

# **APPENDIX A**

## **Street Segment Summary Sheets With Radar Speed Data**



CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	ARDMORE AVENUE	<b>SEGMENT NO.</b>	1
<b>FROM</b>	BOUNDARY PLACE	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.70 miles
Roadway Width	19-40 feet
Number of Lanes	2 (NB/SB Boundary to 2nd; NB/NB 1st to Manhattan Beach Bl)
Center Median Type	Painted Centerline; skip-type striping between 1-way lanes
Traffic Control	Signals-Manhattan Beach Bl.; Stop Signs-Duncan Av., 2nd, 6th St
Horizontal Alignment	Curved
Vertical Alignment	Flat
Visibility	Limited visibility of east side driveways and side street traffic
Lighting	Street lights on both sides
Crosswalks?	2nd (S); Manhattan Beach Bl (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	OS-Greenbelt, RS(H) on East Side
On-Street Parking	Boundary to 2nd-none; 2nd to 6th-light; 6th to Manhattan Bch-heavy
Bike Lanes?	None
Driveways?	Residential (East side only)
Sidewalks?	East side; west side between 9th & Manhattan Beach Bl in Greenbelt

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	5,404 Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Boundary to 6th-Moderate; 6th to Manhattan Beach Bl-Heavy
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	2 Collisions
Average Annual Collisions	0.50 Collisions per Year
Calculated Annual Collision Rate	0.36 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/06/2022
Number of Survey Samples	100 Vehicles
50th Percentile Speed	32 mph
85th Percentile Speed	36 mph
10-mph Pace	27-36 mph
% of Vehicles In Pace	76%
% of Vehicles Over/Under Pace	24%
Posted Speed Limit	30 mph
Speed Limit Justification	School pedestrians, heavy parking, blind driveways,skewed intersections
Recommended Speed Limit	30 mph

**CERTIFICATION:**

I, Erik Zandvliet, do hereby certify that this Engineering and Traffic Survey for the City of Manhattan Beach was performed under my supervision. I certify that I am both experienced in performing surveys of this type and am duly registered in the State of California as a professional engineer. The survey has been conducted in strict compliance with guidelines contained in the most current versions of the California Vehicle Code (CVC) and the California Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD). Data contained in this report represents a true and accurate description of traffic conditions existing on Manhattan Beach streets.

Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	ARDMORE AVENUE	<b>SEGMENT NO.</b>	2
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	19TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.38</b> miles
Roadway Width	<b>30-32</b> feet
Number of Lanes	<b>2</b> (NB/NB Manhattan Beach Bl. to 15th; NB/SB 15th to 19th)
Center Median Type	Painted (skip-type striping between 1-way lanes)
Traffic Control	Signals- Manhattan Beach Bl., 15th St.; Stop Signs- 19th St.
Horizontal Alignment	Straight- Manhattan Beach Bl. to 17th; Curved- 17th to 19th St.
Vertical Alignment	Manhattan Beach Bl.-17th: flat; 17th-19th: slight grade
Visibility	Constrained visibility of ped traffic due to on-street parking
Lighting	At intersections and spaced along segment (east side)
Crosswalks?	M.Bch. Blvd. (N,S); greenbelt (L-turn, exit); 17th (S); 18th (S); 19th (S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	OS-greenbelt / RH(S)
On-Street Parking	Manhattan Beach Bl.-13th:heavy, 13th-17th:moderate, 17th-19th:light
Bike Lanes?	No
Driveways?	Residential (east side only)
Sidewalks?	East side; west side between M.Bch. Blvd. & 12th in greenbelt

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>4,562</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Heavy
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>3</b> Collisions
Average Annual Collisions	<b>0.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>1.19</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/28/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>26</b> mph
85th Percentile Speed	<b>30</b> mph
10-mph Pace	<b>21-30</b> mph
% of Vehicles In Pace	<b>82%</b>
% of Vehicles Over/Under Pace	<b>18%</b>
Posted Speed Limit	<b>30</b> mph
Speed Limit Justification	Residential Zone, heavy pedestrian traffic, on-street parking plus horizontal curvature
Recommended Speed Limit	<b>30</b> mph

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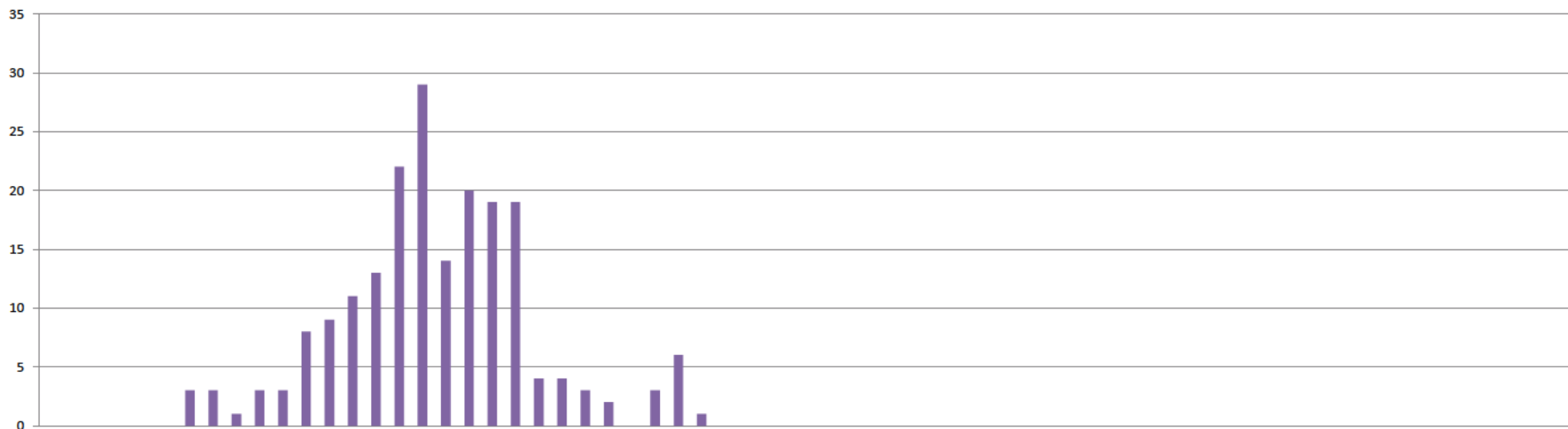
12/23/2022

Date

# RADAR SPEED STUDY

Ardmore Avenue (Manhattan Beach Bl. to 19th St.) - COMBINED DIRECTIONS

<b>LOCATION</b>	Ardmore Avenue (Manhattan Beach Bl. to 19th St.)	<b>PROJECT #</b>	2022132
<b>VICINITY</b>	Manhattan Beach	<b>LOCATION #</b>	002
<b>TIME RANGE</b>	1200	<b>DATE OF STUDY</b>	Tuesday, June 28, 2022



COUN	[Data values for 51 bins]																																																	
MPH	[MPH values for 51 bins]																																																	
% OF O.A.L.	[Percentage values for 51 bins]																																																	
CUMULA. IVE.%	[Cumulative percentage values for 51 bins]																																																	

### SPEED STATISTICS

SAMPLE SIZE	200
AVERAGE SPEED (MPH)	26.58
SPEED RANGE (MPH)	16 - 38

15th PERCENT LE	23 MPH
50th PERCENT LE	26 MPH
85th PERCENT LE	30 MPH

10 MPH PACE	21 - 30
NUMBER IN PACE	164
PERCENT IN PACE	82%

TRAFFIC CONDITIONS	Normal	WEATHER CONDITIONS	Sunny	ROAD CONDITIONS	Normal	POSTED SPEED LIMIT	30 MPH
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2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	ARDMORE AVENUE	<b>SEGMENT NO.</b>	3
<b>FROM</b>	19TH STREET	<b>TO</b>	PACIFIC AVENUE

**1 - ROADWAY CONDITIONS**

Roadway Factors	
Segment Length	<b>0.40</b> miles
Roadway Width	<b>32</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Centerline Stripe
Traffic Control	Stop at Pacific Ave., 19th St.
Horizontal Alignment	Curve between 17th St, and 19th St. straight-19th St. to Pacific Ave.
Vertical Alignment	Vertical curve east and west of Flournoy Rd.
Visibility	Good, Except at Intersections due to vertical and horizontal curve
Lighting	Yes, South Side
Crosswalks?	19th St., Pacific Ave.
Shoulder/Roadside Factors	
Adjacent Land Use	Residential
On-Street Parking	South Side Only
Bike Lanes?	Bike Route, Edgeline Marking along SB Side
Driveways?	South Side Only
Sidewalks?	South Side Only

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>4,122</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>2</b> Collisions
Average Annual Collisions	<b>0.50</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.83</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/28/2022
Number of Survey Samples	<b>139</b> Vehicles
50th Percentile Speed	<b>33</b> mph
85th Percentile Speed	<b>37</b> mph
10-mph Pace	<b>28-37</b> mph
% of Vehicles In Pace	<b>72%</b>
% of Vehicles Over/Under Pace	<b>28%</b>
Posted Speed Limit	<b>30</b> mph
Speed Limit Justification	School pedestrians, limited visibility of skewed intersections, heavy parking, pedestrian volumes, bike route
Recommended Speed Limit	<b>30</b> mph

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**STREET** ARDMORE AVENUE  
**FROM** PACIFIC AVENUE

**SEGMENT NO.** 4  
**TO** 33RD STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.46 miles
Roadway Width	26-32 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Stop Signs at Pacific/Marine Av. and 27th St.
Horizontal Alignment	Straight, with slight curve between Palm and 27th St.
Vertical Alignment	Steady grade change
Visibility	Limited visibility of east side driveways
Lighting	Pacific-27th: east side, 27th-33rd: west side
Crosswalks?	Pacific Av./Marine Av. (NE and SW across Ardmore)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	OS-greenbelt / RS
On-Street Parking	Light
Bike Lanes?	No
Driveways?	Residential (east side only)
Sidewalks?	East side only beyond 1100' of Pacific Av.

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	3,627 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/06/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	29 mph
85th Percentile Speed	33 mph
10-mph Pace	26-35 mph
% of Vehicles In Pace	
% of Vehicles Over/Under Pace	100%
Posted Speed Limit	30 mph
Speed Limit Justification	Residential driveways, on-street parking and horizontal curvature. curvature constraints, 25-MPH school zone.
Recommended Speed Limit	30 mph

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<b>STREET</b>	ARTESIA BOULEVARD	<b>SEGMENT NO.</b>	5
<b>FROM</b>	SEPULVEDA BOULEVARD	<b>TO</b>	PECK AVENUE

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.45 miles
Roadway Width	64 feet
Number of Lanes	4
Center Median Type	Raised
Traffic Control	Signals at Sepulveda Bl., Prospect Av., Meadows Av. and Peck Av.
Horizontal Alignment	Straight
Vertical Alignment	Gradual hills
Visibility	Low commercial driveway visibility due to vert. curvature, short D/Ws
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Sepulveda (E,W); Prospect (E,W); Meadows (E,W); Peck (E,W)
Shoulder/Roadside Factors	
Adjacent Land Use	CG / RH / PS-Mira Costa HS
On-Street Parking	EB-metered near Peck; WB-available spaces adj. to school
Bike Lanes?	No
Driveways?	Residential/Commercial
Sidewalks?	Yes

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	26,501 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate near Peck
Truck Traffic	Moderate to heavy

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.07 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	9 Collisions
Average Annual Collisions	2.25 Collisions per Year
Calculated Annual Collision Rate	0.52 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/06/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	34 mph
85th Percentile Speed	41 mph
10-mph Pace	32-41 mph
% of Vehicles In Pace	58%
% of Vehicles Over/Under Pace	42%
Posted Speed Limit	40 mph
Speed Limit Justification	Residential/commercial driveways with low visibility and vertical curvature constraints, 25-MPH school zone.
Recommended Speed Limit	40 mph

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<b>STREET</b>	ARTESIA BOULEVARD	<b>SEGMENT NO.</b>	6
<b>FROM</b>	PECK AVENUE	<b>TO</b>	AVIATION WAY

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.33 miles
Roadway Width	64 feet
Number of Lanes	4
Center Median Type	Raised
Traffic Control	Traffic Control Signals at Peck Av., Aviation Bl. and Aviation Wy.
Horizontal Alignment	Straight
Vertical Alignment	Gradual hills
Visibility	Low residential driveway visibility due to vert. curvature, short driveways
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Peck Av. (E,W); Aviation Bl. (E,W); Aviation Wy. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RH / CL(G)
On-Street Parking	EB-moderate; WB-moderate
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	25,068 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate near Peck
Truck Traffic	Moderate to heavy

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.07 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	3 Collisions
Average Annual Collisions	0.75 Collisions per Year
Calculated Annual Collision Rate	0.25 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/06/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	35 mph
85th Percentile Speed	40 mph
10-mph Pace	31-40 mph
% of Vehicles In Pace	73%
% of Vehicles Over/Under Pace	27%
Posted Speed Limit	40 mph
Speed Limit Justification	On-street parking, adjacent school activity, vertical curvature. Residential density of 42 DHs/mi.
Recommended Speed Limit	40 mph

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<b>STREET</b>	AVIATION BOULEVARD	<b>SEGMENT NO.</b>	7
<b>FROM</b>	ARTESIA BOULEVARD	<b>TO</b>	2ND STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.51</b> miles
Roadway Width	<b>64</b> feet
Number of Lanes	<b>4</b>
Center Median Type	TWLT - Mathews to 1st.; Painted - Artesia to Mathews / 1st to 2nd
Traffic Control	Signals at Artesia Bl. and 2nd St.
Horizontal Alignment	Curved- Artesia to Ruhland; Straight- Ruhland to 2nd St.
Vertical Alignment	Flat
Visibility	Limited visibility of side street traffic and driveways due to curves
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Artesia Bl. (N,S); 2nd St. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG(L) / RS / PS-grass area
On-Street Parking	SB-light; NB-none
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>33,295</b> Vehicles per Day
Traffic Volume Count Date	07/13/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>6</b> Collisions
Average Annual Collisions	<b>1.50</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.24</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/12/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>38</b> mph
85th Percentile Speed	<b>43</b> mph
10-mph Pace	<b>34-43</b> mph
% of Vehicles In Pace	<b>77%</b>
% of Vehicles Over/Under Pace	<b>23%</b>
Posted Speed Limit	<b>40</b> mph
Speed Limit Justification	Residential driveways, curvature, limited visibility of side street traffic.
Recommended Speed Limit	<b>40</b> mph

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<b>STREET</b>	AVIATION BOULEVARD	<b>SEGMENT NO.</b>	8
<b>FROM</b>	2ND STREET	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.51 miles
Roadway Width	64 feet
Number of Lanes	4
Center Median Type	TWLT - 2nd to 5th / 9th to 11th; Raised - 6th to 9th / 11th to 12th
Traffic Control	Signals at 2nd St. and Manhattan Beach Bl.
Horizontal Alignment	Curved- 2nd to 6th; Straight- 6th to Manhattan Beach Bl.
Vertical Alignment	Slight grade
Visibility	Limited visibility of SB commercial driveways
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	2nd St. (N,S); Manhattan Beach Bl. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS / CG / PD
On-Street Parking	NB-None; SB-Light near Manhattan Beach Bl. Only
Bike Lanes?	No
Driveways?	NB-Residential; SB-Unexpected commercial driveways
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	36,194 Vehicles per Day
Traffic Volume Count Date	07/13/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.07 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	2 Collisions
Average Annual Collisions	0.50 Collisions per Year
Calculated Annual Collision Rate	0.07 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/13/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	35 mph
85th Percentile Speed	42 mph
10-mph Pace	30-39 mph
% of Vehicles In Pace	51%
% of Vehicles Over/Under Pace	49%
Posted Speed Limit	40 mph
Speed Limit Justification	Unexpected commercial driveways, limited visibility of side street traffic
Recommended Speed Limit	40 mph

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<b>STREET</b>	AVIATION BOULEVARD	<b>SEGMENT NO.</b>	9
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	MARINE AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>84-96</b> feet
Number of Lanes	<b>6</b>
Center Median Type	Painted median
Traffic Control	Signals at Manhattan Beach Bl., Space Park Dr. and Marine Av.
Horizontal Alignment	Straight
Vertical Alignment	Mostly flat
Visibility	Limited side street visibility
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Manhattan Beach Bl. (N,S); Space Park Bl. (N); Marine Av. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG / RS-D4
On-Street Parking	None
Bike Lanes?	No
Driveways?	NB-No; SB-Few commercial near Manhattan Beach Bl./Marine Av.
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>37,979</b> Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>3</b> Collisions
Average Annual Collisions	<b>0.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.11</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/13/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>39</b> mph
85th Percentile Speed	<b>46</b> mph
10-mph Pace	<b>34-43</b> mph
% of Vehicles In Pace	<b>51%</b>
% of Vehicles Over/Under Pace	<b>49%</b>
Posted Speed Limit	<b>40</b> mph
Speed Limit Justification	Pedestrian traffic, adjacent park activity, 26 accidents, limited side street visibility
Recommended Speed Limit	<b>40</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	AVIATION BOULEVARD	<b>SEGMENT NO.</b>	10
<b>FROM</b>	MARINE AVENUE	<b>TO</b>	ROSECRANS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>73.5-84</b> feet
Number of Lanes	<b>6</b>
Center Median Type	Painted medians
Traffic Control	Signals at Marine Av., 33rd St. and Rosecrans Av.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Clear
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Marine Av. (N,S); 33rd. St. (S); Rosecrans Av. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG / OS-Marine Sports Complex / IP / PD-Manhattan Gateway
On-Street Parking	None
Bike Lanes?	No
Driveways?	Few commercial driveways near Rosecrans
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>40,515</b> Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>4</b> Collisions
Average Annual Collisions	<b>1.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.14</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/13/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>37</b> mph
85th Percentile Speed	<b>44</b> mph
10-mph Pace	<b>32-41</b> mph
% of Vehicles In Pace	<b>61%</b>
% of Vehicles Over/Under Pace	<b>39%</b>
Posted Speed Limit	<b>40</b> mph
Speed Limit Justification	Limited side street visibility, heavy on-street parking, short driveways, adjacent park
Recommended Speed Limit	<b>40</b> mph

**CERTIFICATION:**

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Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	BLANCHE ROAD	<b>SEGMENT NO.</b>	11
<b>FROM</b>	VALLEY DRIVE	<b>TO</b>	24TH STREET

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.15 miles
Roadway Width	30 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Stop Signs at Valley Dr. and Marine Av., 24th St.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Fair, limited side street visibility
Lighting	At Marine Av. And 24th St.
Crosswalks?	24th St. (N)
Shoulder/Roadside Factors	
Adjacent Land Use	RS-D3
On-Street Parking	None
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	West side only

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	2,865 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Heavy
Truck Traffic	Very light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	1.59 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/13/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	22 mph
85th Percentile Speed	26 mph
10-mph Pace	18-27 mph
% of Vehicles In Pace	85%
% of Vehicles Over/Under Pace	15%
Posted Speed Limit	25 mph
Speed Limit Justification	Residential zone, heavy side street visibility
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

**STREET**    BLANCHE ROAD  
**FROM**        24TH STREET

**SEGMENT NO.**    12  
**TO**                ROSECRANS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.51</b> miles
Roadway Width	<b>18-30</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals- Rosecrans Av.; Stop Signs- 25th St., 27th St., 33rd St.
Horizontal Alignment	Straight
Vertical Alignment	Moderate hills
Visibility	Fair, limited side street visibility
Lighting	Luminaires spaced at each cross street
Crosswalks?	24th St. (N); 25th St. (N); 27th St. (N); Rosecrans Av. (S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(M) / PS-Grandview School
On-Street Parking	West side-none; East side-short driveways w/ parked cars
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	West side

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>3,054</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/07/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>24</b> mph
85th Percentile Speed	<b>29</b> mph
10-mph Pace	<b>20-29</b> mph
% of Vehicles In Pace	<b>73%</b>
% of Vehicles Over/Under Pace	<b>27%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Residential zone, heavy on-street parking, limited side street visibility.
Recommended Speed Limit	<b>25</b> mph

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<b>STREET</b>	HIGHLAND AVENUE	<b>SEGMENT NO.</b>	13
<b>FROM</b>	HOMER STREET	<b>TO</b>	9TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.40</b> miles
Roadway Width	<b>40</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Centerline Stripe
Traffic Control	Stops at 1st St., 5th St.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Restricted at Side Streets, Some Blind Driveways
Lighting	Some, at Walkstreets
Crosswalks?	1st St., 6th St., 7th St., 8th St., 9th St.,
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Residential
On-Street Parking	Both Sides
Bike Lanes?	No
Driveways?	Both Sides
Sidewalks?	Both Sides

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>4,444</b> Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>3</b> Collisions
Average Annual Collisions	<b>0.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>1.16</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/30/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>22</b> mph
85th Percentile Speed	<b>29</b> mph
10-mph Pace	<b>16-25</b> mph
% of Vehicles In Pace	<b>69%</b>
% of Vehicles Over/Under Pace	<b>31%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Limited driveway visibility, vertical grade, heavy on-street parking, high pedestrian traffic, mid-block crosswalks.
Recommended Speed Limit	<b>25</b> mph

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<b>STREET</b>	HIGHLAND AVENUE	<b>SEGMENT NO.</b>	14
<b>FROM</b>	9TH STREET	<b>TO</b>	15TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.32 miles
Roadway Width	39 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals at Manhattan Beach Bl. and 15th St.
Horizontal Alignment	Straight
Vertical Alignment	9th-M.Bch. Bl.:flat, M.Bch. Bl.-15th: light hills
Visibility	Somewhat limited visibility due to on-street parked vehicles
Lighting	Spaced along west side; along both sides near M.Bch. Bl.
Crosswalks?	9th (N); 10th (N); 11th (N); M.Bch. Bl. (N,S); 12th (N,S); 13th (N); 14th (N); 15th (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RM(H) / CD / PS-Civic Center
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Closely-spaced lowrise residential; commercial near M.Bch. Bl.
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	5,755 Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	4 Collisions
Average Annual Collisions	1.00 Collisions per Year
Calculated Annual Collision Rate	1.49 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/20/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	16 mph
85th Percentile Speed	20 mph
10-mph Pace	11-10 mph
% of Vehicles In Pace	87%
% of Vehicles Over/Under Pace	13%
Posted Speed Limit	25 mph
Speed Limit Justification	Continuity with adjacent speed zones
Recommended Speed Limit	25 mph

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<b>STREET</b>	HIGHLAND AVENUE	<b>SEGMENT NO.</b>	15
<b>FROM</b>	15TH STREET	<b>TO</b>	MARINE AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.31 miles
Roadway Width	39 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals at 15th St. and Marine Av.
Horizontal Alignment	Straight
Vertical Alignment	Slight grade
Visibility	Constrained D/W & ped visibility due to narrow road and on-st. parking
Lighting	Spaced along west side; along both sides near Marine Av.
Crosswalks?	15th St. (N,S); 17th St.; 18th St.; 19th St.; Marine Av. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RM / CL
On-Street Parking	Moderate; heavy near Marine Av.
Bike Lanes?	No
Driveways?	Closely-spaced lowrise residential; commercial near Marine Av.
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	14,246 Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	12 Collisions
Average Annual Collisions	3.00 Collisions per Year
Calculated Annual Collision Rate	1.86 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/30/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	21 mph
85th Percentile Speed	26 mph
10-mph Pace	15-24 mph
% of Vehicles In Pace	79%
% of Vehicles Over/Under Pace	21%
Posted Speed Limit	25 mph
Speed Limit Justification	On-street parking, residential driveways with limited visibility.
Recommended Speed Limit	25 mph

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<b>STREET</b>	HIGHLAND AVENUE	<b>SEGMENT NO.</b>	16
<b>FROM</b>	MARINE AVENUE	<b>TO</b>	ROSECRANS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.67</b> miles
Roadway Width	<b>39</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals at Marine Av., 33rd St. and Rosecrans Av.
Horizontal Alignment	Straight
Vertical Alignment	Light to moderate hills
Visibility	Constrained D/W & ped visibility due to vert. grade and on-st. parking
Lighting	Spaced along west side; along both sides b/w 33rd and Rosecrans
Crosswalks?	Marine(N,S); 25th; 26th(N); 27th(S); 29th; 30th; 32nd; 33rd(N,S);
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CL(NE, NE-D5) / RH / OS-Bruce's Beach Park
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Closely-spaced lowrise residential/commercial
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>13,901</b> Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>12</b> Collisions
Average Annual Collisions	<b>3.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.88</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/30/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>26</b> mph
85th Percentile Speed	<b>30</b> mph
10-mph Pace	<b>21-30</b> mph
% of Vehicles In Pace	<b>76%</b>
% of Vehicles Over/Under Pace	<b>24%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	High collision rate, heavy on-street parking, high pedestrian traffic and mid-block crosswalks
Recommended Speed Limit	<b>25</b> mph

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<b>STREET</b>	HIGHLAND AVENUE	<b>SEGMENT NO.</b>	17
<b>FROM</b>	ROSECRANS AVENUE	<b>TO</b>	45TH STREET

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.36 miles
Roadway Width	50 feet
Number of Lanes	4
Center Median Type	Painted centerline
Traffic Control	Signals at Rosecrans Av., 40th St. and 45th St.
Horizontal Alignment	Straight
Vertical Alignment	Moderate grade; inflection near 44th St.
Visibility	Low visibility of commercial/residential driveway turning traffic
Lighting	Spaced along east side of segment and at intersections
Crosswalks?	Rosecrans Ave. (N); 40th St. (S); 41st St. (S); 45th St. (N,S)
Shoulder/Roadside Factors	
Adjacent Land Use	CNE / RH
On-Street Parking	Moderate to heavy
Bike Lanes?	Bike Lanes?
Driveways?	Lowrise residential/commercial mix
Sidewalks?	Yes; limited access due to driveways

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	17,412 Vehicles per Day
Traffic Volume Count Date	06/21/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	9 Collisions
Average Annual Collisions	2.25 Collisions per Year
Calculated Annual Collision Rate	0.98 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	06/30/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	26 mph
85th Percentile Speed	32 mph
10-mph Pace	22-31 mph
% of Vehicles In Pace	61%
% of Vehicles Over/Under Pace	39%
Posted Speed Limit	30 mph
Speed Limit Justification	Closely-spaced commercial driveways with limited visibility, high ped collisions
Recommended Speed Limit	30 mph

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<b>STREET</b>	MANHATTAN AVENUE	<b>SEGMENT NO.</b>	18
<b>FROM</b>	HOMER STREET/35TH STREET	<b>TO</b>	9TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.42</b> miles
Roadway Width	<b>50</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Stop Signs at 1st St. and 9th St.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Somewhat limited due to on-street parked vehicles
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	1st(N,S); 2nd; 3rd; 4th; 5th; 6th; 7th; 8th; 9th St. (N)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RM(H) / CD
On-Street Parking	Heavy; angled parking near 9th St.
Bike Lanes?	Yes
Driveways?	Closely-spaced lowrise residential; commercial near 9th St.
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>6,913</b> Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>3</b> Collisions
Average Annual Collisions	<b>0.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.71</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/30/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>24</b> mph
85th Percentile Speed	<b>28</b> mph
10-mph Pace	<b>18-27</b> mph
% of Vehicles In Pace	<b>77%</b>
% of Vehicles Over/Under Pace	<b>23%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Closely-spaced driveways, heavy on-street parking, mid-block crosswalks, high pedestrian traffic
Recommended Speed Limit	<b>25</b> mph

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2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	MANHATTAN AVENUE	<b>SEGMENT NO.</b>	19
<b>FROM</b>	9TH STREET	<b>TO</b>	15TH STREET

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.33 miles
Roadway Width	50 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 9th St.
Horizontal Alignment	Straight; curves into 15th St. at northerly terminus
Vertical Alignment	Flat
Visibility	Limited view of peds/bicyclists due to narrow road and parking
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	9th(N); 10th; 11th(N); M.Bch. Bl.(N,S); 12th(N); 13th; 14th(N); 15th
Shoulder/Roadside Factors	
Adjacent Land Use	CD / RH
On-Street Parking	Heavy commercial parking (angled); residential N. of M.Bch. Bl.
Bike Lanes?	No
Driveways?	9th-M.Bch. Bl: few commercial, M.Bch. Bl.-15th: lowrise residential
Sidewalks?	Yes

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	3,979 Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	3 Collisions
Average Annual Collisions	0.75 Collisions per Year
Calculated Annual Collision Rate	1.56 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/20/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	14 mph
85th Percentile Speed	18 mph
10-mph Pace	10-19 mph
% of Vehicles In Pace	91%
% of Vehicles Over/Under Pace	9%
Posted Speed Limit	25 mph
Speed Limit Justification	High collision rate, angled on-street parking, high pedestrian and bicycle traffic.
Recommended Speed Limit	25 mph

#### CERTIFICATION:

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Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	MANHATTAN AVENUE	<b>SEGMENT NO.</b>	20
<b>FROM</b>	MARINE AVENUE	<b>TO</b>	27TH STREET

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.23 miles
Roadway Width	30 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Stop Sign at Marine Av.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Limited ped/side traffic visibility due to narrow D/Ws, on-street parking
Lighting	Staggered spacing along segment
Crosswalks?	Marine Av. (N); 23rd St. (N); 24th St.; 25th St.; 26th St. (N); 27th St. (S)
Shoulder/Roadside Factors	
Adjacent Land Use	RH / OS-Culiacan Park / PS-Beach Parking Lot B
On-Street Parking	West side-none; East side-heavy
Bike Lanes?	No
Driveways?	Closely-spaced/back-to-back lowrise residential
Sidewalks?	Yes

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	1,465 Vehicles per Day
Traffic Volume Count Date	01/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Very light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	2.03 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/07/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	22 mph
85th Percentile Speed	26 mph
10-mph Pace	17-26 mph
% of Vehicles In Pace	73%
% of Vehicles Over/Under Pace	27%
Posted Speed Limit	25 mph
Speed Limit Justification	Adjacent open park activity, high pedestrian traffic, and residential driveways with low visibility
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN AVENUE	<b>SEGMENT NO.</b>	21
<b>FROM</b>	27TH STREET	<b>TO</b>	ROSECRANS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.45</b> miles
Roadway Width	<b>30</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Stop Sign at Rosecrans Av.
Horizontal Alignment	Straight
Vertical Alignment	Mostly flat
Visibility	Limited ped/side traffic visibility due to narrow D/Ws, on-street parking
Lighting	Staggered spacing along segment
Crosswalks?	27th (S); 29th; 30th; 31st; 32nd; 33rd; 34th; 35th; Rosecrans (S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RH
On-Street Parking	West side-none; East side-moderate to heavy
Bike Lanes?	No
Driveways?	Closely-spaced/back-to-back lowrise residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>1,855</b> Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Moderate, Heavy in Summer
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/07/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>22</b> mph
85th Percentile Speed	<b>27</b> mph
10-mph Pace	<b>16-25</b> mph
% of Vehicles In Pace	<b>74%</b>
% of Vehicles Over/Under Pace	<b>26%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	High pedestrian traffic and residential driveways with low visibility.
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	22
<b>FROM</b>	OCEAN DRIVE	<b>TO</b>	HIGHLAND AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.10 miles
Roadway Width	55 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals at Manhattan Ave. and Highland Av.
Horizontal Alignment	Straight
Vertical Alignment	Steep; downhill toward M.Bch. Pier
Visibility	Fair, limited angled parking visibility
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Manhattan Av. (E,W); Highland Av. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CD
On-Street Parking	Metered parking (angled on north side)
Bike Lanes?	No
Driveways?	Commercial
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	4,991 Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Heavy
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	1.37 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/20/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	15 mph
85th Percentile Speed	20 mph
10-mph Pace	10-19 mph
% of Vehicles In Pace	82%
% of Vehicles Over/Under Pace	18%
Posted Speed Limit	25 mph
Speed Limit Justification	85th percentile speed
Recommended Speed Limit	25 mph

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2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	23
<b>FROM</b>	HIGHLAND AVENUE	<b>TO</b>	VALLEY DRIVE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.12 miles
Roadway Width	55-60 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals at Highland Av. and Valley Dr.
Horizontal Alignment	Straight
Vertical Alignment	Slight grade
Visibility	Fair, limited angled parking visibility
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Highland Av. (E,W); Morningside Dr. (E,W); Valley Dr. (W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CD
On-Street Parking	Metered parking (angled)
Bike Lanes?	No
Driveways?	Commercial
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	6,965 Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Heavy
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	2 Collisions
Average Annual Collisions	0.50 Collisions per Year
Calculated Annual Collision Rate	1.64 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/20/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	16 mph
85th Percentile Speed	21 mph
10-mph Pace	10-19 mph
% of Vehicles In Pace	80%
% of Vehicles Over/Under Pace	20%
Posted Speed Limit	25 mph
Speed Limit Justification	85th percentile speed
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	24
<b>FROM</b>	VALLEY DRIVE	<b>TO</b>	PACIFIC AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.27 miles
Roadway Width	50-52 feet
Number of Lanes	3
Center Median Type	Painted centerline
Traffic Control	Signals at Valley Dr., Ardmore Av. and Pacific Av.
Horizontal Alignment	Horizontal Alignment
Vertical Alignment	Steep; even grade near Pacific Av.
Visibility	Constrained driveway visibility due to vert. curve, EB on-street parking
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Valley Dr. (W); Ardmore Av. (E); Pacific Av. (E)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RH
On-Street Parking	Moderate to heavy
Bike Lanes?	No
Driveways?	Closely-spaced mid-rise residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	14,599 Vehicles per Day
Traffic Volume Count Date	06/15/2022
Pedestrian/Bicycle Traffic	Heavy with most traveling adjacent to roadway or crossing near Pacific
Truck Traffic	Light to moderate

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	3 Collisions
Average Annual Collisions	0.75 Collisions per Year
Calculated Annual Collision Rate	0.52 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/28/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	30 mph
85th Percentile Speed	36 mph
10-mph Pace	28-37 mph
% of Vehicles In Pace	63%
% of Vehicles Over/Under Pace	37%
Posted Speed Limit	30 mph
Speed Limit Justification	Business district, high peds/bike traffic, and on-street parking. Residential unit density = 155 DHs/mi. (both sides)
Recommended Speed Limit	30 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	25
<b>FROM</b>	PACIFIC AVENUE	<b>TO</b>	SEPULVEDA BLVD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.41</b> miles
Roadway Width	<b>60-70</b> feet
Number of Lanes	<b>4</b>
Center Median Type	Painted - Pacific to Dianthus; Raised - Dianthus to Sepulveda
Traffic Control	Signals at Pacific Av., Poinsettia Av. and Sepulveda Bl.
Horizontal Alignment	Straight
Vertical Alignment	Hilly
Visibility	Mostly fair; limited commercial driveway visibility in EB direction
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Pacific Av. (E); Poinsettia Av. (E); Sepulveda Bl. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CL(G) / PS-Pacific Elementary School
On-Street Parking	EB-None; WB-moderate between Poinsettia and Pacific
Bike Lanes?	No
Driveways?	Closely-spaced commercial driveways
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>21,656</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate, most near Pacific Av.
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>9</b> Collisions
Average Annual Collisions	<b>2.25</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.69</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/22/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>29</b> mph
85th Percentile Speed	<b>35</b> mph
10-mph Pace	<b>25-34</b> mph
% of Vehicles In Pace	<b>62%</b>
% of Vehicles Over/Under Pace	<b>38%</b>
Posted Speed Limit	<b>35</b> mph
Speed Limit Justification	Closely-spaced commercial driveways, on-street parking, and vertical curvature, 25-MPH school zone near Pacific Av.
Recommended Speed Limit	<b>35</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	26
<b>FROM</b>	SEPULVEDA BOULEVARD	<b>TO</b>	PECK AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.48</b> miles
Roadway Width	<b>78-80</b> feet
Number of Lanes	<b>4</b>
Center Median Type	Raised (Striped hatching at Fire Station)
Traffic Control	Signals- Sepulveda, Target, Meadows, Peck; Flashing Yellow- Fire Station
Horizontal Alignment	Straight
Vertical Alignment	Hilly
Visibility	Limited commercial driveway visibility due to on-street parking
Lighting	Inside median, at intersections and along both sides of segment
Crosswalks?	Sepulveda Bl. (E,W); Meadows Av. (E,W); Peck Av. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG / RS(H) / PS-Fire Station #2
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Unexpected lowrise residential; commercial near Sepulveda
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>22,365</b> Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Light; moderate at Sepulveda Bl.
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>11</b> Collisions
Average Annual Collisions	<b>2.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.70</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/22/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>36</b> mph
85th Percentile Speed	<b>42</b> mph
10-mph Pace	<b>32-41</b> mph
% of Vehicles In Pace	<b>64%</b>
% of Vehicles Over/Under Pace	<b>36%</b>
Posted Speed Limit	<b>35</b> mph
Speed Limit Justification	Unexpected residential driveways, high on-street parking, and school crossin
Recommended Speed Limit	<b>35</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MANHATTAN BEACH BOULEVARD	<b>SEGMENT NO.</b>	27
<b>FROM</b>	PECK AVENUE	<b>TO</b>	AVIATION BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>78</b> feet
Number of Lanes	<b>4</b>
Center Median Type	Raised
Traffic Control	Signals at Peck Av., Redondo Av. and Aviation Bl.
Horizontal Alignment	Straight
Vertical Alignment	Gradual hills
Visibility	Limited side street visibility due to parked cars
Lighting	Inside median, at intersections and along both sides of segment
Crosswalks?	Peck Av.(E,W); Redondo Av.(E,W); Harkness St.(E); Aviation Bl.(E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG(L) / RS(H) / PS-M.H. Comm. & Creative Arts Ctrs. / OS-Polliwog & M.H. Parks
On-Street Parking	Moderate near Peck; limited meter parking near Aviation
Bike Lanes?	No
Driveways?	Lowrise residential; closely-spaced commercial near Aviation Bl.
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>22,984</b> Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Moderate between Peck/Redondo
Truck Traffic	Moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>8</b> Collisions
Average Annual Collisions	<b>2.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.48</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/22/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>35</b> mph
85th Percentile Speed	<b>42</b> mph
10-mph Pace	<b>31-40</b> mph
% of Vehicles In Pace	<b>66%</b>
% of Vehicles Over/Under Pace	<b>34%</b>
Posted Speed Limit	<b>35</b> mph
Speed Limit Justification	High collision rate, on-street parking, adjacent park area, peds. Residential (16 DHs/mi) & business (38%) densities.
Recommended Speed Limit	<b>35</b> mph

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	MARINE AVENUE	<b>SEGMENT NO.</b>	28
<b>FROM</b>	OCEAN DRIVE	<b>TO</b>	HIGHLAND DRIVE

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.09 miles
Roadway Width	48 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Highland Av.; Stop Signs- Ocean Dr.
Horizontal Alignment	Straight
Vertical Alignment	Steep grade (downhill toward Ocean Dr.)
Visibility	Fair at low speeds
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Highland Av. (E,W)
Shoulder/Roadside Factors	
Adjacent Land Use	RM(H) / CL
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Closely-spaced lowrise residential
Sidewalks?	Yes

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	2,534 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Very light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/07/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	19 mph
85th Percentile Speed	23 mph
10-mph Pace	15-24 mph
% of Vehicles In Pace	88%
% of Vehicles Over/Under Pace	12%
Posted Speed Limit	25 mph
Speed Limit Justification	85th percentile speed
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MARINE AVENUE	<b>SEGMENT NO.</b>	29
<b>FROM</b>	HIGHLAND AVENUE	<b>TO</b>	VALLEY DRIVE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.53 miles
Roadway Width	22-48 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Highland Av.; Stop Signs- Grandview, Blanche, 25th, Valley
Horizontal Alignment	Straight, with inflections at Marine Av. and 25th St.
Vertical Alignment	Highland-Vista:steep, Vista-Valley:moderate grade
Visibility	Limited residential driveway visibility
Lighting	Lamppost lighting along both sides; luminaires at intersections
Crosswalks?	Highland Av. (E,W); Manor Dr. (E)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RM(H, S-D3) / CL
On-Street Parking	Highland-Vista:heavy, Vista-Valley:light (short driveways) to none
Bike Lanes?	No
Driveways?	Highland-Grandview:lowrise residential, Grandview-Valley:residential
Sidewalks?	Highland-Vista:Yes, Vista-Valley:No

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	3,276 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Light; heavier near segments ends (Highland Av. and Valley Dr.)
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	2 Collisions
Average Annual Collisions	0.50 Collisions per Year
Calculated Annual Collision Rate	0.79 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/13/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	25 mph
85th Percentile Speed	28 mph
10-mph Pace	20-29 mph
% of Vehicles In Pace	82%
% of Vehicles Over/Under Pace	18%
Posted Speed Limit	25 mph
Speed Limit Justification	On-street parking, limited residential driveway visibility, pedestrian traffic
Recommended Speed Limit	25 mph

**CERTIFICATION:**

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Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

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**CITY OF MANHATTAN BEACH**  
**2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MARINE AVENUE	<b>SEGMENT NO.</b>	30
<b>FROM</b>	ARDMORE AVENUE	<b>TO</b>	SEPULVEDA BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.40</b> miles
Roadway Width	<b>26-34</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Centerline Stripe
Traffic Control	Signal at Sepulveda Blvd.; Stops at Elm Ave., Walnut Ave., Palm Ave., Ardmore
Horizontal Alignment	Straight
Vertical Alignment	Moderate Up and Downslopes, Both Directions
Visibility	Restricted at Side Streets, Blind Driveways
Lighting	Some, at Intersections
Crosswalks?	Sepulveda Blvd., Elm Ave., Walnut Ave., Palm Ave.
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Residential
On-Street Parking	Both Sides
Bike Lanes?	No
Driveways?	Both Sides
Sidewalks?	No; Paved Shoulder

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>6,595</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	None

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>1</b> Collisions
Average Annual Collisions	<b>0.25</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.26</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/28/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>25</b> mph
85th Percentile Speed	<b>29</b> mph
10-mph Pace	<b>22-31</b> mph
% of Vehicles In Pace	<b>79%</b>
% of Vehicles Over/Under Pace	<b>21%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Limited driveway visibility, vertical grade, heavy pedestrian traffic
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MARINE AVENUE	<b>SEGMENT NO.</b>	31
<b>FROM</b>	SEPULVEDA BOULEVARD	<b>TO</b>	MEADOWS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.35</b> miles
Roadway Width	<b>72.5-74</b> feet
Number of Lanes	<b>4</b>
Center Median Type	Raised
Traffic Control	Signals at Sepulveda Bl., Cedar Av. and Meadows Av.
Horizontal Alignment	Straight
Vertical Alignment	Sepulveda-Cedar:flat, Cedar-Meadows:moderate grade
Visibility	EB-Limited side street traffic visibility due to vertical profile
Lighting	In median island
Crosswalks?	Sepulveda (E,W); Cedar Av. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG(C-Manhattan Village Mall) / RS-D4(PD)
On-Street Parking	None
Bike Lanes?	No
Driveways?	Few commercial near Sepulveda; otherwise none
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>16,025</b> Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Light to moderate in summer
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>1</b> Collisions
Average Annual Collisions	<b>0.25</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.12</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/21/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>36</b> mph
85th Percentile Speed	<b>41</b> mph
10-mph Pace	<b>32-41</b> mph
% of Vehicles In Pace	<b>68%</b>
% of Vehicles Over/Under Pace	<b>32%</b>
Posted Speed Limit	<b>35</b> mph
Speed Limit Justification	Limited side street traffic visibility due to vertical profile.
Recommended Speed Limit	<b>35</b> mph

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	MARINE AVENUE	<b>SEGMENT NO.</b>	32
<b>FROM</b>	MEADOWS AVENUE	<b>TO</b>	AVIATION BOULEVARD

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	<b>0.74</b> miles
Roadway Width	<b>74-85</b> feet
Number of Lanes	<b>4</b>
Center Median Type	Raised
Traffic Control	Signals at Meadows Av., Peck Av., Redondo Av. and Aviation Bl.
Horizontal Alignment	Straight
Vertical Alignment	Steep grade
Visibility	Limited residential driveway visibility due to steep grade
Lighting	Luminaires located in median and on both sides of intersections
Crosswalks?	Meadows Av. (W); Peck Av. (W); Redondo (W); Aviation (E,W)
Shoulder/Roadside Factors	
Adjacent Land Use	RS(PD) / OS-Marine Ave. Park & Sports Complex / CG
On-Street Parking	EB-Light; WB-none
Bike Lanes?	No
Driveways?	Residential; few commercial near Aviation
Sidewalks?	Yes (short area EB b/w Meadows and Peck without sidewalk)

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	<b>16,390</b> Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Light

### 3 - COLLISION HISTORY

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>8</b> Collisions
Average Annual Collisions	<b>2.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.45</b> Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	06/21/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>33</b> mph
85th Percentile Speed	<b>42</b> mph
10-mph Pace	<b>25-34</b> mph
% of Vehicles In Pace	<b>45%</b>
% of Vehicles Over/Under Pace	<b>55%</b>
Posted Speed Limit	<b>35</b> mph
Speed Limit Justification	Limited residential driveway visibility, on-street parking, hills, adjacent park
Recommended Speed Limit	<b>35</b> mph

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**2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MEADOWS AVENUE	<b>SEGMENT NO.</b>	33
<b>FROM</b>	ARTESIA BOULEVARD	<b>TO</b>	2ND STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.50 miles
Roadway Width	36-40 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Artesia Bl.; Stop Signs- Keats St., Curtis Av., 2nd St.
Horizontal Alignment	Straight
Vertical Alignment	Artesia-Keats:flat, Keats-2nd:steep grade
Visibility	Some constraints due to blind grade plus on-street parking
Lighting	Along east side of segment
Crosswalks?	Artesia Bl. (N); Keats St. (S); Voorhees Av. (S); 2nd St. (S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H) / PD(S-Mira Costa High School)
On-Street Parking	Light, except heavy near High School
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	3,277 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Heavy near Mira Costa Elem.
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	0.42 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/23/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	27 mph
85th Percentile Speed	32 mph
10-mph Pace	22-31 mph
% of Vehicles In Pace	73%
% of Vehicles Over/Under Pace	27%
Posted Speed Limit	25 mph
Speed Limit Justification	Residential driveways, pedestrian traffic, school crossings.
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	MEADOWS AVENUE	<b>SEGMENT NO.</b>	34
<b>FROM</b>	2ND STREET	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.50 miles
Roadway Width	30-35 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 2nd, 6th, 9th, 10th St.
Horizontal Alignment	Straight
Vertical Alignment	Steep grade
Visibility	Some constraints due to blind hills plus on-street parking
Lighting	Along west side of segment and at intersections
Crosswalks?	2nd St. (S); 9th St. (N,S); 10th St. (N,S); 11th St. (N); M.Bch. Bl. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H)
On-Street Parking	Light
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	2,559 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	2 Collisions
Average Annual Collisions	0.50 Collisions per Year
Calculated Annual Collision Rate	1.07 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/23/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	24 mph
85th Percentile Speed	28 mph
10-mph Pace	20-29 mph
% of Vehicles In Pace	76%
% of Vehicles Over/Under Pace	24%
Posted Speed Limit	25 mph
Speed Limit Justification	On-street parking, limited residential driveway visibility, vertical curvature.
Recommended Speed Limit	25 mph

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	MEADOWS AVENUE	<b>SEGMENT NO.</b>	35
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	MARINE AVENUE

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.50 miles
Roadway Width	24-30 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- M.Bch Blvd., Marine; Stop Signs- Meadows Elem., 17th, 21st
Horizontal Alignment	Straight
Vertical Alignment	Moderate grade
Visibility	Limited residential driveway visibility
Lighting	Along west side of segment and at intersections
Crosswalks?	M.Bch. Bl.(N,S); Meadows Elem.; 17th St.(N,S); Marine Av.(N,S)
Shoulder/Roadside Factors	
Adjacent Land Use	RS(H, M, S-D4) / PS-Meadows School
On-Street Parking	M.Bch. Bl.-21st: light to moderate; 21st-Marine: none
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	1,995 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Heavy at both crosswalks across to Meadows Elem.
Truck Traffic	Very light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	0.69 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	06/21/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	23 mph
85th Percentile Speed	28 mph
10-mph Pace	18-27 mph
% of Vehicles In Pace	73%
% of Vehicles Over/Under Pace	27%
Posted Speed Limit	25 mph
Speed Limit Justification	Narrow roadway, high collision rate, on-street parking, and residential driveways, school zone
Recommended Speed Limit	25 mph

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2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PACIFIC AVENUE	<b>SEGMENT NO.</b>	36
<b>FROM</b>	5TH STREET	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.36 miles
Roadway Width	40 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 5th, 8th, 10th St.
Horizontal Alignment	Straight
Vertical Alignment	Light hills
Visibility	Limited due to vertical curvature, on-street parking, narrow roadway
Lighting	Spaced along west side of segment and near Manhattan Beach Bl.
Crosswalks?	Manhattan Beach Bl. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H) / CL
On-Street Parking	Moderate
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes; discontinuous in some areas

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	1,185 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/28/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	24 mph
85th Percentile Speed	29 mph
10-mph Pace	19-28 mph
% of Vehicles In Pace	63%
% of Vehicles Over/Under Pace	37%
Posted Speed Limit	25 mph
Speed Limit Justification	High collision rate, on-street parking, limited residential driveway
Recommended Speed Limit	25 mph

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2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PACIFIC AVENUE	<b>SEGMENT NO.</b>	37
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	17TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.20 miles
Roadway Width	50-70 feet
Number of Lanes	2
Center Median Type	Centerline Stripe
Traffic Control	Signal at Manhattan Beach Bl, Stops at 14th St., 17th St.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Good, Except Some Blind Driveways
Lighting	Yes, At Intersections, Some Midblock
Crosswalks?	Manhattan Beach Blvd., 14th St., 17th St.
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Residential, public school
On-Street Parking	Both Sides
Bike Lanes?	Bike Route Signs
Driveways?	West Sides
Sidewalks?	Both Sides

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	3,804 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	24 mph
85th Percentile Speed	28 mph
10-mph Pace	19-28 mph
% of Vehicles In Pace	86%
% of Vehicles Over/Under Pace	14%
Posted Speed Limit	25 mph
Speed Limit Justification	High pedestrian activity, numerous crosswalks, adjacent school
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PACIFIC AVENUE	<b>SEGMENT NO.</b>	38
<b>FROM</b>	17TH STREET	<b>TO</b>	MARINE AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.30 miles
Roadway Width	40 feet
Number of Lanes	2
Center Median Type	Centerline Stripe
Traffic Control	Stop at 17th St., 18th St., 19th St., Marine Ave.
Horizontal Alignment	Straight
Vertical Alignment	Flat, Slight NB Downgrade at Marine Ave.
Visibility	Good, Except Restricted at Side Streets, Some Blind Driveways
Lighting	Yes, At Intersections, Some Midblock
Crosswalks?	17th St., 18th St., Marine Ave.
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Residential
On-Street Parking	Both Sides
Bike Lanes?	BikeRoute Signs
Driveways?	Both Sides
Sidewalks?	Both Sides

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	4,041 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate in School Zone
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	22 mph
85th Percentile Speed	26 mph
10-mph Pace	18-27 mph
% of Vehicles In Pace	81%
% of Vehicles Over/Under Pace	19%
Posted Speed Limit	25 mph
Speed Limit Justification	School Peds, Heavy Parking, Bike Route, Blind Driveways, Adjacent Speed Limit
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PACIFIC AVENUE	<b>SEGMENT NO.</b>	39
<b>FROM</b>	VALLEY DRIVE	<b>TO</b>	ROSECRANS AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.47</b> miles
Roadway Width	<b>38</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals- Rosecrans Av.; Stop Signs- Valley Dr., 27th, 31st, 35th St.
Horizontal Alignment	Straight
Vertical Alignment	Slight grade changes; flat near Rosecrans
Visibility	Some limitations due to short driveways and on-street parking
Lighting	Spaced along west side of segment
Crosswalks?	Valley Dr. (N); 27th St. (S); 31st St. (S); 35th St. (S); Rosecrans Av. (N,S);
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(S-D1)
On-Street Parking	Moderate to light
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>3,043</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>3</b> Collisions
Average Annual Collisions	<b>0.75</b> Collisions per Year
Calculated Annual Collision Rate	<b>1.44</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>25</b> mph
85th Percentile Speed	<b>30</b> mph
10-mph Pace	<b>20-29</b> mph
% of Vehicles In Pace	<b>74%</b>
% of Vehicles Over/Under Pace	<b>26%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Visibility constraints due to on-street parking and vertical profile.
Recommended Speed Limit	<b>25</b> mph

**CERTIFICATION:**

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Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

Date





**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PECK AVENUE	<b>SEGMENT NO.</b>	40
<b>FROM</b>	ARTESIA BL	<b>TO</b>	2ND STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>42</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals- Artesia Bl.; Stop Signs- Nelson, Ruhland, Curtis, Gates, 2nd
Horizontal Alignment	Straight
Vertical Alignment	Steep grades; hilly with dips near school
Visibility	Some visibility constraints due to steep vertical curvature
Lighting	Spaced along west side of segment; some school lighting
Crosswalks?	Artesia Bl. (N,S); Mathews Av. (S by sign); Ruhland Av. (S by sign);
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Voorhees Av. (N by sign); 1st St. (S by sign)
On-Street Parking	RS(H) / PS-Mira Costa HS & Pennekamp Elementary School
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Residential; school driveways between Keats and 2nd
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>3,006</b> Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Heavy between Artesia and Curtis
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>22</b> mph
85th Percentile Speed	<b>27</b> mph
10-mph Pace	<b>17-26</b> mph
% of Vehicles In Pace	<b>78%</b>
% of Vehicles Over/Under Pace	<b>22%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	High pedestrian traffic, school crossings, vertical curvature, and residential driveways, 25-MPH school zone.
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PECK AVENUE	<b>SEGMENT NO.</b>	41
<b>FROM</b>	2ND STREET	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>24-30</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 2nd, 5th, 8th, 10thSt.
Horizontal Alignment	Straight
Vertical Alignment	Steep grades; hilly
Visibility	Some visibility constraints due to steep vertical curvature
Lighting	Spaced along west side of segment
Crosswalks?	Manhattan Beach Bl. (N,S); some stops/x-walks
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H)
On-Street Parking	Light
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>1,446</b> Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light, mostly adjacent to roadway
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/22/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>22</b> mph
85th Percentile Speed	<b>28</b> mph
10-mph Pace	<b>16-25</b> mph
% of Vehicles In Pace	<b>78%</b>
% of Vehicles Over/Under Pace	<b>22%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Limited residential driveways visibility, steep vertical profile.
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PECK AVENUE	<b>SEGMENT NO.</b>	42
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	12TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.05</b> miles
Roadway Width	<b>35</b> feet
Number of Lanes	<b>2</b>
Center Median Type	None
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 12th St.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Fair
Lighting	Spaced along west side of segment
Crosswalks?	Manhattan Beach Bl. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RH / PS-Manhattan Bch. (Begg) Intermediate School / OS-Begg Field
On-Street Parking	Heavy
Bike Lanes?	No
Driveways?	Residential (few)
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>2,287</b> Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/22/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>18</b> mph
85th Percentile Speed	<b>23</b> mph
10-mph Pace	<b>15-24</b> mph
% of Vehicles In Pace	<b>91%</b>
% of Vehicles Over/Under Pace	<b>9%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	85th percentile speed
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	PECK AVENUE	<b>SEGMENT NO.</b>	43
<b>FROM</b>	18TH STREET	<b>TO</b>	MARINE AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.25 miles
Roadway Width	24-30 feet
Number of Lanes	2
Center Median Type	None
Traffic Control	Signals- Marine Av.; Stop Signs- 18th, 19th, 21st St.
Horizontal Alignment	Straight
Vertical Alignment	Slight grade; flat between 19th and Marine Av.
Visibility	Limited driveway visibility; on-street parking plus narrow roadway
Lighting	Spaced along west side of segment
Crosswalks?	Marine Av. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS / PS-City (Peck) Reservoir
On-Street Parking	Light
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes; some discontinous areas

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	577 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	4.75 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/21/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	16 mph
85th Percentile Speed	19 mph
10-mph Pace	12-21 mph
% of Vehicles In Pace	91%
% of Vehicles Over/Under Pace	9%
Posted Speed Limit	25 mph
Speed Limit Justification	Narrow roadway
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	REDONDO AVENUE	<b>SEGMENT NO.</b>	44
<b>FROM</b>	ARTESIA BOULEVARD	<b>TO</b>	2ND STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.50 miles
Roadway Width	30 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Stop Signs at Artesia Bl., Curtis Av. and 2nd St
Horizontal Alignment	Straight
Vertical Alignment	Light hills
Visibility	Limited residential driveway visibility
Lighting	At intersections; limited along east side of segment
Crosswalks?	None
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H) / CL
On-Street Parking	Moderate (east side only)
Bike Lanes?	No
Driveways?	Residential (east side only from Artesia Bl. to Curtis Av.)
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	1,817 Vehicles per Day
Traffic Volume Count Date	06/08/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/06/2022
Number of Survey Samples	247 Vehicles
50th Percentile Speed	28 mph
85th Percentile Speed	32 mph
10-mph Pace	24-33 mph
% of Vehicles In Pace	74%
% of Vehicles Over/Under Pace	26%
Posted Speed Limit	25 mph
Speed Limit Justification	On-street parking, limited residential driveway visibility, light hills, frequent st
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	REDONDO AVENUE	<b>SEGMENT NO.</b>	45
<b>FROM</b>	2ND STREET	<b>TO</b>	MANHATTAN BEACH BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.50 miles
Roadway Width	35 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl.; Stop Signs- 2nd, 3rd, 6th, 8th, 10th St.
Horizontal Alignment	Straight
Vertical Alignment	Slight grade changes; mostly flat near Manhattan Beach Bl.
Visibility	Some driveway visibility constraints due to on-street parking
Lighting	At intersections; limited along east side of segment; park lighting
Crosswalks?	Manhattan Beach Bl. (N,S); 3rd (N,S); 8th (N,S); 10th (N)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(H) / CL / OS-Manhattan Heights Park
On-Street Parking	Light to moderate (east side only)
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	2,547 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light ped traffic near Manhattan Beach Bl.
Truck Traffic	Very Light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	0.54 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/23/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	19 mph
85th Percentile Speed	22 mph
10-mph Pace	15-24 mph
% of Vehicles In Pace	96%
% of Vehicles Over/Under Pace	4%
Posted Speed Limit	25 mph
Speed Limit Justification	On-street parking, limited residential driveway visibility, light hills, frequent stops
Recommended Speed Limit	25 mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	REDONDO AVENUE	<b>SEGMENT NO.</b>	46
<b>FROM</b>	MANHATTAN BEACH BOULEVARD	<b>TO</b>	MARINE AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>40</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted centerline
Traffic Control	Signals- Manhattan Beach Bl., Marine Av.; Stop Signs- 15th, 19th St.
Horizontal Alignment	Straight
Vertical Alignment	Light hills
Visibility	Fair
Lighting	Along both sides of segment; some west side park lighting
Crosswalks?	Manhattan Beach Bl. (N,S); 15th St. (N); 19th St. (S); Marine Av. (S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS / OS-Polliwog Park / PS-Manhattan Beach Middle School
On-Street Parking	M.Bch. Bl.-19th: heavy SB, 19th-Marine: light
Bike Lanes?	No
Driveways?	Residential; school & park driveways (west side near Manhattan Beach Bl.)
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>3,120</b> Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Heavy ped traffic between Manhattan Beach Blvd. and 15th
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>1</b> Collisions
Average Annual Collisions	<b>0.25</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.44</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/21/2022
Number of Survey Samples	<b>239</b> Vehicles
50th Percentile Speed	<b>28</b> mph
85th Percentile Speed	<b>32</b> mph
10-mph Pace	<b>24-33</b> mph
% of Vehicles In Pace	<b>78%</b>
% of Vehicles Over/Under Pace	<b>22%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Adjacent open park activity, school pedestrians, on-street parking, residential driveways, school zone.
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	ROSECRANS AVENUE	<b>SEGMENT NO.</b>	47
<b>FROM</b>	OCEAN DRIVE	<b>TO</b>	HIGHLAND AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.10 miles
Roadway Width	40 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signal at Highland Av.; Stop Signs- Ocean Dr.
Horizontal Alignment	Straight
Vertical Alignment	Steep downgrade toward beach
Visibility	Fair at low speeds
Lighting	Along both sides of segment
Crosswalks?	Highland Av. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RH / CNE
On-Street Parking	Heavy to moderate
Bike Lanes?	No
Driveways?	Lowrise residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	3,030 Vehicles per Day
Traffic Volume Count Date	06/21/2022
Pedestrian/Bicycle Traffic	Heavy to moderate, most crossing beyond Ocean Dr. or at Highland
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	1 Collisions
Average Annual Collisions	0.25 Collisions per Year
Calculated Annual Collision Rate	2.26 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/07/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	19 mph
85th Percentile Speed	25 mph
10-mph Pace	15-24 mph
% of Vehicles In Pace	85%
% of Vehicles Over/Under Pace	15%
Posted Speed Limit	25 mph
Speed Limit Justification	High collision rate, on-street parking, FAU Local Street.
Recommended Speed Limit	25 mph

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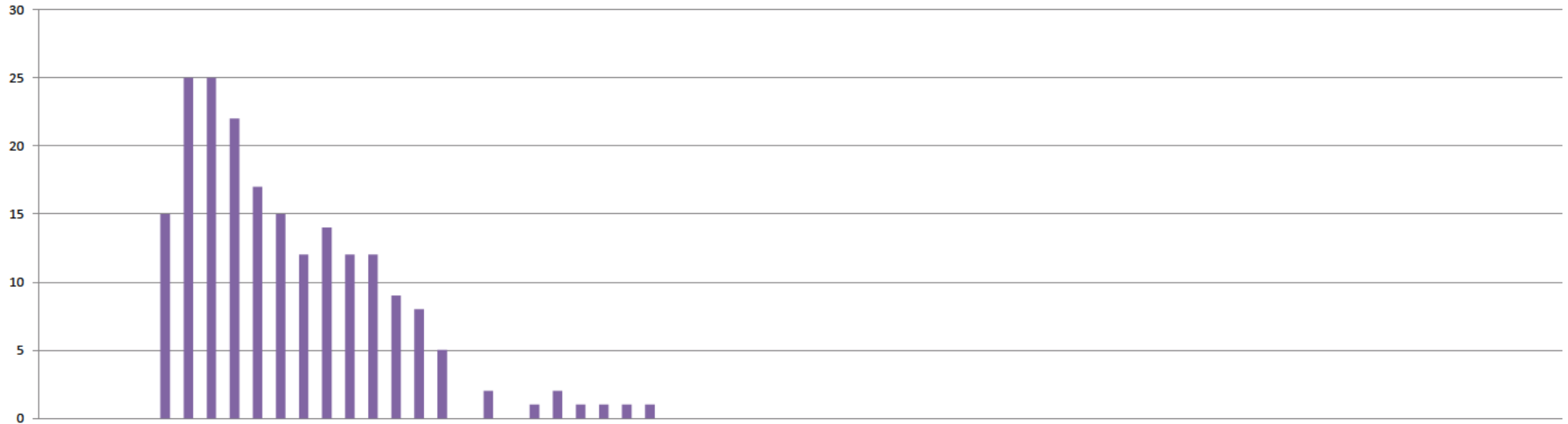
12/23/2022

Date

# RADAR SPEED STUDY

Rosecrans Avenue (Ocean Dr. to Highland Ave.) - COMBINED DIRECTIONS

<b>LOCATION</b>	Rosecrans Avenue (Ocean Dr. to Highland Ave.)	<b>PROJECT #</b>	2022132
<b>VICINITY</b>	Manhattan Beach	<b>LOCATION #</b>	047
<b>TIME RANGE</b>	14:00	<b>DATE OF STUDY</b>	Thursday, July 07, 2022



COUN																																																																														
MPH	0-10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75+												
% OF TOTAL	0%	0%	0%	0%	0%	8%	13%	13%	11%	9%	8%	6%	7%	6%	6%	5%	3%	0%	1%	0%	1%	1%	1%	1%	1%	1%	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%	0%	0%	0%	0%	0%	0%				
CUMULATIVE %	0%	0%	0%	0%	0%	8%	20%	33%	44%	52%	60%	66%	73%	79%	85%	89%	92%	95%	95%	97%	97%	98%	98%	99%	99%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

## SPEED STATISTICS

SAMPLE SIZE	200	15th PERCENT LE	16 MPH	10 MPH PACE	15 - 24
AVERAGE SPEED (MPH)	20.26	50th PERCENT LE	19 MPH	NUMBER IN PACE	169
SPEED RANGE (MPH)	15 - 36	85th PERCENT LE	25 MPH	PERCENT IN PACE	85%
TRAFFIC CONDITIONS	Normal	WEATHER CONDITIONS	Sunny	ROAD CONDITIONS	Normal
				POSTED SPEED LIMIT	25 MPH



CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	ROSECRANS AVENUE	<b>SEGMENT NO.</b>	48
<b>FROM</b>	HIGHLAND AVENUE	<b>TO</b>	BLANCHE ROAD

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.47 miles
Roadway Width	84 feet
Number of Lanes	4
Center Median Type	Raised
Traffic Control	Signals at Highland Av. and Blanche Rd.
Horizontal Alignment	Straight, with slight curve between Vista Dr. and Bell Ave.
Vertical Alignment	Gradual, moderate hills
Visibility	Limited driveway visibility due to on-street parking and curves
Lighting	At intersections and along segment inside median
Crosswalks?	Highland Av. (E,W); Blanche Rd. (E)
Shoulder/Roadside Factors	
Adjacent Land Use	RH(M, MD-1) / CNE
On-Street Parking	Heavy (EB only); metered near Highland
Bike Lanes?	Yes (EB and WB)
Driveways?	Residential (EB only); industrial (WB only)
Sidewalks?	Yes (EB only)

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	15,844 Vehicles per Day
Traffic Volume Count Date	06/21/2022
Pedestrian/Bicycle Traffic	Moderate at Highland Av.
Truck Traffic	Moderate to heavy

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.07 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	4 Collisions
Average Annual Collisions	1.00 Collisions per Year
Calculated Annual Collision Rate	0.37 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/12/2022
Number of Survey Samples	85 Vehicles
50th Percentile Speed	34 mph
85th Percentile Speed	41 mph
10-mph Pace	30-39 mph
% of Vehicles In Pace	74%
% of Vehicles Over/Under Pace	26%
Posted Speed Limit	35 mph
Speed Limit Justification	Horizontal curvature, on-street parking, limited driveway visibility.
Recommended Speed Limit	35 mph

#### CERTIFICATION:

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**CITY OF MANHATTAN BEACH**  
**2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	ROSECRANS AVENUE	<b>SEGMENT NO.</b>	49
<b>FROM</b>	BLANCHE ROAD	<b>TO</b>	SEPULVEDA BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.77 miles
Roadway Width	84 feet
Number of Lanes	5
Center Median Type	Raised
Traffic Control	Signals at Blanche Rd., Pacific Av. and Sepulveda Bl.
Horizontal Alignment	Straight
Vertical Alignment	Gradual, moderate hills
Visibility	Fair
Lighting	At intersections and along segment inside median
Crosswalks?	Blanche Rd. (E); Pacific Av. (E); Sepulveda Bl (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS(S-D1) / CG
On-Street Parking	Moderate to heavy (EB only)
Bike Lanes?	Yes
Driveways?	Residential (EB only); industrial (WB only)
Sidewalks?	Yes (EB only)

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	19,143 Vehicles per Day
Traffic Volume Count Date	06/21/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Heavy

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.07 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	4 Collisions
Average Annual Collisions	1.00 Collisions per Year
Calculated Annual Collision Rate	0.19 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/12/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	40 mph
85th Percentile Speed	47 mph
10-mph Pace	38-47 mph
% of Vehicles In Pace	44%
% of Vehicles Over/Under Pace	56%
Posted Speed Limit	40 mph EB direction only (45 mph in WB direction)
Speed Limit Justification	Limited driveway visibility, vertical grade, heavy street parking,
Recommended Speed Limit	40 mph

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<b>STREET</b>	ROSECRANS AVENUE	<b>SEGMENT NO.</b>	50
<b>FROM</b>	SEPULVEDA BOULEVARD	<b>TO</b>	MARKET PLACE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.55</b> miles
Roadway Width	<b>84</b> feet
Number of Lanes	<b>6</b>
Center Median Type	Raised
Traffic Control	Signals at Sepulveda Bl., Village Dr., Park Wy., and Market Pl.
Horizontal Alignment	Straight
Vertical Alignment	Mostly flat, downgrade EB near Village Dr.
Visibility	Fair
Lighting	Dual-sided luminaires spaced along segment inside median
Crosswalks?	Sepulveda Bl.(E,W); Village Dr.(E); Parkway Dr.(E,W); Market Pl.(E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	CG(C) / IP / PD-Manhattan Marketplace
On-Street Parking	None
Bike Lanes?	No
Driveways?	Commercial; industrial (WB only)
Sidewalks?	Sepulveda to Village:Yes (EB only), Village to Market: Both Sides

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>36,681</b> Vehicles per Day
Traffic Volume Count Date	06/21/2022
Pedestrian/Bicycle Traffic	Light to moderate near Market Pl.
Truck Traffic	Moderate to heavy

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>10</b> Collisions
Average Annual Collisions	<b>2.50</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.34</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/12/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>37</b> mph
85th Percentile Speed	<b>43</b> mph
10-mph Pace	<b>33-42</b> mph
% of Vehicles In Pace	<b>66%</b>
% of Vehicles Over/Under Pace	<b>34%</b>
Posted Speed Limit	<b>40</b> mph EB direction only (45 mph in WB direction)
Speed Limit Justification	Commercial driveways, truck traffic, continuity of adjacent speeds.
Recommended Speed Limit	<b>40</b> mph

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<b>STREET</b>	ROSECRANS AVENUE	<b>SEGMENT NO.</b>	51
<b>FROM</b>	MARKET PLACE	<b>TO</b>	AVIATION BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.44</b> miles
Roadway Width	<b>84</b> feet
Number of Lanes	<b>6</b> (8 from Manhattan Gateway to Aviation)
Center Median Type	Raised (undiv. back-to-back turn lanes from Redondo to Manhattan Gateway)
Traffic Control	Traffic Control
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Fair
Lighting	At intersections and spaced along segment (both sides)
Crosswalks?	Market (E,W); Redondo (E,W); Manhattan Gateway (E); Aviation (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	IP / PD-Manhattan Marketplace & Gateway
On-Street Parking	None
Bike Lanes?	No
Driveways?	Commercial
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>44,404</b> Vehicles per Day
Traffic Volume Count Date	10/12/2022
Pedestrian/Bicycle Traffic	Moderate peds at Manhattan Gateway
Truck Traffic	Heavy

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.07</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>4</b> Collisions
Average Annual Collisions	<b>1.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.14</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/12/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>29</b> mph
85th Percentile Speed	<b>36</b> mph
10-mph Pace	<b>22-31</b> mph
% of Vehicles In Pace	<b>55%</b>
% of Vehicles Over/Under Pace	<b>45%</b>
Posted Speed Limit	<b>40</b> mph EB direction only (45 mph in WB direction)
Speed Limit Justification	85th percentile speed
Recommended Speed Limit	<b>40</b> mph

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**CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	2ND STREET	<b>SEGMENT NO.</b>	52
<b>FROM</b>	SEPULVEDA BOULEVARD	<b>TO</b>	PECK AVENUE

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.50</b> miles
Roadway Width	<b>40</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Centerline Stripe
Traffic Control	Signals at Sepulveda Blvd.; Stop at Johnson St., Meadows St., Powell Ave., Peck Ave.
Horizontal Alignment	Straight
Vertical Alignment	Moderate EB Downgrade-Sepulveda Bl. To Meadows Ave.
Visibility	Good, Except Some Blind Driveways
Lighting	Some, At Intersections
Crosswalks?	Sepulveda Blvd., Meadows St., Rowell Ave., Peck Ave.
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	Residential, Commercial Fronting at Sepulveda Bl.
On-Street Parking	Both Sides
Bike Lanes?	No
Driveways?	Both Sides
Sidewalks?	Both Sides

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>3,870</b> Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Light
Truck Traffic	Very light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>0</b> Collisions
Average Annual Collisions	<b>0.00</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.00</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/23/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>26</b> mph
85th Percentile Speed	<b>30</b> mph
10-mph Pace	<b>21-30</b> mph
% of Vehicles In Pace	<b>82%</b>
% of Vehicles Over/Under Pace	<b>18%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	School Peds, Heavy Parking, Blind Driveways, Adjacent Speed Limit
Recommended Speed Limit	<b>25</b> mph

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2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	2ND STREET	<b>SEGMENT NO.</b>	53
<b>FROM</b>	PECK AVENUE	<b>TO</b>	AVIATION BOULEVARD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	0.50 miles
Roadway Width	36 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Signals- Aviation Bl.; Stop Signs- Peck Av., Herrin St., Redondo Av.
Horizontal Alignment	Straight
Vertical Alignment	Hilly
Visibility	Limited driveway visibility due to on-street parking, narrow road
Lighting	Along north side of segment
Crosswalks?	Peck Av. (E,W); Aviation Bl. (E,W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	RS
On-Street Parking	Moderate to heavy
Bike Lanes?	No
Driveways?	Residential
Sidewalks?	Yes

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	2,778 Vehicles per Day
Traffic Volume Count Date	06/07/2022
Pedestrian/Bicycle Traffic	Moderate school peds near Peck Ave.
Truck Traffic	Deliveries only

**3 - COLLISION HISTORY**

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	0 Collisions
Average Annual Collisions	0.00 Collisions per Year
Calculated Annual Collision Rate	0.00 Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/23/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	24 mph
85th Percentile Speed	28 mph
10-mph Pace	20-29 mph
% of Vehicles In Pace	85%
% of Vehicles Over/Under Pace	15%
Posted Speed Limit	25 mph
Speed Limit Justification	Narrow roadway, limited driveway visibility, heavy on-street parking
Recommended Speed Limit	25 mph

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	VALLEY DRIVE	<b>SEGMENT NO.</b>	54
<b>FROM</b>	BOUNDARY PLACE	<b>TO</b>	10TH STREET

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	<b>0.58</b> miles
Roadway Width	<b>32</b> feet
Number of Lanes	<b>2</b> (NB/SB Longfellow to Homer; SB/SB Homer to 10th)
Center Median Type	Painted (skip-type striping between 1-way lanes)
Traffic Control	Stop Signs at Homer Pl, 1st St. and 6th St.
Horizontal Alignment	Curved
Vertical Alignment	Flat
Visibility	Side street/driveway traffic visibility constraints due to on-street parking
Lighting	At intersections and spaced along west side of segment
Crosswalks?	Francisco St. (N); 1st St. (N,S)
Shoulder/Roadside Factors	
Adjacent Land Use	RS
On-Street Parking	Heavy to moderate (west side only)
Bike Lanes?	No
Driveways?	Lowrise residential (west side only)
Sidewalks?	West side only

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	<b>5,940</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Peds/bicyclists present
Truck Traffic	Very light

### 3 - COLLISION HISTORY

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>2</b> Collisions
Average Annual Collisions	<b>0.50</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.40</b> Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	<b>100</b> Vehicles
50th Percentile Speed	<b>31</b> mph
85th Percentile Speed	<b>36</b> mph
10-mph Pace	<b>29-38</b> mph
% of Vehicles In Pace	<b>70%</b>
% of Vehicles Over/Under Pace	<b>30%</b>
Posted Speed Limit	<b>30</b> mph
Speed Limit Justification	Residential zone, on-street parking, limited driveway visibility, peds.
Recommended Speed Limit	<b>30</b> mph

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2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	VALLEY DRIVE	<b>SEGMENT NO.</b>	55
<b>FROM</b>	10TH STREET	<b>TO</b>	13TH STREET

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.19</b> miles
Roadway Width	<b>32</b> feet
Number of Lanes	<b>2</b>
Center Median Type	Painted (skip-type striping between 1-way lanes)
Traffic Control	Signal at Manhattan Beach Bl.
Horizontal Alignment	Straight
Vertical Alignment	Flat
Visibility	Limited residential driveway visibility
Lighting	At intersections and spaced along west side of segment
Crosswalks?	Manhattan beach Bl. (N,S)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	OS-greenbelt / RM / CD-Metlox Plaza & Parking Lot M
On-Street Parking	Heavy (west side only)
Bike Lanes?	No
Driveways?	Lowrise residential (west side only)
Sidewalks?	West side only

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>6,559</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Heavy
Truck Traffic	Light to moderate

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>2</b> Collisions
Average Annual Collisions	<b>0.50</b> Collisions per Year
Calculated Annual Collision Rate	<b>1.10</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	06/29/2022
Number of Survey Samples	<b>100</b> Vehicles
50th Percentile Speed	<b>24</b> mph
85th Percentile Speed	<b>28</b> mph
10-mph Pace	<b>17-26</b> mph
% of Vehicles In Pace	<b>65%</b>
% of Vehicles Over/Under Pace	<b>35%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Residential zone, pedestrian traffic, on-street parking, horizontal curvature
Recommended Speed Limit	<b>25</b> mph

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**CITY OF MANHATTAN BEACH**  
**2013 ENGINEERING AND TRAFFIC SURVEY**

<b>STREET</b>	VALLEY DRIVE	<b>SEGMENT NO.</b>	56
<b>FROM</b>	13TH STREET	<b>TO</b>	BLANCHE ROAD

**1 - ROADWAY CONDITIONS**

<b>Roadway Factors</b>	
Segment Length	<b>0.47</b> miles
Roadway Width	<b>32-40</b> feet
Number of Lanes	<b>2</b> (SB/SB 13th to 15th; NB/SB 15th to Blanche)
Center Median Type	Painted centerline
Traffic Control	Signals- 15th St.; Stop Signs- Blanche Rd.
Horizontal Alignment	Straight, with curvature along Live Oak Park
Vertical Alignment	Mostly flat
Visibility	Mostly fair; some restriction of ped traffic along curvature
Lighting	At intersections and spaced along west side of segment
Crosswalks?	15th St.(N,S); 2x Greenbelt Parking near 16th; 18th St., Blanche Rd.(W)
<b>Shoulder/Roadside Factors</b>	
Adjacent Land Use	OS-greenbelt & Live Oak Park / PS-Civic Ctr. & Joslyn Community Center / RS-
On-Street Parking	Moderate; angled parking into greenbelt area
Bike Lanes?	No
Driveways?	Residential (west side only); commercial near 15th
Sidewalks?	Yes; no greenbelt sidewalk north of 15th St.

**2 - TRAFFIC VOLUMES**

Average Daily Traffic	<b>7,273</b> Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Heavy; intensified ped volumes at greenbelt/Live Oak Park crossing
Truck Traffic	Light

**3 - COLLISION HISTORY**

Number of Years Considered	<b>4.00</b> Years
Expected Annual Collision Rate	<b>1.29</b> Collisions per Million Vehicle Miles
Total Collisions (4-year period)	<b>1</b> Collisions
Average Annual Collisions	<b>0.25</b> Collisions per Year
Calculated Annual Collision Rate	<b>0.20</b> Collisions per Million Vehicle Miles

**4 - SPEED ZONING ANALYSIS**

Speed Survey Day / Date / Time	07/14/2022
Number of Survey Samples	<b>200</b> Vehicles
50th Percentile Speed	<b>24</b> mph
85th Percentile Speed	<b>28</b> mph
10-mph Pace	<b>20-29</b> mph
% of Vehicles In Pace	<b>79%</b>
% of Vehicles Over/Under Pace	<b>21%</b>
Posted Speed Limit	<b>25</b> mph
Speed Limit Justification	Residential zone, high pedestrian traffic, horizontal curvature.
Recommended Speed Limit	<b>25</b> mph

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CITY OF MANHATTAN BEACH  
2013 ENGINEERING AND TRAFFIC SURVEY

<b>STREET</b>	VALLEY DRIVE	<b>SEGMENT NO.</b>	57
<b>FROM</b>	BLANCHE ROAD	<b>TO</b>	SEPULVEDA BOULEVARD

### 1 - ROADWAY CONDITIONS

Roadway Factors	
Segment Length	0.88 miles
Roadway Width	32-24 feet
Number of Lanes	2
Center Median Type	Painted centerline
Traffic Control	Stop Signs at Blanche Rd., Marine Av., Pacific Av. and Sepulveda Bl.
Horizontal Alignment	Straight with slight curves/inflection between Marine and 27th St.
Vertical Alignment	Steady grade changes
Visibility	Mostly fair; slight blind curve plus on-street parking near Blanche
Lighting	At intersections and spaced along west side of segment
Crosswalks?	Blanche Rd. (W); Pacific Av. (E,W); Sepulveda Bl. (W)
Shoulder/Roadside Factors	
Adjacent Land Use	OS-greenbelt / RS(SC) / CG
On-Street Parking	Light (west side only)
Bike Lanes?	No
Driveways?	Residential, senior apartment driveways (west side only)
Sidewalks?	West side only

### 2 - TRAFFIC VOLUMES

Average Daily Traffic	5,520 Vehicles per Day
Traffic Volume Count Date	06/14/2022
Pedestrian/Bicycle Traffic	Moderate
Truck Traffic	Light

### 3 - COLLISION HISTORY

Number of Years Considered	4.00 Years
Expected Annual Collision Rate	1.29 Collisions per Million Vehicle Miles
Total Collisions (4-year period)	5 Collisions
Average Annual Collisions	1.25 Collisions per Year
Calculated Annual Collision Rate	0.71 Collisions per Million Vehicle Miles

### 4 - SPEED ZONING ANALYSIS

Speed Survey Day / Date / Time	07/14/2022
Number of Survey Samples	200 Vehicles
50th Percentile Speed	30 mph
85th Percentile Speed	35 mph
10-mph Pace	25-34 mph
% of Vehicles In Pace	75%
% of Vehicles Over/Under Pace	25%
Posted Speed Limit	30 mph
Speed Limit Justification	Limited residential driveway visibility, on-street parking, horizontal curvature.
Recommended Speed Limit	30 mph

#### CERTIFICATION:

I, Erik Zandvliet, do hereby certify that this Engineering and Traffic Survey for the City of Manhattan Beach was performed under my supervision. I certify that I am both experienced in performing surveys of this type and am duly registered in the State of California as a professional engineer. The survey has been conducted in strict compliance with guidelines contained in the most current versions of the California Vehicle Code (CVC) and the California Department of Transportation Manual on Uniform Traffic Control Devices (MUTCD). Data contained in this report represents a true and accurate description of traffic conditions existing on Manhattan Beach streets.

Erik Zandvliet

TR #1775

State Registration No.

12/23/2022

Date

