



MEMORANDUM

Date: June 4, 2024
To: Cam Boyd, Coastal Community Builders
From: Michelle Matson and Joe Fernandez, Central Coast Transportation Consulting
Subject: **197 West Grand Avenue, Grover Beach –Transportation Impact Analysis**

This memorandum summarizes the transportation impact analysis for the proposed development at 197 West Grand Avenue in the City of Grover Beach. The project proposes 2,500 square feet of commercial space and 23 apartments in three-and four-story buildings. The project site plan and frontage recommendations are shown on **Figure 1**.

TRANSPORTATION ANALYSIS SUMMARY

The proposed project would generate 373 net new vehicle trips per weekday, including 33 AM peak hour trips and 25 PM peak hour trips. The project would not significantly impact intersection operations on Grand Avenue between State Highway 1 and 4th Street and would have a less than significant impact on vehicle miles traveled (VMT). We recommend the project install the following at the West Grand Avenue and 2nd Street (#2) intersection as shown on **Figure 1**:

- Install no parking zones with red curbs on either side of both project driveways and on both sides of 2nd Street just north of West Grand Avenue consistent with California Manual on Uniform Traffic Control Device (CAMUTCD) guidance.
- Replace the existing NO LEFT TURN (R3-1) sign in the West Grand Avenue median at 2nd Street with a NO U/LEFT TURN (R3-18) sign and an object marker (OM1-1) for eastbound traffic. The existing NO U TURN (R3-4) sign for westbound traffic on the same post to remain.
- Rotate the existing NO U TURN (R3-4) sign in the West Grand Avenue median at 2nd Street for westbound traffic and install an object marker (OM1-1) .
- Install NO U/LEFT TURN (R3-18) sign in the West Grand Avenue median west of 2nd Street and an existing palm tree for eastbound traffic.
- Install pedestrian warning signage (W11-2 and W16-7P) signs at the northeast and southwest corner of the intersection.
- Install sharrows and signage in the westbound right turn lane at State Highway 1 consistent with CAMUTCD Figure 9C-9 and 9C-111 (CA).
- Provide sufficient sidewalk width to allow for future UPRR crossing pedestrian gates.

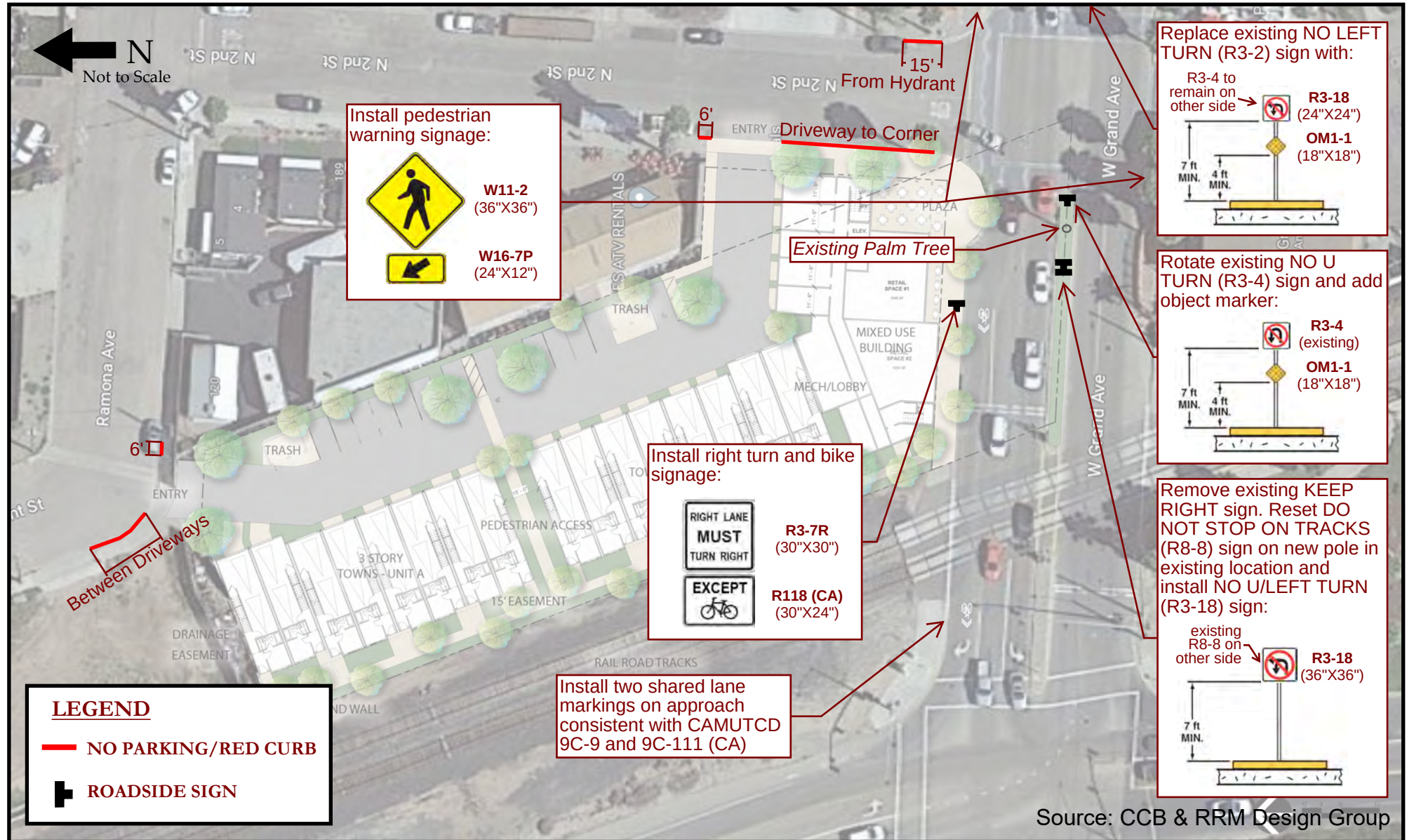
The West Grand Avenue Master Plan includes a variety of improvements to the corridor. We recommend that the City consider improving lighting on the corridor at unsignalized intersections and crosswalks as a part of the Plan implementation. In addition, we recommend Caltrans implement signal timing updates (pedestrian and clearance intervals), reflective backplates, and bicycle delineation improvements at the West Grand Avenue and State Highway 1 (#1) intersection.

The recommendations are shown in **Figure 1**. The following sections summarize the trip generation, California Environmental Quality Act (CEQA) analysis, site access and circulation, and local transportation analysis.

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Figure 1: Site Plan and Recommendations



PROJECT TRIP GENERATION

The Institute of Transportation Engineers' (ITE) Trip Generation Manual 11th Edition was used to estimate project trip generation. Note that the trip generation is conservative as it does not credit trips for the existing all-terrain vehicle (ATV) rental use on site. **Table 1** summarizes the project trip generation.

Table 1: Trip Generation

197 West Grand Avenue Trip Generation									
Land Use	Size	Unit	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total
Dwelling Units ¹	23	DU	155	2	7	9	7	5	12
Retail ²	2,500	KSF	268	13	11	24	14	9	23
	<i>Pass-by Trips (Retail)³</i>		<i>50</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>5</i>	<i>10</i>
Net New Vehicle Trips			373	15	18	33	16	9	25
1. ITE Land Use Code #220, Multifamily Housing (Low Rise). Average rates used.									
2. ITE Land Use Code #932, High-Turnover (Sit-Down) Restaurant. Average rates used.									
3. High-Turnover (Sit-Down) Restaurant PM peak hour pass by rate is 43%. Peak hour pass-by trips multiplied by a factor of 5 to determine daily pass-by trips. No internal capture was assumed.									
Source: ITE <i>Trip Generation Manual</i> , 11th Edition and <i>Trip Generation Handbook</i> , 3rd Edition, 2017.									

The proposed project would generate 373 net new vehicle trips per weekday, including 33 AM peak hour trips and 25 PM peak hour trips.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

This section presents analysis relevant to CEQA, notably analysis of the existing setting, vehicle miles traveled (VMT), emergency access, and safety.

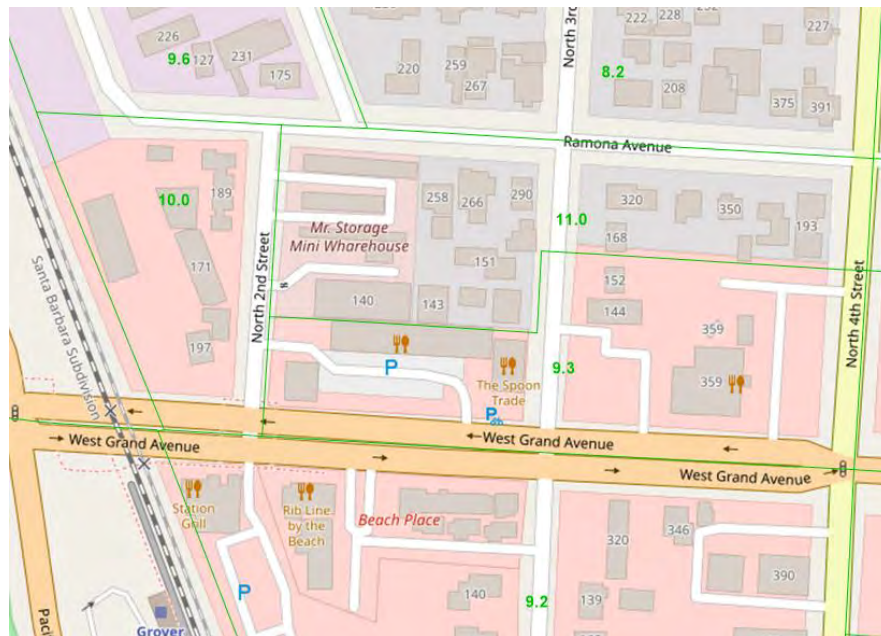
Existing Setting

The project is located north of West Grand Avenue between Highway 1 and 2nd Street just east of the Union Pacific Railroad (UPRR) tracks. West Grand Avenue is a five-lane arterial with a 30 mile per hour (MPH) posted speed limit, sidewalks, and no parking along the project frontage. There are Class II bike lanes on West Grand Avenue east of 2nd Street. 2nd Street and Ramona Avenue are two-lane roadways with sidewalks, on-street parking, and no posted speed limits along the project frontage.

South County Transit routes 21 and 24 run along West Grand Avenue between Highway 1 and Highway 101. The nearest stops for these routes are located at 6th Street and 3rd Street, respectively.

Vehicle Miles Traveled (VMT)

The SLOCOG Regional Travel Demand Model was applied to evaluate potential impacts to VMT. The regional average residential VMT per capita is 14.77 VMT per capita, so a threshold of 85% of this value corresponds to 12.55 VMT per capita. When added to the model the project would generate 10.0 VMT per capita as shown in **Exhibit 1** below. This is below OPR's recommended threshold of 15% below the regional average.

Exhibit 1: Residential VMT per Capita

Accordingly, the project would have a less than significant transportation impact per the CEQA guidelines.

Emergency Access

The project proposes two access points, one on 2nd Street and one on Ramona Avenue, and the emergency access is adequate as proposed.

Collision History

CCTC obtained traffic collision data from the Statewide Integrated Traffic Records System (SWITRS) and Traffic Accident Surveillance and Analysis System (TASAS). **Table 2** summarizes the collision history on West Grand Avenue in the project vicinity between April 2018 and March 2023:

Table 2: Collision History

Collision History							
Total Collisions (4/1/18 - 3/31/23)							
		Grand/ SR 1	Grand/ 2nd St	Grand/ 3rd St	Grand/ 4th St	TOTAL	%
Collision Severity	Property Damage Only	19	14	12	29	74	82%
	Complaint of Pain	3	1	1	7	12	13%
	Severe Injury	2	0	0	0	2	2%
	Other Visible Injury	1	0	0	1	2	2%
	Fatal	0	0	0	0	0	0%
Involved With	Motor Vehicle	16	8	7	25	56	62%
	Fixed Object/Other Object	6	6	3	8	23	26%
	Pedestrian	1	0	1	2	4	4%
	Non-Collision/Not Stated	0	1	0	2	3	3%
	Parked Vehicle	0	0	2	0	2	2%
	Bicycle	2	0	0	0	2	2%
Primary Collision Factor	Unsafe Speed	6	2	4	13	25	28%
	Improper Turning	6	2	4	9	21	23%
	Auto/Pedestrian Right-of-Way	6	2	0	8	16	18%
	Other/Unknown	1	4	2	6	13	14%
	Unsafe Lane Change	3	3	1	1	8	9%
	Unsafe Starting or Backing	0	1	2	0	3	3%
	Traffic Signals and Signs	3	0	0	0	3	3%
	Driving Under the Influence	0	1	0	0	1	1%
Collision Type	Rear End	4	2	4	11	21	23%
	Sideswipe	4	3	3	8	18	20%
	Hit Object	5	6	2	5	18	20%
	Broadside	6	1	1	5	13	14%
	Other /Unknown	2	3	1	4	10	11%
	Head-On	3	0	1	2	6	7%
	Vehicle-Pedestrian	1	0	1	2	4	4%
Lighting	Daylight	15	11	8	28	62	69%
	Dark - Street Lights	9	4	5	6	24	27%
	Dusk-Dawn	1	0	0	3	4	4%
TOTAL COLLISIONS		25	15	13	37	90	100%

Source: Statewide Integrated Traffic Records System & Traffic Accident Surveillance and Analysis System.

The following summarizes the key collision history at each study intersection:

- West Grand Avenue and State Highway 1 (#1):
 - Two bicycle collisions occurred at the intersection, one with a westbound through bicycle at fault and a northbound vehicle and one with a northbound right turning vehicle at fault and a bicyclist.
 - One pedestrian collision occurred at the intersection when a northbound right turning vehicle at fault hit a pedestrian in the crosswalk.
 - 20 collisions were reported in TASAS and an additional five collisions were identified using SWITRS.

- The intersection collision rate is above the statewide average for similar facilities and the total number of collisions is equal to the number of significant collisions per Caltrans' significance test.
- West Grand Avenue and 2nd Street (#2):
 - Two automobile right-of way collisions occurred, one with a northbound left turning vehicle and one with a southbound left turning vehicle.
 - Three southbound left turn hit object collisions occurred, two of them at night.
- West Grand Avenue and 3rd Street (#3):
 - No automobile right-of way collisions occurred.
 - One southbound left turn hit object collision occurred at night.
 - One pedestrian collision occurred when a westbound vehicle was starting or stopping and hit a pedestrian in a crosswalk.
- West Grand Avenue and 4th Street (#4)
 - Two pedestrian collisions occurred at night with eastbound left turning vehicles.

Over one fourth of collisions occurred due to unsafe speed. Eastbound West Grand Avenue from the railroad tracks to 600 feet east qualifies for a 25 mile per hour business district consistent with the California Vehicle Code (CVC); however, westbound does not qualify with or without the project. We recommend enforcement of the existing 30 miles per hour speed limit.

The data shows that 27 percent of collisions occurred at night, and we recommend that the City consider improving lighting on the corridor at unsignalized intersections and crosswalks as a part of the West Grand Master Plan. There is an existing luminaire at the northwest corner of West Grand Avenue and 2nd Street (#2) within the project frontage.

We also recommend Caltrans install reflective backplates consistent with State Standard Specifications, improve bicycle delineation, and review pedestrian and clearance intervals consistent with the CAMUTCD and National Cooperative Highway Research Program (NCHRP) recommendations at West Grand Avenue and State Highway 1 (#1) intersection.

At West Grand Avenue and 2nd Street (#2) and West Grand Avenue and 3rd Street (#3), the collision frequency would not meet CAMUTCD all-way stop control or traffic signal warrants.

Signal upgrades including twelve-inch signal heads, lighting analysis, reflective backplates, push button upgrades, and updated signal timing and clearance intervals are a condition of approval for other nearby development projects at West Grand Avenue and 4th Street (#4). Leading Pedestrian intervals are also recommended consistent with Assembly Bill 2264.

SITE ACCESS AND CIRCULATION

The project is located on West Grand Avenue between the UPRR tracks and 2nd Street on the north side of the roadway as shown in **Figure 1**. The current site includes an all-terrain vehicle (ATV) rental. Two project driveways are proposed, one on 2nd Street east of the project and one on Ramona Avenue/Front Street north of the project. The existing driveway on West Grand Avenue will be removed, which will reduce conflict points on an arterial consistent with access management best practices.

Street features including landscaping, utility poles, street furniture, signs, and parked vehicles can inhibit sight distance in urban areas. Per CAMUTCD guidance, "At all intersections, one stall length on each side measured from the crosswalk or end of curb return should have parking prohibited. A clearance of 6 feet measured from

the curb return should be provided at alleys and driveways.” (See Figure 3B-21(CA) for guidance). We recommend the existing no parking zone red curb be repainted and new red curb added at the proposed project driveways as well as on 2nd Street north of the intersection consistent with CAMUTCD guidance.

Eastbound left turn and U-Turns are prohibited on West Grand Avenue at 2nd Street to avoid queue spillback over the railroad tracks. There is currently a NO LEFT TURN (R3-1) sign on the far side of the intersection and a NO U TURN (R3-4) sign on the near side of the intersection. The near side sign is blocked by a large palm tree. We recommend replacing both signs with a NO LEFT/U TURN (R3-18) sign, relocating the near side sign west of the palm tree, and rotating the existing NO U TURN (R3-4) sign for westbound vehicles. Object markers (OM1-1) are recommended below the R3 series signs. In addition, we recommend installing pedestrian warning signage (W11-2 and W16-7P) signs at the northeast and southwest corner of the intersection. The R3-18 west of the palm tree should be combined with existing railroad signage. A KEEP RIGHT and DO NOT STOP ON TRACKS (R8-8) sign are currently located on the same post. The KEEP RIGHT sign does not meet current CAMUTCD guidance and is not needed. We recommend the R8-8 be reset on a new post in the same location opposite the R3-18 sign.

The westbound bike lane ends at 2nd Street. The available roadway width cannot accommodate the turn lanes and a bike lane and would require reconstruction of the UPRR crossing gate. We recommend sharrows and signage be added to the right turn lane consistent with CAMUTCD Figure 9C-9 and 9C-111 (CA). We also recommend improved bike lane transitions including green paint for all intersections approaches at the West Grand Avenue and State Highway 1 (#1) intersection if that intersection’s striping is updated by Caltrans.

The existing UPRR gate is located within the project frontage and encroaches on the sidewalk when in use. We recommend the project provide sufficient sidewalk width to allow for a future railroad crossing pedestrian gate.

LOCAL TRANSPORTATION ANALYSIS

The following section summarizes the local planning documents and intersection operations.

Local Planning Documents

The City of Grover Beach General Plan Circulation Element was prepared in August 2005 which states that “The City shall maintain a minimum traffic operating Level of Service of “C” on all City transportation facilities.” The City also prepared a master plan in 2011 for the West Grand Avenue corridor from Oak Park Boulevard to the ocean. Key transportation aspects of the plan include:

- The proposed project is within the Visitor Serving District of the plan and is identified as an opportunity site for pedestrian amenities and well-designed corner treatments.
- West Grand Avenue in this district is proposed to have ten-foot sidewalks, eight-foot parking lanes, five-foot bike lanes, 10.5-foot travel lanes, and a 12-foot median.
- Auto traffic speeds along West Grand Avenue are a key challenge in the area, discouraging bicycle and pedestrian travel.
- The plan recommends relaxing parking requirements in the area to incentivize infill development.

We recommend ten-foot minimum sidewalks and plaza areas on West Grand Avenue and 2nd Street consistent with the master plan. We also recommend restricting parking with red curb striping on the west side of 2nd Street from West Grand Avenue to the project driveway.

Existing and Existing Plus Approved Plus Project Intersection Operations

Traffic counts at the study intersections were collected in November 2023 and are included as **Attachment A**. The existing lane configurations and traffic volumes are also shown on **Figure 2**. Counts at the West Grand Avenue and 4th Street (#4) intersection were compared to counts collected in June 2022. The November 2023 total entering intersection volume was approximately 11 percent more and five percent less during the AM and PM peak hour than the June 2022 counts, respectively.

The project trip distribution was estimated using recent traffic studies and local knowledge. CCTC prepared a Transportation Impact Study in 2022 for the 402 West Grand Avenue project and in 2023 for the 401 West Grand Avenue project located north and south of Grand Avenue just east of 4th Street. The traffic volumes from these approved projects as well as the proposed project were added to the existing traffic volumes to determine corridor impacts. The trip distribution and the Existing Plus Approved Plus Project volumes are shown in **Figure 3**.

Figure 2: Lane Configurations and Existing Volumes

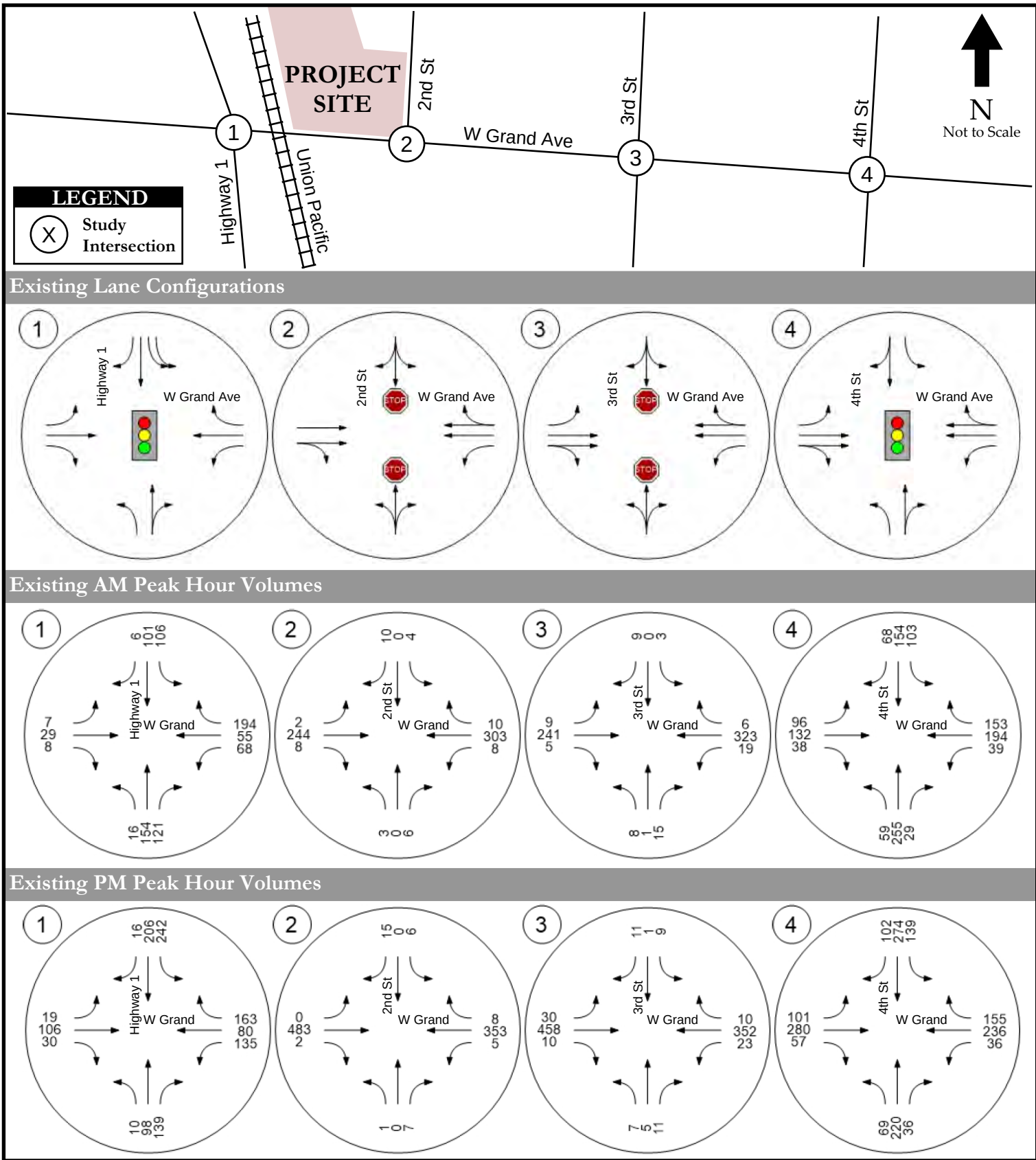
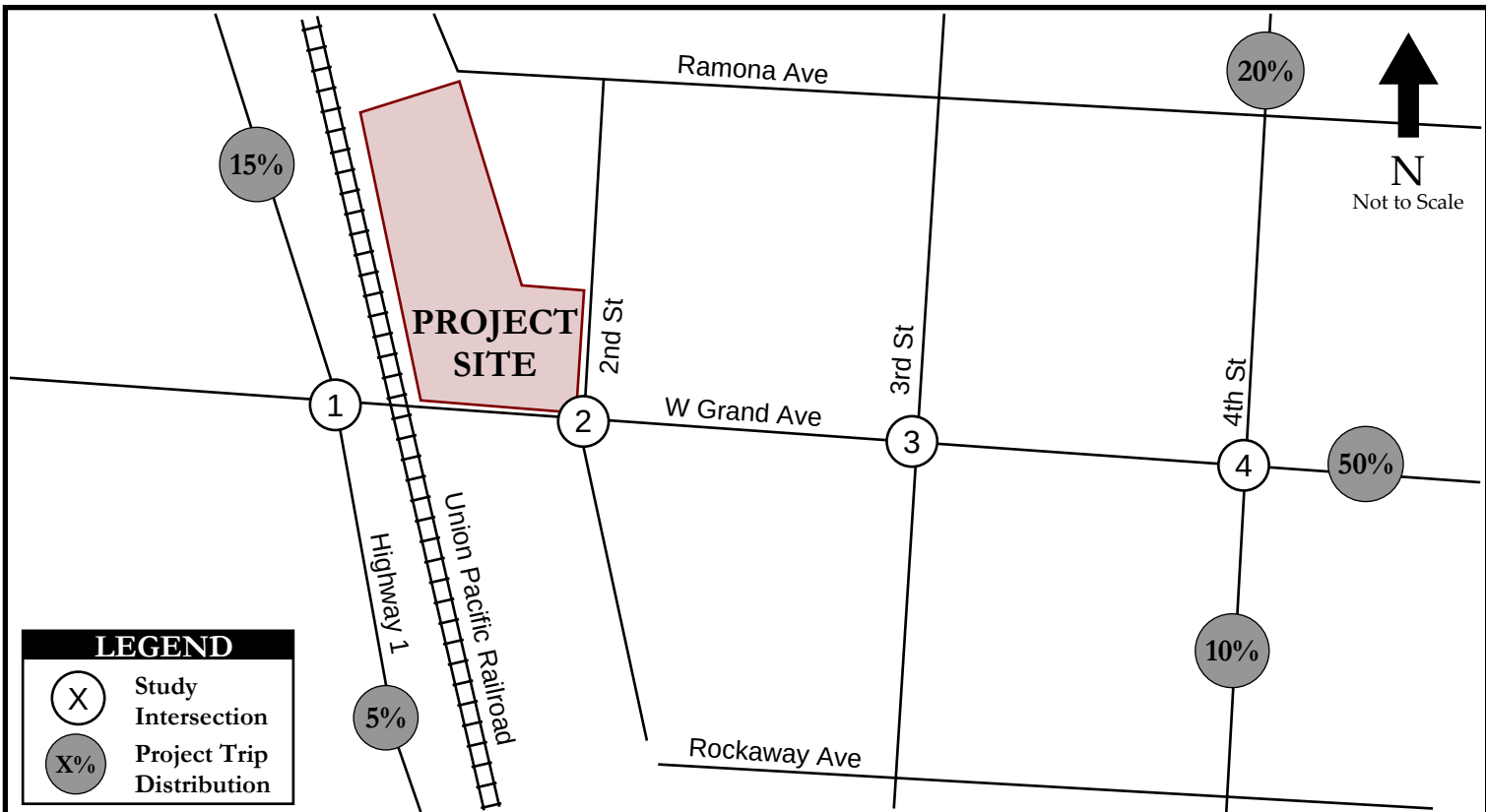
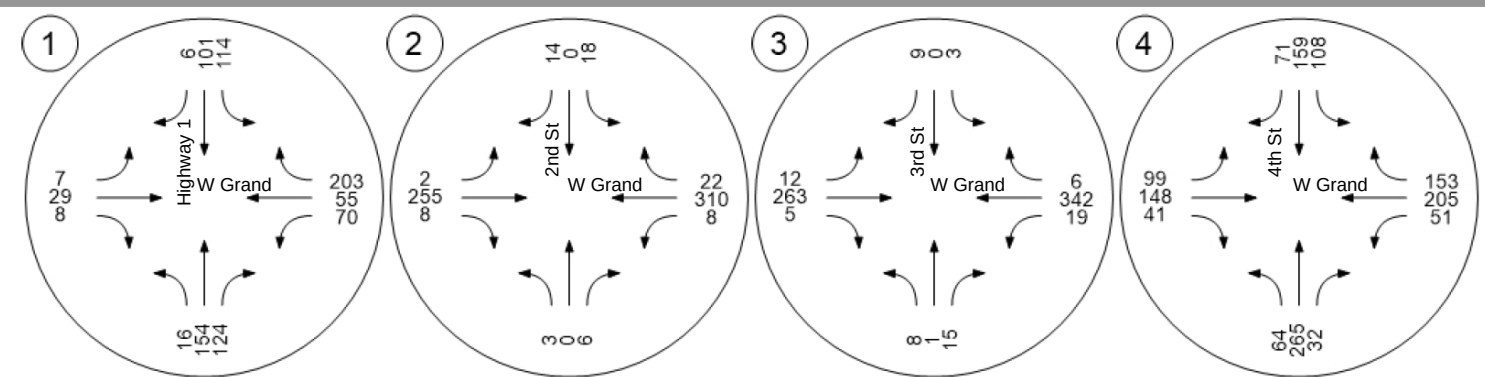


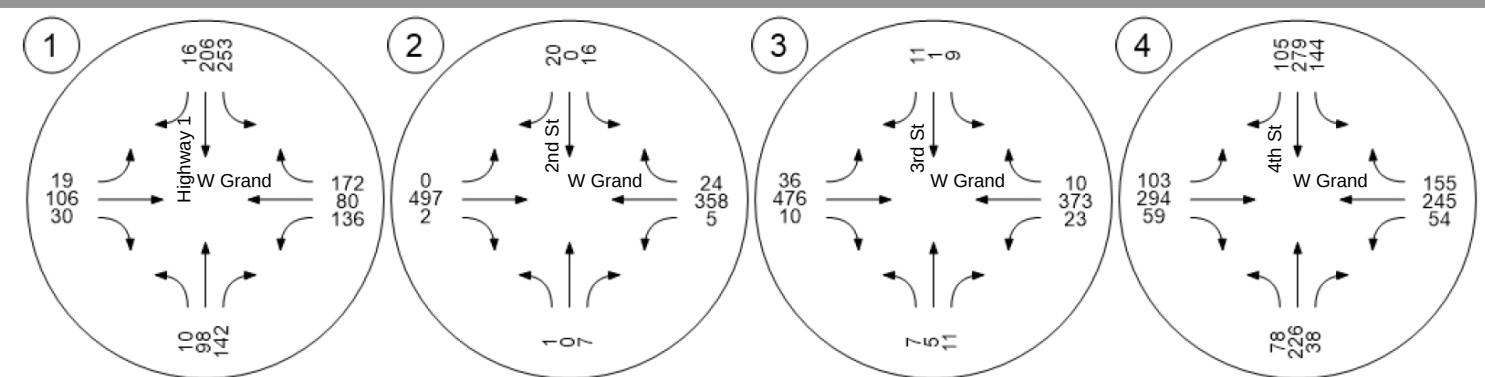
Figure 3: Trip Distribution & Existing Plus Approved Plus Project



Existing Plus Approved Plus Project AM Peak Hour Volumes



Existing Plus Approved Plus Project PM Peak Hour Volumes



197 West Grand Avenue, Grover Beach

Traffic signal timing was observed in the field. Yellow, red, and pedestrian clearance intervals were assumed consistent with the latest CAMUTCD as recommended. The study intersections were analyzed using Synchro 11 and the Highway Capacity Manual (HCM) 6th edition methodologies.

Table 3 summarizes the Existing and Existing Plus Approved Plus Project intersection operations.

Table 3: Existing and Existing Plus Approved Plus Project LOS

Existing Plus Approved Plus Project Intersection Levels of Service					
Intersection	Weekday Peak Hour	Existing		Existing + Approved + Project	
		Delay ¹	LOS	Delay ¹	LOS
1. W Grand Ave & Highway 1	AM	17.8	B	18.0	B
	PM	20.2	C	20.3	C
2. W Grand Ave & 2nd St	AM	0.6 (10.5)	- (B)	0.9 (12.1)	- (B)
	PM	0.4 (11.4)	- (B)	0.6 (12.9)	- (B)
3. W Grand Ave & 3rd St	AM	1.0 (11.3)	- (B)	0.9 (11.6)	- (B)
	PM	1.2 (15.1)	- (C)	1.2 (15.7)	- (C)
4. W Grand Ave & 4th St	AM	19.2	B	19.8	B
	PM	20.7	C	21.3	C
1. HCM 6th average control delay in seconds per vehicle. For side-street-stop controlled intersections, the worst approach's delay is reported in parentheses following the overall intersection delay.					

All study intersections operate acceptably under Existing and Existing Plus Approved Plus Project Conditions.

Table 4 summarizes the Existing and Existing Plus Approved Plus Project intersection queues.

Table 4: Existing and Existing Plus Approved Plus Project Queues

Existing and Existing Plus Approved Plus Project Queues					
	Movement	Storage Length (ft)	Peak Hour	95th Percentile Queues (ft) ¹	
				Existing (EX)	EX + Approved + Project
1. W Grand Ave & Highway 1	EBL	100	AM	19	19
			PM	36	36
	EBR	100	AM	0	0
			PM	0	0
	WBL	140	AM	85	87
			PM	143	145
	WBR	150	AM	35	36
			PM	31	32
	NBL	170	AM	32	32
			PM	23	23
	SBL	470	AM	60	63
			PM	116	121
	SBR	30	AM	0	0
			PM	0	0
2. W Grand Ave & 2nd St	NB & SB	-	AM	< 1 vehicle	< 1 vehicle
			PM		
3. W Grand Ave & 3rd St	NB & SB	-	AM	< 1 vehicle	< 1 vehicle
			PM		
4. W Grand Ave & 4th St	EBL	80	AM	98	101
			PM	107	109
	WBL	105	AM	52	64
			PM	52	69
	NBL	90	AM	56	60
			PM	67	75
	SBL	100	AM	92	98
			PM	117	121
1. Queue length that would not be exceeded 95 percent of the time.					
Bold indicates queue length longer than storage length.					

The following queue deficiencies are noted:

- West Grand Avenue and State Highway 1 (#1): The westbound left 95th percentile PM peak hour queue reaches the 3rd Street intersection and encroaches in the west leg crosswalk. The approved and proposed project(s) increase the queue lengths by an insignificant amount. Pedestrian warning signage is recommended at the intersection as shown in **Figure 1**.
- West Grand Avenue and 4th Street (#4): The eastbound left and southbound left 95th percentile queues exceeded the storage length under Existing Conditions with and without the project(s) during one or more peak hours. However, the average queues would not exceed the storage length. The approved and proposed project(s) do not exacerbate the queues by an additional vehicle and have a less than significant impact.

Cumulative Intersection Operations

Cumulative traffic volumes were forecast using the SLOCOG model. Cumulative Conditions include land uses consistent with the Grover Beach General Plan, approved projects, and other projected growth in the area. The Cumulative Volumes are shown in **Figure 4** and the Cumulative Plus Project Volumes are shown in **Figure 5**.

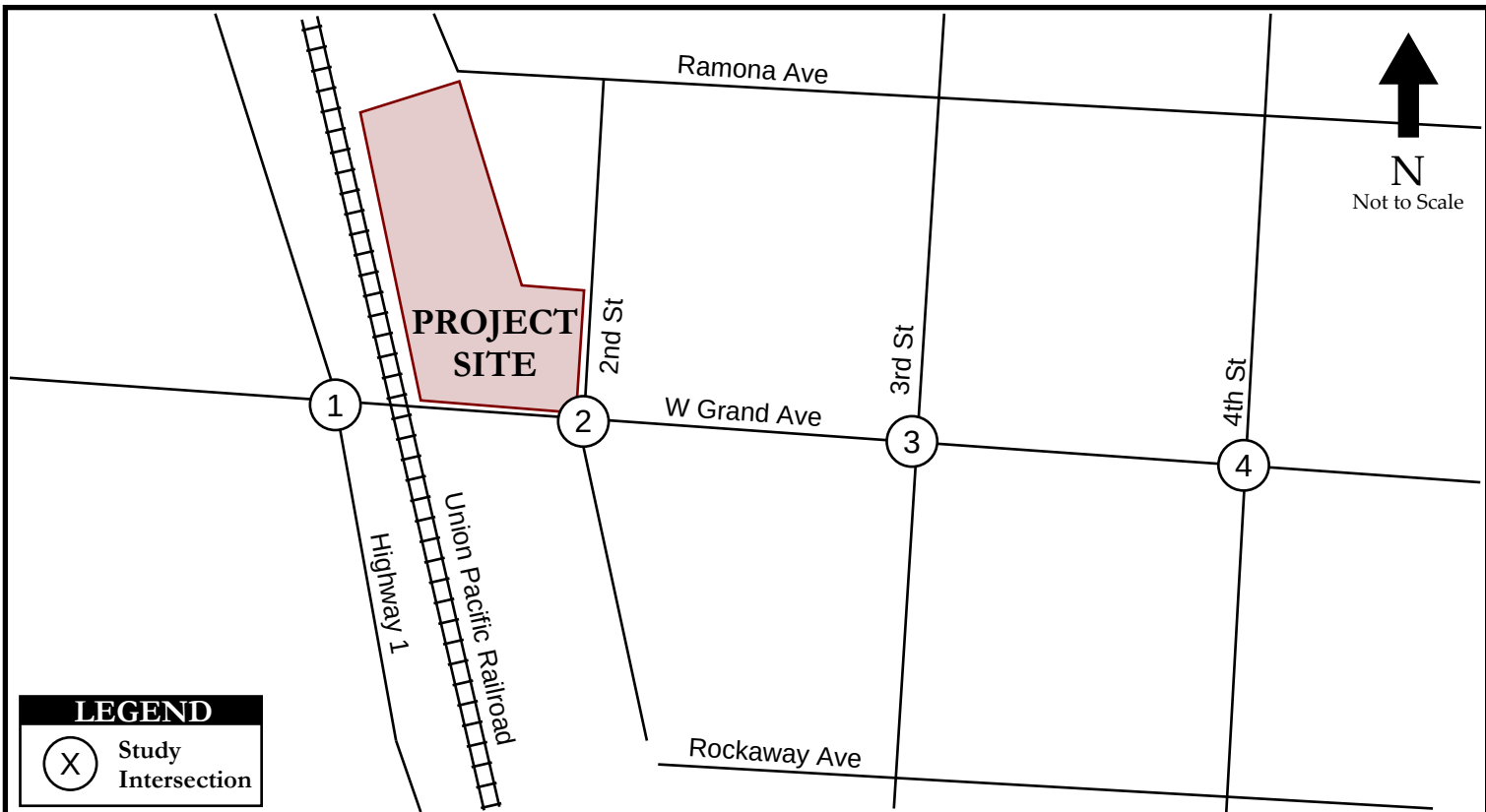
Table 5 summarizes the Cumulative and Cumulative Plus Project intersection LOS operations.

Table 5: Cumulative and Cumulative Plus Project LOS

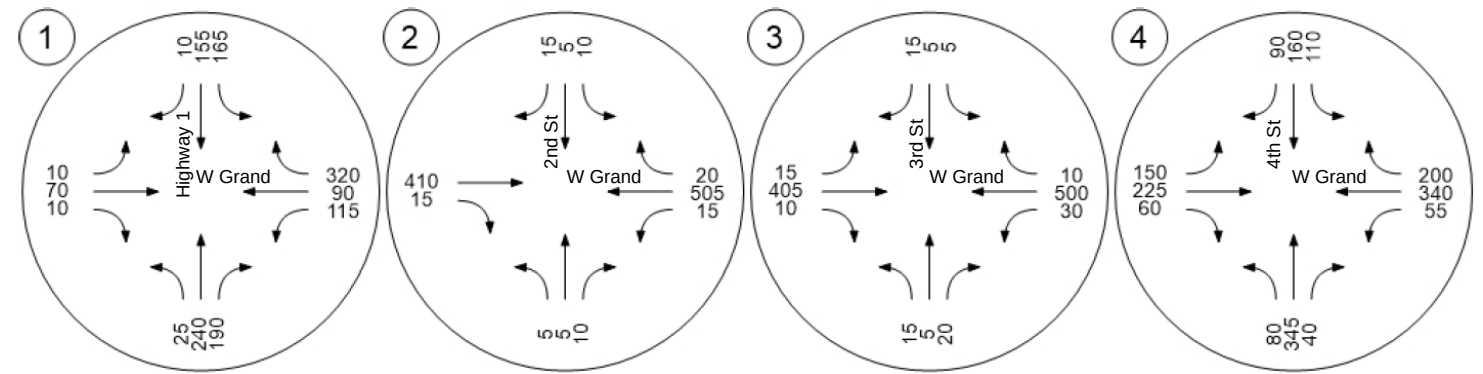
Cumulative Plus Project Intersection Levels of Service					
Intersection	Weekday Peak Hour	Cumulative		Cumulative + Project	
		Delay ¹	LOS	Delay ¹	LOS
1. W Grand Ave & Highway 1	AM	24.1	C	24.3	C
	PM	26.2	C	26.2	C
2. W Grand Ave & 2nd St	AM	0.9 (16.1)	- (C)	1.2 (18.1)	- (C)
	PM	0.9 (21.2)	- (C)	1.2 (21.4)	- (C)
3. W Grand Ave & 3rd St	AM	1.4 (17.1)	- (C)	1.5 (17.7)	- (C)
	PM	1.9 (28.5)	- (D)	2.0 (29.8)	- (D)
4. W Grand Ave & 4th St	AM	26.0	C	26.3	C
	PM	27.7	C	28.1	C
1. HCM 6th average control delay in seconds per vehicle. For side-street-stop controlled intersections, the worst approach's delay is reported in parentheses following the overall intersection delay.					
Note: Unacceptable operations at City intersections shown in bold text.					

All study intersections operate acceptably under Cumulative and Cumulative Plus Project Conditions except the West Grand Avenue and 3rd Street (#3) intersection during the PM peak hour which is forecast to operate at LOS D. The side street hourly approach volumes are less than 50 vehicles per hour and the intersection would not meet CAMUTCD all-way stop control or traffic signal warrants. In addition, the 95th percentile queues on 3rd Street are less than one vehicle as shown in **Table 6** and the project would not significantly impact the intersection. The well-established roadway grid in the area would enable drivers to use a nearby traffic signal to avoid uncontrolled turns.

Figure 4: Cumulative Volumes



Cumulative AM Peak Hour Volumes



Cumulative PM Peak Hour Volumes

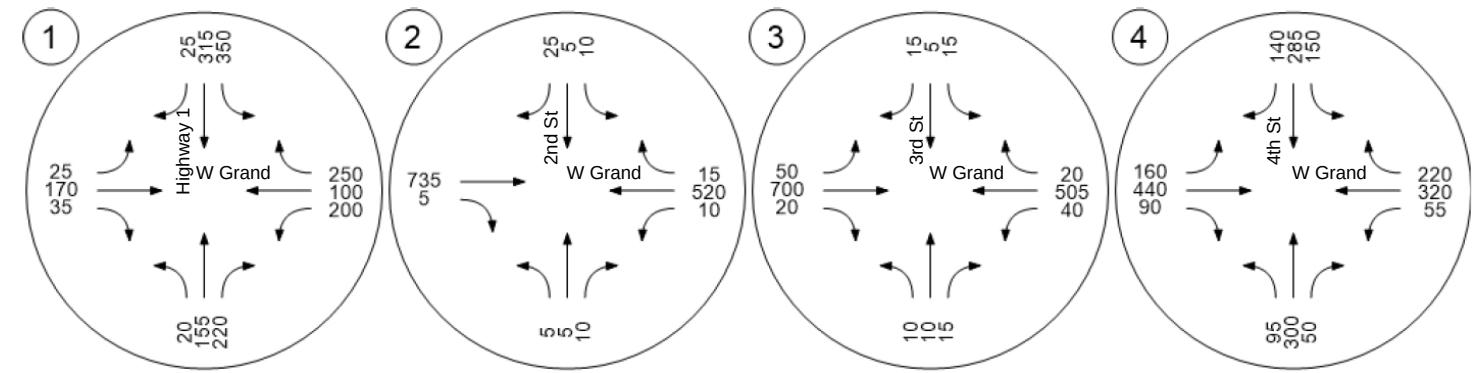
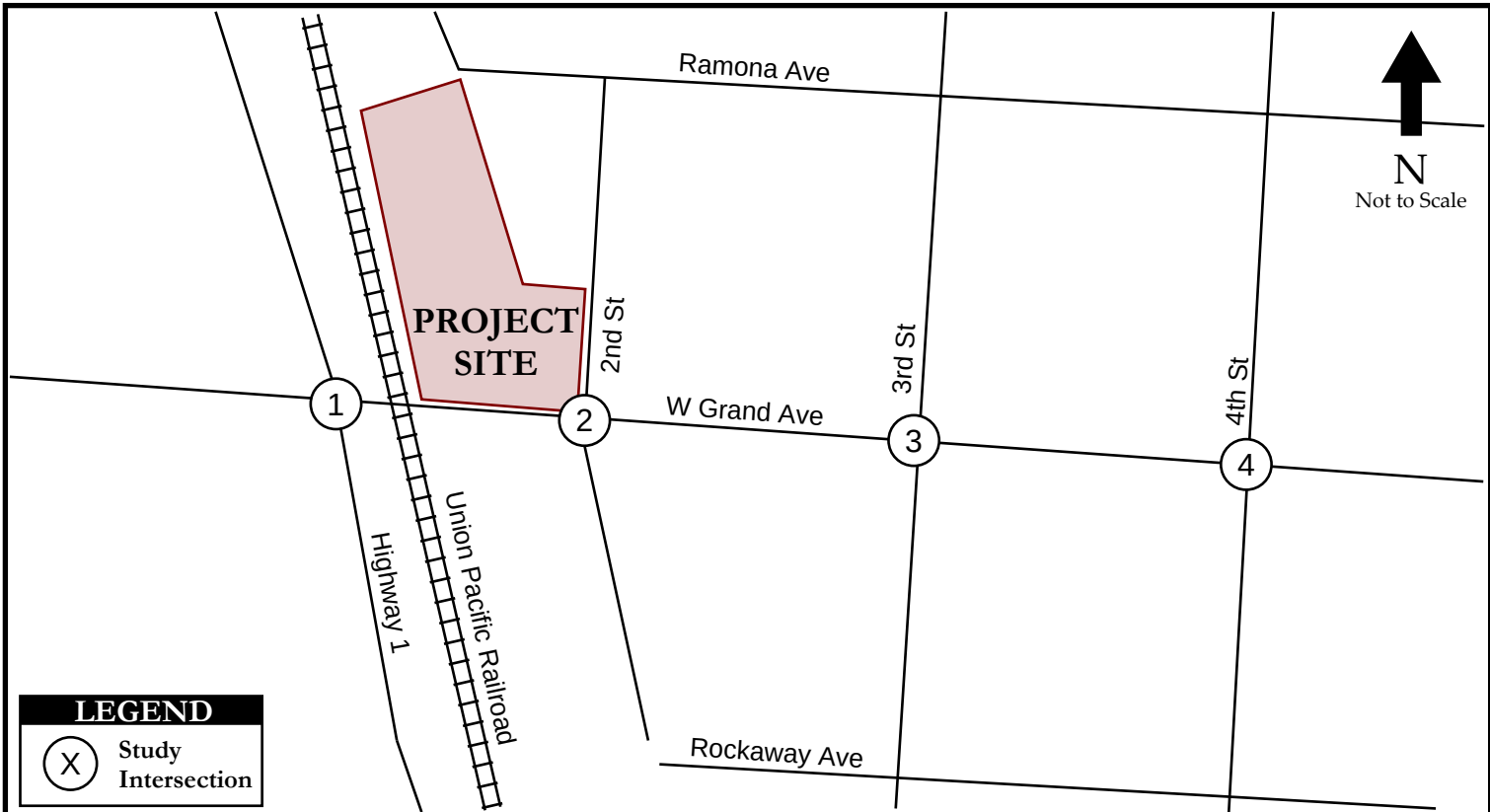
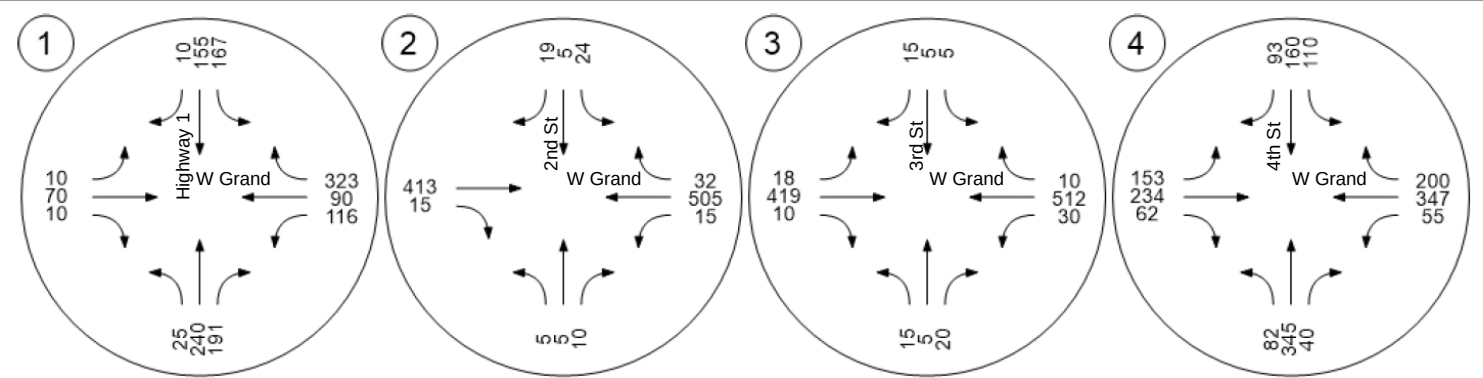


Figure 5: Cumulative Plus Project Volumes



Cumulative Plus Project AM Peak Hour Volumes



Cumulative Plus Project PM Peak Hour Volumes

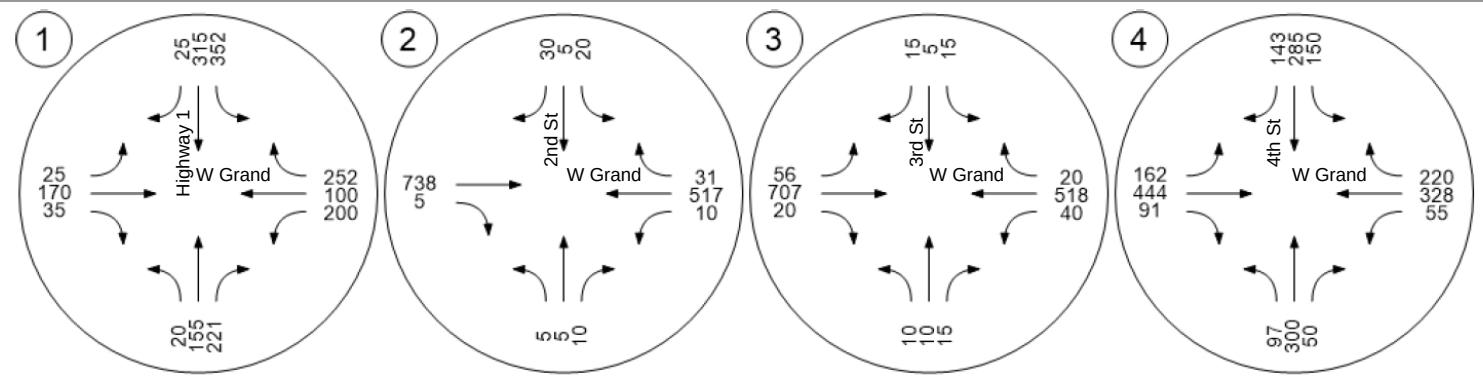


Table 6: Cumulative and Cumulative Plus Project Queues

Cumulative and Cumulative Plus Project Queues					
	Movement	Storage Length (ft)	Peak Hour	95th Percentile Queues (ft) ¹	
				Cumulative	Cumulative + Project
1. W Grand Ave & Highway 1	EBL	100	AM	26	26
			PM	49	49
	EBR	100	AM	0	0
			PM	0	0
	WBL	140	AM	138	139
			PM	229	229
	WBR	100	AM	47	47
			PM	40	40
	NBL	170	AM	46	46
			PM	43	43
	SBL	470	AM	92	94
			PM	190	191
	SBR	30	AM	0	0
			PM	0	0
2. W Grand Ave & 2nd St	NB & SB	-	AM	< 1 vehicle	< 1 vehicle
			PM		
3. W Grand Ave & 3rd St	NB & SB	-	AM	< 1 vehicle	< 1 vehicle
			PM		
4. W Grand Ave & 4th St	EBL	80	AM	154	156
			PM	160	162
	WBL	105	AM	71	71
			PM	70	70
	NBL	90	AM	72	73
			PM	102	105
	SBL	100	AM	116	117
			PM	147	147
1. Queue length that would not be exceeded 95 percent of the time.					
Bold indicates queue length longer than storage length.					

The following queue deficiencies are noted:

- West Grand Avenue and State Highway 1 (#1): The westbound left 95th percentile PM peak hour queue extends through the 3rd Street intersection and encroaches in the east and west leg crosswalks. The project does not exacerbate the queue and has a less than significant impact. Pedestrian warning signage is recommended at the West Grand Avenue and 2nd Street (#2) intersection as shown in **Figure 1**.
- West Grand Avenue and 4th Street (#4): The eastbound left, northbound left, and southbound left 95th percentile queues exceeded the storage length under Cumulative Conditions with and without the project during one or more peak hours. However, the average queues would not exceed the storage length. The project does not exacerbate the queues by an additional vehicle and has a less than significant impact.

ATTACHMENTS

Attachment A: Turning Movement Counts

Attachment B: Synchro Output Reports

REFERENCES

American Association of State Highway and Transportation Officials (AASHTO). 2018. A Policy on Geometric Design of Highways and Streets, 7th Edition.

Association of Environmental Professionals. 2023. CEQA Statute & Guidelines.

California Department of Transportation (Caltrans). 2014, Revision 6. California Manual on Uniform Traffic Control Devices (CAMUTCD).

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Central Coast Transportation Consulting. July 2023. 401 W Grande Avenue Transportation Impact Analysis.

_____. September 2022. 402 W Grande Avenue Transportation Impact Analysis.

City of Grover Beach. January 2011. West Grand Avenue Master Plan.

_____. August 2005. Circulation Element.

Institute of Transportation Engineers (ITE). 2021. Trip Generation Manual, 11th Edition.

_____. 2017. Trip Generation Handbook, 3rd Edition.

San Luis Obispo Council of Governments (SLOCOG). September 2021. 2021 Active Transportation Plan.

Attachment A: Turning Movement Counts



Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Grand Ave @ Hwy 1

LATITUDE 35.1220

COUNTY San Luis Obispo

LONGITUDE -120.6299

COLLECTION DATE Tuesday, November 14, 2023

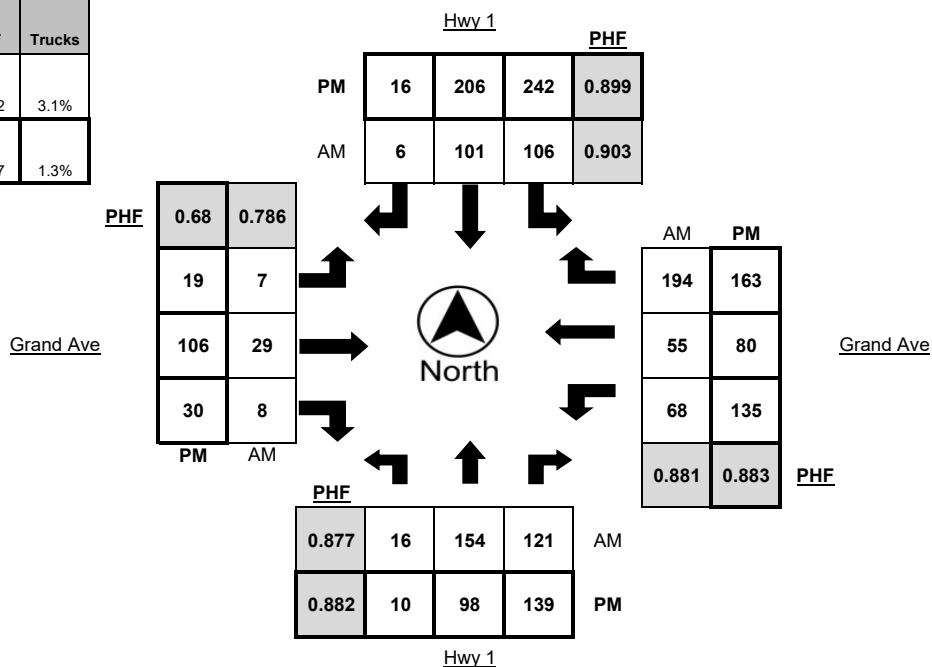
WEATHER Clear

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	3	43	15	1	15	12	0	2	0	5	2	0	12	12	18	1
7:15 AM - 7:30 AM	4	49	19	1	17	17	0	2	0	6	1	0	17	9	32	0
7:30 AM - 7:45 AM	5	61	21	2	25	16	1	4	3	3	2	1	10	2	58	3
7:45 AM - 8:00 AM	2	51	30	1	23	34	2	2	1	8	1	0	15	8	62	2
8:00 AM - 8:15 AM	3	26	35	0	32	27	0	0	3	6	2	1	25	21	39	2
8:15 AM - 8:30 AM	7	44	31	4	24	15	2	1	2	8	4	1	13	8	36	0
8:30 AM - 8:45 AM	4	33	25	3	27	25	2	7	1	7	1	0	15	18	57	3
8:45 AM - 9:00 AM	4	37	18	1	34	14	6	2	4	9	2	1	21	9	38	2
TOTAL	32	344	194	13	197	160	13	20	14	52	15	4	128	87	340	13

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
2:00 PM - 2:15 PM	3	28	27	2	58	40	7	2	2	25	4	0	24	18	49	2
2:15 PM - 2:30 PM	6	29	32	7	51	49	5	8	4	23	6	0	20	18	37	0
2:30 PM - 2:45 PM	1	15	26	2	70	42	4	7	0	16	4	0	32	16	52	3
2:45 PM - 3:00 PM	3	37	28	3	53	41	2	3	2	13	5	0	21	12	41	4
3:00 PM - 3:15 PM	1	19	27	0	46	32	3	1	3	15	2	0	29	23	37	0
3:15 PM - 3:30 PM	2	39	23	6	41	36	5	4	4	10	3	0	30	20	53	0
3:30 PM - 3:45 PM	7	26	36	1	45	47	5	2	2	23	0	0	42	17	52	1
3:45 PM - 4:00 PM	0	29	21	1	49	45	7	1	3	24	2	1	29	22	54	2
4:00 PM - 4:15 PM	8	35	39	8	52	57	2	0	3	17	3	0	42	20	40	1
4:15 PM - 4:30 PM	2	19	34	0	51	46	5	2	6	10	1	0	30	19	43	1
4:30 PM - 4:45 PM	3	23	44	4	66	57	6	1	2	14	3	0	32	27	48	3
4:45 PM - 5:00 PM	4	27	31	1	52	61	6	0	3	23	7	0	35	27	41	1
5:00 PM - 5:15 PM	3	24	27	2	60	47	4	1	7	33	6	0	34	19	40	1
5:15 PM - 5:30 PM	0	24	37	0	64	41	0	1	7	36	14	0	34	7	34	1
5:30 PM - 5:45 PM	0	13	28	0	56	59	3	1	4	28	6	0	26	10	36	2
5:45 PM - 6:00 PM	3	20	31	1	44	44	0	2	2	11	1	0	25	3	24	1
TOTAL	46	407	491	38	858	744	64	36	54	321	67	1	485	278	681	23

PEAK HOUR	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:45 AM - 8:45 AM	16	154	121	8	106	101	6	10	7	29	8	2	68	55	194	7
4:30 PM - 5:30 PM	10	98	139	7	242	206	16	3	19	106	30	0	135	80	163	6

	PHF	Trucks
AM	0.912	3.1%
PM	0.957	1.3%





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Morro Bay, CA 93442

LOCATION Grand Ave @ Hwy 1

LATITUDE 35.1220

COUNTY San Luis Obispo

LONGITUDE -120.6299

COLLECTION DATE Tuesday, November 14, 2023

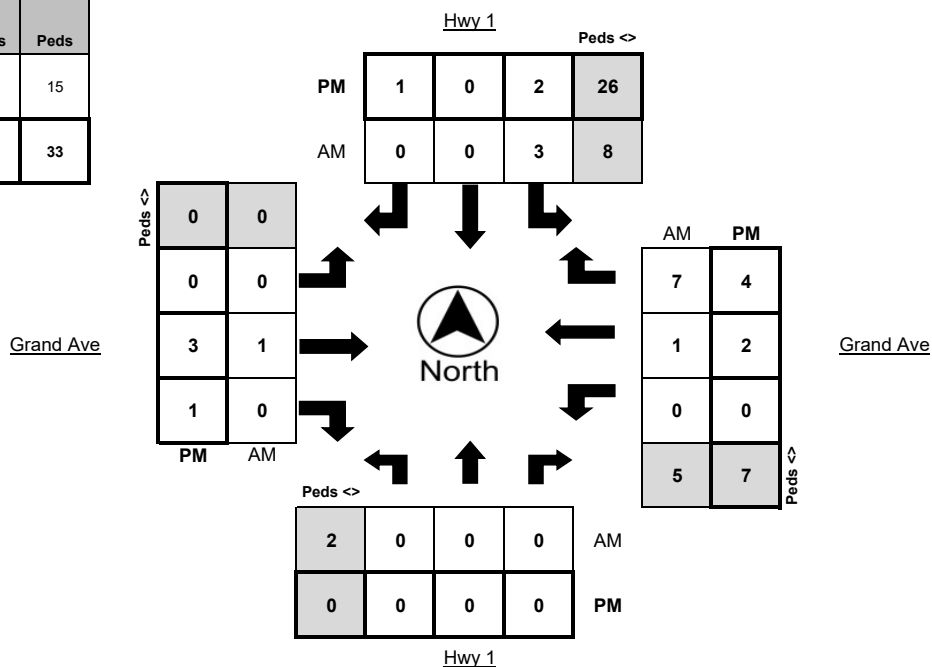
WEATHER Clear

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	1	0	4	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM - 7:45 AM	0	0	0	4	1	0	0	0	0	0	0	0	0	1	0	0
7:45 AM - 8:00 AM	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0
8:00 AM - 8:15 AM	0	0	0	1	1	0	0	0	0	0	0	1	0	0	2	0
8:15 AM - 8:30 AM	0	0	0	3	0	0	0	0	0	0	0	3	0	1	2	0
8:30 AM - 8:45 AM	0	0	0	3	1	0	0	2	0	1	0	0	0	0	3	0
8:45 AM - 9:00 AM	0	0	0	2	0	0	0	0	0	0	0	1	0	1	2	0
TOTAL	0	1	0	18	4	0	1	2	0	1	0	6	0	3	9	1

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
2:00 PM - 2:15 PM	0	0	0	2	3	0	0	0	0	1	0	0	0	0	2	0
2:15 PM - 2:30 PM	0	0	0	4	0	0	0	0	0	1	0	1	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	1	0	5	1	0	0	0	0	0	0	1	0	1	0	0
3:00 PM - 3:15 PM	0	1	0	4	1	1	0	0	0	0	0	1	0	0	1	2
3:15 PM - 3:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	5	0
3:30 PM - 3:45 PM	0	0	1	1	0	2	0	1	0	0	0	0	0	0	2	0
3:45 PM - 4:00 PM	0	2	0	1	0	2	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	7	0	1	0	1	0	0	0	5	0	3	2	0
4:15 PM - 4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
4:30 PM - 4:45 PM	0	0	0	6	0	0	0	0	0	0	0	2	0	2	0	0
4:45 PM - 5:00 PM	0	0	0	6	1	0	1	0	0	2	1	1	0	0	2	0
5:00 PM - 5:15 PM	0	0	0	7	1	0	0	0	0	1	0	2	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	7	0	0	0	0	0	0	0	2	0	0	2	0
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	4	1	56	9	6	1	2	0	5	1	15	0	7	16	2

PEAK HOUR	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:45 AM - 8:45 AM	0	0	0	8	3	0	0	2	0	1	0	5	0	1	7	0
4:30 PM - 5:30 PM	0	0	0	26	2	0	1	0	0	3	1	7	0	2	4	0

	Bikes	Peds
AM Peak Total	12	15
PM Peak Total	13	33





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LATITUDE 35.1219

COUNTY San Luis Obispo

LONGITUDE -120.6289

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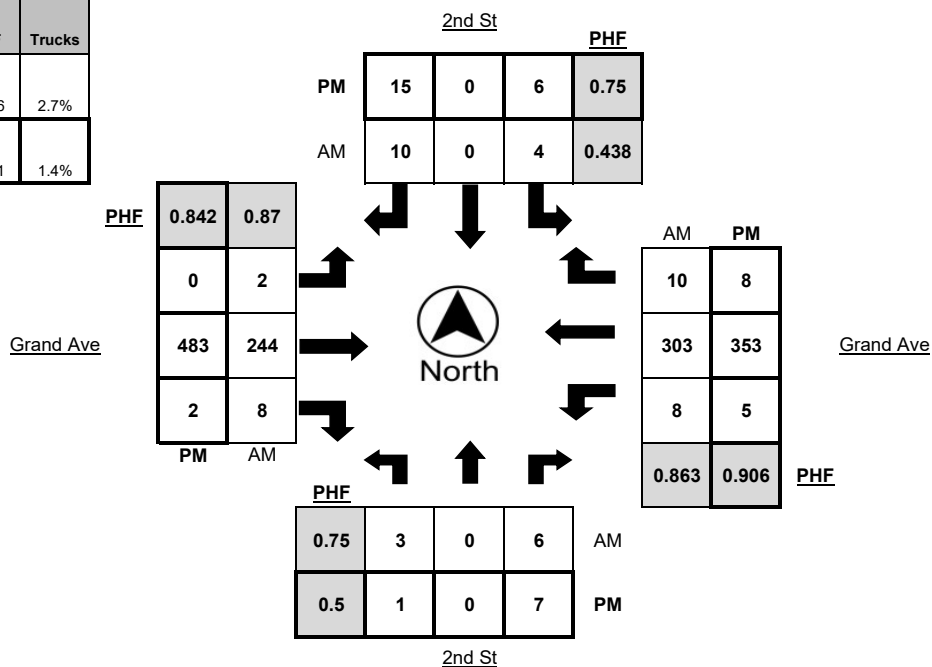
WEATHER Clear

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	1	0	0	1	0	1	1	0	0	35	0	0	1	41	3	1
7:15 AM - 7:30 AM	0	0	0	0	0	0	3	0	0	43	0	1	0	54	1	0
7:30 AM - 7:45 AM	0	0	1	0	1	1	2	0	0	46	1	3	1	68	1	3
7:45 AM - 8:00 AM	1	0	1	0	0	0	2	0	1	56	4	1	2	80	3	3
8:00 AM - 8:15 AM	1	0	2	0	2	0	6	0	1	71	1	1	1	78	2	0
8:15 AM - 8:30 AM	1	0	2	1	0	0	0	0	0	60	1	2	3	56	3	1
8:30 AM - 8:45 AM	0	0	1	0	2	0	2	0	0	57	2	4	2	89	2	3
8:45 AM - 9:00 AM	1	0	2	0	0	0	2	0	1	61	1	2	1	63	4	1
TOTAL	5	0	9	2	5	2	18	0	3	429	10	14	11	529	19	12

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
2:00 PM - 2:15 PM	0	0	3	1	2	0	8	0	1	111	1	2	4	81	4	1
2:15 PM - 2:30 PM	1	0	0	0	3	1	1	0	1	109	0	3	1	78	3	0
2:30 PM - 2:45 PM	1	0	1	0	1	0	2	0	2	113	0	2	1	94	0	3
2:45 PM - 3:00 PM	1	0	1	0	0	0	6	0	0	94	0	1	1	95	1	3
3:00 PM - 3:15 PM	1	0	1	0	3	0	4	0	0	86	0	0	0	88	8	0
3:15 PM - 3:30 PM	0	0	3	0	1	0	2	0	0	72	1	2	2	98	4	0
3:30 PM - 3:45 PM	1	1	1	0	4	0	7	0	2	102	1	1	0	109	3	1
3:45 PM - 4:00 PM	0	0	1	0	4	0	4	0	0	94	1	1	2	100	2	2
4:00 PM - 4:15 PM	2	0	4	0	2	0	4	0	0	110	0	3	3	93	1	1
4:15 PM - 4:30 PM	2	0	1	0	3	0	1	0	0	94	0	1	1	88	1	1
4:30 PM - 4:45 PM	0	0	1	0	2	0	5	0	0	118	2	2	0	99	2	3
4:45 PM - 5:00 PM	1	0	3	0	1	0	3	0	0	106	0	1	2	96	1	1
5:00 PM - 5:15 PM	0	0	1	0	2	0	5	0	0	115	0	2	1	91	4	1
5:15 PM - 5:30 PM	0	0	2	0	1	0	2	0	0	144	0	1	2	67	1	1
5:30 PM - 5:45 PM	0	0	0	0	4	0	5	0	0	108	0	0	1	70	1	1
5:45 PM - 6:00 PM	0	0	0	0	3	0	3	0	3	82	1	2	1	48	1	0
TOTAL	10	1	23	1	36	1	62	0	9	1658	7	24	22	1395	37	19

PEAK HOUR	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:45 AM - 8:45 AM	3	0	6	1	4	0	10	0	2	244	8	8	8	303	10	7
4:30 PM - 5:30 PM	1	0	7	0	6	0	15	0	0	483	2	6	5	353	8	6

	PHF	Trucks
AM	0.906	2.7%
PM	0.961	1.4%





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LOCATION Grand Ave @ 2nd St

LATITUDE 35.1219

COUNTY San Luis Obispo

LONGITUDE -120.6289

COLLECTION DATE Tuesday, November 14, 2023

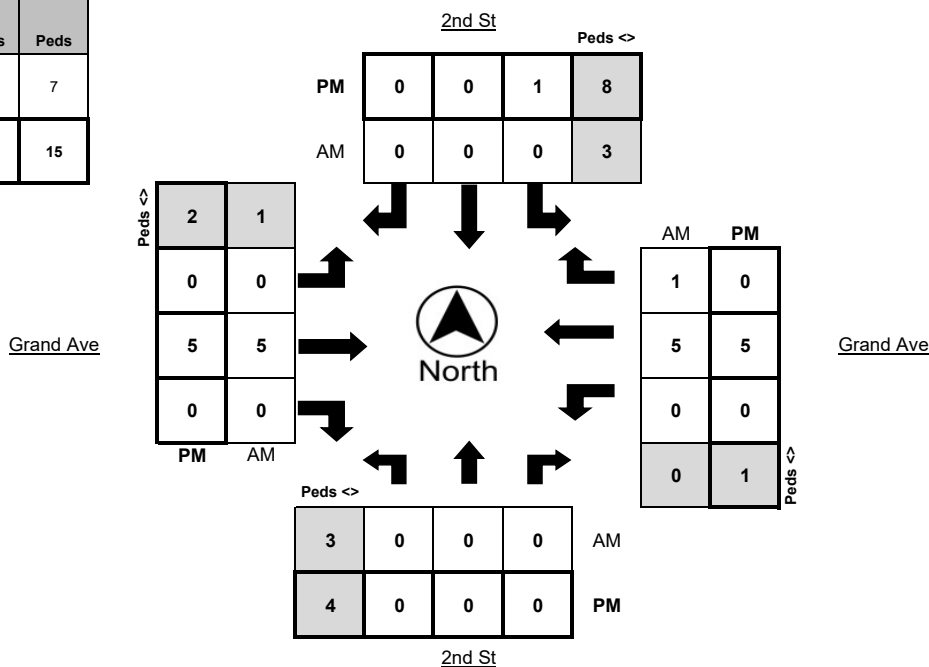
WEATHER Clear

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2
7:30 AM - 7:45 AM	1	0	0	2	1	0	0	1	0	0	0	0	0	1	0	2
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	1	0	2	0	0	0	1	0	0
8:15 AM - 8:30 AM	0	0	0	2	0	0	0	1	0	0	0	0	0	2	0	1
8:30 AM - 8:45 AM	0	0	0	1	0	0	0	1	0	2	0	0	0	2	0	0
8:45 AM - 9:00 AM	1	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0
TOTAL	2	0	0	6	1	0	0	7	0	5	0	1	0	8	1	5

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	2	0	0
2:15 PM - 2:30 PM	0	0	0	1	0	0	0	1	0	3	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0
2:45 PM - 3:00 PM	0	0	0	3	1	0	0	1	0	0	0	2	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	8	1	0	0	0	0	1	0	0	0	0	0	0
3:15 PM - 3:30 PM	0	0	0	1	0	0	0	2	0	2	0	0	0	5	0	0
3:30 PM - 3:45 PM	0	0	1	1	0	0	2	2	0	1	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	0	0	0	1	0	0	0	2	0	1	0	0	0	4	0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1
4:30 PM - 4:45 PM	0	0	0	1	1	0	0	1	0	0	0	1	0	3	0	0
4:45 PM - 5:00 PM	0	0	0	3	0	0	0	1	0	2	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	3	0	0	0	2	0	2	0	0	0	0	0	0
5:15 PM - 5:30 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	2	0	1
5:30 PM - 5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	26	3	0	2	20	0	14	0	3	0	16	0	3

PEAK HOUR	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:45 AM - 8:45 AM	0	0	0	3	0	0	0	3	0	5	0	0	0	5	1	1
4:30 PM - 5:30 PM	0	0	0	8	1	0	0	4	0	5	0	1	0	5	0	2

	Bikes	Peds
AM Peak Total	11	7
PM Peak Total	11	15





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COUNTY San Luis Obispo

LONGITUDE -120.6277

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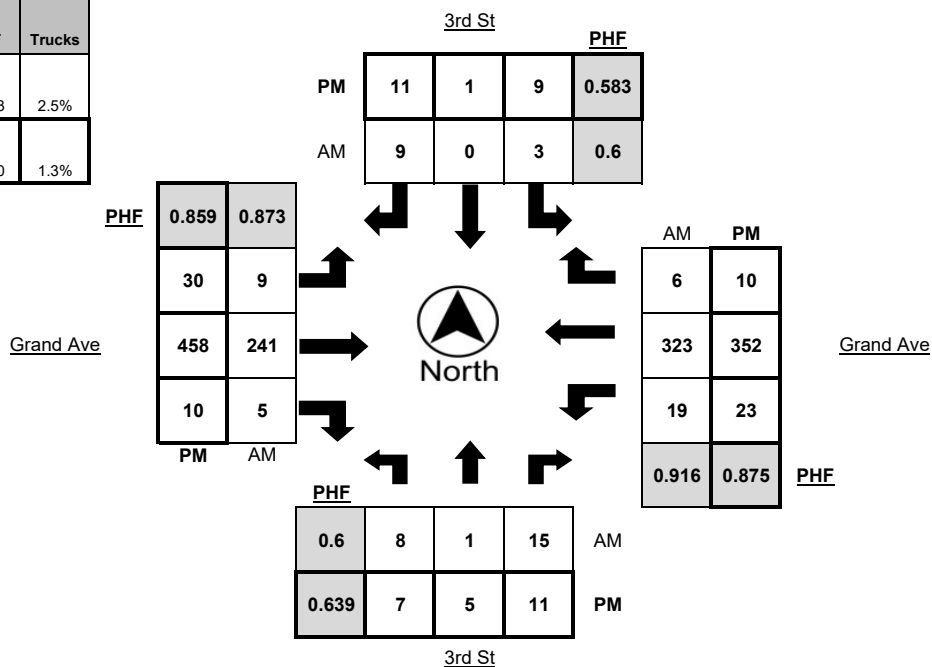
WEATHER Clear

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	1	0	2	1	3	0	2	0	5	31	0	0	2	39	2	1
7:15 AM - 7:30 AM	0	0	3	0	0	0	1	0	0	42	2	1	5	54	2	0
7:30 AM - 7:45 AM	3	0	8	0	1	2	1	0	5	43	1	3	3	65	2	3
7:45 AM - 8:00 AM	0	1	4	0	2	0	2	0	2	52	3	1	5	79	2	2
8:00 AM - 8:15 AM	1	0	3	0	0	0	2	0	4	68	1	1	7	77	1	2
8:15 AM - 8:30 AM	3	0	2	0	0	0	1	0	1	61	0	3	3	79	0	1
8:30 AM - 8:45 AM	4	0	6	0	1	0	4	0	2	60	1	2	4	88	3	4
8:45 AM - 9:00 AM	0	1	1	1	1	3	0	0	4	58	1	2	4	67	1	1
TOTAL	12	2	29	2	8	5	13	0	23	415	9	13	33	548	13	14

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
2:00 PM - 2:15 PM	2	0	9	1	2	0	0	0	3	105	3	3	7	88	1	1
2:15 PM - 2:30 PM	1	0	2	0	0	1	0	0	5	112	2	3	5	79	1	0
2:30 PM - 2:45 PM	3	0	5	0	1	0	1	0	2	108	4	2	5	91	6	4
2:45 PM - 3:00 PM	0	0	5	0	1	0	4	0	4	88	6	1	4	89	0	2
3:00 PM - 3:15 PM	0	1	6	0	3	0	4	0	7	82	3	0	6	92	3	0
3:15 PM - 3:30 PM	1	0	8	0	1	1	2	0	4	73	3	2	5	107	1	0
3:30 PM - 3:45 PM	5	0	6	0	1	0	2	0	4	104	4	2	6	102	1	2
3:45 PM - 4:00 PM	1	1	5	0	0	0	2	0	8	90	2	1	2	104	1	2
4:00 PM - 4:15 PM	5	0	10	0	0	0	0	0	5	105	2	5	3	93	4	1
4:15 PM - 4:30 PM	4	1	8	0	1	0	2	0	5	89	1	1	5	86	1	1
4:30 PM - 4:45 PM	4	1	1	0	1	0	2	0	3	117	3	2	6	94	2	3
4:45 PM - 5:00 PM	0	2	2	0	1	1	0	0	10	102	3	1	4	103	3	1
5:00 PM - 5:15 PM	3	1	5	0	6	0	3	0	10	105	0	2	8	89	3	1
5:15 PM - 5:30 PM	0	1	3	0	1	0	6	0	7	134	4	1	5	66	2	1
5:30 PM - 5:45 PM	2	0	2	0	0	0	2	0	6	107	2	0	2	67	1	1
5:45 PM - 6:00 PM	1	1	1	0	0	1	3	0	7	78	0	2	4	49	0	0
TOTAL	32	9	78	1	19	4	33	0	90	1599	42	28	77	1399	30	20

PEAK HOUR	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:45 AM - 8:45 AM	8	1	15	0	3	0	9	0	9	241	5	7	19	323	6	9
4:30 PM - 5:30 PM	7	5	11	0	9	1	11	0	30	458	10	6	23	352	10	6

	PHF	Trucks
AM	0.923	2.5%
PM	0.990	1.3%





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LATITUDE 35.1219

COUNTY San Luis Obispo

LONGITUDE -120.6277

COLLECTION DATE Tuesday, November 14, 2023

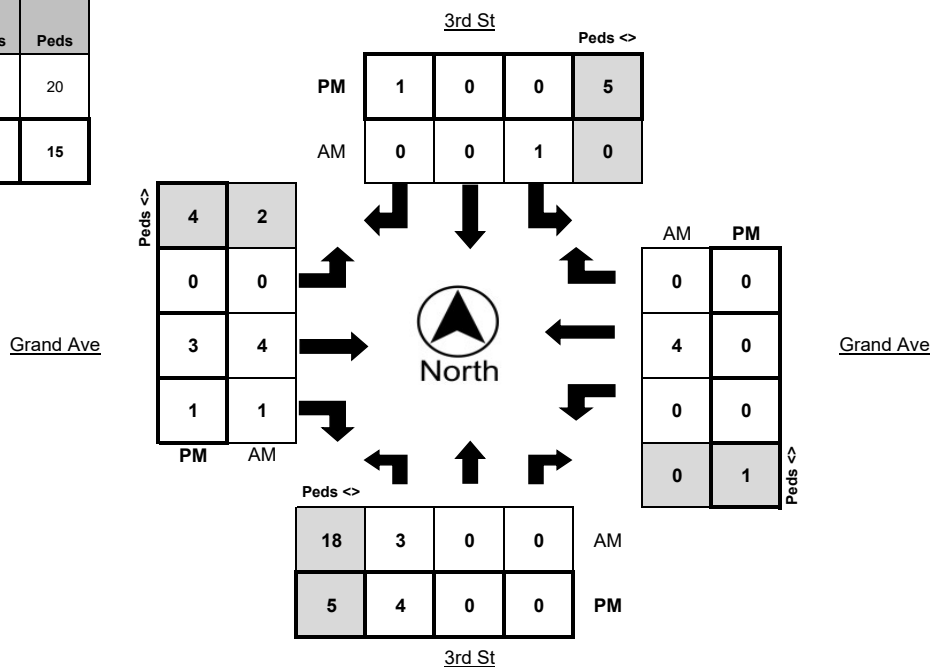
WEATHER Clear

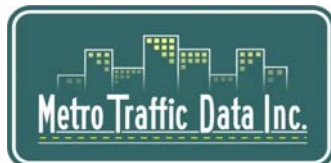
Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:00 AM - 7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	1	0	0	2	0	0	0	1	0	1	0	0	0	0	0	1
7:45 AM - 8:00 AM	2	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0	0	5	0	1	0	0	0	1	0	0
8:15 AM - 8:30 AM	1	0	0	0	0	0	0	3	0	0	1	0	0	1	0	1
8:30 AM - 8:45 AM	0	0	0	0	0	0	0	10	0	2	0	0	0	1	0	1
8:45 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0
TOTAL	4	0	0	3	1	0	0	20	0	5	1	1	0	6	0	3

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	4	0	1	0	0	0	2	0	0
2:15 PM - 2:30 PM	0	0	0	1	0	0	0	3	0	3	0	0	0	0	0	2
2:30 PM - 2:45 PM	0	0	0	1	0	0	0	3	0	0	0	0	0	0	0	2
2:45 PM - 3:00 PM	0	0	0	4	0	0	0	2	0	0	1	0	0	0	0	2
3:00 PM - 3:15 PM	0	0	0	5	0	0	0	0	0	1	1	1	0	0	0	1
3:15 PM - 3:30 PM	2	0	0	0	0	0	0	1	0	2	1	0	0	1	0	0
3:30 PM - 3:45 PM	0	0	0	2	0	0	0	3	0	1	0	0	0	1	0	2
3:45 PM - 4:00 PM	0	0	0	2	0	0	0	3	0	0	0	1	0	0	0	0
4:00 PM - 4:15 PM	2	0	0	2	0	0	1	3	0	4	0	0	0	2	0	2
4:15 PM - 4:30 PM	0	0	0	2	0	0	0	6	0	0	0	0	0	0	0	3
4:30 PM - 4:45 PM	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:45 PM - 5:00 PM	1	0	0	1	0	0	0	1	0	2	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	3	0	0	0	2	0	0	1	0	0	0	0	0
5:15 PM - 5:30 PM	2	0	0	1	0	0	0	2	0	0	0	1	0	0	0	2
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	8	0	0	25	0	0	2	35	0	15	4	3	0	6	0	20

PEAK HOUR	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:45 AM - 8:45 AM	3	0	0	0	1	0	0	18	0	4	1	0	0	4	0	2
4:30 PM - 5:30 PM	4	0	0	5	0	0	1	5	0	3	1	1	0	0	0	4

	Bikes	Peds
AM Peak Total	13	20
PM Peak Total	9	15





Metro Traffic Data Inc.
310 N. Irwin Street - Suite 20
Hanford, CA 93230
800-975-6938 Phone/Fax
www.metrotrafficdata.com

Turning Movement Report

Prepared For:

Central Coast Transportation Consulting
895 Napa Avenue, Suite A-6
Morro Bay, CA 93442

LOCATION Grand Ave @ 4th St

LATITUDE 35.1218

COUNTY San Luis Obispo

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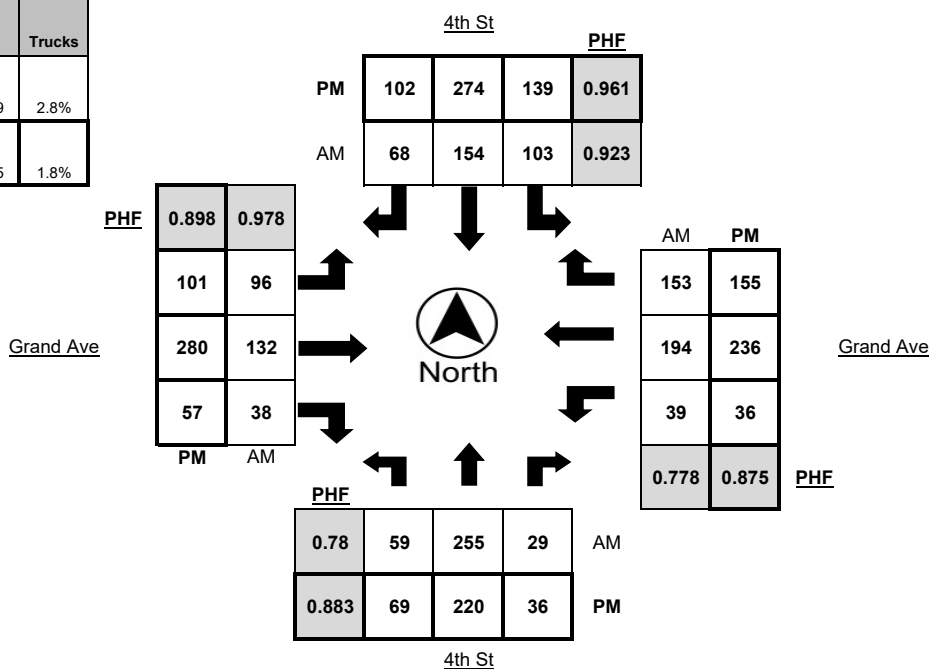
WEATHER Clear

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:00 AM - 7:15 AM	12	62	3	2	11	27	10	0	15	20	2	1	3	21	36	0
7:15 AM - 7:30 AM	19	60	2	1	12	30	9	3	14	23	6	2	4	31	32	1
7:30 AM - 7:45 AM	22	70	7	4	13	31	11	2	22	28	5	3	4	35	38	4
7:45 AM - 8:00 AM	22	80	8	4	22	44	10	2	23	39	6	0	9	56	44	3
8:00 AM - 8:15 AM	16	63	9	2	27	42	19	1	23	29	12	1	14	46	37	2
8:15 AM - 8:30 AM	10	63	5	2	26	36	23	5	29	31	7	2	4	27	25	1
8:30 AM - 8:45 AM	11	49	7	1	28	32	16	4	21	33	13	4	12	65	47	3
8:45 AM - 9:00 AM	19	59	7	6	27	44	15	5	15	33	10	2	7	40	44	1
TOTAL	131	506	48	22	166	286	113	22	162	236	61	15	57	321	303	15

Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
2:00 PM - 2:15 PM	12	49	6	2	31	42	16	7	21	82	14	3	8	66	30	2
2:15 PM - 2:30 PM	13	40	6	0	34	56	17	3	24	71	19	2	8	53	33	1
2:30 PM - 2:45 PM	15	45	11	2	34	49	24	3	21	79	11	3	4	61	31	4
2:45 PM - 3:00 PM	14	40	16	2	42	57	25	6	20	62	10	1	8	55	30	0
3:00 PM - 3:15 PM	12	44	6	1	34	65	23	2	21	62	11	0	10	63	34	1
3:15 PM - 3:30 PM	16	46	9	1	37	60	30	2	25	43	11	2	7	66	38	1
3:30 PM - 3:45 PM	14	68	10	2	40	66	27	1	31	68	15	1	14	65	43	2
3:45 PM - 4:00 PM	24	58	8	3	33	72	29	3	19	68	10	0	7	55	33	2
4:00 PM - 4:15 PM	16	43	10	1	33	65	27	2	30	72	20	4	10	57	44	3
4:15 PM - 4:30 PM	15	51	8	1	33	71	19	3	21	72	12	1	5	59	35	1
4:30 PM - 4:45 PM	19	40	5	2	41	63	18	1	24	78	12	2	5	65	36	0
4:45 PM - 5:00 PM	7	39	6	1	44	67	37	1	33	56	16	1	8	70	36	1
5:00 PM - 5:15 PM	15	40	14	1	34	74	16	3	24	71	17	1	3	64	53	0
5:15 PM - 5:30 PM	10	30	5	0	23	60	21	1	29	88	16	2	2	42	29	0
5:30 PM - 5:45 PM	14	36	6	3	35	65	12	0	24	74	13	0	12	44	33	2
5:45 PM - 6:00 PM	6	27	6	1	38	66	9	3	21	50	17	2	6	34	24	2
TOTAL	222	696	132	23	566	998	350	41	388	1096	224	25	117	919	562	22

PEAK HOUR	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks
7:45 AM - 8:45 AM	59	255	29	9	103	154	68	12	96	132	38	7	39	194	153	9
3:30 PM - 4:30 PM	69	220	36	7	139	274	102	9	101	280	57	6	36	236	155	8

	PHF	Trucks
AM	0.909	2.8%
PM	0.925	1.8%





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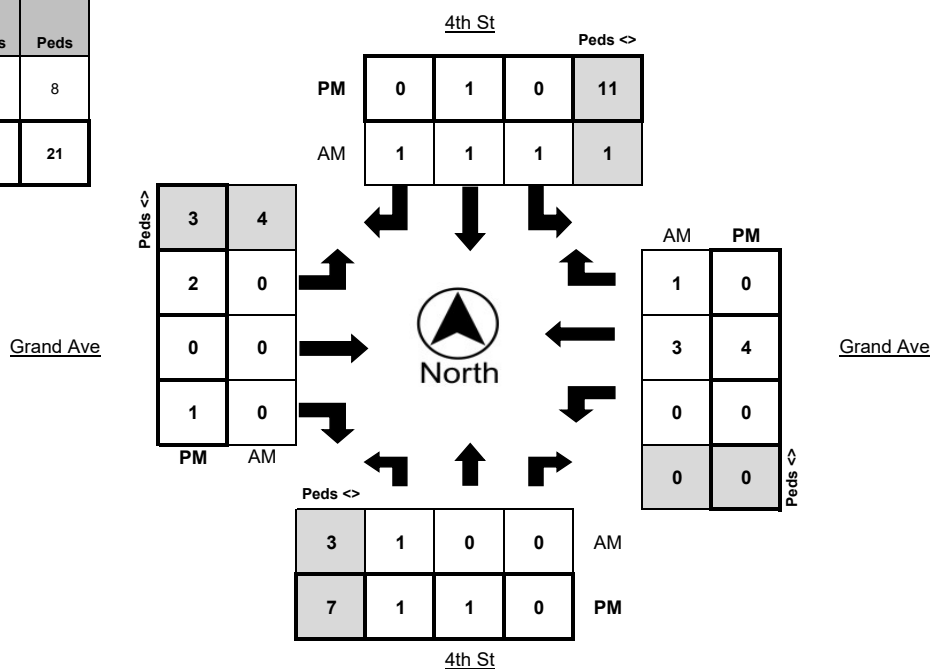
WEATHER Clear

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:00 AM - 7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM - 7:45 AM	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	2
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
8:00 AM - 8:15 AM	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0
8:15 AM - 8:30 AM	1	0	0	1	0	0	0	1	0	0	0	0	0	0	1	2
8:30 AM - 8:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0
8:45 AM - 9:00 AM	1	0	0	1	0	1	1	3	0	1	0	1	0	0	0	1
TOTAL	2	0	0	4	2	2	2	6	0	2	0	1	0	3	1	7

Time	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
2:00 PM - 2:15 PM	0	0	0	0	0	0	0	3	0	1	0	0	0	2	0	0
2:15 PM - 2:30 PM	0	0	0	1	0	0	0	3	0	2	0	0	0	0	0	0
2:30 PM - 2:45 PM	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	2
2:45 PM - 3:00 PM	0	0	0	3	0	1	0	5	0	0	0	0	0	0	0	0
3:00 PM - 3:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	2
3:15 PM - 3:30 PM	0	0	0	0	0	1	0	0	0	2	0	0	0	1	0	7
3:30 PM - 3:45 PM	0	0	0	2	0	1	0	2	0	0	0	0	0	0	0	0
3:45 PM - 4:00 PM	0	1	0	5	0	0	0	2	0	0	0	0	0	0	0	0
4:00 PM - 4:15 PM	1	0	0	1	0	0	0	0	2	0	1	0	0	3	0	0
4:15 PM - 4:30 PM	0	0	0	3	0	0	0	3	0	0	0	0	0	1	0	3
4:30 PM - 4:45 PM	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1
4:45 PM - 5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1
5:00 PM - 5:15 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	2
5:15 PM - 5:30 PM	0	0	0	0	0	0	0	5	0	1	0	1	0	0	0	2
5:30 PM - 5:45 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
5:45 PM - 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	3	0	26	0	3	0	26	2	6	1	2	0	7	2	22

PEAK HOUR	Northbound Bikes			N.Leg Peds	Southbound Bikes			S.Leg Peds	Eastbound Bikes			E.Leg Peds	Westbound Bikes			W.Leg Peds
	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
7:45 AM - 8:45 AM	1	0	0	1	1	1	1	3	0	0	0	0	0	3	1	4
3:30 PM - 4:30 PM	1	1	0	11	0	1	0	7	2	0	1	0	0	4	0	3

	Bikes	Peds
AM Peak Total	8	8
PM Peak Total	10	21



Attachment B: Synchro Output Sheets

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	32	9	75	60	213	18	302	116	111	7
v/c Ratio	0.03	0.08	0.02	0.22	0.10	0.29	0.06	0.54	0.19	0.09	0.01
Control Delay	33.9	24.8	0.1	29.4	18.3	2.9	32.7	22.4	28.3	13.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	24.8	0.1	29.4	18.3	2.9	32.7	22.4	28.3	13.4	0.0
Queue Length 50th (ft)	3	10	0	23	14	0	6	82	18	20	0
Queue Length 95th (ft)	19	37	0	85	55	35	32	228	60	88	0
Internal Link Dist (ft)	266				246				352		765
Turn Bay Length (ft)	100		100				150		170		470
Base Capacity (vph)	833	1216	1044	1042	1275	1123	833	1220	1617	1330	1165
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.03	0.01	0.07	0.05	0.19	0.02	0.25	0.07	0.08	0.01
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Existing AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	29	8	68	55	194	16	154	121	106	101	6
Future Volume (veh/h)	7	29	8	68	55	194	16	154	121	106	101	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	8	32	9	75	60	213	18	169	133	116	111	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	22	284	229	158	447	537	54	242	191	376	665	560
Arrive On Green	0.01	0.15	0.15	0.09	0.24	0.24	0.03	0.25	0.25	0.11	0.36	0.36
Sat Flow, veh/h	1767	1856	1497	1767	1856	1513	1767	959	755	3428	1856	1562
Grp Volume(v), veh/h	8	32	9	75	60	213	18	0	302	116	111	7
Grp Sat Flow(s),veh/h/ln	1767	1856	1497	1767	1856	1513	1767	0	1714	1714	1856	1562
Q Serve(g_s), s	0.2	0.8	0.3	2.1	1.3	5.5	0.5	0.0	8.3	1.6	2.1	0.1
Cycle Q Clear(g_c), s	0.2	0.8	0.3	2.1	1.3	5.5	0.5	0.0	8.3	1.6	2.1	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	22	284	229	158	447	537	54	0	433	376	665	560
V/C Ratio(X)	0.36	0.11	0.04	0.48	0.13	0.40	0.33	0.00	0.70	0.31	0.17	0.01
Avail Cap(c_a), veh/h	682	895	722	853	1182	1136	682	0	1158	1323	1253	1055
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	18.9	18.7	22.4	15.4	12.7	24.6	0.0	17.6	21.3	11.3	10.7
Incr Delay (d2), s/veh	9.5	0.2	0.1	2.2	0.1	0.5	3.5	0.0	2.0	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.3	0.1	0.9	0.5	1.7	0.2	0.0	3.0	0.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	19.1	18.8	24.7	15.6	13.2	28.1	0.0	19.6	21.7	11.5	10.7
LnGrp LOS	C	B	B	C	B	B	C	A	B	C	B	B
Approach Vol, veh/h	49				348				320			
Approach Delay, s/veh	21.6				16.1				20.1			
Approach LOS	C				B				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	23.5	4.2	19.1	10.6	18.0	8.7	14.5				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 25				
Max Q Clear Time (g_c+I1), s	2.5	4.1	2.2	7.5	3.6	10.3	4.1	2.8				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.1	0.3	1.8	0.2	0.1				

Intersection Summary

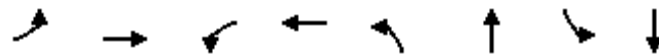
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑			↱			↱	
Traffic Vol, veh/h	2	244	8	8	303	10	3	0	6	4	0	10
Future Vol, veh/h	2	244	8	8	303	10	3	0	6	4	0	10
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	268	9	9	333	11	3	0	7	4	0	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	347	0	0	280	0	0	466	645	142	498	644	176
Stage 1	-	-	-	-	-	-	280	280	-	360	360	-
Stage 2	-	-	-	-	-	-	186	365	-	138	284	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1201	-	-	1272	-	-	478	387	877	453	388	834
Stage 1	-	-	-	-	-	-	700	675	-	628	622	-
Stage 2	-	-	-	-	-	-	795	619	-	848	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1198	-	-	1268	-	-	467	381	874	445	382	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	467	381	-	445	382	-
Stage 1	-	-	-	-	-	-	697	672	-	625	616	-
Stage 2	-	-	-	-	-	-	778	613	-	840	670	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			10.4			10.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	677	1198	-	-	1268	-	-	666				
HCM Lane V/C Ratio	0.015	0.002	-	-	0.007	-	-	0.023				
HCM Control Delay (s)	10.4	8	-	-	7.9	-	-	10.5				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	241	5	19	323	6	8	1	15	3	0	9
Future Vol, veh/h	9	241	5	19	323	6	8	1	15	3	0	9
Conflicting Peds, #/hr	0	0	18	18	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	10	262	5	21	351	7	9	1	16	3	0	10
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	358	0	0	285	0	0	523	703	152	549	702	181
Stage 1	-	-	-	-	-	-	303	303	-	397	397	-
Stage 2	-	-	-	-	-	-	220	400	-	152	305	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1190	-	-	1267	-	-	435	358	864	416	359	827
Stage 1	-	-	-	-	-	-	679	660	-	597	599	-
Stage 2	-	-	-	-	-	-	759	597	-	832	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1190	-	-	1245	-	-	414	343	849	399	344	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	414	343	-	399	344	-
Stage 1	-	-	-	-	-	-	662	644	-	592	589	-
Stage 2	-	-	-	-	-	-	736	587	-	808	642	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.3		0.4			11.3			10.6			
HCM LOS						B			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	601	1190	-	-	1245	-	-	651				
HCM Lane V/C Ratio	0.043	0.008	-	-	0.017	-	-	0.02				
HCM Control Delay (s)	11.3	8.1	-	-	7.9	-	-	10.6				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0.1	-	-	0.1				



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	187	43	381	65	312	113	244
v/c Ratio	0.35	0.17	0.18	0.49	0.21	0.61	0.41	0.48
Control Delay	28.8	13.4	29.6	14.8	20.1	24.9	24.3	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	13.4	29.6	14.8	20.1	24.9	24.3	20.4
Queue Length 50th (ft)	31	13	13	32	16	86	30	58
Queue Length 95th (ft)	98	53	52	85	56	212	92	155
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	522	1827	348	1510	717	1169	639	1134
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.10	0.12	0.25	0.09	0.27	0.18	0.22
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Existing AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	132	38	39	194	153	59	255	29	103	154	68
Future Volume (veh/h)	96	132	38	39	194	153	59	255	29	103	154	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	145	42	43	213	168	65	280	32	113	169	75
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	156	617	172	93	366	272	369	523	60	323	387	172
Arrive On Green	0.09	0.23	0.23	0.05	0.19	0.19	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1767	2703	754	1767	1897	1410	1124	1634	187	1057	1211	537
Grp Volume(v), veh/h	105	93	94	43	197	184	65	0	312	113	0	244
Grp Sat Flow(s),veh/h/ln	1767	1763	1694	1767	1763	1544	1124	0	1821	1057	0	1748
Q Serve(g_s), s	3.1	2.3	2.5	1.3	5.5	5.9	2.6	0.0	7.6	5.3	0.0	5.9
Cycle Q Clear(g_c), s	3.1	2.3	2.5	1.3	5.5	5.9	8.6	0.0	7.6	12.9	0.0	5.9
Prop In Lane	1.00		0.45	1.00		0.91	1.00		0.10	1.00		0.31
Lane Grp Cap(c), veh/h	156	402	387	93	340	298	369	0	583	323	0	559
V/C Ratio(X)	0.67	0.23	0.24	0.46	0.58	0.62	0.18	0.00	0.54	0.35	0.00	0.44
Avail Cap(c_a), veh/h	492	752	723	328	719	630	614	0	980	632	0	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.8	16.9	17.0	24.8	19.8	19.9	17.9	0.0	15.0	20.3	0.0	14.5
Incr Delay (d2), s/veh	5.0	0.3	0.3	3.5	1.6	2.1	0.2	0.0	0.8	0.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.9	0.9	0.6	2.2	2.1	0.6	0.0	2.8	1.2	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.8	17.2	17.3	28.3	21.3	22.0	18.1	0.0	15.8	21.0	0.0	15.0
LnGrp LOS	C	B	B	C	C	C	B	A	B	C	A	B
Approach Vol, veh/h		292			424			377			357	
Approach Delay, s/veh		21.4			22.3			16.2			16.9	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.3	8.5	20.0		25.3	10.5	18.1				
Change Period (Y+Rc), s		* 8.1	* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s		* 29	* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s		10.6	3.3	4.5		14.9	5.1	7.9				
Green Ext Time (p_c), s		1.9	0.0	0.9		1.8	0.2	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	20	110	31	141	83	170	10	247	252	215	17
v/c Ratio	0.11	0.30	0.08	0.43	0.15	0.20	0.05	0.60	0.45	0.26	0.02
Control Delay	40.1	30.2	0.4	36.1	21.4	2.7	40.0	28.6	33.6	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	30.2	0.4	36.1	21.4	2.7	40.0	28.6	33.6	17.4	0.1
Queue Length 50th (ft)	7	40	0	50	21	0	4	68	46	48	0
Queue Length 95th (ft)	36	109	0	143	77	31	23	183	116	158	0
Internal Link Dist (ft)		266			246			352		765	
Turn Bay Length (ft)	100		100			150	170		470		30
Base Capacity (vph)	556	1024	897	695	1130	1044	556	945	1079	1069	959
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.11	0.03	0.20	0.07	0.16	0.02	0.26	0.23	0.20	0.02
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Existing PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										 		
Traffic Volume (veh/h)	19	106	30	135	80	163	10	98	139	242	206	16
Future Volume (veh/h)	19	106	30	135	80	163	10	98	139	242	206	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.93	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	110	31	141	83	170	10	102	145	252	215	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	339	260	196	511	599	32	155	221	426	662	555
Arrive On Green	0.03	0.18	0.18	0.11	0.27	0.27	0.02	0.22	0.22	0.12	0.35	0.35
Sat Flow, veh/h	1781	1870	1433	1781	1870	1475	1781	694	987	3456	1870	1569
Grp Volume(v), veh/h	20	110	31	141	83	170	10	0	247	252	215	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1433	1781	1870	1475	1781	0	1682	1728	1870	1569
Q Serve(g_s), s	0.6	2.9	1.0	4.3	1.9	4.5	0.3	0.0	7.6	3.9	4.8	0.4
Cycle Q Clear(g_c), s	0.6	2.9	1.0	4.3	1.9	4.5	0.3	0.0	7.6	3.9	4.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	51	339	260	196	511	599	32	0	376	426	662	555
V/C Ratio(X)	0.39	0.32	0.12	0.72	0.16	0.28	0.31	0.00	0.66	0.59	0.32	0.03
Avail Cap(c_a), veh/h	628	1154	884	785	1088	1054	628	0	1037	1218	1154	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	20.2	19.4	24.4	15.7	11.7	27.5	0.0	20.0	23.5	13.4	12.0
Incr Delay (d2), s/veh	4.9	0.5	0.2	4.9	0.1	0.3	5.4	0.0	1.9	1.3	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.3	2.0	0.8	1.3	0.2	0.0	2.8	1.5	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	20.7	19.6	29.3	15.8	11.9	32.9	0.0	22.0	24.8	13.7	12.0
LnGrp LOS	C	C	B	C	B	B	C	A	C	C	B	B
Approach Vol, veh/h	161			394			257			484		
Approach Delay, s/veh	21.9			19.0			22.4			19.4		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	25.0	5.1	22.1	11.9	17.6	10.3	16.9				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 35				
Max Q Clear Time (g_c+I1), s	2.3	6.8	2.6	6.5	5.9	9.6	6.3	4.9				
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.7	1.4	0.3	0.7				

Intersection Summary

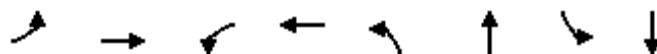
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Traffic Vol, veh/h	0	483	2	5	353	8	1	0	7	6	0	15
Future Vol, veh/h	0	483	2	5	353	8	1	0	7	6	0	15
Conflicting Peds, #/hr	8	0	4	4	0	8	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	503	2	5	368	8	1	0	7	6	0	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	509	0	0	704	902	258	643	899	198
Stage 1	-	-	-	-	-	-	508	508	-	390	390	-
Stage 2	-	-	-	-	-	-	196	394	-	253	509	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	1052	-	-	324	276	741	358	277	810
Stage 1	0	-	-	-	-	-	516	537	-	606	606	-
Stage 2	0	-	-	-	-	-	787	604	-	729	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1048	-	-	315	271	737	350	272	802
Mov Cap-2 Maneuver	-	-	-	-	-	-	315	271	-	350	272	-
Stage 1	-	-	-	-	-	-	516	535	-	606	598	-
Stage 2	-	-	-	-	-	-	767	596	-	721	534	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			10.8			11.4		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	631	-	-	1048	-	-	586					
HCM Lane V/C Ratio	0.013	-	-	0.005	-	-	0.037					
HCM Control Delay (s)	10.8	-	-	8.5	-	-	11.4					
HCM Lane LOS	B	-	-	A	-	-	B					
HCM 95th %tile O(veh)	0	-	-	0	-	-	0.1					

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	458	10	23	352	10	7	5	11	9	1	11
Future Vol, veh/h	30	458	10	23	352	10	7	5	11	9	1	11
Conflicting Peds, #/hr	5	0	5	5	0	5	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	463	10	23	356	10	7	5	11	9	1	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	478	0	0	762	950	243	707	950	192
Stage 1	-	-	-	-	-	-	533	533	-	412	412	-
Stage 2	-	-	-	-	-	-	229	417	-	295	538	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1184	-	-	1081	-	-	294	259	758	322	259	817
Stage 1	-	-	-	-	-	-	498	523	-	588	593	-
Stage 2	-	-	-	-	-	-	753	590	-	689	521	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1178	-	-	1076	-	-	276	245	754	299	245	810
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	245	-	299	245	-
Stage 1	-	-	-	-	-	-	483	507	-	570	578	-
Stage 2	-	-	-	-	-	-	723	575	-	654	505	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.5			15.1			13.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	381	1178	-	-	1076	-	-	440				
HCM Lane V/C Ratio	0.061	0.026	-	-	0.022	-	-	0.048				
HCM Control Delay (s)	15.1	8.1	-	-	8.4	-	-	13.6				
HCM Lane LOS	C	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.2				



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	362	39	421	74	276	149	405
v/c Ratio	0.38	0.32	0.18	0.54	0.32	0.47	0.43	0.70
Control Delay	32.6	17.9	33.5	18.3	22.8	21.0	23.5	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	17.9	33.5	18.3	22.8	21.0	23.5	26.2
Queue Length 50th (ft)	37	40	13	46	20	77	43	122
Queue Length 95th (ft)	107	118	52	112	67	183	117	278
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	483	1699	322	1400	441	1091	656	1072
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.21	0.12	0.30	0.17	0.25	0.23	0.38
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Existing PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	280	57	36	236	155	69	220	36	139	274	102
Future Volume (veh/h)	101	280	57	36	236	155	69	220	36	139	274	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	301	61	39	254	167	74	237	39	149	295	110
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	748	149	86	447	280	256	521	86	358	431	161
Arrive On Green	0.08	0.25	0.25	0.05	0.22	0.22	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1781	2940	587	1781	2049	1284	979	1562	257	1102	1293	482
Grp Volume(v), veh/h	109	180	182	39	219	202	74	0	276	149	0	405
Grp Sat Flow(s),veh/h/ln	1781	1777	1749	1781	1777	1557	979	0	1819	1102	0	1775
Q Serve(g_s), s	3.5	5.0	5.1	1.3	6.5	6.9	4.2	0.0	7.0	7.3	0.0	11.6
Cycle Q Clear(g_c), s	3.5	5.0	5.1	1.3	6.5	6.9	15.8	0.0	7.0	14.3	0.0	11.6
Prop In Lane	1.00		0.34	1.00		0.82	1.00		0.14	1.00		0.27
Lane Grp Cap(c), veh/h	151	452	445	86	387	339	256	0	607	358	0	592
V/C Ratio(X)	0.72	0.40	0.41	0.46	0.56	0.60	0.29	0.00	0.45	0.42	0.00	0.68
Avail Cap(c_a), veh/h	452	691	681	301	661	580	409	0	893	606	0	991
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	18.3	18.3	27.4	20.6	20.8	23.8	0.0	15.5	21.1	0.0	17.0
Incr Delay (d2), s/veh	6.4	0.6	0.6	3.8	1.3	1.7	0.6	0.0	0.5	0.8	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.9	2.0	0.6	2.6	2.5	0.9	0.0	2.6	1.8	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.8	18.8	18.9	31.1	21.9	22.5	24.4	0.0	16.0	21.9	0.0	18.4
LnGrp LOS	C	B	B	C	C	C	C	A	B	C	A	B
Approach Vol, veh/h	471			460			350			554		
Approach Delay, s/veh	22.1			22.9			17.8			19.3		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	27.8		8.5	22.7		27.8		10.7	20.6			
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1		* 5.7	* 7.7			
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33		* 15	* 22			
Max Q Clear Time (g_c+I1), s	17.8		3.3	7.1		16.3		5.5	8.9			
Green Ext Time (p_c), s	1.4		0.0	1.9		2.9		0.2	2.1			
Intersection Summary												
HCM 6th Ctrl Delay	20.7											
HCM 6th LOS	C											
Notes												

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	8	32	9	77	60	223	18	305	125	111	7
v/c Ratio	0.03	0.08	0.02	0.23	0.11	0.30	0.06	0.55	0.20	0.09	0.01
Control Delay	34.1	25.2	0.1	29.6	18.5	2.9	33.0	22.5	28.3	13.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	25.2	0.1	29.6	18.5	2.9	33.0	22.5	28.3	13.3	0.0
Queue Length 50th (ft)	3	10	0	24	14	0	6	83	20	20	0
Queue Length 95th (ft)	19	38	0	87	55	36	32	231	63	87	0
Internal Link Dist (ft)	266				246				352		765
Turn Bay Length (ft)	100			100			150	170			470
Base Capacity (vph)	829	1212	1041	1037	1270	1122	829	1214	1610	1325	1161
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.03	0.01	0.07	0.05	0.20	0.02	0.25	0.08	0.08	0.01
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Existing+Approved+Project AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	29	8	70	55	203	16	154	124	114	101	6
Future Volume (veh/h)	7	29	8	70	55	203	16	154	124	114	101	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	8	32	9	77	60	223	18	169	136	125	111	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	22	282	227	159	447	541	54	241	194	384	672	565
Arrive On Green	0.01	0.15	0.15	0.09	0.24	0.24	0.03	0.25	0.25	0.11	0.36	0.36
Sat Flow, veh/h	1767	1856	1497	1767	1856	1513	1767	949	764	3428	1856	1562
Grp Volume(v), veh/h	8	32	9	77	60	223	18	0	305	125	111	7
Grp Sat Flow(s),veh/h/ln	1767	1856	1497	1767	1856	1513	1767	0	1713	1714	1856	1562
Q Serve(g_s), s	0.2	0.8	0.3	2.2	1.3	5.8	0.5	0.0	8.5	1.8	2.1	0.2
Cycle Q Clear(g_c), s	0.2	0.8	0.3	2.2	1.3	5.8	0.5	0.0	8.5	1.8	2.1	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	22	282	227	159	447	541	54	0	435	384	672	565
V/C Ratio(X)	0.36	0.11	0.04	0.48	0.13	0.41	0.33	0.00	0.70	0.33	0.17	0.01
Avail Cap(c_a), veh/h	676	887	716	845	1171	1131	676	0	1147	1311	1242	1045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	19.1	18.9	22.6	15.6	12.8	24.8	0.0	17.7	21.4	11.3	10.7
Incr Delay (d2), s/veh	9.5	0.2	0.1	2.3	0.1	0.5	3.5	0.0	2.1	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.1	0.9	0.5	1.8	0.2	0.0	3.0	0.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	19.3	19.0	24.9	15.7	13.3	28.3	0.0	19.8	21.9	11.4	10.7
LnGrp LOS	D	B	B	C	B	B	C	A	B	C	B	B
Approach Vol, veh/h	49				360				323			
Approach Delay, s/veh	21.8				16.2				20.2			
Approach LOS	C				B				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	23.8	4.2	19.2	10.8	18.2	8.8	14.5				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 25				
Max Q Clear Time (g_c+I1), s	2.5	4.1	2.2	7.8	3.8	10.5	4.2	2.8				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.1	0.3	1.8	0.2	0.1				

Intersection Summary

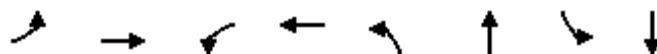
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↱	↑↑			↲			↲	
Traffic Vol, veh/h	2	255	8	8	310	22	3	0	6	18	0	14
Future Vol, veh/h	2	255	8	8	310	22	3	0	6	18	0	14
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	2	280	9	9	341	24	3	0	7	20	0	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	292	0	0	482	678	148	518	670	187
Stage 1	-	-	-	-	-	-	292	292	-	374	374	-
Stage 2	-	-	-	-	-	-	190	386	-	144	296	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1180	-	-	1259	-	-	465	371	869	438	375	820
Stage 1	-	-	-	-	-	-	689	667	-	616	614	-
Stage 2	-	-	-	-	-	-	791	606	-	841	664	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1177	-	-	1255	-	-	452	365	867	431	369	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	452	365	-	431	369	-
Stage 1	-	-	-	-	-	-	686	664	-	613	608	-
Stage 2	-	-	-	-	-	-	770	600	-	833	661	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			10.5			12.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	664	1177	-	-	1255	-	-	543				
HCM Lane V/C Ratio	0.015	0.002	-	-	0.007	-	-	0.065				
HCM Control Delay (s)	10.5	8.1	-	-	7.9	-	-	12.1				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2				

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	263	5	19	342	6	8	1	15	3	0	9
Future Vol, veh/h	12	263	5	19	342	6	8	1	15	3	0	9
Conflicting Peds, #/hr	0	0	18	18	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	13	286	5	21	372	7	9	1	16	3	0	10
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	379	0	0	309	0	0	563	754	164	588	753	192
Stage 1	-	-	-	-	-	-	333	333	-	418	418	-
Stage 2	-	-	-	-	-	-	230	421	-	170	335	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1169	-	-	1241	-	-	407	335	849	390	335	814
Stage 1	-	-	-	-	-	-	652	640	-	580	587	-
Stage 2	-	-	-	-	-	-	749	585	-	812	639	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1169	-	-	1220	-	-	386	320	834	373	320	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	320	-	373	320	-
Stage 1	-	-	-	-	-	-	634	622	-	574	577	-
Stage 2	-	-	-	-	-	-	726	575	-	786	621	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.4			11.6			10.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	574	1169	-	-	1220	-	-	627				
HCM Lane V/C Ratio	0.045	0.011	-	-	0.017	-	-	0.021				
HCM Control Delay (s)	11.6	8.1	-	-	8	-	-	10.9				
HCM Lane LOS	B	A	-	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0.1				



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	109	208	56	393	70	326	119	253
v/c Ratio	0.36	0.21	0.23	0.50	0.23	0.63	0.44	0.49
Control Delay	29.3	15.8	30.3	15.3	20.4	25.5	25.3	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	15.8	30.3	15.3	20.4	25.5	25.3	20.7
Queue Length 50th (ft)	33	24	17	35	18	92	32	62
Queue Length 95th (ft)	101	61	64	91	60	224	98	163
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	515	1804	343	1494	701	1152	611	1119
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.12	0.16	0.26	0.10	0.28	0.19	0.23
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Existing+Approved+Project AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	148	41	51	205	153	64	265	32	108	159	71
Future Volume (veh/h)	99	148	41	51	205	153	64	265	32	108	159	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	109	163	45	56	225	168	70	291	35	119	175	78
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	155	601	160	110	377	267	372	536	64	322	399	178
Arrive On Green	0.09	0.22	0.22	0.06	0.19	0.19	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1767	2733	729	1767	1942	1374	1115	1624	195	1044	1209	539
Grp Volume(v), veh/h	109	103	105	56	203	190	70	0	326	119	0	253
Grp Sat Flow(s),veh/h/ln	1767	1763	1699	1767	1763	1553	1115	0	1820	1044	0	1748
Q Serve(g_s), s	3.3	2.7	2.8	1.7	5.8	6.2	2.9	0.0	8.1	5.8	0.0	6.3
Cycle Q Clear(g_c), s	3.3	2.7	2.8	1.7	5.8	6.2	9.2	0.0	8.1	13.9	0.0	6.3
Prop In Lane	1.00		0.43	1.00		0.88	1.00		0.11	1.00		0.31
Lane Grp Cap(c), veh/h	155	388	374	110	343	302	372	0	601	322	0	577
V/C Ratio(X)	0.70	0.27	0.28	0.51	0.59	0.63	0.19	0.00	0.54	0.37	0.00	0.44
Avail Cap(c_a), veh/h	478	731	704	318	699	616	586	0	951	598	0	1040
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	17.9	18.0	25.2	20.4	20.5	18.2	0.0	15.2	20.9	0.0	14.6
Incr Delay (d2), s/veh	5.6	0.4	0.4	3.6	1.6	2.2	0.2	0.0	0.8	0.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.0	1.1	0.8	2.3	2.2	0.7	0.0	3.0	1.3	0.0	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	18.3	18.4	28.7	22.0	22.7	18.4	0.0	15.9	21.6	0.0	15.1
LnGrp LOS	C	B	B	C	C	C	B	A	B	C	A	B
Approach Vol, veh/h	317			449			396			372		
Approach Delay, s/veh	22.4			23.1			16.4			17.2		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	26.4		9.2	19.9		26.4	10.6	18.5				
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s	11.2		3.7	4.8		15.9	5.3	8.2				
Green Ext Time (p_c), s	2.0		0.0	1.0		1.8	0.2	2.0				
Intersection Summary												
HCM 6th Ctrl Delay	19.8											
HCM 6th LOS	B											
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	20	110	31	142	83	179	10	250	264	215	17
v/c Ratio	0.11	0.30	0.08	0.43	0.15	0.21	0.05	0.60	0.46	0.26	0.02
Control Delay	40.3	30.6	0.4	36.4	21.6	2.7	40.3	28.8	33.7	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	30.6	0.4	36.4	21.6	2.7	40.3	28.8	33.7	17.4	0.1
Queue Length 50th (ft)	7	40	0	51	22	0	4	70	49	49	0
Queue Length 95th (ft)	36	110	0	145	77	32	23	188	121	158	0
Internal Link Dist (ft)		266			246			352		765	
Turn Bay Length (ft)	100		100			150	170		470		30
Base Capacity (vph)	552	1018	892	691	1123	1043	552	939	1072	1066	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.11	0.03	0.21	0.07	0.17	0.02	0.27	0.25	0.20	0.02
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Existing+Approved+Project PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	106	30	136	80	172	10	98	142	253	206	16
Future Volume (veh/h)	19	106	30	136	80	172	10	98	142	253	206	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.93	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	110	31	142	83	179	10	102	148	264	215	17
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	339	259	196	511	598	32	155	224	425	664	557
Arrive On Green	0.03	0.18	0.18	0.11	0.27	0.27	0.02	0.23	0.23	0.12	0.36	0.36
Sat Flow, veh/h	1781	1870	1433	1781	1870	1475	1781	686	995	3456	1870	1569
Grp Volume(v), veh/h	20	110	31	142	83	179	10	0	250	264	215	17
Grp Sat Flow(s),veh/h/ln	1781	1870	1433	1781	1870	1475	1781	0	1680	1728	1870	1569
Q Serve(g_s), s	0.6	2.9	1.0	4.4	1.9	4.7	0.3	0.0	7.7	4.1	4.8	0.4
Cycle Q Clear(g_c), s	0.6	2.9	1.0	4.4	1.9	4.7	0.3	0.0	7.7	4.1	4.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	51	339	259	196	511	598	32	0	379	425	664	557
V/C Ratio(X)	0.39	0.32	0.12	0.72	0.16	0.30	0.31	0.00	0.66	0.62	0.32	0.03
Avail Cap(c_a), veh/h	626	1151	882	783	1085	1051	626	0	1034	1215	1151	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	20.3	19.5	24.5	15.7	11.8	27.6	0.0	20.0	23.7	13.4	12.0
Incr Delay (d2), s/veh	4.9	0.6	0.2	5.0	0.1	0.3	5.4	0.0	2.0	1.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.3	2.0	0.8	1.4	0.2	0.0	2.8	1.6	1.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	20.8	19.7	29.5	15.9	12.1	33.0	0.0	22.0	25.2	13.6	12.0
LnGrp LOS	C	C	B	C	B	B	C	A	C	C	B	B
Approach Vol, veh/h	161			404			260			496		
Approach Delay, s/veh	22.0			19.0			22.4			19.7		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	4.5	25.1	5.1	22.1	11.9	17.7	10.4	16.9				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 35				
Max Q Clear Time (g_c+I1), s	2.3	6.8	2.6	6.7	6.1	9.7	6.4	4.9				
Green Ext Time (p_c), s	0.0	1.2	0.0	1.1	0.7	1.4	0.3	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

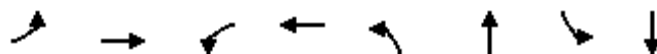
Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑			↱			↱	
Traffic Vol, veh/h	0	497	2	5	358	24	1	0	7	16	0	20
Future Vol, veh/h	0	497	2	5	358	24	1	0	7	16	0	20
Conflicting Peds, #/hr	8	0	4	4	0	8	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	518	2	5	373	25	1	0	7	17	0	21
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	524	0	0	722	939	265	664	928	209
Stage 1	-	-	-	-	-	-	523	523	-	404	404	-
Stage 2	-	-	-	-	-	-	199	416	-	260	524	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	1039	-	-	314	263	733	346	266	797
Stage 1	0	-	-	-	-	-	505	529	-	594	598	-
Stage 2	0	-	-	-	-	-	784	590	-	722	528	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1035	-	-	303	259	730	338	261	789
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	259	-	338	261	-
Stage 1	-	-	-	-	-	-	505	527	-	594	590	-
Stage 2	-	-	-	-	-	-	758	582	-	714	526	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			10.9			12.9		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	621	-	-	1035	-	-	495					
HCM Lane V/C Ratio	0.013	-	-	0.005	-	-	0.076					
HCM Control Delay (s)	10.9	-	-	8.5	-	-	12.9					
HCM Lane LOS	B	-	-	A	-	-	B					
HCM 95th %tile O(veh)	0	-	-	0	-	-	0.2					

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	476	10	23	373	10	7	5	11	9	1	11
Future Vol, veh/h	36	476	10	23	373	10	7	5	11	9	1	11
Conflicting Peds, #/hr	5	0	5	5	0	5	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	481	10	23	377	10	7	5	11	9	1	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	392	0	0	496	0	0	802	1001	252	749	1001	203
Stage 1	-	-	-	-	-	-	563	563	-	433	433	-
Stage 2	-	-	-	-	-	-	239	438	-	316	568	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1163	-	-	1064	-	-	275	241	748	300	241	804
Stage 1	-	-	-	-	-	-	478	507	-	571	580	-
Stage 2	-	-	-	-	-	-	743	577	-	670	505	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1157	-	-	1059	-	-	257	226	744	278	226	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	257	226	-	278	226	-
Stage 1	-	-	-	-	-	-	461	489	-	550	564	-
Stage 2	-	-	-	-	-	-	713	561	-	632	487	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.5			15.7			14.1		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	359	1157	-	-	1059	-	-	415
HCM Lane V/C Ratio	0.065	0.031	-	-	0.022	-	-	0.051
HCM Control Delay (s)	15.7	8.2	-	-	8.5	-	-	14.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-	-	0.2



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	379	58	430	84	284	155	413
v/c Ratio	0.39	0.39	0.25	0.55	0.36	0.48	0.45	0.71
Control Delay	33.1	20.7	34.2	19.2	23.9	21.3	24.0	26.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	20.7	34.2	19.2	23.9	21.3	24.0	26.6
Queue Length 50th (ft)	39	62	20	51	24	81	46	127
Queue Length 95th (ft)	109	124	69	118	75	189	121	285
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	476	1675	317	1380	435	1079	644	1061
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	0.18	0.31	0.19	0.26	0.24	0.39
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Existing+Approved+Project PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	294	59	54	245	155	78	226	38	144	279	105
Future Volume (veh/h)	103	294	59	54	245	155	78	226	38	144	279	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	316	63	58	263	167	84	243	41	155	300	113
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	707	139	110	453	275	259	535	90	362	443	167
Arrive On Green	0.08	0.24	0.24	0.06	0.22	0.22	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1781	2948	579	1781	2078	1262	972	1556	263	1094	1289	485
Grp Volume(v), veh/h	111	189	190	58	223	207	84	0	284	155	0	413
Grp Sat Flow(s),veh/h/ln	1781	1777	1750	1781	1777	1563	972	0	1818	1094	0	1774
Q Serve(g_s), s	3.7	5.5	5.6	1.9	6.8	7.2	4.9	0.0	7.4	7.8	0.0	12.1
Cycle Q Clear(g_c), s	3.7	5.5	5.6	1.9	6.8	7.2	17.0	0.0	7.4	15.2	0.0	12.1
Prop In Lane	1.00		0.33	1.00		0.81	1.00		0.14	1.00		0.27
Lane Grp Cap(c), veh/h	149	426	420	110	387	341	259	0	625	362	0	610
V/C Ratio(X)	0.74	0.44	0.45	0.53	0.58	0.61	0.32	0.00	0.45	0.43	0.00	0.68
Avail Cap(c_a), veh/h	441	674	664	294	645	567	390	0	870	581	0	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	19.6	19.7	27.6	21.2	21.4	24.3	0.0	15.5	21.4	0.0	17.0
Incr Delay (d2), s/veh	7.2	0.7	0.8	3.9	1.4	1.7	0.7	0.0	0.5	0.8	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.2	2.2	0.9	2.8	2.6	1.1	0.0	2.8	1.9	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	20.3	20.4	31.5	22.6	23.1	25.0	0.0	16.0	22.2	0.0	18.3
LnGrp LOS	C	C	C	C	C	C	C	A	B	C	A	B
Approach Vol, veh/h	490			488			368			568		
Approach Delay, s/veh	23.5			23.9			18.0			19.4		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	28.9		9.4	22.2		28.9	10.8	20.9				
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s	19.0		3.9	7.6		17.2	5.7	9.2				
Green Ext Time (p_c), s	1.4		0.0	2.0		2.9	0.2	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	11	76	11	125	98	348	27	468	179	168	11
v/c Ratio	0.07	0.30	0.04	0.45	0.21	0.42	0.16	0.71	0.41	0.18	0.01
Control Delay	43.2	37.9	0.2	40.9	26.3	3.4	42.3	29.4	38.6	15.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	37.9	0.2	40.9	26.3	3.4	42.3	29.4	38.6	15.0	0.0
Queue Length 50th (ft)	5	36	0	58	37	0	13	177	43	36	0
Queue Length 95th (ft)	26	86	0	138	94	47	46	#439	92	126	0
Internal Link Dist (ft)		266			246			352		765	
Turn Bay Length (ft)	100		100			150	170		470		30
Base Capacity (vph)	467	724	666	584	812	998	467	814	907	995	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.10	0.02	0.21	0.12	0.35	0.06	0.57	0.20	0.17	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Cumulative AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										 		
Traffic Volume (veh/h)	10	70	10	115	90	320	25	240	190	165	155	10
Future Volume (veh/h)	10	70	10	115	90	320	25	240	190	165	155	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	76	11	125	98	348	27	261	207	179	168	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	29	344	279	164	501	564	72	312	247	337	749	631
Arrive On Green	0.02	0.19	0.19	0.09	0.27	0.27	0.04	0.33	0.33	0.10	0.40	0.40
Sat Flow, veh/h	1767	1856	1505	1767	1856	1516	1767	956	759	3428	1856	1563
Grp Volume(v), veh/h	11	76	11	125	98	348	27	0	468	179	168	11
Grp Sat Flow(s),veh/h/ln	1767	1856	1505	1767	1856	1516	1767	0	1715	1714	1856	1563
Q Serve(g_s), s	0.4	2.4	0.4	4.8	2.8	13.0	1.0	0.0	17.4	3.4	4.1	0.3
Cycle Q Clear(g_c), s	0.4	2.4	0.4	4.8	2.8	13.0	1.0	0.0	17.4	3.4	4.1	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	29	344	279	164	501	564	72	0	559	337	749	631
V/C Ratio(X)	0.38	0.22	0.04	0.76	0.20	0.62	0.37	0.00	0.84	0.53	0.22	0.02
Avail Cap(c_a), veh/h	513	673	546	641	889	881	513	0	871	995	943	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	23.8	23.0	30.5	19.4	17.8	32.2	0.0	21.5	29.5	13.5	12.3
Incr Delay (d2), s/veh	7.8	0.3	0.1	7.1	0.2	1.1	3.2	0.0	4.3	1.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.0	0.1	2.3	1.2	4.3	0.5	0.0	6.8	1.4	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.3	24.2	23.1	37.6	19.6	18.9	35.3	0.0	25.8	30.8	13.6	12.3
LnGrp LOS	D	C	C	D	B	B	D	A	C	C	B	B
Approach Vol, veh/h	98			571			495			358		
Approach Delay, s/veh	26.0			23.1			26.3			22.2		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	32.7	4.6	25.2	11.7	27.4	10.5	19.4				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 25				
Max Q Clear Time (g_c+I1), s	3.0	6.1	2.4	15.0	5.4	19.4	6.8	4.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	1.7	0.5	2.6	0.3	0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

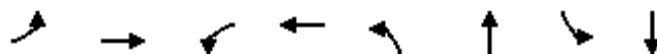
Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↱		↱	↑↑			↱↱			↱↱	
Traffic Vol, veh/h	0	410	15	15	505	20	5	5	10	10	5	15
Future Vol, veh/h	0	410	15	15	505	20	5	5	10	10	5	15
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	446	16	16	549	22	5	5	11	11	5	16
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	465	0	0	767	1063	234	821	1060	290
Stage 1	-	-	-	-	-	-	457	457	-	595	595	-
Stage 2	-	-	-	-	-	-	310	606	-	226	465	-
Critical Hdwy	-	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	0	-	-	1086	-	-	290	220	765	265	221	704
Stage 1	0	-	-	-	-	-	550	563	-	455	488	-
Stage 2	0	-	-	-	-	-	672	483	-	753	559	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	1083	-	-	274	215	763	253	216	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	274	215	-	253	216	-
Stage 1	-	-	-	-	-	-	550	561	-	455	479	-
Stage 2	-	-	-	-	-	-	639	474	-	735	557	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			15.5			16.1		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	366	-	-	1083	-	-	357					
HCM Lane V/C Ratio	0.059	-	-	0.015	-	-	0.091					
HCM Control Delay (s)	15.5	-	-	8.4	-	-	16.1					
HCM Lane LOS	C	-	-	A	-	-	C					
HCM 95th %tile O(veh)	0.2	-	-	0	-	-	0.3					

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	405	10	30	500	10	15	5	20	5	5	15
Future Vol, veh/h	15	405	10	30	500	10	15	5	20	5	5	15
Conflicting Peds, #/hr	0	0	18	18	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	440	11	33	543	11	16	5	22	5	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	554	0	0	469	0	0	838	1116	244	870	1116	279
Stage 1	-	-	-	-	-	-	496	496	-	615	615	-
Stage 2	-	-	-	-	-	-	342	620	-	255	501	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	1005	-	-	1082	-	-	257	205	753	244	205	715
Stage 1	-	-	-	-	-	-	522	541	-	443	478	-
Stage 2	-	-	-	-	-	-	644	476	-	724	538	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1005	-	-	1063	-	-	233	192	740	224	192	714
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	192	-	224	192	-
Stage 1	-	-	-	-	-	-	505	523	-	436	463	-
Stage 2	-	-	-	-	-	-	601	461	-	684	520	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.5			17.1			15.8		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	341	1005	-	-	1063	-	-	360
HCM Lane V/C Ratio	0.128	0.016	-	-	0.031	-	-	0.075
HCM Control Delay (s)	17.1	8.6	-	-	8.5	-	-	15.8
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	163	310	60	587	87	418	120	272
v/c Ratio	0.58	0.25	0.31	0.70	0.28	0.76	0.65	0.50
Control Delay	40.2	18.1	39.1	26.2	23.3	32.9	41.4	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	18.1	39.1	26.2	23.3	32.9	41.4	22.1
Queue Length 50th (ft)	68	49	26	100	30	167	47	86
Queue Length 95th (ft)	154	98	71	186	72	296	116	170
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	376	1357	250	1115	483	861	289	837
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.23	0.24	0.53	0.18	0.49	0.42	0.32
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Cumulative AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	225	60	55	340	200	80	345	40	110	160	90
Future Volume (veh/h)	150	225	60	55	340	200	80	345	40	110	160	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	163	245	65	60	370	217	87	375	43	120	174	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	205	792	205	102	489	281	361	585	67	260	397	224
Arrive On Green	0.12	0.29	0.29	0.06	0.23	0.23	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1767	2754	713	1767	2127	1224	1096	1634	187	960	1108	624
Grp Volume(v), veh/h	163	155	155	60	305	282	87	0	418	120	0	272
Grp Sat Flow(s),veh/h/ln	1767	1763	1704	1767	1763	1589	1096	0	1821	960	0	1731
Q Serve(g_s), s	6.5	5.0	5.2	2.4	11.7	12.1	4.8	0.0	13.9	8.6	0.0	8.7
Cycle Q Clear(g_c), s	6.5	5.0	5.2	2.4	11.7	12.1	13.5	0.0	13.9	22.5	0.0	8.7
Prop In Lane	1.00		0.42	1.00		0.77	1.00		0.10	1.00		0.36
Lane Grp Cap(c), veh/h	205	507	490	102	405	365	361	0	652	260	0	620
V/C Ratio(X)	0.80	0.30	0.32	0.59	0.75	0.77	0.24	0.00	0.64	0.46	0.00	0.44
Avail Cap(c_a), veh/h	365	558	540	243	534	481	406	0	727	352	0	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.3	20.2	20.3	33.4	26.1	26.2	22.9	0.0	19.4	28.8	0.0	17.7
Incr Delay (d2), s/veh	6.9	0.3	0.4	5.2	4.3	5.5	0.3	0.0	1.6	1.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	2.0	2.0	1.2	5.2	4.9	1.2	0.0	5.6	2.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	20.5	20.6	38.6	30.4	31.7	23.2	0.0	21.0	30.1	0.0	18.2
LnGrp LOS	D	C	C	D	C	C	C	A	C	C	A	B
Approach Vol, veh/h	473			647			505			392		
Approach Delay, s/veh	26.6			31.7			21.4			21.9		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	34.1		9.9	28.6		34.1	14.1	24.4				
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s	15.9		4.4	7.2		24.5	8.5	14.1				
Green Ext Time (p_c), s	2.4		0.0	1.6		1.4	0.2	2.3				
Intersection Summary												
HCM 6th Ctrl Delay			26.0									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	26	177	36	208	104	260	21	390	365	328	26
v/c Ratio	0.19	0.56	0.10	0.65	0.18	0.30	0.14	0.79	0.63	0.39	0.03
Control Delay	52.0	46.5	0.6	49.3	29.3	2.8	51.5	41.8	44.8	21.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	46.5	0.6	49.3	29.3	2.8	51.5	41.8	44.8	21.6	0.1
Queue Length 50th (ft)	16	101	0	126	50	0	13	203	114	127	0
Queue Length 95th (ft)	49	199	0	229	106	40	43	362	190	271	0
Internal Link Dist (ft)		266			246			352		765	
Turn Bay Length (ft)	100		100			150	170		470		30
Base Capacity (vph)	395	727	668	493	802	952	395	686	766	885	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.24	0.05	0.42	0.13	0.27	0.05	0.57	0.48	0.37	0.03
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Cumulative PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										 		
Traffic Volume (veh/h)	25	170	35	200	100	250	20	155	220	350	315	25
Future Volume (veh/h)	25	170	35	200	100	250	20	155	220	350	315	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	1.00		0.93	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	177	36	208	104	260	21	161	229	365	328	26
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	284	214	258	507	624	59	198	281	488	770	647
Arrive On Green	0.03	0.15	0.15	0.14	0.27	0.27	0.03	0.28	0.28	0.14	0.41	0.41
Sat Flow, veh/h	1781	1870	1410	1781	1870	1475	1781	695	989	3456	1870	1572
Grp Volume(v), veh/h	26	177	36	208	104	260	21	0	390	365	328	26
Grp Sat Flow(s),veh/h/ln	1781	1870	1410	1781	1870	1475	1781	0	1684	1728	1870	1572
Q Serve(g_s), s	1.1	6.5	1.6	8.4	3.2	9.3	0.9	0.0	15.9	7.5	9.2	0.7
Cycle Q Clear(g_c), s	1.1	6.5	1.6	8.4	3.2	9.3	0.9	0.0	15.9	7.5	9.2	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	60	284	214	258	507	624	59	0	479	488	770	647
V/C Ratio(X)	0.43	0.62	0.17	0.81	0.21	0.42	0.36	0.00	0.81	0.75	0.43	0.04
Avail Cap(c_a), veh/h	482	886	668	603	836	883	482	0	798	936	886	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	29.3	27.3	30.6	20.8	15.5	34.9	0.0	24.6	30.5	15.5	13.0
Incr Delay (d2), s/veh	4.9	2.2	0.4	5.9	0.2	0.4	3.6	0.0	3.4	2.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	0.6	3.9	1.4	3.0	0.4	0.0	6.2	3.1	3.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	31.6	27.6	36.5	21.0	15.9	38.5	0.0	28.0	32.8	15.9	13.0
LnGrp LOS	D	C	C	D	C	B	D	A	C	C	B	B
Approach Vol, veh/h	239				572				411			
Approach Delay, s/veh	31.9				24.3				28.5			
Approach LOS	C				C				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	35.3	6.0	26.6	15.3	25.9	14.8	17.8				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 35				
Max Q Clear Time (g_c+I1), s	2.9	11.2	3.1	11.3	9.5	17.9	10.4	8.5				
Green Ext Time (p_c), s	0.0	1.9	0.0	1.5	0.9	2.2	0.5	1.1				
Intersection Summary												
HCM 6th Ctrl Delay	26.2											
HCM 6th LOS	C											
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↵	↑↑			↕			↕	
Traffic Vol, veh/h	0	735	5	10	520	15	5	5	10	10	5	25
Future Vol, veh/h	0	735	5	10	520	15	5	5	10	10	5	25
Conflicting Peds, #/hr	8	0	4	4	0	8	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	766	5	10	542	16	5	5	10	10	5	26
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	775	0	0	1069	1359	391	965	1353	289
Stage 1	-	-	-	-	-	-	773	773	-	578	578	-
Stage 2	-	-	-	-	-	-	296	586	-	387	775	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	837	-	-	176	147	608	209	149	708
Stage 1	0	-	-	-	-	-	358	407	-	468	499	-
Stage 2	0	-	-	-	-	-	688	495	-	608	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	834	-	-	162	143	605	196	145	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	143	-	196	145	-
Stage 1	-	-	-	-	-	-	358	405	-	468	489	-
Stage 2	-	-	-	-	-	-	646	485	-	589	404	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			21.2			17.5		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	243	-	-	834	-	-	330					
HCM Lane V/C Ratio	0.086	-	-	0.012	-	-	0.126					
HCM Control Delay (s)	21.2	-	-	9.4	-	-	17.5					
HCM Lane LOS	C	-	-	A	-	-	C					
HCM 95th %tile O(veh)	0.3	-	-	0	-	-	0.4					

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	700	20	40	505	20	10	10	15	15	5	15
Future Vol, veh/h	50	700	20	40	505	20	10	10	15	15	5	15
Conflicting Peds, #/hr	5	0	5	5	0	5	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	707	20	40	510	20	10	10	15	15	5	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	535	0	0	732	0	0	1166	1439	370	1067	1439	274
Stage 1	-	-	-	-	-	-	824	824	-	605	605	-
Stage 2	-	-	-	-	-	-	342	615	-	462	834	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1029	-	-	868	-	-	149	132	627	176	132	724
Stage 1	-	-	-	-	-	-	333	385	-	451	486	-
Stage 2	-	-	-	-	-	-	646	480	-	549	381	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1024	-	-	864	-	-	130	118	623	148	118	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	118	-	148	118	-
Stage 1	-	-	-	-	-	-	315	364	-	427	461	-
Stage 2	-	-	-	-	-	-	594	456	-	494	360	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.7			28.5			25.2		
HCM LOS							D			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	188	1024	-	-	864	-	-	213				
HCM Lane V/C Ratio	0.188	0.049	-	-	0.047	-	-	0.166				
HCM Control Delay (s)	28.5	8.7	-	-	9.4	-	-	25.2				
HCM Lane LOS	D	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-	-	0.6				

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	172	570	59	581	102	377	161	457
v/c Ratio	0.60	0.47	0.31	0.69	0.59	0.64	0.67	0.79
Control Delay	41.4	22.2	39.5	24.0	38.1	27.3	38.2	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	22.2	39.5	24.0	38.1	27.3	38.2	32.7
Queue Length 50th (ft)	74	113	26	90	39	142	63	176
Queue Length 95th (ft)	160	191	70	166	102	259	147	322
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	377	1352	251	1139	255	857	354	840
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.42	0.24	0.51	0.40	0.44	0.45	0.54
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Cumulative PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	160	440	90	55	320	220	95	300	50	150	285	140
Future Volume (veh/h)	160	440	90	55	320	220	95	300	50	150	285	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	172	473	97	59	344	237	102	323	54	161	306	151
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	870	177	99	464	312	230	575	96	298	434	214
Arrive On Green	0.12	0.30	0.30	0.06	0.23	0.23	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	2930	597	1781	1989	1336	934	1558	261	1005	1175	580
Grp Volume(v), veh/h	172	286	284	59	306	275	102	0	377	161	0	457
Grp Sat Flow(s),veh/h/ln	1781	1777	1750	1781	1777	1548	934	0	1819	1005	0	1756
Q Serve(g_s), s	7.3	10.4	10.5	2.5	12.3	12.8	8.1	0.0	12.7	11.7	0.0	17.2
Cycle Q Clear(g_c), s	7.3	10.4	10.5	2.5	12.3	12.8	25.2	0.0	12.7	24.5	0.0	17.2
Prop In Lane	1.00		0.34	1.00		0.86	1.00		0.14	1.00		0.33
Lane Grp Cap(c), veh/h	213	528	520	99	414	361	230	0	671	298	0	647
V/C Ratio(X)	0.81	0.54	0.55	0.59	0.74	0.76	0.44	0.00	0.56	0.54	0.00	0.71
Avail Cap(c_a), veh/h	346	529	521	231	506	441	236	0	683	357	0	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.1	22.7	22.8	35.6	27.4	27.6	31.6	0.0	19.4	29.2	0.0	20.8
Incr Delay (d2), s/veh	7.1	1.1	1.2	5.6	4.5	6.1	1.3	0.0	1.0	1.5	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.3	4.3	1.2	5.5	5.1	1.8	0.0	5.2	2.8	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	23.9	24.0	41.2	32.0	33.7	32.9	0.0	20.4	30.7	0.0	23.3
LnGrp LOS	D	C	C	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h	742			640			479			618		
Approach Delay, s/veh	27.7			33.6			23.1			25.3		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	36.6		10.0	30.6		36.6		14.9	25.7			
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1		* 5.7	* 7.7			
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33		* 15	* 22			
Max Q Clear Time (g_c+I1), s	27.2		4.5	12.5		26.5		9.3	14.8			
Green Ext Time (p_c), s	0.5		0.0	2.6		2.0		0.2	2.2			
Intersection Summary												
HCM 6th Ctrl Delay			27.7									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	11	76	11	126	98	351	27	469	182	168	11
v/c Ratio	0.08	0.30	0.04	0.45	0.21	0.42	0.16	0.71	0.41	0.17	0.01
Control Delay	43.4	38.1	0.2	41.2	26.4	3.4	42.5	29.4	38.7	15.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	38.1	0.2	41.2	26.4	3.4	42.5	29.4	38.7	15.0	0.0
Queue Length 50th (ft)	5	36	0	59	37	0	13	178	44	36	0
Queue Length 95th (ft)	26	86	0	139	94	47	46	#443	94	126	0
Internal Link Dist (ft)	266				246				352		765
Turn Bay Length (ft)	100			100			150	170			470
Base Capacity (vph)	465	720	664	582	809	997	465	810	903	995	903
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.11	0.02	0.22	0.12	0.35	0.06	0.58	0.20	0.17	0.01

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Cumulative+Project AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	70	10	116	90	323	25	240	191	167	155	10
Future Volume (veh/h)	10	70	10	116	90	323	25	240	191	167	155	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	11	76	11	126	98	351	27	261	208	182	168	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	29	345	280	165	504	566	72	311	248	336	749	631
Arrive On Green	0.02	0.19	0.19	0.09	0.27	0.27	0.04	0.33	0.33	0.10	0.40	0.40
Sat Flow, veh/h	1767	1856	1505	1767	1856	1516	1767	954	760	3428	1856	1563
Grp Volume(v), veh/h	11	76	11	126	98	351	27	0	469	182	168	11
Grp Sat Flow(s),veh/h/ln	1767	1856	1505	1767	1856	1516	1767	0	1715	1714	1856	1563
Q Serve(g_s), s	0.4	2.4	0.4	4.8	2.8	13.1	1.0	0.0	17.6	3.5	4.1	0.3
Cycle Q Clear(g_c), s	0.4	2.4	0.4	4.8	2.8	13.1	1.0	0.0	17.6	3.5	4.1	0.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	29	345	280	165	504	566	72	0	559	336	749	631
V/C Ratio(X)	0.38	0.22	0.04	0.76	0.19	0.62	0.37	0.00	0.84	0.54	0.22	0.02
Avail Cap(c_a), veh/h	511	670	544	639	885	877	511	0	867	991	939	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	23.9	23.1	30.6	19.4	17.9	32.3	0.0	21.6	29.7	13.5	12.4
Incr Delay (d2), s/veh	7.8	0.3	0.1	7.1	0.2	1.1	3.2	0.0	4.4	1.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.0	0.1	2.3	1.2	4.4	0.5	0.0	6.9	1.4	1.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	24.2	23.2	37.7	19.6	19.0	35.5	0.0	26.0	31.1	13.7	12.4
LnGrp LOS	D	C	C	D	B	B	D	A	C	C	B	B
Approach Vol, veh/h	98				575				496			
Approach Delay, s/veh	26.0				23.2				26.5			
Approach LOS	C				C				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	32.8	4.6	25.4	11.7	27.5	10.6	19.5				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 25				
Max Q Clear Time (g_c+I1), s	3.0	6.1	2.4	15.1	5.5	19.6	6.8	4.4				
Green Ext Time (p_c), s	0.0	0.9	0.0	1.7	0.5	2.6	0.3	0.3				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑			↑↑			↑↑	
Traffic Vol, veh/h	0	413	15	15	505	32	5	5	10	24	5	19
Future Vol, veh/h	0	413	15	15	505	32	5	5	10	24	5	19
Conflicting Peds, #/hr	3	0	3	3	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	449	16	16	549	35	5	5	11	26	5	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	468	0	0	770	1079	236	829	1070	296
Stage 1	-	-	-	-	-	-	460	460	-	602	602	-
Stage 2	-	-	-	-	-	-	310	619	-	227	468	-
Critical Hdwy	-	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	0	-	-	1083	-	-	288	215	763	261	218	697
Stage 1	0	-	-	-	-	-	548	562	-	451	485	-
Stage 2	0	-	-	-	-	-	672	476	-	752	557	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1080	-	-	270	210	761	249	213	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	270	210	-	249	213	-
Stage 1	-	-	-	-	-	-	548	560	-	451	476	-
Stage 2	-	-	-	-	-	-	634	467	-	734	555	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.6	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	361	-	-	1080	-	-	326
HCM Lane V/C Ratio	0.06	-	-	0.015	-	-	0.16
HCM Control Delay (s)	15.6	-	-	8.4	-	-	18.1
HCM Lane LOS	C	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-	0.6

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	419	10	30	512	10	15	5	20	5	5	15
Future Vol, veh/h	18	419	10	30	512	10	15	5	20	5	5	15
Conflicting Peds, #/hr	0	0	18	18	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	20	455	11	33	557	11	16	5	22	5	5	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	0	484	0	0	868	1153	251	899	1153	286
Stage 1	-	-	-	-	-	-	519	519	-	629	629	-
Stage 2	-	-	-	-	-	-	349	634	-	270	524	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	993	-	-	1068	-	-	245	195	746	232	195	708
Stage 1	-	-	-	-	-	-	505	528	-	434	471	-
Stage 2	-	-	-	-	-	-	638	469	-	710	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	1050	-	-	221	182	733	212	182	707
Mov Cap-2 Maneuver	-	-	-	-	-	-	221	182	-	212	182	-
Stage 1	-	-	-	-	-	-	486	508	-	425	456	-
Stage 2	-	-	-	-	-	-	595	454	-	668	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	17.7	16.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	993	-	-	1050	-	-	346
HCM Lane V/C Ratio	0.133	0.02	-	-	0.031	-	-	0.079
HCM Control Delay (s)	17.7	8.7	-	-	8.5	-	-	16.3
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.3

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	321	60	594	89	418	120	275
v/c Ratio	0.59	0.25	0.31	0.70	0.29	0.75	0.65	0.50
Control Delay	40.8	18.2	39.4	26.8	23.5	32.8	41.5	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	18.2	39.4	26.8	23.5	32.8	41.5	22.2
Queue Length 50th (ft)	72	53	26	106	31	170	47	89
Queue Length 95th (ft)	156	102	71	191	73	296	117	171
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	372	1353	248	1103	474	853	286	829
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.24	0.24	0.54	0.19	0.49	0.42	0.33
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Cumulative+Project AM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	234	62	55	347	200	82	345	40	110	160	93
Future Volume (veh/h)	153	234	62	55	347	200	82	345	40	110	160	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	166	254	67	60	377	217	89	375	43	120	174	101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	208	802	207	102	495	280	357	585	67	258	392	227
Arrive On Green	0.12	0.29	0.29	0.06	0.23	0.23	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	1767	2757	710	1767	2143	1211	1093	1634	187	960	1094	635
Grp Volume(v), veh/h	166	160	161	60	309	285	89	0	418	120	0	275
Grp Sat Flow(s),veh/h/ln	1767	1763	1705	1767	1763	1592	1093	0	1821	960	0	1729
Q Serve(g_s), s	6.7	5.2	5.4	2.4	12.0	12.3	5.0	0.0	14.0	8.7	0.0	8.9
Cycle Q Clear(g_c), s	6.7	5.2	5.4	2.4	12.0	12.3	13.8	0.0	14.0	22.7	0.0	8.9
Prop In Lane	1.00		0.42	1.00		0.76	1.00		0.10	1.00		0.37
Lane Grp Cap(c), veh/h	208	512	496	102	407	367	357	0	652	258	0	619
V/C Ratio(X)	0.80	0.31	0.32	0.59	0.76	0.78	0.25	0.00	0.64	0.46	0.00	0.44
Avail Cap(c_a), veh/h	362	554	536	241	530	478	399	0	721	347	0	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.5	20.3	20.3	33.6	26.3	26.4	23.2	0.0	19.6	29.1	0.0	17.9
Incr Delay (d2), s/veh	6.9	0.3	0.4	5.3	4.6	5.9	0.4	0.0	1.7	1.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	2.1	2.1	1.2	5.3	5.0	1.2	0.0	5.7	2.0	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	20.6	20.7	38.9	30.9	32.3	23.6	0.0	21.3	30.4	0.0	18.4
LnGrp LOS	D	C	C	D	C	C	C	A	C	C	A	B
Approach Vol, veh/h	487			654			507			395		
Approach Delay, s/veh	26.7			32.2			21.7			22.1		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	34.3		9.9	29.0		34.3	14.3	24.6				
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s	16.0		4.4	7.4		24.7	8.7	14.3				
Green Ext Time (p_c), s	2.4		0.0	1.6		1.4	0.2	2.3				
Intersection Summary												
HCM 6th Ctrl Delay	26.3											
HCM 6th LOS	C											
Notes												

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	26	177	36	208	104	263	21	391	367	328	26
v/c Ratio	0.19	0.56	0.10	0.65	0.18	0.30	0.14	0.79	0.63	0.39	0.03
Control Delay	52.1	46.6	0.6	49.4	29.3	2.8	51.6	41.8	44.9	21.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	46.6	0.6	49.4	29.3	2.8	51.6	41.8	44.9	21.6	0.1
Queue Length 50th (ft)	16	101	0	126	50	0	13	204	114	127	0
Queue Length 95th (ft)	49	199	0	229	106	40	43	364	191	271	0
Internal Link Dist (ft)		266			246			352		765	
Turn Bay Length (ft)	100		100			150	170		470		30
Base Capacity (vph)	394	726	666	492	801	952	394	685	764	886	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.24	0.05	0.42	0.13	0.28	0.05	0.57	0.48	0.37	0.03
Intersection Summary											

197 W Grand Ave, Grover Beach
1: Highway 1 & W Grand Ave

Cumulative+Project PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	170	35	200	100	252	20	155	221	352	315	25
Future Volume (veh/h)	25	170	35	200	100	252	20	155	221	352	315	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.89	1.00		0.93	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	177	36	208	104	262	21	161	230	367	328	26
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	285	214	258	507	625	59	198	282	490	771	648
Arrive On Green	0.03	0.15	0.15	0.14	0.27	0.27	0.03	0.29	0.29	0.14	0.41	0.41
Sat Flow, veh/h	1781	1870	1410	1781	1870	1475	1781	693	990	3456	1870	1572
Grp Volume(v), veh/h	26	177	36	208	104	262	21	0	391	367	328	26
Grp Sat Flow(s),veh/h/ln	1781	1870	1410	1781	1870	1475	1781	0	1683	1728	1870	1572
Q Serve(g_s), s	1.1	6.6	1.6	8.4	3.2	9.4	0.9	0.0	16.0	7.6	9.3	0.7
Cycle Q Clear(g_c), s	1.1	6.6	1.6	8.4	3.2	9.4	0.9	0.0	16.0	7.6	9.3	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	60	285	214	258	507	625	59	0	480	490	771	648
V/C Ratio(X)	0.44	0.62	0.17	0.81	0.20	0.42	0.36	0.00	0.81	0.75	0.43	0.04
Avail Cap(c_a), veh/h	481	883	666	601	833	881	481	0	795	932	883	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	29.4	27.3	30.7	20.8	15.5	35.1	0.0	24.7	30.5	15.5	13.0
Incr Delay (d2), s/veh	4.9	2.2	0.4	5.9	0.2	0.4	3.6	0.0	3.4	2.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	0.6	3.9	1.4	3.0	0.4	0.0	6.2	3.1	3.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	31.7	27.7	36.6	21.0	16.0	38.7	0.0	28.1	32.9	15.9	13.0
LnGrp LOS	D	C	C	D	C	B	D	A	C	C	B	B
Approach Vol, veh/h	239				574				412			
Approach Delay, s/veh	32.0				24.4				28.6			
Approach LOS	C				C				C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	35.5	6.0	26.7	15.4	26.0	14.8	17.9				
Change Period (Y+Rc), s	3.5	4.9	3.5	6.6	4.9	4.9	4.1	* 6.6				
Max Green Setting (Gmax), s	20.0	35.0	20.0	33.0	20.0	35.0	25.0	* 35				
Max Q Clear Time (g_c+I1), s	2.9	11.3	3.1	11.4	9.6	18.0	10.4	8.6				
Green Ext Time (p_c), s	0.0	1.9	0.0	1.5	0.9	2.2	0.5	1.1				

Intersection Summary

HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

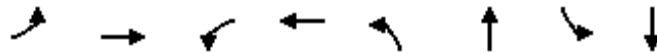
Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↖	↑↑			↕			↕	
Traffic Vol, veh/h	0	738	5	10	517	31	5	5	10	20	5	30
Future Vol, veh/h	0	738	5	10	517	31	5	5	10	20	5	30
Conflicting Peds, #/hr	8	0	4	4	0	8	2	0	1	1	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	769	5	10	539	32	5	5	10	21	5	31
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	778	0	0	1070	1375	392	971	1361	296
Stage 1	-	-	-	-	-	-	776	776	-	583	583	-
Stage 2	-	-	-	-	-	-	294	599	-	388	778	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	834	-	-	175	144	607	207	147	700
Stage 1	0	-	-	-	-	-	356	406	-	465	497	-
Stage 2	0	-	-	-	-	-	690	489	-	607	405	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	831	-	-	160	141	604	194	143	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	141	-	194	143	-
Stage 1	-	-	-	-	-	-	356	404	-	465	487	-
Stage 2	-	-	-	-	-	-	643	479	-	588	403	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			21.4			19.6		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	240	-	-	831	-	-	303					
HCM Lane V/C Ratio	0.087	-	-	0.013	-	-	0.189					
HCM Control Delay (s)	21.4	-	-	9.4	-	-	19.6					
HCM Lane LOS	C	-	-	A	-	-	C					
HCM 95th %tile Q(veh)	0.3	-	-	0	-	-	0.7					

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	707	20	40	518	20	10	10	15	15	5	15
Future Vol, veh/h	56	707	20	40	518	20	10	10	15	15	5	15
Conflicting Peds, #/hr	5	0	5	5	0	5	4	0	1	1	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	57	714	20	40	523	20	10	10	15	15	5	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	548	0	0	739	0	0	1191	1471	373	1095	1471	281
Stage 1	-	-	-	-	-	-	843	843	-	618	618	-
Stage 2	-	-	-	-	-	-	348	628	-	477	853	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1018	-	-	863	-	-	143	126	624	168	126	716
Stage 1	-	-	-	-	-	-	325	378	-	443	479	-
Stage 2	-	-	-	-	-	-	641	474	-	538	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1013	-	-	859	-	-	124	112	620	140	112	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	112	-	140	112	-
Stage 1	-	-	-	-	-	-	305	355	-	416	454	-
Stage 2	-	-	-	-	-	-	589	449	-	481	351	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.7			29.8			26.6		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	1013	-	-	859	-	-	202
HCM Lane V/C Ratio	0.196	0.056	-	-	0.047	-	-	0.175
HCM Control Delay (s)	29.8	8.8	-	-	9.4	-	-	26.6
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-	-	0.6



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	174	575	59	590	104	377	161	460
v/c Ratio	0.61	0.47	0.31	0.70	0.60	0.64	0.67	0.79
Control Delay	42.2	22.4	40.0	25.1	39.3	27.3	38.1	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	22.4	40.0	25.1	39.3	27.3	38.1	32.7
Queue Length 50th (ft)	77	115	26	96	40	145	64	180
Queue Length 95th (ft)	162	193	70	173	105	259	147	324
Internal Link Dist (ft)		296		306		310		307
Turn Bay Length (ft)	80		105		90		100	
Base Capacity (vph)	371	1340	247	1119	249	845	349	829
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.43	0.24	0.53	0.42	0.45	0.46	0.55
Intersection Summary								

197 W Grand Ave, Grover Beach
4: 4th St & W Grand Ave

Cumulative+Project PM
HCM 6th Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	444	91	55	328	220	97	300	50	150	285	143
Future Volume (veh/h)	162	444	91	55	328	220	97	300	50	150	285	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.95	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	174	477	98	59	353	237	104	323	54	161	306	154
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	877	179	99	471	309	227	574	96	297	430	216
Arrive On Green	0.12	0.30	0.30	0.06	0.23	0.23	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	2929	598	1781	2011	1319	931	1558	261	1005	1167	587
Grp Volume(v), veh/h	174	288	287	59	311	279	104	0	377	161	0	460
Grp Sat Flow(s),veh/h/ln	1781	1777	1750	1781	1777	1553	931	0	1819	1005	0	1754
Q Serve(g_s), s	7.4	10.5	10.7	2.5	12.6	13.0	8.4	0.0	12.8	11.8	0.0	17.5
Cycle Q Clear(g_c), s	7.4	10.5	10.7	2.5	12.6	13.0	25.8	0.0	12.8	24.7	0.0	17.5
Prop In Lane	1.00		0.34	1.00		0.85	1.00		0.14	1.00		0.33
Lane Grp Cap(c), veh/h	215	532	524	99	416	364	227	0	670	297	0	646
V/C Ratio(X)	0.81	0.54	0.55	0.60	0.75	0.77	0.46	0.00	0.56	0.54	0.00	0.71
Avail Cap(c_a), veh/h	344	532	524	229	503	439	231	0	679	353	0	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	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	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.3	22.8	22.8	35.9	27.6	27.8	32.1	0.0	19.6	29.4	0.0	21.0
Incr Delay (d2), s/veh	7.4	1.1	1.2	5.6	4.9	6.6	1.4	0.0	1.0	1.5	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.4	4.4	1.2	5.7	5.3	1.9	0.0	5.2	2.8	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	23.9	24.0	41.5	32.5	34.3	33.5	0.0	20.6	30.9	0.0	23.7
LnGrp LOS	D	C	C	D	C	C	C	A	C	C	A	C
Approach Vol, veh/h	749			649			481			621		
Approach Delay, s/veh	27.8			34.1			23.4			25.6		
Approach LOS	C			C			C			C		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	36.7		10.0	31.0		36.7	15.1	25.9				
Change Period (Y+Rc), s	* 8.1		* 5.7	* 7.7		* 8.1	* 5.7	* 7.7				
Max Green Setting (Gmax), s	* 29		* 10	* 23		* 33	* 15	* 22				
Max Q Clear Time (g_c+I1), s	27.8		4.5	12.7		26.7	9.4	15.0				
Green Ext Time (p_c), s	0.4		0.0	2.6		2.0	0.2	2.1				
Intersection Summary												
HCM 6th Ctrl Delay	28.1											
HCM 6th LOS	C											
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.