

TRAFFIC IMPACT ANALYSIS
FOR
OCEAN CHARTER SCHOOL
12870 PANAMA STREET – LOS ANGELES (DEL REY)

Prepared for
LOS ANGELES UNIFIED SCHOOL DISTRICT
&
PLACEWORKS

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I. INTRODUCTION AND PROJECT DESCRIPTION

Introduction and Project Location

This traffic impact analysis was conducted for the Ocean Charter School (OCS), which is a K-8 school that is proposed at 12870 Panama Street in the community of Del Rey in the City of Los Angeles. The school site is on the south side of Panama Street east of Alla Road on a parcel of land located approximately one mile east of the Marina Del Rey harbor and one-quarter mile north of the Marina Freeway (State Route 90). The 2.2-acre site is currently occupied by a one story 17,400 square-foot industrial building, which would be demolished in conjunction with the development of the school.

Project Description

The proposed project would accommodate the relocation of students from two existing OCS campuses to the proposed school site on Panama Street. Grades K-3 of OCS currently operate in a leased building located at 12606 Culver Boulevard in the Del Rey community of Los Angeles. This leased site is on the south side of Culver Boulevard approximately one-quarter mile east of the proposed school site. Grades 4-8 of OCS currently operate on the campus of Westchester High School at 7400 West Manchester Avenue in Playa Del Rey. This school is on the south side of Manchester Avenue approximately two miles south of the proposed school site. The proposed project would consolidate the two split school sites onto a single school campus.

The proposed K-8 school would have 19 classrooms and a capacity of 532 students. Access to the school site would be provided by a driveway on the south side of Panama Street near the intersection of Panama Street and Beethoven Street.

Analysis Methodology

The methodology for the traffic study, in general, was to 1) establish the existing baseline traffic conditions on the streets in the vicinity of the school site, 2) develop the projected future baseline conditions without the proposed project by considering the cumulative effects of ambient regional growth and traffic generated by other development projects in the study area, 3) estimate the increased levels of traffic that would be generated by the proposed school project, 4) conduct a comparative analysis of traffic conditions with and without the proposed school project, 5) evaluate pedestrian safety issues, and 6) make recommendations for enhancing vehicular and pedestrian access and safety.

The traffic analysis is based on the morning (AM) and afternoon (PM) peak hour traffic volumes on the streets and intersections in the vicinity of the proposed school site. The following 16 intersections were analyzed. A level of service (LOS) analysis was conducted for the nine signalized intersections and a traffic signal warrant analysis was conducted for the seven unsignalized intersections.

SIGNALIZED INTERSECTIONS

- Marina Expressway (SR 90) eastbound at Culver Boulevard
- Marina Expressway (SR 90) westbound at Culver Boulevard
- Centinela Avenue at Culver Boulevard

- Marina Expressway (SR 90) westbound at Alla Road
- Centinela Avenue at Short Avenue
- Beethoven Street at Washington Boulevard
- Lincoln Boulevard (SR 1) at Maxella Avenue
- Glencoe Avenue at Maxella Avenue
- Glencoe Avenue at Mindanao Way

UNSIGNALIZED INTERSECTIONS

- Alla Road at Panama Street
- Beethoven Street at Panama Street
- McConnell Avenue at Panama Street
- Centinela Avenue at Little Culver Boulevard
- Alla Road at Glencoe Avenue
- Alla Road at Mindanao Way
- Beethoven Street at Short Avenue

Twelve of the intersections are operated under the jurisdiction of the City of Los Angeles, while four of the intersections are operated by Caltrans. The Caltrans intersections are the three intersections along the Marina Expressway (SR 90) and the one intersection on Lincoln Boulevard (SR 1). As required, a “Traffic Study - Memorandum of Understanding (MOU)” agreement with the City of Los Angeles Department of Transportation (LADOT) was prepared that outlines the basic assumptions and scope for the traffic study. The traffic study was prepared in accordance with the guidelines set forth by the City of Los Angeles, as outlined in LADOT’s “Traffic Study Policies and Procedures” (May 2012).

II. EXISTING AND FUTURE BASELINE TRAFFIC CONDITIONS

The street network in the project vicinity, the existing traffic volumes, and the levels of service (LOS) at the affected study area intersections are described below.

Street Network

The streets in the area that provide access to the proposed school site include Panama Street, Beethoven Street, Alla Road, McConnell Avenue, Short Avenue, Culver Boulevard, Little Culver Boulevard, Centinela Avenue, Glencoe Avenue, Mindanao Way, Maxella Avenue, Lincoln Boulevard, Washington Boulevard, and the Marina Expressway. These streets are described below and illustrated on Figure 1 in the Appendix, which shows the type of traffic control at each intersection, the lane configuration at each intersection, the number of lanes on each street segment, and the speed limit on each street segment.

- **Panama Street** is a two lane east-west street that abuts the north side of the school site. Access to the school would be provided from Panama Street and the speed limit is 25 miles per hour (mph).
- **Beethoven Street** is a two lane north-south street that intersects with Panama Street adjacent to the school site and extends northerly through a residential neighborhood. The speed limit on Beethoven Street is 25 mph between Panama Street and Washington Boulevard and 30 mph north of Washington Boulevard.
- **Alla Road** is a three lane north-south street located approximately one-eighth mile (one block) west of the school site. It has one northbound lane and two southbound lanes. The speed limit on Alla Road is 35 mph.
- **McConnell Avenue** is a two lane north-south street located approximately one-eighth mile (one block) east of the school site. It intersects with Panama Street and extends northerly through a residential neighborhood. The speed limit on McConnell Avenue is 25 mph.
- **Short Avenue** is a two lane east-west street located approximately three-eighths mile north of the school site. It provides a link between Alla Road and Centinela Avenue. The speed limit on Short Avenue is 30 mph.
- **Culver Boulevard** is a four lane arterial street located southeast of the school site. It runs in a southwest to northeast direction. Although it is located near the school site, access to the school from Culver Boulevard would not be provided because another property separates the school site from the Culver Boulevard right-of-way. The speed limit on Culver Boulevard is 40 mph.
- **Little Culver Boulevard** is a two lane street that is a continuation of Panama Street between McConnell Avenue and Centinela Avenue. It runs parallel to Culver Boulevard and serves essentially as a frontage road that provides direct access to the residential properties north of Culver Boulevard. The speed limit on Little Culver Boulevard is 25 mph.
- **Centinela Avenue** is a four lane north-south arterial street located approximately one-half mile east of the school site. The speed limit on Centinela Avenue is 35 mph.

- **Glencoe Avenue** is a two lane street located approximately one-quarter mile northwest of the school site that extends westerly from Alla Road then curves to the north parallel to Lincoln Boulevard. The speed limit on Glencoe Avenue is 25 mph.
- **Mindanao Way** is a four lane east-west street located approximately one-half mile northwest of the school site that is the continuation of Short Avenue west of Alla Road. The speed limit on Mindanao Way is 30 mph.
- **Maxella Avenue** is a two to four lane east-west street located approximately three-quarters of a mile northwest of the school site. It has four lanes between Lincoln Boulevard and Glencoe Avenue and two lanes east of Glencoe Avenue. The speed limit on Maxella Avenue is 30 mph.
- **Lincoln Boulevard (SR 1)** is a six lane north-south arterial street located approximately one mile west of the school site. The speed limit on Lincoln Boulevard is 40 mph.
- **Washington Boulevard** is a four lane east-west arterial street located approximately one mile north of the school site. The speed limit on Washington Boulevard is 35 mph.
- **Marina Expressway (SR 90)** is a four lane east-west expressway located approximately one-eighth mile south of the school site. East of Culver Boulevard, the Marina Expressway transitions into the Marina Freeway (SR 90), which provides a link to the San Diego Freeway (Interstate 405). The speed limit on the Marina Expressway is 40 mph.

Existing Transit Service

There are several bus routes that operate in the vicinity of the school site. Los Angeles County Metropolitan Transportation Authority (Metro) Lines 108 and 358 run along Mindanao Way, Short Avenue, and Centinela Avenue. The Culver City Bus Line 7 and the Los Angeles Department of Transportation (LADOT) Commuter Express Line 437 run along Culver Boulevard, Alla Road, and Mindanao Way. The Santa Monica Big Blue Bus Line 14 runs along Centinela Avenue, while the Big Blue Bus Line 3 and the Santa Monica Rapid buses run along Lincoln Boulevard. These bus lines connect with numerous other lines that serve the project area.

Existing Traffic Volumes

Manual traffic counts were taken at the 16 study area intersections in February and March of 2016 during the morning peak period from 7:00 to 10:00 AM. The one-hour interval of peak traffic flow within the three-hour monitoring period was identified for each intersection for the morning peak hour. Manual traffic counts were taken in September of 2016 during the afternoon peak period from 3:00 to 4:00 PM, which is the hour that would be impacted by the dismissal of the middle school component of the project (grades 4 through 8). The elementary school component (grades K through 3) would be dismissed at 2:00 PM (kindergarten) and 2:20 PM (grades 1 through 3) and would not impact the standard PM peak period, which extends from 3:00 to 6:00 PM. The 4:00 to 6:00 PM commuter peak period would not be impacted by the school. Figures 2 and 3 in the Appendix show the existing peak hour traffic volumes and turning movements at each intersection for the AM and PM peak hours, respectively.

Intersection Levels of Service

For the intersection level of service analysis, LADOT has designated the Circular 212 Planning methodology as the desired technique for the signalized intersections. The concept of roadway level of service under the Circular 212 method is calculated as the volume of vehicles that pass through the intersection divided by the capacity of that intersection. The calculation is based on the sum of the critical movements that pass through the intersection. When an intersection is operating “at capacity” (V/C of 1.00 or greater), extreme congestion occurs. The volume/capacity ratio value is based upon volumes by lane, signal phasing, and approach lane configuration.

Level of service (LOS) values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little or no delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating “capacity” of a roadway. Typically, LOS D represents the lowest acceptable operating condition.

To quantify the existing baseline traffic conditions, the nine signalized intersections in the study area were analyzed to determine their operating conditions during the AM and PM peak hours. Based on the peak hour traffic volumes, the turning movement counts, and the existing number of lanes at each intersection, the volume/capacity (V/C) ratios and LOS have been determined at each intersection, as summarized in Table 1.

**TABLE 1
EXISTING INTERSECTION LEVELS OF SERVICE**

Intersection	V/C Ratio & Level of Service	
	AM Peak Hour	PM Peak Hour
Marina Expressway Eastbound/Culver Blvd	0.471 – A	0.500 – A
Marina Expressway Westbound/Culver Blvd	0.719 – C	0.621 – B
Centinela Avenue/Culver Blvd	0.891 – D	1.004 – F
Marina Expressway Westbound/Alta Road	0.498 – A	0.377 – A
Centinela Avenue/Short Avenue	0.690 – B	0.597 – A
Beethoven Street/Washington Blvd	0.640 – B	0.740 – C
Lincoln Blvd/Maxella Avenue	0.649 – B	0.593 – A
Glencoe Avenue/Maxella Avenue	0.453 – A	0.523 – A
Glencoe Avenue/Mindanao Way	0.577 – A	0.643 – B

The V/C ratio is a measure of an intersection's traffic volumes as compared to the theoretical capacity of the intersection. The relationship between V/C ratios and LOS is as follows:

RELATIONSHIP BETWEEN V/C RATIO AND LEVEL OF SERVICE

<u>V/C RATIO</u>	<u>LOS</u>
0 to 0.600	A
>0.600 to 0.700	B
>0.700 to 0.800	C
>0.800 to 0.900	D
>0.900 to 1.000	E
>1.000	F

As shown in Table 1, four of the nine study area intersections currently operate at LOS A, three intersections operate at LOS B, one intersection operates at LOS C, and one intersection operates at

LOS D during the AM peak hour. During the PM peak hour, five intersections operate at LOS A, two intersections operate at LOS B, one intersection operates at LOS C, and one intersection operates at LOS F. These LOS levels represent acceptable traffic conditions at all of the intersections except for the intersection of Centinela Avenue at Culver Boulevard, which operates at LOS F during the PM peak hour.

Future Baseline Traffic Conditions

The next step of the traffic analysis was to determine the future baseline traffic volumes without the proposed school project. This was done by considering the effects of ambient regional growth and the cumulative increase in traffic volumes that would be generated by other development projects proposed in the area. The year 2020 was used as the analysis year because it is the first expected year of occupancy for the proposed school. The first step in forecasting the baseline traffic conditions for the year 2020 was to expand the existing (2016) traffic volumes by 4.06 percent, which represents a one percent ambient growth rate per year for four years (compounded annually). The assumed one percent annual growth rate is conservatively high because the growth rate cited in the “Los Angeles County Congestion Management Program” for Regional Statistical Area 16 (Santa Monica, Bel Air, Palisades, and Marina del Rey) is 0.3 percent per year and the growth rate used in the traffic analysis for the Marina Del Rey Local Coastal Plan (Raju Associates, March 2010) is 0.5 percent per year. The year 2020 traffic volumes with ambient growth are shown on Figures 4 and 5 in the Appendix for the AM and PM peak hours, respectively.

The second step in forecasting the baseline traffic volumes for the year 2020 was to quantify the cumulative levels of traffic that would be generated by other proposed development projects in the area and add this traffic to the 2020 baseline levels that were calculated by applying the ambient growth rate. The related projects identified by LADOT that were included in the cumulative traffic analysis are shown in Table 2. The locations of these projects are shown on Figure 6.

**TABLE 2
PROPOSED PROJECTS FOR CUMULATIVE ANALYSIS**

Project	Address	Quantities
1 – LMU Master Plan	1 LMU Drive	7,800 students
2 – Mixed-Use Residential & Office	4210 Del Rey Avenue	136 condo units 20,000 sq. ft. office
3 – Mixed-Use Residential, Storage, Office	4040 Del Rey Avenue	168 apartments 100,000 sq. ft. mini-warehouse (or) 33,000 sq. ft. office
4 – Teledyne Creative Office	12964 Panama Street at Alla Road	159,000 sq. ft. office
5 – Multi-Story Office Building	12575 Beatrice Street	250,000 sq. ft. office
6 – Charter School Expansion	4471 Inglewood Blvd at Culver Bl	800 students
7 – Ballona Wetlands Restoration Project	1 Marina Expressway	46,000 sq. ft. ecology center 600 acre ecological reserve
8 - Playa Vista – Phase 1	South of Jefferson Blvd between Lincoln Blvd & Centinela Avenue	1,570,000 sq. ft. office 3,246 condo units 25,000 sq. ft. retail 65,000 sq. ft. community serving

9 – Playa Vista Plant Site (Spruce Goose)	Campus Center Dr/Bluff Creek Dr	1,129,900 sq. ft. production 57,200 sq. ft. office
10 - The Village at Playa Vista (Phase III)	South of Jefferson Blvd between & Westlawn Avenue	175,000 sf office 2,600 apartment units 150,000 sf retail 40,000 community serving
11 – Marina Del Rey Local Coastal Plan	Marina Del Rey	Multiple Developments

The cumulative volumes of traffic that would be generated by these proposed development projects are shown in Table 3. The traffic volume estimates were provided by staff at LADOT. The inbound and outbound volumes are based on the average directional distribution percentages provided in the *Trip Generation Manual* for each land use.

**TABLE 3
TRAFFIC GENERATION ESTIMATES FROM OTHER PROPOSED PROJECTS**

Project	Generated Traffic - Net Increase						
	Daily Traffic	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
1 – LMU Master Plan	2,540	176	146	30	223	112	111
2 – Mixed-Use Res/Office	630	71	24	47	85	48	37
3 – Resid/Storage Office	1,840	89	-50	139	121	149	-28
4 – Teledyne Office	710	67	58	9	59	12	47
5 – Multi-Story Office	2,500	354	311	43	435	74	361
6 – Charter School	280	100	55	45	67	31	36
7 – Ballona Wetlands	1,530	42	38	4	204	57	147
8 - Playa Vista Phase 1	28,260	3,792	2,464	1,328	4,003	1,541	2,462
9 – Playa Vista Plant Site	12,510	1,654	1,456	198	1,526	259	1,267
10 - The Village at PV	24,220	1,626	577	1,049	2,302	1,275	1,027
11 – Marina Del Rey LCP	34,100	1,707	622	1,085	2,503	1,378	1,125
TOTAL	109,120	9,678	5,701	3,977	11,528	4,936	6,592

The traffic volumes shown in Table 3 represent the net increase in traffic associated with each project, as some of the projects would displace existing land uses at the site. The projects included in the cumulative analysis are those that are located within a 1.5-mile radius of the proposed school site. The related projects list that was provided is from the City of Los Angeles’ Case Logging and Tracking System (CLATS). While the CLATS list had more projects than what is shown in Tables 2 and 3, many of the projects were eliminated from the cumulative analysis because the projects have already been completed and occupied.

The estimated volumes of traffic from the related projects that would travel through the study area intersections are shown on Figures 7 and 8 for the AM and PM peak hours, respectively. The traffic assignments for the Playa Vista Phase 1, the Playa Vista Plant Site, and The Village at Playa Vista projects were taken from the traffic report that was prepared for the EIR for The Village at Playa Vista (Kaku Associates, 2003). The traffic assignments for the Marina Del Rey Local Coastal Plan (LCP) were taken from the traffic report that was prepared for the Marina Del Rey LCP Amendment (Raju Associates, March 2010).

The future baseline 2020 traffic volumes were forecasted by adding the traffic that would be generated by the related projects to the expanded traffic volumes that were calculated by using the

ambient growth factor. For the long-range projects shown in Table 2, i.e., the LMU (Loyola Marymount University) Master Plan, Playa Vista Phase I development, the Playa Vista Plant Site, and The Village at Playa Vista, the volumes of traffic used to forecast the year 2020 scenario represent 20 percent of the values shown in Table 3 because these projects are being implemented over a long period of time and parts of these projects have already been developed and occupied. The 2020 cumulative baseline traffic volumes without the proposed school project are shown on Figures 9 and 10 for the AM and PM peak hours, respectively.

Based on the projected peak hour traffic volumes, the turning movement counts, and the existing lane configuration, the future baseline V/C ratios and levels of service were calculated for each signalized intersection in the study area, as summarized in Table 4. As shown, three of the nine study area intersections are projected to operate at LOS A, one of the intersections is at LOS B, four intersections are at LOS C, and one intersection is at LOS E during the AM peak hour. During the PM peak hour, three intersections are at LOS A, four intersections are at LOS B, one intersection is at LOS D, and one intersection is at LOS F.

**TABLE 4
2020 INTERSECTION LEVELS OF SERVICE WITHOUT PROJECT**

Intersection	V/C Ratio & Level of Service	
	AM Peak Hour	PM Peak Hour
Marina Expressway Eastbound/Culver Blvd	0.495 – A	0.531 – A
Marina Expressway Westbound/Culver Blvd	0.755 – C	0.658 – B
Centinela Avenue/Culver Blvd	0.980 – E	1.097 – F
Marina Expressway Westbound/Alla Road	0.536 – A	0.401 – A
Centinela Avenue/Short Avenue	0.745 – C	0.649 – B
Beethoven Street/Washington Blvd	0.741 – C	0.814 – D
Lincoln Blvd/Maxella Avenue	0.740 – C	0.695 – B
Glencoe Avenue/Maxella Avenue	0.494 – A	0.579 – A
Glencoe Avenue/Mindanao Way	0.620 – B	0.685 – B

III. TRAFFIC IMPACT ANALYSIS

This chapter analyzes the project's impacts on the study area traffic conditions. First is a discussion of project generated traffic volumes. This is followed by an analysis of the impacts of the proposed project on traffic volumes, intersection LOS at the signalized intersections, and the need for a traffic signal at the unsignalized intersections.

Project Generated Traffic

The proposed project would result in an increase in traffic volumes on the streets in the immediate vicinity of the school site because students, parents, and the faculty/staff would be traveling to and from the school. The trip generation rates and the anticipated volumes of traffic that would be generated by a K-8 school are shown in Table 5. The trip rates represent values from the *ITE Trip Generation Manual* for the private school land use category, as detailed in the notes beneath the table.

**TABLE 5
PROJECT GENERATED TRAFFIC**

Land Use	Daily Traffic	AM Peak Hour Traffic			PM Peak Hour Traffic		
		Total Traffic	Trips In	Trips Out	Total Traffic	Trips In	Trips Out
TRIP GENERATION RATES (per student)							
Charter K-8 School*	2.48	0.90	55%	45%	0.60	47%	53%
GENERATED TRAFFIC VOLUMES – PROPOSED CHARTER SCHOOL							
Total School (532 students)	1,320	479	263	216			
Grades K-3 (252 students)	PM Release Time: K at 2:00, Grades 1-3 at 2:20				151	71	80
Grades 4-8 (280 students)	PM Release Time: Grades 4-8 at 3:10				168	79	89

* Trip rates for daily traffic are the ITE rates for the private school K-12 land use category and the trip rates for the AM and PM peak hours are the ITE rates for the private school K-8 category. The ITE manual does not have a daily rate for a K-8 private school.

Table 5 indicates that the proposed school would generate an estimated 1,320 vehicle trips per day and 479 trips during the morning peak hour (263 inbound and 216 outbound). In the afternoon, grades K-3 would generate 151 trips (71 inbound and 80 outbound) during the early dismissal times (2:00 and 2:20 PM) and grades 4-8 would generate 168 trips (79 inbound and 89 outbound) at the later dismissal time (3:10 PM). Although the proposed school would displace an industrial building that currently occupies the school site, the levels of traffic that would be generated by the existing land use were not subtracted from the levels of traffic expected to be generated by the proposed school because the existing building appeared to be unoccupied when the traffic counts were taken for this analysis.

It should be noted that the volumes of project generated traffic do not necessarily represent new traffic on the overall street network, but instead represent the volumes of traffic that would be re-directed to this school site from the existing K-3 school located on Culver Boulevard near the proposed school site and from the existing 4-8 school that currently operates at Westchester High School. The number of students attending school in the area is a function of the school-age

population rather than the number of schools or classrooms. However, for the traffic impact analysis, it has been assumed that the site-generated traffic represents new traffic.

The increased volumes of traffic that would be generated by the proposed school during the morning and afternoon peak hours were distributed onto the street network based on the locations of the student residences and the observed traffic patterns on the study area street network. Using the generated traffic volumes shown in Table 5 and the geographical distribution of the students' residences, the volume of project traffic on each street and at each study area intersection was determined for the traffic impact analysis. The volumes of project generated traffic at each study area intersection are shown on Figures 11 and 12 for the AM and PM peak hours, respectively.

The project generated traffic volumes shown on Figures 11 and 12 were added to the existing traffic volumes and to the projected 2020 baseline traffic volumes to quantify the project's impacts. The existing plus project traffic volumes are shown on Figures 13 and 14 and the year 2020 traffic volumes with the proposed school are shown on Figures 15 and 16 for the AM and PM peak hours.

Significance Criteria

According to LADOT's "Traffic Study Policies and Procedures," a traffic impact on an intersection shall be deemed significant in accordance with the criteria outlined in Table 6. A project would not result in a significant impact at an intersection if the intersection is projected to operate at LOS A or B.

**TABLE 6
SIGNIFICANCE CRITERIA FOR TRAFFIC IMPACTS**

Level of Service	Final V/C Ratio	Project-Related Increase in V/C
C	> 0.700 - 0.800	Equal to or greater than 0.040
D	> 0.800 - 0.900	Equal to or greater than 0.020
E, F	> 0.900	Equal to or greater than 0.010

Intersection Impact Analysis

An analysis of traffic impacts at the signalized intersections was conducted by quantifying the before-and-after traffic volumes, then determining the V/C ratios and LOS at the study area intersections for the "without project" and "with project" scenarios. Two baseline scenarios are addressed in the analysis: existing conditions and year 2020 conditions with ambient growth and the cumulative traffic generated by the other development projects.

For the existing conditions baseline scenario, the before-and-after V/C ratios and LOS at each of the study area intersections are summarized in Table 7 for the morning and afternoon peak hours. The PM peak hour represents the 3:00 to 4:00 time frame that would be impacted by the school's afternoon dismissal time. The school would not impact the afternoon commuter peak period, which typically occurs between 4:00 and 6:00 PM.

Table 7 shows the existing traffic conditions, the traffic conditions with the addition of the school traffic, and the increase in V/C ratios associated with the project. The final column in the table indicates if the intersection would be significantly impacted by the proposed project.

The intersection of Marina Expressway eastbound and Culver Boulevard, for example, would operate at a V/C ratio of 0.471 and LOS A for existing conditions during the AM peak hour and at a V/C ratio of 0.516 and LOS A for the existing scenario plus the proposed school. The proposed project would increase the V/C ratio by an increment of 0.045, which does not represent a significant impact for an intersection that operates at LOS A. Table 7 indicates that none of the study area intersections would be significantly impacted by the proposed school according to the significance criteria presented in Table 6.

**TABLE 7
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
EXISTING CONDITIONS AS BASELINE**

Intersection	V/C Ratio and Level of Service			
	Existing Conditions	Existing Plus Project	Increase In V/C Ratio	Significant Impact?
Marina Expwy Eastbound/Culver Blvd AM Peak Hour	0.471 – A	0.516 – A	0.045	No
PM Peak Hour	0.500 – A	0.503 – A	0.003	No
Marina Expwy Westbound/Culver Blvd AM Peak Hour	0.719 – C	0.745 – C	0.026	No
PM Peak Hour	0.621 – B	0.633 – B	0.012	No
Centinela Avenue/Culver Blvd AM Peak Hour	0.891 – D	0.899 – D	0.008	No
PM Peak Hour	1.004 – F	1.008 – F	0.004	No
Marina Expwy Westbound/Alla Road AM Peak Hour	0.498 – A	0.609 – B	0.111	No
PM Peak Hour	0.377 – A	0.411 – A	0.034	No
Centinela Avenue/Short Avenue AM Peak Hour	0.690 – B	0.707 – C	0.017	No
PM Peak Hour	0.597 – A	0.603 – B	0.006	No
Beethoven Street/Washington Blvd AM Peak Hour	0.640 – B	0.659 – B	0.019	No
PM Peak Hour	0.740 – C	0.745 – C	0.005	No
Lincoln Blvd/Maxella Avenue AM Peak Hour	0.649 – B	0.670 – B	0.021	No
PM Peak Hour	0.593 – A	0.596 – A	0.003	No
Glencoe Avenue/Maxella Avenue AM Peak Hour	0.453 – A	0.456 – A	0.003	No
PM Peak Hour	0.523 – A	0.530 – A	0.007	No
Glencoe Avenue/Mindanao Way AM Peak Hour	0.577 – A	0.581 – A	0.004	No
PM Peak Hour	0.643 – B	0.645 – B	0.002	No

The comparative V/C ratios and levels of service for the year 2020 analysis scenario are shown in Table 8. As shown, none of the study area intersections would be significantly impacted by the proposed school.

**TABLE 8
PROJECT IMPACT ON INTERSECTION LEVELS OF SERVICE
YEAR 2020 AS BASELINE**

Intersection	V/C Ratio and Level of Service			
	2020 Without Project	2020 With Project	Increase In V/C Ratio	Significant Impact?
Marina Expwy Eastbound/Culver Blvd AM Peak Hour PM Peak Hour	0.495 – A 0.531 – A	0.539 – A 0.536 – A	0.044 0.005	No No
Marina Expwy Westbound/Culver Blvd AM Peak Hour PM Peak Hour	0.755 – C 0.658 – B	0.780 – C 0.669 – B	0.025 0.011	No No
Centinela Avenue/Culver Blvd AM Peak Hour PM Peak Hour	0.980 – E 1.097 – F	0.988 – E 1.101 – F	0.008 0.004	No No
Marina Expwy Westbound/Alla Road AM Peak Hour PM Peak Hour	0.536 – A 0.401 – A	0.647 – B 0.435 – A	0.111 0.034	No No
Centinela Avenue/Short Avenue AM Peak Hour PM Peak Hour	0.745 – C 0.649 – B	0.762 – C 0.656 – B	0.017 0.007	No No
Beethoven Street/Washington Blvd AM Peak Hour PM Peak Hour	0.741 – C 0.814 – C	0.760 – C 0.819 – D	0.019 0.005	No No
Lincoln Blvd/Maxella Avenue AM Peak Hour PM Peak Hour	0.740 – C 0.695 – B	0.761 – C 0.698 – B	0.021 0.003	No No
Glencoe Avenue/Maxella Avenue AM Peak Hour PM Peak Hour	0.494 – A 0.579 – A	0.497 – A 0.586 – A	0.003 0.007	No No
Glencoe Avenue/Mindanao Way AM Peak Hour PM Peak Hour	0.620 – B 0.685 – B	0.624 – B 0.687 – B	0.004 0.002	No No

Traffic Signal Warrant Analysis

The seven unsignalized intersections in the project area that would be most-directly impacted by the proposed school were analyzed to determine if a traffic signal would be warranted based on the guidelines of the “California Manual on Uniform Traffic Control Devices” (CA MUTCD). The analysis is based on Warrant 3, Peak Hour, whereby the peak hour traffic volumes at each intersection are plotted on the graph shown on Figure 4C-3 of the manual. The results of the traffic signal warrant analysis are summarized in Table 9.

The traffic signal warrant analysis worksheets, which are copies of the Figure 4C-3 graphs from the manual with the traffic volumes plotted for each intersection, are provided in the Appendix. If the traffic volumes at a particular intersection are above the curve on the graph, a traffic signal may be warranted. If the traffic volumes are below the curve on the graph, a traffic signal is not warranted

based on peak hour traffic volumes. If a signal is not warranted for the year “2020 with project” scenario for an intersection (i.e., if the plotted point for the traffic volumes is below the curve on the graph), it was not necessary to also plot the volumes for the other three scenarios because the traffic volumes for these other scenarios would be lower than the “2020 with project” scenario.

**TABLE 9
TRAFFIC SIGNAL WARRANT ANALYSIS**

Intersection	Traffic Signal Warranted?			
	Existing Conditions	Existing Plus Project	2020 Without Project	2020 With Project
Alla Road/Mindanao Way AM Peak Hour	Yes	Yes	Yes	Yes
PM Peak Hour	No	No	No	No
Alla Road/Glencoe Avenue AM Peak Hour	No	No	No	No
PM Peak Hour	No	No	No	No
Alla Road/Panama Street AM Peak Hour	No	No	No	No
PM Peak Hour	No	No	No	No
Beethoven Street/Short Avenue AM Peak Hour	No	No	No	No
PM Peak Hour	No	No	No	No
Beethoven Street/Panama Street AM Peak Hour	No	No	No	No
PM Peak Hour	No	No	No	No
McConnell Avenue/Panama Street AM Peak Hour	No	No	No	No
PM Peak Hour	No	No	No	No
Centinela Avenue/Little Culver Blvd AM Peak Hour	No	No*	No	No*
PM Peak Hour	No	No	No	No

* Although the traffic volume on the minor street (Little Culver Blvd) for this scenario is slightly over the warrant threshold of 100 vehicles per hour, a signal is not warranted because all of the movements are right turns.

The analysis indicates that a traffic signal is warranted at the intersection of Alla Road and Mindanao Way based on the existing AM peak hour traffic volumes at this intersection, which currently has four-way stop signs. The proposed school would add a relatively minor volume of traffic to the intersection; i.e., an additional 49 vehicles to an intersection that has an existing volume of 1,540 vehicles during the AM peak hour. This represents a three percent increase in traffic at the intersection. While a traffic signal may be warranted based on the peak hour traffic volumes, the need for a signal is not triggered by the development of the school.

The analysis indicates that a traffic signal would not be warranted at any of the other unsignalized intersections in the study area.

Congestion Management Program

The Congestion Management Program (CMP) was created statewide because of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The 2010 CMP for Los Angeles County (Metro) requires that the traffic impact of individual development projects of potentially regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system. Per the CMP Transportation Impact Analysis (TIA) Guidelines, a significant impact may result and a traffic impact analysis is required where:

- At CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project will add 50 or more vehicle trips during either morning or afternoon weekday peak hours.
- At CMP mainline freeway-monitoring locations, where the project will add 150 or more trips, in either direction, during the either the morning or afternoon weekday peak hours.

The CMP arterial routes closest to the school site are the Marina Expressway/Marina Freeway (SR 90), Lincoln Boulevard (SR 1), Venice Boulevard (SR 187), and Manchester Avenue. The closest CMP intersections are Lincoln Boulevard at Marina Expressway, Lincoln Boulevard at Venice Boulevard, Venice Boulevard at Centinela Boulevard, and Lincoln Boulevard at Manchester Avenue. It is estimated that a maximum of 8 percent of the project generated traffic would travel through any of these intersections, which is equates to approximately 38 vehicles during the morning peak hour. As this volume of traffic is less than the CMP threshold of 50 trips per hour, a detailed CMP analysis is not required. The two intersections along the Marina Expressway that would be most-directly affected by the project (Marina Expressway eastbound at Culver Boulevard and Marina Freeway westbound at Culver Boulevard) were analyzed and it was determined that these intersections would not be significantly impacted by the project.

With regard to the proposed project's CMP-related freeway impacts, it is assumed that a maximum of 27 percent of the school traffic would use any particular freeway segment as an access route, which equates to 71 inbound trips and 58 outbound trips during the morning peak hour. As these directional volumes are well below the CMP threshold of 150 trips for freeways, a detailed CMP freeway analysis is not required and the proposed project would not have a significant impact on the freeway network. The proposed project would not, therefore, exceed a LOS standard established by the congestion management agency.

Pedestrian and Bicycle Access and Safety

The proposed school would generate an increased demand for non-motorized travel as some students would travel to and from the school as pedestrians or on bicycles. The streets near the school site have sidewalks along the sides of the street, except for the south side of Panama Street between Alla Road and McConnell Avenue, which includes the project frontage. The two intersections along Panama Street that are closest to the school site have three-way stop signs; i.e., the intersection of Panama Street at Beethoven Street, which is located adjacent to the school site, and the intersection of Panama Street at McConnell Avenue, which is located northeast of the school site. Pedestrian crossings would be accommodated at these two intersections. Also, the signalized intersections in the study area are equipped with painted crosswalks, pedestrian signals, and pedestrian push buttons to activate the signals.

Pedestrian access to the school would be provided on the Panama Street frontage. Although a sidewalk is not currently in place at this location, a sidewalk would be installed on the south side of Panama Street along the frontage of the school property in conjunction with the development of the school. A passenger drop-off/pick-up zone would also be constructed along the project frontage in a pull-out area that would be off-set from the existing curb alignment so that the stopped vehicles would be physically separated from the travelled lanes on Panama Street.

The increased levels of traffic, the increased number of pedestrians and bicycles in the area, and the concentration of vehicular turning movements at the school access driveway, at the nearby intersections, and in the general vicinity of the school may result in an increased number of traffic conflicts and a corresponding increase in the probability of an accident occurring. As part of the project these conflicts would be reduced by installation of school area warning signs to notify drivers that they are entering a school zone and by painting yellow school crosswalks at the intersections adjacent to and near the school site; i.e., Panama Street at Beethoven Street and Panama Street at McConnell Avenue. These installations are subject to approval by LADOT. In addition, a “School Route Plan” would be prepared to provide information to students, parents, and faculty regarding pedestrian and bicycle safety.

Vehicular Access and Circulation

The school driveway would be on the south side of Panama Street west of Beethoven Street at the west end of the property. This driveway would provide access to a subterranean parking garage that would be used by staff and faculty. The school would also have a passenger drop-off/pick-up zone in a pull-out area along the Panama Street frontage of the school, which would begin immediately east of Beethoven Street and extend to the east end of the school site.

As the drop-off/pick-up zone would be along the eastbound direction of Panama Street, most of the inbound traffic generated by the school would approach the site from either eastbound Panama Street via Alla Road or from southbound Beethoven Street onto eastbound Panama Street. A lesser volume of traffic would approach the school using Panama Street in the westbound direction. Some parents might elect to drop off and/or pick up their students on the north side of Panama Street on the opposite side of the street from the school or on the streets that intersect with Panama Street, such as Beethoven Street or McConnell Avenue.

After dropping off or picking up the students, most of the departing traffic would continue on eastbound Panama Street and either travel to Centinela Avenue via Little Culver Boulevard, turn left onto one of the residential streets (i.e., McConnell Avenue, Mascagni Street, or Westlawn Avenue), or make a U-turn and travel back to Alla Road via westbound Panama Street. Some motorists would use the local streets in the neighborhood while traveling to and from the school and thereby result in additional traffic volumes on the residential streets that are parallel to Panama Street, such as Rubens Avenue, Admiral Avenue, and Bonaparte Avenue. This increase in traffic could be bothersome to some of the residents, but would be short-term; i.e., approximately 15 minutes in the morning during the arrival time and 15 minutes in the afternoon during the departure time.

As the school’s driveway would be on Panama Street west of Beethoven Street, conflicts could potentially occur involving motorists turning left into the driveway. These left-turn movements

would be crossing the stream of traffic on eastbound Panama Street that is approaching the school and there would likely be a queue of stopped vehicles because of the stop signs at the Panama Street/Beethoven Street intersection. In addition, some motorists might elect to make U-turns at this intersection as a transition from westbound Panama Street to the drop-off/pick-up zone. The proposed project includes installation of a KEEP CLEAR pavement marking at the driveway and a “No U-Turn” sign on Panama Street at its intersection with Beethoven Street.

IV. SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings of the traffic impact analysis are presented below.

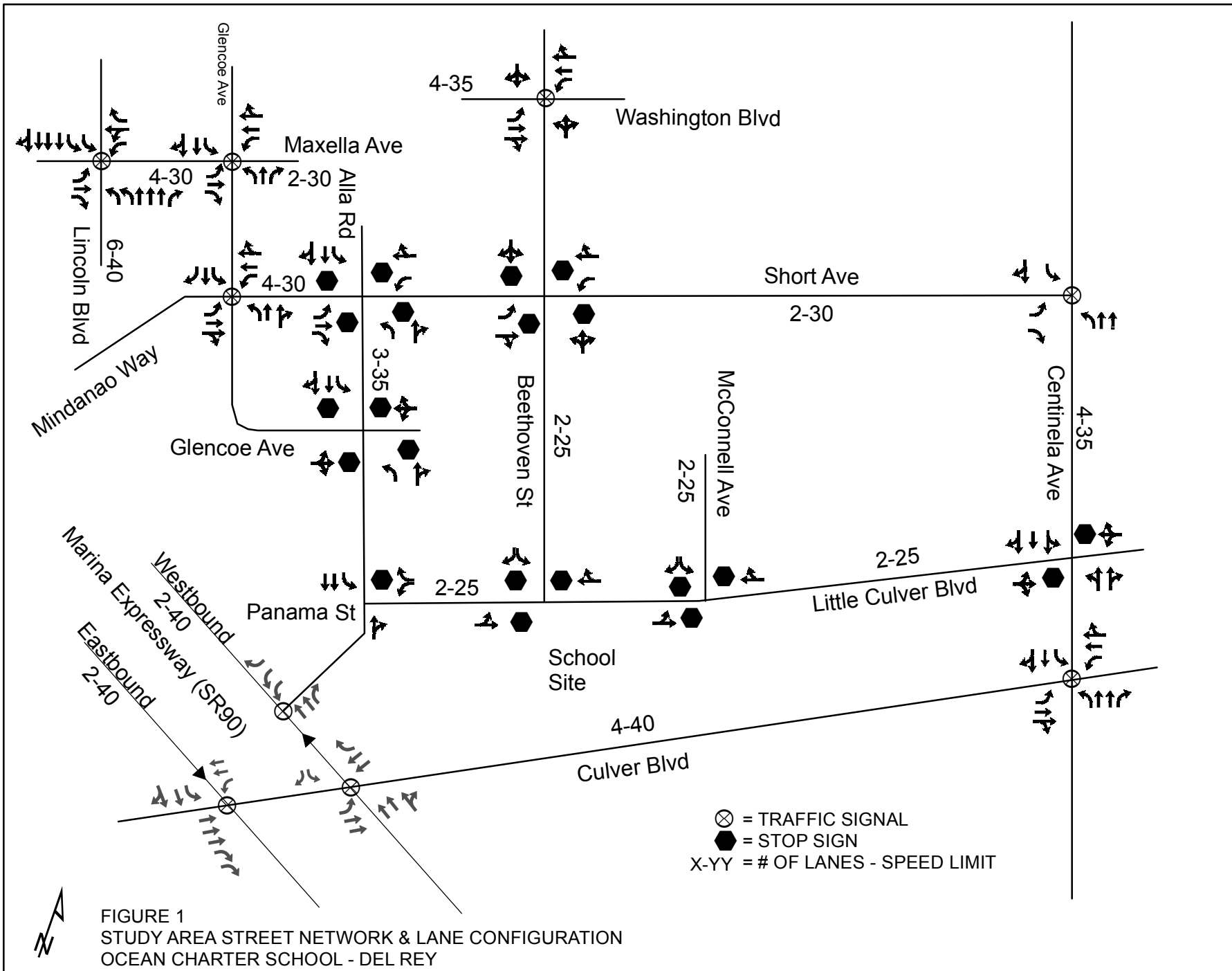
- The proposed 532-student K-8 charter school would generate an estimated 1,320 vehicle trips per day and 479 trips during the morning peak hour (263 inbound and 216 outbound). In the afternoon, grades K-3 would generate 151 trips (71 inbound and 80 outbound) during the early dismissal times (2:00 and 2:20 PM) and grades 4-8 would generate 168 trips (79 inbound and 89 outbound) at the later dismissal time (3:10 PM).
- As the proposed school would provide a single campus for two existing components of the Ocean Charter School, the project would result in a relocation of traffic to this particular school site as opposed to an overall increase in traffic volumes on the study area street network. The traffic analysis was conducted with the conservative assumption that all of the school's site-generated traffic would be new traffic.
- An analysis of nine signalized intersections in the vicinity of the school site indicates that the traffic generated by the proposed school would not result in a significant impact at any of the intersections according to the City of Los Angeles significance criteria.
- An analysis of seven unsignalized intersections in the vicinity of the school site indicates that a traffic signal is currently warranted at one intersection based on the existing AM peak hour traffic volumes; i.e., the intersection of Alla Road and Mindanao Way. While a traffic signal may be warranted based on the peak hour traffic volumes, the need for a signal is not triggered by the development of the school.
- The school would result in an increase in traffic volumes on the residential neighborhood streets in the vicinity of the school site, including Panama Street, Beethoven Street, McConnell Avenue, Mascagni Street, Westlawn Avenue, Rubens Avenue, Admiral Avenue, and Bonaparte Avenue. Traffic increases could be bothersome to some of the residents, but would be short-term; i.e., approximately 15 minutes in the morning during the arrival time and 15 minutes in the afternoon during the departure time.
- The proposed school would include:
 - A sidewalk on the south side of Panama Street along the school frontage.
 - Student drop-off/pick-up zone along the school frontage in a pull-out area that is off-set from the existing curb alignment of Panama Street. This passenger loading zone would begin east of the Panama Street/Beethoven Street intersection so that it will not conflict with pedestrian crossings at the intersection.
 - Installation of school area warning signs on Panama Street east and west of the school site and on Beethoven Street north of Panama Street, subject to approval by LADOT.
 - Yellow school crosswalks at the Panama Street/Beethoven Street and Panama Street/McConnell Avenue intersections, subject to approval by LADOT.
 - Preparation of a "School Route Plan" as a cooperative effort between the school and the City of Los Angeles, that will be distributed annually to provide information to students, parents, and faculty regarding pedestrian and bicycle safety. This plan would provide guidance as to

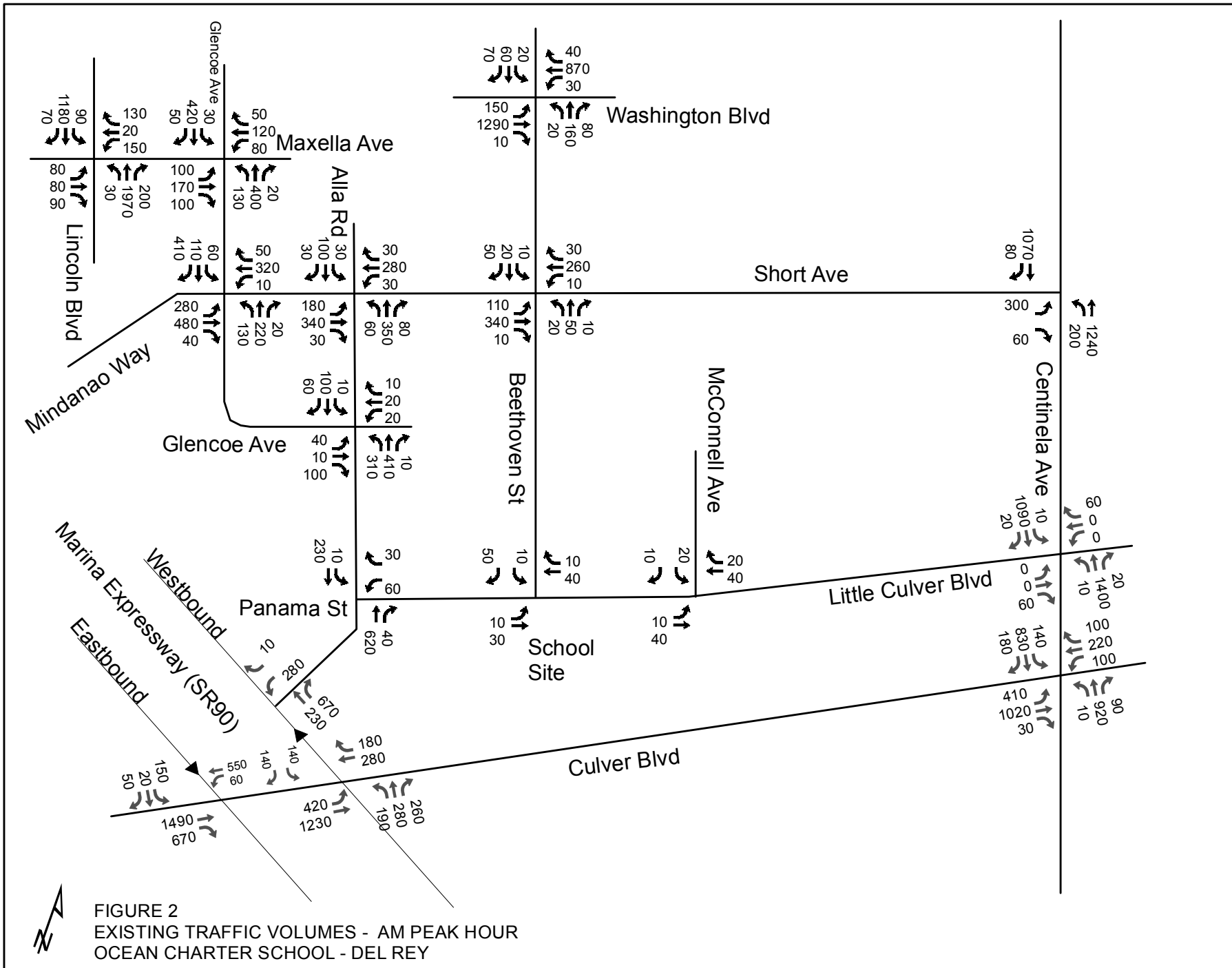
the preferred travel routes and locations to cross the streets based on the school area's traffic control devices, sidewalks, and crosswalks.

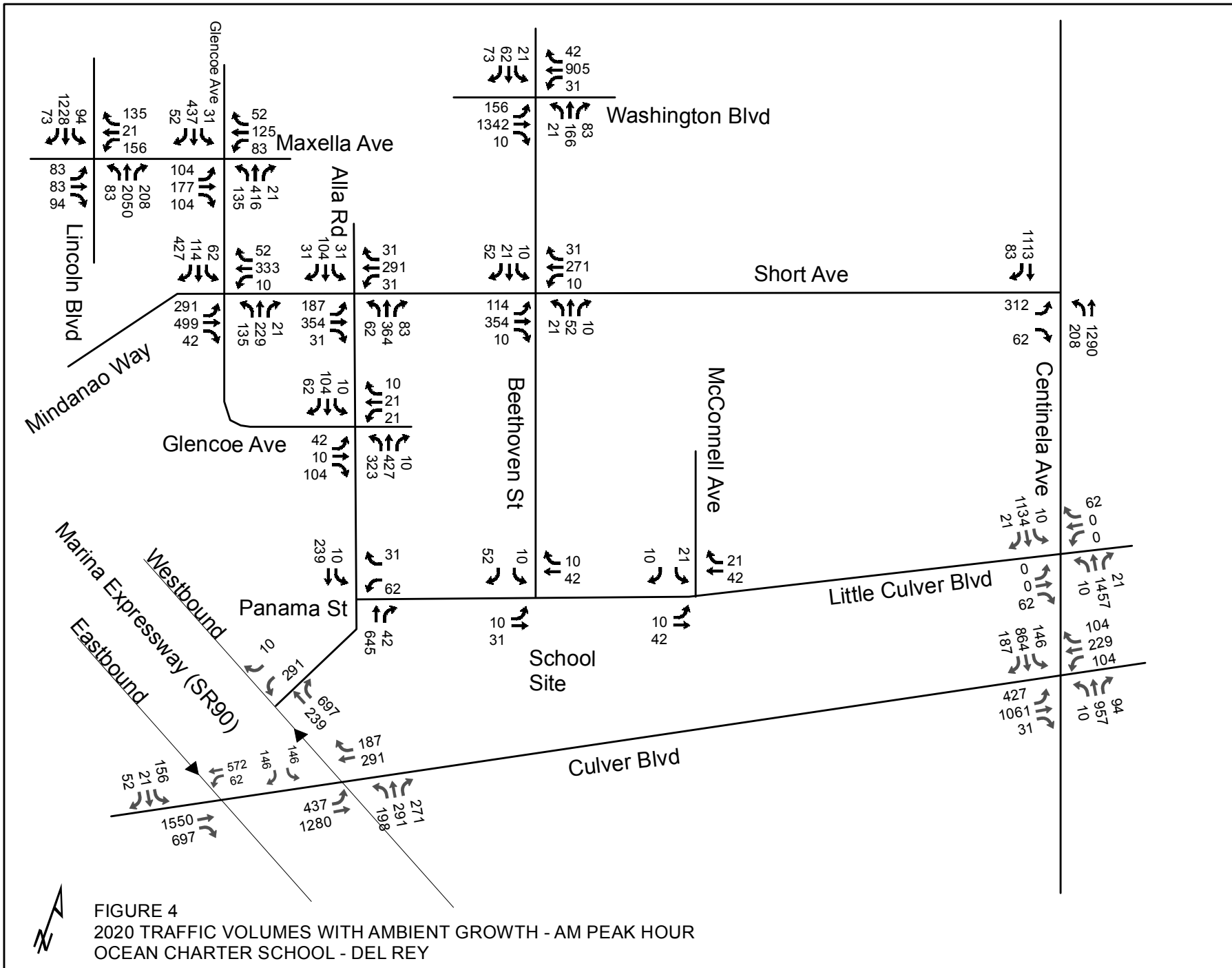
- Installation of a KEEP CLEAR pavement marking on Panama Street at the school's access driveway west of Beethoven Street, subject to approval by LADOT.
- Installation of a "No U-Turn" sign on westbound Panama Street at its intersection with Beethoven Street, subject to approval by LADOT..

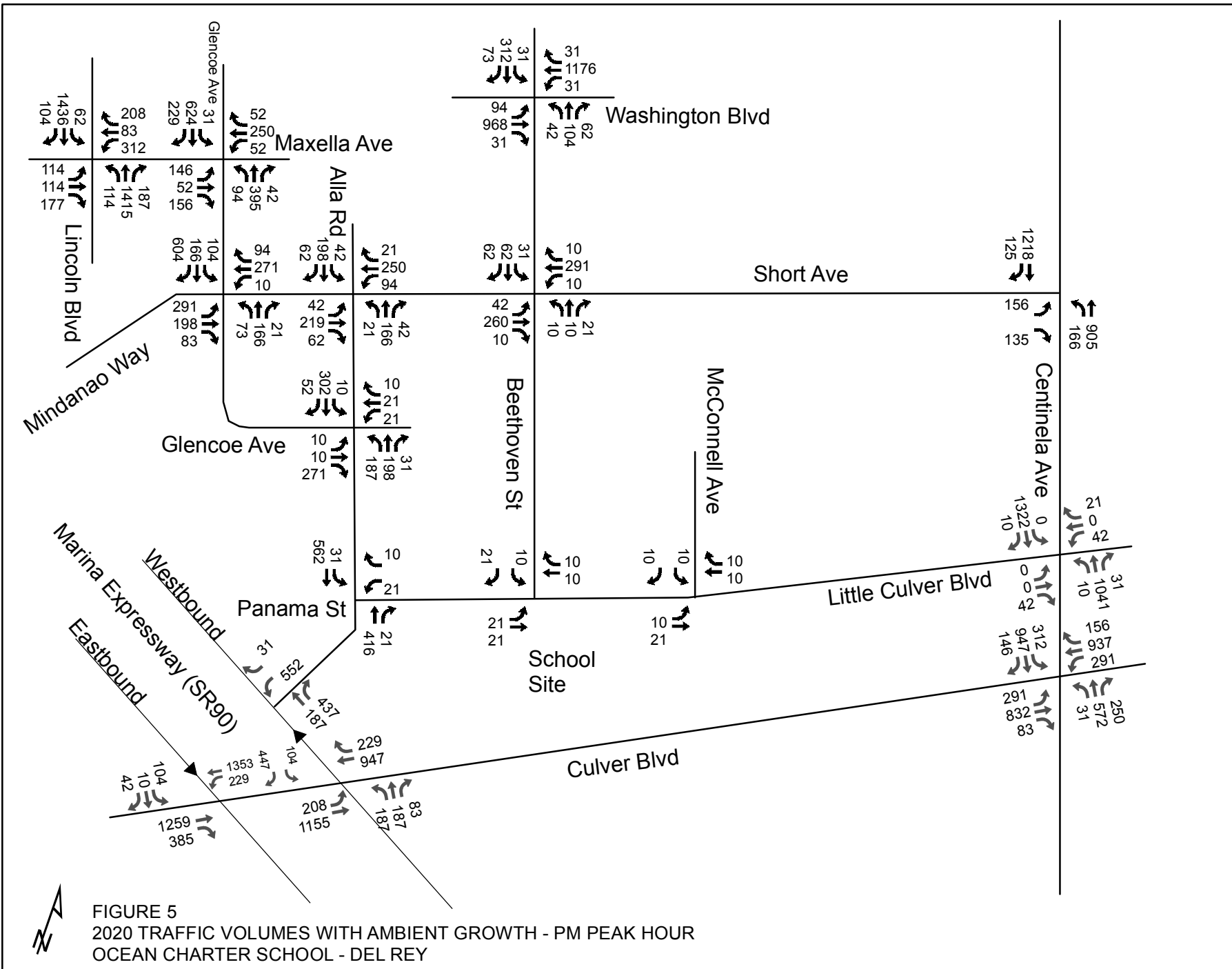
APPENDIX

TRAFFIC FIGURES









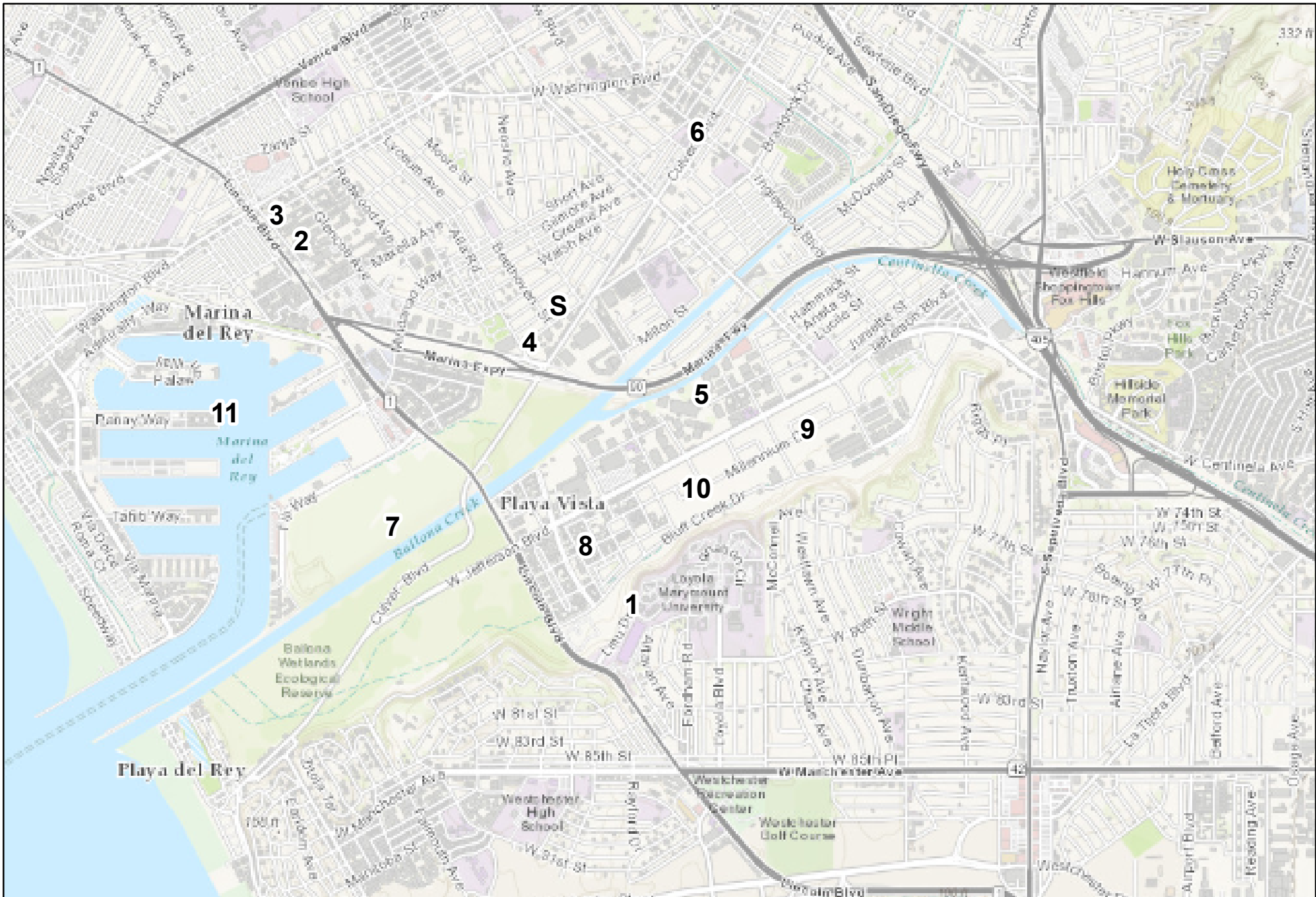
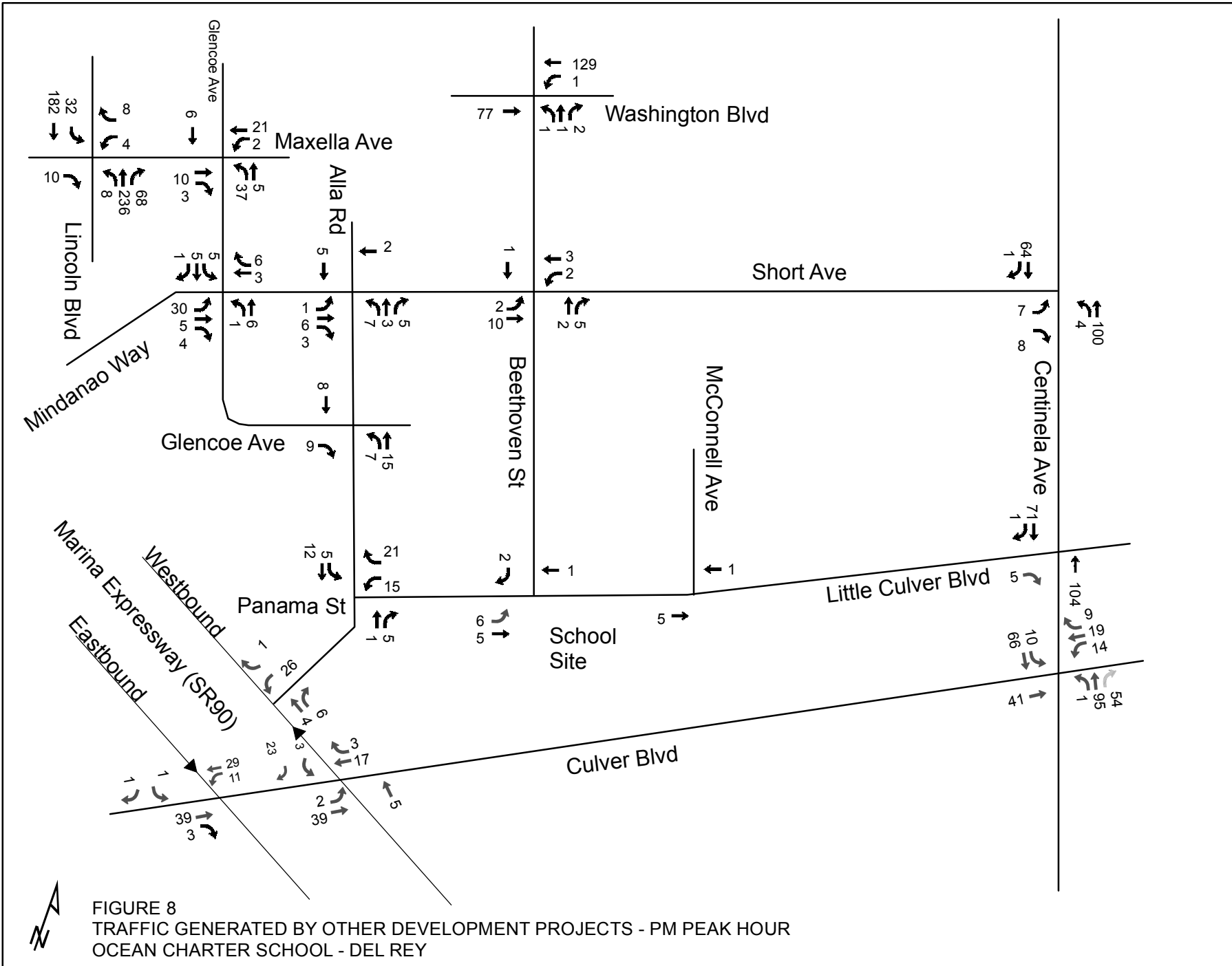
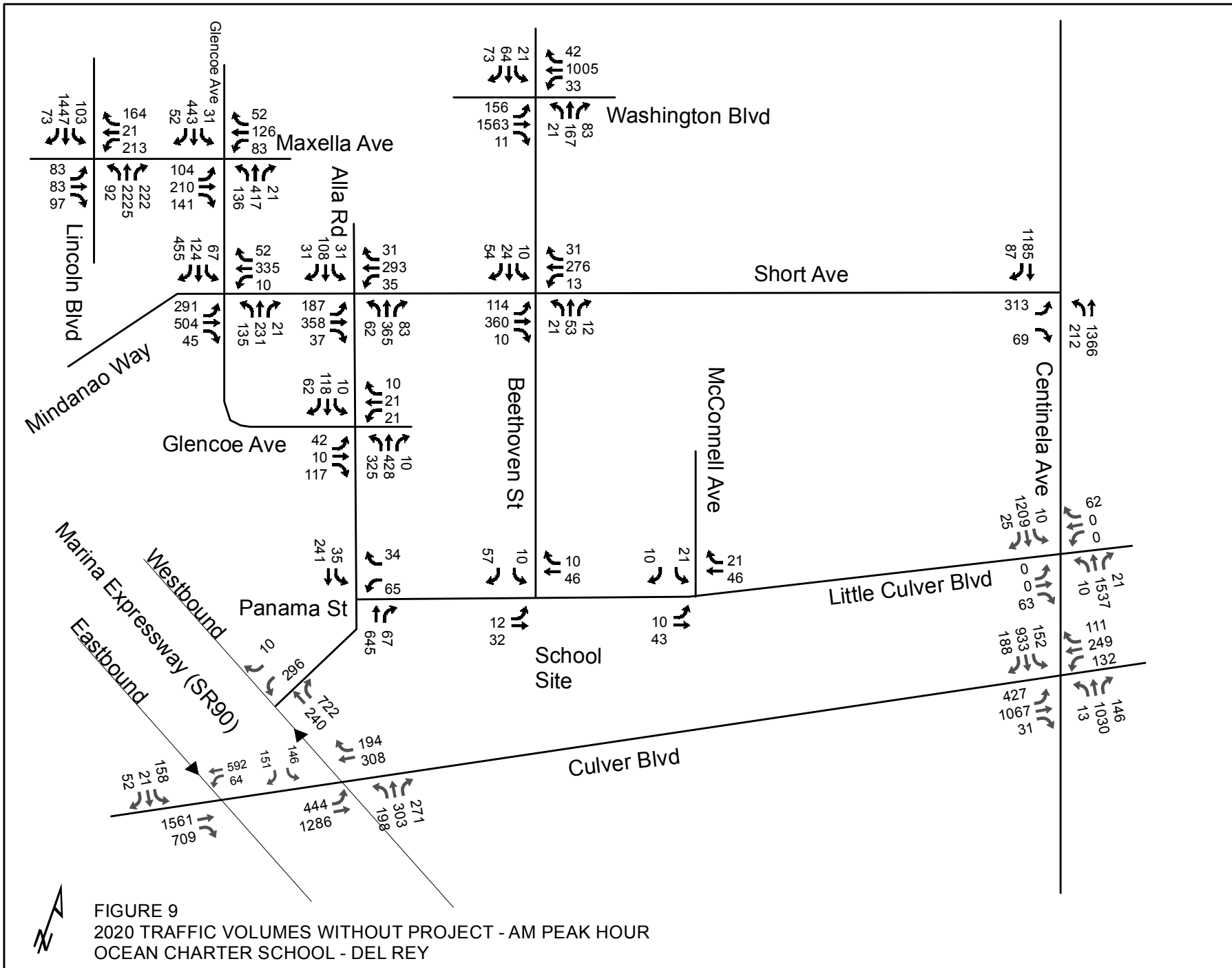


FIGURE 6
 LOCATION OF OTHER PROPOSED PROJECTS FOR CUMULATIVE ANALYSIS
 OCEAN CHARTER SCHOOL - DEL REY

= Project Location

S = School Site





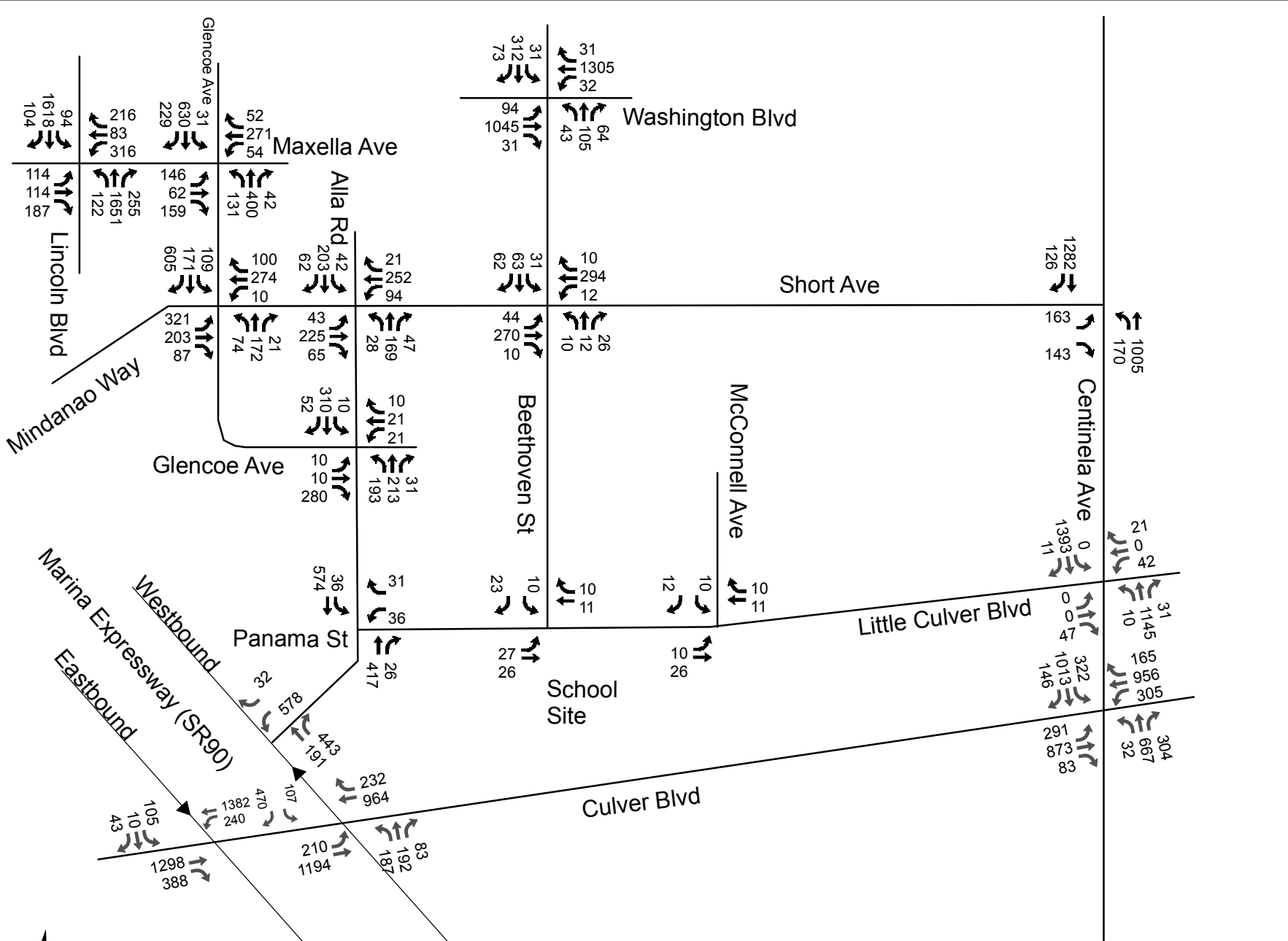
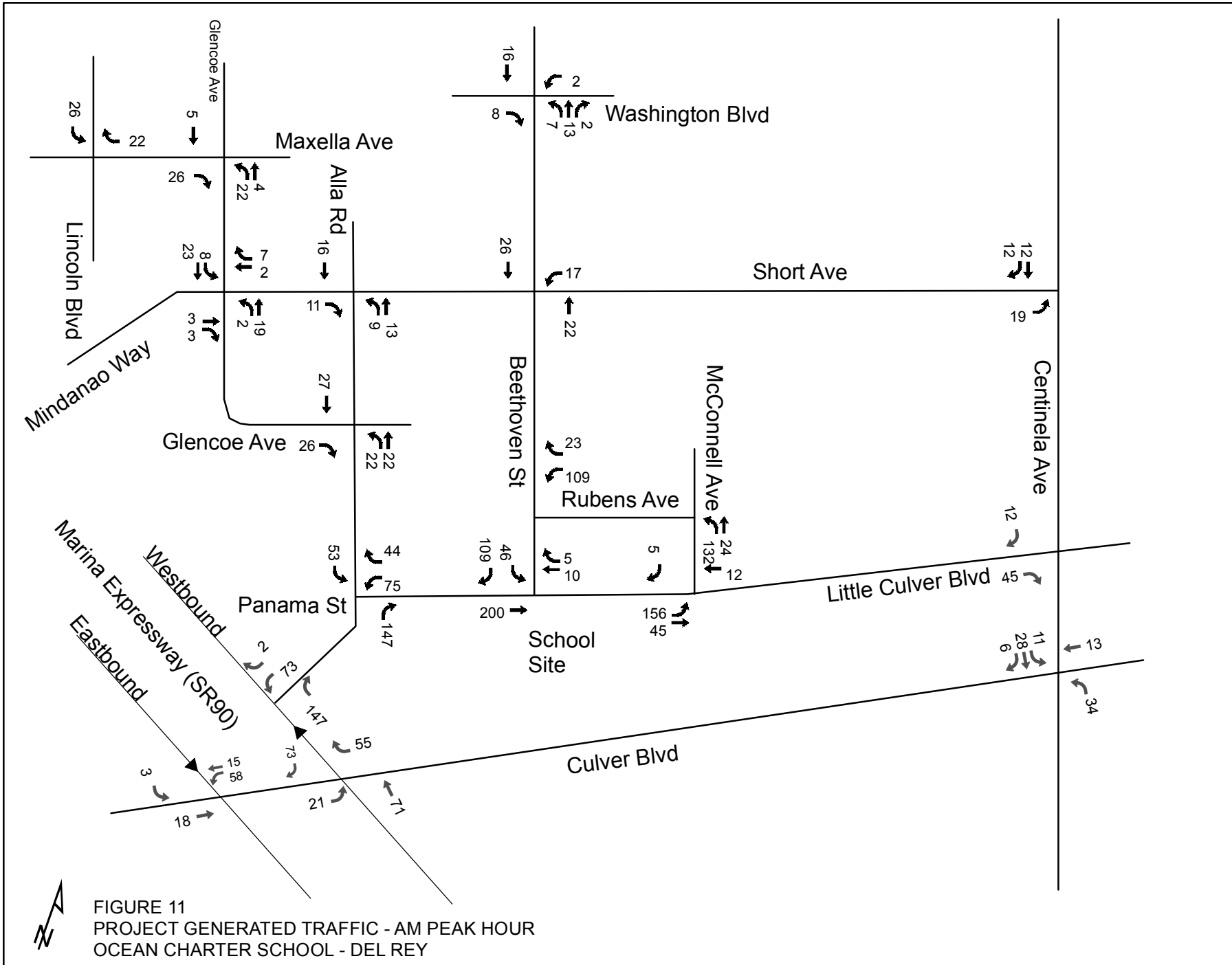
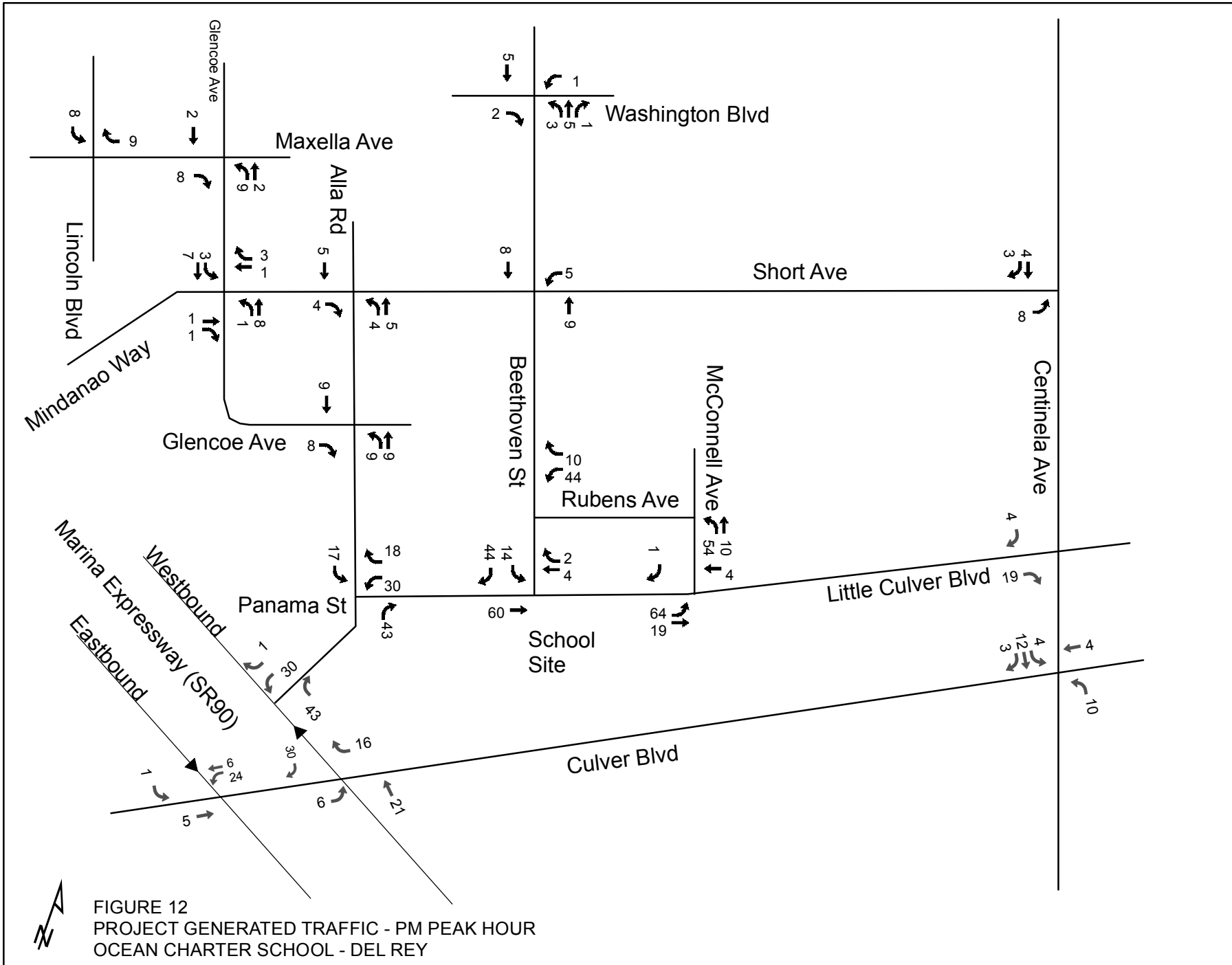
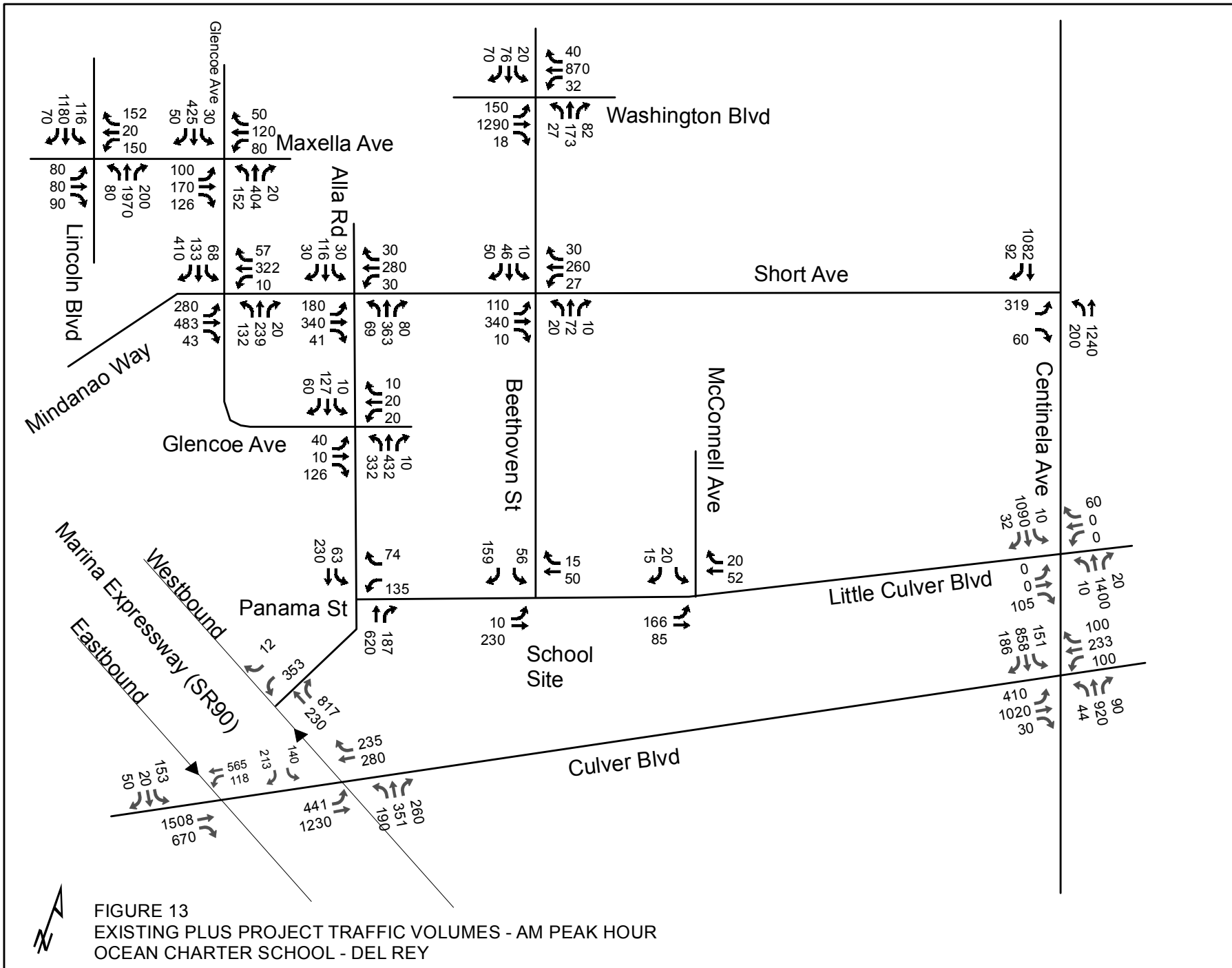
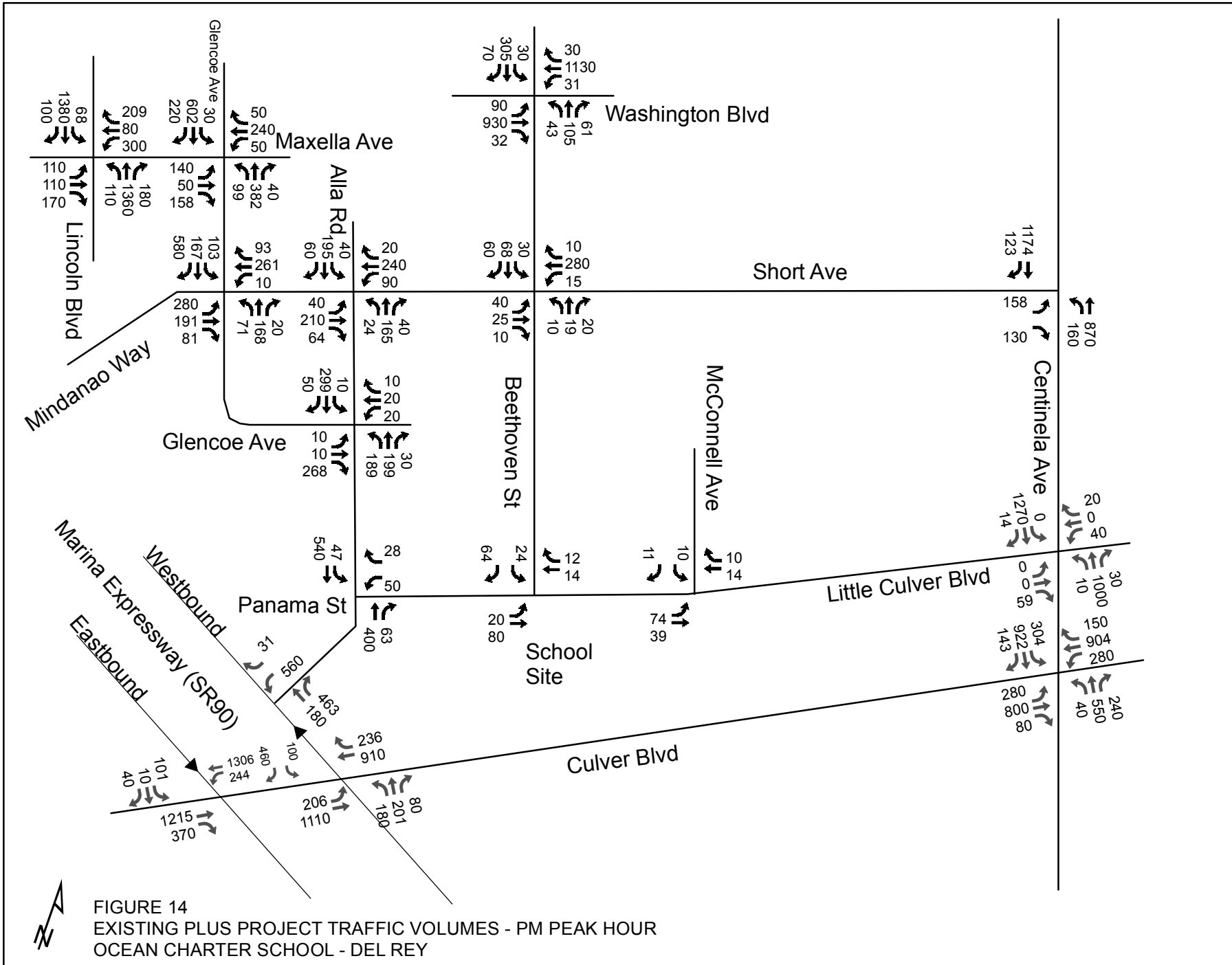


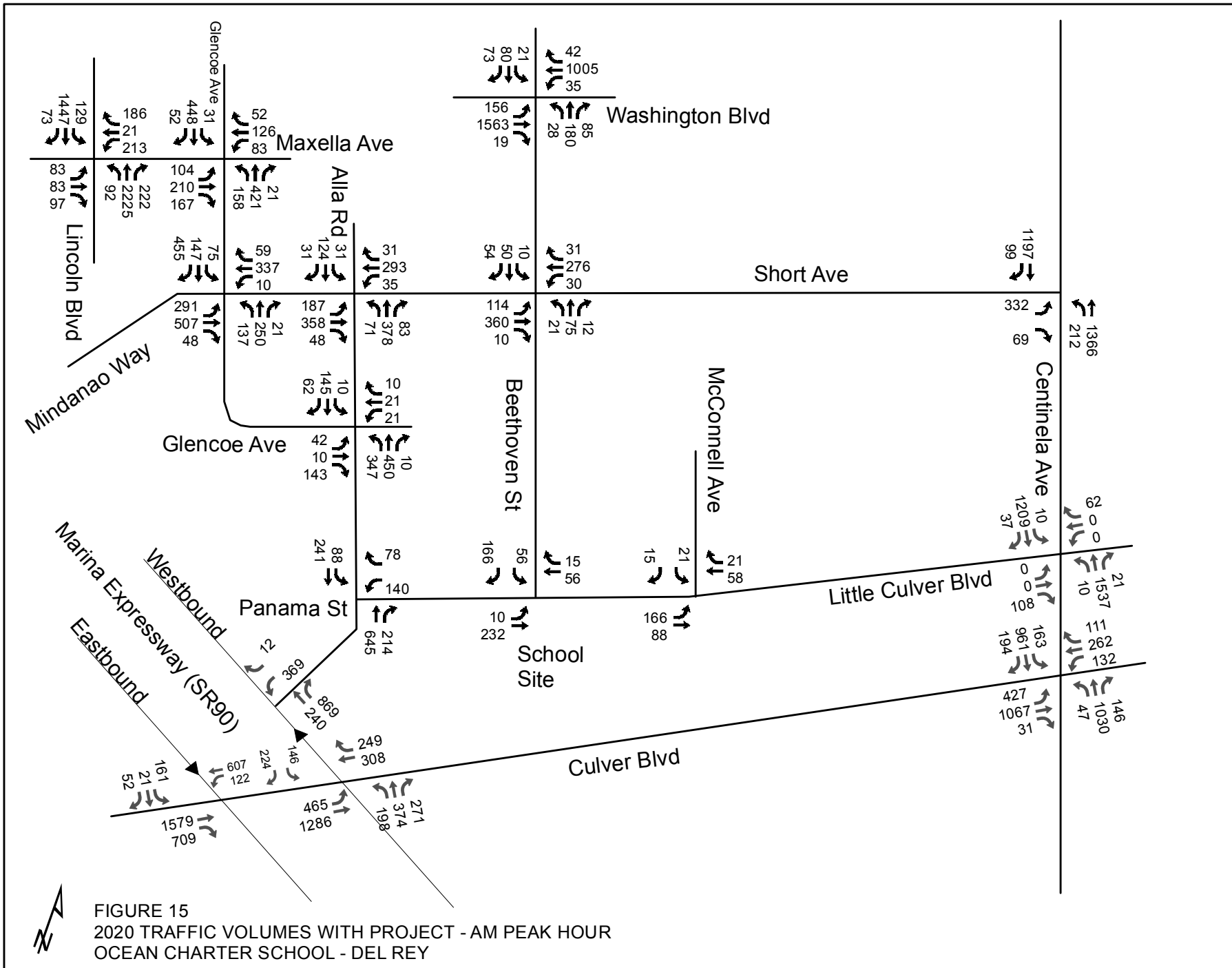
FIGURE 10
 2020 TRAFFIC VOLUMES WITHOUT PROJECT - PM PEAK HOUR
 OCEAN CHARTER SCHOOL - DEL REY











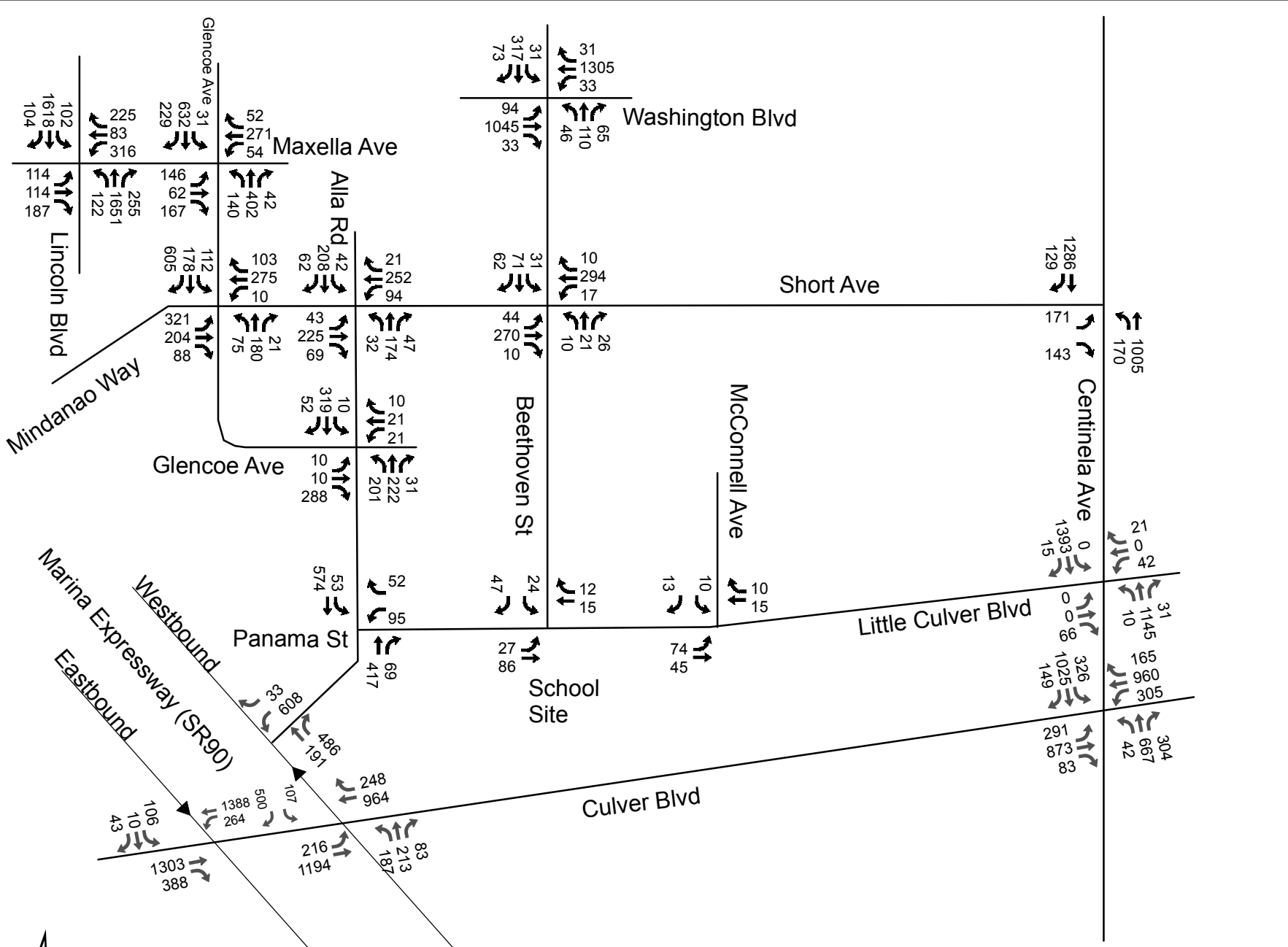


FIGURE 16
 2020 TRAFFIC VOLUMES WITH PROJECT - PM PEAK HOUR
 OCEAN CHARTER SCHOOL - DEL REY

LEVEL OF SERVICE WORKSHEETS

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
1	East-West Street:	Marina Expy EB Frontage Rd	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through		0						0			0		0		0		0	
	Through	1490	3	497	18	1508	503	11	1561	3	520	18	1579	3	526	0	1579	3	526
	Through-Right		0						0				0		0		0		0
	Right	670	2	369	0	670	369	12	709	2	390	0	709	2	390	0	709	2	390
	Left-Through-Right		0						0					0				0	
	Left-Right		0					0					0				0		
SOUTHBOUND	Left	60	1	60	58	118	118	2	64	1	64	58	122	1	122	0	122	1	122
	Left-Through		0						0				0				0		
	Through	550	2	275	15	565	283	20	592	2	296	15	607	2	304	0	607	2	304
	Through-Right		0						0				0				0		
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right		0						0					0				0	
	Left-Right		0					0					0				0		
EASTBOUND	Left	150	1	150	3	153	153	2	158	1	158	3	161	1	161	0	161	1	161
	Left-Through		0						0				0				0		
	Through	20	1	20	0	20	20	0	21	1	21	0	21	1	21	0	21	1	21
	Through-Right		1						1				1				1		
	Right	50	0	50	0	50	50	0	52	0	52	0	52	0	52	0	52	0	52
	Left-Through-Right		0						0					0				0	
	Left-Right		0					0					0				0		
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through		0						0				0				0		
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right		0						0				0				0		
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right		0						0					0				0	
	Left-Right		0					0					0				0		
CRITICAL VOLUMES		North-South: 557 East-West: 150 SUM: 707			North-South: 621 East-West: 153 SUM: 774			North-South: 584 East-West: 158 SUM: 742					North-South: 648 East-West: 161 SUM: 809					North-South: 648 East-West: 161 SUM: 809	
VOLUME/CAPACITY (V/C) RATIO:			0.471			0.516			0.495			0.539			0.539			0.539	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.471			0.516			0.495			0.539			0.539			0.539	
LEVEL OF SERVICE (LOS):			A			A			A			A			A			A	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.044	Δv/c after mitigation:	0.044
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
2	East-West Street:	Marina Expy WB Frontage Rd	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		3			3			3											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 1 WB-- 0			NB-- 0 SB-- 0 EB-- 1 WB-- 0			NB-- 0 SB-- 0 EB-- 1 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	420	1	420	21	441	441	7	444	1	444	21	465	1	465	0	465	1	465
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	1230	2	615	0	1230	615	6	1286	2	643	0	1286	2	643	0	1286	2	643
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	280	2	140	0	280	140	17	308	2	154	0	308	2	154	0	308	2	154
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	180	1	110	55	235	165	7	194	1	121	55	249	1	176	0	249	1	176
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	140	1	140	0	140	140	0	146	1	146	0	146	1	146	0	146	1	146
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	140	1	0	73	213	0	5	151	1	0	73	224	1	0	0	224	1	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	190	1	190	0	190	190	0	198	1	198	0	198	1	198	0	198	1	198
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	280	1	270	71	351	306	12	303	1	287	71	374	1	323	0	374	1	323
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	260	0	260	0	260	260	0	271	0	271	0	271	0	271	0	271	0	271
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES		North-South: 615 East-West: 410 SUM: 1025			North-South: 615 East-West: 446 SUM: 1061			North-South: 643 East-West: 433 SUM: 1076					North-South: 643 East-West: 469 SUM: 1112					North-South: 643 East-West: 469 SUM: 1112	
VOLUME/CAPACITY (V/C) RATIO:		0.719			0.745			0.755					0.780					0.780	
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.719			0.745			0.755					0.780					0.780	
LEVEL OF SERVICE (LOS):		C			C			C					C					C	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.025	Δv/c after mitigation:	0.025
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
3	East-West Street:	Centinela Ave	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		4			4			4											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	410	1	410	0	410	410	0	427	1	427	0	427	1	427	0	427	1	427
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	1020	1	525	0	1020	525	6	1067	1	549	0	1067	1	549	0	1067	1	549
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	30	0	30	0	30	30	0	31	0	31	0	31	0	31	0	31	0	31
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	100	1	100	0	100	100	28	132	1	132	0	132	1	132	0	132	1	132
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	220	1	160	13	233	167	20	249	1	180	13	262	1	187	0	262	1	187
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	100	0	100	0	100	100	7	111	0	111	0	111	0	111	0	111	0	111
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	140	1	140	11	151	151	6	152	1	152	11	163	1	163	0	163	1	163
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	830	1	505	28	858	522	69	933	1	561	28	961	1	578	0	961	1	578
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	180	0	180	6	186	186	1	188	0	188	6	194	0	194	0	194	0	194
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	10	1	10	34	44	44	3	13	1	13	34	47	1	47	0	47	1	47
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	920	2	460	0	920	460	73	1030	2	515	0	1030	2	515	0	1030	2	515
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	90	1	40	0	90	40	52	146	1	80	0	146	1	80	0	146	1	80
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES		North-South: 625 East-West: 600 SUM: 1225			North-South: 625 East-West: 611 SUM: 1236			North-South: 681 East-West: 667 SUM: 1348					North-South: 681 East-West: 678 SUM: 1359					North-South: 681 East-West: 678 SUM: 1359	
VOLUME/CAPACITY (V/C) RATIO:				0.891			0.899					0.980					0.988		
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.891			0.899					0.980					0.988		
LEVEL OF SERVICE (LOS):				D			D					E					E		

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.008	Δv/c after mitigation:	0.008
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Alla Road	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016										
4	East-West Street:	Marina Expy WB Frontage Rd	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2												
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0												
ATSAC-1 or ATSAC+ATCS-2?		0			0			0												
Override Capacity		0			0			0												
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through																			
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right																			
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right																			
SOUTHBOUND	Left	280	2	154	73	353	194	5	296	2	163	73	369	2	203	0	369	2	203	
	Left-Through																			
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right																			
	Right	10	1	10	2	12	12	0	10	1	10	2	12	1	12	0	12	1	12	
	Left-Through-Right																			
EASTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through																			
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right																			
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right																			
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through																			
	Through	230	2	115	0	230	115	1	240	2	120	0	240	2	120	0	240	2	120	
	Through-Right																			
	Right	670	1	593	147	817	720	25	722	1	641	147	869	1	768	0	869	1	768	
	Left-Through-Right																			
CRITICAL VOLUMES		North-South: 154			North-South: 194			North-South: 163				North-South: 203				North-South: 203				
		East-West: 593			East-West: 720			East-West: 641				East-West: 768				East-West: 768				
		SUM: 747			SUM: 914			SUM: 804				SUM: 971				SUM: 971				
VOLUME/CAPACITY (V/C) RATIO:		0.498			0.609			0.536				0.647				0.647				
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.498			0.609			0.536				0.647				0.647				
LEVEL OF SERVICE (LOS):		A			B			A				B				B				

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.111	Δv/c after mitigation:	0.111
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Centinela Ave	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
5	East-West Street:	Short Avenue	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	200	1	200	0	200	200	4	212	1	212	0	212	1	212	0	212	1	212
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	1240	2	620	0	1240	620	76	1366	2	683	0	1366	2	683	0	1366	2	683
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	1070	2	535	12	1082	541	72	1185	2	593	12	1197	2	599	0	1197	2	599
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	80	1	0	12	92	0	4	87	1	0	12	99	1	0	0	99	1	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	300	1	300	19	319	319	1	313	1	313	19	332	1	332	0	332	1	332
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	60	1	0	0	60	0	7	69	1	0	0	69	1	0	0	69	1	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES		North-South: 735 East-West: 300 SUM: 1035			North-South: 741 East-West: 319 SUM: 1060			North-South: 805 East-West: 313 SUM: 1118					North-South: 811 East-West: 332 SUM: 1143						
VOLUME/CAPACITY (V/C) RATIO:				0.690			0.707					0.745					0.762		
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.690			0.707					0.745					0.762		
LEVEL OF SERVICE (LOS):				B			C					C					C		

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.017	Δv/c after mitigation:	0.017
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Glencoe Avenue	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
7	East-West Street:	Maxella Avenue	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	130	1	130	22	152	152	1	136	1	136	22	158	1	158	0	158	1	158
	Left-Through		0					0		0		0		0		0		0	
	Through	400	1	400	4	404	404	1	417	1	417	4	421	1	421	0	421	1	421
	Through-Right		0					0		0		0		0		0		0	
	Right	20	1	0	0	20	0	0	21	1	0	0	21	1	0	0	21	1	0
	Left-Through-Right		0					0		0		0		0		0		0	
Left-Right		0					0		0		0		0		0		0		
SOUTHBOUND	Left	30	1	30	0	30	30	0	31	1	31	0	31	1	31	0	31	1	31
	Left-Through		0					0		0		0		0		0		0	
	Through	420	1	235	5	425	238	6	443	1	248	5	448	1	250	0	448	1	250
	Through-Right		1					1		1		1		1		1		1	
	Right	50	0	50	0	50	50	0	52	0	52	0	52	0	52	0	52	0	52
	Left-Through-Right		0					0		0		0		0		0		0	
Left-Right		0					0		0		0		0		0		0		
EASTBOUND	Left	100	1	100	0	100	100	0	104	1	104	0	104	1	104	0	104	1	104
	Left-Through		0					0		0		0		0		0		0	
	Through	170	1	170	0	170	170	33	210	1	210	0	210	1	210	0	210	1	210
	Through-Right		0					0		0		0		0		0		0	
	Right	100	1	35	26	126	50	37	141	1	73	26	167	1	88	0	167	1	88
	Left-Through-Right		0					0		0		0		0		0		0	
Left-Right		0					0		0		0		0		0		0		
WESTBOUND	Left	80	1	80	0	80	80	0	83	1	83	0	83	1	83	0	83	1	83
	Left-Through		0					0		0		0		0		0		0	
	Through	120	1	85	0	120	85	1	126	1	89	0	126	1	89	0	126	1	89
	Through-Right		1					1		1		1		1		1		1	
	Right	50	0	50	0	50	50	0	52	0	52	0	52	0	52	0	52	0	52
	Left-Through-Right		0					0		0		0		0		0		0	
Left-Right		0					0		0		0		0		0		0		
CRITICAL VOLUMES		North-South: 430 East-West: 250 SUM: 680			North-South: 434 East-West: 250 SUM: 684			North-South: 448 East-West: 293 SUM: 741			North-South: 452 East-West: 293 SUM: 745			North-South: 452 East-West: 293 SUM: 745					
VOLUME/CAPACITY (V/C) RATIO:				0.453			0.456			0.494			0.497			0.497			
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.453			0.456			0.494			0.497			0.497			
LEVEL OF SERVICE (LOS):				A			A			A			A			A			

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Glencoe Avenue	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016											
8	East-West Street:	Mindanao Way	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School											
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2													
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0													
ATSAC-1 or ATSAC+ATCS-2?		0			0			0													
Override Capacity		0			0			0													
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	↵	Left	1	130	2	132	132	0	135	1	135	2	137	1	137	0	137	1	137		
	↵↵	Left-Through	0					0		0			0			0		0			
	↵↵↵	Through	1	120	19	239	130	2	231	1	126	19	250	1	136	0	250	1	136		
	↵↵↵↵	Through-Right	1							1				1				1			
	↵↵↵↵↵	Right	0	20	0	20	20	0	21	0	21	0	21	0	21	0	21	0	21		
	↵↵↵↵↵↵	Left-Through-Right	0								0				0				0		
↵↵↵↵↵↵↵	Left-Right	0								0				0				0			
SOUTHBOUND	↵	Left	1	60	8	68	68	5	67	1	67	8	75	1	75	0	75	1	75		
	↵↵	Left-Through	0					0		0			0			0		0			
	↵↵↵	Through	1	110	23	133	133	10	124	1	124	23	147	1	147	0	147	1	147		
	↵↵↵↵	Through-Right	0							0				0				0			
	↵↵↵↵↵	Right	1	270	0	410	270	28	455	1	310	0	455	1	310	0	455	1	310		
	↵↵↵↵↵↵	Left-Through-Right	0								0				0				0		
↵↵↵↵↵↵↵	Left-Right	0								0				0				0			
EASTBOUND	↵	Left	1	280	0	280	280	0	291	1	291	0	291	1	291	0	291	1	291		
	↵↵	Left-Through	0					0		0			0			0		0			
	↵↵↵	Through	1	260	3	483	263	5	504	1	275	3	507	1	278	0	507	1	278		
	↵↵↵↵	Through-Right	1							1				1				1			
	↵↵↵↵↵	Right	0	40	3	43	43	3	45	0	45	3	48	0	48	0	48	0	48		
	↵↵↵↵↵↵	Left-Through-Right	0								0				0				0		
↵↵↵↵↵↵↵	Left-Right	0								0				0				0			
WESTBOUND	↵	Left	1	10	0	10	10	0	10	1	10	0	10	1	10	0	10	1	10		
	↵↵	Left-Through	0					0		0			0			0		0			
	↵↵↵	Through	1	185	2	322	190	2	335	1	194	2	337	1	198	0	337	1	198		
	↵↵↵↵	Through-Right	1							1				1				1			
	↵↵↵↵↵	Right	0	50	7	57	57	0	52	0	52	7	59	0	59	0	59	0	59		
	↵↵↵↵↵↵	Left-Through-Right	0								0				0				0		
↵↵↵↵↵↵↵	Left-Right	0								0				0				0			
CRITICAL VOLUMES		North-South:	400	North-South:		402	North-South:		445	North-South:		447	North-South:		447	North-South:		447	North-South:		447
		East-West:	465	East-West:		470	East-West:		485	East-West:		489	East-West:		489	East-West:		489	East-West:		489
		SUM:	865	SUM:		872	SUM:		930	SUM:		936	SUM:		936	SUM:		936	SUM:		936
VOLUME/CAPACITY (V/C) RATIO:			0.577		0.581		0.620		0.624		0.624		0.624		0.624		0.624		0.624		0.624
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.577		0.581		0.620		0.624		0.624		0.624		0.624		0.624		0.624		0.624
LEVEL OF SERVICE (LOS):			A		A		B		B		B		B		B		B		B		B

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Beethoven Street	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
9	East-West Street:	Washington Blvd	Projection Year:	2020	Peak Hour:	AM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	20	0	20	7	27	27	0	21	0	21	7	28	0	28	0	28	0	28
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through	160	0	260	13	173	282	1	167	0	271	13	180	0	293	0	180	0	293
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	80	0	0	2	82	0	0	83	0	0	2	85	0	0	0	85	0	0
	Left-Through-Right	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0
Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTHBOUND	Left	20	0	20	0	20	20	0	21	0	21	0	21	0	21	0	21	0	21
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	60	0	150	16	76	166	2	64	0	158	16	80	0	174	0	80	0	174
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	70	0	0	0	70	0	0	73	0	0	0	73	0	0	0	73	0	0
	Left-Through-Right	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0
Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
EASTBOUND	Left	150	1	150	0	150	150	0	156	1	156	0	156	1	156	0	156	1	156
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	1290	1	650	0	1290	654	221	1563	1	787	0	1563	1	791	0	1563	1	791
	Through-Right	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	
	Right	10	0	10	8	18	18	1	11	0	11	8	19	0	19	0	19	0	19
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
WESTBOUND	Left	30	1	30	2	32	32	2	33	1	33	2	35	1	35	0	35	1	35
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	870	1	455	0	870	455	100	1005	1	524	0	1005	1	524	0	1005	1	524
	Through-Right	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	
	Right	40	0	40	0	40	40	0	42	0	42	0	42	0	42	0	42	0	42
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Left-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
CRITICAL VOLUMES		North-South: 280 East-West: 680 SUM: 960	North-South: 302 East-West: 686 SUM: 988	North-South: 292 East-West: 820 SUM: 1112	North-South: 314 East-West: 826 SUM: 1140	North-South: 314 East-West: 826 SUM: 1140													
VOLUME/CAPACITY (V/C) RATIO:		0.640	0.659	0.741	0.760	0.760													
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.640	0.659	0.741	0.760	0.760													
LEVEL OF SERVICE (LOS):		B	B	C	C	C													

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.019	Δv/c after mitigation:	0.019
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016										
1	East-West Street:	Marina Expy EB Frontage Rd	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2												
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0												
ATSAC-1 or ATSAC+ATCS-2?		0			0			0												
Override Capacity		0			0			0												
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Left-Through	1210	3	403	5	1215	405	39	1298	3	433	5	1303	3	434	0	1303	3	434	
	Through	370	2	204	0	370	204	3	388	2	213	0	388	2	213	0	388	2	213	
	Through-Right																			
	Right																			
	Left-Through-Right																			
SOUTHBOUND	Left	220	1	220	24	244	244	11	240	1	240	24	264	1	264	0	264	1	264	
	Left-Through	1300	2	650	6	1306	653	29	1382	2	691	6	1388	2	694	0	1388	2	694	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right																			
	Right																			
	Left-Through-Right																			
EASTBOUND	Left	100	1	100	1	101	101	1	105	1	105	1	106	1	106	0	106	1	106	
	Left-Through	10	1	10	0	10	10	0	10	1	10	0	10	1	10	0	10	1	10	
	Through	40	0	40	0	40	40	1	43	0	43	0	43	0	43	0	43	0	43	
	Through-Right																			
	Right																			
	Left-Through-Right																			
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right																			
	Right																			
	Left-Through-Right																			
CRITICAL VOLUMES		North-South: 650 East-West: 100 SUM: 750			North-South: 653 East-West: 101 SUM: 754			North-South: 691 East-West: 105 SUM: 796					North-South: 698 East-West: 106 SUM: 804							
VOLUME/CAPACITY (V/C) RATIO:		0.500			0.503			0.531					0.536							
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.500			0.503			0.531					0.536							
LEVEL OF SERVICE (LOS):		A			A			A					A							

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
2	East-West Street:	Marina Expy WB Frontage Rd	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		3			3			3											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 1 WB-- 0			NB-- 0 SB-- 0 EB-- 1 WB-- 0			NB-- 0 SB-- 0 EB-- 1 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	200	1	200	6	206	206	2	210	1	210	6	216	1	216	0	216	1	216
	Left-Through		0					0		0				0		0		0	
	Through	1110	2	555	0	1110	555	39	1194	2	597	0	1194	2	597	0	1194	2	597
	Through-Right		0							0				0		0		0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right		0								0				0		0		0
	Left-Right		0							0				0		0		0	
SOUTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through		0					0		0				0		0		0	
	Through	910	2	455	0	910	455	17	964	2	482	0	964	2	482	0	964	2	482
	Through-Right		0					0		0				0		0		0	
	Right	220	1	170	16	236	186	3	232	1	179	16	248	1	195	0	248	1	195
	Left-Through-Right		0					0		0				0		0		0	
	Left-Right		0					0		0				0		0		0	
EASTBOUND	Left	100	1	100	0	100	100	3	107	1	107	0	107	1	107	0	107	1	107
	Left-Through		0					0		0				0		0		0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Through-Right		0					0		0				0		0		0	
	Right	430	1	0	30	460	0	23	470	1	0	30	500	1	0	0	500	1	0
	Left-Through-Right		0					0		0				0		0		0	
	Left-Right		0					0		0				0		0		0	
WESTBOUND	Left	180	1	180	0	180	180	0	187	1	187	0	187	1	187	0	187	1	187
	Left-Through		0					0		0				0		0		0	
	Through	180	1	130	21	201	141	5	192	1	138	21	213	1	148	0	213	1	148
	Through-Right		1					1		1				1		1		1	
	Right	80	0	80	0	80	80	0	83	0	83	0	83	0	83	0	83	0	83
	Left-Through-Right		0					0		0				0		0		0	
	Left-Right		0					0		0				0		0		0	
CRITICAL VOLUMES		North-South: 655 East-West: 230 SUM: 885			North-South: 661 East-West: 241 SUM: 902			North-South: 692 East-West: 245 SUM: 937					North-South: 698 East-West: 255 SUM: 953					North-South: 698 East-West: 255 SUM: 953	
VOLUME/CAPACITY (V/C) RATIO:			0.621			0.633			0.658				0.669			0.669			0.669
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.621			0.633			0.658				0.669			0.669			0.669
LEVEL OF SERVICE (LOS):			B			B			B				B			B			B

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.011	Δv/c after mitigation:	0.011
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Culver Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
3	East-West Street:	Centinela Ave	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		4			4			4											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	280	1	280	0	280	280	0	291	1	291	0	291	1	291	0	291	1	291
	Left-Through		0						0				0				0		
	Through	800	1	440	0	800	440	41	873	1	478	0	873	1	478	0	873	1	478
	Through-Right		1							1				1				1	
	Right	80	0	80	0	80	80	0	83	0	83	0	83	0	83	0	83	0	83
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	280	1	280	0	280	280	14	305	1	305	0	305	1	305	0	305	1	305
	Left-Through		0						0				0				0		
	Through	900	1	525	4	904	527	19	956	1	561	4	960	1	563	0	960	1	563
	Through-Right		1							1				1				1	
	Right	150	0	150	0	150	150	9	165	0	165	0	165	0	165	0	165	0	165
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	300	1	300	4	304	304	10	322	1	322	4	326	1	326	0	326	1	326
	Left-Through		0						0				0				0		
	Through	910	1	525	12	922	533	66	1013	1	580	12	1025	1	587	0	1025	1	587
	Through-Right		1							1				1				1	
	Right	140	0	140	3	143	143	0	146	0	146	3	149	0	149	0	149	0	149
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	30	1	30	10	40	40	1	32	1	32	10	42	1	42	0	42	1	42
	Left-Through		0						0				0				0		
	Through	550	2	275	0	550	275	95	667	2	334	0	667	2	334	0	667	2	334
	Through-Right		0							0				0				0	
	Right	240	1	100	0	240	100	54	304	1	152	0	304	1	152	0	304	1	152
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		80	North-South: East-West: SUM:	805 575 1380	North-South: East-West: SUM:	807 579 1386	North-South: East-West: SUM:	852 656 1508	North-South: East-West: SUM:	854 660 1514	North-South: East-West: SUM:	854 660 1514	North-South: East-West: SUM:	854 660 1514					
VOLUME/CAPACITY (V/C) RATIO:				1.004		1.008		1.097		1.101		1.101		1.101		1.101		1.101	
V/C LESS ATSAC/ATCS ADJUSTMENT:				1.004		1.008		1.097		1.101		1.101		1.101		1.101		1.101	
LEVEL OF SERVICE (LOS):				F		F		F		F		F		F		F		F	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.004	Δv/c after mitigation:	0.004
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Alla Road	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
4	East-West Street:	Marina Expy WB Frontage Rd	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTHBOUND	Left	530	2	292	30	560	308	26	578	2	318	30	608	2	334	0	608	2	334
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	30	1	30	1	31	31	1	32	1	32	1	33	1	33	0	33	1	33
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EASTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	180	2	90	0	180	90	4	191	2	96	0	191	2	96	0	191	2	96
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	420	1	274	43	463	309	6	443	1	284	43	486	1	319	0	486	1	319
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CRITICAL VOLUMES		North-South: 292 East-West: 274 SUM: 566	North-South: 308 East-West: 309 SUM: 617	North-South: 318 East-West: 284 SUM: 602	North-South: 334 East-West: 319 SUM: 653	North-South: 334 East-West: 319 SUM: 653													
VOLUME/CAPACITY (V/C) RATIO:		0.377	0.411	0.401	0.435	0.435													
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.377	0.411	0.401	0.435	0.435													
LEVEL OF SERVICE (LOS):		A	A	A	A	A													

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.034	Δv/c after mitigation:	0.034
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Centinela Ave	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
5	East-West Street:	Short Avenue	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	160	1	160	0	160	160	4	170	1	170	0	170	1	170	0	170	1	170
	Left-Through		0							0				0				0	
	Through	870	2	435	0	870	435	100	1005	2	503	0	1005	2	503	0	1005	2	503
	Through-Right		0							0				0				0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right		0								0				0				0
Left-Right		0								0				0				0	
SOUTHBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through		0							0				0				0	
	Through	1170	2	585	4	1174	587	64	1282	2	641	4	1286	2	643	0	1286	2	643
	Through-Right		0							0				0				0	
	Right	120	1	45	3	123	44	1	126	1	45	3	129	1	44	0	129	1	44
	Left-Through-Right		0							0				0				0	
Left-Right		0								0				0				0	
EASTBOUND	Left	150	1	150	8	158	158	7	163	1	163	8	171	1	171	0	171	1	171
	Left-Through		0							0				0				0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right		0							0				0				0	
	Right	130	1	50	0	130	50	8	143	1	58	0	143	1	58	0	143	1	58
	Left-Through-Right		0							0				0				0	
Left-Right		0								0				0				0	
WESTBOUND	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Left-Through		0							0				0				0	
	Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through-Right		0							0				0				0	
	Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Left-Through-Right		0							0				0				0	
Left-Right		0								0				0				0	
CRITICAL VOLUMES		North-South: 745 East-West: 150 SUM: 895			North-South: 747 East-West: 158 SUM: 905			North-South: 811 East-West: 163 SUM: 974					North-South: 813 East-West: 171 SUM: 984					North-South: 813 East-West: 171 SUM: 984	
VOLUME/CAPACITY (V/C) RATIO:					0.597			0.603					0.649					0.656	
V/C LESS ATSAC/ATCS ADJUSTMENT:					0.597			0.603					0.649					0.656	
LEVEL OF SERVICE (LOS):					A			B					B					B	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.007	Δv/c after mitigation:	0.007
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Lincoln Blvd	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016										
6	East-West Street:	Maxella Avenue	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School										
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		4			4			4												
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0												
ATSAC-1 or ATSAC+ATCS-2?		0			0			0												
Override Capacity		0			0			0												
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION					
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume		
NORTHBOUND	Left	110	2	61	0	110	61	8	122	2	67	0	122	2	67	0	122	2	67	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	1360	3	453	0	1360	453	236	1651	3	550	0	1651	3	550	0	1651	3	550	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Right	180	1	85	0	180	85	68	255	1	155	0	255	1	155	0	255	1	155	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	60	2	33	8	68	37	32	94	2	52	8	102	2	56	0	102	2	56	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	1380	3	370	0	1380	370	182	1618	3	431	0	1618	3	431	0	1618	3	431	
	Through-Right	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	
	Right	100	0	100	0	100	100	0	104	0	104	0	104	0	104	0	104	0	104	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	110	1	110	0	110	110	0	114	1	114	0	114	1	114	0	114	1	114	
	Left-Through	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Through	110	1	110	0	110	110	0	114	1	114	0	114	1	114	0	114	1	114	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	170	1	140	0	170	140	10	187	1	154	0	187	1	154	0	187	1	154	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WESTBOUND	Left	300	1	190	0	300	190	4	316	1	200	0	316	1	200	0	316	1	200	
	Left-Through	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	
	Through	80	0	190	0	80	190	0	83	0	200	0	83	0	200	0	83	0	200	
	Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Right	200	1	184	9	209	191	8	216	1	190	9	225	1	197	0	225	1	197	
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
CRITICAL VOLUMES		North-South: 486 East-West: 330 SUM: 816			North-South: 490 East-West: 330 SUM: 820			North-South: 602 East-West: 354 SUM: 956					North-South: 606 East-West: 354 SUM: 960							
VOLUME/CAPACITY (V/C) RATIO:		0.593			0.596			0.695					0.698							
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.593			0.596			0.695					0.698							
LEVEL OF SERVICE (LOS):		A			A			B					B							

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.003	Δv/c after mitigation:	0.003
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Glencoe Avenue	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
7	East-West Street:	Maxella Avenue	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION				
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	90	1	90	9	99	99	37	131	1	131	9	140	1	140	0	140	1	140
	Left-Through		0							0				0				0	
	Through	380	1	380	2	382	382	5	400	1	400	2	402	1	402	0	402	1	402
	Through-Right		0							0				0				0	
	Right	40	1	15	0	40	15	0	42	1	15	0	42	1	15	0	42	1	15
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	30	1	30	0	30	30	0	31	1	31	0	31	1	31	0	31	1	31
	Left-Through		0							0				0				0	
	Through	600	1	410	2	602	411	6	630	1	430	2	632	1	431	0	632	1	431
	Through-Right		1							1				1				1	
	Right	220	0	220	0	220	220	0	229	0	229	0	229	0	229	0	229	0	229
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	140	1	140	0	140	140	0	146	1	146	0	146	1	146	0	146	1	146
	Left-Through		0							0				0				0	
	Through	50	1	50	0	50	50	10	62	1	62	0	62	1	62	0	62	1	62
	Through-Right		0							0				0				0	
	Right	150	1	105	8	158	109	3	159	1	94	8	167	1	97	0	167	1	97
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	50	1	50	0	50	50	2	54	1	54	0	54	1	54	0	54	1	54
	Left-Through		0							0				0				0	
	Through	240	1	145	0	240	145	21	271	1	162	0	271	1	162	0	271	1	162
	Through-Right		1							1				1				1	
	Right	50	0	50	0	50	50	0	52	0	52	0	52	0	52	0	52	0	52
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 500 East-West: 285 SUM: 785			North-South: 510 East-West: 285 SUM: 795			North-South: 561 East-West: 308 SUM: 869					North-South: 571 East-West: 308 SUM: 879					North-South: 571 East-West: 308 SUM: 879	
VOLUME/CAPACITY (V/C) RATIO:			0.523			0.530			0.579			0.586			0.586			0.586	
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.523			0.530			0.579			0.586			0.586			0.586	
LEVEL OF SERVICE (LOS):			A			A			A			A			A			A	

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.007	Δv/c after mitigation:	0.007
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Glencoe Avenue	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
8	East-West Street:	Mindanao Way	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	70	1	70	1	71	71	1	74	1	74	1	75	1	75	0	75	1	75
	Left-Through		0							0				0				0	
	Through	160	1	90	8	168	94	6	172	1	97	8	180	1	101	0	180	1	101
	Through-Right		1							1				1				1	
	Right	20	0	20	0	20	20	0	21	0	21	0	21	0	21	0	21	0	21
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
SOUTHBOUND	Left	100	1	100	3	103	103	5	109	1	109	3	112	1	112	0	112	1	112
	Left-Through		0							0				0				0	
	Through	160	1	160	7	167	167	5	171	1	171	7	178	1	178	0	178	1	178
	Through-Right		0							0				0				0	
	Right	580	1	440	0	580	440	1	605	1	445	0	605	1	445	0	605	1	445
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
EASTBOUND	Left	280	1	280	0	280	280	30	321	1	321	0	321	1	321	0	321	1	321
	Left-Through		0							0				0				0	
	Through	190	1	135	1	191	136	5	203	1	145	1	204	1	146	0	204	1	146
	Through-Right		1							1				1				1	
	Right	80	0	80	1	81	81	4	87	0	87	1	88	0	88	0	88	0	88
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
WESTBOUND	Left	10	1	10	0	10	10	0	10	1	10	0	10	1	10	0	10	1	10
	Left-Through		0							0				0				0	
	Through	260	1	175	1	261	177	3	274	1	187	1	275	1	189	0	275	1	189
	Through-Right		1							1				1				1	
	Right	90	0	90	3	93	93	6	100	0	100	3	103	0	103	0	103	0	103
	Left-Through-Right		0							0				0				0	
Left-Right		0							0				0				0		
CRITICAL VOLUMES		North-South: 510 East-West: 455 SUM: 965			North-South: 511 East-West: 457 SUM: 968			North-South: 519 East-West: 508 SUM: 1027					North-South: 520 East-West: 510 SUM: 1030					North-South: 520 East-West: 510 SUM: 1030	
VOLUME/CAPACITY (V/C) RATIO:			0.643			0.645			0.685		0.685		0.687		0.687		0.687		0.687
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.643			0.645			0.685		0.685		0.687		0.687		0.687		0.687
LEVEL OF SERVICE (LOS):			B			B			B		B		B		B		B		B

REMARKS:

Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.002	Δv/c after mitigation:	0.002
Significant impacted?	NO	Fully mitigated?	N/A

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:	Beethoven Street	Year of Count:	2016	Ambient Growth: (%):	1	Conducted by:	R Garland	Date:	3/15/2016									
9	East-West Street:	Washington Blvd	Projection Year:	2020	Peak Hour:	PM	Reviewed by:		Project:	Ocean Charter School									
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		2			2			2											
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0			NB-- 0 SB-- 0 EB-- 0 WB-- 0											
ATSAC-1 or ATSAC+ATCS-2?		0			0			0											
Override Capacity		0			0			0											
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT				FUTURE CONDITION W/ PROJECT				FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	40	0	40	3	43	43	1	43	0	43	3	46	0	46	0	46	0	46
	Left-Through		0							0				0		0		0	
	Through	100	0	200	5	105	209	1	105	0	212	5	110	0	221	0	110	0	221
	Through-Right		0							0				0		0		0	
	Right	60	0	0	1	61	0	2	64	0	0	1	65	0	0	0	65	0	0
	Left-Through-Right		1							1				1		1		1	
Left-Right		0							0				0		0		0		
SOUTHBOUND	Left	30	0	30	0	30	30	0	31	0	31	0	31	0	31	0	31	0	31
	Left-Through		0							0				0		0		0	
	Through	300	0	400	5	305	405	0	312	0	416	5	317	0	421	0	317	0	421
	Through-Right		0							0				0		0		0	
	Right	70	0	0	0	70	0	0	73	0	0	0	73	0	0	0	73	0	0
	Left-Through-Right		1							1				1		1		1	
Left-Right		0							0				0		0		0		
EASTBOUND	Left	90	1	90	0	90	90	0	94	1	94	0	94	1	94	0	94	1	94
	Left-Through		0							0				0		0		0	
	Through	930	1	480	0	930	481	77	1045	1	538	0	1045	1	539	0	1045	1	539
	Through-Right		1							1				1		1		1	
	Right	30	0	30	2	32	32	0	31	0	31	2	33	0	33	0	33	0	33
	Left-Through-Right		0							0				0		0		0	
Left-Right		0							0				0		0		0		
WESTBOUND	Left	30	1	30	1	31	31	1	32	1	32	1	33	1	33	0	33	1	33
	Left-Through		0							0				0		0		0	
	Through	1130	1	580	0	1130	580	129	1305	1	668	0	1305	1	668	0	1305	1	668
	Through-Right		1							1				1		1		1	
	Right	30	0	30	0	30	30	0	31	0	31	0	31	0	31	0	31	0	31
	Left-Through-Right		0							0				0		0		0	
Left-Right		0							0				0		0		0		
CRITICAL VOLUMES		North-South: 440 East-West: 670 SUM: 1110			North-South: 448 East-West: 670 SUM: 1118			North-South: 459 East-West: 762 SUM: 1221					North-South: 467 East-West: 762 SUM: 1229					North-South: 467 East-West: 762 SUM: 1229	
VOLUME/CAPACITY (V/C) RATIO:			0.740			0.745			0.814				0.819				0.819		0.819
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.740			0.745			0.814				0.819				0.819		0.819
LEVEL OF SERVICE (LOS):			C			C			D				D				D		D

REMARKS:

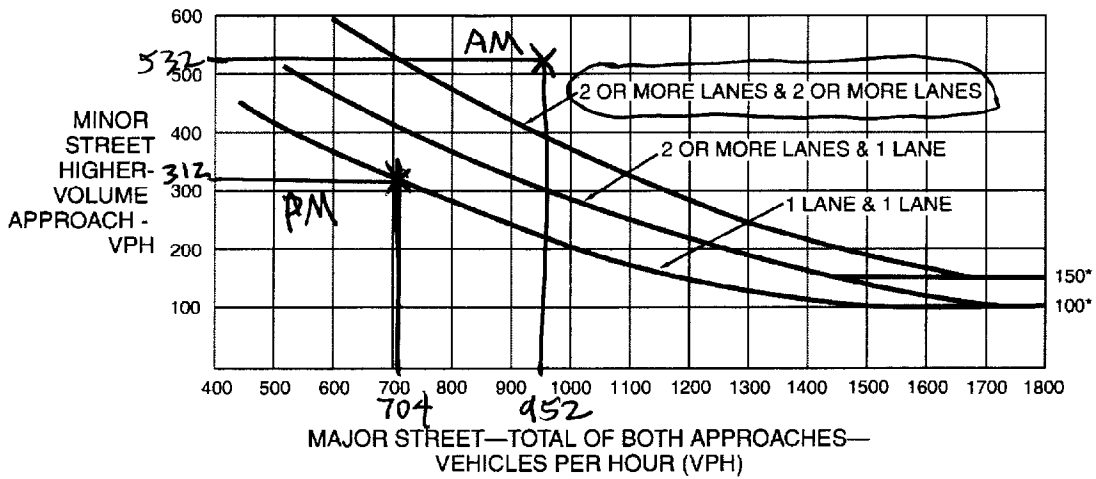
Version: 1i Beta; 8/4/2011

PROJECT IMPACT

Change in v/c due to project:	0.005	Δv/c after mitigation:	0.005
Significant impacted?	NO	Fully mitigated?	N/A

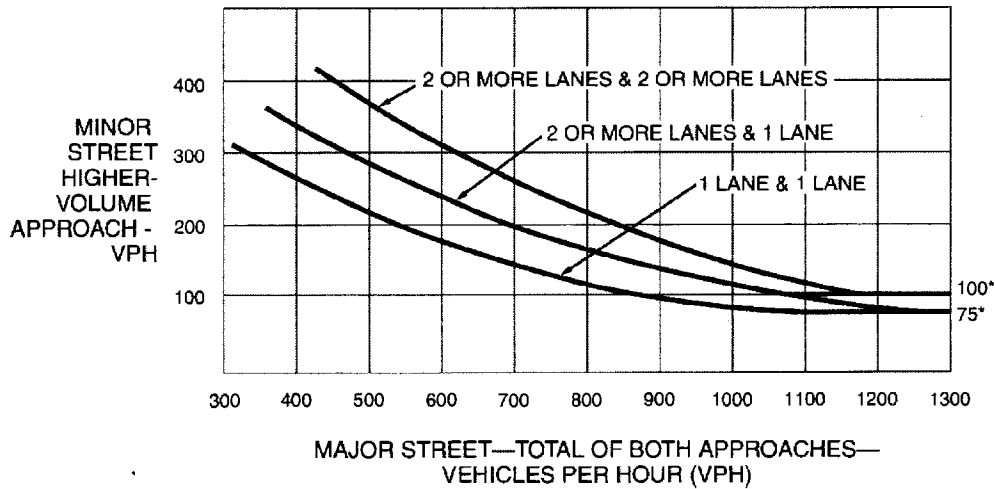
**TRAFFIC SIGNAL WARRANT ANALYSIS
WORKSHEETS**

Alla Rd/Mindanao Way - 2020 With Project
Figure 4C-3. Warrant 3, Peak Hour



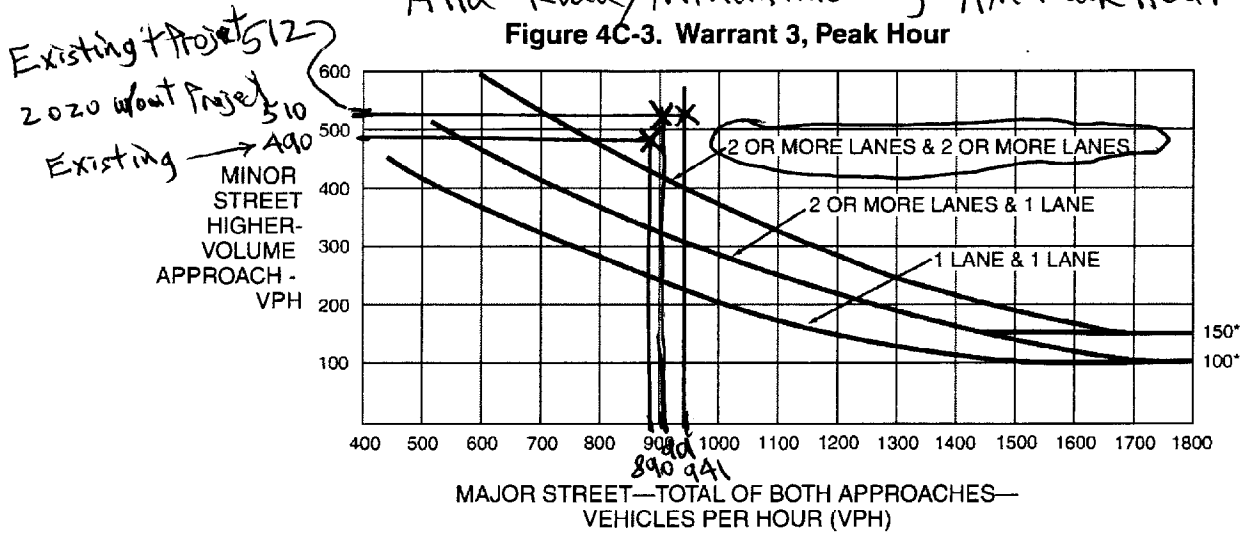
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



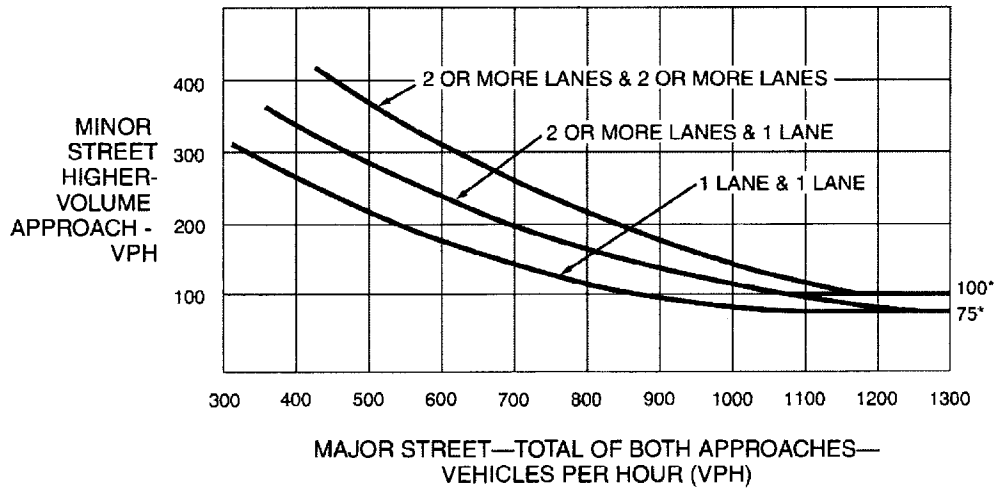
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Alla Road/Mindandao Way - AM Peak Hour
Figure 4C-3. Warrant 3, Peak Hour



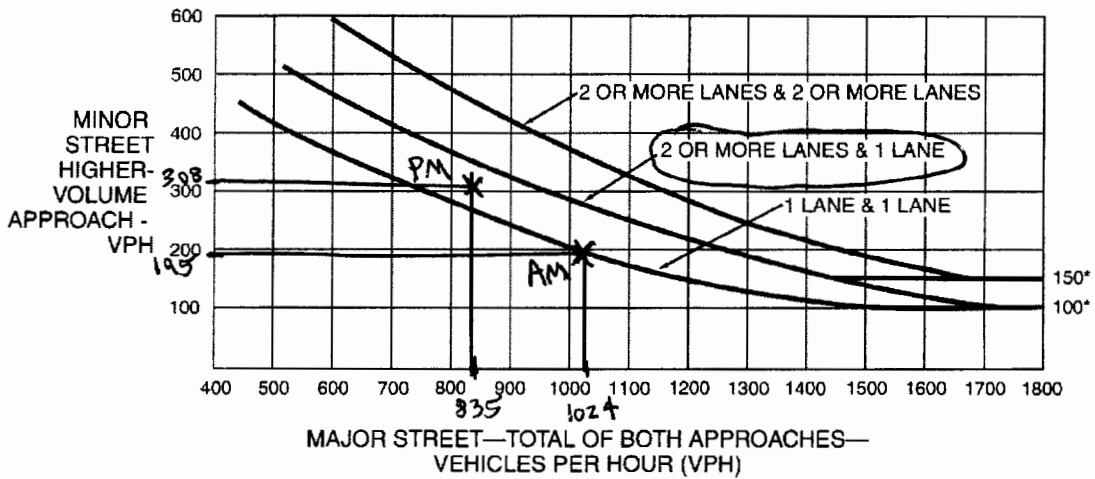
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



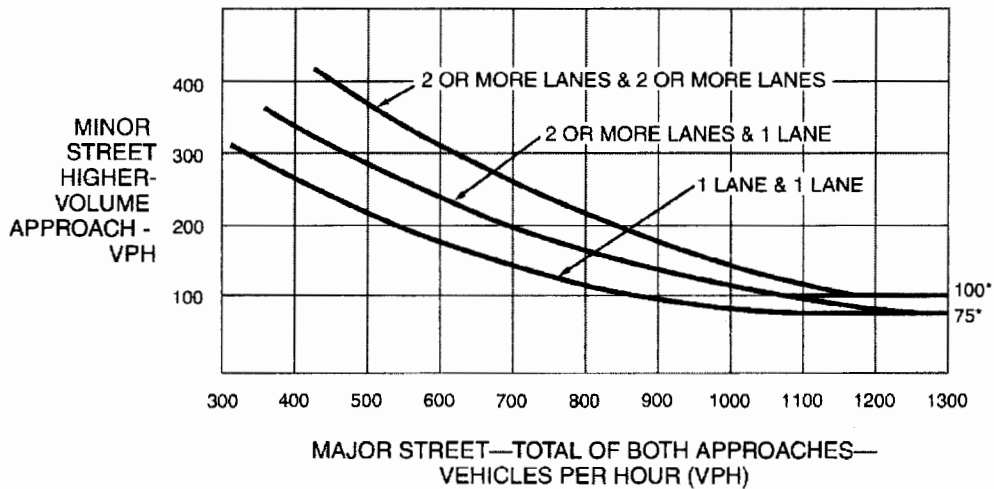
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Alla Rd/Glencoe Ave - 2020 With Project
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

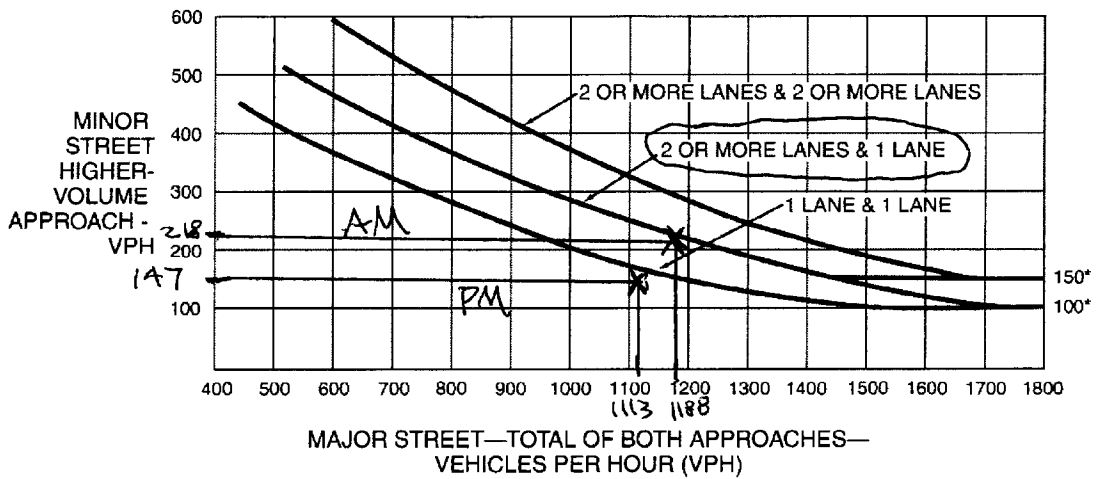
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

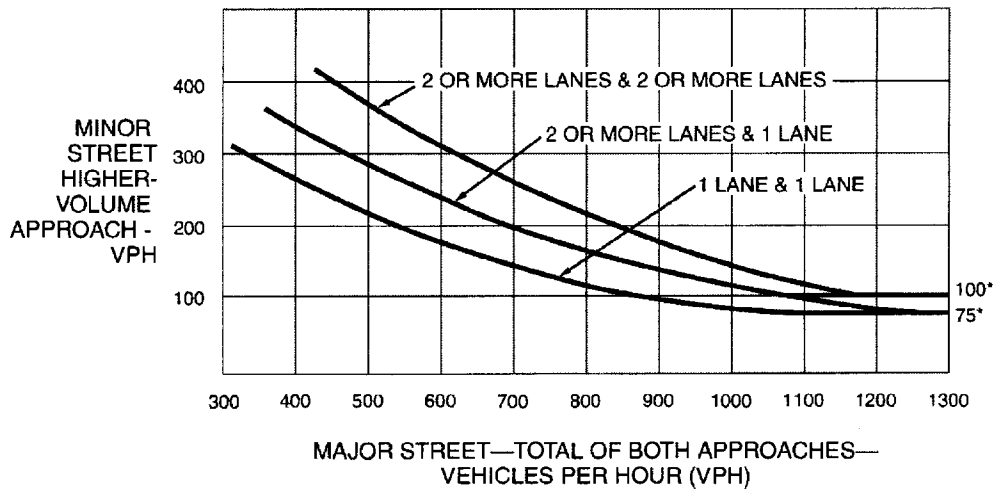
Alla Road / Panama St - 2020 with Project

Figure 4C-3. Warrant 3, Peak Hour



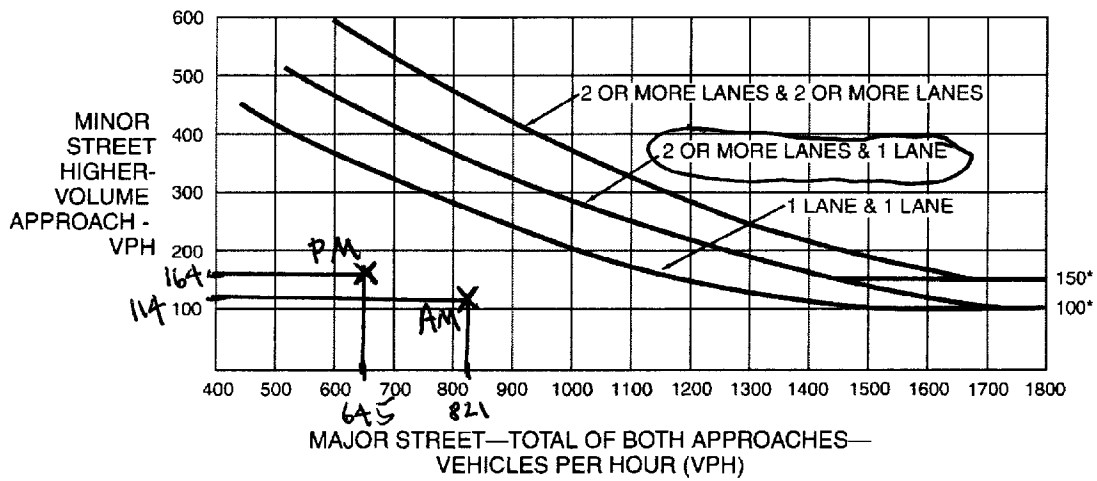
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



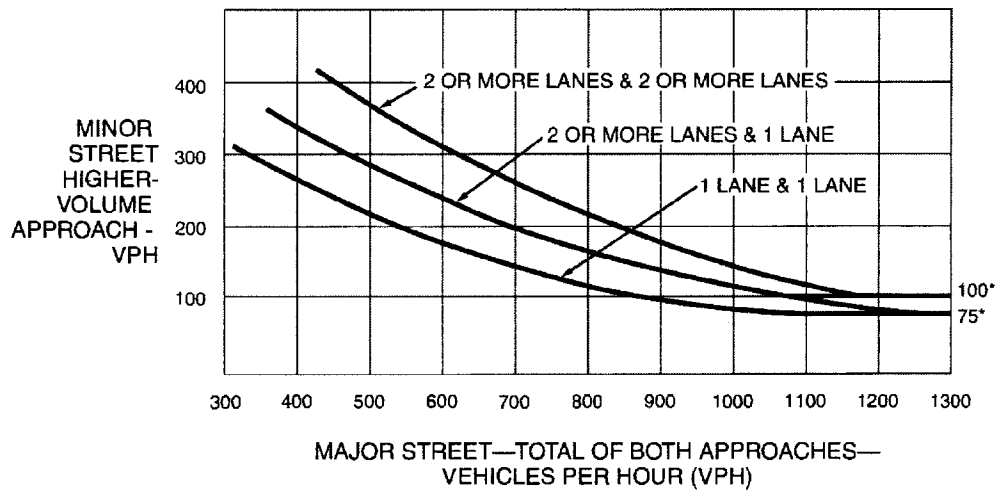
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Beethoven St/Short Ave - 2020 With Project
Figure 4C-3. Warrant 3, Peak Hour



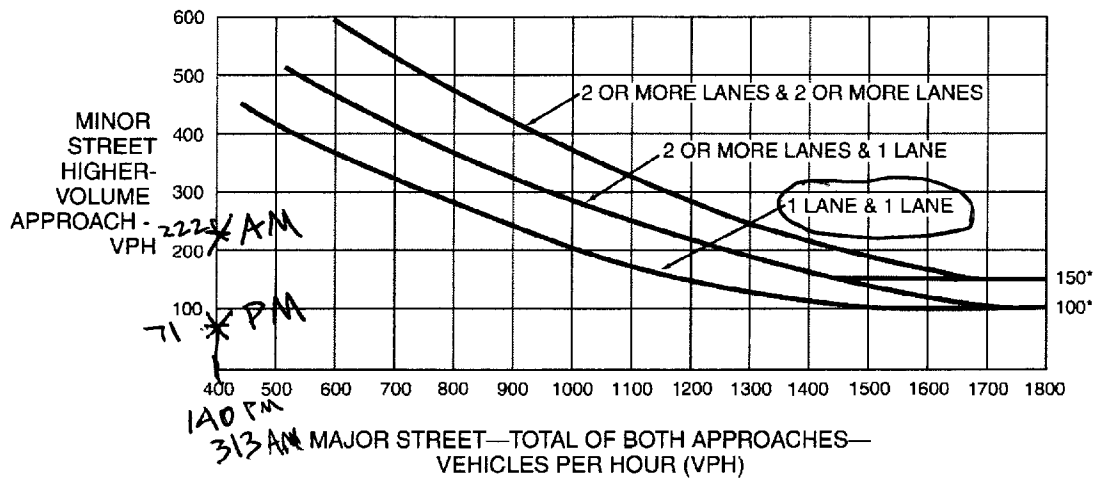
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



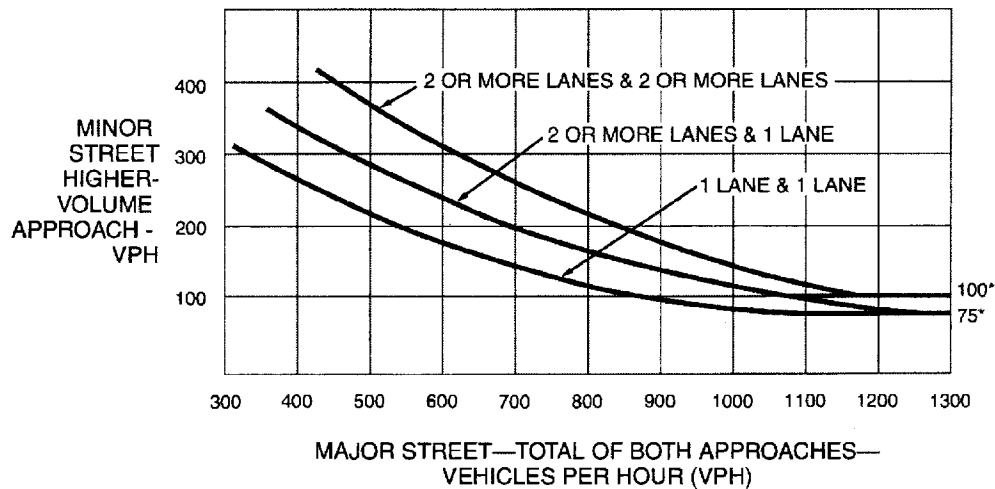
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Beethoven St / Panama St - 2020 with Project
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



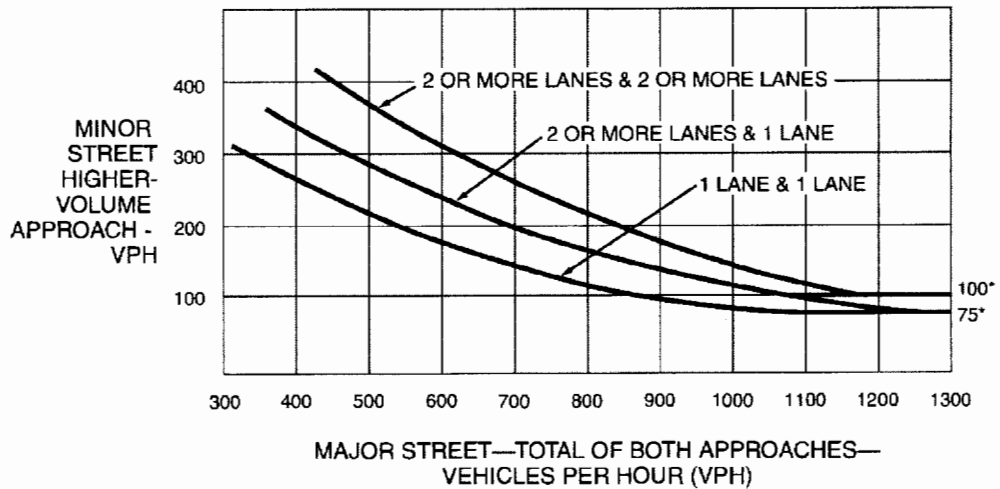
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

McConnell Ave/Panama St - 2020 With Project
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Centinela Ave/Little Calver Blvd - 2020 With Project
Figure 4C-3. Warrant 3, Peak Hour

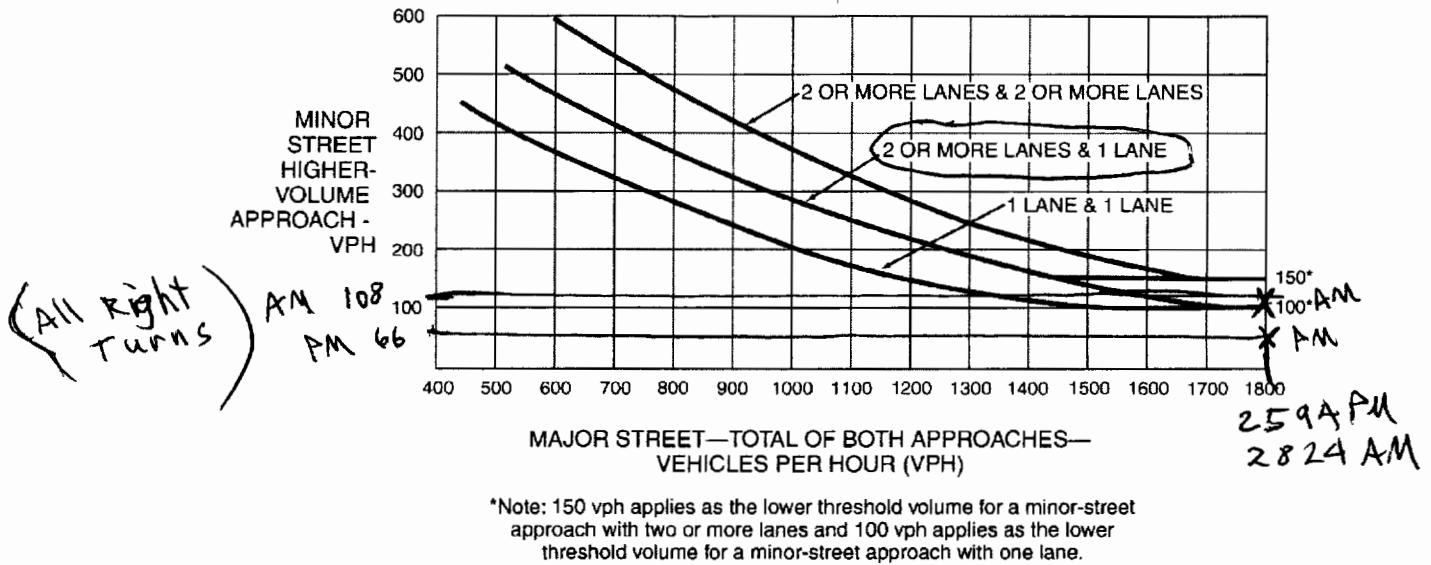
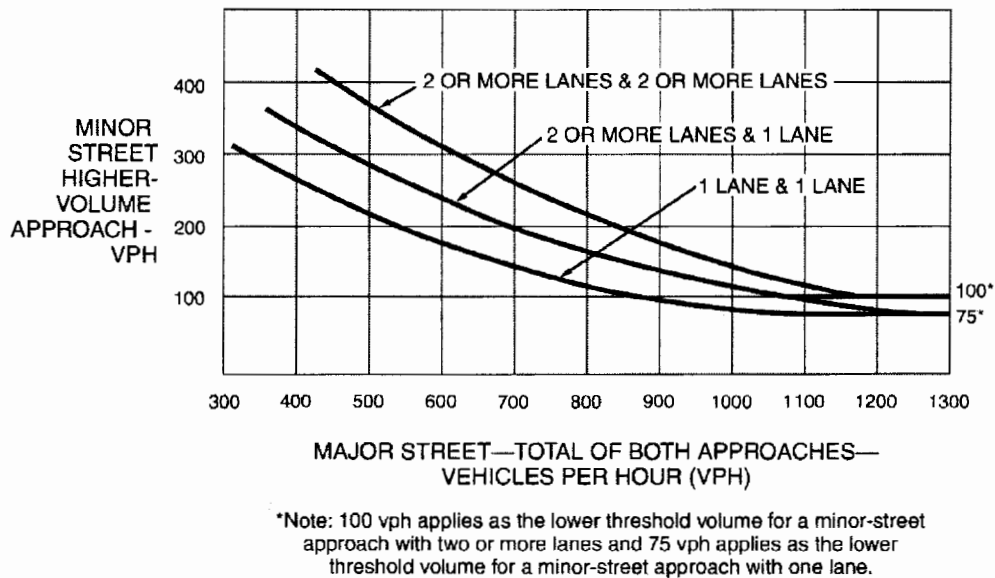


Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



Centinela Ave (Little Culver Blvd) - Existing + Project
Figure 4C-3. Warrant 3, Peak Hour

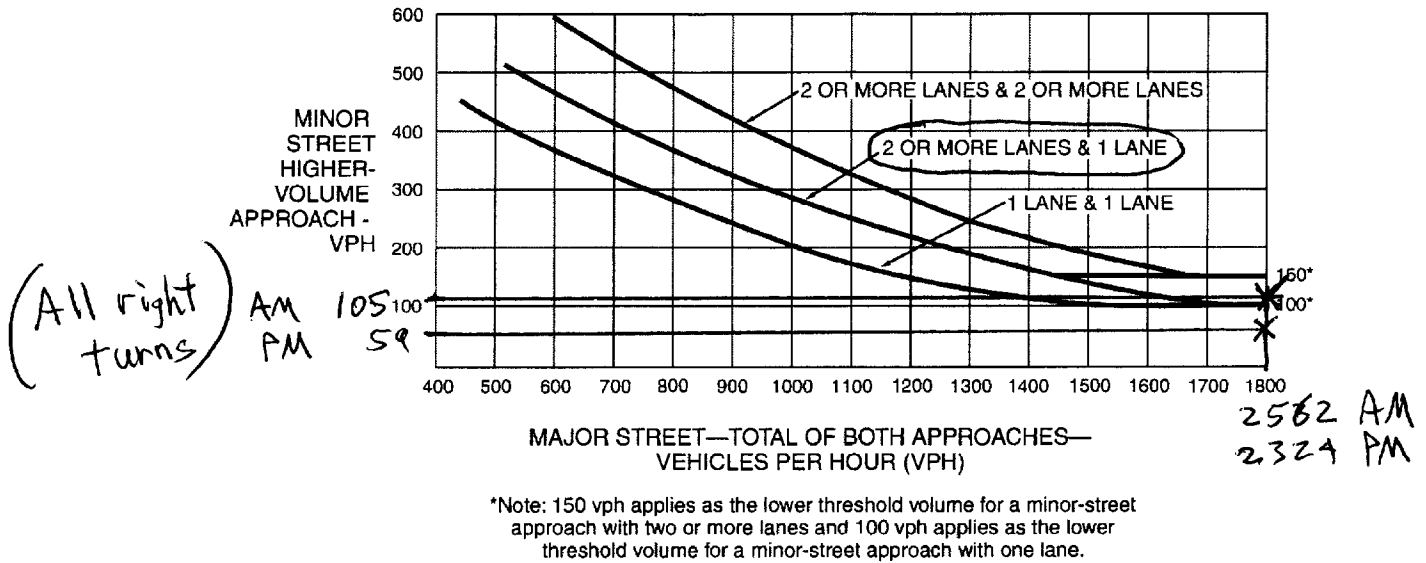


Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

