

Appendix A

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



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
AVAILABLE 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 $\pm 1,000$ 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 Artificial 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.



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- 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,

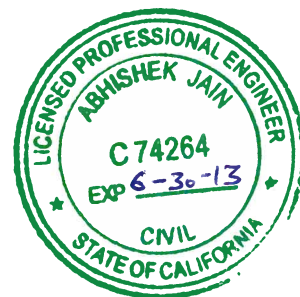
Hatch Mott MacDonald

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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





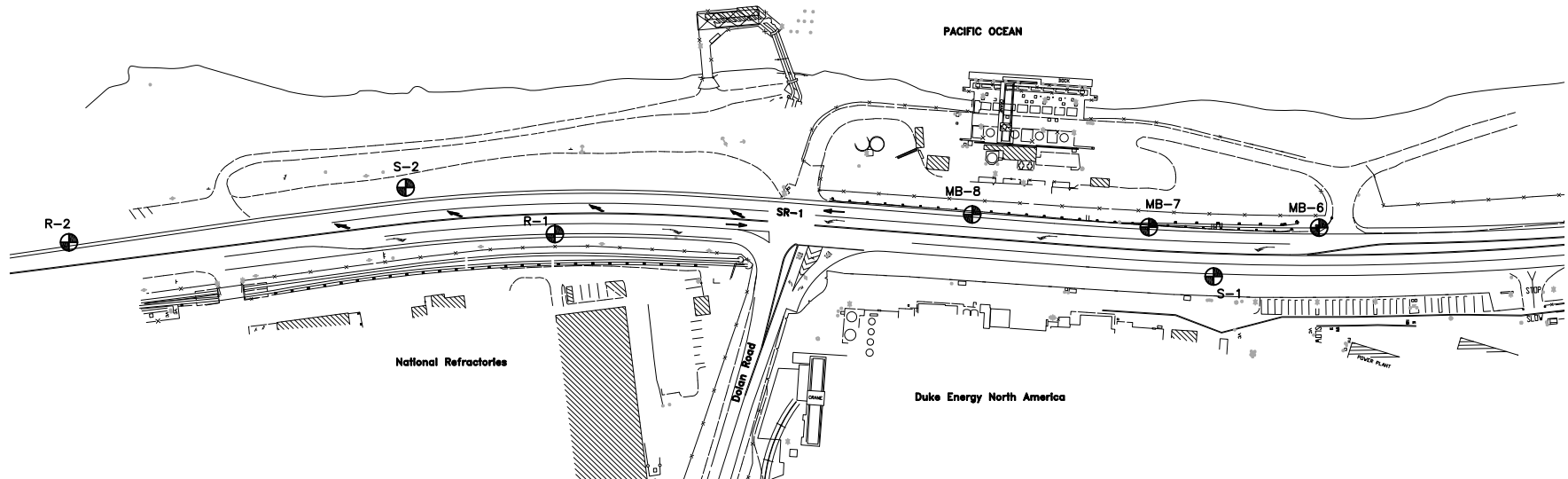
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Appendix A

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



LEGEND:

⊕ = SAMPLE/BORING



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Appendix B

R- Value Test Results



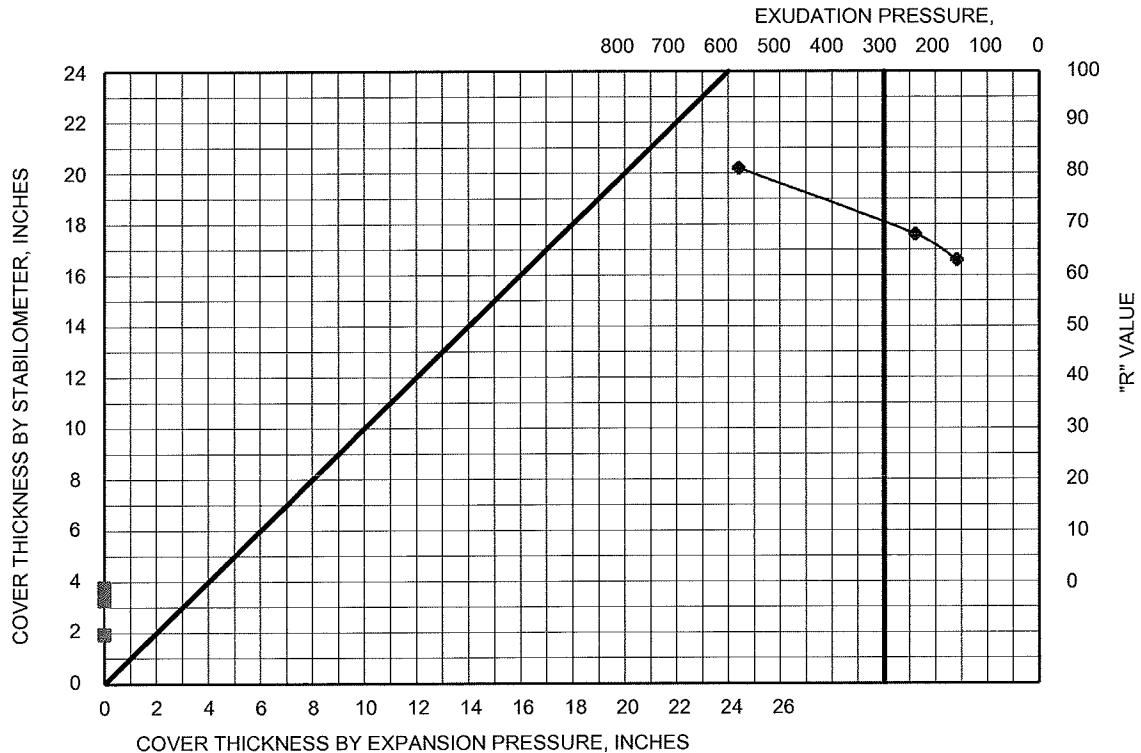
R-Value Test

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

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



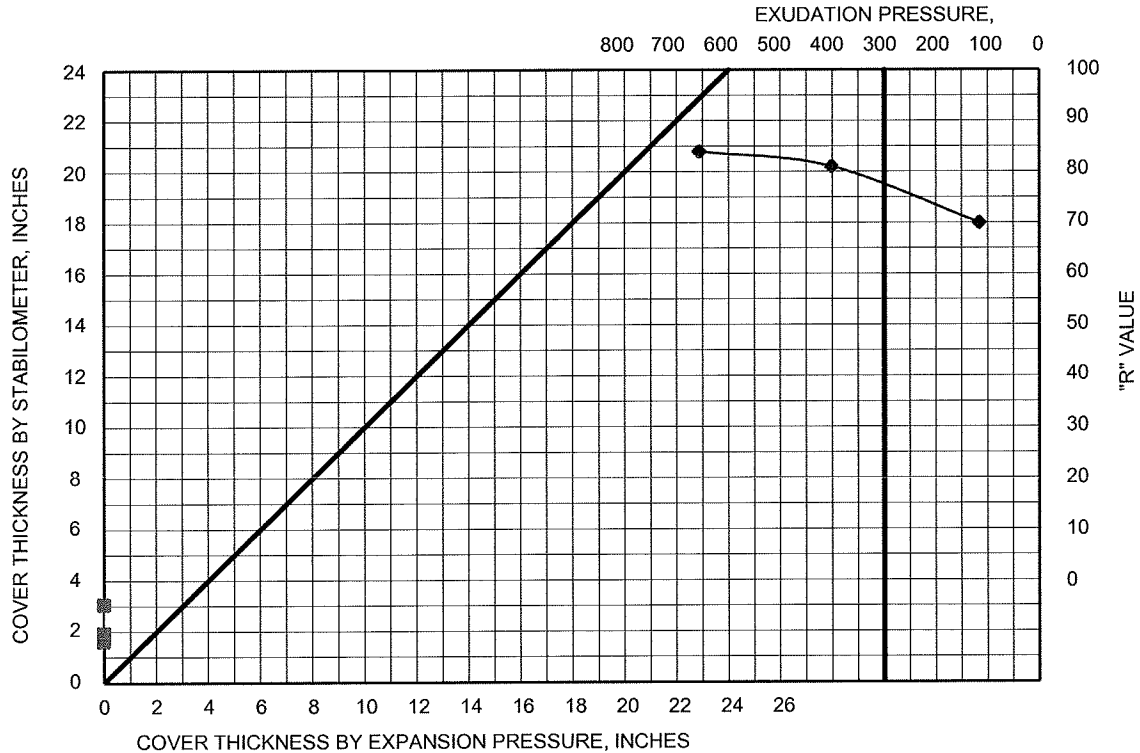
R-Value Test

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

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:

Appendix C

CalFP Program Runs

Pavement Design Results_Run 8.txt

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
 $0.0032 \cdot TI \cdot (100 - R.VALUE)$ = 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
 $0.0032 \cdot TI \cdot (100 - R.VALUE)$ = 0000.60 ft
 Base MAX. depth = 0002.00 ft
 Base MIN. depth = 0000.35 ft

Depth (ft)	GF (ft)	GE (ft)	Depth (ft)	GF (ft)	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

Pavement Design Results_Run 8.txt

HMA	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF	
ft		ft		ft			ft	ft
\$/y^2								

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 *****

Pavement Design Results_Run 4.txt

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 (ft)	GE (ft)	Depth (ft)	GF (ft)	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	T-Base ft	B-Base ft	Subbase	Res-GE ft	Cost	HMA-GF ft	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	

Pavement Design Results_Run 4.txt

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 *****

Pavement Design Results_Run 5.txt

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 (ft)	GE (ft)	Depth (ft)	GF (ft)	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

Pavement Design Results_Run 5.txt

HMA ft	TPB	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost	HMA-GF ft	ft
\$/y^2								
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 *****

Pavement Design Results_Run 6.txt

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 (ft)	GE (ft)	Depth (ft)	GF (ft)	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	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost	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 *****

Pavement Design Results_Run 7.txt

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
 $0.0032 \cdot TI \cdot (100 - R.VALUE)$ = 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
 $0.0032 \cdot TI \cdot (100 - R.VALUE)$ = 0000.60 ft
 Base MAX. depth = 0002.00 ft
 Base MIN. depth = 0000.35 ft

Depth (ft)	GF (ft)	GE (ft)	Depth (ft)	GF (ft)	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

Pavement Design Results_Run 7.txt

HMA \$/y^2	TPB ft	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost	HMA-GF ft	ft
---------------	-----------	--------------	--------------	---------------	--------------	------	--------------	----

00.40	00.00	00.70	00.00	00.35	00.54	0000.00	01.94	
-------	-------	-------	-------	-------	-------	---------	-------	--

***** FINISH *****

Pavement Design Results_Run 1.txt

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 (ft)	GE (ft)	Depth (ft)	GF (ft)	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	T-Base ft	B-Base ft	Subbase	Res-GE ft	Cost	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	

Pavement Design Results_Run 1.txt

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 *****

Pavement Design Results_Run 2.txt

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
 $0.0032 \cdot TI \cdot (100 - R.VALUE) = 0000.60$ 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
 $0.0032 \cdot TI \cdot (100 - R.VALUE) = 0000.00$ ft
 TPB MAX. depth = 0000.25 ft
 TPB MIN. depth = 0000.25 ft

Depth (ft)	GF (ft)	GE (ft)	Depth (ft)	GF (ft)	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.

Pavement Design Results_Run 2.txt

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	TPB	T-Base	B-Base	Subbase	Res-GE	Cost	HMA-GF	
ft		ft		ft	ft		ft	ft

\$/y^2

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	GF	GE	Depth	GF	GE
(ft)	(ft)	(ft)	(ft)	(ft)	(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

Pavement Design Results_Run 2.txt

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	T-Base ft	B-Base ft	Subbase ft	Res-GE ft	Cost	HMA-GF ft	ft
\$/y^2								
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 *****

Pavement Design Results_Run 3.txt

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 (ft)	GE (ft)	Depth (ft)	GF (ft)	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	T-Base ft	B-Base	Subbase ft	Res-GE ft	Cost	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.

Google Earth software, version 7.0.3.8542

Hallsten, K. J. (2010). Preliminary Drawings, Monterey Bay Sanctuary Scenic Trail Project, Moss Landing Segment, Monterey County, California, August 31, 2010.

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

Parikh Consultants, Inc. (2000). Geotechnical Engineering Investigation Report, SR-1 / Dolan Road Intersection Improvements, Moss Landing, California, April 2000.

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

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STATE ROUTE 1 – DOLAN ROAD IMPROVEMENTS

Environmental Constraints Report

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November 11, 2013

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TABLE OF CONTENTS

1.0	INTRODUCTION	1-1
2.0	STUDY AREA DESCRIPTION	1-1
3.0	ENVIRONMENTAL ISSUE AREAS.....	3-1
3.1	Biological Resources	3-1
3.2	Cultural Resources	3-10
3.3	Hazardous Materials	3-11
3.4	Hydrology, Flooding, and Water Quality	3-12
3.5	Transportation	3-13
3.6	Utilities	3-15
4.0	REFERENCES	4-1

Figures

Figure 1	Study Area.....	2-3
Figure 2	Plant Communities	3-7

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 Plant 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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0 500 feet

 Study Area

Source: Google Earth 2012

Figure 1
Study Area



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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 RWQCB 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.

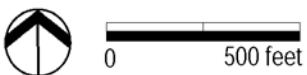
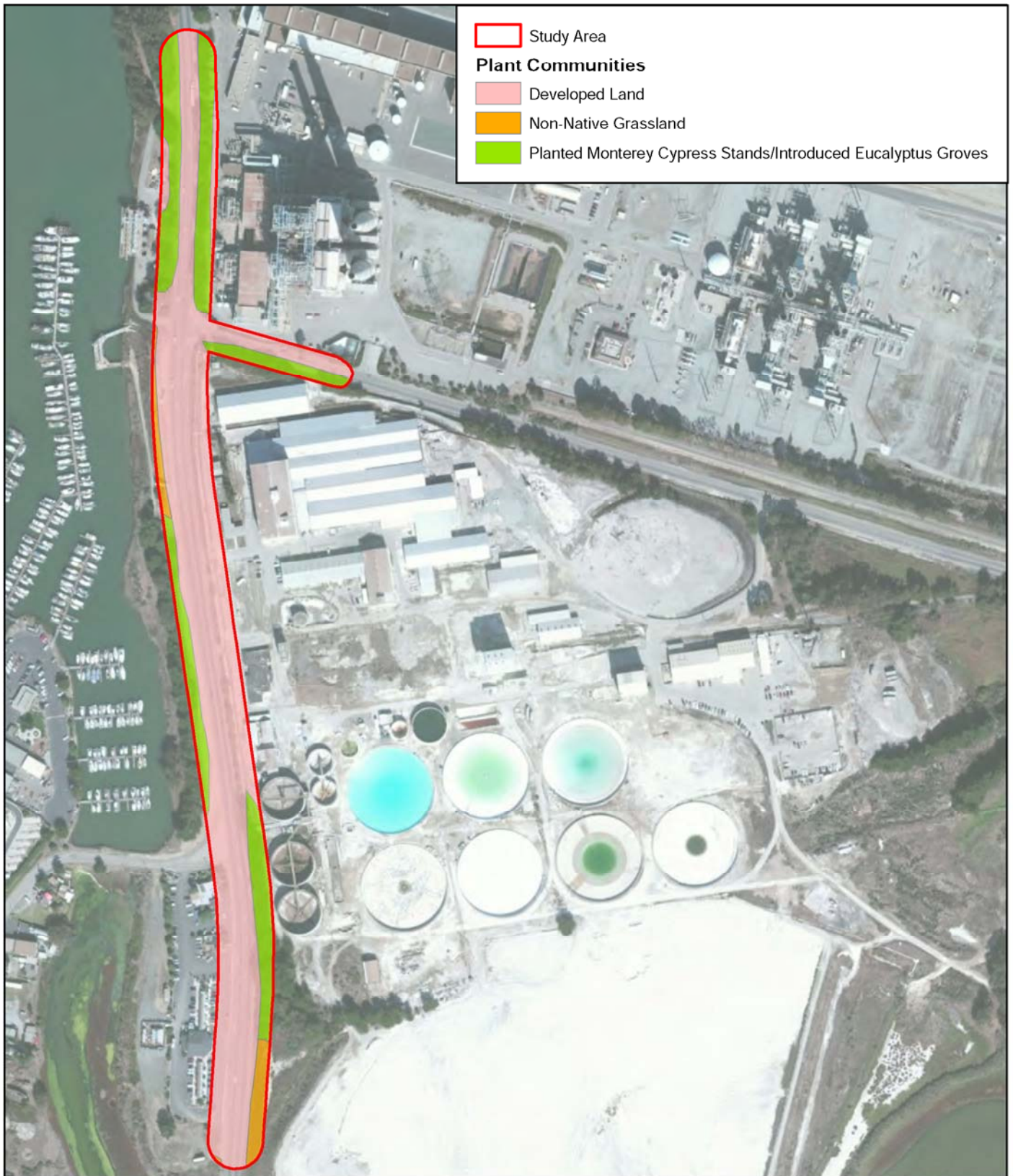
Non-Native Grassland. This plant community is dominated by non-native ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and soft chess (*Bromus hordeaceus*). Other species observed include non-native bristly ox-tongue (*Helminthotheca echinoides*), bull mallow (*Malva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



Source: Google Earth 2012

Figure 2

Plant Communities

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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), polycyclic aromatic 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 1 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

Primary Rd RT 1 City UNINCORP. Primary Collision Factor Weather1 CLEAR Hit and Run																			Distance (ft) I County MONTEREY R-O-W AUTO Weather2 Motor Veh Involved With																			Direction Population Violation OTHER MV																			Secondary Rd 9 Rpt Dist 21802A Collision Rdwy Surface DRY OTHER MV																			DOLAN RD Beat 074 SIDESWIPE INJURY DAYLIGHT Ped Action																			NCIC 9730 Type 1 CalTrans Dist 5 Severity INJURY NO UNUSL CND DAYLIGHT Ped Action																			State Hwy? Y Route 1 Badge 018543 Collision Date 20070705 Tow Away? 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Total Count: 85

MONTEREY COUNTY

Primary Rd DOLAN RD Distance (ft) 12 Direction E Secondary Rd RT 1 Beat 007 NCIC 9730 State Hwy? Y Route 1 Postmile Prefix - Postmile 96.101 Side of Hwy N City UNINCORP. 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Total Count: 85

MONTEREY COUNTY

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 Weather2 21801A Collision Type BROADSIDE Severity INJURY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Rdwy Condt 0 Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DARK - ST LTS Ped Action Hit and Run FELONY																		
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																		
1F	DRVR	998	M	B	HNB	IMP UNK	S	D	2200	FORD	-	3	N	-	B	-	-	-
2	DRVR	42	M	B	HNB	PROC ST	N	C	0200	-	2007	-	3	N	-	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 Weather2 21801A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Rdwy Condt 0 Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DUSK/DAWN Ped Action Hit and Run																		
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																		
1F	DRVR	69	M	O	HNB	LFT TURN	S	D	2200	FORD	1989	-	3	N	-	M	G	-
2	DRVR	36	M	W	HNB	PROC ST	N	A	0700	FORD	1991	-	3	N	-	M	G	-
3	DRVR	35	M	H	HNB	STOPPED	W	A	0800	PONTI	1998	-	3	N	-	M	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 Weather2 22350 Collision Type REAR END Severity PDO Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Rdwy Condt 0 Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Hit and Run																		
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																		
1F	DRVR	30	F	H	HNB	PROC ST	N	A	0100	HONDA	2001	-	3	N	-	M	G	0
2	DRVR	18	F	H	HNB	SLOWING	N	A	0100	KIA	2007	-	3	N	-	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 Weather2 22350 Collision Type REAR END Severity INJURY Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Rdwy Condt 0 Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Hit and Run																		
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																		
1F	DRVR	28	F	W	HNB	PROC ST	W	A	0100	TOYOT	1998	-	3	F	-	N	M	G
2	DRVR	33	F	H	HNB	STOPPED	W	A	0100	HONDA	2002	-	3	N	-	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 Weather2 21801A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Rdwy Cond2 Rdwy Condt 0 Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Ped Action Hit and Run																		
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																		
1F	DRVR	36	M	H	HNB	LFT TURN	S	D	2200	NISSA	1987	-	3	N	-	P	G	-
2	DRVR	25	M	W	HNB	PROC ST	N	A	0100	HONDA	1990	-	3	N	-	P	G	-
3	DRVR	28	F	H	HNB	STOPPED	W	A	0700	JEEP	2002	-	3	N	-	M	G	0

Total Count: 85

MONTEREY COUNTY

Primary Rd	DOLAN RD	Distance (ft)	2	Direction	E	Secondary Rd	RT 1	Beat	007	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLOUDY	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	32	F	H	HNB	STOPPED	W	A	0700	HUMME	2003	-	3	N	-	M	G				
2	DRVR	43	F	H	HNB	STOPPED	W	A	0100	CHRY	S 2001	-	3	N	-	M	G				
Primary Rd	DOLAN RD	Distance (ft)	10	Direction	E	Secondary Rd	RT 1	Beat	007	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLEAR	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	56	M	W	HNB	STOPPED	W	D	2200	TOYOT	2006	-	3	N	-	M	G				
2	DRVR	40	M	W	HNB	STOPPED	W	A	0100	TOYOT	2008	-	3	N	-	M	G				
Primary Rd	RT 1	Distance (ft)	1	Direction	S	Secondary Rd	DOLAN RD	Beat	074	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLOUDY	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	24	M	H	HNB	STOPPED	W	A	0100	MERCE	2001	-	3	N	-	M	G				
2	DRVR	29	M	A	HNB	SLOWING	W	A	0100	MITSU	1998	-	3	N	-	M	G				
Primary Rd	DOLAN RD	Distance (ft)	10	Direction	E	Secondary Rd	RT 1	Beat	007	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLEAR	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	24	M	H	HNB	STOPPED	W	A	0700	JEEP	2003	-	3	N	-	M	G				
2	DRVR	24	F	H	HNB	SLOWING	W	A	0100	NISSA	2002	-	3	N	-	M	G				
Primary Rd	RT 1	Distance (ft)	50	Direction	S	Secondary Rd	MOSS LANDING RD	Beat	074	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	95.80	Side of Hwy	S
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22350	Collision Type	REAR END	Weather1	CLEAR	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	31	M	W	HNB	STOPPED	W	A	0700	JEEP	2003	-	3	N	-	M	G				
2	DRVR	24	F	H	HNB	SLOWING	W	A	0100	NISSA	2002	-	3	N	-	M	G				
Primary Rd	RT 1	Distance (ft)	7	Direction	E	Secondary Rd	RT 1	Beat	007	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLEAR	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	19	F	W	HNB	STOPPED	S	A	0700	TOYOT	1990	-	3	N	-	M	G				
2	DRVR	59	M	H	HNB	SLOWING	S	A	0800	MAZDA	2006	-	3	N	-	M	G				
Primary Rd	DOLAN RD	Distance (ft)	7	Direction	E	Secondary Rd	RT 1	Beat	007	NCIC	9730	State Hwy?	Y	Route	1	Postmile Prefix	-	Postmile	96.101	Side of Hwy	N
City	UNINCORP.	County	MONTEREY	Population	9	Rpt Dist		Violation	22106	Collision Type	REAR END	Weather1	CLEAR	Weather2	Motor Veh Involved With	OTHER MV	Lighting	DAYLIGHT	Rdwy Cond1	NO UNUSL CND	Ped Action
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh	Make	Year	Sp	Info	OAF1	Viol	OAF2	Safety Equip	Role	Ext of Inj
1F	DRVR	18	M	H	HNB	STOPPED	W	F	5500	FREIG	2005	-	3	N	-	M	G				
2	DRVR	27	M	H	HNB	STOPPED	W	A	0700	CHEVR	1999	-	3	N	-	M	G				

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 Weather2 Violation 22350 Collision Type REAR END Severity PDO RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLEAR Rdwy Surface DRY Lighting DAYLIGHT																						
Hit and Run Motor Veh Involved With OTHER MV																						
MSDMNR																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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 -																						
Primary Rd RT 1 Distance (ft) 1 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 Weather2 Violation 21802A Collision Type HEAD-ON Severity PDO RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLOUDY Rdwy Surface DRY Lighting DAYLIGHT																						
Hit and Run Motor Veh Involved With OTHER MV																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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																						
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 5 Badge 19700 Collision Date 20090916 Time 2350 Day WED																						
Primary Collision Factor UNSAFE SPEED Weather2 Violation 22350 Collision Type REAR END Severity PDO RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLEAR Rdwy Surface DRY Lighting DARK - NO ST LTS Ped Action																						
Hit and Run Motor Veh Involved With OTHER MV																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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 - - -																						
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 Weather2 Violation 22350 Collision Type REAR END Severity INJURY RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLEAR Rdwy Surface DRY Lighting DAYLIGHT																						
Hit and Run Motor Veh Involved With OTHER MV																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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																						
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 Weather2 Violation 22106 Collision Type REAR END Severity PDO RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLEAR Rdwy Surface DRY Lighting DAYLIGHT																						
Hit and Run Motor Veh Involved With OTHER MV																						
MSDMNR																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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																						
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 Weather2 Violation 22106 Collision Type REAR END Severity PDO RdwY Cond1 NO UNUSL CND RdwY Cond2 Ped Action																						
Weather1 CLEAR Rdwy Surface DRY Lighting DAYLIGHT																						
Hit and Run Motor Veh Involved With OTHER MV																						
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																						
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																						

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
Primary Collision Factor	IMPROP PASS	Weather2	Violation 21755	Collision Type	SIDESWIPE	Severity	PDO	# Killed 0	# Injured 0	Tow Away?	N
Weather1 CLOUDY	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
Hit and Run	MSDMNR	Motor Veh Involved With	OTHER MV	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 998	M	W	HNB	UI	UNSTURN	N	A	0100	DODGE 1995	- 3 N
2	DRVR 73	M	W	HNB	UI	PROCAST	N	A	0700	HONDA 2007	- 3 N
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
Primary Collision Factor	DRVR ALCLIDRG	Weather2	Violation 23152A	Collision Type	HIT OBJECT	Severity	PDO	# Killed 0	# Injured 0	Tow Away?	Y
Weather1 CLEAR	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	FNCTNG	Loc Type H
Hit and Run		Motor Veh Involved With	FIXED OBJ	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	FNCTNG	Loc Type H
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 59	M	W	HBD-UI		UNSTURN	N	A	0100	SUBAR 1995	- 3 A
2	PRKD 998					PARKED	W	A	0800	FORD 2000	- 3 N
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
Primary Collision Factor	R-O-W AUTO	Weather2	Violation 21804A	Collision Type	BROADSIDE	Severity	INJURY	# Killed 0	# Injured 1	Tow Away?	Y
Weather1 CLEAR	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
Hit and Run		Motor Veh Involved With	OTHER MV	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 27	F	W	HNB		LFT TURN	E	A	0100	TOYOT 1998	- 3 N
2	DRVR 55	M	W	HNB		PROCAST	S	D	2200	CHEVR 1996	- 3 N
3	DRVR 27	F	H	HNB		PROCAST	N	D	2200	DODGE 2000	- 3 N
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
Primary Collision Factor	DRVR ALCLIDRG	Weather2	Violation 23152A	Collision Type	SIDESWIPE	Severity	PDO	# Killed 0	# Injured 0	Tow Away?	Y
Weather1 CLEAR	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
Hit and Run	MSDMNR	Motor Veh Involved With	OTHER MV	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 52	F	W	HNB		UNSTURN	S	A	0100	FORD 1998	- 3 A
2	DRVR 30	M	H	HNB		PROCAST	S	A	0700	GMC 1998	- 3 N
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
Primary Collision Factor	R-O-W AUTO	Weather2	Violation 21802A	Collision Type	HEAD-ON	Severity	INJURY	# Killed 0	# Injured 4	Tow Away?	Y
Weather1 CLEAR	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
Hit and Run		Motor Veh Involved With	OTHER MV	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	NT PRS/FCTR	Loc Type H
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 51	M	W	HNB		LFT TURN	N	D	2200	FORD 1991	- 3 N
2	DRVR 51	F	A	HNB		PROCAST	S	A	0100	TOYOT 2007	- 3 N
3	DRVR 51	F	W	HNB		PROCAST	N	A	0700	JEEP 2002	- 3 N
Primary Rd RT 1	Distance (ft) 1	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
Primary Collision Factor	R-O-W AUTO	Weather2	Violation 21802A	Collision Type	BROADSIDE	Severity	PDO	# Killed 0	# Injured 0	Tow Away?	N
Weather1 CLOUDY	Weather2	Motor Veh Involved With	Rdwy Surface DRY	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	FNCTNG	Loc Type I
Hit and Run		Motor Veh Involved With	OTHER MV	Lighting	Rdwy Cond1 NO UNUSL CND	Severity	PDO	Rdwy Cond2	Cntrl Dev	FNCTNG	Loc Type I
PARTY INFO											
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll	Dir	SW	Veh	CHP	Veh Make
1F	DRVR 64	M	W	HNB		LFT TURN	W	A	0100	HONDA 1998	- 2 N
2	DRVR 61	M	H	HNB		LFT TURN	S	D	2200	NISSA 1984	- 3 N

Total Count: 85

MONTEREY COUNTY

Primary Rd RT 1 City UNINCORP. Primary Collision Factor Weather1 CLEAR Hit and Run												Distance (ft) 1584 County MONTEREY WRONG SIDE Weather2 Motor Veh Involved With												Direction N Population 9 Violation 21460A Rdwy Surface DRY OTHER MV												Secondary Rd Rpt Dist SIDESWIPE Severity PDO NO UNUSL CND DAYLIGHT Ped Action												DOLAN RD Beat 074 Type 1 CalTrans Dist 5 Rdwy Cond1 NO UNUSL CND DAYLIGHT Ped Action												NCIC 9730 Type 1 CalTrans Dist 5 Severity PDO NO UNUSL CND DAYLIGHT Ped Action												State Hwy? Y Rdwy Cond1 NO UNUSL CND DAYLIGHT Ped Action												Route 1 Badge 19981 # Killed 0 # Injured 0 Tow Away? N Rdwy Cond2 NT PRS/FCTCR Loc Type H Ramp/Int -												Postmile Collision Date 20100331 Time 0840 Process Date 20110318 Spec Cond 0 Ramp/Int -												Side of Hwy S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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Total Count: 85

MONTEREY COUNTY

Primary Rd DOLAN RD Distance (ft) 11 Direction E Secondary Rd RT 1 RT 1 Beat 007 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 201007316 Time 1140 Day FRI																										
Primary Collision Factor UNSAFE SPEED Violation 22350 Collision Type REAR END RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? N Process Date 20120201																										
Weather1 CLEAR RdwY Surface DRY Lighting DAYLIGHT Ped Action																										
Hit and Run Motor Veh Involved With OTHER MV																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 998 IMP UNK IMP UNK STOPPED W A 0100 VOLVO - 3 N - B - PASS 51 F 3 M G 0																										
2 DRVR 53 F O HNB STOPPED W A 0700 HONDA 2002 - 3 N - M G PASS 51 F 3 M G 0																										
Primary Rd MOSS LANDING Rl Distance (ft) 60 Direction W Secondary Rd RT 1 RT 1 Beat 007 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 RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? N Process Date 20120201																										
Weather1 CLOUDY RdwY Surface DRY Lighting DAYLIGHT Ped Action																										
Hit and Run Motor Veh Involved With OTHER MV																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 60 M W HNB LFT TURN N D 2200 FORD 2007 - 3 N - M G PASS 49 M 3 M G 0																										
2 DRVR 62 M W HNB PROC ST W A 0100 TOYOT 2010 - 3 N - M G 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 DOLAN RD RT 1 Beat 062 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 RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? N Process Date 20120201																										
Weather1 CLOUDY RdwY Surface DRY Lighting DAYLIGHT Ped Action																										
Hit and Run Motor Veh Involved With OTHER MV																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 54 M H HNB LFT TURN W A 0700 FORD 1997 - 3 N - M G DRVR COMP PN 45 M 1 M G 0																										
2 DRVR 45 M W HNB LFT TURN S A 0700 TOYOT 2002 - 3 N - M G DRVR COMP PN 45 M 1 M G 0																										
Primary Rd RT 1 Distance (ft) 120 Direction S Secondary Rd DOLAN RD DOLAN RD RT 1 Beat 074 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 RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? Y Process Date 20120209																										
Weather1 CLOUDY RdwY Surface WET Lighting DUSK/DAWN Ped Action																										
Hit and Run Motor Veh Involved With OTHER MV																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 998 M H IMP UNK IMP UNK STOPPED S A 0100 HONDA 1990 - 3 N - P B PASS 20 M 3 P G 0																										
2 DRVR 58 M H HNB STOPPED S G 2731 PETER 1999 - 3 N - M G PASS 20 M 3 P G 0																										
Primary Rd RT 1 Distance (ft) 528 Direction N Secondary Rd DOLAN RD DOLAN RD RT 1 Beat 074 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 RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? Y Process Date 20120209																										
Weather1 CLOUDY RdwY Surface DRY Lighting DAYLIGHT Ped Action																										
Hit and Run Motor Veh Involved With OTHER MV																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 31 M W HNB OPPOS LN S D 2200 FORD 2003 - 3 F - M G PASS 20 M 3 P G 0																										
2 DRVR 27 M W HNB PROC ST N A 0700 FORD 2003 - 3 N - M G PASS 20 M 3 P G 0																										
Primary Rd RT 1 Distance (ft) 559 Direction N Secondary Rd DOLAN RD DOLAN RD RT 1 Beat 074 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 INJURY RdwY Cond1 NO UNUSL CND Severity PDO RdwY Cond2 RdwY Cond2 Tow Away? Y Process Date 20120209																										
Weather1 CLEAR RdwY Surface DRY Lighting DUSK/DAWN Ped Action																										
Hit and Run Motor Veh Involved With FIXED OBJ																										
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 Role Ext of Inj Age Sex Seat Pos Safety Equip Ejected																										
1F DRVR 23 M B HNB FATG RAN OFF RD S D 2200 GMC 2001 - 3 N - L G 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 Weather2 Violation 22350 Collision Type REAR END Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													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 Weather2 Violation 22350 Collision Type REAR END Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	67	M	W	HNB	PROC ST	N	A	0100	OLDSM	1996	- 3	G	-	L	G										
2	DRVR	25	F	H	HNB	SLOWING	N	D	2200	DODGE	2007	- 3	G	-	M	G			26	M	3	M	G	0		
													PASS													
													PASS													
Primary Rd RT 1 Distance (ft) 1056 Direction S 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 Weather2 Violation 21801A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													Primary Rd RT 1 Distance (ft) 1056 Direction S 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 Weather2 Violation 21801A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	44	M	O	HNB	LFT TURN	S	A	0700	JEEP	2007	- 3	F	-	M	G										
2	DRVR	44	M	W	HNB	PROC ST	N	A	0100	SATUR	2001	- 3	N	-	L	G										
Primary Rd RT 1 Distance (ft) 1056 Direction S 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													Primary Rd RT 1 Distance (ft) 1056 Direction S 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	66	M	W	HNB	RGT TURN	W	D	2200	DODGE	2001	- 3	N	-	M	G										
2	DRVR	40	M	H	HNB	STOPPED	W	A	0800	FORD	1995	- 3	N	-	M	G										
Primary Rd RT 1 Distance (ft) 1056 Direction S 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 Weather2 Violation 21802A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													Primary Rd RT 1 Distance (ft) 1056 Direction S 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 Weather2 Violation 21802A Collision Type BROADSIDE Severity PDO Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	24	M	A	HNB	LFT TURN	W	A	0100	HONDA	1998	- 3	N	-	P	G										
2	DRVR	40	M	H	HNB	PROC ST	S	D	2200	CHEVR	2006	- 3	N	-	M	G			49	F	3	M	G	0		
Primary Rd DOLAN RD Distance (ft) 1056 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity INJURY Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													Primary Rd DOLAN RD Distance (ft) 1056 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity INJURY Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLEAR Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	42	F	W	HNB	RGT TURN	W	A	0700	NISSA	2001	- 3	N	-	M	G										
2	DRVR	55	F	H	HNB	STOPPED	W	D	2200	FORD	1989	- 3	N	-	P	G			55	F	1	P	G	0		
Primary Rd DOLAN RD Distance (ft) 20516 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity INJURY Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													Primary Rd DOLAN RD Distance (ft) 20516 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 STRTINGBCKNG Weather2 Violation 22106 Collision Type REAR END Severity INJURY Rdwy Cond1 NO UNUSL CND Ped Action Weather1 CLOUDY Motor Veh Involved With OTHER MV Lighting DAYLIGHT Hit and Run													
PARTY INFO													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	Role	Ext of Inj	Age	Sex	Seat Pos	Safety Equip	Ejected					
1F	DRVR	32	F	H	HNB	PROC ST	W	A	0100	HONDA	1992	- 3	N	-	M	G			32	F	1	M	G	0		
2	DRVR	998	F	H	IMP UNK	IMP UNK	STOPPED	W	A	0100	HONDA		- 3	N	-	B	-			DRVR COMP PN	32	F	1	M	G	0

Primary Rd RT 1	Direction N	Distance (ft) 4	Secondary Rd	DOLAN RD	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 96.101	Side of Hwy N
City UNINCORP.	Population 9	Rpt Dist	Beat 074	Beat 074	Type 1	CalTrans Dist 5	Badge 019806	Collision Date	20110421	Time 0042
Primary Collision Factor	Violation 22450A	Collision Type	HIT OBJECT	WET	Severity PDO		# Killed 0	# Injured 0	Tow Away? Y	Process Date 20120918
Weather1 CLOUDY	Weather2	Rdwy Surface	FIXED OBJ	Lighting DARK - ST LTS	Rdwy Cond1 NO UNUSL CND	Ped Action			Loc Type I	Spec Cond 0
Hit and Run	Motor Veh Involved With	MSDMNR						Cntrl Dev	NT PRS/FCTR	Ramp/Int 5
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1F	DRVR 998	M	O	HNB		RAN OFF RD	N	A	0700	CHEVR 2000
Primary Rd RT 1	Direction N	Distance (ft) 10	Secondary Rd	DOLAN RD	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 96.101	Side of Hwy N
City UNINCORP.	Population 9	Rpt Dist	Beat 074	Beat 074	Type 1	CalTrans Dist 5	Badge 017851	Collision Date	20110506	Time 1140
Primary Collision Factor	Violation 22107	Collision Type	HIT OBJECT	WET	Severity PDO		# Killed 0	# Injured 0	Tow Away? Y	Process Date 20121213
Weather1 CLEAR	Weather2	Rdwy Surface	FIXED OBJ	Lighting DAYLIGHT	Rdwy Cond1 NO UNUSL CND	Ped Action			Loc Type I	Spec Cond 0
Hit and Run	Motor Veh Involved With							Cntrl Dev	NT PRS/FCTR	Ramp/Int 6
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1F	DRVR 44	M	O	HNB		RAN OFF RD	N	A	0700	CHEVR 2011
Primary Rd	MOSS LANDING RT	Distance (ft) 20	Secondary Rd	RT 1	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 95.810	Side of Hwy S
City UNINCORP.	Population 9	Rpt Dist	Beat 007	Beat 007	Type 3	CalTrans Dist 5	Badge 19529	Collision Date	20110515	Time 1610
Primary Collision Factor	Violation 22106	Collision Type	OTHER	Lighting DAYLIGHT	Rdwy Cond1 NO UNUSL CND	Ped Action			Tow Away? Y	Process Date 20121213
Weather1 CLEAR	Weather2	Rdwy Surface	OTHER MV						Loc Type I	Spec Cond 0
Hit and Run	Motor Veh Involved With							Cntrl Dev	FNCTNG	Ramp/Int 6
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1F	DRVR 15	M	H	HNB		BACKING	E	A	0700	NISSA 2005
2	DRVR 50	M	A	HNB		STOPPED	E	D	2200	DODGE 1997
Primary Rd RT 1	Direction S	Distance (ft) 200	Secondary Rd	MOSS LANDING RD	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 95.770	Side of Hwy S
City UNINCORP.	Population 9	Rpt Dist	Beat 074	Beat 074	Type 1	CalTrans Dist 5	Badge 17575	Collision Date	20110602	Time 1510
Primary Collision Factor	Violation 21804A	Collision Type	BROADSIDE	Lighting DAYLIGHT	Rdwy Cond1 NO UNUSL CND	Ped Action			Tow Away? N	Process Date 20121213
Weather1 CLOUDY	Weather2	Rdwy Surface	OTHER MV						Loc Type H	Spec Cond 0
Hit and Run	Motor Veh Involved With							Cntrl Dev	NT PRS/FCTR	Ramp/Int -
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1F	DRVR 998	M	H	HNB		LFT TURN	E	A	0100	NISSA 1997
2	DRVR 21	M	H	HNB		PROC ST	S	A	0100	NISSA 1997
Primary Rd	MOSS LANDING RT	Distance (ft) 50	Secondary Rd	RT 1	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 95.810	Side of Hwy S
City UNINCORP.	Population 9	Rpt Dist	Beat 007	Beat 007	Type 3	CalTrans Dist 5	Badge 15160	Collision Date	20110607	Time 1405
Primary Collision Factor	Violation 21460A	Collision Type	SIDESWIPE	Lighting DAYLIGHT	Rdwy Cond1 NO UNUSL CND	Ped Action			Tow Away? N	Process Date 20130102
Weather1 CLEAR	Weather2	Rdwy Surface	OTHER MV						Loc Type I	Spec Cond 0
Hit and Run	Motor Veh Involved With							Cntrl Dev	FNCTNG	Ramp/Int 6
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1	DRVR 53	M	H	IMP UNK		OTHER	E	F	2500	FREIG 1993
2	DRVR 35	M	H	HNB		OTHER	W	G	2528	PETER 2008
Primary Rd RT 1	Direction	Distance (ft) 1	Secondary Rd	DOLAN RD	NCIC 9730	State Hwy? Y	Route 1	Postmile Prefix -	Postmile 96.101	Side of Hwy N
City UNINCORP.	Population 9	Rpt Dist	Beat 074	Beat 074	Type 1	CalTrans Dist 5	Badge 018766	Collision Date	20110716	Time 0605
Primary Collision Factor	Violation 21801A	Collision Type	BROADSIDE	Lighting DUSK/DAWN	Rdwy Cond1 NO UNUSL CND	Ped Action			Tow Away? Y	Process Date 20130212
Weather1 CLOUDY	Weather2	Rdwy Surface	OTHER MV						Loc Type I	Spec Cond 0
Hit and Run	Motor Veh Involved With							Cntrl Dev	NT PRS/FCTR	Ramp/Int 5
PARTY INFO										
Party Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre Coll Dir	SW Veh	CHP Veh	Make	Year
1F	DRVR 46	M	H	HNB		LFT TURN	S	D	2200	ISUZU 2000
2	DRVR 36	M	H	HNB		PROC ST	N	A	0800	GMC 1997

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
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					Loc Type Spec Cond 0	Ramp/Int
Hit and Run	Motor Veh Involved With	OTHER MV		Lighting DAYLIGHT		Ped Action			Cntrl Dev NT PRS/FCR		
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	Role
1F DRVR 998	H	HNBD	IMP UNK	N	-	9900	-	3	N	-	B -
2 DRVR 42	M	H	HNBD	S	D	2200	CHEVR 2004	-	3	N	M G
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
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					Loc Type Spec Cond 0	Ramp/Int
Hit and Run	Motor Veh Involved With	OTHER MV		Lighting DAYLIGHT		Ped Action			Cntrl Dev NT PRS/FCR		
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	Role
1F DRVR 20	M	H	HNBD	S	A	0100	HONDA 1994	-	3	N	-
2 DRVR 61	F	W	HNBD	S	A	0100	LINCO 2008	-	3	N	M G
Primary Rd RT 1	Distance (ft) 1	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
Primary Collision Factor	STOP SGNISIG	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					Loc Type Spec Cond 0	Ramp/Int
Hit and Run	Motor Veh Involved With	OTHER MV		Lighting DAYLIGHT		Ped Action			Cntrl Dev FNCTNG		
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	Role
1F DRVR 58	F	W	HNBD	PROC ST	W	A	0100	TOYOT 1994	-	3	F
2 DRVR 37	M	H	HNBD	PROC ST	N	D	2200	GMC 2003	-	3	N
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
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					Loc Type Spec Cond 0	Ramp/Int
Hit and Run	Motor Veh Involved With	OTHER MV		Lighting DAYLIGHT		Ped Action			Cntrl Dev NT PRS/FCR		
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	Role
1F DRVR 33	F	H	HNBD	PROC ST	N	A	0100	MAZDA 2008	-	3	F
2 DRVR 35	M	W	HNBD	STOPPED	N	A	0100	ACURA 1993	-	3	G
3 DRVR 31	M	H	HNBD	SLOWING	N	D	2200	CHEVR 1997	-	3	G
Primary Rd RT 1	Distance (ft) 1	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
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					Loc Type Spec Cond 0	Ramp/Int
Hit and Run	Motor Veh Involved With	OTHER MV		Lighting DAYLIGHT		Ped Action			Cntrl Dev FNCTNG		
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	Role
1F DRVR 25	M	W	HNBD	LFT TURN	W	A	0700	DODGE 1992	-	3	N
2 DRVR 55	F	W	HNBD	LFT TURN	S	A	0100	VOLVO 2000	-	3	N

Appendix D

Travel Time Data

Travel Time & Delay Report for Highway 1

Legend:

NCT:	Nodes 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
Stop:	Speed 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 once again
CStop:	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 once again
BSIT:	Time spent Below Speed at (10 mph) while traveling from previous Node (seconds)
CBSTT:	Cumulative Time spent Below Speed at (10 mph) since beginning of Run (seconds)
ASIT:	Free-Flow Travel Time (spent Above Speed at (10 mph)) while traveling from previous Node (seconds) = TT - BSIT
CASIT:	Cumulative Free-Flow Travel Time (spent Above Speed at (10 mph)) since beginning of Run (seconds) = CTT - CBSTT
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) S, 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) travelling Northbound from Merritt Street

	Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	Signd	Csignd	BSIT	CSBIT	ASIT	AS	CAS	DS	PLS	MAS	Signd	CSignd	TBL	BQL	TBT	BQT	TBS	BQS	TBMAS	BQMAS	QDL	COL	CLN
to Motera Road (S)	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	98	141	4257	9305	4209	9264	0	6	26	52	115	0	6	0	5	58	136	46.6	45	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	11686	2376	11640	366	0	26	32	147	0	6	0	5	32	168	50.3	46	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 Moss Landing Road (N)	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 #4	6:37:30 AM	NB	19	224	1371	15474	1368	15419	134	1	25	19	199	0	6	0	5	19	218	46.2	47.2	50	50	51.9	0	1	1371	0	19	0	48.2	0	51.9	51.9	0	4971	6
to Moss Landing Road (N)	6:37:40 AM	NB	10	233	751	16225	750	16188	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 Moss Landing Road (N)	6:38:14 AM	NB	34	268	2643	18689	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 Moss Landing Road (N)	6:38:55 AM	NB	40	308	3240	22108	2907	21704	96	1	24	40	294	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 Moss Landing Road (N)	6:39:42 AM	NB	47	355	3922	26033	3915	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	6:40:19 AM	NB	36	392	2640	28671	2636	28155	123	4	27	33	364	0	6	0	5	36	386	46.7	46.9	55	55	54.3	0	1	2640	0	36	0	49.7	0	54.3	54.3	0	4971	11
to Moss Landing 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) travelling Northbound from Merritt Street

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Debx	CD	RT	CRT	Signd	Csignd	BSIT	CSBIT	ASIT	AS	CAS	DS	PLS	Mos	Signd	CSignd	TBL	BCL	TBT	BQT	TBS	BOs	TBMos	BOkMos	QDL	COL	CLN	
to Motera Road (S)	6:55:56 AM	NB	72	72	5046	5046	5056	5056	1448	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	54.9	0	0	4255	0	55	0	52.9	0	54.9	54.9	0	0	2	
to Driveway #1	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 Moss Landing Road (N)	6:57:51 AM	NB	20	187	1552	14103	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 #4	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 Moss Landing Road	6:58:20 AM	NB	10	216	751	16222	750	16188	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 Moss Landing Road	6:58:54 AM	NB	34	250	2644	18686	2628	18796	95	-2	5	36	245	0	0	0	3	34	247	53.2	51.5	50	50	56.3	0	0	2644	0	34	0	53.2	0	56.3	56.3	0	0	8
to Moss Landing Road (S)	6:59:35 AM	NB	41	291	3242	22107	2907	21704	107	1	6	40	294	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 Moss Landing Road (N)	7:00:23 AM	NB	48	339	3926	26033	3915	25519	120	1	7	47	332	0	0	0	3	48	336	55.5	52.4	55	55	56.2	0	0	3926	0	48	0	55.5	0	56.2	56.2	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 Moss Landing Road	7:02:14 AM	NB	72	450	5685	34360	5684	33859	281	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) travelling Northbound from Merritt Street

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Debx	CD	RT	CRT	Signd	Csignd	BSIT	CSBIT	ASIT	AS	CAS	DS	PLS	Mos	Signd	CSignd	TBL	BCL	TBT	BQT	TBS	BOs	TBMos	BOkMos	QDL	COL	CLN	
to Motera 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	56.6	1	1	5049	0	71	0	48.4	0	56.6	56.6	4086	4086	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	56.9	0	1	4255	0	52	0	56.2	0	56.9	56.9	0	4086	2
to Driveway #1	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	56.1	0	1	2379	0	29	0	56.7	0	56.1	56.1	0	4086	3
to Moss Landing Road (N)	7:18:30 AM	NB	10	162	866	12559	864	12504	129	-1	3	12	159	0	3	0	3	10	159	57	52.9	50	50	56.1	0	1	866	0	10	0	57	0	56.1	56.1	0	4086	4
to Moss Landing 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	4086	5
to Driveway #4	7:19:08 AM	NB	19	200	1372	15474	1368	15419	344	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	4086	6
to Moss Landing Road	7:19:17 AM	NB	9	209	751	16225	750	16188	312	-1	0	10	209	0	3	0	3	9	206	56.7	53	50	50	56.5	0	1	751	0	9	0	56.7	0	56.5	56.5	0	4086	7
to Moss Landing Road	7:19:48 AM	NB	31	239	2642	18687	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	4086	8
to Moss Landing 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	4086	9
to Moss Landing Road (N)	7:21:10 AM	NB	44	321	3927	26031	3915	25519	147	-3	-11	47	332	0	3	0	3	44	318	60.9	55.3	55	55	60.5	0	1	3927	0	44	0	60.9	0	60.5	60.5	0	4086	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	4086	11
to Moss Landing Road	7:22:50 AM	NB	68	422	5685	34356	5684	33859	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	4086	12

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

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	StopID	StopOrd	BSLT	CBST	ASIT	CASIT	AS	CAS	DS	PUS	MOS	Stops	CScore	TBL	BQL	TBT	BQT	TBS	BOS	TBMAS	BOUMAS	QOL	COLL	CLN
to Molera Road (N)	7:37:28 AM	NB	68	68	5061	5061	5056	5056	847	5	5	63	63	0	0	2	2	65	65	51	51	95	95	61.2	0	0	5061	0	68	0	51	0	61.2	0	0	0	1
to Moss Landing Road (S)	7:38:21 AM	NB	53	120	4295	9316	4209	9264	112	1	5	52	115	0	0	0	2	53	118	55	52.8	95	95	96.8	0	0	4295	0	53	0	55	0	96.8	0	0	2	
to Driveway #2	7:38:50 AM	NB	29	150	2379	11696	2376	11640	126	-3	2	32	147	0	0	0	2	29	147	55.4	53.3	90	90	59.1	0	0	2379	0	29	0	55.4	0	59.1	0	0	3	
to Moss Landing Road (N)	7:39:01 AM	NB	11	161	867	12560	864	12504	111	-1	2	12	159	0	0	0	2	11	159	52.9	52.3	90	90	54.5	0	0	867	0	11	0	52.9	0	54.5	0	0	4	
to Doan Road (N)	7:39:21 AM	NB	20	181	1552	14113	1548	14051	94	-1	1	21	180	0	0	0	2	20	179	52.2	52.3	90	90	54.9	0	0	1552	0	20	0	53.2	0	54.9	0	0	5	
to Driveway #1	7:39:36 AM	NB	17	198	1372	15468	1368	15419	103	-1	-1	19	199	0	0	0	2	17	196	54.5	53.4	90	90	58	0	0	1372	0	17	0	54.5	0	58	0	0	6	
to Moss Landing Road (N)	7:39:47 AM	NB	9	207	751	16236	750	16168	97	-1	-2	10	209	0	0	0	2	9	205	59.3	52.6	90	90	59	0	0	751	0	9	0	59.3	0	59	0	0	7	
to Shawe Road (S)	7:40:17 AM	NB	30	237	2642	18875	2628	18796	120	-6	-8	36	245	0	0	0	2	30	235	59.4	54.3	90	90	60.3	0	0	2642	0	30	0	59.4	0	60.3	0	0	8	
to Driveway #3	7:40:56 AM	NB	38	275	3231	22319	2907	21704	93	-1	-9	40	284	0	0	0	2	38	273	57.4	54.8	90	90	60	0	0	3231	0	38	0	57.4	0	60	0	0	9	
to Doan Road (N)	7:41:40 AM	NB	44	320	3921	26031	3915	25519	142	-3	-12	47	332	0	0	0	2	44	318	60.1	55.5	95	95	64.5	0	0	3921	0	44	0	60.1	0	64.5	0	0	10	
to Springfield Road (N)	7:42:12 AM	NB	32	352	2641	28672	2636	28155	101	-1	-13	33	364	0	0	0	2	32	260	56.5	55.6	95	95	58	0	0	2641	0	32	0	56.5	0	58	0	0	11	
to Driveway #4	7:43:21 AM	NB	69	420	5685	34357	5684	33859	113	-2	-15	70	435	0	0	0	2	69	418	56.4	55.7	95	95	59.9	0	0	5685	0	69	0	56.4	0	59.9	0	0	12	

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

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	StopID	StopOrd	BSLT	CBST	ASIT	CASIT	AS	CAS	DS	PUS	MOS	Stops	CScore	TBL	BOL	TBT	BQT	TBS	BOS	TBMAS	BOUMAS	QOL	COLL	CLN
to Molera Road	7:59:19 AM	NB	70	5069	5069	5096	5096	604	8	8	63	63	0	0	0	0	0	0	70	70	49.1	49.1	95	95	95.8	0	0	5069	0	70	0	49.1	0	95.8	0	0	1
to Moss Landing Road (S)	8:00:14 AM	NB	55	125	4252	9321	4209	9264	108	3	10	52	115	0	0	0	0	55	125	52.8	50.7	95	95	95.8	0	0	4252	0	55	0	52.8	0	95.8	0	0	2	
to Driveway #1	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	90	90	57.2	0	0	2377	0	30	0	53.3	0	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	90	90	56.2	0	0	868	0	11	0	54.3	0	56.2	0	0	4	
to Doan Road (N)	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	90	90	56.6	0	0	1550	0	22	0	47.2	0	56.6	0	0	5	
to Driveway #1	8:01:37 AM	NB	19	208	1372	15468	1368	15419	982	1	10	19	199	0	0	0	0	19	208	48.1	50.7	90	90	53.7	0	0	1372	0	19	0	48.1	0	53.7	0	0	6	
to Elkhorn Road (N)	8:01:46 AM	NB	9	218	750	16236	750	16168	125	-1	9	10	209	0	0	0	0	9	218	54.2	50.8	90	90	56.2	0	0	750	0	9	0	54.2	0	56.2	0	0	7	
to Driveway #2	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	90	90	58.1	0	0	2643	0	32	0	55.5	0	58.1	0	0	8	
to Shawe Road (S)	8:02:59 AM	NB	40	290	3236	22117	2907	21704	143	0	6	40	294	0	0	0	0	40	290	55.2	51.9	90	90	56.1	0	0	3236	0	40	0	55.2	0	56.1	0	0	9	
to Driveway #3	8:03:46 AM	NB	46	337	3923	26040	3915	25519	144	-1	5	47	332	0	0	0	0	46	336	57.8	52.8	95	95	99.5	0	0	3923	0	46	0	57.8	0	99.5	0	0	10	
to Springfield Road (N)	8:04:18 AM	NB	33	370	2640	28689	2636	28155	122	1	5	33	364	0	0	0	0	33	370	54.2	52.9	95	95	56.6	0	0	2640	0	33	0	54.2	0	56.6	0	0	11	
to Driveway #4	8:05:29 AM	NB	71	440	5685	34359	5684	33839	98	0	6	70	435	0	0	0	0	71	440	54.8	53.2	95	95	59.9	0	0	5685	0	71	0	54.8	0	59.9	0	0	12	

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

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delev	CD	RT	CRT	StopID	StopOrd	BSLT	CBST	ASIT	CASIT	AS	CAS	DS	PUS	MOS	Stops	CScore	TBL	BOL	TBT	BQT	TBS	BOS	TBMAS	BOUMAS	QOL	COLL	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	95	95	62.8	1	1	5050	0	71	0	48.5	0	62.8	4089	4089	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	95	95	98.2	0	1	4254	0	53	0	55.1	0	98.2	0	4089	2	
to Driveway #1	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	90	90	55.4	0	1	2378	0	31	0	52.9	0	55.4	0	4089	3	
to Moss Landing Road (N)	8:22:08 AM	NB	11	168	867	12549	864	12504	139	0	7	12	159	0	6	0	6	11	159	51.8	51.6	90	90	55.4	0	1	867	0	11	0	51.8	0	55.4	0	4089	4	
to Doan 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	90	90	59	0	1	1551	0	22	0	47.7	0	59	0	4089	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	90	90	52.1	0	1	1372	0	19	0	48.2	0	52.1	0	4089	6	
to Elkhorn Road (S)	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	90	90	52.7	0	1	751	0	10	0	52.2	0	52.7	0	4089	7	
to Shawe Road (N)	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	90	90	55.2	0	1	2642	0	35	0	51.7	0	55.2	0	4089	8	
to Driveway #2	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	90	90	54.6	0	1	3230	0	46	0	48.4	0	54.6	0	4089	9	
to Doan Road (N)	8:25:10 AM	NB	50	348	3931	26026	3915	25519	125	3	16	47	332	0	6	0	6	50	341	53.4	51	95	95	57.7	0	1	3931	0	50	0	53.4	0	57.7	0	4089	10	
to Springfield Road	8:25:50 AM	NB	40	387	2642	28689	2636	28155	0	7	23	33	364	0	6	0	6	40	381	45.2	50.4	95	95	49.4	0	1	2642	0	40	0	45.2	0	49.4	0	4089	11	
to Driveway #3	8:27:06 AM	NB	76	464	5685	34354	5684	33839	2830	6	29	70	435	0	6	0	6	76	467	50.9	50.5	95	95	55.1	0	1	5685	0	76	0	50.9	0	55.1	0	4089	12	

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	Stopd	Chupd	BSIT	CBST	ASIT	CASIT	AS	CAS	DS	PLS	MAS	Slope	TBL	BQL	TBT	BQT	TBS	BOS	TBMos	BOkMos	ODL	COLL	CLN	
to Mober Road	3:24:25 PM	NB	76	5046	5046	5056	5056	0	14	14	63	63	0	0	0	2	2	74	74	45	45	95	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	98	134	4249	9295	4209	9264	2173	5	19	52	115	0	0	0	2	58	132	50.3	47.3	95	55	55.3	0	0	4249	0	98	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	809	12542	864	12504	124	1	20	12	159	0	0	0	2	12	177	48.2	47.7	50	50	50.6	0	0	809	0	12	0	48.2	0	50.6	50.6	0	0	4
to Doan Road	3:36:29 PM	NB	21	201	1550	14939	1548	14951	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 #4	3:36:46 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 Moss Landing Road	3:36:59 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 Shawe Road (S)	3:37:31 PM	NB	34	262	2640	18661	2628	18796	140	-2	38	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 Doan Road	3:38:12 PM	NB	40	303	3229	22930	2907	21704	99	1	38	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 Springfield Road	3:38:06 PM	NB	54	357	3828	26017	3815	25519	155	7	25	47	332	0	0	0	2	54	354	49.5	49.7	55	55	55	0	0	3828	0	54	0	49.5	0	55	55	0	0	10
to Driveway #4	3:39:45 PM	NB	39	385	2641	28659	2636	28155	0	7	32	33	364	0	0	0	2	39	384	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 Driveway #4	3:41:04 PM	NB	79	475	5685	34343	5684	33859	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

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delev	CD	RT	CRT	Stopd	Chupd	BSIT	CBST	ASIT	CASIT	AS	CAS	DS	PLS	Mos	Slope	Slope	Stages	TBL	BQL	TBT	BQT	TBS	BOS	TBMos	BOkMos	ODL	COLL	CLN
to Mober Road	3:57:02 PM	NB	80	60	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	4994	4994	1	
to Moss Landing Road (S)	3:58:38 PM	NB	96	175	4249	9288	4209	9264	104	43	60	52	115	7	16	10	20	86	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 Doan Road	3:59:47 PM	NB	23	244	1550	14934	1548	14951	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 #4	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	46.7	0	2	1374	0	21	0	43.8	0	46.7	46.7	0	6087	6	
to Elkhorn Road	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	46.3	0	2	752	0	12	0	44	0	46.3	46.3	0	6087	7	
to Moss Landing Road	4:01:01 PM	NB	42	319	2640	18660	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 Shawe Road (S)	4:01:47 PM	NB	46	364	3225	22934	2907	21704	946	6	80	40	294	0	16	0	20	46	345	46.4	41.3	50	50	51.4	0	2	3225	0	46	0	46.4	0	51.4	51.4	0	6087	9	
to Doan Road	4:02:38 PM	NB	51	415	3832	26018	3815	25519	295	4	84	47	332	0	16	0	20	51	396	52.4	42.7	55	55	56.2	0	2	3832	0	51	0	52.4	0	56.2	56.2	0	6087	10	
to Springfield Road	4:03:18 PM	NB	41	466	2641	28659	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 Driveway #4	4:04:39 PM	NB	81	537	5685	34343	5684	33859	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 4:19:18 pm (35449 seconds) traveling Northbound from Merritt Street

Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	Stopd	Chupd	BSIT	CBST	ASIT	CASIT	AS	CAS	DS	PLS	Mos	Slope	Slope	Stages	TBL	BQL	TBT	BQT	TBS	BOS	TBMos	BOkMos	ODL	COLL	CLN
to Mober Road	4:20:39 PM	NB	84	84	5058	5058	5056	5056	0	21	21	63	63	0	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	46.9	0	0	4250	0	61	0	47.3	0	46.9	46.9	0	0	2	
to Driveway #4	4:22:13 PM	NB	32	177	2376	11682	2376	11640	109	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	809	12552	864	12504	127	1	31	12	159	0	0	0	3	12	186	48	45.1	50	50	51.5	0	0	809	0	12	0	48	0	51.5	51.5	0	0	4	
to Doan Road	4:22:47 PM	NB	22	212	1550	14102	1548	14051	967	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 #4	4:23:07 PM	NB	20	231	1374	15475	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 Road	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 Moss Landing Road	4:23:54 PM	NB	37	279	2640	18670	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 Shawe Road (S)	4:24:36 PM	NB	42	321	3223	22952	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 Doan Road	4:25:26 PM	NB	52	373	3828	26021	3815	25519	604	5	41	47	332	0	0	0	3	52	370	51.5	47.6	55	55	56.4	0	0	3828	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	46.3	0	0	2643	0	54	0	33.5	0	46.3	46.3	0	0	11	
to Driveway #4	4:26:19 PM	NB	117	544	5686	34349	5684	33859	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																																						
Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Delay	CD	RT	CRT	Stopd	Chngd	BSIT	CBST	ASIT	CAS	PLS	MAS	Slope	CSlope	TBL	BQL	TBT	ROT	TBS	BQS	TRMS	BQMS	QOL	COQL	CLN				
to Moberg Road (S)	4:43:13 PM	NB	73	5049	5049	5056	717	10	10	63	63	0	0	0	0	4	4	69	69	47.1	47.1	95	57.6	0	0	5049	0	73	0	47.1	0	57.6	57.6	0	0	1		
to Driveway #2	4:44:13 PM	NB	61	134	4248	9297	4209	9264	0	9	19	52	115	0	0	0	0	4	61	130	47.7	47.4	95	51.7	0	0	4248	0	61	0	47.7	0	51.7	91.7	0	0	2	
to Moberg Road (N)	4:44:49 PM	NB	36	170	2377	11574	2376	11640	89	4	23	32	147	0	0	0	0	4	36	166	44.9	46.9	90	50	48.7	0	0	2377	0	36	0	44.9	0	48.7	48.7	0	0	3
to Moberg Road (S)	4:45:03 PM	NB	13	183	869	12543	864	12604	0	2	24	12	159	0	0	0	0	4	13	179	44.4	46.7	90	50	47.7	0	0	869	0	13	0	44.4	0	47.7	47.7	0	0	4
to Driveway #4	4:45:26 PM	NB	24	207	1551	14939	1548	14051	0	3	27	21	180	0	0	0	0	4	24	203	44.3	46.4	90	50	47.7	0	0	1551	0	24	0	44.3	0	47.7	47.7	0	0	5
to Moberg Road (N)	4:45:47 PM	NB	20	227	1373	15467	1368	15419	1339	2	29	19	199	0	0	0	0	4	20	224	45.7	46.4	90	50	48.4	0	0	1373	0	20	0	45.7	0	48.4	48.4	0	0	6
to Moberg Road (S)	4:45:59 PM	NB	12	239	752	16218	750	16188	0	1	30	10	209	0	0	0	0	4	12	235	44.1	46.2	90	48.4	0	0	752	0	12	0	44.1	0	46.4	46.4	0	0	7	
to Shawe Road (N)	4:46:36 PM	NB	37	277	2642	11863	2628	18796	1091	2	32	36	245	0	0	0	0	4	37	273	48.1	46.5	90	53.3	0	0	2642	0	37	0	48.1	0	53.3	53.3	0	0	8	
to Moberg Road (S)	4:47:25 PM	NB	49	325	3229	22939	2907	21704	111	9	41	40	284	0	0	0	0	4	49	322	45.2	46.3	90	55	52.3	0	0	3229	0	49	0	45.2	0	52.3	92.3	0	0	9
to Moberg Road (N)	4:48:17 PM	NB	53	378	3934	26024	3915	25519	398	5	46	47	332	0	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 (N)	4:49:20 PM	NB	63	441	2644	29669	2636	29155	0	30	76	33	364	0	0	0	0	4	63	437	28.6	44.3	95	55	46.3	0	0	2644	0	63	0	28.6	0	46.3	46.3	0	0	11
to Moberg Road	4:50:51 PM	NB	91	532	5698	34534	5684	33859	0	21	97	70	435	0	0	0	0	4	91	528	42.6	44	55	55	48.5	0	0	5698	0	91	0	42.6	0	48.5	48.5	0	0	12

Entered artery 5:04:05 pm (18138 seconds) Traveling Northbound from Merritt Street																																						
Note	NCT	Dir	IT	CTI	IL	CTL	DL	COL	DSL	Debx	CD	RT	CRT	Stopd	Chngd	BSIT	CBST	ASIT	CASIT	AS	CAS	PLS	MAS	Slope	TBL	ROL	TOT	BOT	TBS	BQS	TBMS	BQMS	COL	COL	CLN			
to Moberg Road (N)	5:05:44 PM	NB	100	5047	5047	5056	5056	0	37	37	63	63	11	11	12	12	88	88	34.5	34.5	95	52.3	1	1	5047	0	100	0	34.5	0	52.3	0	52.3	4993	4993	1		
to Moberg 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	95	55	51.7	0	1	4248	0	64	0	45.2	0	51.7	0	4993	2		
to Driveway #1	5:07:20 PM	NB	33	196	2378	11873	2376	11640	728	0	49	32	147	0	11	0	12	33	185	49.6	40.5	90	53.4	0	1	2378	0	33	0	40.6	0	53.4	0	53.4	0	4993	3	
to Moberg Road (N)	5:07:32 PM	NB	12	208	809	12542	864	12604	77	0	49	12	150	0	11	0	12	12	196	51.1	41.1	90	53.3	0	1	809	0	12	0	51.1	0	53.3	0	53.3	0	4993	4	
to Moberg Road (S)	5:07:55 PM	NB	23	231	1551	14932	1548	14051	777	2	51	21	180	0	11	0	12	23	219	46.2	41.6	90	50	48.1	0	1	1551	0	23	0	46.2	0	48.1	0	48.1	0	4993	5
to Driveway #4	5:08:15 PM	NB	20	251	1374	15466	1368	15419	1022	2	52	19	190	0	11	0	12	20	239	46.2	42	50	50	51.2	0	1	1374	0	20	0	46.2	0	51.2	0	51.2	0	4993	6
to Elkhorn Road (N)	5:08:25 PM	NB	10	261	752	16218	750	16188	96	0	52	10	209	0	11	0	12	10	249	51.5	42.4	90	53	0	1	752	0	10	0	51.5	0	53	0	53	0	4993	7	
to Elkhorn Road (S)	5:09:00 PM	NB	35	296	2641	11869	2628	18796	96	-1	52	36	245	0	11	0	12	35	285	51	43.4	90	50	54.2	0	1	2641	0	35	0	51	0	54.2	0	54.2	0	4993	8
to Shawe Road (S)	5:09:42 PM	NB	42	338	3230	22939	2907	21704	78	2	54	40	294	0	11	0	12	42	327	52.5	44.5	90	55	55	0	1	3230	0	42	0	52.5	0	55	0	55	0	4993	9
to Moberg Road (N)	5:10:33 PM	NB	51	389	3933	26023	3915	25519	534	4	57	47	332	0	11	0	12	51	378	52.6	45.6	95	56.2	0	1	3933	0	51	0	52.6	0	56.2	0	56.2	0	4993	10	
to Springfield Road (N)	5:11:21 PM	NB	48	437	2641	29664	2636	29155	0	15	73	33	364	0	11	0	12	48	425	37.7	44.7	95	55	51.5	0	1	2641	0	48	0	37.7	0	51.5	0	51.5	0	4993	11
to Moberg Road	5:13:19 PM	NB	118	555	5696	34535	5684	33859	0	47	120	70	435	9	20	9	21	109	534	32.9	42.2	95	55	51.3	1	2	1136	4549	34	84	22.8	27.6	51.3	4454	9446	12		

Cumulative Reports

Entered artery 6:33:47 am (320 seconds) Traveling Northbound from Merritt Street														
Note	NCT	Dir	CTI	CTL	CD	CRT	Stopd	CBST	CASIT	CAS	CSlope	COL	CLN	
to Jensen Road	6:41:33 AM	NB	466	34357	33859	31	435	6	5	461	50.2	1	4971	
to Jensen Road	7:02:14 AM	NB	450	34380	33859	15	435	0	3	447	53.1	0	12	
to Jensen Road	7:22:50 AM	NB	422	34356	33859	-13	435	3	3	419	55.6	1	4980	
to Jensen Road	7:43:21 AM	NB	420	34357	33859	-15	435	0	2	418	55.7	0	12	
to Jensen Road	8:05:29 AM	NB	440	34386	33859	6	435	0	0	440	53.2	0	12	
to Jensen Road	8:27:06 AM	NB	464	34354	33859	29	435	6	6	457	50.5	1	4980	
to Jensen Road	8:41:04 PM	NB	475	34343	33859	40	435	0	2	472	49.3	0	12	
to Jensen Road	4:04:39 PM	NB	537	34343	33859	102	435	16	20	517	43.6	2	6087	
to Jensen Road	4:28:19 PM	NB	544	34348	33859	109	435	0	3	541	43.1	0	12	
to Jensen Road	4:50:51 PM	NB	532	34364	33859	97	435	0	4	528	44	0	12	
to Jensen Road	5:13:19 PM	NB	555	34350	33859	120	435	20	21	534	42.2	2	9446	

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)
- QDL:**
Cumulative User-specified Design Distance since beginning of Run (feet)
- DRL:**
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 - CTT
- RT:**
Running Time from previous Node (seconds) = DL/DS
- CRT:**
Cumulative Running Time (seconds) = accumulation of CRTs since beginning of Run
- Stops:**
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
- CStops:**
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
- BS:**
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:**
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) = TT/TT
- CA:**
Cumulative Actual Average Speed since beginning of Run (mph) = CTL/CTL
- DS:**
User-specified Design Speed (mph)
- PLS:**
User-specified Posted Speed Limit (mph)
- MS:**
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
- TBA:**
Average Speed to First Blockage (mph) = TBL/TBT
- BQS:**
Average Speed from First Blockage to this Node (mph) = BQ/BQT, when applicable
- TBMb:**
Maximum Speed to First Blockage (mph) MxS, if there is no blockage
- BQMb:**
Maximum Speed from First Blockage to this Node (mph) MxS, 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
- CDL:**
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 area at 3142.2 pm (16195 seconds) travelling Southbound from Jerez Road																															
Node	ACT	IT	CTT	TL	CTL	BL	CLA	POA	POW	CD	WT	CAF	30m00	30m02	35.11	35.17	35.21	35.27	35.31	35.37	35.43	35.49	35.55	35.61	35.67	35.73	35.79	35.85	35.91		
Springford	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 1)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 2)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 3)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 4)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 5)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 6)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 7)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 8)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 9)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 10)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 11)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 12)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 13)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 14)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 15)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 16)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 17)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 18)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 19)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 20)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 21)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 22)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 23)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 24)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 25)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 26)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 27)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 28)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 29)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 30)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 31)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 32)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 33)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 34)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 35)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 36)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 37)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 38)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 39)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 40)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 41)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 42)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 43)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 44)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 45)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 46)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 47)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 48)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3	70	70	0	0	0	0	73	53.1	53.1	56	58	0	0	5085	0	73	0	53.1	0	58	0
Springford (No. 49)	4:32.54 PM	58	73	5085	5085	5084	5084	102	3	3																					

Entered area 4.54/6 pm (173/39 seconds) travelling Southbound from Irsen Road																											
Node	AC1	IT	LT	LT	CTL	CA	CA	PAW	CD	IT	LT	LT	LT	CTL	CA	CA	PAW	CD	IT	LT	LT	LT	CTL	CA	CA	PAW	
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-2	70	70	0	0	68	68	56.6	30	95	618	0	0	5085	0	68	0	68
Springford	4:53.14 PM	SR	68	68	5085	5085	5084	9684	154	-																	

Cumulative Reports

Entered year 6:45:23 AM (1016 sec) - Targeting Southbound from Jensen Road															
	NCD	CIT	CLT	COL	QCR	SCH	SHO	CSH	CSB	SCB	COB	QCB	NCB	CCB	QCB
North Street	6:52:29 AM	SB	448	340:55	33:39	16	-431	0	1	467	52:3	0	0	13	
West Main Street	7:13:54 AM	SB	470	340:54	32:39	29	-431	2	4	469	48:4	2	50:68	12	
South Main Street	7:36:40 AM	SB	460	340:68	33:39	43	-431	0	1	469	50:9	0	0	12	
East Main Street	7:56:16 AM	SB	489	340:53	33:39	57	-431	11	11	477	48	1	0	12	
North Street	8:17:16 AM	SB	467	340:44	33:39	55	-431	12	15	471	48:1	1	0	12	
West Main Street	8:39:00 AM	SB	464	340:51	33:39	33	-431	0	0	464	50:5	0	0	12	
South Main Street	8:59:33 PM	SB	461	340:83	33:39	30	-431	0	0	461	50:9	0	0	12	
East Main Street	9:33:36 PM	SB	591	340:59	33:39	130	-431	23	21	541	41:7	1	22:2	13	
North Street	4:17:23 PM	SB	576	340:63	32:39	144	-431	112	108	407	40:7	1	3	12	
West Main Street	4:30:06 PM	SB	497	340:57	33:39	73	-431	58	58	467	46:5	1	8	12	
South Main Street	5:02:22 PM	SB	497	340:66	33:39	65	-431	3	9	488	47	0	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

Traffic Data Service

Campbell, CA

(408) 377-2988

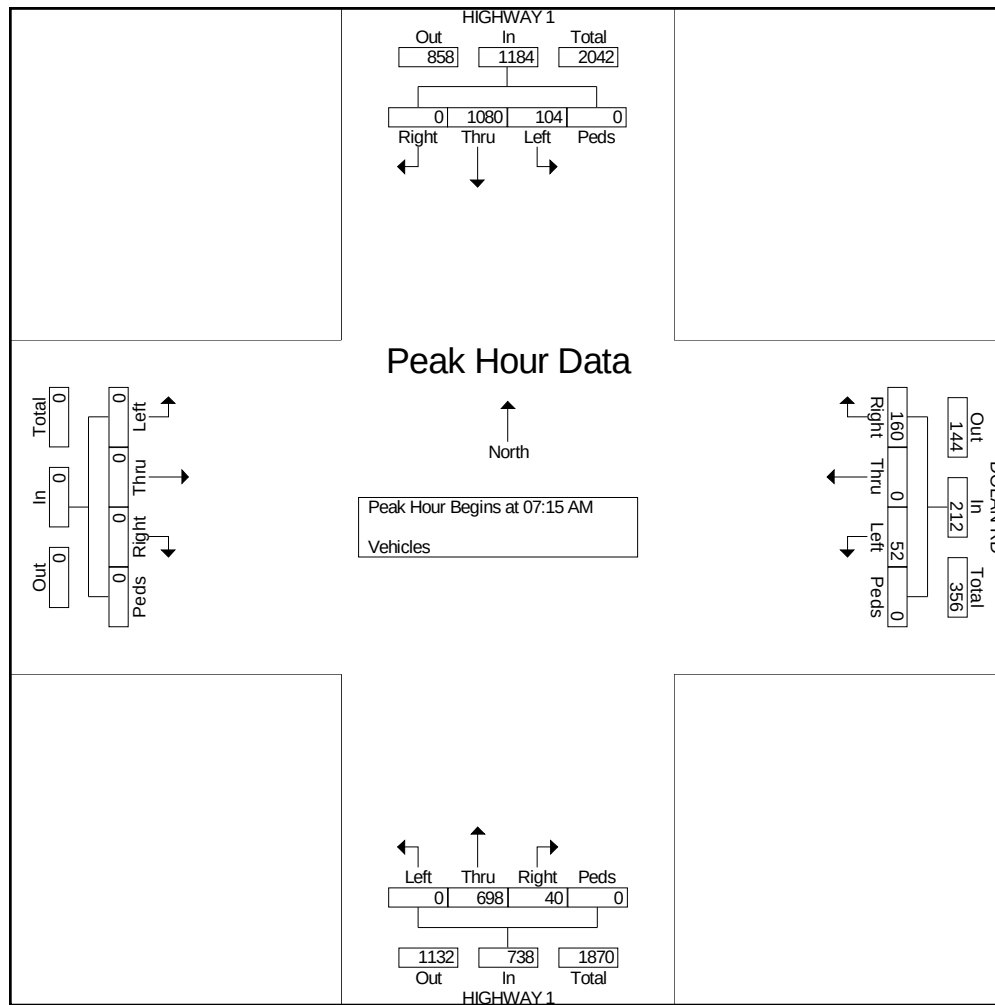
tdsbay@cs.com

File Name : 1AM FINAL

Site Code : 00000001

Start Date : 3/30/2011

Page No : 2



Traffic Data Service

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

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

Traffic Data Service

Campbell, CA

(408) 377-2988

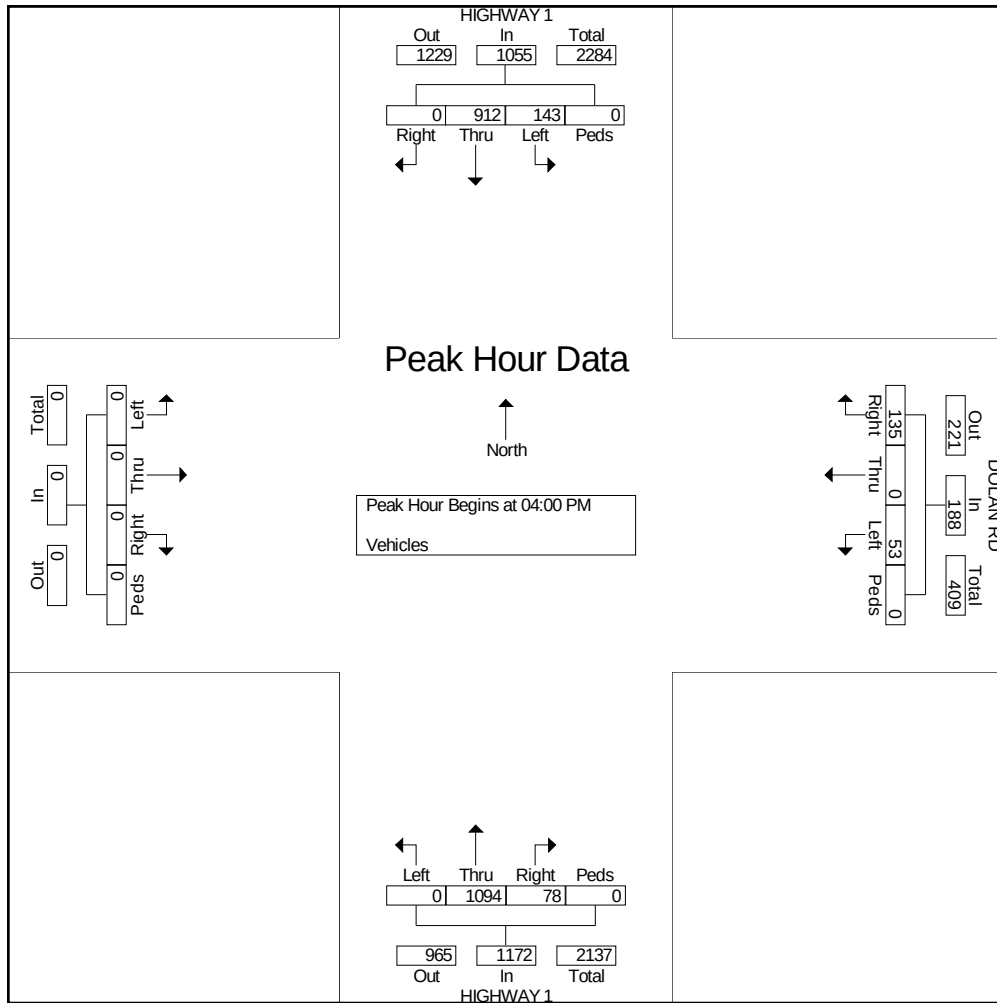
tdsbay@cs.com

File Name : 1PM FINAL

Site Code : 00000001

Start Date : 3/30/2011

Page No : 2



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	NBRWBLn1	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	-

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing AM - Full Signal

4/24/2014

								
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+I), s	17.9	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing AM - Full Signal - 2 Lanes

4/24/2014

								
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+I), s	15.9	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing AM - Half Signal

4/24/2014

								
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+l1), 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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing AM - Half Signal - 2 NB Throughs

4/24/2014

								
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+1), 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
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	NBRWBLn1WBLn2	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
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	NBRWBLn1	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	-

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing PM - Full Signal
4/24/2014

								
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+I), s	19.9	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing PM - Full Signal - Two Lanes

4/24/2014

								
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+I), s	17.2	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Existing PM - Half Signal
4/24/2014

								
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					

HCM 2010 Signalized Intersection Summary
1: SR 1 & Dolan Rd

Existing PM - Half Signal - 2 NB Thrus

4/24/2014

								
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+l1), 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
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	-

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 AM - Full Signal
4/24/2014

								
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+I), s	19.8	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 AM - Full Signal - 2 Lanes

4/24/2014

								
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	13.0	27.0				44.0		8.0
Max Q Clear Time (g_c+I), s	10.5	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					

HCM 2010 Signalized Intersection Summary
1: SR 1 & Dolan Rd

Year 2035 AM - Half Signal

4/24/2014

								
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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 AM - Half Signal - 2 NB Throughs

4/24/2014

								
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+l1), 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
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	NBRWBLn1	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	-

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 PM - Full Signal

4/24/2014

	     							
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+10), s	11.0	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 PM - Full Signal - Two Lanes

4/24/2014

								
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+I), s	17.9	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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 PM - Half Signal
4/24/2014

								
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+l1), 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					

HCM 2010 Signalized Intersection Summary

1: SR 1 & Dolan Rd

Year 2035 PM - Half Signal - 2 NB Thrus

4/24/2014

								
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+l1), 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



1

CABRILLO HWY

← 1315(1120)
↘ 120(160)

↑ 180(155)
↙ 60(60)

↑ 860(1345)
↘ 45(90)

Dolan Rd

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

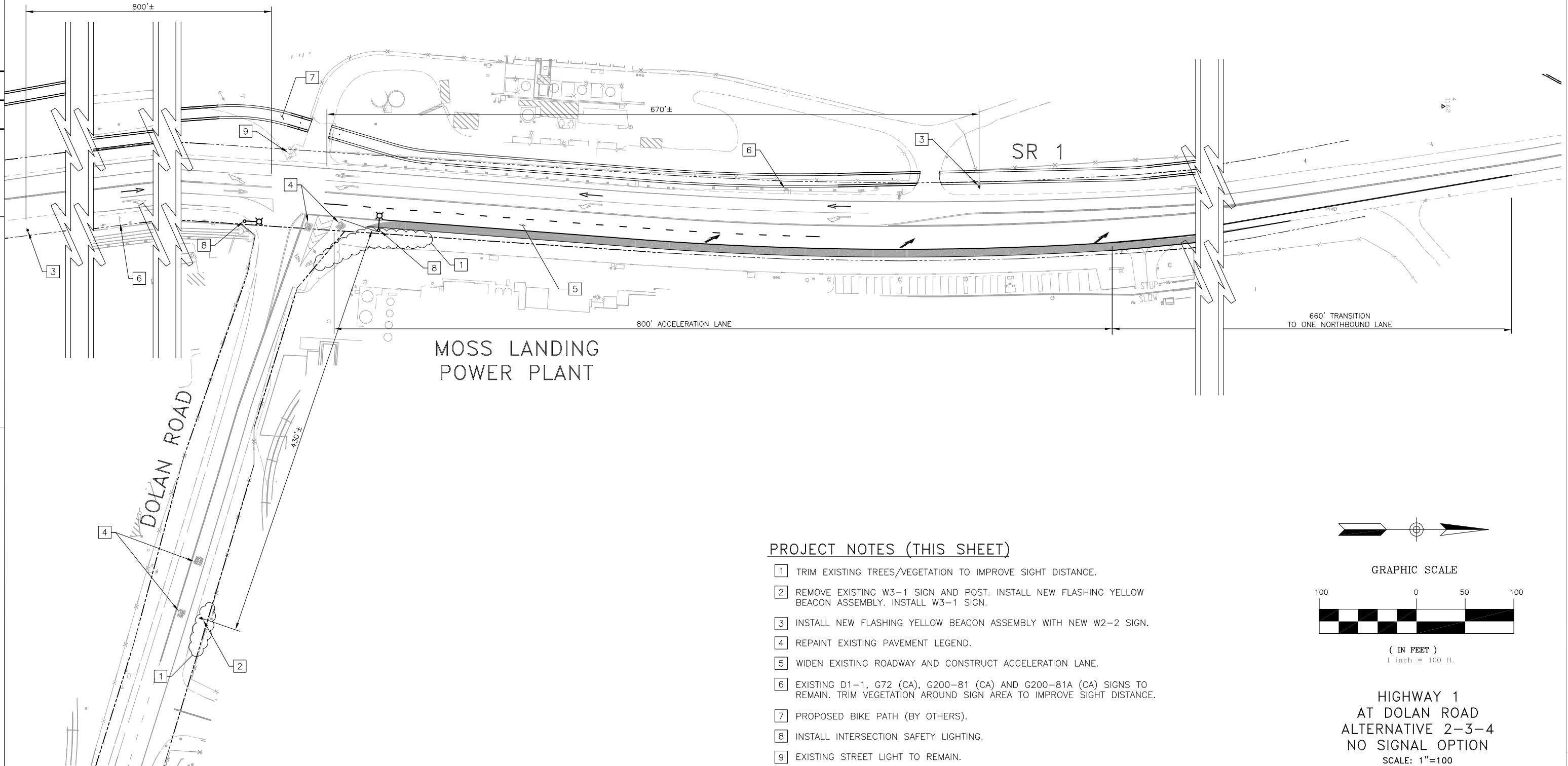
Roundabout Conceptual Footprint

Appendix I

Improvement Alternative Conceptual Designs

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX-XX.XX	1	4

CONCEPTUAL PLAN ONLY
NOT FOR CONSTRUCTION



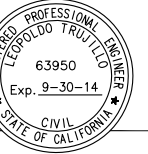
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	MON	1	XX.XX-XX.XX	4	4

CONCEPTUAL PLAN ONLY
NOT FOR CONSTRUCTION

THIS PLAN IS CONCEPTUAL ONLY, AND IS PREPARED FROM AVAILABLE AERIAL PHOTOS AND FIELD MEASUREMENTS, NOT TOPOGRAPHIC SURVEY DATA. FINAL DESIGN WILL BE CONTINGENT UPON PHYSICAL, TOPOGRAPHIC, UTILITY AND RIGHT-OF-WAY CONSTRAINTS.

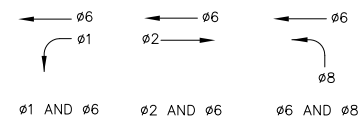
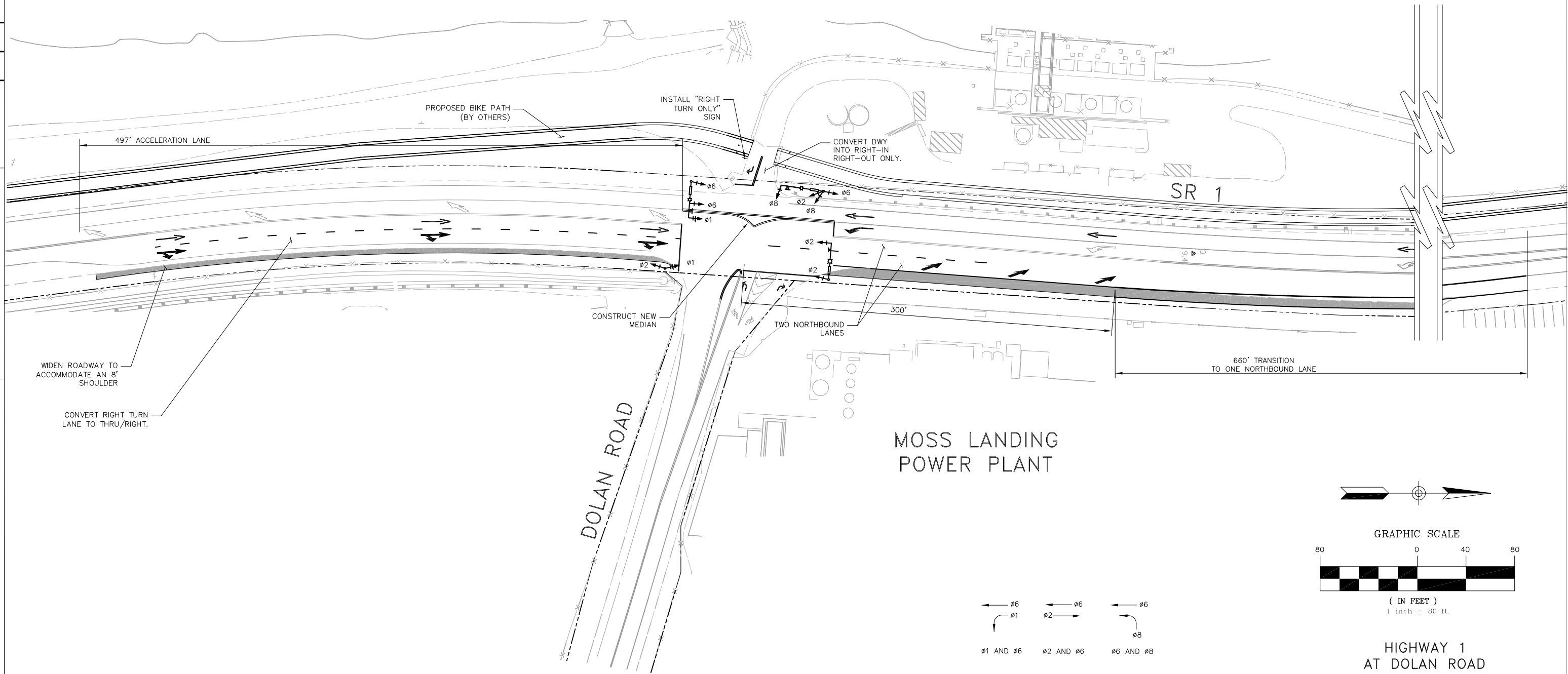
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

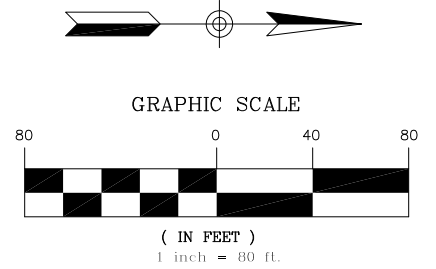
Hatch Mott
MacDonald W

1300-B FIRST STREET
GILROY, CA 95020
(408)848-3122
WWW.HATCHMOTT.COM

1-11-13



PROPOSED PHASE DIAGRAM

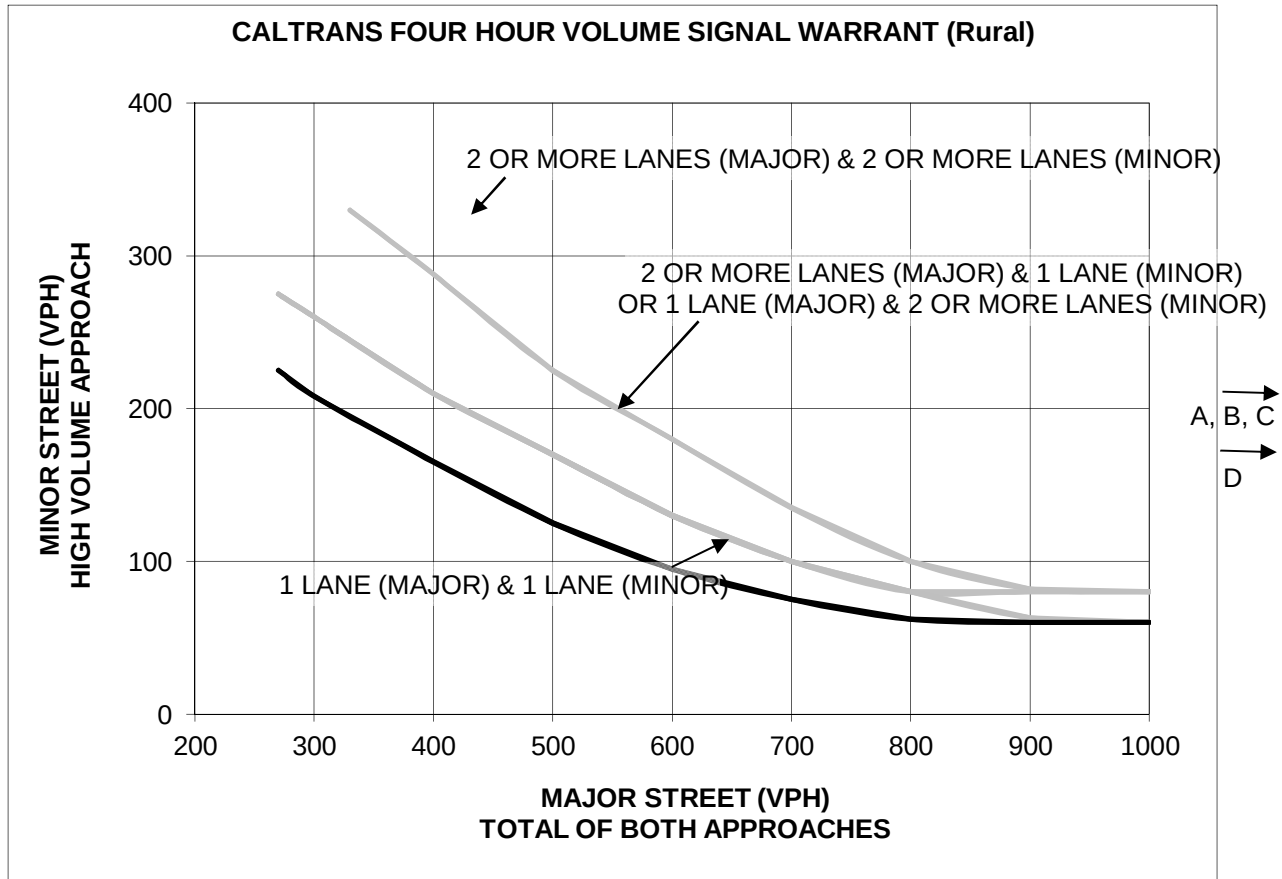


HIGHWAY 1
AT DOLAN ROAD
ALTERNATIVE 9B
HALF SIGNAL OPTION 2
SCALE: 1"=80'

Appendix J

Signal Warrants

Warrant 2 - Four-Hour Warrant

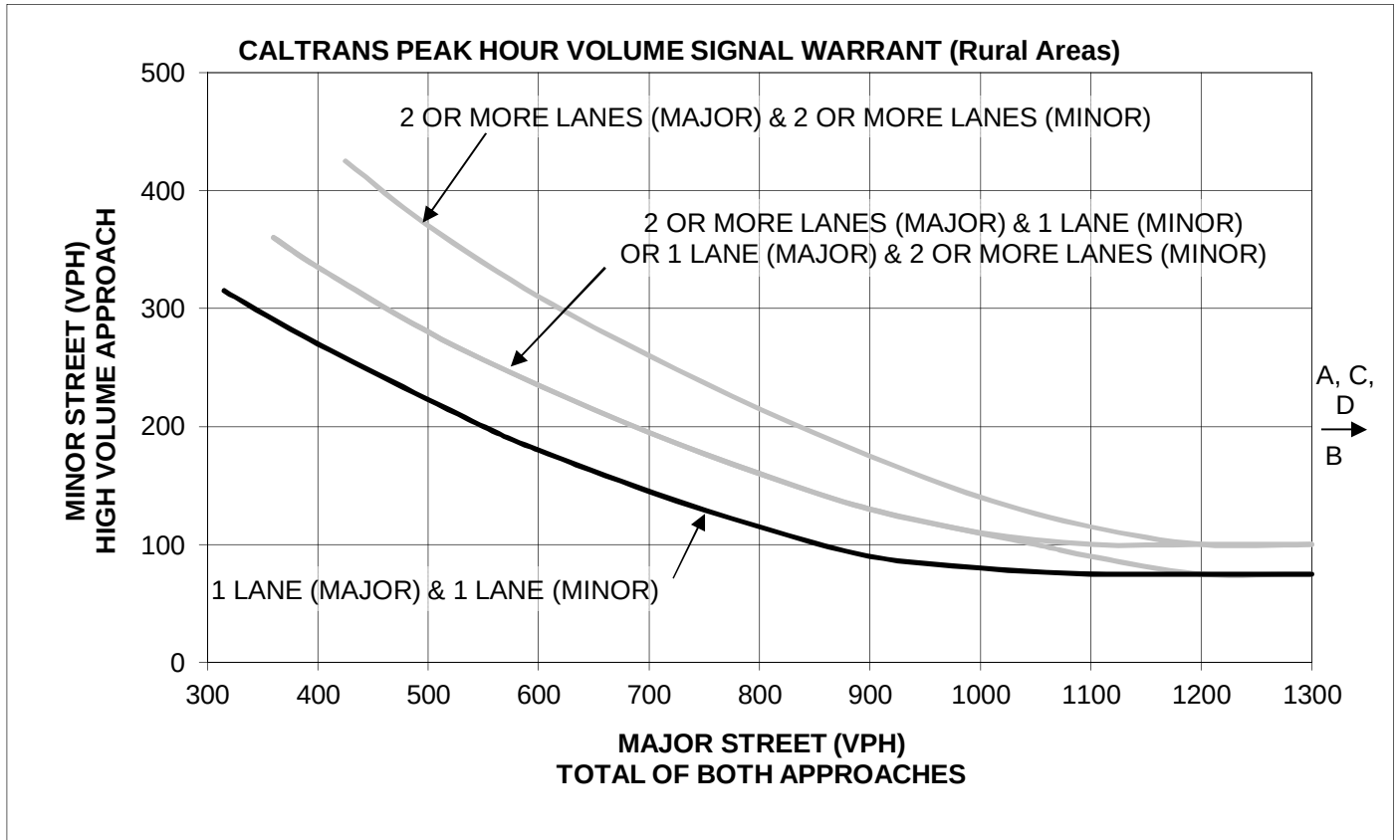


Scenario	SR 1	Dolan	Warrant
	North/South	East/West	Met?
A. 7:00 - 8:00 AM	1885	192	Yes
B. 8:00 - 9:00 AM	1727	190	Yes
C. 4:00 - 5:00 PM	2227	188	Yes
D. 5:00 - 6:00 PM	2133	164	Yes

Notes:

- 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.
- Bold line applies to intersection geometry.

Warrant 3A - Peak-Hour Warrant



Scenario	SR 1	Dolan	Warrant
	North/South	East/West	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:

- 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.
- Bold line applies to intersection geometry.

**Warrant 3 (Part B) - Peak Hour Delay
State Route 1 / Dolan Road**

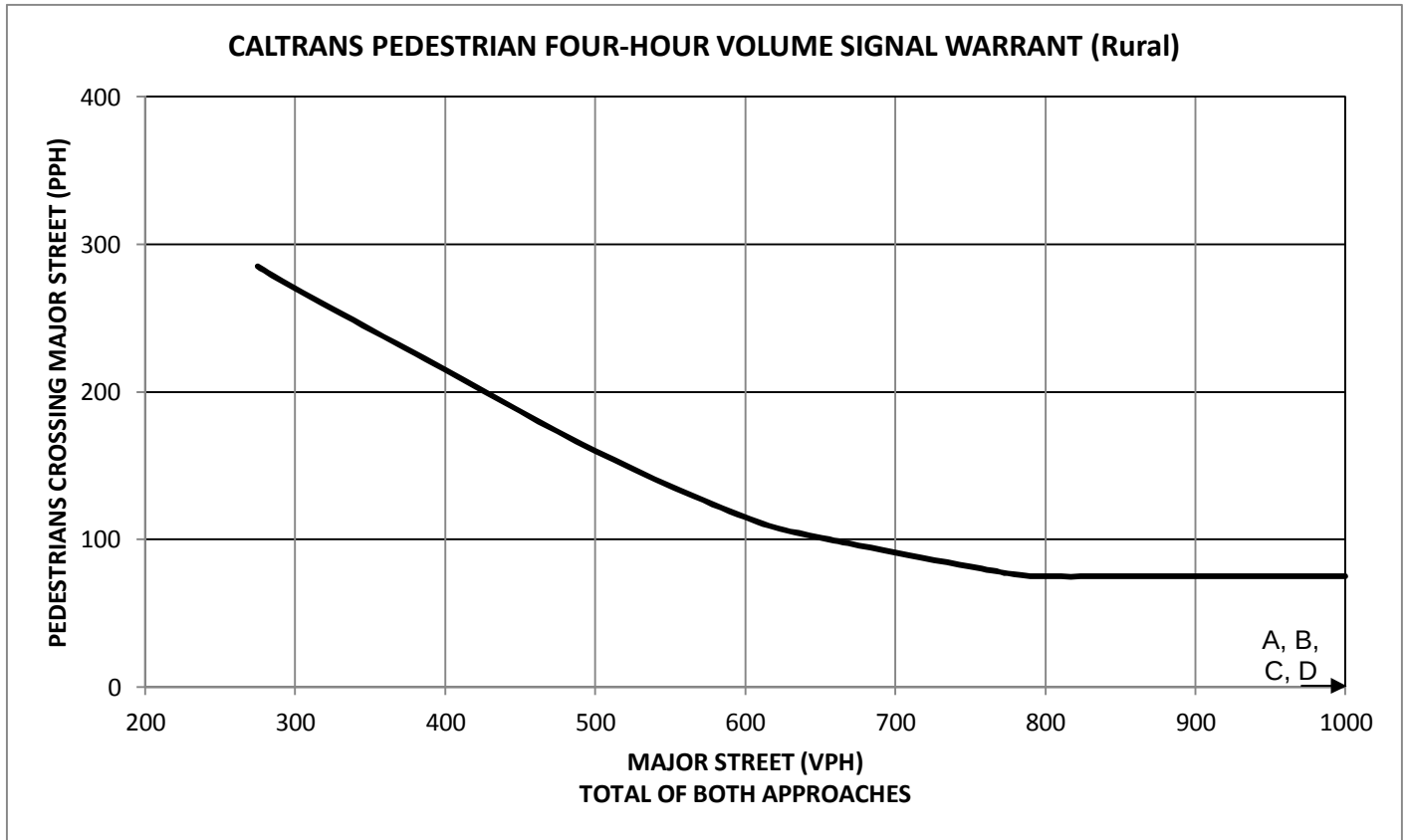
Number of Approaches to Intersection: 3 approaches
 Total Entering Volumes: Existing AM: 2114 vehicles
 Existing PM: 2415 vehicles
 Year 2035 AM: 2580 vehicles
 Year 2035 PM: 2930 vehicles
 Minimum Entering Vehicles: 650

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)

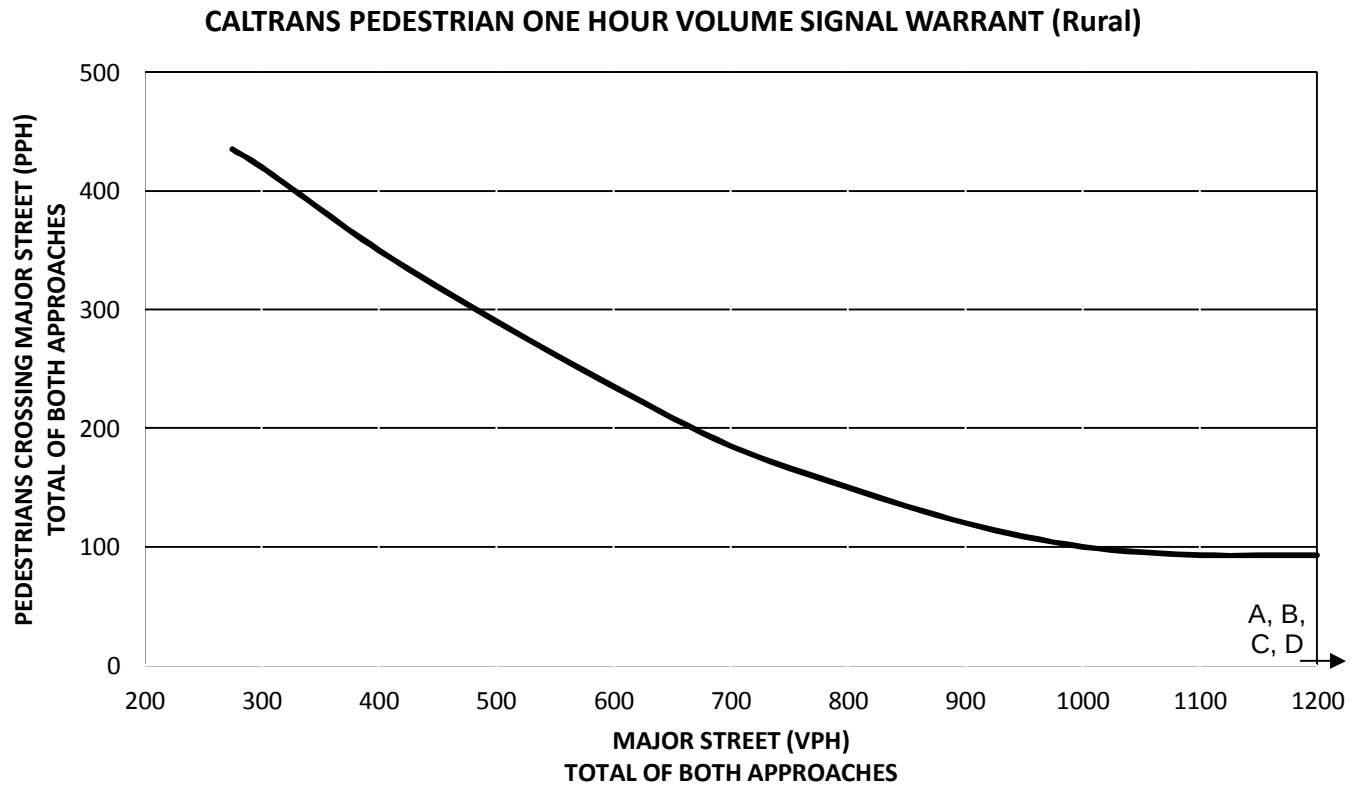


Scenario	SR 1	Dolan	Warrant Met?
	North/South	East/West	
	(Vehicles)	(Pedestrians)	(Yes/No)
A. 7:00 - 8:00 AM	1885	0	No
B. 8:00 - 9:00 AM	1727	0	No
C. 4:00 - 5:00 PM	2227	0	No
D. 5:00 - 6:00 PM	2133	0	No

Notes:

1. 75 PPH applies as the lower threshold pedestrian volume.

Warrant 4 (Part B) - Pedestrian One-Hour Volume (Rural)



Scenario	SR 1	Dolan	Warrant Met?
	North/South	East/West	
	(Vehicles)	(Pedestrians)	(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

Yes

Is Warrant Met?

Note: For overall warrant to be met, all parts must be satisfied.

Distance to Nearest Signal:

North: - feet
South: - feet
East: - feet
West: - feet

Distance > 1000 feet?
Distance > 1000 feet?
Distance > 1000 feet?
Distance > 1000 feet?

Yes

No

* Street reaches end before reaching another signal
* Street reaches end before reaching another signal
* Street reaches end before reaching another signal
* Street reaches end before reaching another signal

On a two-way street, adjacent traffic control signals do not provide the necessary 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.

<u>Critical speed major street equal or greater than 40 mph?</u>		(Yes/No)	
<u>In built-up area of isolated community of less than 10,000 pop.?</u>		No	Rural
		Yes	
Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency?		Yes	No
		✓	
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?		✓	
<u>80% of any of the following Warrants satisfied?</u>			
Warrant 1, Condition A?			N/A
<u>OR</u> Warrant 1, Condition B?			N/A
<u>OR</u> 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 be met, all parts must be satisfied.

	Yes	No
Typical Weekday Peak Hour: 2415 veh/hr Volume > 1000 veh/hr?	✓	
<u>AND</u> 5-year projected traffic volumes meet at least one of Warrants 1, 2 & 3'	✓	
<u>OR</u> Volumes on each of any 5 hours on a typical Saturday or Sunday > 1000 veh/hr		N/A
Do both crossing streets meet <u>any</u> of the following characteristics?		
Highway system serving as principal network for through traffic?	✓	
<u>OR</u> Rural or Suburban Highway outside of, entering, or traversing a city	✓	
<u>OR</u> Appears as a Major Route on an Official Plan	✓	

Appendix K

Vehicle Queuing Calculations

Queues
1: SR 1 & Dolan Rd

Existing AM - Full Signal
4/24/2014

						
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.

Queues
1: SR 1 & Dolan Rd

Existing AM - Half Signal
4/24/2014

					
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					

Queues
1: SR 1 & Dolan Rd

Existing AM - Half Signal - 2 NB Throughs

4/24/2014

				
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				

Queues
1: SR 1 & Dolan Rd

Existing PM - Full Signal

4/24/2014

						
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.

Queues
1: SR 1 & Dolan Rd

Existing PM - Half Signal
4/24/2014

					
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.

Queues
1: SR 1 & Dolan Rd

Existing PM - Half Signal - 2 NB Thrus

4/24/2014

				
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				

Queues
1: SR 1 & Dolan Rd

Year 2035 AM - Full Signal
4/24/2014

						
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.

Queues
1: SR 1 & Dolan Rd

Year 2035 AM - Half Signal
4/24/2014

					
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.

Queues
1: SR 1 & Dolan Rd

Year 2035 AM - Half Signal - 2 NB Throughs

4/24/2014

				
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				

Queues
1: SR 1 & Dolan Rd

Year 2035 PM - Full Signal
4/24/2014

						
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.

Queues
1: SR 1 & Dolan Rd

Year 2035 PM - Half Signal
4/24/2014

					
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.

Queues
1: SR 1 & Dolan Rd

Year 2035 PM - Half Signal - 2 NB Thrus

4/24/2014

				
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
Tel 831.755.4800

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November 11, 2013

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TABLE OF CONTENTS

A.	BACKGROUND.....	1
B.	ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED	21
C.	DETERMINATION.....	22
D.	EVALUATION OF ENVIRONMENTAL IMPACTS	23
1.	Aesthetics	25
2.	Agriculture and Forest Resources.....	28
3.	Air Quality	30
4.	Biological Resources.....	32
5.	Cultural Resources	38
6.	Geology and Soils.....	41
7.	Greenhouse Gas Emissions.....	43
8.	Hazards and Hazardous Materials.....	44
9.	Hydrology and Water Quality.....	47
10.	Land Use and Planning.....	50
11.	Mineral Resources	52
12.	Noise	53
13.	Population and Housing.....	55
14.	Public Services	56
15.	Recreation	57
16.	Transportation/Traffic.....	58
17.	Utilities and Service Systems	61
18.	Mandatory Findings of Significance	63
E.	SOURCES	64

Figures

Figure 1	Location Map	5
Figure 2	Project Vicinity	7
Figure 3	Site Photographs	9
Figure 4	Study Area	11
Figure 5	Alternative 2-3-4 Improvements	13
Figure 6	Alternative 8A Improvements	15
Figure 7	Alternative 9A Improvements	17
Figure 8	Alternative 9B Improvements	19

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

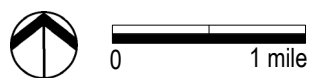
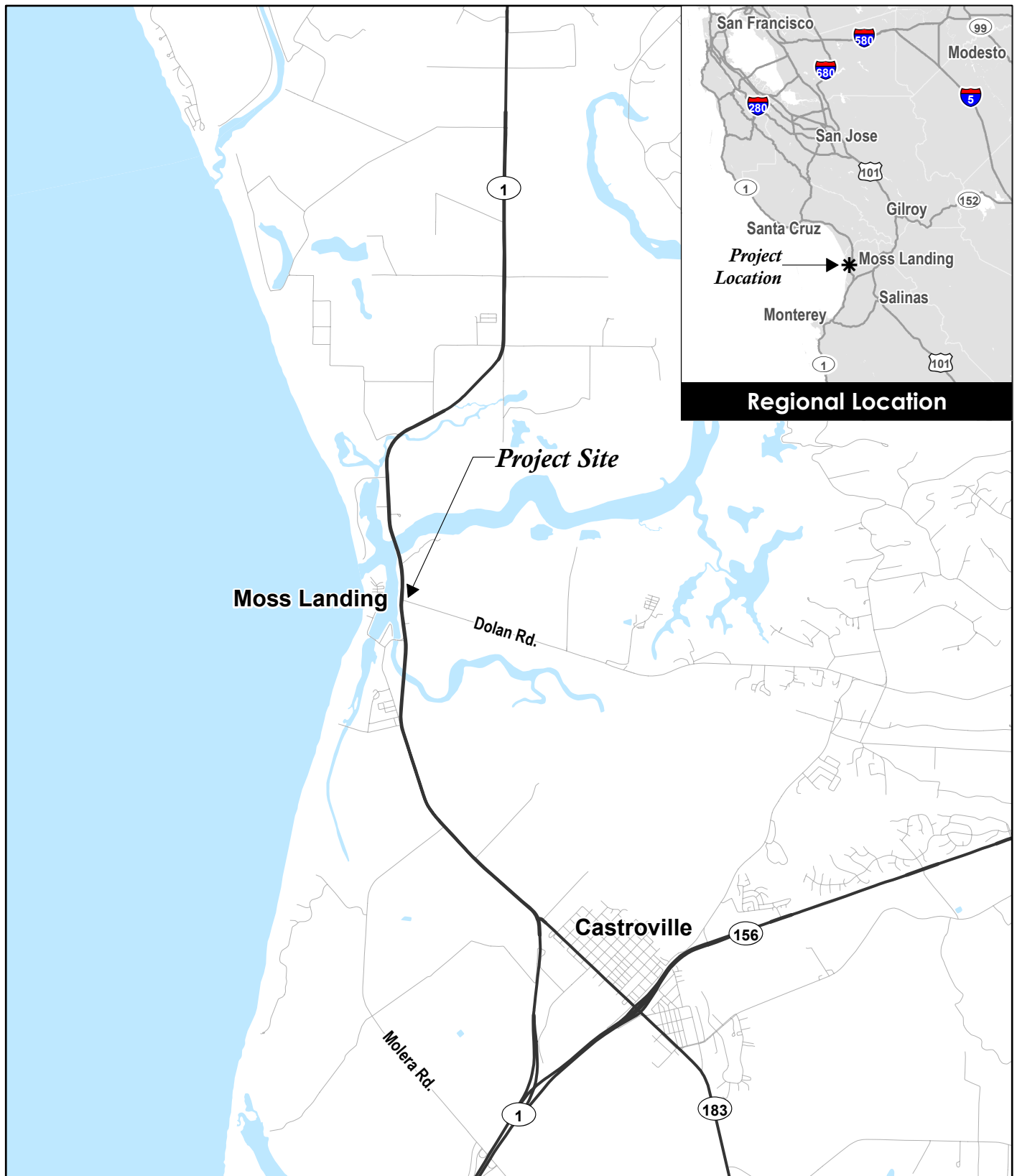
Several other improvement options were considered initially, but not fully developed into alternatives. These included a roundabout, widening existing lanes and shoulders, adding new through lanes in each direction, and re-aligning Dolan Road to the south to a four-legged intersection with Moss Landing 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

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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

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0 500 feet

 Study Area

Source: Google Earth 2012

Figure 4
Study Area

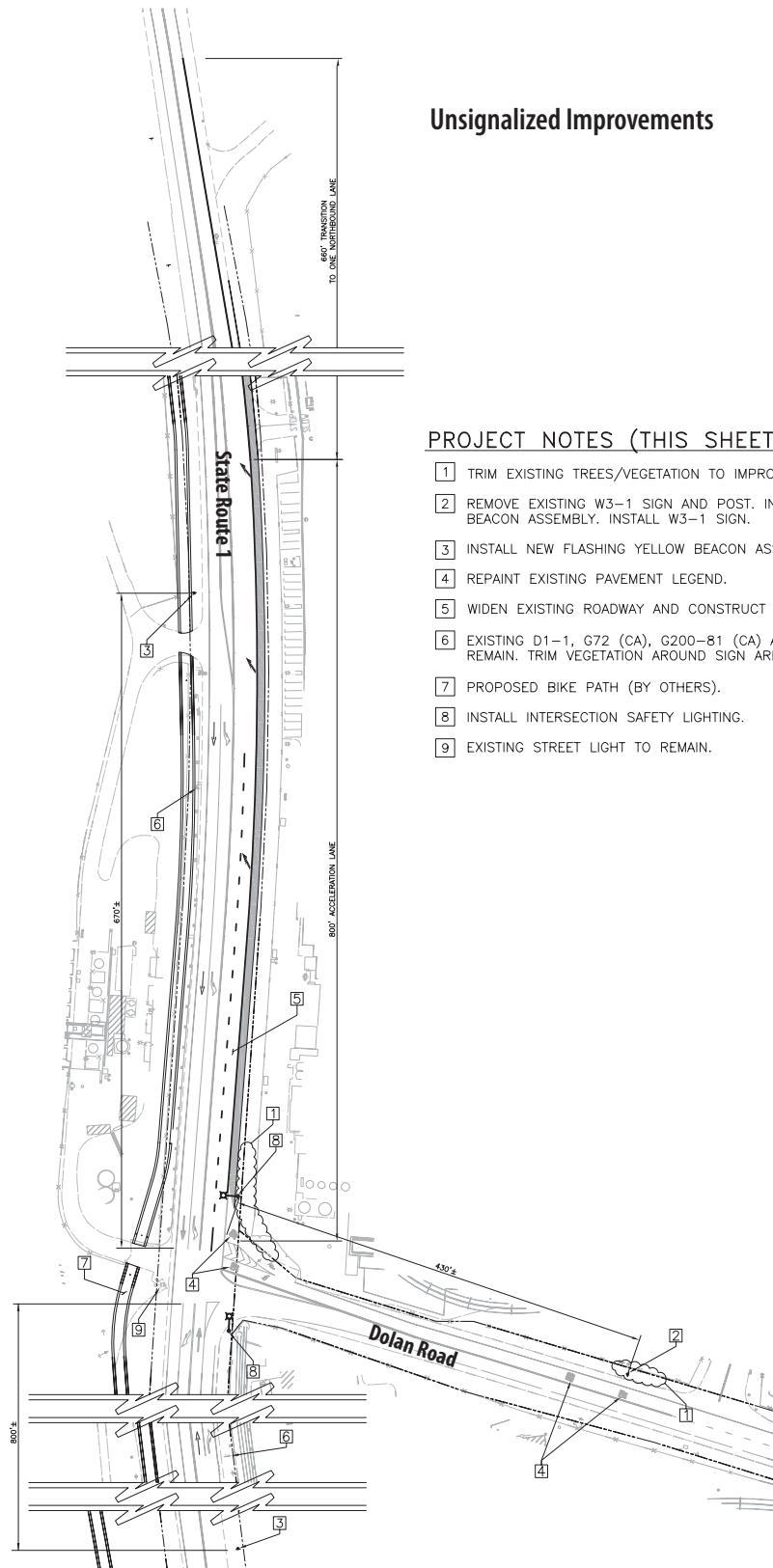
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C

State Route 1 - Dolan Road Improvements Initial Study

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Unsignalized Improvements

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.



0 190 feet

Source: Hatch Mott MacDonald 2013

Figure 5

Alternative 2-3-4 Improvements

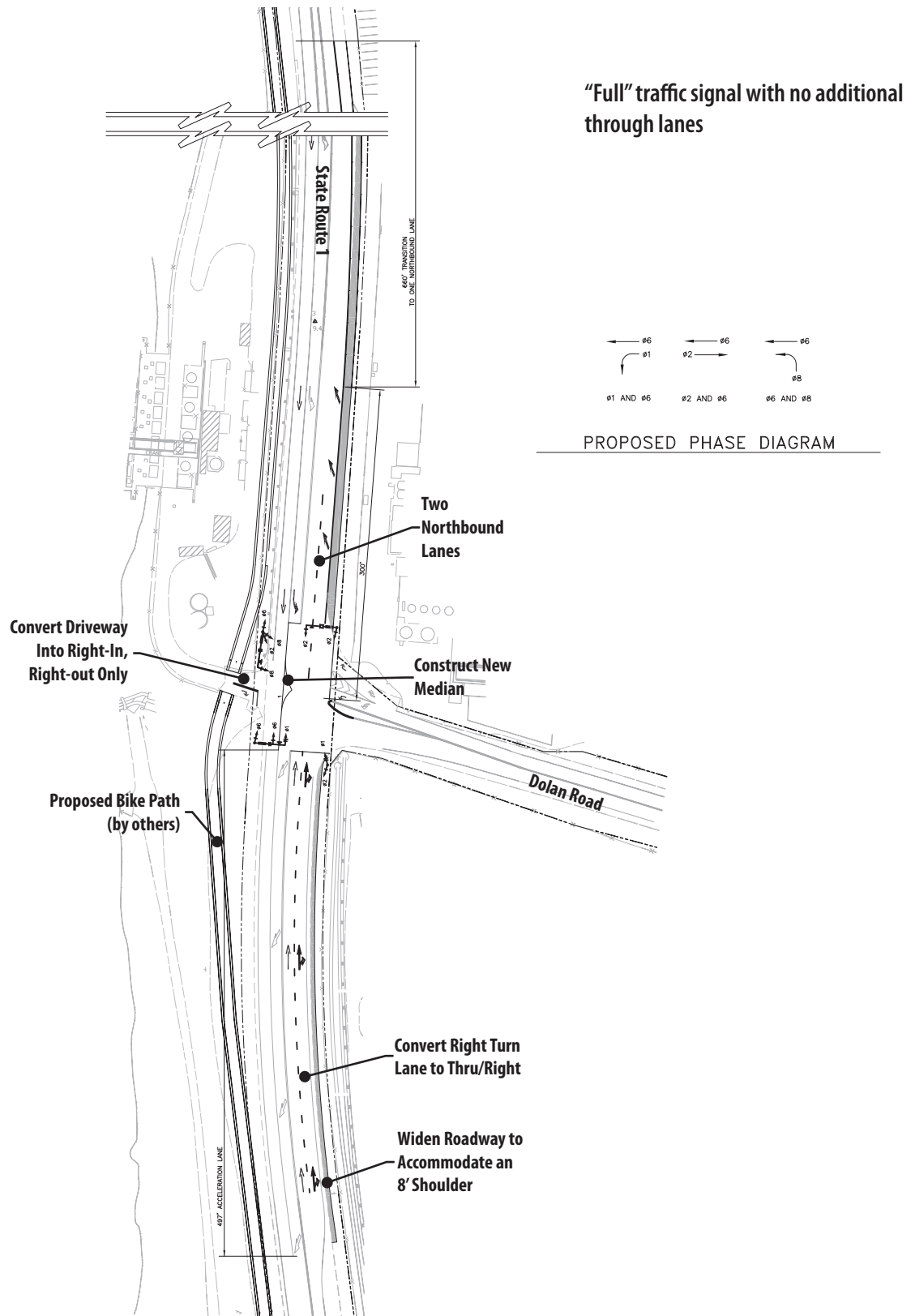
State Route 1 - Dolan Road Improvements Initial Study

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Source: Hatch Mott MacDonald 2013

Figure 6

Alternative 8A Improvements

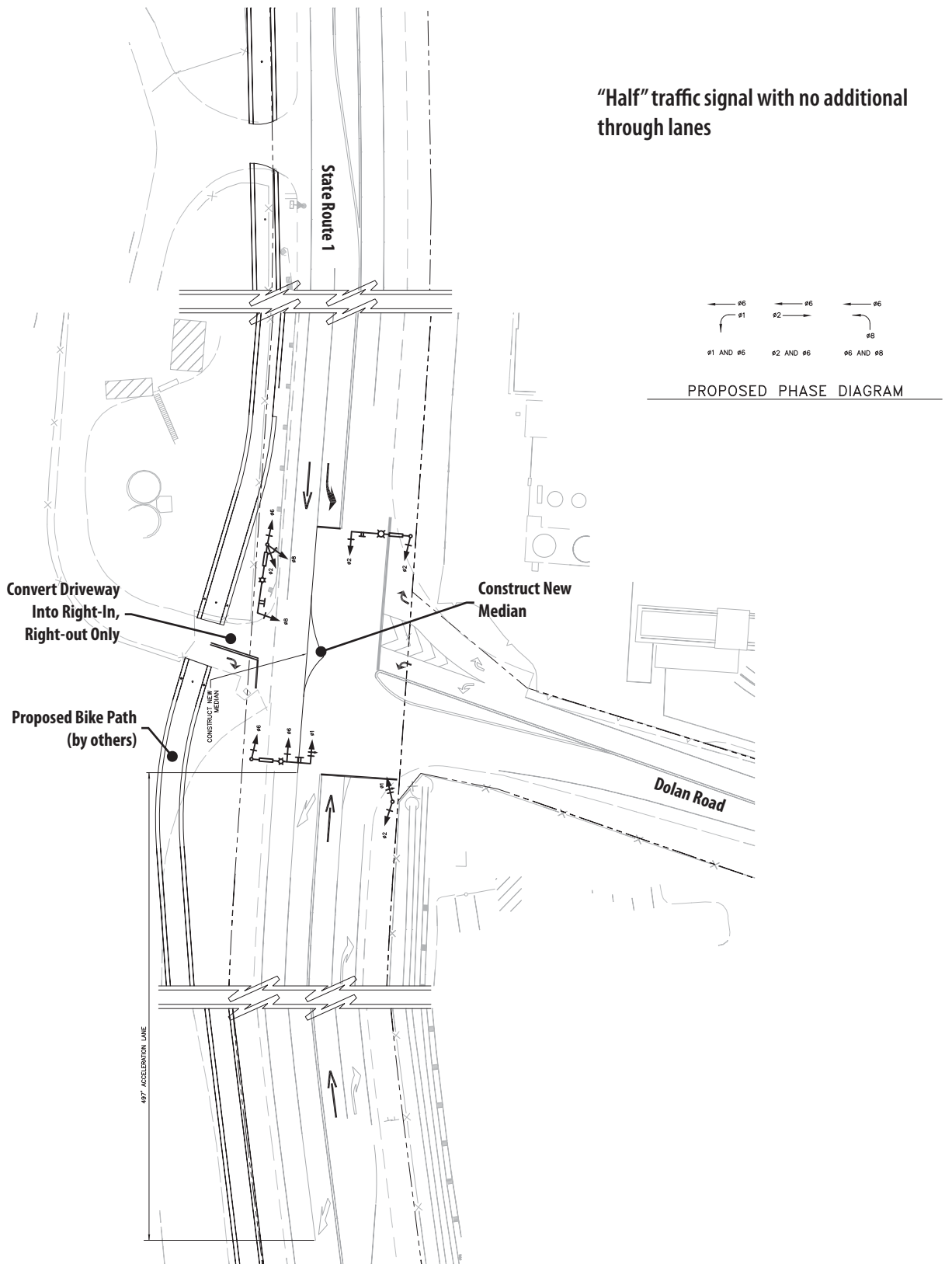
State Route 1 - Dolan Road Improvements Initial Study



0 150 feet



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Source: Hatch Mott MacDonald 2013

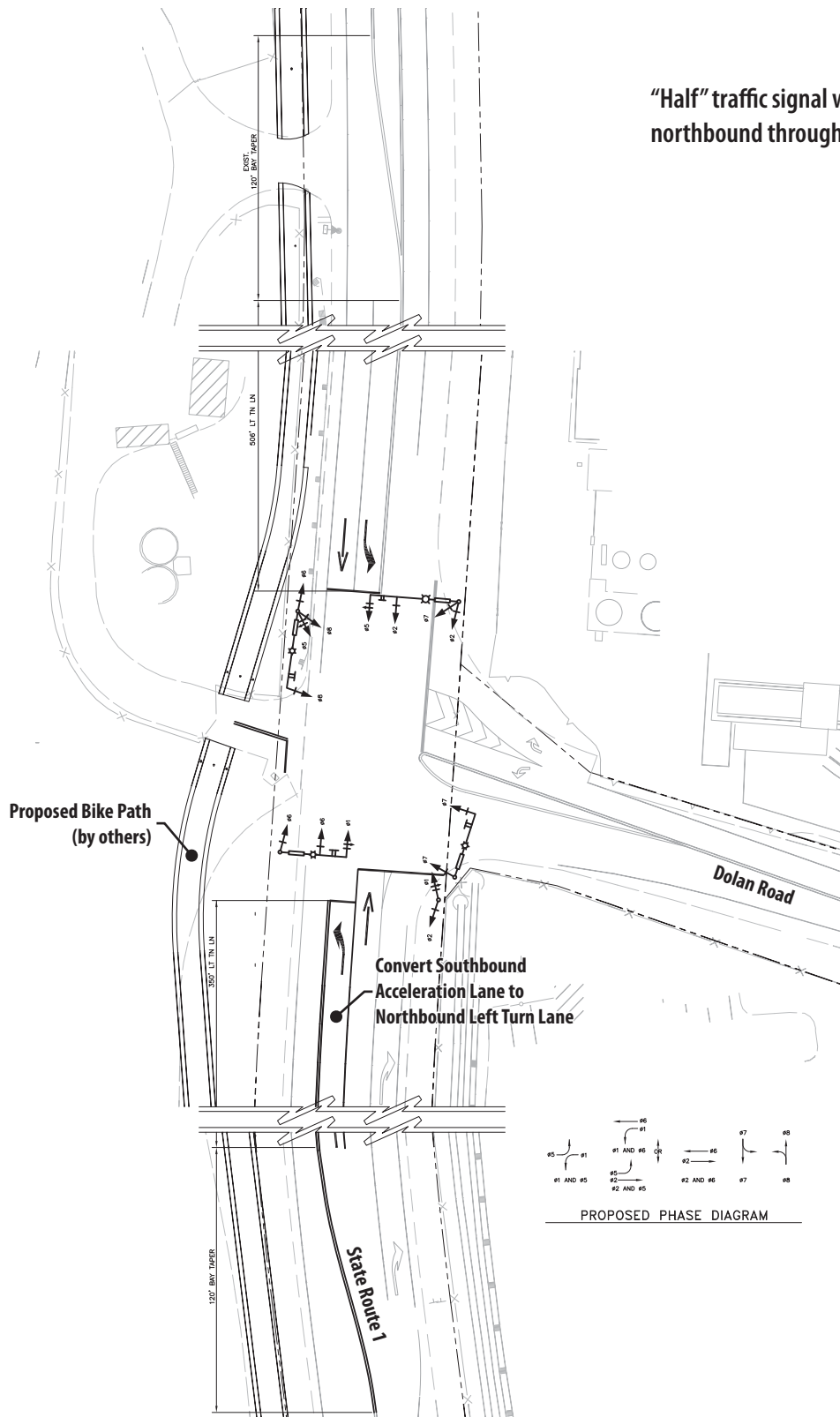
Figure 7

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

E

M

C

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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 | ☐ Greenhouse Gas Emissions | ☐ Population/Housing |
| ☐ Agriculture and Forestry Resources | ☐ Hazards & Hazardous Materials | ☐ Public Services |
| ☐ Air quality | ☐ Hydrology/Water Quality | ☐ Recreation |
| ☐ Biological Resources | ☐ Land Use/Planning | ☐ Transportation/Traffic |
| ☐ Cultural Resources | ☐ Mineral Resources | ☐ Utilities/Service Systems |
| ☐ Geology/Soils | ☐ Noise | ☐ 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 as 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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than-Significant Impact</i>	<i>No Impact</i>
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 alternatives. 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 (PM₁₀). 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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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, filling, 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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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)	☐	☐	☐	✓

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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 <i>substantial erosion or siltation on- or off-site?</i> (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 <i>flooding on- or off-site?</i> (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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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:

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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

	<i>Potentially Significant Impact</i>	<i>Less-than-Significant Impact with Mitigation Measures Incorporated</i>	<i>Less-Than- Significant Impact</i>	<i>No Impact</i>
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.