Mole D Public Boat Launch Transportation Impact and Parking Study

Final Report

City of Redondo Beach | September 12, 2025

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REDONDO BEACH

City of Redondo Beach

Mole D Public Boat Launch

Transportation Impact and Parking Study

Final Report

September 2025

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1 INTRODUCTION

The City of Redondo Beach is proposing to construct a new public boat launch ramp ("Project") on Mole D of the City of Redondo Beach King Harbor. The project location is shown in **Figure 1-1** This report has been prepared to evaluate the following:

- Operating condition of the surrounding intersections, that will likely be affected by the project, with the addition of the project.
- Parking adequacy of the proposed project site design layout.
- Project access and on-site circulation.
- Pedestrian connectivity and pedestrian-vehicle conflict areas.

This report was prepared in consultation with the project development team including the City of Redondo Beach and Moffatt & Nichol.

1.1 PROJECT DESCRIPTION

Project Site Location: The project site is located south of Herondo Street, north of Torrance Boulevard and west of Pacific Coast Highway (State Route 1) and Catalina Avenue. The Seaside Lagoon is located north, and the Redondo Beach Pier is located south of the project site.

Project Site: The project site consists of the parking lot (Mole D) located south of the Redondo Beach Marina entrance. The site consists of a 10,000 square-feet restaurant, 5,000 square-feet restaurant and event building, 3,000 square-feet of office space and a boat hoist. All land uses share the parking lot within the project site. In addition, the project proposes reconfiguration of the parking lot (north parking lot) located between Portofino Way and the Redondo Beach Marina entrance.

Proposed Project Description: The project proposes the following:

- Construct two lane boat launch ramp on Mole D and include necessary vehicle + trailer parking, boat launch queueing area, turn-around area and new tenant restrooms.
- Reconfigure the south parking lot (Mole D) and the north parking lot to accommodate the new boat launch facility, vehicle + trailer parking and to provide an optimum number of parking spaces.
- The access to the project site will be retained, which is from the Redondo Beach Marina entrance on Harbor Drive. The project proposes to reduce the number of outbound lanes from the current two lanes to one lane. This should reduce the conflict zone between vehicles, bicyclists and pedestrians at the driveway access/ egress. The existing one inbound lane will be retained
- The existing pedestrian promenade shall be retained.
- The existing boat hoist facility will be removed.

It should be noted that during the preparation of this report, the site design was in the planning and development stages and several alternative site design concepts were developed by Moffat and Nichol. This report evaluates the design preferred at the time of preparation of this report. The preferred alternative site design concept is shown in **Figure 1-2**.

1.2 BACKGROUND

As part of the "Public Amenities Plan" approved by the City Council in 2022, the boat launch ramp was proposed along with vehicle + trailer parking stalls, wash down area, launching queue area, turn-around circle, employee office, restroom/shower, security cameras, striped pedestrian crossings and emergency call boxes. The King Harbor Coastal Access, Revitalization, and Enhancement Act (Measure C), passed in 2015 is meant to preserve and expand public access to King Harbor and to ensure safety and maintain aquatic recreational activity. To achieve its objectives, Measure C established specific design requirements for boat launches. These include provisions for the number of launch lanes and vehicle-plus-trailer parking spaces and ensuring safety. Additionally, the measure mandates the strategic placement of launch lanes to support safe operations and protect against high waves.

1.3 DOCUMENT ORGANIZATION

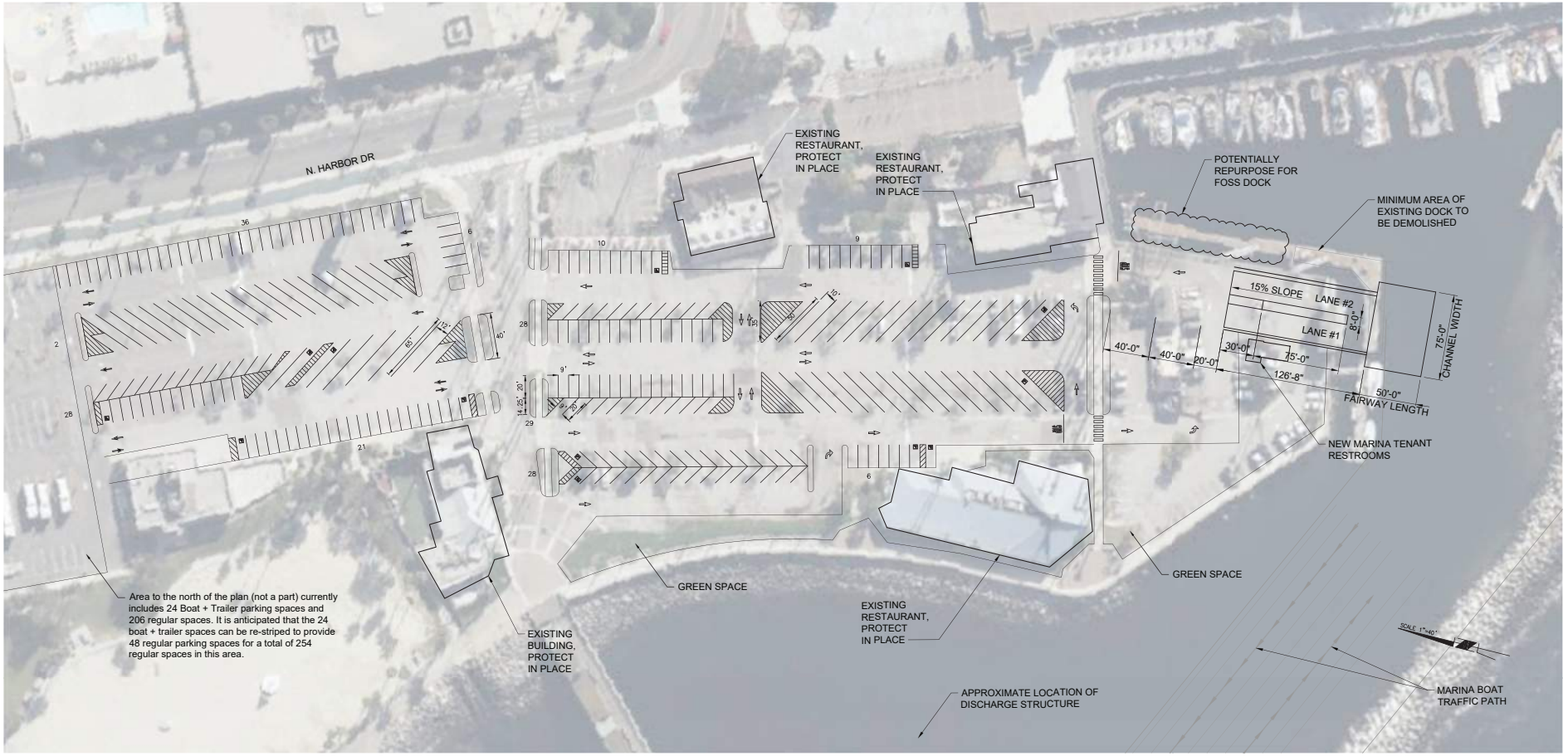
The report is organized into the following sections described below:

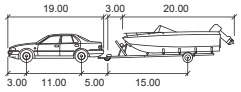
- **Local Transportation Assessment:** Presents the operating condition of the study intersections with the project. The subsections present a description of the study area, study scenarios, existing roadway conditions, existing traffic data, traffic volume forecast, project trip generation, trip distribution and, intersection analysis methodology and results.
- **Parking Evaluation**: Presents an evaluation of the parking adequacy of the proposed site design layout. The subsections present the existing parking assessment, proposed parking evaluation and City Parking Requirements.
- **City Parking Requirements:** Compares City parking requirements with proposed parking supply.
- **Project Access, On-Site and Pedestrian Circulation Assessment:** Presents an evaluation of the project access and on-site circulation of the proposed site design layout.

Mole D Public Boat Launch Project

Figure 1-1
Project Location

Mole D Public Boat Launch Project

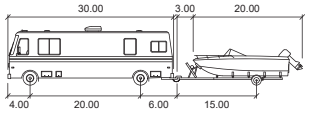




P-B

feet

Car Width	: 7.00		
Trailer Width	: 8.00		
Car Track	: 6.00		
Trailer Track	: 8.00		
Lock to Lock Time	: 6.0		
Steering Angle	: 31.6		
Articulating Angle	: 70.0		



MH-B

feet

MH Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 25.8
MH Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		

NORTH PARKING LOT	
REGULAR SPACES	346
ADA SPACES	3
VEHICLE/TRAILER	21
ADA/VEH/TRAILER	2
RV/TRAILER	5

SOUTH PARKING LOT	
REGULAR SPACES	110
ADA SPACES	6
VEHICLE/TRAILER	30
ADA/VEH/TRAILER	2
RV/TRAILER	0

TOTAL(NORTH+SOUTH)	
REGULAR SPACES	456
ADA SPACES	9
VEHICLE/TRAILER	51
ADA/VEH/TRAILER	4
RV/TRAILER	5

Not for construction. Further design required.

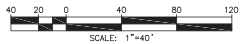


Figure 1-2
Proposed Site Design Concept

2 LOCAL TRANSPORTATION ASSESSMENT

This section presents the operating conditions of the study intersections with the project.

2.1 STUDY AREA

The study intersections evaluated in this traffic study are listed below and shown in **Figure 2-1**:

1. Harbor Drive/ Hermosa Avenue and Herondo Street (Signal).
2. Harbor Drive and Yacht Club Way (Signal).
3. Harbor Drive and Marina Way (Signal).
4. Harbor Drive and Beryl Street/ Portofino Way (Signal).
5. Harbor Drive and Redondo Beach Marina Entrance (All-Way Stop).
6. Harbor Drive and N Pacific Avenue (All-Way Stop).

2.2 STUDY SCENARIOS

The intersection conditions were evaluated for the following scenarios:

- **Existing Conditions (Year 2024)**: This scenario evaluates the intersection conditions for the year 2024 with the existing roadway geometry and the peak season traffic volumes.

- **Opening Year 2027 Without Project Conditions:** This scenario forecasts the intersection conditions in the project opening year 2027, with existing roadway geometry and projected year 2027 traffic volumes.

- **Opening Year 2027 With Project Conditions:** This scenario forecasts the roadway conditions in the project opening Year 2027 with the project constructed and operational. The project trips was added to the Opening Year 2027 Without Project traffic volumes to derive the traffic volumes for this scenario.

Mole D Public Boat Launch Project

Figure 2-1
Project Study Area

2.3 EXISTING ROADWAY CONDITIONS

The existing roadway conditions are summarized in this section. The existing intersection geometry is shown in **Figure 2-2**.

Harbor Drive, within the project study area is oriented in the north-south direction. In the City's General Plan, the roadway is classified as a Collector north of Beryl Street/ Portofino Way and unclassified to the south. This unclassified section provides access to the project site. The roadway between Herondo Street and Pacific Avenue has two travel lanes with a center two-way-left-turn-lane. The posted speed limit is 30 MPH. On-street parallel parking exists on the west side of the roadway north of Beryl Street/ Portofino Way and on the east side of the roadway south of Beryl Street/ Portofino Way. A two-way Class IV cycle track exists along the west side of the roadway. Sidewalks exist on both sides of the roadway.

Herondo Street, within the project study area is oriented in the east-west direction. In the City's General Plan, the roadway is classified as a Secondary Arterial between Harbor Drive and Pacific Coast Highway and as a Major Arterial east of Pacific Coast Highway. The section of Herondo Street closest to the project, west of Pacific Coast Highway, the posted speed limit is 30 MPH. Here the roadway has two travel lanes separated by a raised median and back-in-only, angled on-street parking is provided on both sides of the roadway. Class II bike lanes and sidewalks exist on both sides of the roadway.

Beryl Street, within the project study area is oriented in the east-west direction. In the City's General Plan, the roadway is classified as a Secondary Arterial. West of Catalina Avenue, the roadway has two travel lanes in each direction with a center two-way-left-turn-lane. East of Catalina there is one travel lane in each direction, on-street parallel parking, Class II bike lanes and sidewalks on both sides of the roadway. West of Pacific Coast Highway the posted speed limit is 25 MPH.

Mole D Public Boat Launch Project

Figure 2-2
Existing Intersection Geometry

2.4 TRAFFIC VOLUMES

This section provides a description of the existing traffic volume data and the Opening Year 2027 traffic volume forecast.

2.4.1 Existing Traffic Volume Data

The peak hour count data was collected on Saturday, October 5, 2024, at the study intersections. The count data consists of vehicle and bicycle turning movement count and pedestrian counts on each leg of the intersection. The counts were collected during the following peak periods:

- Morning (7:00 AM – 9:00 AM)
- Midday (11:00 AM – 1:00 PM)
- Evening (4:00 PM – 6:00 PM)

Peak Season Adjustment: To evaluate the intersection condition during peak season, Placer.ai data was provided by the City and utilized to determine the peak season of the year. The data, provided in **Appendix A**, shows an 80% increase in visitors to the Waterfront area in the month of July when compared to October. For a conservative estimate, the October peak hour intersection vehicle turning movement volumes were increased by a factor of 80% to reflect peak season volumes.

The adjusted peak hour intersection turning movement volumes for AM and mid-day (MD) peak hours are shown in **Figure 2-3** and the volume for PM peak hour is shown in **Figure 2-4**. The count data and the Placer.ai data are included in Appendix A.

Mole D Public Boat Launch Project

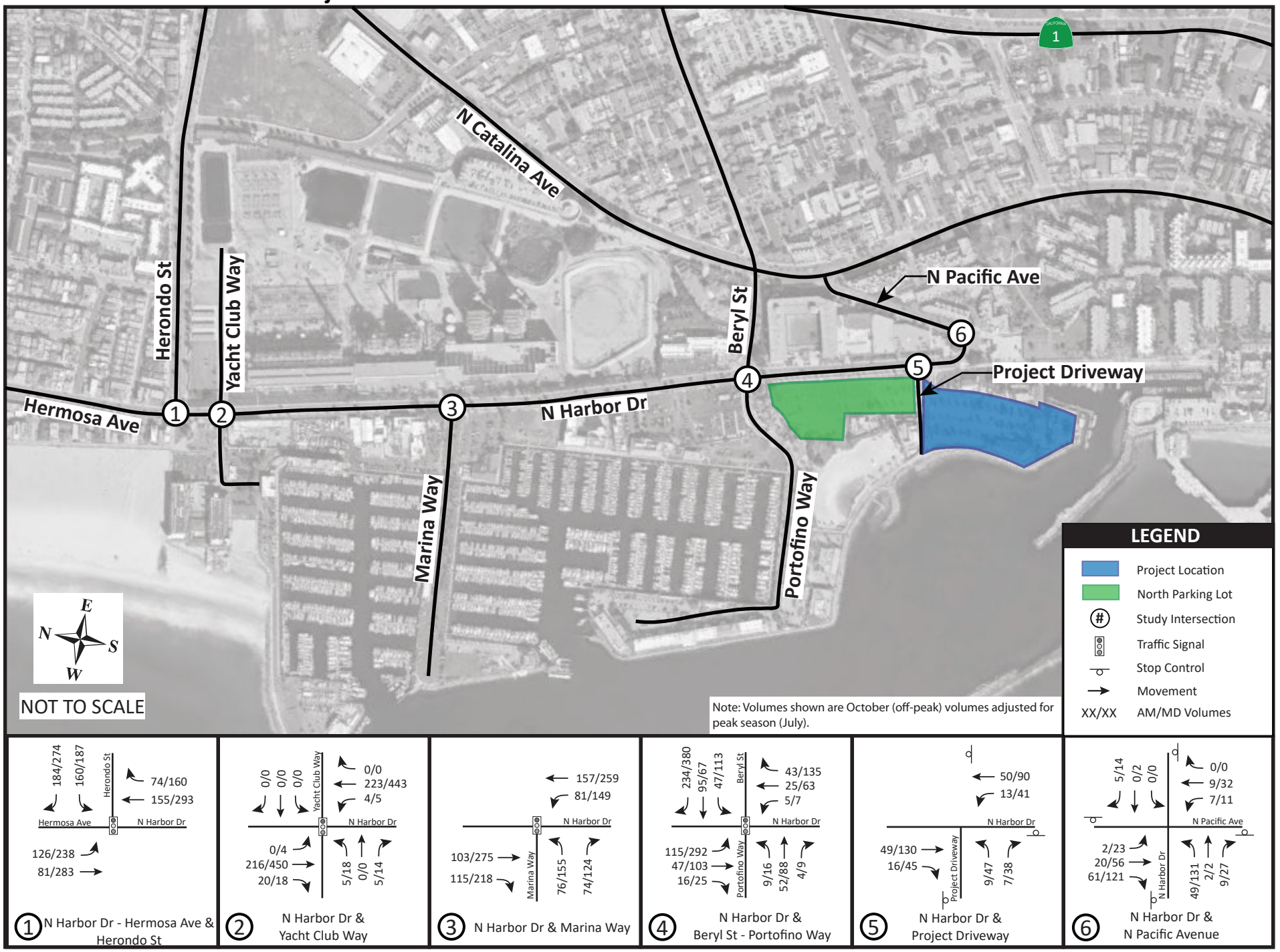


Figure 2-3
Existing AM and MD Peak Hour Intersection Volumes

Mole D Public Boat Launch Project

1 N Harbor Dr - Hermosa Ave & Herondo St

2 N Harbor Dr & Yacht Club Way

3 N Harbor Dr & Marina Way

4 N Harbor Dr & Beryl St - Portofino Way

5 N Harbor Dr & Project Driveway

6 N Harbor Dr & N Pacific Avenue

Figure 2-4
Existing PM Peak Hour Intersection Volumes

2.4.2 Opening Year 2027 Without Project Traffic Volume

The Opening Year 2027 Without Project traffic volumes were forecasted by applying an annual growth to the existing peak season traffic volumes (adjusted volumes). The growth factor was calculated using the employment data from the Southern California Association of Governments (SCAG) Demographics and Growth Forecast Technical Report (September 3, 2020) and confirmed as appropriate during scoping discussions with the City on Wednesday November 13, 2024. Based on the comparison of the year 2016 and year 2045 employment data for the City of Redondo Beach, the employment is forecast to grow 0.39% per year. A total growth factor of 1.17% was applied to the existing traffic volume to forecast the Opening Year 2027 Without Project traffic volumes. The AM and MD peak hour intersection turning movement volumes are shown in **Figure 2-5** and the volumes for the PM peak hour are shown in **Figure 2-6**. The SCAG data is included in **Appendix B**.

Mole D Public Boat Launch Project

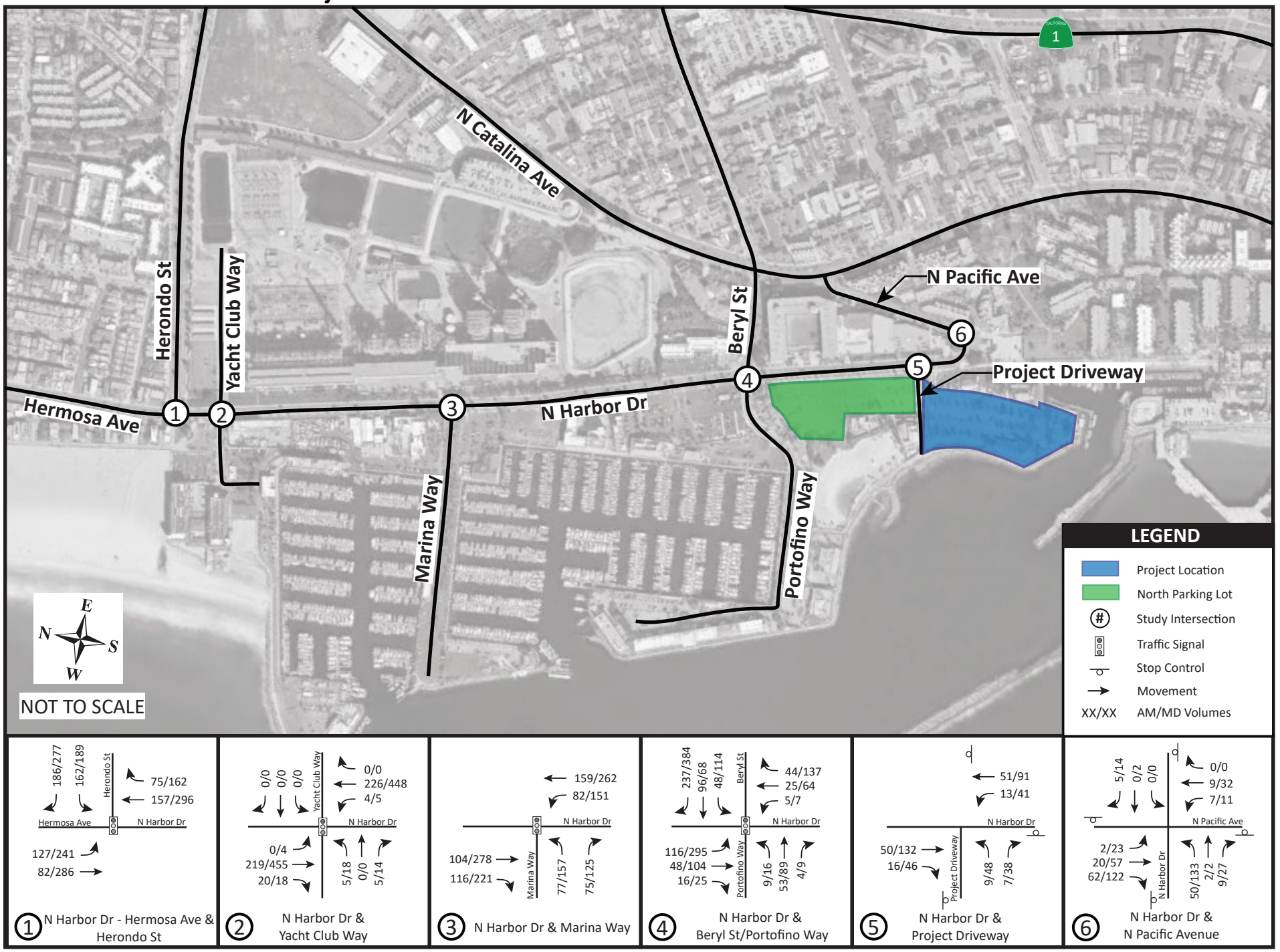


Figure 2-5

Opening Year 2027 Without Project AM and MD Peak Hour Intersection Volumes

Mole D Public Boat Launch Project

Figure 2-6
Opening Year 2027 Without Project PM Peak Hour Intersection Volumes

2.4.3 Opening Year 2027 With Project Traffic Volume

The Opening Year 2027 With Project traffic volumes were derived by adding the project trips to the Opening Year 2027 Without Project traffic volumes. The project trips at the study intersections were estimated based on the peak hour project trip generation estimate and the anticipated distribution of trips through the roadway network.

Project Trip Generation: Since there is no trip generation manual that provides trip estimates for a boat launch facility, the following are the assumptions were made to derive project trips as shown in **Table 2-1**:

- The Boat Ramp Demand Study (Moffatt & Nichol, 2025) anticipates a normal peak day average of 27 boat launches and 27 boat retrievals per launch lane per day. This trip generation was derived from California Department of Parks and Recreation Division of Boating and Waterways Layout & Design Guidelines for Boat Launching Facilities (2021) and equates to 54 trips per launch lane per day.
- The normal peak day was assumed to be a Saturday.
- The actual trip generation as seen in the table below is higher than the trip generation in the VMT Screening Evaluation (STC Traffic, 2025) which uses updated information. This provides a conservative approach for the level of service (LOS) analysis.
- For a worse-case scenario all trips were assumed to occur during the peak hour, with maximum inbound trips occurring during the AM and MD peak hours and the maximum outbound trips occurring during the PM peak hour.

Table 2-1: Project Trip Generation

Land Use	Daily Trips	Time Period	Trip Rates		Trip Generation	
			IN	Out	IN	OUT
Boat Launch Ramp (2 lanes)	120	AM	50%	0%	30	0
		MD	45%	10%	27	6
		PM	5%	90%	3	54
		Total	100%	100%	60	60[1]

[1]LOS Analysis Trip Generation is conservative as it is higher than the VMT Screening Evaluation which used updated information.

Project Trip Distribution and Assignment: Project trip distribution is the anticipated travel pattern of the project trips based on the existing traffic pattern and the surrounding roadway network. The project trip distribution is shown in **Figure 2-7**.

The project trip assignment for the AM and MD peak hour are shown in **Figure 2-8** and for the PM peak hour in **Figure 2-9**. The Opening Year 2027 With Project traffic volumes for the AM and MD peak hour are shown in **Figure 2-10** and for the PM peak hour in **Figure 2-11**.

Mole D Public Boat Launch Project

1 N Harbor Dr - Hermosa Ave & Herondo St

2 N Harbor Dr & Yacht Club Way

3 N Harbor Dr & Marina Way

4 N Harbor Dr & Beryl St/Portofino Way

5 N Harbor Dr & Project Driveway

6 N Harbor Dr & N Pacific Avenue

Figure 2-7
Project Trip Distribution

Mole D Public Boat Launch Project

Figure 2-8
AM and MD Peak Hour Project Trip Assignment

Mole D Public Boat Launch Project

Figure 2-9
PM Peak Hour Project Trip Assignment

Mole D Public Boat Launch Project

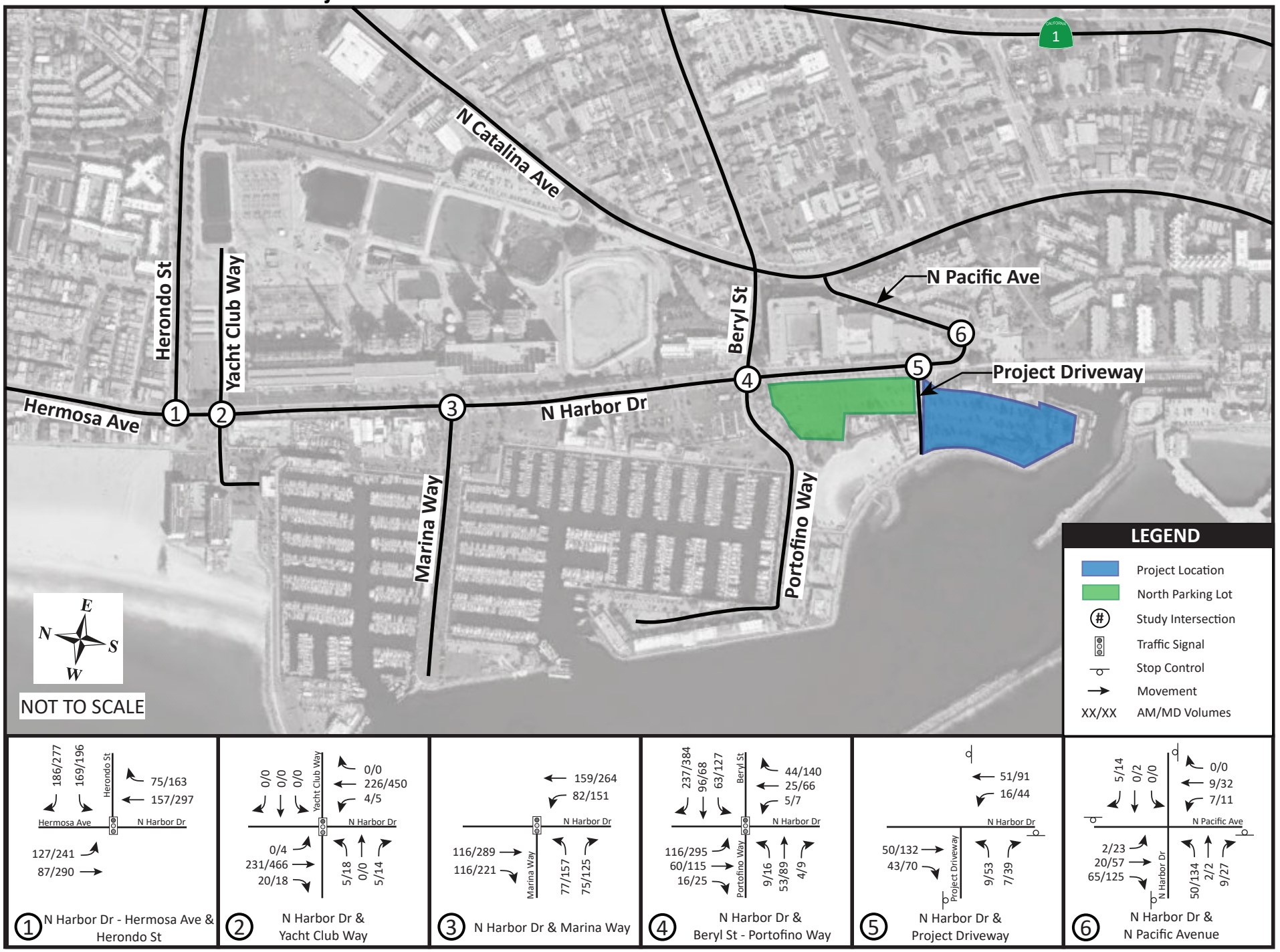


Figure 2-10

Opening Year 2027 With Project AM and MD Peak Hour Intersection Volumes

Mole D Public Boat Launch Project

Figure 2-11
Opening Year 2027 With Project PM Peak Hour Intersection Volumes

2.5 TRAFFIC ANALYSIS

This section presents the LOS traffic analysis methodology and the analysis results for the study intersections. The analysis was conducted for the AM, MD, and PM peak hours on a Saturday (busiest day of the week) during the peak season (July). The analysis methodology was established in reference to the City of Redondo Beach Transportation Impact Study (TIS) Guidelines (May 5, 2021) and in consultation with the City of Redondo Beach staff.

Project Changes: At the project access, the project proposes to reduce the number of outbound lanes from the current two lanes to one lane. Hence, at the Harbor Drive and Redondo Beach Marina entrance intersection the eastbound approach was analyzed with one shared left turn/right turn lane.

2.5.1 Analysis Methodology

Intersection LOS analysis was conducted using the Synchro 11 analysis software. Existing roadway geometry was obtained from Google Earth aerial imagery and verified in the field. Existing traffic signal timing sheets were used for signal timing inputs. Traffic volume (vehicle, pedestrian and bicycle) and peak hour factor (PHF) data inputs were based on count data.

Highway Capacity Manual (HCM) 6th Edition methodology was used to report intersection conditions for unsignalized intersections. Due to HCM 6th Edition methodology not supporting non – standard NEMA phasing and clustered intersections on one common traffic signal controller, HCM 2000 methodology was used to report intersection condition for all signalized intersections. Delay (in seconds) and corresponding LOS are reported for intersection conditions. The LOS thresholds are shown in **Table 2-2**.

Table 2-2: HCM LOS Threshold

LOS	Control Delay (sec/veh)		Description
	Signalized Intersection	Unsignalized Intersection	
A	≤10	≤10	Operations with very low delay and most vehicles do not stop.
B	>10 and ≤20	>10 and ≤15	Operations with good progression but with some restricted movements.
C	>20 and ≤35	>15 and ≤25	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35 and ≤55	>25 and ≤35	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines.
E	>55 and <80	>35 and <50	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80	>50	Operations that are unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.

Source: *Highway Capacity Manual (HCM).*

2.5.2 Performance Criteria

The City of Redondo Beach has identified significant degradation criteria for intersection conditions, which is shown in **Table 2-3**. If the project results in degradation of the intersection conditions, improvements should be identified to offset degraded roadway operations.

Table 2-3: City of Redondo Beach Significant Degradation Criteria

LOS	Project-Related Increase in Seconds of Average Total Delay	
	Signalized Intersection	Unsignalized (All-Way Stop) Intersection
D	Equal to or greater than 10.0 seconds	Equal to or greater than 4.0 seconds
E or F	Equal to or greater than 5.0 seconds	Equal to or greater than 3.0 seconds

2.5.3 General Plan Consistency

Section 1.2, Page 12 of the Redondo Beach Circulation Element (Adopted July 2021) states that the City of Redondo Beach has expressed a goal for City intersections not to degrade beyond LOS D. Where intersections currently exceed LOS D, the City will pursue mitigation measures to achieve LOS D.

2.5.4 Analysis Results

The existing intersection conditions are summarized in **Table 2-4**. The Opening Year 2027 Without Project and the Opening Year 2027 With Project conditions are summarized in **Table 2-5** and **Table 2-6** respectively. The analysis worksheets are included in **Appendix C**.

Table 2-4: Existing Intersection LOS Analysis Summary

Study Intersection		Control	AM		MD		PM	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Harbor Dr/ Hermosa Ave and Herondo St [1]	Signal	17.6	B	21.1	C	27.9	C
2	Harbor Dr and Yacht Club Way[1]	Signal	11.3	B	15.6	B	20.3	C
3	Harbor Dr and Marina Way [1]	Signal	13.2	B	15.1	B	15.4	B
4	Harbor Dr and Beryl St - Portofino Way [1]	Signal	21.8	C	31.3	C	45.1	D
5	Harbor Dr and RB Marina Entrance	AWS	7.9	A	8.9	A	9.8	A
6	Harbor Dr and N Pacific Ave	AWS	7.9	A	9.3	A	10.0	A

Delay reported in seconds. LOS – Level of Service. AWS – All-Way Stop Control

[1]Reported HCM 2000 methodology results.

Table 2-5: Opening Year 2027 Without Project Intersection LOS Analysis Summary

Study Intersection		Control	AM		MD		PM	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Harbor Dr/ Hermosa Ave and Herondo St [1]	Signal	17.6	B	21.3	C	28.8	C
2	Harbor Dr and Yacht Club Way[1]	Signal	11.3	B	15.8	B	20.7	C
3	Harbor Dr and Marina Way [1]	Signal	13.3	B	15.2	B	15.7	B
4	Harbor Dr and Beryl St - Portofino Way [1]	Signal	21.8	C	31.6	C	46.4	D
5	Harbor Dr and RB Marina Entrance	AWS	7.9	A	8.9	A	9.8	A
6	Harbor Dr and N Pacific Ave	AWS	7.9	A	9.3	A	10.1	B

Delay reported in seconds. LOS – Level of Service. AWS – All-Way Stop Control

[1]Reported HCM 2000 methodology results.

Table 2-6: Opening Year 2027 With Project Intersection LOS Analysis Summary

Study Intersection		Control	AM		MD		PM	
			Delay	LOS	Delay	LOS	Delay	LOS
1	Harbor Dr/ Hermosa Ave and Herondo St [1]	Signal	17.8	B	21.6	C	30.4	C
2	Harbor Dr and Yacht Club Way[1]	Signal	11.3	B	16.0	B	22.4	C
3	Harbor Dr and Marina Way [1]	Signal	13.2	B	15.1	B	15.6	B
4	Harbor Dr and Beryl St - Portofino Way [1]	Signal	21.9	C	32.0	C	49.1	D
5	Harbor Dr and RB Marina Entrance	AWS	7.7	A	8.7	A	10.0	A
6	Harbor Dr and N Pacific Ave	AWS	7.9	A	9.3	A	10.2	B

Delay reported in seconds. LOS – Level of Service. AWS – All-Way Stop Control

[1]Reported HCM 2000 methodology results.

As shown in Table 2-4, Table 2-5 and Table 2-6, all intersections operate at an acceptable LOS D or better during all peak hours for all scenarios. The addition of the project trips does not result in degradation of the intersection conditions at any of the study intersections.

3 PARKING EVALUATION

The parking evaluation was performed to determine parking adequacy of the proposed project site design layout and to compare future parking requirements and supply. With the addition of the boat launch ramp and vehicle + trailer parking, the project proposes reconfiguring the south parking lot (Mole D) and the north parking lot to provide an optimum number of parking spaces and efficient circulation.

The following tasks were performed as part of the study:

- Assessment of the existing parking supply.
- Evaluation of proposed conceptual parking layout and circulation.
- City Parking Requirements
- Recommendations

3.1 EXISTING PARKING ASSESSMENT

This section provides an assessment of the existing parking spaces available (parking supply) and the existing demand. Existing parking conditions were evaluated during field visits on Wednesday September 25, 2024. Some spaces were inaccessible as they were being used by facilities and maintenance crews. Parking space counts were also conducted using aerial imagery. The Parking occupancy surveys were conducted on Friday October 4, Saturday October 5, and Sunday October 6, 2024. Results are provided in **Appendix D**. The existing parking space counts are summarized in **Table 3-1**.

Table 3-1: Existing Parking Condition

Parking Lot	Parking Spaces	Land Use/Activity Served
North Parking Lot	Regular & ADA – 333 Vehicle + Trailer – 49 **Total = 382**	- Seaside Lagoon - California Surf Club & Restaurant
South Parking Lot	Regular & ADA – 337 **Total = 337**	- Captain Kidd's Fish Market and Restaurant - Riviera Mexican Cantina - R/10 Social House Restaurant - Boat Hoist - FOSS Marine Services
Total (North + South Lots)	Regular & ADA – 670 Vehicle + Trailer – 49 **Total = 719**	- All waterfront land uses

The parking lots may also be utilized by visitors for other activities including walking, running, biking and water activities.

The Captain Kidds's Fish Market and Restaurant, which is located north-east of the south parking lot has an additional 27 parking spaces within the property of the restaurant, which is reserved to its customers. Vehicle access between the south parking lot and the restaurant is restricted.

Results from the parking occupancy survey showed that in terms of parking space utilization, the busiest time was 10:00 AM on Sunday October 6, 2024 with 136 spaces occupied in the north and south lot. However, the count could have been influenced by the 19th Annual Car Show. The second busiest time was 5:00 PM on Saturday October 5, when 124 spaces were occupied in both lots. Both counts mean that the north and south lots were less than 20% utilized at these times. It should be noted that the seaside lagoon is not open in October when the counts were conducted.

3.2 PROPOSED PARKING EVALUATION

The project proposes the following changes to the parking:

- Install a total of 54 vehicle + trailer parking spaces and 6 RV + trailer parking spaces.
- Reconfigure both parking lots to provide an optimum number of parking spaces.

The proposed site design layout is shown in Figure 1-2. The proposed parking conditions are summarized in **Table 3-2**.

Table 3-2: Proposed Parking Condition

Parking Lot	Parking Spaces	Land Use/Activity Served
North Parking Lot	Regular – 346 Regular ADA – 3 Vehicle +Trailer – 20 Vehicle +Trailer ADA – 2 RV +Trailer - 6 **Total = 377**	- Seaside Lagoon - California Surf Club & Restaurant
South Parking Lot	Regular – 110 Regular ADA – 6 Vehicle + Trailer – 30 Vehicle + Trailer ADA - 2 **Total = 148**	- Captain Kidd's Fish Market and Restaurant - R/10 Social House Restaurant - FOSS Marine Services - Boat Launch Ramp (2 lanes)
Total (North + South Lots)	Regular – 456 Regular ADA – 9 Vehicle + Trailer – 50 Vehicle + Trailer ADA – 4 RV + Trailer - 6 **Total = 525**	- All waterfront land uses

The parking lots may also be utilized by visitors for other activities including walking, running, biking and water activities.

A comparison of existing and proposed parking is shown in **Table 3-3**.

Table 3-3 Existing and Proposed Parking Comparison (North + South Lots)

Type	Existing	Proposed	Increase (+) / Decrease (-)
Regular Parking Spaces (including ADA)	670	465	-205
Vehicle + Trailer Spaces (including ADA)	49	54	+6
RV + Trailer Parking	0	6	+5
Total	**719**	**525**	**-194**

Table 3-3 shows that the project will result in a reduction of 194 parking spaces.

There are an additional 346 parking spaces available in the vicinity of the project site at the following locations. These are shown in **Figure 3-1** and are less than 600 feet from the project site (measured from the center of the south parking lot on Mole D).

- 331 parking spaces within the Redondo Beach Waterfront multi-story parking garage which is located east of the project site and accessed off the Harbor Drive and N Pacific Avenue stop controlled intersection. Pedestrian access exists between the parking garage, the south parking lot and the International Boardwalk.
- 15 on-street parking spaces along east side of Harbor Drive between Beryl Street and Redondo Beach Marina entrance.

Mole D Public Boat Launch Project

Figure 3-1
Other Waterfront Parking Locations

3.3 CITY PARKING REQUIREMENTS

This section considers the parking space requirements for existing businesses within Mole D, the parking requirements for the project, and whether the proposed parking supply is sufficient to meet these requirements. The following information, shown in **Table 3-4**, was provided by the City and includes floor area, parking space rate, and the number of parking spaces required based on the municipal code. The City does not have a parking requirement for open space so the data for Seaside Lagoon was provided by the City and is based on adult visitors paying for entry at the Seaside Lagoon between its open season of Memorial Day weekend through Labor Day Weekend. This data is provided in **Appendix D**.

Table 3-4 Parking Requirements for Existing Uses

Location	Business Name and Type of Use	Parking Rate	Building Square Footage or Number of Seats	Parking Spaces Required
181 N Harbor Drive	Redondo Beach Marina Office	1 space per 300 SF	1491 SF	5
181 N Harbor Drive	Basin 3 Commercial Vessel Operators. Boat Slips.	3/4 space per boat slip	15 slips	11
161 N Harbor Drive	Foss Building Office	1 space per 300 SF	1,216 SF	4
179 N Harbor Drive	R10 Sitdown Restaurant	1 per 4 seats but not less than 1 space per 50 SF of seating area	90 seats or 1,178 SF	24
		Outdoor Seating - No additional parking required for first 12 seats. Thereafter, 1 per 6 seats	20 seats	3
209 N Harbor Drive	Captain Kidd's Sitdown Restaurant	1 per 4 seats but not less than 1 space per 50 SF of seating area	216 seats or 2,835.41 SF	30[1]
		Outdoor Seating - No additional parking required for first 12 seats. Thereafter, 1 per 6 seats	12 seats	0
239 N Harbor Drive	CA Surf Club. Commercial Recreation	1 per 250 SF	5,867 SF	25
245 N Harbor Drive	CA Surf Club Sitdown Restaurant	1 per 4 seats but not less than 1 space per 50 SF of seating area	44 seats or 1,321 SF	26
		Outdoor Seating - No additional parking required for first 12 seats. Thereafter, 1 per 6 seats	61 seats	8
200 Portofino Way	Seaside Lagoon	213 peak season demand based on 2024 open season		213[2]
			Total	**349**

[1]A total of 57 spaces are required but 27 spaces are provided in purpose-built parking lot.
[2]The seaside lagoon number of spaces is based on open season demand since the City does not have a parking requirement for this land use.

Table 3-4 shows that 349 spaces are required for the existing uses based on City parking requirements.

Project Parking Requirements

Per the California Department of Parks and Recreation Division of Boating and Waterways Layout & Design Guidelines for Boat Launching Facilities (2021) the minimum parking space ratio for the project should be between 20 and 30 vehicle and trailer parking spaces per launch lane. Sixty (60) spaces in total were assumed for a conservative estimate for the two proposed launch lanes and to comply with Measure C requirements. **Table 3-5** compares the Existing + Project parking requirements with the proposed parking supply.

Table 3-5 Parking Requirements for Existing + Proposed Land Uses vs Parking Supply

Parking Spaces	Total
Existing Municipal Code Requirement	349
Project Requirement	60
Existing + Project Requirement	**409**
Total Proposed Parking Supply North & South Parking Lots	525
Parking Space Surplus	**116**

Table 3-2 shows that 525 parking spaces are proposed in Mole D following the completion of the project. Table 3-5 shows that with the completion of the project a total of 409 parking spaces will be required resulting in a surplus of 116 parking spaces. Therefore, it can be concluded that the proposed parking supply will accommodate municipal code parking requirements for the existing land uses plus the proposed project.

4 PROJECT ACCESS, ON-SITE AND PEDESTRIAN CIRCULATION ASSESSMENT

This section presents an evaluation of the project access, on-site vehicle and pedestrian circulation of the proposed project site design layout.

4.1 PROJECT ACCESS

The access to the project site will be retained at the Redondo Beach Marina entrance on Harbor Drive with the following changes:

- The outbound lanes will be reduced from the current two lanes to one lane. This should reduce the conflict zone between vehicles, bicyclists and pedestrians at the driveway access/ egress. The existing one inbound lane will be retained.
- Parking fees will be collected through pay over cell phone or pay stations within the parking lot.
- We understand that the City would like to modify curb returns and make lanes as narrow as possible to shrink the intersection and turning templates at the Harbor Drive access are provided in **Appendix E**.

4.1.1 Operations and Queue Analysis

The queue length is based on the Synchro analysis software and is reported as 95th percentile queue length in number of vehicles. The intersection operations and queue analysis for the Harbor Drive and Redondo Beach Marina entrance for the Opening Year 2027 With Project is summarized in **Table 4-1**.

Table 4-1: Opening Year 2027 With Project Access Analysis

Mov	AM			MD			PM		
	QL	App D/LOS	Int D/LOS	QL	App D/LOS	Int D/LOS	QL	App D/LOS	Int D/LOS
EB LR	1	7.4 / A	7.7 / A	1	8.6 / A	8.7 / A	1	9.9 / A	10.0 / A
NB L	1	7.8 / A		1	8.6 / A		1	10.2 / B	
NB T	1			1			2		
SB TR	1	7.7 / A		1	8.9 / A		2	9.9 / A	

- Mov-Movement, QL-Queue Length, App-Approach, D-Delay, LOS-Level of Service, EB-Eastbound, NB-Northbound, SB-Southbound, L-Left Turn, T-Through, R-Right Turn
- 95th Percentile queue length reported in vehicles.
- Delay reported in seconds.

As shown in Table 4-1 for all the peak hours, with the addition of project trips to the project access intersection, all approaches and the whole intersection is forecast to operate at a LOS B or better. Excess queueing is not anticipated at the intersection approaches.

4.1.2 Project Access Design Assessment

The existing curb returns at the project access will be retained which are designed per the applicable standards to accommodate large vehicles with trailer maneuvers. In addition, the reduction in the number of outbound lanes and the removal of the roadway median and the parking ticket booths at the entrance, more room is provided for maneuvering through the parking lots. This will also reduce the number of potential conflict points with the bike lane on Harbor Drive. It should also be noted that vehicles with trailers are currently accessing the project site through this access under existing conditions.

4.2 ON-SITE VEHICLE CIRCULATION

The following is a summary of the on-site vehicle circulation elements of the proposed project site design layout:

- As per the applicable design standard, a minimum parking drive aisle width and internal circulation roadway width of 26 feet will be provided for one-way traffic and a width of 28 feet for two-way traffic. The width for two-way traffic is sufficient for safe passage of vehicles in both directions.
- The parking aisle and internal circulation roadway width are adequate for vehicles with trailers maneuvering, including driving into and out of the parking space and turnaround from one parking drive aisle to the other.
- The end of the parking aisle may consist of raised median island or striping, the corners of which are designed to accommodate vehicles with trailers turning maneuvers.
- Excess queuing and delay are not anticipated within the internal circulation roadways, that will result in adverse impact on internal circulation.

The adequacy of the proposed project site design layout for vehicles with trailers maneuver is demonstrated with turn template and included in Appendix E.

4.3 PEDESTRIAN CIRCULATION

The following is a summary of the on-site pedestrian circulation for the proposed project site design layout:

- The project will retain the pedestrian pathway from the Redondo Beach Marina entrance, which connects the sidewalk on Harbor Drive to the pedestrian promenade.
- The project will modify the pedestrian pathway connecting the International Boardwalk and the pedestrian promenade, to include a minimum of 8 feet pedestrian pathway and planter area on either side of the pathway.
- Pedestrian crosswalk markings will be provided at the stop control locations within the parking lot drive aisles. This provides a comfortable pedestrian connection from the pedestrian promenade along the waterfront to the International Boardwalk and may be more attractive to pedestrians than the existing conditions.

5 SUMMARY AND CONCLUSION

A summary of the project and analysis findings are as follows:

Project Description

- The project proposes constructing a two-lane boat launch ramp on Mole D and includes vehicle + trailer parking, a boat launch queueing area, a turn-around area and new tenant restrooms.
- The project will reconfigure the south parking lot (Mole D) and the north parking lot to accommodate the new boat launch facility, vehicle + trailer parking and to provide an optimum number of parking spaces.
- At the project access at the Redondo Beach Marina entrance on Harbor Drive, the project proposes to reduce the number of outbound lanes from two to one and retain the one inbound lane. The parking ticket booths have been removed.

Local Transportation Assessment

- The new boat launch facility is estimated to generate a total of 120 daily trips (60 inbound and 60 outbound). Most trips were assumed to occur during the peak hours. The VMT Screening Evaluation (STC Traffic, 2025) shows a lower trip generation using updated information. The level of service analysis used the higher trip generation for a conservative analysis.
- Six intersections, including the project access intersection, were evaluated for project impacts in the project opening year 2027, for the AM, MD, and PM peak hours on a Saturday (busiest day of the week) during the peak season (July) by applying a seasonal growth factor to existing volumes. All intersections were forecast to operate at an acceptable LOS D or better and the addition of the project trips does not result in degradation of the intersection conditions.

Parking Evaluation

- The existing north and south parking lots provide a total of 719 spaces. The proposed project site design layout will include a total of 525 parking spaces (377 north parking lot and 148 south parking lot), resulting in a decrease in 194 parking spaces from the current condition.
- The total parking requirement (Existing Plus Project) is estimated to be 409. This can be accommodated using the proposed 525 spaces in the north and south lots resulting in a surplus of 116 parking spaces following completion of the project.
- In addition, there are 346 parking spaces available in the vicinity of the project site, including the Beach Waterfront multi-story parking garage (331 spaces) and on-street parking (15 spaces).

Project Access, On-Site and Pedestrian Circulation Assessment

- With the addition of project trips to the project access intersection, all approaches and the intersection as a whole, are forecast to operate at a LOS B or better. Excess queuing is not anticipated at the intersection approaches.
- The project site access and the on-site circulation layout are designed to accommodate vehicles with trailers maneuvering through the parking lots.

- The proposed project site design layout consists of pedestrian pathways that connect the pedestrian promenade to the sidewalk on Harbor Drive and the International Boardwalk. Pedestrian crosswalk markings will be provided where required.

Appendix A

Traffic Count Data

Placer.ai Data

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Redondo Beach
N/S: Hermosa Avenue/N Harbor Drive
E/W: Herondo Street
Weather: Clear

File Name : 01_RDB_Har_Her AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	7	9	16	16	17	33	12	2	14	63
07:15 AM	4	9	13	8	21	29	11	2	13	55
07:30 AM	14	7	21	21	9	30	13	9	22	73
07:45 AM	8	15	23	18	17	35	20	15	35	93
Total	33	40	73	63	64	127	56	28	84	284
08:00 AM	18	8	26	22	28	50	18	5	23	99
08:15 AM	11	10	21	18	24	42	23	14	37	100
08:30 AM	16	13	29	24	22	46	20	11	31	106
08:45 AM	25	14	39	25	28	53	25	11	36	128
Total	70	45	115	89	102	191	86	41	127	433
Grand Total	103	85	188	152	166	318	142	69	211	717
Apprch %	54.8	45.2		47.8	52.2		67.3	32.7		
Total %	14.4	11.9	26.2	21.2	23.2	44.4	19.8	9.6	29.4	

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	18	8	26	22	**28**	50	18	5	23	99
08:15 AM	11	10	21	18	24	42	23	**14**	**37**	100
08:30 AM	16	13	29	24	22	46	20	11	31	106
08:45 AM	**25**	**14**	**39**	**25**	28	**53**	**25**	11	36	**128**
Total Volume	70	45	115	89	102	191	86	41	127	433
% App. Total	60.9	39.1		46.6	53.4		67.7	32.3		
PHF	.700	.804	.737	.890	.911	.901	.860	.732	.858	.846

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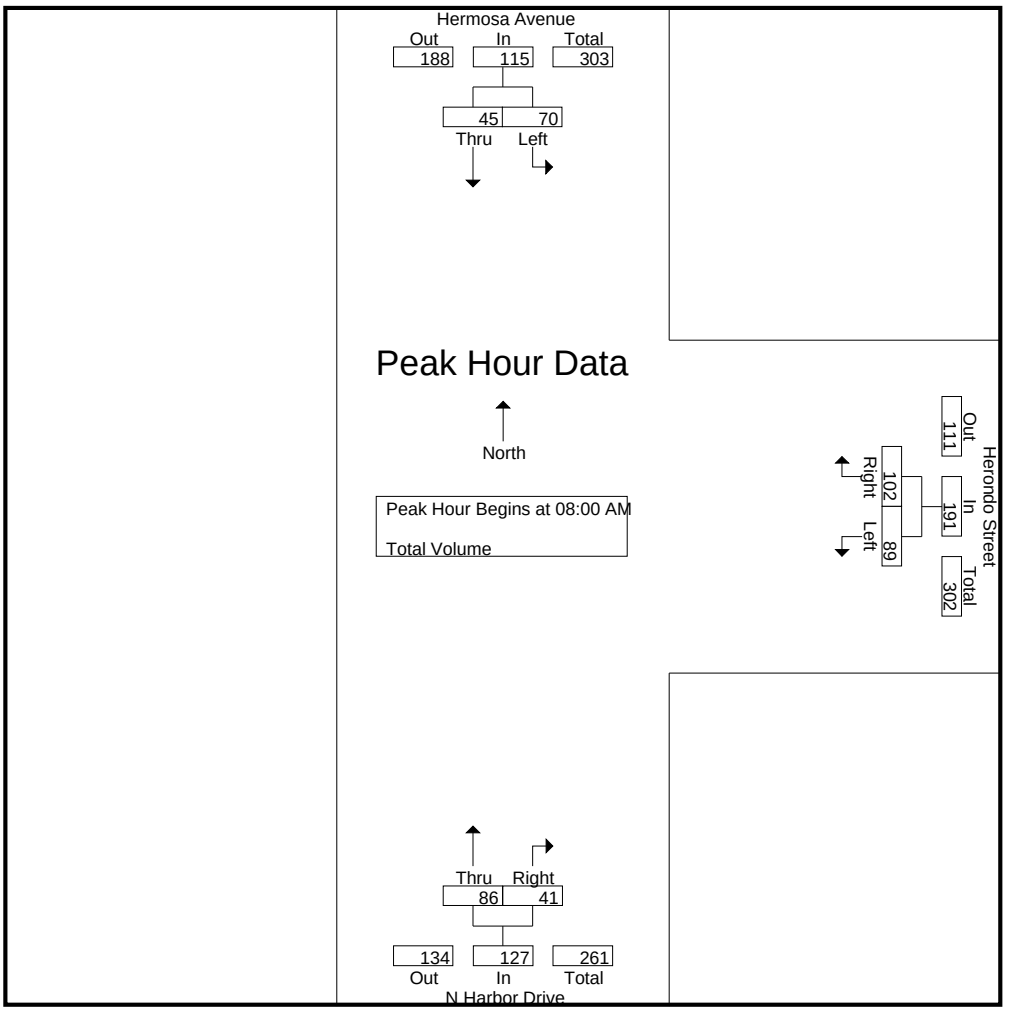

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			08:00 AM		
+0 mins.	18	8	26	22	**28**	50	18	5	23
+15 mins.	11	10	21	18	24	42	23	**14**	**37**
+30 mins.	16	13	29	24	22	46	20	11	31
+45 mins.	**25**	**14**	**39**	**25**	28	**53**	**25**	11	36
Total Volume	70	45	115	89	102	191	86	41	127
% App. Total	60.9	39.1		46.6	53.4		67.7	32.3	
PHF	.700	.804	.737	.890	.911	.901	.860	.732	.858

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City of Redondo Beach
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File Name : 01_RDB_Har_Her MD
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
11:00 AM	30	32	62	22	39	61	33	19	52	175
11:15 AM	27	32	59	35	28	63	34	20	54	176
11:30 AM	37	39	76	29	33	62	39	15	54	192
11:45 AM	35	30	65	36	15	51	50	11	61	177
Total	129	133	262	122	115	237	156	65	221	720
12:00 PM	24	46	70	29	34	63	42	23	65	198
12:15 PM	29	34	63	23	38	61	37	22	59	183
12:30 PM	35	36	71	30	41	71	45	25	70	212
12:45 PM	44	41	85	22	39	61	39	19	58	204
Total	132	157	289	104	152	256	163	89	252	797
Grand Total	261	290	551	226	267	493	319	154	473	1517
Apprch %	47.4	52.6		45.8	54.2		67.4	32.6		
Total %	17.2	19.1	36.3	14.9	17.6	32.5	21	10.2	31.2	

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	24	**46**	70	29	34	63	42	23	65	198
12:15 PM	29	34	63	23	38	61	37	22	59	183
12:30 PM	35	36	71	**30**	**41**	**71**	**45**	**25**	**70**	**212**
12:45 PM	**44**	41	**85**	22	39	61	39	19	58	204
Total Volume	132	157	289	104	152	256	163	89	252	797
% App. Total	45.7	54.3		40.6	59.4		64.7	35.3		
PHF	.750	.853	.850	.867	.927	.901	.906	.890	.900	.940

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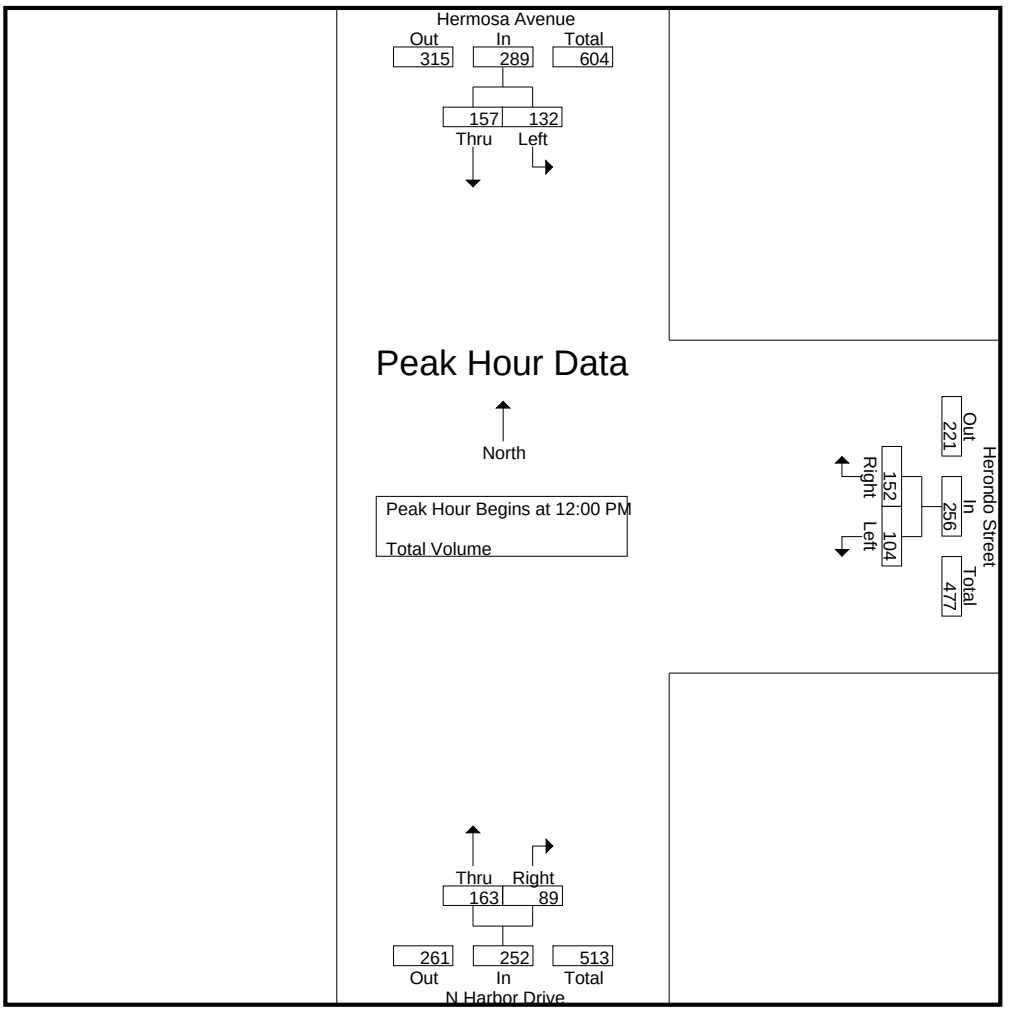

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM			12:00 PM			11:45 AM		
+0 mins.	24	**46**	70	29	34	63	**50**	11	61
+15 mins.	29	34	63	23	38	61	42	23	65
+30 mins.	35	36	71	**30**	**41**	**71**	37	22	59
+45 mins.	**44**	41	**85**	22	39	61	45	**25**	**70**
Total Volume	132	157	289	104	152	256	174	81	255
% App. Total	45.7	54.3		40.6	59.4		68.2	31.8	
PHF	.750	.853	.850	.867	.927	.901	.870	.810	.911

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City of Redondo Beach
N/S: Hermosa Avenue/N Harbor Drive
E/W: Herondo Street
Weather: Clear

File Name : 01_RDB_Har_Her PM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	28	47	75	37	31	68	39	19	58	201
04:15 PM	25	42	67	32	36	68	49	27	76	211
04:30 PM	37	33	70	28	40	68	44	23	67	205
04:45 PM	29	38	67	41	45	86	49	26	75	228
Total	119	160	279	138	152	290	181	95	276	845
05:00 PM	38	60	98	32	34	66	40	26	66	230
05:15 PM	22	47	69	31	36	67	45	25	70	206
05:30 PM	29	39	68	34	38	72	42	26	68	208
05:45 PM	28	39	67	29	22	51	39	24	63	181
Total	117	185	302	126	130	256	166	101	267	825
Grand Total	236	345	581	264	282	546	347	196	543	1670
Apprch %	40.6	59.4		48.4	51.6		63.9	36.1		
Total %	14.1	20.7	34.8	15.8	16.9	32.7	20.8	11.7	32.5	

	Hermosa Avenue Southbound			Herondo Street Westbound			N Harbor Drive Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	25	42	67	32	36	68	**49**	**27**	**76**	211
04:30 PM	37	33	70	28	40	68	44	23	67	205
04:45 PM	29	38	67	**41**	**45**	**86**	49	26	75	228
05:00 PM	**38**	**60**	**98**	32	34	66	40	26	66	**230**
Total Volume	129	173	302	133	155	288	182	102	284	874
% App. Total	42.7	57.3		46.2	53.8		64.1	35.9		
PHF	.849	.721	.770	.811	.861	.837	.929	.944	.934	.950

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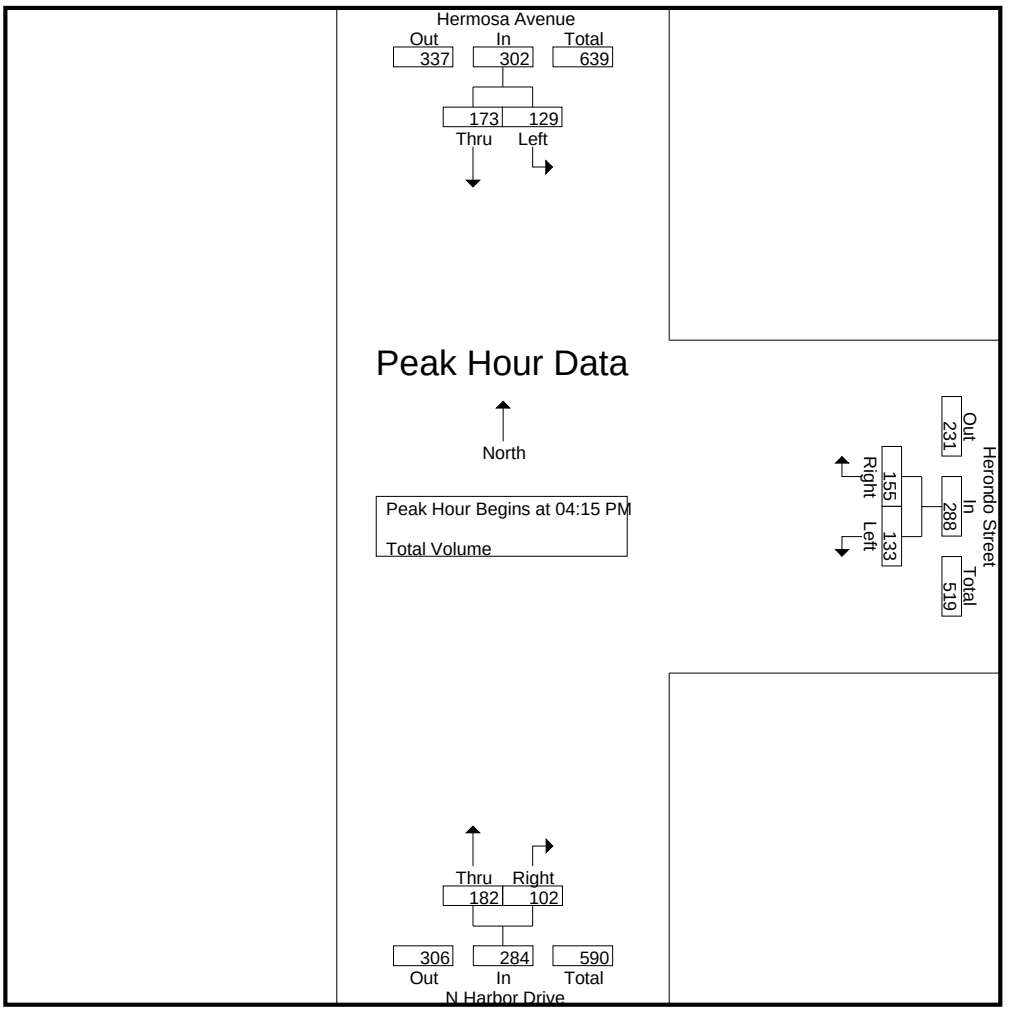

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:15 PM		
+0 mins.	37	33	70	**41**	**45**	**86**	**49**	**27**	**76**
+15 mins.	29	38	67	32	34	66	44	23	67
+30 mins.	**38**	**60**	**98**	31	36	67	49	26	75
+45 mins.	22	47	69	34	38	72	40	26	66
Total Volume	126	178	304	138	153	291	182	102	284
% App. Total	41.4	58.6		47.4	52.6		64.1	35.9	
PHF	.829	.742	.776	.841	.850	.846	.929	.944	.934

Location: Redondo Beach
N/S: Hermosa Ave/Harbor Dr
E/W: Herondo Street

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg Hermosa Avenue Pedestrians	East Leg Herondo Street Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Gateway Parkette Pedestrians	
7:00 AM	6	1	17	20	44
7:15 AM	8	2	5	8	23
7:30 AM	16	2	5	6	29
7:45 AM	12	1	2	5	20
8:00 AM	7	4	14	16	41
8:15 AM	8	3	4	6	21
8:30 AM	14	3	19	23	59
8:45 AM	11	1	10	14	36
TOTAL VOLUMES:	82	17	76	98	273

	North Leg Hermosa Avenue Pedestrians	East Leg Herondo Street Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Gateway Parkette Pedestrians	
11:00 AM	8	3	9	11	31
11:15 AM	14	2	8	20	44
11:30 AM	9	1	5	10	25
11:45 AM	6	7	13	7	33
12:00 PM	8	5	8	10	31
12:15 PM	7	1	1	3	12
12:30 PM	15	5	3	6	29
12:45 PM	7	5	7	9	28
TOTAL VOLUMES:	74	29	54	76	233

	North Leg Hermosa Avenue Pedestrians	East Leg Herondo Street Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Gateway Parkette Pedestrians	
4:00 PM	9	5	6	6	26
4:15 PM	12	2	11	9	34
4:30 PM	5	3	7	10	25
4:45 PM	5	7	7	6	25
5:00 PM	4	1	4	5	14
5:15 PM	5	4	6	14	29
5:30 PM	9	2	2	8	21
5:45 PM	5	1	5	7	18
TOTAL VOLUMES:	54	25	48	65	192

Counts Unlimited, Inc.
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951-268-6268

Location: Redondo Beach
N/S: Hermosa Ave/Harbor Dr
E/W: Herondo Street

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound Hermosa Avenue			Westbound Herondo Street			Northbound N Harbor Drive			Eastbound Gateway Parkette			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	2	9	0	0	3	7	3	5	1	0	0	3	33
7:30 AM	3	3	0	0	0	2	15	8	1	0	0	0	32
7:45 AM	1	22	0	3	2	3	19	2	1	0	1	8	62
8:00 AM	0	13	0	1	2	2	11	3	0	0	1	10	43
8:15 AM	0	33	0	2	0	0	20	7	0	0	0	14	76
8:30 AM	1	15	0	5	2	2	13	22	1	0	0	9	70
8:45 AM	2	17	0	2	0	5	17	5	1	0	0	10	59
TOTAL VOLUMES:	9	112	0	13	9	21	98	52	5	0	2	54	375

	Southbound Hermosa Avenue			Westbound Herondo Street			Northbound N Harbor Drive			Eastbound Gateway Parkette			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	1	31	0	3	1	1	31	9	2	0	0	22	101
11:15 AM	3	12	0	2	4	1	41	11	1	0	4	14	93
11:30 AM	1	15	0	0	0	2	30	12	0	0	0	16	76
11:45 AM	1	16	0	2	0	3	51	9	1	1	1	24	109
12:00 PM	6	24	0	2	0	3	18	6	3	0	0	35	97
12:15 PM	2	27	0	2	0	2	60	6	3	0	2	22	126
12:30 PM	5	20	0	0	0	2	47	7	1	0	0	36	118
12:45 PM	2	8	0	3	7	0	43	7	2	0	2	37	111
TOTAL VOLUMES:	21	153	0	14	12	14	321	67	13	1	9	206	831

	Southbound Hermosa Avenue			Westbound Herondo Street			Northbound N Harbor Drive			Eastbound Gateway Parkette			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	5	11	0	2	0	0	24	5	0	0	2	26	75
4:15 PM	1	10	0	1	0	0	27	5	1	1	0	24	70
4:30 PM	1	10	0	1	0	1	29	4	5	0	5	19	75
4:45 PM	1	6	0	2	0	1	31	3	0	0	0	31	75
5:00 PM	2	14	0	0	0	0	10	3	0	0	0	17	46
5:15 PM	2	6	0	0	0	1	25	6	0	0	1	19	60
5:30 PM	2	16	0	2	0	1	10	3	0	0	5	23	62
5:45 PM	3	6	0	1	0	1	26	1	0	1	4	13	56
TOTAL VOLUMES:	17	79	0	9	0	5	182	30	6	2	17	172	519

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City of Redondo Beach
N/S: N Harbor Drive
E/W: Yacht Club Way
Weather: Clear

File Name : 02_RDB_Har_YC AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	20	4	24	0	0	0	0	0	12	0	12	1	0	2	3	39
07:15 AM	0	15	1	16	0	0	0	0	0	13	0	13	1	0	0	1	30
07:30 AM	0	25	3	28	0	0	0	0	0	20	0	20	1	0	1	2	50
07:45 AM	0	33	0	33	0	0	0	0	0	34	0	34	1	0	0	1	68
Total	0	93	8	101	0	0	0	0	0	79	0	79	4	0	3	7	187
08:00 AM	0	23	4	27	0	0	0	0	1	21	0	22	1	0	0	1	50
08:15 AM	0	27	1	28	0	0	0	0	1	39	0	40	0	0	1	1	69
08:30 AM	0	32	4	36	0	0	0	0	0	30	0	30	2	0	1	3	69
08:45 AM	0	38	2	40	0	0	0	0	0	34	0	34	0	0	1	1	75
Total	0	120	11	131	0	0	0	0	2	124	0	126	3	0	3	6	263
Grand Total	0	213	19	232	0	0	0	0	2	203	0	205	7	0	6	13	450
Apprch %	0	91.8	8.2		0	0	0		1	99	0		53.8	0	46.2		
Total %	0	47.3	4.2	51.6	0	0	0	0	0.4	45.1	0	45.6	1.6	0	1.3	2.9	

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	23	**4**	27	0	0	0	0	**1**	21	0	22	1	0	0	1	50
08:15 AM	0	27	1	28	0	0	0	0	1	**39**	0	**40**	0	0	**1**	1	69
08:30 AM	0	32	4	36	0	0	0	0	0	30	0	30	**2**	0	1	**3**	69
08:45 AM	0	**38**	2	**40**	0	0	0	0	0	34	0	34	0	0	1	1	**75**
Total Volume	0	120	11	131	0	0	0	0	2	124	0	126	3	0	3	6	263
% App. Total	0	91.6	8.4		0	0	0		1.6	98.4	0		50	0	50		
PHF	.000	.789	.688	.819	.000	.000	.000	.000	.500	.795	.000	.788	.375	.000	.750	.500	.877

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File Name : 02_RDB_Har_YC AM
Site Code : 23224873
Start Date : 10/5/2024
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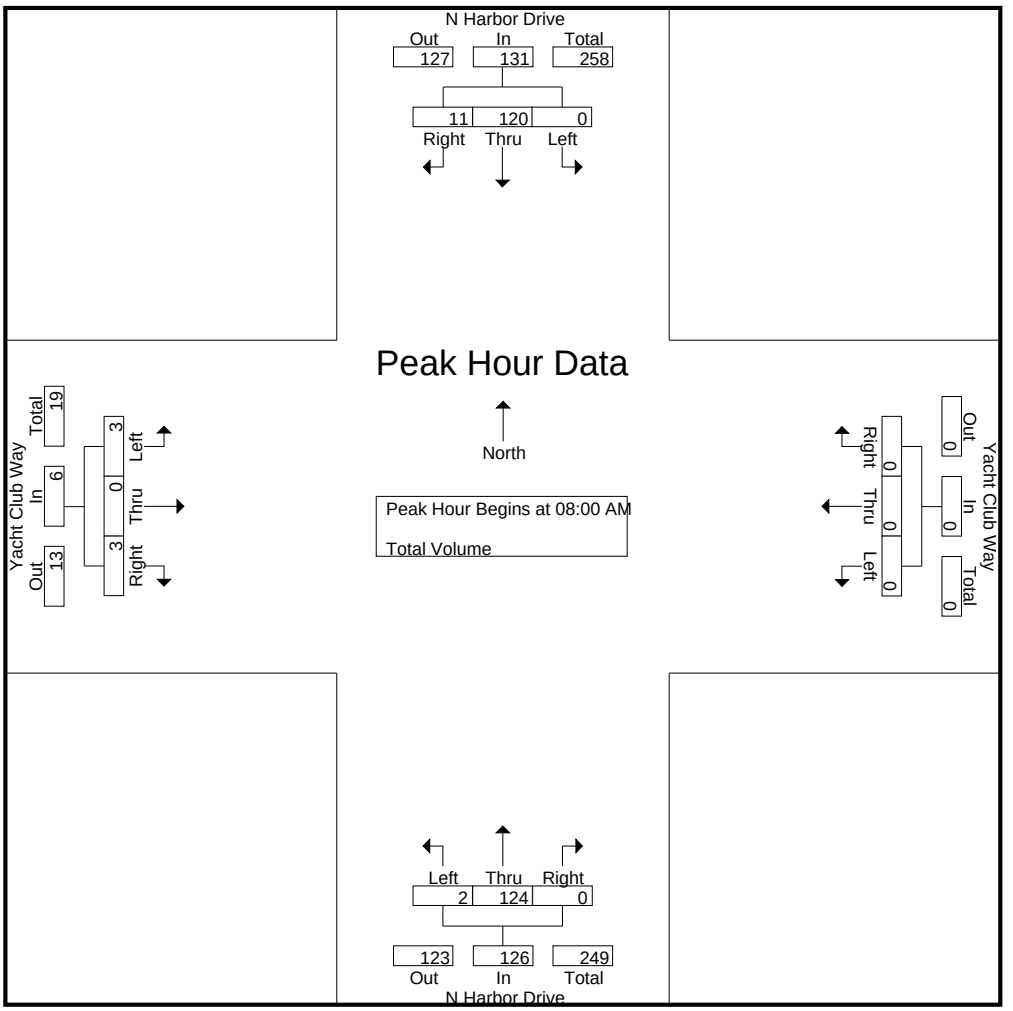

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:45 AM				07:00 AM			
+0 mins.	0	23	**4**	27	0	0	0	0	0	34	0	34	**1**	0	**2**	**3**
+15 mins.	0	27	1	28	0	0	0	0	**1**	21	0	22	1	0	0	1
+30 mins.	0	32	4	36	0	0	0	0	1	**39**	0	**40**	1	0	1	2
+45 mins.	0	**38**	2	**40**	0	0	0	0	0	30	0	30	1	0	0	1
Total Volume	0	120	11	131	0	0	0	0	2	124	0	126	4	0	3	7
% App. Total	0	91.6	8.4		0	0	0		1.6	98.4	0		57.1	0	42.9	
PHF	.000	.789	.688	.819	.000	.000	.000	.000	.500	.795	.000	.788	1.000	.000	.375	.583

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City of Redondo Beach
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Weather: Clear

File Name : 02_RDB_Har_YC MD
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	52	3	55	0	0	0	0	1	51	0	52	5	0	3	8	115
11:15 AM	0	64	3	67	0	0	0	0	1	49	0	50	2	0	4	6	123
11:30 AM	2	61	5	68	0	0	0	0	0	52	0	52	1	0	3	4	124
11:45 AM	1	59	4	64	0	0	0	0	1	61	0	62	2	0	2	4	130
Total	3	236	15	254	0	0	0	0	3	213	0	216	10	0	12	22	492
12:00 PM	1	76	0	77	0	0	0	0	2	61	0	63	4	0	3	7	147
12:15 PM	0	56	1	57	0	0	0	0	0	55	0	55	3	0	1	4	116
12:30 PM	0	59	5	64	0	0	0	0	0	69	0	69	1	0	2	3	136
12:45 PM	0	60	3	63	0	0	0	0	3	58	1	62	1	0	1	2	127
Total	1	251	9	261	0	0	0	0	5	243	1	249	9	0	7	16	526
Grand Total	4	487	24	515	0	0	0	0	8	456	1	465	19	0	19	38	1018
Apprch %	0.8	94.6	4.7		0	0	0		1.7	98.1	0.2		50	0	50		
Total %	0.4	47.8	2.4	50.6	0	0	0	0	0.8	44.8	0.1	45.7	1.9	0	1.9	3.7	

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	**1**	59	4	64	0	0	0	0	1	61	0	62	2	0	2	4	130
12:00 PM	1	**76**	0	**77**	0	0	0	0	**2**	61	0	63	**4**	0	**3**	**7**	**147**
12:15 PM	0	56	1	57	0	0	0	0	0	55	0	55	3	0	1	4	116
12:30 PM	0	59	**5**	64	0	0	0	0	0	**69**	0	**69**	1	0	2	3	136
Total Volume	2	250	10	262	0	0	0	0	3	246	0	249	10	0	8	18	529
% App. Total	0.8	95.4	3.8		0	0	0		1.2	98.8	0		55.6	0	44.4		
PHF	.500	.822	.500	.851	.000	.000	.000	.000	.375	.891	.000	.902	.625	.000	.667	.643	.900

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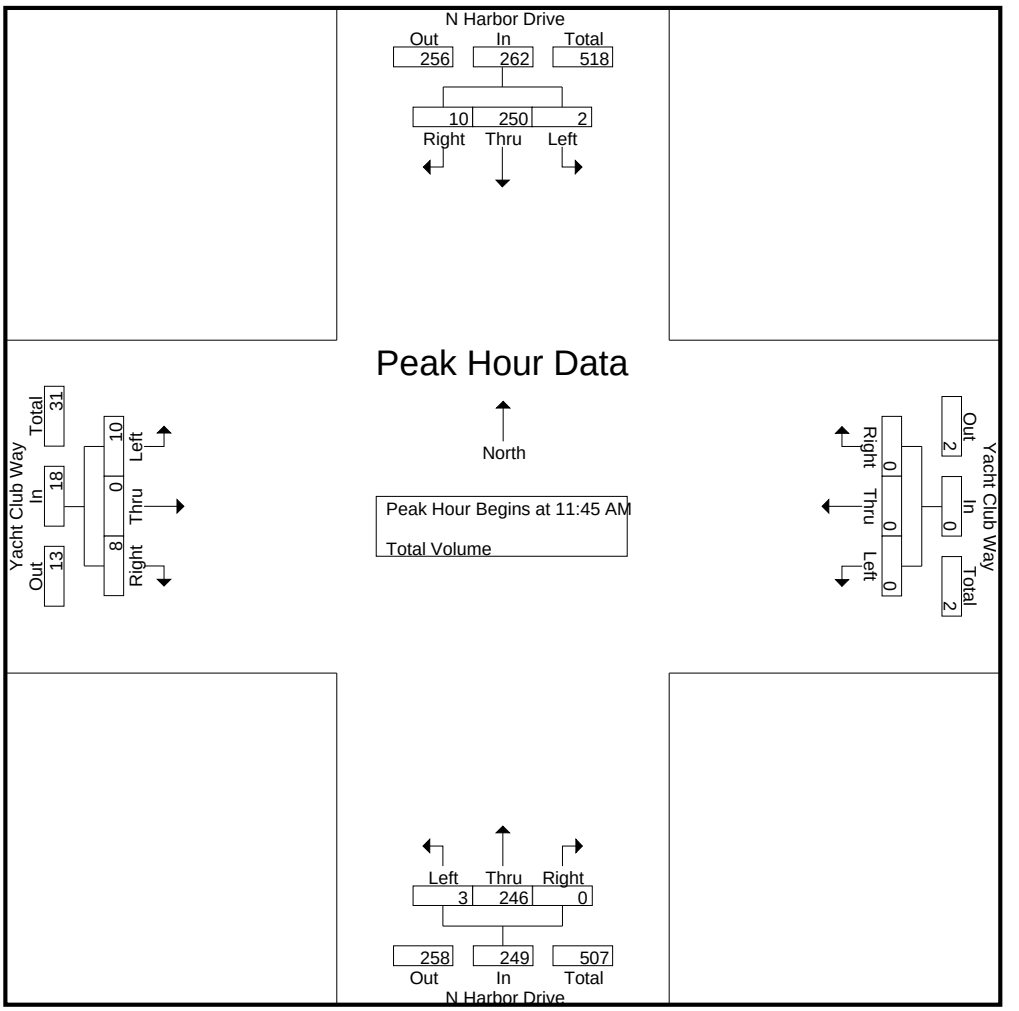

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:15 AM				11:00 AM				11:45 AM				11:00 AM			
+0 mins.	0	64	3	67	0	0	0	0	1	61	0	62	**5**	0	3	**8**
+15 mins.	**2**	61	**5**	68	0	0	0	0	**2**	61	0	63	2	0	**4**	6
+30 mins.	1	59	4	64	0	0	0	0	0	55	0	55	1	0	3	4
+45 mins.	1	**76**	0	**77**	0	0	0	0	0	**69**	0	**69**	2	0	2	4
Total Volume	4	260	12	276	0	0	0	0	3	246	0	249	10	0	12	22
% App. Total	1.4	94.2	4.3		0	0	0		1.2	98.8	0		45.5	0	54.5	
PHF	.500	.855	.600	.896	.000	.000	.000	.000	.375	.891	.000	.902	.500	.000	.750	.688

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City of Redondo Beach
N/S: N Harbor Drive
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Weather: Clear

File Name : 02_RDB_Har_YC PM
Site Code : 23224873
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Groups Printed- Total Volume

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	79	3	82	0	0	1	1	1	53	0	54	3	0	1	4	141
04:15 PM	0	71	3	74	0	0	0	0	1	73	1	75	3	0	2	5	154
04:30 PM	0	58	2	60	0	0	0	0	1	66	0	67	1	0	6	7	134
04:45 PM	0	76	2	78	0	0	0	0	3	72	0	75	5	0	6	11	164
Total	0	284	10	294	0	0	1	1	6	264	1	271	12	0	15	27	593
05:00 PM	0	89	4	93	0	0	0	0	2	62	0	64	2	0	3	5	162
05:15 PM	0	72	7	79	0	0	0	0	1	68	0	69	2	0	6	8	156
05:30 PM	0	67	6	73	0	0	0	0	7	68	0	75	0	0	12	12	160
05:45 PM	0	58	9	67	1	0	0	1	0	62	1	63	3	0	3	6	137
Total	0	286	26	312	1	0	0	1	10	260	1	271	7	0	24	31	615
Grand Total	0	570	36	606	1	0	1	2	16	524	2	542	19	0	39	58	1208
Apprch %	0	94.1	5.9		50	0	50		3	96.7	0.4		32.8	0	67.2		
Total %	0	47.2	3	50.2	0.1	0	0.1	0.2	1.3	43.4	0.2	44.9	1.6	0	3.2	4.8	

	N Harbor Drive Southbound				Yacht Club Way Westbound				N Harbor Drive Northbound				Yacht Club Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	76	2	78	0	0	0	0	3	**72**	0	**75**	**5**	0	6	11	**164**
05:00 PM	0	**89**	4	**93**	0	0	0	0	2	62	0	64	2	0	3	5	162
05:15 PM	0	72	**7**	79	0	0	0	0	1	68	0	69	2	0	6	8	156
05:30 PM	0	67	6	73	0	0	0	0	**7**	68	0	75	0	0	**12**	**12**	160
Total Volume	0	304	19	323	0	0	0	0	13	270	0	283	9	0	27	36	642
% App. Total	0	94.1	5.9		0	0	0		4.6	95.4	0		25	0	75		
PHF	.000	.854	.679	.868	.000	.000	.000	.000	.464	.938	.000	.943	.450	.000	.563	.750	.979

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File Name : 02_RDB_Har_YC PM
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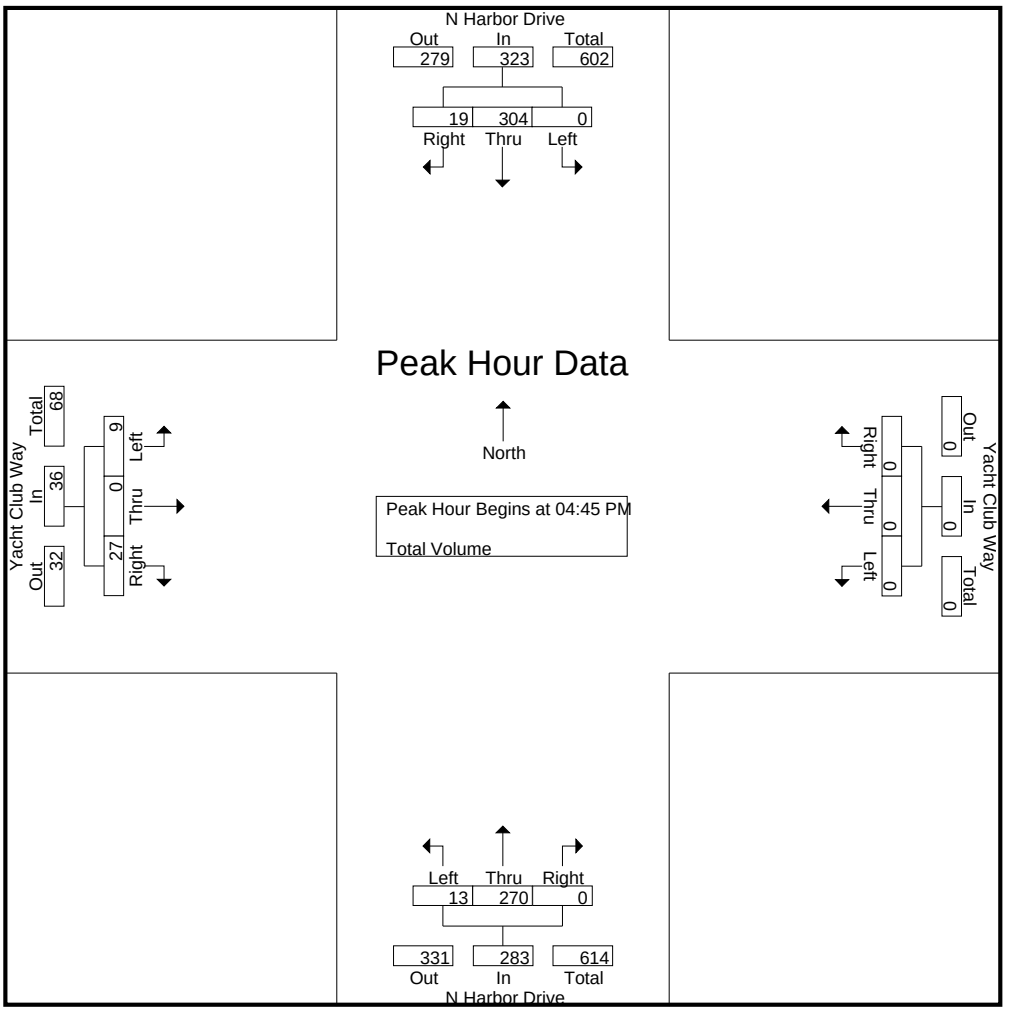

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:45 PM				04:45 PM			
+0 mins.	0	76	2	78	0	0	**1**	**1**	3	**72**	0	**75**	**5**	0	6	11
+15 mins.	0	**89**	4	**93**	0	0	0	0	2	62	0	64	2	0	3	5
+30 mins.	0	72	**7**	79	0	0	0	0	1	68	0	69	2	0	6	8
+45 mins.	0	67	6	73	0	0	0	0	**7**	68	0	75	0	0	**12**	**12**
Total Volume	0	304	19	323	0	0	1	1	13	270	0	283	9	0	27	36
% App. Total	0	94.1	5.9		0	0	100		4.6	95.4	0		25	0	75	
PHF	.000	.854	.679	.868	.000	.000	.250	.250	.464	.938	.000	.943	.450	.000	.563	.750

Location: Redondo Beach
N/S: N Harbor Drive
E/W: Yacht Club Way

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg N Harbor Drive Pedestrians	East Leg Yacht Club Way Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Yacht Club Way Pedestrians	
7:00 AM	0	4	1	31	36
7:15 AM	0	4	0	25	29
7:30 AM	0	5	0	23	28
7:45 AM	0	2	1	36	39
8:00 AM	0	3	2	24	29
8:15 AM	0	6	1	38	45
8:30 AM	0	4	0	45	49
8:45 AM	0	5	0	42	47
TOTAL VOLUMES:	0	33	5	264	302

	North Leg N Harbor Drive Pedestrians	East Leg Yacht Club Way Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Yacht Club Way Pedestrians	
11:00 AM	0	5	0	41	46
11:15 AM	0	3	0	59	62
11:30 AM	0	0	2	24	26
11:45 AM	0	6	1	21	28
12:00 PM	1	9	1	39	50
12:15 PM	0	2	1	32	35
12:30 PM	0	2	0	27	29
12:45 PM	0	4	0	28	32
TOTAL VOLUMES:	1	31	5	271	308

	North Leg N Harbor Drive Pedestrians	East Leg Yacht Club Way Pedestrians	South Leg N Harbor Drive Pedestrians	West Leg Yacht Club Way Pedestrians	
4:00 PM	0	7	0	23	30
4:15 PM	0	3	0	17	20
4:30 PM	0	1	0	16	17
4:45 PM	0	2	0	13	15
5:00 PM	0	1	0	12	13
5:15 PM	0	0	0	15	15
5:30 PM	0	1	0	17	18
5:45 PM	0	4	0	16	20
TOTAL VOLUMES:	0	19	0	129	148

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Location: Redondo Beach
N/S: N Harbor Drive
E/W: Yacht Club Way

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound N Harbor Drive			Westbound Yacht Club Way			Northbound N Harbor Drive			Eastbound Yacht Club Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	11	0	0	0	0	0	12	0	0	0	0	23
7:15 AM	0	4	0	0	0	0	0	24	0	0	0	0	28
7:30 AM	1	29	0	0	0	0	0	19	0	0	0	0	49
7:45 AM	0	24	0	0	0	0	0	16	0	0	0	0	40
8:00 AM	0	46	0	0	0	0	1	27	0	0	0	0	74
8:15 AM	0	26	2	0	0	0	0	37	0	0	0	1	66
8:30 AM	0	30	1	0	0	0	0	24	0	0	0	1	56
8:45 AM	0	41	0	0	0	0	0	37	0	0	0	0	78
TOTAL VOLUMES:	1	211	3	0	0	0	1	196	0	0	0	2	414

	Southbound N Harbor Drive			Westbound Yacht Club Way			Northbound N Harbor Drive			Eastbound Yacht Club Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	51	0	0	0	0	0	42	0	0	0	0	93
11:15 AM	0	29	1	0	0	0	0	49	0	0	0	1	80
11:30 AM	0	29	0	0	0	0	0	42	0	0	0	0	71
11:45 AM	0	38	0	0	0	0	0	60	0	0	0	0	98
12:00 PM	0	63	0	0	0	0	0	29	0	0	0	2	94
12:15 PM	0	47	0	0	0	0	0	56	0	0	0	0	103
12:30 PM	0	59	0	0	0	0	0	48	0	0	0	1	108
12:45 PM	0	50	0	0	0	0	1	49	0	0	0	1	101
TOTAL VOLUMES:	0	366	1	0	0	0	1	375	0	0	0	5	748

	Southbound N Harbor Drive			Westbound Yacht Club Way			Northbound N Harbor Drive			Eastbound Yacht Club Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	34	1	0	0	0	2	32	0	0	0	1	70
4:15 PM	0	34	0	0	0	0	0	30	0	0	0	0	64
4:30 PM	0	28	0	0	0	0	0	33	0	0	0	0	61
4:45 PM	0	33	3	0	0	0	0	34	0	1	0	0	71
5:00 PM	1	25	1	0	0	0	1	13	0	0	0	0	41
5:15 PM	0	24	0	0	0	0	1	27	0	0	0	0	52
5:30 PM	0	43	0	0	0	0	0	13	0	0	0	0	56
5:45 PM	0	19	0	0	0	0	0	27	0	0	0	0	46
TOTAL VOLUMES:	1	240	5	0	0	0	4	209	0	1	0	1	461

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City of Redondo Beach
N/S: N Harbor Drive
E/W: Marina Way
Weather: Clear

File Name : 03_RDB_Har_Mar AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	7	18	25	0	0	0	0	10	11	0	21	1	0	3	4	50
07:15 AM	0	9	8	17	0	0	0	0	11	11	0	22	4	0	0	4	43
07:30 AM	0	6	20	26	0	0	0	0	10	15	0	25	4	0	1	5	56
07:45 AM	0	10	20	30	0	0	0	0	22	20	0	42	12	0	6	18	90
Total	0	32	66	98	0	0	0	0	53	57	0	110	21	0	10	31	239
08:00 AM	0	8	18	26	0	0	0	0	9	17	0	26	7	0	7	14	66
08:15 AM	0	13	11	24	0	0	0	0	8	24	0	32	16	0	11	27	83
08:30 AM	0	14	19	33	0	0	0	0	12	20	0	32	8	0	9	17	82
08:45 AM	0	22	16	38	0	0	0	0	16	26	0	42	11	0	14	25	105
Total	0	57	64	121	0	0	0	0	45	87	0	132	42	0	41	83	336
Grand Total	0	89	130	219	0	0	0	0	98	144	0	242	63	0	51	114	575
Apprch %	0	40.6	59.4		0	0	0		40.5	59.5	0		55.3	0	44.7		
Total %	0	15.5	22.6	38.1	0	0	0	0	17	25	0	42.1	11	0	8.9	19.8	

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	8	18	26	0	0	0	0	9	17	0	26	7	0	7	14	66
08:15 AM	0	13	11	24	0	0	0	0	8	24	0	32	**16**	0	11	**27**	83
08:30 AM	0	14	**19**	33	0	0	0	0	12	20	0	32	8	0	9	17	82
08:45 AM	0	**22**	16	**38**	0	0	0	0	**16**	**26**	0	**42**	11	0	**14**	25	**105**
Total Volume	0	57	64	121	0	0	0	0	45	87	0	132	42	0	41	83	336
% App. Total	0	47.1	52.9		0	0	0		34.1	65.9	0		50.6	0	49.4		
PHF	.000	.648	.842	.796	.000	.000	.000	.000	.703	.837	.000	.786	.656	.000	.732	.769	.800

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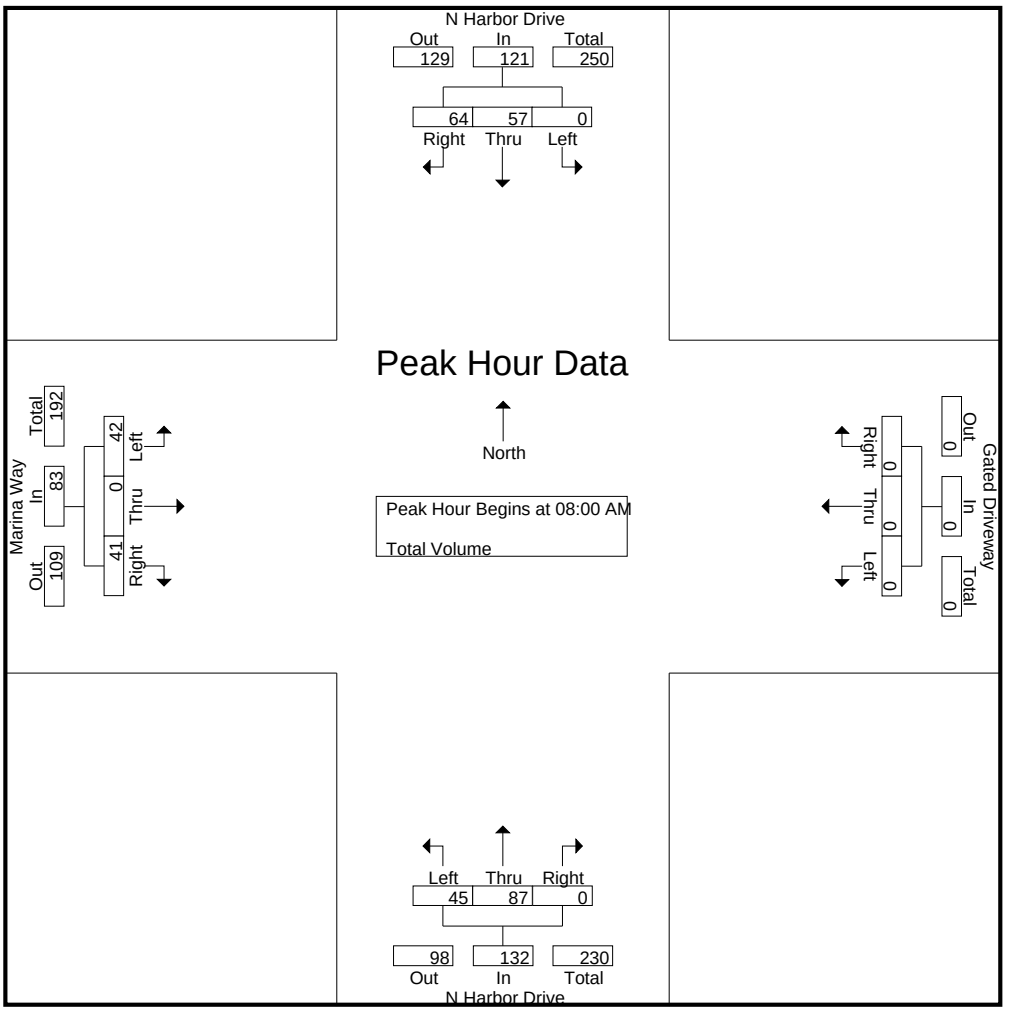
City of Redondo Beach
N/S: N Harbor Drive
E/W: Marina Way
Weather: Clear

File Name : 03_RDB_Har_Mar AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:45 AM				08:00 AM			
+0 mins.	0	8	18	26	0	0	0	0	**22**	20	0	**42**	7	0	7	14
+15 mins.	0	13	11	24	0	0	0	0	9	17	0	26	**16**	0	11	**27**
+30 mins.	0	14	**19**	33	0	0	0	0	8	**24**	0	32	8	0	9	17
+45 mins.	0	**22**	16	**38**	0	0	0	0	12	20	0	32	11	0	**14**	25
Total Volume	0	57	64	121	0	0	0	0	51	81	0	132	42	0	41	83
% App. Total	0	47.1	52.9		0	0	0		38.6	61.4	0		50.6	0	49.4	
PHF	.000	.648	.842	.796	.000	.000	.000	.000	.580	.844	.000	.786	.656	.000	.732	.769

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City of Redondo Beach
N/S: N Harbor Drive
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File Name : 03_RDB_Har_Mar MD
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	39	15	54	0	0	0	0	16	26	0	42	23	0	15	38	134
11:15 AM	0	42	25	67	0	0	0	0	19	37	0	56	15	0	15	30	153
11:30 AM	0	36	28	64	0	0	0	0	22	31	0	53	24	0	21	45	162
11:45 AM	0	38	25	63	0	0	0	0	27	40	0	67	24	0	16	40	170
Total	0	155	93	248	0	0	0	0	84	134	0	218	86	0	67	153	619
12:00 PM	0	37	43	80	0	0	0	0	15	36	0	51	23	0	17	40	171
12:15 PM	0	44	18	62	0	0	0	0	18	37	0	55	18	0	13	31	148
12:30 PM	0	39	21	60	0	0	0	0	10	44	0	54	27	0	23	50	164
12:45 PM	0	39	15	54	0	0	0	0	22	41	0	63	21	0	13	34	151
Total	0	159	97	256	0	0	0	0	65	158	0	223	89	0	66	155	634
Grand Total	0	314	190	504	0	0	0	0	149	292	0	441	175	0	133	308	1253
Apprch %	0	62.3	37.7		0	0	0		33.8	66.2	0		56.8	0	43.2		
Total %	0	25.1	15.2	40.2	0	0	0	0	11.9	23.3	0	35.2	14	0	10.6	24.6	

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	0	**42**	25	67	0	0	0	0	19	37	0	56	15	0	15	30	153
11:30 AM	0	36	28	64	0	0	0	0	22	31	0	53	**24**	0	**21**	**45**	162
11:45 AM	0	38	25	63	0	0	0	0	**27**	**40**	0	**67**	24	0	16	40	170
12:00 PM	0	37	**43**	**80**	0	0	0	0	15	36	0	51	23	0	17	40	**171**
Total Volume	0	153	121	274	0	0	0	0	83	144	0	227	86	0	69	155	656
% App. Total	0	55.8	44.2		0	0	0		36.6	63.4	0		55.5	0	44.5		
PHF	.000	.911	.703	.856	.000	.000	.000	.000	.769	.900	.000	.847	.896	.000	.821	.861	.959

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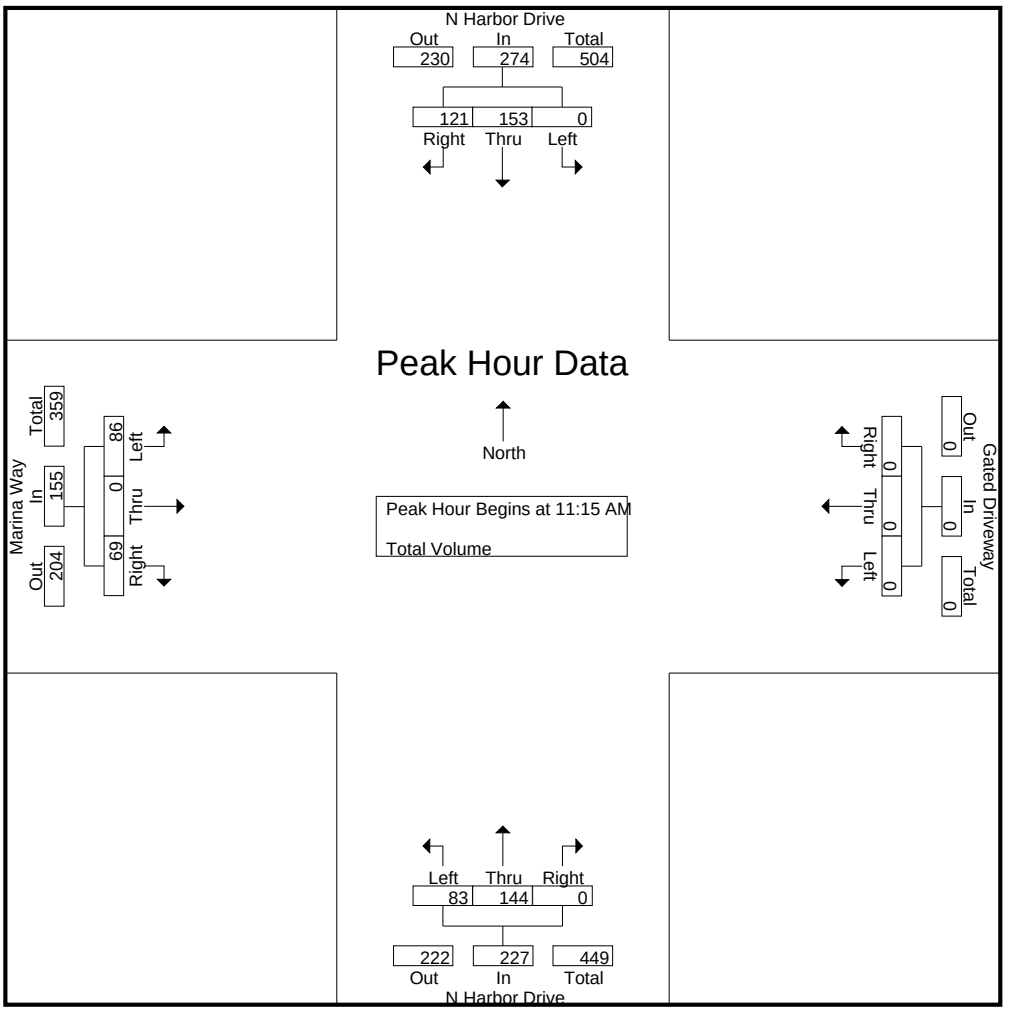
Site Code : 23224873
Start Date : 10/5/2024
Page No : 2



Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:15 AM				11:00 AM				11:15 AM				11:45 AM			
+0 mins.	0	**42**	25	67	0	0	0	0	19	37	0	56	24	0	16	40
+15 mins.	0	36	28	64	0	0	0	0	22	31	0	53	23	0	17	40
+30 mins.	0	38	25	63	0	0	0	0	**27**	**40**	0	**67**	18	0	13	31
+45 mins.	0	37	**43**	**80**	0	0	0	0	15	36	0	51	**27**	0	**23**	**50**
Total Volume	0	153	121	274	0	0	0	0	83	144	0	227	92	0	69	161
% App. Total	0	55.8	44.2		0	0	0		36.6	63.4	0		57.1	0	42.9	
PHF	.000	.911	.703	.856	.000	.000	.000	.000	.769	.900	.000	.847	.852	.000	.750	.805

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City of Redondo Beach
N/S: N Harbor Drive
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Weather: Clear

File Name : 03_RDB_Har_Mar PM
Site Code : 23224873
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Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	52	19	71	0	0	0	0	18	39	0	57	18	0	13	31	159
04:15 PM	0	50	19	69	0	0	0	0	18	54	0	72	22	0	15	37	178
04:30 PM	0	40	25	65	0	0	0	0	19	46	0	65	18	0	18	36	166
04:45 PM	0	47	37	84	0	0	0	0	16	47	0	63	26	0	25	51	198
Total	0	189	100	289	0	0	0	0	71	186	0	257	84	0	71	155	701
05:00 PM	0	58	28	86	0	0	0	0	21	34	0	55	24	0	26	50	191
05:15 PM	0	56	25	81	0	0	0	0	13	52	0	65	18	0	24	42	188
05:30 PM	0	52	28	80	0	0	0	0	23	43	0	66	36	0	20	56	202
05:45 PM	0	40	25	65	0	0	0	0	29	43	0	72	18	0	16	34	171
Total	0	206	106	312	0	0	0	0	86	172	0	258	96	0	86	182	752
Grand Total	0	395	206	601	0	0	0	0	157	358	0	515	180	0	157	337	1453
Apprch %	0	65.7	34.3		0	0	0		30.5	69.5	0		53.4	0	46.6		
Total %	0	27.2	14.2	41.4	0	0	0	0	10.8	24.6	0	35.4	12.4	0	10.8	23.2	

	N Harbor Drive Southbound				Gated Driveway Westbound				N Harbor Drive Northbound				Marina Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	47	**37**	84	0	0	0	0	16	47	0	63	26	0	25	51	198
05:00 PM	0	**58**	28	**86**	0	0	0	0	21	34	0	55	24	0	**26**	50	191
05:15 PM	0	56	25	81	0	0	0	0	13	**52**	0	65	18	0	24	42	188
05:30 PM	0	52	28	80	0	0	0	0	**23**	43	0	**66**	**36**	0	20	**56**	**202**
Total Volume	0	213	118	331	0	0	0	0	73	176	0	249	104	0	95	199	779
% App. Total	0	64.4	35.6		0	0	0		29.3	70.7	0		52.3	0	47.7		
PHF	.000	.918	.797	.962	.000	.000	.000	.000	.793	.846	.000	.943	.722	.000	.913	.888	.964

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City of Redondo Beach
N/S: N Harbor Drive
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File Name : 03_RDB_Har_Mar PM
Site Code : 23224873
Start Date : 10/5/2024
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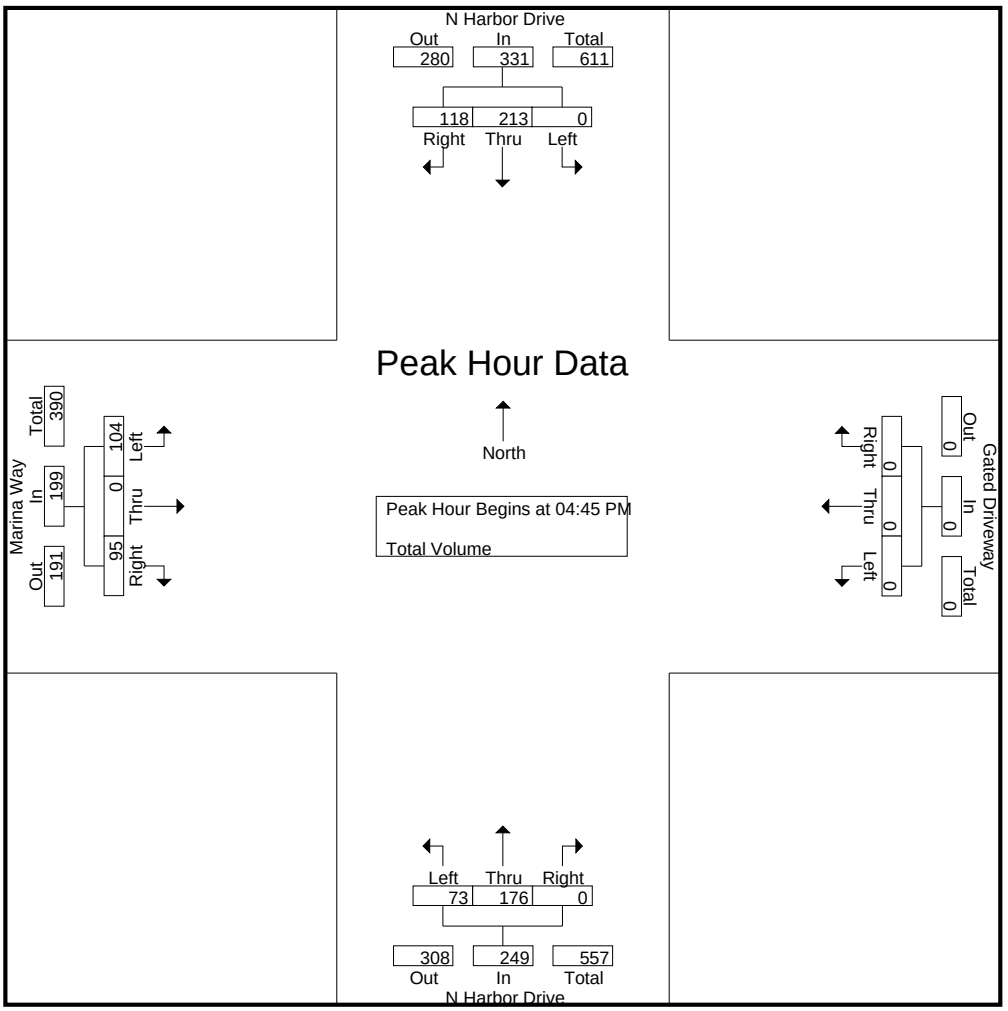

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				05:00 PM				04:45 PM			
+0 mins.	0	47	**37**	84	0	0	0	0	21	34	0	55	26	0	25	51
+15 mins.	0	**58**	28	**86**	0	0	0	0	13	**52**	0	65	24	0	**26**	50
+30 mins.	0	56	25	81	0	0	0	0	23	43	0	66	18	0	24	42
+45 mins.	0	52	28	80	0	0	0	0	**29**	43	0	**72**	**36**	0	20	**56**
Total Volume	0	213	118	331	0	0	0	0	86	172	0	258	104	0	95	199
% App. Total	0	64.4	35.6		0	0	0		33.3	66.7	0		52.3	0	47.7	
PHF	.000	.918	.797	.962	.000	.000	.000	.000	.741	.827	.000	.896	.722	.000	.913	.888

Location: Redondo Beach
N/S: N Harbor Drive
E/W: Marina Way

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg N Harbor Drive	East Leg Gated Driveway	South Leg N Harbor Drive	West Leg Marina Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	5	0	25	30
7:15 AM	0	2	0	31	33
7:30 AM	0	4	0	21	25
7:45 AM	1	0	1	32	34
8:00 AM	1	3	0	19	23
8:15 AM	0	6	0	46	52
8:30 AM	1	1	0	35	37
8:45 AM	6	8	0	32	46
TOTAL VOLUMES:	9	29	1	241	280

	North Leg N Harbor Drive	East Leg Gated Driveway	South Leg N Harbor Drive	West Leg Marina Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
11:00 AM	1	2	0	44	47
11:15 AM	0	2	2	46	50
11:30 AM	0	0	0	38	38
11:45 AM	0	2	0	22	24
12:00 PM	0	0	0	39	39
12:15 PM	0	1	0	32	33
12:30 PM	0	2	0	35	37
12:45 PM	2	1	0	32	35
TOTAL VOLUMES:	3	10	2	288	303

	North Leg N Harbor Drive	East Leg Gated Driveway	South Leg N Harbor Drive	West Leg Marina Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	3	4	0	27	34
4:15 PM	0	3	0	24	27
4:30 PM	0	0	0	14	14
4:45 PM	0	2	1	17	20
5:00 PM	0	1	0	18	19
5:15 PM	0	0	0	10	10
5:30 PM	0	2	1	10	13
5:45 PM	0	2	0	13	15
TOTAL VOLUMES:	3	14	2	133	152

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Location: Redondo Beach
N/S: N Harbor Drive
E/W: Marina Way

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound N Harbor Drive			Westbound Gated Driveway			Northbound N Harbor Drive			Eastbound Marina Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	10	0	0	0	0	0	12	0	0	0	1	23
7:15 AM	0	4	0	0	0	0	2	26	0	0	0	0	32
7:30 AM	0	23	1	0	0	0	0	17	0	0	0	0	41
7:45 AM	0	22	2	0	0	0	1	16	0	0	0	1	42
8:00 AM	0	42	1	0	0	0	0	24	0	0	0	0	67
8:15 AM	0	22	3	0	0	0	4	40	0	0	0	0	69
8:30 AM	0	27	2	0	0	0	0	23	0	0	0	0	52
8:45 AM	0	39	3	0	0	0	0	36	0	1	0	0	79
TOTAL VOLUMES:	0	189	12	0	0	0	7	194	0	1	0	2	405

	Southbound N Harbor Drive			Westbound Gated Driveway			Northbound N Harbor Drive			Eastbound Marina Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	47	0	0	0	0	1	44	0	0	0	4	96
11:15 AM	0	31	1	0	0	0	2	46	0	2	0	0	82
11:30 AM	0	22	1	0	0	0	1	42	0	4	0	1	71
11:45 AM	0	35	2	0	0	0	1	52	0	0	0	3	93
12:00 PM	0	68	0	0	0	0	1	33	0	1	0	2	105
12:15 PM	0	40	0	0	0	0	1	47	0	1	0	1	90
12:30 PM	0	57	1	0	0	0	0	49	0	1	0	1	109
12:45 PM	0	49	1	0	0	0	0	46	0	0	0	1	97
TOTAL VOLUMES:	0	349	6	0	0	0	7	359	0	9	0	13	743

	Southbound N Harbor Drive			Westbound Gated Driveway			Northbound N Harbor Drive			Eastbound Marina Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	33	0	0	0	0	5	27	0	0	0	0	65
4:15 PM	0	26	6	0	0	0	0	30	0	0	0	4	66
4:30 PM	0	31	2	0	0	0	0	29	0	0	0	3	65
4:45 PM	0	30	2	0	0	0	0	31	0	0	0	1	64
5:00 PM	0	25	0	0	0	0	1	17	0	1	0	2	46
5:15 PM	0	21	3	0	0	0	0	25	0	1	0	0	50
5:30 PM	0	35	4	0	0	0	0	15	0	0	0	2	56
5:45 PM	0	18	2	0	0	0	0	20	0	2	0	5	47
TOTAL VOLUMES:	0	219	19	0	0	0	6	194	0	4	0	17	459

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City of Redondo Beach
N/S: N Harbor Drive
E/W: Portofino Way/Beryl Street
Weather: Clear

File Name : 04_RDB_Har_Beryl AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	6	2	0	8	3	5	22	30	0	5	2	7	0	6	0	6	51
07:15 AM	5	4	0	9	2	10	17	29	0	0	3	3	0	2	0	2	43
07:30 AM	8	3	0	11	1	4	27	32	0	5	7	12	0	0	0	0	55
07:45 AM	12	3	0	15	2	17	35	54	0	4	8	12	0	2	0	2	83
Total	31	12	0	43	8	36	101	145	0	14	20	34	0	10	0	10	232
08:00 AM	15	1	1	17	2	12	31	45	0	4	5	9	0	5	0	5	76
08:15 AM	19	4	1	24	13	11	25	49	2	3	3	8	1	8	1	10	91
08:30 AM	11	9	3	23	2	15	30	47	1	3	6	10	2	5	1	8	88
08:45 AM	19	12	4	35	9	15	44	68	0	4	10	14	2	11	0	13	130
Total	64	26	9	99	26	53	130	209	3	14	24	41	5	29	2	36	385
Grand Total	95	38	9	142	34	89	231	354	3	28	44	75	5	39	2	46	617
Apprch %	66.9	26.8	6.3		9.6	25.1	65.3		4	37.3	58.7		10.9	84.8	4.3		
Total %	15.4	6.2	1.5	23	5.5	14.4	37.4	57.4	0.5	4.5	7.1	12.2	0.8	6.3	0.3	7.5	

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	15	1	1	17	2	12	31	45	0	**4**	5	9	0	5	0	5	76
08:15 AM	**19**	4	1	24	**13**	11	25	49	**2**	3	3	8	1	8	**1**	10	91
08:30 AM	11	9	3	23	2	**15**	30	47	1	3	6	10	**2**	5	1	8	88
08:45 AM	19	**12**	**4**	**35**	9	15	**44**	**68**	0	4	**10**	**14**	2	**11**	0	**13**	**130**
Total Volume	64	26	9	99	26	53	130	209	3	14	24	41	5	29	2	36	385
% App. Total	64.6	26.3	9.1		12.4	25.4	62.2		7.3	34.1	58.5		13.9	80.6	5.6		
PHF	.842	.542	.563	.707	.500	.883	.739	.768	.375	.875	.600	.732	.625	.659	.500	.692	.740

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City of Redondo Beach
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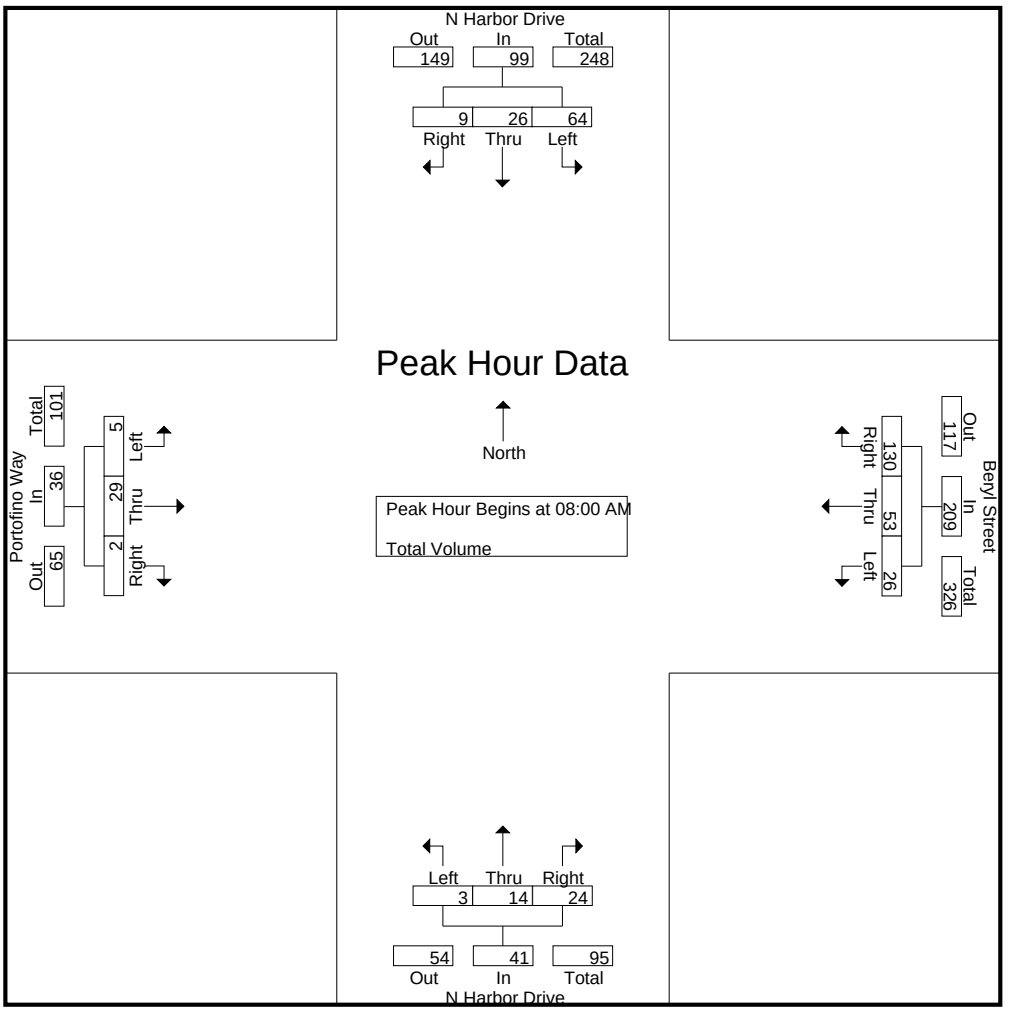
E/W: Portofino Way/Beryl Street
Weather: Clear

File Name : 04_RDB_Har_Beryl AM
Site Code : 23224873
Start Date : 10/5/2024



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				07:30 AM				08:00 AM			
+0 mins.	15	1	1	17	2	12	31	45	0	**5**	7	**12**	0	5	0	5
+15 mins.	**19**	4	1	24	**13**	11	25	49	0	4	**8**	12	1	8	**1**	10
+30 mins.	11	9	3	23	2	**15**	30	47	0	4	5	9	**2**	5	1	8
+45 mins.	19	**12**	**4**	**35**	9	15	**44**	**68**	**2**	3	3	8	2	**11**	0	**13**
Total Volume	64	26	9	99	26	53	130	209	2	16	23	41	5	29	2	36
% App. Total	64.6	26.3	9.1		12.4	25.4	62.2		4.9	39	56.1		13.9	80.6	5.6	
PHF	.842	.542	.563	.707	.500	.883	.739	.768	.250	.800	.719	.854	.625	.659	.500	.692

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City of Redondo Beach
N/S: N Harbor Drive
E/W: Portofino Way/Beryl Street
Weather: Clear

File Name : 04_RDB_Har_Beryl MD
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	37	14	8	59	7	15	44	66	0	8	14	22	2	12	0	14	161
11:15 AM	34	16	4	54	13	19	58	90	0	5	10	15	5	12	0	17	176
11:30 AM	33	20	6	59	7	11	62	80	0	6	8	14	5	13	2	20	173
11:45 AM	33	13	7	53	13	8	61	82	0	5	13	18	9	12	1	22	175
Total	137	63	25	225	40	53	225	318	0	24	45	69	21	49	3	73	685
12:00 PM	38	12	4	54	11	11	51	73	1	7	10	18	2	11	2	15	160
12:15 PM	38	18	6	62	20	8	49	77	2	8	16	26	3	11	1	15	180
12:30 PM	50	12	3	65	15	10	52	77	0	7	30	37	2	13	2	17	196
12:45 PM	36	15	1	52	17	8	59	84	1	13	19	33	2	14	0	16	185
Total	162	57	14	233	63	37	211	311	4	35	75	114	9	49	5	63	721
Grand Total	299	120	39	458	103	90	436	629	4	59	120	183	30	98	8	136	1406
Apprch %	65.3	26.2	8.5		16.4	14.3	69.3		2.2	32.2	65.6		22.1	72.1	5.9		
Total %	21.3	8.5	2.8	32.6	7.3	6.4	31	44.7	0.3	4.2	8.5	13	2.1	7	0.6	9.7	

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	38	12	4	54	11	**11**	51	73	1	7	10	18	2	11	**2**	15	160
12:15 PM	38	**18**	**6**	62	**20**	8	49	77	**2**	8	16	26	**3**	11	1	15	180
12:30 PM	**50**	12	3	**65**	15	10	52	77	0	7	**30**	**37**	2	13	2	**17**	**196**
12:45 PM	36	15	1	52	17	8	**59**	**84**	1	**13**	19	33	2	**14**	0	16	185
Total Volume	162	57	14	233	63	37	211	311	4	35	75	114	9	49	5	63	721
% App. Total	69.5	24.5	6		20.3	11.9	67.8		3.5	30.7	65.8		14.3	77.8	7.9		
PHF	.810	.792	.583	.896	.788	.841	.894	.926	.500	.673	.625	.770	.750	.875	.625	.926	.920

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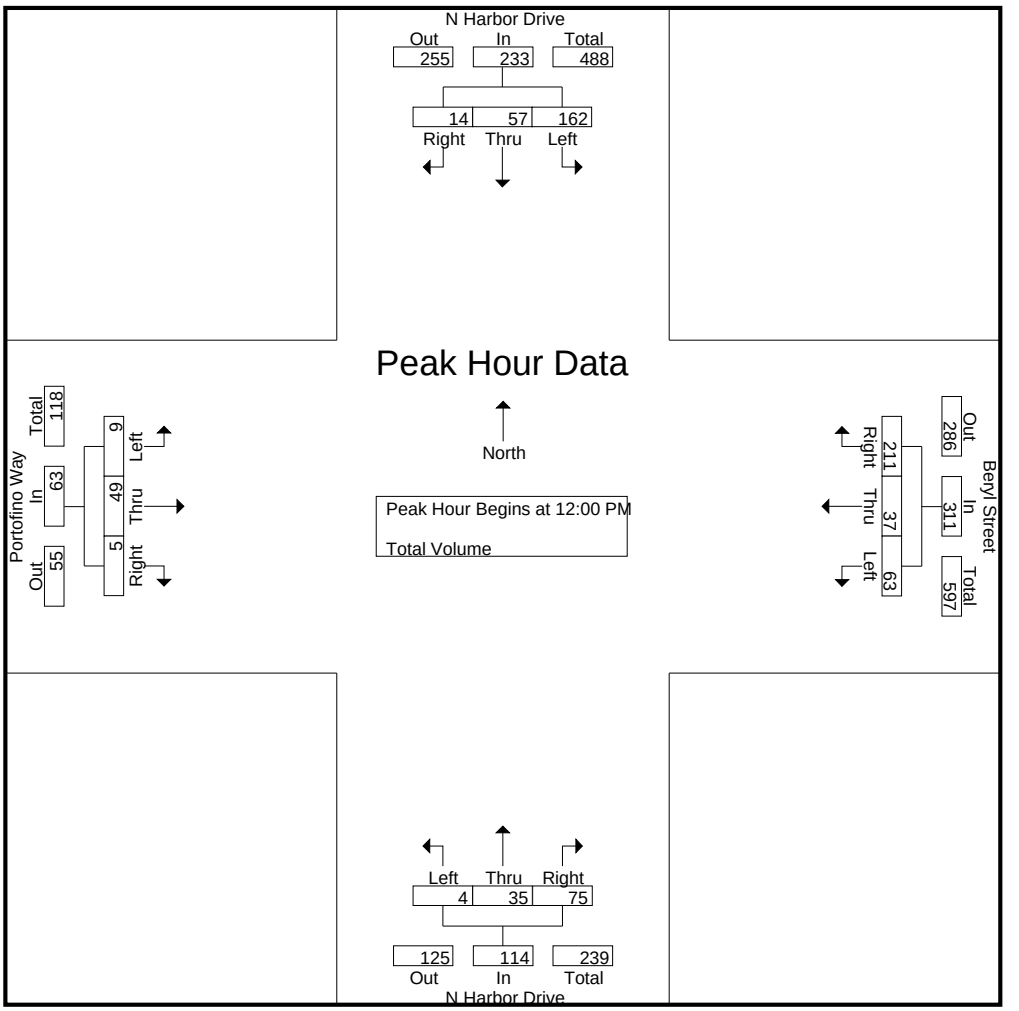

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:45 AM				11:15 AM				12:00 PM				11:15 AM			
+0 mins.	33	13	**7**	53	**13**	**19**	58	**90**	1	7	10	18	5	12	0	17
+15 mins.	38	12	4	54	7	11	**62**	80	**2**	8	16	26	5	**13**	**2**	20
+30 mins.	38	**18**	6	62	13	8	61	82	0	7	**30**	**37**	**9**	12	1	**22**
+45 mins.	**50**	12	3	**65**	11	11	51	73	1	**13**	19	33	2	11	2	15
Total Volume	159	55	20	234	44	49	232	325	4	35	75	114	21	48	5	74
% App. Total	67.9	23.5	8.5		13.5	15.1	71.4		3.5	30.7	65.8		28.4	64.9	6.8	
PHF	.795	.764	.714	.900	.846	.645	.935	.903	.500	.673	.625	.770	.583	.923	.625	.841

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Groups Printed- Total Volume

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	49	19	2	70	24	9	59	92	1	14	19	34	4	16	2	22	218
04:15 PM	52	21	6	79	12	12	68	92	1	7	17	25	4	11	3	18	214
04:30 PM	47	16	13	76	11	11	58	80	2	11	16	29	5	13	1	19	204
04:45 PM	46	17	4	67	18	8	73	99	2	10	17	29	3	12	1	16	211
Total	194	73	25	292	65	40	258	363	6	42	69	117	16	52	7	75	847
05:00 PM	57	24	15	96	25	18	66	109	0	9	11	20	3	19	1	23	248
05:15 PM	62	18	10	90	36	9	69	114	2	16	15	33	2	13	0	15	252
05:30 PM	43	18	5	66	33	7	74	114	0	13	17	30	4	17	1	22	232
05:45 PM	50	17	4	71	22	13	78	113	1	17	21	39	19	8	2	29	252
Total	212	77	34	323	116	47	287	450	3	55	64	122	28	57	4	89	984
Grand Total	406	150	59	615	181	87	545	813	9	97	133	239	44	109	11	164	1831
Apprch %	66	24.4	9.6		22.3	10.7	67		3.8	40.6	55.6		26.8	66.5	6.7		
Total %	22.2	8.2	3.2	33.6	9.9	4.8	29.8	44.4	0.5	5.3	7.3	13.1	2.4	6	0.6	9	

	N Harbor Drive Southbound				Beryl Street Westbound				N Harbor Drive Northbound				Portofino Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	57	**24**	**15**	**96**	25	**18**	66	109	0	9	11	20	3	**19**	1	23	248
05:15 PM	**62**	18	10	90	**36**	9	69	**114**	**2**	16	15	33	2	13	0	15	**252**
05:30 PM	43	18	5	66	33	7	74	114	0	13	17	30	4	17	1	22	232
05:45 PM	50	17	4	71	22	13	**78**	113	1	**17**	**21**	**39**	**19**	8	**2**	**29**	252
Total Volume	212	77	34	323	116	47	287	450	3	55	64	122	28	57	4	89	984
% App. Total	65.6	23.8	10.5		25.8	10.4	63.8		2.5	45.1	52.5		31.5	64	4.5		
PHF	.855	.802	.567	.841	.806	.653	.920	.987	.375	.809	.762	.782	.368	.750	.500	.767	.976

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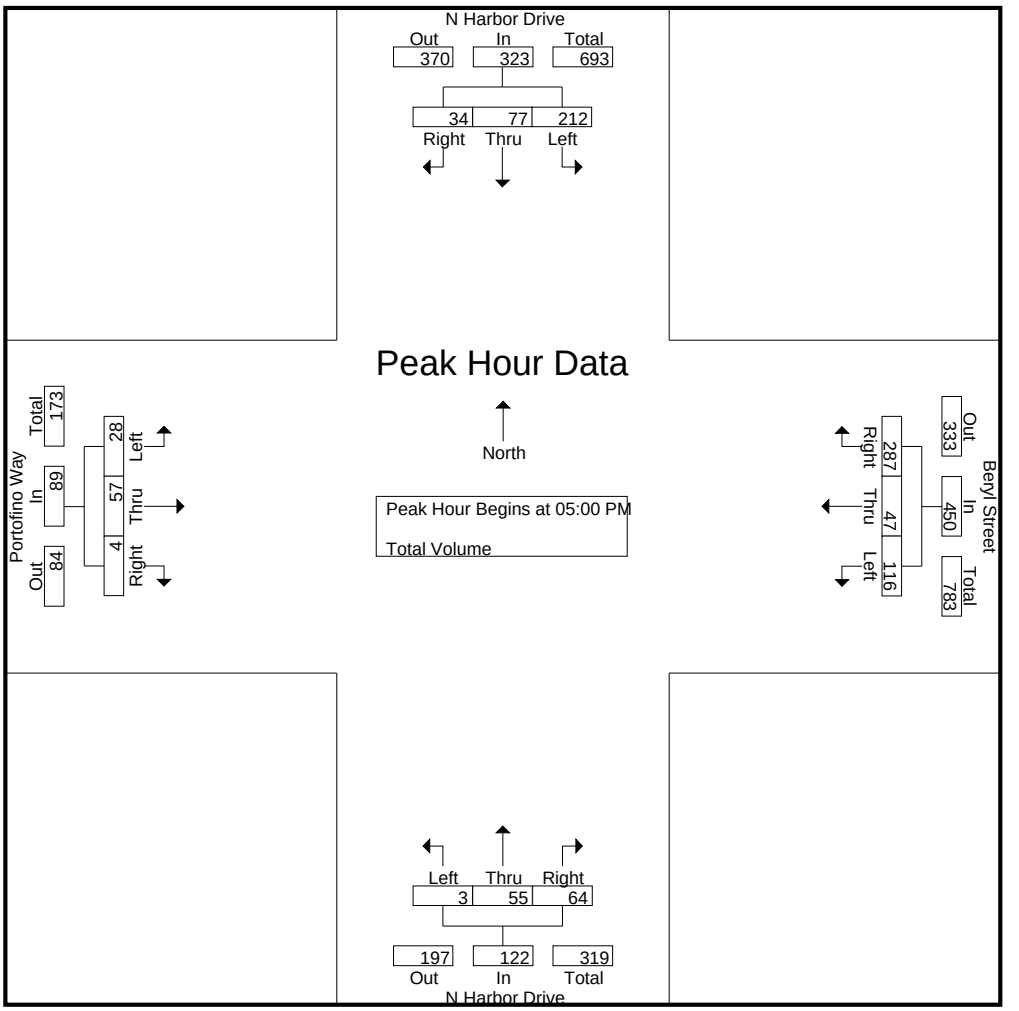

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	47	16	13	76	25	**18**	66	109	0	9	11	20	3	**19**	1	23
+15 mins.	46	17	4	67	**36**	9	69	**114**	**2**	16	15	33	2	13	0	15
+30 mins.	57	**24**	**15**	**96**	33	7	74	114	0	13	17	30	4	17	1	22
+45 mins.	**62**	18	10	90	22	13	**78**	113	1	**17**	**21**	**39**	**19**	8	**2**	**29**
Total Volume	212	75	42	329	116	47	287	450	3	55	64	122	28	57	4	89
% App. Total	64.4	22.8	12.8		25.8	10.4	63.8		2.5	45.1	52.5		31.5	64	4.5	
PHF	.855	.781	.700	.857	.806	.653	.920	.987	.375	.809	.762	.782	.368	.750	.500	.767

Location: Redondo Beach
N/S: N Harbor Drive
E/W: Portofino Way/Beryl St

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg N Harbor Drive	East Leg Beryl Street	South Leg N Harbor Drive	West Leg Portofino Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	5	1	1	17	24
7:15 AM	6	5	2	32	45
7:30 AM	3	0	2	26	31
7:45 AM	6	1	4	16	27
8:00 AM	10	7	4	26	47
8:15 AM	12	7	8	45	72
8:30 AM	6	6	4	31	47
8:45 AM	7	7	3	34	51
TOTAL VOLUMES:	55	34	28	227	344

	North Leg N Harbor Drive	East Leg Beryl Street	South Leg N Harbor Drive	West Leg Portofino Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
11:00 AM	20	8	6	36	70
11:15 AM	5	2	6	32	45
11:30 AM	16	1	0	36	53
11:45 AM	3	3	2	27	35
12:00 PM	7	7	5	32	51
12:15 PM	9	9	8	39	65
12:30 PM	5	4	12	30	51
12:45 PM	5	3	5	36	49
TOTAL VOLUMES:	70	37	44	268	419

	North Leg N Harbor Drive	East Leg Beryl Street	South Leg N Harbor Drive	West Leg Portofino Way	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	10	13	15	41	79
4:15 PM	2	11	6	13	32
4:30 PM	12	6	2	18	38
4:45 PM	12	5	2	29	48
5:00 PM	8	2	3	11	24
5:15 PM	4	2	7	17	30
5:30 PM	7	12	7	35	61
5:45 PM	19	11	6	22	58
TOTAL VOLUMES:	74	62	48	186	370

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Location: Redondo Beach
N/S: N Harbor Drive
E/W: Portofino Way/Beryl St

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound N Harbor Drive			Westbound Beryl Street			Northbound N Harbor Drive			Eastbound Portofino Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	3	8	0	1	0	5	0	12	0	0	0	0	29
7:15 AM	0	5	0	0	0	6	0	19	0	0	0	0	30
7:30 AM	2	22	0	0	0	5	0	13	0	1	0	0	43
7:45 AM	1	20	0	0	0	1	0	15	0	0	1	0	38
8:00 AM	3	43	0	0	0	11	0	25	0	1	0	0	83
8:15 AM	1	20	0	0	0	3	0	22	0	3	0	0	49
8:30 AM	5	23	2	0	0	5	0	17	0	1	0	0	53
8:45 AM	4	29	0	0	0	4	0	29	0	1	0	0	67
TOTAL VOLUMES:	19	170	2	1	0	40	0	152	0	7	1	0	392

	Southbound N Harbor Drive			Westbound Beryl Street			Northbound N Harbor Drive			Eastbound Portofino Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	3	42	0	1	0	6	0	41	1	2	0	0	96
11:15 AM	0	38	0	1	0	10	1	35	0	0	1	0	86
11:30 AM	2	23	0	0	0	8	0	29	2	4	1	0	69
11:45 AM	4	31	0	0	0	14	0	39	3	0	0	1	92
12:00 PM	6	60	5	2	0	8	0	34	4	0	0	0	119
12:15 PM	1	43	0	1	0	9	0	32	1	1	0	0	88
12:30 PM	5	49	2	0	0	7	0	38	0	0	0	2	103
12:45 PM	6	35	6	0	1	7	2	32	0	6	0	0	95
TOTAL VOLUMES:	27	321	13	5	1	69	3	280	11	13	2	3	748

	Southbound N Harbor Drive			Westbound Beryl Street			Northbound N Harbor Drive			Eastbound Portofino Way			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	1	24	1	0	0	1	0	22	0	1	0	0	50
4:15 PM	2	30	1	0	0	3	0	36	0	0	0	0	72
4:30 PM	8	15	6	0	0	1	2	23	4	0	0	2	61
4:45 PM	2	25	0	0	0	4	0	25	4	2	0	0	62
5:00 PM	5	28	0	0	0	2	0	10	0	0	0	0	45
5:15 PM	1	18	0	0	0	0	0	21	1	0	0	1	42
5:30 PM	2	33	1	1	0	2	0	16	0	0	0	0	55
5:45 PM	4	19	0	2	0	0	0	20	0	0	0	0	45
TOTAL VOLUMES:	25	192	9	3	0	13	2	173	9	3	0	3	432

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City of Redondo Beach
N/S: N Harbor Drive
E/W: Project Driveway
Weather: Clear

File Name : 05_RDB_Har_Project DW AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
07:00 AM	3	2	5	4	3	7	0	0	0	12
07:15 AM	4	1	5	2	0	2	2	3	5	12
07:30 AM	1	1	2	4	5	9	3	1	4	15
07:45 AM	3	1	4	6	6	12	3	1	4	20
Total	11	5	16	16	14	30	8	5	13	59
08:00 AM	2	1	3	2	8	10	2	1	3	16
08:15 AM	7	2	9	4	5	9	1	1	2	20
08:30 AM	8	1	9	1	5	6	1	1	2	17
08:45 AM	10	5	15	0	10	10	1	1	2	27
Total	27	9	36	7	28	35	5	4	9	80
Grand Total	38	14	52	23	42	65	13	9	22	139
Apprch %	73.1	26.9		35.4	64.6		59.1	40.9		
Total %	27.3	10.1	37.4	16.5	30.2	46.8	9.4	6.5	15.8	

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	1	3	2	8	**10**	**2**	**1**	**3**	16
08:15 AM	7	2	9	**4**	5	9	1	1	2	20
08:30 AM	8	1	9	1	5	6	1	1	2	17
08:45 AM	**10**	**5**	**15**	0	**10**	10	1	1	2	**27**
Total Volume	27	9	36	7	28	35	5	4	9	80
% App. Total	75	25		20	80		55.6	44.4		
PHF	.675	.450	.600	.438	.700	.875	.625	1.00	.750	.741

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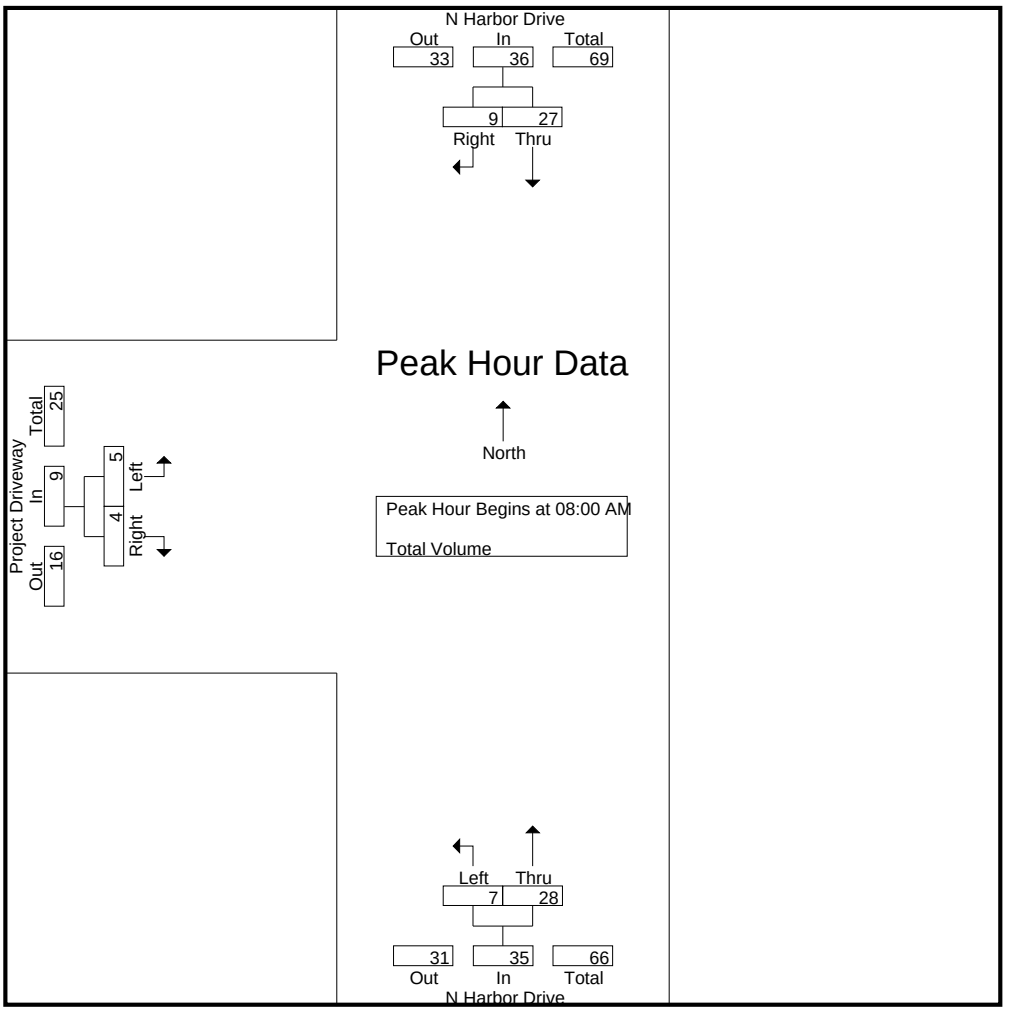

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:30 AM			07:15 AM		
+0 mins.	2	1	3	4	5	9	2	**3**	**5**
+15 mins.	7	2	9	**6**	6	**12**	**3**	1	4
+30 mins.	8	1	9	2	**8**	10	3	1	4
+45 mins.	**10**	**5**	**15**	4	5	9	2	1	3
Total Volume	27	9	36	16	24	40	10	6	16
% App. Total	75	25		40	60		62.5	37.5	
PHF	.675	.450	.600	.667	.750	.833	.833	.500	.800

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Groups Printed- Total Volume

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
11:00 AM	11	4	15	2	13	15	1	2	3	33
11:15 AM	17	7	24	7	7	14	1	6	7	45
11:30 AM	22	4	26	2	7	9	3	3	6	41
11:45 AM	16	10	26	5	10	15	1	6	7	48
Total	66	25	91	16	37	53	6	17	23	167
12:00 PM	19	5	24	4	10	14	1	7	8	46
12:15 PM	22	5	27	9	9	18	4	4	8	53
12:30 PM	11	9	20	5	16	21	11	5	16	57
12:45 PM	20	6	26	5	15	20	10	5	15	61
Total	72	25	97	23	50	73	26	21	47	217
Grand Total	138	50	188	39	87	126	32	38	70	384
Apprch %	73.4	26.6		31	69		45.7	54.3		
Total %	35.9	13	49	10.2	22.7	32.8	8.3	9.9	18.2	

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	19	5	24	4	10	14	1	**7**	8	46
12:15 PM	**22**	5	**27**	**9**	9	18	4	4	8	53
12:30 PM	11	**9**	20	5	**16**	**21**	**11**	5	**16**	57
12:45 PM	20	6	26	5	15	20	10	5	15	**61**
Total Volume	72	25	97	23	50	73	26	21	47	217
% App. Total	74.2	25.8		31.5	68.5		55.3	44.7		
PHF	.818	.694	.898	.639	.781	.869	.591	.750	.734	.889

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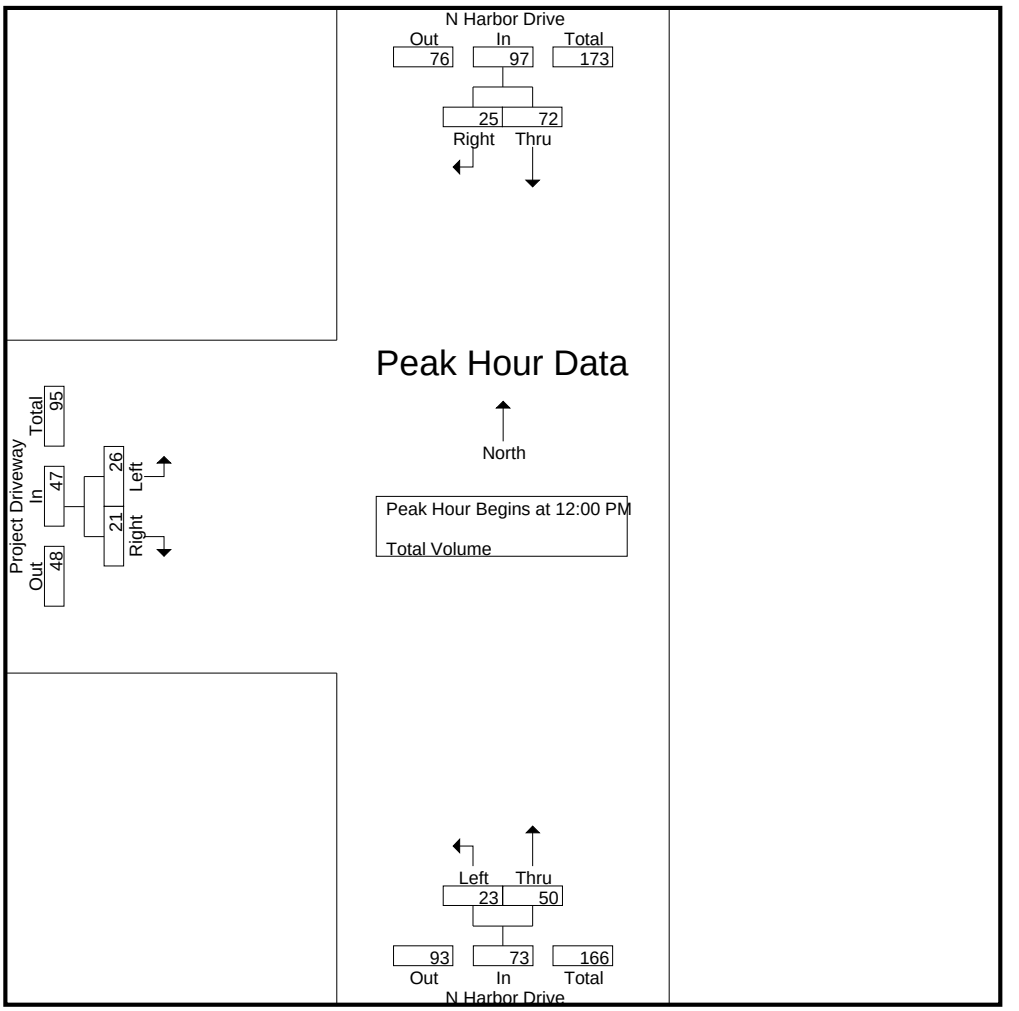

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:30 AM			12:00 PM			12:00 PM		
+0 mins.	**22**	4	26	4	10	14	1	**7**	8
+15 mins.	16	**10**	26	**9**	9	18	4	4	8
+30 mins.	19	5	24	5	**16**	**21**	**11**	5	**16**
+45 mins.	22	5	**27**	5	15	20	10	5	15
Total Volume	79	24	103	23	50	73	26	21	47
% App. Total	76.7	23.3		31.5	68.5		55.3	44.7	
PHF	.898	.600	.954	.639	.781	.869	.591	.750	.734

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E/W: Project Driveway
Weather: Clear

File Name : 05_RDB_Har_Project DW PM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
04:00 PM	27	12	39	10	18	28	9	5	14	81
04:15 PM	21	6	27	11	13	24	3	9	12	63
04:30 PM	15	7	22	8	19	27	8	3	11	60
04:45 PM	21	5	26	8	25	33	7	2	9	68
Total	84	30	114	37	75	112	27	19	46	272
05:00 PM	27	5	32	6	17	23	9	5	14	69
05:15 PM	21	8	29	11	29	40	7	4	11	80
05:30 PM	29	3	32	10	32	42	8	6	14	88
05:45 PM	14	3	17	5	23	28	12	7	19	64
Total	91	19	110	32	101	133	36	22	58	301
Grand Total	175	49	224	69	176	245	63	41	104	573
Apprch %	78.1	21.9		28.2	71.8		60.6	39.4		
Total %	30.5	8.6	39.1	12	30.7	42.8	11	7.2	18.2	

	N Harbor Drive Southbound			N Harbor Drive Northbound			Project Driveway Eastbound			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	21	5	26	8	25	33	7	2	9	68
05:00 PM	27	5	**32**	6	17	23	**9**	5	**14**	69
05:15 PM	21	**8**	29	**11**	29	40	7	4	11	80
05:30 PM	**29**	3	32	10	**32**	**42**	8	**6**	14	**88**
Total Volume	98	21	119	35	103	138	31	17	48	305
% App. Total	82.4	17.6		25.4	74.6		64.6	35.4		
PHF	.845	.656	.930	.795	.805	.821	.861	.708	.857	.866

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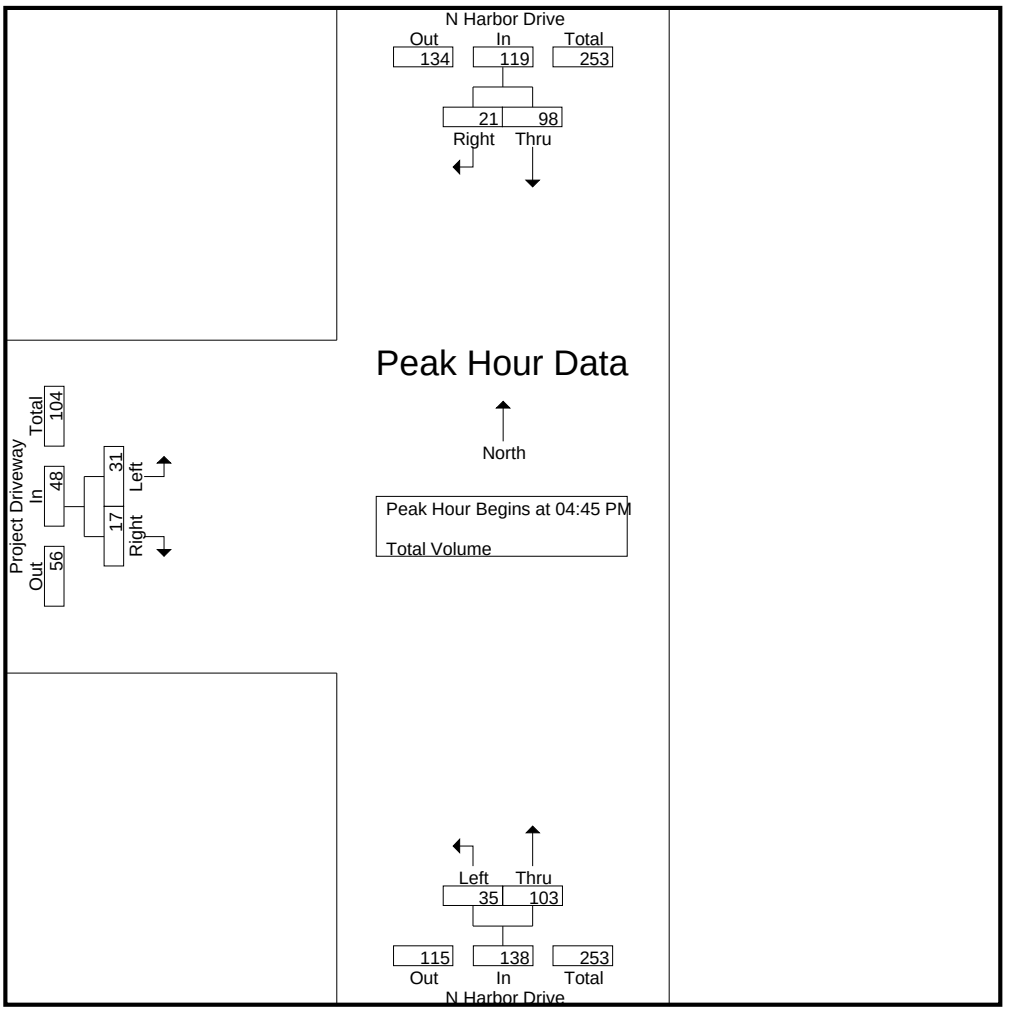
City of Redondo Beach
N/S: N Harbor Drive
E/W: Project Driveway
Weather: Clear

File Name : 05_RDB_Har_Project DW PM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:45 PM			05:00 PM		
+0 mins.	21	5	26	8	25	33	9	5	14
+15 mins.	27	5	**32**	6	17	23	7	4	11
+30 mins.	21	**8**	29	**11**	29	40	8	6	14
+45 mins.	**29**	3	32	10	**32**	**42**	**12**	**7**	**19**
Total Volume	98	21	119	35	103	138	36	22	58
% App. Total	82.4	17.6		25.4	74.6		62.1	37.9	
PHF	.845	.656	.930	.795	.805	.821	.750	.786	.763

Location: Redondo Beach
N/S: N Harbor Drive
E/W: Project Driveway

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg N Harbor Drive	East Leg Dead End	South Leg N Harbor Drive	West Leg Project Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	1	12	13
7:15 AM	0	1	1	29	31
7:30 AM	0	2	0	29	31
7:45 AM	2	5	5	15	27
8:00 AM	0	3	3	24	30
8:15 AM	2	2	1	29	34
8:30 AM	1	4	3	35	43
8:45 AM	2	8	6	41	57
TOTAL VOLUMES:	7	25	20	214	266

	North Leg N Harbor Drive	East Leg Dead End	South Leg N Harbor Drive	West Leg Project Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
11:00 AM	0	4	11	39	54
11:15 AM	3	12	13	34	62
11:30 AM	1	6	6	33	46
11:45 AM	1	8	9	20	38
12:00 PM	1	9	10	37	57
12:15 PM	1	12	11	39	63
12:30 PM	1	6	9	24	40
12:45 PM	0	13	8	39	60
TOTAL VOLUMES:	8	70	77	265	420

	North Leg N Harbor Drive	East Leg Dead End	South Leg N Harbor Drive	West Leg Project Driveway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	14	16	28	58
4:15 PM	1	8	10	22	41
4:30 PM	0	19	20	16	55
4:45 PM	5	20	21	24	70
5:00 PM	0	10	8	18	36
5:15 PM	1	11	13	14	39
5:30 PM	2	16	7	23	48
5:45 PM	0	14	19	30	63
TOTAL VOLUMES:	9	112	114	175	410

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Location: Redondo Beach
N/S: N Harbor Drive
E/W: Project Driveway

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound N Harbor Drive			Westbound Dead End			Northbound N Harbor Drive			Eastbound Project Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	5	2	0	0	0	0	13	0	0	0	0	20
7:15 AM	0	4	0	0	0	0	0	16	0	1	0	0	21
7:30 AM	0	18	0	0	0	0	1	13	0	0	0	1	33
7:45 AM	0	22	0	0	0	0	0	16	0	0	0	0	38
8:00 AM	0	38	1	0	0	0	0	24	0	0	0	0	63
8:15 AM	0	23	0	0	0	0	0	22	0	0	0	0	45
8:30 AM	0	24	0	0	0	0	0	18	0	0	0	0	42
8:45 AM	0	24	0	0	0	0	0	27	0	0	0	0	51
TOTAL VOLUMES:	0	158	3	0	0	0	1	149	0	1	0	1	313

	Southbound N Harbor Drive			Westbound Dead End			Northbound N Harbor Drive			Eastbound Project Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	34	1	0	0	0	1	33	0	4	0	0	73
11:15 AM	0	34	0	0	0	0	0	36	0	2	0	0	72
11:30 AM	0	27	1	0	0	0	0	29	0	0	0	0	57
11:45 AM	0	32	0	0	0	0	0	38	0	2	0	0	72
12:00 PM	2	51	3	0	0	0	0	36	0	1	0	1	94
12:15 PM	0	32	2	0	0	0	0	35	0	0	0	0	69
12:30 PM	2	61	0	0	0	0	0	34	0	0	0	0	97
12:45 PM	0	36	0	0	0	0	0	36	0	0	0	0	72
TOTAL VOLUMES:	4	307	7	0	0	0	1	277	0	9	0	1	606

	Southbound N Harbor Drive			Westbound Dead End			Northbound N Harbor Drive			Eastbound Project Driveway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	21	0	0	0	0	0	31	0	0	0	0	52
4:15 PM	0	32	0	0	0	0	0	30	0	0	0	0	62
4:30 PM	0	17	0	0	0	0	0	31	0	0	0	0	48
4:45 PM	0	25	0	0	0	0	1	28	0	0	0	0	54
5:00 PM	0	21	0	0	0	0	1	13	0	0	0	0	35
5:15 PM	0	22	0	0	0	0	0	18	0	3	0	0	43
5:30 PM	0	34	0	0	0	0	0	17	0	0	0	0	51
5:45 PM	0	12	2	0	0	0	0	15	0	0	0	0	29
TOTAL VOLUMES:	0	184	2	0	0	0	2	183	0	3	0	0	374

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City of Redondo Beach
N/S: N Pacific Avenue
E/W: N Harbor Drive
Weather: Clear

File Name : 06_RDB_Pac_Har AM
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	8	8	0	0	0	0	1	0	0	1	1	0	1	2	11
07:15 AM	1	1	3	5	0	0	0	0	0	0	0	0	7	0	0	7	12
07:30 AM	1	1	6	8	0	1	0	1	0	0	0	0	2	0	0	2	11
07:45 AM	0	3	11	14	0	1	1	2	0	0	0	0	4	0	0	4	20
Total	2	5	28	35	0	2	1	3	1	0	0	1	14	0	1	15	54
08:00 AM	0	4	9	13	0	0	0	0	2	0	0	2	2	0	2	4	19
08:15 AM	0	1	8	9	0	0	1	1	1	3	0	4	5	1	2	8	22
08:30 AM	1	2	6	9	0	0	1	1	1	1	0	2	8	0	1	9	21
08:45 AM	0	4	11	15	0	0	1	1	0	1	0	1	12	0	0	12	29
Total	1	11	34	46	0	0	3	3	4	5	0	9	27	1	5	33	91
Grand Total	3	16	62	81	0	2	4	6	5	5	0	10	41	1	6	48	145
Apprch %	3.7	19.8	76.5		0	33.3	66.7		50	50	0		85.4	2.1	12.5		
Total %	2.1	11	42.8	55.9	0	1.4	2.8	4.1	3.4	3.4	0	6.9	28.3	0.7	4.1	33.1	

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	**4**	9	13	0	0	0	0	**2**	0	0	2	2	0	**2**	4	19
08:15 AM	0	1	8	9	0	0	**1**	**1**	1	**3**	0	**4**	5	**1**	2	8	22
08:30 AM	**1**	2	6	9	0	0	1	1	1	1	0	2	8	0	1	9	21
08:45 AM	0	4	**11**	**15**	0	0	1	1	0	1	0	1	**12**	0	0	**12**	**29**
Total Volume	1	11	34	46	0	0	3	3	4	5	0	9	27	1	5	33	91
% App. Total	2.2	23.9	73.9		0	0	100		44.4	55.6	0		81.8	3	15.2		
PHF	.250	.688	.773	.767	.000	.000	.750	.750	.500	.417	.000	.563	.563	.250	.625	.688	.784

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City of Redondo Beach
N/S: N Pacific Avenue
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File Name : 06_RDB_Pac_Har AM
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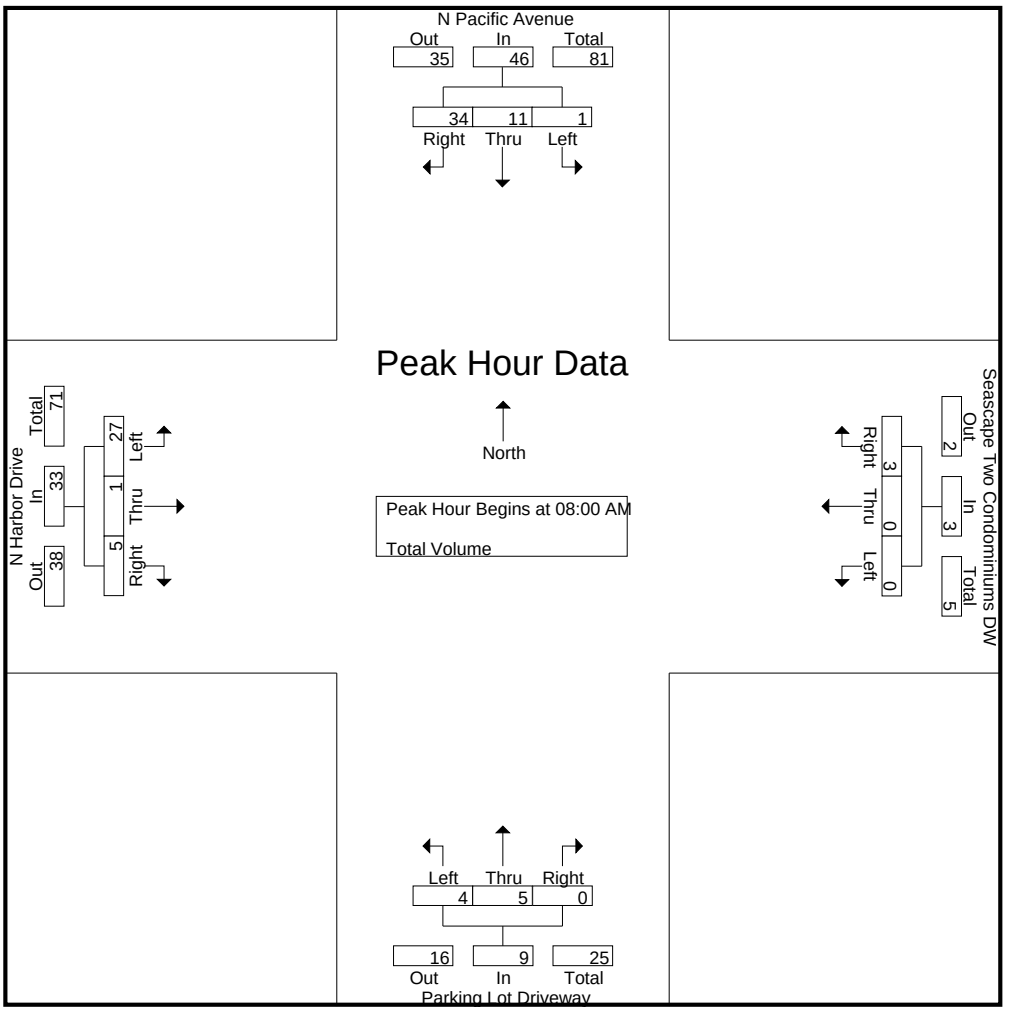

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				08:00 AM				08:00 AM			
+0 mins.	0	**4**	9	13	0	**1**	0	1	**2**	0	0	2	2	0	**2**	4
+15 mins.	0	1	8	9	0	1	**1**	**2**	1	**3**	0	**4**	5	**1**	2	8
+30 mins.	**1**	2	6	9	0	0	0	0	1	1	0	2	8	0	1	9
+45 mins.	0	4	**11**	**15**	0	0	1	1	0	1	0	1	**12**	0	0	**12**
Total Volume	1	11	34	46	0	2	2	4	4	5	0	9	27	1	5	33
% App. Total	2.2	23.9	73.9		0	50	50		44.4	55.6	0		81.8	3	15.2	
PHF	.250	.688	.773	.767	.000	.500	.500	.500	.500	.417	.000	.563	.563	.250	.625	.688

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City of Redondo Beach
N/S: N Pacific Avenue
E/W: N Harbor Drive
Weather: Clear

File Name : 06_RDB_Pac_Har MD
Site Code : 23224873
Start Date : 10/5/2024
Page No : 1

Groups Printed- Total Volume

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
11:00 AM	0	10	14	24	0	0	0	0	2	3	0	5	13	0	1	14	43
11:15 AM	0	2	14	16	0	0	1	1	0	4	0	4	17	1	3	21	42
11:30 AM	1	6	5	12	0	1	1	2	3	5	0	8	18	0	6	24	46
11:45 AM	0	5	14	19	0	0	0	0	2	0	0	2	15	1	4	20	41
Total	1	23	47	71	0	1	2	3	7	12	0	19	63	2	14	79	172
12:00 PM	2	9	14	25	0	0	2	2	1	3	0	4	22	0	2	24	55
12:15 PM	6	8	20	34	0	1	3	4	0	4	0	4	22	0	6	28	70
12:30 PM	3	9	19	31	0	0	2	2	3	2	0	5	11	1	4	16	54
12:45 PM	2	5	14	21	0	0	1	1	2	9	0	11	18	0	3	21	54
Total	13	31	67	111	0	1	8	9	6	18	0	24	73	1	15	89	233
Grand Total	14	54	114	182	0	2	10	12	13	30	0	43	136	3	29	168	405
Apprch %	7.7	29.7	62.6		0	16.7	83.3		30.2	69.8	0		81	1.8	17.3		
Total %	3.5	13.3	28.1	44.9	0	0.5	2.5	3	3.2	7.4	0	10.6	33.6	0.7	7.2	41.5	

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	2	**9**	14	25	0	0	2	2	1	3	0	4	**22**	0	2	24	55
12:15 PM	**6**	8	**20**	**34**	0	**1**	**3**	**4**	0	4	0	4	22	0	**6**	**28**	**70**
12:30 PM	3	9	19	31	0	0	2	2	**3**	2	0	5	11	**1**	4	16	54
12:45 PM	2	5	14	21	0	0	1	1	2	**9**	0	**11**	18	0	3	21	54
Total Volume	13	31	67	111	0	1	8	9	6	18	0	24	73	1	15	89	233
% App. Total	11.7	27.9	60.4		0	11.1	88.9		25	75	0		82	1.1	16.9		
PHF	.542	.861	.838	.816	.000	.250	.667	.563	.500	.500	.000	.545	.830	.250	.625	.795	.832

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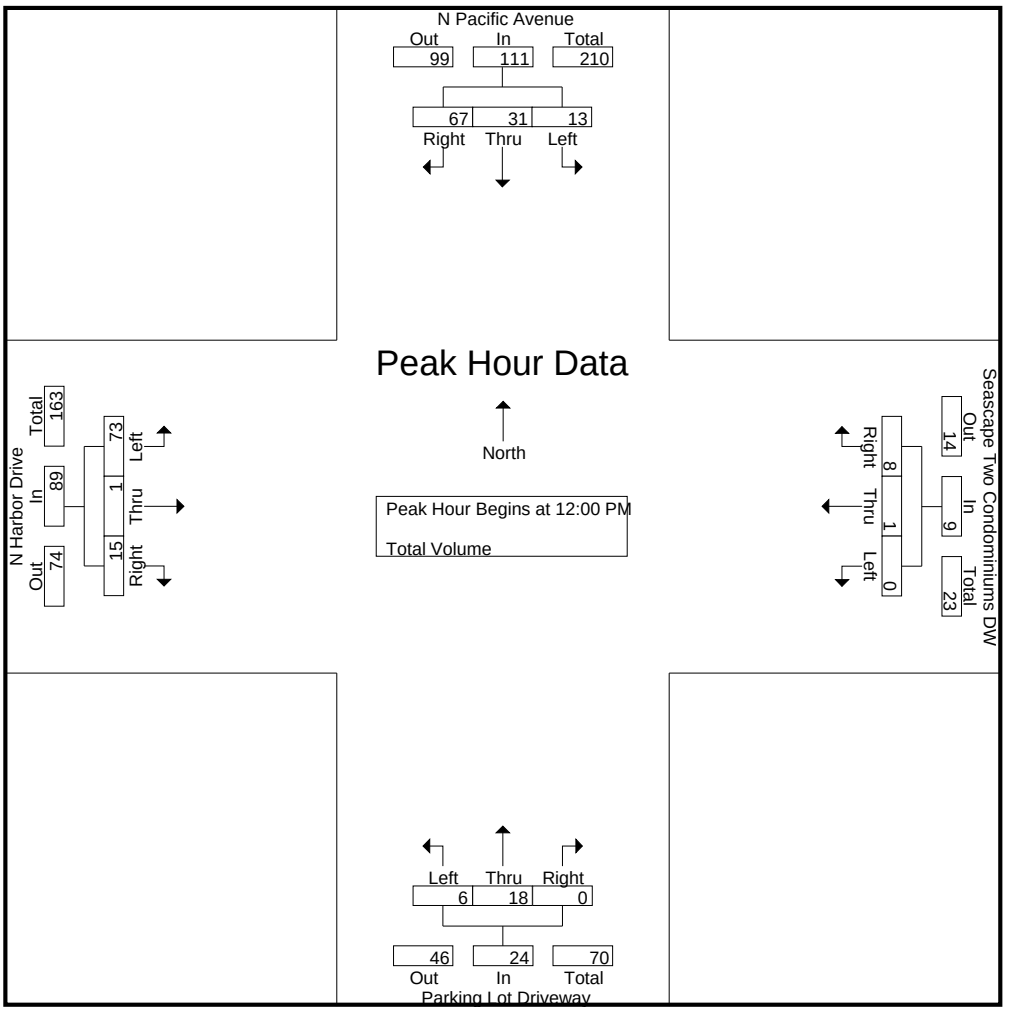

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				11:30 AM			
+0 mins.	2	**9**	14	25	0	0	2	2	1	3	0	4	18	0	**6**	24
+15 mins.	**6**	8	**20**	**34**	0	**1**	**3**	**4**	0	4	0	4	15	**1**	4	20
+30 mins.	3	9	19	31	0	0	2	2	**3**	2	0	5	**22**	0	2	24
+45 mins.	2	5	14	21	0	0	1	1	2	**9**	0	**11**	22	0	6	**28**
Total Volume	13	31	67	111	0	1	8	9	6	18	0	24	77	1	18	96
% App. Total	11.7	27.9	60.4		0	11.1	88.9		25	75	0		80.2	1	18.8	
PHF	.542	.861	.838	.816	.000	.250	.667	.563	.500	.500	.000	.545	.875	.250	.750	.857

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City of Redondo Beach
N/S: N Pacific Avenue
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File Name : 06_RDB_Pac_Har PM
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Groups Printed- Total Volume

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	1	6	26	33	0	0	0	0	5	16	0	21	32	0	5	37	91
04:15 PM	1	13	19	33	0	0	1	1	1	13	0	14	29	1	3	33	81
04:30 PM	2	3	25	30	0	0	0	0	3	16	0	19	19	0	3	22	71
04:45 PM	2	2	30	34	0	0	1	1	2	10	0	12	18	1	5	24	71
Total	6	24	100	130	0	0	2	2	11	55	0	66	98	2	16	116	314
05:00 PM	4	9	25	38	0	0	1	1	1	12	0	13	25	0	7	32	84
05:15 PM	0	1	35	36	0	0	0	0	3	8	0	11	24	0	4	28	75
05:30 PM	1	6	37	44	0	1	2	3	2	10	0	12	27	0	5	32	91
05:45 PM	0	6	20	26	0	0	0	0	7	10	0	17	19	1	2	22	65
Total	5	22	117	144	0	1	3	4	13	40	0	53	95	1	18	114	315
Grand Total	11	46	217	274	0	1	5	6	24	95	0	119	193	3	34	230	629
Apprch %	4	16.8	79.2		0	16.7	83.3		20.2	79.8	0		83.9	1.3	14.8		
Total %	1.7	7.3	34.5	43.6	0	0.2	0.8	1	3.8	15.1	0	18.9	30.7	0.5	5.4	36.6	

	N Pacific Avenue Southbound				Seascape Two Condominiums DW Westbound				Parking Lot Driveway Northbound				N Harbor Drive Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	2	30	34	0	0	1	1	2	10	0	12	18	**1**	5	24	71
05:00 PM	**4**	**9**	25	38	0	0	1	1	1	**12**	0	**13**	25	0	**7**	**32**	84
05:15 PM	0	1	35	36	0	0	0	0	**3**	8	0	11	24	0	4	28	75
05:30 PM	1	6	**37**	**44**	0	**1**	**2**	**3**	2	10	0	12	**27**	0	5	32	**91**
Total Volume	7	18	127	152	0	1	4	5	8	40	0	48	94	1	21	116	321
% App. Total	4.6	11.8	83.6		0	20	80		16.7	83.3	0		81	0.9	18.1		
PHF	.438	.500	.858	.864	.000	.250	.500	.417	.667	.833	.000	.923	.870	.250	.750	.906	.882

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City of Redondo Beach
N/S: N Pacific Avenue
E/W: N Harbor Drive
Weather: Clear

File Name : 06_RDB_Pac_Har PM
Site Code : 23224873
Start Date : 10/5/2024
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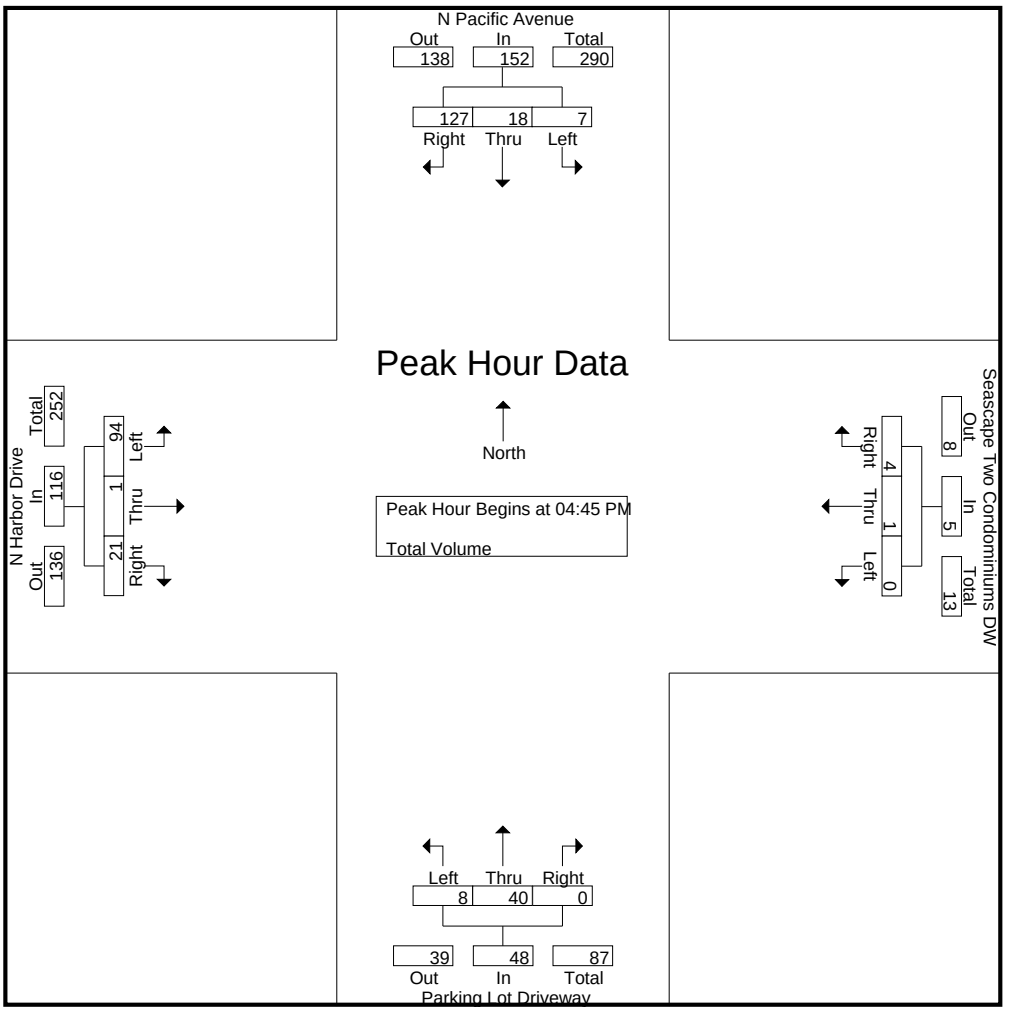

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:45 PM				04:00 PM				04:00 PM			
+0 mins.	2	2	30	34	0	0	1	1	**5**	**16**	0	**21**	**32**	0	**5**	**37**
+15 mins.	**4**	**9**	25	38	0	0	1	1	1	13	0	14	29	**1**	3	33
+30 mins.	0	1	35	36	0	0	0	0	3	16	0	19	19	0	3	22
+45 mins.	1	6	**37**	**44**	0	**1**	**2**	**3**	2	10	0	12	18	1	5	24
Total Volume	7	18	127	152	0	1	4	5	11	55	0	66	98	2	16	116
% App. Total	4.6	11.8	83.6		0	20	80		16.7	83.3	0		84.5	1.7	13.8	
PHF	.438	.500	.858	.864	.000	.250	.500	.417	.550	.859	.000	.786	.766	.500	.800	.784

Location: Redondo Beach
N/S: N Pacific Avenue
E/W: N Harbor Drive

Date: 10/5/2024
Day: Saturday

PEDESTRIANS

	North Leg N Pacific Avenue Pedestrians	East Leg Seascape 2 Driveway Pedestrians	South Leg Parking Lot Driveway Pedestrians	West Leg N Harbor Drive Pedestrians	
7:00 AM	1	0	2	1	4
7:15 AM	0	0	2	0	2
7:30 AM	0	0	2	2	4
7:45 AM	0	0	3	1	4
8:00 AM	0	0	1	0	1
8:15 AM	0	0	5	1	6
8:30 AM	1	0	3	4	8
8:45 AM	2	0	3	1	6
TOTAL VOLUMES:	4	0	21	10	35

	North Leg N Pacific Avenue Pedestrians	East Leg Seascape 2 Driveway Pedestrians	South Leg Parking Lot Driveway Pedestrians	West Leg N Harbor Drive Pedestrians	
11:00 AM	4	0	1	1	6
11:15 AM	0	0	4	0	4
11:30 AM	0	0	4	3	7
11:45 AM	1	0	4	1	6
12:00 PM	1	0	4	3	8
12:15 PM	0	0	0	1	1
12:30 PM	3	2	6	1	12
12:45 PM	0	0	4	0	4
TOTAL VOLUMES:	9	2	27	10	48

	North Leg N Pacific Avenue Pedestrians	East Leg Seascape 2 Driveway Pedestrians	South Leg Parking Lot Driveway Pedestrians	West Leg N Harbor Drive Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	2	2	2	6
4:30 PM	0	0	0	1	1
4:45 PM	0	0	5	0	5
5:00 PM	9	4	5	6	24
5:15 PM	0	0	4	0	4
5:30 PM	0	0	7	7	14
5:45 PM	4	0	0	0	4
TOTAL VOLUMES:	13	6	23	16	58

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

Location: Redondo Beach
N/S: N Pacific Avenue
E/W: N Harbor Drive

Date: 10/5/2024
Day: Saturday

BICYCLES

	Southbound N Pacific Avenue			Westbound Seascape 2 Driveway			Northbound Parking Lot Driveway			Eastbound N Harbor Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	0	5	0	0	0	1	0	0	0	0	0	6
7:15 AM	0	0	1	0	0	1	2	0	0	2	0	0	6
7:30 AM	0	0	3	0	0	0	1	0	0	5	0	1	10
7:45 AM	0	1	0	0	0	0	0	0	0	4	0	0	5
8:00 AM	0	0	1	0	0	0	0	0	0	9	0	0	10
8:15 AM	0	0	4	0	0	0	1	0	0	5	0	0	10
8:30 AM	0	0	6	0	0	0	0	0	0	6	0	0	12
8:45 AM	0	0	6	0	0	0	0	0	0	4	0	0	10
TOTAL VOLUMES:	0	1	26	0	0	1	5	0	0	35	0	1	69

	Southbound N Pacific Avenue			Westbound Seascape 2 Driveway			Northbound Parking Lot Driveway			Eastbound N Harbor Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	0	2	0	0	0	2	0	0	9	0	3	16
11:15 AM	0	0	1	0	0	0	4	0	0	5	0	0	10
11:30 AM	0	0	1	0	0	0	0	0	0	2	0	0	3
11:45 AM	1	0	2	0	0	0	2	0	0	5	0	0	10
12:00 PM	0	0	12	0	0	0	3	0	0	5	0	0	20
12:15 PM	0	0	0	0	0	0	1	0	0	4	0	1	6
12:30 PM	0	0	2	0	0	0	2	0	0	11	0	3	18
12:45 PM	0	0	0	0	0	0	0	0	0	3	0	5	8
TOTAL VOLUMES:	1	0	20	0	0	0	14	0	0	44	0	12	91

	Southbound N Pacific Avenue			Westbound Seascape 2 Driveway			Northbound Parking Lot Driveway			Eastbound N Harbor Drive			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	2	0	0	0	1	0	0	0	0	2	5
4:15 PM	0	0	1	0	0	0	2	0	0	2	0	4	9
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	3	6
4:45 PM	0	0	0	0	0	0	1	0	0	2	0	0	3
5:00 PM	0	0	2	0	0	0	3	0	0	1	0	4	10
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	5	6
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	3	4
TOTAL VOLUMES:	0	0	5	0	0	0	7	1	0	10	0	21	44

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

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Mole D 12- Month Analysis

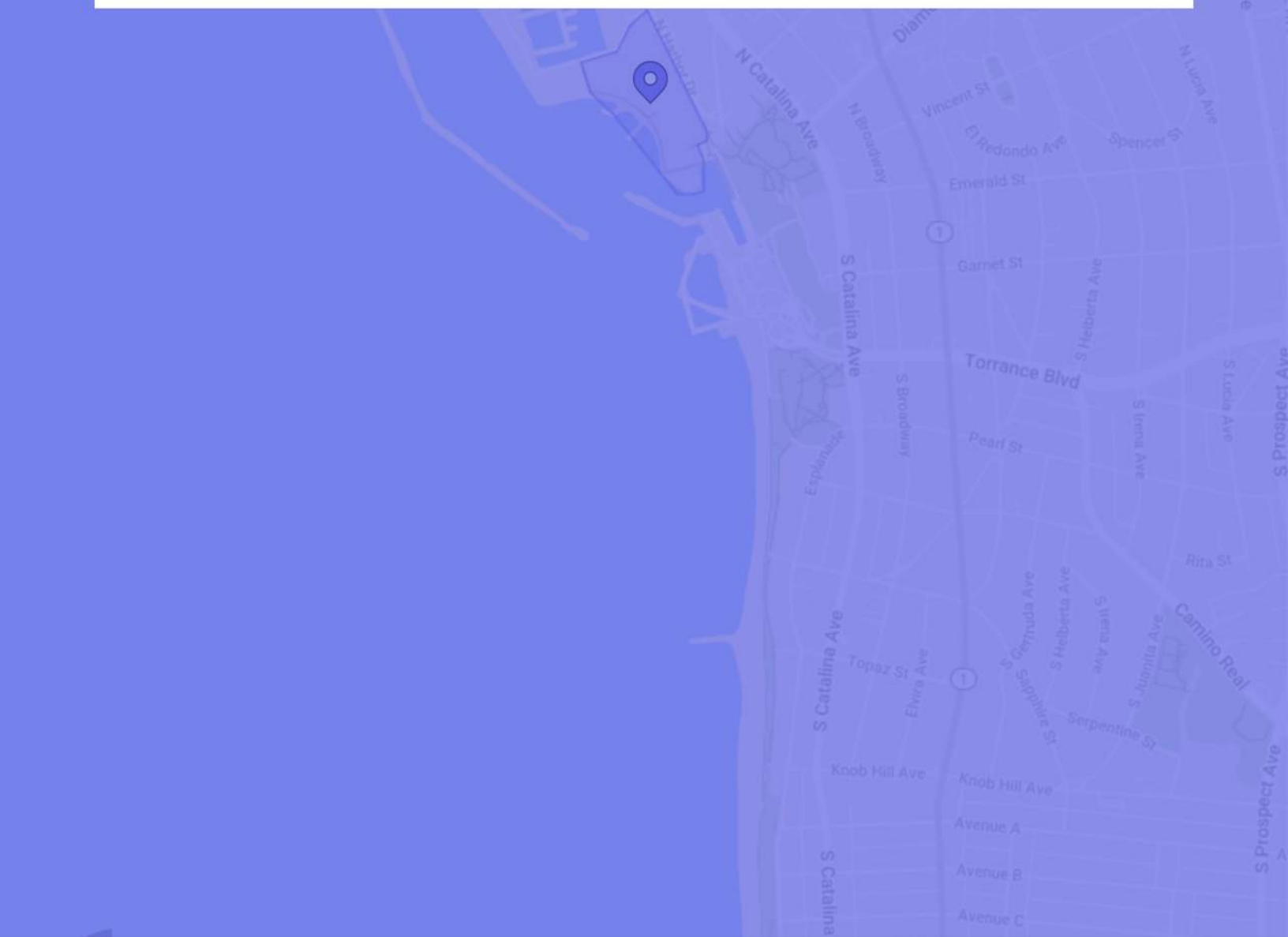
Nov 1, 2023 - Oct 31, 2024

Property:

MD

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA 90277

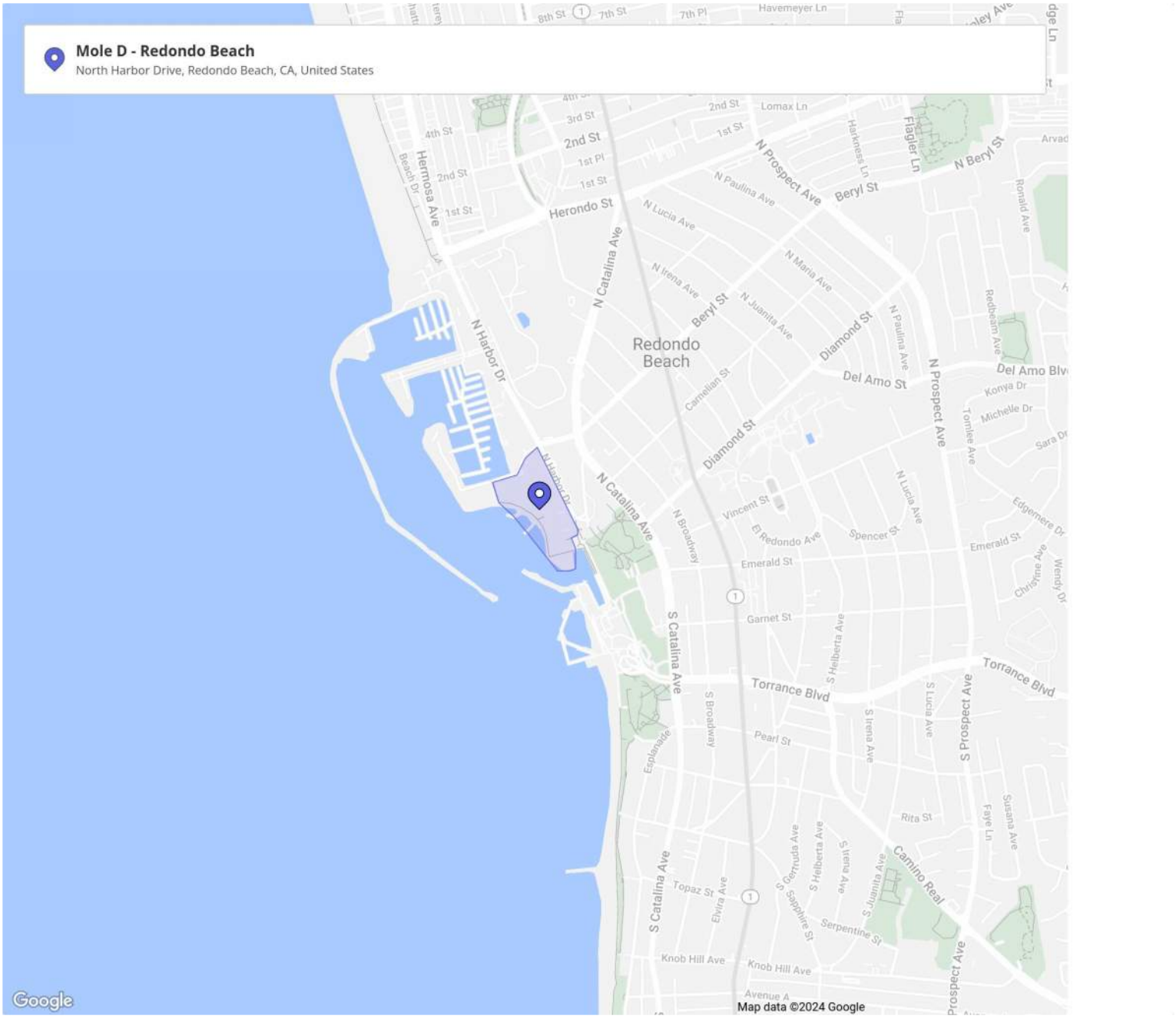
Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.
For additional info, please visit https://www.placer.ai/company/privacy-faq



Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq



Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Metrics

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA 90277

Visits	401.6K	Panel Visits	14.2K
Visitors	239.3K	Visits YoY	-0.2%
Visit Frequency	1.68	Visits Yo2Y	-12.6%
Avg. Dwell Time	61 min	Visits Yo3Y	-7.5%

Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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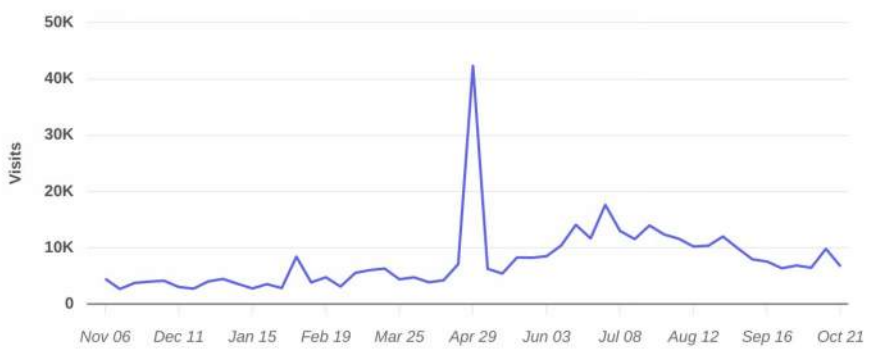
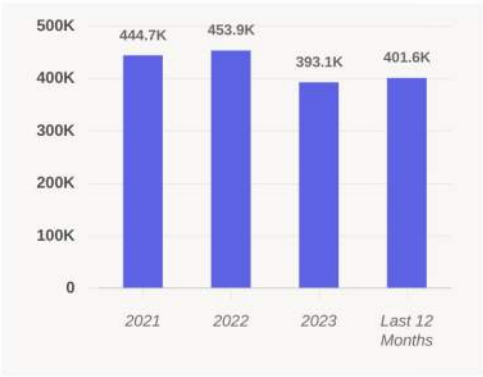
Visits Trend

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA





Weekly | Visits | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Audience Overview

Summary

Property	Median Household Income	Bachelor's Degree or Higher	Median Age	Most Common Ethnicity	Persons per Household
Mole D - Redondo B... Harbor Drive, Redondo B...	$80.9K	37.9%	36.7	Hispanic or Latino (44%)	2.85
California	$84.8K	35.3%	36.6	Hispanic or Latino (39.5%)	2.99

Nov 1st, 2023 - Oct 31st, 2024 | Data Source: Census 2021
Data provided by Placer Labs Inc. (www.placer.ai)

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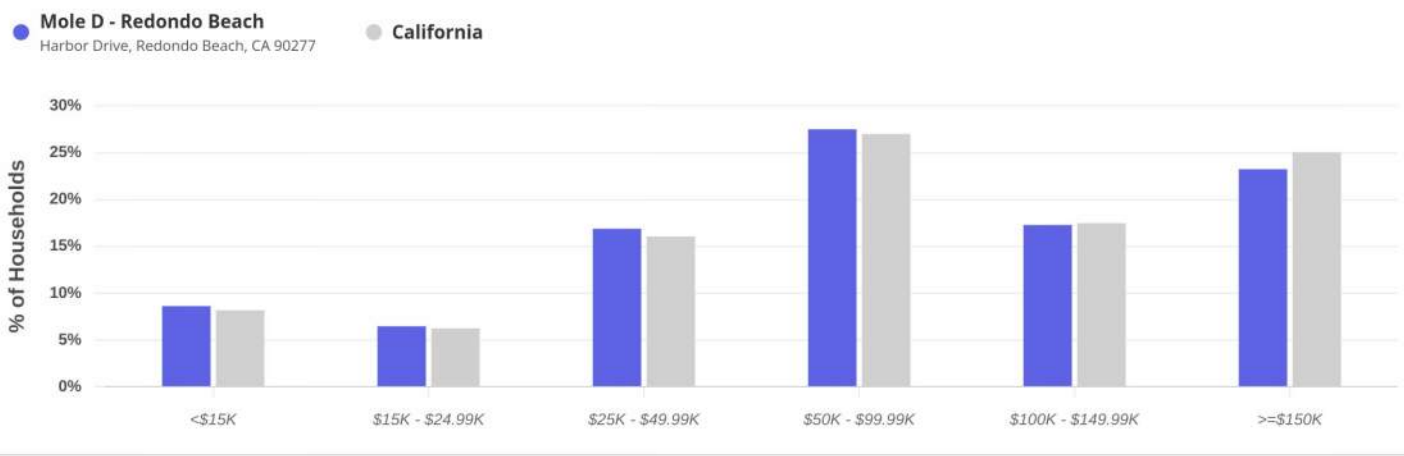
Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

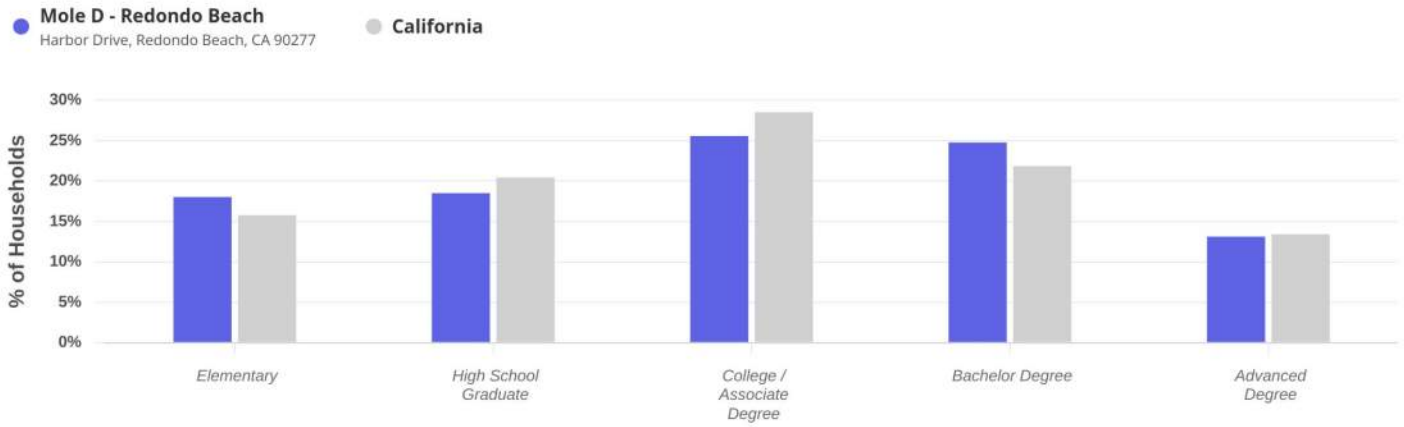
Household Income



Nov 1st, 2023 - Oct 31st, 2024 | Data Source: Census 2021
Data provided by Placer Labs Inc. (www.placer.ai)

Placer.ai

Education



Nov 1st, 2023 - Oct 31st, 2024 | Data Source: Census 2021
Data provided by Placer Labs Inc. (www.placer.ai)

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Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

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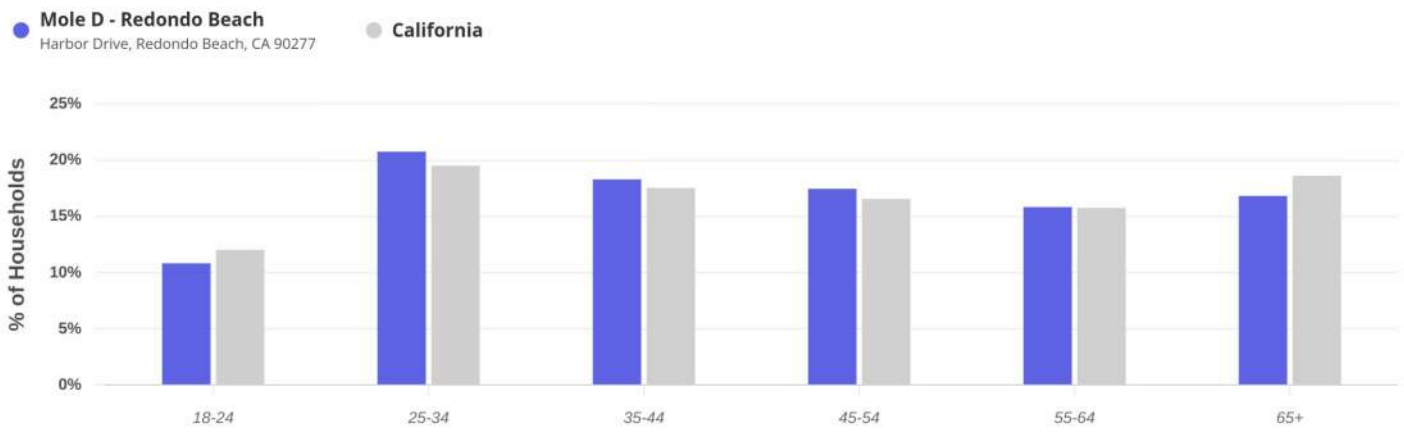
Age



Nov 1st, 2023 - Oct 31st, 2024 | Data Source: Census 2021
Data provided by Placer Labs Inc. (www.placer.ai)

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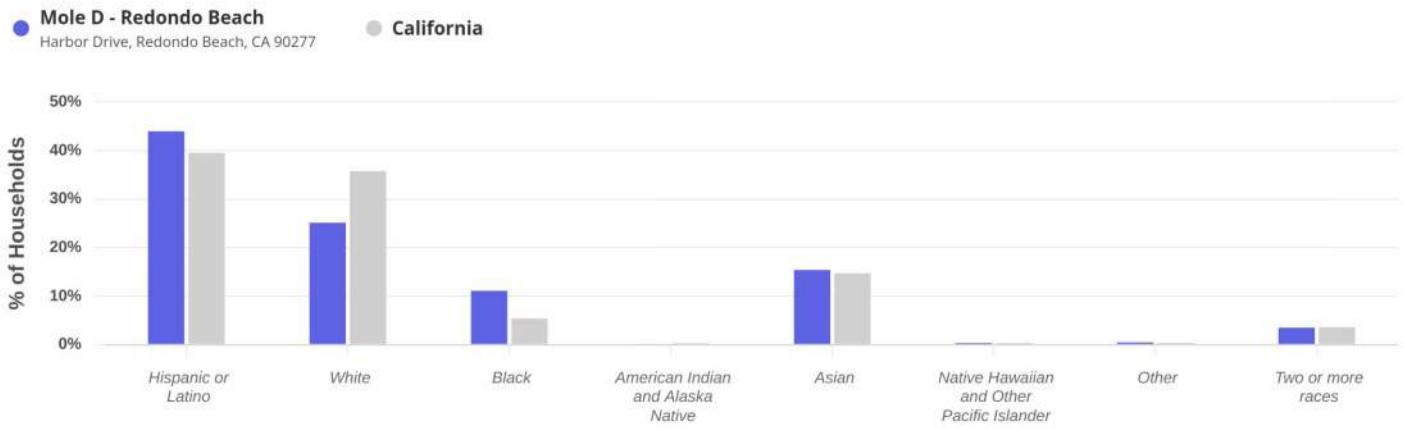
Ethnicity



Nov 1st, 2023 - Oct 31st, 2024 | Data Source: Census 2021
Data provided by Placer Labs Inc. (www.placer.ai)

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Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

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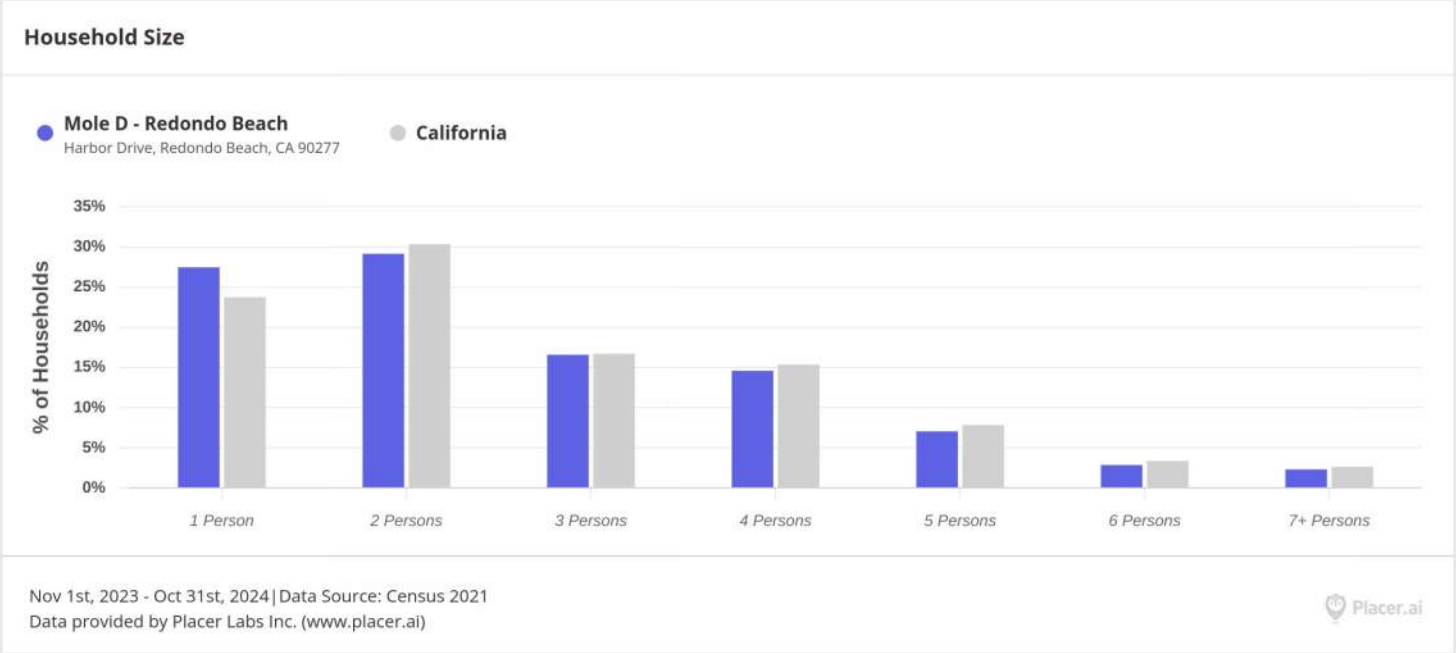
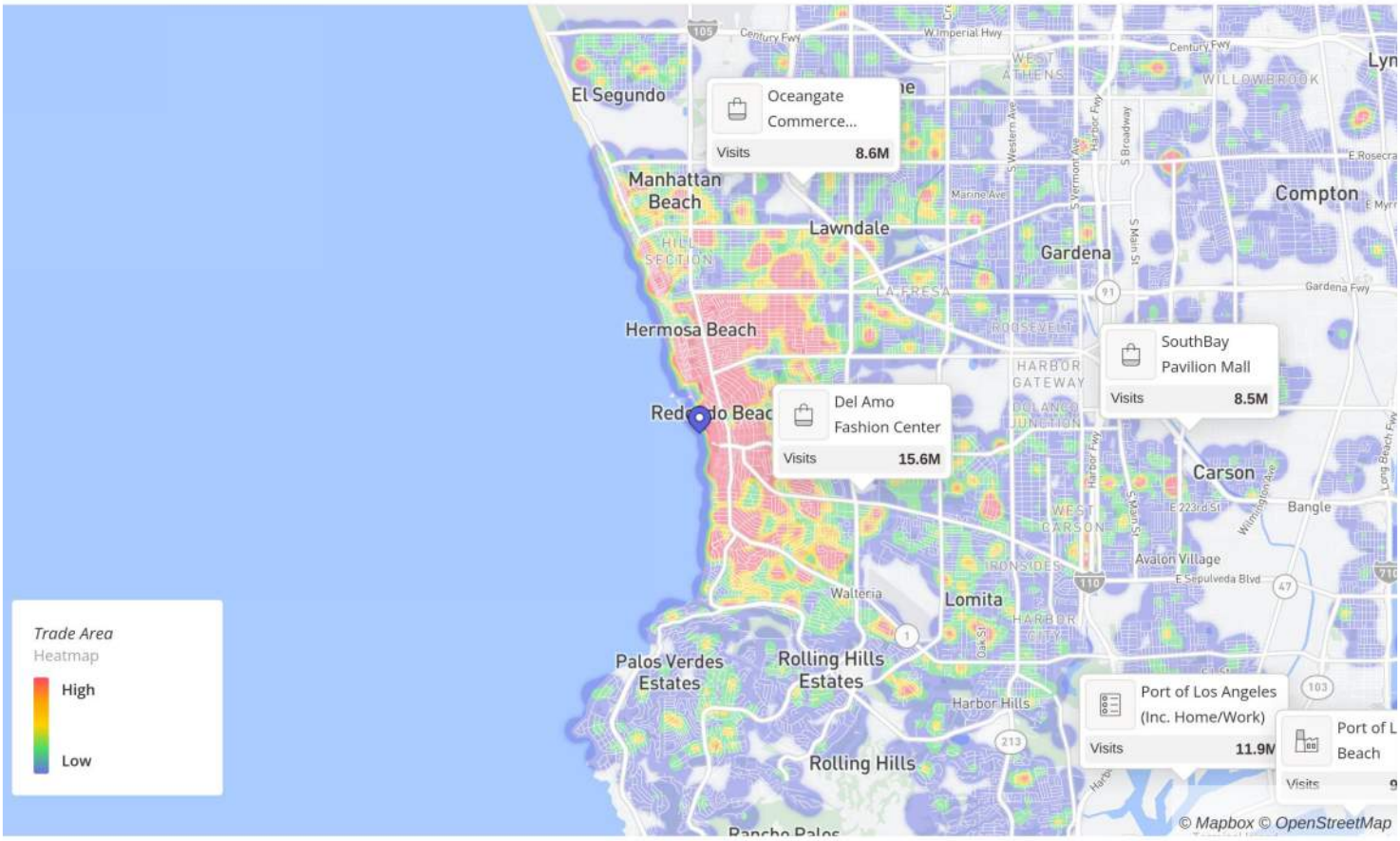


Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Market Landscape



Home locations are obfuscated for privacy and randomly placed within a census block. They do not represent actual home addresses.

Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Ranking Overview

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA 90277

Category: Address | Visits | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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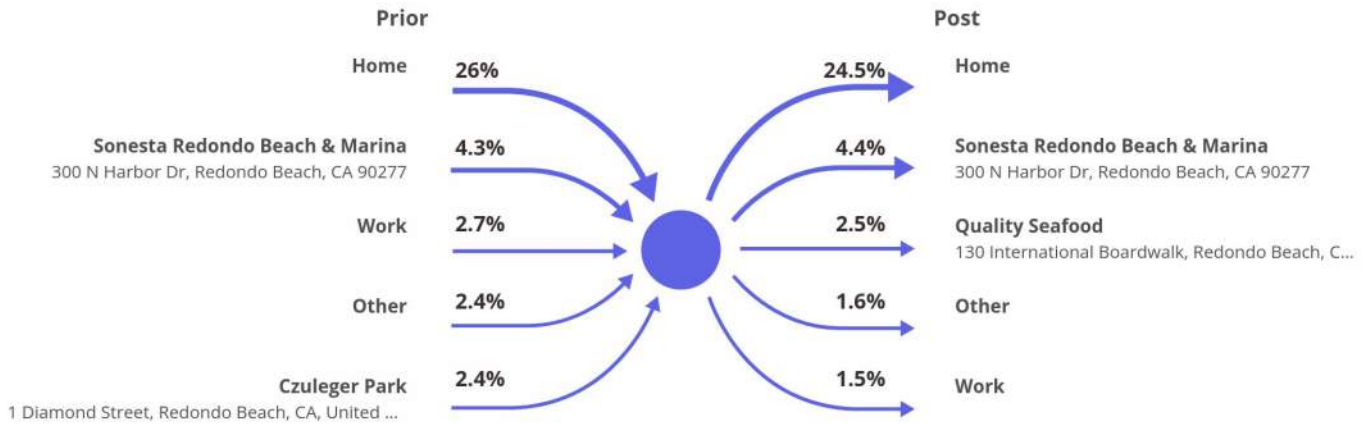
Visitor Journey

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA 90277



Show by: | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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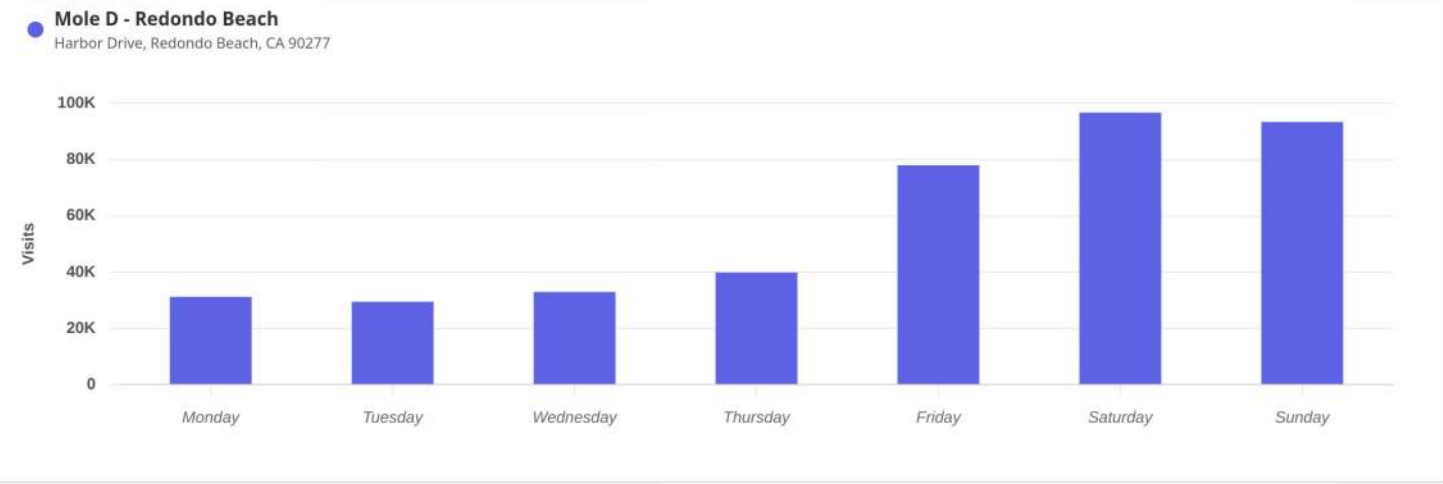
Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Daily Visits



Visits | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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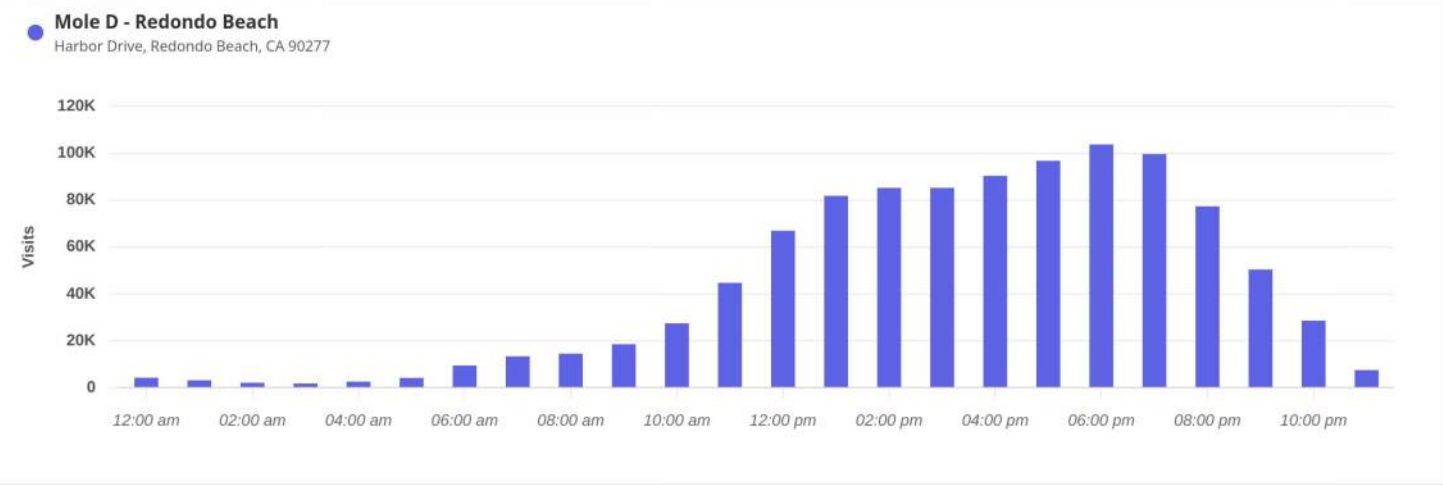
Hourly Visits



Visits | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

Placer.ai

Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Favorite Places

Mole D - Redondo Beach / Harbor Drive, Redondo Beach, CA

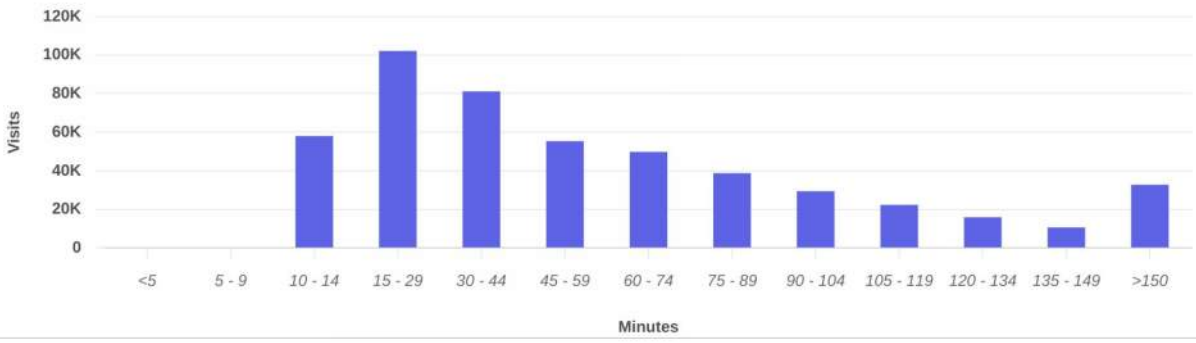
Rank	Name	Distance	Visitors
1	**Los Angeles International Airport** / 1 World Way, Los Angeles, CA 90045	7.1 mi	159.9K (66.8%)
2	**Redondo Beach Pier** / 100 Fishermans Wharf, Redondo Beach, CA 90277	0.3 mi	123.1K (51.5%)
3	**Del Amo Fashion Center** / 3525 W Carson St, Torrance, CA 90503	2.5 mi	116.2K (48.6%)
4	**Parking lot** / 161 N Harbor Dr, Redondo Beach, CA 90277	0.1 mi	90.4K (37.8%)
5	**Manhattan Village** / 3200 N Sepulveda Blvd, Manhattan Beach, CA 90266	4 mi	76.2K (31.8%)
6	**Lax International Airport Los Angeles California** / 1 World Way, Los Angeles, CA 90045	6.9 mi	59.4K (24.8%)
7	**Gateway Center** / 14501 Hindry Ave, Hawthorne, CA 90250	4 mi	59.2K (24.8%)
8	**Oceangate Commerce Center** / 14555 S Ocean Gate Ave, Hawthorne, CA 90250	4.2 mi	59K (24.7%)
9	**Disneyland Park** / 1313 Disneyland Dr, Anaheim, CA 92802	27.3 mi	58.6K (24.5%)
10	**South Bay Marketplace** / 1517 Hawthorne Blvd, Redondo Beach, CA 90278	2.8 mi	57.5K (24.1%)

Category: All Categories | Min. Visits: 1 | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

Placer.ai

Visit Duration

Mole D - Redondo Beach
Harbor Drive, Redondo Beach, CA 90277



Average Stay	61 min
Median Stay	47 min

Visits | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

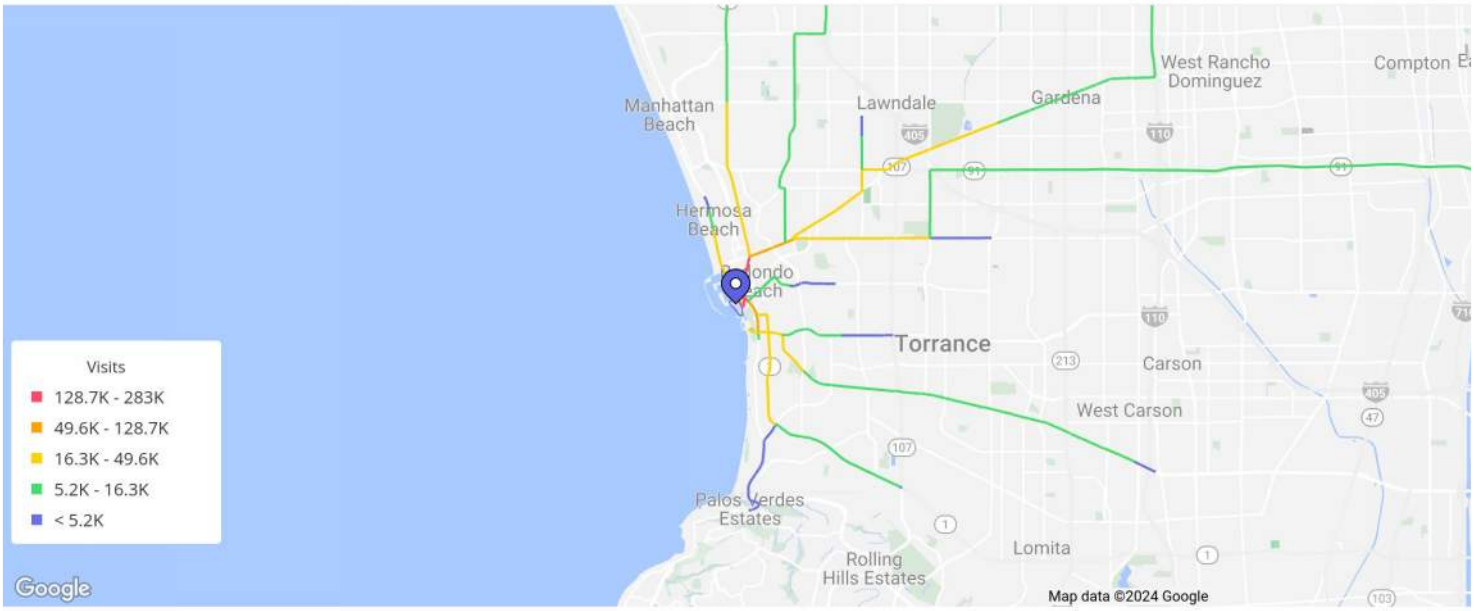
Placer.ai

Mole D 12- Month Analysis

Nov 1, 2023 - Oct 31, 2024

Visitation data for Mole D - Redondo Beach is adjusted to exclude restricted locations.For additional info, please visit https://www.placer.ai/company/privacy-faq

Visitor Journey - Routes



To protect individual privacy, the beginning points shown for each route are approximations and do not represent actual home locations.

Journey Direction: To Property | Nov 1st, 2023 - Oct 31st, 2024
Data provided by Placer Labs Inc. (www.placer.ai)

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Appendix B

SCAG Data

employment growth reflecting different land use scenarios. As part of the SB375's Sustainable Communities Strategy guidelines, SCAG held twenty-seven public outreach meetings to solicit input on these alternatives. The goal of this scenario planning exercise is to maximize the benefits of Greenhouse Gas/ Vehicle Miles Travelled (GHG/VMT) reductions, public health, and other co-benefits from large transportation investments in the region. Following public input and SCAG's analysis of the GHG/VMT benefits of the alternative scenarios, a preferred growth forecast scenario was chosen which prioritizes growth in areas such as job centers and transit priority areas which have regional transportation benefits. See the Sustainable Communities Strategy Technical Report for additional details (see **EXHIBITS 1-9**).

After developing the draft 2020 RTP/SCS between July 2019 and October 2019, SCAG released the draft 2020 RTP/SCS in November 2019. The Regional Council adopted the 2020 RTP/SCS, including the regional growth forecast at the county and jurisdictional-levels.

GROWTH TRENDS

POPULATION

According to the January 1, 2019 population estimates from the California Department of Finance (DOF), the population of the SCAG region is 19,155,405. This represents 5.8 percent of the 328 million people in the United States and 48.0 percent of California's population. The SCAG region is the nation's second-largest combined statistical area (CSA) behind the New York-Newark CSA. If the SCAG region were its own state, it would rank fifth in population just behind New York (19.2 million) and well ahead of Pennsylvania (12.8 million) (**TABLE 2**).

While job growth and unemployment drops have characterized the recovery from the Great Recession, slower population growth is anticipated not just in the SCAG region but across California and nationwide. Historically, the SCAG region's population growth has dramatically outpaced the United States—1.7 percent compared to 1.1 percent for the period from 1970 to 2000. However, since 2000 average annual growth rates in the region have been comparable with the United States at roughly 0.8 percent annually.

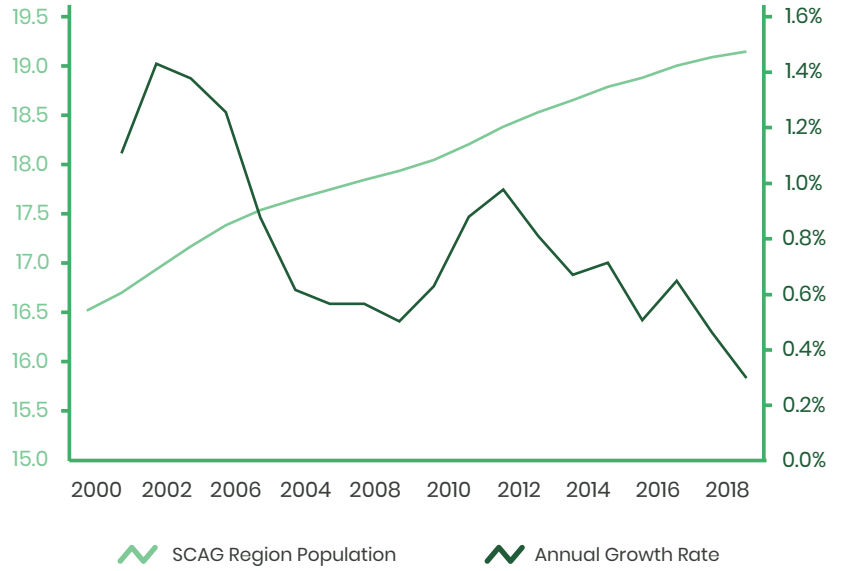
Population growth dipped noticeably during the Great Recession reaching a low of 0.5 percent in 2009 before rebounding to nearly 1.0 percent by 2012 **(FIGURE 1)**. Despite this, the annual rate of population growth has continued

TABLE 2 Annual Average Population Growth Rate, 1970–2045

	1970–2000	2000–2016	2016–2045
SCAG Region	1.65%	0.82%	0.61%
California	1.76%	0.93%	0.66%
United States	1.09%	0.86%	0.57%

Source: U.S. Census Bureau, CA DOF, SCAG

FIGURE 1 SCAG Region Population (in Millions) and Annual Growth Rate, 2000–2019



Source: CA DOF

TABLE 14 Jurisdiction-Level Growth Forecast - Continued

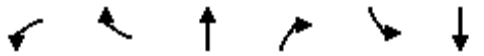
County	Jurisdiction	Population		Households		Employment	
		2016	2045	2016	2045	2016	2045
Los Angeles	Lancaster city	157,800	213,300	46,900	74,600	56,300	65,500
Los Angeles	La Puente city	40,400	41,600	9,400	9,900	6,600	8,200
Los Angeles	La Verne city	33,100	34,400	11,700	12,400	17,000	18,300
Los Angeles	Lawndale city	33,400	34,400	9,700	10,200	7,400	8,300
Los Angeles	Lomita city	20,400	21,200	8,000	8,500	5,600	6,100
Los Angeles	Long Beach city	470,900	489,600	168,600	198,200	155,900	185,400
Los Angeles	Los Angeles city	3,933,800	4,771,300	1,367,000	1,793,000	1,848,300	2,135,900
Los Angeles	Lynwood city	71,900	76,900	14,900	16,500	12,000	13,100
Los Angeles	Malibu city	12,700	13,000	5,200	5,400	9,900	11,000
Los Angeles	Manhattan Beach city	35,400	35,600	13,900	14,000	22,000	23,600
Los Angeles	Maywood city	28,000	29,000	6,600	7,000	4,000	4,300
Los Angeles	Monrovia city	38,000	42,100	14,000	16,700	22,700	24,800
Los Angeles	Montebello city	63,900	67,800	19,100	21,100	29,300	31,300
Los Angeles	Monterey Park city	61,500	65,600	20,000	22,200	45,500	48,000
Los Angeles	Norwalk city	105,500	107,000	26,700	27,300	25,700	28,100
Los Angeles	Palmdale city	158,600	207,000	43,800	61,800	36,700	45,900
Los Angeles	Palos Verdes Estates city	13,700	14,000	5,100	5,300	3,000	3,300
Los Angeles	Paramount city	55,900	57,500	14,100	14,500	21,400	23,000
Los Angeles	Pasadena city	142,100	155,500	56,300	65,100	116,200	140,200
Los Angeles	Pico Rivera city	63,500	67,400	16,600	18,500	24,900	27,200
Los Angeles	Pomona city	154,700	187,600	39,300	52,800	55,700	63,400
Los Angeles	Rancho Palos Verdes city	42,800	43,000	15,700	15,800	8,000	8,200
Los Angeles	Redondo Beach city	68,200	72,900	29,200	31,100	25,400	28,300
Los Angeles	Rolling Hills city	1,900	2,000	700	700	100	100
Los Angeles	Rolling Hills Estates city	8,100	8,500	2,900	3,200	7,100	7,600

Population = 0.24% / Year (Total=6.9%)

Employment = 0.39% / Year (Total=11.4%)

Appendix C

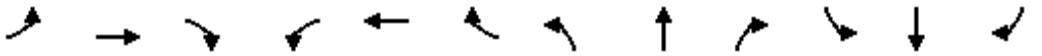
Intersection Analysis Worksheets



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	160	184	155	74	126	81
Future Volume (vph)	160	184	155	74	126	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.90	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1597	1583	1742		1762	1863
Flt Permitted	0.95	1.00	1.00		0.48	1.00
Satd. Flow (perm)	1597	1583	1742		890	1863
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.74	0.74
Adj. Flow (vph)	178	204	180	86	170	109
RTOR Reduction (vph)	0	133	8	0	0	0
Lane Group Flow (vph)	178	71	258	0	170	109
Confl. Peds. (#/hr)	47			11	11	
Confl. Bikes (#/hr)				37		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	18.0	18.0	36.9		62.9	42.7
Effective Green, g (s)	18.0	18.0	36.9		57.9	42.7
Actuated g/C Ratio	0.20	0.20	0.40		0.63	0.47
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	314	311	703		725	870
v/s Ratio Prot			c0.15		c0.04	0.06
v/s Ratio Perm	c0.11	0.04			0.10	
v/c Ratio	0.57	0.23	0.37		0.23	0.13
Uniform Delay, d1	33.2	30.9	19.1		7.2	13.8
Progression Factor	1.00	1.00	0.15		1.00	1.00
Incremental Delay, d2	2.3	0.4	0.3		0.2	0.1
Delay (s)	35.5	31.2	3.2		7.4	13.8
Level of Service	D	C	A		A	B
Approach Delay (s)	33.2		3.2			9.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	24.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

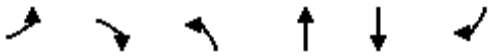
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	5	0	0	0	4	223	0	0	216	20
Future Volume (vph)	5	0	5	0	0	0	4	223	0	0	216	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.93					1.00	1.00			1.00	0.85
Flt Protected		0.98					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1672					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1628					1770	1863			1863	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.92	0.92	0.92	0.79	0.79	0.79	0.82	0.82	0.82
Adj. Flow (vph)	10	0	10	0	0	0	5	282	0	0	263	24
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	0	0	5	282	0	0	263	24
Confl. Peds. (#/hr)			3	3					18	18		149
Confl. Bikes (#/hr)									125			143
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		9.9					1.3	36.9			66.2	81.1
Effective Green, g (s)		9.9					1.3	36.9			66.2	76.1
Actuated g/C Ratio		0.11					0.01	0.40			0.72	0.83
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		176					25	752			1349	1318
v/s Ratio Prot							c0.00	c0.15			c0.14	c0.02
v/s Ratio Perm		0.00										
v/c Ratio		0.01					0.20	0.38			0.19	0.02
Uniform Delay, d1		36.4					44.5	19.1			4.0	1.3
Progression Factor		1.00					1.00	1.00			0.21	0.00
Incremental Delay, d2		0.0					1.4	0.3			0.1	0.0
Delay (s)		36.4					46.0	19.5			0.9	0.0
Level of Service		D					D	B			A	A
Approach Delay (s)		36.4			0.0			19.9			0.8	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

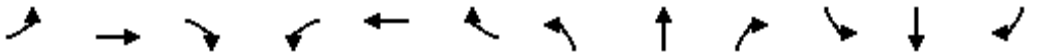
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	76	74	81	157	103	115
Future Volume (vph)	76	74	81	157	103	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.90
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1749	1583	1770	1863	1863	1419
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1749	1583	1770	1863	1863	1419
Peak-hour factor, PHF	0.77	0.77	0.79	0.79	0.80	0.80
Adj. Flow (vph)	99	96	103	199	129	144
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	99	96	103	199	129	144
Confl. Peds. (#/hr)	8					132
Confl. Bikes (#/hr)						130
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	9.0	9.0	6.9	45.3	33.9	42.9
Effective Green, g (s)	9.0	9.0	6.9	45.3	33.9	42.9
Actuated g/C Ratio	0.14	0.14	0.11	0.71	0.53	0.67
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	246	223	191	1322	989	954
v/s Ratio Prot			c0.06	c0.11	0.07	0.02
v/s Ratio Perm	0.06	c0.06				0.08
v/c Ratio	0.40	0.43	0.54	0.15	0.13	0.15
Uniform Delay, d1	25.0	25.1	26.9	3.0	7.5	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.3	1.5	0.1	0.1	0.0
Delay (s)	26.0	26.4	28.4	3.1	7.6	3.8
Level of Service	C	C	C	A	A	A
Approach Delay (s)	26.2			11.7	5.6	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	52	4	47	95	234	5	25	43	115	47	16
Future Volume (vph)	9	52	4	47	95	234	5	25	43	115	47	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.92		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1835		1770	1863	1544	1770	1554		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1835		1770	1863	1544	1770	1554		1770	1863	1583
Peak-hour factor, PHF	0.69	0.69	0.69	0.77	0.77	0.77	0.73	0.73	0.73	0.71	0.71	0.71
Adj. Flow (vph)	13	75	6	61	123	304	7	34	59	162	66	23
RTOR Reduction (vph)	0	0	0	0	0	176	0	46	0	0	0	0
Lane Group Flow (vph)	13	81	0	61	123	128	7	47	0	162	66	23
Confl. Peds. (#/hr)			19			35			27			136
Confl. Bikes (#/hr)									93			115
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	2.5	9.1		4.0	10.1	30.6	0.7	16.3		20.5	37.1	7.1
Effective Green, g (s)	2.5	9.1		4.0	10.1	30.6	0.7	16.3		20.5	37.1	7.1
Actuated g/C Ratio	0.03	0.12		0.05	0.14	0.42	0.01	0.22		0.28	0.51	0.10
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	60	229		97	258	648	16	347		497	948	154
v/s Ratio Prot	0.01	0.04		c0.03	c0.07	0.06	0.00	c0.03		c0.09	0.04	c0.01
v/s Ratio Perm						0.03						
v/c Ratio	0.22	0.35		0.63	0.48	0.20	0.44	0.14		0.33	0.07	0.15
Uniform Delay, d1	34.2	29.2		33.7	29.0	13.4	35.9	22.7		20.7	9.1	30.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3		8.8	0.5	0.1	6.8	0.2		0.4	0.0	0.2
Delay (s)	34.9	29.6		42.6	29.5	13.5	42.7	22.9		21.1	9.2	30.3
Level of Service	C	C		D	C	B	D	C		C	A	C
Approach Delay (s)		30.3			21.2			24.3			18.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	72.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	7	13	50	49	16
Future Vol, veh/h	9	7	13	50	49	16
Peak Hour Factor	0.75	0.75	0.88	0.88	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	15	57	82	27
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	7.7	7.8	8
HCM LOS	A	A	A

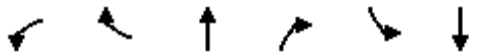
Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	75%
Vol Right, %	0%	0%	0%	100%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	50	9	7	65
LT Vol	13	0	9	0	0
Through Vol	0	50	0	0	49
RT Vol	0	0	0	7	16
Lane Flow Rate	15	57	12	9	108
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.021	0.073	0.018	0.011	0.129
Departure Headway (Hd)	5.125	4.624	5.457	4.254	4.276
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	773	660	846	835
Service Time	2.863	2.363	3.157	1.954	2.32
HCM Lane V/C Ratio	0.022	0.074	0.018	0.011	0.129
HCM Control Delay	8	7.7	8.3	7	8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1	0	0.4

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	2	9	0	0	5	7	9	0	2	20	61
Future Vol, veh/h	49	2	9	0	0	5	7	9	0	2	20	61
Peak Hour Factor	0.69	0.69	0.69	0.75	0.75	0.75	0.56	0.56	0.56	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	3	13	0	0	7	13	16	0	3	26	79
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.4	7.4	8.2	7.4
HCM LOS	A	A	A	A

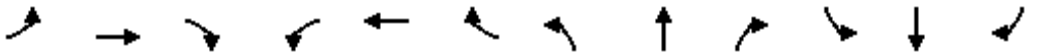
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	44%	100%	0%	0%	9%	0%
Vol Thru, %	56%	0%	18%	0%	91%	0%
Vol Right, %	0%	0%	82%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	49	11	5	22	61
LT Vol	7	49	0	0	2	0
Through Vol	9	0	2	0	20	0
RT Vol	0	0	9	5	0	61
Lane Flow Rate	29	71	16	7	29	79
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.04	0.104	0.019	0.008	0.039	0.09
Departure Headway (Hd)	4.982	5.268	4.194	4.355	4.856	4.109
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	723	673	840	825	742	877
Service Time	2.985	3.061	1.986	2.362	2.556	1.809
HCM Lane V/C Ratio	0.04	0.105	0.019	0.008	0.039	0.09
HCM Control Delay	8.2	8.7	7.1	7.4	7.8	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0	0.1	0.3



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	187	274	293	160	238	283
Future Volume (vph)	187	274	293	160	238	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.96	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1690	1583	1731		1767	1863
Flt Permitted	0.95	1.00	1.00		0.22	1.00
Satd. Flow (perm)	1690	1583	1731		417	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.85	0.85
Adj. Flow (vph)	208	304	326	178	280	333
RTOR Reduction (vph)	0	165	10	0	0	0
Lane Group Flow (vph)	208	139	494	0	280	333
Confl. Peds. (#/hr)	19			16	16	
Confl. Bikes (#/hr)				26		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	22.7	22.7	39.9		70.5	45.7
Effective Green, g (s)	22.7	22.7	39.9		65.5	45.7
Actuated g/C Ratio	0.22	0.22	0.38		0.63	0.44
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	369	346	666		544	821
v/s Ratio Prot			c0.29		c0.11	0.18
v/s Ratio Perm	c0.12	0.09			0.22	
v/c Ratio	0.56	0.40	0.74		0.51	0.41
Uniform Delay, d1	36.1	34.7	27.5		12.2	19.8
Progression Factor	1.00	1.00	0.27		1.00	1.00
Incremental Delay, d2	2.0	0.8	3.2		0.8	0.3
Delay (s)	38.1	35.5	10.6		13.0	20.1
Level of Service	D	D	B		B	C
Approach Delay (s)	36.5		10.6			16.8
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

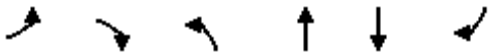
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	14	0	0	0	5	443	0	4	450	18
Future Volume (vph)	18	0	14	0	0	0	5	443	0	4	450	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5		5.5	5.5	5.5
Lane Util. Factor		1.00					1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00		0.99	1.00	1.00
Frt		0.94					1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1683					1770	1863		1753	1863	1583
Flt Permitted		0.95					0.95	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1644					1770	1863		599	1863	1583
Peak-hour factor, PHF	0.64	0.64	0.64	0.92	0.92	0.92	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	28	0	22	0	0	0	6	492	0	5	529	21
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	0	0	6	492	0	5	529	21
Confl. Peds. (#/hr)			3	3					19	19		119
Confl. Bikes (#/hr)									193			207
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		14.5					1.3	39.9		73.9	73.9	93.4
Effective Green, g (s)		14.5					1.3	39.9		73.9	73.9	88.4
Actuated g/C Ratio		0.14					0.01	0.38		0.71	0.71	0.85
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		229					22	716		426	1327	1349
v/s Ratio Prot							c0.00	c0.26			c0.28	0.01
v/s Ratio Perm		c0.00								0.01		
v/c Ratio		0.03					0.27	0.69		0.01	0.40	0.02
Uniform Delay, d1		38.5					50.7	26.7		4.3	6.0	1.1
Progression Factor		1.00					1.00	1.00		0.16	0.11	0.01
Incremental Delay, d2		0.1					2.4	2.8		0.0	0.2	0.0
Delay (s)		38.6					53.2	29.4		0.7	0.9	0.0
Level of Service		D					D	C		A	A	A
Approach Delay (s)		38.6			0.0			29.7			0.8	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	103.7	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

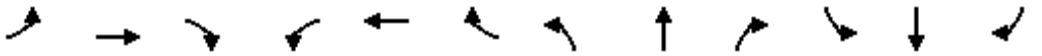
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	124	149	259	275	218
Future Volume (vph)	155	124	149	259	275	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1411
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1411
Peak-hour factor, PHF	0.86	0.86	0.85	0.85	0.86	0.86
Adj. Flow (vph)	180	144	175	305	320	253
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	180	144	175	305	320	253
Confl. Peds. (#/hr)		2				145
Confl. Bikes (#/hr)						156
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	13.0	13.0	11.1	46.1	30.5	43.5
Effective Green, g (s)	13.0	13.0	11.1	46.1	30.5	43.5
Actuated g/C Ratio	0.19	0.19	0.16	0.67	0.44	0.63
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	335	293	286	1251	828	894
v/s Ratio Prot			c0.10	0.16	c0.17	0.05
v/s Ratio Perm	c0.10	0.09				0.13
v/c Ratio	0.54	0.49	0.61	0.24	0.39	0.28
Uniform Delay, d1	25.1	24.8	26.7	4.4	12.8	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	1.3	2.7	0.1	0.3	0.1
Delay (s)	26.7	26.1	29.5	4.5	13.1	5.7
Level of Service	C	C	C	A	B	A
Approach Delay (s)	26.5			13.6	9.8	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	88	9	113	67	380	7	63	135	292	103	25
Future Volume (vph)	16	88	9	113	67	380	7	63	135	292	103	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.91		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1821		1770	1863	1531	1770	1524		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1821		1770	1863	1531	1770	1524		1770	1863	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77	0.90	0.90	0.90
Adj. Flow (vph)	17	95	10	122	72	409	9	82	175	324	114	28
RTOR Reduction (vph)	0	0	0	0	0	242	0	67	0	0	0	0
Lane Group Flow (vph)	17	105	0	122	72	167	9	190	0	324	114	28
Confl. Peds. (#/hr)			30			26			23			137
Confl. Bikes (#/hr)						1			136			187
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	3.1	10.9		10.1	17.4	38.6	0.9	29.2		21.2	50.5	11.9
Effective Green, g (s)	3.1	10.9		10.1	17.4	38.6	0.9	29.2		21.2	50.5	11.9
Actuated g/C Ratio	0.03	0.12		0.11	0.18	0.41	0.01	0.31		0.22	0.53	0.13
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	58	210		189	343	626	16	471		397	996	199
v/s Ratio Prot	0.01	c0.06		c0.07	0.04	0.06	0.01	c0.12		c0.18	0.06	0.02
v/s Ratio Perm						0.05						
v/c Ratio	0.29	0.50		0.65	0.21	0.27	0.56	0.40		0.82	0.11	0.14
Uniform Delay, d1	44.6	39.2		40.4	32.7	18.5	46.6	25.7		34.7	10.9	36.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.7		5.6	0.1	0.2	24.2	0.8		12.2	0.1	0.1
Delay (s)	45.6	39.9		46.0	32.8	18.7	70.8	26.5		47.0	10.9	36.8
Level of Service	D	D		D	C	B	E	C		D	B	D
Approach Delay (s)		40.7			25.9			28.0			37.5	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	23.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	47	38	41	90	130	45
Future Vol, veh/h	47	38	41	90	130	45
Peak Hour Factor	0.73	0.73	0.87	0.87	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	52	47	103	144	50
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.6	8.6	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	74%
Vol Right, %	0%	0%	0%	100%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	90	47	38	175
LT Vol	41	0	47	0	0
Through Vol	0	90	0	0	130
RT Vol	0	0	0	38	45
Lane Flow Rate	47	103	64	52	194
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.072	0.144	0.105	0.067	0.252
Departure Headway (Hd)	5.509	5.006	5.868	4.662	4.668
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	652	718	612	768	770
Service Time	3.231	2.728	3.596	2.389	2.689
HCM Lane V/C Ratio	0.072	0.143	0.105	0.068	0.252
HCM Control Delay	8.7	8.6	9.3	7.7	9.3
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.4	0.2	1

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	131	2	27	0	2	14	11	32	0	23	56	121
Future Vol, veh/h	131	2	27	0	2	14	11	32	0	23	56	121
Peak Hour Factor	0.80	0.80	0.80	0.56	0.56	0.56	0.55	0.55	0.55	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	164	3	34	0	4	25	20	58	0	28	68	148
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

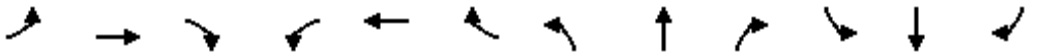
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.2	8.3	9.3	8.6
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	26%	100%	0%	0%	29%	0%
Vol Thru, %	74%	0%	7%	12%	71%	0%
Vol Right, %	0%	0%	93%	88%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	131	29	16	79	121
LT Vol	11	131	0	0	23	0
Through Vol	32	0	2	2	56	0
RT Vol	0	0	27	14	0	121
Lane Flow Rate	78	164	36	29	96	148
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.119	0.266	0.047	0.04	0.145	0.187
Departure Headway (Hd)	5.498	5.841	4.683	5.066	5.4	4.55
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	650	614	761	703	664	787
Service Time	3.548	3.591	2.432	3.127	3.138	2.287
HCM Lane V/C Ratio	0.12	0.267	0.047	0.041	0.145	0.188
HCM Control Delay	9.3	10.7	7.7	8.3	9.1	8.3
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.4	1.1	0.1	0.1	0.5	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	239	279	328	184	232	342
Future Volume (vph)	239	279	328	184	232	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.93	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1637	1583	1736		1769	1863
Flt Permitted	0.95	1.00	1.00		0.15	1.00
Satd. Flow (perm)	1637	1583	1736		272	1863
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.77	0.77
Adj. Flow (vph)	285	332	353	198	301	444
RTOR Reduction (vph)	0	125	11	0	0	0
Lane Group Flow (vph)	285	207	540	0	301	444
Confl. Peds. (#/hr)	29			13	13	
Confl. Bikes (#/hr)				15		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	28.9	28.9	40.4		72.5	43.0
Effective Green, g (s)	28.9	28.9	40.4		67.5	43.0
Actuated g/C Ratio	0.26	0.26	0.36		0.60	0.38
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	417	403	619		485	707
v/s Ratio Prot			c0.31		c0.13	0.24
v/s Ratio Perm	c0.17	0.13			0.23	
v/c Ratio	0.68	0.51	0.87		0.62	0.63
Uniform Delay, d1	38.1	36.2	34.0		19.0	28.6
Progression Factor	1.00	1.00	0.24		1.00	1.00
Incremental Delay, d2	4.6	1.1	8.2		2.5	1.8
Delay (s)	42.7	37.3	16.3		21.4	30.4
Level of Service	D	D	B		C	C
Approach Delay (s)	39.8		16.3			26.8
Approach LOS	D		B			C

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	113.3	Sum of lost time (s)	24.5
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

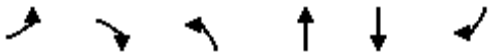
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	49	0	0	0	23	495	0	0	547	34
Future Volume (vph)	16	0	49	0	0	0	23	495	0	0	547	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.90					1.00	1.00			1.00	0.85
Flt Protected		0.99					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1653					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1589					1770	1863			1863	1583
Peak-hour factor, PHF	0.75	0.75	0.75	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Adj. Flow (vph)	21	0	65	0	0	0	24	527	0	0	629	39
RTOR Reduction (vph)	0	73	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	13	0	0	0	0	24	527	0	0	629	39
Confl. Peds. (#/hr)									57	57		4
Confl. Bikes (#/hr)									87			125
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		17.4					4.5	40.4			77.4	99.8
Effective Green, g (s)		17.4					4.5	40.4			77.4	94.8
Actuated g/C Ratio		0.15					0.04	0.36			0.68	0.84
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		244					70	664			1272	1324
v/s Ratio Prot							c0.01	c0.28			c0.34	0.02
v/s Ratio Perm		c0.01										
v/c Ratio		0.05					0.34	0.79			0.49	0.03
Uniform Delay, d1		40.9					53.0	32.7			8.6	1.5
Progression Factor		1.00					1.00	1.00			0.15	0.00
Incremental Delay, d2		0.1					1.1	6.5			0.2	0.0
Delay (s)		41.0					54.0	39.2			1.5	0.0
Level of Service		D					D	D			A	A
Approach Delay (s)		41.0			0.0			39.8			1.4	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	113.3	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

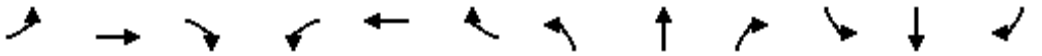
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	187	171	131	317	383	212
Future Volume (vph)	187	171	131	317	383	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1493
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1493
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.96	0.96
Adj. Flow (vph)	210	192	139	337	399	221
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	210	192	139	337	399	221
Confl. Peds. (#/hr)		2				55
Confl. Bikes (#/hr)						111
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	14.0	14.0	8.0	43.7	31.2	45.2
Effective Green, g (s)	14.0	14.0	8.0	43.7	31.2	45.2
Actuated g/C Ratio	0.21	0.21	0.12	0.65	0.46	0.67
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	368	322	210	1211	864	1004
v/s Ratio Prot			c0.08	0.18	c0.21	0.05
v/s Ratio Perm	0.12	c0.12				0.10
v/c Ratio	0.57	0.60	0.66	0.28	0.46	0.22
Uniform Delay, d1	23.9	24.0	28.3	5.0	12.3	4.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1	3.0	5.9	0.1	0.4	0.0
Delay (s)	26.0	27.0	34.2	5.1	12.7	4.3
Level of Service	C	C	C	A	B	A
Approach Delay (s)	26.5			13.6	9.7	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	67.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	103	7	209	85	517	5	99	115	382	139	61
Future Volume (vph)	50	103	7	209	85	517	5	99	115	382	139	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1836		1770	1863	1507	1770	1622		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1836		1770	1863	1507	1770	1622		1770	1863	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.99	0.99	0.99	0.78	0.78	0.78	0.84	0.84	0.84
Adj. Flow (vph)	65	134	9	211	86	522	6	127	147	455	165	73
RTOR Reduction (vph)	0	0	0	0	0	251	0	34	0	0	0	0
Lane Group Flow (vph)	65	143	0	211	86	271	6	240	0	455	165	73
Confl. Peds. (#/hr)			23			38			27			85
Confl. Bikes (#/hr)									67			98
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	6.5	14.6		15.2	22.8	53.3	1.0	30.3		30.5	60.8	16.5
Effective Green, g (s)	6.5	14.6		15.2	22.8	53.3	1.0	30.3		30.5	60.8	16.5
Actuated g/C Ratio	0.06	0.13		0.13	0.20	0.47	0.01	0.27		0.27	0.54	0.15
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	101	235		236	373	707	15	432		475	997	229
v/s Ratio Prot	0.04	c0.08		c0.12	0.05	0.10	0.00	c0.15		c0.26	0.09	0.05
v/s Ratio Perm						0.08						
v/c Ratio	0.64	0.61		0.89	0.23	0.38	0.40	0.55		0.96	0.17	0.32
Uniform Delay, d1	52.4	46.8		48.4	38.0	19.5	56.0	35.8		40.9	13.5	43.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.1	3.0		31.2	0.1	0.3	6.3	1.9		30.4	0.1	0.3
Delay (s)	62.5	49.8		79.6	38.2	19.9	62.3	37.7		71.4	13.6	43.8
Level of Service	E	D		E	D	B	E	D		E	B	D
Approach Delay (s)		53.8			37.2			38.3			54.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	113.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	56	31	63	185	176	38
Future Vol, veh/h	56	31	63	185	176	38
Peak Hour Factor	0.86	0.86	0.82	0.82	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	36	77	226	189	41
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.3	9.8	10.1
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	82%
Vol Right, %	0%	0%	0%	100%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	63	185	56	31	214
LT Vol	63	0	56	0	0
Through Vol	0	185	0	0	176
RT Vol	0	0	0	31	38
Lane Flow Rate	77	226	65	36	230
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.118	0.315	0.114	0.051	0.311
Departure Headway (Hd)	5.523	5.021	6.3	5.089	4.861
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	649	715	568	701	739
Service Time	3.257	2.754	4.052	2.841	2.895
HCM Lane V/C Ratio	0.119	0.316	0.114	0.051	0.311
HCM Control Delay	9	10.1	9.9	8.1	10.1
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0.4	1.3	0.4	0.2	1.3

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	169	2	38	0	2	7	14	72	0	13	32	229
Future Vol, veh/h	169	2	38	0	2	7	14	72	0	13	32	229
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	186	2	42	0	5	17	15	78	0	15	37	266
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

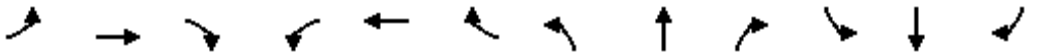
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.8	8.7	9.7	9.6
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	100%	0%	0%	29%	0%
Vol Thru, %	84%	0%	5%	22%	71%	0%
Vol Right, %	0%	0%	95%	78%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	169	40	9	45	229
LT Vol	14	169	0	0	13	0
Through Vol	72	0	2	2	32	0
RT Vol	0	0	38	7	0	229
Lane Flow Rate	93	186	44	21	52	266
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.147	0.311	0.059	0.032	0.08	0.344
Departure Headway (Hd)	5.646	6.032	4.858	5.391	5.504	4.654
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	632	592	731	657	649	770
Service Time	3.713	3.806	2.632	3.486	3.252	2.402
HCM Lane V/C Ratio	0.147	0.314	0.06	0.032	0.08	0.345
HCM Control Delay	9.7	11.5	7.9	8.7	8.7	9.8
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.5	1.3	0.2	0.1	0.3	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	162	186	157	75	127	82
Future Volume (vph)	162	186	157	75	127	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.90	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1597	1583	1742		1762	1863
Flt Permitted	0.95	1.00	1.00		0.47	1.00
Satd. Flow (perm)	1597	1583	1742		880	1863
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.74	0.74
Adj. Flow (vph)	180	207	183	87	172	111
RTOR Reduction (vph)	0	133	8	0	0	0
Lane Group Flow (vph)	180	74	262	0	172	111
Confl. Peds. (#/hr)	47			11	11	
Confl. Bikes (#/hr)				37		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	18.2	18.2	36.8		62.8	42.6
Effective Green, g (s)	18.2	18.2	36.8		57.8	42.6
Actuated g/C Ratio	0.20	0.20	0.40		0.63	0.47
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	317	314	700		719	867
v/s Ratio Prot			c0.15		c0.04	0.06
v/s Ratio Perm	c0.11	0.05			0.11	
v/c Ratio	0.57	0.24	0.37		0.24	0.13
Uniform Delay, d1	33.1	30.8	19.2		7.3	13.9
Progression Factor	1.00	1.00	0.15		1.00	1.00
Incremental Delay, d2	2.3	0.4	0.3		0.2	0.1
Delay (s)	35.4	31.2	3.2		7.5	14.0
Level of Service	D	C	A		A	B
Approach Delay (s)	33.2		3.2			10.0
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	24.5
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

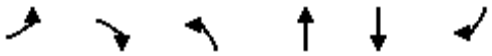
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	5	0	0	0	4	226	0	0	219	20
Future Volume (vph)	5	0	5	0	0	0	4	226	0	0	219	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.93					1.00	1.00			1.00	0.85
Flt Protected		0.98					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1672					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1628					1770	1863			1863	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.92	0.92	0.92	0.79	0.79	0.79	0.82	0.82	0.82
Adj. Flow (vph)	10	0	10	0	0	0	5	286	0	0	267	24
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	0	0	5	286	0	0	267	24
Confl. Peds. (#/hr)			3	3					18	18		149
Confl. Bikes (#/hr)									125			143
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		9.9					1.3	36.8			66.3	81.2
Effective Green, g (s)		9.9					1.3	36.8			66.3	76.2
Actuated g/C Ratio		0.11					0.01	0.40			0.72	0.83
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		176					25	749			1349	1318
v/s Ratio Prot							c0.00	c0.15			c0.14	c0.02
v/s Ratio Perm		0.00										
v/c Ratio		0.01					0.20	0.38			0.20	0.02
Uniform Delay, d1		36.4					44.6	19.3			4.1	1.3
Progression Factor		1.00					1.00	1.00			0.20	0.00
Incremental Delay, d2		0.0					1.4	0.3			0.1	0.0
Delay (s)		36.5					46.0	19.6			0.9	0.0
Level of Service		D					D	B			A	A
Approach Delay (s)		36.5			0.0			20.1			0.8	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	91.5	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

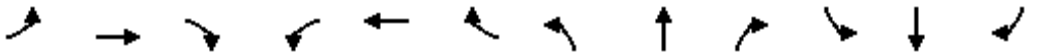
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	75	82	159	104	116
Future Volume (vph)	77	75	82	159	104	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.90
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1749	1583	1770	1863	1863	1419
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1749	1583	1770	1863	1863	1419
Peak-hour factor, PHF	0.77	0.77	0.79	0.79	0.80	0.80
Adj. Flow (vph)	100	97	104	201	130	145
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	100	97	104	201	130	145
Confl. Peds. (#/hr)	8					132
Confl. Bikes (#/hr)						130
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	9.0	9.0	6.9	45.2	33.8	42.8
Effective Green, g (s)	9.0	9.0	6.9	45.2	33.8	42.8
Actuated g/C Ratio	0.14	0.14	0.11	0.71	0.53	0.67
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	247	223	191	1321	988	953
v/s Ratio Prot			c0.06	c0.11	0.07	0.02
v/s Ratio Perm	0.06	c0.06				0.08
v/c Ratio	0.40	0.43	0.54	0.15	0.13	0.15
Uniform Delay, d1	24.9	25.0	26.9	3.0	7.5	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.4	1.7	0.1	0.1	0.0
Delay (s)	26.0	26.4	28.6	3.1	7.6	3.8
Level of Service	C	C	C	A	A	A
Approach Delay (s)	26.2			11.8	5.6	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	53	4	48	96	237	5	25	44	116	48	16
Future Volume (vph)	9	53	4	48	96	237	5	25	44	116	48	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.92		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1836		1770	1863	1544	1770	1552		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1836		1770	1863	1544	1770	1552		1770	1863	1583
Peak-hour factor, PHF	0.69	0.69	0.69	0.77	0.77	0.77	0.73	0.73	0.73	0.71	0.71	0.71
Adj. Flow (vph)	13	77	6	62	125	308	7	34	60	163	68	23
RTOR Reduction (vph)	0	0	0	0	0	179	0	47	0	0	0	0
Lane Group Flow (vph)	13	83	0	62	125	129	7	47	0	163	68	23
Confl. Peds. (#/hr)			19			35			27			136
Confl. Bikes (#/hr)									93			115
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	2.5	9.0		4.1	10.1	30.6	0.7	16.4		20.5	37.2	7.1
Effective Green, g (s)	2.5	9.0		4.1	10.1	30.6	0.7	16.4		20.5	37.2	7.1
Actuated g/C Ratio	0.03	0.12		0.06	0.14	0.42	0.01	0.22		0.28	0.51	0.10
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	60	226		99	257	647	16	348		497	949	153
v/s Ratio Prot	0.01	0.05		c0.04	c0.07	0.06	0.00	c0.03		c0.09	0.04	c0.01
v/s Ratio Perm						0.03						
v/c Ratio	0.22	0.37		0.63	0.49	0.20	0.44	0.14		0.33	0.07	0.15
Uniform Delay, d1	34.3	29.4		33.7	29.1	13.4	36.0	22.6		20.8	9.1	30.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4		8.6	0.5	0.2	6.8	0.2		0.4	0.0	0.2
Delay (s)	35.0	29.8		42.3	29.6	13.6	42.8	22.9		21.2	9.2	30.4
Level of Service	C	C		D	C	B	D	C		C	A	C
Approach Delay (s)		30.5			21.2			24.3			18.8	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	7	13	51	50	16
Future Vol, veh/h	9	7	13	51	50	16
Peak Hour Factor	0.75	0.75	0.88	0.88	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	15	58	83	27
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	7.7	7.8	8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	76%
Vol Right, %	0%	0%	0%	100%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	51	9	7	66
LT Vol	13	0	9	0	0
Through Vol	0	51	0	0	50
RT Vol	0	0	0	7	16
Lane Flow Rate	15	58	12	9	110
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.021	0.074	0.018	0.011	0.131
Departure Headway (Hd)	5.126	4.625	5.463	4.26	4.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	773	659	845	835
Service Time	2.865	2.364	3.163	1.96	2.323
HCM Lane V/C Ratio	0.022	0.075	0.018	0.011	0.132
HCM Control Delay	8	7.7	8.3	7	8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1	0	0.5

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	2	9	0	0	5	7	9	0	2	20	62
Future Vol, veh/h	50	2	9	0	0	5	7	9	0	2	20	62
Peak Hour Factor	0.69	0.69	0.69	0.75	0.75	0.75	0.56	0.56	0.56	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	3	13	0	0	7	13	16	0	3	26	81
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

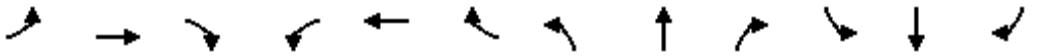
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.4	7.4	8.2	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	44%	100%	0%	0%	9%	0%
Vol Thru, %	56%	0%	18%	0%	91%	0%
Vol Right, %	0%	0%	82%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	50	11	5	22	62
LT Vol	7	50	0	0	2	0
Through Vol	9	0	2	0	20	0
RT Vol	0	0	9	5	0	62
Lane Flow Rate	29	72	16	7	29	81
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.04	0.106	0.019	0.008	0.039	0.092
Departure Headway (Hd)	4.988	5.272	4.197	4.36	4.86	4.113
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	722	672	839	824	741	877
Service Time	2.99	3.065	1.99	2.368	2.56	1.813
HCM Lane V/C Ratio	0.04	0.107	0.019	0.008	0.039	0.092
HCM Control Delay	8.2	8.7	7.1	7.4	7.8	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.1	0	0.1	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	189	277	296	162	241	286
Future Volume (vph)	189	277	296	162	241	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.96	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1690	1583	1730		1767	1863
Flt Permitted	0.95	1.00	1.00		0.22	1.00
Satd. Flow (perm)	1690	1583	1730		407	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.85	0.85
Adj. Flow (vph)	210	308	329	180	284	336
RTOR Reduction (vph)	0	166	10	0	0	0
Lane Group Flow (vph)	210	142	499	0	284	336
Confl. Peds. (#/hr)	19			16	16	
Confl. Bikes (#/hr)				26		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	22.8	22.8	40.0		70.8	45.8
Effective Green, g (s)	22.8	22.8	40.0		65.8	45.8
Actuated g/C Ratio	0.22	0.22	0.38		0.63	0.44
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	370	346	664		542	819
v/s Ratio Prot			c0.29		c0.11	0.18
v/s Ratio Perm	c0.12	0.09			0.22	
v/c Ratio	0.57	0.41	0.75		0.52	0.41
Uniform Delay, d1	36.3	34.9	27.8		12.4	19.9
Progression Factor	1.00	1.00	0.27		1.00	1.00
Incremental Delay, d2	2.0	0.8	3.4		0.9	0.3
Delay (s)	38.3	35.7	10.8		13.3	20.3
Level of Service	D	D	B		B	C
Approach Delay (s)	36.7		10.8			17.1
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

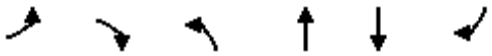
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	14	0	0	0	5	448	0	4	455	18
Future Volume (vph)	18	0	14	0	0	0	5	448	0	4	455	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5		5.5	5.5	5.5
Lane Util. Factor		1.00					1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00		0.99	1.00	1.00
Frt		0.94					1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1683					1770	1863		1753	1863	1583
Flt Permitted		0.95					0.95	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1644					1770	1863		590	1863	1583
Peak-hour factor, PHF	0.64	0.64	0.64	0.92	0.92	0.92	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	28	0	22	0	0	0	6	498	0	5	535	21
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	0	0	6	498	0	5	535	21
Confl. Peds. (#/hr)			3	3					19	19		119
Confl. Bikes (#/hr)									193			207
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		14.7					1.3	40.0		74.1	74.1	93.8
Effective Green, g (s)		14.7					1.3	40.0		74.1	74.1	88.8
Actuated g/C Ratio		0.14					0.01	0.38		0.71	0.71	0.85
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		232					22	715		419	1326	1350
v/s Ratio Prot							c0.00	c0.27			c0.29	0.01
v/s Ratio Perm		c0.00								0.01		
v/c Ratio		0.03					0.27	0.70		0.01	0.40	0.02
Uniform Delay, d1		38.6					50.9	26.9		4.4	6.1	1.1
Progression Factor		1.00					1.00	1.00		0.16	0.11	0.01
Incremental Delay, d2		0.1					2.4	3.0		0.0	0.2	0.0
Delay (s)		38.6					53.4	29.9		0.7	0.9	0.0
Level of Service		D					D	C		A	A	A
Approach Delay (s)		38.6			0.0			30.2			0.8	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	104.1	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

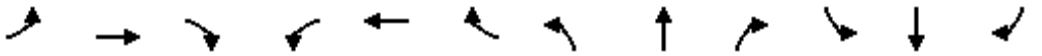
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	125	151	262	278	221
Future Volume (vph)	157	125	151	262	278	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1411
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1411
Peak-hour factor, PHF	0.86	0.86	0.85	0.85	0.86	0.86
Adj. Flow (vph)	183	145	178	308	323	257
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	183	145	178	308	323	257
Confl. Peds. (#/hr)		2				145
Confl. Bikes (#/hr)						156
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	13.1	13.1	11.2	46.2	30.5	43.6
Effective Green, g (s)	13.1	13.1	11.2	46.2	30.5	43.6
Actuated g/C Ratio	0.19	0.19	0.16	0.67	0.44	0.63
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	337	294	288	1251	825	894
v/s Ratio Prot			c0.10	0.17	c0.17	0.05
v/s Ratio Perm	c0.10	0.09				0.13
v/c Ratio	0.54	0.49	0.62	0.25	0.39	0.29
Uniform Delay, d1	25.1	24.9	26.8	4.4	12.9	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.3	2.8	0.1	0.3	0.1
Delay (s)	26.9	26.2	29.6	4.6	13.2	5.7
Level of Service	C	C	C	A	B	A
Approach Delay (s)	26.6			13.7	9.9	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	89	9	114	68	384	7	64	137	295	104	25
Future Volume (vph)	16	89	9	114	68	384	7	64	137	295	104	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.91		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1821		1770	1863	1531	1770	1524		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1821		1770	1863	1531	1770	1524		1770	1863	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77	0.90	0.90	0.90
Adj. Flow (vph)	17	96	10	123	73	413	9	83	178	328	116	28
RTOR Reduction (vph)	0	0	0	0	0	244	0	67	0	0	0	0
Lane Group Flow (vph)	17	106	0	123	73	169	9	194	0	328	116	28
Confl. Peds. (#/hr)			30			26			23			137
Confl. Bikes (#/hr)						1			136			187
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	3.1	11.0		10.1	17.5	38.7	0.9	29.2		21.2	50.5	11.9
Effective Green, g (s)	3.1	11.0		10.1	17.5	38.7	0.9	29.2		21.2	50.5	11.9
Actuated g/C Ratio	0.03	0.12		0.11	0.19	0.41	0.01	0.31		0.22	0.53	0.13
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	58	211		189	345	626	16	470		397	995	199
v/s Ratio Prot	0.01	c0.06		c0.07	0.04	0.06	0.01	c0.13		c0.19	0.06	0.02
v/s Ratio Perm						0.05						
v/c Ratio	0.29	0.50		0.65	0.21	0.27	0.56	0.41		0.83	0.12	0.14
Uniform Delay, d1	44.6	39.2		40.5	32.6	18.5	46.6	25.9		34.9	10.9	36.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.7		6.0	0.1	0.2	24.2	0.8		13.1	0.1	0.1
Delay (s)	45.7	39.9		46.5	32.8	18.8	70.8	26.7		48.0	11.0	36.9
Level of Service	D	D		D	C	B	E	C		D	B	D
Approach Delay (s)		40.7			26.0			28.1			38.3	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	94.5	Sum of lost time (s)	23.5
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	38	41	91	132	46
Future Vol, veh/h	48	38	41	91	132	46
Peak Hour Factor	0.73	0.73	0.87	0.87	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	52	47	105	147	51
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	8.6	8.6	9.3
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	74%
Vol Right, %	0%	0%	0%	100%	26%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	41	91	48	38	178
LT Vol	41	0	48	0	0
Through Vol	0	91	0	0	132
RT Vol	0	0	0	38	46
Lane Flow Rate	47	105	66	52	198
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.072	0.146	0.107	0.068	0.257
Departure Headway (Hd)	5.517	5.015	5.879	4.672	4.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	650	716	610	766	769
Service Time	3.24	2.738	3.609	2.402	2.695
HCM Lane V/C Ratio	0.072	0.147	0.108	0.068	0.257
HCM Control Delay	8.7	8.6	9.3	7.7	9.3
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.4	0.2	1

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	133	2	27	0	2	14	11	32	0	23	57	122
Future Vol, veh/h	133	2	27	0	2	14	11	32	0	23	57	122
Peak Hour Factor	0.80	0.80	0.80	0.56	0.56	0.56	0.55	0.55	0.55	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	166	3	34	0	4	25	20	58	0	28	70	149
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

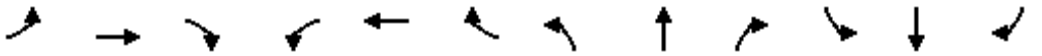
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.2	8.4	9.3	8.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	26%	100%	0%	0%	29%	0%
Vol Thru, %	74%	0%	7%	12%	71%	0%
Vol Right, %	0%	0%	93%	88%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	133	29	16	80	122
LT Vol	11	133	0	0	23	0
Through Vol	32	0	2	2	57	0
RT Vol	0	0	27	14	0	122
Lane Flow Rate	78	166	36	29	98	149
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.12	0.27	0.047	0.04	0.147	0.188
Departure Headway (Hd)	5.509	5.847	4.688	5.075	5.406	4.558
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	649	613	760	701	662	786
Service Time	3.558	3.598	2.439	3.138	3.145	2.296
HCM Lane V/C Ratio	0.12	0.271	0.047	0.041	0.148	0.19
HCM Control Delay	9.3	10.8	7.7	8.4	9.1	8.4
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.4	1.1	0.1	0.1	0.5	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	242	282	332	186	235	346
Future Volume (vph)	242	282	332	186	235	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.92	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1637	1583	1736		1769	1863
Flt Permitted	0.95	1.00	1.00		0.14	1.00
Satd. Flow (perm)	1637	1583	1736		257	1863
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.77	0.77
Adj. Flow (vph)	288	336	357	200	305	449
RTOR Reduction (vph)	0	126	11	0	0	0
Lane Group Flow (vph)	288	210	546	0	305	449
Confl. Peds. (#/hr)	29			13	13	
Confl. Bikes (#/hr)				15		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	29.0	29.0	40.4		72.9	43.0
Effective Green, g (s)	29.0	29.0	40.4		67.9	43.0
Actuated g/C Ratio	0.25	0.25	0.36		0.60	0.38
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	417	403	616		484	703
v/s Ratio Prot			c0.31		c0.14	0.24
v/s Ratio Perm	c0.18	0.13			0.24	
v/c Ratio	0.69	0.52	0.89		0.63	0.64
Uniform Delay, d1	38.3	36.4	34.5		20.6	29.0
Progression Factor	1.00	1.00	0.24		1.00	1.00
Incremental Delay, d2	4.9	1.2	9.0		2.7	1.9
Delay (s)	43.2	37.7	17.2		23.3	30.9
Level of Service	D	D	B		C	C
Approach Delay (s)	40.2		17.2			27.8
Approach LOS	D		B			C

Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	113.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

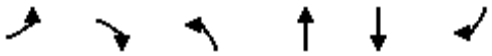
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	50	0	0	0	23	501	0	0	553	34
Future Volume (vph)	16	0	50	0	0	0	23	501	0	0	553	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.90					1.00	1.00			1.00	0.85
Flt Protected		0.99					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1652					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1588					1770	1863			1863	1583
Peak-hour factor, PHF	0.75	0.75	0.75	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Adj. Flow (vph)	21	0	67	0	0	0	24	533	0	0	636	39
RTOR Reduction (vph)	0	74	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	0	0	24	533	0	0	636	39
Confl. Peds. (#/hr)									57	57		4
Confl. Bikes (#/hr)									87			125
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		17.8					4.5	40.4			77.5	100.3
Effective Green, g (s)		17.8					4.5	40.4			77.5	95.3
Actuated g/C Ratio		0.16					0.04	0.36			0.68	0.84
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		248					69	661			1268	1325
v/s Ratio Prot							c0.01	c0.29			c0.34	0.02
v/s Ratio Perm		c0.01										
v/c Ratio		0.06					0.35	0.81			0.50	0.03
Uniform Delay, d1		40.8					53.2	33.2			8.8	1.5
Progression Factor		1.00					1.00	1.00			0.15	0.00
Incremental Delay, d2		0.1					1.1	7.1			0.2	0.0
Delay (s)		40.9					54.3	40.3			1.6	0.0
Level of Service		D					D	D			A	A
Approach Delay (s)		40.9			0.0			40.9			1.5	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	113.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

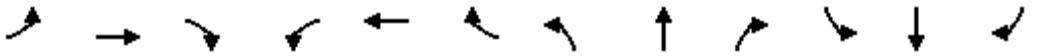
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	189	173	133	321	387	214
Future Volume (vph)	189	173	133	321	387	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1491
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1491
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.96	0.96
Adj. Flow (vph)	212	194	141	341	403	223
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	212	194	141	341	403	223
Confl. Peds. (#/hr)		2				55
Confl. Bikes (#/hr)						111
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	14.2	14.2	10.2	45.5	30.8	45.0
Effective Green, g (s)	14.2	14.2	10.2	45.5	30.8	45.0
Actuated g/C Ratio	0.21	0.21	0.15	0.66	0.45	0.65
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	363	317	260	1224	829	969
v/s Ratio Prot			c0.08	0.18	c0.22	0.05
v/s Ratio Perm	0.12	c0.13				0.10
v/c Ratio	0.58	0.61	0.54	0.28	0.49	0.23
Uniform Delay, d1	24.8	25.0	27.3	5.0	13.6	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	3.5	1.2	0.1	0.5	0.0
Delay (s)	27.2	28.5	28.6	5.1	14.0	5.0
Level of Service	C	C	C	A	B	A
Approach Delay (s)	27.8			12.0	10.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	104	7	211	86	523	5	100	116	386	141	62
Future Volume (vph)	51	104	7	211	86	523	5	100	116	386	141	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1836		1770	1863	1507	1770	1621		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1836		1770	1863	1507	1770	1621		1770	1863	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.99	0.99	0.99	0.78	0.78	0.78	0.84	0.84	0.84
Adj. Flow (vph)	66	135	9	213	87	528	6	128	149	460	168	74
RTOR Reduction (vph)	0	0	0	0	0	250	0	34	0	0	0	0
Lane Group Flow (vph)	66	144	0	213	87	278	6	243	0	460	168	74
Confl. Peds. (#/hr)			23			38			27			85
Confl. Bikes (#/hr)									67			98
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	6.5	14.6		15.2	22.8	53.3	1.0	30.6		30.5	61.1	16.8
Effective Green, g (s)	6.5	14.6		15.2	22.8	53.3	1.0	30.6		30.5	61.1	16.8
Actuated g/C Ratio	0.06	0.13		0.13	0.20	0.47	0.01	0.27		0.27	0.54	0.15
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	101	235		236	372	705	15	435		473	999	233
v/s Ratio Prot	0.04	c0.08		c0.12	0.05	0.11	0.00	c0.15		c0.26	0.09	0.05
v/s Ratio Perm						0.08						
v/c Ratio	0.65	0.61		0.90	0.23	0.39	0.40	0.56		0.97	0.17	0.32
Uniform Delay, d1	52.6	47.0		48.6	38.2	19.8	56.2	35.8		41.3	13.5	43.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.0	3.3		33.0	0.1	0.4	6.3	1.9		34.1	0.1	0.3
Delay (s)	63.6	50.3		81.7	38.3	20.1	62.4	37.7		75.4	13.6	43.7
Level of Service	E	D		F	D	C	E	D		E	B	D
Approach Delay (s)		54.5			37.9			38.3			57.3	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	23.5
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	31	64	187	178	38
Future Vol, veh/h	57	31	64	187	178	38
Peak Hour Factor	0.86	0.86	0.82	0.82	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	36	78	228	191	41
Number of Lanes	1	1	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.3	9.8	10.1
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1
Vol Left, %	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	0%	82%
Vol Right, %	0%	0%	0%	100%	18%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	187	57	31	216
LT Vol	64	0	57	0	0
Through Vol	0	187	0	0	178
RT Vol	0	0	0	31	38
Lane Flow Rate	78	228	66	36	232
Geometry Grp	5	5	5	5	3b
Degree of Util (X)	0.12	0.318	0.116	0.051	0.314
Departure Headway (Hd)	5.529	5.027	6.313	5.102	4.87
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	649	714	567	699	739
Service Time	3.263	2.76	4.064	2.853	2.904
HCM Lane V/C Ratio	0.12	0.319	0.116	0.052	0.314
HCM Control Delay	9	10.1	9.9	8.1	10.1
HCM Lane LOS	A	B	A	A	B
HCM 95th-tile Q	0.4	1.4	0.4	0.2	1.3

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	171	2	38	0	2	7	14	73	0	13	32	232
Future Vol, veh/h	171	2	38	0	2	7	14	73	0	13	32	232
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	2	42	0	5	17	15	79	0	15	37	270
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

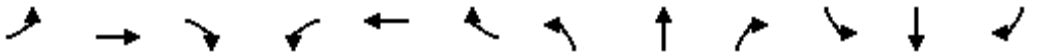
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.9	8.7	9.7	9.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	100%	0%	0%	29%	0%
Vol Thru, %	84%	0%	5%	22%	71%	0%
Vol Right, %	0%	0%	95%	78%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	171	40	9	45	232
LT Vol	14	171	0	0	13	0
Through Vol	73	0	2	2	32	0
RT Vol	0	0	38	7	0	232
Lane Flow Rate	95	188	44	21	52	270
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.149	0.315	0.059	0.032	0.08	0.349
Departure Headway (Hd)	5.657	6.042	4.869	5.407	5.513	4.663
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	630	592	729	654	648	769
Service Time	3.725	3.818	2.644	3.504	3.262	2.411
HCM Lane V/C Ratio	0.151	0.318	0.06	0.032	0.08	0.351
HCM Control Delay	9.7	11.6	8	8.7	8.7	9.9
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.5	1.3	0.2	0.1	0.3	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	169	186	157	75	127	87
Future Volume (vph)	169	186	157	75	127	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.90	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1595	1583	1742		1762	1863
Flt Permitted	0.95	1.00	1.00		0.47	1.00
Satd. Flow (perm)	1595	1583	1742		877	1863
Peak-hour factor, PHF	0.90	0.90	0.86	0.86	0.74	0.74
Adj. Flow (vph)	188	207	183	87	172	118
RTOR Reduction (vph)	0	127	8	0	0	0
Lane Group Flow (vph)	188	80	262	0	172	118
Confl. Peds. (#/hr)	47			11	11	
Confl. Bikes (#/hr)				37		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	18.8	18.8	36.8		62.9	42.6
Effective Green, g (s)	18.8	18.8	36.8		57.9	42.6
Actuated g/C Ratio	0.20	0.20	0.40		0.63	0.46
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	325	322	695		714	860
v/s Ratio Prot			c0.15		c0.04	0.06
v/s Ratio Perm	c0.12	0.05			0.11	
v/c Ratio	0.58	0.25	0.38		0.24	0.14
Uniform Delay, d1	33.1	30.8	19.6		7.5	14.2
Progression Factor	1.00	1.00	0.15		1.00	1.00
Incremental Delay, d2	2.5	0.4	0.3		0.2	0.1
Delay (s)	35.6	31.2	3.2		7.7	14.3
Level of Service	D	C	A		A	B
Approach Delay (s)	33.3		3.2			10.4
Approach LOS	C		A			B

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

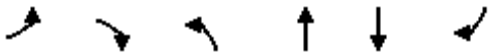
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	0	5	0	0	0	4	226	0	0	231	20
Future Volume (vph)	5	0	5	0	0	0	4	226	0	0	231	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.93					1.00	1.00			1.00	0.85
Flt Protected		0.98					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1672					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1628					1770	1863			1863	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.92	0.92	0.92	0.79	0.79	0.79	0.82	0.82	0.82
Adj. Flow (vph)	10	0	10	0	0	0	5	286	0	0	282	24
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	0	0	0	5	286	0	0	282	24
Confl. Peds. (#/hr)			3	3					18	18		149
Confl. Bikes (#/hr)									125			143
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		10.0					1.3	36.8			66.9	81.9
Effective Green, g (s)		10.0					1.3	36.8			66.9	76.9
Actuated g/C Ratio		0.11					0.01	0.40			0.73	0.83
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		176					24	743			1351	1320
v/s Ratio Prot							c0.00	c0.15			c0.15	c0.02
v/s Ratio Perm		0.00										
v/c Ratio		0.01					0.21	0.38			0.21	0.02
Uniform Delay, d1		36.7					44.9	19.7			4.1	1.3
Progression Factor		1.00					1.00	1.00			0.20	0.00
Incremental Delay, d2		0.0					1.6	0.3			0.1	0.0
Delay (s)		36.7					46.5	20.0			0.9	0.0
Level of Service		D					D	B			A	A
Approach Delay (s)		36.7			0.0			20.5			0.8	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

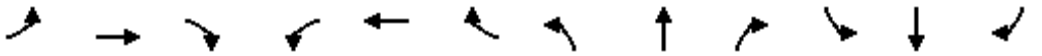
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	75	82	159	116	116
Future Volume (vph)	77	75	82	159	116	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.90
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1749	1583	1770	1863	1863	1419
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1749	1583	1770	1863	1863	1419
Peak-hour factor, PHF	0.77	0.77	0.79	0.79	0.80	0.80
Adj. Flow (vph)	100	97	104	201	145	145
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	100	97	104	201	145	145
Confl. Peds. (#/hr)	8					132
Confl. Bikes (#/hr)						130
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	9.0	9.0	6.9	45.2	33.8	42.8
Effective Green, g (s)	9.0	9.0	6.9	45.2	33.8	42.8
Actuated g/C Ratio	0.14	0.14	0.11	0.71	0.53	0.67
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	247	223	191	1321	988	953
v/s Ratio Prot			c0.06	c0.11	0.08	0.02
v/s Ratio Perm	0.06	c0.06				0.08
v/c Ratio	0.40	0.43	0.54	0.15	0.15	0.15
Uniform Delay, d1	24.9	25.0	26.9	3.0	7.6	3.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.4	1.7	0.1	0.1	0.0
Delay (s)	26.0	26.4	28.6	3.1	7.7	3.8
Level of Service	C	C	C	A	A	A
Approach Delay (s)	26.2			11.8	5.8	
Approach LOS	C			B	A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	53	4	63	96	237	5	25	44	116	60	16
Future Volume (vph)	9	53	4	63	96	237	5	25	44	116	60	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	0.92		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1835		1770	1863	1538	1770	1547		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1835		1770	1863	1538	1770	1547		1770	1863	1583
Peak-hour factor, PHF	0.69	0.69	0.69	0.77	0.77	0.77	0.73	0.73	0.73	0.71	0.71	0.71
Adj. Flow (vph)	13	77	6	82	125	308	7	34	60	163	85	23
RTOR Reduction (vph)	0	0	0	0	0	172	0	47	0	0	0	0
Lane Group Flow (vph)	13	83	0	82	125	136	7	47	0	163	85	23
Confl. Peds. (#/hr)			19			35			27			136
Confl. Bikes (#/hr)									93			115
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	2.6	9.5		6.1	12.5	33.3	0.7	16.2		20.8	37.3	7.3
Effective Green, g (s)	2.6	9.5		6.1	12.5	33.3	0.7	16.2		20.8	37.3	7.3
Actuated g/C Ratio	0.03	0.13		0.08	0.17	0.44	0.01	0.21		0.28	0.49	0.10
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	60	230		142	308	677	16	331		486	919	152
v/s Ratio Prot	0.01	0.05		c0.05	c0.07	0.06	0.00	c0.03		c0.09	0.05	c0.01
v/s Ratio Perm						0.03						
v/c Ratio	0.22	0.36		0.58	0.41	0.20	0.44	0.14		0.34	0.09	0.15
Uniform Delay, d1	35.5	30.3		33.5	28.2	13.0	37.3	24.1		21.9	10.2	31.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	0.4		3.5	0.3	0.1	6.8	0.3		0.4	0.1	0.2
Delay (s)	36.2	30.6		37.0	28.5	13.1	44.1	24.3		22.3	10.2	31.5
Level of Service	D	C		D	C	B	D	C		C	B	C
Approach Delay (s)		31.4			20.7			25.7			19.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	7	16	51	50	43
Future Vol, veh/h	9	7	16	51	50	43
Peak Hour Factor	0.75	0.75	0.88	0.88	0.60	0.60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	18	58	83	72
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	7.4	7.8	7.7
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	56%	0%
Vol Thru, %	0%	100%	0%	54%
Vol Right, %	0%	0%	44%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	51	16	93
LT Vol	16	0	9	0
Through Vol	0	51	0	50
RT Vol	0	0	7	43
Lane Flow Rate	18	58	21	155
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.026	0.075	0.025	0.166
Departure Headway (Hd)	5.149	4.648	4.284	3.85
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	696	771	841	928
Service Time	2.877	2.376	2.284	1.888
HCM Lane V/C Ratio	0.026	0.075	0.025	0.167
HCM Control Delay	8	7.8	7.4	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.1	0.6

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	2	9	0	0	5	7	9	0	2	20	65
Future Vol, veh/h	50	2	9	0	0	5	7	9	0	2	20	65
Peak Hour Factor	0.69	0.69	0.69	0.75	0.75	0.75	0.56	0.56	0.56	0.77	0.77	0.77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	3	13	0	0	7	13	16	0	3	26	84
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

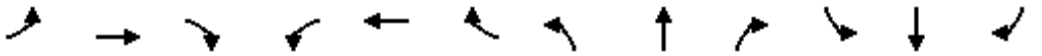
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	8.4	7.4	8.2	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	44%	100%	0%	0%	9%	0%
Vol Thru, %	56%	0%	18%	0%	91%	0%
Vol Right, %	0%	0%	82%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	16	50	11	5	22	65
LT Vol	7	50	0	0	2	0
Through Vol	9	0	2	0	20	0
RT Vol	0	0	9	5	0	65
Lane Flow Rate	29	72	16	7	29	84
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.04	0.106	0.019	0.008	0.039	0.096
Departure Headway (Hd)	4.991	5.278	4.203	4.368	4.86	4.113
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	721	671	838	823	741	876
Service Time	2.994	3.072	1.997	2.375	2.56	1.813
HCM Lane V/C Ratio	0.04	0.107	0.019	0.009	0.039	0.096
HCM Control Delay	8.2	8.7	7.1	7.4	7.8	7.2
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.1	0	0.1	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	196	277	297	163	241	290
Future Volume (vph)	196	277	297	163	241	290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.95	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1690	1583	1730		1767	1863
Flt Permitted	0.95	1.00	1.00		0.21	1.00
Satd. Flow (perm)	1690	1583	1730		398	1863
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.85	0.85
Adj. Flow (vph)	218	308	330	181	284	341
RTOR Reduction (vph)	0	158	11	0	0	0
Lane Group Flow (vph)	218	150	500	0	284	341
Confl. Peds. (#/hr)	19			16	16	
Confl. Bikes (#/hr)				26		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	23.4	23.4	40.0		70.9	45.8
Effective Green, g (s)	23.4	23.4	40.0		65.9	45.8
Actuated g/C Ratio	0.22	0.22	0.38		0.63	0.44
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	377	353	660		536	814
v/s Ratio Prot			c0.29		c0.11	0.18
v/s Ratio Perm	c0.13	0.09			0.22	
v/c Ratio	0.58	0.42	0.76		0.53	0.42
Uniform Delay, d1	36.3	34.9	28.2		12.7	20.3
Progression Factor	1.00	1.00	0.26		1.00	1.00
Incremental Delay, d2	2.1	0.8	3.4		0.9	0.4
Delay (s)	38.4	35.7	10.9		13.7	20.7
Level of Service	D	D	B		B	C
Approach Delay (s)	36.9		10.9			17.5
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

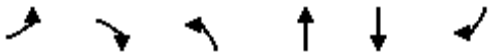
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	0	14	0	0	0	5	450	0	4	466	18
Future Volume (vph)	18	0	14	0	0	0	5	450	0	4	466	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5		5.5	5.5	5.5
Lane Util. Factor		1.00					1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99					1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00		0.99	1.00	1.00
Frt		0.94					1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97					0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1683					1770	1863		1753	1863	1583
Flt Permitted		0.95					0.95	1.00		0.32	1.00	1.00
Satd. Flow (perm)		1644					1770	1863		587	1863	1583
Peak-hour factor, PHF	0.64	0.64	0.64	0.92	0.92	0.92	0.90	0.90	0.90	0.85	0.85	0.85
Adj. Flow (vph)	28	0	22	0	0	0	6	500	0	5	548	21
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	7	0	0	0	0	6	500	0	5	548	21
Confl. Peds. (#/hr)			3	3					19	19		119
Confl. Bikes (#/hr)									193			207
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		14.8					1.3	40.0		74.7	74.7	94.5
Effective Green, g (s)		14.8					1.3	40.0		74.7	74.7	89.5
Actuated g/C Ratio		0.14					0.01	0.38		0.71	0.71	0.85
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		232					21	711		418	1327	1351
v/s Ratio Prot							c0.00	c0.27			c0.29	0.01
v/s Ratio Perm		c0.00								0.01		
v/c Ratio		0.03					0.29	0.70		0.01	0.41	0.02
Uniform Delay, d1		38.8					51.3	27.4		4.4	6.1	1.1
Progression Factor		1.00					1.00	1.00		0.16	0.11	0.01
Incremental Delay, d2		0.1					2.7	3.2		0.0	0.2	0.0
Delay (s)		38.9					54.0	30.5		0.7	0.9	0.0
Level of Service		D					D	C		A	A	A
Approach Delay (s)		38.9			0.0			30.8			0.9	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

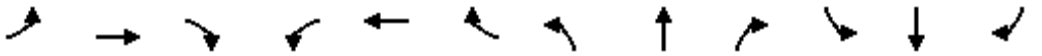
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	125	151	264	289	221
Future Volume (vph)	157	125	151	264	289	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.89
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1411
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1411
Peak-hour factor, PHF	0.86	0.86	0.85	0.85	0.86	0.86
Adj. Flow (vph)	183	145	178	311	336	257
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	183	145	178	311	336	257
Confl. Peds. (#/hr)		2				145
Confl. Bikes (#/hr)						156
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	13.1	13.1	11.2	46.2	30.5	43.6
Effective Green, g (s)	13.1	13.1	11.2	46.2	30.5	43.6
Actuated g/C Ratio	0.19	0.19	0.16	0.67	0.44	0.63
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	337	294	288	1251	825	894
v/s Ratio Prot			c0.10	0.17	c0.18	0.05
v/s Ratio Perm	c0.10	0.09				0.13
v/c Ratio	0.54	0.49	0.62	0.25	0.41	0.29
Uniform Delay, d1	25.1	24.9	26.8	4.5	13.0	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.3	2.8	0.1	0.3	0.1
Delay (s)	26.9	26.2	29.6	4.6	13.3	5.7
Level of Service	C	C	C	A	B	A
Approach Delay (s)	26.6			13.7	10.0	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	89	9	127	68	384	7	66	140	295	115	25
Future Volume (vph)	16	89	9	127	68	384	7	66	140	295	115	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.91		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1821		1770	1863	1530	1770	1524		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1821		1770	1863	1530	1770	1524		1770	1863	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.77	0.77	0.77	0.90	0.90	0.90
Adj. Flow (vph)	17	96	10	137	73	413	9	86	182	328	128	28
RTOR Reduction (vph)	0	0	0	0	0	242	0	67	0	0	0	0
Lane Group Flow (vph)	17	106	0	137	73	171	9	201	0	328	128	28
Confl. Peds. (#/hr)			30			26			23			137
Confl. Bikes (#/hr)						1			136			187
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	3.1	11.0		10.7	18.1	39.3	0.9	29.2		21.2	50.5	12.0
Effective Green, g (s)	3.1	11.0		10.7	18.1	39.3	0.9	29.2		21.2	50.5	12.0
Actuated g/C Ratio	0.03	0.12		0.11	0.19	0.41	0.01	0.31		0.22	0.53	0.13
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	57	210		199	354	632	16	467		394	989	199
v/s Ratio Prot	0.01	c0.06		c0.08	0.04	0.06	0.01	c0.13		c0.19	0.07	0.02
v/s Ratio Perm						0.05						
v/c Ratio	0.30	0.50		0.69	0.21	0.27	0.56	0.43		0.83	0.13	0.14
Uniform Delay, d1	44.9	39.5		40.6	32.4	18.4	46.9	26.3		35.3	11.2	37.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	0.7		7.7	0.1	0.2	24.2	0.9		13.9	0.1	0.1
Delay (s)	46.0	40.2		48.3	32.6	18.7	71.1	27.2		49.2	11.3	37.1
Level of Service	D	D		D	C	B	E	C		D	B	D
Approach Delay (s)		41.0			26.8			28.6			38.5	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	23.5
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	53	39	44	91	132	70
Future Vol, veh/h	53	39	44	91	132	70
Peak Hour Factor	0.73	0.73	0.87	0.87	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	53	51	105	147	78
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	8.6	8.6	8.9
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	58%	0%
Vol Thru, %	0%	100%	0%	65%
Vol Right, %	0%	0%	42%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	91	92	202
LT Vol	44	0	53	0
Through Vol	0	91	0	132
RT Vol	0	0	39	70
Lane Flow Rate	51	105	126	224
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.077	0.146	0.163	0.269
Departure Headway (Hd)	5.514	5.011	4.661	4.318
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	651	716	770	833
Service Time	3.237	2.734	2.685	2.338
HCM Lane V/C Ratio	0.078	0.147	0.164	0.269
HCM Control Delay	8.7	8.6	8.6	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.5	0.6	1.1

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	134	2	27	0	2	14	11	32	0	23	57	125
Future Vol, veh/h	134	2	27	0	2	14	11	32	0	23	57	125
Peak Hour Factor	0.80	0.80	0.80	0.56	0.56	0.56	0.55	0.55	0.55	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	168	3	34	0	4	25	20	58	0	28	70	152
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

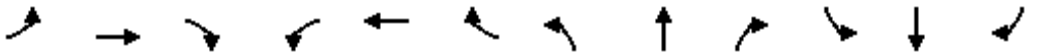
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	10.2	8.4	9.3	8.7
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	26%	100%	0%	0%	29%	0%
Vol Thru, %	74%	0%	7%	12%	71%	0%
Vol Right, %	0%	0%	93%	88%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	134	29	16	80	125
LT Vol	11	134	0	0	23	0
Through Vol	32	0	2	2	57	0
RT Vol	0	0	27	14	0	125
Lane Flow Rate	78	168	36	29	98	152
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.12	0.272	0.047	0.04	0.147	0.193
Departure Headway (Hd)	5.517	5.855	4.697	5.086	5.41	4.561
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	648	611	759	700	662	785
Service Time	3.566	3.606	2.447	3.149	3.149	2.3
HCM Lane V/C Ratio	0.12	0.275	0.047	0.041	0.148	0.194
HCM Control Delay	9.3	10.8	7.7	8.4	9.1	8.4
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.4	1.1	0.1	0.1	0.5	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	243	282	340	200	235	346
Future Volume (vph)	243	282	340	200	235	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.5		4.0	5.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	0.92	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.95		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1637	1583	1732		1769	1863
Flt Permitted	0.95	1.00	1.00		0.11	1.00
Satd. Flow (perm)	1637	1583	1732		210	1863
Peak-hour factor, PHF	0.84	0.84	0.93	0.93	0.77	0.77
Adj. Flow (vph)	289	336	366	215	305	449
RTOR Reduction (vph)	0	125	12	0	0	0
Lane Group Flow (vph)	289	211	569	0	305	449
Confl. Peds. (#/hr)	29			13	13	
Confl. Bikes (#/hr)				15		
Turn Type	Perm	Perm	NA		pm+pt	NA
Protected Phases			2		1 12	6
Permitted Phases	3	3			6	
Actuated Green, G (s)	29.1	29.1	40.4		72.9	43.0
Effective Green, g (s)	29.1	29.1	40.4		67.9	43.0
Actuated g/C Ratio	0.26	0.26	0.35		0.60	0.38
Clearance Time (s)	5.0	5.0	5.5			5.5
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	418	404	614		466	703
v/s Ratio Prot			c0.33		c0.14	0.24
v/s Ratio Perm	c0.18	0.13			0.25	
v/c Ratio	0.69	0.52	0.93		0.65	0.64
Uniform Delay, d1	38.3	36.4	35.3		24.7	29.1
Progression Factor	1.00	1.00	0.24		1.00	1.00
Incremental Delay, d2	4.9	1.2	12.3		3.3	1.9
Delay (s)	43.2	37.6	20.8		27.9	31.0
Level of Service	D	D	C		C	C
Approach Delay (s)	40.2		20.8			29.8
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

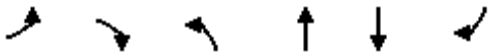
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	0	50	0	0	0	23	523	0	0	554	34
Future Volume (vph)	16	0	50	0	0	0	23	523	0	0	554	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					4.0	5.5			5.5	5.5
Lane Util. Factor		1.00					1.00	1.00			1.00	1.00
Frpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Flpb, ped/bikes		1.00					1.00	1.00			1.00	1.00
Frt		0.90					1.00	1.00			1.00	0.85
Flt Protected		0.99					0.95	1.00			1.00	1.00
Satd. Flow (prot)		1652					1770	1863			1863	1583
Flt Permitted		0.95					0.95	1.00			1.00	1.00
Satd. Flow (perm)		1588					1770	1863			1863	1583
Peak-hour factor, PHF	0.75	0.75	0.75	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Adj. Flow (vph)	21	0	67	0	0	0	24	556	0	0	637	39
RTOR Reduction (vph)	0	74	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	14	0	0	0	0	24	556	0	0	637	39
Confl. Peds. (#/hr)									57	57		4
Confl. Bikes (#/hr)									87			125
Turn Type	custom	NA					Prot	NA		Perm	NA	custom
Protected Phases							5	2			6 3	6 3 4
Permitted Phases	12	12		11	11					6 3		
Actuated Green, G (s)		17.8					4.5	40.4			77.6	100.4
Effective Green, g (s)		17.8					4.5	40.4			77.6	95.4
Actuated g/C Ratio		0.16					0.04	0.35			0.68	0.84
Clearance Time (s)		5.0					4.0	5.5				
Vehicle Extension (s)		3.0					1.5	3.0				
Lane Grp Cap (vph)		248					69	660			1269	1325
v/s Ratio Prot							c0.01	c0.30			c0.34	0.02
v/s Ratio Perm		c0.01										
v/c Ratio		0.06					0.35	0.84			0.50	0.03
Uniform Delay, d1		40.9					53.3	33.8			8.8	1.5
Progression Factor		1.00					1.00	1.00			0.15	0.00
Incremental Delay, d2		0.1					1.1	9.6			0.2	0.0
Delay (s)		41.0					54.4	43.4			1.6	0.0
Level of Service		D					D	D			A	A
Approach Delay (s)		41.0			0.0			43.8			1.5	
Approach LOS		D			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	113.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

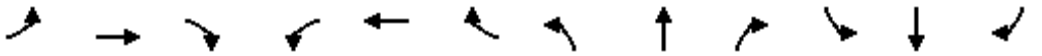
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	189	173	133	343	388	214
Future Volume (vph)	189	173	133	343	388	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.98	1.00	1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1547	1770	1863	1863	1491
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1547	1770	1863	1863	1491
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.96	0.96
Adj. Flow (vph)	212	194	141	365	404	223
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	212	194	141	365	404	223
Confl. Peds. (#/hr)		2				55
Confl. Bikes (#/hr)						111
Turn Type	Perm	Perm	Prot	NA	NA	custom
Protected Phases			5	2	6	8
Permitted Phases	4	4				6
Actuated Green, G (s)	14.2	14.2	10.2	45.5	30.8	45.0
Effective Green, g (s)	14.2	14.2	10.2	45.5	30.8	45.0
Actuated g/C Ratio	0.21	0.21	0.15	0.66	0.45	0.65
Clearance Time (s)	4.5	4.5	4.5	5.0	5.0	4.5
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	0.2
Lane Grp Cap (vph)	363	317	260	1224	829	969
v/s Ratio Prot			c0.08	0.20	c0.22	0.05
v/s Ratio Perm	0.12	c0.13				0.10
v/c Ratio	0.58	0.61	0.54	0.30	0.49	0.23
Uniform Delay, d1	24.8	25.0	27.3	5.0	13.6	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	3.5	1.2	0.1	0.5	0.0
Delay (s)	27.2	28.5	28.6	5.2	14.1	5.0
Level of Service	C	C	C	A	B	A
Approach Delay (s)	27.8			11.7	10.8	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	104	7	213	86	523	5	122	143	386	142	62
Future Volume (vph)	51	104	7	213	86	523	5	122	143	386	142	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		3.5	4.5	4.5	3.5	5.5		4.5	5.5	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.95	1.00	0.95		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1836		1770	1863	1506	1770	1622		1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1836		1770	1863	1506	1770	1622		1770	1863	1583
Peak-hour factor, PHF	0.77	0.77	0.77	0.99	0.99	0.99	0.78	0.78	0.78	0.84	0.84	0.84
Adj. Flow (vph)	66	135	9	215	87	528	6	156	183	460	169	74
RTOR Reduction (vph)	0	0	0	0	0	228	0	34	0	0	0	0
Lane Group Flow (vph)	66	144	0	215	87	300	6	305	0	460	169	74
Confl. Peds. (#/hr)			23			38			27			85
Confl. Bikes (#/hr)									67			98
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	custom
Protected Phases	7	4		3	8	1	5	2 9		1	6 9	7 9
Permitted Phases						8						
Actuated Green, G (s)	6.6	14.8		15.2	22.9	53.3	1.0	32.2		30.4	62.6	17.6
Effective Green, g (s)	6.6	14.8		15.2	22.9	53.3	1.0	32.2		30.4	62.6	17.6
Actuated g/C Ratio	0.06	0.13		0.13	0.20	0.46	0.01	0.28		0.26	0.54	0.15
Clearance Time (s)	4.0	4.5		3.5	4.5	4.5	3.5			4.5		
Vehicle Extension (s)	1.5	1.5		1.5	1.5	3.0	1.5			3.0		
Lane Grp Cap (vph)	101	235		232	369	694	15	451		465	1008	241
v/s Ratio Prot	0.04	c0.08		c0.12	0.05	0.11	0.00	c0.19		c0.26	0.09	0.05
v/s Ratio Perm						0.09						
v/c Ratio	0.65	0.61		0.93	0.24	0.43	0.40	0.68		0.99	0.17	0.31
Uniform Delay, d1	53.4	47.7		49.6	39.0	21.0	57.0	37.1		42.4	13.4	43.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	11.0	3.3		38.7	0.1	0.4	6.3	4.4		38.5	0.1	0.3
Delay (s)	64.4	51.0		88.3	39.1	21.4	63.3	41.4		80.9	13.5	43.8
Level of Service	E	D		F	D	C	E	D		F	B	D
Approach Delay (s)		55.2			40.6			41.8			60.8	
Approach LOS		E			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.6	Sum of lost time (s)	23.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	106	36	64	187	178	41
Future Vol, veh/h	106	36	64	187	178	41
Peak Hour Factor	0.86	0.86	0.82	0.82	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	42	78	228	191	44
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.9	10.2	9.9
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	75%	0%
Vol Thru, %	0%	100%	0%	81%
Vol Right, %	0%	0%	25%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	187	142	219
LT Vol	64	0	106	0
Through Vol	0	187	0	178
RT Vol	0	0	36	41
Lane Flow Rate	78	228	165	235
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.123	0.328	0.238	0.309
Departure Headway (Hd)	5.677	5.174	5.182	4.721
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	629	693	690	758
Service Time	3.43	2.926	3.239	2.775
HCM Lane V/C Ratio	0.124	0.329	0.239	0.31
HCM Control Delay	9.2	10.5	9.9	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.4	0.9	1.3

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	176	2	38	0	2	7	14	73	0	13	32	232
Future Vol, veh/h	176	2	38	0	2	7	14	73	0	13	32	232
Peak Hour Factor	0.91	0.91	0.91	0.42	0.42	0.42	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	193	2	42	0	5	17	15	79	0	15	37	270
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	11	8.7	9.8	9.8
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	16%	100%	0%	0%	29%	0%
Vol Thru, %	84%	0%	5%	22%	71%	0%
Vol Right, %	0%	0%	95%	78%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	176	40	9	45	232
LT Vol	14	176	0	0	13	0
Through Vol	73	0	2	2	32	0
RT Vol	0	0	38	7	0	232
Lane Flow Rate	95	193	44	21	52	270
Geometry Grp	4b	5	5	4b	5	5
Degree of Util (X)	0.149	0.325	0.059	0.032	0.08	0.351
Departure Headway (Hd)	5.678	6.045	4.872	5.418	5.532	4.682
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	628	592	728	653	646	766
Service Time	3.747	3.822	2.647	3.518	3.281	2.431
HCM Lane V/C Ratio	0.151	0.326	0.06	0.032	0.08	0.352
HCM Control Delay	9.8	11.7	8	8.7	8.8	10
HCM Lane LOS	A	B	A	A	A	A
HCM 95th-tile Q	0.5	1.4	0.2	0.1	0.3	1.6

Appendix D

Existing Parking Data

2024 Season: Paid Seaside Lagoon Visitors

Visit Date	CHILD Count	ADULT Count
5/25/2024	63	68
5/26/2024	82	114
5/27/2024	159	138
5/30/2024	72	24
5/31/2024	94	24
6/1/2024	73	49
6/2/2024	73	85
6/3/2024	8	7
6/4/2024	135	39
6/5/2024	24	19
6/6/2024	44	23
6/7/2024	45	52
6/8/2024	108	127
6/9/2024	132	132
6/10/2024	27	22
6/11/2024	18	12
6/12/2024	103	54
6/13/2024	111	126
6/14/2024	102	79
6/15/2024	416	391
6/16/2024	220	260
6/17/2024	63	47
6/18/2024	81	80
6/19/2024	413	350
6/20/2024	138	103
6/21/2024	321	308
6/22/2024	463	502
6/23/2024	594	712
6/24/2024	181	168
6/25/2024	272	213
6/26/2024	234	189
6/27/2024	314	263
6/28/2024	474	293
6/29/2024	456	526
6/30/2024	537	583
7/1/2024	187	256
7/2/2024	235	301
7/3/2024	248	268
7/4/2024	637	534
7/5/2024	534	562
7/6/2024	574	519
7/7/2024	656	541
7/8/2024	120	176
7/9/2024	134	174
7/10/2024	219	260
7/11/2024	157	219
7/12/2024	153	172
7/13/2024	593	500
7/14/2024	622	460
7/15/2024	156	182
7/16/2024	164	187
7/17/2024	171	213
7/18/2024	240	291
7/19/2024	276	362
7/20/2024	593	498
7/21/2024	586	564
7/22/2024	151	192
7/23/2024	187	266
7/24/2024	188	249
7/25/2024	176	269
7/26/2024	249	297
7/27/2024	623	508
7/28/2024	662	519
7/29/2024	175	165
7/30/2024	136	175
7/31/2024	151	162
8/1/2024	107	145
8/2/2024	268	292
8/3/2024	418	362
8/4/2024	398	328
8/5/2024	206	226
8/6/2024	193	235
8/7/2024	151	226
8/8/2024	185	272
8/9/2024	210	264
8/10/2024	437	378
8/11/2024	422	296
8/12/2024	95	146
8/13/2024	91	110
8/14/2024	116	131
8/15/2024	103	145
8/16/2024	203	196
8/17/2024	374	276
8/18/2024	393	285
8/19/2024	112	154
8/20/2024	72	87
8/21/2024	101	139
8/22/2024	69	54
8/23/2024	63	57
8/24/2024	375	267
8/25/2024	438	327
8/26/2024	62	68
8/27/2024	42	34
8/28/2024	20	12
8/29/2024	15	19
8/30/2024	136	53
8/31/2024	308	222
9/1/2024	332	278
9/2/2024	391	332
	Median	**213**

Redondo Beach Marina
Parking Lot Utilization
Friday, October 4th, 2024

Time	Parking Zone	Parking Zone	
	North Lot	South Lot	
6:00 AM	2	2	4
6:10 AM	2	4	6
6:20 AM	3	3	6
6:30 AM	3	3	6
6:40 AM	4	2	6
6:50 AM	4	2	6
7:00 AM	4	6	10
7:10 AM	4	8	12
7:20 AM	6	10	16
7:30 AM	8	10	18
7:40 AM	10	6	16
7:50 AM	11	11	22
8:00 AM	12	12	24
8:10 AM	12	12	24
8:20 AM	12	12	24
8:30 AM	13	14	27
8:40 AM	13	15	28
8:50 AM	13	15	28
9:00 AM	15	13	28
9:10 AM	16	13	29
9:20 AM	18	12	30
9:30 AM	19	12	31
9:40 AM	20	13	33
9:50 AM	19	14	33
10:00 AM	19	15	34
10:10 AM	23	17	40
10:20 AM	24	19	43
10:30 AM	25	22	47
10:40 AM	26	25	51
10:50 AM	28	23	51
11:00 AM	26	28	54
11:10 AM	25	26	51
11:20 AM	24	28	52
11:30 AM	23	30	53
11:40 AM	20	33	53
11:50 AM	21	39	60
12:00 PM	25	40	65
12:10 PM	21	46	67
12:20 PM	21	54	75
12:30 PM	22	60	82
12:40 PM	24	65	89
12:50 PM	24	72	96
1:00 PM	23	72	95
1:10 PM	23	72	95
1:20 PM	23	74	97
1:30 PM	24	76	100
1:40 PM	24	73	97
1:50 PM	23	75	98
2:00 PM	23	81	104
2:10 PM	23	77	100
2:20 PM	20	81	101
2:30 PM	19	78	97
2:40 PM	17	81	98
2:50 PM	19	77	96
3:00 PM	17	72	89
3:10 PM	16	78	94
3:20 PM	16	81	97
3:30 PM	12	80	92
3:40 PM	11	80	91
3:50 PM	8	78	86
4:00 PM	7	80	87
4:10 PM	8	78	86
4:20 PM	6	83	89
4:30 PM	6	81	87
4:40 PM	6	83	89
4:50 PM	6	85	91
5:00 PM	6	91	97
5:10 PM	6	92	98
5:20 PM	6	92	98
5:30 PM	7	101	108
5:40 PM	6	103	109
5:50 PM	6	108	114
6:00 PM	4	107	111

Redondo Beach Marina
Parking Lot Utilization
Saturday, October 5th, 2024

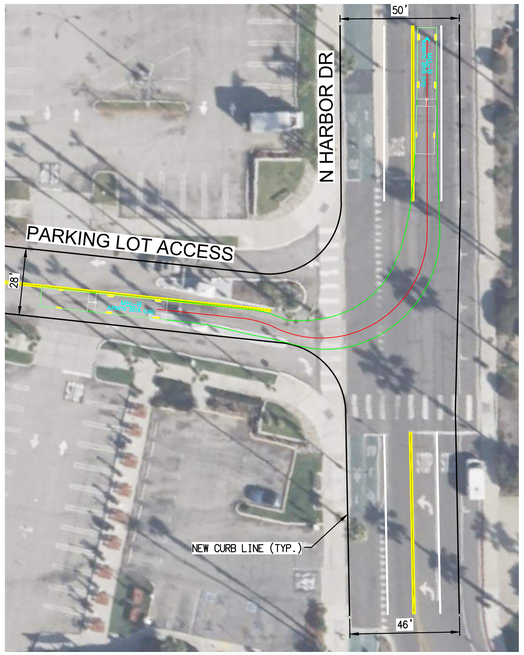
Time	Parking Zone	Parking Zone	
	North Lot	South Lot	Total
6:00 AM	4	11	15
6:10 AM	4	16	20
6:20 AM	4	17	21
6:30 AM	4	19	23
6:40 AM	5	21	26
6:50 AM	6	25	31
7:00 AM	5	30	35
7:10 AM	5	34	39
7:20 AM	5	37	42
7:30 AM	5	32	37
7:40 AM	5	32	37
7:50 AM	6	31	37
8:00 AM	7	31	38
8:10 AM	7	30	37
8:20 AM	7	31	38
8:30 AM	7	32	39
8:40 AM	7	33	40
8:50 AM	7	33	40
9:00 AM	7	35	42
9:10 AM	7	35	42
9:20 AM	7	34	41
9:30 AM	8	39	47
9:40 AM	9	40	49
9:50 AM	11	42	53
10:00 AM	13	43	56
10:10 AM	13	43	56
10:20 AM	13	47	60
10:30 AM	13	50	63
10:40 AM	13	52	65
10:50 AM	12	55	67
11:00 AM	12	57	69
11:10 AM	12	57	69
11:20 AM	12	59	71
11:30 AM	12	67	79
11:40 AM	12	67	79
11:50 AM	12	69	81
12:00 PM	13	74	87
12:10 PM	11	76	87
12:20 PM	9	82	91
12:30 PM	6	89	95
12:40 PM	6	90	96
12:50 PM	6	81	87
1:00 PM	7	81	88
1:10 PM	8	77	85
1:20 PM	8	79	87
1:30 PM	9	85	94
1:40 PM	9	85	94
1:50 PM	9	85	94
2:00 PM	9	91	100
2:10 PM	7	96	103
2:20 PM	7	97	104
2:30 PM	7	99	106
2:40 PM	6	97	103
2:50 PM	6	94	100
3:00 PM	6	96	102
3:10 PM	5	90	95
3:20 PM	5	90	95
3:30 PM	5	91	96
3:40 PM	5	95	100
3:50 PM	4	100	104
4:00 PM	4	106	110
4:10 PM	4	112	116
4:20 PM	3	116	119
4:30 PM	3	17	20
4:40 PM	3	18	21
4:50 PM	4	16	20
5:00 PM	4	120	124
5:10 PM	3	119	122
5:20 PM	3	114	117
5:30 PM	4	118	122
5:40 PM	4	19	23
5:50 PM	5	111	116
6:00 PM	5	101	106

Redondo Beach Marina
Parking Lot Utilization
Sunday, October 6th, 2024

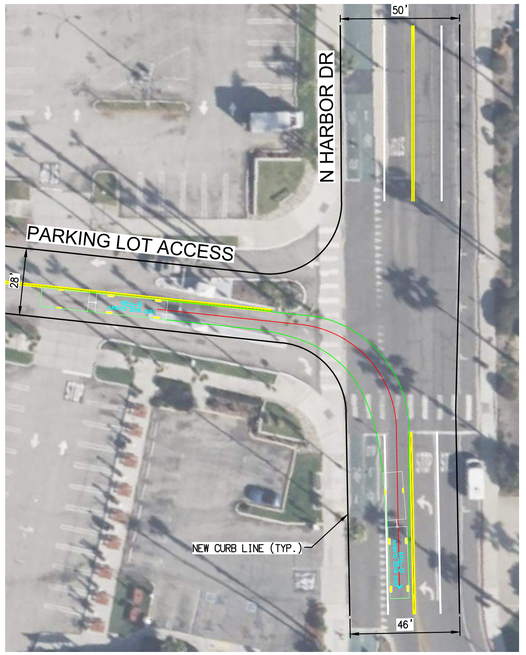
Time	Parking Zone	Parking Zone	
	North Lot	South Lot	
6:00 AM	3	9	12
6:10 AM	3	12	15
6:20 AM	3	14	17
6:30 AM	3	16	19
6:40 AM	3	19	22
6:50 AM	3	24	27
7:00 AM	3	26	29
7:10 AM	3	31	34
7:20 AM	4	37	41
7:30 AM	4	37	41
7:40 AM	5	39	44
7:50 AM	8	37	45
8:00 AM	8	37	45
8:10 AM	10	36	46
8:20 AM	13	35	48
8:30 AM	18	34	52
8:40 AM	24	34	58
8:50 AM	31	34	65
9:00 AM	34	38	72
9:10 AM	58	40	98
9:20 AM	65	45	110
9:30 AM	75	46	121
9:40 AM	81	47	128
9:50 AM	83	50	133
10:00 AM	80	56	136
10:10 AM	75	59	134
10:20 AM	62	66	128
10:30 AM	54	71	125
10:40 AM	47	74	121
10:50 AM	28	84	112
11:00 AM	20	90	110
11:10 AM	13	93	106
11:20 AM	10	89	99
11:30 AM	10	86	96
11:40 AM	9	87	96
11:50 AM	8	88	96
12:00 PM	7	92	99
12:10 PM	8	99	107
12:20 PM	7	106	113
12:30 PM	6	101	107
12:40 PM	6	100	106
12:50 PM	6	103	109
1:00 PM	8	103	111
1:10 PM	10	103	113
1:20 PM	8	103	111
1:30 PM	8	102	110
1:40 PM	7	102	109
1:50 PM	7	103	110
2:00 PM	9	104	113
2:10 PM	10	105	115
2:20 PM	10	99	109
2:30 PM	10	89	99
2:40 PM	10	96	106
2:50 PM	10	86	96
3:00 PM	9	88	97
3:10 PM	9	89	98
3:20 PM	9	85	94
3:30 PM	11	86	97
3:40 PM	10	85	95
3:50 PM	10	90	100
4:00 PM	10	89	99
4:10 PM	7	92	99
4:20 PM	6	95	101
4:30 PM	6	96	102
4:40 PM	6	97	103
4:50 PM	5	98	103
5:00 PM	5	98	103
5:10 PM	5	97	102
5:20 PM	5	106	111
5:30 PM	5	107	112
5:40 PM	4	105	109
5:50 PM	4	101	105
6:00 PM	4	99	103

Appendix E

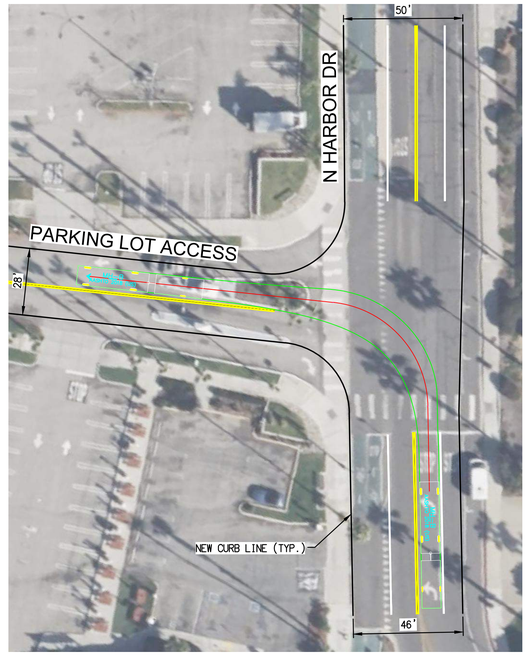
Proposed Project Site Design Layout - Turn Template



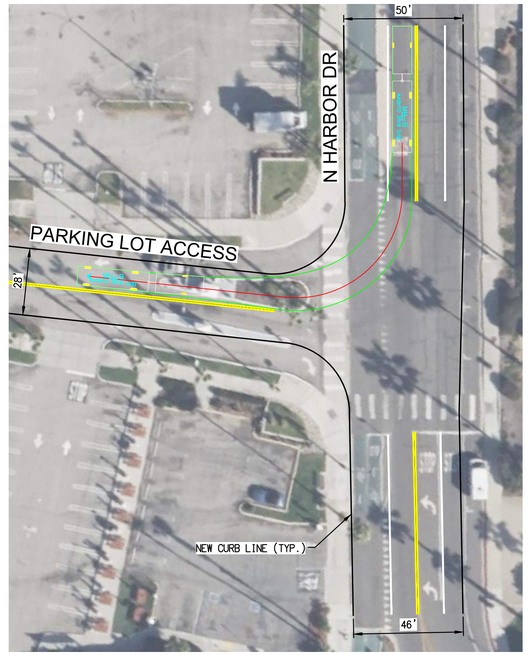
EASTBOUND LEFT MOVEMENT



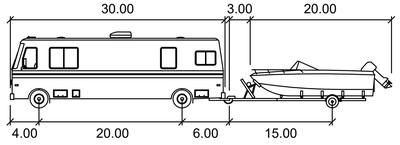
EASTBOUND RIGHT MOVEMENT



NORTHBOUND LEFT MOVEMENT



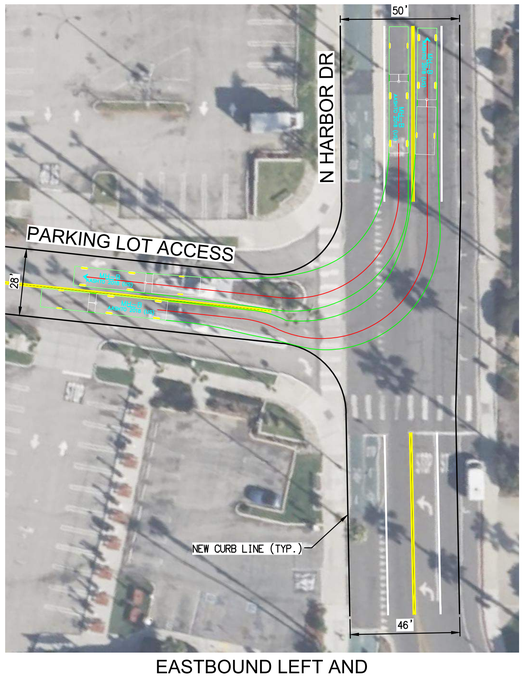
SOUTHBOUND RIGHT MOVEMENT



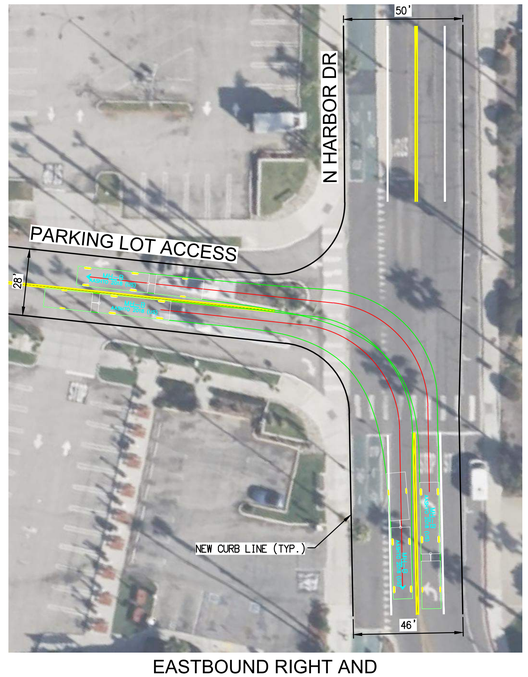
MH-B

feet

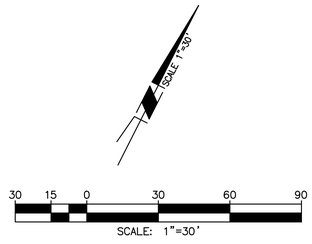
MH Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 25.8
MH Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		

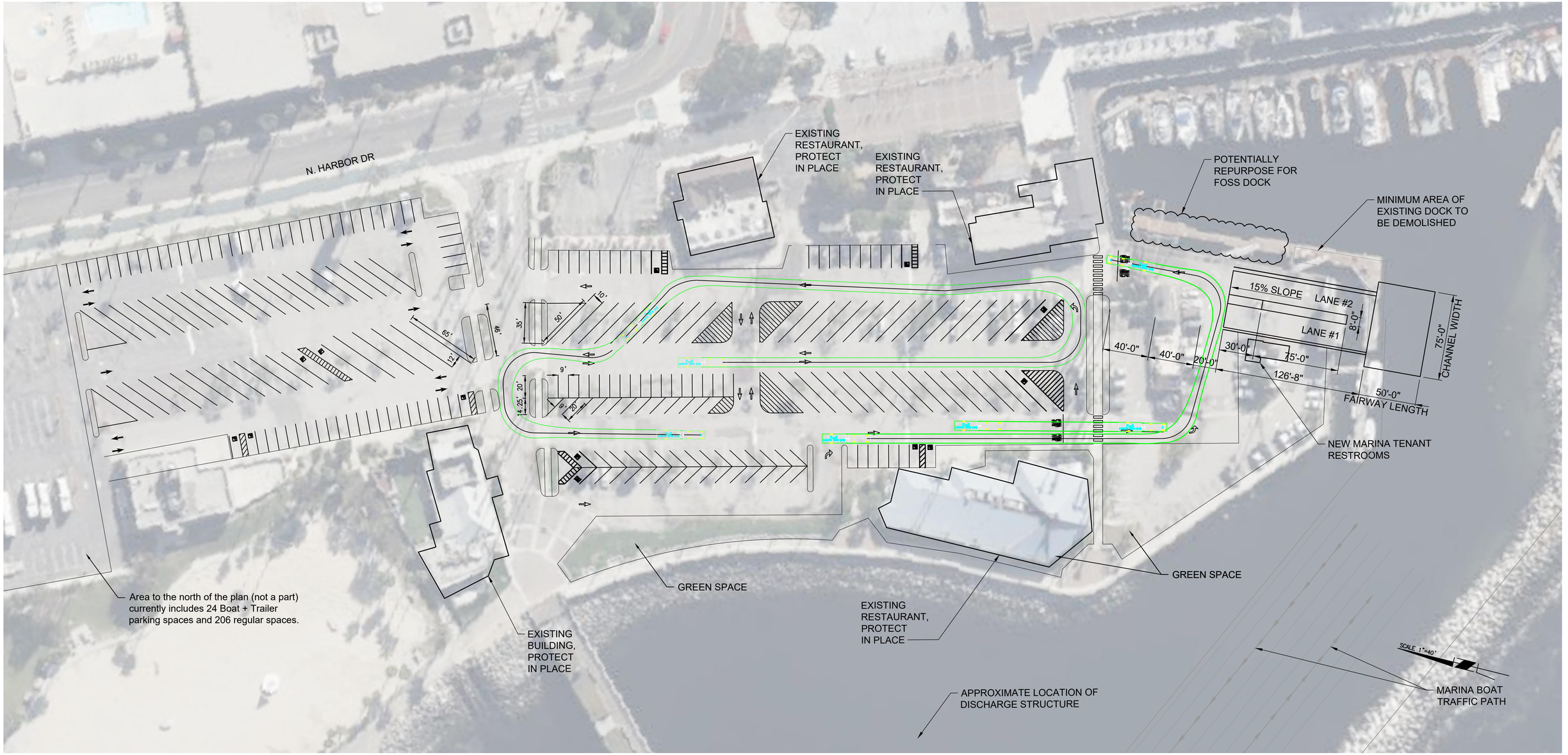


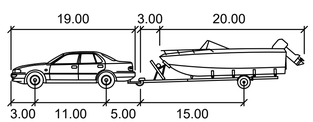
EASTBOUND LEFT AND
SOUTHBOUND RIGHT
MOVEMENTS



EASTBOUND RIGHT AND
NORTHBOUND LEFT
MOVEMENTS

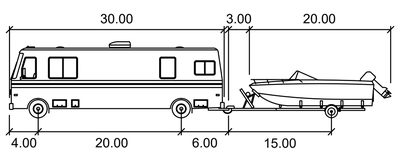






P-B

	feet
Car Width	: 7.00
Trailer Width	: 8.00
Car Track	: 6.00
Trailer Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.6
Articulating Angle	: 70.0



MH-B

	feet		
MH Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.00	Steering Angle	: 25.8
MH Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.00		

Not for construction. Further design required