



REDONDO UNION HIGH ACCESS STUDY AND DESIGN

Promoting safer and more accessible options for all users on
Diamond Street including Redondo Union High School (RUHS)
students, parents, and staff.

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REDONDO UNION HIGH ACCESS STUDY AND DESIGN

Project Introduction

The Redondo Union High Access Study and Design project focuses on promoting safer and more accessible options for all users on Diamond Street from Pacific Coast Highway to N. Prospect Avenue. This project aims to redefine curbside loading, parking, and multimodal mobility, with an emphasis on Redondo Union High School (RUHS) traffic, by gathering data and community input to identify short-term treatments and provide recommendations on pickup and drop-off zones at El Redondo Avenue and Vincent Park on the south side of the RUHS campus. Upon approval of project recommendations, the project team will develop a 100% signing and striping PS&E package to potentially implement “quick-build” changes as part of the repaving of Diamond Street.

The project aligns with the guiding principles from the City of Redondo Beach’s General Plan Vision 2050 to enhance **Community Character and Livability** and to achieve greater **Health and Vitality** throughout the community by:

- Promoting safety and security for its residents and visitors;
- Reducing automobile traffic volume and congestion;
- Providing safe, efficient, multimodal transportation that offers alternatives to the car;
- Providing walkable and bike-friendly interconnected neighborhoods; and
- Promoting active lifestyles for all age groups

Evaluation of Data

Toole Design collected parking occupancy data, traffic volumes, travel speed, and crash data on Diamond Street to identify key issues in the project area and determine the recommended interventions to improve the experience of people walking, biking, driving, and taking transit.

Parking Occupancy

Parking occupancy data was collected on Diamond Street on Wednesday, December 4, 2024, from 7 AM to 7 PM. The time when most people were parked on the street was 9 AM which aligns with the RUHS’s typical Wednesday class start time of 8:30 AM. Figure 1 depicts the parking occupancy percentage by block at 9 AM.

Though the south curb of Diamond Street from N. Gertruda Avenue to Del Amo Street/ N. Juanita Avenue right in front of RUHS was fully occupied (a total of 46 parking spots) and the north curb from Pacific Coast Highway to Del Amo Street/ N. Juanita Avenue had 36 out of 40 spots filled, 68 spots remained vacant from Del Amo Street/ N. Juanita Avenue to Prospect Avenue to the east.

See **Appendix A** for a detailed table of the parking occupancy along Diamond Street.

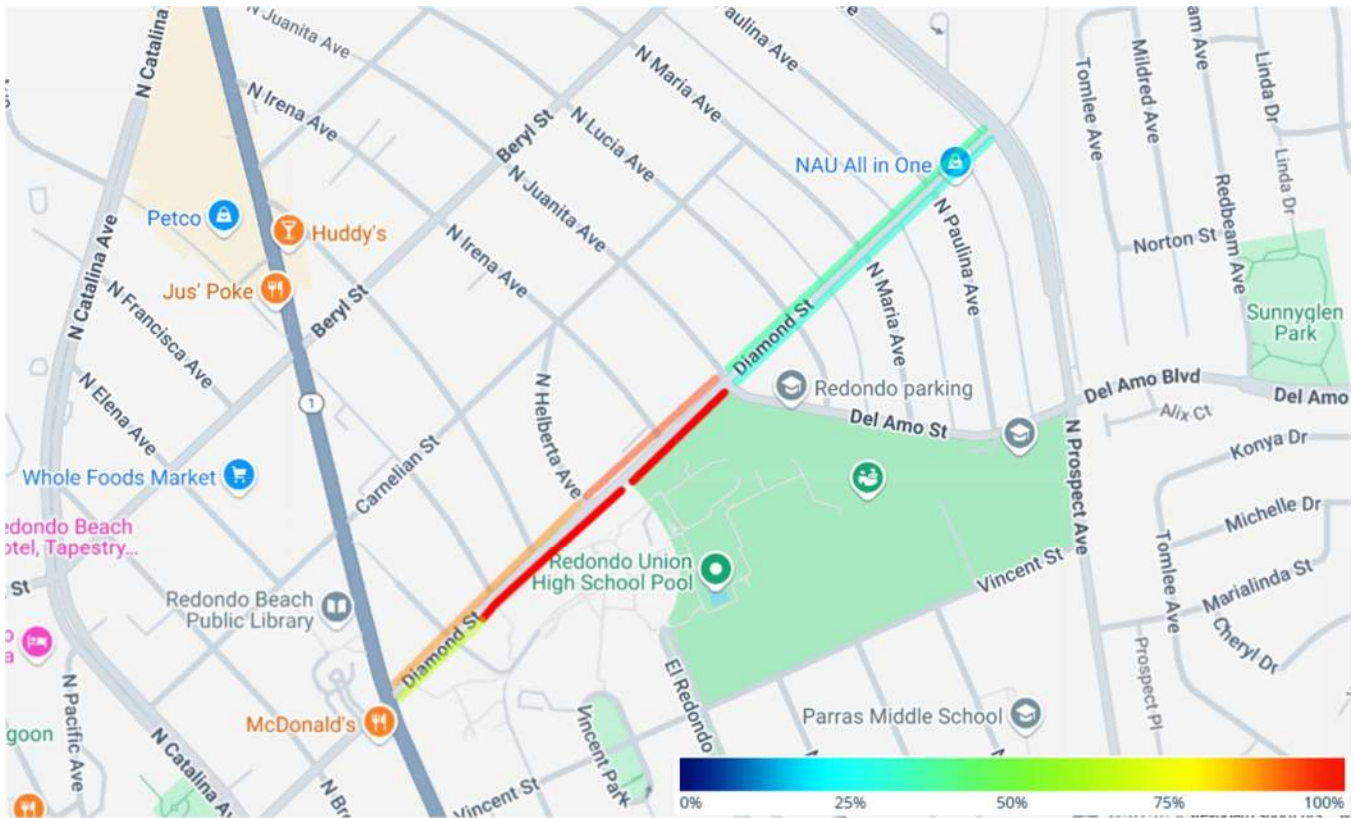


Figure 1. Parking Occupancy on Diamond Street at 9 AM (Wednesday, December 4, 2024)

Traffic Volumes

The project team collected turning movement counts at five (5) key intersections on Diamond Street to assess potential traffic impacts and determine where potentially unsafe conflicts are occurring. The intersections included: N. Francisca Avenue, N. Helberta Avenue, Sea Hawk Way, Del Amo Street/ N. Juanita Avenue, and N. Lucia Avenue.

During the morning peak hour when the greatest number of people are traveling on Diamond St, from 7:45 AM to 8:45 AM, one of the most notable conflicts was at the uncontrolled Diamond Street/Sea Hawk Way intersection between westbound left-turning bicyclists and motorists also making the same left turn and motorists traveling eastbound (Figure 2). There was a total of 141 people biking turning left as compared to 131 vehicles making the same left turn. The project team visited the site during arrival and dismissal times on October 29, 2024, and observed that people biking would ride next to and in front of turning vehicles while navigating the turn at the same time and entering the same receiving lane.



Students getting off at the nearside westbound bus stop regularly cross Diamond Street at Helberta Avenue where there is no crosswalk.

Peak Hour Turning Movement Count

ID: 24-020419-004
City: Redondo Beach

Day: Wednesday
Date: 12/4/2024

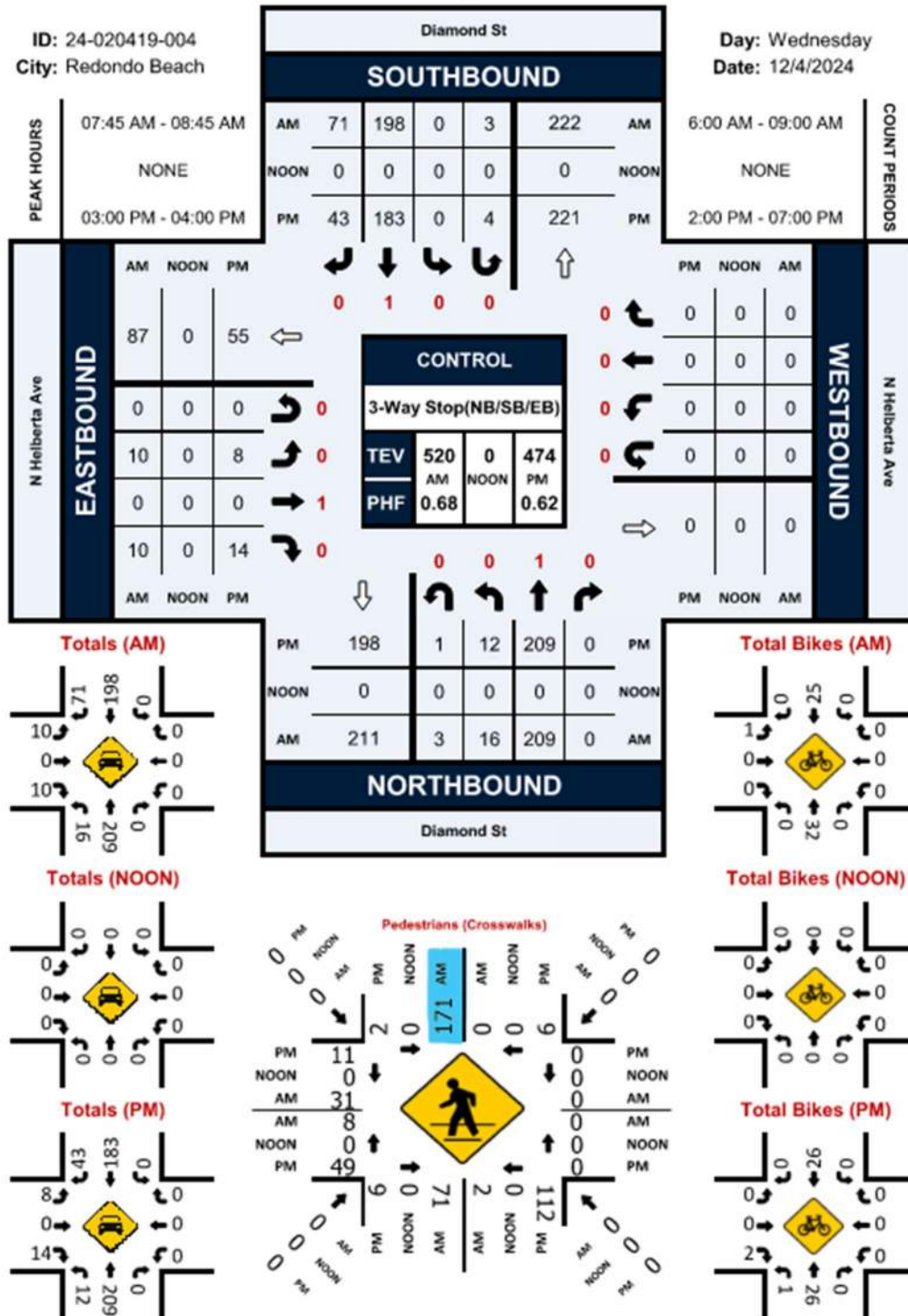


Figure 3. Volumes at Diamond Street & N Helberta Avenue

Travel Speed

The posted speed limit along Diamond Street is 30 miles per hour (mph) in both the eastbound and westbound directions and 25 mph during school arrival and dismissal. Vehicular travel speeds were collected along the corridor at the same time the turning movement counts and parking occupancy were collected. Figure 4 depicts the average speed of vehicles traveling along various locations along the corridor on December 4, 2024.

The 85th percentile speed is the speed at or below which 85 percent of all vehicles are observed to travel and has historically been used to set speed limits. For all locations, the 85th percentile ranged from 32 to 35 mph with the highest 85th percentile being along the eastbound direction between N Guadalupe Avenue and N Gertruda Avenue.

On average, vehicles travel at or below the 30-mph speed limit. Speed surveys, however, confirmed that a few motorists travel more than 45 mph, at the western end of the corridor. Though this is less than 1% of all vehicles, the time of day at which they sped included 5 AM and in the afternoon around the time of dismissal (3 PM) until 8 PM.

See **Appendix C** for a detailed speed survey.

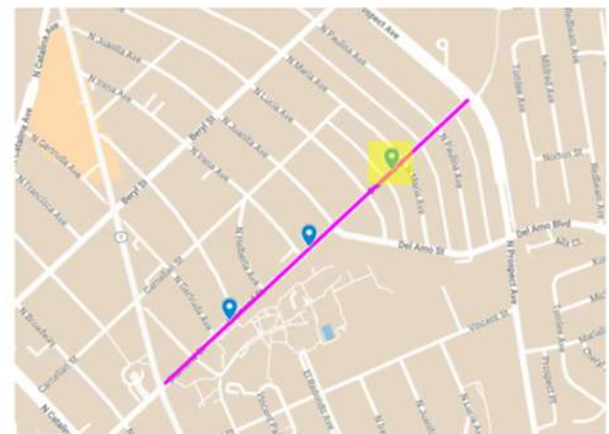
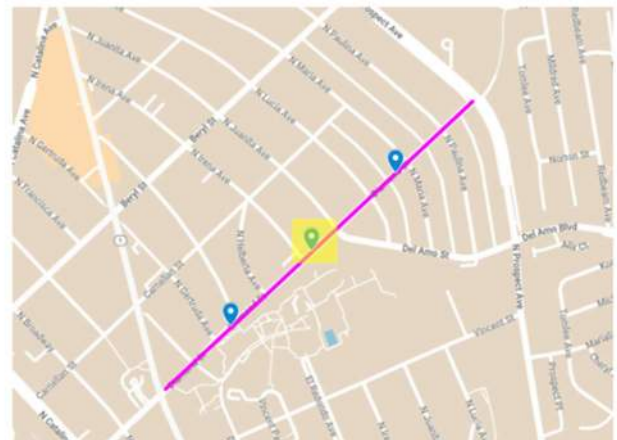
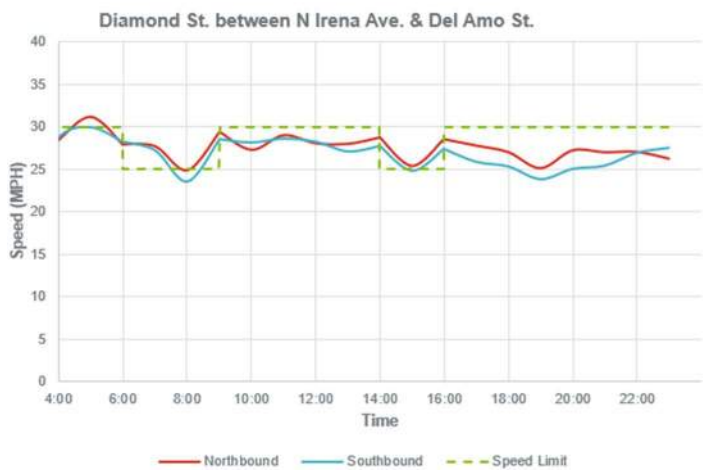
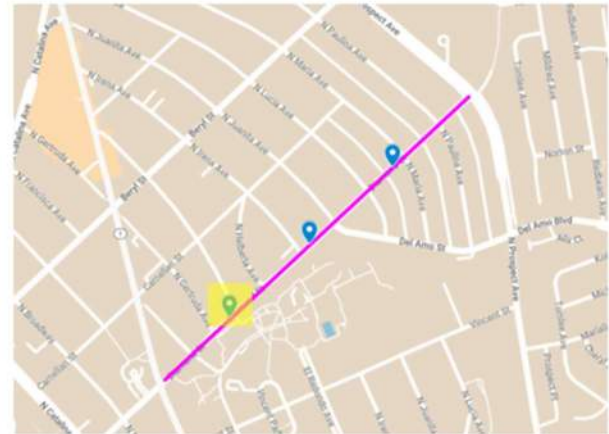
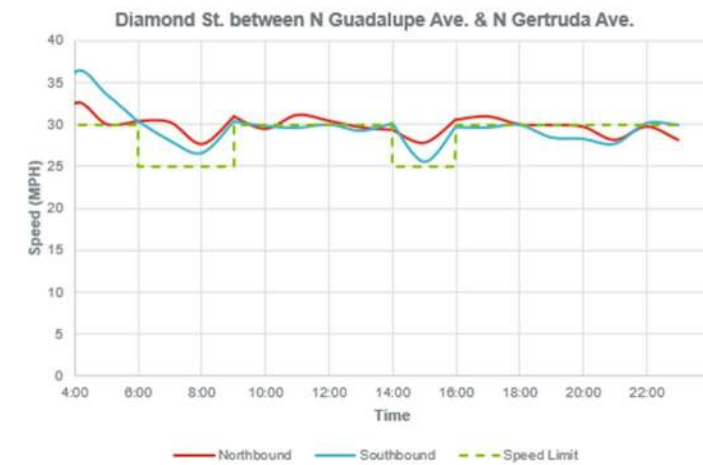


Figure 4. Average Speed of Vehicles on Diamond Street

Crash Trends

Using the Transportation Injury Mapping System (TIMS) Crash Data (Dec 2019 – June 2024) and additional crash data provided by Redondo Beach Traffic Engineering, showed that there were 17 total reported crashes on Diamond Street. An analysis of the last 5 years' worth of collision data demonstrated that crashes involving people biking and walking made up 47% of total crashes recorded along Diamond Street. In addition, 63% of crashes resulting in minor injuries included bicyclists. Figure 5 shows that more crashes occurred during school arrival and dismissal times than any other time of day.

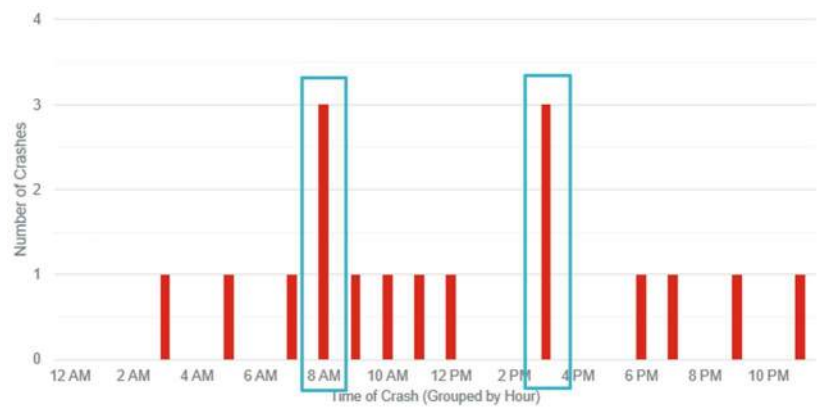


Figure 5. Crashes along Diamond Street by Hour (December 2019 – June 2024)

Figure 6 depicts the location of all crashes involving people biking and walking and their severity. On Diamond Street, most crashes occur at an intersection where people walking, rolling, biking, and driving have the most conflicts.

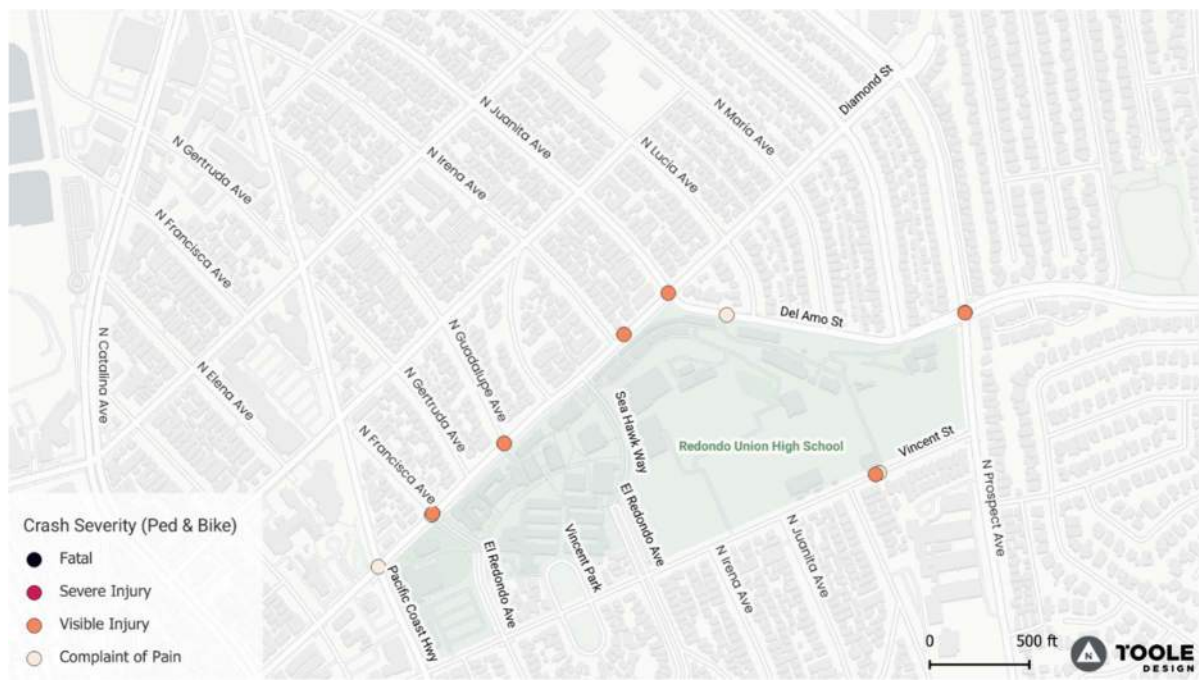


Figure 6. Crash Location and Severity Involving People Walking and Biking

Community Engagement

Approach

The project team led three virtual engagement events to gather input from the community on key issues the data may not have captured.

Stakeholder Meeting – January 8, 2025

The project team met with key City staff to discuss traffic safety and operations, including representatives of the Parent Teacher Association, the Redondo Beach Unified School District, the Redondo Beach Fire Department, the South Bay Bicycle Coalition, and the Redondo Beach Police Department. The community event included a presentation outlining background and preliminary data analysis and concluded with a discussion with guiding questions.

Stakeholder Meeting (Students) – January 16, 2025

A second stakeholder meeting was held to gather input from students. The school chose two students with diverse backgrounds, one who walked to school and one who took public transit or was driven to school, to meet with the team and provide input. The meeting included a presentation outlining background and preliminary data analysis and had guiding questions throughout the presentation to encourage discussion throughout.

Community Meeting – February 19, 2025

In addition to the presentation, the community meeting used Mentimeter, an interactive polling site to gather feedback during the presentation. The community meeting consisted of:

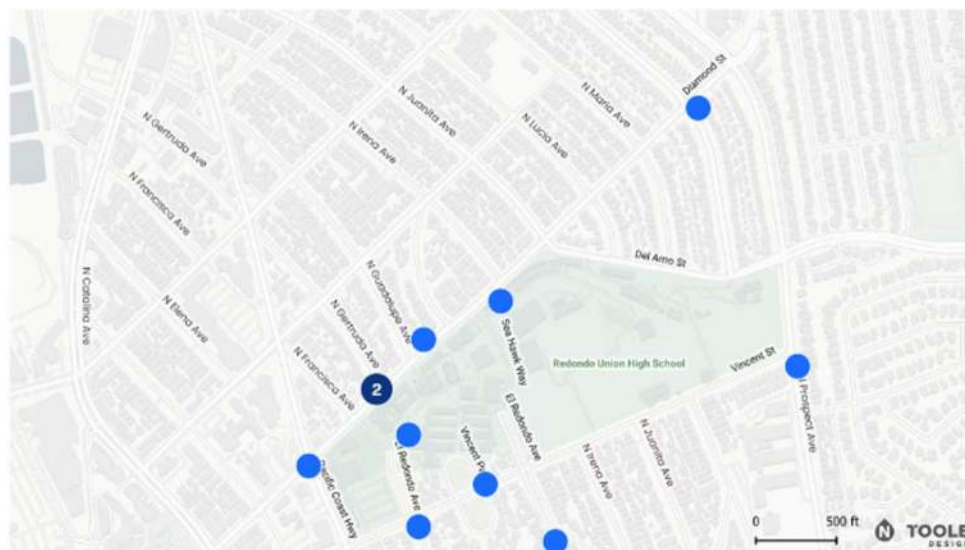
- 16 neighbors – largely residents living on the other side of RUHS along Vincent Street
- 1 parent and neighbor, and
- 3 people who identified as “other”.

Summary of Community Input

Below is a summary of additional concerns brought up by community members during the Stakeholder and Community Meetings.

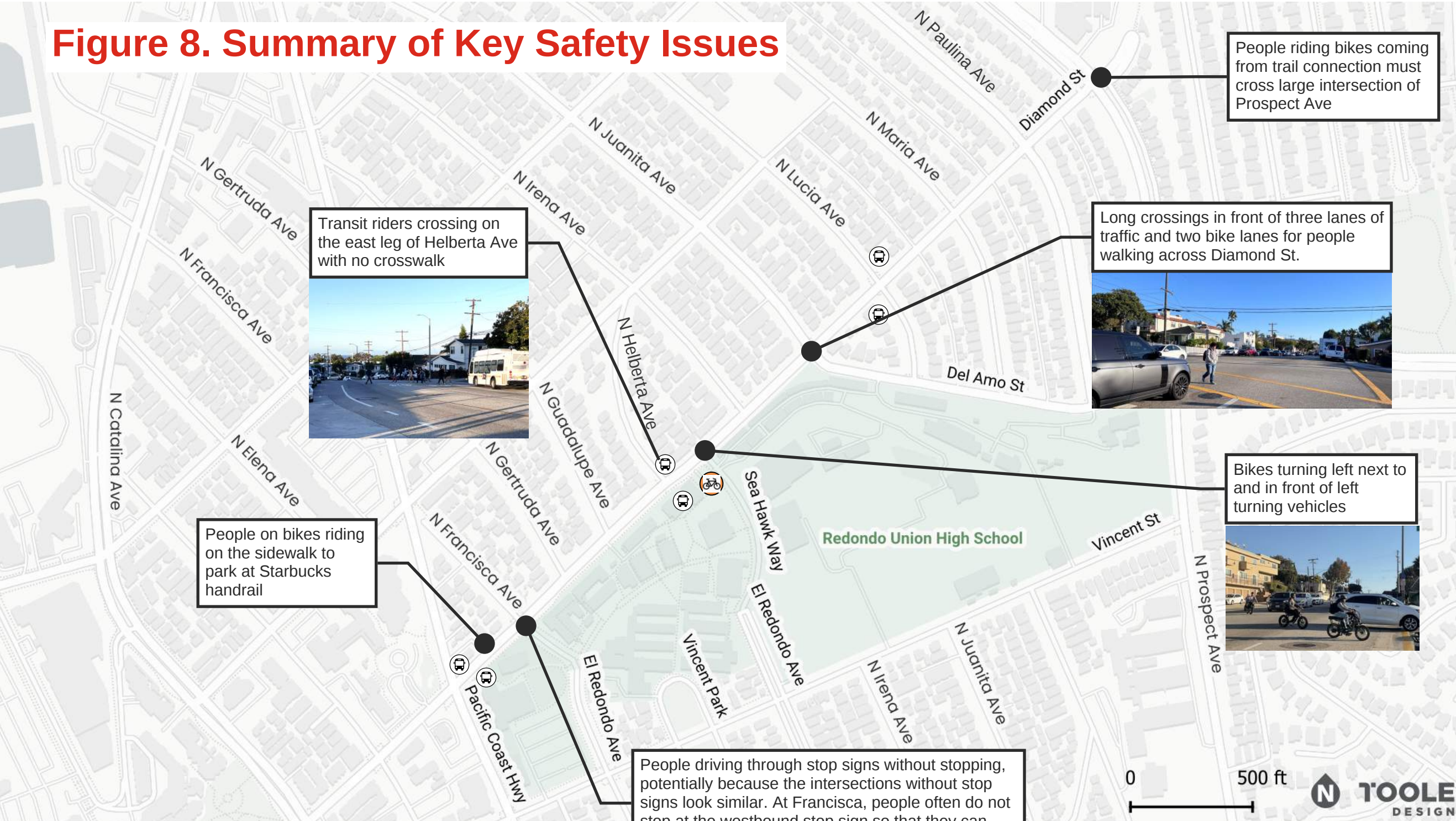
- All-way stop-controlled intersections
 - People walking feel unsafe crossing Diamond Street because they must cross in front of multiple lanes of traffic, both for motor vehicles and bikes.
 - The Del Amo Street / N. Juanita Avenue & Diamond Street intersection can feel chaotic during the morning.
 - People biking tend to not stop at stop signs.
 - People driving tend to run the stop sign at N Francisca Avenue going westbound towards Pacific Coast Highway, possibly to catch a green signal for Diamond Street at PCH, since the green signal is visible from a distance (this was highlighted in a letter from a resident to the City).
- Bus Stops
 - The bus is full by the time it reaches the Sea Hawk Way stop in the afternoon, so most students wait by the Pacific Coast Highway stop instead.
 - There is a need for better bus transportation options to accommodate students' schedules.
 - It is difficult to see around the westbound bus that stops at Helberta Avenue if you are driving westbound as well.
- Bike Parking

- While e-bikes can be an issue due to reckless riders, the bigger issue with e-bikes is the overcrowding and traffic congestion caused by having a single central parking location for bikes at Sea Hawk Way.
- Conflicts
 - Students go to Starbucks after school and bike and park on the sidewalk causing bike and pedestrian conflicts.
 - The Sea Hawk Way entrance is congested with people trying to enter and exit (bicyclists, vehicles, pedestrians).
 - Double parking in the bike lanes.
- Near-misses and Speeding
 - When asked to identify any locations where community members had experienced or witnessed a near-miss, many of the points placed were at intersections as shown in Figure 7.
 - The students mentioned speeding issues, particularly on Juanita Avenue and downhill towards Pacific Coast Hwy.



Summary of Key Safety Issues

Figure 8. Summary of Key Safety Issues



Recommendations

Summary of Recommendations

Figure 9 summarizes the recommended interventions on Diamond Street and in the project area.

Clear Space and Parking Impacts

Clear space leading up to intersections and alleyways is required to provide appropriate sight distance for approaching vehicles and bicyclists to see each other so that each user can anticipate and avoid a potential collision with crossing traffic. This “clear sight triangle” should be kept clear of obstructions, including parked vehicles. At intersections, 50 ft of clear space is recommended. At alleyways, 20 ft of clear space is recommended.

The proposed design has minimal impacts on the parking on Diamond Street to the west of Del Amo Street/ N. Juanita Avenue with the potential removal of one (1) parking spot. East of Del Amo Street/ N. Juanita Avenue, about 11 parking spots are impacted. As stated in the Parking Occupancy section of this report, 68 vacant spots remained east of Del Amo Street/ N. Juanita Avenue during the most heavily parked time of the day while 4 vacant spots remained to the west of Del Amo Street/ N. Juanita Avenue. The parking loss is equal to or less than the current number of vacant spots on Diamond Street per the parking occupancy data. As documented in the collected parking occupancy data, the corridor has substantial parking availability today, and while the design would reduce some parking spaces, parking would remain available throughout a typical school day.

Figure 9. Summary of Recommendations



Recommended Interventions and Benefits

	KEY ISSUE	INTERVENTION(S)	BENEFIT
ADDITIONAL DROP-OFF/PICKUP AREAS	The Sea Hawk Way entrance congested with people trying to enter and exit (bicyclists, vehicles, pedestrians).	Remove 2 ADA spaces and 1 police parking space on Vincent Park loop and convert to 7:45-8:45 am and 3:00-4:00pm loading with 2-hour parking between loading times. No restrictions outside of school hours. Maintain 1 ADA space near building door. Future RUHS project for pickup and drop-off area on Francisca Ave. Shift existing loading zone on south side of Diamond St closer to school building next to existing bus stop. Change parking restrictions to 7:45-8:45 and 3:00-4:00pm loading with 1-hour parking between loading times. No restrictions outside of school hours.	By providing multiple pickup and drop-off locations, the Sea Hawk Way entrance will see less demand and improve congestion and safety.

	KEY ISSUE	INTERVENTION(S)	BENEFIT
IMPROVED PEDESTRIAN CROSSING DESIGN	People walking across Diamond Street must navigate across long crossings with multiple conflict zones.	Install curb extensions at the following crossings on Diamond Street: Francisca Avenue, Helberta Avenue, Del Amo Street/ N. Juanita Avenue, N. Lucia Avenue, N. Paulina Avenue. Install pedestrian refuges at the following crossings on Diamond Street: Francisca Avenue (east side), Del Amo Street/ N. Juanita Avenue, and N. Lucia Avenue (west side). See City's level of service analysis determining feasibility of turn lane removal along Diamond St. Install high-visibility crosswalks at all existing marked crossings on Diamond Street and its side streets in the project area.	Curb extensions shorten crossing distances and provide better visibility for pedestrians crossing, a pedestrian refuge provides a waiting area to help people navigate two directions of traffic.
ADDITIONAL BIKE PARKING	Overcrowding and traffic congestion due to only two parking locations for bikes – one at Sea Hawk Way and another on Francisca Ave. Students go to Starbucks after school and bike and park on the sidewalk causing bike and pedestrian conflicts.	Install bike parking around the perimeter of RUHS (the project team will work with RUSD to identify final locations). Install on-street corral for bikes in the red curb by the Starbucks driveway. See Appendix E for an example of bicycle parking.	By providing multiple convenient bike parking locations, the Sea Hawk Way entrance will see less demand and improve congestion and safety. This also reduces the conflicts between people walking and biking on the sidewalk east of the Starbucks.
ASPHALT ART AT ALL-WAY STOP INTERSECTIONS	People biking tend to not stop at stop signs. People driving tend to run the stop sign at N Francisca Avenue going	Install asphalt art at the pedestrian refuges and potentially the curb extensions where they're proposed. See Appendix E	Providing asphalt art at all-way stop-controlled intersections gives drivers an additional indication of

	KEY ISSUE	INTERVENTION(S)	BENEFIT
	westbound towards Pacific Coast Hwy.	for an example of asphalt art at all-way stop intersections.	an all-way stop intersection.
RELOCATION OF WB BUS STOP AT HELBERTA AVE	The westbound bus stop is located on the east side of the intersection which encourages riders to cross Diamond Street in the unmarked crossing on the east side. It is difficult to see pedestrians crossing around the westbound bus that stops at Helberta Avenue if you are driving westbound due to buses obstructing the view of crossing students.	Relocate the WB bus stop at Helberta Avenue to the far side of the intersection.	Improves the visibility of pedestrians crossing the crosswalk on the west leg. Encourages people taking transit to use the existing marked crossing and curb ramps at this intersection.
PARKING-PROTECTED BIKE LANES ON THE SOUTH SIDE OF THE STREET	People double park in the bike lanes.	Install parking-protected bike lanes on the south side of Diamond Street. See Appendix E for an example of parking-protected bike lanes.	Protected bike lanes discourage double parking and provides a safer, protected area for people to bike without vehicular conflict between intersections.
BUFFERED BIKE LANES ON THE NORTH SIDE OF THE STREET	Students biking in groups to and from school. The students would typically bike in the adjacent travel lane due to space constraints of the bike lane.	Install bike lanes with a 5' buffer on the north side of Diamond Street. See Appendix E for an example of buffered bike lanes.	Buffered bike lanes provide additional space for people biking while maintaining curbside parking
LEFT TURN BIKE LANE AND DEDICATED RECEIVING LANE AT SEA HAWK WAY	Left-turning bicyclists going westbound on Diamond Street turning into Sea Hawk Way at the uncontrolled intersection. People biking ride next to and in front of turning	Install dedicated left turn lane and receiving lane for people biking at Sea Hawk Way to separate bike traffic from vehicular traffic as shown on Figure 9.	Dedicated lanes for people biking separate and decrease the conflict zones between the two modes of transportation.

	KEY ISSUE	INTERVENTION(S)	BENEFIT
	vehicles while navigating the turn at the same time and entering the same receiving lane.		
GREEN CONFLICT MARKINGS	Some crashes along Diamond Street involving people biking were due to vehicles striking people biking at intersections.	Install conflict markings at all intersections where bike lanes continue through the intersection. The City has used green conflict markings for other bikeways, such as Beryl Street's Class II bike lanes from PCH to Flagler Lane. See Appendix E for an example of green conflict markings.	Conflict markings alert people driving and biking to potential conflict areas.

Next Steps

The project team's primary goal for the Redondo Union Access Study and Design was to identify "quick-build" interventions that would provide the highest impact to the safety and efficient access of the RUHS area. This report serves to demonstrate how the community engagement process and the data analysis led to the identification of targeted safety countermeasures on Diamond Street. The project team recommends continuing to 60% design of the project to implement countermeasures so that enhancements can be installed quickly, tested and evaluated, and modified as required before more permanent and capital-intensive measures are designed and constructed.

A. PARKING OCCUPANCY

Parking Study

Project ID: 24-020420

City: Redondo Beach, CA

Date: 12/4/2024

Day: Wednesday

Segment	Street	From	To	Curb Type	Side of the Street	Marked/Unmarked	Restriction	Measurement (ft.) / # of Spaces (if Marked)	Approximate Spaces	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM
OSP-001	Diamond Street	Pacific Coast Hwy	Francisca Avenue	Regular	S	Unmarked	No Parking Monday 8am-9pm	170'	9	3	6	5	6	7	7	2	6	7	1	1	0
	Diamond Street	Pacific Coast Hwy	Francisca Avenue	Regular	S	Marked	No Parking Thursday 11am-2pm/Tow-Away No Parking 7:45am-8:45am & 2:15pm-3:15pm School Days Only		4	2	1	4	4	4	4	4	4	4	1	1	2
	Diamond Street	Pacific Coast Hwy	Francisca Avenue	Red	S	Unmarked	Illegal Parking	-	-	0	0	0	1	1	0	0	1	1	0	0	0
OSP-002	Diamond Street	Francisca Avenue	Sea Hawk Way	Regular	S	Marked	No Parking Thursday 11am-2pm		10	7	10	10	9	9	8	7	8	7	5	5	4
	Diamond Street	Francisca Avenue	Sea Hawk Way	Regular	S	Marked	Tow-Away No Parking 7:30am-3:30pm School Days Only		13	13	13	13	13	13	13	3	10	5	3	4	3
OSP-003	Diamond Street	Sea Hawk Way	Del Amo Street	Regular	S	Marked	No Parking Thursday 11am-2pm		23	22	23	23	22	22	21	15	20	18	13	14	12
OSP-004	Diamond Street	Del Amo Street	Prospect Avenue	Regular	S	Unmarked	No Parking Thursday 11am-2pm	962'	48	11	11	14	15	14	14	10	12	12	8	8	8
OSP-005	Diamond Street	Prospect Avenue	Del Amo Street	Regular	N	Unmarked	No Parking Friday 11am-2pm	908'	45	29	18	16	16	16	16	19	7	8	6	6	6
OSP-006	Diamond Street	Del Amo Street	Helberta Avenue	Regular	N	Marked	No Parking Friday 11am-2pm		17	14	16	16	14	16	14	14	15	14	14	15	13
OSP-007	Diamond Street	Helberta Avenue	Pacific Coast Hwy	Regular	N	Marked	No Parking Friday 11am-2pm		18	13	16	18	17	15	15	13	13	10	7	7	7
	Diamond Street	Helberta Avenue	Pacific Coast Hwy	Regular	N	Unmarked	Parking by Permit Only everyday 8am-10am/No Parking Friday 11am-2pm	90'	5	3	3	2	2	2	2	3	3	3	3	3	3
	Diamond Street	Helberta Avenue	Pacific Coast Hwy	Red	N	Unmarked	Illegal Parking	-	-	0	2	0	0	0	0	0	0	0	0	0	0

Notes: OSP-001 & OSP-007 - Vehicles illegally parked at the red curb during the study

OSP-002 (Tow-Away No Parking 7:30am-3:30pm School Days Only) - Buses occupying 2 spaces but counted as 1 occupancy from 4:00pm-6:00pm.

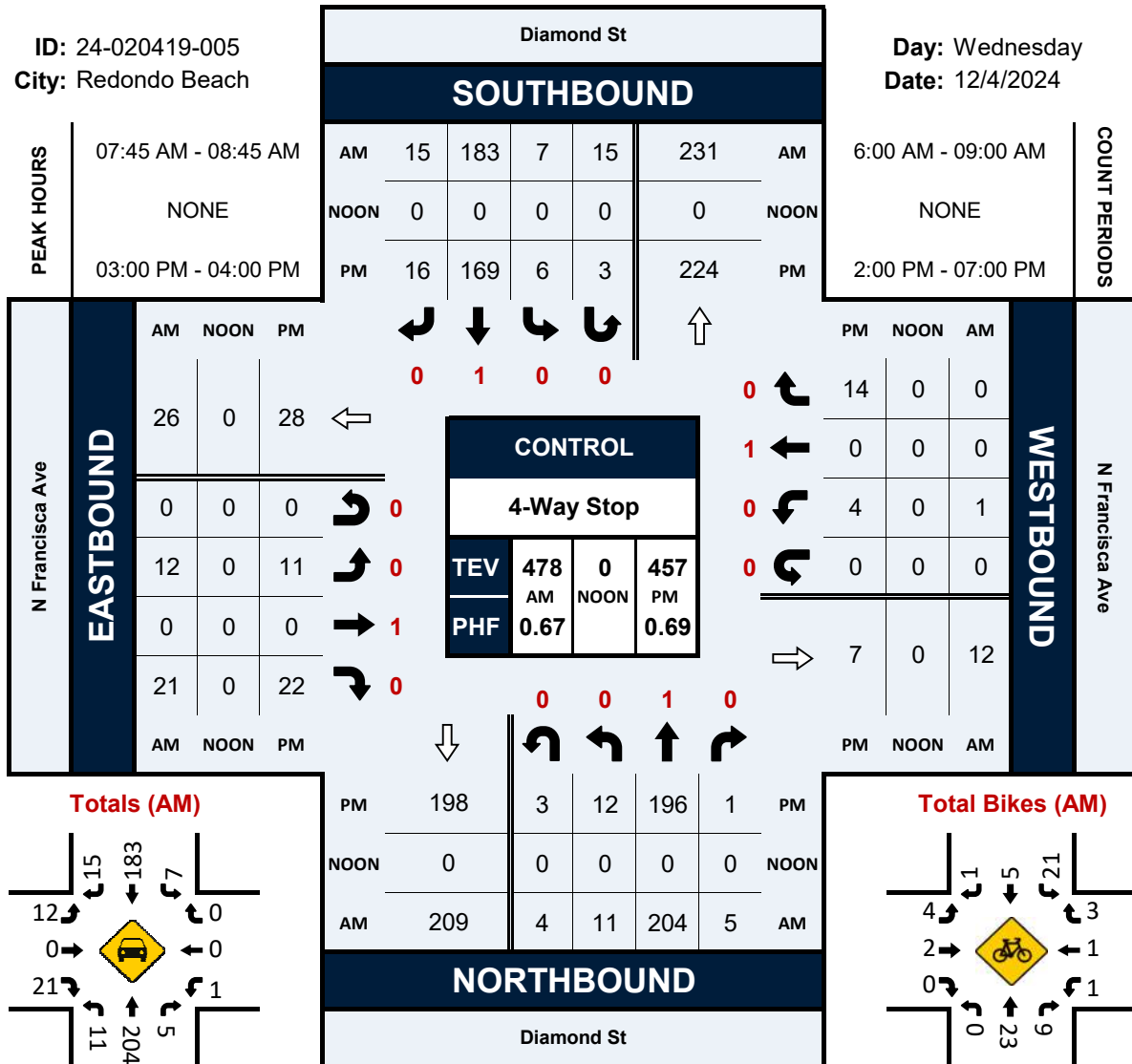
B. TRAFFIC VOLUMES

Diamond St & N Francisca Ave

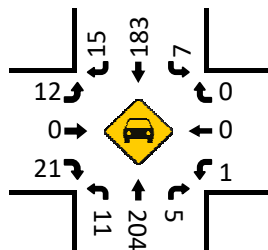
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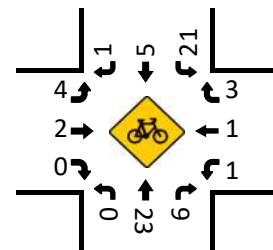
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Date: 12/4/2024



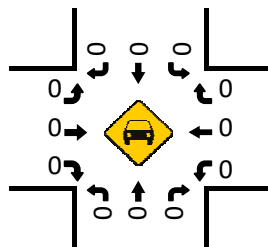
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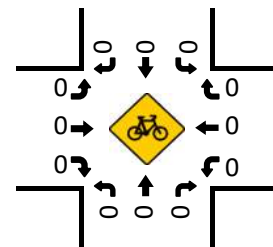
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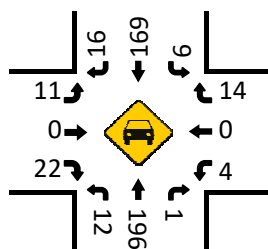
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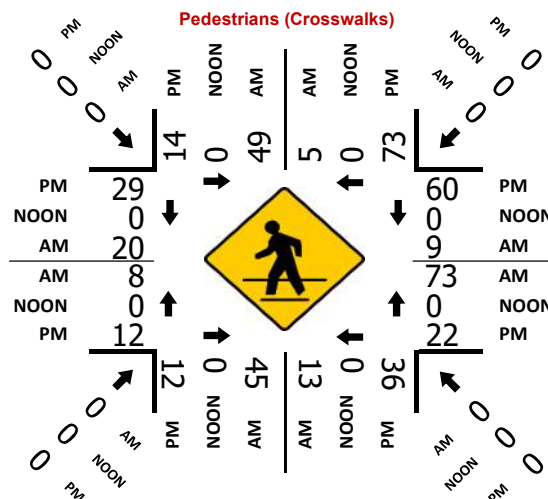
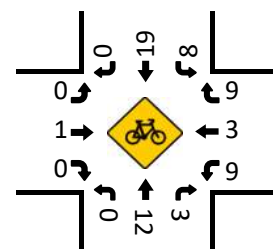
Total Bikes (NOON)



Totals (PM)



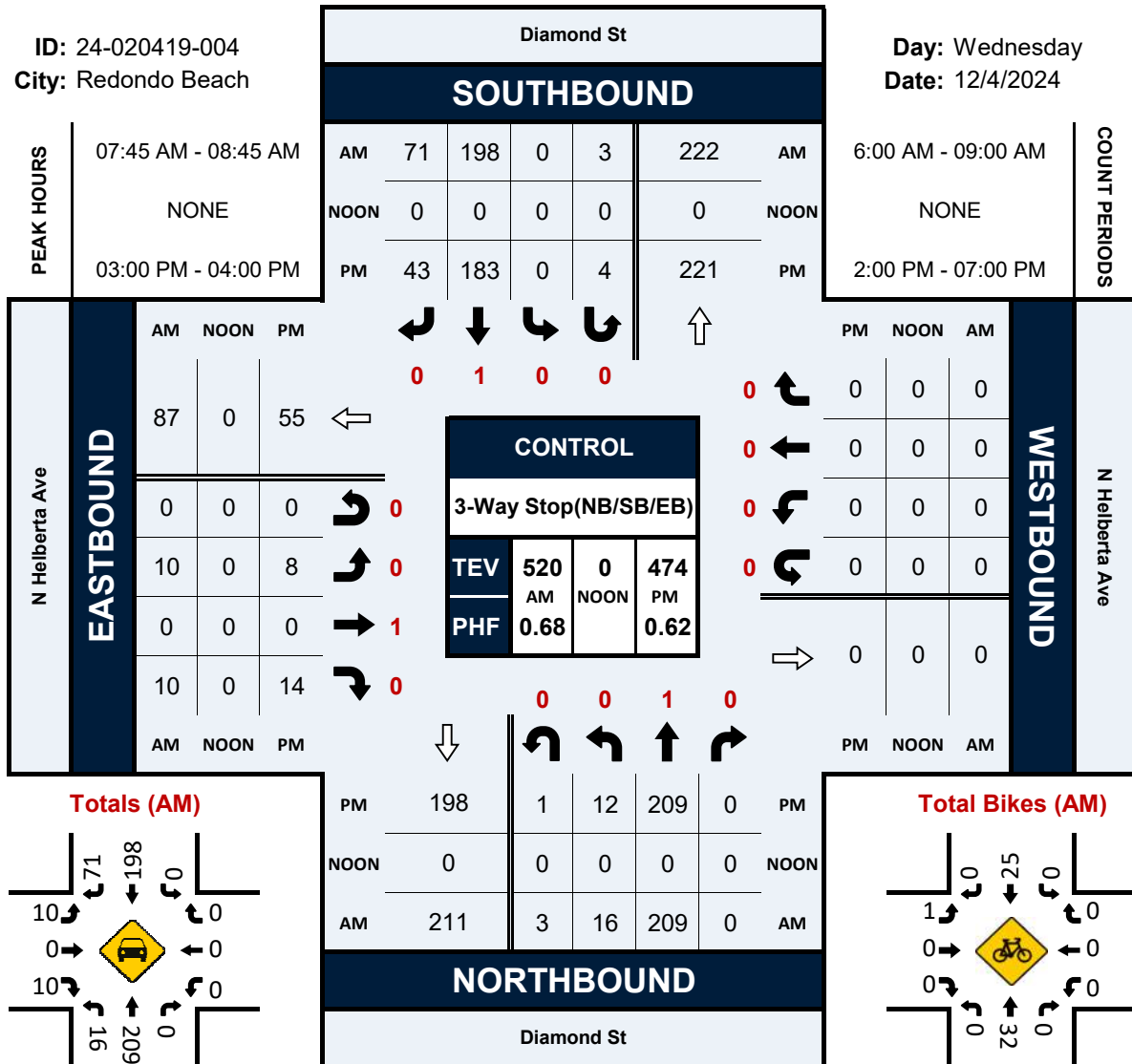
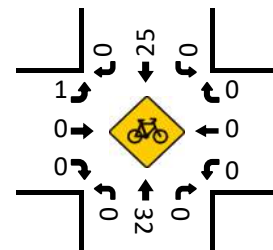
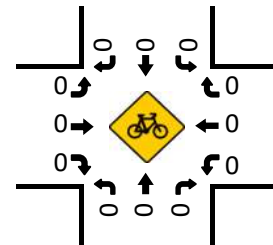
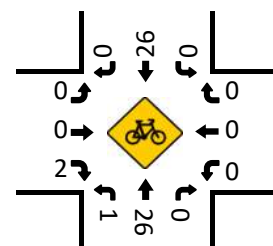
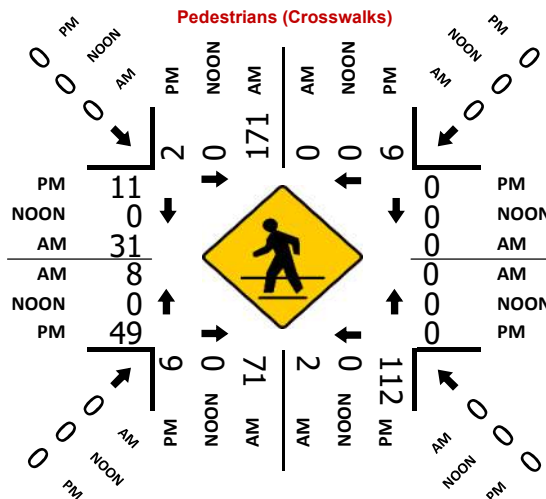
Total Bikes (PM)



Diamond St & N Helberta Ave**Peak Hour Turning Movement Count**

ID: 24-020419-004
City: Redondo Beach

Day: Wednesday
Date: 12/4/2024

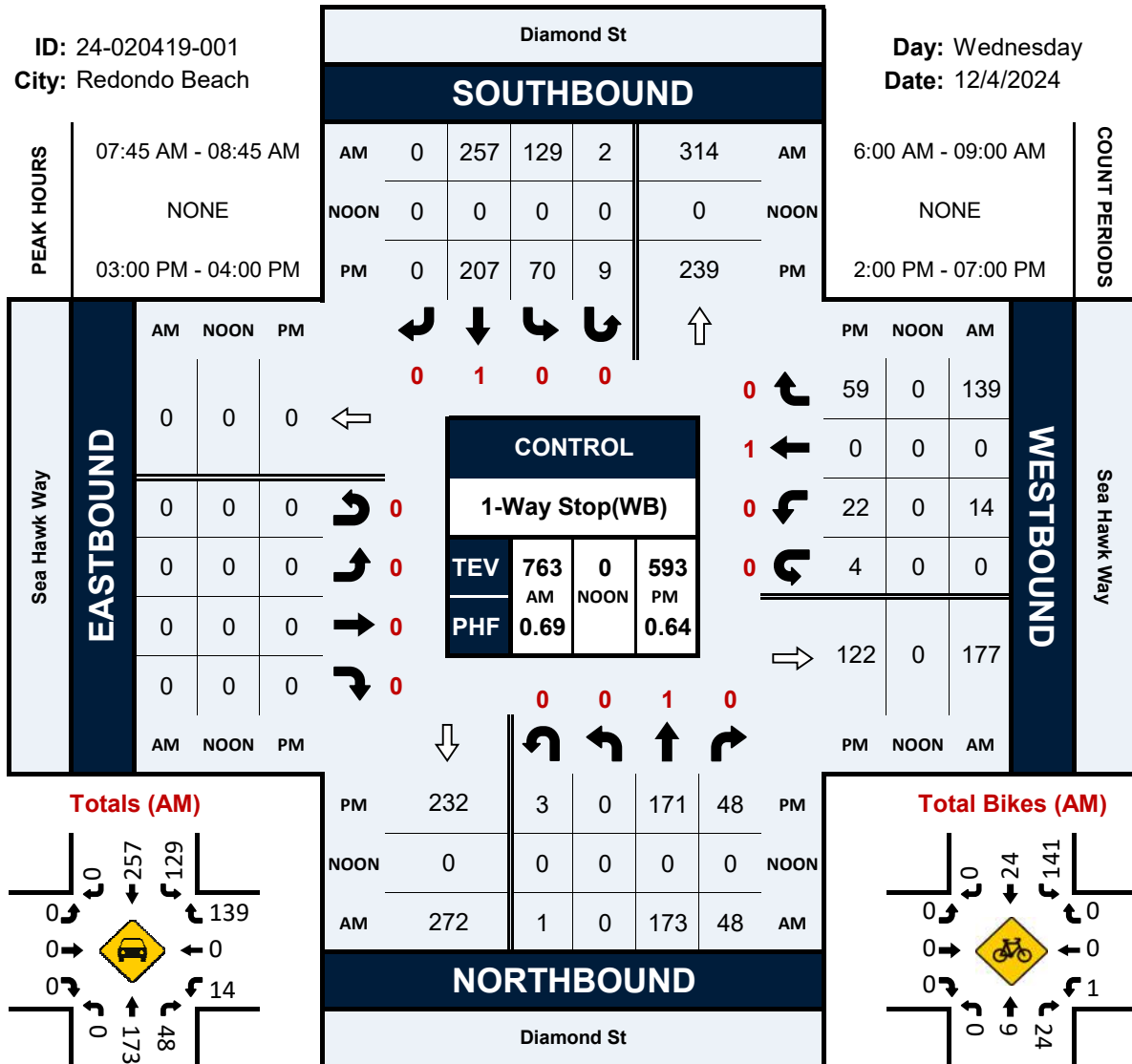
**Total Bikes (AM)****Total Bikes (NOON)****Total Bikes (PM)****Pedestrians (Crosswalks)**

Diamond St & Sea Hawk Way

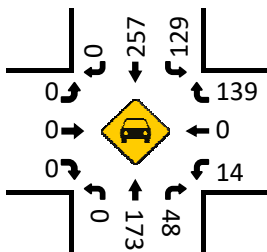
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City: Redondo Beach

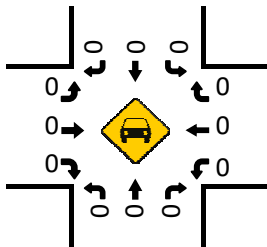
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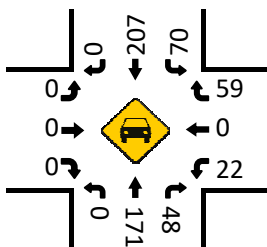
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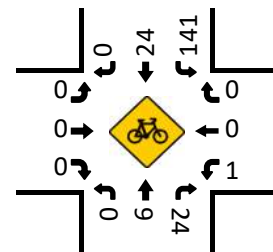
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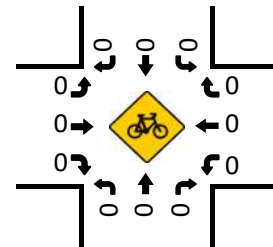
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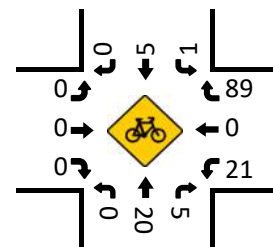
Total Bikes (AM)



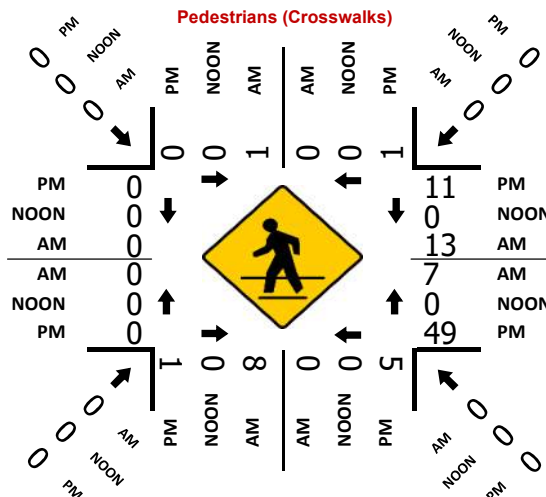
Total Bikes (NOON)



Total Bikes (PM)



Pedestrians (Crosswalks)

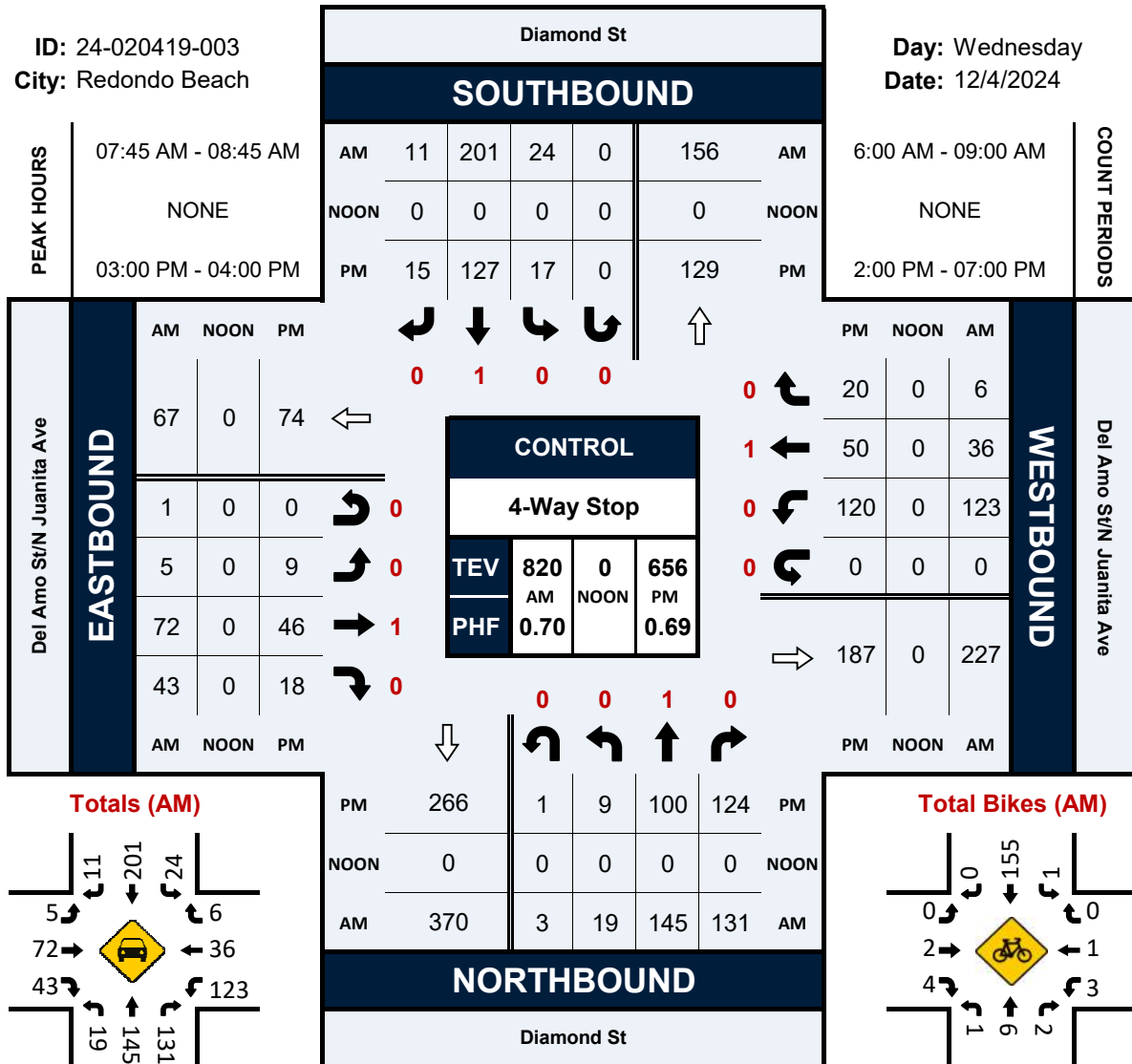


Diamond St & Del Amo St/N Juanita Ave

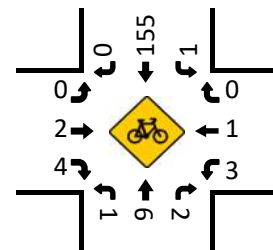
Peak Hour Turning Movement Count

ID: 24-020419-003
City: Redondo Beach

Day: Wednesday
Date: 12/4/2024



Total Bikes (AM)

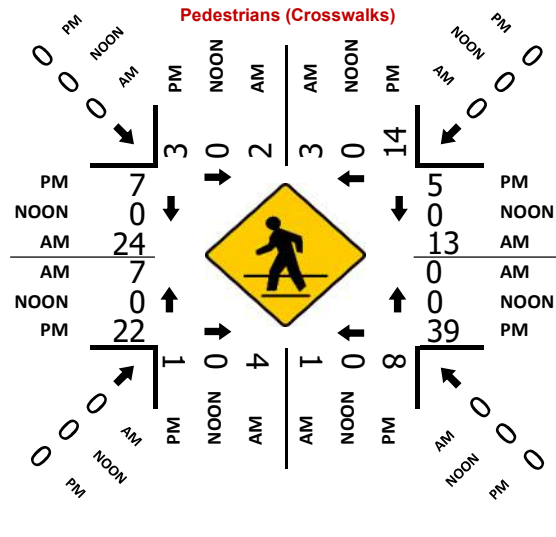
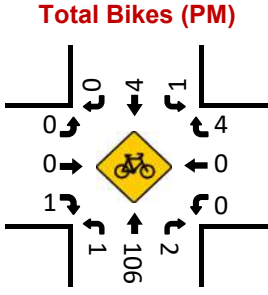
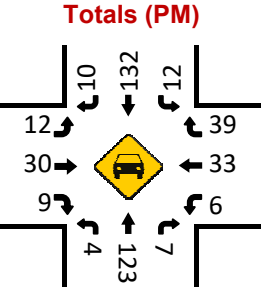
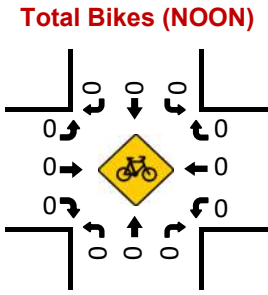
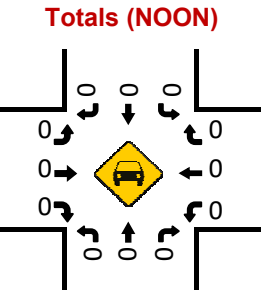
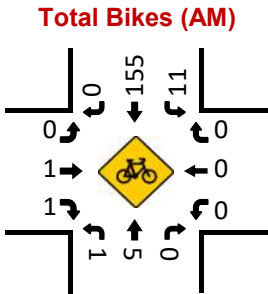
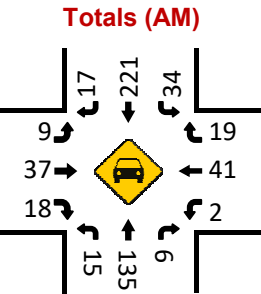
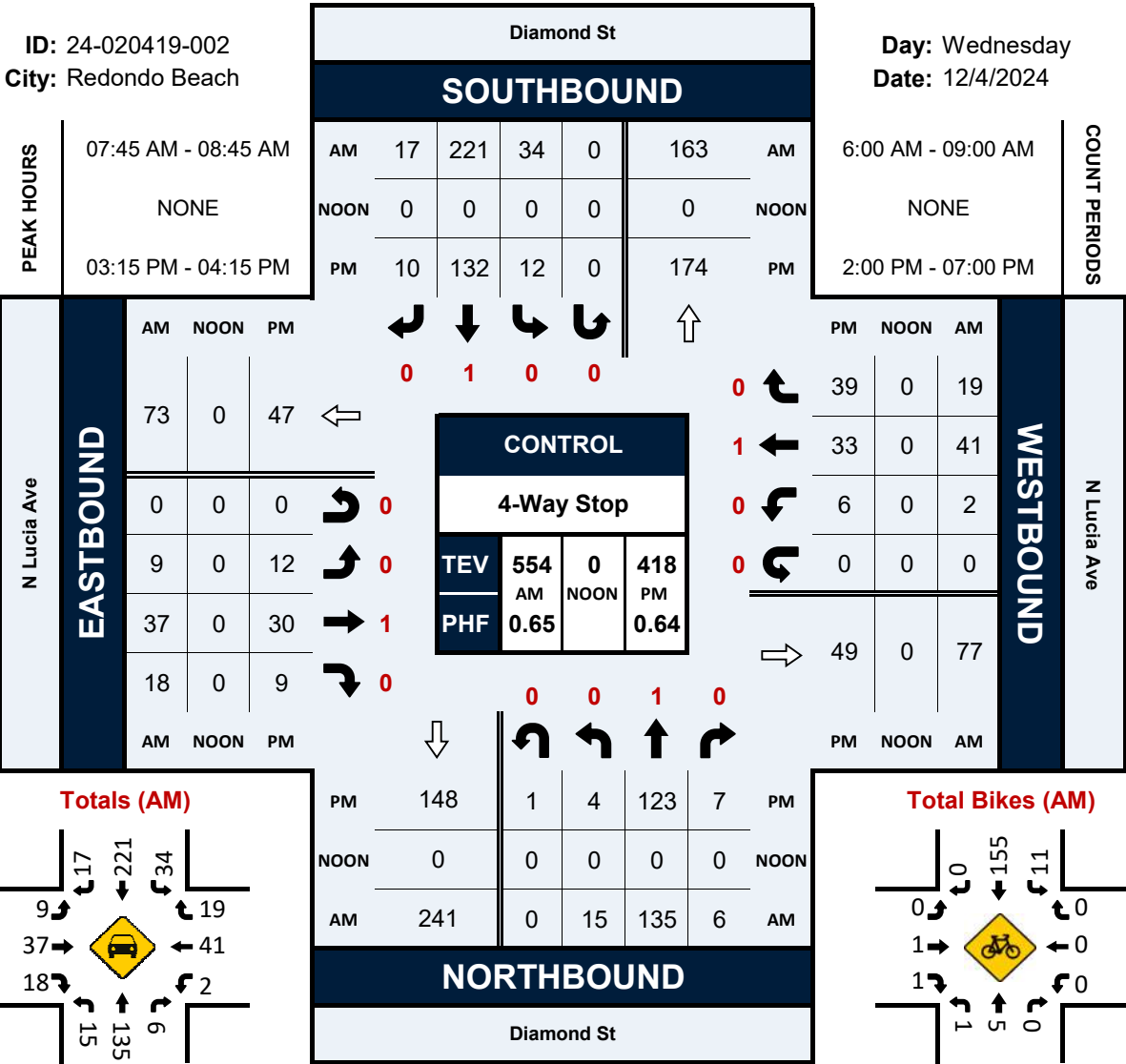


Diamond St & N Lucia Ave

Peak Hour Turning Movement Count

ID: 24-020419-002
City: Redondo Beach

Day: Wednesday
Date: 12/4/2024



C. TRAVEL SPEED

SPEED

Diamond St Bet N Guadalupe Ave & N Gertruda Ave

Day: Wednesday

City: Redondo Beach

Date: 12/4/2024

Project #: CA24_020421_003

Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
	5	15	20	25	30	35	40	45	50	55	60	65	70	5		15	20	25	30	35	40	45	50	55	60	65	70	5	15		20	25	30	35	40	45	50	55	60	65	70				
	15	20	25	30	35	40	45	50	55	60	65	70	99	15		20	25	30	35	40	45	50	55	60	65	70	99	15	20		25	30	35	40	45	50	55	60	65	70	99				
0:00	0	0	0	1	3	3	0	0	0	0	0	0	0	7	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	1	4	4	0	0	0	0	0	0	0	0	9			
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	2	1	0	0	0	0	0	4	0	0	0	0	1	3	1	0	0	0	0	0	0	5				
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	1	2	0	0	0	0	0	0	0	0	3				
3:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	4				
4:00	0	0	0	2	5	2	0	0	0	0	0	0	0	9	0	0	0	0	1	3	0	0	0	0	0	0	4	0	0	0	2	6	5	0	0	0	0	0	0	0	13				
5:00	0	0	2	5	5	2	0	0	0	0	0	0	0	14	0	0	0	4	10	1	2	1	0	0	0	0	18	0	0	2	9	15	3	2	1	0	0	0	0	0	32				
6:00	0	2	6	13	23	7	1	0	0	0	0	0	0	52	0	1	2	18	17	3	2	0	0	0	0	0	43	0	3	8	31	40	10	3	0	0	0	0	0	0	95				
7:00	2	3	14	52	56	23	3	0	0	0	0	0	0	153	8	2	15	58	46	9	0	0	0	0	0	0	138	10	5	29	110	102	32	3	0	0	0	0	0	0	291				
8:00	7	10	33	73	46	18	0	0	0	0	0	0	0	187	7	22	45	88	46	15	0	0	0	0	0	0	223	14	32	78	161	92	33	0	0	0	0	0	0	0	410				
9:00	0	2	5	25	35	13	1	0	0	0	0	0	0	81	3	3	4	32	38	17	2	0	0	0	0	0	99	3	5	9	57	73	30	3	0	0	0	0	0	0	180				
10:00	2	3	4	34	30	8	1	0	0	0	0	0	0	82	3	2	12	25	48	12	1	0	0	0	0	0	103	5	5	16	59	78	20	2	0	0	0	0	0	0	185				
11:00	1	4	5	19	43	20	0	0	0	0	0	0	0	92	2	6	8	32	49	11	1	0	0	0	0	0	109	3	10	13	51	92	31	1	0	0	0	0	0	0	201				
12:00	1	4	7	32	58	14	0	0	0	0	0	0	0	116	1	3	10	24	36	11	2	0	0	0	0	0	87	2	7	17	56	94	25	2	0	0	0	0	0	0	203				
13:00	0	4	13	39	41	12	1	0	0	0	0	0	0	110	1	7	21	39	51	17	1	0	0	0	0	0	137	1	11	34	78	92	29	2	0	0	0	0	0	0	247				
14:00	2	2	16	51	45	10	3	0	0	0	0	0	0	120	0	5	5	40	52	12	0	0	0	0	0	0	134	2	7	21	91	92	22	3	0	0	0	0	0	0	243				
15:00	3	17	39	87	73	10	1	0	0	0	0	0	0	230	28	20	31	69	60	11	0	1	0	0	0	0	220	31	37	70	156	133	21	1	1	0	0	0	0	0	450				
16:00	2	3	14	50	63	23	5	0	0	0	0	0	0	160	3	5	13	35	58	17	0	0	0	0	0	0	131	5	8	27	85	121	40	5	0	0	0	0	0	0	291				
17:00	0	2	13	51	86	22	3	0	0	0	0	0	0	177	2	8	3	39	45	11	1	1	0	0	0	0	110	2	10	16	90	131	33	4	1	0	0	0	0	0	287				
18:00	3	7	8	54	49	24	3	0	0	0	0	0	0	148	2	2	9	35	37	13	1	1	0	0	0	0	100	5	9	17	89	86	37	4	1	0	0	0	0	0	248				
19:00	2	3	6	38	38	10	3	0	0	0	0	0	0	100	0	7	12	39	29	6	0	1	0	0	0	0	94	2	10	18	77	67	16	3	1	0	0	0	0	0	194				
20:00	1	1	7	33	25	11	0	0	0	0	0	0	0	78	3	0	5	32	20	1	0	1	0	0	0	0	62	4	1	12	65	45	12	0	1	0	0	0	0	0	140				
21:00	1	1	7	48	18	2	0	0	0	0	0	0	0	77	2	2	9	26	19	2	0	0	0	0	0	0	60	3	3	16	74	37	4	0	0	0	0	0	0	0	137				
22:00	0	2	1	6	7	0	2	0	0	0	0	0	0	18	0	1	1	8	12	2	0	0	0	0	0	0	24	0	3	2	14	19	2	2	0	0	0	0	0	0	42				
23:00	0	0	2	3	3	0	0	0	0	0	0	0	0	8	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	2	4	4	0	0	0	0	0	0	0	0	0	10			
Totals	27	70	203	719	752	235	27	0	0	0	0	0	0	2,033	65	96	205	645	679	177	14	6	0	0	0	0	1,887	92	166	408	1,364	1,431	412	41	6	0	0	0	0	0	0	3,920			
% of Totals	1%	3%	10%	35%	37%	12%	1%							100%	3%	5%	11%	34%	36%	9%	1%	0.32%				100%	2%	4%	10%	35%	37%	11%	1%	0.15%								100%			

STATISTICS	00:00 - 12:00	%	12	24	70	227	246	97	6	0	0	0	0	0	0	0	682	23	36	86	258	259	74	9	1	0	0	0	0	0	0	746	35	60	156	485	505	171	15	1	0	0	0	0	0	1428	
		%	1%	1%	3%	11%	12%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	34%	1%	2%	4%	13%	4%	0%	0%	0%	0%	0%	0%	0%	37%	2%	3%	8%	24%	25%	8%	1%	0%	0%	0%	0%	7%	70%			
	Peak Hour	%	7:45	8:15	7:45	7:45	7:00	7:00	6:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:45	7:30	7:45	7:30	7:45	10:45	9:15	4:30	4:30	0:00	0:00	0:00	0:00	0:00	7:45	7:45	8:15	7:45	7:45	7:00	7:45	6:00	4:30	0:00	0:00	0:00	0:00	0:00	7:45	
	Peak Volume	%	9	11	36	83	56	23	3	0	0	0	0	0	0	0	0	215	10	23	45	104	53	21	2	1	0	0	0	0	0	237	19	33	81	187	102	35	3	1	0	0	0	0	452		
	12:00 - 24:00	%	15	46	133	492	506	138	21	0	0	0	0	0	0	0	0	1351	42	60	119	387	420	103	5	5	0	0	0	0	0	1141	57	106	252	879	926	241	26	5	0	0	0	0	2492		
		%	18%	45%	133%	492%	506%	138%	21%	0%	0%	0%	0%	0%	0%	0%	0%	15%	15%	15%	15%	15%	15%	15%	12%	12%	12%	12%	12%	12%	12%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
	Peak Hour	%	18:45	15:15	15:00	15:00	17:00	17:45	16:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	15:00	15:00	14:45	15:15	15:15	16:15	15:45	12:00	17:15	12:00	12:00	12:00	12:00	15:00	15:00	15:15	15:15	15:15	16:15	15:45	17:45	17:15	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00
	Peak Volume	%	4	19	39	87	86	25	5	0	0	0	0	0	0	0	0	230	28	22	33	69	63	19	2	2	0	0	0	0	0	220	31	39	71	156	135	40	6	2	0	0	0	0	0	450	
	07:00 - 09:00	%	9	13	47	125	102	41	3	0	0	0	0	0	0	0	0	340	15	24	60	146	92	24	0	0	0	0	0	0	0	361	24	37	107	271	194	65	3	0	0	0	0	0	701		
	Peak Hour	%	7:45	8:00	7:45	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:30	7:45	7:30	7:45	7:00	8:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:45	7:45	7:45	7:45	7:00	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00
Peak Volume	%	9	10	36	83	56	23	3	0	0	0	0	0	0	0	0	215	10	23	45	104	46	15	0	0	0	0	0	0	0	237	19	32	81	187	102	35	3	0	0	0	0	0	0	452		
16:00 - 18:00	%	16	5	34	27	101	45	8	0	0	0	0	0	0	0	0	337	5	13	16	74	103	1	0	0	0	0	0	0	0	241	7	18	43	175	252	73	9	1	0	0	0	0	0	578		
Peak Hour	%	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	16:15	16:30	16:00	16:15	16:15	16:00	17:00	16:45	16:00	16:00	16:00	16:00	16:15	16:00	16:30	16:00	16:15	16:15	16:00	16:00	16:45	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00
Peak Volume	%	2	3	14	55	86	23	5	0	0	0	0	0	0	0	0	177	4	9	13	40	63	17	1	1	0	0	0	0	140	5	12	27	95	135	40	5	1	0	0	0	0	0	0	307		

Direction	Percentiles					ADT
	15th	50th	Average	85th	95th	
NORTHBOUND	25	30	30	35	38	2013
SOUTHBOUND	23	29	29	34	38	1887
TOTALS	24	30	29	35	38	3920

SPEED

Diamond St Bet N Guadalupe Ave & N Gertruda Ave

Day: Wednesday

City: Redondo Beach

Date: 12/4/2024

Project #: CA24_020421_003

Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
	5 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15		15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15	15 20		20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99				
15-MINUTE BREAKDOWN	0:00	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2		
	0:15	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2		
	0:30	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3		
	0:45	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2		
	1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1			
	1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	2			
	1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1			
	1:45	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1		
	2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1		
	2:15	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1		
	2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1		
	2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	
	3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:30	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
	3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	4:00	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2		
	4:15	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	1	1	2	0	0	0	0	0	0	0	0	4		
	4:30	0	0	0	0	2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3		
	4:45	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	4		
	5:00	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	4	0	0	0	3	1	1	1	0	0	0	0	0	0	0	6		
	5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	1	0	0	0	0	0	5	0	0	0	1	2	0	1	1	0	0	0	0	0	5			
	5:30	0	0	1	3	1	0	0	0	0	0	0	0	5	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	1	3	2	1	0	0	0	0	0	0	0	0	7		
	5:45	0	0	1	1	4	1	0	0	0	0	0	0	7	0	0	0	1	6	0	0	0	0	0	0	0	0	7	0	0	1	2	10	1	0	0	0	0	0	0	0	0	14		
	6:00	0	0	0	0	2	2	0	0	0	0	0	0	4	0	0	1	2	2	0	1	0	0	0	0	0	0	6	0	0	1	2	4	2	1	0	0	0	0	0	0	0	10		
	6:15	0	0	0	2	6	0	0	0	0	0	0	0	8	0	0	0	3	7	0	1	0	0	0	0	0	0	11	0	0	0	5	13	0	1	0	0	0	0	0	0	19			
	6:30	0	0	0	4	6	3	0	0	0	0	0	0	13	0	0	0	1	4	2	0	0	0	0	0	0	7	0	0	0	5	10	5	0	0	0	0	0	0	0	0	0	20		
	6:45	0	2	6	7	9	2	1	0	0	0	0	0	27	0	1	1	12	4	1	0	0	0	0	0	0	19	0	3	7	19	13	3	1	0	0	0	0	0	0	0	0	0	46	
	7:00	0	2	5	16	19	8	0	0	0	0	0	0	50	1	0	9	18	22	2	0	0	0	0	0	0	0	52	1	2	14	34	41	10	0	0	0	0	0	0	0	0	0	102	
	7:15	0	1	2	9	11	5	0	0	0	0	0	0	28	1	1	0	8	9	3	0	0	0	0	0	0	0	22	1	2	2	17	20	8	0	0	0	0	0	0	0	0	50		
	7:30	0	0	3	8	8	2	2	0	0	0	0	0	23	3	0	4	11	9	3	0	0	0	0	0	0	0	30	3	0	7	19	17	5	2	0	0	0	0	0	0	0	53		
	7:45	2	0	4	19	18	8	1	0	0	0	0	0	52	3	1	2	21	6	1	0	0	0	0	0	0	0	34	5	1	6	40	24	9	1	0	0	0	0	0	0	0	0	86	
	8:00	1	1	4	30	15	5	0	0	0	0	0	0	56	0	2	12	21	11	4	0	0	0	0	0	0	0	50	1	3	16	51	26	9	0	0	0	0	0	0	0	0	0	106	
	8:15	3	7	21	21	12	3	0	0	0	0	0	0	67	4	17	27	37	12	2	0	0	0	0	0	0	0	99	7	24	48	58	24	5	0	0	0	0	0	0	0	0	0	166	
	8:30	3	1	7	13	9	7	0	0	0	0	0	0	40	3	3	4	25	14	5	0	0	0	0	0	0	0	54	6	4	11	38	23	12	0	0	0	0	0	0	0	0	0	94	
	8:45	0	1	1	9	10	3	0	0	0	0	0	0	24	0	0	2	5	9	4	0	0	0	0	0	0	0	20	0	1	3	14	19	7	0	0	0	0	0	0	0	0	44		
	9:00	0	2	1	6	11	2	0	0	0	0	0	0	22	2	2	3	13	13	0	0	0	0	0	0	0	33	2	4	4	19	24	2	0	0	0	0	0	0	0	0	0	55		
	9:15	0	0	2	8	11	4	0	0	0	0	0	0	25	0	0	0	5	7	5	2	0	0	0	0	0	19	0	0	2	13	18	9	2	0	0	0	0	0	0	0	0	44		
	9:30	0	0	1	5	10	5	1	0	0	0	0	0	22	0	1	0	5	7	6	0	0	0	0	0	0	19	0	1	1	10	17	11	1	0	0	0	0	0	0	0	0	41		
9:45	0	0	1	6	3	2	0	0	0	0	0	0	12	1	0	1	9	11	6	0	0	0	0	0	0	28	1	0	2	15	14	8	0	0	0	0	0	0	0	0	0	40			
10:00	0	0	0	8	6	1	0	0	0	0	0	0	15	1	0	1	4	7	4	0	0	0	0	0	0	17	1	0	1	12	13	5	0	0	0	0	0	0	0	0	0	32			

City: Redondo Beach
Project #: CA24_020421_003

Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
	5 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15		15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15	15 20		20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99				
15-MINUTE BREAKDOWN	12:00	0	0	0	4	12	6	0	0	0	0	0	0	22	0	1	2	7	9	1	1	0	0	0	0	0	21	0	1	2	11	21	7	1	0	0	0	0	0	0	0	43			
	12:15	0	0	1	8	10	3	0	0	0	0	0	0	22	0	0	4	3	7	2	1	0	0	0	0	0	17	0	0	5	11	17	5	1	0	0	0	0	0	39					
	12:30	1	1	1	10	10	4	0	0	0	0	0	0	27	1	0	3	7	7	6	0	0	0	0	0	0	24	2	1	4	17	17	10	0	0	0	0	0	0	51					
	12:45	0	3	5	10	26	1	0	0	0	0	0	0	45	0	2	1	7	13	2	0	0	0	0	0	0	25	0	5	6	17	39	3	0	0	0	0	0	0	70					
	13:00	0	2	8	12	8	3	0	0	0	0	0	0	33	0	2	12	16	10	4	0	0	0	0	0	0	44	0	4	20	28	18	7	0	0	0	0	0	0	77					
	13:15	0	1	1	8	14	2	0	0	0	0	0	0	26	1	4	2	7	13	5	0	0	0	0	0	0	32	1	5	3	15	27	7	0	0	0	0	0	58						
	13:30	0	1	1	16	8	4	0	0	0	0	0	0	30	0	1	4	8	16	4	1	0	0	0	0	0	34	0	2	5	24	24	8	1	0	0	0	0	0	64					
	13:45	0	0	3	3	11	3	1	0	0	0	0	0	21	0	0	3	8	12	4	0	0	0	0	0	0	27	0	0	6	11	23	7	1	0	0	0	0	0	48					
	14:00	0	1	3	18	15	3	0	0	0	0	0	0	40	0	2	0	7	14	2	0	0	0	0	0	0	25	0	3	3	25	29	5	0	0	0	0	0	0	65					
	14:15	2	0	2	13	10	6	2	0	0	0	0	0	35	0	0	4	13	14	2	0	0	0	0	0	0	33	2	0	6	26	24	8	2	0	0	0	0	0	68					
	14:30	0	0	9	9	10	1	1	0	0	0	0	0	30	0	1	0	9	14	5	0	0	0	0	0	0	29	0	1	9	18	24	6	1	0	0	0	0	0	59					
	14:45	0	1	2	11	10	0	0	0	0	0	0	0	24	0	2	1	11	10	3	0	0	0	0	0	0	27	0	3	3	22	20	3	0	0	0	0	0	0	51					
	15:00	1	0	6	15	18	1	0	0	0	0	0	0	41	1	1	2	8	22	4	0	0	0	0	0	0	38	2	1	8	23	40	5	0	0	0	0	0	0	79					
	15:15	0	5	7	21	19	5	0	0	0	0	0	0	57	1	3	4	16	8	2	0	1	0	0	0	0	35	1	8	11	37	27	7	0	1	0	0	0	92						
	15:30	2	9	20	25	12	2	1	0	0	0	0	0	81	25	16	22	25	15	0	0	0	0	0	0	0	103	27	25	42	60	27	2	1	0	0	0	0	0	184					
	15:45	0	3	6	16	24	2	0	0	0	0	0	0	51	1	0	3	20	15	5	0	0	0	0	0	0	44	1	3	9	36	39	7	0	0	0	0	0	95						
	16:00	1	2	5	9	13	8	0	0	0	0	0	0	38	1	1	4	7	14	4	0	0	0	0	0	0	31	2	3	9	16	27	12	0	0	0	0	0	0	69					
	16:15	0	0	4	10	18	6	2	0	0	0	0	0	40	0	0	3	8	15	8	0	0	0	0	0	0	34	0	0	7	18	33	14	2	0	0	0	0	0	74					
	16:30	1	0	1	18	17	5	2	0	0	0	0	0	44	2	2	2	8	13	2	0	0	0	0	0	0	29	3	2	3	26	30	7	2	0	0	0	0	0	73					
	16:45	0	1	4	13	15	4	1	0	0	0	0	0	38	0	2	4	12	16	3	0	0	0	0	0	0	37	0	3	8	25	31	7	1	0	0	0	0	0	75					
	17:00	0	2	1	14	22	6	0	0	0	0	0	0	45	2	3	1	12	19	3	0	0	0	0	0	0	40	2	5	2	26	41	9	0	0	0	0	0	0	85					
	17:15	0	0	5	10	24	5	1	0	0	0	0	0	45	0	2	1	7	9	3	0	0	0	0	0	0	22	0	2	6	17	33	8	1	0	0	0	0	0	67					
	17:30	0	0	2	15	20	4	0	0	0	0	0	0	41	0	1	0	9	9	2	0	1	0	0	0	0	22	0	1	2	24	29	6	0	1	0	0	0	0	63					
	17:45	0	0	5	12	20	7	2	0	0	0	0	0	46	0	2	1	11	8	3	1	0	0	0	0	0	26	0	2	6	23	28	10	3	0	0	0	0	0	72					
	18:00	0	3	1	14	18	8	1	0	0	0	0	0	45	0	1	3	9	15	5	0	1	0	0	0	0	34	0	4	4	23	33	13	1	1	0	0	0	0	79					
	18:15	0	2	2	15	14	5	1	0	0	0	0	0	39	1	1	0	10	6	3	0	0	0	0	0	0	21	1	3	2	25	20	8	1	0	0	0	0	0	60					
	18:30	1	0	3	15	8	5	0	0	0	0	0	0	32	0	0	3	5	7	2	1	0	0	0	0	0	18	1	0	6	20	15	7	1	0	0	0	0	0	50					
	18:45	2	2	2	10	9	6	1	0	0	0	0	0	32	1	0	3	11	9	3	0	0	0	0	0	0	27	3	2	5	21	18	9	1	0	0	0	0	0	59					
	19:00	0	1	2	11	10	3	0	0	0	0	0	0	27	0	0	2	7	8	2	0	0	0	0	0	0	19	0	1	4	18	18	5	0	0	0	0	0	0	46					
	19:15	0	0	2	10	9	3	0	0	0	0	0	0	24	0	0	3	11	7	0	0	1	0	0	0	0	22	0	0	5	21	16	3	0	1	0	0	0	0	46					
	19:30	2	2	0	8	11	3	2	0	0	0	0	0	28	0	6	6	10	6	2	0	0	0	0	0	0	30	2	8	6	18	17	5	2	0	0	0	0	0	58					
	19:45	0	0	2	9	8	1	1	0	0	0	0	0	21	0	1	1	11	8	2	2	0	0	0	0	0	23	0	1	3	20	16	3	1	0	0	0	0	0	44					
20:00	1	0	1	4	7	2	0	0	0	0	0	0	15	0	0	0	10	3	1	0	0	0	0	0	0	14	1	0	1	14	10	3	0	0	0	0	0	0	29						
20:15	0	0	2	8	4	6	0	0	0	0	0	0	20	2	0	1	6	4	0	0	0	0	0	0	0	13	2	0	3	14	8	6	0	0	0	0	0	0	33						
20:30	0	1	3	9	6	6	0	0	0	0	0	0	21	0	6	0	5	6	0	0	0	0	0	0	0	11	0	1	3	11	15	2	0	0	0	0	0	0	32						
20:45	0	0	1	15	5	1	0	0	0	0	0	0	22	1	0	4	11	7	0	0	1	0	0	0	0	24	0	0	5	26	12	1	0	1	0	0	0	0	46						
21:00	0	0	2	9	2	0	0	0	0	0	0	0	13	0	1	1	6	5	0	0	0	0	0	0	0	13	0	1	3	15	7	0	0	0	0	0	0	26							
21:15	1	0	1	12	3	0	0	0	0	0	0	0	17	1	1	5	12	5	1	0	0	0	0	0	0	25	2	1	6	24	8	1	0	0	0	0	0	0	42						
21:30	0	1	3	15	7	2	0	0	0	0	0	0	28	1	0	1	7	6	1	0	0	0	0	0	0	16	1	1	4	22	13	3	0	0	0	0	0	0	44						
21:45	0	0	1	12	6	0	0	0	0	0	0	0	19	0	0	2	1	3	0	0	0	0	0	0	0	6	0	0	3	13	9	0	0	0	0	0	0	0	25						
22:00	0	1	0	3	3	0	0	0	0	0	0	0	7	0	1	1	3	2	2	0	0	0	0	0	0	9	0	2	1	6	5	2	0	0	0	0	0	0	16						
22:15	0	0	0	2	2	0	1	0	0	0	0	0	5	0	0	0	3	6	0	0	0	0	0	0	0	9	0	0	0	5	8	0	1	0	0	0	0	0	14						
22:30	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3	0	0	0	0	0	0	0	5	0	1	1	2	3	0	0	0	0	0	0	0	7						
22:45	0	0	0	1	2	0	1	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	1	0	0	0	0	0	5						
23:00	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	3					
23:15	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2						
23:30	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0																					

SPEED

Diamond St Bet N Irena Ave & Del Amo St/N Juanita Ave

Day: Wednesday

City: Redondo Beach

Date: 12/4/2024

Project #: CA24_020421_002

Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
	5	15	20	25	30	35	40	45	50	55	60	65	70	5		15	20	25	30	35	40	45	50	55	60	65	70	5	15		20	25	30	35	40	45	50	55	60	65	70				
	15	20	25	30	35	40	45	50	55	60	65	70	99	15		20	25	30	35	40	45	50	55	60	65	70	99	15	20		25	30	35	40	45	50	55	60	65	70	99				
HOURLY BREAKDOWN	0:00	0	0	0	0	3	2	0	0	0	0	0	0	5	0	0	1	0	1	0	1	0	0	0	0	0	3	0	0	1	0	4	2	1	0	0	0	0	0	0	0	8			
	1:00	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	1	2	1	0	0	0	0	0	0	6	2	0	0	1	3	1	0	0	0	0	0	0	7					
	2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	2					
	3:00	0	0	1	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	3					
	4:00	0	0	2	0	3	0	0	0	0	0	0	0	5	0	0	2	2	4	0	0	0	0	0	0	0	8	0	0	4	2	7	0	0	0	0	0	0	0	13					
	5:00	0	0	1	5	7	1	1	0	0	0	0	0	15	0	1	2	13	7	2	2	0	0	0	0	0	27	0	1	3	18	14	3	3	0	0	0	0	0	42					
	6:00	0	3	12	10	18	2	0	0	0	0	0	0	45	1	0	12	34	18	2	1	0	0	0	0	0	68	1	3	24	44	36	4	1	0	0	0	0	0	113					
	7:00	0	13	47	72	50	14	1	0	0	0	0	0	197	9	8	35	108	47	11	0	0	0	0	0	0	218	9	21	82	180	97	25	1	0	0	0	0	0	415					
	8:00	8	40	93	83	45	6	0	0	0	0	0	0	275	25	58	122	98	42	4	0	0	0	0	0	0	349	33	98	215	181	87	10	0	0	0	0	0	0	624					
	9:00	0	7	11	31	31	10	3	0	0	0	0	0	93	2	7	10	44	35	4	3	0	0	0	0	0	105	2	14	21	75	66	14	6	0	0	0	0	0	198					
	10:00	1	13	21	28	38	4	0	0	0	0	0	0	105	3	8	18	52	45	5	2	0	0	0	0	0	133	4	21	39	80	83	9	2	0	0	0	0	0	0	238				
	11:00	1	6	11	31	31	47	5	0	0	0	0	0	101	1	3	17	51	33	9	0	0	0	0	0	0	114	2	9	28	82	80	14	0	0	0	0	0	0	0	215				
	12:00	3	13	14	43	49	8	0	0	0	0	0	0	130	1	3	15	54	28	6	0	0	0	0	0	0	107	4	16	29	97	77	14	0	0	0	0	0	0	0	237				
13:00	0	8	29	58	43	5	2	0	0	0	0	0	145	5	10	24	53	36	7	0	0	0	0	0	0	135	5	18	53	111	79	12	2	0	0	0	0	0	0	280					
14:00	0	6	13	68	36	11	0	0	0	0	0	0	134	0	5	26	60	25	8	0	0	0	0	0	0	124	0	11	39	128	61	19	0	0	0	0	0	0	0	258					
15:00	19	23	51	85	46	8	1	0	0	0	0	0	233	21	27	71	99	46	4	0	0	0	0	0	0	268	40	50	122	184	92	12	1	0	0	0	0	0	0	501					
16:00	2	5	35	67	52	17	1	0	0	0	0	0	179	2	11	29	81	45	4	0	0	0	0	0	0	172	4	16	64	148	97	21	1	0	0	0	0	0	0	351					
17:00	1	8	39	77	51	6	2	0	0	0	0	0	184	5	14	48	79	29	3	0	0	0	0	0	0	178	6	22	87	156	80	9	2	0	0	0	0	0	0	362					
18:00	2	9	45	64	30	12	0	0	0	0	0	0	162	7	20	37	75	25	2	0	0	0	0	0	0	166	9	29	82	139	55	14	0	0	0	0	0	0	0	328					
19:00	5	22	30	32	25	5	0	0	0	0	0	0	119	10	21	32	52	11	2	0	0	0	0	0	0	128	15	43	62	84	36	7	0	0	0	0	0	0	0	247					
20:00	0	8	23	32	26	4	0	0	0	0	0	0	93	3	7	22	27	10	1	0	0	0	0	0	0	70	3	15	45	59	36	5	0	0	0	0	0	0	0	163					
21:00	0	8	33	79	28	3	0	0	0	0	0	0	151	3	3	15	18	9	1	0	0	0	0	0	0	49	3	11	48	97	37	4	0	0	0	0	0	0	0	0	200				
22:00	0	4	4	19	4	1	1	0	0	0	0	0	33	1	2	3	17	7	0	0	0	0	0	0	0	30	1	6	7	36	11	1	1	0	0	0	0	0	0	63					
23:00	0	0	4	2	2	0	0	0	0	0	0	0	8	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	5	2	3	0	0	0	0	0	0	0	0	0	10				
	Totals	42	196	519	887	635	124	12	0	0	0	0	2,415	101	208	543	1,018	507	77	9	0	0	0	0	0	2,463	143	404	1,062	1,905	1,142	201	21	0	0	0	0	0	0	0	4,878				
	% of Totals	2%	8%	21%	37%	26%	5%	0%					100%	4%	8%	22%	41%	21%	3%	0%					100%	3%	8%	22%	39%	23%	4%	0%										100%			

STATISTICS	00:00 - 12:00	10	82	199	261	243	44	5	0	0	0	0	0	0	0	0	844	43	85	220	403	235	39	9	0	0	0	0	0	0	1034	53	167	419	664	478	83	14	0	0	0	0	0	1878
	Peak Hour	7:45	7:45	7:45	7:45	7:00	7:15	8:45	0:00	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:45	7:45	8:00	7:45	6:45	7:00	9:30	0:00	0:00	0:00	0:00	0:00	0:00	0:00	7:45	7:45	8:00	7:45	7:45	7:00	7:15	9:00	0:00	0:00	0:00	0:00	0:00	7:45
	Peak Volume	8	41	95	98	50	15	3	0	0	0	0	0	0	0	0	298	25	58	130	111	49	11	4	0	0	0	0	0	369	33	98	225	209	97	26	6	0	0	0	0	0	667	
	12:00 - 24:00	32	114	320	626	392	80	7	0	0	0	0	0	0	0	0	1571	58	123	323	615	272	38	0	0	0	0	0	0	1429	90	237	643	1241	664	118	7	0	0	0	0	0	3000	
	Peak Hour	15:00	15:00	18:30	15:15	16:15	16:00	13:30	12:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	15:30	15:00	18:45	14:15	15:00	15:45	13:45	12:00	12:00	12:00	12:00	12:00	12:00	12:00	15:00	18:45	15:00	15:15	15:45	14:15	13:00	12:00	12:00	12:00	12:00	12:00	15:00	
	Peak Volume	19	23	53	94	59	17	2	0	0	0	0	0	0	0	0	244	21	31	71	99	49	10	0	0	0	0	0	0	268	40	52	122	189	105	21	2	0	0	0	0	501		
	07:00 - 09:00	8	53	140	155	95	20	1	0	0	0	0	0	0	0	0	472	34	66	157	206	89	15	0	0	0	0	0	0	567	42	119	297	361	184	35	1	0	0	0	0	0	1039	
	Peak Hour	7:45	7:45	7:45	7:45	7:00	7:15	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:45	8:00	7:45	7:45	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:00	7:45	7:45	8:00	7:45	7:45	7:00	7:15	7:00	7:00	7:00	7:00	7:00	7:00	7:45	
	Peak Volume	8	41	95	98	50	15	1	0	0	0	0	0	0	0	0	298	25	58	130	111	47	11	0	0	0	0	0	0	369	33	98	225	209	97	26	1	0	0	0	0	0	667	
	16:00 - 18:00	3	13	74	144	103	23	3	0	0	0	0	0	0	0	0	363	7	25	77	160	74	17	0	0	0	0	0	0	0	350	10	38	151	304	177	30	3	0	0	0	0	0	713
Peak Hour	16:30	16:30	16:45	17:00	16:15	16:00	17:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:30	16:30	16:45	16:45	17:00	16:30	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	16:30	16:30	17:00	16:30	16:15	16:00	17:00	16:00	16:00	16:00	16:00	16:00	16:30		
Peak Volume	3	10	46	77	59	17	2	0	0	0	0	0	0	0	0	197	5	16	48	84	45	4	0	0	0	0	0	0	178	7	25	87	158	102	21	2	0	0	0	0	0	370		

City: Redondo Beach
Project #: CA24_020421_002

[illegible]

SPEED

Diamond St Bet N Irena Ave & Del Amo St/N Juanita Ave

Day: Wednesday

Date: 12/4/2024

City: Redondo Beach

Project #: CA24_020421_002

	Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
		5 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15		15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15	15 20		20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99				
15-MINUTE BREAKDOWN	12:00	1	2	1	8	13	3	0	0	0	0	0	0	28	1	1	3	10	7	2	0	0	0	0	0	0	24	2	3	4	18	20	5	0	0	0	0	0	0	0	0	52				
	12:15	0	3	1	8	11	2	0	0	0	0	0	0	25	0	0	3	12	3	2	0	0	0	0	0	0	20	0	3	4	20	14	4	0	0	0	0	0	0	0	45					
	12:30	0	3	9	13	4	1	0	0	0	0	0	0	30	0	1	5	19	6	1	0	0	0	0	0	0	32	0	4	14	32	10	2	0	0	0	0	0	0	62						
	12:45	2	5	3	14	21	2	0	0	0	0	0	0	47	0	1	4	13	12	1	0	0	0	0	0	0	31	2	6	7	27	33	3	0	0	0	0	0	0	78						
	13:00	0	3	9	25	13	2	0	0	0	0	0	0	52	0	4	6	17	12	3	0	0	0	0	0	0	42	0	7	15	42	25	5	0	0	0	0	0	0	94						
	13:15	0	0	6	12	7	1	0	0	0	0	0	0	26	2	4	4	10	13	1	0	0	0	0	0	0	34	2	4	10	22	20	2	0	0	0	0	0	0	60						
	13:30	0	2	9	13	14	2	0	0	0	0	0	0	40	1	1	9	9	6	1	0	0	0	0	0	0	27	1	3	18	22	20	3	0	0	0	0	0	0	67						
	13:45	0	3	5	8	9	0	2	0	0	0	0	0	27	2	1	5	17	5	2	0	0	0	0	0	0	32	2	4	10	25	14	2	2	0	0	0	0	0	59						
	14:00	0	2	2	23	10	2	0	0	0	0	0	0	39	0	2	7	11	4	1	0	0	0	0	0	0	25	0	4	9	34	14	3	0	0	0	0	0	0	64						
	14:15	0	1	4	12	9	5	0	0	0	0	0	0	31	0	1	2	16	5	4	0	0	0	0	0	0	28	0	2	6	28	14	9	0	0	0	0	0	0	59						
	14:30	0	1	2	18	11	3	0	0	0	0	0	0	35	0	1	8	15	10	3	0	0	0	0	0	0	37	0	2	10	33	21	6	0	0	0	0	0	0	72						
	14:45	0	2	5	15	6	1	0	0	0	0	0	0	29	0	1	9	18	6	0	0	0	0	0	0	0	34	0	3	14	33	12	1	0	0	0	0	0	0	63						
	15:00	1	1	6	14	6	3	0	0	0	0	0	0	31	1	0	12	25	18	2	0	0	0	0	0	0	58	2	1	18	39	24	5	0	0	0	0	0	0	0	89					
	15:15	0	1	6	17	11	3	1	0	0	0	0	0	39	4	11	26	29	10	0	0	0	0	0	0	0	80	4	12	32	46	21	3	1	0	0	0	0	0	119						
	15:30	15	18	29	36	13	0	0	0	0	0	0	0	111	15	15	24	25	8	0	0	0	0	0	0	0	87	30	33	53	61	21	0	0	0	0	0	0	0	0	198					
	15:45	3	3	10	18	16	2	0	0	0	0	0	0	52	1	1	9	20	10	2	0	0	0	0	0	0	43	4	4	19	38	26	4	0	0	0	0	0	0	0	95					
	16:00	0	0	5	23	9	4	0	0	0	0	0	0	41	1	2	5	21	14	0	0	0	0	0	0	0	43	1	2	10	44	23	4	0	0	0	0	0	0	0	84					
	16:15	0	1	6	12	14	6	1	0	0	0	0	0	40	0	0	9	16	14	2	0	0	0	0	0	0	41	0	1	15	28	28	8	1	0	0	0	0	0	0	81					
	16:30	1	2	9	21	17	3	0	0	0	0	0	0	53	0	1	6	21	11	1	0	0	0	0	0	0	40	1	3	15	42	28	4	0	0	0	0	0	0	0	93					
	16:45	1	2	15	11	12	4	0	0	0	0	0	0	45	1	8	9	23	6	1	0	0	0	0	0	0	48	2	10	24	34	18	5	0	0	0	0	0	0	0	93					
	17:00	0	0	10	22	16	1	0	0	0	0	0	0	49	1	5	6	23	12	0	0	0	0	0	0	0	47	1	5	16	45	28	1	0	0	0	0	0	0	0	96					
	17:15	1	6	11	20	11	1	0	0	0	0	0	0	50	2	1	14	17	3	1	0	0	0	0	0	0	38	3	7	25	37	14	2	0	0	0	0	0	0	88						
	17:30	0	0	10	16	13	2	0	0	0	0	0	0	41	1	2	11	15	8	2	0	0	0	0	0	0	39	1	2	21	31	21	4	0	0	0	0	0	0	0	80					
	17:45	0	2	8	19	11	2	2	0	0	0	0	0	44	1	6	17	24	6	0	0	0	0	0	0	0	54	1	8	25	43	17	2	2	0	0	0	0	0	0	98					
	18:00	0	2	9	13	13	3	0	0	0	0	0	0	40	4	3	12	24	5	0	0	0	0	0	0	0	48	4	5	21	37	18	3	0	0	0	0	0	0	0	88					
	18:15	0	1	6	21	6	3	0	0	0	0	0	0	37	0	2	9	17	6	2	0	0	0	0	0	0	36	0	3	15	38	12	5	0	0	0	0	0	0	73						
	18:30	1	4	7	15	4	4	0	0	0	0	0	0	35	1	3	5	18	7	0	0	0	0	0	0	0	34	2	7	12	33	11	4	0	0	0	0	0	0	0	69					
	18:45	1	2	23	15	7	2	0	0	0	0	0	0	50	2	12	11	16	7	0	0	0	0	0	0	0	48	3	14	34	31	14	2	0	0	0	0	0	0	0	98					
	19:00	0	6	10	11	8	0	0	0	0	0	0	0	35	1	7	6	12	2	2	0	0	0	0	0	0	30	1	13	16	23	10	2	0	0	0	0	0	0	0	65					
	19:15	2	6	13	5	6	1	0	0	0	0	0	0	33	6	6	10	18	2	0	0	0	0	0	0	0	42	8	12	23	23	8	1	0	0	0	0	0	0	0	75					
	19:30	3	7	2	7	5	3	0	0	0	0	0	0	27	2	7	6	9	12	4	0	0	0	0	0	0	33	5	13	11	19	9	3	0	0	0	0	0	0	0	60					
	19:45	0	3	5	9	6	1	0	0	0	0	0	0	24	1	2	7	10	3	0	0	0	0	0	0	0	23	1	5	12	19	9	1	0	0	0	0	0	0	0	47					
	20:00	0	2	4	6	5	0	0	0	0	0	0	0	17	2	1	5	6	2	1	0	0	0	0	0	0	17	2	3	9	12	7	1	0	0	0	0	0	0	0	34					
	20:15	0	3	6	9	7	2	0	0	0	0	0	0	27	0	1	4	10	2	0	0	0	0	0	0	0	17	0	4	10	19	9	2	0	0	0	0	0	0	0	44					
	20:30	0	2	8	8	5	1	0	0	0	0	0	0	24	1	4	2	3	4	0	0	0	0	0	0	0	14	1	6	10	11	9	1	0	0	0	0	0	0	0	38					
	20:45	0	1	5	9	9	1	0	0	0	0	0	0	25	0	1	11	8	2	0	0	0	0	0	0	0	22	0	2	16	17	11	1	0	0	0	0	0	0	0	47					
21:00	0	1	13	6	6	0	0	0	0	0	0	0	26	1	1	4	5	1	0	0	0	0	0	0	0	12	1	2	17	11	7	0	0	0	0	0	0	0	0	38						
21:15	0	3	5	22	8	0	0	0	0	0	0	0	38	0	1	6	9	1	0	0	0	0	0	0	0	17	0	4	11	31	9	0	0	0	0	0	0	0	0	55						
21:30	0	1	9	32	6	1	0	0	0	0	0	0	49	2	1	1	2	4	1	0	0	0	0	0	0	11	2	2	10	34	10	2	0	0	0	0	0	0	0	60						
21:45	0	3	6	19	8	2	0	0	0	0	0	0	38	0	0	4	2	3	0	0	0	0	0	0	0	9	0	3	10	21	11	2	0	0	0	0	0	0	0	47						
22:00	0	2	3	9	0	1	0	0	0	0	0	0	15	0	1	1	5	2	0	0	0	0	0	0	0	9	0	3	4	14	2	1	0	0	0	0	0	0	0	24						
22:15	0	0	0	6	1	0	0	0	0	0	0	0	7	1	1	0	7	5	0	0	0	0	0	0	0	14	1	1	0	13	6	0	0	0	0	0	0	0	0	21						
2																																														

City: Redondo Beach
Project #: CA24_020421_001

[illegible]

Direction	Percentiles					
	15th	50th	Average	85th	95th	ADT
NORTHBOUND	21	27	27	33	35	1266
SOUTHBOUND	21	27	27	33	35	1253
TOTALS	21	27	27	33	35	2519

City: Redondo Beach
Project #: CA24_020421_001

[illegible]

City: Redondo Beach
Project #: CA24_020421_001

Time	NORTHBOUND														Total	SOUTHBOUND														Total	TOTALS														Total
	5 15	15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15		15 20	20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99	5 15	15 20		20 25	25 30	30 35	35 40	40 45	45 50	50 55	55 60	60 65	65 70	70 99				
15-MINUTE BREAKDOWN	12:00	2	2	4	2	3	2	0	0	0	0	0	0	15	0	0	1	3	2	0	0	0	0	0	0	0	6	2	2	5	5	5	2	0	0	0	0	0	0	21					
	12:15	0	0	1	5	3	1	0	0	0	0	0	0	10	2	1	0	2	2	1	0	0	0	0	0	0	8	2	1	1	7	5	2	0	0	0	0	0	18						
	12:30	0	0	1	4	3	0	0	0	0	0	0	0	8	0	1	2	2	3	0	0	0	0	0	0	0	8	0	1	3	6	6	0	0	0	0	0	0	16						
	12:45	1	1	3	8	3	0	1	0	0	0	0	0	17	1	2	4	3	3	1	0	0	0	0	0	0	14	2	3	7	11	6	1	1	0	0	0	0	31						
	13:00	0	3	7	18	14	2	0	0	0	0	0	0	44	0	1	2	5	7	1	0	0	0	0	0	0	16	0	4	9	23	21	3	0	0	0	0	0	60						
	13:15	0	0	5	5	5	0	0	0	0	0	0	0	15	2	2	4	5	4	1	0	0	0	0	0	0	18	2	2	9	10	9	1	0	0	0	0	0	33						
	13:30	0	1	0	20	13	0	0	0	0	0	0	0	34	0	4	2	9	4	0	0	0	0	0	0	0	19	0	5	2	29	17	0	0	0	0	0	0	53						
	13:45	1	2	5	6	2	0	0	0	0	0	0	0	16	0	1	4	3	1	2	0	0	0	0	0	0	11	1	3	9	9	3	2	0	0	0	0	0	27						
	14:00	0	1	2	9	1	0	0	0	0	0	0	0	13	1	2	4	4	2	2	0	0	0	0	0	0	15	1	3	6	13	3	2	0	0	0	0	0	28						
	14:15	0	0	4	5	7	1	0	0	0	0	0	0	17	0	1	0	6	2	0	0	0	0	0	0	0	9	0	1	4	11	9	1	0	0	0	0	0	26						
	14:30	1	1	4	7	4	0	1	0	0	0	0	0	18	0	0	5	7	3	1	0	0	0	0	0	0	16	1	1	9	14	7	1	1	0	0	0	0	0	34					
	14:45	0	1	4	1	4	0	0	0	0	0	0	0	10	0	1	3	11	3	0	0	0	0	0	0	0	18	0	2	7	12	7	0	0	0	0	0	0	28						
	15:00	0	0	3	6	1	0	1	0	0	0	0	0	11	0	2	2	12	10	3	0	0	0	0	0	0	29	0	2	5	18	11	3	1	0	0	0	0	0	40					
	15:15	1	2	9	13	8	2	0	0	0	0	0	0	35	0	3	9	25	13	3	0	0	0	0	0	0	53	1	5	18	38	21	5	0	0	0	0	0	88						
	15:30	26	25	22	18	9	4	1	0	0	0	0	0	105	2	2	12	26	14	4	1	0	0	0	0	0	61	28	27	34	44	23	8	2	0	0	0	0	0	166					
	15:45	7	8	9	14	9	1	1	0	0	0	0	0	49	0	0	2	7	6	2	1	0	0	0	0	0	18	7	8	11	21	15	3	2	0	0	0	0	0	67					
	16:00	0	0	2	15	3	1	1	0	0	0	0	0	22	0	0	3	8	7	1	0	0	0	0	0	0	19	0	0	5	23	10	2	1	0	0	0	0	0	41					
	16:15	0	0	5	6	6	2	1	0	0	0	0	0	20	0	0	1	8	7	0	0	0	0	0	0	0	16	0	0	6	14	13	2	1	0	0	0	0	36						
	16:30	0	0	4	11	7	0	0	0	0	0	0	0	22	0	0	3	8	7	0	0	0	0	0	0	0	18	0	0	7	19	14	0	0	0	0	0	0	0	40					
	16:45	0	0	5	9	6	0	0	0	0	0	0	0	20	0	0	5	10	6	0	0	0	0	0	0	0	21	0	0	10	19	12	0	0	0	0	0	0	0	41					
	17:00	1	0	3	11	8	0	0	0	0	0	0	0	23	1	0	1	12	6	1	0	0	0	0	0	0	21	2	0	4	23	14	1	0	0	0	0	0	0	44					
	17:15	0	0	7	9	5	0	0	0	0	0	0	0	21	0	0	5	13	3	0	0	0	0	0	0	0	21	0	0	12	22	8	0	0	0	0	0	0	0	42					
	17:30	0	0	3	10	4	1	0	0	0	0	0	0	18	0	0	5	10	2	0	0	0	0	0	0	0	17	0	0	8	20	6	1	0	0	0	0	0	0	35					
	17:45	0	1	5	6	6	1	0	0	0	0	0	0	19	0	0	8	17	9	0	0	0	0	0	0	0	34	0	1	13	23	15	1	0	0	0	0	0	0	53					
	18:00	0	0	7	10	5	1	0	0	0	0	0	0	23	0	1	4	7	5	1	0	0	0	0	0	0	18	0	1	11	17	10	2	0	0	0	0	0	0	41					
	18:15	0	1	6	12	11	2	0	0	0	0	0	0	32	0	1	3	9	5	2	0	0	0	0	0	0	20	0	2	9	21	16	4	0	0	0	0	0	0	52					
	18:30	0	2	3	3	1	1	0	0	0	0	0	0	10	0	3	2	4	2	0	0	0	0	0	0	0	11	0	5	5	7	3	1	0	0	0	0	0	0	21					
	18:45	0	0	4	11	6	1	0	0	0	0	0	0	22	0	2	1	9	5	3	0	0	0	0	0	0	20	0	2	5	20	11	4	0	0	0	0	0	0	42					
	19:00	0	2	3	4	3	1	0	0	0	0	0	0	13	1	0	3	4	3	0	0	0	0	0	0	0	11	1	2	6	8	6	1	0	0	0	0	0	0	24					
	19:15	0	0	2	3	2	1	0	0	0	0	0	0	8	0	3	5	11	4	0	0	0	0	0	0	0	23	0	3	7	14	6	1	0	0	0	0	0	0	31					
	19:30	1	0	4	11	7	0	0	0	0	0	0	0	23	2	0	1	1	2	0	0	0	0	0	0	0	6	6	3	0	5	7	12	9	0	0	0	0	0	29					
	19:45	0	3	3	4	1	0	0	0	0	0	0	0	11	0	2	1	3	1	0	0	0	0	0	0	0	7	0	5	4	7	2	0	0	0	0	0	0	0	18					
	20:00	0	1	1	4	0	1	0	0	0	0	0	0	7	0	0	0	3	1	0	1	0	0	0	0	0	7	0	0	3	1	7	1	1	1	0	0	0	0	14					
	20:15	1	0	2	4	3	0	0	0	0	0	0	0	10	3	1	4	3	1	1	0	0	0	0	0	0	11	4	1	3	8	4	1	0	0	0	0	0	0	21					
	20:30	1	0	1	3	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	4	0	0	0	0	0	0	0	0	6					
	20:45	0	1	2	2	6	0	0	0	0	0	0	0	11	0	1	1	5	1	0	0	0	0	0	0	0	8	0	2	3	7	7	0	0	0	0	0	0	0	19					
	21:00	0	0	4	5	4	1	0	0	0	0	0	0	14	0	0	0	4	1	0	0	0	0	0	0	0	5	0	0	4	9	5	1	0	0	0	0	0	0	19					
	21:15	0	0	8	2	6	1	0	0	0	0	0	0	17	0	0	3	3	2	1	0	0	0	0	0	0	9	0	0	11	5	8	2	0	0	0	0	0	0	26					
	21:30	0	0	7	19	5	1	0	0	0	0	0	0	32	0	1	1	2	4	0	0	0	0	0	0	0	8	0	1	8	21	9	1	0	0	0	0	0	0	40					
	21:45	0	0	3	9	5	0	0	0	0	0	0	0	17	0	0	1	4	0	1	0	0	0	0	0	0	6	0	0	4	13	5	1	0	0	0	0	0	0	23					
22:00	0	0	1	4	1	0	0	0	0	0	0	0	6	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	4	2	0	0	0	0	0	0	0	7						
22:15	0	0	2	4	1	0	0	0	0	0	0	0	7	1	0	0	2	2	0	0	0	0	0	0	0	5	1	0	2	6	3	0	0	0	0	0	0	0	12						
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
22:45	0	0	0	1	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	3					
23:00	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	2	0	0	0	0	0	0	0	5	0	1	1	1	1	2	0	1	0	0	0	0	0	6					
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1					
23:30	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2						
23:45	0	0	1	0	0	0	0	0	0																																				

D. TIMS CRASH DATA

City of Redondo Beach

Traffic Engineering

From 10/09/19 to 10/09/24

Total Collisions: 5

Injury Collisions: 4 Total Injured: 4

Fatal Collisions: 0 Total Killed: 0

Collision Summary Report

10/9/24

DIAMOND ST from PACIFIC COAST HWY to PROSPECT AV

Page 1 of 2

8968738	11/05/19	18:01	Tuesday	DIAMOND ST - LUCIA AV	0'	Direction: Not Stated	Dark - Street Ligh	Clear	Pty at Fault:1
	Broadside		Bicycle	Improper Turning	22107	Hit & Run: Felony	Complaint of Pain	# Inj: 1	# Killed: 0
Party 1 Driver	East	Making Right Turn		Not Sta	Age: 0	OTHER - TRUCK	Pickups & Panels		No Injury
Veh Type: Pickup Truck		Sobriety: Impairment Not Kno		Assoc Factor: Not Stated		Unknown	Not Stated		
Party 2 Bicyclist	East	Proceeding Straight		Male	Age: 15	0 -	Bicycle		No Injury
Veh Type: Bicycle		Sobriety: HNBD		Assoc Factor: Not Stated		Not Stated	Not Stated		
9020599	12/12/19	11:20	Thursday	PACIFIC COAST HWY - DIAMOND ST	0'	Direction: Not Stated	Daylight	Clear	Pty at Fault:1
	Broadside		Other Motor Vehicle	Traffic Signals and Signs	21453A	Hit & Run: No	Complaint of Pain	# Inj: 1	# Killed: 0
Party 1 Driver	South	Proceeding Straight		Male	Age: 87	2015 MERCEDES-BENZ	Passenger Car, Station Wagon, Jeep		No Injury
Veh Type: Passenger Car		Sobriety: HNBD		Assoc Factor: Not Stated		Air Bag Not Deployed	Not Stated		
Party 2 Driver	East	Proceeding Straight		Female	Age: 28	2005 TOYOTA	Passenger Car, Station Wagon, Jeep		Complaint of Pain
Veh Type: Passenger Car		Sobriety: HNBD		Assoc Factor: Not Stated		Air Bag Not Deployed	Not Stated		
24-000021	01/02/24	05:05	Tuesday	HELBERTA AV - DIAMOND ST	0'	Direction: Not Stated	Dark - Street Ligh	Clear	Pty at Fault:1
	Head-On		Parked Motor Vehicle	Unsafe Speed	22350	Hit & Run: Misde	Property Damage Only	# Inj: 0	# Killed: 0
Party 1 Driver	NORT	Other		Not Sta	Age: 2013	Toyota	Sport Utility Vehicle		
Veh Type:		Sobriety: Not Applicable		Assoc Factor: None Apparent			Not Stated		
Party 2 Parked Vehicle	SOUT	Parked		Not Sta	Age: 2022	Subaru	Sport Utility Vehicle		
Veh Type:		Sobriety: Not Applicable		Assoc Factor: None Apparent			Not Stated		
24-000145	01/08/24	09:19	Monday	DIAMOND ST - GUADALUPE AV	0'	Direction: Not Stated	Daylight	Clear	Pty at Fault:1
	Sideswipe		Bicycle	Improper Turning	22107	Hit & Run: No	Other Visible Injury	# Inj: 1	# Killed: 0
Party 1 Driver	WEST	Making Right Turn		F	Age: 65	2020 FORD	EDGE	Sport Utility Vehicle	
Veh Type:		Sobriety: HNBD		Assoc Factor: None Apparent		Lap/Shoulder Harness Used	Cell Phone Not In Use		
Party 2 Bicyclist	WEST	Proceeding Straight		F	Age: 15	2020 RAD POWER BIK	EBIKE	Bicycle	
Veh Type:		Sobriety: HNBD		Assoc Factor: None Apparent		M/C Bicycle Helmet Driver - Y	Cell Phone Not In Use		
24-000383	01/19/24	08:30	Friday	DIAMOND ST - GUADALUPE AV	0'	Direction: Not Stated	Daylight	Cloudy	Pty at Fault:1
	Sideswipe		Bicycle	Improper Turning	22107	Hit & Run: No	Other Visible Injury	# Inj: 1	# Killed: 0
Party 1 Driver	WEST	Making Right Turn		F	Age: 45	2004 Acura	TI	Passenger Car, Station Wagon, Jeep	
Veh Type:		Sobriety: HNBD		Assoc Factor: Violation		Lap/Shoulder Harness Used	Cell Phone Not In Use		
Party 2 Bicyclist	WEST	Proceeding Straight		F	Age: 17		BIRD	Electric Bicycle	
Veh Type:		Sobriety: HNBD		Assoc Factor: None Apparent		M/C Bicycle Helmet Driver - Y	Cell Phone Not In Use		

Segment Length: 0.68 miles (3,601')

Collisions per mile: 7.33

Settings for Query:

Segment: DIAMOND ST between PACIFIC COAST HWY and PROSPECT AV
Include Intersection Related at Limit 1 (PACIFIC COAST HWY): True
Include Intersection Related at Limit 2 (PROSPECT AV): True
Include Intersection Related at Intermediate Intersections: True
Sorted By: Date and Time

Transportation Injury Mapping System (TIMS) Crash Data (Dec 2019 – June 2024)

CASE_ID	ACCIDENT_YEAR	PROC_DATE	JURIS	COLLISION_DATE	COLLISION_TIME	Time_format	OFFICER_ID
8968738	2019	2/7/2020	1956	11/5/2019	1801	18:01	1206
9020599	2019	3/9/2020	1956	12/12/2019	1120	11:20	1328
9221408	2021	2/23/2021	1956	1/21/2021	2108	21:08	1272
9402944	2022	2/10/2022	1956	1/6/2022	1056	10:56	1292
9392789	2022	2/1/2022	1956	1/8/2022	825	8:25	1379
9379708	2022	2/4/2022	1956	1/8/2022	1232	12:32	1379
9414543	2022	3/24/2022	1956	3/5/2022	1904	19:04	1362
9440021	2022	5/12/2022	1956	4/7/2022	1535	15:35	1335
9442115	2022	5/17/2022	1956	4/29/2022	810	8:10	1370
9442118	2022	5/17/2022	1956	4/29/2022	752	7:52	1372
9536515	2022	1/20/2023	1956	10/15/2022	2303	23:03	1292
9536151	2022	1/3/2023	1956	10/28/2022	1540	15:40	1390
9577181	2023	5/26/2023	1956	4/27/2023	1544	15:44	1292
9683231	2023	5/16/2024	1956	9/18/2023	330	3:30	1372
9652652	2024	3/28/2024	1956	1/8/2024	919	9:19	1372
9667460	2024	3/30/2024	1956	1/19/2024	830	8:30	1384
				1/2/2024	505	5:05	

CASE_ID	REPORTING_DISTRICT	DAY_OF_WEEK	CHP_SHIFT	POPULATION	CNTY_CITY_LOC	SPECIAL_COND	BEAT_TYPE
8968738		26	2	5	5	1956	0
9020599		20	4	5	5	1956	0
9221408		20	4	5	5	1956	0
9402944		26	4	5	5	1956	0
9392789			6	5	5	1956	0
9379708			6	5	5	1956	0
9414543	25-Feb		6	5	5	1956	0
9440021		28	4	5	5	1956	0
9442115		26	5	5	5	1956	0
9442118		23	5	5	5	1956	0
9536515		20	6	5	5	1956	0
9536151		23	5	5	5	1956	0
9577181		25	4	5	5	1956	0
9683231		9	1	5	5	1956	0
9652652		25	1	5	5	1956	0
9667460		25	5	5	5	1956	0
			2			1956	

CASE_ID	CHP_BEAT_TYPE	CITY_DIVISION_LAPD	CHP_BEAT_CLASS	BEAT_NUMBER	PRIMARY_RD	SECONDARY_RD
8968738	0		0	2	DIAMOND ST	LUCIA AV
9020599	0		0	2	RT 1	DIAMOND ST
9221408	0		0	2	RT 1	DIAMOND ST
9402944	0		0	2	N PROSPECT AV	DIAMOND ST
9392789	0		0	2	FRANCISCA AV	DIAMOND ST
9379708	0		0		RT 1	DIAMOND ST
9414543	0		0	2	PACIFIC COAST HWY	DIAMOND ST
9440021	0		0	2	PROSPECT AV	DAIMOND ST
9442115	0		0	2	DIAMOND ST	MARIA AV
9442118	0		0	2	DIAMOND ST	FRANCISCA AV
9536515	0		0	2	RT 1	DIAMOND ST
9536151	0		0	2	DIAMOND ST	PACIFIC COAST HWY
9577181	0		0	2	DIAMOND ST	IRENA AVE
9683231	0		0	1	DIAMOND AV	JUANITA AV
9652652	0		0	2	DIAMOND ST	GUADALUPE AV
9667460	0		0	2	DIAMOND ST	GUADALUPE AV
					HELBERTA AV	DIAMOND ST

CASE_ID	DISTANCE	DIRECTION	INTERSECTION	WEATHER_1	WEATHER_2	STATE_HWY_IND	CALTRANS_COUNTY
8968738	0		Y	A	-	N	
9020599	0		Y	A	-	Y	LA
9221408	0		Y	A	-	Y	LA
9402944	75 S		N	A	-	N	
9392789	0		Y	A	-	N	
9379708	0		N	A	-	Y	LA
9414543	0		Y	A	-	Y	LA
9440021	47 N		N	A	-	N	
9442115	0		Y	A	-	N	
9442118	10 E		N	A	-	N	
9536515	0		Y	B	-	Y	LA
9536151	0		Y	A	-	Y	LA
9577181	69 E		N	B	-	N	
9683231	0		Y	A	-	N	
9652652	0		Y	A	-	N	
9667460	0		Y	B	-	N	
	0		Y			N	

CASE_ID	RAMP_INTERSECTION	SIDE_OF_HWY	TOW_AWAY	COLLISION_SEVERITY	NUMBER_KILLED	NUMBER_INJURED
8968738			N		4	0
9020599		5 S	Y		4	0
9221408		5 N	Y		3	0
9402944			Y		3	0
9392789			N		4	0
9379708		5 N	Y		4	0
9414543		5 N	Y		4	0
9440021			N		4	0
9442115			N		4	0
9442118			N		3	0
9536515		5 S	Y		3	0
9536151		6 N	N		4	0
9577181			N		3	0
9683231					3	0
9652652			N		3	0
9667460			N		3	0
					0	0

CASE_ID	PARTY_COUNT	PRIMARY_COLL_FACTOR	PCF_CODE_OF_VIOL	PCF_VIOL_CATEGORY	PCF_VIOLATION
8968738	2	A	-	8	22107
9020599	2	A	-	12	21453
9221408	2	A	-	9	21801
9402944	2	A	-	3	22350
9392789	2	A	-	12	22450
9379708	2	A	-	9	21801
9414543	2	A	-	9	21801
9440021	2	A	-	8	22107
9442115	2	A	-	9	21802
9442118	2	A	-	9	21801
9536515	2	A	-	2	22400
9536151	2	A	-	3	22350
9577181	2	A	-	0	21760
9683231	2	A	-	12	22450
9652652	2	A	-	8	22107
9667460	2	A	-	8	22107
	2	A		3	22350

CASE_ID	PCF_VIOL_SUBSECTION	HIT_AND_RUN	TYPE_OF_COLLISION	MVIW	PED_ACTION	ROAD_SURFACE	ROAD_COND_1
8968738		F	D	G	A	A	H
9020599 A		N	D	C	A	A	H
9221408 A		N	D	C	A	A	H
9402944		N	C	C	A	A	H
9392789 A		N	D	G	A	A	H
9379708 A		N	D	C	A	A	H
9414543 A		N	A	C	A	A	H
9440021		N	B	C	A	A	H
9442115 A		N	D	C	A	A	H
9442118 A		N	D	G	A	A	H
9536515 A		N	C	C	A	A	A
9536151		F	G	G	F	A	H
9577181 C		N	B	G	A	A	H
9683231 A		F	G	-	B	A	H
9652652		N	B	G	A	A	H
9667460		N	H	G	A	A	A
		M	A				

CASE_ID	ROAD_COND_2	LIGHTING	CONTROL_DEVICE	CHP_ROAD_TYPE	PEDESTRIAN_ACCIDENT	BICYCLE_ACCIDENT
8968738 -		C	D		0	Y
9020599 -		A	A		0	
9221408 -		C	A		0	
9402944 -		A	A		0	
9392789 -		A	D		0	Y
9379708 -		A	A		0	
9414543 -		C	A		0	
9440021 -		A	D		0	
9442115 -		A	-		0	
9442118 -		A	A		0	Y
9536515 H		C	-		0	
9536151 -		A	D		0 Y	Y
9577181 -		A	D		0	Y
9683231 -		A	A		0 Y	Y
9652652 -		A	D		0	Y
9667460 -		A	D		0	Y

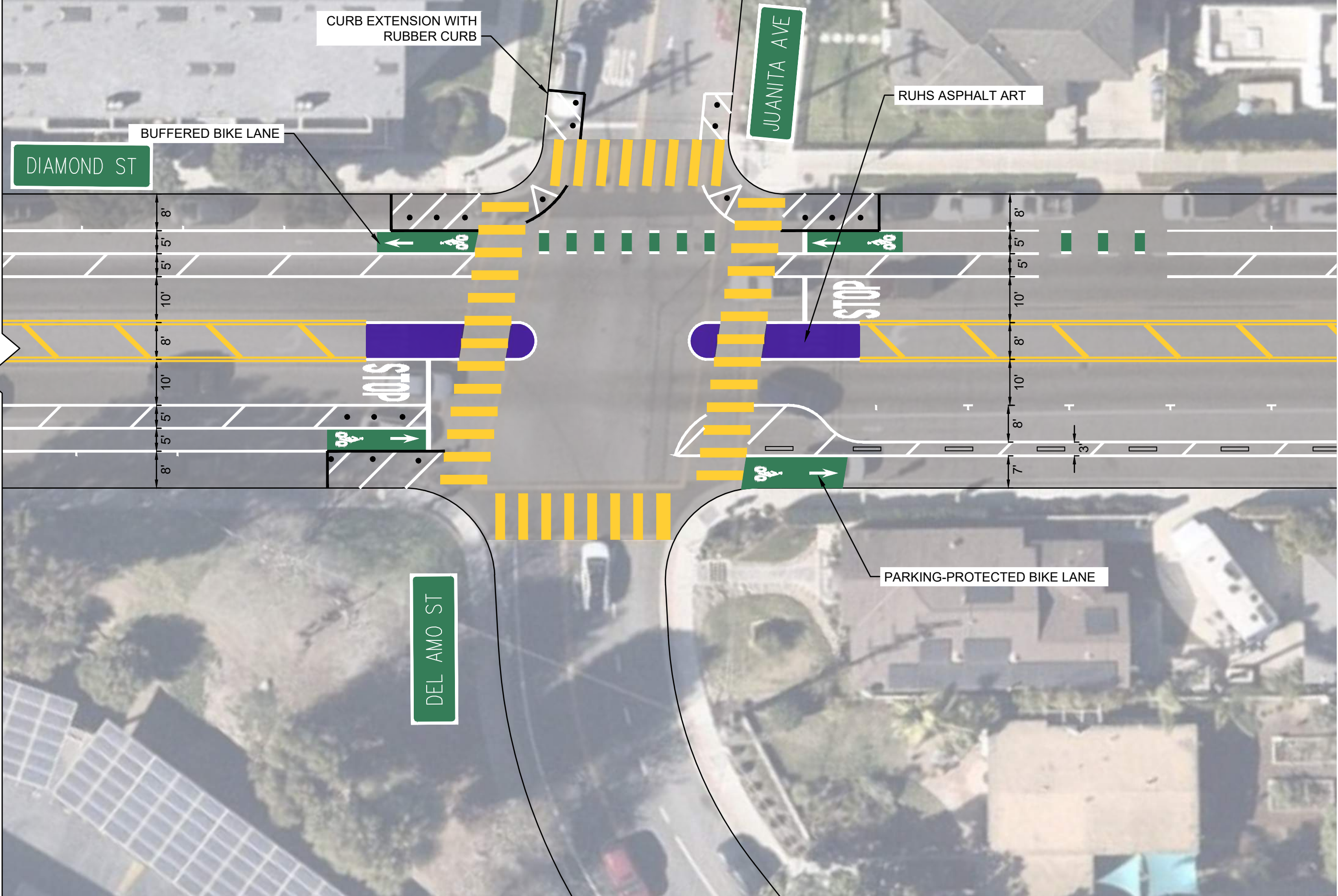
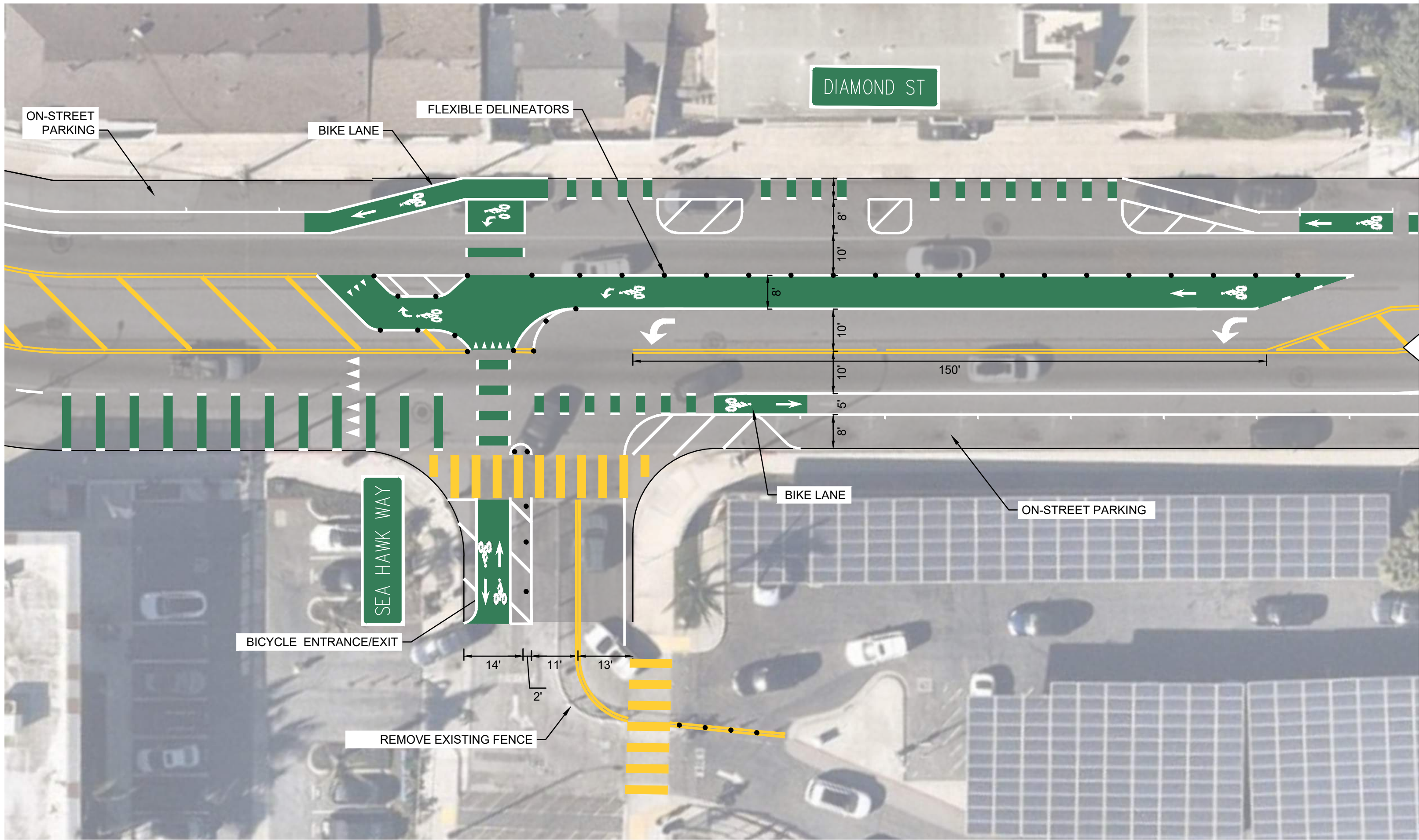
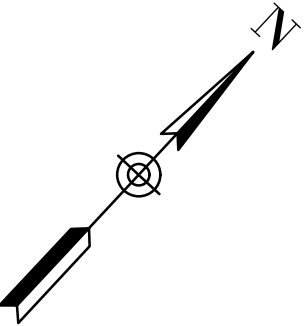
CASE_ID	MOTORCYCLE_ACCIDENT	TRUCK_ACCIDENT	NOT_PRIVATE_PROPERTY	ALCOHOL_INVOLVED	STWD_VEHTYPE_AT_FAULT
8968738			Y		D
9020599			Y		A
9221408			Y		A
9402944			Y		A
9392789			Y		L
9379708			Y		D
9414543			Y		A
9440021			Y		A
9442115			Y		A
9442118			Y		L
9536515	Y		Y	Y	C
9536151			Y		L
9577181			Y		A
9683231			Y		L
9652652			Y		A
9667460			Y		A
			Y		A

CASE_ID	CHP_VEHTYPE_AT_FAULT	COUNT_SEVERE_INJ	COUNT_VISIBLE_INJ	COUNT_COMPLAINT_PAIN	COUNT_PED_KILLED
8968738	22	0	0	1	0
9020599	1	0	0	1	0
9221408	1	0	2	0	0
9402944	1	0	1	2	0
9392789	4	0	0	1	0
9379708	22	0	0	1	0
9414543	7	0	0	1	0
9440021	1	0	0	1	0
9442115	1	0	0	1	0
9442118	4	0	1	0	0
9536515	2	0	1	0	0
9536151	4	0	0	1	0
9577181	1	0	1	0	0
9683231	4	0	1	0	0
9652652	7	0	1	0	0
9667460	1	0	1	0	0
	7	0	0	0	0

CASE_ID	COUNT_PED_INJURED	COUNT_BICYCLIST_KILLED	COUNT_BICYCLIST_INJURED	COUNT_MC_KILLED	COUNT_MC_INJURED
8968738	0	0	1	0	0
9020599	0	0	0	0	0
9221408	0	0	0	0	0
9402944	0	0	0	0	0
9392789	0	0	1	0	0
9379708	0	0	0	0	0
9414543	0	0	0	0	0
9440021	0	0	0	0	0
9442115	0	0	0	0	0
9442118	0	0	1	0	0
9536515	0	0	0	0	1
9536151	1	0	0	0	0
9577181	0	0	1	0	0
9683231	1	0	0	0	0
9652652	0	0	1	0	0
9667460	0	0	1	0	0
	0	0	0	0	0

CASE_ID	PRIMARY_RAMP	SECONDARY_RAMP	LATITUDE	LONGITUDE	COUNTY	CITY	POINT_X	POINT_Y
8968738 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38155	33.8494911
9020599 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38726	33.8449707
9221408 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38726	33.8449707
9402944 -	-	-			LOS ANGELES	REDONDO BEACH	-118.37879	33.8516388
9392789 -	-	-	33.84568024	-118.3863907	LOS ANGELES	REDONDO BEACH	-118.38638	33.8456955
9379708 -	-	-	33.84497833	-118.3872833	LOS ANGELES	REDONDO BEACH	-118.38726	33.8449821
9414543 -	-	-	33.84497833	-118.3872833	LOS ANGELES	REDONDO BEACH	-118.38726	33.8449821
9440021 -	-	-	33.85174942	-118.3786697	LOS ANGELES	REDONDO BEACH	-118.3789	33.8517303
9442115 -	-	-	33.8502388	-118.3805313	LOS ANGELES	REDONDO BEACH	-118.38053	33.8502884
9442118 -	-	-	33.84568024	-118.2863922	LOS ANGELES	REDONDO BEACH	-118.38636	33.8457184
9536515 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38726	33.8449821
9536151 -	-	-	33.84497833	-118.3872833	LOS ANGELES	REDONDO BEACH	-118.38726	33.8449821
9577181 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38319	33.8481789
9683231 -	-	-	33.84878922	-118.3824692	LOS ANGELES	REDONDO BEACH	-118.38246	33.8487473
9652652 -	-	-			LOS ANGELES	REDONDO BEACH	-118.38518	33.8466797
9667460 -	-	-	33.84674072	-118.3852463	LOS ANGELES	REDONDO BEACH	-118.38518	33.8466797
					LOS ANGELES	REDONDO BEACH		

E. DIAMOND STREET PREFERRED DESIGN AND PROPOSED TREATMENTS



T'OOLE
DESIGN

PREFERRED ALTERNATIVE

REDONDO UNION HIGH ACCESS STUDY AND DESIGN
10/14/25

PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

H:\G0000102\LAX_00343_00_P_Redondo Union High Access Study and Design\PRODUCTION\CADD\PLANS\02\LAX_00343_00_TP_Prefered ALong 10/14/2025

THIS IS A PRELIMINARY CONCEPT. FIELD VERIFICATION, SITE CONDITION ASSESSMENTS, ENGINEERING ANALYSIS AND DESIGN ARE NECESSARY PRIOR TO IMPLEMENTING ANY OF THE RECOMMENDATIONS CONTAINED HEREIN.



A BIKE LANE, NO BUFFER



B PARKING-PROTECTED BIKE LANE



C BUFFERED BIKE LANE



D BICYCLE PARKING



E CURB EXTENSIONS AND ASPHALT ART
AT ALL-WAY STOP INTERSECTIONS



F BICYCLE CONFLICT MARKINGS

THIS IS A PRELIMINARY CONCEPT. FIELD VERIFICATION, SITE CONDITION ASSESSMENTS, ENGINEERING ANALYSIS AND DESIGN ARE NECESSARY PRIOR TO IMPLEMENTING ANY OF THE RECOMMENDATIONS CONTAINED HEREIN.

TOOLE
DESIGN

PROPOSED TREATMENTS
REDONDO UNION HIGH ACCESS STUDY AND DESIGN

PRELIMINARY CONCEPT - NOT FOR CONSTRUCTION

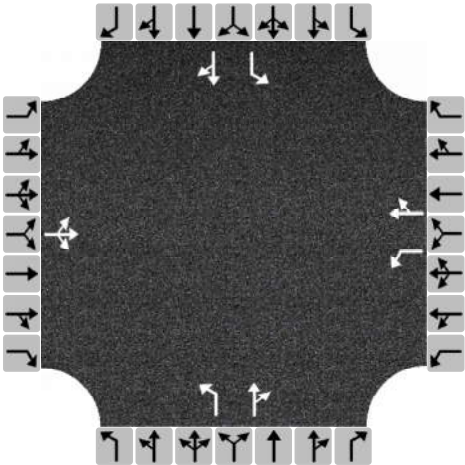
**F. HCS REPORT EXISTING AND PROPOSED
CONDITIONS - DEL AMO STREET/ N. JUANITA
AVENUE AND DIAMOND STREET**

HCS All-Way Stop Control Report

General and Site Information

Analyst	EK
Agency/Co.	Toole Design
Date Performed	3/17/2025
Analysis Year	2024
Analysis Time Period (hrs)	1.00
Time Analyzed	Existing AM Peak
Project Description	Redondo Union High Access Study an...
Intersection	Diamond St at Del Amo St/Juanita Ave
Jurisdiction	Redondo Beach
East/West Street	Del Amo St/Juanita Ave
North/South Street	Diamond St
Peak Hour Factor	0.70

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	6	72	43	123	36	6	22	145	131	24	201	11
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	174			176	60		32	396		34	304	
Percent Heavy Vehicles	2			2	2		2	2		2	2	
Initial Departure Headway, h _d (s)	3.20			3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.154			0.157	0.054		0.028	0.352		0.031	0.270	
Final Departure Headway, h _d (s)	7.13			7.74	7.13		7.15	6.30		7.28	6.73	
Final Degree of Utilization, x	0.344			0.379	0.119		0.063	0.693		0.070	0.569	
Move-Up Time, m (s)	2.0			2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t _s (s)	5.13			5.44	4.83		4.85	4.00		4.98	4.43	

Capacity, Delay and Level of Service

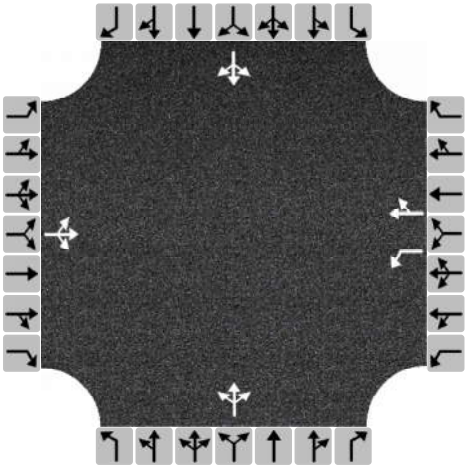
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	174			176	60		32	396		34	304	
Capacity (veh/h)	505			465	505		504	571		495	535	
95% Queue Length, Q ₉₅ (veh)	1.6			1.8	0.4		0.2	6.3		0.2	3.8	
95% Queue Length, Q ₉₅ (ft)	40.6			45.7	10.2		5.1	160.0		5.1	96.5	
Control Delay (s/veh)	13.9			15.1	10.8		10.3	22.9		10.5	18.2	
Level of Service, LOS	B			C	B		B	C		B	C	
Approach Delay (s/veh) LOS	13.9	B		14.0	B		22.0	C		17.4	C	
Intersection Delay (s/veh) LOS	17.9						C					

HCS All-Way Stop Control Report

General and Site Information

Analyst	CB
Agency/Co.	Toole Design
Date Performed	3/25/2025
Analysis Year	2024
Analysis Time Period (hrs)	1.00
Time Analyzed	Rerouting AM Peak
Project Description	Redondo Union High Access Study an...
Intersection	Diamond St at Del Amo St/Juanita Ave
Jurisdiction	Redondo Beach
East/West Street	Del Amo St/Juanita Ave
North/South Street	Diamond St
Peak Hour Factor	0.70

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	6	72	43	207	36	76	22	41	96	24	201	11
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		LTR			LTR		
Flow Rate, v (veh/h)	174			297	161		228			339		
Percent Heavy Vehicles	2			2	2		2			2		
Initial Departure Headway, h _d (s)	3.20			3.20	3.20		3.20			3.20		
Initial Degree of Utilization, x	0.154			0.264	0.143		0.203			0.301		
Final Departure Headway, h _d (s)	6.65			7.23	6.23		6.29			6.33		
Final Degree of Utilization, x	0.321			0.596	0.278		0.399			0.595		
Move-Up Time, m (s)	2.0			2.3	2.3		2.0			2.0		
Service Time, t _s (s)	4.65			4.93	3.93		4.29			4.33		

Capacity, Delay and Level of Service

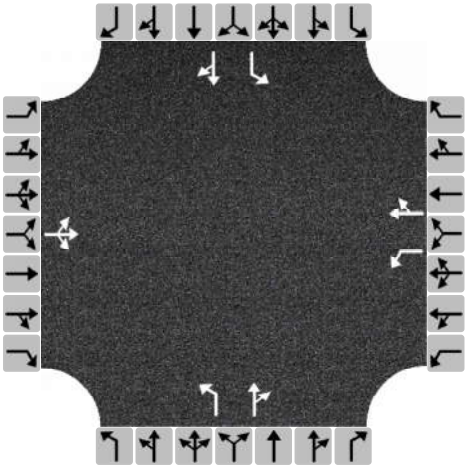
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		LTR			LTR		
Flow Rate, v (veh/h)	174			297	161		228			339		
Capacity (veh/h)	541			498	578		572			569		
95% Queue Length, Q ₉₅ (veh)	1.4			4.3	1.1		2.0			4.3		
95% Queue Length, Q ₉₅ (ft)	35.6			109.2	27.9		50.8			109.2		
Control Delay (s/veh)	12.8			20.4	11.3		13.4			18.5		
Level of Service, LOS	B			C	B		B			C		
Approach Delay (s/veh) LOS	12.8		B	17.2		C	13.4		B	18.5		C
Intersection Delay (s/veh) LOS	16.2						C					

HCS All-Way Stop Control Report

General and Site Information

Analyst	CB
Agency/Co.	Toole Design
Date Performed	3/25/2025
Analysis Year	2024
Analysis Time Period (hrs)	1.00
Time Analyzed	Existing PM Peak
Project Description	Redondo Union High Access Study an...
Intersection	Diamond St at Del Amo St/Juanita Ave
Jurisdiction	Redondo Beach
East/West Street	Del Amo St/Juanita Ave
North/South Street	Diamond St
Peak Hour Factor	0.70

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	9	46	18	120	50	20	9	100	124	17	127	15
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	105			172	100		13	321		24	204	
Percent Heavy Vehicles	2			2	2		2	2		2	2	
Initial Departure Headway, h _d (s)	3.20			3.20	3.20		3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.093			0.153	0.089		0.011	0.286		0.022	0.181	
Final Departure Headway, h _d (s)	6.44			6.78	6.07		6.57	5.67		6.70	6.12	
Final Degree of Utilization, x	0.187			0.324	0.169		0.024	0.506		0.045	0.346	
Move-Up Time, m (s)	2.0			2.3	2.3		2.3	2.3		2.3	2.3	
Service Time, t _s (s)	4.44			4.48	3.77		4.27	3.37		4.40	3.82	

Capacity, Delay and Level of Service

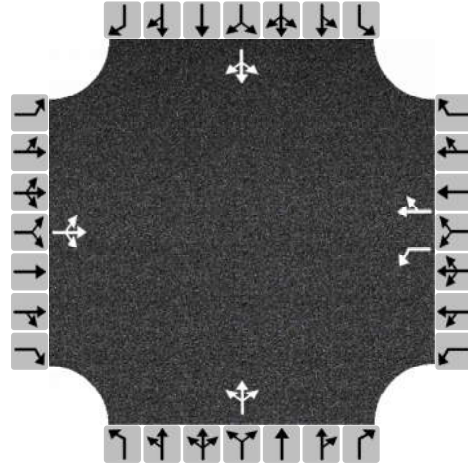
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		L	TR		L	TR	
Flow Rate, v (veh/h)	105			172	100		13	321		24	204	
Capacity (veh/h)	559			531	593		548	635		537	588	
95% Queue Length, Q ₉₅ (veh)	0.7			1.4	0.6		0.1	3.0		0.1	1.6	
95% Queue Length, Q ₉₅ (ft)	17.8			35.6	15.2		2.5	76.2		2.5	40.6	
Control Delay (s/veh)	10.9			12.7	10.0		9.4	14.2		9.7	12.1	
Level of Service, LOS	B			B	B		A	B		A	B	
Approach Delay (s/veh) LOS	10.9		B	11.7		B	14.0		B	11.8		B
Intersection Delay (s/veh) LOS	12.5						B					

HCS All-Way Stop Control Report

General and Site Information

Analyst	CB
Agency/Co.	Toole Design
Date Performed	3/25/2025
Analysis Year	2024
Analysis Time Period (hrs)	1.00
Time Analyzed	Rerouting PM Peak
Project Description	Redondo Union High Access Study an...
Intersection	Diamond St at Del Amo St/Juanita Ave
Jurisdiction	Redondo Beach
East/West Street	Del Amo St/Juanita Ave
North/South Street	Diamond St
Peak Hour Factor	0.70

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	9	46	18	172	50	50	9	56	109	17	127	15
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			L	TR		LTR			LTR		
Flow Rate, v (veh/h)	105			247	143		250			228		
Percent Heavy Vehicles	2			2	2		2			2		
Initial Departure Headway, h_d (s)	3.20			3.20	3.20		3.20			3.20		
Initial Degree of Utilization, x	0.093			0.219	0.128		0.222			0.203		
Final Departure Headway, h_d (s)	5.97			6.56	5.70		5.36			5.70		
Final Degree of Utilization, x	0.174			0.449	0.227		0.372			0.361		
Move-Up Time, m (s)	2.0			2.3	2.3		2.0			2.0		
Service Time, t_s (s)	3.97			4.26	3.40		3.36			3.70		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound						
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3				
Configuration	LTR			L	TR		LTR			LTR						
Flow Rate, v (veh/h)	105			247	143		250			228						
Capacity (veh/h)	603			549	632		672			631						
95% Queue Length, Q ₉₅ (veh)	0.6			2.4	0.9		1.8			1.7						
95% Queue Length, Q ₉₅ (ft)	15.2			61.0	22.9		45.7			43.2						
Control Delay (s/veh)	10.2			14.6	10.1		11.5			11.9						
Level of Service, LOS	B			B	B		B			B						
Approach Delay (s/veh) LOS	10.2		B		12.9		B		11.5		B		11.9		B	
Intersection Delay (s/veh) LOS	12.0						B									

G. HCS REPORT EXISTING AND PROPOSED CONDITIONS - FRANCISCA AVENUE AND DIAMOND ST

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	204	5	22	183	15	1	0	0	12	0	21
Future Vol, veh/h	15	204	5	22	183	15	1	0	0	12	0	21
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	304	7	33	273	22	1	0	0	18	0	31
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	11	10.6	8.8	8.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	100%	0%	100%	0%	36%
Vol Thru, %	0%	0%	98%	0%	92%	0%
Vol Right, %	0%	0%	2%	0%	8%	64%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	15	209	22	198	33
LT Vol	1	15	0	22	0	12
Through Vol	0	0	204	0	183	0
RT Vol	0	0	5	0	15	21
Lane Flow Rate	1	22	312	33	296	49
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.002	0.034	0.425	0.05	0.4	0.07
Departure Headway (Hd)	5.743	5.428	4.909	5.431	4.875	5.142
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	622	661	736	661	739	696
Service Time	3.79	3.15	2.631	3.152	2.596	3.179
HCM Lane V/C Ratio	0.002	0.033	0.424	0.05	0.401	0.07
HCM Control Delay, s/veh	8.8	8.3	11.2	8.4	10.8	8.6
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0	0.1	2.1	0.2	1.9	0.2

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	204	5	22	183	15	1	0	0	12	0	21
Future Vol, veh/h	15	204	5	22	183	15	1	0	0	12	0	21
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	304	7	33	273	22	1	0	0	18	0	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.4	10.3	8.7	8.5
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	100%	7%	10%	36%
Vol Thru, %	0%	91%	83%	0%
Vol Right, %	0%	2%	7%	64%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	224	220	33
LT Vol	1	15	22	12
Through Vol	0	204	183	0
RT Vol	0	5	15	21
Lane Flow Rate	1	334	328	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.409	0.4	0.069
Departure Headway (Hd)	5.656	4.4	4.386	5.056
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	631	819	821	707
Service Time	3.703	2.419	2.405	3.097
HCM Lane V/C Ratio	0.002	0.408	0.4	0.069
HCM Control Delay, s/veh	8.7	10.4	10.3	8.5
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0	2	1.9	0.2

Intersection	
Intersection Delay, s/veh	21
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	145	131	24	201	11	123	36	6	6	72	43
Future Vol, veh/h	22	145	131	24	201	11	123	36	6	6	72	43
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	216	196	36	300	16	184	54	9	9	107	64
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay, s/veh	25.5	20.4	18.5	14.3
HCM LOS	D	C	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	77%	0%	7%	10%	5%
Vol Thru, %	23%	0%	49%	85%	60%
Vol Right, %	0%	100%	44%	5%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	6	298	236	121
LT Vol	123	0	22	24	6
Through Vol	36	0	145	201	72
RT Vol	0	6	131	11	43
Lane Flow Rate	237	9	445	352	181
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.517	0.017	0.752	0.636	0.363
Departure Headway (Hd)	7.837	6.72	6.09	6.496	7.233
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	458	528	592	553	500
Service Time	5.631	4.514	4.177	4.589	5.233
HCM Lane V/C Ratio	0.517	0.017	0.752	0.637	0.362
HCM Control Delay, s/veh	18.8	9.6	25.5	20.4	14.3
HCM Lane LOS	C	A	D	C	B
HCM 95th-tile Q	2.9	0.1	6.6	4.4	1.6

HCM 7th AWSC
3: Diamond & Francisca

05/09/2025

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	196	1	9	169	16	4	0	14	11	0	22
Future Vol, veh/h	15	196	1	9	169	16	4	0	14	11	0	22
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	284	1	13	245	23	6	0	20	16	0	32
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	10.6	10.4	8.2	8.4
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	22%	100%	0%	100%	0%	33%
Vol Thru, %	0%	0%	99%	0%	91%	0%
Vol Right, %	78%	0%	1%	0%	9%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	15	197	9	185	33
LT Vol	4	15	0	9	0	11
Through Vol	0	0	196	0	169	0
RT Vol	14	0	1	0	16	22
Lane Flow Rate	26	22	286	13	268	48
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.036	0.033	0.392	0.02	0.366	0.067
Departure Headway (Hd)	4.967	5.447	4.941	5.473	4.91	5.019
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	718	658	728	655	732	712
Service Time	3.014	3.175	2.669	3.201	2.638	3.062
HCM Lane V/C Ratio	0.036	0.033	0.393	0.02	0.366	0.067
HCM Control Delay, s/veh	8.2	8.4	10.8	8.3	10.5	8.4
HCM Lane LOS	A	A	B	A	B	A
HCM 95th-tile Q	0.1	0.1	1.9	0.1	1.7	0.2

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	100	124	17	127	15	120	50	20	9	46	18
Future Vol, veh/h	9	100	124	17	127	15	120	50	20	9	46	18
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	145	180	25	184	22	174	72	29	13	67	26
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	14.5	12.2	14.5	11.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	71%	0%	100%	0%	100%	0%	12%
Vol Thru, %	29%	0%	0%	45%	0%	89%	63%
Vol Right, %	0%	100%	0%	55%	0%	11%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	20	9	224	17	142	73
LT Vol	120	0	9	0	17	0	9
Through Vol	50	0	0	100	0	127	46
RT Vol	0	20	0	124	0	15	18
Lane Flow Rate	246	29	13	325	25	206	106
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.461	0.046	0.024	0.521	0.047	0.357	0.196
Departure Headway (Hd)	6.73	5.663	6.683	5.781	6.829	6.245	6.677
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	629	534	620	522	574	534
Service Time	4.492	3.424	4.446	3.544	4.598	4.013	4.758
HCM Lane V/C Ratio	0.46	0.046	0.024	0.524	0.048	0.359	0.199
HCM Control Delay, s/veh	15.2	8.7	9.6	14.7	9.9	12.5	11.4
HCM Lane LOS	C	A	A	B	A	B	B
HCM 95th-tile Q	2.4	0.1	0.1	3	0.1	1.6	0.7

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	196	1	9	169	16	4	0	14	11	0	22
Future Vol, veh/h	15	196	1	9	169	16	4	0	14	11	0	22
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	284	1	13	245	23	6	0	20	16	0	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	9.7	8.1	8.3
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	7%	5%	33%
Vol Thru, %	0%	92%	87%	0%
Vol Right, %	78%	0%	8%	67%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	212	194	33
LT Vol	4	15	9	11
Through Vol	0	196	169	0
RT Vol	14	1	16	22
Lane Flow Rate	26	307	281	48
Geometry Grp	1	1	1	1
Degree of Util (X)	0.035	0.377	0.343	0.065
Departure Headway (Hd)	4.869	4.42	4.397	4.924
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	814	818	726
Service Time	2.911	2.441	2.419	2.963
HCM Lane V/C Ratio	0.035	0.377	0.344	0.066
HCM Control Delay, s/veh	8.1	10.1	9.7	8.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.1	1.8	1.5	0.2

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	100	124	17	127	15	120	50	20	9	46	18
Future Vol, veh/h	9	100	124	17	127	15	120	50	20	9	46	18
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	145	180	25	184	22	174	72	29	13	67	26
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay, s/veh	13.2	11.9	14.1	10.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	71%	0%	4%	11%	12%
Vol Thru, %	29%	0%	43%	80%	63%
Vol Right, %	0%	100%	53%	9%	25%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	170	20	233	159	73
LT Vol	120	0	9	17	9
Through Vol	50	0	100	127	46
RT Vol	0	20	124	15	18
Lane Flow Rate	246	29	338	230	106
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.452	0.045	0.489	0.361	0.178
Departure Headway (Hd)	6.601	5.531	5.21	5.638	6.045
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	544	645	689	634	590
Service Time	4.358	3.288	3.268	3.704	4.119
HCM Lane V/C Ratio	0.452	0.045	0.491	0.363	0.18
HCM Control Delay, s/veh	14.7	8.6	13.2	11.9	10.4
HCM Lane LOS	B	A	B	B	B
HCM 95th-tile Q	2.3	0.1	2.7	1.6	0.6

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	145	131	24	201	11	123	36	6	6	72	43
Future Vol, veh/h	22	145	131	24	201	11	123	36	6	6	72	43
Peak Hour Factor	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	216	196	36	300	16	184	54	9	9	107	64
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay, s/veh	26.4	20	19	15.7
HCM LOS	D	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	77%	0%	100%	0%	100%	0%	5%
Vol Thru, %	23%	0%	0%	53%	0%	95%	60%
Vol Right, %	0%	100%	0%	47%	0%	5%	36%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	159	6	22	276	24	212	121
LT Vol	123	0	22	0	24	0	6
Through Vol	36	0	0	145	0	201	72
RT Vol	0	6	0	131	0	11	43
Lane Flow Rate	237	9	33	412	36	316	181
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.526	0.017	0.068	0.76	0.076	0.624	0.388
Departure Headway (Hd)	7.975	6.859	7.494	6.641	7.65	7.099	7.725
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	519	476	544	467	506	464
Service Time	5.753	4.637	5.265	4.411	5.424	4.873	5.816
HCM Lane V/C Ratio	0.525	0.017	0.069	0.757	0.077	0.625	0.39
HCM Control Delay, s/veh	19.3	9.8	10.8	27.6	11.1	21	15.7
HCM Lane LOS	C	A	B	D	B	C	C
HCM 95th-tile Q	3	0.1	0.2	6.7	0.2	4.2	1.8

H. STAKEHOLDER ENGAGEMENT SUMMARY

MEMORANDUM

January 17, 2025

To: Ryan Liu

Organization: City of Redondo Beach

From: Sofia Pollmann, PE

Project: Redondo Union High School Access Study and Design

Re: Stakeholder Meeting Summary

Attendees

1/8/2025 – General Stakeholder Meeting

Ryan Liu – Redondo Beach

Sofia Pollmann – Toole Design

Adam Vest – Toole Design

Nikki Vasquez – PTA/Resident

Annette Alpern – Deputy Superintendent/RBUSD

Brian Regan – Division Chief RBFD

Liam Wash – South Bay Bicycle Coalition.

Chuck Prestia – RBPd

1/16/2025 – Student Stakeholder Meeting

Ryan Liu

Sofia Pollmann

Vincent Huynh – RUHS Student, takes bus
and is driven by his parent to school

Kaia Weiss – RUHS Student, walks to
school

Kick-off Question: What would make Diamond Street a safer, more enjoyable place to travel?

beautification
relocate starbucks
protected bike lanes
safer crossings
clear bike lanes
traffic guards
more stop signs
separating diff modes
bikes having to stop

Improvements for Diamond Street Safety: 🚲 Protected bike lanes 🚦 Safer crossings 🌳 Beautification

Takeaways

Stop Signs

- Nikki highlighted the issue of teenagers not stopping at stop signs, causing anxiety for drivers.
- Participants discussed the effectiveness of stop signs and the behavior of teenagers at intersections. The consensus was that the main issue is not the lack of stop signs but the teenagers' disregard for them, leading to potential accidents and conflicts (though in many of the crashes reported, the driver was at fault and the person biking ended up injured)

Conflicts

- Participants discussed specific concerns along the study area, including the intersection of Del Amo and Diamond Street. Separating bike and car traffic was mentioned as a potential solution.
- Nikki suggested a crossing guard might help with conflicts at Del Amo and Diamond, but Chuck mentioned that crossing guards are prioritized for elementary and middle schools.
- Students go to Starbucks after school and bike and park on the sidewalk causing bike and pedestrian conflicts.

Bond Measure

School District Plans

- Annette discussed the bond measure that passed, which includes plans to convert a portion of the Redondo Union High School campus (Francisca Ave) into a vehicular turn-around drop-off area. This is expected to alleviate some of the traffic congestion on Diamond Street.
- The proposed turn-around drop-off area will involve converting part of the sidewalk to create a larger space for vehicles to enter, turn around, and exit. This will also include restriping parking spaces for staff and creating a designated drop-off zone for parents.

Traffic Circulation

- Annette shared her personal experience of navigating the school area and suggested that the new drop-off zone would help families coming from the north or south to use Pacific Coast Highway for drop-offs, reducing congestion on Diamond Street.
- The school board would need to approve any alternative proposals for the turn-around drop-off area. While the current plan is written into the facility master plan, the board is open to considering other options if presented.
- Annette mentioned that changes to the circulation on Sea Hawk Way, such as making it one-way during certain hours, was one of their goals already.

Bike Parking

- Annette mentioned that the school district is open to adding more bike parking to reduce conflicts between bikes and vehicles and the school would like to keep bike parking around the perimeter of the campus for safety reasons.

Student Input

Beautification

- Updating the outdated fences bordering the sidewalk/parking lot on Diamond St. and repainting the wall.
- The parking lot by the pool entrance also needs beautification.
- Adding more trees along Diamond Street would enhance the area

Pick-Up and Drop-Off Areas

- The Del Amo entrance to the school parking lot is less congested and easier to navigate.
- On game days when the parking lot is full, walking through the parking lot is tricky.
- The students suggested creating additional drop-off locations, particularly near the faculty parking lot (Francisca Ave), to alleviate congestion and improve traffic flow.

E-Bike Safety Concerns

- The students shared that while some E-bike drivers are responsible, others are reckless, causing safety concerns for pedestrians and drivers.
- While E-bikes can be an issue due to reckless riders, the main issue with E-bikes is the overcrowding and traffic congestion caused by having a single central parking spot for E-bikes. Vincent suggested creating multiple parking spots to distribute the traffic and reduce congestion.

Bus Transportation Issues

- Long lines for the express bus are due to its limited availability and the fact that it bypasses the transit center, making it the fastest option for students who live far from the school. Vincent mentioned that the normal bus route takes an extra 20 minutes due to the transit center stop.
- Recommendation to add more than one express bus to accommodate the high demand and reduce the long lines. Vincent noted that this would help students who have classes on the other side of the school and find it difficult to make it to the express bus stop on time.
- Kaia mentioned that her friend's schedule is dictated by the bus schedule, and she sometimes has to miss tutoring sessions to ensure she catches the express bus.
- There is a need for better bus transportation options to accommodate students' schedules.

Parking Lot Challenges

- The students highlighted issues with the parking lot near the pool entrance, including difficulty navigating when crowded and the need for an additional entrance and exit to improve traffic flow.
- Kaia observed that cars often double park in the parking lot, which further complicates navigation and contributes to congestion.

Speeding and Crashes

- The students mentioned speeding issues, particularly on Juanita and downhill towards PCH.
- E-bike riders tend to speed downhill towards PCH, often performing wheelies and other stunts. This behavior creates a dangerous situation for both pedestrians and cars, especially at the crosswalk for the bus stop at Helena.

Next Steps

- Schedule Community Meeting - Encourage meeting participants to attend and share the word about the upcoming public meeting
- ~~Meet with students to gather their perspectives~~
- Focus on: limiting conflict points, improving predictability and encouraging better behavior through design.
- Think about: how to best get each user thinking about the other modes' perspective.

I. COMMUNITY ENGAGEMENT SUMMARY

Redondo Union High Access Study

Community Meeting
February 19, 2025

TOOLE
DESIGN



REDONDO
BEACH



Meeting Format

Today's meeting is being recorded



Attendee cameras are encouraged, and microphones are muted.



Questions can be submitted throughout the presentation using the chat function.



Mentimeter – interactive polling software to gather your input throughout the presentation.

Agenda

- Introductions
- Project Overview
- Existing Conditions
- Concepts and Discussion
- Next Steps

Introductions



Presenters



Todd Loewenstein

*City of Redondo Beach
Council Member*



Ryan Liu

*City of Redondo Beach
Project Manager*



Adam Vest

*Toole Design
Principal Engineer*



Sofia Pollmann

*Toole Design
Project Manager (Engineer)*

What's your relation to the school? (staff, student, parent, neighbor, etc)

0
Staff

0
Student

1
Parent

17
Neighbor

4
Other

How do you get to and from the Redondo Union High School area?

39 responses

drive auto
walk
biking vehicle bike car running

Project Overview



Purpose

- Gather **data and community input** on the experience of traveling in the study area
- Identify short-term treatments that create a **safer and more accessible Diamond Street**
- Provide **recommendations** on **pickup and drop-off zones** at RUHS
- Potentially **implement “quick-build” changes** as part of Diamond Street repaving.



Project Timeline



What does the RUHS area look like today?



Project Area



Legend

-  Redondo Union High School
-  Study Streets

0 500 ft



Diamond Street between N Helberta Avenue and N Irena Ave

Pickup & Drop-offs

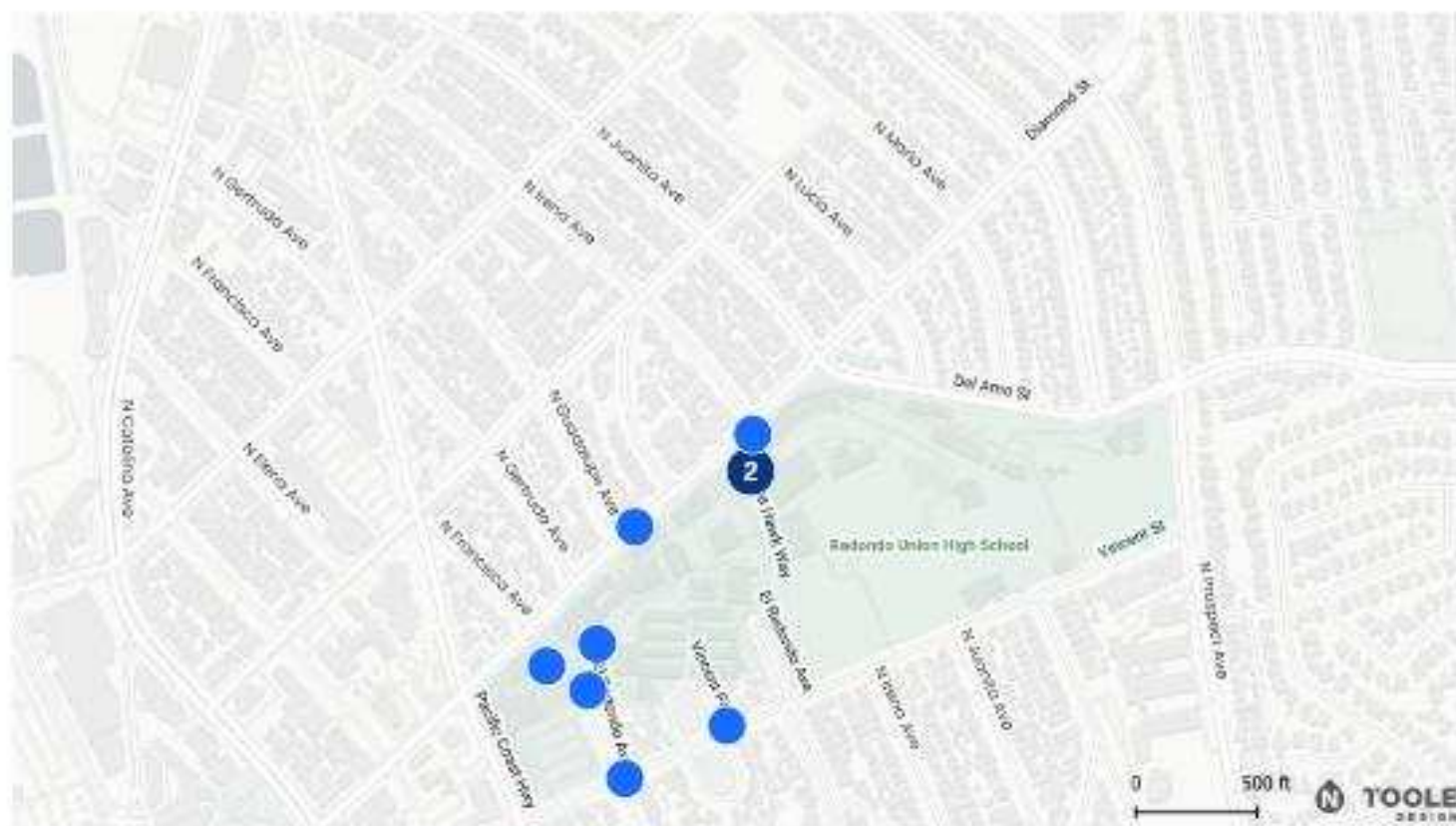
What we heard: “An additional drop-off zone along Francisca Ave. could help families coming from PCH.”

Pick-ups/drop-offs along Diamond

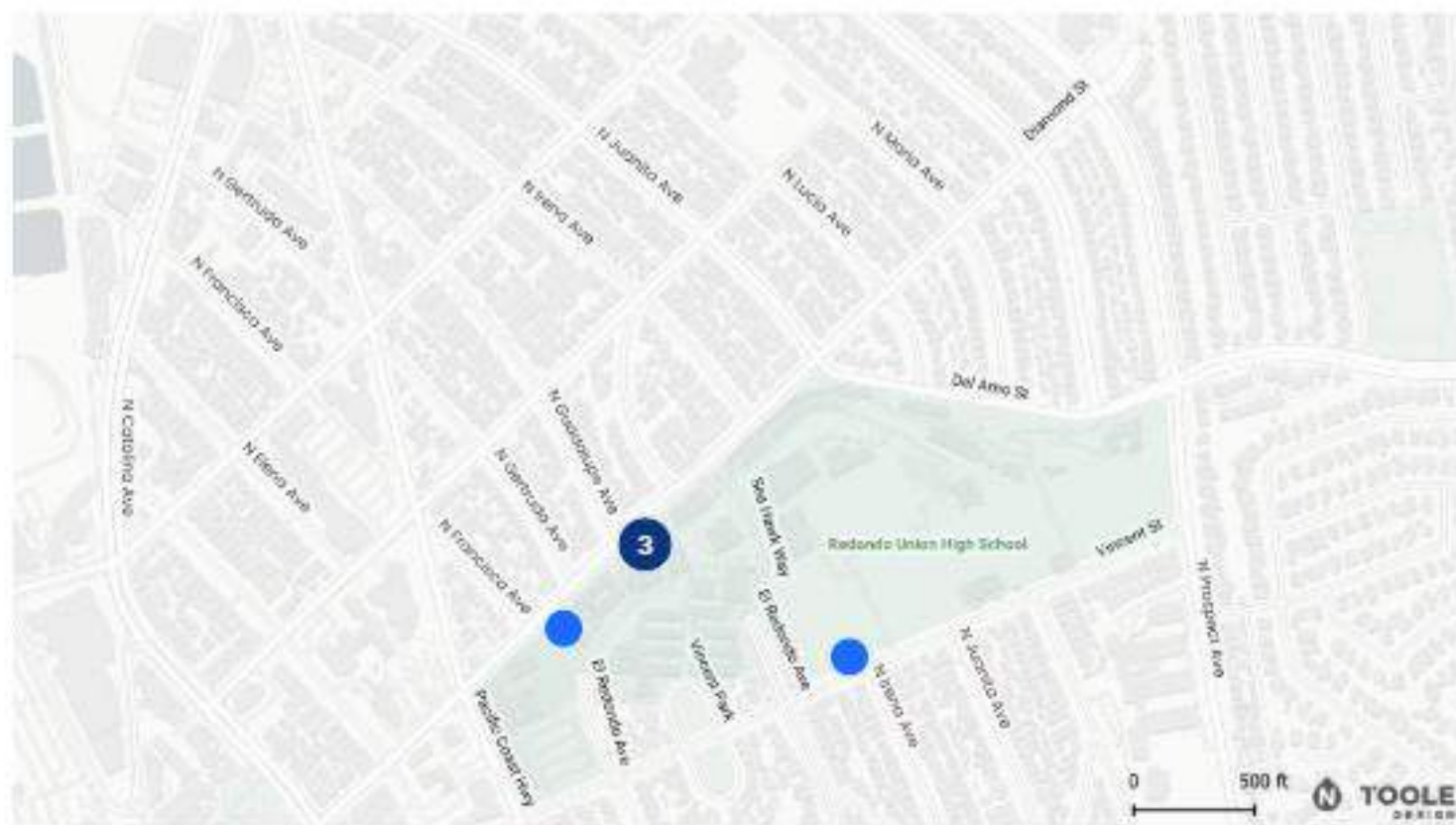
- Pick-up/drop-off areas
- Access to pick-up/drop-off

0 500 ft

Parents: Where do you prefer to pick up students?



Parents: Where do you prefer to drop off students?



Bike Count

	2022 – 2023 ¹	2023 – 2024 ²
Bikes	162 bikes (121 e-bikes)	~300 bikes
Enrollment	3,005 students	2,971 students

¹ 2023 Beach Cities Health District Report

² 2024 October Field Visit

Bicycling

What we heard: “The Sea Hawk Way entrance is overcrowded with people trying to enter and exit (bikes, vehicles)”

Bike parking observed mostly at Francisca and Sea Hawk entrances

173 cars
141 bikes
(AM)

113 bikes
(AM)

Connection to bike path

 Bike lane
 RUHS bike parking

Count timeframe: 7:30 AM – 8:30 AM
Wednesday, November 8, 2023

0 500 ft

Students biking: Where would you want to see additional bike parking?



Note: based on the results, these dots were placed by neighbors, not students

Bike Lanes

Bike Lane



- + Designated lane for bikes
- Conflicts – parking, door zone, double parking

Buffered Bike Lane



- + Designated lane for bikes, more space
- Conflicts – parking, double parking

Protected Bike Lane



- + More protection, less conflicts
- Loss of parking at intersections and driveways

Bike Lane



Buffered Bike Lane



Protected Bike Lane



Join at menti.com | use code 9536 5554

Mentimeter

Everyone: how comfortable would you feel biking in or driving next to:

Bike Lane



Buffered Bike Lane



Protected Bike Lane



Uncomfortable

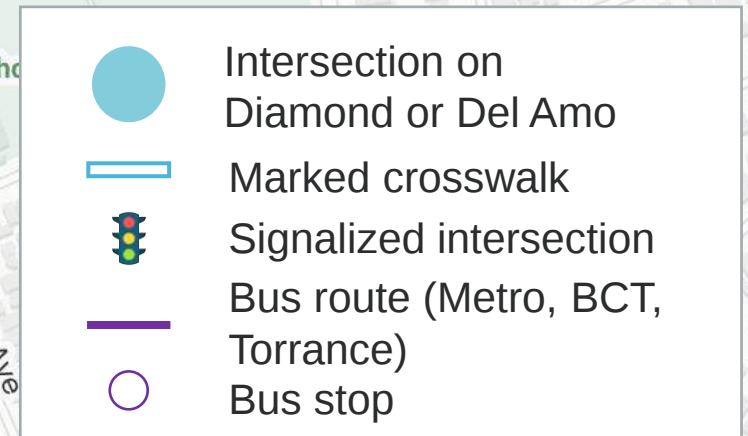
Comfortable

Transit and Walking

Diamond/Del Amo
intersection observed to
have frequent crossings
and conflicts

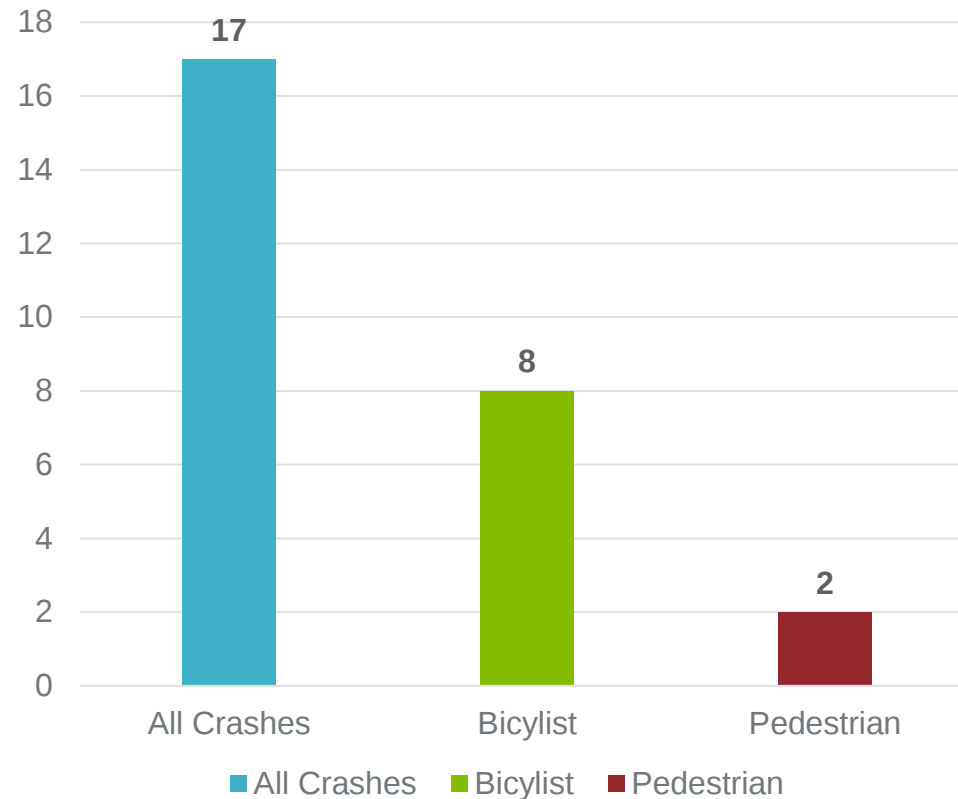
Many bus riders get off here
in the morning, cross
Diamond at east leg without
crosswalk

What we heard: “The Del Amo & Diamond intersection can feel chaotic during the morning”



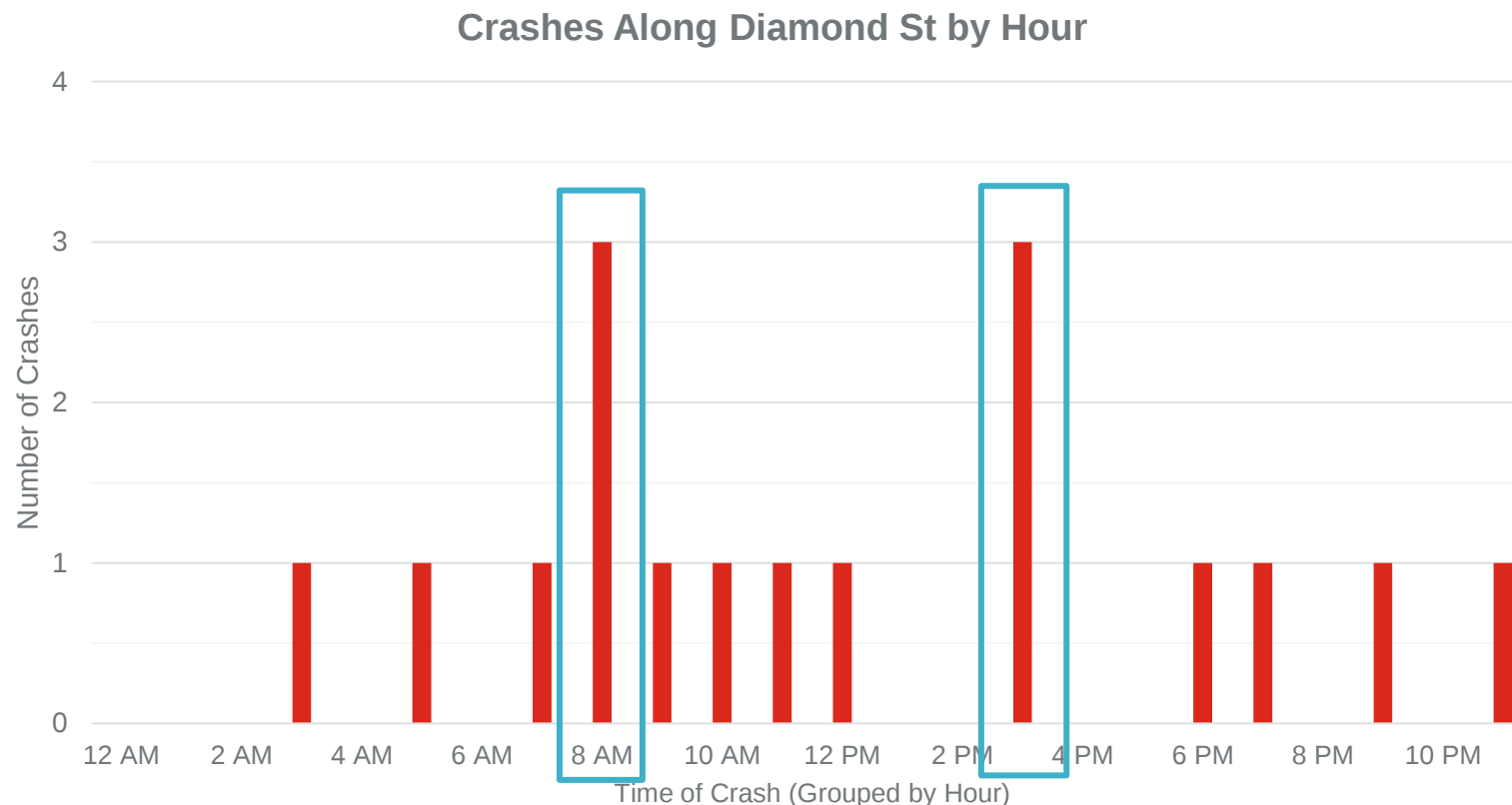
Crashes on Diamond Street

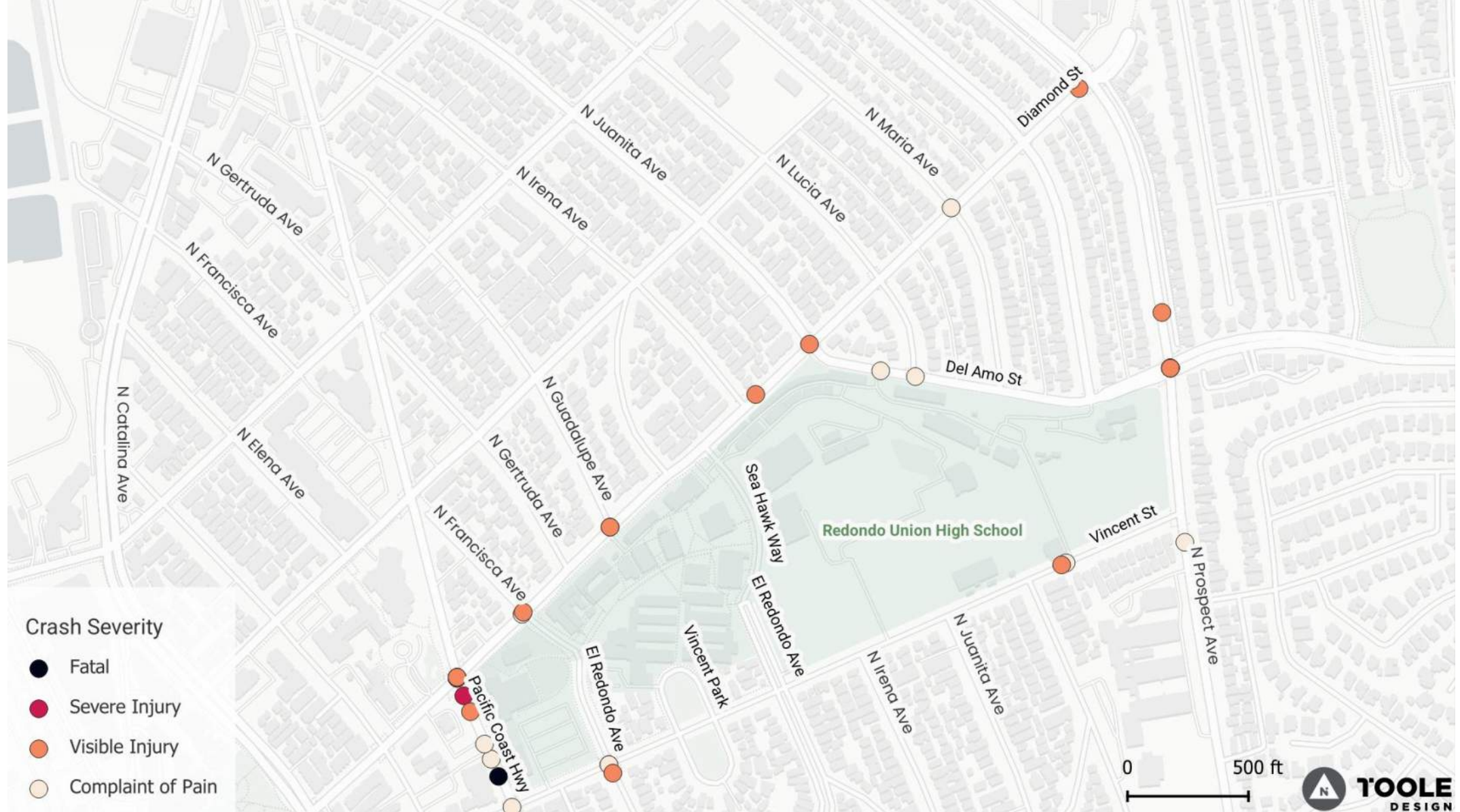
Crashes involving bicyclists and pedestrians made up 47% of total crashes recorded along Diamond St between Dec. 2019 and June 2024.



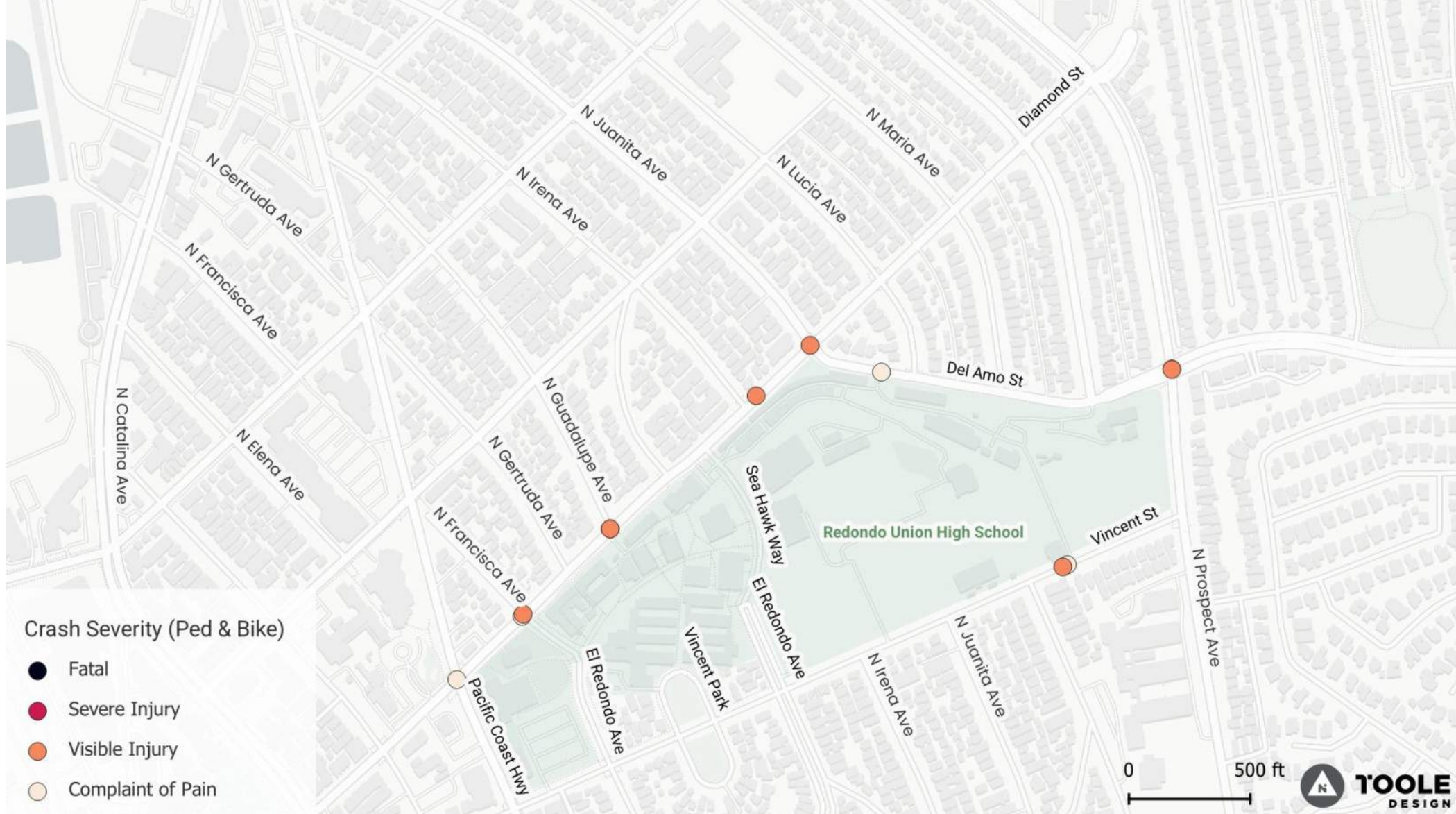
Crashes on Diamond Street

6 crashes occurred during school arrival and dismissal times, between Dec. 2019 and June 2024.



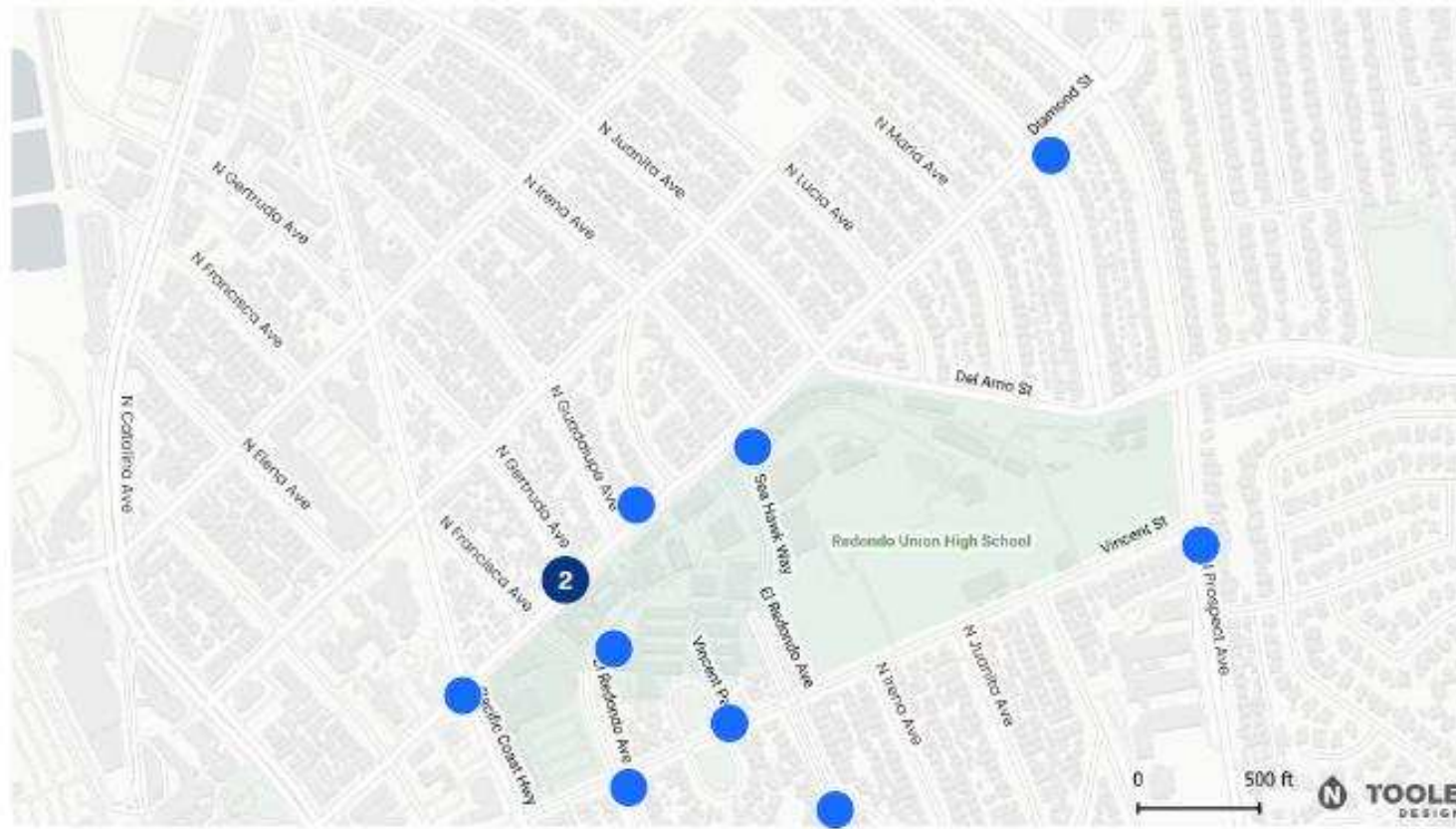


All Crashes in the Redondo Union High Study Area



Ped and Bicyclist Injury Crashes in the Redondo Union High Study Area

Everyone: Please identify any locations along Diamond Street that you experienced or witnessed a near-miss.



Diamond Street Preliminary Concepts

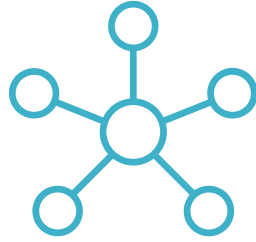


How we reached these preliminary concepts



Safety

Reducing conflicts between people biking, driving, and walking



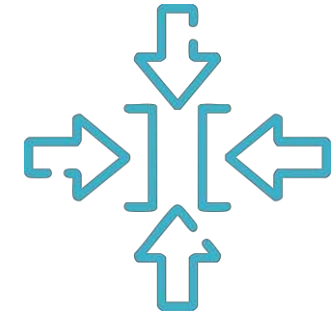
Access

Ensuring facilities meet the needs of all users



Guidance

Using latest national and state guidance



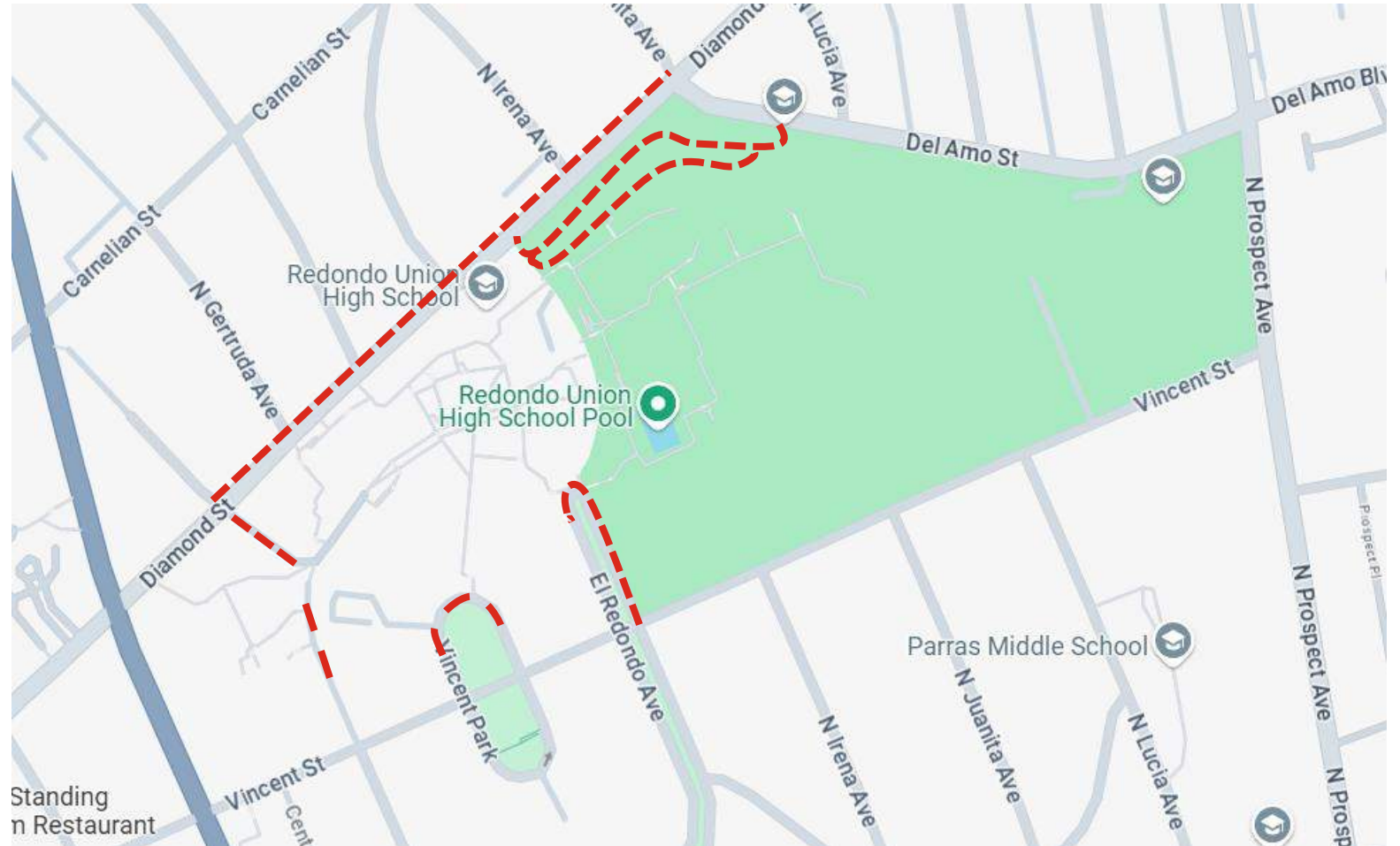
Constraints

Working within the available space

Pickup and Drop-off Considerations

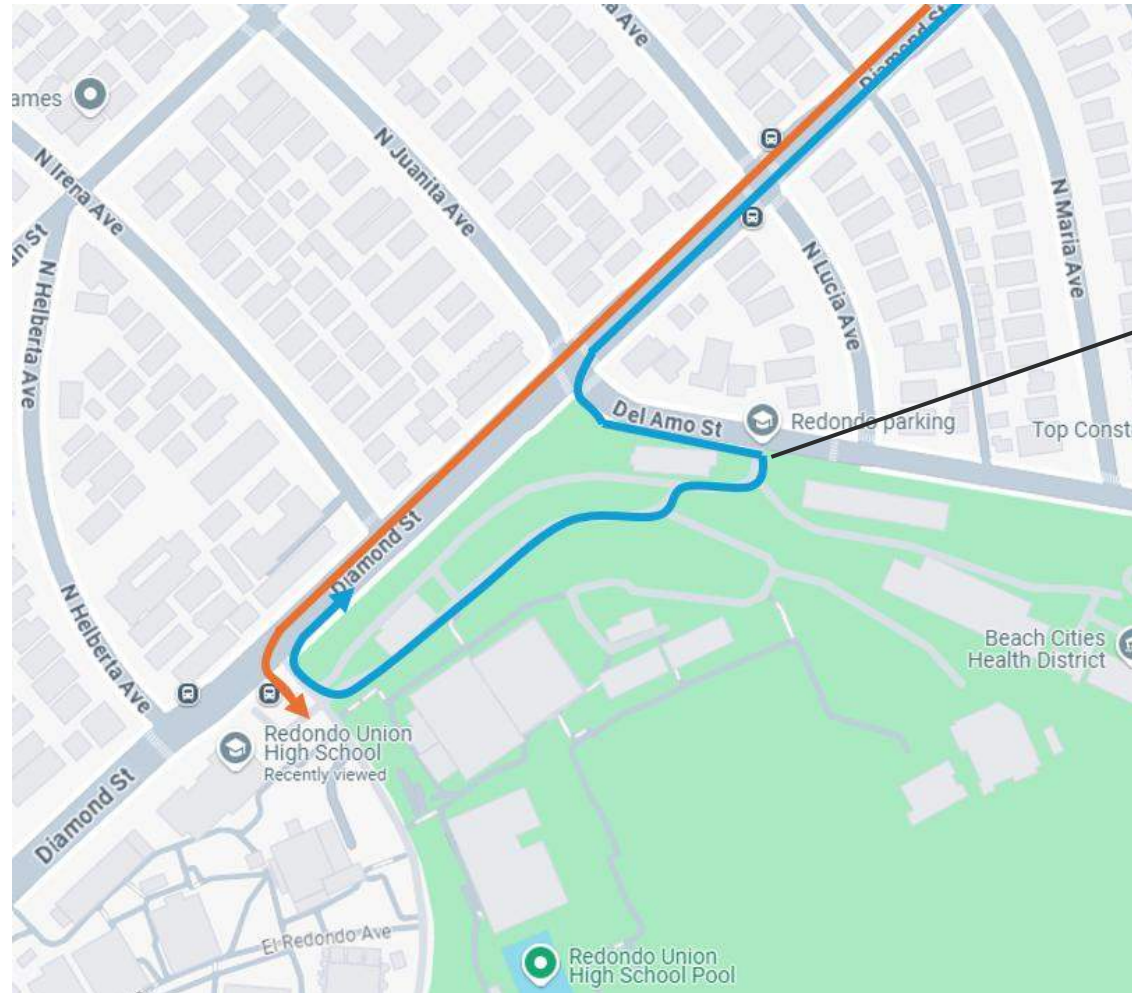
Currently looking to add:

- Additional pickup/ drop-off zones at Francisca Ave. and on Diamond St.
- Expanded pickup and drop-off zones south of campus



Circulation Option – Alternative 1

— Bikes — Vehicles



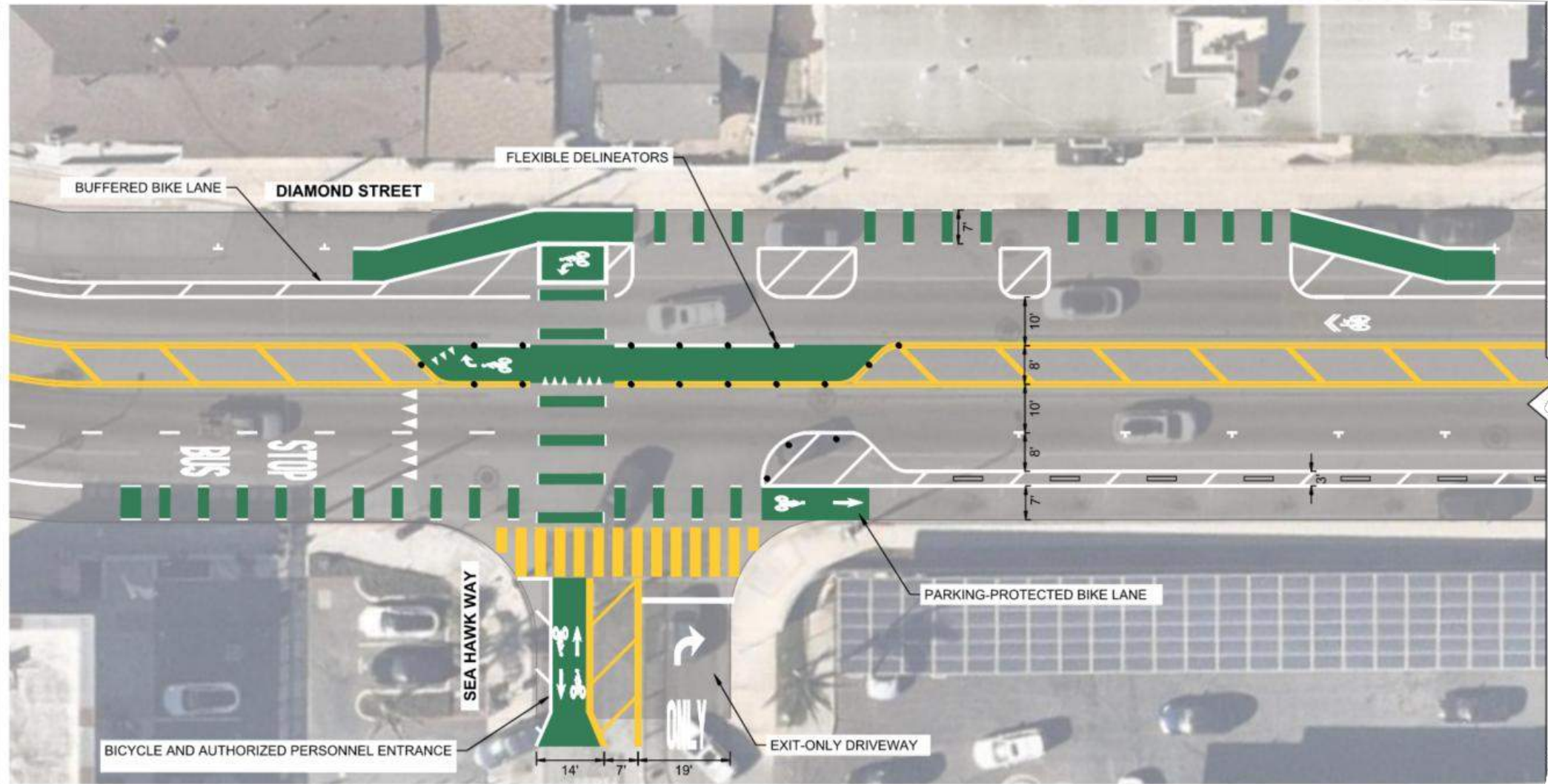
Del Amo driveway:
entrance only'

Alternative 1

Diamond St at Sea Hawk Way

Issues Today:

- Vehicles and bikes turning conflicts
- People walking have a hard time crossing Sea Hawk Way

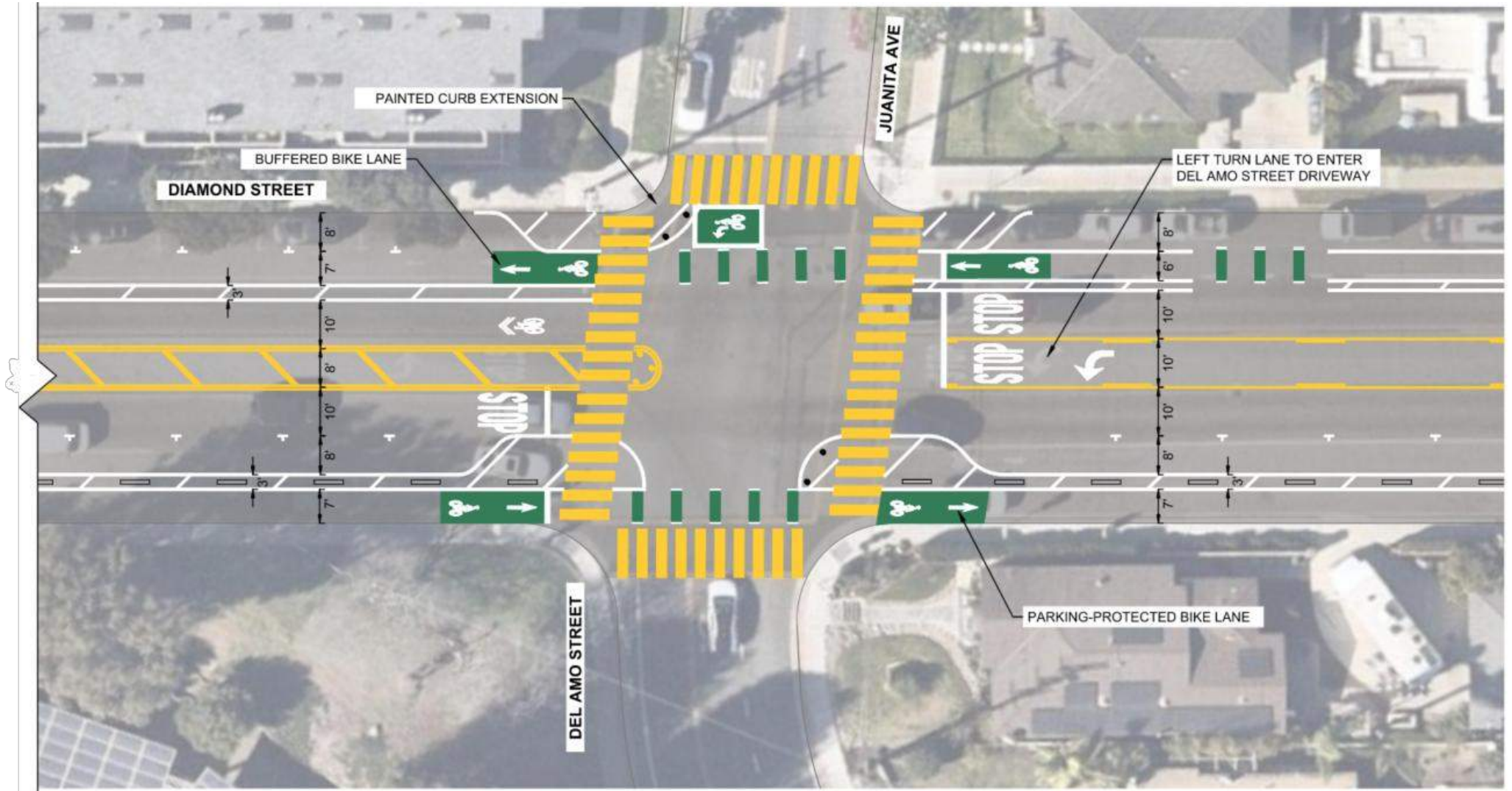


Alternative 1

Diamond St at Del Amo St

Issues Today:

- Long crossing distances for people walking
- Confusing intersection, too many lanes



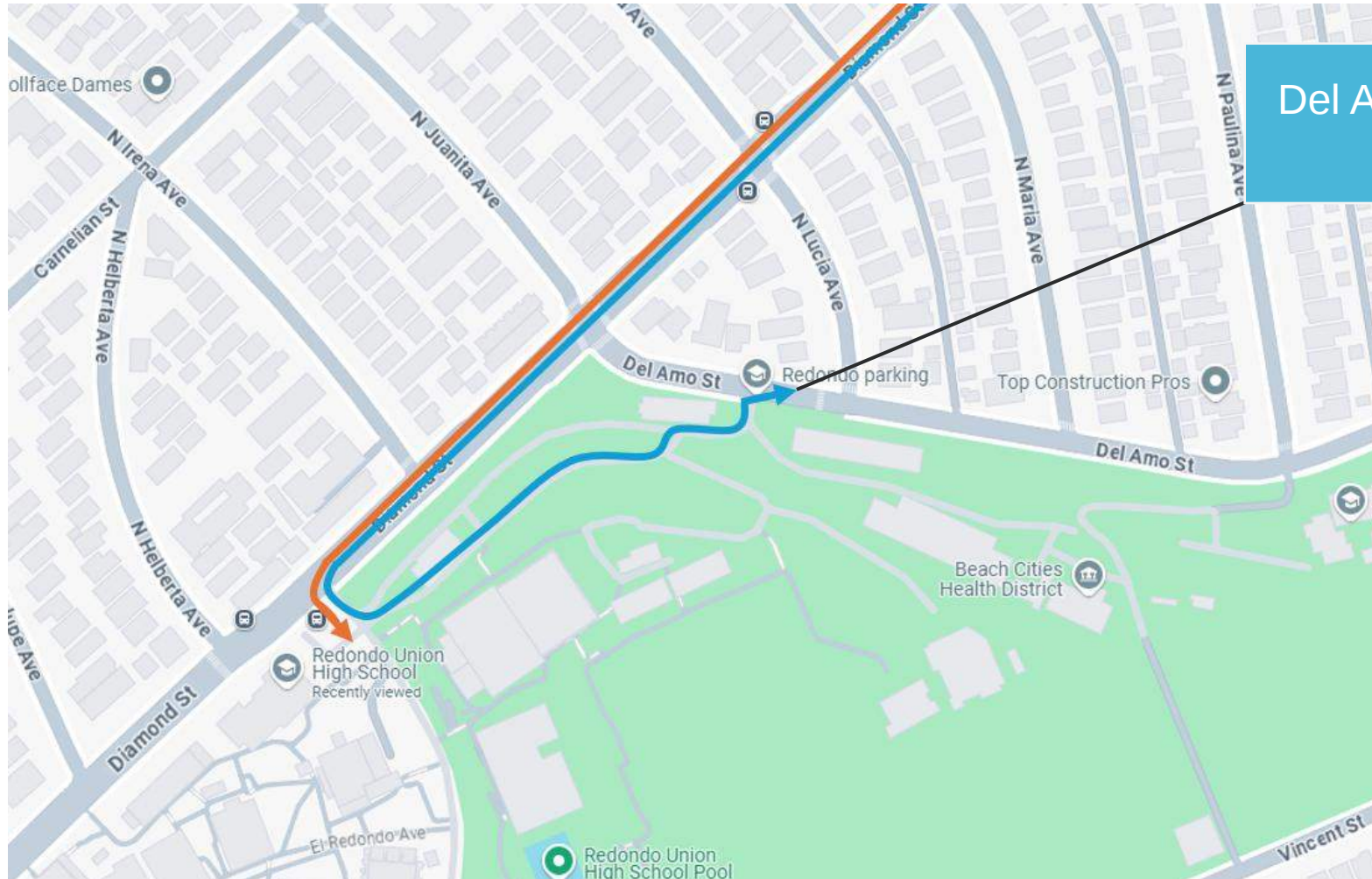
Alternative 1

Del Amo St Driveway



Circulation Option – Alternative 2

— Bikes — Vehicles



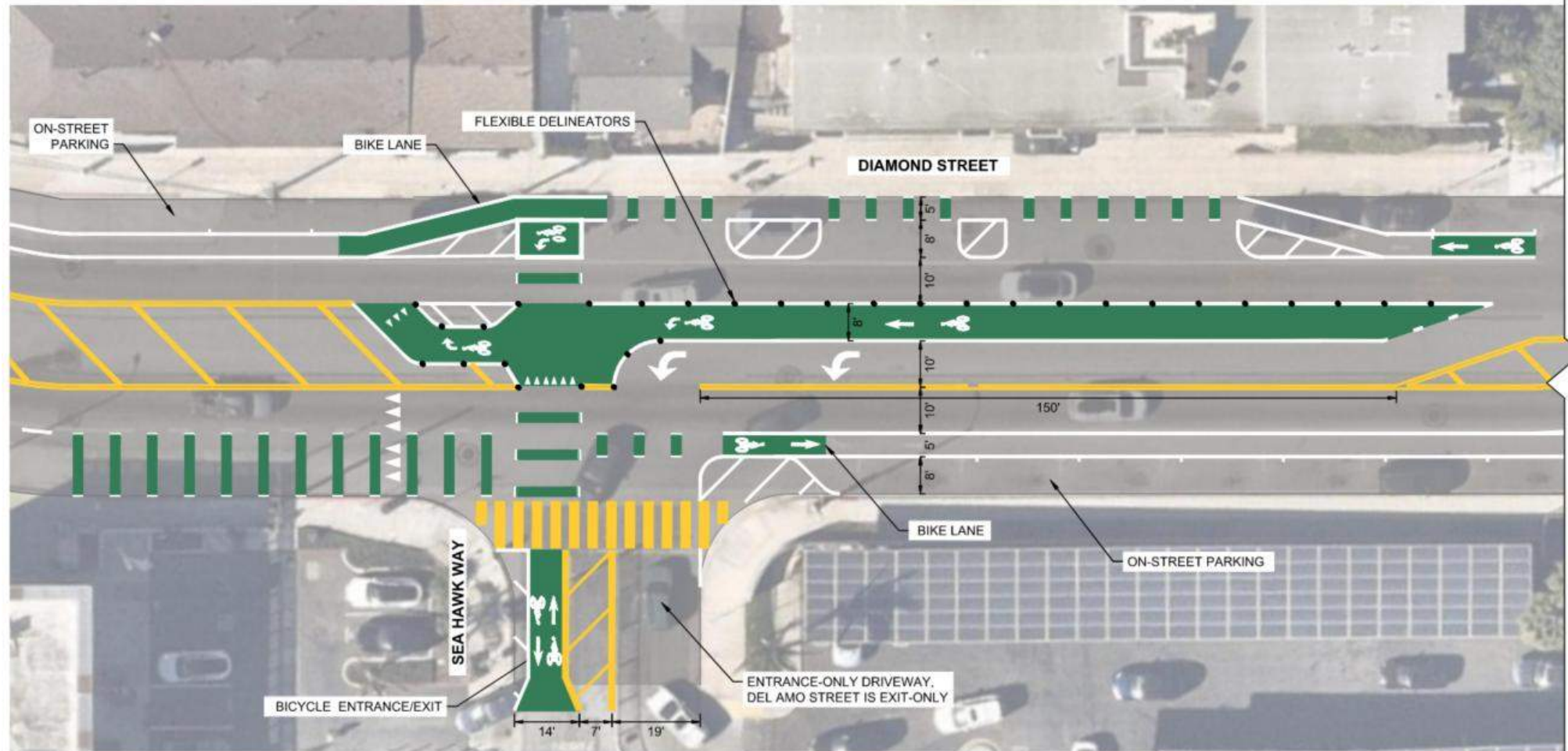
Del Amo driveway:
exit only

Alternative 2

Diamond St at Sea Hawk Way

Issues Today:

- Vehicles and bikes turning conflicts
- People walking have a hard time crossing the driveway

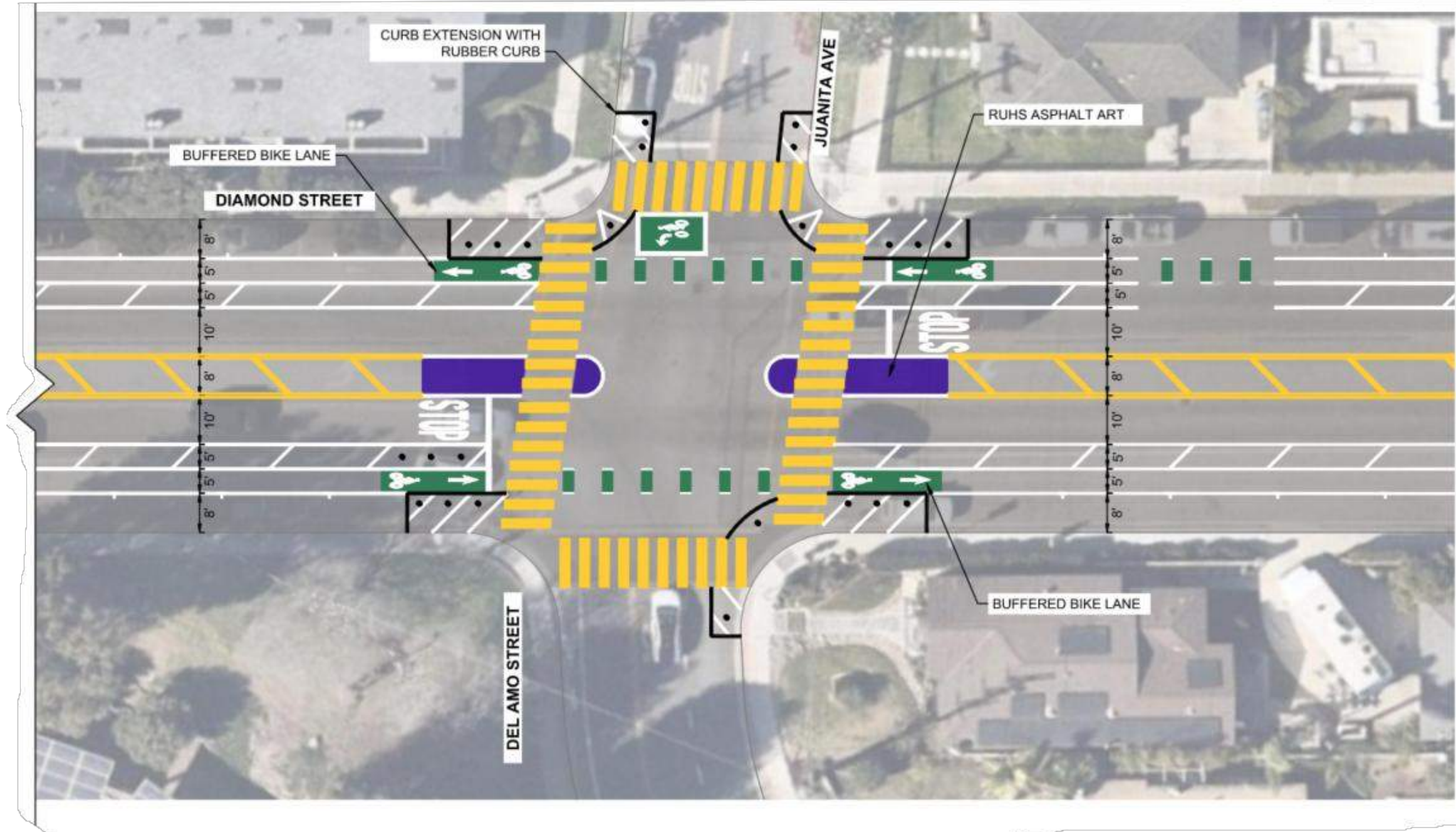


Alternative 2

Diamond St at Del Amo St

Issues Today:

- Long crossing distances for people walking
- Confusing intersection, too many lanes



Alternative 2

Del Amo St Driveway



Thank you!

Ryan Liu, TrafficEngineering@redondo.org

