effect upon capacity
5	Prohibit Turning Movements (WB Dolan Left Turn)	- 7 (T) -	53	0	0	0	7	10	17	9	0	10	Minor effect upon capacity; Traffic diversions minimize safety benefits
6	Widen Shoulder Widths to Caltrans Standards	- 9 -	46	0	7	5	9	5	10	0	0	10	No effect upon capacity
7	Widen Lane Widths to Caltrans Standards	- 13 (T) -	39	0	7	5	7	5	5	0	0	10	No effect upon capacity
8	Full Signal												
	a. One Through Lane	- 6 -	56	5	10	8	9	9	10	5	0	0	Longer SR 1 queues
	b. Two Through Lanes	- 11 -	41	8	10	8	4	5	3	0	3	0	Minor SR 1 queues
9	Half Signal (SB does not stop)												
	a. Single NB Thru Lane	- 4 (T) -	57	6	8	7	9	9	13	5	0	0	Longer NB SR 1 queues
	b. Two NB Thru Lanes	- 10 -	45	9	8	7	6	7	5	0	3	0	Minor NB SR 1 queues
10	Roundabout												Requires shifting
	a. Single-Lane	- 15 -	32	0	9	5	5	5	3	5	0	0	intersection to the
	b. Two-Lane	- 16 -	31	9	9	5	4	4	0	0	0	0	south
11	Widen SR 1 to Two Lanes in Each Direction	- 17 -	28	5	7	0	4	0	0	0	2	10	Unclear if Coastal Commission will allow
12	Relocate SR 1/Dolan Intersection to the South	- 13 (T) -	39	1	10	5	5	5	5	0	0	8	Prevents WB right turn blockage by left turn queue
13	Consolidate Intersections and Driveways (including SR 1/ Dolan and SR 1/Moss Landing)	- 12 -	40	3	10	5	4	0	3	2	5	8	Long-Term Improvement
14	Connect Dolan and Moss Landing Roads via New Overpass	- 7 (T) -	53	10	13	10	4	2	2	2	0	10	Long-Term Improvement

Notes:
1. NB, SB, EB, WB = Northbound, Southbound, Eastbound and Westbound).
2. Higher scores reflect more feasible and beneficial improvements.
3. (T) = Tie -- multiple improvement options rate at the same score.

Exhibit 21B – Completed Design Criteria Matrix (by Improvement Ranking)

Project Goal: Identify cost-effective solution(s) that improve safety and operations

	Options	Relative Ranking	Total Points	Evaluation Criteria									Notes
				Reduces Vehicle Delays	Improves Vehicle Safety	Improves Pedestrian and Bicyclist Safety	Minimizes Environmental Impacts	Minimizes Right-of-Way Acquisitions	Minimizes Project Costs	Minimizes Project Duration	Constructible in Phases/ Increments	Likely Acceptable to Caltrans	
			(0-100)	(0-10)	(0-15)	(0-10)	(0-10)	(0-10)	(0-20)	(0-10)	(0-5)	(0-10)	
2	Flashing Beacons, Signs, Channelizers & Striping	- 1 -	74	0	10	3	10	10	17	9	5	10	Improves driver awareness
1	No Build	- 2 -	65	0	0	0	10	10	20	10	5	10	No improvements
4	Add NB SR 1 Right Turn Acceleration Lane	- 3 -	62	1	10	5	7	9	15	7	0	8	Improves sight distance; Minimal effect upon capacity
3	Improve Sight Distance (relocate utilities, trim foliage, remove obstructions, etc.)	- 4 (T) -	57	1	10	3	8	10	5	5	5	10	Improves driver, bicyclist and pedestrian visibility
9	Half Signal (SB does not stop) a. Single NB Thru Lane	- 4 (T) -	57	6	8	7	9	9	13	5	0	0	Longer NB SR 1 queues
8	Full Signal a. One Through Lane	- 6 -	56	5	10	8	9	9	10	5	0	0	Longer SR 1 queues
5	Prohibit Turning Movements (WB Dolan Left Turn)	- 7 (T) -	53	0	0	0	7	10	17	9	0	10	Minor effect upon capacity; Traffic diversions minimize safety benefits
14	Connect Dolan and Moss Landing Roads via New Overpass	- 7 (T) -	53	10	13	10	4	2	2	2	0	10	Long-Term Improvement
6	Widen Shoulder Widths to Caltrans Standards	- 9 -	46	0	7	5	9	5	10	0	0	10	No effect upon capacity
9	Half Signal (SB does not stop) b. Two NB Thru Lanes	- 10 -	45	9	8	7	6	7	5	0	3	0	Minor NB SR 1 queues
8	Full Signal b. Two Through Lanes	- 11 -	41	8	10	8	4	5	3	0	3	0	Minor SR 1 queues
13	Consolidate Intersections and Driveways (including SR 1/ Dolan and SR 1/Moss Landing)	- 12 -	40	3	10	5	4	0	3	2	5	8	Long-Term Improvement
7	Widen Lane Widths to Caltrans Standards	- 13 (T) -	39	0	7	5	7	5	5	0	0	10	No effect upon capacity
12	Relocate SR 1/Dolan Intersection to the South	- 13 (T) -	39	1	10	5	5	5	5	0	0	8	Prevents WB right turn blockage by left turn queue
10	Roundabout a. Single-Lane	- 15 -	32	0	9	5	5	5	3	5	0	0	Requires shifting intersection to the south
	b. Two-Lane	- 16 -	31	9	9	5	4	4	0	0	0	0	
11	Widen SR 1 to Two Lanes in Each Direction	- 17 -	28	5	7	0	4	0	0	0	2	10	Unclear if Coastal Commission will allow

Notes:
1. NB, SB, EB, WB = Northbound, Southbound, Eastbound and Westbound).
2. Higher scores reflect more feasible and beneficial improvements.
3. (T) = Tie -- multiple improvement options rate at the same score.

3.4 Improvement Alternatives Recommended for Rejection

Many of the improvement recommendations were rejected for further consideration. The reasons behind each rejection are discussed below.

1. No Build:

Despite ranking second of all improvement alternatives, the No Build improvement alternative was rejected as its lack of any improvements does not further the stated goals of improving safety and operations at the intersection.

5. Prohibit Turning Movements:

This improvement alternative was not analyzed further in part because the remedy – prohibition of the westbound Dolan Road left turn movement – was viewed as being too draconian of an improvement for traffic bound for Moss Landing. The movement prohibition would lead to potential traffic diversions of approximately 6 additional minutes beyond the current duration of a trip to reach Moss Landing Road (North) from Dolan Road. In addition, the prohibition could lead to some vehicles attempting U-turns further north on SR 1, which would introduce additional safety issues to the corridor.

6. Widen Shoulder Widths to Caltrans Standards:

This improvement alternative ranked relatively low (9th out of 17), in part because it would require acquisition of additional right-of-way and potentially relocation of various utilities. For these reasons, this improvement was not analyzed.

7. Widen Lane Widths to Caltrans Standards:

This improvement alternative had a low ranking (tied for 13th out of 17 improvements), due in part to its relatively high cost of implementation compared to the relative amount of benefit, and the fact that its physical length of improvement has a higher than average potential for environmental impacts, longer construction times, and inability to construct the improvement in phases or increments. For these reasons, this improvement was not analyzed.

8b. Full Signal, Two Through Lanes:

This improvement alternative was not analyzed further for the same reasons as Improvement Alternative #7. In addition, it is highly likely that this improvement would require acquisition of additional right-of-way to be implemented, especially north of Dolan Road.

10. Roundabout (Single-Lane and Two-Lane):

These two improvement alternatives – which scored 15th and 16th out of 17 improvements) were not analyzed further due to interrelated reasons. Guidelines within *NCHRP Report 672: Roundabouts: An Informational Guide, 2nd Edition,* published by the National Cooperative Highway Research Program (NCHRP) in 2010, were reviewed to initially identify if a single-lane or two-lane roundabout would be more appropriate at the SR 1/Dolan Road intersection. The guidelines suggest that a one-lane roundabout should operate acceptably if the sum of the

circulating traffic and entering traffic at each entry into the roundabout is less than 1,000 vehicles per hour. Traffic sums of between 1,000 and 1,300 vehicles per hour should operate marginally in a one-lane roundabout, while traffic sums over 1,300 vehicles per hour should require a two-lane roundabout. As shown within **Exhibit 22**, during the PM peak hour for Existing conditions, two of the traffic sums are between 1,000 and 1,300 vehicles per hour, while one traffic sum is over 1,300 vehicles per hour. Under Year 2035 conditions, all of the PM peak hour traffic sums and one of the AM peak hour sums are over 1,300 vehicles per hour. These results were confirmed by the operational analysis, which found that PM peak hour operations of the single-lane roundabout (both for Existing and Year 2035 conditions) would be deficient for traffic entering from Dolan Road. For these reasons, the single-lane roundabout was not analyzed further.

Exhibit 22 – State Route 1/Dolan Road Roundabout Lane Requirements

Roundabout Entry Point	Volumes at Roundabout Entry Points (sum of entering and conflicting volumes)				Number of Lanes Required
	Existing Conditions		Year 2035		
	AM	PM	AM	PM	
South Entry	842	1315	1025	1595	Two Lanes Required
East Entry	910	1282	1100	1550	Two Lanes Required
North Entry	1236	1108	1495	1340	Two Lanes Required

The two-lane roundabout would operate acceptably within Caltrans standards. However, the overall size of the two-lane roundabout would need to be on the larger side of a typical two-lane roundabout; this for two reasons. First, due to SR 1's designation as a "Terminal Route;" the larger trucks would require a larger roundabout diameter in order to minimize lane offtracking. Second, the roundabout design uses a roundabout design speed of 30 mph, which dictates a larger internal radius than for slower design speeds. With a design speed of 30 mph, all entering vehicles will need to reduce speeds by at least 20 mph prior to entering the roundabout; use of a lower design speed would require further speed reduction. Constructing said roundabout as a system – such as in conjunction with the two other roundabouts proposed within the draft Moss Landing Community Plan (at Moss Landing Road (South) and Moss Landing Road (North)) – would better allow for a slower design speed more typical of a modern roundabout, as they will act in tandem to moderate vehicle travel speeds. Using lower design speed at an isolated roundabout at the intersection of two high-speed roadways is generally not advisable without further physical improvements on the roadway approaches to encourage vehicle deceleration prior to entering the roundabout.

A preliminary "conceptual footprint" design of the two-lane roundabout found that it would likely not fit within the space available. (See **Appendix H** for the "conceptual footprint" design of the two-lane roundabout.) If it were constructed, the center of the two-lane roundabout would have to be relocated further south of the existing intersection to avoid encroachment onto the Moss Landing Power Plant property,

requiring a southerly relocation of Dolan Road. These relocations, however, would in turn encroach upon the existing buildings and pipelines present at the Moss Landing Commercial Park, possibly requiring their relocation or removal; such relocations or removals would be complicated by their potential historical significance. Second, the western edge of the roundabout would encroach upon the edge of the Moss Landing Harbor, potentially requiring a retaining wall at the edge of the harbor and also displacing the planned Monterey Bay Sanctuary Scenic Trail from its planned alignment. Further detailed design of the two-lane roundabout may result in a minimizing of many of these impacts, but not all of them are expected to be eliminated. For those reasons, the two-lane roundabout was not analyzed further.

11. Widen SR 1 to Two Lanes in each Direction:
This improvement alternative, which scored the lowest of all of the improvements, is not being considered any further for the same reasons that Improvement Alternative 8b was rejected. In addition, the current position of the California Coastal Commission is that widening of SR 1 to four lanes through this area may violate the California Coastal Act; this position may make this improvement infeasible at this time.

12. Relocate SR 1/Dolan Road Intersection to the South:
This improvement alternative was not analyzed for some of the same reasons as Improvement Alternative #10b, namely that the relocation of the intersection would encroach upon existing buildings and pipelines at the Moss Landing Commercial Park.

3.5 Improvement Alternatives Recommended for Further Study

The following improvement alternatives are recommended for further study:

2. Flashing Beacons, Signs, Channelizers and Striping
3. Improve Sight Distance
4. Add Northbound SR 1 Right Turn Acceleration Lane
8a. Full Signal, One Through Lane
9a. Half Signal, Single Northbound Through Lane
9b. Half Signal, Two Northbound Through Lanes

These six improvement alternatives were found to have major safety and/or operational benefits. Further evaluation, conceptual design, and environmental analysis of these improvement alternatives are summarized in Section 4 of this report.

4 IMPROVEMENT ALTERNATIVE FEASIBILITY STUDY

This section summarizes the further operational evaluation, conceptual design, and environmental analysis performed on the improvement alternatives recommended for further study in the previous section.

4.1 Improvement Alternative Categories

The six improvement alternatives recommended for further study have been grouped into two categories – unsignalized and signalized. Each category is described below.

4.1.1 Unsignalized Improvement Alternative

The three unsignalized improvement alternatives are not mutually exclusive of each other, and thus have been consolidated into a single conceptual design depicted within **Appendix I**. This consolidated improvement alternative, hereby referred to as Improvement Alternative 2-3-4, includes new flashing beacons, signs and street lighting; refreshing of existing pavement striping; trimming of roadside foliage to improve both intersection sight distance and views of existing signs; and the addition of a new northbound SR 1 acceleration lane. The yellow flashing beacons would be mounted above new Side Road (W2-2) signs on SR 1 and a replaced Stop Ahead (W3-1) sign on Dolan Road approaching the intersection, in order to further emphasize the presence of the intersection and potential conflicting traffic. New street lights would be added at the southeast and northeast corners of the intersection, in order to improve intersection lighting at night and on foggy days, as well as to again emphasize the presence of the intersection and potentially conflicting traffic. The striping improvements would include refreshing of the existing "STOP AHEAD" and "STOP" legends on Dolan Road and the through pavement arrows on northbound and southbound SR 1 approaching the intersection. The foliage trimming would occur around existing signs and within trees immediately adjacent to the intersection.

Finally, the new acceleration lane would be designed to allow vehicles turning right from Dolan Road onto northbound SR 1 to accelerate up to the existing signed speed limit of 50 MPH prior to merging with through traffic. This is opposed to the current intersection layout which requires right-turning traffic to merge directly with through traffic immediately after stopping at the stop sign. This improvement would require additional pavement along the northbound frontage of SR 1 directly in front of the Moss Landing Power Plant; said widening would end prior to the existing bridge over Elkhorn Slough.

Note: It is highly recommended that the new flashing beacons be powered by solar panels and batteries. This will eliminate the need to obtain direct electrical service for the beacons and can provide flexibility in their location. The battery will allow the beacons to function at night and on foggy days with more limited sun exposure. The use of LED beacons will also reduce overall power requirements for the improvement.

4.1.2 Signalized Improvement Alternatives

The three signalized improvement alternatives have been further evaluated as a unit but conceptually designed as individual improvements. This is because the signalized improvement alternatives are each mutually exclusive; while they share many aspects with each other, they cannot be combined as individual units.

The following sub-sections discuss both the additional evaluations (signal warrants and vehicle queuing) and the individual designs of each alternative.

Signal Warrant Evaluation:

Signal warrants were evaluated at the SR 1/Dolan Road intersection for both Existing and Year 2035 conditions. **Exhibit 23** summarizes the warrant results for each evaluated condition, while **Appendix J** contains each evaluated warrant. Three of the six evaluated warrants were found to be met for Existing conditions, including the four-hour (Warrant 2) and peak hour (Warrant 3) warrants. The peak hour warrant was also found to be met under Year 2035 conditions. Based upon these results, a traffic signal at the SR 1/ Dolan Road intersection is considered warranted.

Exhibit 23 – Signal Warrant Evaluations – State Route 1/Dolan Road

Warrant	Warrant Status			Notes
	Met	Not Met	N/A	
1. Eight-Hour Vehicular Volume			✓	Sufficient data not available to evaluate warrant
1A. Minimum Vehicular Volume			✓	
1B. Interruption of Continuous Traffic			✓	
1C. Combination of A and B			✓	
2. Four-Hour Vehicular Volume	✓			Side Street has high right turn volume
3. Peak Hour Vehicle Volume	✓			Side Street has high right turn volume
Existing (Year 2011)	✓			
Year 2035	✓			
4. Pedestrian Volume		✓		No pedestrian crossings at intersection
Part A (Four-Hour)		✓		
Part B (One-Hour)		✓		No pedestrian crossings at intersection
5. School Crossing		✓		School children do not cross at intersection
6. Coordinated Signal System			✓	Approaches do not have downstream signals
7. Crash Experience		✓		Collision rates meet warrant, but other parts not met
8. Roadway Network	✓			Intersection of two regionally important roadways
9. Intersection Near a Grade Crossing			✓	Warrant does not apply

Signal Queuing Evaluation:

Exhibit 24 summarizes the estimated 95th percentile vehicle queue lengths for through traffic on State Route 1 for each of the three signalized improvement alternatives. The vehicle queue calculations can be found within **Appendix K**. These queues represent a simple method to compare the relative impact of the improvement alternative upon the through traffic operations of State Route 1.

Ninety-fifth percentile vehicle queue lengths would be longest for Improvement Alternative 8a (Full Signal, One Through Lane) and shortest for Improvement Alternative 9b (Half Signal, Two Northbound Through Lanes). Queue lengths would be longest on northbound SR 1 and shorter on southbound SR 1, especially in the PM peak hour. None of these queues would extend far enough to block traffic at adjacent intersections; however, as traffic would slow as it approaches the end of these queues, it is possible that such slowing under Improvement Alternative 8a could affect operations at the State Route 1/Moss Landing Road intersection, which is located approximately 1,500 feet south of the Dolan Road intersection, under Year 2035 conditions during the PM peak hour.

Exhibit 24 – Vehicle Queue Length Comparison Table

Improvement Alternative	State Route 1 Through Vehicle Queues (feet)							
	Existing Conditions (Year 2011)				Year 2035 Conditions			
	AM		*PM*		*AM*		*PM*	
	NB	SB	NB	SB	NB	SB	NB	SB
8a. Full Signal, One Through Lane	298	292	877#	162	418	1022#	1198#	311
9a. Half Signal, One Northbound Through Lane	309	0	727#	0	414	0	964#	0
9b. Half Signal, Two Northbound Through Lane	135	0	217	0	174	0	281	0

Notes:
1. Queues represent 95th percentile queues.
2. # = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Results from the queuing report show the length of the northbound right turn lane on State Route 1 at Dolan Road is adequate for both Existing and Year 2035 Conditions.

Queues on the northbound right turn lane are minimal under both Existing and Year 2035 Conditions, less than 15 feet.

Given the conceptual intersection geometrics, the southbound left turn lane is approximately 506 feet, with a 120 feet bay taper, which totals 626 feet. This provides a storage length of 251 feet on the turn lane. This storage length is adequate to accommodate the existing queues and year 2035 queues.

Signalized Improvement Alternative Conceptual Designs:

Appendix I contains the conceptual designs of the three signalized improvement alternatives. Various attributes, benefits and deficiencies for each improvement alternative identified through the conceptual design process are summarized within **Exhibit 25**.

Exhibit 25 – Signal Improvement Alternatives Comparison

Improvement Alternative	Additional Right-of-Way Needed?	Handling of Moss Landing Power Plant Emergency Driveway	Additional Pavement Added?
Alternative 8a – Full Signal, One Through Lane	No	Controlled by signal	No
Alternative 9a – Half Signal, Single Northbound Through Lane	No	Not controlled by signal; Restricted to right turns in and right turns out only	No
Alternative 9b – Half Signal, Two Northbound Through Lanes	No	Not controlled by signal; Restricted to right turns in and right turns out only	Yes – New second northbound through lane north of Dolan Road and widened northbound shoulder south of Dolan Road

Notes:

1. Alternative 8a, Full Signal, One Through Lane – The alternative treats the Moss Landing Power Plant emergency equipment area driveway as if it is an active driveway, complete with protected left turn phasing into the driveway and a shared east-west permitted phase with westbound Dolan Road traffic. Although not absolutely necessary, this treatment of the emergency driveway will minimize any impacts to overall intersection operations when maintenance vehicles need to access the gated equipment accessible from the driveway.

2. Alternative 9b, Half Signal, Two Northbound Through Lanes:
   a. New Second Northbound Through Lane North of Dolan Road – As this new lane is a merge lane and not an acceleration lane, it does not need to be as long as the previously described acceleration lane under Alternative "2-3-4."

   b. Widening of Northbound SR 1 Shoulder South of Dolan Road – This widening would add approximately four feet to the existing shoulder south of Dolan Road, in order to meet the Caltrans shoulder standard width of 8 feet. This widening is incorporated into this improvement alternative because the second northbound SR 1 through lane would now also carry higher-speed through traffic in addition to slower right-turning traffic. Note that while this improvement would not change the distance between the traveled way and existing aboveground utilities fronting the highway, it would narrow the distance between the edge of pavement and said utilities by four feet.

The preparation of the improvement alternative conceptual designs did not uncover any design issues that would preclude their construction. Discussions of potential environmental issues associated with the designs are described within Section 4.2 Initial Study Results.

4.2 Improvement Alternative Construction Cost Estimates

Exhibit 26 summarizes the preliminary construction cost estimates for each of the four improvement alternatives described above – Alternatives 2-3-4, 8a, 9a, and 9b. The detailed programming construction estimates are contained within **Appendix L**. The construction programming estimates range between approximately $220,000 to $391,000, depending upon the improvement alternative. Note that this does not include soft costs (design, environmental, right-of-way, utilities construction management and permitting).

Exhibit 26 – Summary of Improvement Alternative Construction Cost Estimates

Improvement Alternative	Preliminary Construction Cost Estimate	Soft Cost (Design, Env, ROW, Utilities, Permitting	Total Programming Project Cost
Alternative 2-3-4 – Flashing Beacons, Striping, etc.; Sight Distance Improvements; Northbound Acceleration Lane	$220,128	$479,872	$700,00
Alternative 8a – Full Signal,One Through Lane	$249,336	$850,664	$1,110,000

Improvement Alternative	Preliminary Construction Cost Estimate	Soft Cost (Design, Env, ROW, Utilities, Permitting	Total Programming Project Cost
Alternative 9a – Half Signal, Single Northbound Through Lane	$227,184	$872,816	$1,110,000
Alternative 9b – Half Signal, Two Northbound Through Lanes	$391,068	$908,932	$1,300,000

Note: Programming estimates are plus or minus 35% accurate.

4.3 Initial Study Results

An Initial Study has been prepared by EMC Planning Group, assessing the potential environmental impacts of the four improvement alternatives previously describes within this section (i.e. Improvement Alternatives 2-3-4, 8a, 9a, and 9b). This report – *Initial Study – State Route 1 – Dolan Road Improvements* – concluded that a mitigated negative declaration can be declared for all four improvement alternatives. All of the identified potentially significant impacts can be reduced to less-than-significant status through the implementation of various mitigation measures, both prior and during construction. **Exhibit 27** summarizes the overall findings under each evaluated environmental factor, specifically if any mitigation measures are deemed necessary and, if so, provides a summary of that measure and its potential effect upon implementation of the improvement alternatives. The full Initial Study, including each detailed mitigation measure, is located within **Appendix M**.

Exhibit 27 – Summary of Overall Findings from Initial Study

Finding	Mitigation Measure	Limiting of Improvement Options?
1 Aesthetics		
b Removal of existing trees along SR 1 could result in a significant visual impact.	Implement Mitigation Measure BIO-2 (see below)	Unlikely, but would add additional construction costs and time. Only applicable to Improvement Alternatives 2-3-4 and 9b.

Finding			Mitigation Measure	Limiting of Improvement Options?
1	Aesthetics (continued)			
c	Removal of and replacement of existing trees along SR 1 could have a potentially significant impact upon visual character of project area.		Implement Mitigation Measure BIO-2 (see below)	Unlikely, but would increase additional construction costs and time. Only applicable to Improvement Alternatives 2-3-4 and 9b.
2	*Agriculture and Forest Resources*			
	No Impacts			
3	*Air Quality*			
	All impacts would be Less Than Significant			
4	*Biological Resources*			
a	i	Construction noise and removal of trees during breeding season could disturb nesting birds or their young, which is considered a significant adverse environmental impact.	BIO-1 – Tree removal and noise-generating activities should occur outside of nesting bird season (February 1 to September 15). If removal of construction occurs during nesting season, a pre-construction survey for nesting birds should be performed. If nesting birds are found within 250 feet of construction, a construction-free buffer zone should be established.	Unlikely, but could limit construction times during the year and/or increase construction costs. Only applicable to Improvement Alternatives 2-3-4 and 9b.
	ii	The special-status plant species Congdon's tarplant has been recorded as occurring near the project area.	BIO-2 – The presence/absence of Congdon's tarplant shall be determined on bare soils within the project area during the summer and fall months (typically August and September) prior to construction-related activities.	

Finding		Mitigation Measure	Limiting of Improvement Options?
4	*Biological Resources* (continued)		
		BIO-3 – If found, appropriate avoidance or mitigation shall be developed in coordination with appropriate regulatory agencies, including identification of off-site mitigation area for habitat restoration, seed and topsoil transfer, and establishment of a five-year maintenance and monitoring program	Unlikely, but would increase construction time and costs. Only applicable to Improvement Alternatives 2-3-4 and 9b.
e	Potential removal of three "landmark" trees (as defined in *North County Coastal Implementation Plan*)	BIO-4 – A Monterey County costal development permit shall be required for removal of any landmark trees. A Forester's Assessment and Recommendation for removal will be necessary. The quantity, size, and species of replacement trees shall be coordinated with Monterey County Resource Management Agency – Planning Department and Caltrans District Landscape Architect. All removed landmark trees must be replaced at a minimum ratio of 1:1.	Unlikely, but would increase construction time and costs. Only applicable to Improvement Alternatives 2-3-4 and 9b.
5	*Cultural Resources*		
b	A known archaeological site is located near the northern end of the study area	CR-1 – Prior to development of road improvements north of Dolan Road, steps shall be taken to protect potential cultural resources, including backhoe testing and construction monitoring by a qualified archaeologist.	Unlikely, but would increase construction time and costs. Only applicable to Improvement Alternatives 2-3-4 and 9b.
d	Construction activity could potentially disturb human remains	Implement Mitigation Measure CR-1	Unlikely, but would increase construction time and costs. Only applicable to Improvement Alternatives 2-3-4 and 9b.

Finding		Mitigation Measure	Limiting of Improvement Options?
6	*Geology and Soils*		
	All impacts would be Less Than Significant		
7	*Greenhouse Gas Emissions*		
	All impacts would be Less Than Significant		
8	*Hazards and Hazardous Materials*		
d	Construction could involve excavation of soils contaminated by past groundwater contamination at the Moss Landing Power Plant		
		HAZ-1 – Prior to construction of improvements, the project sponsor shall coordinate with Department of Toxic Substances Control to develop appropriate hazardous materials protocols for soil excavation.	Unlikely, but would increase construction time and costs.
9	*Hydrology and Water Quality*		
b	Ongoing irrigation of new landscaping would represent an inappropriate optional use of water within an over-drafted basin.		
		HY-1 – Re-vegetation of highway margins shall incorporate native plantings that will successfully establish after five years of irrigation. Any installed irrigation systems shall be removed after five years.	Unlikely, although will affect the types of landscape materials that can be used, potentially increasing construction time and costs.
10	*Land Use and Planning*		
	No Impacts		
11	*Mineral Resources*		
	No Impacts		
12	*Noise*		
	All impacts would be Less Than Significant		
13	*Population and Housing*		
	No Impacts		

Finding		Mitigation Measure	Limiting of Improvement Options?
14	*Public Services*		
	No Impacts		
15	*Recreation*		
	No Impacts		
16	*Transportation/Traffic*		
	All impacts would be Less Than Significant		
17	*Utilities and Service Systems*		
b	Water would be drawn from an over-drafted aquifer		
18	Mandatory Findings of Significance	Implement Mitigation Measure HY-1	Unlikely, though will limit usable types of landscape materials, potentially increasing construction time and costs.
a	Proposed project could have impacts upon endangered plants, specifically Congdon's tarplant		

4.4 Feasibility Assessment

Exhibit 28 summarizes the feasibility of constructing the four improvement alternatives evaluated within this section of the report. Accounting for all of the design and environmental analysis, all four improvements appear to be feasible to construct. While there are a number of required mitigation measures that must be followed prior to and during construction, none would preclude the construction of any of the improvement alternatives. However, these mitigation measures will likely increase the construction time and cost.

Exhibit 28 – Improvement Alterative Feasibility Table

Improvement Alternative		Constructability and Environmental Issues	Feasible to Construct? (Yes/No)[2]	Notes
2-3-4	Flashing Beacons, Signs, Channelizers & Striping; Improve Sight Distance (relocate utilities, trim foliage, remove obstructions, etc.); Add WB Dolan Right Turn Acceleration Lane	Construction period may be restricted by nesting birds, Tree removal requires replantings and County permits; Verification of presence of endangered plant, Measures to preserve potential cultural resources; Methods to handle contaminated soil; Use of native plantings with minimal water usage; Adjacent power plant may request buffer or other security enhancements	**Yes**	Improves driver awareness; Improves driver, bicyclist and pedestrian visibility; Improves sight distance; Minimal effect upon capacity
8	Full Signal a. One Through Lane	Minimal striping, grading and foundations;Methods to handle contaminated soil; Use of native plantings with minimal water usage	**Yes**	Longer SR 1 queues
9	Half Signal (SB does not stop) a. Single NB Thru Lane	Minimal striping, grading and foundations; Methods to handle contaminated soil; Use of native plantings with minimal water usage	**Yes**	Longer NB SR 1 queues
	b. Two NB Thru Lanes	Construction period may be restricted by nesting birds, Tree removal requires replantings and County permits; Verification of presence of endangered plant, Measures to preserve potential cultural resources; Methods to handle contaminated soil; Use of native plantings with minimal water usage; Adjacent power plant may request buffer or other security enhancements	**Yes**	Minor NB SR 1 queues

5 RECOMMENDED IMPROVEMENT ALTERNATIVES FOR FURTHER STUDY

This section identifies the improvements recommended for further study, as well as the likely next steps in the design and analysis process prior to approval and construction.

5.1 Improvement Alternatives Recommended for Further Study

All four of the improvement alternatives discussed in Section 4 – Improvement Alternatives 2-3-4, 8a, 9a, and 9b – appear to be feasible to construct and are not environmentally precluded from construction. It is therefore recommended that all four improvements be considered for future implementation. Further analysis and design is recommended prior to selection of a single improvement alternative for implementation.

5.2 Next Steps

The likely next step in the analysis and design process would be the preparation of a formal Project Study Report (PSR), the completion of which would be the gateway to state approval and funding for the ultimately selected improvement. As previously mentioned within the Introduction, a likely component of a future PSR is the new Intersection Control Evaluation (ICE) process recently implemented by a Caltrans directive in August 2013. ICE is an evaluation process meant to analyze potential intersection and interchange improvement alternatives on a Caltrans facility. This includes common improvements such as stop signs and traffic signals, as well as more unique and innovative improvement options like roundabouts or improvements deviating from Caltrans design standards. Responsibility for implementation of the ICE process is left to each individual Caltrans district; therefore all future discussions regarding the ICE process for this project would be with Caltrans District 5 staff. The analysis contained within this report was structured in the spirit of these future guidelines.

The County of Monterey should also consider a long-term solution to safety and circulation issues in the study area, such as the intersection consolidation and grade separation improvements identified in Improvement Alternatives 13 and 14. These improvements will require considerably more analysis, design, and stakeholder collaboration than was performed as part of this report. These improvements will also be more expensive and will take longer to build; however, they will be more consistent with the stated long-term goals of Caltrans and the Moss Landing Community Plan for the SR 1 corridor through Moss Landing. Note that it is possible that such an improvement may be incorporated into an ICE analysis of the SR 1/Dolan intersection.

6 REFERENCES

6.1 List of References

1. California Department of Transportation, *Traffic Operations Policy Directive 13-02 – Intersection Control Evaluation (ICE)*, Issued August 23, 2013, Effective August 30, 2013.
2. 2010 US Census, http://www.census.gov/2010census, accessed August 6, 2013.
3. Moss Landing History, www.mosslanding.com, accessed March 6, 2013.
4. Monterey County Resource Management Agency, *Draft Moss Landing Community Plan*, May 2012.
5. California Department of Transportation (Caltrans), *State Routes 1 & 183 Corridor System Management Plan*, October 2011.
6. Monterey-Salinas Transit web page, www.mst.org, accessed August 5, 2013.
7. County of Monterey Department of Public Works, *2008 Monterey County General Bikeways Plan*, Approved October 7, 2008.
8. California Department of Transportation, *2009 Collision Data on California State Highways*, 2009.
9. Applied Development Economics, *Moss Landing Economic Development Strategy*, February 25, 2010
10. Kimley-Horn and Associates, *Regional Impact Fee – Nexus Study Update*, March 26, 2008.
11. National Cooperative Highway Research Program, *NCHRP Report 672: Roundabouts: An Informational Guide, 2nd Edition,* 2010.

6.2 List of Contacts

1. Paul H. Greenway P.E., Assistant Director of Public Works, RMA – Department of Public Works, Salinas, California.
2. Patricia A. Lopez, Project Manager, RMA – Department of Public Works, Salinas, California.
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4. Jonathan Pascua, P.E., RMA – Department of Public Works, Salinas, California.
5. Richard James, EMC Planning Group, Monterey, California.
6. Martin Carver, Management Specialist RMA – Planning Department, Salinas, California.
7. Franziska Church, Fehr & Peers, San Jose, California.

Appendix A

State Highway 1 & Dolan Road
Feasibility Study,
Monterey County, California –
Geotechnical Letter Report

Hatch Mott MacDonald

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March 27, 2013

Patricia A. Lopez
County of Monterey Department of Public Works
168 W. Alisal Street, 2nd Floor
Salinas, CA 93901

RE: State Highway 1 & Dolan Road Feasibility Study, Monterey County, California Geotechnical Letter Report

Dear Patricia:

Hatch Mott MacDonald (HMM) is pleased to provide this geotechnical letter report in support of traffic engineering services related to the State Highway 1 & Dolan Road Feasibility Study in Moss Landing, Monterey County, California. The project involves the identification, study, and design of potential improvements to the intersection of State Route 1 (SR 1) and Dolan Road, as recommended within the draft Moss Landing Community Plan. Two approaches were evaluated in the draft Plan. The first approach involved installing an overcrossing at SR 1. The second approach consisted of realigning Moss Landing Road, Dolan Road and Highway 1 into a traffic circle / roundabout requiring widening and reconstruction of existing road. This report is prepared in support of intersection-level improvement studies; overcrossing improvements were not part of our geotechnical scope of work.

SCOPE OF WORK

Our work included review of available geotechnical reports, plans and publicly available data, project site visit, limited field investigation, laboratory geotechnical testing and preparation of this report. These tasks are described below followed by our findings, evaluations, conclusions and recommendations.

A. REVIEW OF EXISTING GEOTECHNICAL REPORTS, PLANS AND PUBLICLY AVAIALBLE DATA

We reviewed Geotechnical Engineering Investigation Reports for SR-1 / Dolan Road Intersection Improvement (Parikh Consultants, Inc. (Parikh), April 2000) and Monterey Bay Sanctuary Scenic Trail Project, Moss Landing Segment ((Trail Project), Parikh, August 2010), and plans for the proposed Trail Project, and utilized relevant project data and information to perform our evaluations included in this letter report. We also reviewed soils data by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) available online to support our findings and evaluations. The complete list of references is provided in Appendix D.

B. FIELD INVESTIGATION

We visited the project site on February 13, 2013 and obtained two bulk soil samples from the northbound and southbound roadside areas of SR 1 within 500 feet of its intersection with Dolan Road (See Sampling and Boring Plan in Appendix A). Sampling locations were selected by our Traffic Engineer. The soils samples were obtained from within the top 10 inches of ground surface using a shovel. Identification and evaluation of hazardous materials was not part of scope of our work, and is not addressed in our report.

C. LABORATORY GEOTECHNICAL TESTING

The two soil samples collected from project site during our field investigation were sent to BSK Associates Engineers and Laboratories in Livermore, CA for R-value testing in accordance with California Test 301 procedures.

FINDINGS AND EVALUATIONS

Based on our review of existing geotechnical plans and reports, publicly available data, field investigation, and laboratory geotechnical testing, our findings and evaluations followed by conclusions and recommendations are as follows.

A. EXISTING SITE CONDITIONS

Based on project information, it was assumed that the proposed traffic improvements would be limited to within ±1,000 feet of intersection of SR 1 and Dolan Road in the north and south directions on SR 1 (Project Site). The Project Site consists of a level roadway built on the top of a bluff with a marina and harbor on its west. A power plant and an industrial building exist in northeast and southeast portions of the intersection respectively. The elevations drop steeply from the roadway down to the marina. The roadbed consists of a flexible pavement structure and showed no signs of distress at the time of our field visit. A level to gently sloping sand roadside area, clear of any vegetation, exists south of the intersection along the southbound side of SR 1, and extends approximately 10 to 30 feet before encountering shrubbery and sloping steeply down to the marina. North of the intersection, a steel guard rail with a steep slope down to the marina adjoins the southbound side of SR 1. On the northbound side of SR 1, the roadside consists of a few feet of level to up-sloping area vegetated by shrubbery and grass south of the intersection. The roadside consists of a few feet of gently down-sloping clear sand area before encountering a tree line north of the intersection on the northbound side of SR 1. A number of electric overhead lines supported on wooden poles run along and across the Project Site.

B. PROPOSED PROJECT IN SITE VICINTY

A scenic trail, part of the Trail Project, is proposed on the west side of SR 1 next to the marina. A continuous 500-foot long retaining wall north of the intersection is also proposed on the southbound side of SR 1 to retain imported fill material to minimize excavation into the slope. Any feasible alternatives of traffic improvements will need to factor in impact due to the proposed project along the Project Site. Evaluation of this impact is outside the scope of this report.

C. GEOLOGY

Based on the Maps Showing Geology and Liquefaction Potential of Northern Monterey and Southern Santa Cruz Counties, California (USGS MF-1199, 1980), the surficial sediments at the Project Site are mapped into two Geologic Units: Artificial Fill and Eolian Deposits of Maresa Beach. The Artifical Fill Unit consists of artificially deposited fill material consisting of well-compacted sand and silt to poorly-compacted organic soils. The Eolian Deposits consist of weakly to moderately consolidated silt and sand deposits.

D. SUBSURFACE AND GROUNDWATER CONDITIONS

Three borings MB-6, MB-7 and MB-8 in the vicinity of the Project Site were drilled to 30 feet below ground surface (bgs) by Parikh for the Trail Project at the proposed location of retaining wall west of SR 1. The borings primarily encountered medium dense to very dense Poorly-graded Sand (SP) to Silty Sand (SM) and Clayey Sand (SC) with varying amounts of gravel at ground surface continuing to boring termination depths. Thin 5-foot thick seams of Lean Clay (CL) and Fat Clay (CH) were encountered in boring MB-7 and MB-8 between approximately 8 and 18 feet depths bgs. The Fat Clay soil sample was found to have a Plasticity Index (PI) of 32. Other samples from these borings were not tested for Atterberg Limits. Groundwater was not encountered in the borings during drilling. However, groundwater level may vary depending on seasonal variations, daily tidal fluctuations, surface and subsurface flows or other factors. Our review of online soil data available from USDA NRCS indicated a similar soil profile with PI ranging from 15 to 30 for clay soils and non-plastic to 20 for sand soils.

Four bulk soil samples were collected from within top 2 feet from the shoulder areas south of the intersection by Parikh to support an earlier study for this project performed by Dokken Engineering. Two of the four samples, designated R-1 and R-2, were selected for R-value testing. The samples consisted of brown sand to orange-brown clayey sand, and their R-values were 67 and 15, respectively. The two bulk samples, designated S-1 and S-2, collected by us for this study consisted of tan, silty sand with gravel, and their R-values were found to be 71 and 73. The laboratory test results are provided in Appendix B.

E. PRELIMINARY PAVEMENT DESIGN SECTION

We used CalFP version 1.1 software developed by CALTRANS to obtain preliminary design pavement sections. The CalFP software program is based on an empirical method for pavement design as described in Section 633.1 of CALTRANS Highway Design Manual ((HDM), 2012). The Traffic Index (TI) of 8.5 provided by our Traffic Engineer was used for our evaluations. Since there was a considerable difference between the R-value testing results of R-2 and other samples (R-1, S-1 and S-2), two different pavement design sections are provided for the Project Site: a thicker section in the area of R-1, and a relatively thin section for the rest of the Project Site. Based on Section 614.3 of HDM, the R-value of subgrade soil used for pavement design should be limited to no more than 50. Therefore, we performed our runs using two R-values, 15 and 50, to obtain preliminary design pavement sections. The different pavement configurations that may be acceptable are as shown in the Table 1. Detailed results of software runs are included in Appendix C.

Table 1 Acceptable Preliminary Pavement Design Configurations

Option / CalFP Run No.	Traffic Index (TI)	Subgrade R-value (Max. 50*)	Hot Mix Asphalt (HMA) Surface Course (ft)	Asphalt Treated Permeable Base (TPB) (ft)	Base (Aggregate Class 2) (ft)	Subbase (Aggregate Class 2) (ft)	Total Pavement Thickness (ft)
Area Near R-1							
1 / Run 8	8.5	15	0.45	-	0.60	0.80	1.85
2 / Run 4	8.5	15	0.40	-	1.40	-	1.80
3 / Run 5	8.5	15	0.90	0.25	-	-	1.15
4 / Run 6	8.5	15	1.00	-	-	-	1.00
Rest of the Project Site							
1 / Run 7	8.5	50	0.40	-	0.70	0.35	1.45
2 / Run 1	8.5	50	0.40	-	0.55	-	0.85
3 / Run 2	8.5	50	0.55	0.25	-	-	0.80
4 / Run 3	8.5	50	0.70	-	-	-	0.70

*Based on Section 614.3 of CALTRANS Highway Design Manual (2012)

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our investigations and evaluations, our preliminary conclusions and recommendations regarding feasibility of realignment at the intersection of SR 1 and Dolan Road are as follows:

- The widening of road is feasible from a geotechnical pavement engineering standpoint.
- Two different pavement design sections are recommended to be used for the Project Site: a thicker section in the southern area with a lower subgrade R-value, and a relatively thin section for the rest of the Project Site. Alternatively, the subgrade soils exhibiting a lower R-value may be replaced by competent soils with higher R-values to be able to use a thinner pavement design section. In such case, the R-value of competent borrow material must be obtained and evaluations shall be performed prior to construction.
- We recommend that the extent of subgrade soils with a lower R-value shall be further investigated and/or verified by additional field investigations.
- Construction shall conform to CALTRANS standard specifications, latest edition.
- If full-depth HMA, or HMA with TPB are used for design, use working table for placing construction equipment to meet construction requirement and subtract its Gravel Equivalent from the surface layer for design.
- Our recommendations are preliminary in nature and further site investigations and analyses will be required for final pavement design section and construction.

LIMITATIONS

The following limitations apply to the findings, conclusions and evaluations presented in this report:

- Our professional services were performed consistent with our agreement with the Client. We do not warrant the accuracy of information by others.
- This report is solely for the use of our Client unless noted otherwise. Any reliance on this report by a third party is at the party's sole risk.

Hatch Mott MacDonald

- The analyses, conclusions and recommendations in this report are based upon site conditions as they existed at the time of our preliminary surface and subsurface investigations. We have assumed that the subsurface soil conditions at the locations of our sampling are generally representative of the subsurface conditions at the Project Site for our preliminary conclusions and recommendations. However, actual subsurface conditions at locations between and beyond our sampling locations may differ. If actual conditions are found to be different than anticipated, we should be contracted to conduct further evaluations.
- Our geotechnical engineering scope and services did not include evaluating the Project Site for hazardous materials.
- Construction recommendations are outside the scope of this report, but are recommended to be completed prior to construction.
- If changes are made to the nature or design of the project as described in this report, then the conclusions and recommendations in this report shall be considered invalid.

If you have any questions regarding the contents of this report or need additional information, please do not hesitate to contact Anil Dean. Thank you for the opportunity to assist you with this project.

Very truly yours,

Hatch Mott MacDonald

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Encl.

Appendix A – Sampling and Boring Location Plan
Appendix B – R-Value Test Results
Appendix C – CalFP Program Runs
Appendix D – List of References

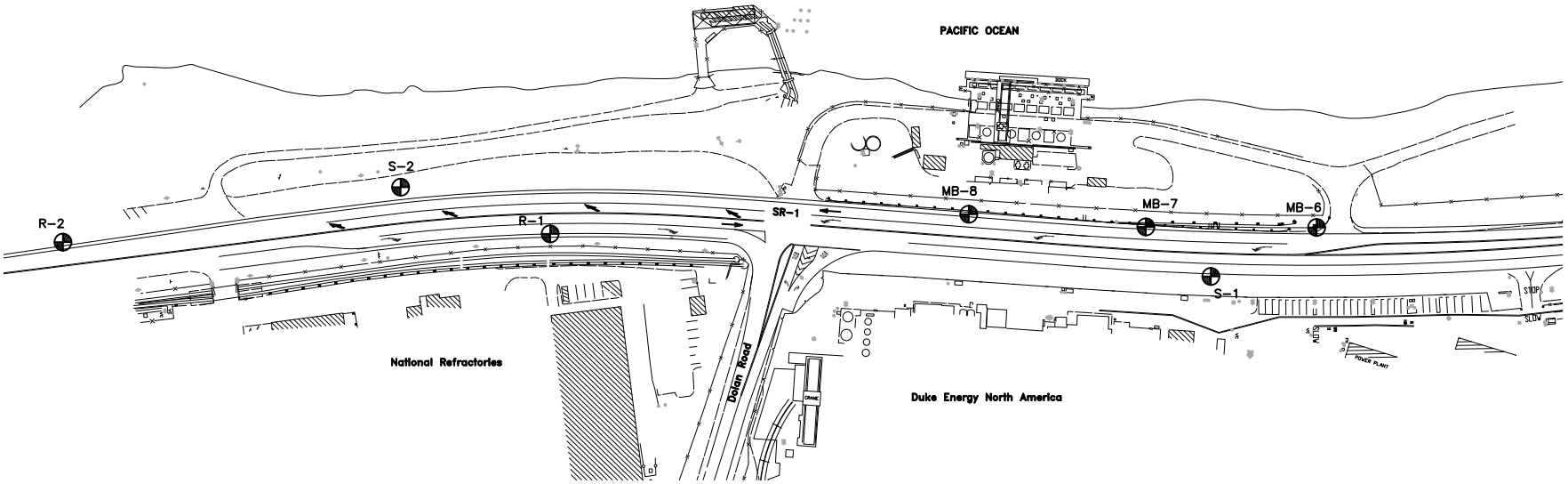
Hatch Mott MacDonald

Appendix A

Sampling and Boring Location Plan

NOTES:
1. S–# BASED ON HMM 2013 GEOTECHNICAL INVESTIGATION
2. R–# BASED ON PARIKH 2000 GEOTECHNICAL INVESTIGATION
3. MB–# BASED ON PARIKH 2010 GEOTECHNICAL INVESTIGATION

1"=200'



LEGEND:
⊕ = SAMPLE/BORING

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Sampling and Boring Location Plan

J:\2010\280974AB01 – SR 1–Dolan Feasibility Study\14.1 Conceptual\EX–LAYOUT.dwg Samples Location 3/19/2013 2:38 PM LEE49250

Hatch Mott MacDonald

Appendix B

R- Value Test Results

BSK Associates
Engineers & Laboratories

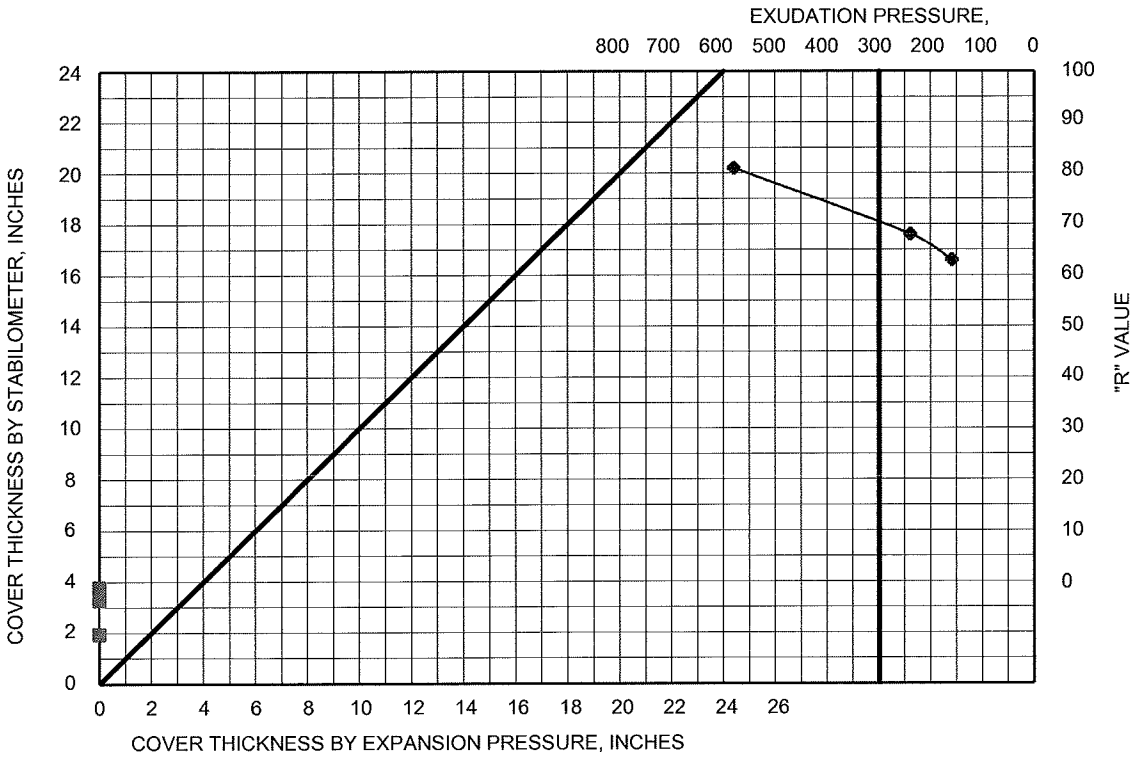
700 22nd Street
Bakersfield, CA 93301
Ph: (661) 327-0671
Fax: (661) 324-4218

R-Value Test

Caltrans Test Method 301

Project Name: Hwy 1 / Dolan Rd
Project Number: G13-036-10P
Lab Tracking ID: B13-065
Sample Location: NB Lane-Intersection of Hwy 1 & Dolan Rd, Santa Cruz

Sample Date: NP
Test Date: 2/27/2013
Report Date: 2/28/2013
Tested By: L. Colocado



Sample Description: Silty sand with little gravel

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	7283	2998	1991
EXUDATION PRESSURE, PSI	580	239	159
EXPANSION, * 0.0001 IN	0	0	0
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	22	34	38
DISPLACEMENT	3.72	4.39	4.62
RESISTANCE VALUE "R"	81	68	63
"R" VALUE CORRECTED FOR HEIGHT	81	68	63
% MOISTURE AT TEST	7.4	8.4	8.9
DRY DENSITY AT TEST, PCF	132.7	132.3	131.2
"R" VALUE AT 300 PSI EXUDATION PRESSURE	**71**		
"R" VALUE BY EXPANSION PRESSURE TI = 4.0, GF=1.50	**N/A**		

Reviewed By

BSK Associates
Engineers & Laboratories

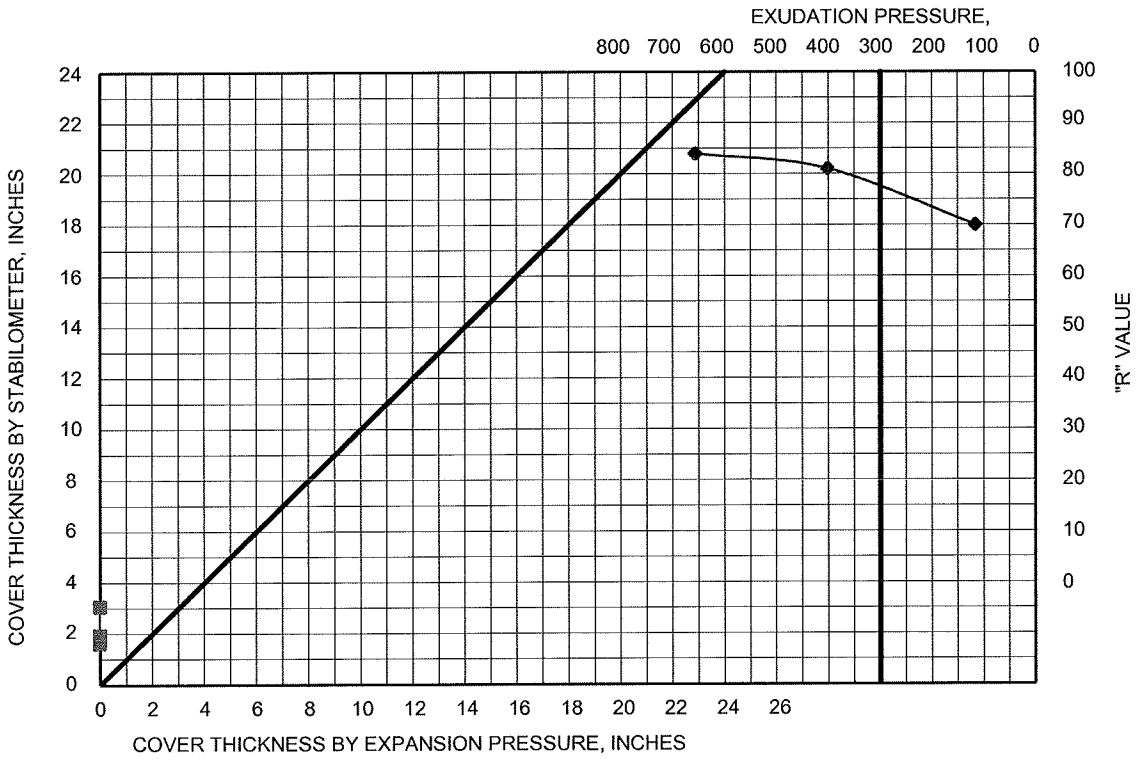
700 22nd Street
Bakersfield, CA 93301
Ph: (661) 327-0671
Fax: (661) 324-4218

R-Value Test

Caltrans Test Method 301

Project Name: Hwy 1 / Dolan Rd
Project Number: G13-036-10P
Lab Tracking ID: B13-066
Sample Location: SB Lane-Intersection of Hwy 1 & Dolan Rd, Santa Cruz

Sample Date: NP
Test Date: 2/27/2013
Report Date: 2/28/2013
Tested By: L. Colocado



Sample Description: Silty sand with little gravel

SPECIMEN	A	B	C
EXUDATION PRESSURE, LOAD (lb)	8241	5041	1458
EXUDATION PRESSURE, PSI	656	401	116
EXPANSION, * 0.0001 IN	0	0	0
EXPANSION PRESSURE, PSF	0	0	0
STABILOMETER PH AT 2000 LBS	18	21	33
DISPLACEMENT	3.76	3.84	4.21
RESISTANCE VALUE "R"	84	81	70
"R" VALUE CORRECTED FOR HEIGHT	84	81	70
% MOISTURE AT TEST	5.9	6.9	7.9
DRY DENSITY AT TEST, PCF	135.6	134.3	133.8
"R" VALUE AT 300 PSI EXUDATION PRESSURE	**73**		
"R" VALUE BY EXPANSION PRESSURE TI = 4.0, GF=1.50	**N/A**		

Reviewed By:

Hatch Mott MacDonald

Appendix C

CalFP Program Runs

CALFP Ver. 1.1

Unit System = E

Title: SR 1 / Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 15
Required GE = 0002.31 ft

Subbase Type = AB-Class 2

Subbase Gravel Factor = 0001.00
Subbase R.Value = 0050.00
0.0032*TI*(100-R.VALUE) = 0001.36 ft
Subbase MAX. depth = 0005.00 ft
Subbase MIN. depth = 0000.35 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10
Base R.Value = 0078.00
0.0032*TI*(100-R.VALUE) = 0000.60 ft
Base MAX. depth = 0002.00 ft
Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Subbase

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft
00.40	00.00	00.70	00.00	00.75	-00.02	0000.00	01.94
00.45	00.00	00.60	00.00	00.80	00.02	0000.00	01.94
00.50	00.00	00.55	00.00	00.75	00.01	0000.00	01.94
00.55	00.00	00.45	00.00	00.75	00.02	0000.00	01.97
00.60	00.00	00.35	00.00	00.70	-00.01	0000.00	02.03
00.65	00.00	00.35	00.00	00.60	00.02	0000.00	02.08
00.70	00.00	00.35	00.00	00.45	00.01	0000.00	02.13
00.75	00.00	00.35	00.00	00.35	00.06	0000.00	02.18
00.80	00.00	00.35	00.00	00.35	00.21	0000.00	02.23
00.85	00.00	00.35	00.00	00.35	00.35	0000.00	02.27
00.90	00.00	00.35	00.00	00.35	00.51	0000.00	02.32

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 15
Required GE = 0002.31 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10
Base R.Value = 0078.00
0.0032*TI*(100-R.VALUE) = 0000.60 ft
Base MAX. depth = 0002.00 ft
Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft
00.40	00.00	01.40	00.00	00.00	00.00	0000.00	01.94
00.45	00.00	01.30	00.00	00.00	-00.01	0000.00	01.94
00.50	00.00	01.20	00.00	00.00	-00.02	0000.00	01.94

00.55	00.00	01.10	00.00	00.00	-00.02	0000.00	01.97
00.60	00.00	01.00	00.00	00.00	00.01	0000.00	02.03
00.65	00.00	00.85	00.00	00.00	-00.02	0000.00	02.08
00.70	00.00	00.75	00.00	00.00	00.00	0000.00	02.13
00.75	00.00	00.60	00.00	00.00	-00.02	0000.00	02.18
00.80	00.00	00.50	00.00	00.00	00.02	0000.00	02.23
00.85	00.00	00.35	00.00	00.00	00.00	0000.00	02.27
00.90	00.00	00.35	00.00	00.00	00.16	0000.00	02.32
00.95	00.00	00.35	00.00	00.00	00.32	0000.00	02.36
01.00	00.00	00.35	00.00	00.00	00.47	0000.00	02.40

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 15
Required GE = 0002.31 ft

TPB Type = ATPB

TPB Gravel Factor = 0001.40
TPB R.Value = 0100.00
0.0032*TI*(100-R.VALUE) = 0000.00 ft
TPB MAX. depth = 0000.25 ft
TPB MIN. depth = 0000.25 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.10 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)
HMA MIN. Depth (from TPB) = 0000.00 ft
HMA MIN. Depth (from Ratio) = 0000.00 ft

HMA MIN. Depth (selected) = 0000.35 ft

Note: To locate the TPB (Treated Permeable Base) as close as possible to the surface
(to facilitate drainage) you might want to 'sandwich' the TPB somewhere within the HMA.
If so, use the minimum HMA depth shown above for the top layer of the 'sandwich' ft 0.35
and then from the following table select an HMA depth of at least ft 0.5
which will provide a minimum depth of 0.15 ft for the bottom layer.

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Native Soil
Note: Layer Number and Minimum Layer Ratio (GE) 4 0.425735294117647

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft	ft
00.90	00.25	00.00	00.00	00.00	00.13	0000.00	02.32	
00.95	00.25	00.00	00.00	00.00	00.28	0000.00	02.36	
01.00	00.25	00.00	00.00	00.00	00.44	0000.00	02.40	
01.05	00.25	00.00	00.00	00.00	00.60	0000.00	02.44	

Note: This design requires a safety Factor for GE. This requires that a design be selected that has a value as close as possible to 0.1 in the 'Res-GE' column. Such a design is generally shown in the first row of the above table.

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 15
Required GE = 0002.31 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.10 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (selected) = 0000.30 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Native Soil

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft	ft
01.00	00.00	00.00	00.00	00.00	00.09	0000.00	02.40	
01.05	00.00	00.00	00.00	00.00	00.25	0000.00	02.44	
01.10	00.00	00.00	00.00	00.00	00.42	0000.00	02.48	
01.15	00.00	00.00	00.00	00.00	00.59	0000.00	02.52	

Note: This design requires a safety Factor for GE. This requires that a design be selected that has a value as close as possible to 0.1 in the 'Res-GE' column. Such a design is generally shown in the first row of the above table.

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1 / Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 50
Required GE = 0001.36 ft

Subbase Type = AB-Class 2

Subbase Gravel Factor = 0001.00
Subbase R.Value = 0050.00
0.0032*TI*(100-R.VALUE) = 0001.36 ft
Subbase MAX. depth = 0005.00 ft
Subbase MIN. depth = 0000.35 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10
Base R.Value = 0078.00
0.0032*TI*(100-R.VALUE) = 0000.60 ft
Base MAX. depth = 0002.00 ft
Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Subbase

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft
00.40	00.00	00.70	00.00	00.35	00.54	0000.00	01.94

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 50
Required GE = 0001.36 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10
Base R.Value = 0078.00
0.0032*TI*(100-R.VALUE) = 0000.60 ft
Base MAX. depth = 0002.00 ft
Base MIN. depth = 0000.35 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (from Base) = 0000.20 ft

HMA MIN. Depth (selected) = 0000.20 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Base

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft	ft
00.40	00.00	00.55	00.00	00.00	00.02	0000.00	01.94	
00.45	00.00	00.45	00.00	00.00	00.01	0000.00	01.94	
00.50	00.00	00.35	00.00	00.00	-00.01	0000.00	01.94	

00.55	00.00	00.35	00.00	00.00	00.11	0000.00	01.97
00.60	00.00	00.35	00.00	00.00	00.24	0000.00	02.03
00.65	00.00	00.35	00.00	00.00	00.38	0000.00	02.08
00.70	00.00	00.35	00.00	00.00	00.52	0000.00	02.13

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 50
Required GE = 0001.36 ft

Base Type = AB-Class 2

Base Gravel Factor = 0001.10
Base R.Value = 0078.00
0.0032*TI*(100-R.VALUE) = 0000.60 ft
Base MAX. depth = 0002.00 ft
Base MIN. depth = 0000.35 ft

TPB Type = ATPB

TPB Gravel Factor = 0001.40
TPB R.Value = 0100.00
0.0032*TI*(100-R.VALUE) = 0000.00 ft
TPB MAX. depth = 0000.25 ft
TPB MIN. depth = 0000.25 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.20 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)
HMA MIN. Depth (from TPB) = 0000.00 ft
HMA MIN. Depth (from Ratio) = 0000.00 ft

HMA MIN. Depth (selected) = 0000.40 ft

Note: To locate the TPB (Treated Permeable Base) as close as possible to the surface
(to facilitate drainage) you might want to 'sandwich' the TPB somewhere within the HMA.
If so, use the minimum HMA depth shown above for the top layer of the 'sandwich' ft 0.4
and then from the following table select an HMA depth of at least ft 0.55
which will provide a minimum depth of 0.15 ft for the bottom layer.

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Base
Note: Layer Number and Minimum Layer Ratio (GE) 5 0.423529411764706

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft
00.40	00.25	00.35	00.00	00.00	00.15	0000.00	01.94
00.45	00.25	00.35	00.00	00.00	00.25	0000.00	01.94
00.50	00.25	00.35	00.00	00.00	00.35	0000.00	01.94
00.55	00.25	00.35	00.00	00.00	00.46	0000.00	01.97
00.60	00.25	00.35	00.00	00.00	00.59	0000.00	02.03

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 50
Required GE = 0001.36 ft

TPB Type = ATPB

TPB Gravel Factor = 0001.40
TPB R.Value = 0100.00
0.0032*TI*(100-R.VALUE) = 0000.00 ft
TPB MAX. depth = 0000.25 ft
TPB MIN. depth = 0000.25 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.10 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)
HMA MIN. Depth (from TPB) = 0000.00 ft
HMA MIN. Depth (from Ratio) = 0000.00 ft

HMA MIN. Depth (selected) = 0000.35 ft

Note: To locate the TPB (Treated Permeable Base) as close as possible to the surface
(to facilitate drainage) you might want to 'sandwich' the TPB somewhere within the HMA.
If so, use the minimum HMA depth shown above for the top layer of the 'sandwich' ft 0.35
and then from the following table select an HMA depth of at least ft 0.5
which will provide a minimum depth of 0.15 ft for the bottom layer.

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Native Soil
Note: Layer Number and Minimum Layer Ratio (GE) 4 0.425735294117647

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft
00.55	00.25	00.00	00.00	00.00	00.07	0000.00	01.97
00.60	00.25	00.00	00.00	00.00	00.21	0000.00	02.03
00.65	00.25	00.00	00.00	00.00	00.34	0000.00	02.08
00.70	00.25	00.00	00.00	00.00	00.48	0000.00	02.13
00.75	00.25	00.00	00.00	00.00	00.63	0000.00	02.18

Note: This design requires a safety Factor for GE. This requires that a design be selected that has a value as close as possible to 0.1 in the 'Res-GE' column. Such a design is generally shown in the first row of the above table.

***** FINISH *****

CALFP Ver. 1.1

Unit System = E

Title: SR 1/ Dolan Road Traffic Improvements
Traffic Index (TI) = 08.5
R.Value of Subgrade (Native Soil) = 50
Required GE = 0001.36 ft

Depth (ft)	GF	GE (ft)	Depth (ft)	GF	GE (ft)
00.10	01.94	00.19	00.15	01.94	00.29
00.20	01.94	00.39	00.25	01.94	00.49
00.30	01.94	00.58	00.35	01.94	00.68
00.40	01.94	00.78	00.45	01.94	00.87
00.50	01.94	00.97	00.55	01.97	01.08
00.60	02.03	01.22	00.65	02.08	01.35
00.70	02.13	01.49	00.75	02.18	01.64
00.80	02.23	01.78	00.85	02.27	01.93
00.90	02.32	02.09	00.95	02.36	02.24
01.00	02.40	02.40	01.05	02.44	02.56
01.10	02.48	02.73	01.15	02.52	02.90

HMA Safety Factor (GE) = 0000.10 ft
HMA Ultimate Depth = 0001.15 ft
(HMA MAX. Depth shown in Table)

HMA MIN. Depth (selected) = 0000.30 ft

Note: Positive Residual GE indicates over-design.
Note: Negative Safety Factor in Native Soil

HMA ft	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost $/y^2	HMA-GF ft	ft
00.70	00.00	00.00	00.00	00.00	00.13	0000.00	02.13	
00.75	00.00	00.00	00.00	00.00	00.28	0000.00	02.18	
00.80	00.00	00.00	00.00	00.00	00.42	0000.00	02.23	
00.85	00.00	00.00	00.00	00.00	00.57	0000.00	02.27	

Note: This design requires a safety Factor for GE. This requires that a design be selected that has a value as close as possible to 0.1 in the 'Res-GE' column. Such a design is generally shown in the first row of the above table.

***** FINISH *****

Appendix D

List of References

Dupre, W. R. and Tinsley III, J. C. (1980). Maps Showing Geology and Liquefaction Potential of Northern Monterey County and Southern Santa Cruz Counties.

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Monterey County Resource Management Agency (2012), Draft Moss Landing Community Plan, May 2012.

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Parikh Consultants, Inc. (2010). Geotechnical Engineering Investigation Report, Monterey Bay Sanctuary Scenic Trail Project, Moss Landing Segment, Monterey County, California, August 30, 2010.

Web Soil Survey Online Tool, http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Appendix B

Environmental Constraints Report –
State Route 1 – Dolan Road Improvements

Planning for Success.

ENVIRONMENTAL CONSTRAINTS REPORT

STATE ROUTE 1 – DOLAN ROAD IMPROVEMENTS

PREPARED FOR

Monterey County Resource Management Agency
Department of Public Works

November 11, 2013

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940 Tel 831·649·1799 Fax 831·649·8399
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State Route 1 – Dolan Road Improvements

Environmental Constraints Report

PREPARED FOR

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PREPARED BY

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November 11, 2013

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Figures

1.0
INTRODUCTION

State Route 1 in Moss Landing is a two-lane conventional highway that provides local access within northern Monterey County and a regional connection between the coastal areas of Monterey and Santa Cruz counties. Within the Moss Landing community area, the highway intersects with Jetty Road, Dolan Road, and the north and south ends of Moss Landing Road. In addition, there are several driveways serving businesses and other uses adjacent to the highway. The Moss Landing Community Plan was adopted in 1982 and currently being updated. The draft Moss Landing Community Plan update proposes major long-term improvements at the State Route 1 intersections with Dolan Road and Moss Landing Road.

The Monterey County Resources Management Agency – Public Works Department is seeking low-cost and effective interim safety and operational improvements for the intersection of State Route 1 and Dolan Road in Moss Landing. This report explores environmental factors that could present constraints to the development of transportation facilities within the study area. Environmental factors that are considered in this report include biological resources; cultural resources; hazardous materials; hydrology, flooding, and water quality; transportation; and utilities. Geotechnical constraints are addressed in a separate study.

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2.0
STUDY AREA DESCRIPTION

The study area encompasses an area near the State Route 1 intersections with Dolan Road and the north end of Moss Landing Road in the town of Moss Landing. The study area has been selected as the area in which short-term and low cost road improvements could potentially be constructed to improve functionality and safety of the intersection. Because the north end of Moss Landing Road is located very close to Dolan Road (about 1,500 feet separation), the study area has been extended southward to include the area around that intersection as well. The study area includes the State and County rights-of-way and extends a short distance onto the adjacent private property.

The study area includes a section of State Route 1 from the Moss Landing Power Plan gate north of Dolan Road to the southern driveway of the Whole Enchilada Marketplace, south of Moss Landing Road. The study area is approximately 200 feet wide along the highway (centered on the centerline) and extends approximately 3,200 feet north to south. The study area also includes the portion of Dolan Road between State Route 1 and the western-most Moss Landing Power Plant gate. The study area is approximately 75 feet wide along Dolan Road (centered on the centerline) and extends approximately 500 feet east of the study area along the highway.

A portion of the Moss Landing Harbor and businesses along State Route 1 are adjacent to the western boundary of the study area. The Moss Landing Power Plant is adjacent to north and part of the east boundary of the study area. The Moss Landing Business Park (the former Kaiser or National Refractory site) is adjacent to the south and part of the east boundary of the study area. Elkhorn Slough is located within one-quarter mile to the north of the study area and downtown Moss Landing is located within one-quarter mile to the west of the study area. The study area boundaries are depicted in Figure 1, Study Area.

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Study Area

Source: Google Earth 2012

Figure 1

Study Area

State Route 1 - Dolan Road Improvements Environmental Constraints Report

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3.0
ENVIRONMENTAL ISSUE AREAS

3.1 BIOLOGICAL RESOURCES

This biological resources section is based on a site visit conducted by EMC Planning Group Biologist Andrea Edwards on March 14, 2013. Prior to the site visit, Ms. Edwards reviewed site maps, aerial photographs, electronic database accounts, and relevant scientific literature describing natural resources in the project vicinity. Searches of the California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (CNDDB) and the California Native Plant Society (CNPS) *Inventory of Rare and Endangered Plants* for the Soquel, Watsonville West, Watsonville East, Moss Landing, Prunedale, Marina, and Salinas U.S. Geological Survey (USGS) quadrangles were conducted in order to generate lists of potentially occurring special-status species in the project vicinity (CDFW 2013; CNPS 2013). Species listed by the U.S. Fish and Wildlife Service (USFWS) that occur in Monterey County were also reviewed (USFWS 2013). Special-status species in this report are those listed as endangered, threatened, or rare, or as candidates for listing or of special concern by the USFWS and/or CDFW; or as rare and/or special-status by the CNPS (Rare Plant Rank 1B or 2).

Protective Policies for Biological Resources

Federal Regulations

Endangered Species Act. The federal Endangered Species Act of 1973 (known hereafter as the "Act") protects species that the USFWS has listed as "Endangered" or "Threatened." Permits may be required from USFWS if activities associated with a proposed project would result in the "take" of a federally listed species or its habitat. Under the Act, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include

significant habitat modification that could result in take. "Take" of a listed species is prohibited unless (1) a Section 10(a) permit has been issued by the USFWS or (2) an Incidental Take Statement has been obtained through formal consultation between a federal agency and the USFWS pursuant to Section 7 of the Act.

Migratory Bird Treaty Act. The federal Migratory Bird Treaty Act (MBTA: 16 U.S.C., sec. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The Migratory Bird Treaty Act encompasses whole birds, parts of birds, bird nests, and eggs.

Clean Water Act. Section 404 of the Clean Water Act (CWA) of 1972 regulates the discharge of dredge and fill material into "Waters of the U.S." including wetlands. Natural drainage channels and wetlands are considered jurisdictional "Waters of the U.S." The U.S. Army Corps of Engineers (USACE) is responsible for administering the 404 permit program and determines the extent of jurisdiction within drainage channels as defined by ordinary high water marks on channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual.

Activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Discharge permits are typically issued on the condition that the project proponent agrees to provide mitigation resulting in no net loss of wetland function or value. In addition to individual discharge permits, the USACE issues nationwide permits applicable to certain activities. Nationwide Permit 43 covers storm-water management facilities of up to one-half acre within non-tidal wetlands, with notification required over one-tenth acre, and a compensatory mitigation proposal required in all cases. Under the nationwide permits, discharge of fill must be minimized to the extent practicable.

Under Section 401 of the CWA, any activity requiring a USACE Section 404 permit must also obtain a state Water Quality Certification (or waiver thereof) to ensure that the proposed activity will meet state water quality standards. The applicable Regional Water Quality Control Board (RWQCB) is responsible for administering the water quality certification program. The RWCQB is also responsible for enforcing National Pollutant Discharge Elimination System (NPDES) permits, including the General Construction Storm Water Permit.

State Regulations

California Endangered Species Act. Pursuant to the California Endangered Species Act and Section 2081 of the California Fish and Wildlife Code, an incidental take permit from the CDFW is required for projects that could result in the take of a state-listed Threatened or Endangered species. "Take" is defined under these laws as an activity that would directly or indirectly kill an individual of a species. If a proposed project would result in the take of a state-listed species, then a CDFW Incidental Take Permit including the preparation of a conservation plan would be required.

Nesting Birds and Birds of Prey. Sections 3505, 3503.5, and 3800 of the California Fish and Wildlife Code prohibit the take, possession, or destruction of birds, including their nests or eggs. Birds of prey are specifically protected in California under provisions of the California Fish and Wildlife Code, Section 3503.5. This section states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code. Disturbance that causes nest abandonment and/or loss of reproductive effort, such as construction during the breeding season, is considered take by the CDFW.

Streambed Alterations. The CDFW has jurisdiction over the bed and bank of natural drainages according to provisions of Sections 1601 through 1603 of the California Fish and Wildlife Code. Diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that support wildlife resources and/or riparian vegetation are subject to CDFW regulations. Activities that would disturb these drainages are regulated by the CDFW; authorization is required in the form of a Streambed Alteration Agreement. Such an agreement typically stipulates certain measures that will protect the habitat values of the drainage in question.

California Porter-Cologne Water Quality Control Act. Under the California Porter-Cologne Water Quality Control Act, the applicable RWQCB may necessitate Waste Discharge Requirements for the fill or alteration of "Waters of the State," which according to California Water Code Section 13050 includes "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB may therefore necessitate Waste Discharge Requirements even if the affected waters are not under USACE jurisdiction.

California Coastal Act. California Coastal Act Section 30240 prohibits all development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, in and/or adjacent to any "environmentally sensitive area", which is defined in Section 30107.5 as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

Further, Section 30121 defines wetlands as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." Any alteration of existing wetlands must comply with the regulations of the California Coastal Act, including implementation of mitigation measures as appropriate.

Finally, Section 30231 states that "the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."

California Environmental Quality Act (CEQA). CEQA Guidelines Appendix G contains standards of significance to indicate that a project may have a significant effect on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Regional/Local Regulations

Monterey County General Plan. The Monterey County General Plan was adopted in 1982, and although an updated General Plan was adopted in 2010, that plan does not apply within the Coastal Zone.

North County Land Use Plan (LUP)/Local Coastal Program (LCP). The North County LUP/LCP was certified in June 1982 and applies to the coastal zone within the North County planning area. Section 2.3 defines "environmentally sensitive habitats (ESHA)" as "areas in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. These include Areas of Special Biological Significance as identified by the State Water Resources Control Board; rare and endangered species habitat, all coastal wetlands and lagoons, all marine wildlife, and kelp beds; and indigenous dune plant habitats." The North County LUP/LCP includes numerous policies protecting biological resources. Policy 2.3.2.1 prohibits all development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, in ESHA.

Moss Landing Community Plan. The Moss Landing Community Plan is a chapter of the North County Land Use Plan, and was adopted in 1982. The Moss Landing Community Plan is currently being updated. The draft Moss Landing Community Plan update does not contain any supplemental biological policies; these are expected to be developed through the CEQA process.

Monterey County Code. Title 20, including the *North County Coastal Implementation Plan* (CIP), provides regulations for the Monterey County Coastal Zone. Per CIP Sections 20.144.040.B.2, .3, and .5, proposed development on or within 100 feet of ESHA may not be allowed to adversely affect the habitat's long-term maintenance. Proposed development is to be modified for siting, location, design, grading vegetation removal, and/or other methods where such modifications will reduce impacts to an insignificant level and assure the habitat's long-term maintenance. CIP Section 20.144.040.C.2.b typically requires all development be set a minimum of 50 feet from the extent of riparian vegetation, although exceptions are permitted.

CIP Section 20.144.50 Forest Resources Development Standards protects native trees 12 inches or more in diameter at breast height and oak trees six inches or more in diameter measured two feet above the ground. This regulation also protects landmark trees of all native and non-native species, including eucalyptus and Monterey pine trees that are 36 inches or more in diameter at breast height, and any other type of tree that is 24 inches or more in diameter at breast height. Although these trees may be non-native and/or planted, a coastal development permit must be obtained for the removal of protected trees.

Existing Conditions

Plant Communities

The study area includes a section of State Route 1, an approximately 200-foot-wide area along the highway (centered on the center-line), plus a distance of about 500 feet of Dolan Road adjacent to its intersection with the State Route 1. The paved roadway and paved/dirt shoulder areas are considered developed land. Plant communities present to a limited extent along the margins of State Route 1 include non-native grassland and planted Monterey cypress stands/introduced eucalyptus groves, as described below. Figure 2, Plant Communities, shows the location of each habitat type.

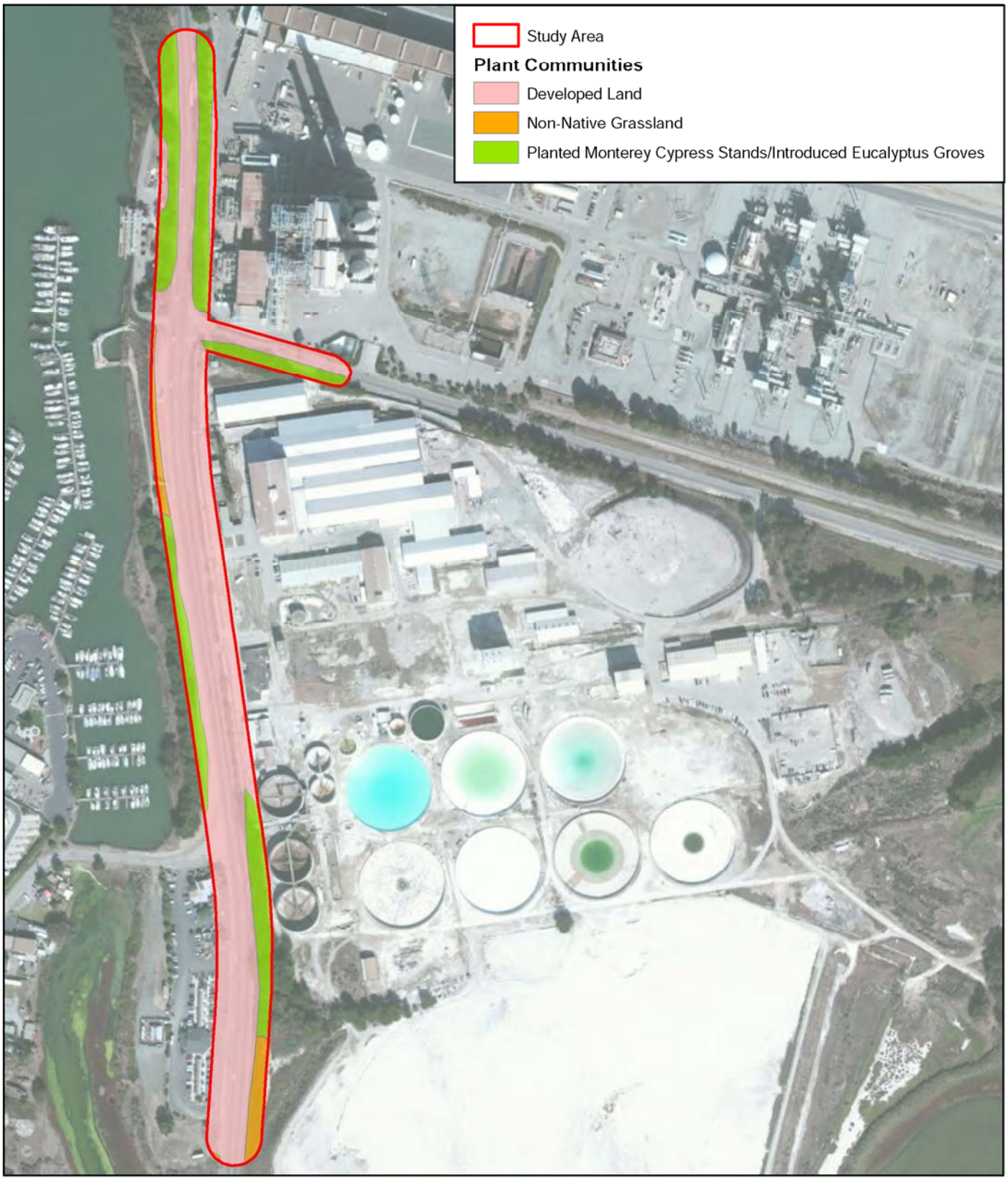
Non-Native Grassland. This plant community is dominated by non-native ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and soft chess (*Bromus hordeaceus*). Other species observed include non-native bristly ox-tongue (*Helminthotheca echioides*), bull mallow (*Malva nicaeensis*), cheeseweed (*Malva parviflora*), and sourclover (*Melilotus indica*).

Planted Monterey Cypress Stands/Introduced Eucalyptus Groves. Tree stands and groves exist in the ornamental landscaped areas along the roadways. They include mature planted Monterey cypress (*Hesperocyparis macrocarpa*) and non-native gum (*Eucalyptus* sp.) trees. Along State Route 1, adjacent to the Moss Landing Power Plant, there are 20 cypress trees and 8 eucalyptus trees. Many of these trees are large enough to be considered landmark trees. Smaller cypress trees are located adjacent to the refractory site along Dolan Road.

Special-Status Species

Due to the existing site development and high vehicular traffic, only very low quality habitat is present along the road margins. Therefore, most special-status species known to occur in this biologically diverse Moss Landing Harbor region are not expected to occur at the study area due to lack of suitable habitat. No sensitive habitat areas, wildlife movement corridors, or potentially jurisdictional wetlands or waterways were observed within the study area.

Plants. Special-status plants generally occur in relatively undisturbed areas and are largely found within unique plant communities and/or habitats such as coastal scrub, freshwater marsh, or coastal salt marsh. Due to the extremely disturbed nature of roadside vegetation in the study area, the presence of these species is unlikely. However, there is potential for one disturbance-tolerant special-status plant species to occur in the non-native grassland areas present within the study area: Congdon's tarplant (*Centromadia parryi* spp. *congdonii*), which is considered Rare, Threatened, or Endangered by the CNPS, and has been recorded as occurring very close to the study area.



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Source: Google Earth 2012

Figure 2

Plant Communities

State Route 1 - Dolan Road Improvements Environmental Improvements Report

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Terrestrial Animals. Special-status terrestrial animal species generally occur in relatively undisturbed areas and are largely found within unique habitats such as ponds, creeks, or woodland habitats. Due to the amount of vehicular traffic passing through the study area and the highly disturbed nature of existing roadside vegetation, the presence of suitable nesting or denning habitat for these species is unlikely. However, the many mature trees present within the study area have the potential to support protected bird nesting activities, and tree removal and/or noise-generating construction activities could disrupt such activities. Therefore, mitigation to protect nesting birds would require nesting bird pre-construction surveys and avoidance if active nests are present for any site disturbance that occurs between February 1 and September 15.

Marine Animals. Moss Landing Harbor, located immediately adjacent to the study area, provides refuge to many marine animal species, including marine mammals, fish, and intertidal and benthic species. Many of these species are transient and may only move through the harbor area or use it as foraging habitat. However, intertidal or benthic species such as oysters, scallops, sea stars, crabs, lobsters, clams, and worms may occur along the bottom of the harbor waters. Many of these species are considered relatively immobile or have limited dispersal ranges. Marine animal species do not occur within the study area. However, construction noise could cause temporary disruption to marine animals in the adjacent harbor.

Conclusions

To comply with the CIP, a coastal development permit must be obtained for the removal of any protected trees including landmark trees present within the study area (eucalyptus and Monterey pine trees that are 36 inches or more in diameter at breast height, and any other type of tree that is 24 inches or more in diameter at breast height).

Presence/absence focused plant surveys are recommended for Congdon's tarplant during the appropriate blooming period (typically September) to determine if impacts to this special-status plant species could occur as a result of construction in the study area. Further, pre-construction nesting bird surveys are recommended for tree removal or construction conducted between February 1 and September 15. Temporary construction noise impacts to marine animals present in the adjacent harbor are expected to be adverse but less than significant.

3.2 CULTURAL RESOURCES

Archaeological Resources Existing Conditions

Database Search

The project site is located within the Elkhorn Slough/Moro Cojo Slough/Salinas River area in north Monterey County. This area provided significant hunting, fishing, and other resources to the native populations, and there are a number of known archaeological sites in the general vicinity. The main area of concern for cultural resources appears to be the northern end of the project area on State Route 1 as it comes into the site identified as CA-MNT-229. Somewhere near the southern end is, or was, the missing location of the site identified as CA-MNT-235. This site may have been destroyed or buried during construction of the National Refractory facility, but it still shows up on the site maps.

Site Reconnaissance

The site reconnaissance provided no evidence of site CA-MNT-235 along the highway cut at the south end of the study area.

Historic Resources Existing Conditions

There are no structures located within the State or County rights-of-way. The study area extends beyond the rights-of-way into adjacent private property, and there are existing structures located along State Route 1 that are partially within the study area, specifically one structure located at the refractory site and the building housing the Whole Enchilada restaurant. Above-ground pipes at the refractory site are also located partially within the study area. Other structures at the power plant and refractory are located adjacent to the study area east of State Route 1, and one of the power plant's seawater intakes is located adjacent to the study area west of State Route 1.

None of the structures that extend into the study area are known to be historic resources. Although none of these structures is designated as historic, any building that is at least 45 years old is considered potentially historic. The refractory was originally constructed in the early 1940s, and additional facilities were added over time. Of particular note at the refractory site is one of the two intake pipes that parallels State Route 1 is original and is constructed of redwood.

The buildings that extend into the study area may date back as far as the early 1940s and 1950s, and therefore, are old enough to be potentially historic. The only structure within Moss Landing identified as a designated historic resource is the Pacific Coast Steamship Company building

located on Moss Landing Road, about 850 feet west of the southern end of the project area (Monterey County GIS 2013). There are no sites in Moss Landing listed on the National Register of Historic Places (National Register of Historic Places 2013).

Conclusions

Two archaeological sites potentially exist within the project area, one at or near the north end and one at or near the south end. Potential for archaeological impacts will need to be fine tuned when the actual project is determined.

If buildings are to be removed or altered, a historic building evaluation should be conducted, since most of the buildings that encroach into the study area are at least 45 years old and could potentially have historic value. The redwood pipe at the refractory site is unique, and may have an elevated potential for historic significance.

3.3 HAZARDOUS MATERIALS

Existing Conditions

The Department of Toxic Substances Control Envirostor database identifies the Moss Landing Power Plant as an active cleanup site. The power plant is currently operated with natural gas, but at one time was powered by fuel oil, which was stored in 19 aboveground tanks (removed between 2000 and 2004) located along Dolan Road eastward from the first gate on Dolan Road. Leakage from these tanks and spillage at a shop located north of the State Route 1 gate resulted in groundwater contamination, principally total petroleum hydrocarbons (TPH), total extractable hydrocarbons (TEH), volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), metals (inorganics), polychlorinated biphenyls (PCBs), and asbestos (Department of Toxic Substances Control 2013).

Groundwater near the power plant is monitored for contaminant levels through about 40 monitoring wells. Several of the monitoring wells are located within or immediately adjacent to the study area, including two just northeast the gate on Dolan Road, four just east of the fence and 200 to 300 feet south of the northern study area boundary, and four west of State Route 1 and 200 to 700 feet south of the northern study area boundary. It does not appear that any of the monitoring wells are located more than about 20 feet into the State Route 1 portion of the study area. No monitoring wells are shown south of the north right-of-way line for Dolan Road (Arcadis 2012, Figure 2).

The California Water Resources Control Board Geotracker database lists potential cleanup actions at the former refractory site that center around past discharges to (and/or leaks from) seven storage tanks located east of State Route 1. High levels of chromium have been measured in soils and groundwater near the storage tanks. The seven storage tanks are currently non-operational. There are 11 monitoring wells within the former refractory site. At least one of these is located west of the tanks, but the information provided on the Geotracker database does not provide detail on the location of these nor does it provide information on the potential extent of soil or groundwater contamination (California Water Resources Control Board 2013, California Regional Water Quality Control Board 2011, Calera 2011).

Conclusions

Groundwater or soil toxicity is not likely to constrain transportation facility development, although certain precautions to protect worker health could potentially be necessary during construction. The precise location of groundwater monitoring wells should be verified to ensure that these do not interfere with plans or are not inadvertently removed or damaged.

3.4 HYDROLOGY, FLOODING, AND WATER QUALITY

Existing Conditions

Groundwater Hydrology

Four water-bearing formations exist in the Moss Landing area. The uppermost formation consists of marine terrace and alluvial deposits up to 200 feet below the surface and yields poor quality water. The Aromas Red Sands consists of well-sorted sands and gravels with thin clay interbeds is the major water-bearing unit in the Moss Landing area, and occurs between 200 to 800 feet below the surface with variable water quality. Below this formation is the Purisima Formation occurring at a depth of 800 to at least 1,200 feet. The Tertiary sediment is the lowest formation, comprised of consolidated marine sediments of sandstone, siltstone and mudstone underlain by granite bedrock, but yielding poor quality water characterized by high salinity (California Energy Commission 2000).

Based on monitoring well data from the power plant, groundwater is shallow in the study area, at an average elevation of about four feet above mean sea level. The ground surface elevation is approximately 30 feet above mean sea level, so groundwater is found at about 26 feet below the surface. Groundwater flow is toward the west and southwest, with a gradient of about 0.0003 feet per horizontal foot (Arcadis 2012).

Flooding

The Federal Emergency Management Agency Flood Insurance Rate Map indicates that the entire study area is within Zone X. The portion of the study area including and south of Dolan Road is in an area with a 0.2 percent annual chance flood, and that the northern portion of the study area is outside of a flood zone (Federal Emergency Management Agency 2009).

The portion of the study area west of State Route 1 and immediately south of Dolan Road is shown as an area of potential tsunami wave movement (California Emergency Management Agency, et al 2009). The actual pattern of tsunami movement is dependent on numerous factors, including the location and size of the event triggering the tsunami, tidal phase, etc., and could be significantly altered with sea level rise. Therefore, the maps provide only a rough planning guide. In any case, the map does not indicate significantly deep or widespread inundation of the study area in the event of a tsunami.

Water Quality

The study area is immediately upslope from Moss Landing Harbor. Given its proximity to this water body, construction within or use of the study area has an elevated potential to affect water quality.

Conclusions

Standard designs and construction practices should adequately address hydrological issues. Despite its location adjacent to the harbor, the study area is not in a location that would experience significant flooding.

3.5 TRANSPORTATION

Existing Conditions

State Route 1. State Route 1 is currently two lanes in each direction, with a southbound left turn lane (for eastbound turns onto Dolan Road), southbound center receiving lane (for left turns from westbound Dolan Road), northbound right turn lane (for right turns onto eastbound Dolan Road), and northbound acceleration taper (for right turns from westbound Dolan Road). Pavement width is about 53 feet north of Dolan Road and about 60 feet south of Dolan Road. At the north end of Moss Landing Road, a westbound free-flow right turn lane forms a triangular intersection with the standard tee intersection, with right angle sides of about 125 feet

each. State Route 1 was resurfaced and restriped in 1999-2000, with some minor improvements to the Dolan road intersection, including lengthening of the center turn lanes (California Energy Commission 2000).

Dolan Road. Dolan Road is a two lane County road with a pavement width of about 26 feet, including two travel lanes and shoulders. Dolan Road widens at the State Route 1 intersection to provide separate queuing space for right and left turning vehicles.

Railroad. The Union Pacific Railroad owns a spur line to the Moss Landing Power Plant and Moss Landing Business Park. The line is located principally to the north side of Dolan Road, and crosses Dolan Road into the business park about 2,200 feet east of the study area. Within the business park site the railroad angles away from Dolan Road, and does not approach the study area. Within the Moss Landing Power Plant site the tracks parallel Dolan Road and terminate about 450 feet east of the study area.

Public Transit. Monterey Salinas Transit runs three bus lines through the study area: Lines 27, 28, and 78. A bus stop is located along the west side of State Route 1 about 550 feet north of Moss Landing Road and a bus stop is located along the east side of State Route 1 about 800 feet north of Dolan Road. There are no facilities at these stops other than signs.

Planned Improvements

State Route 1. The current Moss Landing Community Plan calls for widening State Route 1 to four lanes. The California Coastal Commission opposes widening of the highway, and the draft Moss Landing Community Plan update proposes retention of a two-lane facility, with additional center turn lanes and/or roundabouts at the three intersections with Dolan Road and Moss Landing Road.

Monterey Bay Sanctuary Trail. The Monterey Bay Sanctuary Trail is planned as a bicycle and pedestrian route connecting Pacific Grove to Santa Cruz. The Moss Landing section of the trail is planned along the west side of State Route 1, turning onto the north end of Moss Landing Road. This portion of the planned trail is within the study area. The alignment is close to State Route 1 at the north end of the study area, but transitions to the western edge of the study area near the intersection of Dolan Road, and continues into Moss Landing along Moss Landing Road.

Conclusions

The only transportation related constraint is the future location of the Monterey Bay Sanctuary Trial. Designs should also consider the potential for accommodation of the existing bus stops, but this is not likely to be a significant constraint.

3.6 UTILITIES

Existing Conditions

Electrical Power Lines. Local delivery electrical power lines parallel Dolan Road on the north side of the road, angling across to the south side of the road as they enter the eastern end of the study area. Within the study area, poles are located along the south side of Dolan Road about 10 feet from the outside lane line. These lines continue across State Route 1 to a pole located just west of the pavement and about 15 feet west of the outside lane line. This pole contains a street light. From that point, the lines angle away from State Route 1, initially to a distance of about 65 feet west of the outside lane line, but returning to as close as about 35 feet distant. The power lines depart State Route 1 and follow Moss Landing Road. A smaller power line runs along the east side of State Route 1, with poles about 10 feet from the outside lane line. This line extends south from Dolan Road to about 275 feet south of Moss Landing Road. The high voltage electrical transmission lines emanate from the switchyard east of the Moss Landing Power Plant, and go to the east, There are no high voltage power lines within the study area.

Water Pipelines. Both the Moss Landing Power Plant and the Moss Landing Business Park have seawater intakes and discharges, with pipes connecting beneath State Route 1.

The Moss Landing Power Plant intakes are located along the harbor edge west of State Route 1 and north of Dolan Road. Access driveways to the intake are located opposite Dolan Road and about 200 feet south of the northern end of the study area. The intake pipelines cross under State Route 1 about 250 feet north of Dolan Road. The power plant discharges are located in the ocean 600 feet off-shore of the Moss Landing Harbor (California Energy Commission 2000).

The Moss Landing Business Park intake is located west of State Route I just south of Dolan Road. The access driveway is located about 500 feet south of Dolan Road. The intake pipeline crosses State Route 1 approximately in line with the south edge of the Dolan Road right-of-way. Within the Moss Landing Business Park, the pipelines run parallel to State Route 1 to about 100 feet north of Moss Landing Road, where they turn eastward into the interior of the business park. The business park discharge pipe crosses under State Route 1 a short distance north of Moss Landing Road, and discharges off-shore near the end of the former Sandholdt Pier (Moss Landing Commercial Park LLC 2013).

Pajaro Sunny Mesa Community Services District provides potable water in the Moss Landing area. The service area includes properties both north and south of Elkhorn Slough. The well serving the area is located on Avila Road, about two mile east of Moss Landing along Dolan Road. The main water line follows Dolan Road to storage tanks above Moss Landing Road Monterey County Resource Management Agency 2012).

Sewer Pipelines. The County's Moss Landing Sanitation District operates wastewater collection lines serving the areas of Moss Landing west of State Route 1, both north and south of Elkhorn Slough. Wastewater is piped to the Monterey Regional Water Pollution Control Agency's plant north of Marina. It is assumed, but not verified, that wastewater collection lines travel within the State Route 1 right-of-way to provide the connection to the area north of Elkhorn Slough.

Natural Gas Transmission Pipelines. One PG&E natural gas regional transmission line serves the Moss Landing area. The pipeline comes into the area from the east and is located north of Dolan Road, within the same corridor as the high voltage electrical transmission lines. The natural gas regional transmission line terminates within the Moss Landing Power Plant site, although local transmission lines not shown on the PG&E map may extend to other areas within Moss Landing. The regional transmission pipeline does not enter the study area (Pacific Gas and Electric Company 2013).

Conclusions

It is probable that local electrical transmission lines would require re-location to accommodate transportation improvements. Although locations will need to be ascertained and standard protocols in place to protect underground utilities, these should not present a significant constraint. However, the seawater pipes at the refractory site significantly constrain expansion beyond the existing right-of-way in that area.

4.0
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Appendix C

Collision History Data

130438B 2002 - AV 2011/2012 COLLISIONS ON RT 1 BTWN MOSS LANDING & DOLAN RD IN MONTEREY COUNTY

Primary Rd RT 1 Distance (ft) 200 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.140 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018046 Collision Date 20070223 Time 1750 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20070628
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	998	M		IMP UNK	IMP UNK	PROC ST	N	A	0100		FORD		-	3	N	-	- -
2	DRVR	39	M	H	HNBD		PROC ST	N	D	2200		MAZDA	2002	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17151 Collision Date 20070329 Time 1924 Day THU
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20070731
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	55	M	H	HBD-UI		LFT TURN	S	D	2200		FORD	1969	-	3	A	21801A	- P C
2	DRVR	32	F	H	HNBD		PROC ST	N	A	0100		HONDA	2005	-	3	N		- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 1056 Direction N Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.010 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 017486 Collision Date 20070406 Time 1450 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20070827
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	50	M	W	HNBD		PROC ST	N	D	2200		TOYOT	2001	-	3	G	-	M G
2	DRVR	57	M	W	HNBD		SLOWING	N	D	2200		TOYOT	2000	-	3	G	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		45	F	3	M G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 062 Type 1 CalTrans Dist 5 Badge 018341 Collision Date 20070410 Time 1401 Day TUE
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20071004
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	67	F	W	HNBD		LFT TURN	E	A	0700		GMC	2002	-	3	N	-	M G
2	DRVR	27	M	H	HNBD		PROC ST	S	A	0100		ACURA	1995	-	3	N	-	L G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS	OTH VIS	2	F	6	P Q	0
PASS		26	F	3	M G	0

Primary Rd RT 1 Distance (ft) 152 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.130 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018413 Collision Date 20070413 Time 1650 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20070829
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	18	M	H	HNBD		PROC ST	S	A	0700		GMC	1995	-	3	N	-	M G
2	DRVR	55	M	W	HNBD		SLOWING	S	A	0100		PORSC	1997	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	55	M	1	M G	0

Primary Rd DOLAN RD Distance (ft) 6 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 017539 Collision Date 20070607 Time 1655 Day THU
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 2 Tow Away? N Process Date 20071113
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	46	M	W	HBD-NUI		PROC ST	W	A	0800		CHEVR	2002	-	3	N	-	M G
2	DRVR	32	M	H	HNBD		STOPPED	W	A	0100		DODGE	1995	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	32	M	1	M G	0
PASS	COMP PN	11	M	3	M G	0
PASS		11	M	6	P G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018543 Collision Date 20070705 Time 1315 Day THU
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type SIDESWIPE Severity INJURY # Killed 0 # Injured 1 Tow Away? N Process Date 20071219
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1	DRVR	26	M	H	HNBD		LFT TURN	S	A	0800	FORD	1992	-	3	N	- M G
2F	DRVR	58	M	W	HNBD		LFT TURN	W	A	0800	GMC	1996	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	26	M	1	M G	0
PASS		29	F	3	M G	0
PASS		40	M	7	P G	0
PASS		50	M	4	P G	0
PASS		27	F	5	P D	0
PASS		24	M	3	M G	0

Primary Rd RT 1 Distance (ft) 528 Direction S Secondary Rd DOLAN CREEK BRI NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 31.070 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 012 Type 1 CalTrans Dist 5 Badge 10697 Collision Date 20070723 Time 1730 Day MON
Primary Collision Factor R-O-W AUTO Violation 21804A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20071219
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	40	M	W	HNBD		ENT TRAF	N	A	0100	FORD	2007	-	3	F	- M G
2	DRVR	45	F	W	HNBD		PROC ST	S	A	0800	TOYOT	2007	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 017851 Collision Date 20070908 Time 1140 Day SAT
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type SIDESWIPE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20080305
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	26	F	H		DRUG	OPPOS LN	S	A	0700	MITSU	1999	-	3	A	21460A - L G
2	DRVR	59	M	W	HNBD		PROC ST	N	A	0800	DODGE	2001	-	3	N	- M G
3	DRVR	52	F	H	HNBD		PROC ST	N	A	0800	PLYMO	1991	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	OTH VIS	59	M	1	M G	0
PASS		51	F	3	M G	0
PASS		14	M	3	M G	0

Primary Rd DOLAN RD Distance (ft) I Direction Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018341 Collision Date 20070929 Time 2342 Day SAT
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type HIT OBJECT Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20080320
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With FIXED OBJ Lighting DARK - NO ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	19	M	H	HBD-UI		PROC ST	W	D	2200	TOYOT	2000	-	3	A	22450A - M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018549 Collision Date 20071110 Time 2009 Day SAT
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type HEAD-ON Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20080606
Weather1 RAINING Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DARK - NO ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	24	F	W	HNBD		LFT TURN	S	A	0100	HONDA	1997	-	3	N	- M G
2	DRVR	22	M	W	HNBD		PROC ST	N	A	0100	TOYOT	1995	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018549 Collision Date 20071110 Time 1649 Day SAT
Primary Collision Factor STOP SGN|SIG Violation 22450A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20080515
Weather1 RAINING Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	33	M	H	HNBD		PROC ST	W	D	2200	TOYOT	1986	-	3	N	-	M G
2	DRVR	49	M	W	HNBD		PROC ST	S	D	2200	TOYOT	2002	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	33	M	1	M G	0

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018283 Collision Date 20080217 Time 1305 Day SUN
Primary Collision Factor IMPROP TURN Violation 22102 Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20081031
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	30	M	H	HNBD		U-TURN	S	A	0100	PONTI	2000	-	3	N	-	M G
2	DRVR	42	F	H	HNBD		PROC ST	N	A	0100	FORD	2002	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		74	F	3	M G	0

Primary Rd DOLAN RD Distance (ft) 20 Direction W Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 018768 Collision Date 20080226 Time 0900 Day TUE
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20080924
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With MV ON OTHER RD Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	56	F	H	HNBD		PROC ST	W	A	0800	HONDA	2003	-	3	F	-	M G
2	DRVR	32	F	H	HNBD		STOPPED	W	A	0100	HONDA	1998	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		4	M	4	P G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 0178766 Collision Date 20080304 Time 2030 Day TUE
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20081031
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DARK - ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1	DRVR	25	M	W	HNBD		PROC ST	N	A	0700	FORD	1987	-	3	N	-	P G
2F	DRVR	61	F	W	HNBD		LFT TURN	S	D	2200	FORD	1989	-	3	N	-	P G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018046 Collision Date 20080408 Time 1415 Day TUE
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20081212
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	18	F	W	HNBD		LFT TURN	W	A	0100	HYUND	2002	-	3	N	-	M G
2	DRVR	50	M	H	HNBD		LFT TURN	S	A	0100	CHRYS	2004	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 1584 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.40 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18720 Collision Date 20080504 Time 1426 Day SUN
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20081219
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	
1F	DRVR	40	M	W		DRUG	OPPOS LN	N	D	2200	TOYOT	2002	-	3	A	21460A	- M G
2	DRVR	36	M	H	HNBD		PROC ST	S	A	0700	CHEVR	1999	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd DOLAN RD | Distance (ft) 12 | Direction E | Secondary Rd RT 1 | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.101 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 007 | Type 3 | CalTrans Dist 5 | Badge 12332 | Collision Date 20080516 | Time 0615 | Day FRI
Primary Collision Factor STRTNG|BCKNG | Violation 22106 | Collision Type REAR END | Severity PDO | # Killed 0 | # Injured 0 | Tow Away? N | Process Date 20081219
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Veh Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type I | Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	28	M	H	HNBD		PROC ST	W	A	0100		HONDA	1995	- 3	F	-	M G
2	DRVR	38	M	H	HNBD		STOPPED	W	A	0700		CADIL	2004	- 3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 | Distance (ft) I | Direction | Secondary Rd DOLAN RD | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.101 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 074 | Type 1 | CalTrans Dist 5 | Badge 18283 | Collision Date 20080614 | Time 1040 | Day SAT
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity PDO | # Killed 0 | # Injured 0 | Tow Away? N | Process Date 20090309
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Veh Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type I | Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	83	M	W	HNBD		LFT TURN	W	A	0100		FORD	2005	- 3	N	-	M G
2	DRVR	23	M	W	HNBD		LFT TURN	S	A	0700		DODGE	2007	- 3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		18	M	3	M G	0

Primary Rd RT 1 | Distance (ft) I | Direction | Secondary Rd DOLAN RD | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.101 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 074 | Type 1 | CalTrans Dist 5 | Badge 18492 | Collision Date 20080622 | Time 1923 | Day SUN
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | # Killed 0 | # Injured 2 | Tow Away? Y | Process Date 20090309
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Veh Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type I | Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1	DRVR	37	M	H	HBD-UI		PROC ST	N	D	2200		FORD	1994	- 3	N	-	P G
2F	DRVR	23	M	H	HNBD		LFT TURN	W	D	2200		FORD	1987	- 3	N	-	P G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	OTH VIS	37	-	1	P G	0
PASS	SEVERE	32	F	3	P G	0
PASS		26	M	3	P G	0

Primary Rd RT 1 | Distance (ft) I | Direction | Secondary Rd DOLAN RD | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.101 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 074 | Type 1 | CalTrans Dist 5 | Badge 018438 | Collision Date 20080709 | Time 2008 | Day WED
Primary Collision Factor R-O-W AUTO | Violation 21802A | Collision Type BROADSIDE | Severity INJURY | # Killed 0 | # Injured 1 | Tow Away? Y | Process Date 20090326
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Veh Involved With OTHER MV | Lighting DUSK/DAWN | Ped Action | Cntrl Dev FNCTNG | Loc Type I | Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	68	M	W	HNBD		LFT TURN	W	A	0100		HONDA	2003	- 3	N	-	M G
2	DRVR	49	F	H	HNBD		LFT TURN	S	A	0100		MERCE	1990	- 3	N	-	P G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	49	F	1	P G	0

Primary Rd RT 1 | Distance (ft) 50 | Direction S | Secondary Rd DOLAN RD | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.090 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 074 | Type 1 | CalTrans Dist 5 | Badge 18549 | Collision Date 20080812 | Time 2140 | Day TUE
Primary Collision Factor IMPROP TURN | Violation 22107 | Collision Type REAR END | Severity PDO | # Killed 0 | # Injured 0 | Tow Away? N | Process Date 20090326
Weather1 CLEAR | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run MSDMNR | Motor Veh Involved With OTHER MV | Lighting DUSK/DAWN | Ped Action | Cntrl Dev NT PRS/FCTR | Loc Type H | Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	998	M	H	IMP UNK	IMP UNK	PROC ST	N	A	0800		MERCU	1995	- 3	N	-	B -
2	DRVR	80	M	W	HNBD		STOPPED	N	A	0800		FORD	2005	- 3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 | Distance (ft) I | Direction | Secondary Rd DOLAN RD | NCIC 9730 | State Hwy? Y | Route 1 | Postmile Prefix - | Postmile 96.101 | Side of Hwy N
City UNINCORP. | County MONTEREY | Population 9 | Rpt Dist | Beat 074 | Type 1 | CalTrans Dist 5 | Badge 018492 | Collision Date 20080909 | Time 1729 | Day TUE
Primary Collision Factor STRTNG|BCKNG | Violation 22106 | Collision Type REAR END | Severity PDO | # Killed 0 | # Injured 0 | Tow Away? N | Process Date 20090518
Weather1 CLOUDY | Weather2 | Rdwy Surface DRY | Rdwy Cond1 NO UNUSL CND | Rdwy Cond2 | Spec Cond 0
Hit and Run | Motor Veh Involved With OTHER MV | Lighting DAYLIGHT | Ped Action | Cntrl Dev FNCTNG | Loc Type I | Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	63	M	W	HNBD		RGT TURN	W	A	0800		TOYOT	2005	- 3	N	-	M G
2	DRVR	26	M	H	HNBD		STOPPED	W	A	0100		HONDA	1998	- 3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd DOLAN RD Distance (ft) I Direction Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 17851 Collision Date 20081010 Time 0650 Day FRI
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20090623
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	31	F	H	HNBD		PROC ST	W	A	0800		NISSA	1994	- 3	N	-	M G	
2	DRVR	41	M	H	HNBD		STOPPED	W	A	0100		HONDA	2006	- 3	N	-	M G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd MOSS LANDING RI Distance (ft) 10 Direction W Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 18641 Collision Date 20081011 Time 1815 Day SAT
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20090710
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	21	F	W	HNBD		PROC ST	E	A	0700		FORD	2008	- 3	N	-	M G	
2	DRVR	51	M	W	HNBD		STOPPED	E	A	0700		SATUR	2008	- 3	N	-	M G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018438 Collision Date 20081028 Time 0935 Day TUE
Primary Collision Factor OTHER HAZ Violation 22109 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20090710
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	38	F	W	HNBD		SLOWING	S	A	0100		VOLKS	2005	- 2	N	-	M G	
2	DRVR	18	F	H	HNBD		PROC ST	S	A	0700		MAZDA	2006	- 3	A 21703	-	M G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18106 Collision Date 20081105 Time 0648 Day WED
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20090810
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1	DRVR	43	M	H	HNBD		PROC ST	N	A	0100		TOYOT	1995	- 3	N	-	M G	
2F	DRVR	26	M		IMP UNK	IMP UNK	LFT TURN	W	A	0100		DODGE	1997	- 3	N	-	B -	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 528 Direction S Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.0 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17840 Collision Date 20081107 Time 1755 Day FRI
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type OVERTURNED Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20090810
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With NON-CLSN Lighting DARK - ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	44	M	W	HBD-UI		SLOWING	N	C	0200		HARLE	2005	- 3	A 22107	-	P W	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	OTH VIS	44	M	1	P W	1

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18106 Collision Date 20081111 Time 0545 Day TUE
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 2 Tow Away? Y Process Date 20090709
Weather1 CLOUDY Weather2 FOG Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	48	M	H	HNBD		LFT TURN	W	A	0100		SUBAR	1996	- 3	N	-	L G	
2	DRVR	40	F	H	HNBD		PROC ST	N	A	0800		DODGE	1996	- 3	N	-	P G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	48	M	1	L G	0
DRVR	OTH VIS	40	F	1	P G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018600 Collision Date 20081126 Time 1755 Day WED
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20090810
Weather1 CLOUDY Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run FELONY Motor Veh Involved With OTHER MV Lighting DARK - ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	998			IMP UNK	IMP UNK	LFT TURN	S	D	2200	-	FORD		-	3	N	- B -
2	DRVR	42	M	B	HNBD		PROC ST	N	C	0200	-		2007	-	3	N	- P W

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	42	M	1	P W	2

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18294 Collision Date 20081205 Time 1600 Day FRI
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20090810
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	69	M	O	HNBD		LFT TURN	S	D	2200		FORD	1989	-	3	N	- M G
2	DRVR	36	M	W	HNBD		PROC ST	N	A	0700		FORD	1991	-	3	N	- M G
3	DRVR	35	M	H	HNBD		STOPPED	W	A	0800		PONTI	1998	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		25	M	3	M G	0
PASS		13	M	4	P G	0
PASS		2	M	6	P Q	0
PASS		8	F	8	P G	0

Primary Rd RT 1 Distance (ft) 528 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.710 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 15638 Collision Date 20090102 Time 1505 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20090917
Weather1 CLOUDY Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	30	F	H	HNBD		PROC ST	N	A	0100		HONDA	2001	-	3	N	- M G
2	DRVR	18	F	H	HNBD		SLOWING	N	A	0100		KIA	2007	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		18	F	3	M G	0
PASS		18	F	3	M G	0

Primary Rd DOLAN RD Distance (ft) 10 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 17851 Collision Date 20090324 Time 0815 Day TUE
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20091117
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	28	F	W	HNBD		PROC ST	W	A	0100		TOYOT	1998	-	3	F	N M G
2	DRVR	33	F	H	HNBD		STOPPED	W	A	0100		HONDA	2002	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	33	F	1	M G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19239 Collision Date 20090502 Time 1229 Day SAT
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20100222
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	36	M	H	HNBD		LFT TURN	S	D	2200		NISSA	1987	-	3	N	- P G
2	DRVR	25	M	W	HNBD		PROC ST	N	A	0100		HONDA	1990	-	3	N	- P G
3	DRVR	28	F	H	HNBD		STOPPED	W	A	0700		JEEP	2002	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		30	M	3	M G	0

Primary Rd **DOLAN RD** Distance (ft) **2** Direction **E** Secondary Rd **RT 1** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **96.101** Side of Hwy **N**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **007** Type **3** CalTrans Dist **5** Badge **19239** Collision Date **20090504** Time **0745** Day **MON**
Primary Collision Factor **STRTNG|BCKNG** Violation **22106** Collision Type **REAR END** Severity **PDO** # Killed **0** # Injured **0** Tow Away? **N** Process Date **20100303**
Weather1 **CLOUDY** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type **I** Ramp/Int **6**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	32	F	H	HNBD		PROC ST	W	A	0700		HUMME	2003	-	3	N	- M G
2	DRVR	43	F	H	HNBD		STOPPED	W	A	0100		CHRYS	2001	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd **DOLAN RD** Distance (ft) **10** Direction **E** Secondary Rd **RT 1** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **96.101** Side of Hwy **N**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **007** Type **3** CalTrans Dist **5** Badge **19239** Collision Date **20090516** Time **1050** Day **SAT**
Primary Collision Factor **STRTNG|BCKNG** Violation **22106** Collision Type **REAR END** Severity **PDO** # Killed **0** # Injured **0** Tow Away? **N** Process Date **20100303**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type **I** Ramp/Int **6**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	56	M	W	HNBD		PROC ST	W	D	2200		TOYOT	2006	-	3	N	- M G
2	DRVR	40	M	W	HNBD		STOPPED	W	A	0100		TOYOT	2008	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		11	M	3	M G	0

Primary Rd **RT 1** Distance (ft) **I** Direction Secondary Rd **DOLAN RD** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **96.101** Side of Hwy **N**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **074** Type **1** CalTrans Dist **5** Badge **18636** Collision Date **20090516** Time **1245** Day **SAT**
Primary Collision Factor **STRTNG|BCKNG** Violation **22106** Collision Type **REAR END** Severity **INJURY** # Killed **0** # Injured **1** Tow Away? **N** Process Date **20100222**
Weather1 **CLOUDY** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **FNCTNG** Loc Type **I** Ramp/Int **5**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	24	M	H	HNBD		PROC ST	W	A	0100		MERCE	2001	-	3	N	- M G
2	DRVR	29	M	A	HNBD		SLOWING	W	A	0100		MITSU	1998	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS	COMP PN	27	M	3	M G	0

Primary Rd **DOLAN RD** Distance (ft) **10** Direction **E** Secondary Rd **RT 1** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **96.101** Side of Hwy **N**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **007** Type **3** CalTrans Dist **5** Badge **18707** Collision Date **20090611** Time **1520** Day **THU**
Primary Collision Factor **STRTNG|BCKNG** Violation **22106** Collision Type **REAR END** Severity **PDO** # Killed **0** # Injured **0** Tow Away? **N** Process Date **20100330**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type **I** Ramp/Int **6**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	31	M	W	HNBD		PROC ST	W	A	0700		JEEP	2003	-	3	N	- M G
2	DRVR	24	F	H	HNBD		SLOWING	W	A	0100		NISSA	2002	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd **RT 1** Distance (ft) **50** Direction **S** Secondary Rd **MOSS LANDING RD** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **95.80** Side of Hwy **S**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **074** Type **1** CalTrans Dist **5** Badge **019482** Collision Date **20090726** Time **1135** Day **SUN**
Primary Collision Factor **UNSAFE SPEED** Violation **22350** Collision Type **REAR END** Severity **PDO** # Killed **0** # Injured **0** Tow Away? **N** Process Date **20100917**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **FNCTNG** Loc Type **H** Ramp/Int **-**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	19	F	W	HNBD		PROC ST	S	A	0700		TOYOT	1990	-	3	N	- M G
2	DRVR	59	M	H	HNBD		SLOWING	S	A	0800		MAZDA	2006	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd **DOLAN RD** Distance (ft) **7** Direction **E** Secondary Rd **RT 1** NCIC **9730** State Hwy? **Y** Route **1** Postmile Prefix **-** Postmile **96.101** Side of Hwy **N**
City **UNINCORP.** County **MONTEREY** Population **9** Rpt Dist Beat **007** Type **3** CalTrans Dist **5** Badge **019525** Collision Date **20090813** Time **1505** Day **THU**
Primary Collision Factor **STRTNG|BCKNG** Violation **22106** Collision Type **REAR END** Severity **PDO** # Killed **0** # Injured **0** Tow Away? **Y** Process Date **20100916**
Weather1 **CLEAR** Weather2 Rdwy Surface **DRY** Rdwy Cond1 **NO UNUSL CND** Rdwy Cond2 Spec Cond **0**
Hit and Run Motor Veh Involved With **OTHER MV** Lighting **DAYLIGHT** Ped Action Cntrl Dev **NT PRS/FCTR** Loc Type **I** Ramp/Int **6**

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	18	M	H	HNBD		PROC ST	W	F	5500		FREIG	2005	-	3	N	- M G
2	DRVR	27	M	H	HNBD		STOPPED	W	A	0700		CHEVR	1999	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		13	M	3	M G	0

Primary Rd RT 1 Distance (ft) 528 Direction S Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.0 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19569 Collision Date 20090906 Time 1330 Day SUN
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20100903
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	20	M	H	HNBD		PROC ST	N	A	0100		NISSA	2005	-	3	N	- M G
2	DRVR	998			IMP UNK	IMP UNK	SLOWING	N	A	0800		FORD		-	3	N	- B -

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17184 Collision Date 20090914 Time 1635 Day MON
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type HEAD-ON Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20100916
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	39	F	H	HNBD		LFT TURN	W	A	0100		CHRYS	2002	-	3	N	- M G
2	DRVR	30	M	H	HNBD		PROC ST	N	D	2200		GMC	2001	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd DOLAN RD Distance (ft) 5280 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? N Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist Badge 19700 Collision Date 20090916 Time 2350 Day WED
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20100519
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DARK - NO ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	27	M	H	HNBD		PROC ST	E	A	0100		NISSA	2006	-	3	N	- L G
2	OTHR	998					STOPPED	E	G	2528		PETER	1994	-	-	N	- - -

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 50 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.110 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17851 Collision Date 20090930 Time 1611 Day WED
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20100903
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	19	M	W	HNBD		PROC ST	N	A	0100		VOLKS	2002	-	3	G	- M G
2	DRVR	42	F	H	HNBD		SLOWING	N	A	0800		CHRYS	2001	-	3	G	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS	COMP PN	16	F	3	M G	0

Primary Rd DOLAN RD Distance (ft) 20 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 13533 Collision Date 20091001 Time 1110 Day THU
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20101213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	26	M	H	HNBD		PROC ST	W	D	2200		NISSA	2009	-	3	N	- P G
2	DRVR	23	F	W	HNBD		STOPPED	W	A	0100		CHRYS	2007	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		30	M	3	M G	0
PASS		2	M	4	M Q	0

Primary Rd DOLAN RD Distance (ft) 15 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 19557 Collision Date 20091102 Time 1315 Day MON
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20101213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	60	M	H	HNBD		PROC ST	W	D	2200		CHEVR	2006	-	3	N	- M G
2	DRVR	58	M	W	HNBD		STOPPED	W	A	0700		LEXUS	2000	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 150 Direction N Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.840 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 13533 Collision Date 20091127 Time 1500 Day FRI
Primary Collision Factor IMPROP PASS Violation 21755 Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20101213
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	998			IMP UNK	IMP UNK	PASSING	N	A	0100		DODGE	1995	-	3	N	-	B -
2	DRVR	73	M	W	HNBD		PROC ST	N	A	0700		HONDA	2007	-	3	N	-	M G 0

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		71	F	3	M G	0

Primary Rd RT 1 Distance (ft) 528 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.20 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18543 Collision Date 20091129 Time 0120 Day SUN
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type HIT OBJECT Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20101213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With FIXED OBJ Lighting DARK - ST LTS Ped Action Cntrl Dev FNCTNG Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	59	M	W	HBD-UI		UNS TURN	N	A	0100		SUBAR	1995	-	3	A 22107	-	L G
2	PRKD	998					PARKED	W	A	0800		FORD	2000	-	-	N	-	- -

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 18492 Collision Date 20091129 Time 1515 Day SUN
Primary Collision Factor R-O-W AUTO Violation 21804A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20101213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	27	F	W	HNBD		LFT TURN	E	A	0100		TOYOT	1998	-	3	N	-	M G 0
2	DRVR	55	M	W	HNBD		PROC ST	S	D	2200		CHEVR	1996	-	3	N	-	M H
3	DRVR	27	F	H	HNBD		PROC ST	N	D	2200		DODGE	2000	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	OTH VIS	27	F	1	M G	0

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19840 Collision Date 20100103 Time 1350 Day SUN
Primary Collision Factor DRVR ALC|DRG Violation 23152A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20101213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	52	F	W		DRUG	UNS TURN	S	A	0100		FORD	1998	-	3	A 22107	-	M G
2	DRVR	30	M	H	HNBD		PROC ST	S	A	0700		GMC	1998	-	3	N	-	L G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		27	F	6	P G	0
PASS		0	F	5	P Q	0

Primary Rd RT 1 Distance (ft) 10 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.80 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19796 Collision Date 20100114 Time 1738 Day THU
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type HEAD-ON Severity INJURY # Killed 0 # Injured 4 Tow Away? Y Process Date 20110214
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DARK - NO ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	51	M	W	HNBD		LFT TURN	N	D	2200		FORD	1991	-	3	N	-	P G
2	DRVR	51	F	A	HNBD		PROC ST	S	A	0100		TOYOT	2007	-	3	N	-	L G
3	DRVR	51	F	W	HNBD		PROC ST	N	A	0700		JEEP	2002	-	3	N	-	L G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	51	M	1	P G	0
DRVR	COMP PN	51	F	1	L G	0
PASS	COMP PN	17	F	3	L G	0
DRVR	COMP PN	51	F	1	L G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17575 Collision Date 20100222 Time 1030 Day MON
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20110127
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	64	M	W	HNBD		LFT TURN	W	A	0100		HONDA	1998	-	2	N	-	M G
2	DRVR	61	M	H	HNBD		LFT TURN	S	D	2200		NISSA	1984	-	3	N	-	P G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 1584 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.40 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19981 Collision Date 20100331 Time 0840 Day WED
Primary Collision Factor WRONG SIDE Violation 21460A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20110318
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1	DRVR	24	F	W	HNBD		PROC ST	S	A	0100	TOYOT	1992	-	3	N	- M G
2F	DRVR	998			IMP UNK	IMP UNK	OPPOS LN	N	A	0700	-		-	3	N	- B -

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 135 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.130 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 019981 Collision Date 20100402 Time 1315 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 2 Tow Away? Y Process Date 20110812
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	24	M	H	HNBD		PROC ST	S	D	2200	FORD	2005	-	3	F	- M G
2	DRVR	54	M	H	HNBD		STOPPED	S	A	0100	MERCE	2002	-	3	N	- M G
3	DRVR	29	M	H	HNBD		STOPPED	S	A	0100	AUDI	2010	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	29	M	1	M G	0
PASS	COMP PN	25	F	3	M G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 13533 Collision Date 20100416 Time 1407 Day FRI
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20110502
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	32	M	H	HNBD		LFT TURN	E	A	0100	MAZDA	2008	-	3	N	- M G
2	DRVR	24	M	H	HNBD		PROC ST	S	A	0100	TOYOT	2008	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		66	M	3	M G	0
PASS		54	M	4	M G	0
PASS		27	F	3	M G	0
PASS		1	M	5	P Q	0

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17840 Collision Date 20100615 Time 1730 Day TUE
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20110812
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	45	M	W	HNBD		PROC ST	N	D	2200	FORD	1998	-	3	G	- M G
2	DRVR	51	F	B	HNBD		STOPPED	N	A	0100	TOYOT	2007	-	3	G	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		50	M	3	M G	0
PASS		39	M	6	P G	0

Primary Rd DOLAN RD Distance (ft) 17 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 019770 Collision Date 20100703 Time 0630 Day SAT
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20120201
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	27	M	H	HNBD		PROC ST	W	D	2200	CHEVR	1996	-	3	N	- M G
2	DRVR	27	M	H	HNBD		STOPPED	W	A	0100	HONDA	1994	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		18	F	4	P G	0

Primary Rd DOLAN RD Distance (ft) 11 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 19718 Collision Date 20100716 Time 1140 Day FRI
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20120201
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	998			IMP UNK	IMP UNK	SLOWING	W	A	0100	VOLVO	-	3	N	-	B	-	
2	DRVR	53	F	O	HNBD		STOPPED	W	A	0700	HONDA	2002	-	3	N	-	M	G	0

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		51	F	3	M	G	0

Primary Rd MOSS LANDING RI Distance (ft) 60 Direction W Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 19315 Collision Date 20100717 Time 1240 Day SAT
Primary Collision Factor R-O-W AUTO Violation 21804A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20120201
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	60	M	W	HNBD		LFT TURN	N	D	2200	FORD	2007	-	3	N	-	M	G	
2	DRVR	62	M	W	HNBD		PROC ST	W	A	0100	TOYOT	2010	-	3	N	-	M	G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		49	M	3	M	G	0
PASS		13	M	3	M	G	0
PASS		12	M	4	M	G	0
PASS		61	F	6	M	G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 062 Type 1 CalTrans Dist 5 Badge 15638 Collision Date 20100729 Time 1200 Day THU
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? N Process Date 20120201
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	54	M	H	HNBD		LFT TURN	W	A	0700	FORD	1997	-	3	N	-	M	G	
2	DRVR	45	M	W	HNBD		LFT TURN	S	A	0700	TOYOT	2002	-	3	N	-	M	G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	45	M	1	M	G	0

Primary Rd RT 1 Distance (ft) 120 Direction S Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.080 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17851 Collision Date 20100804 Time 0545 Day WED
Primary Collision Factor IMPROP TURN Violation 22107 Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120209
Weather1 CLOUDY Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	998	M	H	IMP UNK	IMP UNK	UNS TURN	S	A	0100	HONDA	1990	-	3	N	-	P	B	
2	DRVR	58	M	H	HNBD		STOPPED	S	G	2731	PETER	1999	-	3	N	-	M	G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		20	M	3	P	G	0

Primary Rd RT 1 Distance (ft) 528 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.20 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018179 Collision Date 20100815 Time 0854 Day SUN
Primary Collision Factor WRONG SIDE Violation 21460A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120209
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	31	M	W	HNBD		OPPOS LN	S	D	2200	FORD	2003	-	3	F	-	M	G	
2	DRVR	27	M	W	HNBD		PROC ST	N	A	0700	FORD	2003	-	3	N	-	M	G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 559 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.210 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 14800 Collision Date 20100817 Time 0614 Day TUE
Primary Collision Factor IMPROP TURN Violation 22107 Collision Type HIT OBJECT Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20120209
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With FIXED OBJ Lighting DUSK/DAWN Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip	Ejected
1F	DRVR	23	M	B	HNBD	FATG	RAN OFF RD	S	D	2200	GMC	2001	-	3	N	-	L	G	

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	23	M	1	L	G	0

Primary Rd RT 1 Distance (ft) 1056 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.610 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 15638 Collision Date 20100818 Time 1748 Day WED
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120209
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	67	M	W	HNBD		PROC ST	N	A	0100	OLDSM	1996	-	3	G	- L G
2	DRVR	25	F	H	HNBD		SLOWING	N	D	2200	DODGE	2007	-	3	G	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		26	M	3	M G	0
PASS		2	M	4	P Q	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 15297 Collision Date 20100907 Time 1630 Day TUE
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120201
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	44	M	O	HNBD		LFT TURN	S	A	0700	JEEP	2007	-	3	F	- M G
2	DRVR	44	M	W	HNBD		PROC ST	N	A	0100	SATUR	2001	-	3	N	- L G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19414 Collision Date 20100911 Time 1625 Day SAT
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20120201
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	66	M	W	HNBD		RGT TURN	W	D	2200	DODGE	2001	-	3	N	- M G
2	DRVR	40	M	H	HNBD		STOPPED	W	A	0800	FORD	1995	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 13533 Collision Date 20101021 Time 1405 Day THU
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120322
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	24	M	A	HNBD		LFT TURN	W	A	0100	HONDA	1998	-	3	N	- P G
2	DRVR	40	M	H	HNBD		PROC ST	S	D	2200	CHEVR	2006	-	3	N	- M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		49	F	3	M G	0

Primary Rd DOLAN RD Distance (ft) 10 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 17851 Collision Date 20110208 Time 1620 Day TUE
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity INJURY # Killed 0 # Injured 1 Tow Away? N Process Date 20120424
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	42	F	W	HNBD		RGT TURN	W	A	0700	NISSA	2001	-	3	N	- M G
2	DRVR	55	F	H	HNBD		STOPPED	W	D	2200	FORD	1989	-	3	N	- P G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR COMP PN		55	F	1	P G	0

Primary Rd DOLAN RD Distance (ft) 20 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 17575 Collision Date 20110316 Time 1345 Day WED
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type REAR END Severity INJURY # Killed 0 # Injured 1 Tow Away? N Process Date 20120517
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run FELONY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	32	F	H	HNBD		PROC ST	W	A	0100	HONDA	1992	-	3	N	- M G
2	DRVR	998	F	H	IMP UNK	IMP UNK	STOPPED	W	A	0100	HONDA		-	3	N	- B -

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR COMP PN		32	F	1	M G	0

Primary Rd RT 1 Distance (ft) 4 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 019806 Collision Date 20110421 Time 0042 Day THU
Primary Collision Factor STOP SGN|SIG Violation 22450A Collision Type HIT OBJECT Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20120918
Weather1 CLOUDY Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With FIXED OBJ Lighting DARK - ST LTS Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	998			IMP UNK	IMP UNK	RAN OFF RD	W	D	2200		CHEVR	2000	-	3 A	22107	- M B

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 10 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 017851 Collision Date 20110506 Time 1140 Day FRI
Primary Collision Factor IMPROP TURN Violation 22107 Collision Type HIT OBJECT Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20121213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With FIXED OBJ Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	44	M	O	HNBD		RAN OFF RD	N	A	0700		CHEVR	2011	-	3 L	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd MOSS LANDING RI Distance (ft) 20 Direction W Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 19529 Collision Date 20110515 Time 1610 Day SUN
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type OTHER Severity PDO # Killed 0 # Injured 0 Tow Away? Y Process Date 20121213
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	15	M	H	HNBD		BACKING	E	A	0700		NISSA	2005	-	3 N	-	M G
2	DRVR	50	M	A	HNBD		STOPPED	E	D	2200		DODGE	1997	-	3 N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		51	M	3	M G	0
PASS		37	M	3	M G	0
PASS		37	M	6	P G	0

Primary Rd RT 1 Distance (ft) 200 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.770 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 17575 Collision Date 20110602 Time 1510 Day THU
Primary Collision Factor R-O-W AUTO Violation 21804A Collision Type BROADSIDE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20121213
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	998			IMP UNK	IMP UNK	LFT TURN	E	A	0100		-		-	3 N	-	B -
2	DRVR	21	M	H	HNBD		PROC ST	S	A	0100		NISSA	1997	-	3 N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd MOSS LANDING RI Distance (ft) 50 Direction W Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.810 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 007 Type 3 CalTrans Dist 5 Badge 15160 Collision Date 20110607 Time 1405 Day TUE
Primary Collision Factor WRONG SIDE Violation 21460A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130102
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1	DRVR	53	M	H	IMP UNK	IMP UNK	OTHER	E	F	2500		FREIG	1993	-	3 N	-	P G
2	DRVR	35	M	H	HNBD		OTHER	W	G	2528		PETER	2008	-	3 N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 018766 Collision Date 20110716 Time 0605 Day SAT
Primary Collision Factor R-O-W AUTO Violation 21801A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20130212
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Cntrl Dev NT PRS/FCTR Loc Type I Ramp/Int 5

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP Veh	Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	46	M	H	HNBD		LFT TURN	S	D	2200		ISUZU	2000	-	3 N	-	M G
2	DRVR	36	M	H	HNBD		PROC ST	N	A	0800		GMC	1997	-	3 N	-	L G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	OTH VIS	36	M	1	L G	0

Primary Rd RT 1 Distance (ft) 10 Direction S Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.090 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 20246 Collision Date 20110723 Time 1342 Day SAT
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130402
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip		
1F	DRVR	29	F	W	HNBD		LFT TURN	W	A	0100	DODGE	2011	-	3	N	-	M	G
2	DRVR	45	M	H	HNBD		PROC ST	S	E	2232	FORD	2003	-	3	N	-	M	G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		39	F	3	M G	0
PASS		1	F	4	P Q	0
PASS		32	M	5	P G	0
PASS		2	F	6	P G	0
PASS		29	M	3	M G	0

Primary Rd RT 1 Distance (ft) 148 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.130 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19770 Collision Date 20110724 Time 1845 Day SUN
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity INJURY # Killed 0 # Injured 3 Tow Away? N Process Date 20130212
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip		
1F	DRVR	33	M	A	HNBD		PROC ST	N	A	0100	HONDA	2006	-	3	G	I	M	G
2	DRVR	57	M	W	HNBD		SLOWING	N	A	0100	FORD	2001	-	3	G	I	M	G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		56	M	3	M G	0
PASS	COMP PN	53	F	4	P G	0
PASS	COMP PN	9	F	5	P G	0
PASS	COMP PN	56	F	6	P G	0

Primary Rd RT 1 Distance (ft) 20 Direction N Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.110 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19770 Collision Date 20110724 Time 1750 Day SUN
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130403
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip		
1F	DRVR	18	F	A	HNBD		PROC ST	N	A	0100	TOYOT	2006	-	3	F	G	M	G
2	DRVR	60	M	W	HNBD		STOPPED	N	A	0100	MERCU	1997	-	3	G	-	M	G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		20	M	3	M G	0
PASS		61	F	3	M G	0

Primary Rd RT 1 Distance (ft) 200 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 95.770 Side of Hwy S
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 19700 Collision Date 20110813 Time 1800 Day SAT
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130403
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type H Ramp/Int -

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip		
1F	DRVR	998			IMP UNK	IMP UNK	PROC ST	S	D	2200	DODGE		-	3	G	-	B	-
2	DRVR	64	M	W	HNBD		SLOWING	S	A	0700	JEEP	1992	-	3	G	-	M	G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd DOLAN RD Distance (ft) 12 Direction E Secondary Rd RT 1 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist 5 Badge 15297 Collision Date 20110822 Time 1550 Day MON
Primary Collision Factor STRTNG|BCKNG Violation 22106 Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130403
Weather1 CLOUDY Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type I Ramp/Int 6

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip		
1F	DRVR	51	M	H	HNBD		PROC ST	W	A	0700	JEEP	1993	-	3	F	-	M	G
2	DRVR	19	F	H	HNBD		STOPPED	W	A	0700	CHEVR	2001	-	3	N	-	M	G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		21	M	3	M G	0

Primary Rd RT 1 Distance (ft) 102 Direction S Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist Badge 020246 Collision Date 20110912 Time 1735 Day MON
Primary Collision Factor WRONG SIDE Violation 21460A Collision Type SIDESWIPE Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130108
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run MSDMNR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	998			IMP UNK	IMP UNK	OPPOS LN	N	-	9900	-		-	3	N	-	B -
2	DRVR	42	M	H	HNBD		PROC ST	S	D	2200	CHEVR	2004	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) 528 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist Badge 13533 Collision Date 20111006 Time 1040 Day THU
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20121222
Weather1 CLOUDY Weather2 RAINING Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	20	M	H	HNBD		PROC ST	S	A	0100	HONDA	1994	-	3	N	-	M G
2	DRVR	61	F	W	HNBD		STOPPED	S	A	0100	LINCO	2008	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
PASS		21	F	6	P G	0
PASS		998	F	5	P Q	0
PASS		41	M	3	M G	0

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist Badge 13255 Collision Date 20111011 Time 0840 Day TUE
Primary Collision Factor STOP SGN|SIG Violation 22450A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 1 Tow Away? Y Process Date 20130112
Weather1 CLOUDY Weather2 Rdwy Surface WET Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	58	F	W	HNBD		PROC ST	W	A	0100	TOYOT	1994	-	3	F	-	M G
2	DRVR	37	M	H	HNBD		PROC ST	N	D	2200	GMC	2003	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	52	F	1	M G	0
PASS		18	F	3	M G	0

Primary Rd RT 1 Distance (ft) 1000 Direction S Secondary Rd MOSS LANDING RD NCIC 9730 State Hwy? Y Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist Badge 015638 Collision Date 20111027 Time 1745 Day THU
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END Severity PDO # Killed 0 # Injured 0 Tow Away? N Process Date 20130108
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev NT PRS/FCTR Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	33	F	H	HNBD		PROC ST	N	A	0100	MAZDA	2008	-	3	F	G	M G
2	DRVR	35	M	W	HNBD		STOPPED	N	A	0100	ACURA	1993	-	3	G	-	M G
3	DRVR	31	M	H	HNBD		SLOWING	N	D	2200	CHEVR	1997	-	3	G	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected

Primary Rd RT 1 Distance (ft) I Direction Secondary Rd DOLAN RD NCIC 9730 State Hwy? Y Route Postmile Prefix Postmile Side of Hwy
City UNINCORP. County MONTEREY Population 9 Rpt Dist Beat 074 Type 1 CalTrans Dist Badge 15297 Collision Date 20111202 Time 1645 Day FRI
Primary Collision Factor R-O-W AUTO Violation 21802A Collision Type BROADSIDE Severity INJURY # Killed 0 # Injured 3 Tow Away? N Process Date 20130126
Weather1 CLEAR Weather2 Rdwy Surface DRY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Spec Cond 0
Hit and Run Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Cntrl Dev FNCTNG Loc Type Ramp/Int

PARTY INFO

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh CHP	Veh Make	Year	Sp Info	OAF1 Viol	OAF2	Safety Equip
1F	DRVR	25	M	W	HNBD		LFT TURN	W	A	0700	DODGE	1992	-	3	N	-	P G
2	DRVR	55	F	W	HNBD		LFT TURN	S	A	0100	VOLVO	2000	-	3	N	-	M G

VICTIM INFO

Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected
DRVR	COMP PN	25	M	1	P G	0
PASS		28	F	3	P G	0
DRVR	COMP PN	55	F	1	M G	0
PASS	COMP PN	59	F	3	M G	0

Appendix D

Travel Time
Data

Tuesday 6/18/2013 9:10:38 AM

Travel Time & Delay Report for Highway 1

Legend:

NCT:
Node Crossing Time
Dir:
Direction of Travel (NB, SB, EB, or WB)
TT:
Travel Time from previous Node (seconds)
CTT:
Cumulative Travel Time since beginning of Run (seconds)
TL:
Travel Distance from previous Node (feet)
CTL:
Cumulative Travel Distance since beginning of Run (feet)
DL:
User-specified Design Distance from previous Node (feet)
CDL:
Cumulative User-specified Design Distance since beginning of Run (feet)
DSL:
Travel Distance to reach Design Speed (feet)
Delay:
Delay in Travel Time from previous Node based on user-specified design speed and distance (seconds) = TT - RT
CD:
Cumulative Delay since beginning of Run (seconds) = CTT - CRT
RT:
Running Time from previous Node (seconds) = DL/DS
CRT:
Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run
StopD:
Stopped Delay, or Time spent Waiting in Queue while traveling from previous Node (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
CStopD:
Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
BS1T:
Time spent Below Speed #1 (10 mph) while traveling from previous Node (seconds)
CBS1T:
Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)
AS1T:
Free-Flow Travel Time (spent Above Speed #1 (10 mph)) while traveling from previous Node (seconds) = TT - BS1T
CAS1T:
Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T
AS:
Actual Average Speed from previous Node (mph) = TL/TT
CAS:
Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT
DS:
User-specified Design Speed (mph)
PLS:
User-specified Posted Speed Limit (mph)
MxS:
Maximum Speed reached in Travel from previous Node (mph)
Stops:
Number of Stops in Travel from previous Node. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CStops:
Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
TBL:
Travel Distance to First Blockage (feet) TL, if there is no blockage)
BQL:
Travel Distance from First Blockage to this Node (feet) = TL - TBL
TBT:
Travel Time to First Blockage (seconds) TT, if there is no blockage)
BQT:
Travel Time from First Blockage to this Node (seconds) = TT - TBT
TBS:
Average Speed to First Blockage (mph) = TBL/TBT
BQS:
Average Speed from First Blockage to this Node (mph) = BQL/BQT, when applicable
TBMxS:
Maximum Speed to First Blockage (mph) MxS, if there is no blockage)
BQMxS:
Maximum Speed from First Blockage to this Node (mph) 0, if there is no blockage)
QDL:
Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet) 0, if there is no blockage). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CQDL:
Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CLN:
Cumulative Number of Links in Run

Entered artery 6:33:47 am (320 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	6:35:09 AM	NB	82	82	5048	5048	5056	5056	3574	20	20	63	63	6	6	5	5	77	77	41.8	41.8	55	55	54.4	1	1	5048	0	82	0	41.8	0	54.4	54.4	4971	4971	1
to Moss Landing Road (S)	6:36:07 AM	NB	58	141	4257	9305	4209	9264	0	6	26	52	115	0	6	0	5	58	136	49.6	45	55	55	52.4	0	1	4257	0	58	0	49.6	0	52.4	52.4	0	4971	2
to Driveway #2	6:36:40 AM	NB	32	173	2381	11685	2376	11640	356	0	26	32	147	0	6	0	5	32	168	50.3	46	50	50	53.4	0	1	2381	0	32	0	50.3	0	53.4	53.4	0	4971	3
to Moss Landing Road (N)	6:36:51 AM	NB	11	184	866	12551	864	12504	149	-1	25	12	159	0	6	0	5	11	179	53.5	46.5	50	50	54.7	0	1	866	0	11	0	53.5	0	54.7	54.7	0	4971	4
to Dolan Road	6:37:11 AM	NB	20	204	1553	14103	1548	14051	150	-1	24	21	180	0	6	0	5	20	199	52.8	47.1	50	50	54.9	0	1	1553	0	20	0	52.8	0	54.9	54.9	0	4971	5
to Driveway #1	6:37:30 AM	NB	19	224	1371	15474	1368	15419	134	1	25	19	199	0	6	0	5	19	218	48.2	47.2	50	50	51.9	0	1	1371	0	19	0	48.2	0	51.9	51.9	0	4971	6
to Elkhorn Slough	6:37:40 AM	NB	10	233	751	16225	750	16168	110	0	24	10	209	0	6	0	5	10	228	52.1	47.4	50	50	53.3	0	1	751	0	10	0	52.1	0	53.3	53.3	0	4971	7
to Jetty Road	6:38:14 AM	NB	34	268	2643	18869	2628	18796	120	-1	23	36	245	0	6	0	5	34	263	52.5	48	50	50	54.2	0	1	2643	0	34	0	52.5	0	54.2	54.2	0	4971	8
to Struve Road (S)	6:38:55 AM	NB	40	308	3240	22108	2907	21704	96	1	24	40	284	0	6	0	5	40	303	54.8	48.9	50	55	57.7	0	1	3240	0	40	0	54.8	0	57.7	57.7	0	4971	9
to Struve Road (N)	6:39:42 AM	NB	47	355	3922	26031	3815	25519	154	0	24	47	332	0	6	0	5	47	350	56.4	49.9	55	55	58.8	0	1	3922	0	47	0	56.4	0	58.8	58.8	0	4971	10
to Springfield Road	6:40:18 AM	NB	36	392	2640	28671	2636	28155	123	4	27	33	364	0	6	0	5	36	386	49.7	49.9	55	55	54.3	0	1	2640	0	36	0	49.7	0	54.3	54.3	0	4971	11
to Jensen Road	6:41:33 AM	NB	75	466	5685	34357	5684	33839	2644	4	31	70	435	0	6	0	5	75	461	51.9	50.2	55	55	56.1	0	1	5685	0	75	0	51.9	0	56.1	56.1	0	4971	12

Entered artery 6:54:44 am (1578 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	6:55:56 AM	NB	72	72	5046	5046	5056	5056	1148	9	9	63	63	0	0	3	3	69	69	47.8	47.8	55	55	56.5	0	0	5046	0	72	0	47.8	0	56.5	56.5	0	0	1
to Moss Landing Road (S)	6:56:51 AM	NB	55	127	4255	9301	4209	9264	106	3	12	52	115	0	0	0	3	55	124	52.9	50	55	55	54.9	0	0	4255	0	55	0	52.9	0	54.9	54.9	0	0	2
to Driveway #2	6:57:20 AM	NB	29	156	2380	11682	2376	11640	110	-3	9	32	147	0	0	0	3	29	153	55.2	51	50	50	57.2	0	0	2380	0	29	0	55.2	0	57.2	57.2	0	0	3
to Moss Landing Road (N)	6:57:31 AM	NB	11	167	866	12548	864	12504	92	-1	8	12	159	0	0	0	3	11	164	55.4	51.3	50	50	57.2	0	0	866	0	11	0	55.4	0	57.2	57.2	0	0	4
to Dolan Road	6:57:51 AM	NB	20	187	1552	14100	1548	14051	115	-1	7	21	180	0	0	0	3	20	184	52.7	51.4	50	50	54.7	0	0	1552	0	20	0	52.7	0	54.7	54.7	0	0	5
to Driveway #1	6:58:11 AM	NB	19	206	1371	15471	1368	15419	98	1	8	19	199	0	0	0	3	19	204	48.1	51.1	50	50	52.1	0	0	1371	0	19	0	48.1	0	52.1	52.1	0	0	6
to Elkhorn Slough	6:58:20 AM	NB	10	216	751	16222	750	16168	145	0	7	10	209	0	0	0	3	10	213	52.6	51.2	50	50	54.4	0	0	751	0	10	0	52.6	0	54.4	54.4	0	0	7
to Jetty Road	6:58:54 AM	NB	34	250	2644	18866	2628	18796	95	-2	5	36	245	0	0	0	3	34	247	53.2	51.5	50	50	55.3	0	0	2644	0	34	0	53.2	0	55.3	55.3	0	0	8
to Struve Road (S)	6:59:35 AM	NB	41	291	3242	22107	2907	21704	107	1	6	40	284	0	0	0	3	41	288	54.2	51.8	50	55	56.2	0	0	3242	0	41	0	54.2	0	56.2	56.2	0	0	9
to Struve Road (N)	7:00:23 AM	NB	48	339	3926	26033	3815	25519	120	1	7	47	332	0	0	0	3	48	336	55.5	52.4	55	55	58.2	0	0	3926	0	48	0	55.5	0	58.2	58.2	0	0	10
to Springfield Road	7:01:02 AM	NB	39	378	2641	28674	2636	28155	0	6	13	33	364	0	0	0	3	39	375	46.3	51.7	55	55	51.9	0	0	2641	0	39	0	46.3	0	51.9	51.9	0	0	11
to Jensen Road	7:02:14 AM	NB	72	450	5685	34360	5684	33839	261	2	15	70	435	0	0	0	3	72	447	53.7	52.1	55	55	57	0	0	5685	0	72	0	53.7	0	57	57	0	0	12

Entered artery 7:15:49 am (2842 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	7:17:00 AM	NB	71	71	5049	5049	5056	5056	1133	8	8	63	63	3	3	3	3	68	68	48.4	48.4	55	55	58.6	1	1	5049	0	71	0	48.4	0	58.6	58.6	4986	4986	1
to Moss Landing Road (S)	7:17:51 AM	NB	52	123	4255	9304	4209	9264	152	-1	8	52	115	0	3	0	3	52	120	56.2	51.7	55	55	58.9	0	1	4255	0	52	0	56.2	0	58.9	58.9	0	4986	2
to Driveway #2	7:18:20 AM	NB	29	151	2379	11684	2376	11640	91	-4	4	32	147	0	3	0	3	29	148	56.7	52.6	50	50	58.1	0	1	2379	0	29	0	56.7	0	58.1	58.1	0	4986	3
to Moss Landing Road (N)	7:18:30 AM	NB	10	162	866	12550	864	12504	129	-1	3	12	159	0	3	0	3	10	159	57	52.9	50	50	58.1	0	1	866	0	10	0	57	0	58.1	58.1	0	4986	4
to Dolan Road	7:18:50 AM	NB	19	181	1552	14102	1548	14051	95	-2	1	21	180	0	3	0	3	19	178	55	53.1	50	50	57.3	0	1	1552	0	19	0	55	0	57.3	57.3	0	4986	5
to Driveway #1	7:19:08 AM	NB	19	200	1372	15474	1368	15419	144	0	1	19	199	0	3	0	3	19	197	50.5	52.9	50	50	54.9	0	1	1372	0	19	0	50.5	0	54.9	54.9	0	4986	6
to Elkhorn Slough	7:19:17 AM	NB	9	209	751	16225	750	16168	112	-1	0	10	209	0	3	0	3	9	206	56.7	53	50	50	58.5	0	1	751	0	9	0	56.7	0	58.5	58.5	0	4986	7
to Jetty Road	7:19:48 AM	NB	31	239	2642	18867	2628	18796	116	-5	-6	36	245	0	3	0	3	31	236	58.7	53.8	50	50	60	0	1	2642	0	31	0	58.7	0	60	60	0	4986	8
to Struve Road (S)	7:20:26 AM	NB	38	277	3236	22103	2907	21704	148	-2	-7	40	284	0	3	0	3	38	274	58.1	54.4	50	55	61.1	0	1	3236	0	38	0	58.1	0	61.1	61.1	0	4986	9
to Struve Road (N)	7:21:10 AM	NB	44	321	3927	26031	3815	25519	147	-3	-11	47	332	0	3	0	3	44	318	60.9	55.3	55	55	63.5	0	1	3927	0	44	0	60.9	0	63.5	63.5	0	4986	10
to Springfield Road	7:21:42 AM	NB	33	354	2640	28671	2636	28155	152	0	-11	33	364	0	3	0	3	33	351	55.2	55.3	55	55	58	0	1	2640	0	33	0	55.2	0	58	58	0	4986	11
to Jensen Road	7:22:50 AM	NB	68	422	5685	34356	5684	33839	97	-3	-13	70	435	0	3	0	3	68	419	57.2	55.6	55	55	60.8	0	1	5685	0	68	0	57.2	0	60.8	60.8	0	4986	12

Entered artery 7:36:21 am (4074 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	7:37:28 AM	NB	68	68	5061	5061	5056	5056	847	5	5	63	63	0	0	2	2	65	65	51	51	55	55	61.2	0	0	5061	0	68	0	51	0	61.2	61.2	0	0	1
to Moss Landing Road (S)	7:38:21 AM	NB	53	120	4255	9316	4209	9264	112	1	5	52	115	0	0	0	2	53	118	55	52.8	55	55	56.8	0	0	4255	0	53	0	55	0	56.8	56.8	0	0	2
to Driveway #2	7:38:50 AM	NB	29	150	2379	11695	2376	11640	126	-3	2	32	147	0	0	0	2	29	147	55.4	53.3	50	50	58.1	0	0	2379	0	29	0	55.4	0	58.1	58.1	0	0	3
to Moss Landing Road (N)	7:39:01 AM	NB	11	161	867	12562	864	12504	111	-1	2	12	159	0	0	0	2	11	159	52.9	53.3	50	50	54.5	0	0	867	0	11	0	52.9	0	54.5	54.5	0	0	4
to Dolan Road	7:39:21 AM	NB	20	181	1552	14113	1548	14051	94	-1	1	21	180	0	0	0	2	20	179	53.2	53.3	50	50	54.9	0	0	1552	0	20	0	53.2	0	54.9	54.9	0	0	5
to Driveway #1	7:39:38 AM	NB	17	198	1372	15485	1368	15419	103	-1	-1	19	199	0	0	0	2	17	196	54.5	53.4	50	50	58	0	0	1372	0	17	0	54.5	0	58	58	0	0	6
to Elkhorn Slough	7:39:47 AM	NB	9	207	751	16236	750	16168	97	-1	-2	10	209	0	0	0	2	9	205	58.3	53.6	50	50	59	0	0	751	0	9	0	58.3	0	59	59	0	0	7
to Jetty Road	7:40:17 AM	NB	30	237	2642	18879	2628	18796	120	-6	-8	36	245	0	0	0	2	30	235	59.4	54.3	50	50	60.3	0	0	2642	0	30	0	59.4	0	60.3	60.3	0	0	8
to Struve Road (S)	7:40:56 AM	NB	38	275	3231	22110	2907	21704	93	-1	-9	40	284	0	0	0	2	38	273	57.4	54.8	50	55	60	0	0	3231	0	38	0	57.4	0	60	60	0	0	9
to Struve Road (N)	7:41:40 AM	NB	44	320	3921	26031	3815	25519	142	-3	-12	47	332	0	0	0	2	44	318	60.1	55.5	55	55	64.5	0	0	3921	0	44	0	60.1	0	64.5	64.5	0	0	10
to Springfield Road	7:42:12 AM	NB	32	352	2641	28672	2636	28155	101	-1	-13	33	364	0	0	0	2	32	350	56.5	55.6	55	55	58	0	0	2641	0	32	0	56.5	0	58	58	0	0	11
to Jensen Road	7:43:21 AM	NB	69	420	5685	34357	5684	33839	113	-2	-15	70	435	0	0	0	2	69	418	56.4	55.7	55	55	58.9	0	0	5685	0	69	0	56.4	0	58.9	58.9	0	0	12

Entered artery 7:58:09 am (5382 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	7:59:19 AM	NB	70	70	5069	5069	5056	5056	604	8	8	63	63	0	0	0	0	70	70	49.1	49.1	55	55	55.8	0	0	5069	0	70	0	49.1	0	55.8	55.8	0	0	1
to Moss Landing Road (S)	8:00:14 AM	NB	55	125	4252	9321	4209	9264	198	3	10	52	115	0	0	0	0	55	125	52.8	50.7	55	55	55.8	0	0	4252	0	55	0	52.8	0	55.8	55.8	0	0	2
to Driveway #2	8:00:44 AM	NB	30	156	2377	11698	2376	11640	120	-2	8	32	147	0	0	0	0	30	156	53.3	51.2	50	50	57.2	0	0	2377	0	30	0	53.3	0	57.2	57.2	0	0	3
to Moss Landing Road (N)	8:00:55 AM	NB	11	167	868	12566	864	12504	103	-1	8	12	159	0	0	0	0	11	166	54.3	51.4	50	50	56.2	0	0	868	0	11	0	54.3	0	56.2	56.2	0	0	4
to Dolan Road	8:01:17 AM	NB	22	189	1550	14116	1548	14051	111	1	9	21	180	0	0	0	0	22	189	47.2	50.9	50	50	55.6	0	0	1550	0	22	0	47.2	0	55.6	55.6	0	0	5
to Driveway #1	8:01:37 AM	NB	19	208	1372	15488	1368	15419	582	1	10	19	199	0	0	0	0	19	208	48.1	50.7	50	50	53.7	0	0	1372	0	19	0	48.1	0	53.7	53.7	0	0	6
to Elkhorn Slough	8:01:46 AM	NB	9	218	750	16238	750	16168	125	-1	9	10	209	0	0	0	0	9	218	54.2	50.8	50	50	56.2	0	0	750	0	9	0	54.2	0	56.2	56.2	0	0	7
to Jetty Road	8:02:19 AM	NB	32	250	2643	18881	2628	18796	93	-3	5	36	245	0	0	0	0	32	250	55.5	51.4	50	50	58.1	0	0	2643	0	32	0	55.5	0	58.1	58.1	0	0	8
to Struve Road (S)	8:02:59 AM	NB	40	290	3236	22117	2907	21704	143	0	6	40	284	0	0	0	0	40	290	55.2	51.9	50	55	58.1	0	0	3236	0	40	0	55.2	0	58.1	58.1	0	0	9
to Struve Road (N)	8:03:45 AM	NB	46	337	3923	26040	3815	25519	144	-1	5	47	332	0	0	0	0	46	336	57.8	52.8	55	55	59.5	0	0	3923	0	46	0	57.8	0	59.5	59.5	0	0	10
to Springfield Road	8:04:18 AM	NB	33	370	2640	28680	2636	28155	122	1	5	33	364	0	0	0	0	33	370	54.2	52.9	55	55	56.6	0	0	2640	0	33	0	54.2	0	56.6	56.6	0	0	11
to Jensen Road	8:05:29 AM	NB	71	440	5685	34365	5684	33839	98	0	6	70	435	0	0	0	0	71	440	54.8	53.2	55	55	58.9	0	0	5685	0	71	0	54.8	0	58.9	58.9	0	0	12

Entered artery 8:19:23 am (6656 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	8:20:33 AM	NB	71	71	5050	5050	5056	5056	965	8	8	63	63	6	6	6	6	65	65	48.5	48.5	55	55	62.8	1	1	5050	0	71	0	48.5	0	62.8	62.8	4989	4989	1
to Moss Landing Road (S)	8:21:26 AM	NB	53	124	4254	9304	4209	9264	83	0	9	52	115	0	6	0	6	53	117	55.1	51.3	55	55	58.2	0	1	4254	0	53	0	55.1	0	58.2	58.2	0	4989	2
to Driveway #2	8:21:57 AM	NB	31	154	2378	11682	2376	11640	102	-2	7	32	147	0	6	0	6	31	148	52.9	51.6	50	50	55.4	0	1	2378	0	31	0	52.9	0	55.4	55.4	0	4989	3
to Moss Landing Road (N)	8:22:08 AM	NB	11	166	867	12549	864	12504	139	0	7	12	159	0	6	0	6	11	159	51.8	51.6	50	50	55.4	0	1	867	0	11	0	51.8	0	55.4	55.4	0	4989	4
to Dolan Road	8:22:30 AM	NB	22	188	1551	14101	1548	14051	93	1	8	21	180	0	6	0	6	22	182	47.7	51.2	50	50	50	0	1	1551	0	22	0	47.7	0	50	50	0	4989	5
to Driveway #1	8:22:50 AM	NB	19	207	1372	15473	1368	15419	623	1	9	19	199	0	6	0	6	19	201	48.2	50.9	50	50	52.1	0	1	1372	0	19	0	48.2	0	52.1	52.1	0	4989	6
to Elkhorn Slough	8:23:00 AM	NB	10	217	751	16224	750	16168	131	0	8	10	209	0	6	0	6	10	211	52.2	51	50	50	52.7	0	1	751	0	10	0	52.2	0	52.7	52.7	0	4989	7
to Jetty Road	8:23:34 AM	NB	35	252	2642	18866	2628	18796	140	-1	7	36	245	0	6	0	6	35	246	51.7	51.1	50	50	55.2	0	1	2642	0	35	0	51.7	0	55.2	55.2	0	4989	8
to Struve Road (S)	8:24:20 AM	NB	46	297	3230	22096	2907	21704	80	6	13	40	284	0	6	0	6	46	291	48.4	50.6	50	55	54.6	0	1	3230	0	46	0	48.4	0	54.6	54.6	0	4989	9
to Struve Road (N)	8:25:10 AM	NB	50	348	3931	26026	3815	25519	125	3	16	47	332	0	6	0	6	50	341	53.4	51	55	55	57.7	0	1	3931	0	50	0	53.4	0	57.7	57.7	0	4989	10
to Springfield Road	8:25:50 AM	NB	40	387	2642	28669	2636	28155	0	7	23	33	364	0	6	0	6	40	381	45.2	50.4	55	55	48.4	0	1	2642	0	40	0	45.2	0	48.4	48.4	0	4989	11
to Jensen Road	8:27:06 AM	NB	76	464	5685	34354	5684	33839	2830	6	29	70	435	0	6	0	6	76	457	50.9	50.5	55	55	55.1	0	1	5685	0	76	0	50.9	0	55.1	55.1	0	4989	12

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	3:34:25 PM	NB	76	76	5046	5046	5056	5056	0	14	14	63	63	0	0	2	2	74	74	45	45	55	55	52	0	0	5046	0	76	0	45	0	52	52	0	0	1
to Moss Landing Road (S)	3:35:23 PM	NB	58	134	4249	9295	4209	9264	2173	5	19	52	115	0	0	0	2	58	132	50.3	47.3	55	55	55.3	0	0	4249	0	58	0	50.3	0	55.3	55.3	0	0	2
to Driveway #2	3:35:56 PM	NB	33	167	2379	11674	2376	11640	661	1	20	32	147	0	0	0	2	33	165	49.2	47.7	50	50	52.4	0	0	2379	0	33	0	49.2	0	52.4	52.4	0	0	3
to Moss Landing Road (N)	3:36:08 PM	NB	12	179	869	12542	864	12504	124	1	20	12	159	0	0	0	2	12	177	48.2	47.7	50	50	50.6	0	0	869	0	12	0	48.2	0	50.6	50.6	0	0	4
to Dolan Road	3:36:29 PM	NB	21	201	1550	14093	1548	14051	236	0	20	21	180	0	0	0	2	21	198	49.5	47.9	50	50	51.9	0	0	1550	0	21	0	49.5	0	51.9	51.9	0	0	5
to Driveway #1	3:36:48 PM	NB	19	219	1374	15467	1368	15419	75	0	20	19	199	0	0	0	2	19	217	50.4	48.1	50	50	53.7	0	0	1374	0	19	0	50.4	0	53.7	53.7	0	0	6
to Elkhorn Slough	3:36:58 PM	NB	10	229	753	16220	750	16168	110	-1	20	10	209	0	0	0	2	10	226	53.3	48.3	50	50	54.4	0	0	753	0	10	0	53.3	0	54.4	54.4	0	0	7
to Jetty Road	3:37:31 PM	NB	34	262	2640	18861	2628	18796	140	-2	18	36	245	0	0	0	2	34	260	53.5	49	50	50	58.1	0	0	2640	0	34	0	53.5	0	58.1	58.1	0	0	8
to Struve Road (S)	3:38:12 PM	NB	40	303	3229	22090	2907	21704	99	1	18	40	284	0	0	0	2	40	300	54.7	49.8	50	55	58.1	0	0	3229	0	40	0	54.7	0	58.1	58.1	0	0	9
to Struve Road (N)	3:39:06 PM	NB	54	357	3928	26017	3815	25519	155	7	25	47	332	0	0	0	2	54	354	49.5	49.7	55	55	55	0	0	3928	0	54	0	49.5	0	55	55	0	0	10
to Springfield Road	3:39:45 PM	NB	39	396	2641	28658	2636	28155	0	7	32	33	364	0	0	0	2	39	394	45.9	49.3	55	55	48.5	0	0	2641	0	39	0	45.9	0	48.5	48.5	0	0	11
to Jensen Road	3:41:04 PM	NB	79	475	5685	34343	5684	33839	0	9	40	70	435	0	0	0	2	79	473	49.1	49.3	55	55	52.3	0	0	5685	0	79	0	49.1	0	52.3	52.3	0	0	12

Entered artery 3:55:42 pm (34036 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	3:57:02 PM	NB	80	80	5050	5050	5056	5056	1974	17	17	63	63	9	9	10	10	70	70	43.2	43.2	55	55	57.6	1	1	5050	0	80	0	43.2	0	57.6	57.6	4984	4984	1
to Moss Landing Road (S)	3:58:38 PM	NB	96	175	4249	9298	4209	9264	104	43	60	52	115	7	16	10	20	85	156	30.3	36.2	55	55	54.1	1	2	3084	1165	69	27	30.5	29.8	54.1	46.8	1103	6087	2
to Driveway #2	3:59:11 PM	NB	33	208	2376	11675	2376	11640	332	1	61	32	147	0	16	0	20	33	189	48.9	38.2	50	50	50.6	0	2	2376	0	33	0	48.9	0	50.6	50.6	0	6087	3
to Moss Landing Road (N)	3:59:23 PM	NB	12	221	869	12543	864	12504	119	0	62	12	159	0	16	0	20	12	201	48.3	38.8	50	50	49.6	0	2	869	0	12	0	48.3	0	49.6	49.6	0	6087	4
to Dolan Road	3:59:47 PM	NB	23	244	1550	14094	1548	14051	0	2	64	21	180	0	16	0	20	23	224	45	39.4	50	50	47.2	0	2	1550	0	23	0	45	0	47.2	47.2	0	6087	5
to Driveway #1	4:00:08 PM	NB	21	265	1374	15468	1368	15419	0	3	67	19	199	0	16	0	20	21	246	43.8	39.7	50	50	45.7	0	2	1374	0	21	0	43.8	0	45.7	45.7	0	6087	6
to Elkhorn Slough	4:00:20 PM	NB	12	277	752	16220	750	16168	0	1	68	10	209	0	16	0	20	12	258	44	39.9	50	50	45.3	0	2	752	0	12	0	44	0	45.3	45.3	0	6087	7
to Jetty Road	4:01:01 PM	NB	42	319	2640	18860	2628	18796	2453	6	74	36	245	0	16	0	20	42	299	43.3	40.3	50	50	48.5	0	2	2640	0	42	0	43.3	0	48.5	48.5	0	6087	8
to Struve Road (S)	4:01:47 PM	NB	45	364	3225	22084	2907	21704	846	6	80	40	284	0	16	0	20	45	345	48.4	41.3	50	55	51.4	0	2	3225	0	45	0	48.4	0	51.4	51.4	0	6087	9
to Struve Road (N)	4:02:38 PM	NB	51	415	3932	26016	3815	25519	295	4	84	47	332	0	16	0	20	51	396	52.4	42.7	55	55	56.2	0	2	3932	0	51	0	52.4	0	56.2	56.2	0	6087	10
to Springfield Road	4:03:18 PM	NB	41	456	2641	28658	2636	28155	0	8	91	33	364	0	16	0	20	41	436	44.4	42.9	55	55	46.6	0	2	2641	0	41	0	44.4	0	46.6	46.6	0	6087	11
to Jensen Road	4:04:39 PM	NB	81	537	5685	34343	5684	33839	5056	11	102	70	435	0	16	0	20	81	517	47.8	43.6	55	55	55.1	0	2	5685	0	81	0	47.8	0	55.1	55.1	0	6087	12

Entered artery 4:19:16 pm (35449 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	4:20:39 PM	NB	84	84	5058	5058	5056	5056	0	21	21	63	63	0	0	3	3	81	81	41.1	41.1	55	55	48.5	0	0	5058	0	84	0	41.1	0	48.5	48.5	0	0	1
to Moss Landing Road (S)	4:21:41 PM	NB	61	145	4250	9308	4209	9264	0	9	30	52	115	0	0	0	3	61	142	47.3	43.7	55	55	49.9	0	0	4250	0	61	0	47.3	0	49.9	49.9	0	0	2
to Driveway #2	4:22:13 PM	NB	32	177	2376	11683	2376	11640	199	0	30	32	147	0	0	0	3	32	174	50.4	44.9	50	50	53.4	0	0	2376	0	32	0	50.4	0	53.4	53.4	0	0	3
to Moss Landing Road (N)	4:22:25 PM	NB	12	190	869	12552	864	12504	127	1	31	12	159	0	0	0	3	12	186	48	45.1	50	50	51.5	0	0	869	0	12	0	48	0	51.5	51.5	0	0	4
to Dolan Road	4:22:47 PM	NB	22	212	1550	14102	1548	14051	567	1	32	21	180	0	0	0	3	22	208	47.8	45.4	50	50	50.4	0	0	1550	0	22	0	47.8	0	50.4	50.4	0	0	5
to Driveway #1	4:23:07 PM	NB	20	231	1374	15476	1368	15419	90	1	33	19	199	0	0	0	3	20	228	47.7	45.6	50	50	50.4	0	0	1374	0	20	0	47.7	0	50.4	50.4	0	0	6
to Elkhorn Slough	4:23:17 PM	NB	10	242	754	16230	750	16168	118	0	33	10	209	0	0	0	3	10	239	49.1	45.8	50	50	50.9	0	0	754	0	10	0	49.1	0	50.9	50.9	0	0	7
to Jetty Road	4:23:54 PM	NB	37	279	2640	18870	2628	18796	626	1	34	36	245	0	0	0	3	37	275	49	46.2	50	50	56.1	0	0	2640	0	37	0	49	0	56.1	56.1	0	0	8
to Struve Road (S)	4:24:36 PM	NB	42	321	3223	22092	2907	21704	112	3	36	40	284	0	0	0	3	42	318	52	46.9	50	55	56.1	0	0	3223	0	42	0	52	0	56.1	56.1	0	0	9
to Struve Road (N)	4:25:28 PM	NB	52	373	3928	26021	3815	25519	604	5	41	47	332	0	0	0	3	52	370	51.5	47.6	55	55	56.4	0	0	3928	0	52	0	51.5	0	56.4	56.4	0	0	10
to Springfield Road	4:26:22 PM	NB	54	427	2643	28663	2636	28155	0	21	62	33	364	0	0	0	3	54	423	33.5	45.8	55	55	45.3	0	0	2643	0	54	0	33.5	0	45.3	45.3	0	0	11
to Jensen Road	4:28:19 PM	NB	117	544	5686	34349	5684	33839	0	47	109	70	435	0	0	0	3	117	541	33	43.1	55	55	44.7	0	0	5686	0	117	0	33	0	44.7	44.7	0	0	12

Entered artery 4:41:59 pm (36813 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	4:43:13 PM	NB	73	73	5049	5049	5056	5056	717	10	10	63	63	0	0	4	4	69	69	47.1	47.1	55	55	57.6	0	0	5049	0	73	0	47.1	0	57.6	57.6	0	0	1
to Moss Landing Road (S)	4:44:13 PM	NB	61	134	4248	9297	4209	9264	0	9	19	52	115	0	0	0	4	61	130	47.7	47.4	55	55	51.7	0	0	4248	0	61	0	47.7	0	51.7	51.7	0	0	2
to Driveway #2	4:44:49 PM	NB	36	170	2377	11674	2376	11640	89	4	23	32	147	0	0	0	4	36	166	44.9	46.9	50	50	48.7	0	0	2377	0	36	0	44.9	0	48.7	48.7	0	0	3
to Moss Landing Road (N)	4:45:03 PM	NB	13	183	869	12543	864	12504	0	2	24	12	159	0	0	0	4	13	179	44.4	46.7	50	50	47.7	0	0	869	0	13	0	44.4	0	47.7	47.7	0	0	4
to Dolan Road	4:45:26 PM	NB	24	207	1551	14093	1548	14051	0	3	27	21	180	0	0	0	4	24	203	44.3	46.4	50	50	47.7	0	0	1551	0	24	0	44.3	0	47.7	47.7	0	0	5
to Driveway #1	4:45:47 PM	NB	20	227	1373	15467	1368	15419	1339	2	29	19	199	0	0	0	4	20	224	45.7	46.4	50	50	48.4	0	0	1373	0	20	0	45.7	0	48.4	48.4	0	0	6
to Elkhorn Slough	4:45:59 PM	NB	12	239	752	16218	750	16168	0	1	30	10	209	0	0	0	4	12	235	44.1	46.2	50	50	48.4	0	0	752	0	12	0	44.1	0	48.4	48.4	0	0	7
to Jetty Road	4:46:36 PM	NB	37	277	2642	18861	2628	18796	1091	2	32	36	245	0	0	0	4	37	273	48.1	46.5	50	50	53.3	0	0	2642	0	37	0	48.1	0	53.3	53.3	0	0	8
to Struve Road (S)	4:47:25 PM	NB	49	325	3229	22090	2907	21704	111	9	41	40	284	0	0	0	4	49	322	45.2	46.3	50	55	52.3	0	0	3229	0	49	0	45.2	0	52.3	52.3	0	0	9
to Struve Road (N)	4:48:17 PM	NB	53	378	3934	26024	3815	25519	368	5	46	47	332	0	0	0	4	53	374	50.9	47	55	55	54.6	0	0	3934	0	53	0	50.9	0	54.6	54.6	0	0	10
to Springfield Road	4:49:20 PM	NB	63	441	2644	28668	2636	28155	0	30	76	33	364	0	0	0	4	63	437	28.6	44.3	55	55	45.3	0	0	2644	0	63	0	28.6	0	45.3	45.3	0	0	11
to Jensen Road	4:50:51 PM	NB	91	532	5686	34354	5684	33839	0	21	97	70	435	0	0	0	4	91	528	42.6	44	55	55	48.5	0	0	5686	0	91	0	42.6	0	48.5	48.5	0	0	12

Entered artery 5:04:04 pm (38138 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Molera Road	5:05:44 PM	NB	100	100	5047	5047	5056	5056	0	37	37	63	63	11	11	12	12	88	88	34.5	34.5	55	55	52.3	1	1	5047	0	100	0	34.5	0	52.3	52.3	4993	4993	1
to Moss Landing Road (S)	5:06:48 PM	NB	64	164	4248	9295	4209	9264	0	12	49	52	115	0	11	0	12	64	152	45.2	38.7	55	55	51.7	0	1	4248	0	64	0	45.2	0	51.7	51.7	0	4993	2
to Driveway #2	5:07:20 PM	NB	33	196	2378	11673	2376	11640	728	0	49	32	147	0	11	0	12	33	185	49.6	40.5	50	50	53.4	0	1	2378	0	33	0	49.6	0	53.4	53.4	0	4993	3
to Moss Landing Road (N)	5:07:32 PM	NB	12	208	869	12542	864	12504	77	0	49	12	159	0	11	0	12	12	196	51.1	41.1	50	50	53.3	0	1	869	0	12	0	51.1	0	53.3	53.3	0	4993	4
to Dolan Road	5:07:55 PM	NB	23	231	1551	14092	1548	14051	777	2	51	21	180	0	11	0	12	23	219	46.2	41.6	50	50	48.1	0	1	1551	0	23	0	46.2	0	48.1	48.1	0	4993	5
to Driveway #1	5:08:15 PM	NB	20	251	1374	15466	1368	15419	1022	2	52	19	199	0	11	0	12	20	239	46.2	42	50	50	51.2	0	1	1374	0	20	0	46.2	0	51.2	51.2	0	4993	6
to Elkhorn Slough	5:08:25 PM	NB	10	261	752	16218	750	16168	96	0	52	10	209	0	11	0	12	10	249	51.5	42.4	50	50	53	0	1	752	0	10	0	51.5	0	53	53	0	4993	7
to Jetty Road	5:09:00 PM	NB	35	296	2641	18860	2628	18796	96	-1	52	36	245	0	11	0	12	35	285	51	43.4	50	50	54.2	0	1	2641	0	35	0	51	0	54.2	54.2	0	4993	8
to Struve Road (S)	5:09:42 PM	NB	42	338	3230	22090	2907	21704	78	2	54	40	284	0	11	0	12	42	327	52.5	44.5	50	55	55	0	1	3230	0	42	0	52.5	0	55	55	0	4993	9
to Struve Road (N)	5:10:33 PM	NB	51	389	3933	26023	3815	25519	534	4	57	47	332	0	11	0	12	51	378	52.6	45.6	55	55	56.2	0	1	3933	0	51	0	52.6	0	56.2	56.2	0	4993	10
to Springfield Road	5:11:21 PM	NB	48	437	2641	28664	2636	28155	0	15	73	33	364	0	11	0	12	48	425	37.7	44.7	55	55	51.5	0	1	2641	0	48	0	37.7	0	51.5	51.5	0	4993	11
to Jensen Road	5:13:19 PM	NB	118	555	5686	34350	5684	33839	0	47	120	70	435	9	20	9	21	109	534	32.9	42.2	55	55	51.3	1	2	1136	4549	34	84	22.8	37.1	27.6	51.3	4454	9446	12

Cumulative Reports

Entered artery 6:33:47 am (320 seconds) traveling Northbound from Merritt Street

Node	NCT	Dir	CTT	CTL	CDL	CD	CRT	CStopD	CBS1T	CAS1T	CAS	CStops	CQDL	CLN
to Jensen Road	6:41:33 AM	NB	466	34357	33839	31	435	6	5	461	50.2	1	4971	12
to Jensen Road	7:02:14 AM	NB	450	34360	33839	15	435	0	3	447	52.1	0	0	12
to Jensen Road	7:22:50 AM	NB	422	34356	33839	-13	435	3	3	419	55.6	1	4986	12
to Jensen Road	7:43:21 AM	NB	420	34357	33839	-15	435	0	2	418	55.7	0	0	12
to Jensen Road	8:05:29 AM	NB	440	34365	33839	6	435	0	0	440	53.2	0	0	12
to Jensen Road	8:27:06 AM	NB	464	34354	33839	29	435	6	6	457	50.5	1	4989	12
to Jensen Road	3:41:04 PM	NB	475	34343	33839	40	435	0	2	473	49.3	0	0	12
to Jensen Road	4:04:39 PM	NB	537	34343	33839	102	435	16	20	517	43.6	2	6087	12
to Jensen Road	4:28:19 PM	NB	544	34349	33839	109	435	0	3	541	43.1	0	0	12
to Jensen Road	4:50:51 PM	NB	532	34354	33839	97	435	0	4	528	44	0	0	12
to Jensen Road	5:13:19 PM	NB	555	34350	33839	120	435	20	21	534	42.2	2	9446	12

Tuesday 6/18/2013 9:10:38 AM

Travel Time & Delay Report for Highway 1

Legend:

NCT:
Node Crossing Time
Dir:
Direction of Travel (NB, SB, EB, or WB)
TT:
Travel Time from previous Node (seconds)
CTT:
Cumulative Travel Time since beginning of Run (seconds)
TL:
Travel Distance from previous Node (feet)
CTL:
Cumulative Travel Distance since beginning of Run (feet)
DL:
User-specified Design Distance from previous Node (feet)
CDL:
Cumulative User-specified Design Distance since beginning of Run (feet)
DSL:
Travel Distance to reach Design Speed (feet)
Delay:
Delay in Travel Time from previous Node based on user-specified design speed and distance (seconds) = TT - RT
CD:
Cumulative Delay since beginning of Run (seconds) = CTT - CRT
RT:
Running Time from previous Node (seconds) = DL/DS
CRT:
Cumulative Running Time (seconds) = accumulation of DL/DS since beginning of Run
StopD:
Stopped Delay, or Time spent Waiting in Queue while traveling from previous Node (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
CStopD:
Cumulative Stopped Delay since beginning of Run (seconds). The "Stopped Delay" is counted from when the speed drops below 5 mph after exceeding 15 mph until it exceeds 15 mph once again
BS1T:
Time spent Below Speed #1 (10 mph) while traveling from previous Node (seconds)
CBS1T:
Cumulative Time spent Below Speed #1 (10 mph) since beginning of Run (seconds)
AS1T:
Free-Flow Travel Time (spent Above Speed #1 (10 mph)) while traveling from previous Node (seconds) = TT - BS1T
CAS1T:
Cumulative Free-Flow Travel Time (spent Above Speed #1 (10 mph)) since beginning of Run (seconds) = CTT - CBS1T
AS:
Actual Average Speed from previous Node (mph) = TL/TT
CAS:
Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTT
DS:
User-specified Design Speed (mph)
PLS:
User-specified Posted Speed Limit (mph)
MxS:
Maximum Speed reached in Travel from previous Node (mph)
Stops:
Number of Stops in Travel from previous Node. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CStops:
Cumulative number of Stops in Run. A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
TBL:
Travel Distance to First Blockage (feet) TL, if there is no blockage)
BQL:
Travel Distance from First Blockage to this Node (feet) = TL - TBL
TBT:
Travel Time to First Blockage (seconds) TT, if there is no blockage)
BQT:
Travel Time from First Blockage to this Node (seconds) = TT - TBT
TBS:
Average Speed to First Blockage (mph) = TBL/TBT
BQS:
Average Speed from First Blockage to this Node (mph) = BQL/BQT, when applicable
TBMxS:
Maximum Speed to First Blockage (mph) MxS, if there is no blockage)
BQMxS:
Maximum Speed from First Blockage to this Node (mph) 0, if there is no blockage)
QDL:
Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet) 0, if there is no blockage). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CQDL:
Cumulative Travel Distance from Vehicle Startup after last Stop to Node Crossing (feet). A "Stop" is counted when the speed drops below 5 mph after exceeding 15 mph
CLN:
Cumulative Number of Links in Run

Entered artery 6:45:23 am (1016 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	6:46:42 AM	SB	79	79	5651	5651	5684	5684	1211	9	9	70	70	0	0	1	1	78	78	48.7	48.7	55	55	56.1	0	0	5651	0	79	0	48.7	0	56.1	56.1	0	0	1
to Struve Road (N)	6:47:16 AM	SB	34	113	2635	8286	2636	8320	955	2	10	33	103	0	0	0	1	34	112	52.4	49.8	55	55	55.1	0	0	2635	0	34	0	52.4	0	55.1	55.1	0	0	2
to Struve Road (S)	6:48:06 AM	SB	50	163	3919	12206	3815	12135	955	2	13	47	150	0	0	0	1	50	162	53.7	51	55	55	56.2	0	0	3919	0	50	0	53.7	0	56.2	56.2	0	0	3
to Jetty Road	6:48:47 AM	SB	41	204	3249	15455	2907	15043	146	5	18	36	186	0	0	0	1	41	203	54.1	51.6	55	55	55.9	0	0	3249	0	41	0	54.1	0	55.9	55.9	0	0	4
to Elkhorn Slough	6:49:21 AM	SB	35	239	2654	18109	2628	17671	148	-1	16	36	222	0	0	0	1	35	237	52.3	51.7	50	50	55.2	0	0	2654	0	35	0	52.3	0	55.2	55.2	0	0	5
to Driveway #1	6:49:32 AM	SB	10	249	746	18855	750	18420	92	0	17	10	233	0	0	0	1	10	248	48.6	51.6	50	50	51.2	0	0	746	0	10	0	48.6	0	51.2	51.2	0	0	6
to Dolan Road	6:49:49 AM	SB	17	266	1365	20219	1368	19788	139	-1	15	19	251	0	0	0	1	17	265	54.1	51.8	50	50	55.6	0	0	1365	0	17	0	54.1	0	55.6	55.6	0	0	7
to Moss Landing Road (N)	6:50:09 AM	SB	20	286	1557	21776	1548	21336	130	-1	14	21	272	0	0	0	1	20	285	53.7	51.9	50	50	55.3	0	0	1557	0	20	0	53.7	0	55.3	55.3	0	0	8
to Driveway #2	6:50:20 AM	SB	11	297	862	22638	864	22199	143	-1	13	12	284	0	0	0	1	11	296	53.2	51.9	50	50	54.2	0	0	862	0	11	0	53.2	0	54.2	54.2	0	0	9
to Moss Landing Road (S)	6:50:50 AM	SB	31	328	2381	25020	2376	24575	143	-2	12	32	316	0	0	0	1	31	327	52.7	52	50	50	54.2	0	0	2381	0	31	0	52.7	0	54.2	54.2	0	0	10
to Molera Road	6:51:44 AM	SB	54	382	4267	29286	4209	28784	1114	1	13	52	369	0	0	0	1	54	380	54.2	52.3	55	55	57.1	0	0	4267	0	54	0	54.2	0	57.1	57.1	0	0	11
to Merritt Street	6:52:50 AM	SB	66	448	5069	34355	5056	33839	112	3	16	63	431	0	0	0	1	66	447	52.3	52.3	55	55	57.6	0	0	5069	0	66	0	52.3	0	57.6	57.6	0	0	12

Entered artery 7:06:04 am (2257 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	7:07:22 AM	SB	78	78	5651	5651	5684	5684	615	8	8	70	70	2	2	2	2	76	76	49.4	49.4	55	55	58.9	1	1	5651	0	78	0	49.4	0	58.9	58.9	5598	5598	1
to Struve Road (N)	7:07:55 AM	SB	34	112	2635	8286	2636	8320	155	1	9	33	103	0	2	0	2	34	110	53.1	50.5	55	55	56.1	0	1	2635	0	34	0	53.1	0	56.1	56.1	0	5598	2
to Struve Road (S)	7:08:44 AM	SB	49	161	3919	12206	3815	12135	1361	2	10	47	150	0	2	0	2	49	159	54.6	51.8	55	55	61	0	1	3919	0	49	0	54.6	0	61	61	0	5598	3
to Jetty Road	7:09:26 AM	SB	42	203	3245	15451	2907	15043	97	6	16	36	186	0	2	0	2	42	200	53	52	55	55	55.4	0	1	3245	0	42	0	53	0	55.4	55.4	0	5598	4
to Elkhorn Slough	7:10:07 AM	SB	41	244	2653	18104	2628	17671	110	6	22	36	222	0	2	0	2	41	242	43.7	50.6	50	50	50.6	0	1	2653	0	41	0	43.7	0	50.6	50.6	0	5598	5
to Driveway #1	7:10:19 AM	SB	12	255	748	18852	750	18420	0	1	23	10	233	0	2	0	2	12	253	44.2	50.3	50	50	47.4	0	1	748	0	12	0	44.2	0	47.4	47.4	0	5598	6
to Dolan Road	7:10:38 AM	SB	19	275	1366	20218	1368	19788	252	1	24	19	251	0	2	0	2	19	273	48.2	50.2	50	50	50.4	0	1	1366	0	19	0	48.2	0	50.4	50.4	0	5598	7
to Moss Landing Road (N)	7:11:01 AM	SB	22	297	1558	21775	1548	21336	229	1	25	21	272	0	2	0	2	22	295	47.2	50	50	50	48.8	0	1	1558	0	22	0	47.2	0	48.8	48.8	0	5598	8
to Driveway #2	7:11:13 AM	SB	12	309	862	22637	864	22199	197	0	25	12	284	0	2	0	2	12	307	48	49.9	50	50	49.4	0	1	862	0	12	0	48	0	49.4	49.4	0	5598	9
to Moss Landing Road (S)	7:11:45 AM	SB	32	342	2382	25019	2376	24575	111	0	25	32	316	0	2	0	2	32	340	50.4	49.9	50	50	51.5	0	1	2382	0	32	0	50.4	0	51.5	51.5	0	5598	10
to Molera Road	7:12:40 AM	SB	55	397	4267	29286	4209	28784	1282	3	28	52	369	0	2	0	2	55	395	52.8	50.3	55	55	55.7	0	1	4267	0	55	0	52.8	0	55.7	55.7	0	5598	11
to Merritt Street	7:13:54 AM	SB	74	470	5067	34354	5056	33839	2186	11	39	63	431	0	2	1	4	72	467	46.9	49.8	55	55	52.9	1	2	5067	0	74	0	46.9	0	52.9	52.9	0	5598	12

Entered artery 7:27:02 am (3515 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	7:28:16 AM	SB	74	74	5662	5662	5684	5684	550	4	4	70	70	0	0	1	1	73	73	51.8	51.8	55	55	65.6	0	0	5662	0	74	0	51.8	0	65.6	65.6	0	0	1
to Struve Road (N)	7:28:57 AM	SB	41	116	2635	8297	2636	8320	118	8	12	33	103	0	0	0	1	41	115	43.7	48.9	55	55	54.1	0	0	2635	0	41	0	43.7	0	54.1	54.1	0	0	2
to Struve Road (S)	7:29:50 AM	SB	53	168	3923	12220	3815	12135	2825	6	18	47	150	0	0	0	1	53	167	50.6	49.5	55	55	53.6	0	0	3923	0	53	0	50.6	0	53.6	53.6	0	0	3
to Jetty Road	7:30:33 AM	SB	43	211	3248	15467	2907	15043	345	7	25	36	186	0	0	0	1	43	210	51.6	49.9	55	55	53.7	0	0	3248	0	43	0	51.6	0	53.7	53.7	0	0	4
to Elkhorn Slough	7:31:08 AM	SB	35	246	2652	18120	2628	17671	116	-1	24	36	222	0	0	0	1	35	245	52.1	50.2	50	50	54	0	0	2652	0	35	0	52.1	0	54	54	0	0	5
to Driveway #1	7:31:18 AM	SB	10	256	747	18867	750	18420	142	0	24	10	233	0	0	0	1	10	255	51.1	50.2	50	50	52.7	0	0	747	0	10	0	51.1	0	52.7	52.7	0	0	6
to Dolan Road	7:31:35 AM	SB	17	273	1367	20233	1368	19788	143	-1	22	19	251	0	0	0	1	17	272	53.7	50.4	50	50	57.1	0	0	1367	0	17	0	53.7	0	57.1	57.1	0	0	7
to Moss Landing Road (N)	7:31:55 AM	SB	20	294	1556	21789	1548	21336	128	-1	22	21	272	0	0	0	1	20	293	52	50.6	50	50	57.1	0	0	1556	0	20	0	52	0	57.1	57.1	0	0	8
to Driveway #2	7:32:07 AM	SB	12	306	862	22651	864	22199	82	0	22	12	284	0	0	0	1	12	305	49.9	50.5	50	50	51.4	0	0	862	0	12	0	49.9	0	51.4	51.4	0	0	9
to Moss Landing Road (S)	7:32:38 AM	SB	31	337	2381	25033	2376	24575	99	-1	20	32	316	0	0	0	1	31	336	52.3	50.7	50	50	55.3	0	0	2381	0	31	0	52.3	0	55.3	55.3	0	0	10
to Molera Road	7:33:32 AM	SB	54	390	4265	29298	4209	28784	478	1	22	52	369	0	0	0	1	54	389	54.2	51.2	55	55	57.2	0	0	4265	0	54	0	54.2	0	57.2	57.2	0	0	11
to Merritt Street	7:34:42 AM	SB	70	460	5070	34368	5056	33839	134	7	29	63	431	0	0	0	1	70	459	49.4	50.9	55	55	55.5	0	0	5070	0	70	0	49.4	0	55.5	55.5	0	0	12

Entered artery 7:48:08 am (4781 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	7:49:24 AM	SB	76	76	5657	5657	5684	5684	556	6	6	70	70	0	0	1	1	75	75	50.4	50.4	55	55	58.9	0	0	5657	0	76	0	50.4	0	58.9	58.9	0	0	1
to Struve Road (N)	7:50:02 AM	SB	38	115	2636	8292	2636	8320	0	6	12	33	103	0	0	0	1	38	114	46.7	49.2	55	55	50.4	0	0	2636	0	38	0	46.7	0	50.4	50.4	0	0	2
to Struve Road (S)	7:50:53 AM	SB	51	165	3919	12211	3815	12135	955	3	15	47	150	0	0	0	1	51	164	52.9	50.3	55	55	56.6	0	0	3919	0	51	0	52.9	0	56.6	56.6	0	0	3
to Jetty Road	7:51:38 AM	SB	45	210	3237	15448	2907	15043	121	9	24	36	186	0	0	0	1	45	209	49.5	50.1	55	55	54	0	0	3237	0	45	0	49.5	0	54	54	0	0	4
to Elkhorn Slough	7:52:18 AM	SB	41	251	2652	18100	2628	17671	1704	5	28	36	222	0	0	0	1	41	249	44.5	49.2	50	50	48.7	0	0	2652	0	41	0	44.5	0	48.7	48.7	0	0	5

Entered artery 8:09:10 am (6043 seconds) traveling Southbound from Jensen Road

Entered artery 8:30:20 am (7313 seconds) traveling Southbound from Jensen Road

Entered artery 3:23:31 pm (32104 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	3:24:43 PM	SB	72	72	5685	5685	5684	5684	143	2	2	70	70	0	0	0	0	72	72	53.8	53.8	55	55	57	0	0	5685	0	72	0	53.8	0	57	57	0	0	1
to Struve Road (N)	3:25:16 PM	SB	33	105	2636	8320	2636	8320	225	0	2	33	103	0	0	0	0	33	105	54.4	54	55	55	56	0	0	2636	0	33	0	54.4	0	56	56	0	0	2
to Struve Road (S)	3:26:04 PM	SB	48	153	3915	12236	3815	12135	1026	1	3	47	150	0	0	0	0	48	153	55.5	54.5	55	55	61	0	0	3915	0	48	0	55.5	0	61	61	0	0	3
to Jetty Road	3:26:51 PM	SB	47	200	3252	15487	2907	15043	132	11	14	36	186	0	0	0	0	47	200	47	52.7	55	55	57.3	0	0	3252	0	47	0	47	0	57.3	57.3	0	0	4
to Elkhorn Slough	3:27:26 PM	SB	35	235	2651	18138	2628	17671	107	-1	13	36	222	0	0	0	0	35	235	51.7	52.6	50	50	54.2	0	0	2651	0	35	0	51.7	0	54.2	54.2	0	0	5
to Driveway #1	3:27:36 PM	SB	10	245	748	18886	750	18420	108	0	13	10	233	0	0	0	0	10	245	51	52.5	50	50	52.2	0	0	748	0	10	0	51	0	52.2	52.2	0	0	6
to Dolan Road	3:27:54 PM	SB	18	263	1367	20254	1368	19788	113	-1	12	19	251	0	0	0	0	18	263	51.9	52.5	50	50	53.5	0	0	1367	0	18	0	51.9	0	53.5	53.5	0	0	7
to Moss Landing Road (N)	3:28:15 PM	SB	21	284	1555	21809	1548	21336	115	0	12	21	272	0	0	0	0	21	284	50.6	52.3	50	50	53.4	0	0	1555	0	21	0	50.6	0	53.4	53.4	0	0	8
to Driveway #2	3:28:27 PM	SB	12	296	863	22672	864	22199	113	0	12	12	284	0	0	0	0	12	296	49.9	52.2	50	50	51.5	0	0	863	0	12	0	49.9	0	51.5	51.5	0	0	9
to Moss Landing Road (S)	3:28:58 PM	SB	31	327	2380	25052	2376	24575	128	-1	10	32	316	0	0	0	0	31	327	52.5	52.2	50	50	54.2	0	0	2380	0	31	0	52.5	0	54.2	54.2	0	0	10
to Molera Road	3:29:56 PM	SB	59	386	4263	29315	4209	28784	1611	6	17	52	369	0	0	0	0	59	386	49.6	51.8	55	55	54.9	0	0	4263	0	59	0	49.6	0	54.9	54.9	0	0	11
to Merritt Street	3:31:12 PM	SB	75	461	5068	34383	5056	33839	1907	13	30	63	431	0	0	0	0	75	461	45.8	50.9	55	55	57.6	0	0	5068	0	75	0	45.8	0	57.6	57.6	0	0	12

Entered artery 3:44:14 pm (33348 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	3:45:28 PM	SB	74	74	5685	5685	5684	5684	764	4	4	70	70	0	0	0	0	74	74	52.3	52.3	55	55	57	0	0	5685	0	74	0	52.3	0	57	57	0	0	1
to Struve Road (N)	3:46:05 PM	SB	36	111	2635	8320	2636	8320	2001	4	7	33	103	0	0	0	0	36	111	49.4	51.3	55	55	54.1	0	0	2635	0	36	0	49.4	0	54.1	54.1	0	0	2
to Struve Road (S)	3:46:55 PM	SB	50	160	3916	12236	3815	12135	518	3	10	47	150	0	0	0	0	50	160	53.5	52	55	55	56.4	0	0	3916	0	50	0	53.5	0	56.4	56.4	0	0	3
to Jetty Road	3:47:38 PM	SB	43	204	3252	15488	2907	15043	374	7	17	36	186	0	0	0	0	43	204	51.4	51.9	55	55	53.7	0	0	3252	0	43	0	51.4	0	53.7	53.7	0	0	4
to Elkhorn Slough	3:48:31 PM	SB	53	257	2651	18139	2628	17671	0	18	35	36	222	0	0	0	0	53	257	33.9	48.1	50	50	47.6	0	0	2651	0	53	0	33.9	0	47.6	47.6	0	0	5
to Driveway #1	3:48:43 PM	SB	12	269	748	18887	750	18420	0	2	37	10	233	0	0	0	0	12	269	41.7	47.8	50	50	44.5	0	0	748	0	12	0	41.7	0	44.5	44.5	0	0	6
to Dolan Road	3:49:04 PM	SB	21	290	1370	20257	1368	19788	0	2	39	19	251	0	0	0	0	21	290	44.5	47.6	50	50	46.5	0	0	1370	0	21	0	44.5	0	46.5	46.5	0	0	7
to Moss Landing Road (N)	3:49:28 PM	SB	24	314	1554	21811	1548	21336	0	3	42	21	272	0	0	0	0	24	314	44.1	47.3	50	50	46.6	0	0	1554	0	24	0	44.1	0	46.6	46.6	0	0	8
to Driveway #2	3:49:41 PM	SB	13	327	864	22675	864	22199	0	1	43	12	284	0	0	0	0	13	327	45.6	47.3	50	50	46.6	0	0	864	0	13	0	45.6	0	46.6	46.6	0	0	9
to Moss Landing Road (S)	3:50:14 PM	SB	33	360	2381	25057	2376	24575	569	0	43	32	316	0	0	0	0	33	360	49.5	47.5	50	50	52.4	0	0	2381	0	33	0	49.5	0	52.4	52.4	0	0	10
to Molera Road	3:51:44 PM	SB	90	450	4261	29318	4209	28784	0	38	82	52	369	0	0	6	6	84	444	32.2	44.4	55	55	51.6	0	0	4261	0	90	0	32.2	0	51.6	51.6	0	0	11
to Merritt Street	3:53:35 PM	SB	111	561	5041	34359	5056	33839	0	49	130	63	431	23	23	14	21	97	541	30.9	41.7	55	55	49.9	1	1	4583	457	81	30	38.7	10.3	49.9	21.8	222	222	12

Entered artery 4:07:55 pm (34768 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	4:09:06 PM	SB	71	71	5684	5684	5684	5684	207	1	1	70	70	0	0	0	0	71	71	54.2	54.2	55	55	58	0	0	5684	0	71	0	54.2	0	58	58	0	0	1
to Struve Road (N)	4:09:41 PM	SB	34	106	2636	8320	2636	8320	168	2	3	33	103	0	0	0	0	34	106	52.1	53.5	55	55	54.2	0	0	2636	0	34	0	52.1	0	54.2	54.2	0	0	2
to Struve Road (S)	4:10:33 PM	SB	52	158	3913	12233	3815	12135	1132	5	8	47	150	0	0	0	0	52	158	50.8	52.6	55	55	55.9	0	0	3913	0	52	0	50.8	0	55.9	55.9	0	0	3
to Jetty Road	4:11:16 PM	SB	43	202	3247	15480	2907	15043	96	7	15	36	186	0	0	0	0	43	202	51.3	52.3	55	55	55	0	0	3247	0	43	0	51.3	0	55	55	0	0	4
to Elkhorn Slough	4:11:54 PM	SB	37	239	2650	18130	2628	17671	73	2	17	36	222	0	0	0	0	37	239	48.2	51.7	50	50	51.4	0	0	2650	0	37	0	48.2	0	51.4	51.4	0	0	5
to Driveway #1	4:12:06 PM	SB	12	251	749	18879	750	18420	0	2	19	10	233	0	0	0	0	12	251	42.1	51.2	50	50	46.3	0	0	749	0	12	0	42.1	0	46.3	46.3	0	0	6
to Dolan Road	4:12:26 PM	SB	20	271	1368	20247	1368	19788	620	1	20	19	251	0	0	0	0	20	271	46.4	50.9	50	50	48.7	0	0	1368	0	20	0	46.4	0	48.7	48.7	0	0	7
to Moss Landing Road (N)	4:12:47 PM	SB	20	292	1556	21802	1548	21336	95	-1	19	21	272	0	0	0	0	20	292	52	50.9	50	50	55.2	0	0	1556	0	20	0	52	0	55.2	55.2	0	0	8
to Driveway #2	4:12:59 PM	SB	12	304	864	22666	864	22199	136	1	20	12	284	0	0	0	0	12	304	47.9	50.8	50	50	48.8	0	0	864	0	12	0	47.9	0	48.8	48.8	0	0	9
to Moss Landing Road (S)	4:13:34 PM	SB	35	339	2382	25048	2376	24575	115	2	22	32	316	0	0	0	0	35	339	46.8	50.4	50	50	49.5	0	0	2382	0	35	0	46.8	0	49.5	49.5	0	0	10
to Molera Road	4:14:31 PM	SB	57	396	4260	29308	4209	28784	2777	5	27	52	369	0	0	0	0	57	396	50.8	50.5	55	55	53.8	0	0	4260	0	57	0	50.8	0	53.8	53.8	0	0	11
to Merritt Street	4:17:31 PM	SB	180	576	5094	34403	5056	33839	2402	117	144	63	431	112	112	108	108	71	467	19.3	40.7	55	55	55.2	1	1	4615	479	68	112	46.2	2.9	55.2	18.5	3	3	12

Entered artery 4:31:42 pm (36195 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	4:32:54 PM	SB	73	73	5685	5685	5684	5684	162	3	3	70	70	0	0	0	0	73	73	53.1	53.1	55	55	58	0	0	5685	0	73	0	53.1	0	58	58	0	0	1
to Struve Road (N)	4:33:26 PM	SB	32	105	2637	8321	2636	8320	87	-1	2	33	103	0	0	0	0	32	105	56.6	54.2	55	55	58	0	0	2637	0	32	0	56.6	0	58	58	0	0	2
to Struve Road (S)	4:34:14 PM	SB	48	153	3922	12243	3815	12135	103	1	2	47	150	0	0	0	0	48	153	55.6	54.6	55	55	57.9	0	0	3922	0	48	0	55.6	0	57.9	57.9	0	0	3
to Jetty Road	4:34:55 PM	SB	41	194	3251	15494	2907	15043	394	5	8	36	186	0	0	0	0	41	194	53.8	54.5	55	55	55.7	0	0	3251	0	41	0	53.8	0	55.7	55.7	0	0	4
to Elkhorn Slough	4:35:31 PM	SB	35	229	2647	18141	2628	17671	78	0	7	36	222	0	0	0	0	35	229	50.9	53.9	50	50	55.3	0	0	2647	0	35	0	50.9	0	55.3	55.3	0	0	5
to Driveway #1	4:35:41 PM	SB	10	239	749	18891	750	18420	124	0	7	10	233	0	0	0	0	10	239	51.5	53.8	50	50	54.9	0	0	749	0	10	0	51.5	0	54.9	54.9	0	0	6
to Dolan Road	4:36:00 PM	SB	19	258	1368	20259	1368	19788	323	0	7	19	251	0	0	0	0	19	258	49.9	53.5	50	50	55.2	0	0	1368	0	19	0	49.9	0	55.2	55.2	0	0	7
to Moss Landing Road (N)	4:36:19 PM	SB	20	278	1555	21814	1548	21336	155	-1	6	21	272	0	0	0	0	20	278	53.6	53.5	50	50	57.2	0	0	1555	0	20	0	53.6	0	57.2	57.2	0	0	8
to Driveway #2	4:36:31 PM	SB	12	290	862	22677	864	22199	83	0	5	12	284	0	0	0	0	12	290	50.2	53.4	50	50	52.4	0	0	862	0	12	0	50.2	0	52.4	52.4	0	0	9
to Moss Landing Road (S)	4:37:01 PM	SB	30	320	2381	25058	2376	24575	111	-2	3	32	316	0	0	0	0	30	320	53.8	53.4	50	50	57.2	0	0	2381	0	30	0	53.8	0	57.2	57.2	0	0	10
to Molera Road	4:37:59 PM	SB	57	377	4262	29320	4209	28784	1862	5	9	52	369	0	0	0	0	57	377	50.6	53	55	55	60	0	0	4262	0	57	0	50.6	0	60	60	0	0	11
to Merritt Street	4:40:06 PM	SB	128	505	5077	34397	5056	33839	1869	65	73	63	431	58	58	58	58	70	447	27.1	46.5	55	55	53.8	1	1	4742	336	69	58	46.7	3.9	53.8	16.3	8	8	12

Entered artery 4:54:06 pm (37539 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	TT	CTT	TL	CTL	DL	CDL	DSL	Delay	CD	RT	CRT	StopD	CStopD	BS1T	CBS1T	AS1T	CAS1T	AS	CAS	DS	PLS	MxS	Stops	CStops	TBL	BQL	TBT	BQT	TBS	BQS	TBMxS	BQMxS	QDL	CQDL	CLN
to Springfield Road	4:55:14 PM	SB	68	68	5685	5685	5684	5684	154	-2	-2	70	70	0	0	0	0	68	68	56.6	56.6	55	55	60.8	0	0	5685	0	68	0	56.6	0	60.8	60.8	0	0	1
to Struve Road (N)	4:55:54 PM	SB	40	108	2636	8321	2636	8320	409	7	5	33	103	0	0	0	0	40	108	45.1	52.4	55	55	54.2	0	0	2636	0	40	0	45.1	0	54.2	54.2	0	0	2
to Struve Road (S)	4:57:03 PM	SB	69	178	3923	12244	3815	12135	0	22	27	47	150	0	0	0	0	69	178	38.6	47	55	55	49.2	0	0	3923	0	69	0	38.6	0	49.2	49.2	0	0	3
to Jetty Road	4:57:48 PM	SB	45	223	3245	15490	2907	15043	1663	9	36	36	186	0	0	0	0	45	223	49.2	47.5	55	55	53.4	0	0	3245	0	45	0	49.2	0	53.4	53.4	0	0	4
to Elkhorn Slough	4:58:27 PM	SB	39	262	2650	18139	2628	17671	1674	3	39	36	222	0	0	0	0	39	262	46.3	47.3	50	50	50.4	0	0	2650	0	39	0	46.3	0	50.4	50.4	0	0	5
to Driveway #1	4:58:39 PM	SB	11	273	748	18887	750	18420	0	1	40	10	233	0	0	0	0	11	273	44.7	47.2	50	50	47.4	0	0	748	0	11	0	44.7	0	47.4	47.4	0	0	6
to Dolan Road	4:59:00 PM	SB	21	294	1368	20255	1368	19788	0	2	43	19	251	0	0	0	0	21	294	44.3	47	50	50	47.4	0	0	1368	0	21	0	44.3	0	47.4	47.4	0	0	7
to Moss Landing Road (N)	4:59:22 PM	SB	22	316	1555	21810	1548	21336	327	1	44	21	272	0	0	0	0	22	316	48.5	47.1	50	50	53	0	0	1555	0	22	0	48.5	0	53	53	0	0	8
to Driveway #2	4:59:34 PM	SB	12	328	863	22673	864	22199	405	0	44	12	284	0	0	0	0	12	328	48.5	47.1	50	50	54.2	0	0	863	0	12	0	48.5	0	54.2	54.2	0	0	9
to Moss Landing Road (S)	5:00:04 PM	SB	30	358	2381	25054	2376	24575	146	-2	42	32	316	0	0	0	0	30	358	53.5	47.7	50	50	56.1	0	0	2381	0	30	0	53.5	0	56.1	56.1	0	0	10
to Molera Road	5:01:00 PM	SB	56	414	4263	29317	4209	28784	120	4	46	52	369	0	0	0	0	56	414	51.9	48.2	55	55	55.3	0	0	4263	0	56	0	51.9	0	55.3	55.3	0	0	11
to Merritt Street	5:02:22 PM	SB	82	497	5069	34386	5056	33839	2149	20	65	63	431	3	3	9	9	74	488	42	47.2	55	55	56.5	1	1	5034	36	79	3	43.4	7.8	56.5	10.8	0	0	12

Cumulative Reports

Entered artery 6:45:23 am (1016 seconds) traveling Southbound from Jensen Road

Node	NCT	Dir	CTT	CTL	CDL	CD	CRT	CStopD	CBS1T	CAS1T	CAS	CStops	CQDL	CLN
to Merritt Street	6:52:50 AM	SB	448	34355	33839	16	431	0	1	447	52.3	0	0	12
to Merritt Street	7:13:54 AM	SB	470	34354	33839	39	431	2	4	467	49.8	2	5598	12
to Merritt Street	7:34:42 AM	SB	460	34368	33839	29	431	0	1	459	50.9	0	0	12
to Merritt Street	7:56:16 AM	SB	488	34353	33839	57	431	11	11	477	48	1	0	12
to Merritt Street	8:17:16 AM	SB	487	34344	33839	55	431	12	15	471	48.1	1	0	12
to Merritt Street	8:38:04 AM	SB	464	34381	33839	33	431	0	0	464	50.5	0	0	12
to Merritt Street	3:31:12 PM	SB	461	34383	33839	30	431	0	0	461	50.9	0	0	12
to Merritt Street	3:53:35 PM	SB	561	34359	33839	130	431	23	21	541	41.7	1	222	12
to Merritt Street	4:17:31 PM	SB	576	34403	33839	144	431	112	108	467	40.7	1	3	12
to Merritt Street	4:40:06 PM	SB	505	34397	33839	73	431	58	58	447	46.5	1	8	12
to Merritt Street	5:02:22 PM	SB	497	34386	33839	65	431	3	9	488	47.2	1	0	12

Appendix E

Existing
Traffic Counts

Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 3/30/2011
Page No : 1

Groups Printed- Vehicles

	HIGHWAY 1 Southbound					DOLAN RD Westbound					HIGHWAY 1 Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	218	16	0	234	30	0	8	0	38	6	152	0	0	158	0	0	0	0	0	430
07:15 AM	0	277	20	0	297	44	0	16	0	60	6	196	0	0	202	0	0	0	0	0	559
07:30 AM	0	283	24	0	307	32	0	9	0	41	7	193	0	0	200	0	0	0	0	0	548
07:45 AM	0	280	30	0	310	39	0	14	0	53	12	165	0	0	177	0	0	0	0	0	540
Total	0	1058	90	0	1148	145	0	47	0	192	31	706	0	0	737	0	0	0	0	0	2077
08:00 AM	0	240	30	0	270	45	0	13	0	58	15	144	0	0	159	0	0	0	0	0	487
08:15 AM	0	237	28	0	265	36	0	8	0	44	6	167	0	0	173	0	0	0	0	0	482
08:30 AM	0	247	20	0	267	30	0	23	0	53	13	183	0	0	196	0	0	0	0	0	516
08:45 AM	0	211	18	0	229	23	0	12	0	35	10	158	0	0	168	0	0	0	0	0	432
Total	0	935	96	0	1031	134	0	56	0	190	44	652	0	0	696	0	0	0	0	0	1917
Grand Total	0	1993	186	0	2179	279	0	103	0	382	75	1358	0	0	1433	0	0	0	0	0	3994
Apprch %	0	91.5	8.5	0		73	0	27	0		5.2	94.8	0	0		0	0	0	0		
Total %	0	49.9	4.7	0	54.6	7	0	2.6	0	9.6	1.9	34	0	0	35.9	0	0	0	0	0	

	HIGHWAY 1 Southbound					DOLAN RD Westbound					HIGHWAY 1 Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	277	20	0	297	44	0	16	0	60	6	196	0	0	202	0	0	0	0	0	559
07:30 AM	0	283	24	0	307	32	0	9	0	41	7	193	0	0	200	0	0	0	0	0	548
07:45 AM	0	280	30	0	310	39	0	14	0	53	12	165	0	0	177	0	0	0	0	0	540
08:00 AM	0	240	30	0	270	45	0	13	0	58	15	144	0	0	159	0	0	0	0	0	487
Total Volume	0	1080	104	0	1184	160	0	52	0	212	40	698	0	0	738	0	0	0	0	0	2134
% App. Total	0	91.2	8.8	0		75.5	0	24.5	0		5.4	94.6	0	0		0	0	0	0		
PHF	.000	.954	.867	.000	.955	.889	.000	.813	.000	.883	.667	.890	.000	.000	.913	.000	.000	.000	.000	.000	.954

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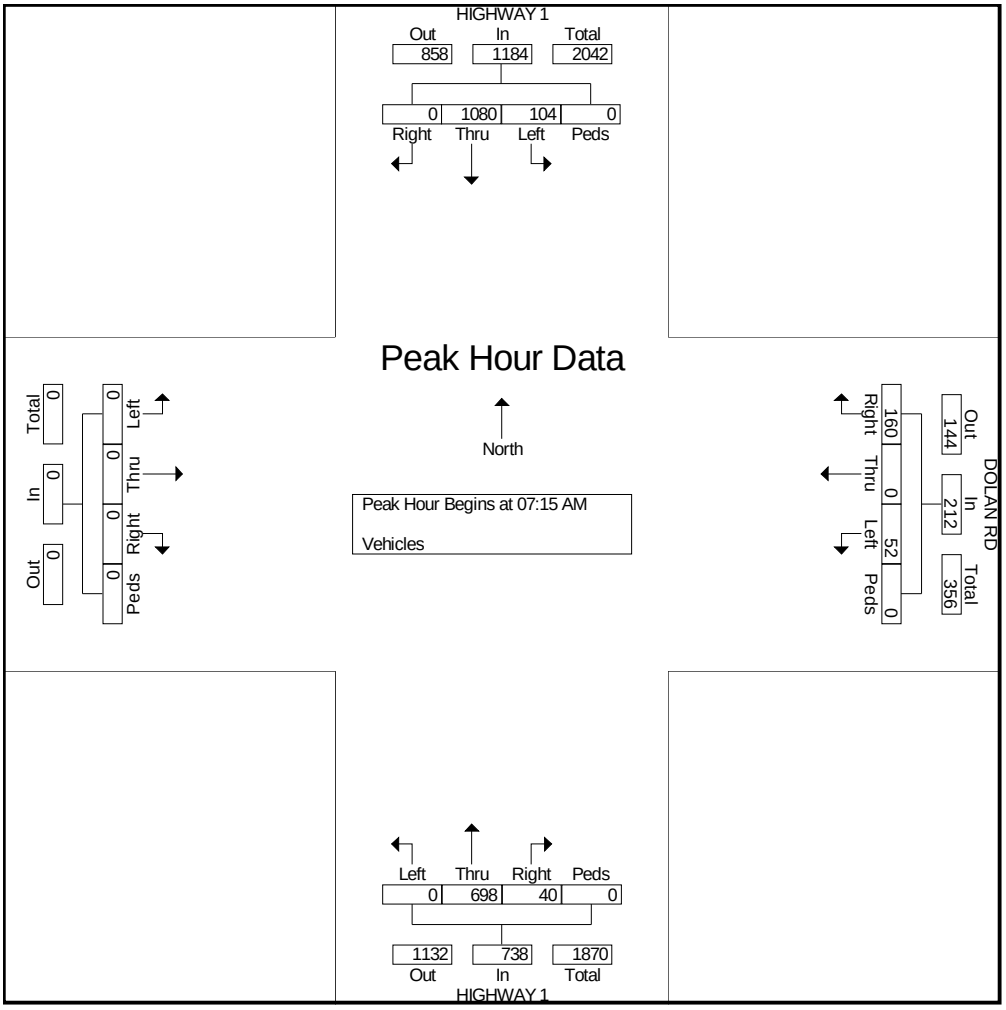

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File Name : 1PM FINAL
Site Code : 00000001
Start Date : 3/30/2011
Page No : 1

Groups Printed- Vehicles

	HIGHWAY 1 Southbound					DOLAN RD Westbound					HIGHWAY 1 Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	235	33	0	268	35	0	19	0	54	24	277	0	0	301	0	0	0	0	0	623
04:15 PM	0	224	34	0	258	36	0	10	0	46	18	278	0	0	296	0	0	0	0	0	600
04:30 PM	0	218	39	0	257	35	0	19	0	54	16	254	0	0	270	0	0	0	0	0	581
04:45 PM	0	235	37	0	272	29	0	5	0	34	20	285	0	0	305	0	0	0	0	0	611
Total	0	912	143	0	1055	135	0	53	0	188	78	1094	0	0	1172	0	0	0	0	0	2415
05:00 PM	0	218	16	0	234	26	0	10	0	36	22	295	0	0	317	0	0	0	0	0	587
05:15 PM	0	220	36	0	256	27	0	10	0	37	13	325	0	0	338	0	0	0	0	0	631
05:30 PM	0	219	27	0	246	34	0	25	0	59	13	247	0	0	260	0	0	0	0	0	565
05:45 PM	0	154	19	0	173	19	0	13	0	32	20	289	0	0	309	0	0	0	0	0	514
Total	0	811	98	0	909	106	0	58	0	164	68	1156	0	0	1224	0	0	0	0	0	2297
Grand Total	0	1723	241	0	1964	241	0	111	0	352	146	2250	0	0	2396	0	0	0	0	0	4712
Apprch %	0	87.7	12.3	0		68.5	0	31.5	0		6.1	93.9	0	0		0	0	0	0		
Total %	0	36.6	5.1	0	41.7	5.1	0	2.4	0	7.5	3.1	47.8	0	0	50.8	0	0	0	0	0	

	HIGHWAY 1 Southbound					DOLAN RD Westbound					HIGHWAY 1 Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	235	33	0	268	35	0	19	0	54	24	277	0	0	301	0	0	0	0	0	623
04:15 PM	0	224	34	0	258	36	0	10	0	46	18	278	0	0	296	0	0	0	0	0	600
04:30 PM	0	218	39	0	257	35	0	19	0	54	16	254	0	0	270	0	0	0	0	0	581
04:45 PM	0	235	37	0	272	29	0	5	0	34	20	285	0	0	305	0	0	0	0	0	611
Total Volume	0	912	143	0	1055	135	0	53	0	188	78	1094	0	0	1172	0	0	0	0	0	2415
% App. Total	0	86.4	13.6	0		71.8	0	28.2	0		6.7	93.3	0	0		0	0	0	0		
PHF	.000	.970	.917	.000	.970	.938	.000	.697	.000	.870	.813	.960	.000	.000	.961	.000	.000	.000	.000	.000	.969

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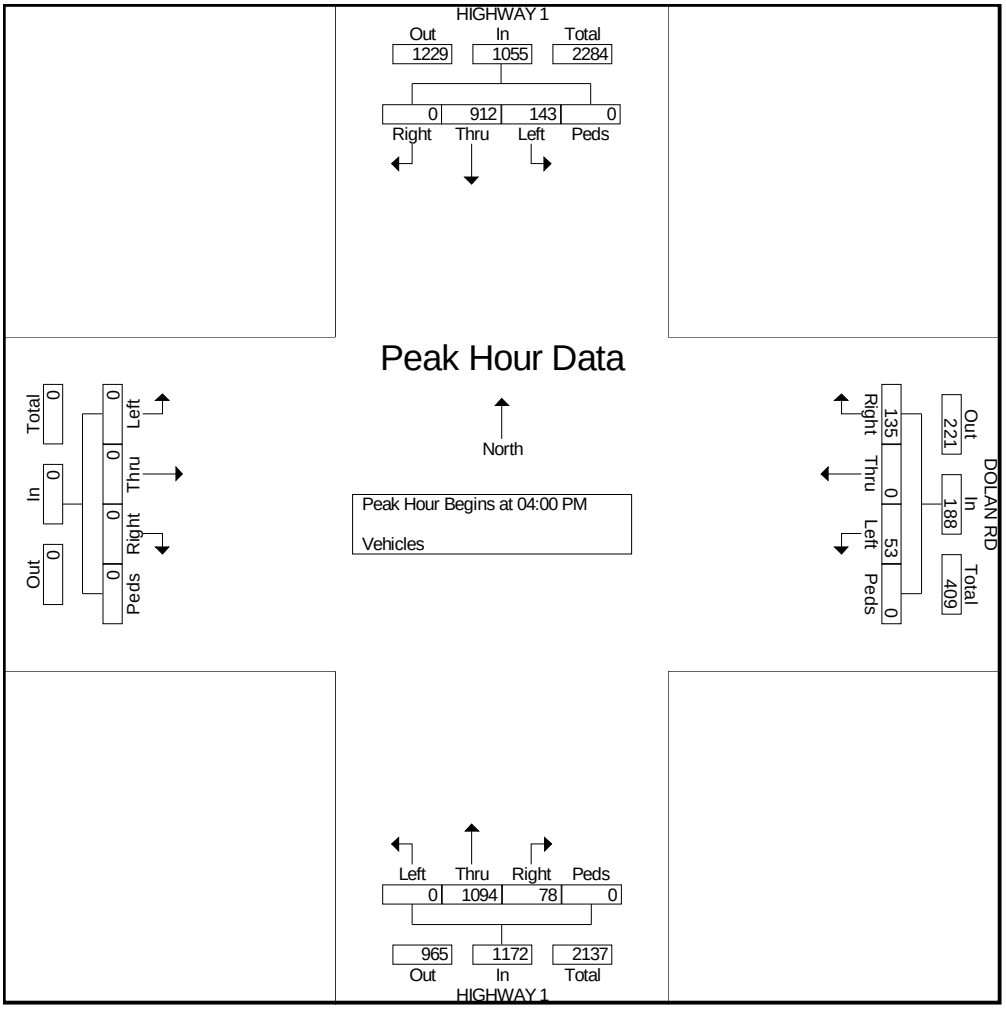


Appendix F

Level of Service Calculations

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	52	160	698	40	104	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	168	735	42	109	1137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2091	735	0	0	735	0
Stage 1	735	-	-	-	-	-
Stage 2	1356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	58	420	-	-	835	-
Stage 1	474	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 50	420	-	-	835	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.7	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	151	420	835	-
HCM Lane V/C Ratio	-	-	0.362	0.401	0.131	-
HCM Control Delay (s)	-	-	41.8	19.2	10	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	1.5	1.9	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	52	160	698	40	104	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yeild	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	168	735	42	109	1137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2091	735	0	0	735	0
Stage 1	735	-	-	-	-	-
Stage 2	1356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	58	420	-	-	835	-
Stage 1	474	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 50	420	-	-	835	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.7	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	151	420	835	-
HCM Lane V/C Ratio	-	-	0.362	0.401	0.131	-
HCM Control Delay (s)	-	-	41.8	19.2	10	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	1.5	1.9	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	160	698	40	104	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	0	168	735	42	109	1137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2091	735	0	0	735	0
Stage 1	735	-	-	-	-	-
Stage 2	1356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	58	420	-	-	835	-
Stage 1	474	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	50	420	-	-	835	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	420	835	-
HCM Lane V/C Ratio	-	-	0.401	0.131	-
HCM Control Delay (s)	-	-	19.2	10	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	1.9	0.5	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	52	160	698	40	104	1080
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	168	735	42	109	1137
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	99	218	1259	1070	135	1478
Arrive On Green	0.06	0.06	0.73	0.73	0.08	0.86
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	55	168	735	42	109	1137
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	2.7	5.0	18.1	0.7	5.9	25.0
Cycle Q Clear(g_c), s	2.7	5.0	18.1	0.7	5.9	25.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	99	218	1259	1070	135	1478
V/C Ratio(X)	0.56	0.77	0.58	0.04	0.81	0.77
Avail Cap(c_a), veh/h	99	218	1259	1070	201	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	37.4	5.8	3.4	40.6	2.7
Incr Delay (d2), s/veh	6.8	15.4	2.0	0.1	13.5	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.0	9.1	0.3	3.2	13.0
LnGrp Delay(d),s/veh	48.3	52.8	7.7	3.5	54.1	6.7
LnGrp LOS	D	D	A	A	D	A
Approach Vol, veh/h	223		777			1246
Approach Delay, s/veh	51.7		7.5			10.8
Approach LOS	D		A			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.4	69.6				81.0		9.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	11.0	62.0				77.0		5.0
Max Q Clear Time (g_c+I1), s	7.9	20.1				27.0		7.0
Green Ext Time (p_c), s	0.1	21.0				22.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	52	160	698	40	104	1080
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	168	735	42	109	1137
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	221	331	1934	865	138	2430
Arrive On Green	0.12	0.12	0.59	0.59	0.08	0.74
Sat Flow, veh/h	1774	1583	3368	1468	1645	3368
Grp Volume(v), veh/h	55	168	735	42	109	1137
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1468	1645	1641
Q Serve(g_s), s	1.7	5.6	7.0	0.7	3.9	8.2
Cycle Q Clear(g_c), s	1.7	5.6	7.0	0.7	3.9	8.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	221	331	1934	865	138	2430
V/C Ratio(X)	0.25	0.51	0.38	0.05	0.79	0.47
Avail Cap(c_a), veh/h	239	346	1934	865	360	2430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	20.8	6.5	5.2	26.7	3.1
Incr Delay (d2), s/veh	0.6	1.2	0.6	0.1	9.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	3.3	0.3	2.1	3.9
LnGrp Delay(d),s/veh	24.1	22.0	7.0	5.3	36.2	3.7
LnGrp LOS	C	C	A	A	D	A
Approach Vol, veh/h	223		777			1246
Approach Delay, s/veh	22.5		6.9			6.6
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	39.0				48.0		11.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	13.0	27.0				44.0		8.0
Max Q Clear Time (g_c+I1), s	5.9	9.0				10.2		7.6
Green Ext Time (p_c), s	0.1	11.4				16.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	52	160	698	40	104	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	168	735	42	109	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	230	336	891	758	136	1191
Arrive On Green	0.13	0.13	0.52	0.52	0.08	0.00
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	55	168	735	42	109	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	1.2	4.1	15.8	0.6	2.9	0.0
Cycle Q Clear(g_c), s	1.2	4.1	15.8	0.6	2.9	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	230	336	891	758	136	1191
V/C Ratio(X)	0.24	0.50	0.82	0.06	0.80	0.00
Avail Cap(c_a), veh/h	241	346	1680	1428	335	2188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.3	15.3	9.0	5.3	19.9	0.0
Incr Delay (d2), s/veh	0.5	1.1	2.0	0.0	10.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.9	7.8	0.3	1.7	0.0
LnGrp Delay(d),s/veh	17.8	16.5	11.0	5.4	30.3	0.0
LnGrp LOS	B	B	B	A	C	
Approach Vol, veh/h	223		777			109
Approach Delay, s/veh	16.8		10.7			30.3
Approach LOS	B		B			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.7	26.8				34.5		9.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	9.0	43.0				56.0		6.0
Max Q Clear Time (g_c+I1), s	4.9	17.8				0.0		6.1
Green Ext Time (p_c), s	0.1	5.0				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	52	160	698	40	104	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1900	1727	1727
Adj Flow Rate, veh/h	55	168	735	42	109	0
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	247	349	1227	70	134	1037
Arrive On Green	0.14	0.14	0.39	0.39	0.08	0.00
Sat Flow, veh/h	1774	1583	3242	180	1645	1727
Grp Volume(v), veh/h	55	168	382	395	109	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1695	1645	1727
Q Serve(g_s), s	0.8	2.8	5.7	5.7	2.0	0.0
Cycle Q Clear(g_c), s	0.8	2.8	5.7	5.7	2.0	0.0
Prop In Lane	1.00	1.00		0.11	1.00	
Lane Grp Cap(c), veh/h	247	349	638	659	134	1037
V/C Ratio(X)	0.22	0.48	0.60	0.60	0.82	0.00
Avail Cap(c_a), veh/h	462	541	1548	1600	589	2473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.7	10.4	7.5	7.5	13.9	0.0
Incr Delay (d2), s/veh	0.4	1.0	0.9	0.9	11.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.3	2.7	2.8	1.3	0.0
LnGrp Delay(d),s/veh	12.2	11.5	8.4	8.4	25.2	0.0
LnGrp LOS	B	B	A	A	C	
Approach Vol, veh/h	223		777			109
Approach Delay, s/veh	11.6		8.4			25.2
Approach LOS	B		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.5	16.0				22.4		8.3
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	11.0	29.0				44.0		8.0
Max Q Clear Time (g_c+I1), s	4.0	7.7				0.0		4.8
Green Ext Time (p_c), s	0.1	4.2				0.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	94.5
Intersection LOS	F

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	223	777	1246
Demand Flow Rate, veh/h	227	854	1371
Vehicles Circulating, veh/h	808	120	56
Vehicles Exiting, veh/h	166	1307	979
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	15.4	26.1	151.2
Approach LOS	C	D	F

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	227	854	1371
Cap Entry Lane, veh/h	504	1002	1068
Entry HV Adj Factor	0.982	0.909	0.909
Flow Entry, veh/h	223	777	1246
Cap Entry, veh/h	495	911	971
V/C Ratio	0.451	0.852	1.283
Control Delay, s/veh	15.4	26.1	151.2
LOS	C	D	F
95th %tile Queue, veh	2	11	45

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	223	777	1246
Demand Flow Rate, veh/h	227	854	1371
Vehicles Circulating, veh/h	808	120	56
Vehicles Exiting, veh/h	166	1307	979
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.6	8.6	13.0
Approach LOS	B	A	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	227	401	453	644	727
Cap Entry Lane, veh/h	642	1033	1039	1083	1087
Entry HV Adj Factor	0.982	0.910	0.909	0.910	0.909
Flow Entry, veh/h	223	365	412	586	661
Cap Entry, veh/h	631	940	944	985	987
V/C Ratio	0.354	0.388	0.436	0.594	0.669
Control Delay, s/veh	10.6	8.2	8.9	11.8	14.0
LOS	B	A	A	B	B
95th %tile Queue, veh	2	2	2	4	5

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	52	160	698	40	104	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	168	735	42	109	1137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1522	367	0	0	735	0
Stage 1	735	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.3	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.3	-
Pot Cap-1 Maneuver	109	630	-	-	815	-
Stage 1	435	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	94	630	-	-	815	-
Mov Cap-2 Maneuver	220	-	-	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	354	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	220	630	815	-
HCM Lane V/C Ratio	-	-	0.249	0.267	0.134	-
HCM Control Delay (s)	-	-	26.7	12.8	10.1	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	1	1.1	0.5	-

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	52	160	698	40	104	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	168	735	42	109	1137

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2091	735	0	0	735	0
Stage 1	735	-	-	-	-	-
Stage 2	1356	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	58	420	-	-	835	-
Stage 1	474	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 50	420	-	-	835	-
Mov Cap-2 Maneuver	151	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.7	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	151	420	835	-
HCM Lane V/C Ratio	-	-	0.362	0.401	0.131	-
HCM Control Delay (s)	-	-	41.8	19.2	10	-
HCM Lane LOS	-	-	E	C	A	-
HCM 95th %tile Q(veh)	-	-	1.5	1.9	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	53	135	1094	78	143	912
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	139	1128	80	147	940

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2363	1128	0	0	1128	0
Stage 1	1128	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 39	249	-	-	591	-
Stage 1	309	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 29	249	-	-	591	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.4	0	1.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	125	249	591	-
HCM Lane V/C Ratio	-	-	0.437	0.559	0.249	-
HCM Control Delay (s)	-	-	54.5	36.3	13.1	-
HCM Lane LOS	-	-	F	E	B	-
HCM 95th %tile Q(veh)	-	-	1.9	3.1	1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	53	135	1094	78	143	912
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yeild	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	139	1128	80	147	940

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2363	1128	0	0	1128	0
Stage 1	1128	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 39	249	-	-	591	-
Stage 1	309	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 29	249	-	-	591	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.4	0	1.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	125	249	591	-
HCM Lane V/C Ratio	-	-	0.437	0.559	0.249	-
HCM Control Delay (s)	-	-	54.5	36.3	13.1	-
HCM Lane LOS	-	-	F	E	B	-
HCM 95th %tile Q(veh)	-	-	1.9	3.1	1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	135	1094	78	143	912
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	0	139	1128	80	147	940

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2363	1128	0	0	1128	0
Stage 1	1128	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	39	249	-	-	591	-
Stage 1	309	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	29	249	-	-	591	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.3	0	1.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	249	591	-
HCM Lane V/C Ratio	-	-	0.559	0.249	-
HCM Control Delay (s)	-	-	36.3	13.1	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	3.1	1	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	53	135	1094	78	143	912
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	139	1128	80	147	940
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	99	258	1215	1033	177	1478
Arrive On Green	0.06	0.06	0.70	0.70	0.11	0.86
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	55	139	1128	80	147	940
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	2.7	5.0	50.2	1.5	7.9	15.5
Cycle Q Clear(g_c), s	2.7	5.0	50.2	1.5	7.9	15.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	99	258	1215	1033	177	1478
V/C Ratio(X)	0.56	0.54	0.93	0.08	0.83	0.64
Avail Cap(c_a), veh/h	99	258	1215	1033	201	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	34.6	11.4	4.2	39.4	2.1
Incr Delay (d2), s/veh	6.8	2.2	13.5	0.1	22.5	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.3	28.1	0.7	4.7	7.9
LnGrp Delay(d),s/veh	48.3	36.8	24.9	4.3	61.8	4.2
LnGrp LOS	D	D	C	A	E	A
Approach Vol, veh/h	194		1208			1087
Approach Delay, s/veh	40.0		23.5			12.0
Approach LOS	D		C			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	13.7	67.3				81.0		9.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	11.0	62.0				77.0		5.0
Max Q Clear Time (g_c+I1), s	9.9	52.2				17.5		7.0
Green Ext Time (p_c), s	0.0	8.2				29.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	53	135	1094	78	143	912
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	139	1128	80	147	940
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	177	335	1932	864	183	2516
Arrive On Green	0.10	0.10	0.59	0.59	0.11	0.77
Sat Flow, veh/h	1774	1583	3368	1468	1645	3368
Grp Volume(v), veh/h	55	139	1128	80	147	940
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1468	1645	1641
Q Serve(g_s), s	1.7	4.6	12.9	1.4	5.2	5.6
Cycle Q Clear(g_c), s	1.7	4.6	12.9	1.4	5.2	5.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	177	335	1932	864	183	2516
V/C Ratio(X)	0.31	0.42	0.58	0.09	0.80	0.37
Avail Cap(c_a), veh/h	177	335	1932	864	274	2516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	20.4	7.7	5.4	26.0	2.3
Incr Delay (d2), s/veh	1.0	0.8	1.3	0.2	9.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.1	6.1	0.6	2.9	2.6
LnGrp Delay(d),s/veh	26.1	21.3	9.0	5.6	35.8	2.7
LnGrp LOS	C	C	A	A	D	A
Approach Vol, veh/h	194		1208			1087
Approach Delay, s/veh	22.6		8.8			7.2
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.7	39.3				50.0		10.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	32.0				46.0		6.0
Max Q Clear Time (g_c+I1), s	7.2	14.9				7.6		6.6
Green Ext Time (p_c), s	0.1	12.0				20.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	53	135	1094	78	143	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	55	139	1128	80	147	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	102	250	1156	983	166	1429
Arrive On Green	0.06	0.06	0.67	0.67	0.10	0.00
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	55	139	1128	80	147	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	2.1	4.0	43.3	1.3	6.1	0.0
Cycle Q Clear(g_c), s	2.1	4.0	43.3	1.3	6.1	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	102	250	1156	983	166	1429
V/C Ratio(X)	0.54	0.56	0.98	0.08	0.89	0.00
Avail Cap(c_a), veh/h	102	250	1167	992	166	1440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.9	27.0	11.0	4.0	30.9	0.0
Incr Delay (d2), s/veh	5.6	2.7	20.6	0.0	39.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.6	26.7	0.5	4.6	0.0
LnGrp Delay(d),s/veh	37.4	29.7	31.5	4.1	70.6	0.0
LnGrp LOS	D	C	C	A	E	
Approach Vol, veh/h	194		1208			147
Approach Delay, s/veh	31.9		29.7			70.6
Approach LOS	C		C			E

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.0	50.5				61.5		8.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	7.0	47.0				58.0		4.0
Max Q Clear Time (g_c+I1), s	8.1	45.3				0.0		6.0
Green Ext Time (p_c), s	0.0	1.3				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	53	135	1094	78	143	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1900	1727	1727
Adj Flow Rate, veh/h	55	139	1128	80	147	0
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	196	353	1542	109	186	1213
Arrive On Green	0.11	0.11	0.50	0.50	0.11	0.00
Sat Flow, veh/h	1774	1583	3195	220	1645	1727
Grp Volume(v), veh/h	55	139	595	613	147	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1688	1645	1727
Q Serve(g_s), s	1.2	3.2	12.3	12.3	3.7	0.0
Cycle Q Clear(g_c), s	1.2	3.2	12.3	12.3	3.7	0.0
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	196	353	814	837	186	1213
V/C Ratio(X)	0.28	0.39	0.73	0.73	0.79	0.00
Avail Cap(c_a), veh/h	249	401	1229	1264	385	1859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.5	14.1	8.5	8.5	18.5	0.0
Incr Delay (d2), s/veh	0.8	0.7	1.3	1.3	7.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.5	5.7	5.9	2.1	0.0
LnGrp Delay(d),s/veh	18.2	14.8	9.8	9.8	25.8	0.0
LnGrp LOS	B	B	A	A	C	
Approach Vol, veh/h	194		1208			147
Approach Delay, s/veh	15.8		9.8			25.8
Approach LOS	B		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	25.2				34.0		8.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	32.0				46.0		6.0
Max Q Clear Time (g_c+I1), s	5.7	14.3				0.0		5.2
Green Ext Time (p_c), s	0.1	6.9				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	134.9
Intersection LOS	F

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	194	1208	1087
Demand Flow Rate, veh/h	198	1329	1196
Vehicles Circulating, veh/h	1241	162	56
Vehicles Exiting, veh/h	250	1090	1383
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	30.2	195.3	86.5
Approach LOS	D	F	F

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	198	1329	1196
Cap Entry Lane, veh/h	327	961	1068
Entry HV Adj Factor	0.980	0.909	0.909
Flow Entry, veh/h	194	1208	1087
Cap Entry, veh/h	320	874	971
V/C Ratio	0.606	1.383	1.119
Control Delay, s/veh	30.2	195.3	86.5
LOS	D	F	F
95th %tile Queue, veh	4	51	29

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	194	1208	1087
Demand Flow Rate, veh/h	198	1329	1196
Vehicles Circulating, veh/h	1241	162	56
Vehicles Exiting, veh/h	250	1090	1383
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	15.3	14.8	10.9
Approach LOS	C	B	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	198	625	704	562	634
Cap Entry Lane, veh/h	474	1001	1009	1083	1087
Entry HV Adj Factor	0.980	0.909	0.910	0.909	0.909
Flow Entry, veh/h	194	568	640	511	576
Cap Entry, veh/h	464	909	918	985	987
V/C Ratio	0.418	0.625	0.698	0.519	0.584
Control Delay, s/veh	15.3	13.4	15.9	10.1	11.5
LOS	C	B	C	B	B
95th %tile Queue, veh	2	5	6	3	4

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	53	135	1094	78	143	912
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	139	1128	80	147	940

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1893	564	0	0	1128	0
Stage 1	1128	-	-	-	-	-
Stage 2	765	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.3	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.3	-
Pot Cap-1 Maneuver	62	469	-	-	571	-
Stage 1	271	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 46	469	-	-	571	-
Mov Cap-2 Maneuver	153	-	-	-	-	-
Stage 1	271	-	-	-	-	-
Stage 2	312	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	153	469	571	-
HCM Lane V/C Ratio	-	-	0.357	0.297	0.258	-
HCM Control Delay (s)	-	-	41.1	15.9	13.5	-
HCM Lane LOS	-	-	E	C	B	-
HCM 95th %tile Q(veh)	-	-	1.5	1.2	1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	53	135	1094	78	143	912
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	55	139	1128	80	147	940

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2363	1128	0	0	1128	0
Stage 1	1128	-	-	-	-	-
Stage 2	1235	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 39	249	-	-	591	-
Stage 1	309	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 29	249	-	-	591	-
Mov Cap-2 Maneuver	125	-	-	-	-	-
Stage 1	309	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	41.4	0	1.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	125	249	591	-
HCM Lane V/C Ratio	-	-	0.437	0.559	0.249	-
HCM Control Delay (s)	-	-	54.5	36.3	13.1	-
HCM Lane LOS	-	-	F	E	B	-
HCM 95th %tile Q(veh)	-	-	1.9	3.1	1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	180	860	45	120	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	63	189	905	47	126	1384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2542	905	0	0	905	0
Stage 1	905	-	-	-	-	-
Stage 2	1637	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 30	335	-	-	719	-
Stage 1	395	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 25	335	-	-	719	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	144	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	105	335	719	-
HCM Lane V/C Ratio	-	-	0.602	0.566	0.176	-
HCM Control Delay (s)	-	-	81.2	28.9	11.1	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	2.9	3.3	0.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	180	860	45	120	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yeild	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	63	189	905	47	126	1384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2542	905	0	0	905	0
Stage 1	905	-	-	-	-	-
Stage 2	1637	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 30	335	-	-	719	-
Stage 1	395	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 25	335	-	-	719	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	144	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	105	335	719	-
HCM Lane V/C Ratio	-	-	0.602	0.566	0.176	-
HCM Control Delay (s)	-	-	81.2	28.9	11.1	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	2.9	3.3	0.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	180	860	45	120	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	0	189	905	47	126	1384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2542	905	0	0	905	0
Stage 1	905	-	-	-	-	-
Stage 2	1637	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	30	335	-	-	719	-
Stage 1	395	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	25	335	-	-	719	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	144	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.9	0	0.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	335	719	-
HCM Lane V/C Ratio	-	-	0.566	0.176	-
HCM Control Delay (s)	-	-	28.9	11.1	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	3.3	0.6	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	180	860	45	120	1315
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	63	189	905	47	126	1384
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	99	236	1240	1054	154	1478
Arrive On Green	0.06	0.06	0.72	0.72	0.09	0.86
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	63	189	905	47	126	1384
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	3.1	5.0	28.0	0.8	6.8	52.4
Cycle Q Clear(g_c), s	3.1	5.0	28.0	0.8	6.8	52.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	99	236	1240	1054	154	1478
V/C Ratio(X)	0.64	0.80	0.73	0.04	0.82	0.94
Avail Cap(c_a), veh/h	99	236	1240	1054	165	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	37.0	7.5	3.7	40.1	4.7
Incr Delay (d2), s/veh	13.0	17.8	3.8	0.1	25.8	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.7	14.4	0.4	4.2	28.6
LnGrp Delay(d),s/veh	54.6	54.8	11.3	3.8	65.8	17.2
LnGrp LOS	D	D	B	A	E	B
Approach Vol, veh/h	252		952			1510
Approach Delay, s/veh	54.7		11.0			21.3
Approach LOS	D		B			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	12.4	68.6				81.0		9.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	9.0	64.0				77.0		5.0
Max Q Clear Time (g_c+I1), s	18.8	30.0				54.4		7.0
Green Ext Time (p_c), s	0.0	26.1				18.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	180	860	45	120	1315
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	63	189	905	47	126	1384
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	237	365	1869	836	160	2407
Arrive On Green	0.13	0.13	0.57	0.57	0.10	0.73
Sat Flow, veh/h	1774	1583	3368	1468	1645	3368
Grp Volume(v), veh/h	63	189	905	47	126	1384
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1468	1645	1641
Q Serve(g_s), s	1.9	6.3	9.8	0.9	4.5	11.7
Cycle Q Clear(g_c), s	1.9	6.3	9.8	0.9	4.5	11.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	237	365	1869	836	160	2407
V/C Ratio(X)	0.27	0.52	0.48	0.06	0.79	0.58
Avail Cap(c_a), veh/h	237	365	1869	836	356	2407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	20.2	7.7	5.7	26.5	3.7
Incr Delay (d2), s/veh	0.6	1.3	0.9	0.1	8.4	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.9	4.6	0.4	2.4	5.3
LnGrp Delay(d),s/veh	24.0	21.5	8.6	5.9	34.9	4.7
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	252		952			1510
Approach Delay, s/veh	22.1		8.4			7.2
Approach LOS	C		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.8	38.2				48.0		12.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	13.8	27.0				44.0		8.0
Max Q Clear Time (g_c+I1), s	11.5	11.8				13.7		8.3
Green Ext Time (p_c), s	0.1	11.8				19.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	180	860	45	120	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	63	189	905	47	126	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	135	272	1037	881	158	1333
Arrive On Green	0.08	0.08	0.60	0.60	0.10	0.00
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	63	189	905	47	126	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	1.8	4.0	23.2	0.7	3.9	0.0
Cycle Q Clear(g_c), s	1.8	4.0	23.2	0.7	3.9	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	135	272	1037	881	158	1333
V/C Ratio(X)	0.47	0.69	0.87	0.05	0.80	0.00
Avail Cap(c_a), veh/h	135	272	1509	1283	250	1903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.3	20.5	8.8	4.3	23.3	0.0
Incr Delay (d2), s/veh	2.5	7.4	4.1	0.0	9.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.1	12.0	0.3	2.2	0.0
LnGrp Delay(d),s/veh	25.8	27.9	13.0	4.4	32.4	0.0
LnGrp LOS	C	C	B	A	C	
Approach Vol, veh/h	252		952			126
Approach Delay, s/veh	27.4		12.6			32.4
Approach LOS	C		B			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	9.0	35.6				44.6		8.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	8.0	46.0				58.0		4.0
Max Q Clear Time (g_c+I1), s	5.9	25.2				0.0		6.0
Green Ext Time (p_c), s	0.1	6.4				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	180	860	45	120	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1900	1727	1727
Adj Flow Rate, veh/h	63	189	905	47	126	0
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	262	387	1355	70	159	1093
Arrive On Green	0.15	0.15	0.43	0.43	0.10	0.00
Sat Flow, veh/h	1774	1583	3261	165	1645	1727
Grp Volume(v), veh/h	63	189	468	484	126	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1698	1645	1727
Q Serve(g_s), s	1.1	3.7	8.3	8.3	2.7	0.0
Cycle Q Clear(g_c), s	1.1	3.7	8.3	8.3	2.7	0.0
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	262	387	700	725	159	1093
V/C Ratio(X)	0.24	0.49	0.67	0.67	0.79	0.00
Avail Cap(c_a), veh/h	341	457	1305	1350	541	2131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.7	11.8	8.4	8.4	16.1	0.0
Incr Delay (d2), s/veh	0.5	1.0	1.1	1.1	8.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.7	3.9	4.0	1.6	0.0
LnGrp Delay(d),s/veh	14.2	12.8	9.5	9.5	24.7	0.0
LnGrp LOS	B	B	A	A	C	
Approach Vol, veh/h	252		952			126
Approach Delay, s/veh	13.1		9.5			24.7
Approach LOS	B		A			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.5	19.6				27.1		9.4
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	12.0	29.0				45.0		7.0
Max Q Clear Time (g_c+I1), s	4.7	10.3				0.0		5.7
Green Ext Time (p_c), s	0.2	5.2				0.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	179.3
Intersection LOS	F

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	252	952	1510
Demand Flow Rate, veh/h	257	1048	1661
Vehicles Circulating, veh/h	995	139	64
Vehicles Exiting, veh/h	191	1586	1188
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	24.9	70.2	273.9
Approach LOS	C	F	F

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	257	1048	1661
Cap Entry Lane, veh/h	418	983	1060
Entry HV Adj Factor	0.981	0.909	0.909
Flow Entry, veh/h	252	952	1510
Cap Entry, veh/h	410	894	963
V/C Ratio	0.615	1.066	1.567
Control Delay, s/veh	24.9	70.2	273.9
LOS	C	F	F
95th %tile Queue, veh	4	23	76

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	252	952	1510
Demand Flow Rate, veh/h	257	1048	1523
Vehicles Circulating, veh/h	995	139	64
Vehicles Exiting, veh/h	191	1448	1188
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	14.2	10.5	14.8
Approach LOS	B	B	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	257	493	555	716	807
Cap Entry Lane, veh/h	563	1018	1025	1077	1080
Entry HV Adj Factor	0.981	0.908	0.910	0.991	0.992
Flow Entry, veh/h	252	448	505	710	800
Cap Entry, veh/h	552	924	932	1068	1071
V/C Ratio	0.456	0.484	0.541	0.665	0.747
Control Delay, s/veh	14.2	9.9	11.0	13.1	16.3
LOS	B	A	B	B	C
95th %tile Queue, veh	2	3	3	5	7

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	180	860	45	120	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	63	189	905	47	126	1384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1850	453	0	0	905	0
Stage 1	905	-	-	-	-	-
Stage 2	945	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.3	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.3	-
Pot Cap-1 Maneuver	66	554	-	-	699	-
Stage 1	355	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 54	554	-	-	699	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	277	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	166	554	699	-
HCM Lane V/C Ratio	-	-	0.38	0.342	0.181	-
HCM Control Delay (s)	-	-	39.4	14.8	11.3	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	1.6	1.5	0.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	180	860	45	120	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	63	189	905	47	126	1384

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2542	905	0	0	905	0
Stage 1	905	-	-	-	-	-
Stage 2	1637	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 30	335	-	-	719	-
Stage 1	395	-	-	-	-	-
Stage 2	174	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 25	335	-	-	719	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	144	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	42	0	0.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	105	335	719	-
HCM Lane V/C Ratio	-	-	0.602	0.566	0.176	-
HCM Control Delay (s)	-	-	81.2	28.9	11.1	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	2.9	3.3	0.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	155	1345	90	160	1120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	62	160	1387	93	165	1155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2872	1387	0	0	1387	0
Stage 1	1387	-	-	-	-	-
Stage 2	1485	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 18	175	-	-	469	-
Stage 1	232	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 12	175	-	-	469	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	134	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	106.9	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	83	175	469	-
HCM Lane V/C Ratio	-	-	0.745	0.913	0.352	-
HCM Control Delay (s)	-	-	124.6	100	16.8	-
HCM Lane LOS	-	-	F	F	C	-
HCM 95th %tile Q(veh)	-	-	3.7	6.8	1.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 8.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	155	1345	90	160	1120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yeild	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	62	160	1387	93	165	1155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2872	1387	0	0	1387	0
Stage 1	1387	-	-	-	-	-
Stage 2	1485	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 18	175	-	-	469	-
Stage 1	232	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 12	175	-	-	469	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	134	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	106.9	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	83	175	469	-
HCM Lane V/C Ratio	-	-	0.745	0.913	0.352	-
HCM Control Delay (s)	-	-	124.6	100	16.8	-
HCM Lane LOS	-	-	F	F	C	-
HCM 95th %tile Q(veh)	-	-	3.7	6.8	1.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	155	1345	90	160	1120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	0	160	1387	93	165	1155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2872	1387	0	0	1387	0
Stage 1	1387	-	-	-	-	-
Stage 2	1485	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	18	175	-	-	469	-
Stage 1	232	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	12	175	-	-	469	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	134	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	100	0	2.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	175	469	-
HCM Lane V/C Ratio	-	-	0.913	0.352	-
HCM Control Delay (s)	-	-	100	16.8	-
HCM Lane LOS	-	-	F	C	-
HCM 95th %tile Q(veh)	-	-	6.8	1.6	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	155	1345	90	160	1120
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	62	160	1387	93	165	1155
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	99	276	1196	1017	195	1478
Arrive On Green	0.06	0.06	0.69	0.69	0.12	0.86
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	62	160	1387	93	165	1155
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	3.1	5.0	62.3	1.9	8.8	26.2
Cycle Q Clear(g_c), s	3.1	5.0	62.3	1.9	8.8	26.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	99	276	1196	1017	195	1478
V/C Ratio(X)	0.63	0.58	1.16	0.09	0.85	0.78
Avail Cap(c_a), veh/h	99	276	1196	1017	201	1478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	34.1	13.8	4.5	38.9	2.8
Incr Delay (d2), s/veh	12.1	3.0	81.4	0.2	26.3	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	3.9	56.0	0.8	5.5	13.6
LnGrp Delay(d),s/veh	53.7	37.2	95.3	4.7	65.2	7.0
LnGrp LOS	D	D	F	A	E	A
Approach Vol, veh/h	222		1480			1320
Approach Delay, s/veh	41.8		89.6			14.3
Approach LOS	D		F			B

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	14.7	66.3				81.0		9.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	11.0	62.0				77.0		5.0
Max Q Clear Time (g_c+I1), s	10.8	64.3				28.2		7.0
Green Ext Time (p_c), s	0.0	0.0				38.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	155	1345	90	160	1120
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	62	160	1387	93	165	1155
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	177	355	1891	846	204	2516
Arrive On Green	0.10	0.10	0.58	0.58	0.12	0.77
Sat Flow, veh/h	1774	1583	3368	1468	1645	3368
Grp Volume(v), veh/h	62	160	1387	93	165	1155
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1468	1645	1641
Q Serve(g_s), s	2.0	5.2	18.6	1.7	5.9	7.6
Cycle Q Clear(g_c), s	2.0	5.2	18.6	1.7	5.9	7.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	177	355	1891	846	204	2516
V/C Ratio(X)	0.35	0.45	0.73	0.11	0.81	0.46
Avail Cap(c_a), veh/h	177	355	1891	846	274	2516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	20.1	9.3	5.8	25.6	2.5
Incr Delay (d2), s/veh	1.2	0.9	2.6	0.3	12.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.4	9.0	0.8	3.4	3.6
LnGrp Delay(d),s/veh	26.4	21.0	11.9	6.0	37.9	3.1
LnGrp LOS	C	C	B	A	D	A
Approach Vol, veh/h	222		1480			1320
Approach Delay, s/veh	22.5		11.5			7.5
Approach LOS	C		B			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.4	38.6				50.0		10.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	32.0				46.0		6.0
Max Q Clear Time (g_c+I1), s	7.9	20.6				9.6		7.2
Green Ext Time (p_c), s	0.1	9.9				25.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	155	1345	90	160	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1727	1727	1727
Adj Flow Rate, veh/h	62	160	1387	93	165	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	101	226	1184	1007	141	1431
Arrive On Green	0.06	0.06	0.69	0.69	0.09	0.00
Sat Flow, veh/h	1774	1583	1727	1468	1645	1727
Grp Volume(v), veh/h	62	160	1387	93	165	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1727	1468	1645	1727
Q Serve(g_s), s	2.4	4.0	48.0	1.5	6.0	0.0
Cycle Q Clear(g_c), s	2.4	4.0	48.0	1.5	6.0	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	101	226	1184	1007	141	1431
V/C Ratio(X)	0.61	0.71	1.17	0.09	1.17	0.00
Avail Cap(c_a), veh/h	101	226	1184	1007	141	1431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	28.6	11.0	3.7	32.0	0.0
Incr Delay (d2), s/veh	10.3	9.7	86.3	0.0	128.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.5	50.4	0.6	7.7	0.0
LnGrp Delay(d),s/veh	42.6	38.3	97.3	3.7	160.8	0.0
LnGrp LOS	D	D	F	A	F	
Approach Vol, veh/h	222		1480			165
Approach Delay, s/veh	39.5		91.4			160.8
Approach LOS	D		F			F

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.0	52.0				62.0		8.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	6.0	48.0				58.0		4.0
Max Q Clear Time (g_c+I1), s	8.0	50.0				0.0		6.0
Green Ext Time (p_c), s	0.0	0.0				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	91.3
HCM 2010 LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	60	155	1345	90	160	0
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1727	1900	1727	1727
Adj Flow Rate, veh/h	62	160	1387	93	165	0
Adj No. of Lanes	1	1	2	0	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	10	10	10	10
Cap, veh/h	142	326	1730	116	207	1312
Arrive On Green	0.08	0.08	0.55	0.55	0.13	0.00
Sat Flow, veh/h	1774	1583	3209	209	1645	1727
Grp Volume(v), veh/h	62	160	727	753	165	0
Grp Sat Flow(s),veh/h/ln	1774	1583	1641	1690	1645	1727
Q Serve(g_s), s	1.7	4.0	17.7	17.9	4.9	0.0
Cycle Q Clear(g_c), s	1.7	4.0	17.7	17.9	4.9	0.0
Prop In Lane	1.00	1.00		0.12	1.00	
Lane Grp Cap(c), veh/h	142	326	909	937	207	1312
V/C Ratio(X)	0.44	0.49	0.80	0.80	0.80	0.00
Avail Cap(c_a), veh/h	142	326	1117	1150	329	1659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.9	17.5	8.9	9.0	21.2	0.0
Incr Delay (d2), s/veh	2.1	1.1	3.4	3.5	7.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.0	8.7	9.1	2.6	0.0
LnGrp Delay(d),s/veh	24.0	18.7	12.4	12.4	28.2	0.0
LnGrp LOS	C	B	B	B	C	
Approach Vol, veh/h	222		1480			165
Approach Delay, s/veh	20.2		12.4			28.2
Approach LOS	C		B			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	10.3	31.7				42.0		8.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	10.0	34.0				48.0		4.0
Max Q Clear Time (g_c+I1), s	6.9	19.9				0.0		6.0
Green Ext Time (p_c), s	0.1	7.8				0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

Intersection	
Intersection Delay, s/veh	257.3
Intersection LOS	F

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	222	1480	1320
Demand Flow Rate, veh/h	226	1628	1452
Vehicles Circulating, veh/h	1526	181	63
Vehicles Exiting, veh/h	283	1333	1689
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	82.1	345.9	187.5
Approach LOS	F	F	F

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	226	1628	1452
Cap Entry Lane, veh/h	246	943	1061
Entry HV Adj Factor	0.982	0.909	0.909
Flow Entry, veh/h	222	1480	1320
Cap Entry, veh/h	241	857	964
V/C Ratio	0.920	1.727	1.369
Control Delay, s/veh	82.1	345.9	187.5
LOS	F	F	F
95th %tile Queue, veh	8	84	54

Intersection	
Intersection Delay, s/veh	20.0
Intersection LOS	C

Approach	WB	NB	SB
Entry Lanes	1	2	2
Conflicting Circle Lanes	2	2	2
Adj Approach Flow, veh/h	222	1480	1320
Demand Flow Rate, veh/h	226	1628	1452
Vehicles Circulating, veh/h	1526	181	63
Vehicles Exiting, veh/h	283	1333	1689
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	24.7	24.3	14.4
Approach LOS	C	C	B

Lane	Left	Left	Right	Left	Right
Designated Moves	LR	LT	TR	LT	TR
Assumed Moves	LR	LT	TR	LT	TR
RT Channelized					
Lane Util	1.000	0.470	0.530	0.470	0.530
Critical Headway, s	4.113	4.293	4.113	4.293	4.113
Entry Flow, veh/h	226	765	863	682	770
Cap Entry Lane, veh/h	388	987	995	1078	1081
Entry HV Adj Factor	0.982	0.909	0.909	0.909	0.908
Flow Entry, veh/h	222	696	785	620	699
Cap Entry, veh/h	381	897	905	980	982
V/C Ratio	0.582	0.775	0.867	0.633	0.712
Control Delay, s/veh	24.7	20.2	27.9	12.9	15.7
LOS	C	C	D	B	C
95th %tile Queue, veh	4	8	11	5	6

Intersection

Int Delay, s/veh 3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	155	1345	90	160	1120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	60	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	62	160	1387	93	165	1155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2294	693	0	0	1387	0
Stage 1	1387	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.3	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.3	-
Pot Cap-1 Maneuver	~ 33	386	-	-	450	-
Stage 1	197	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 21	386	-	-	450	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	197	-	-	-	-	-
Stage 2	224	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	37.2	0	2.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	105	386	450	-
HCM Lane V/C Ratio	-	-	0.589	0.414	0.367	-
HCM Control Delay (s)	-	-	79.6	20.8	17.6	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	2.8	2	1.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 8.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	60	155	1345	90	160	1120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	175	-	430	550	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	10	10	10	10
Mvmt Flow	62	160	1387	93	165	1155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2872	1387	0	0	1387	0
Stage 1	1387	-	-	-	-	-
Stage 2	1485	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	~ 18	175	-	-	469	-
Stage 1	232	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 12	175	-	-	469	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	134	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	106.9	0	2.1
HCM LOS	F		

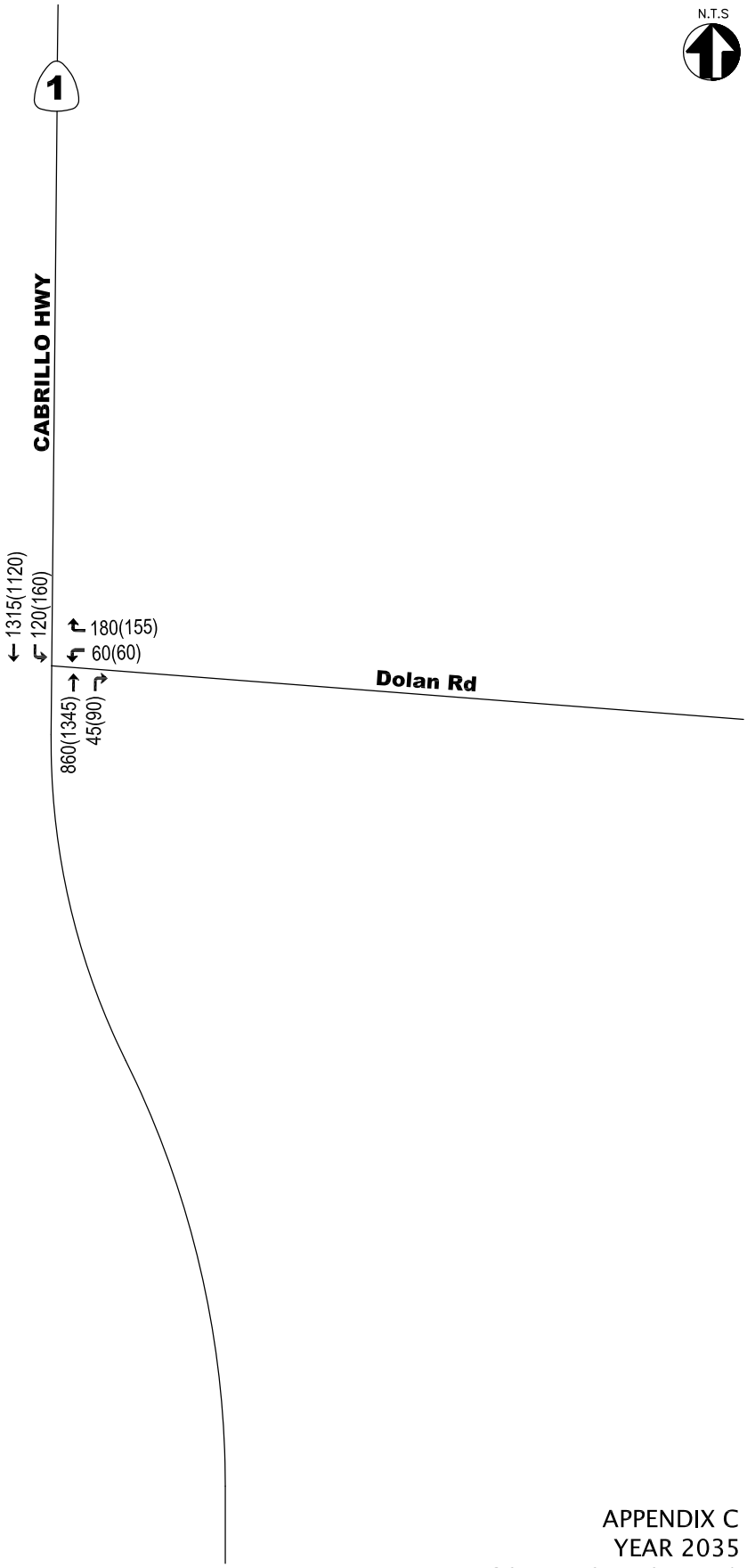
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	83	175	469	-
HCM Lane V/C Ratio	-	-	0.745	0.913	0.352	-
HCM Control Delay (s)	-	-	124.6	100	16.8	-
HCM Lane LOS	-	-	F	F	C	-
HCM 95th %tile Q(veh)	-	-	3.7	6.8	1.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix G

Year 2035 Traffic Volumes



Legend:
XX (YY) = AM Peak Hour (PM Peak Hour)
WB L = Westbound Dolan Rd. Left Turn
WB R = Westbound Dolan Rd. Right Turn

Note:
Year 2035 volumes projected using volumes from Regional Impact Fee Nexus Study Updates, Kimley - Horn and Associates, March 26, 2008

Hatch Mott MacDonald

APPENDIX C
YEAR 2035
CONDITION VOLUMES

Appendix H

Roundabout
Conceptual Footprint

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX–XX.XX	1	1

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
LEOPOLDO TRUJILLO
63950
Exp. 9-30-14
CIVIL
STATE OF CALIFORNIA

Hatch Mott MacDonald
1300-B FIRST STREET
GILROY, CA 95020
(408)848-3122
WWW.HATCHMOTT.COM

11-11-13

DATE | REVISED BY | DATE REVISED

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PROJECT ENGINEER

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Caltrans

Moss Landing Harbor

Moss Landing Harbor

8' SHOULDER ENCROACHES INTO EXISTING ACCESS ROAD.

230' DIAMETER INSCRIBED CIRICLE

REALIGN DRIVEWAY

PROPOSED BIKE PATH (BY OTHERS)

15'

15'

8'

12'

12'

12'

12'

8'

8'

12'

12'

12'

12'

8'

SR–1

BEGIN 350' LANE DROP

DOCK

CRANE

Dolan Road

8' 12' 12' 8'

National Refractories

Moss Landing Power Plant

CONCEPTUAL PLAN ONLY NOT FOR CONSTRUCTION

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GRAPHIC SCALE

80 0 40 80

(IN FEET)
1 inch = 80 ft.

HIGHWAY 1 AT DOLAN ROAD ALTERNATIVE 10B 30MPH ROUNDABOUT OPTION

SCALE: 1"=80'

Appendix I

Improvement Alternative Conceptual Designs

CONCEPTUAL PLAN ONLY
NOT FOR CONSTRUCTION

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX-XX.XX	1	4

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER LEOPOLDO TRUTILLO 63950 Exp. 9-30-14 CIVIL STATE OF CALIFORNIA

Hatch Mott MacDonald
1300-B FIRST STREET
GILROY, CA 95020
(408)848-3122
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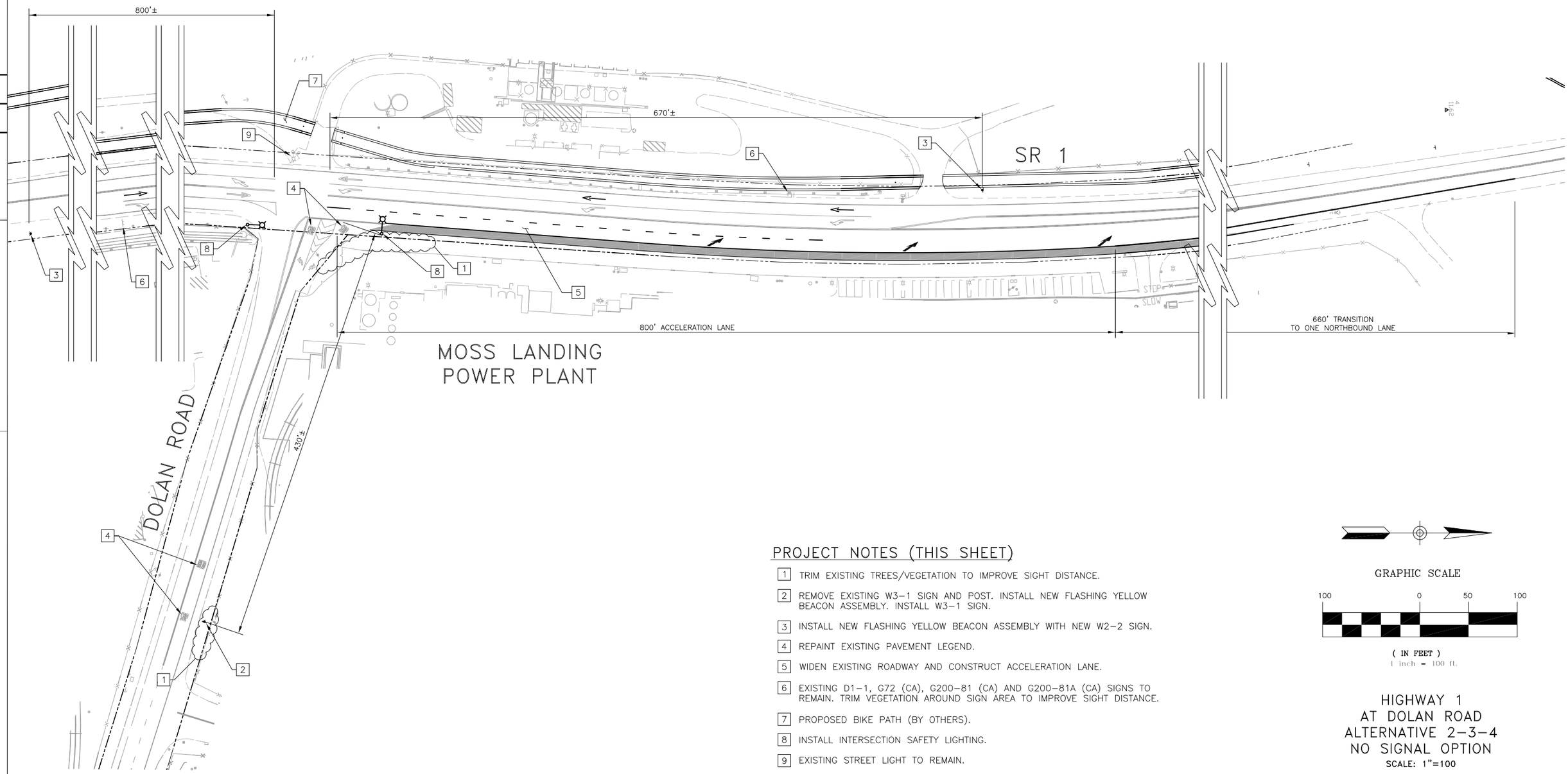

PROJECT NOTES (THIS SHEET)

1. TRIM EXISTING TREES/VEGETATION TO IMPROVE SIGHT DISTANCE.
2. REMOVE EXISTING W3-1 SIGN AND POST. INSTALL NEW FLASHING YELLOW BEACON ASSEMBLY. INSTALL W3-1 SIGN.
3. INSTALL NEW FLASHING YELLOW BEACON ASSEMBLY WITH NEW W2-2 SIGN.
4. REPAINT EXISTING PAVEMENT LEGEND.
5. WIDEN EXISTING ROADWAY AND CONSTRUCT ACCELERATION LANE.
6. EXISTING D1-1, G72 (CA), G200-81 (CA) AND G200-81A (CA) SIGNS TO REMAIN. TRIM VEGETATION AROUND SIGN AREA TO IMPROVE SIGHT DISTANCE.
7. PROPOSED BIKE PATH (BY OTHERS).
8. INSTALL INTERSECTION SAFETY LIGHTING.
9. EXISTING STREET LIGHT TO REMAIN.

GRAPHIC SCALE

100 0 50 100

(IN FEET)
1 inch = 100 ft.

HIGHWAY 1
AT DOLAN ROAD
ALTERNATIVE 2-3-4
NO SIGNAL OPTION

SCALE: 1"=100

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX–XX.XX	2	4

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER LEOPOLDO TRUJILLO 63950 Exp. 9-30-14 CIVIL STATE OF CALIFORNIA

Hatch Mott MacDonald
1300-B FIRST STREET
GILROY, CA 95020
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11-11-13

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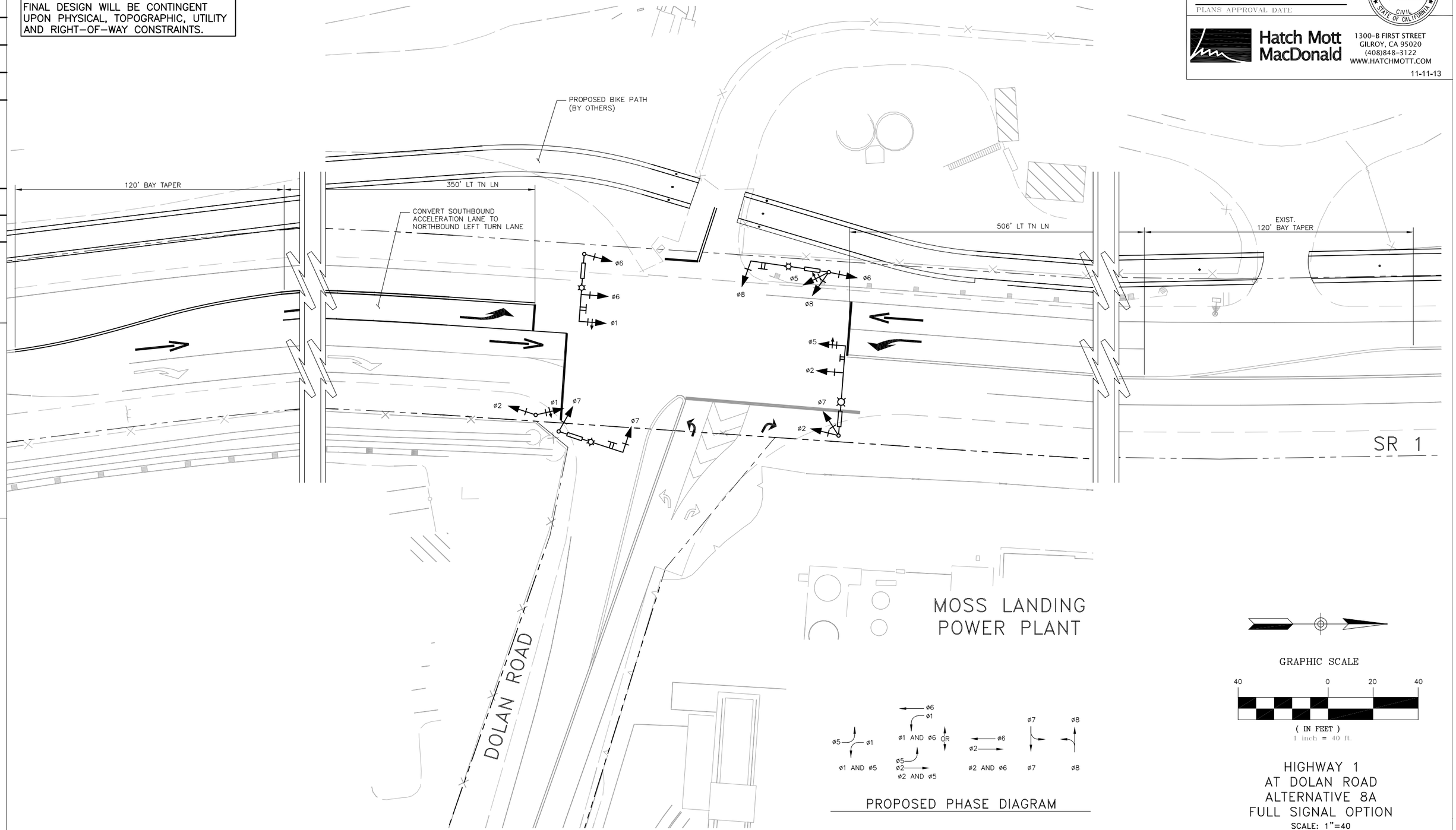

PROPOSED PHASE DIAGRAM

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

HIGHWAY 1
AT DOLAN ROAD
ALTERNATIVE 8A
FULL SIGNAL OPTION

SCALE: 1"=40

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX-XX.XX	3	4

REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER LEOPOLDO TRUTILLO 63950 Exp. 9-30-14 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

Hatch Mott MacDonald
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GILROY, CA 95020
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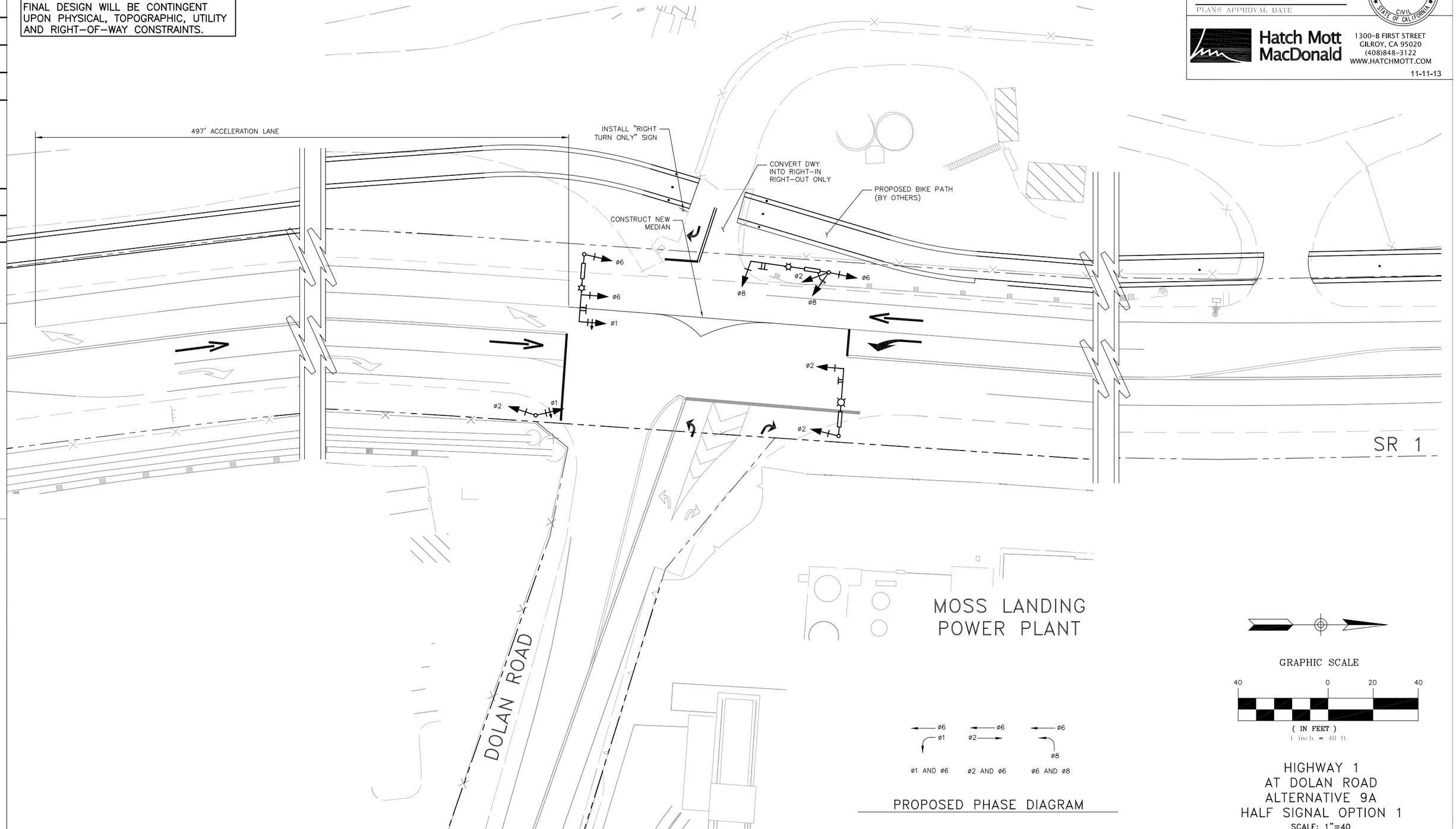

ø6 ø1 — ø1 AND ø6
ø6 ø2 — ø2 AND ø6
ø6 ø8 — ø6 AND ø8

PROPOSED PHASE DIAGRAM

GRAPHIC SCALE

40 0 20 40
(IN FEET)
1 inch = 40 ft.

HIGHWAY 1
AT DOLAN ROAD
ALTERNATIVE 9A
HALF SIGNAL OPTION 1
SCALE: 1"=40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX–XX.XX	4	4

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER LEOPOLDO TRUJILLO 63950 Exp. 9-30-14 CIVIL STATE OF CALIFORNIA

Hatch Mott MacDonald
1300-B FIRST STREET
GILROY, CA 95020
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11-11-13

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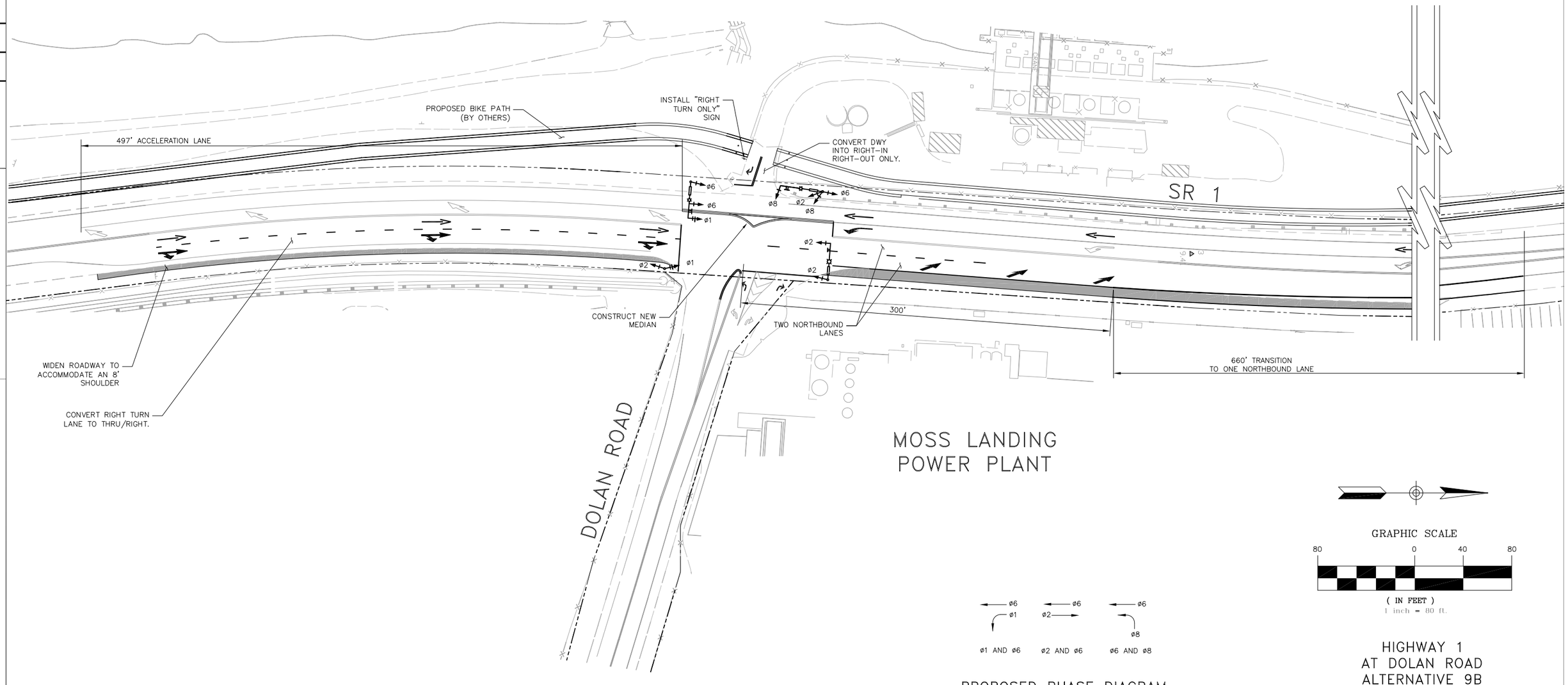


PROPOSED PHASE DIAGRAM

GRAPHIC SCALE

80 0 40 80

(IN FEET)
1 inch = 80 ft.

HIGHWAY 1
AT DOLAN ROAD
ALTERNATIVE 9B
HALF SIGNAL OPTION 2

SCALE: 1"=80

DATE | REVISED BY | DATE REVISED

CALCULATED/ DESIGNED BY | CHECKED BY

PROJECT ENGINEER

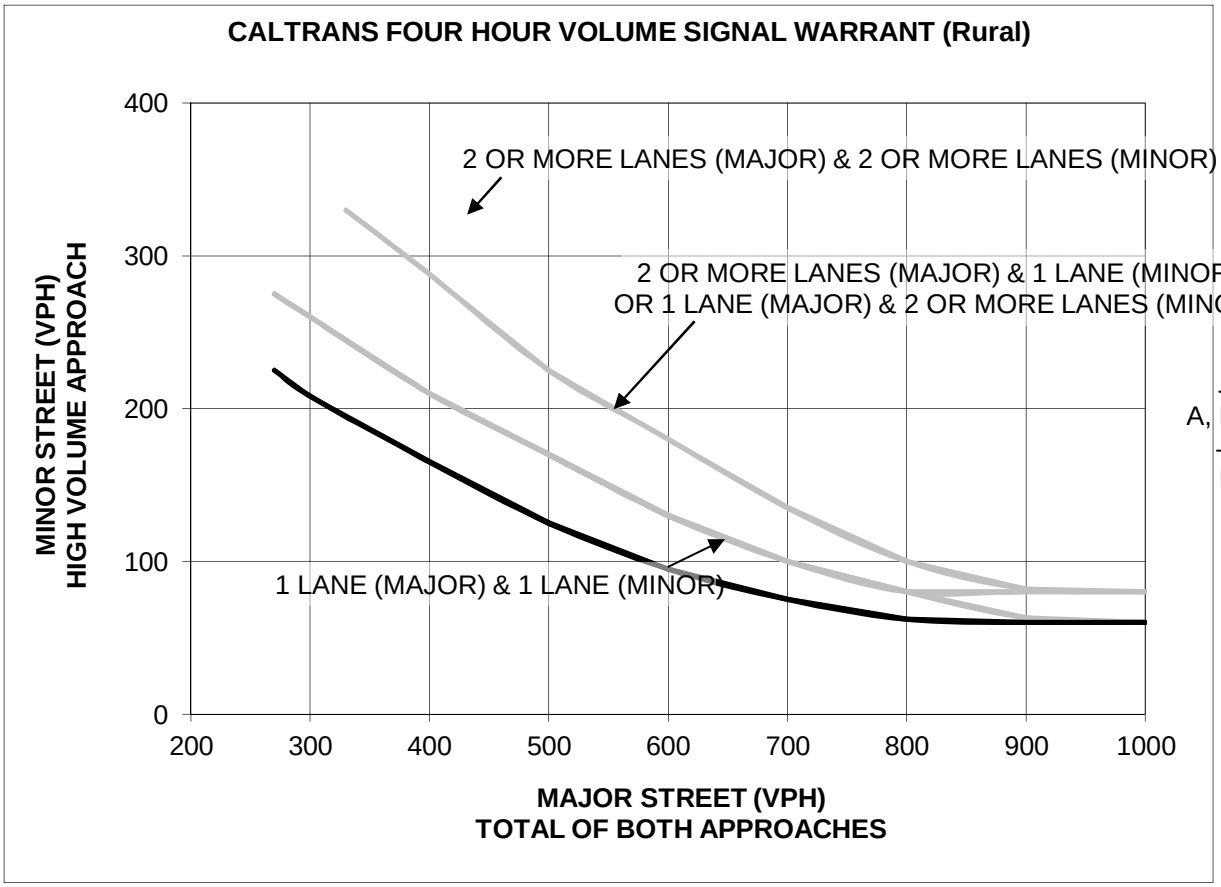
STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans

Appendix J

Signal Warrants

Warrant 2 - Four-Hour Warrant



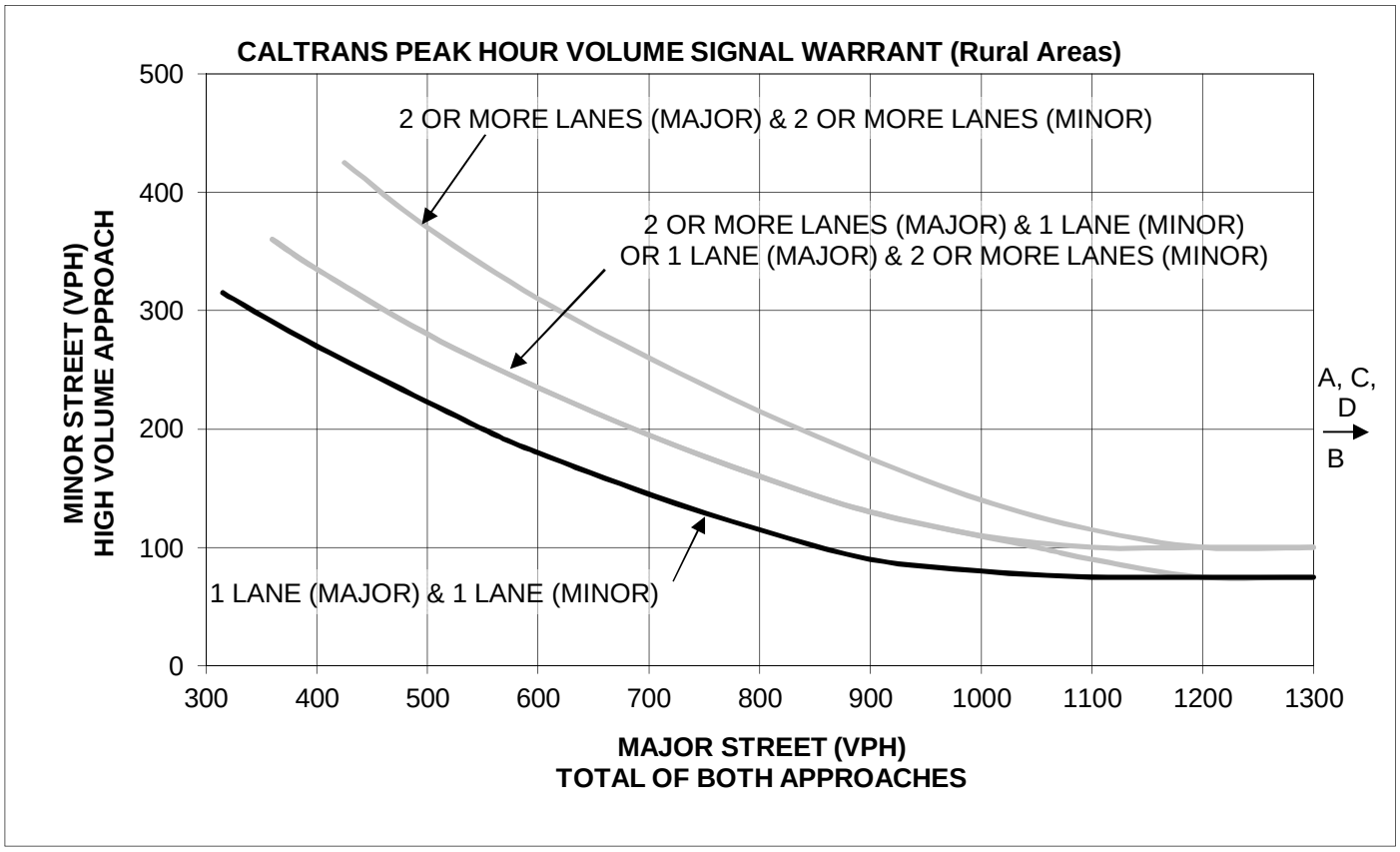
Scenario	SR 1	Dolan	Warrant
	North/South	East/West	Met?
A. 7:00 - 8:00 AM	1885	192	Yes
B. 8:00 - 9:00 AM	1727	190	Yes
C. 4:00 - 5:00 PM	2227	188	Yes
D. 5:00 - 6:00 PM	2133	164	Yes

Notes:

1. 80 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 60 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

Warrant 3A - Peak-Hour Warrant



Scenario	SR 1 North/South	Dolan East/West	Warrant Met?
A. Existing AM	1902	212	Yes
B. Existing PM	2227	188	Yes
C. Yr 2035 AM Peak	2340	240	Yes
D. Yr 2035 PM Peak	2715	215	Yes

Notes:

1. 100 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 75 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

Warrant 3 (Part B) - Peak Hour Delay
State Route 1 / Dolan Road

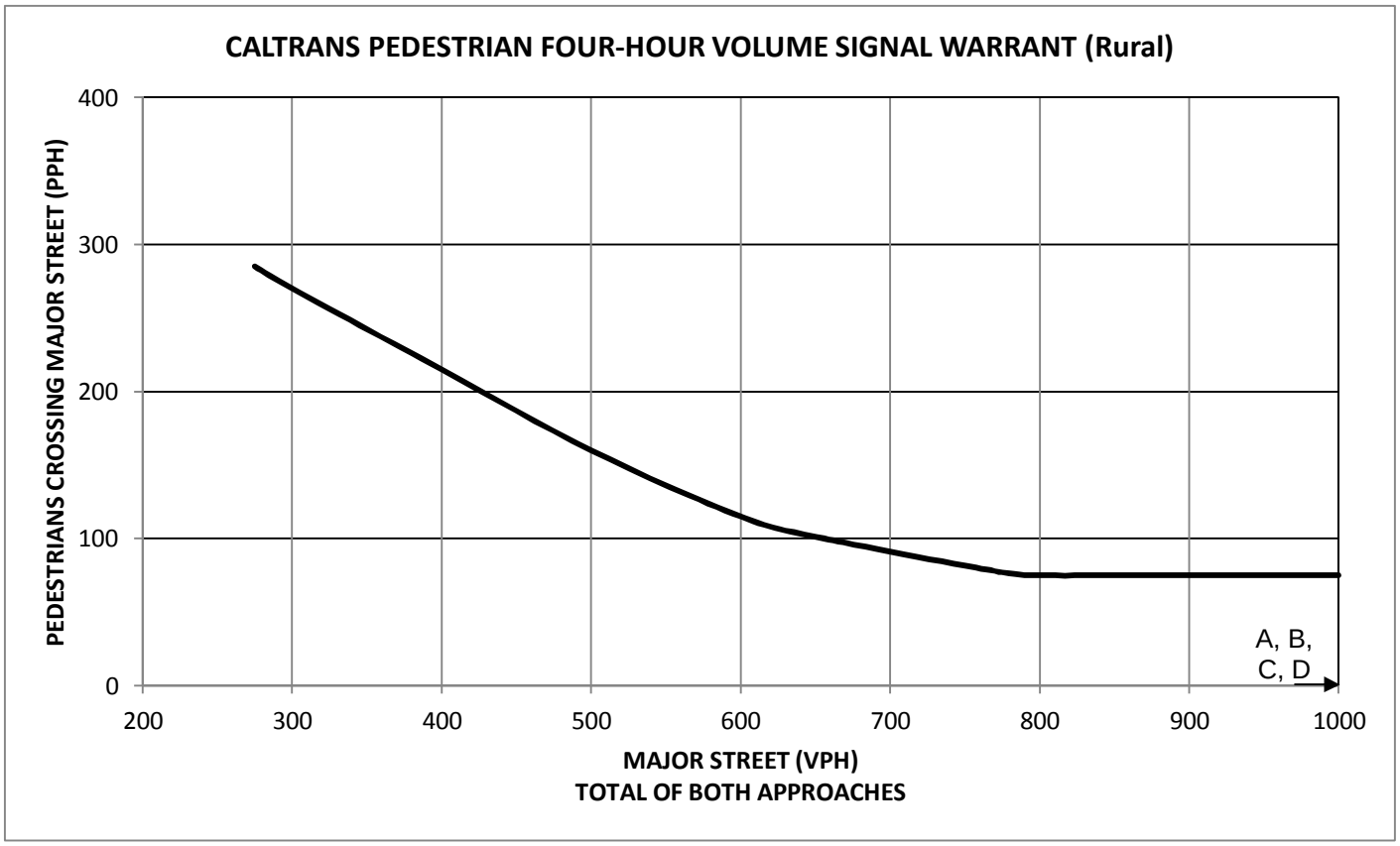
Number of Approaches to Intersection: 3 approaches **Minimum Entering Vehicles:** **650**

Total Entering Volumes:
Existing AM: 2114 vehicles
Existing PM: 2415 vehicles
Year 2035 AM: 2580 vehicles
Year 2035 PM: 2930 vehicles

Street	Direction	Scenario	Peak Hour	No. of Stopped Vehicles	Average Vehicle Delay (sec)	Total Vehicle Delay (sec)	Total Delay (hours)	Min. 4 Veh-Hrs of Delay? (Approach)	At least 100 Veh? (Approach)	At least 650 Veh? (Intersection)	Warrant Met?
Dolan	WB	Existing	AM	212	24.6	5215	1.45	NO	Yes	Yes	**NO**
Dolan	WB	Existing	PM	188	41.1	7727	2.15	NO	Yes	Yes	**NO**
Dolan	WB	Year 2035	AM	240	41.6	9984	2.77	NO	Yes	Yes	**NO**
Dolan	WB	Year 2035	PM	215	106.1	22812	6.34	Yes	Yes	Yes	**Yes**

Notes:
1. Warrant based on level of service calculations.
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.

Warrant 4 (Part A) - Pedestrian Four-Hour Volume (Rural)

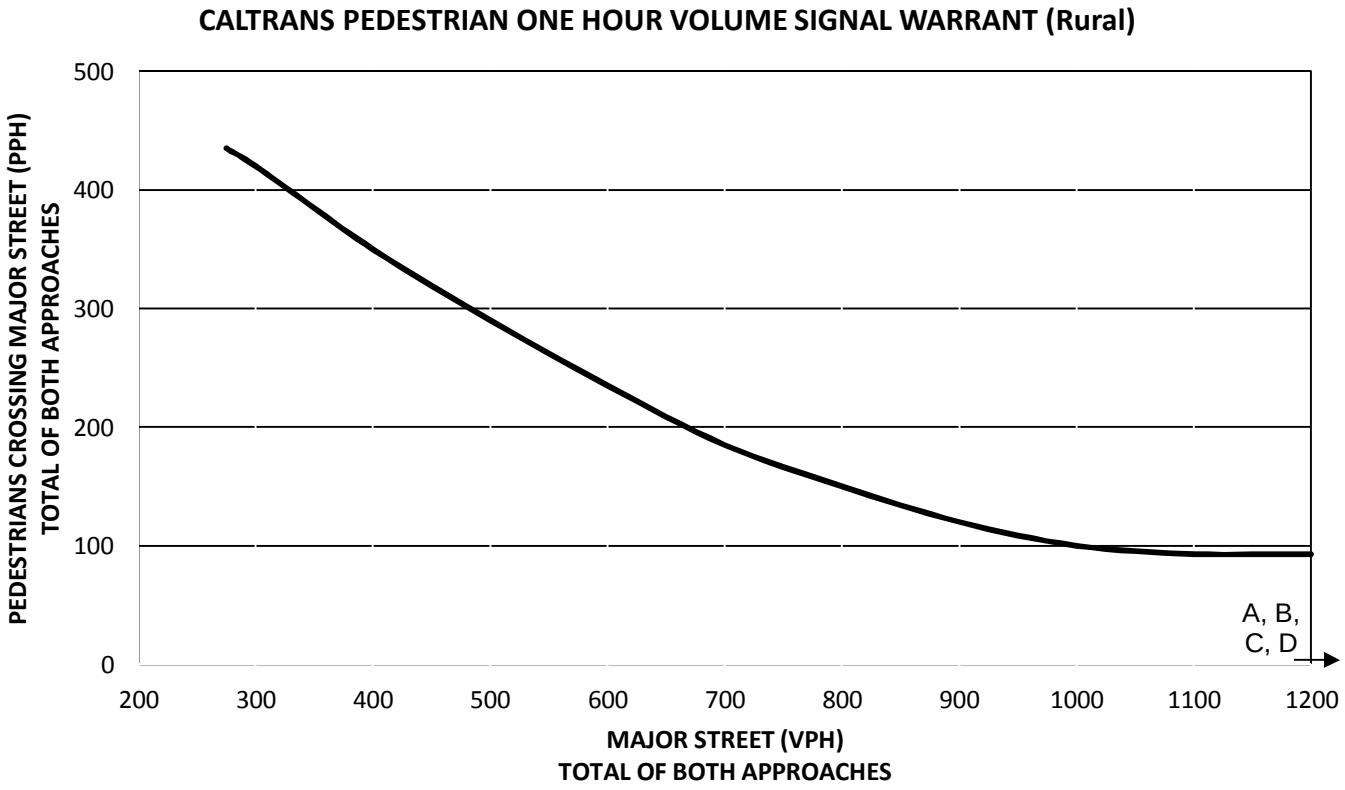


Scenario	SR 1 North/South (Vehicles)	Dolan East/West (Pedestrians)	Warrant Met? (Yes/No)
A. 7:00 - 8:00 AM	1885	0	No
B. 8:00 - 9:00 AM	1727	0	No
C. 4:00 - 5:00 PM	2227	0	No
D. 5:00 - 6:00 PM	2133	0	No

Notes:

1. 75 PPH applies as the lower threshold pedestrian volume.

Warrant 4 (Part B) - Pedestrian One-Hour Volume (Rural)



Scenario	SR 1 North/South (Vehicles)	Dolan East/West (Pedestrians)	Warrant Met? (Yes/No)
A. 7:00 - 8:00 AM	1885	0	No
B. 8:00 - 9:00 AM	1727	0	No
C. 4:00 - 5:00 PM	2227	0	No
D. 5:00 - 6:00 PM	2133	0	No

Notes:

1. 93 PPH applies as the lower threshold pedestrian volume.

Signal Warrant
Warrant 6 - Coordinated Signal System Is Warrant Met? **Yes**

Note: For overall warrant to be met, all parts must be satisfied.

				Yes	No	
Distance to Nearest Signal:						
North:	-	feet	Distance > 1000 feet?	✓		* Street reaches end before reaching another signal
South:	-	feet	Distance > 1000 feet?	✓		* Street reaches end before reaching another signal
East:	-	feet	Distance > 1000 feet?	✓		* Street reaches end before reaching another signal
West:	-	feet	Distance > 1000 feet?	✓		* Street reaches end before reaching another signal

On a two-way street, adjacent traffic control signals do not provide the ncessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation?	✓	

Signal Warrant
Warrant 7 - Crash Experience Is Warrant Met? **Yes**

Note: For overall warrant to met met, all parts must be satisfied.

	(Yes/No)	
Critical speed major street equal or greater than 40 mph?	No	**Rural**
In built-up area of isolated community of less than 10,000 pop.?	Yes	

	Yes	No
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency?	✓	
Five or more accidents within a 12-month period susceptible to correction by a traffic signal, and involving personal injury or property damage exceeding the requirements for a reportable crash?	✓	

80% of any of the following Warrants satisfied?	Warrant 1, Condition A?	N/A	
	OR Warrant 1, Condition B?	N/A	
	OR Warrant 4:		
	Ped Vol > 74 for any hour?		✓
	Ped Vol > 59 for any 4 hours?		✓

Signal Warrant
Warrant 8 - Roadway Network Is Warrant Met? **No**

Note: For overall warrant to met met, all parts must be satisfied.

			Yes	No
Typical Weekday Peak Hour:	2415 veh/hr	Volume > 1000 veh/hr?	✓	
AND 5-year projected traffic volumes meet at least one of Warrants 1, 2 & 3			✓	
OR Volumes on each of any 5 hours on a typical Saturday or Sunday > 1000 veh/h				N/A

Do both crossing streets meet any of the following characteristics?

Highway system serving as principal network for through traffic?	✓
OR Rural or Suburban Highway outside of, entering, or traversing a city	✓
OR Appears as a Major Route on an Official Plan	✓

Appendix K

Vehicle Queuing Calculations

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	168	735	42	109	1137
v/c Ratio	0.57	0.39	0.59	0.04	0.62	0.74
Control Delay	65.0	7.7	9.3	1.6	53.3	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	7.7	9.3	1.6	53.3	6.3
Queue Length 50th (ft)	31	0	196	0	59	162
Queue Length 95th (ft)	#83	50	298	9	113	292
Internal Link Dist (ft)	431		737			571
Turn Bay Length (ft)		60		430	550	
Base Capacity (vph)	97	452	1249	1074	198	1527
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.37	0.59	0.04	0.55	0.74

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL
Lane Group Flow (vph)	55	168	735	42	109
v/c Ratio	0.26	0.32	0.73	0.05	0.43
Control Delay	30.1	5.7	14.1	2.3	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	5.7	14.1	2.3	30.0
Queue Length 50th (ft)	18	0	187	0	34
Queue Length 95th (ft)	56	41	309	10	92
Internal Link Dist (ft)	310		395		
Turn Bay Length (ft)		60			550
Base Capacity (vph)	215	562	1405	1202	299
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.52	0.03	0.36

Intersection Summary

Lane Group	WBL	WBR	NBT	SBL
Lane Group Flow (vph)	55	168	777	109
v/c Ratio	0.17	0.28	0.42	0.30
Control Delay	19.1	4.3	8.9	18.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.1	4.3	8.9	18.4
Queue Length 50th (ft)	8	3	37	15
Queue Length 95th (ft)	43	32	135	69
Internal Link Dist (ft)	310		395	
Turn Bay Length (ft)		60		550
Base Capacity (vph)	402	727	2599	513
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.14	0.23	0.30	0.21

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	139	1128	80	147	940
v/c Ratio	0.57	0.34	0.91	0.07	0.77	0.62
Control Delay	65.0	9.5	25.3	1.3	65.7	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	9.5	25.3	1.3	65.7	3.9
Queue Length 50th (ft)	31	6	499	0	82	101
Queue Length 95th (ft)	#83	53	#877	12	#174	162
Internal Link Dist (ft)	431		737			571
Turn Bay Length (ft)		60		430	550	
Base Capacity (vph)	97	418	1236	1073	198	1527
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.33	0.91	0.07	0.74	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL
Lane Group Flow (vph)	55	139	1128	80	147
v/c Ratio	0.53	0.38	0.92	0.07	0.88
Control Delay	52.6	10.1	24.4	1.3	77.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	10.1	24.4	1.3	77.9
Queue Length 50th (ft)	24	7	386	0	64
Queue Length 95th (ft)	#71	49	#727	11	#164
Internal Link Dist (ft)	310		395		
Turn Bay Length (ft)		60			550
Base Capacity (vph)	103	368	1228	1067	168
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.38	0.92	0.07	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	SBL
Lane Group Flow (vph)	55	139	1208	147
v/c Ratio	0.23	0.28	0.59	0.48
Control Delay	26.8	10.0	10.1	27.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.8	10.0	10.1	27.2
Queue Length 50th (ft)	17	16	152	44
Queue Length 95th (ft)	48	52	217	99
Internal Link Dist (ft)	310		395	
Turn Bay Length (ft)		60		550
Base Capacity (vph)	241	566	2306	373
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.25	0.52	0.39

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	63	189	905	47	126	1384
v/c Ratio	0.65	0.43	0.71	0.04	0.79	0.91
Control Delay	72.5	8.2	11.4	1.3	72.8	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	8.2	11.4	1.3	72.8	15.8
Queue Length 50th (ft)	36	0	265	0	71	341
Queue Length 95th (ft)	#98	54	418	9	#164	#1022
Internal Link Dist (ft)	431		737			571
Turn Bay Length (ft)		60		430	550	
Base Capacity (vph)	97	438	1268	1090	163	1527
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.43	0.71	0.04	0.77	0.91

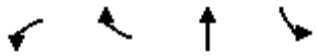
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL
Lane Group Flow (vph)	63	189	905	47	126
v/c Ratio	0.51	0.41	0.80	0.05	0.58
Control Delay	48.3	7.8	15.2	1.6	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	7.8	15.2	1.6	40.7
Queue Length 50th (ft)	24	3	239	0	46
Queue Length 95th (ft)	#83	50	414	9	#127
Internal Link Dist (ft)	310		395		
Turn Bay Length (ft)		60			550
Base Capacity (vph)	123	474	1383	1185	228
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.40	0.65	0.04	0.55

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	SBL
Lane Group Flow (vph)	63	189	952	126
v/c Ratio	0.24	0.34	0.58	0.40
Control Delay	24.2	8.3	11.3	22.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.2	8.3	11.3	22.7
Queue Length 50th (ft)	17	17	107	32
Queue Length 95th (ft)	53	60	174	83
Internal Link Dist (ft)	310		395	
Turn Bay Length (ft)		60		550
Base Capacity (vph)	284	682	2170	451
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.22	0.28	0.44	0.28

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	160	1387	93	165	1155
v/c Ratio	0.64	0.43	1.13	0.09	0.84	0.76
Control Delay	71.3	20.2	86.4	1.2	74.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	20.2	86.4	1.2	74.1	6.7
Queue Length 50th (ft)	35	40	~947	0	93	171
Queue Length 95th (ft)	#97	97	#1198	13	#202	311
Internal Link Dist (ft)	431		737			571
Turn Bay Length (ft)		60		430	550	
Base Capacity (vph)	97	378	1229	1072	199	1527
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.42	1.13	0.09	0.83	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

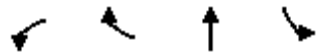
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	WBL	WBR	NBT	NBR	SBL
Lane Group Flow (vph)	62	160	1387	93	165
v/c Ratio	0.63	0.47	1.13	0.09	1.20
Control Delay	61.8	18.9	84.3	1.1	174.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	18.9	84.3	1.1	174.1
Queue Length 50th (ft)	27	32	~729	0	~87
Queue Length 95th (ft)	#82	82	#964	11	#197
Internal Link Dist (ft)	310		395		
Turn Bay Length (ft)		60			550
Base Capacity (vph)	99	338	1230	1072	137
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.63	0.47	1.13	0.09	1.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Lane Group	WBL	WBR	NBT	SBL
Lane Group Flow (vph)	62	160	1480	165
v/c Ratio	0.46	0.38	0.76	0.59
Control Delay	40.1	15.2	12.1	32.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.1	15.2	12.1	32.5
Queue Length 50th (ft)	22	32	195	56
Queue Length 95th (ft)	#68	74	281	#124
Internal Link Dist (ft)	310		395	
Turn Bay Length (ft)		60		550
Base Capacity (vph)	134	456	2108	311
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.46	0.35	0.70	0.53

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Appendix L

Improvement Alternative Construction Cost Estimates

PRELIMINARY ENGINEER'S ESTIMATE OF PROBABLE COST

Hatch Mott MacDonald

Estimator: JE
Checked By: LT
Date: 9-12-13

Project: Hwy 1 / Dolan Rd Improvements - No Signal
Proj. #: 280974

PAVING, SIGNAGE, & STRIPING IMPROVEMENTS

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Mobilization	LS	1	$10,000.00	$10,000.00
Traffic Control	LS	1	$10,000.00	$10,000.00
Clearing & Grubbing	LS	1	$2,000.00	$2,000.00
Earthwork	LS	1	$2,000.00	$2,000.00
Erosion Control	LS	1	$5,000.00	$5,000.00
Trim Existing Trees / Vegetation	LS	1	$4,000.00	$4,000.00
Sawcut	LF	1200	$2.00	$2,400.00
Remove Existing Pavement	SF	1200	$4.00	$4,800.00
Remove Existing Sign and Post	EA	1	$200.00	$200.00
Remove Traffic Stripe 4"	LF	1350	$3.00	$4,050.00
Install New Pavement	SF	9000	$12.00	$108,000.00
Install New Roadside Sign	EA	3	$200.00	$600.00
Install Thermoplastic Striping - Detail 9	LF	510	$2.00	$1,020.00
Install Thermoplastic Striping - Detail 27B	LF	1410	$2.00	$2,820.00
Pavement Marking (Legend & Arrows)	SF	355	$10.00	$3,550.00
PAVING, SIGNAGE, & STRIPING SUB-TOTAL				**$160,440.00**

SIGNAL & LIGHTING

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Install New Flashing Yellow Beacon Assembly	EA	3	$5,000.00	$15,000.00
Install Street Lighting	EA	2	$4,000.00	$8,000.00
Conductors & Conduit	LS	1	$10,000.00	$10,000.00
PG&E Electrical Service Connection	EA	1	$5,000.00	$5,000.00
SIGNAL & LIGHTING SUB-TOTAL:				**$23,000.00**

PROJECT SUB-TOTAL:		**$183,440.00**
CONTINGENCIES	20.00%	$36,688.00
TOTAL		**$220,128.00**

PRELIMINARY ENGINEER'S ESTIMATE OF PROBABLE COST

Hatch Mott MacDonald

Estimator: JE
Checked By: LT
Date: 9-12-13

Project: Hwy 1 / Dolan Rd Improvements - Full Signal
Proj. #: 280974

PAVING, SIGNAGE, & STRIPING IMPROVEMENTS

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Mobilization	LS	1	$10,000.00	$10,000.00
Traffic Control	LS	1	$5,000.00	$5,000.00
Remove Traffic Stripe 4"	LF	1720	$3.00	$5,160.00
Remove Existing Pavement Legend / Arrows	EA	11	$200.00	$2,200.00
Install Thermoplastic Striping - Detail 22	LF	500	$2.00	$1,000.00
Install Thermoplastic Striping - Detail 38	LF	365	$2.00	$730.00
Install Thermoplastic Striping - 12" White	LF	90	$6.00	$540.00
Pavement Marking (Legend & Arrows)	SF	335	$10.00	$3,350.00
PAVING, SIGNAGE, & STRIPING SUB-TOTAL				**$27,980.00**

SIGNAL & LIGHTING

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Luminaire (250 W)	EA	4	$500.00	$2,000.00
Controller Cabinet & Equipment	EA	1	$12,000.00	$12,000.00
Controller Foundation	EA	1	$1,500.00	$1,500.00
Electrical Service Type III	EA	1	$5,000.00	$5,000.00
Service Foundation	EA	1	$1,000.00	$1,000.00
Conductors & Conduit	LS	1	$15,000.00	$15,000.00
Video Detection System	LS	1	$35,000.00	$35,000.00
Advance Detection Loops	EA	6	$500.00	$3,000.00
Pole (Type 1A)	EA	1	$800.00	$800.00
Signal Pole with Mast Arm	EA	4	$8,000.00	$32,000.00
Pole Foundation (Type 1A)	EA	1	$1,000.00	$1,000.00
Signal Pole with Mast Arm Foundation	EA	4	$5,000.00	$20,000.00
Pull Box #5	EA	3	$400.00	$1,200.00
Pull Box #6	EA	1	$600.00	$600.00
12" Signal Head Backplates	EA	15	$300.00	$4,500.00
Internally Illuminated Street Name Sign (IISNS)	EA	4	$1,800.00	$7,200.00
Signal Head Mounts	EA	11	$400.00	$4,400.00
Signal Heads 12"-3 Sec (LED)	EA	15	$1,800.00	$27,000.00
Sign (Mast-arm Mounted)	EA	4	$400.00	$1,600.00
PG&E Electrical Service Connection	EA	1	$5,000.00	$5,000.00
SIGNAL & LIGHTING SUB-TOTAL:				**$179,800.00**

PROJECT SUB-TOTAL:		**$207,780.00**
CONTINGENCIES	20.00%	$41,556.00
TOTAL		**$249,336.00**

PRELIMINARY ENGINEER'S ESTIMATE OF PROBABLE COST

Hatch Mott MacDonald

Estimator: JE
Checked By: LT
Date: 9-12-13

Project: Hwy 1 / Dolan Rd Improvements - Half Signal with 1 NB Thru
Proj. #: 280974

PAVING, SIGNAGE, & STRIPING IMPROVEMENTS

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Mobilization	LS	1	$10,000.00	$10,000.00
Traffic Control	LS	1	$5,000.00	$5,000.00
Sawcut	LF	260	$2.00	$520.00
Remove Existing Pavement	SF	400	$4.00	$1,600.00
Remove Traffic Stripe 4"	LF	360	$3.00	$1,080.00
Remove Existing Pavement Legend / Arrows	EA	9	$200.00	$1,800.00
Install New Pavement	SF	120	$12.00	$1,440.00
Install Thermoplastic Striping - Detail 22	LF	25	$2.00	$50.00
Install Thermoplastic Striping - 12" White	LF	70	$6.00	$420.00
Pavement Marking (Legend & Arrows)	SF	273	$10.00	$2,730.00
Construct New Median	SF	140	$12.00	$1,680.00
PAVING, SIGNAGE, & STRIPING SUB-TOTAL				**$26,320.00**

SIGNAL & LIGHTING

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Luminaire (250 W)	EA	3	$500.00	$1,500.00
Controller Cabinet & Equipment	EA	1	$12,000.00	$12,000.00
Controller Foundation	EA	1	$1,500.00	$1,500.00
Electrical Service Type III	EA	1	$5,000.00	$5,000.00
Service Foundation	EA	1	$1,000.00	$1,000.00
Conductors & Conduit	LS	1	$14,000.00	$14,000.00
Video Detection System	LS	1	$35,000.00	$35,000.00
Advance Detection Loops	EA	5	$500.00	$2,500.00
Pole (Type 1A)	EA	1	$800.00	$800.00
Signal Pole with Mast Arm	EA	3	$12,000.00	$36,000.00
Pole Foundation (Type 1A)	EA	1	$1,000.00	$1,000.00
Signal Pole with Mast Arm Foundation	EA	3	$5,000.00	$15,000.00
Pull Box #5	EA	3	$400.00	$1,200.00
Pull Box #6	EA	1	$600.00	$600.00
12" Signal Head Backplates	EA	11	$300.00	$3,300.00
Internally Illuminated Street Name Sign (IISNS)	EA	3	$1,800.00	$5,400.00
Signal Head Mounts	EA	8	$400.00	$3,200.00
Signal Heads 12"-3 Sec (LED)	EA	11	$1,800.00	$19,800.00
Sign (Mast-arm Mounted)	EA	3	$400.00	$1,200.00
PG&E Electrical Service Connection	EA	1	$3,000.00	$3,000.00
SIGNAL & LIGHTING SUB-TOTAL:				**$163,000.00**

PROJECT SUB-TOTAL:		**$189,320.00**
CONTINGENCIES	20.00%	$37,864.00
TOTAL		**$227,184.00**

PRELIMINARY ENGINEER'S ESTIMATE OF PROBABLE COST

Hatch Mott MacDonald

Estimator: JE
Checked By: LT
Date: 9-12-13

Project: Hwy 1 / Dolan Rd Improvements - Half Signal with 2 NB Thru
Proj. #: 280974

PAVING, SIGNAGE, & STRIPING IMPROVEMENTS

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Mobilization	LS	1	$15,000.00	$15,000.00
Traffic Control	LS	1	$10,000.00	$10,000.00
Clearing & Grubbing	LS	1	$2,000.00	$2,000.00
Earthwork	LS	1	$4,000.00	$4,000.00
Erosion Control	LS	1	$8,000.00	$8,000.00
Sawcut	LF	1660	$2.00	$3,320.00
Remove Existing Pavement	SF	1800	$4.00	$7,200.00
Remove Traffic Stripe 4"	LF	1780	$3.00	$5,340.00
Remove Traffic Stripe 12"	LF	80	$5.00	$400.00
Remove Existing Pavement Legend / Arrows	EA	9	$200.00	$1,800.00
Install New Pavement	SF	8020	$12.00	$96,240.00
Install Thermoplastic Striping - Detail 9	LF	615	$2.00	$1,230.00
Install Thermoplastic Striping - Detail 22	LF	25	$2.00	$50.00
Install Thermoplastic Striping - Detail 27B	LF	900	$2.00	$1,800.00
Install Thermoplastic Striping - Detail 29	LF	30	$2.00	$60.00
Install Thermoplastic Striping - 12" White	LF	130	$6.00	$780.00
Pavement Marking (Legend & Arrows)	SF	567	$10.00	$5,670.00
Construct New Median	SF	140	$12.00	$1,680.00
PAVING, SIGNAGE, & STRIPING SUB-TOTAL				**$162,890.00**

SIGNAL & LIGHTING

ITEM	UNIT	QTY	UNIT PRICE	TOTAL
Luminaire (250 W)	EA	3	$500.00	$1,500.00
Controller Cabinet & Equipment	EA	1	$12,000.00	$12,000.00
Controller Foundation	EA	1	$1,500.00	$1,500.00
Electrical Service Type III	EA	1	$5,000.00	$5,000.00
Service Foundation	EA	1	$1,000.00	$1,000.00
Conductors & Conduit	LS	1	$14,000.00	$14,000.00
Video Detection System (all equipment)	LS	1	$35,000.00	$35,000.00
Advance Detection Loops	EA	5	$500.00	$2,500.00
Pole (Type 1A)	EA	1	$800.00	$800.00
Signal Pole with Mast Arm	EA	3	$12,000.00	$36,000.00
Pole Foundation (Type 1A)	EA	1	$1,000.00	$1,000.00
Signal Pole with Mast Arm Foundation	EA	3	$5,000.00	$15,000.00
Pull Box #5	EA	3	$400.00	$1,200.00
Pull Box #6	EA	1	$600.00	$600.00
12" Signal Head Backplates	EA	11	$300.00	$3,300.00
Internally Illuminated Street Name Sign (IISNS)	EA	3	$1,800.00	$5,400.00
Signal Head Mounts	EA	8	$400.00	$3,200.00
Signal Heads 12"-3 Sec (LED)	EA	11	$1,800.00	$19,800.00
Sign (Mast-arm Mounted)	EA	3	$400.00	$1,200.00
PG&E Electrical Service Connection	EA	1	$3,000.00	$3,000.00
SIGNAL & LIGHTING SUB-TOTAL:				**$163,000.00**

PROJECT SUB-TOTAL:		**$325,890.00**
CONTINGENCIES	20.00%	$65,178.00
TOTAL		**$391,068.00**

PRELIMINARY ENGINEER'S ESTIMATE OF PROBABLE COST

Hatch Mott MacDonald

Estimator: FC
Checked By: LT
Date: 9-12-13

Project: Hwy 1 / Dolan Rd Improvements - Roundabout
Proj. #: 280974

ROUNDABOUT OPTION

ITEM	UNIT	LENGTH	WIDTH	QTY	UNIT PRICE	TOTAL
Mobilization	LS			1	$20,000	$20,000.00
Traffic Control	LS			1	$15,000	$15,000.00
Clearing & Grubbing	LS			1	$20,000	$20,000.00
Earthwork	LS			1	$15,000	$15,000.00
Erosion control	LS			1	$10,000	$10,000.00
Remove Existing Pavement	SF	900	55	49,500	$5	$247,500.00
Roundabout Construction	LS			1	$500,000	$500,000.00
Roadway Striping & Signage	LF	1,800		1,800	$4	$7,200.00
CONSTRUCTION SUB-TOTAL:						**$834,700.00**

PROJECT SUB-TOTAL:		**$799,700.00**
CONTINGENCIES	20.00%	$159,940.00
TOTAL		**$959,640.00**

Notes:
1. This estimate assumes a 230' diameter 2-lane roundabout.
2. This estimate does not include costs for major utility relocation and right-of-way costs.

Appendix M

Initial Study –
State Route 1 – Dolan Road Improvements

Planning for Success.

INITIAL STUDY

State Route 1 – Dolan Road Improvements

PREPARED FOR

Monterey County Resource Management Agency
Department of Public Works

November 11, 2013

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

301 Lighthouse Avenue Suite C Monterey California 93940 Tel 831·649·1799 Fax 831·649·8399
www.emcplanning.com

State Route 1 – Dolan Road Improvements

Initial Study

PREPARED FOR

Patricia Lopez, Project Manager
Monterey County Resource Management Agency
Department of Public Works
168 West Alisal Street, 2nd Floor
Salinas, CA 93901
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PREPARED BY

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james@emcplanning.com
www.emcplanning.com

November 11, 2013

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Figures

A. BACKGROUND

Project Title	State Route 1/Dolan Road Intersection Improvements
Lead Agency Contact Person and Phone Number	Monterey County Resources Management Agency – Department of Public Works Patricia A. Lopez, Project Manager (831) 755-4800
Date Prepared	Admin Draft September 12, 2013
Study Prepared by	EMC Planning Group Inc. 301 Lighthouse Avenue, Suite C Monterey, CA 93940 Richard James, AICP, Principal Planner Andrea Edwards, Associate Biologist
Project Location	Moss Landing, Monterey County, California
Project Sponsor Name and Address	Monterey County Resources Management Agency – Department of Public Works 168 West Alisal Street, 2nd Floor, Salinas, CA 93901
General Plan Designation	Not applicable
Zoning	Not applicable

Setting

State Route 1 in Moss Landing is a two-lane conventional highway that provides local access within northern Monterey County and a regional connection between the coastal areas of Monterey and Santa Cruz counties. Within the Moss Landing community area, the highway intersects with Jetty Road, Dolan Road, and the north and south ends of Moss Landing Road. In addition, there are several driveways serving businesses and other uses adjacent to the highway. State Route 1 bypasses the historic downtown area of Moss Landing, but runs adjacent to several notable landmarks and features, including the power plant, former refractory complex, the harbor, Elkhorn Slough, and several shops and restaurants. Figure 1, Location Map, shows the location of the proposed project. Figure 2, Project Vicinity, shows the existing conditions along State Route 1 between the Elkhorn Slough highway bridge and the northern Moss Landing Road intersection. Figure 3, Site Photographs, shows representative photographs of the existing conditions in the project vicinity.

Particularly in the summer months, State Route 1 is heavily congested through Moss Landing, and turning movements at the Dolan Road intersection are difficult. Research conducted by Hatch Mott McDonald indicates that, for the five-year period from 2007 through 2011, the State

Route 1/Dolan Road intersection had a collision rate of nearly three times the state average for similar intersections (i.e. rate of 0.839 collisions per million entering vehicles, compared to the statewide average of 0.300 collisions per million entering vehicles for similar intersections). During this five-year time period, 54 collisions occurred within 500 feet of the intersection. The two most prevalent collision types at the intersection were rear-end collisions (eight on State Route 1, 16 on Dolan Road, 24 total) and collisions where drivers failed to yield right-of-way (eight on State Route 1, 15 on Dolan Road, 23 total). All of the "failure to yield" collisions involved vehicles turning left from State Route 1 and/or Dolan Road.

The Moss Landing Community Plan, one of Monterey County's local coastal programs, was adopted in 1982 and is currently being updated. The draft Moss Landing Community Plan update proposes major long-term improvements at the State Route 1 intersections with Dolan Road and Moss Landing Road.

Description of Project

The Monterey County Resources Management Agency – Department of Public Works is seeking low-cost and effective interim (short-term) safety and operational improvements for the intersection of State Route 1 and Dolan Road (hereinafter "intersection") in Moss Landing. A study area was established that extended from south of the northern Moss Landing Road intersection to near the Elkhorn Slough highway bridge, and eastward on Dolan Road. The study area is illustrated in Figure 4, Study Area. Within the study area, four potential improvement scenarios have been proposed, and are described below. The four alternatives as a whole will be referred to as the "Proposed Project." Conceptual diagrams of the improvement alternatives are presented in Figures 5 through 8, Alternative 2-3-4 Improvements, Alternative 8A Improvements, Alternative 9A Improvements, and Alternative 9B Improvements.

2-3-4: Un-signalized Improvements. This option includes roadway signing and striping improvements, flashing beacons, sight distance improvements, and a new northbound right turn acceleration lane. Roadway widening would occur along the State Route 1 power plant frontage to create an acceleration lane of about 550 feet. Street lights would be added at the southeast northeast corners.

8A: "Full" traffic signal with no additional through lanes. This option includes a full signalization of the intersection, with signal lights controlling movement on all lanes in both directions of State Route 1 and cross traffic on Dolan Road and the driveway serving the Moss Landing Power Plant's harbor-side facilities. The State Route 1 lane configuration would remain essentially unchanged. Street lights would be installed on each signal pole.

9A: "Half" traffic signal with no additional through lanes. This option includes signal lights controlling movement in both directions on State Route 1, and right and left turns from Dolan

Road onto State Route 1, and a median barrier to restrict access at the driveway serving the Moss Landing Power Plant's harbor-side facilities. The outside lane of southbound State Route 1 would have a continuous green light. Access to the driveway would be limited to right turns in and right turns out from/to southbound State Route 1. The State Route 1 lane configuration would remain essentially unchanged. Street lights would be installed on each signal pole.

9B: "Half" traffic signal with second northbound through lane. This option includes signal lights controlling movement in both directions on State Route 1, and right and left turns from Dolan Road onto State Route 1, and a median barrier to restrict access at the driveway serving the Moss Landing Power Plant's harbor-side facilities. The outside lane of southbound State Route 1 would have a continuous green light. Access to the driveway would be limited to right turn in and right turns out from/to southbound State Route 1. This option includes roadway widening along the State Route 1 Moss Landing Power Plant site frontage to convert the existing northbound right turn lane into an additional through lane (about 450 feet to the south of Dolan Road and about 150 feet north of Dolan Road). Street lights would be installed on each signal pole.

Improvement Options Considered but Not Selected

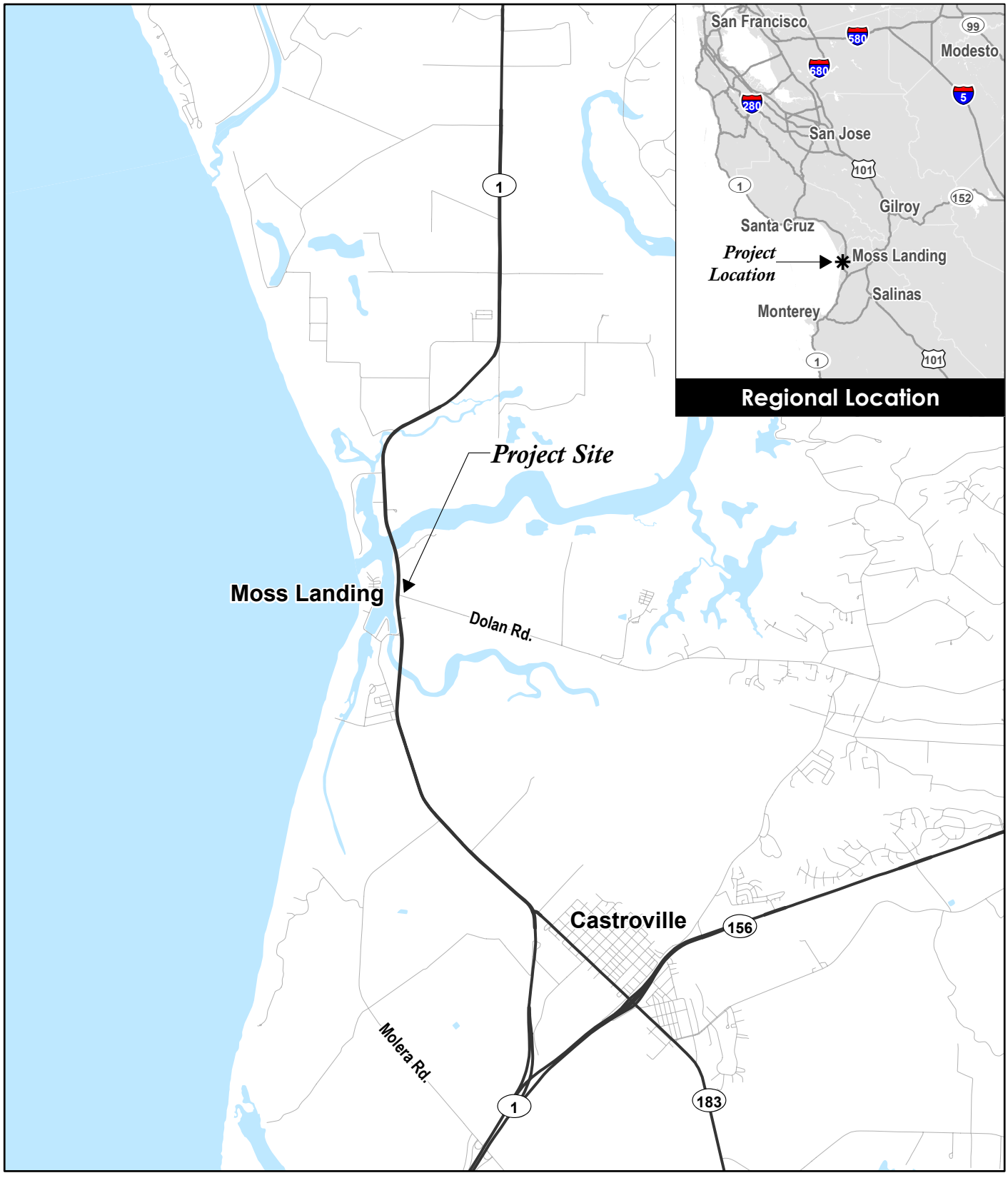
Several other improvement options were considered initially, but not fully developed into alternatives. These included a roundabout, widening existing lanes and shoulders, adding new through lanes in each direction, and re-aligning Dolan Road to the south to a four-legged intersection with Moss Landing Road. The roundabout is included as an ultimate improvement option in the draft Moss Landing Community Plan update, and was developed to a concept-drawing level for this study. To provide adequate curve radii for highway traffic, the roundabout was determined to extend beyond the Caltrans' right-of-way and require partial removal of a building on the Moss Landing Power Plant site. Therefore, the roundabout alternative was not selected for consideration as a short-term improvement.

Construction

Construction of the proposed project would disturb an area estimated to extend up to 20 feet beyond the existing edge of pavement, primarily on the eastern side of the highway. The precise extent of disturbance to the side of the existing highway depends on the alternative and the specific improvements within each location. The available Caltrans right-of-way area between the edge of pavement and adjoining property on the eastern side of the highway varies, but is generally in the range of 25 to 30 feet north of Dolan Road and 15 to 20 feet to the south of Dolan Road. There is up to 50 feet of available space to the west of the highway. Existing paved shoulders are generally eight to nine feet wide, occasionally more or less wide.

Other Public Agencies Whose Approval is Required

California Department of Transportation (Caltrans) – Road improvements within State Highway right-of-way



Source: ESRI Streetmap North America 2010

Figure 1

Location Map

State Route 1 - Dolan Road Improvements Initial Study

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0 500 feet

Source: Google Earth 2012

Figure 2

Project Vicinity

State Route 1 - Dolan Road Improvements Initial Study

E M C

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1 State Route 1 north of Dolan Road showing trees near power plant

2 Power plant driveway at west side of intersection

3 State Route 1 northern intersection with Moss Landing Road

4 State Route 1/Dolan Road intersection

5 Dolan Road view eastward

6 Dolan Road view westward approaching State Route 1

Source: Google Earth 2012

Figure 3

Site and Vicinity Photographs

State Route 1 - Dolan Road Improvements Initial Study

E M C

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0 500 feet

Study Area

Source: Google Earth 2012

Figure 4

Study Area

State Route 1 - Dolan Road Improvements Initial Study

E M C

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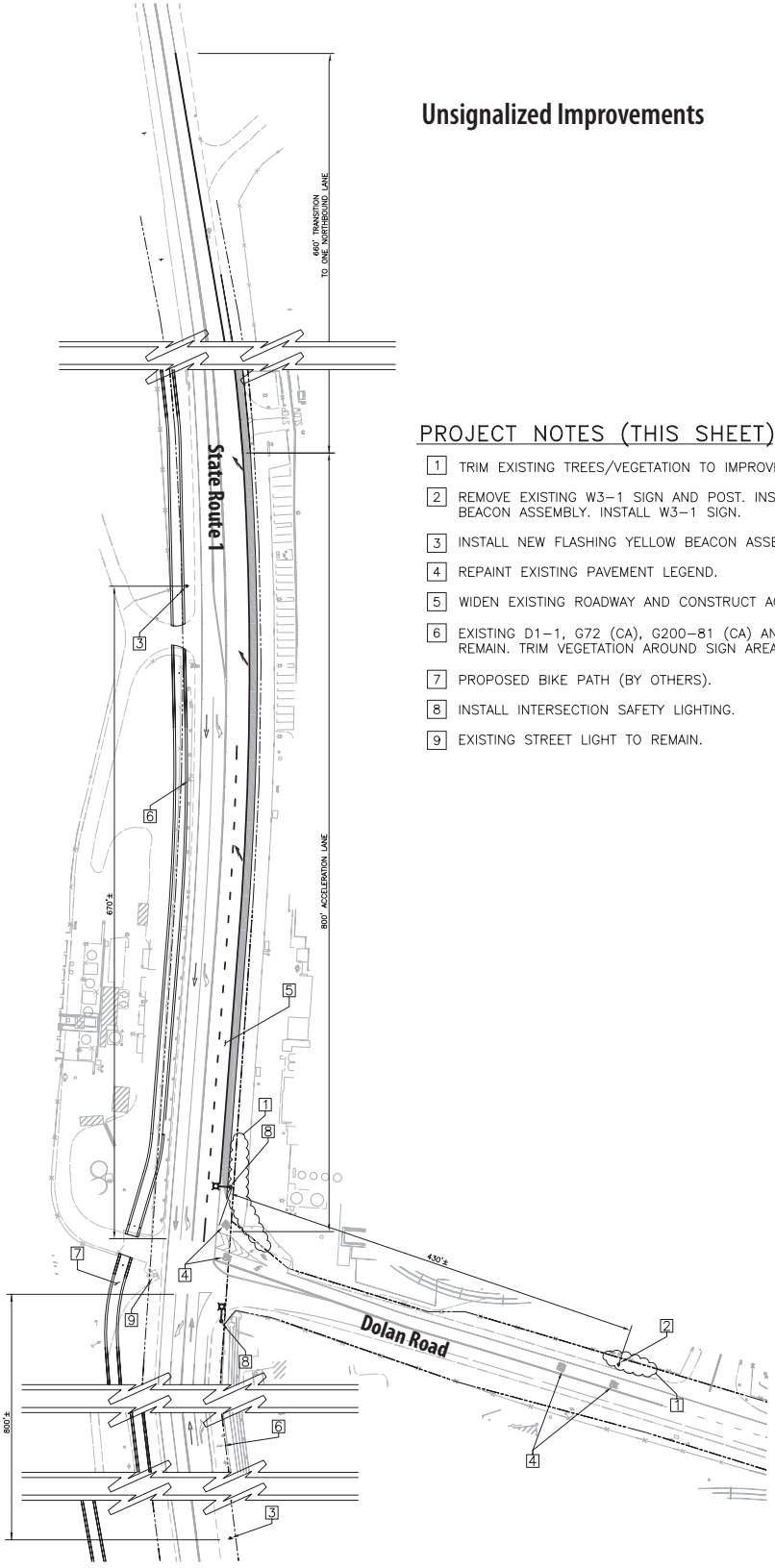

Source: Hatch Mott MacDonald 2013

Figure 5

Alternative 2-3-4 Improvements

State Route 1 - Dolan Road Improvements Initial Study

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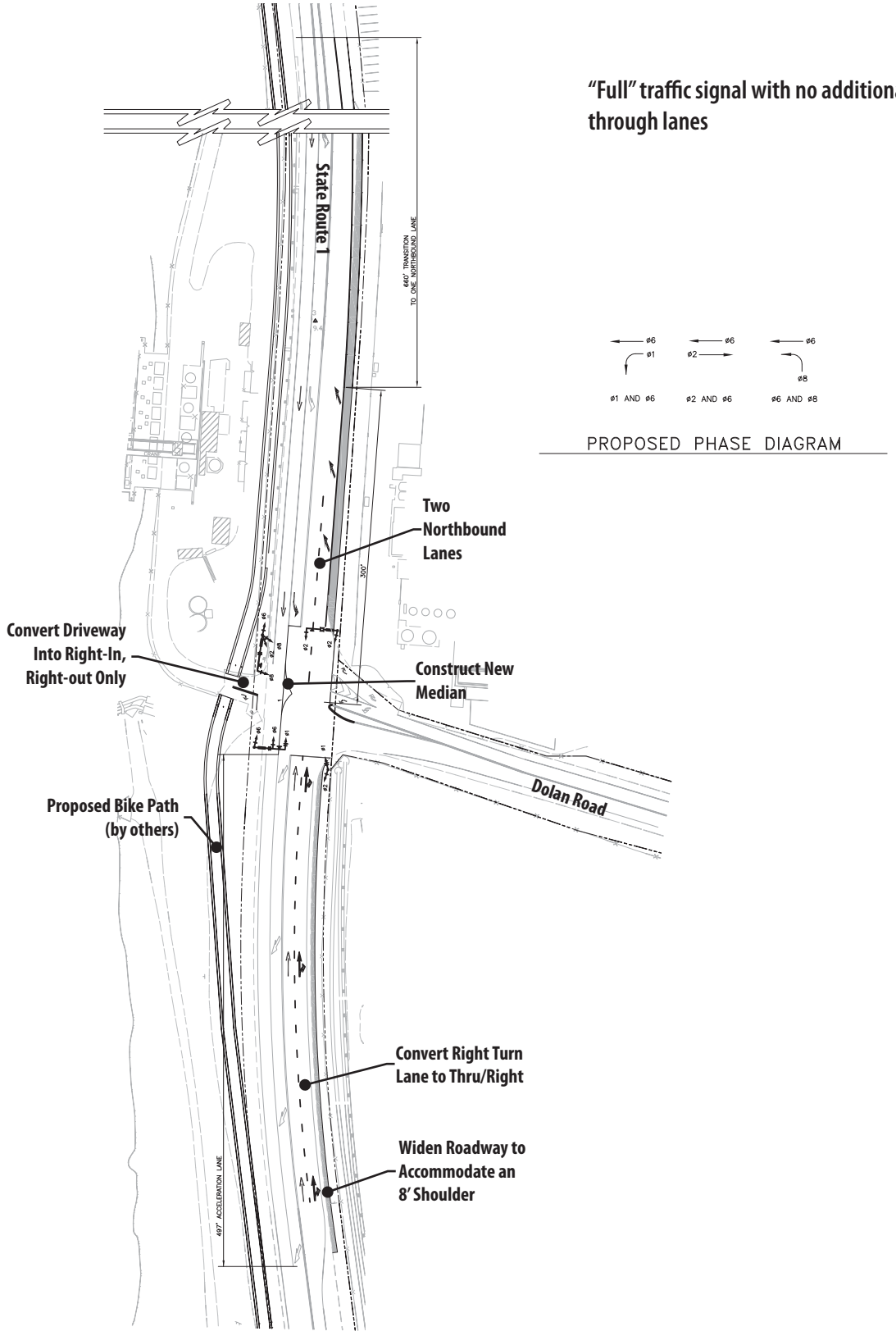

0 150 feet

Source: Hatch Mott MacDonald 2013

Figure 6

Alternative 8A Improvements

State Route 1 - Dolan Road Improvements Initial Study

E M C

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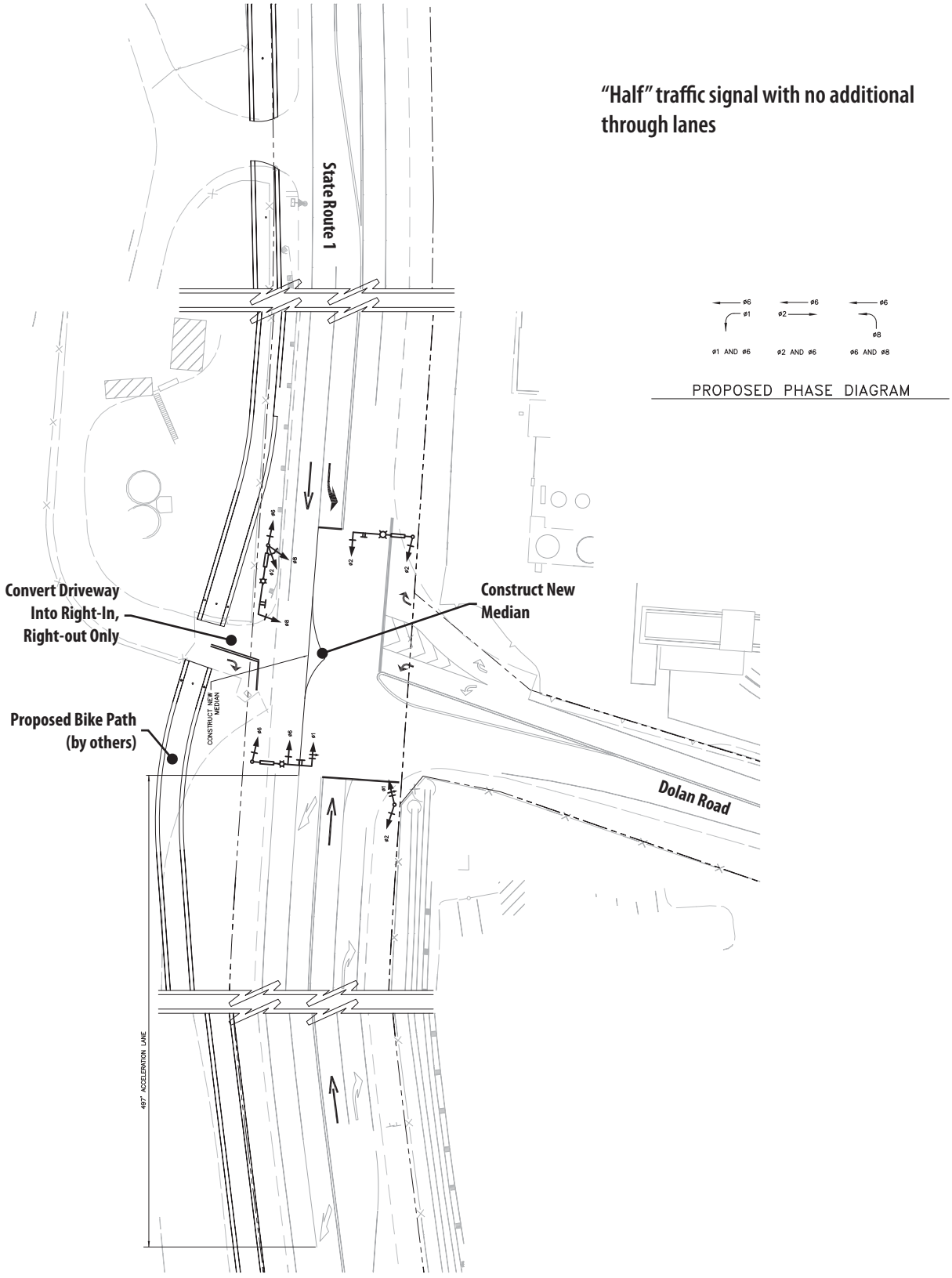

0 80 feet

Source: Hatch Mott MacDonald 2013

Figure 7

Alternative 9A Improvements

State Route 1 - Dolan Road Improvements Initial Study

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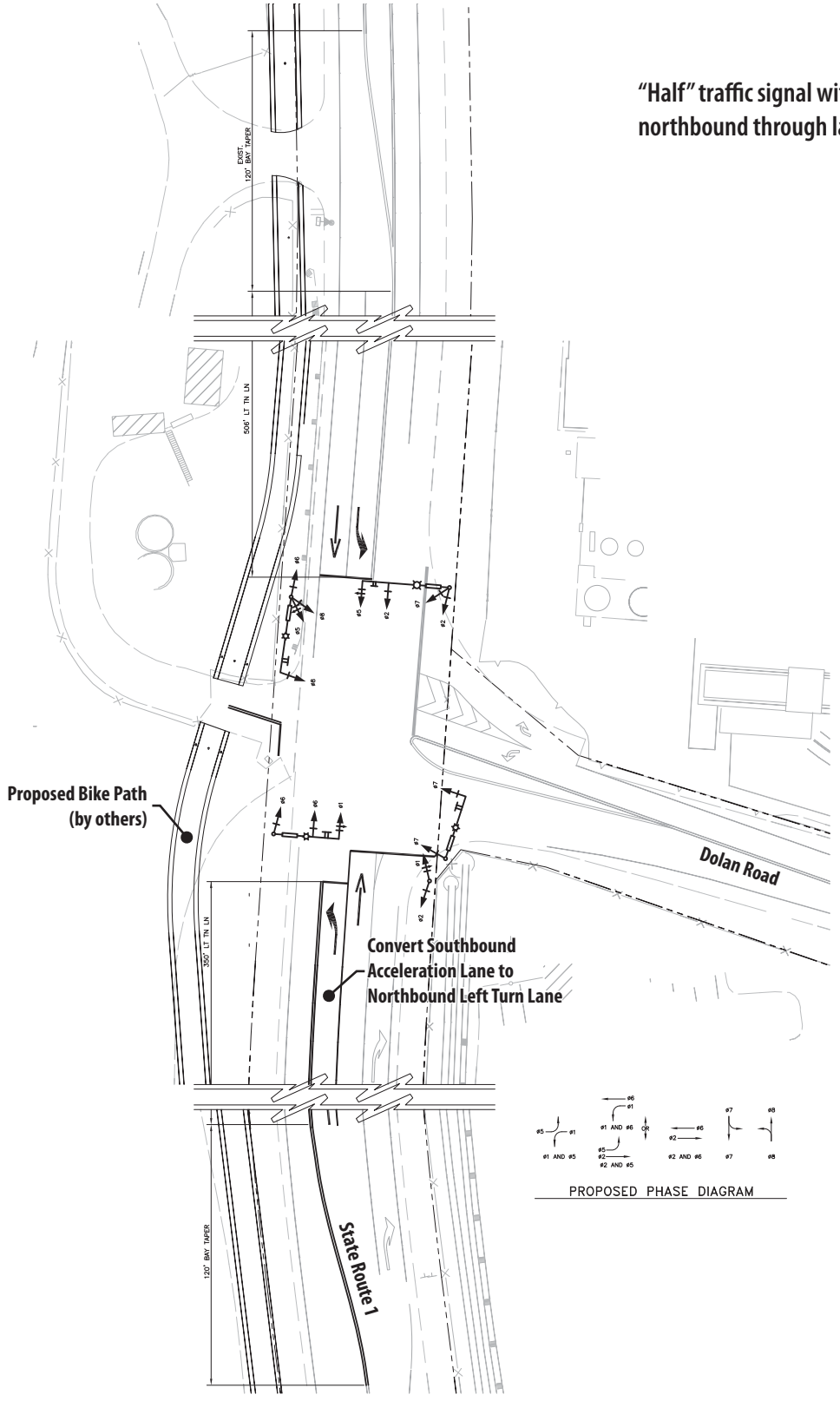

0 80 feet

Source: Hatch Mott MacDonald 2013

Figure 8

Alternative 9B Improvements

State Route 1 - Dolan Road Improvements Initial Study

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B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- ❑ Aesthetics
- ❑ Agriculture and Forestry Resources
- ❑ Air quality
- ❑ Biological Resources
- ❑ Cultural Resources
- ❑ Geology/Soils
- ❑ Greenhouse Gas Emissions
- ❑ Hazards & Hazardous Materials
- ❑ Hydrology/Water Quality
- ❑ Land Use/Planning
- ❑ Mineral Resources
- ❑ Noise
- ❑ Population/Housing
- ❑ Public Services
- ❑ Recreation
- ❑ Transportation/Traffic
- ❑ Utilities/Service Systems
- ❑ Mandatory Findings of Significance

C. DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ✓ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (1) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Patricia A. Lopez, Project Manager Date

D. EVALUATION OF ENVIRONMENTAL IMPACTS

Notes

1. A brief explanation is provided for all answers except "No Impact" answers that are adequately supported by the information sources cited in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer is explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers take account of the whole action involved, including off-site as well as on-site, cumulative as well a project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once it has been determined that a particular physical impact may occur, then the checklist answers indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less-Than-Significant Impact with Mitigation Measures Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less-Than-Significant Impact." The mitigation measures are described, along with a brief explanation of how they reduce the effect to a less-than-significant level (mitigation measures from section XVII, "Earlier Analyses," may be cross-referenced).

5. Earlier analyses are used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier document or negative declaration. [Section 15063(c)(3)(D)] In this case, a brief discussion would identify the following:

    a. "Earlier Analysis Used" identifies and states where such document is available for review.

b. "Impact Adequately Addressed" identifies which effects from the checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and states whether such effects were addressed by mitigation measures based on the earlier analysis.

c. "Mitigation Measures"—For effects that are "Less-Than-Significant Impact with Mitigation Measures Incorporated," mitigation measures are described which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances, etc.) are incorporated. Each reference to a previously prepared or outside document, where appropriate, includes a reference to the page or pages where the statement is substantiated.

7. "Supporting Information Sources"—A source list is attached, and other sources used or individuals contacted are cited in the discussion.

8. This is the format recommended in the CEQA Guidelines as amended January 2011.

9. The explanation of each issue identifies:

a. The significance criteria or threshold, if any, used to evaluate each question; and

b. The mitigation measure identified, if any to reduce the impact to less than significant.

1. AESTHETICS

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Have a substantial adverse effect on a scenic vista? (1, 2, 5, 6)	❑	❑	✓	❑
b. Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway? (1, 2, 4, 5, 6, 7, 8)	❑	✓	❑	❑
c. Substantially degrade the existing visual character or quality of the site and its surroundings? (1, 2, 20)	❑	✓	❑	❑
d. Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (1, 2)	❑	❑	✓	❑

Comments:

a. Current Moss Landing Community Plan Specific Policy 5.6.3-6 and draft Moss Landing Community Plan update policies NCLCP-ML-8.8 and NCLCP-ML-8.9 identify scenic vistas of the harbor area from State Route 1. All of the proposed alternatives would include surface changes (expanded pavement, markings, etc.). These surface improvements would not affect views of scenic vistas. Three of the alternatives (Alternative 8A, Alternative 9A, and Alternative 9B) include the addition of signal lights at the intersection. Although the signal lights would add a new visual element to the intersection, they would not significantly disrupt the scenic views into the harbor. Views into the harbor are already partially obscured by cypress trees to the west of the highway, and the intersection location constitutes only a small portion of the viewing window to the harbor. Therefore, the potential impact on a scenic vista would be less than significant.

b. The current Moss Landing Community Plan makes reference to State Route 1 as a scenic route (page 96). The North County Land Use Plan/Local Coastal Program Recommended Action 2.2.4-4 calls for designation of State Route 1 as a scenic highway. The Moss Landing Community Plan update does not address scenic route status for State Route 1. Caltrans lists State Route 1 in the Moss Landing area as eligible for scenic highway designation, but not officially designated. Although State Route 1 is not a designated scenic highway in this area, the proposed project could affect its eligibility for

scenic highway status. The removal of trees for Alternative 2-3-4 and Alternative 9B could result in a significant visual impact. Implementation of a mitigation measure presented in the Biological Resources section would reduce this impact to a less than significant level. Refer to discussions for item c, below, and the Biological Resources section, item e.

c. The intersection is adjacent to both the harbor (identified as scenic by the Moss Landing Community Plan), and two very large industrial facilities. Therefore, the visual character of the intersection is variable and inconsistent. The power plant smokestacks stand about 550 feet tall, and the power plant structure stands over 150 feet tall. The former refractory building is over 75 feet tall. Because of their size, the two industrial facilities dominate the visual character of the intersection, and the new signal lights proposed in three of the alternatives (Alternative 8A, Alternative 9A, and Alternative 9B) would marginally change the existing visual character of the project site. Therefore, the visual impact of signal lights would be less than significant. The lane additions proposed in two of the alternatives (Alternative 2-3-4, and Alternative 9B) would add up to 15 feet of pavement (tapering to zero at the north end) within the approximately 30 feet of existing open area between the current edge of pavement and the adjacent property. The pavement expansion area is occupied primarily by trees, and the space between the trees is generally bare ground. The new lanes would increase the width of pavement at the edges of the highway, but would not significantly alter the character of the highway. Therefore, the road widening would have a less than significant effect on visual character.

Alternative 2-3-4 and Alternative 9B include the addition of a northbound turn lanes and/or northbound acceleration lanes. Trees within 20 feet of the existing edge of pavement are assumed to be removed under these alternatives, therefore, about 14 of the 38 existing trees between Dolan Road and the Moss Landing Power Plant gate would be removed. Up to 15 feet of the 30 feet of open area between the existing edge of pavement and the adjacent property would be paved with new lanes (less toward the north as the acceleration lanes ends). The screening currently provided by the trees in this area would be reduced, but not completely eliminated. Caltrans policies require that existing landscaping displaced by road improvements be replaced as determined by the Caltrans District landscape architect. The trees removed to accommodate the Alternative 2-3-4 and Alternative 9B improvements would be replaced by the project sponsor under this policy. Additionally, the project sponsor would be required to obtain a coastal development permit for the removal of three landmark trees -- refer to Biological Resources section, item e. The removal and replacement of these trees would have a potentially significant effect on the visual character of the project area. Implementation of a mitigation measure presented in the Biological Resources section would reduce this impact to a less than significant level.

d. Three of the four alternatives (Alternative 8A, Alternative 9A, and Alternative 9B,) include signal lights, with a street light on each signal pole. The un-signalized alternative (Alternative 2-3-4) would add two streetlights. Existing lighting in the vicinity includes a streetlight and numerous lights throughout the power plant structure and within the harbor. The addition of signal lights would not add a significant amount of light or glare.

2. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts on agricultural resources are significant environmental effects and in assessing impacts on agriculture and farmland, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use? (1, 2)	❑	❑	❑	✓
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? (1, 2)	❑	❑	❑	✓
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? (1, 2)	❑	❑	❑	✓
d. Result in the loss of forest land or conversion of forest land to non-forest use? (1, 2)	❑	❑	❑	✓
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to non-forest use? (1, 2)	❑	❑	❑	✓

Comments:

a. The intersection is fully within the existing public right-of-way and there is no Farmland in the vicinity, and therefore, the proposed project would have no effect on Farmland.

b. The intersection is fully within the existing public right-of-way and there is no Farmland in the vicinity, and therefore no land with Williamson Act contracts exists in the project area.

c. The intersection is fully within the existing public right-of-way and there is no land zoned for forestry in the vicinity.

d. The intersection is fully within the existing public right-of-way and there is no forestland in the vicinity; therefore, the proposed project would have no effect on forestland.

e. The proposed project would not result in any changes that would adversely affect agriculture or forestry.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Conflict with or obstruct implementation of the applicable air quality plan? (1, 9)	❑	❑	❑	✓
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (1, 9)	❑	❑	✓	❑
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)? (1, 9)	❑	❑	✓	❑
d. Expose sensitive receptors to substantial pollutant concentrations? (1, 2, 9)	❑	❑	❑	✓
e. Create objectionable odors affecting a substantial number of people? (1,9)	❑	❑	❑	✓

Comments:

a. Consistency with the air quality plan is based on consistency of the proposed project's population generation with population projections. The proposed project does not affect population, so the proposed project would not conflict with the air quality plan.

b. The proposed project would not involve new operational air emissions sources or add vehicular trips, but could affect operations at the intersection. The alternatives that have signal lights (Alternative 8A, Alternative 9A, Alternative 9B) would slightly decrease operational efficiency of through movements at the intersection under current conditions (LOS A or LOS B), and more noticeably under 2035 conditions (LOS A, LOS B, or LOS D). However, these decreases would occur within a segment of State Route 1 that operates as poorly as LOS F during peak summer hours. Therefore, the decrease in level of service of the intersection would not worsen overall traffic congestion, and air emissions on State Route 1 within the Moss Landing area would not increase. Absent the congestion of peak hours, the level of service and queuing lengths at the intersection would be within the acceptable range for intersections, and would not significantly affect air quality.

Construction of the proposed project would involve grading and paving. The area of disturbance would vary depending on the alteratives. Alternatives 8A and 9A do not add any new lanes, and would disturb a nominal area at the margins of the existing pavement. Disturbance areas for Alternative 2-3-4 and Alternative 9B assumed a disturbance width of 20 feet for the full lanes, and an average disturbance width of 10 feet for the merger/taper transition areas. Alternative 2-3-4 would add about 800 linear feet of lane plus 660 linear feet of transition area. The disturbance area for Alternative 2-3-4 is estimated at 22,600 square feet (0.52 acres). Alternative 9B would add about 600 linear feet of lane plus 1,050 linear feet of transition area. The disturbance area for Alternative 9B is estimated at 22,500 square feet (0.52 acres). All of the alternatives are assumed to include a staging area of up to one quarter acre. The *CEQA Air Quality Guidelines* (Monterey Bay Unified Air Pollution Control District 2008) indicate that a project that disturbs less than 2.2 acres (major grading or excavation) or less than 8.1 acres (finish grading) would have a less than significant construction impact on air quality. Because the construction area of the proposed project would be less than these thresholds, the proposed project would have a less than significant impact from construction emissions.

c. The air basin is in state non-attainment for ozone and particulate matter (PM_{10}). The proposed project would not result in significant emissions of either of these air pollutants, and would not have a significant cumulative effect on air quality.

d. The intersection is not located near any sensitive receptors. The intersection is adjacent to large industrial facilities and a harbor. Therefore, the proposed project would not result in emissions that would adversely affect sensitive receptors.

e. The proposed project would not emit substantial odors.

4. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service? (1, 2, 5, 6, 10, 11, 12)	❑	✓	❑	❑
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service? (2, 5, 6, 7, 33, 34)	❑	❑	✓	❑
c. Have a substantial adverse effect on federally protected wetlands, as defined by section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.), through direct removal, filing, hydrological interruption, or other means? (2, 5, 6)	❑	❑	❑	✓
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? (1, 2, 10, 11, 12, 13)	❑	❑	❑	✓
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (7, 20)	❑	✓	❑	❑
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (3, 4, 5, 6)	❑	❑	❑	✓

Comments:

a. Special-status terrestrial animal species generally occur in relatively undisturbed areas and are largely found within unique habitats such as ponds, creeks, or woodland habitats. Due to the amount of vehicular traffic passing through the study area and the highly disturbed nature of existing roadside vegetation, the presence of suitable nesting or denning habitat for these species is unlikely. However, the many mature trees present within the study area have the potential to support protected bird nesting activities, and tree removal and/or noise-generating construction activities could disrupt such activities. Alternative 2-3-4 and Alternative 9B would result in the removal of mature trees near the Moss Landing Power Plant, and if the trees are removed during the breeding season (February 1 through September 15), disturbance to nesting birds or their young could occur, which is considered a significant adverse environmental impact. The following mitigation measure would reduce impacts to nesting birds to a less than significant level.

Mitigation Measure (Alternative 2-3-4 and Alternative 9B)

BIO-1. *To avoid impacts to nesting birds, tree removal and noise-generating construction activities should be scheduled to take place outside of the nesting bird season (February 1 to September 15). If tree removal or construction is to occur during the nesting season, then a qualified biologist shall conduct a pre-construction survey for nesting birds to ensure that no nests would be disturbed during project implementation. This survey shall be conducted no more than 7 days prior to the initiation of disturbance activities during the early part of the nesting season (February through April) and no more than 30 days prior to the initiation of disturbance activities during the late part of the nesting season (May through September 15).*

If no active nests are present within 250 feet of construction, then activities can proceed as scheduled. However, if an active nest is detected during the survey within 250 feet of construction, then the establishment of a protective construction-free buffer zone from each active nest (typically 250 feet for raptors and 50-100 feet for other species) shall be clearly delineated or fenced until the juvenile bird(s) have fledged (left the nest), unless the biologist determines that construction noise would not impact the active nest.

Implementation of this mitigation measure shall be the responsibility of the project sponsor, prior to commencement of construction.

Although Alternative 8A and Alternative 9A would include construction near the trees, the level of construction noise would be relatively low due to the lack of significant grading, and the impact to nesting birds would be less than significant.

Special-status plants generally occur in relatively undisturbed areas and are largely found within unique plant communities and/or habitats such as coastal scrub, freshwater marsh, or coastal salt marsh. Due to the extremely disturbed nature of roadside vegetation in the study area, the presence of these species is unlikely. However, there is potential for one disturbance-tolerant special-status plant species to occur in the non-native grassland areas present within the study area: Congdon's tarplant (*Centromadia parryi* spp. *congdonii*), which has a California Native Plant Society rare plant rank of 1B.1 (rare, threatened, or endangered in California and elsewhere, and seriously endangered in California). Congdon's tarplant has been recorded as occurring near the project area, within the Moss Landing Quadrangle. Therefore, its presence or non-presence should be established prior to the commencement of construction that extends a significant distance into presently bare soils (Alternative 2-3-4 and Alternative 9B). Implementation of the following mitigation measure would reduce potential impacts on Congdon's tarplant to a less than significant level.

Mitigation Measure (Alternative 2-3-4 and Alternative 9B)

BIO-2. *Prior to ground disturbance, the project sponsor shall retain a qualified biologist to conduct a focused botanical survey in accordance with current California Department of Fish and Wildlife and California Native Plant Society rare plant survey protocols during the Congdon's tarplant peak blooming period (typically August through September) to determine the presence or absence of this annual herb on the site. If present, the approximate number or density of plants will be quantified for compensatory purposes.*

The biologist shall prepare a report documenting the results of the survey and, if appropriate, measures for avoiding possible impacts to this species before and during construction. If the focused survey concludes that the species is not present in the project area, or if it is present in the project area but impacts to it can be completely avoided, then no further mitigation is required.

BIO-3. *If the focused botanical survey identifies Congdon's tarplant on the site, and it will be impacted by proposed improvements, then appropriate mitigation shall be developed by a qualified biologist and implemented by the project sponsor prior to any ground disturbance. These measures may include, but are not limited to:*

a. A qualified biologist shall collaborate with the project sponsor to identify an on-site or off-site mitigation area suitable for restoration of habitat and seed transplantation for Congdon's tarplant with a minimum acreage replacement ratio of 3:1. The project sponsor shall be responsible for the placement of a conservation easement over the mitigation area and the provision of funds to ensure the restoration of the mitigation area and its preservation in perpetuity.

b. Because this species is an annual herb, prior to any ground disturbance, the project sponsor shall contract with a qualified biologist or native plant specialist to perform seed collection from all plants within the impact area, and implement seed installation at the mitigation area at the optimal time. Additionally, topsoil from the project area shall be salvaged (where practical) for use in the mitigation area.

c. A maintenance and monitoring program shall be established for a minimum of five years to verify that restoration activities have been successful. Maintenance activities may include watering during the seed establishment period, supplemental seed planting as needed, and removal of non-native plants. Monitoring shall include quarterly monitoring reports for the first year and annual reports for the remaining four years. Though population sizes for annual plants vary from year to year depending on environmental conditions including amount of rainfall, in general, the performance standard for successful mitigation will be a minimum 3:1 Congdon's tarplant replacement ratio (i.e. three plants observed in the mitigation area for each plant lost from the project area).

b. The Moss Landing area includes a variety of sensitive natural community areas, including wetlands, sand dunes, and open waters supporting protected marine life. None of these communities are located within the boundaries of the proposed intersection improvements, although marine waters are located as close as 100 feet from the proposed improvements. The Moss Landing South Harbor, located immediately adjacent to the project area, provides refuge to many marine animal species, including marine mammals, fish, and intertidal and benthic species. Many of these species are transient and may only move through the harbor area or use it as foraging habitat. However, intertidal or benthic species such as oysters, scallops, sea stars, crabs, lobsters, clams, and worms may occur along the bottom of the harbor waters. Many of these species are considered relatively immobile or have limited dispersal ranges. Construction of the proposed project could potentially result in run-off waters, which, if they entered the harbor, could adversely affect the marine environment and/or marine organisms. Because most grading work would occur to the eastern side of State Route 1, away from the harbor, and standard erosion control measures would be employed, effects from erosion would be less than significant. Refer to the Geology and Soils section, item b. Construction noise could cause temporary disruption to marine animals in the adjacent harbor, but because most of the noise-intensive grading would take place to the eastern side of State Route 1, this is considered to be a less than significant impact. Other sensitive natural community areas are located at a substantial distance from the project area, at least one-quarter mile, and would not be affected by the proposed project.

c. The Moss Landing area includes large parts of the Elkhorn Slough and Moro Cojo Slough estuarine areas, which comprise some of the largest coastal wetlands in California. These wetland areas are located at a substantial distance from the project area, at least one-quarter mile, and would not be affected by the proposed project.

d. The project area is in an urbanized portion of Moss Landing. The project area is surrounded by the Moss Landing south harbor and heavy industrial development and does not provide a migration corridor for terrestrial species. Elkhorn Slough is a major wetland that attracts water birds, which migrate along the coast. However, the proposed project would not affect the waters that attract migrating birds, and would have a less than significant effect on bird migration routes. Elkhorn Slough provides a nursery area for marine mammals, but other than the actively-used Moss Landing South Harbor, which provides only a marginally-suitable nursery area, the Elkhorn Slough waters are located at least one-quarter mile from the project area, and would not be affected by the proposed project.

e. To comply with the Coastal Implementation Plan Section 20.144.50, Forest Resources Development Standards, a coastal development permit must be obtained for the removal of any protected trees or landmark trees. Protected trees are defined as native trees 12 inches or more in diameter at breast height and oak trees six inches or more in diameter measured two feet above the ground. Landmark trees are defined as eucalyptus and Monterey pine trees that are 36 inches or more in diameter at breast height, and any other type of tree that is 24 inches or more in diameter at breast height. Landmark trees are generally not allowed to be removed, although there is an exception for removal of a landmark tree within the public right-of-way or area to be purchased for the public right-of-way where no feasible and prudent alternatives to such removal are available. Caltrans policies require that existing landscaping displaced by road improvements be replaced as determined by the Caltrans District landscape architect.

Alternative 2-3-4 and Alternative 9B would remove up to 14 mature trees near the power plant, along State Route 1 north of Dolan Road. The initial study assumes that all of the trees within 20 feet of the existing pavement would be removed, although some trees located closer to the existing pavement at the northern half of the taper are likely to be retained. The trees between Dolan Road and the power plant gate were surveyed for species and size. This area includes 20 Monterey cypress (*Hesperocyparis macrocarpa*) and 18 eucalyptus trees (*Eucalyptus spp.*). Although Monterey cypress is native within Monterey County, the Monterey cypress trees in the project area are planted specimens outside their natural range, and would not be considered native in this setting. Based on preliminary designs, about eight Monterey cypress and six eucalyptus trees would likely be removed. Three of the trees that would be removed qualify as landmark trees: three

Monterey cypress trees with 24-, 26-, and 30-inch diameter trunks at breast height (several of these trees also have additional smaller trunks). Removal of these landmark trees is a significant adverse environmental impact. Implementation of the following mitigation measures would reduce this impact to a less than significant level.

Mitigation Measure (Alternative 2-3-4 and Alternative 9B)

BIO-4. *If any landmark trees, as defined in the North County Coastal Implementation Plan, are proposed for removal, the project sponsor shall obtain a Monterey County coastal development permit for the tree removal. The number of landmark trees to be removed shall be determined based on project improvement plans for the selected alternative. A Forester's Assessment and Recommendation from a County-qualified forester shall be obtained by the project sponsor, and shall include a recommendation for tree replacement. The project sponsor shall coordinate with the Monterey County Resource Management Agency – Planning Department and the Caltrans District Landscape Architect in determining the quantity, size, and species of replacement trees, and the replacement locations. In no case shall the replacement ratio be less than 1:1. Replacement trees shall be planted as close to the location of the trees that are removed, but may be located in a near-by off-site location if no feasible location exists within the project area. The coastal development permit shall also specify other landscape requirements necessary to replace the visual screening value of all of the trees (landmark or otherwise) removed. Caltrans policies regarding tree and landscaping installation and maintenance shall apply.*

f. No conservation plan covers the project vicinity.

5. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5? (1, 2)	❑	❑	❑	✓
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5? (14)	❑	✓	❑	❑
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (1, 3)	❑	❑	❑	✓
d. Disturb any human remains, including those interred outside of formal cemeteries? (14)	❑	✓	❑	❑

Comments:

a. The proposed project is entirely within existing public rights-of-way, and would not affect any structures or other potentially historic resources.

b. An archival records search and archaeological reconnaissance were conducted for the project area by Archeological Consulting. Although no surface evidence of archaeological resources was observed in the project area, two previously-documented sites were identified, one in the northern extent of the project area and one at the south end of the of the study area. The proposed intersection improvements do not extend to the southern end of the study area, and are not likely to disturb resources in that area. Alternative 8A and Alternative 9A would not disturb any area known to contain cultural resources. Although the exact limits of the northern site are not certain, Alternative 2-3-4 and Alternative 9B likely extend into the northern site, and could potentially disturb resources in that area. Implementation of the following mitigation measure would reduce potential impacts for these two alternatives to a less than significant level.

Mitigation Measure (Alternative 2-3-4 and Alternative 9B)

CR-1. *Prior to development of road improvements to the north of Dolan Road, steps to protect potential cultural resources shall be taken within that portion of the project area. The project sponsor, in consultation with Caltrans, shall engage the services of a qualified archaeologist to conduct backhoe testing and construction monitoring.*

Backhoe Testing. *Backhoe trenches shall be excavated in areas subject to project grading, at a depth and spacing that would reasonably expect to discover site materials which might be present on the site. Samples of materials from each trench shall be passed through 1/4 inch mesh screen in order to assess the presence of cultural materials. If the trenching fails to identify archaeological materials, the project shall be allowed to proceed with an archaeological monitor present during earth disturbing activities. If archaeological materials are found during trenching, the testing strategy should be altered to most efficiently determine the depth and boundaries of the archaeological deposit. Information sufficient to file an Archaeological Site Record shall be obtained. When the extent of the archaeological site has been determined, additional archaeological recovery shall be undertaken to determine the nature and significance of the cultural deposit under the provisions of the Public Resources Code. In making this determination, it will be necessary to address several specific research questions, including, but not limited to, the following:*

a. What are the content(s) and function(s) of the site?

b. During which temporal period(s) was the site occupied?

c. What role(s) did the site play in the settlement and subsistence patterns of the region? Did this change through time?

In order to obtain the data necessary to make the above determination, the following minimum steps shall be taken:

a. Where archaeological materials are located, a single one meter by one meter test unit, or the equivalent, shall be excavated using standard archaeological techniques.

b. Professional analyses of the materials shall be performed based on the types and quantities of those materials recovered. This could include analysis of lithic artifacts and materials, radiocarbon dating of shell fragments, bead analysis, faunal analysis, etc.

Construction Monitoring. *A qualified archaeological monitor shall be present during construction activities that involve native soil disturbance, such as grading, storm channel excavation, etc. If, at any time, midden soil, cultural features or potentially significant cultural resources are discovered, work shall be halted within 50 meters (164 feet) of the find until it can be evaluated for significance by the monitor and/or the principal archaeologist and, if determined to be significant under CEQA, until appropriate mitigation measures are formulated, with the approval of the lead agency, and implemented.*

Mitigation during construction shall include recovery of significant cultural materials and professional analysis based on the types and quantities of those materials recovered. If, at any time during the project, human remains are identified, work shall be halted and the

Monterey County Coroner shall be notified immediately. If the Coroner determines that the remains are likely to be Native American, the Native American Heritage Commission (NAHC) will be notified as required by law. The NAHC will notify the designated Most Likely Descendant, who will provide recommendations for mitigation of Native American human remains. Cultural materials recovered during trenching or construction, other than those directly associated with Native American burials, shall be curated in the public domain at a suitable research facility.

c. The proposed project would not involve deep excavations, which are more likely to disturb paleontological resources than the shallow excavations typical of minor roadway improvements. Most of the paleontological resources found within Monterey County are micro-organisms such as foraminifera or diatoms, or assemblages of mollusks and barnacles most commonly found in sedimentary rocks. General Plan Figure 4.10-1 shows the location of the 12 most important paleontological sites in Monterey County; none of the sites is located within the Moss Landing area.

d. The northern end of the project area is known to contain cultural resources, although the exact geographic extent is not certain. It is possible that grading for Alternative 2-3-4 and Alternative 9B could disturb buried human remains. Implementation of Mitigation Measure CR-1 would reduce this impact to a less than significant level.

6. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
(1) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42? (15)	❑	❑	❑	✓
(2) Strong seismic ground shaking? (15, 18)	❑	❑	✓	❑
(3) Seismic-related ground failure, including liquefaction? (16, 18)	❑	❑	✓	❑
(4) Landslides? (2, 16)	❑	❑	❑	✓
b. Result in substantial soil erosion or the loss of topsoil? (1, 2, 7, 16, 17, 18, 34, 35)	❑	❑	✓	❑
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? (16)	❑	❑	❑	✓
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (16, 17)	❑	❑	❑	✓
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (1)	❑	❑	❑	✓

Comments:

a. The project vicinity is not within an Alquist-Priolo earthquake fault zone, and is not likely to experience ground fissures during an earthquake. The nearest earthquake faults are off-shore within Monterey Bay and about 15 miles inland from the project area. Ground shaking in the project area during a large earthquake on any of the faults in the region is likely, but is not likely to cause significant damage to roads constructed on appropriate base materials. The geological report prepared for the proposed project concluded that the soils were appropriate for supporting a highway. A study of liquefaction during the 1989 Loma Prieta Earthquake concluded that the most severe liquefaction occurred on the sand spit, at Moss Landing State Beach, and at the Moss Landing Harbor District parking lot; however, low levels of liquefaction were reported near the power plant. Although the bluff on which the highway is constructed drops sharply into the harbor, the highway area itself is level and not subject to landslides.

b. Project vicinity soils are described as poorly-graded sand, silty sand, and clayey sand in the first eight to 18 feet of depth, with bands of clay soils found at lower depths. Sands are typically subject to water erosion; however, the project area is level, and standard Caltrans and/or County erosion control measures would be required during and immediately following construction to prevent disturbed soils from eroding or washing away. Caltrans erosion control requirements and best practices are included in Chapter 21 of their Standard Specifications and in *Key Concepts of Sustainable Erosion Control Technical Guide*. Monterey County erosion control regulations are embodied in Chapter 16.12 of the Monterey County code, and include requirements for erosion control plans, runoff and sediment transport control, land clearing, and winter operations. Because work would be conducted in compliance with these regulations, the impact from erosion would be less than significant.

c. The geological report prepared for the proposed project analyzed borings for the proposed Monterey Bay Sanctuary Scenic Trail – Moss Landing segment, which would be located approximately 20 to 60 west of State Route 1 near the edge of the harbor. The geological report concluded that the soils were appropriate for supporting a highway.

d. Project vicinity surface soils are described as poorly-graded sand, silty sand, and clayey sand. Sandy soils are not subject to expansion.

e. The proposed project does not involve septic systems.

7. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (1)	❑	❑	✓	❑
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (3, 19)	❑	❑	❑	✓

Comments:

a. The proposed project would not involve new operational greenhouse gas emissions sources or add vehicular trips, but could affect operations at the intersection. The alternatives that have signal lights (Alternative 8A, Alternative 9A, Alternative 9B) would slightly decrease operational efficiency of through movements at the intersection under current conditions (LOS A or LOS B), and more noticeably under 2035 conditions (LOS A, LOS B, or LOS D). However, these decreases would occur within a segment of State Route 1 that operates as poorly as LOS F during peak summer hours. Therefore, the decrease in level of service of the intersection would not worsen overall traffic congestion, and greenhouse gas emissions on State Route 1 within the Moss Landing area would not increase. Absent the congestion of peak hours, the level of service and queuing lengths at the intersection would be within the acceptable range for intersections, and would not significantly affect greenhouse gas emissions.

   The proposed project would generate greenhouse gas emissions during the construction phase, but construction of the proposed project would involve a small area and small amount of equipment and truck trips, and result in short-term, less than significant levels of greenhouse gas emissions.

b. There is no local climate action plan or other plan for reducing greenhouse gas emissions. AB 32 establishes an overall State reduction target of 25 percent by 2020. The proposed project emissions would be less than significant, and therefore, the proposed project would not hinder or delay the targets contained in AB 32.

8. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (1)	❑	❑	❑	✓
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (1)	❑	❑	❑	✓
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (1, 2)	❑	❑	❑	✓
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment? (21, 22, 23, 24)	❑	✓	❑	❑
e. For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or a public-use airport, result in a safety hazard for people residing or working in the project area? (2)	❑	❑	❑	✓
f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area? (2)	❑	❑	❑	✓
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (1, 25)	❑	❑	❑	✓

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands area adjacent to urbanized areas or where residences are intermixed with wildlands? (1, 2)	❑	❑	❑	✓

Comments:

a. The proposed project would not involve routine transport, use, or disposal of hazardous materials.

b. The proposed project would not involve foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. The project area is more than two miles from the nearest public primary or secondary school. California State University operates the Moss Landing Marine Laboratories to the west and southwest of the project area, with the nearest facility about one-tenth mile away. The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste, so would not result in adverse effects on schools from these materials.

d. The project area is adjacent to the Moss Landing Power Plant, which is a site with known groundwater contamination. The groundwater contamination from this adjacent site likely extends within the project area. The Department of Toxic Substances Control Envirostor database identifies the Moss Landing Power Plant as an active cleanup site. The power plant is currently operated with natural gas, but at one time was powered by fuel oil, which was stored in 19 aboveground tanks (removed between 2000 and 2004) located along Dolan Road eastward from the first gate on Dolan Road. Leakage from these tanks and spillage at a shop located north of the State Route 1 power plant gate resulted in groundwater contamination, principally total petroleum hydrocarbons (TPH), total extractable hydrocarbons (TEH), volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), metals (inorganics), polychlorinated biphenyls (PCBs), chromium, hexavalent chromium, and asbestos.

   Groundwater near the power plant is monitored for contaminant levels through about 40 monitoring wells. None of the monitoring wells are located within the areas of proposed improvements, but several of the monitoring wells are located within or immediately adjacent to the project area, including four just east of the power plant fence and 200 to 300 feet south of the power plant gate, and four west of State Route 1 and 200 to 700 feet

south of the power plant gate. Concentrations of VOC, TPH, and hexavalent chromium were detected in monitoring wells near the project area. No monitoring wells are shown south of the north right-of-way line for Dolan Road.

The California Water Resources Control Board Geotracker database lists potential cleanup actions at the former refractory site that center around past discharges to (and/or leaks from) seven storage tanks located east of State Route 1. High levels of chromium have been measured in soils and groundwater near the storage tanks. The proposed intersection improvements are located north of this area (California Water Resources Control Board 2013, California Regional Water Quality Control Board 2011, Calera 2011).

Construction of the proposed improvements could involve excavation of soils contaminated by a variety of constituents that were introduced to groundwater at the power plant. Implementation of the following mitigation measures would reduce this impact to a less than significant level.

Mitigation Measure

HAZ-1. *Prior to construction of improvements north of Dolan Road, the project sponsor shall coordinate with the Department of Toxic Substances Control to develop appropriate hazardous materials protocols for soil excavation.*

e. The project area is not located within an airport land use plan or within two miles of a public use airport. The nearest public use airports are in Watsonville to the north and Marina to the south, both more than two miles from the project area.

f. There are no known private landing strips within two miles of the project area.

g. Both State Route 1 and Dolan Road are designated as emergency routes, and could be used for evacuation or emergency response routes. The proposed project would improve traffic movements and safety at the intersection of these roads and improve emergency response use of these routes.

h. The proposed project would not be subject to significant damage during a wildfire. The project area is within an extensive area of wetlands, agricultural lands, and sand dunes that are not subject to wildlands fires.

9. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Violate any water quality standards or waste discharge requirements? (1, 2, 7, 33, 34)	❑	❑	✓	❑
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., would the production rate of preexisting nearby wells drop to a level which would not support existing land uses or planned uses for which permits have been granted? (1, 2, 26)	❑	✓	❑	❑
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in *substantial erosion or siltation on- or off-site?* (1, 7, 16, 17, 18, 33, 34)	❑	❑	✓	❑
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface run-off in a manner which would result in *flooding on- or off-site?* (1, 2)	❑	❑	✓	❑
e. Create or contribute run-off water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted run-off? (1, 2)	❑	❑	✓	❑
f. Otherwise substantially degrade water quality? (1, 2, 16, 17, 18)	❑	❑	✓	❑
g. Place housing within a 100-year flood hazard area as mapped on Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (1)	❑	❑	❑	✓

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (1, 27)	❑	❑	❑	✓
i. Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? (2)	❑	❑	❑	✓
j. Be subject to inundation by seiche, tsunami, or mudflow? (1, 2, 28)	❑	❑	✓	❑

Comments:

a. Construction-related activities could potentially result in run-off waters that would adversely affect water quality in the Moss Landing South Harbor. However, standard erosion control measures would reduce this potential to a less than significant level. Refer also to item c, below, and the Geology and Soils section, item b.

b. The proposed improvements are located in a region that has a limited water supply, over-drafted aquifers, and seawater intrusion. The proposed project would require water during construction, and re-vegetation of the eastern margins of the highway right-of-way could temporarily require water to establish plantings. Otherwise, the intersection improvements would not require an ongoing water supply. However, ongoing irrigation would be an increase over existing conditions and represent an inappropriate optional use of water within an over-drafted basin. Although Caltrans does not officially have policies for landscape water conservation, the agency defers to local direction on water conservation. Implementation of the following mitigation measure would reduce this impact to a less than significant level.

Mitigation Measure

HY-1. *Landscape plans for re-vegetation of highway margins shall incorporate native and/or drought-tolerant plantings that will successfully establish with no more than five years of irrigation. If an irrigation system is used, it shall be removed from use five years following initial planting.*

c. Under current conditions, water draining off the eastern side of the highway percolates into the soil, and does not appear to drain away from the area. Run-off is expected to continue to drain off to the eastern margins of the highway. Project vicinity soils are described as poorly-graded sand, silty sand, and clayey sand in the first eight to 18 feet of depth, with bands of clay soils found at lower depths. Although sands are typically

subject to water erosion, they also percolate water quickly, so run-off is less likely to flow beyond the project area. The project area is level, and thus less prone to erosion, and standard Caltrans and/or County erosion control measures would be required during and immediately following construction to prevent disturbed soils from eroding or washing away. Refer to the Geology and Soils section, item b. Therefore, the impact from erosion would be less than significant.

d. The proposed intersection improvements would add new pavement to the area, ranging from minor increases with Alternative 8A and Alternative 9A, to up to about 15,000 square feet (0.34 acres) with Alternative 2-3-4 and Alternative 9B. The additional pavement would drain off the eastern side of the highway. Under current conditions, water draining off the eastern side of the highway percolates into the soil, and does not appear to drain away from the area. The open area to the east of the highway drops one to two feet from the highway surface and appears to collect and percolate run-off. It is anticipated that with the increased pavement run-off and decreased open area to the side of the highway, run-off would continue to adequately percolate in this area, and that significant storm water drainage changes would not occur.

e. Refer to items c and d.

f. Refer to items c and d.

g. There are no houses existing or proposed within the project area.

h. The Federal Emergency Management Agency Flood Insurance Rate Map indicates that the portion of the project area within and south of Dolan Road is within Zone X, an area with a 0.2 percent annual chance flood. The northern portion of the project area is outside of a flood zone (Federal Emergency Management Agency 2009). The proposed improvements are either pavement, level with the ground, or small profile vertical poles for signal lights, neither of which would interfere with flood flows.

i. The project area is not downstream of a significant dam or levee.

j. The portion of the project area west of State Route 1 and immediately south of Dolan Road is shown as an area of potential tsunami wave movement. The actual pattern of tsunami movement is dependent on numerous factors, including the location and size of the event triggering the tsunami, tidal phase, etc., and could be significantly altered with sea level rise. Therefore, the maps provide only a rough planning guide. In any case, the map does not indicate significantly deep or widespread inundation of the project area in the event of a tsunami.

10. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Physically divide an established community? (1)	❑	❑	❑	✓
b. Conflict with any applicable land-use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (3, 4, 5, 6, 29, 30)	❑	❑	❑	✓
c. Conflict with any applicable habitat conservation plan or natural community conservation plan? (3, 4, 5, 6)	❑	❑	❑	✓

Comments:

a. The proposed project would expand existing intersection improvements within an existing highway right-of-way. The Moss Landing Community Plan area spans both sides of State Route 1. Although the highway does divide the community into western and eastern parts, the proposed improvements would not further divide the community. The proposed signal lights (Alternative 8A, Alternative 9A. Alternative 9B) would provide a protected crossing for pedestrians between sides of the highway to connect the two sides of the Community Plan area. Although Alternative 2-3-4 would not provide a pedestrian crossing, it would not result in a worsening of existing division between the two sides of Moss Landing.

b. The current Moss Landing Community Plan calls for expansion of State Route 1 to four lanes (two in each direction) throughout the Community Plan area. The draft Moss Landing Community Plan scales back expansion plans for State Route 1, but retains plans for the addition of lanes, a roundabout, or other improvements at three intersections within the Community Plan area, including the project area. Caltrans' concept plans for State Route 1 call for a four-lane conventional highway or expressway in the Moss Landing area, or achieving similar capacity through the provision of alternative transportation. The California Coastal Act includes a policy to maintain two-lane scenic highways in rural areas. Coastal Act Section 30254 states in part "it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone

remain a scenic two-lane road." The California Coastal Commission desires to keep State Route 1 through the Moss Landing area at the existing two lane configuration. The Coastal Commission's periodic review of the Monterey County local coastal programs promotes diversion of traffic to other routes, and use of alternative transportation modes through Moss Landing. State Route 1 in this location is currently constructed with one through lane in each direction and two supplemental lanes (a right turn lane in the northbound direction, and a left turn lane / receiving lane in the southbound direction. The proposed project would not add new through lanes beyond the immediate area of the intersection, and would be consistent with Coastal Act direction for State Route 1.

c. Refer to the Biological Resources section, item f.

11. MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Result in loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (3, 4, 5, 6)	❑	❑	❑	✓
b. Result in the loss of availability of a locally important mineral resource recovery site delineated in a local general plan, specific plan, or other land-use plan? (3, 4, 5, 6)	❑	❑	❑	✓

Comments:

a. The proposed project would not result in the loss of a mineral resource. No mineral resources are known in the project area.

b. The project area is not delineated as a mineral resource recovery area.

12. NOISE

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or in applicable standards of other agencies? (1, 2, 3)	❑	❑	✓	❑
b. Result in exposure of persons to or generation of excessive ground-borne vibration or ground borne noise levels? (1, 2)	❑	❑	✓	❑
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (1)	❑	❑	❑	✓
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (1, 2)	❑	❑	✓	❑
e. For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public-use airport, expose people residing or working in the project area to excessive noise levels? (2)	❑	❑	❑	✓
f. For a project located within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels? (2)	❑	❑	❑	✓

Comments:

a. The project area is industrial, with a high level of existing traffic noise and no nearby noise-sensitive receptors. The Monterey County General Plan indicates that noise levels up to 75 dBA are acceptable and up to 80 dBA are conditionally acceptable at industrial uses. The proposed project would result in additional noise only during the construction phase. The construction noise would not exceed standards for the adjacent industrial uses.

b. Construction of the proposed project could involve brief periods of ground borne noise, depending on the construction methods necessary to prepare the site for the improvements. Because there are no sensitive receptors in the project area, and existing noise levels are high due to traffic on State Route 1, the construction noise would have a less than significant effect.

c. The proposed project would not result in any permanent increase in noise.

d. Construction noise would have a less than significant impact. Refer to item a and item b.

e. The project area is not located within an airport land use plan or within two miles of a public use airport. The nearest public use airports are in Watsonville to the north and Marina to the south, both more than two miles from the project area.

f. There are no known private landing strips within two miles of the project area.

13. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? (1, 3, 4, 5, 6)	❑	❑	❑	✓
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (1)	❑	❑	❑	✓
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (1)	❑	❑	❑	✓

Comments:

a. The proposed project would not increase population growth. The capacity of the Moss Landing segment of State Route 1 would remain unchanged for most of its length and the proposed project would not induce growth in the area.

b. There is no housing in the project area.

c. The proposed project would not displace people.

14. PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of or need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Fire protection? (1)	❑	❑	❑	✓
b. Police protection? (1)	❑	❑	❑	✓
c. Schools? (1)	❑	❑	❑	✓
d. Parks? (1)	❑	❑	❑	✓
e. Other public facilities? (1)	❑	❑	❑	✓

Comments:

a. The proposed project is a road improvement project that would not increase the need for fire protection services.

b. The proposed project is a road improvement project that would not increase the need for police protection services.

c. The proposed project is a road improvement project that would not increase the need for schools.

d. The proposed project is a road improvement project that would not increase the need for parks.

e. The proposed project is a road improvement project that would not increase the need for other public services.

15. RECREATION

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (1)	❑	❑	❑	✓
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (1)	❑	❑	❑	✓

Comments:

a. The proposed project is a road improvement project that would not increase the use of recreational facilities.

b. The proposed project does not include recreational facilities or require their construction or expansion.

16. TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
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? (3, 4, 5, 6, 30, 31, 36)	❑	❑	✓	❑
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? (32)	❑	❑	❑	✓
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (1)	❑	❑	❑	✓
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (1)	❑	❑	❑	✓
e. Result in inadequate emergency access? (1, 2, 25)	❑	❑	❑	✓
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? (1, 33)	❑	❑	❑	✓

Comments:

a. The proposed project would address turning movements and other safety concerns at the intersection. The State Route 1 segment through Moss Landing currently operates at

levels of service as low as LOS F during peak hours during the summer, and is expected to worsen if additional capacity is not provided. The Caltrans concept target for this segment of State Route 1 is LOS D. To achieve LOS D, Caltrans's Transportation Concept Report for State Route 1 calls for two additional through lanes or equivalent capacity in alternative modes (California Department of Transportation 2006, 2011). Intersection operations were evaluated for off-peak months when traffic flows smoothly in Moss Landing. At the intersection, mainline movements operate at LOS A (notwithstanding the segment level of service identified earlier), but right turns from Dolan Road operate at LOS C and LOS E, and left turns from Dolan Road operate at LOS E and LOS F. Under the 2035 traffic scenario, the existing configuration is projected to operate at LOS A for mainline traffic, LOS F for Dolan Road left turns, and LOS D and LOS F for Dolan Road right turns (Hatch Mott McDonald. 2013).

Alternative 2-3-4 does not stop mainline traffic has the least effect on levels of service. Alternative 2-3-4 would continue the LOS A intersection conditions for mainline traffic for both the current and 2035 scenarios. Dolan Road left turns would degrade from LOS E in the AM peak and LOS F in the PM peak to LOS F in both peak hours. Dolan Road right turns would degrade from LOS C in the AM peak and LOS E in the PM peak to LOS D in the AM peak and LOS F in the PM peak. Alternative 2-3-4 operates at unacceptable levels of service for at least one peak hour under both current and 2035 scenarios.

With the Alternative 8A full signal light, mainline traffic would decrease to a still acceptable LOS B with existing traffic conditions. Under the 2035 scenario, the intersection would continue to operate at LOS B during the 2035 AM peak hour, but degrade to LOS D during the 2035 PM peak hour. Alternative 8A would result in northbound PM peak hour queues during the State Route 1 red light phase of up to about 850 (current conditions) to 1,150 feet (2035 conditions). The longest queues could interfere with turning movements at Moss Landing Road, which is about 1,500 feet to the south. Southbound peak hour queues would be about 250 feet.

With the Alternative 9A half signal light (single signalized northbound lane and free-flow southbound lane), mainline traffic would remain at LOS A in the AM peak hour and decrease to LOS B in the PM peak hour. With the Alternative 9B half signal light (two signalized northbound lanes and free-flow southbound lane) mainline traffic would operate at LOS A during both peak hours. Alternative 9A would result in northbound PM peak hour queues during the State Route 1 red light phase of up to about 700 to 900 feet. No queues would occur in the southbound direction because the stop phase would not apply to southbound traffic. Alternative 9B would result in northbound PM peak hour queues during the State Route 1 red light phase of up to about 200 to 300 feet. No queues would occur in the southbound direction because the stop phase would not apply to southbound traffic.

The addition of signal lights (Alternative 8A, Alternative 9A, and Alternative 9B) could somewhat reduce level of service for mainline traffic, but would significantly improve safety and decrease delays for left turns. Under all three signalized alternatives operations are acceptable under the current scenario. In the 2035 scenario, operations are below acceptable levels (LOS D) during the PM peak hour for Alternative 8A and Alternative 9A. However, none of the alternatives degrades existing or 2035 levels of service compared to the no project baseline.

b. The Transportation Agency for Monterey County is the Congestion Management Agency for the Monterey Bay region. The Monterey County Regional Transportation Plan was adopted in 2010 and provides a long-range plan for transportation improvements. The Regional Transportation Improvement Program is a five-year program of transportation projects, aligned with the State Transportation Improvement Program. Together, the Regional Transportation Plan and Regional Transportation Improvement Program serve as the congestion management program for Monterey County. The proposed project is not a listed project in the Regional Transportation Plan or the 2012 Regional Transportation Improvement Program, but would not interfere with projects that are included. Refer to item a regarding operational standards.

c. The proposed project would not affect air traffic.

d. The proposed project would reduce existing safety concerns at the intersection. The full and half signal lights (Alternative 8A, Alternative 9A, and Alternative 9B) would provide protected turns to eliminate existing conflicts between left turn movements (southbound left turns from Dolan Road conflict with eastbound left turns from southbound State Route 1, in addition to conflicts with mainline traffic).

e. Both State Route 1 and Dolan Road are designated as emergency routes, and could be used for evacuation or emergency response routes. The proposed project would improve traffic movements and safety at the intersection of these roads and improve emergency response use of these routes.

f. The proposed project would not conflict with plans for transit, pedestrians, or bicycles. The full signalization of the intersection (Alternative 8A), and to a lesser degree half signalization of the intersection (Alternative 9A and Alternative 9B), would afford protected crossings of the intersection for pedestrians, including bus riders, most of whom need to cross the free-flowing State Route 1 traffic lanes to or from the northbound bus stop. The proposed project does not interfere with the coastal path planned to the west of State Route 1.

17. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (1)	❑	❑	❑	✓
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (1)	❑	✓	❑	❑
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (1, 2)	❑	❑	✓	❑
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (1)	❑	❑	❑	✓
e. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (1)	❑	❑	❑	✓
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid-waste disposal needs? (1)	❑	❑	✓	❑
g. Comply with federal, state, and local statutes and regulations related to solid waste? (1)	❑	❑	❑	✓

Comments:

a. The proposed project would not generate wastewater.

b. The proposed project would not generate wastewater, and would only temporarily require water during construction activities. However, water would be drawn from an over-drafted aquifer. Refer to Hydrology and Water Quality section item b.

c. Storm water is expected to drain to and percolate within a depressed area at the side of the highway as it does under existing conditions. Refer to Hydrology and Water Quality section item d.

d. The proposed project would only temporarily require water. Refer to the Hydrology and Water Quality section, item b.

e. The proposed project would not generate wastewater.

f. The proposed project would only temporarily generate waste materials during construction. Therefore, the impact to affected landfill(s) would be less than significant.

g. The proposed project would be required to comply with relevant federal, state, and local statutes and regulations related to solid waste.

18. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	*Less-than-Significant Impact with Mitigation Measures Incorporated*	*Less-Than-Significant Impact*	*No Impact*
a. Does the project have the potential to degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory? (1, 2, 5, 6, 10, 11, 12)	❑	✓	❑	❑
b. 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) (1, 2, 5, 6, 10, 11, 12)	❑	❑	✓	❑
c. Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly? (1)	❑	❑	❑	✓

Comments:

a. The proposed project could have impacts on endangered plants, specifically Congdon's tarplant, which is ranked by the California Native Plant Society as a List 1B.1 plant. The Biological Resources section includes a mitigation measure to require pre-construction surveys to protect this plant.

b. Cumulative projects could result in the loss of larger numbers of Congdon's tarplant; however, the proposed project affects only a very small area of potential habitat for this species and the cumulative contribution from disturbance of the project area would be very small. In any case, the Biological Resources section includes a imitation measure to require pre-construction surveys to protect Congdon's tarplant, and to mitigate for impacts to the plant(s) should they occur.

c. The proposed project would not cause substantial adverse effect on human beings.

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All documents indicated in bold are available for review at the **Monterey County Resource Management Agency, Department of Public Works, 168 W. Alisal Street, 2nd Floor Salinas, CA 93901, (831) 755-4800** during normal business hours.

All documents listed above are available for review at EMC Planning Group Inc., 301 Lighthouse Avenue, Suite C, Monterey, California 93940, (831) 649-1799 during normal business hours.