Post-Pilot Vehicle, Pedestrian & Bicycle Volume & Speed Monitoring Project

Prepared for: City of Hermosa Beach

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FEHR &PEERS

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Key Takeaways

- **Big Data** – A Smartphone-based travel data source (called StreetLight Data) was used to evaluate the potential for traffic diversion along primary and secondary routes used to travel to and from Downtown as a result of the lane reductions on Pier Avenue and Hermosa Avenue. Weekend day StreetLight Data was gathered for the months of July and August 2019, 2020, and 2021, expanding the sample size to assess summer travel patterns. Overall activity in Downtown decreased by approximately 20% from summer 2019 to summer 2021. However, from summer 2020 to summer 2021 activity increased by 34%, indicating that activity trends and restaurant visitations in Downtown were returning to pre-COVID conditions. StreetLight Data was also used to evaluate trip distribution along primary and secondary routes for trips traveling to or from Downtown. Distribution on both lane reduction segments (Pier Avenue and Hermosa Avenue) remained the same or increased from summer 2019 to summer 2021, while secondary routes (potential diversion) experienced a decrease in distribution. 27th Street experienced a 1% decrease in distribution, making it highly unlikely that the lane reductions diverted traffic onto 27th Street.
- Additionally, weekend day activity was analyzed for each of the summer periods along 27th Street. Overall, 27th Street activity decreased by approximately 15% from summer 2019 to summer 2021. Of the total trips using 27th Street, roughly 21% started or ended in Downtown in summer 2019, and 17% in summer 2021. In conclusion, the assessment of overall activity in Downtown, along primary and secondary routes used to travel to Downtown, and along 27th Street during each summer period likely indicates that travel patterns and volumes are returning to pre-COVID conditions, and the lane reductions are not contributing significant traffic diversions onto secondary routes and 27th Street.

- **Empirical Data** – When comparing the AM peak hour October 2022 counts with the 2015 counts from the Traffic Impact Analysis conducted for the North Elementary School, vehicular volumes decreased overall by 20%. Some locations experienced increases in volumes while others experienced more significant decreases in the volumes. These fluctuations are expected as the count periods are static in time and only reflect a single day of counts.
- The data collected in August 2021 and July 2022 indicated that the lane reduction pilot may have contributed to a 33% increase in walking and a 26% increase in biking, which was not observed for the City overall; and therefore may not be driven primarily by COVID related reopenings.
- The data collected in August 2021 and July 2022 also indicated that the pilot may have contributed to 5% slower speeds observed on the roadways, which has a safety benefit for people who walk and/or bike.

Introduction

The purpose of this study is to provide vehicle, pedestrian and bicycle count and speed data in the City of Hermosa Beach, primarily to compare pre and post mobility pilot implementation in Downtown Hermosa Beach. Multiple data sources and methodologies were used to assess changes in data, particularly because the COVID 19 pandemic occurred over the course of this data monitoring and pilot project implementation. This report is divided into four sections, including this introduction. The second section is focused on data comparisons for Downtown Hermosa Beach using location based origin destination data, referred to as Big Data analysis. The third section focuses on in-field empirically collected data for Downtown, and the fourth section focuses on empirically collected data for the North School area.

Big Data Evaluation – Downtown Hermosa Beach

StreetLight Big Data Methodology

StreetLight Data applies proprietary machine-learning algorithms to measure travel patterns and makes them available on-demand via StreetLight InSight®, the world's first SaaS platform for mobility. StreetLight provides powerful analyses for a wide variety of transportation studies including volume, counts, Origin-Destination (O-D) and more. StreetLight algorithmically transforms trillions of location data points into contextualized, aggregated, and normalized travel pattern data to deliver unique insights into how vehicles, bikes, pedestrians, and bus and rail passengers move on virtually every road and Census Block. StreetLight Data collects all its transportation data as Location Based Services (LBS) data which are services based on the location of a mobile device. They obtain "low fidelity" cell phone data scrubbed of all Personally Identifiable Information (PII), and pair it with data with "high fidelity" data from GPS devices.

StreetLight Data was used to evaluate vehicular traffic volumes, distribution, and overall activity before and after the pilot in Downtown. Three date periods for weekend days (Saturday & Sunday) were defined for each of the StreetLight analyses:

1. Summer 2019: Pre-Pilot (July-August 2019)
2. Summer 2020: Post-Pilot (July-August 2020)
3. Summer 2021: Post -Pilot (July-August 2021)

Downtown Activity

A zone activity analysis using StreetLight Data was conducted to assess the potential change in Downtown visitation and overall activity from summer 2019 to summer 2021. **Table 1** shows for the All Day (12am -12am) day part from summer 2019 to summer 2021, overall activity in Downtown decreased by approximately 20% for the all-day period. However, from summer 2020 to summer 2021, overall activity increased by approximately 34%. While the overall change in volume from summer 2019 conditions to summer 2021 decreased, the increase from summer 2020 to summer 2021 indicates that Downtown activity and visitation is likely returning to pre-COVID conditions.

Table 1 – Downtown activity from Summer 2019 to Summer 2021

Day Part	Summer 2019	Summer 2020	Summer 2021
	ADT	ADT	ADT
All Day (12am - 12am)	26,413	15,865 (-40%)	21,233 (-20%)
Peak AM (6am - 10am)	2,761	1,725 (-38%)	2,272 (-18%)
Mid-Day (10am-3pm)	7,831	5,648 (-28%)	7,048 (-10%)
Peak PM (3pm-7pm)	7,263	4,764 (-34%)	6,001 (-17%)

Source: Fehr & Peers / StreetLight, Inc.

Trip Distribution

An Origin-Destination analysis using StreetLight Data was conducted to assess trip distribution along potential primary and secondary routes for trips starting or ending in Downtown during the three summer date periods. Origin-Destination zones were placed at the following locations within Downtown:

1. 27th Street w/o Morningside Drive
2. 8th Street w/o Valley Drive
3. Hermosa Avenue n/o 16th Street
4. Hermosa Avenue n/o 8th Street
5. Manhattan Avenue n/o Pier Avenue
6. Manhattan Avenue s/o Pier Avenue
7. Monterey Boulevard n/o Pier Avenue
8. Monterey Boulevard s/o Pier Avenue
9. Pier Avenue w/o Valley Boulevard

Table 2 shows from summer 2019 to summer 2021, the average daily (All Day 12am – 12am) distribution of trips along primary and secondary routes used to travel to and from Downtown remained consistent. More than 95% of trips traveling to or from Downtown in the summer periods used at least one of these routes. The Pier Avenue and Hermosa Avenue segments, where the lane reductions were implemented, accounted for approximately 74% of trips in summer 2019, increasing to roughly 79% in summer 2020 and summer 2021. Other secondary routes used as potential diversion routes such as Monterey Boulevard and Manhattan Avenue did not see an increase in trips from pre- to post-pilot conditions. Additionally, 27th Street experienced a decrease in trips from pre- to post-pilot. **Figure A-1** in the appendix shows the locations in at which StreetLight volumes were collected.

Table 2 – Downtown trip distribution along primary and secondary routes from Summer 2019 to Summer 2021

Zone ID	Zone Name	Trip Distribution		
		Summer 2019	Summer 2020	Summer 2021
		%	%	%
1	27th Street (w/o Morningside)	7.0%	5.9%	6.2%
2	8th Street (w/o Valley)	7.4%	7.2%	6.0%
3	Hermosa Avenue (n/o 16th)	17.2%	16.9%	17.1%
4	Hermosa Avenue (n/o 8th)	21.7%	22.7%	22.6%
5	Manhattan Ave (n/o Pier)	2.9%	1.6%	2.0%
6	Manhattan Ave (s/o Pier)	2.5%	2.0%	2.1%
7	Monterey Boulevard (n/o Pier)	2.2%	2.0%	1.6%
8	Monterey Boulevard (s/o Pier)	3.0%	2.3%	2.5%
9	Pier Avenue (w/o Valley)	36.0%	39.5%	39.8%

Source: Fehr & Peers / StreetLight, Inc.

Figure 1 – Downtown Trip Distribution Primary/Secondary Routes Summer 2019 to Summer 2021
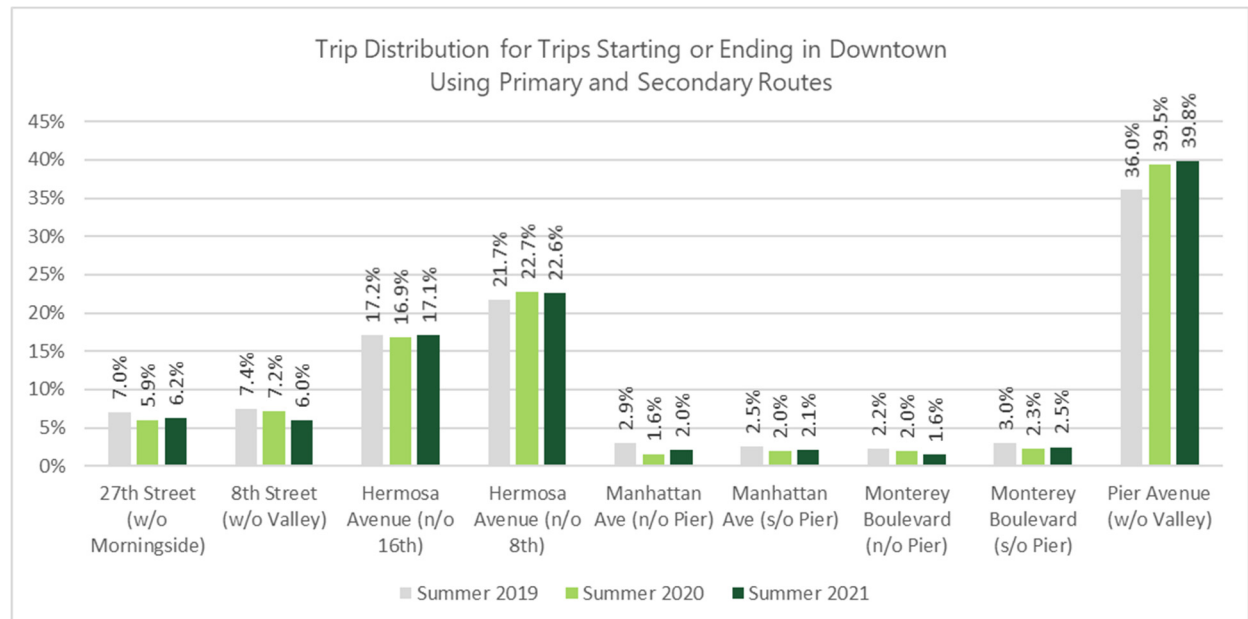
Source: Fehr & Peers / StreetLight, Inc.

27th Street Diversion

A zone activity analysis using StreetLight Data was conducted to assess overall activity along 27th Street from summer 2019 to summer 2021. **Table 3** shows for the All Day (12am -12am) day part from summer 2019 to summer 2021, 27th Street experienced a decrease in overall activity from pre-COVID / pre-pilot conditions. Additionally, roughly 21% of trips traveling along 27th Street started or ended in Downtown in summer 2019, decreasing to 17% in summer 2021.

Table 3 – 27th Street activity from Summer 2019 to Summer 2021

Day Part	Summer 2019	Summer 2020	Summer 2021
	ADT	ADT	ADT
All Day (12am - 12am)	10061	7935 (-21%)	8545 (-15%)
Peak AM (6am - 10am)	1147	794 (-31%)	890 (22%)
Mid-Day (10am-3pm)	3421	2915 (-15%)	3014 (-12%)
Peak PM (3pm-7pm)	2959	2586 (-13%)	2458 (-17%)

Source: Fehr & Peers / StreetLight, Inc.

Downtown Route Travel Time

An assessment of travel time along primary and secondary routes used to travel to and from Downtown using StreetLight Data was conducted to highlight potential congestion along cut through routes as a result of the lane reductions. **Table 4** highlights average bidirectional travel time for each route starting or ending at the Pier Avenue and Hermosa Avenue intersection for each summer period. All but one route experienced decreases in average travel time from summer 2019 to summer 2021. The Pier Avenue to Manhattan Avenue to 27th Street route experienced a 36% increase in travel time. The Manhattan Avenue segment between Pier Avenue and Monterey Boulevard nearly doubled in travel time while all other segments remained consistent with pre-pilot conditions. This could potentially be due to traffic opting to use Manhattan Avenue as a cut through route instead of Hermosa Avenue to travel to and from Downtown. **Figure A-2** in the appendix shows the extent of each route.

Table 4 – Downtown Bidirectional Route Travel Time from Summer 2019 to Summer 2021

	Route Name	Summer 2019 Travel Time (min)	Summer 2020 Travel Time (min)	Summer 2021 Travel Time (min)
1	Pier Avenue	4.7	3.7	4.1
2	Hermosa Avenue to Herondo Street	4.1	4.0	3.7
3	Hermosa Avenue to 27th Street	6.5	5.7	5.2
4	Hermosa Avenue to 8th Street	4.7	4.1	4.4
5	Pier Avenue to Manhattan Avenue to 8th Street	10.5	7.6	7.4
6	Pier Avenue to Monterey Boulevard to 8th Street	6.0	4.9	5.1
7	Pier Avenue to Manhattan Avenue to 27th Street	9.1	12.2	12.4
8	Pier Avenue to Monterey Boulevard to Manhattan Avenue to 27th Street	9.1	7.8	6.9

Source: Fehr & Peers / StreetLight, Inc.

Downtown Travel Runs

Empirically collected time runs were collected on one primary route and one secondary route during PM Peak Period (4-6 PM) on a Thursday in December 2022 through Downtown. The intent of this assessment was to assess the potential for using alternative or cut-through routes in and out, and through Downtown from a perspective of travel time, and to compare to StreetLight Data's travel time estimates. StreetLight Data travel times were during PM Peak Period (4-6 PM) for an average weekday (Tuesday-Thursday) in December 2021. **Figure A-3** in the appendix highlights the one primary and one secondary route that were analyzed, both starting at the Hermosa Avenue and Herondo Street intersection:

- Route 1: Hermosa Avenue to Pier Avenue to Ardmore Avenue to Gould Avenue
- Route 2: Hermosa Avenue to 27th Street/Gould Avenue to Ardmore Avenue

A total of two travel time runs were conducted and averaged in each direction for each route. Both routes are approximately 1.8 miles in length. On average, route 1 was roughly 30 seconds faster in each direction (**Table 5**). One reason for this is PM Peak Period congestion traveling eastbound and westbound at the Gould Avenue and Valley Drive/Ardmore Avenue intersection.

When comparing the bidirectional travel time runs with the StreetLight Data travel time estimates, StreetLight Data's travel times were approximately 5.6% faster than the travel time runs for Route 2. While the difference between the two data points is small, it is important to note that the travel time run represents a single period in time for one day, whereas StreetLight Data estimates travel time based on an average of multiple weekdays and Peak PM periods for an entire month. StreetLight Data captures a much greater sample size and range of travel times which is more indicative of both historical and existing travel times. Route 1 was not compared in this analysis since a portion of the route was not included in the StreetLight travel time segments.

Table 5 – Travel Time Runs During Weekday PM Peak Period

Route	Travel Time Runs (min.)	StreetLight Data (min.)
Route 1	6.7	NA
Route 2	7.3	6.9

Empirical Data Evaluation– Downtown Hermosa Beach

In addition to the big data summary using StreetLight Data, observed changes in traffic volumes and bicycle/pedestrian activity along several Downtown streets in Hermosa Beach after the installation of the pilot project using 24-hour counts were summarized. The pilot project involved a one lane reduction in both directions of travel along Hermosa Avenue (from 8th Street to 14th Street) and Pier Avenue (from Hermosa Avenue to Valley Drive) in Downtown. The counts were taken in July 2022 which were collected on a Saturday per the City's request to capture summer visitation and activity to Downtown. The July 2022 counts were compared to the August 2021 counts for the same locations to assess the adjusted effects of the lane reductions along Hermosa Avenue and Pier Avenue. Additionally, the July 2022 counts were compared to the August 2015 counts from the 2017 Pier & Strand Hotel Traffic Study to evaluate changes from pre-COVID-19 volumes. For this comparison, three additional locations were added to the July 2022 counts along Manhattan Avenue and Monterey Boulevard to assess potential traffic diversion as a result of the lane reductions.

Table 6 below provides a summary of the overall change in daily traffic volumes between August 2021 and July 2022 in Downtown at six selected street segments:

1. 8th Street between Hermosa Avenue and Monterey Boulevard (start of lane reduction)
2. Hermosa Avenue at 11th Street (lane reduction section)
3. Hermosa Avenue at 13th Street (lane reduction section)
4. Pier Avenue between Hermosa Avenue and Monterey Boulevard (lane reduction section)
5. Monterey Boulevard between 11th and Pier Avenue (adjacent to lane reduction section)
6. Pier Avenue west of Valley Drive (major gateway for the City)

Overall, the six Downtown locations saw an average increase of 32% in daily vehicular volumes from August, 2021 to July, 2022, as traffic continued to return to pre-COVD-19 conditions and restaurant visitations.

However, **Table 7** below provides a summary of the overall change in daily traffic volumes between July 2022 midday peak hour counts and August 2015 midday peak hour counts in Downtown at the six selected street segments analyzed across pre- and post-pilot conditions (1-6) and three additional segments to evaluate potential traffic diversion (7-9):

1. 8th Street between Hermosa Avenue and Monterey Boulevard (start of lane reduction)
2. Hermosa Avenue at 11th Street (lane reduction section)
3. Hermosa Avenue at 13th Street (lane reduction section)
4. Pier Avenue between Hermosa Avenue and Monterey Boulevard (lane reduction section)
5. Monterey Boulevard between 11th and Pier Avenue (adjacent to lane reduction section)
6. Pier Avenue west of Valley Drive (major gateway for the City)

7. Manhattan Avenue between Pier Avenue and 14th Street (traffic diversion section)
8. Manhattan Avenue between Pier Avenue and 10th Street (traffic diversion section)
9. Monterey Boulevard between Pier Avenue and 16th Street (traffic diversion section)

Overall, the nine Downtown locations saw an average increase of 6% in daily vehicular volumes from August, 2015 to July, 2022. This slight increase in volumes is indicative of travel patterns, restaurant visitation, and overall Downtown activity returning to pre-COVID conditions. Both Manhattan Avenue and Monterey Boulevard segments experienced minor increases in total volume (though percentage change was largely due to these roads carrying low traffic volumes during the midday hour) while the lane reduction sections (Hermosa Avenue and Pier Avenue) experienced minimal change. While the alternative Downtown routes experienced increases in volumes, the total peak hour volume changes were negligible in aggregate. When comparing the results of the StreetLight trip distribution summary in **Table 2** with the midday weekend peak hour volumes in **Table 5**, it's important to note that StreetLight accounts for a broader range of all day weekend travel patterns averaged over a substantial period of time with many samples, making it a more accurate representation of traffic flows and potential traffic diversion. The midday traffic counts were snapshots in time and represent just 2 samples on the corridors as opposed to many samples in the StreetLight data.

When looking closer at the vehicular volumes in **Tables 6-7** for Hermosa Avenue July, 2022, the total segment volumes after the pilot installation were 6% higher than the volumes observed in 2015 (pre-COVID, and without lane reductions) as part of the 2017 Pier & Strand Hotel Traffic Study.

Table 6 – Observed Daily Traffic Volumes in Downtown in August, 2021 and July, 2022

		2021 Post-Pilot August Traffic Volumes (Saturday)			2022 Post-Pilot July Traffic Volumes (Saturday)			
No.	**Street Segment**	**August 2021 NB/EB**	**August 2021 SB/WB**	**August 2021 Total Segment Volumes**	**July 2022 NB/EB**	**July 2022 SB/WB**	**July 2022 Total Segment Volumes**	**% Change in Total Volumes**
1	8th St between Hermosa Ave & Monterey Blvd	1,285	1,424	2,709	1,806	1,960	3,766	39%
2	Hermosa Ave at 11th St	4,034	3,839	7,873	6,074	5,675	11,749	49%
3	Hermosa Ave at 13th St	4,549	3,479	8,028	6,160	4,837	10,997	37%
4	Pier Ave between Hermosa Ave & Monterey Blvd	3,786	4,507	8,293	5,083	5,976	11,059	33%
5	Monterey Blvd between 11 St & Pier Ave	1,620	1,080	2,700	2,128	1,371	3,499	30%
6	Pier Ave west of Valley Dr	5,774	6,672	12,446	6,955	7,314	14,269	15%

NB = Northbound, EB = Eastbound, SB = Southbound, WB = Westbound

Total Average % Change **+32%**

Table 7 – Observed Midday Peak Hour (1:45 pm – 2:45 pm) Traffic Volumes in Downtown in August, 2015 and July, 2022

		2015 August Traffic Volumes (Saturday)			2022 Post-Pilot July Traffic Volumes (Saturday)			
Downtown								
No.	**Street Segment**	**August 2015 NB/EB**	**August 2015 SB/WB**	**August 2015 Total Segment Volumes**	**July 2022 NB/EB**	**July 2022 SB/WB**	**July 2022 Total Segment Volumes**	**% Change in Total Volumes**
1	8th St between Hermosa Ave & Monterey Blvd	92	100	192	121	151	272	42%
2	Hermosa Ave north of 11th St	418	438	856	409	400	809	-5%
3	Hermosa Ave north of 13th St	432	363	795	523	370	893	12%
4	Pier Ave between Hermosa Ave & Monterey Blvd	353	399	752	390	412	802	7%
5	Monterey Blvd between 11 St & Pier Ave	138	86	224	181	118	299	33%
6	Pier Ave west of Valley Dr	531	551	1,082	475	494	969	-10%
7	Manhattan Ave between Pier Ave & 14th St	101	129	230	127	155	282	23%
8	Manhattan Ave between Pier Ave & 10th St	69	101	170	125	96	221	30%
9	Monterey Blvd between Pier Ave & 16th St	139	115	254	145	119	264	4%

NB = Northbound, EB = Eastbound, SB = Southbound, WB = Westbound   *Total Average % Change*   **+6%**

Figure 2 – Midday Peak Hour Segment Volumes

Midday Peak Hour Segment Volumes from August (Saturday) 2015 vs. July (Saturday) 2022
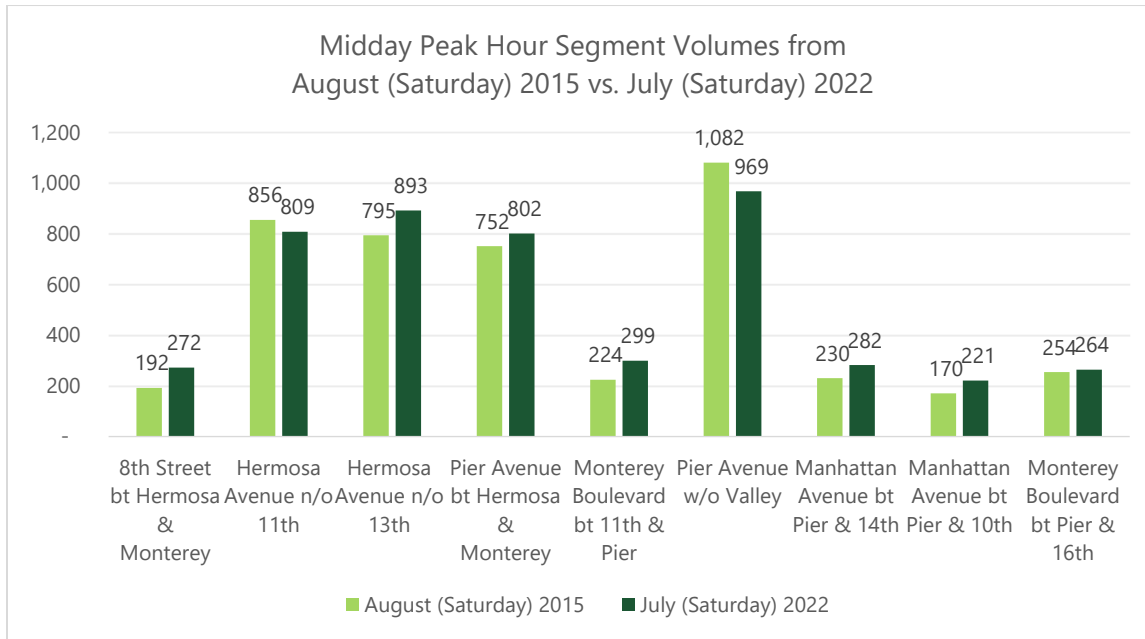
Figure 3 – Percent Change in Midday Peak Hour Segment Volumes

Percent Change in Midday Peak Hour Segment Volumes from August (Saturday) 2015 vs. July (Saturday) 2022
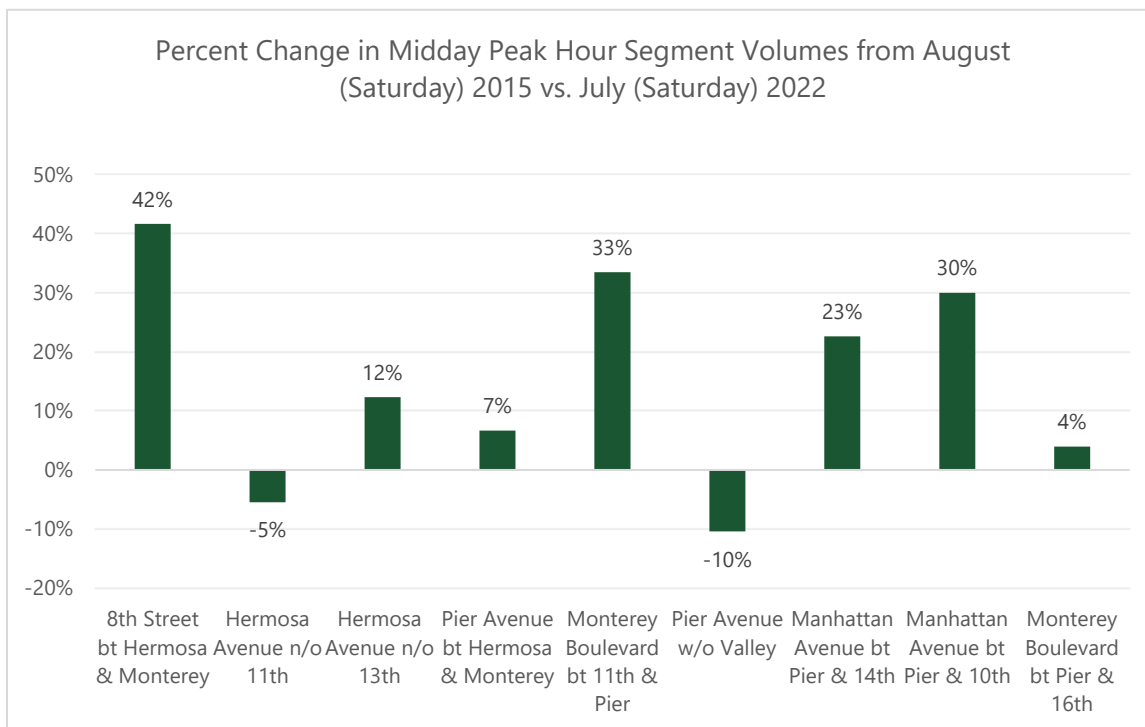
Figure 4 shows the 85th percentile speed for each road segment (for both directions of travel) in August, 2021 and July, 2022. Most of the segments saw minor decreases (or no change) in speed. The Pier Avenue segment west of Valley Drive saw a slight increase in speed (of 1 mph) compared to August, 2021. Overall, speeds were 2% slower after the pilot.

Figure 4 – Downtown Daily Segment 85th Percentile Speeds (mph)
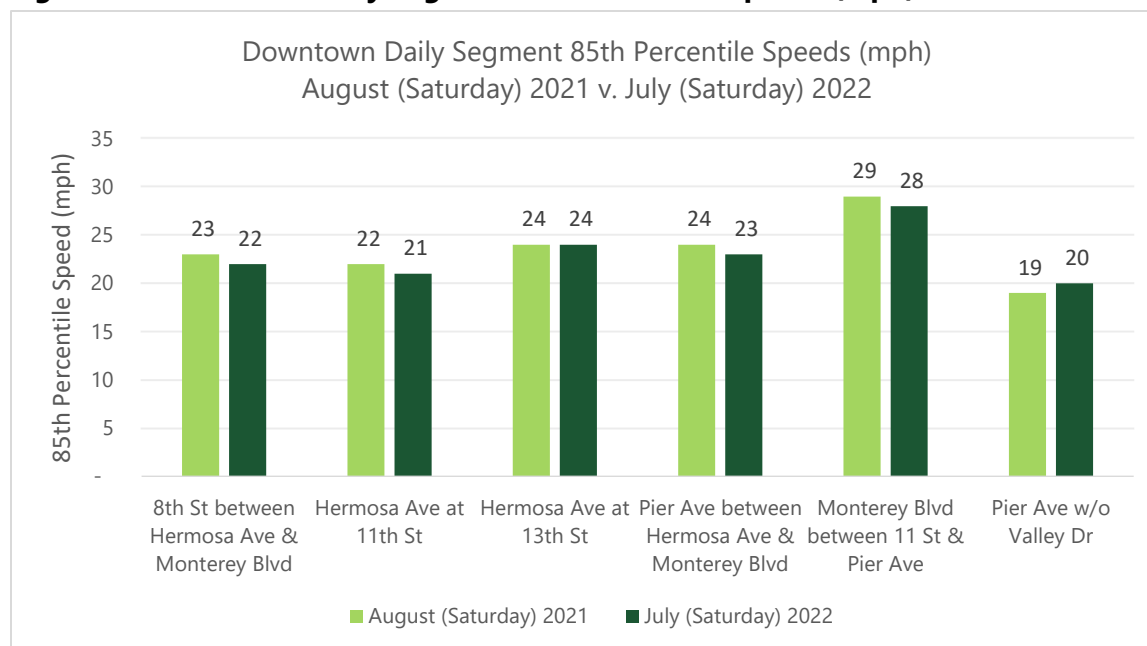

Figure 5 shows the change in pedestrian/walking activity, and **Figure 6** shows the change in bicycle activity in Downtown. Pedestrian walking activity increased in Downtown by approximately 33% in July, 2022 versus August, 2021, and bicycle activity increased by approximately 26%. Individually, there were no decreases in biking or walking at any of the observed locations from August, 2021 to July, 2022.

Helmet Wearing and e-Bike Data

Figures 7-9 show the percentage of bicyclists who were observed wearing a helmet, along with whether the bicycle was an e-bike (pedal-assisted or fully powered by an electric motor). Approximately 65% of the observed bicyclists in July, 2022 did not wear a helmet, while the other 35% did wear a helmet (Figure 5). Additionally, of all the observed bicyclists, 8% were e-bikes, while the other 92% were traditional, human-powered bicycles (Figure 6). Just under half of the e-bike riders wore a helmet (Figure 7).

Figure 5 – Change in Pedestrian/Walking Activity in Downtown
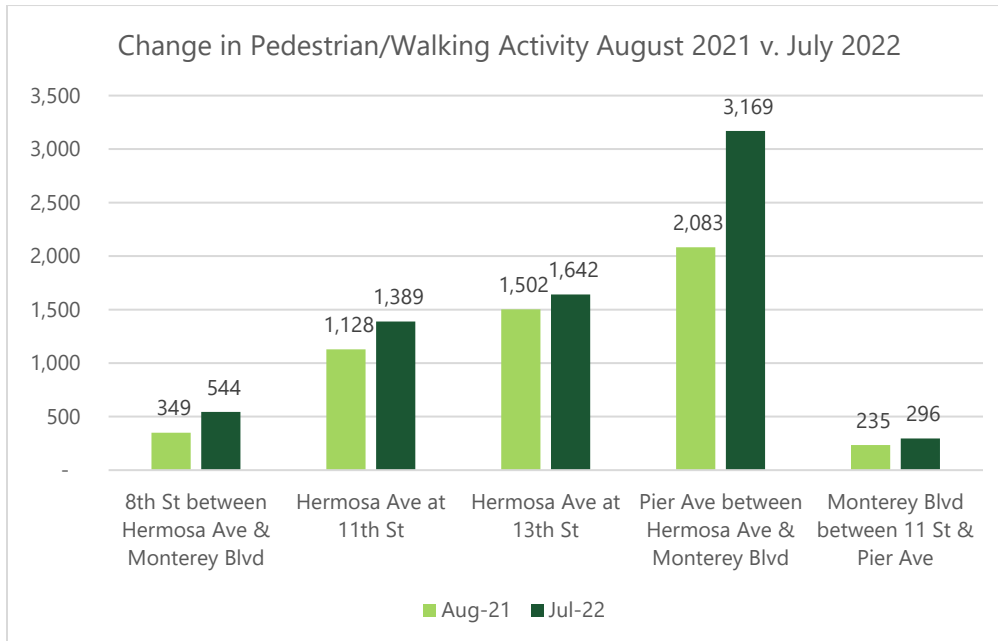
Note: Collected using cameras then counted, includes skateboarders

Figure 6 – Change in Bicyclist Activity in Downtown
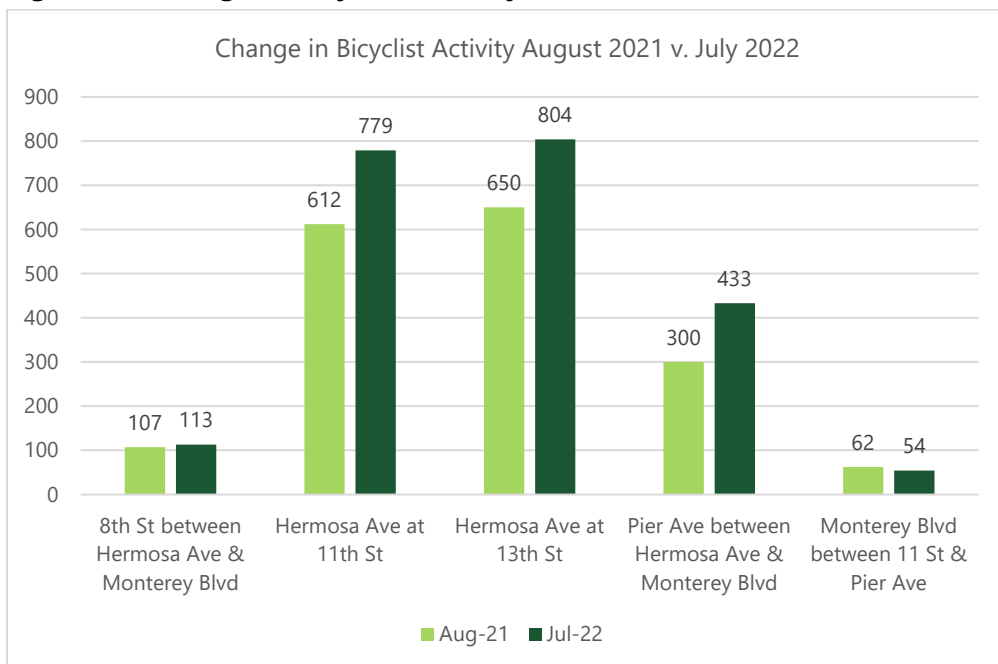
Note: Collected using cameras then counted, excludes scooters

Figure 7 – Helmet vs. No Helmet Bicyclist Counts in Downtown
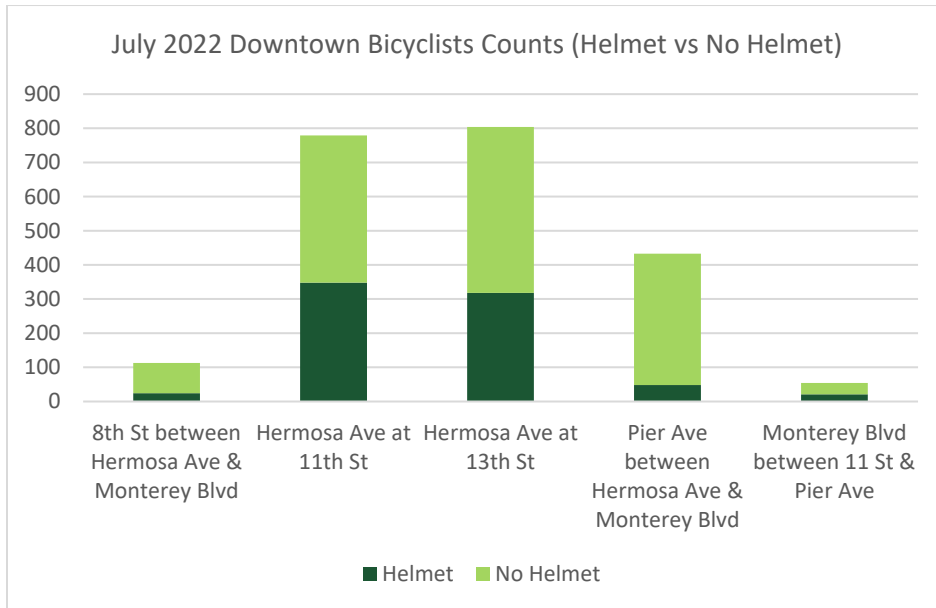
Note: Collected using cameras then counted

Figure 8 – E-bike vs. Non E-bike Bicyclist Counts in Downtown

Note: Collected using cameras then counted

Figure 9 – Helmet vs. No Helmet E-bike Bicyclist Counts in Downtown
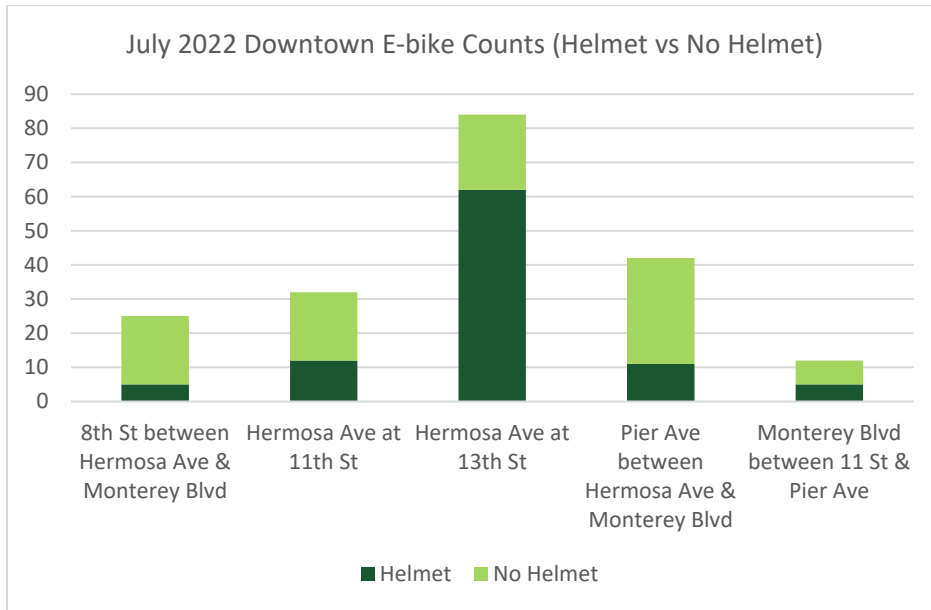
Note: Collected using cameras then counted

Empirical Data Evaluation - North School Area

Overall, the 16 North School Area count locations saw an average decrease of 13% in daily vehicular volumes from October, 2021 to October, 2022 (**Table 8**). Lo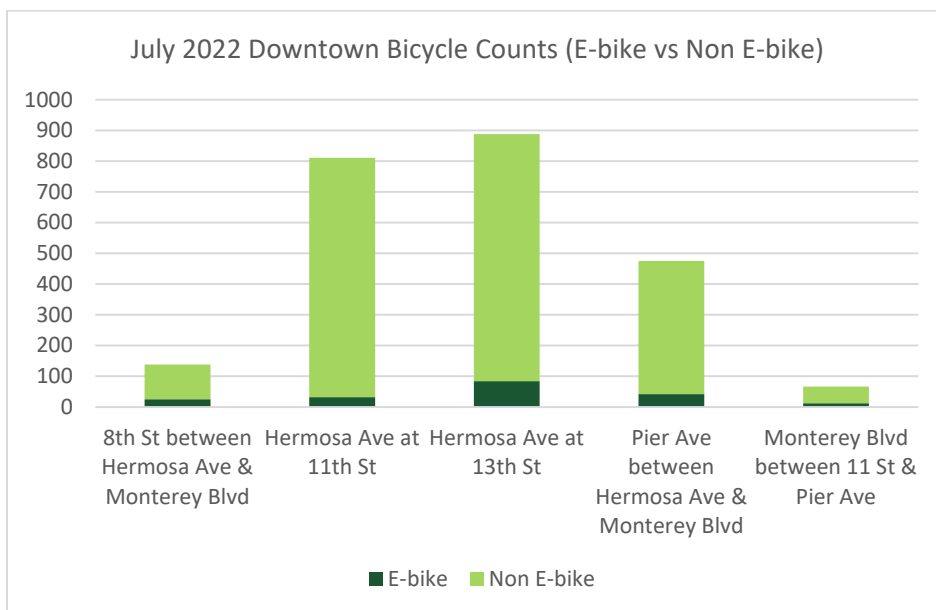cations that experienced the most significant decreases in volume included 24th and 25th Street between Park Avenue and Valley Drive, and 26th Street between Manhattan Avenue and Morningside Drive. Additionally, **Table 9** shows 85th percentile speeds between the two periods experienced minimal change overall with a decrease of 1% in speeds for northbound and eastbound travel and a decrease of 3% in speeds for southbound and westbound travel.

The October, 2022 counts were also compared against the 2015 counts from the traffic impact analysis conducted for the North Elementary School in April 2017 (**Table 10**). Overall, locations experienced a decrease of 20% in AM peak hour vehicular volumes from November/December, 2015 to October, 2022.

Table 8 – Observed Daily Traffic Volumes October, 2021 and October, 2022

No.	Street Segment	2021 Post-Pilot October Traffic Volumes (Thursday)			2022 Post-Pilot October Traffic Volumes (Thursday)			% Change in Total Volumes
		October 2021 NB/EB	October 2021 SB/WB	October 2021 Total Segment Volumes	October 2022 NB/EB	October 2022 SB/WB	October 2022 Total Segment Volumes	
1	Manhattan Ave S/O 25th St	2,100	1,860	3,960	1,578	1,905	3,483	-12%
2	Valley Dr Bet. Gould Ave & 25th St	1,933	3,526	5,459	1,764	3,945	5,709	5%
3	27th Ct Bet. Morningside Dr & Ozone Ct	21	55	76	12	50	62	-18%
4	Ozone Ct Bet. 24th St & 27th St	23	25	48	29	18	47	-2%
5	26th St Bet. Manhattan Ave & Morningside Dr	231	286	517	5	338	343	-34%
6	25th St Bet. Manhattan Ave & S Park Ave	211	260	471	225	371	596	27%
7	25th St Bet. S Park Ave & Valley Dr	338	477	815	97	44	141	-83%
8	24th Pl Bet. S Park Ave & Valley Dr	216	177	393	254	159	413	5%
9	24th St Bet. S Park Ave & Valley Dr	362	335	697	231	148	379	-46%
10	24th St Bet. S Park Ave & Manhattan Ave	339	187	526	170	316	486	-8%
11	Silverstrand Ave Bet. 25th St & 24th St	63	119	182	117	79	196	8%
12	Myrtle Ave Bet. 24th St & 26th St	75	221	296	79	203	282	-5%
13	S Park Ave Bet. 25th St & Monterey Blvd	319	509	828	438	300	738	-11%

North School Area		2021 Post-Pilot October Traffic Volumes (Thursday)			2022 Post-Pilot October Traffic Volumes (Thursday)			
No.	Street Segment	October 2021 NB/EB	October 2021 SB/WB	October 2021 Total Segment Volumes	October 2022 NB/EB	October 2022 SB/WB	October 2022 Total Segment Volumes	% Change in Total Volumes
14	Gould Ave W/O Valley Dr	3,453	3,876	7,329	3,263	3,699	6,962	-5%
15	Greenwich Village Bet. Hermosa Ave & 27th St	-	-	-	2,897	3,417	6,314	-
16	Manhattan Ave Bet. 26th St & 27th St	-	-	-	1,429	1,731	3,160	-

NB = Northbound, EB = Eastbound, SB = Southbound, WB = Westbound
Total Average % Change   **-13%**

Table 9 – 85th Percentile Speeds October, 2021 and October, 2022

No.	Street Segment	2021 October 85th Percentile Traffic Speed (Thursday)		2022 October 85th Percentile Traffic Speed (Thursday)		% Change Comparison	
North School Area		October 2021 NB/EB	October 2021 SB/WB	October 2022 NB/EB	October 2022 SB/WB	% Change in NB/EB Speed	% Change in SB/WB Speed
1	Manhattan Ave S/O 25th St	29	28	24	25	-17%	-11%
2	Valley Dr Bet. Gould Ave & 25th St	34	36	29	33	-15%	-8%
3	27th Ct Bet. Morningside Dr & Ozone Ct	-	-	-	-	-	-
4	Ozone Ct Bet. 24th St & 27th St	-	-	-	-	-	-
5	26th St Bet. Manhattan Ave & Morningside Dr	19	19	18	19	-5%	0%
6	25th St Bet. Manhattan Ave & S Park Ave	22	20	28	24	27%	20%
7	25th St Bet. S Park Ave & Valley Dr	23	23	20	19	-13%	-17%
8	24th Pl Bet. S Park Ave & Valley Dr	18	20	20	22	11%	10%
9	24th St Bet. S Park Ave & Valley Dr	23	24	24	22	4%	-8%
10	24th St Bet. S Park Ave & Manhattan Ave	20	22	20	19	0%	-14%
11	Silverstrand Ave Bet. 25th St & 24th St	23	24	20	20	-13%	-17%
12	Myrtle Ave Bet. 24th St & 26th St	21	21	18	20	-14%	-5%
13	S Park Ave Bet. 25th St & Monterey Blvd	23	23	23	24	0%	4%

North School Area		2021 October 85th Percentile Traffic Speed (Thursday)		2022 October 85th Percentile Traffic Speed (Thursday)		% Change Comparison	
No.	Street Segment	October 2021 NB/EB	October 2021 SB/WB	October 2022 NB/EB	October 2022 SB/WB	% Change in NB/EB Speed	% Change in SB/WB Speed
14	Gould Ave W/O Valley Dr	24	30	30	33	25%	10%
15	Greenwich Village Bet. Hermosa Ave & 27th St	-	-	19	18	-	-
16	Manhattan Ave Bet. 26th St & 27th St	-	-	17	24	-	-

NB = Northbound, EB = Eastbound, SB = Southbound, WB = Westbound

Total Average % Change   *-1%*   *-3%*

Table 10 – Observed AM Peak Hour Traffic Volumes in the North School Area in November/December, 2015 and October, 2022

No.	Street Segment	2015 Traffic Volumes (Tuesday/Thursday)			2022 Post-Pilot October Traffic Volumes (Thursday)			
		2015 NB/EB	2015 SB/WB	2015 Total Segment Volumes	October 2022 NB/EB	October 2022 SB/WB	October 2022 Total Segment Volumes	% Change in Total Volumes
1	Manhattan Ave S/O 25th St	250	125	375	69	197	266	-29%
2	Valley Dr Bet. Gould Ave & 25th St	200	410	610	169	244	413	-32%
3	27th Ct Bet. Morningside Dr & Ozone Ct	-	-	-	-	-	-	-
4	Ozone Ct Bet. 24th St & 27th St	-	-	-	-	-	-	-
5	26th St Bet. Manhattan Ave & Morningside Dr	30	20	50	0	33	33	-34%
6	25th St Bet. Manhattan Ave & S Park Ave	40	60	100	27	112	139	39%
7	25th St Bet. S Park Ave & Valley Dr	40	50	90	14	5	19	-79%
8	24th Pl Bet. S Park Ave & Valley Dr	-	-	-	-	-	-	-
9	24th St Bet. S Park Ave & Valley Dr	60	40	100	29	11	40	-60%
10	24th St Bet. S Park Ave & Manhattan Ave	40	20	60	13	64	77	28%
11	Silverstrand Ave Bet. 25th St & 24th St	-	-	-	-	-	-	-
12	Myrtle Ave Bet. 24th St & 26th St	35	40	75	6	51	57	-24%

North School Area		2015 Traffic Volumes (Tuesday/Thursday)			2022 Post-Pilot October Traffic Volumes (Thursday)			
No.	Street Segment	2015 NB/EB	2015 SB/WB	2015 Total Segment Volumes	October 2022 NB/EB	October 2022 SB/WB	October 2022 Total Segment Volumes	% Change in Total Volumes
13	S Park Ave Bet. 25th St & Monterey Blvd	35	55	90	98	23	121	34%
14	Gould Ave W/O Valley Dr	300	230	530	206	261	467	-12%
15	Greenwich Village Bet. Hermosa Ave & 27th St	340	110	450	190	252	442	-2%
16	Manhattan Ave Bet. 26th St & 27th St	250	110	360	130	100	230	-36%

NB = Northbound, EB = Eastbound, SB = Southbound, WB = Westbound

Total Average % Change   *-20%*

APPENDIX

Figure A-1

Downtown Trip Distribution Count Locations
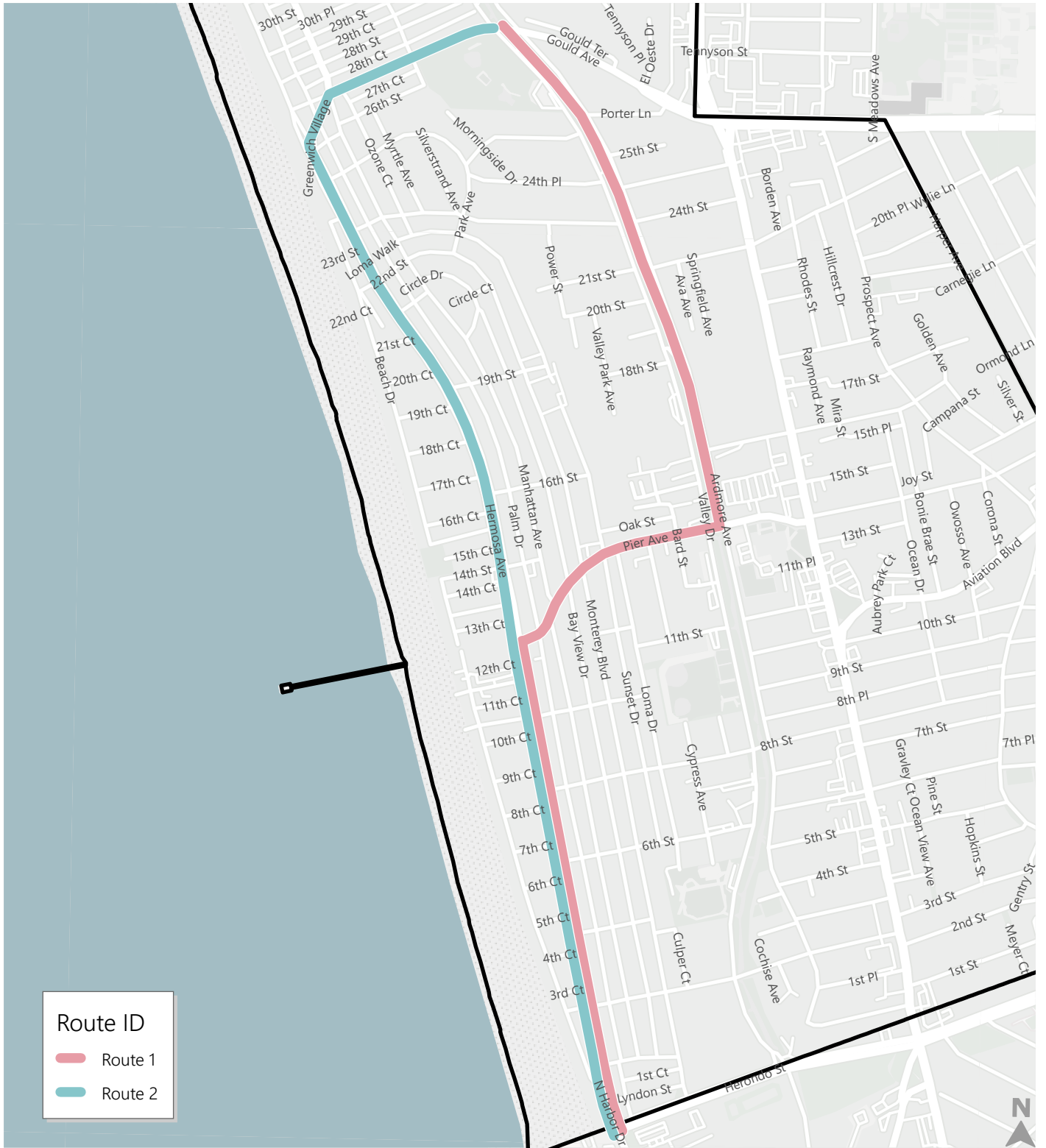
Figure A-2

Downtown Routes

Route ID

Route 1

Route 2

Figure A-3

Downtown Travel Time Run Routes