

This report contains a summary of the observed speeds and average daily traffic for the major roadways within the Equestrian Preserve Area.

Equestrian Preserve Area

2023 Season Speed Study

Jonathan Reinsvold
Village Engineer
Prepared for: Equestrian Preserve Committee
Date: 09/06/2023

Table of Contents

Introduction	2
Definitions.....	2
Data Collection.....	2
Roadway Speed and Count Data.....	2
Conclusion.....	3

List of Figures

Figure 1: StreetLight InSight Corporate Logo.....	3
Figure 2: StreetLight InSight Screenshot.....	3

List of Tables

Table 1: Top Ten Speeding Locations.....	4
--	---

List of Exhibits

Exhibit A:	Equestrian Preserve Area
Exhibit B:	Data Collection Locations
Exhibit C:	Data Collection “Hot Spots”
Exhibit C.1.1:	January 2023 Weekday Speeds and Counts
Exhibit C.1.2:	January 2023 Weekend Speeds and Counts
Exhibit C.2.1:	February 2023 Weekday Speeds and Counts
Exhibit C.2.2:	February 2023 Weekend Speeds and Counts
Exhibit C.3.1	March 2023 Weekday Speeds and Counts
Exhibit C.3.2	March 2023 Weekend Speeds and Counts
Exhibit C.4.1	April 2023 Weekday Speeds and Counts
Exhibit C.4.2	April 2023 Weekend Speeds and Counts

List of Attachments

Attachment 1: Streetlight InSight Speed Validation Whitepaper

Introduction

The Village of Wellington Engineering Department has been tasked to provide speed and count data for the major roadway links within the Village of Wellington Equestrian Preserve Area (EPA). An overview of the Equestrian Preserve Area is attached as [EXHIBIT A](#). The purpose of this study is to provide the first EPA specific speed study.

This report is also intended to support the presentation to the Equestrian Preserve Committee (EPC) scheduled for September 6th, 2023. The EPC Liaison (Jonathan Reinsvold) will present recommendations for traffic calming within the EPA.

It should also be noted that the Village of Wellington is currently in solicitation to obtain the services of a professional traffic Engineer to draft a Safe Streets for All (SS4A), Vision Zero Action Plan. The Vision Zero action plan is a federally funded program with the goal of reducing vehicular related deaths. The EPC Liaison will ensure that the EPA is an integral part of the SS4A, Vision Zero Action plan.

Definitions

EPA: Equestrian Preserve Area

EPC: Equestrian Preserve Committee

85th Percentile: The speed (in mph) at or below which 85 percent of all vehicles are observed to travel under free-flowing conditions past a monitored point.

ADT: Average Daily Trips

Data Collection

Speed and daily traffic volumes were collected on the roadways as shown in [EXHIBIT B](#). Data was collected using Streetlight InSight Data collection software. A data validation whitepaper for this software is referenced as [ATTACHMENT 1](#).

The data was collected and sorted for the following periods:

- January 1st, 2023 – January 31st, 2023
- February 1st, 2023 – February 28th, 2023
- March 1st, 2023 – March 31st, 2023
- April 1st, 2023 – April 30th, 2023

The data was further segmented into average daily traffic volumes, Average Speeds, 15th Percentile Speeds, 85th Percentile Speeds, and 95th Percentile Speeds and placed appropriately into daily bins (M, T, W, R, F, S, S)

Roadway Speed and Count Data

The benefit of using the Streetlight InSight software package is the ability to collect data from multiple points throughout the study Area. [EXHIBIT C.1.1](#) thorough [C.4.2](#) summarizes this data and is broken segmented as follows:

- Exhibit C.1.1 – January 2023 Weekday Speeds and Counts

- Exhibit C.1.2 – January 2023 Weekend Speeds and Counts
- Exhibit C.2.1 – February 2023 Weekday Speeds and Counts
- Exhibit C.2.2 – February 2023 Weekend Speeds and Counts
- Exhibit C.3.1 – March 2023 Weekday Speeds and Counts
- Exhibit C.3.2 – March 2023 Weekend Speeds and Counts
- Exhibit C.4.1 – April 2023 Weekday Speeds and Counts
- Exhibit C.4.2 – April 2023 Weekend Speeds and Counts



Figure 1: StreetLight InSight Corporate Logo

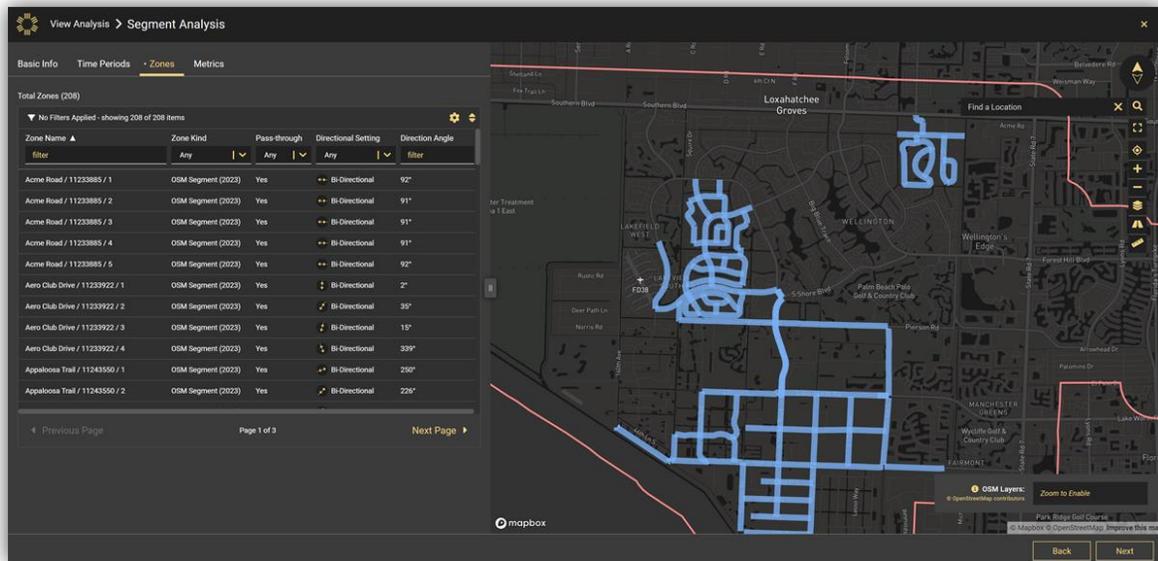


Figure 2: StreetLight InSight Screenshot

Conclusion

The above data was transposed into a “Hot Spot” map, and is attached to this report as **EXHIBIT C**.

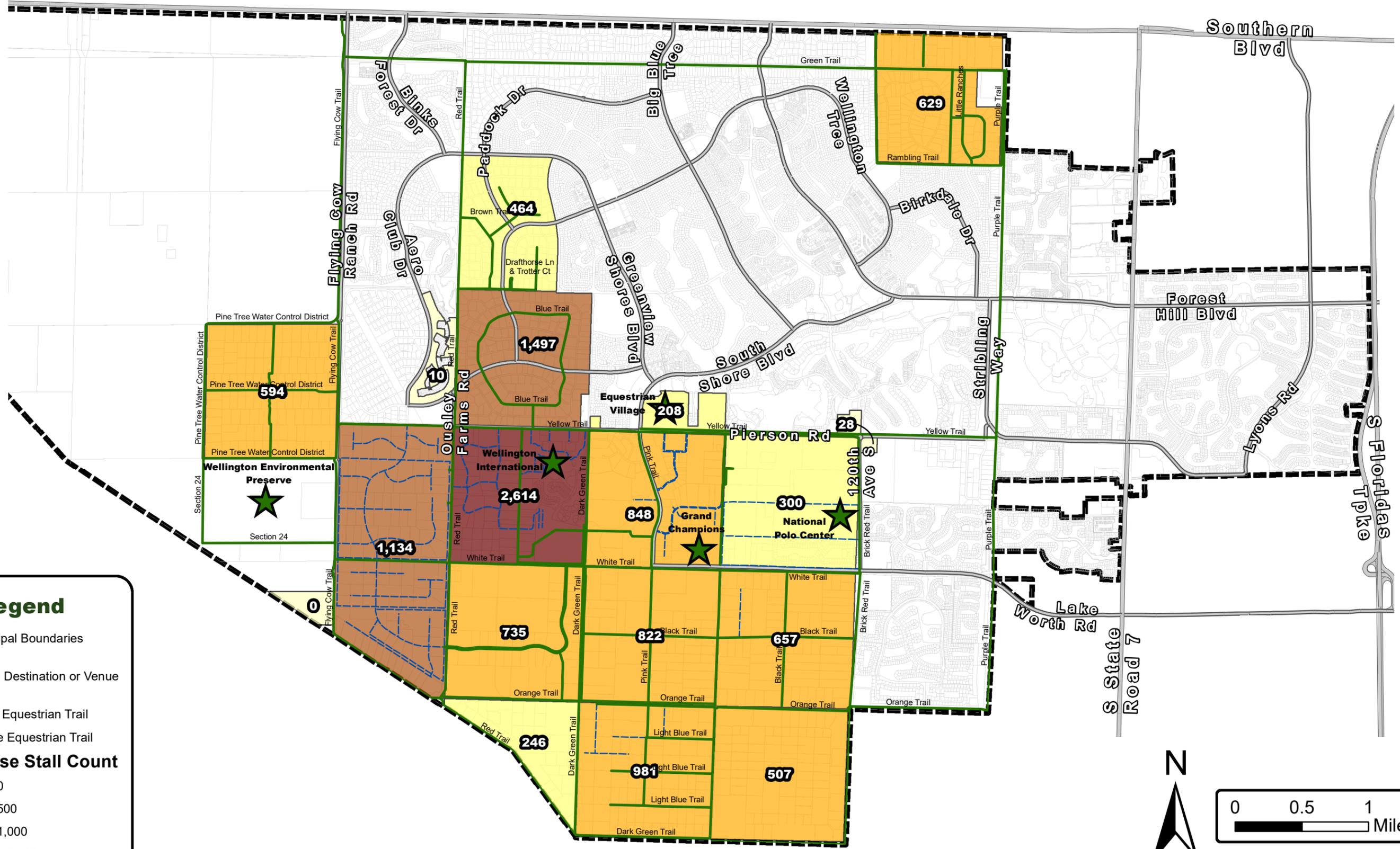
The most concerning locations, in terms of speeds observed above the posted speed limit were along 120th Ave (from 50th St to Lake Worth Road), 50th St (from South Rd to 120th Ave), Gracida St. (full length), Lake Worth Road (from South Shore Blvd. to 120th Ave.), and South Shore Blvd. (from 50th St to Lake Worth Road).

EXHIBIT D sorts the data from the largest to smallest in terms of difference in speed from the 85th percentile to the posted speed.

Additionally, the top ten Largest are shown below in **TABLE 1: Top Ten Speeding Locations**.

Table 1: Top Ten Speeding Locations

Row Labels	Posted Speed	85TH Percentile (mph)	+/- Speed Difference
50t St. 7	30	54	24
120th Ave. 1	25	47	22
120th Ave. 2	25	47	22
50t St. 5	30	48	18
50t St. 4	30	47	17
50t St. 6	30	47	17
Gracida 2	25	41	16
50t St. 2	30	46	16
50t St. 3	30	46	16
Gracida 1	25	40	15



Legend

- Municipal Boundaries
- Local Destination or Venue
- Public Equestrian Trail
- Private Equestrian Trail

2023 Horse Stall Count

- 0 - 100
- 101 - 500
- 501 - 1,000
- 1,001 - 1,500
- 1,501 - 2,614

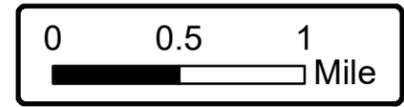
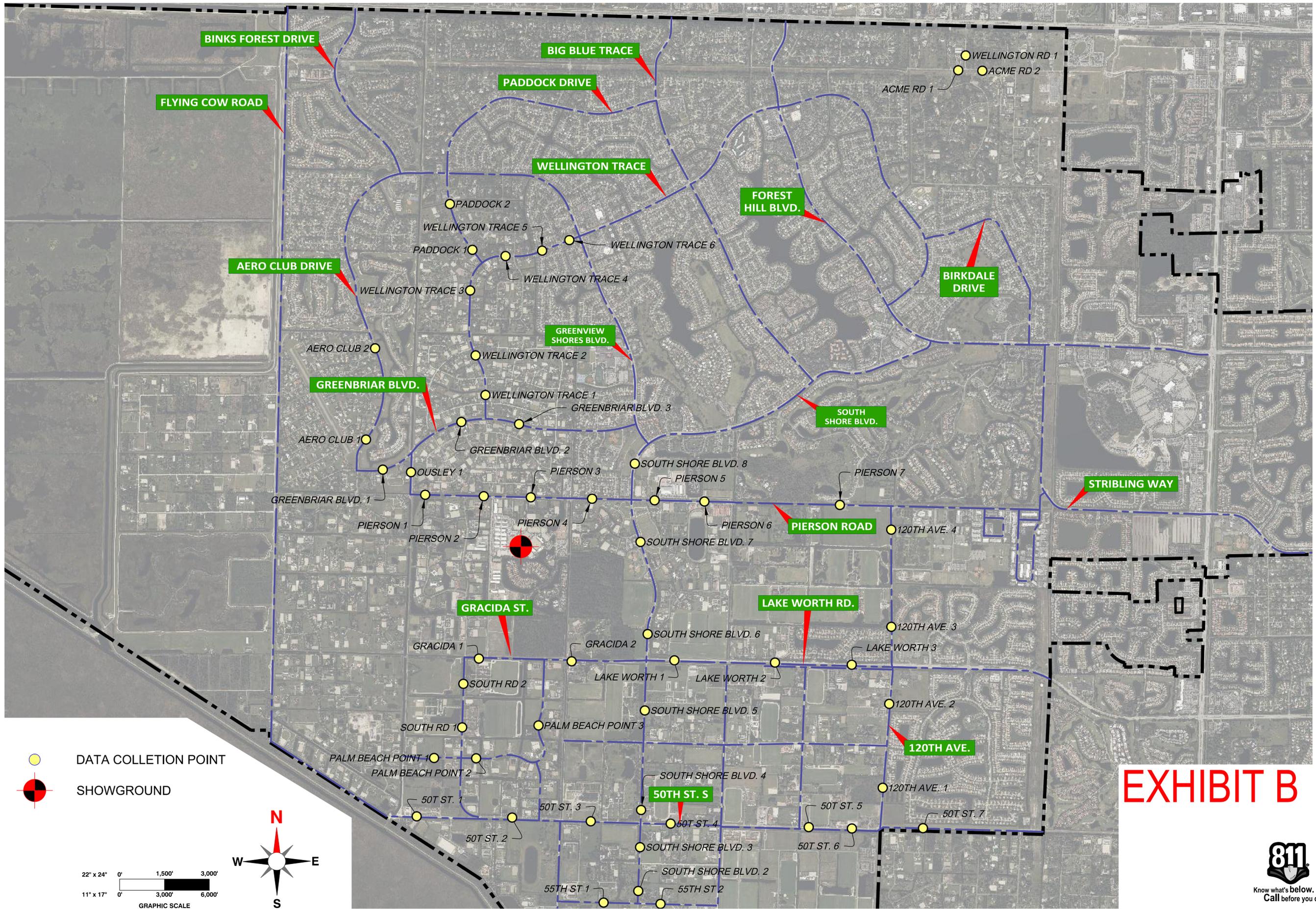


Exhibit "A"



-  DATA COLLECTION POINT
-  SHOWGROUND

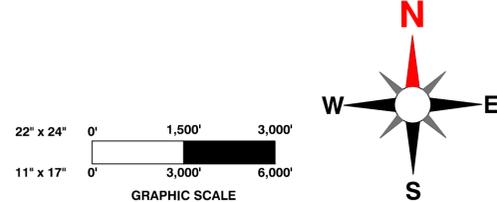


EXHIBIT B



09 / 06 / 2023 EPC MEETING EXHIBIT

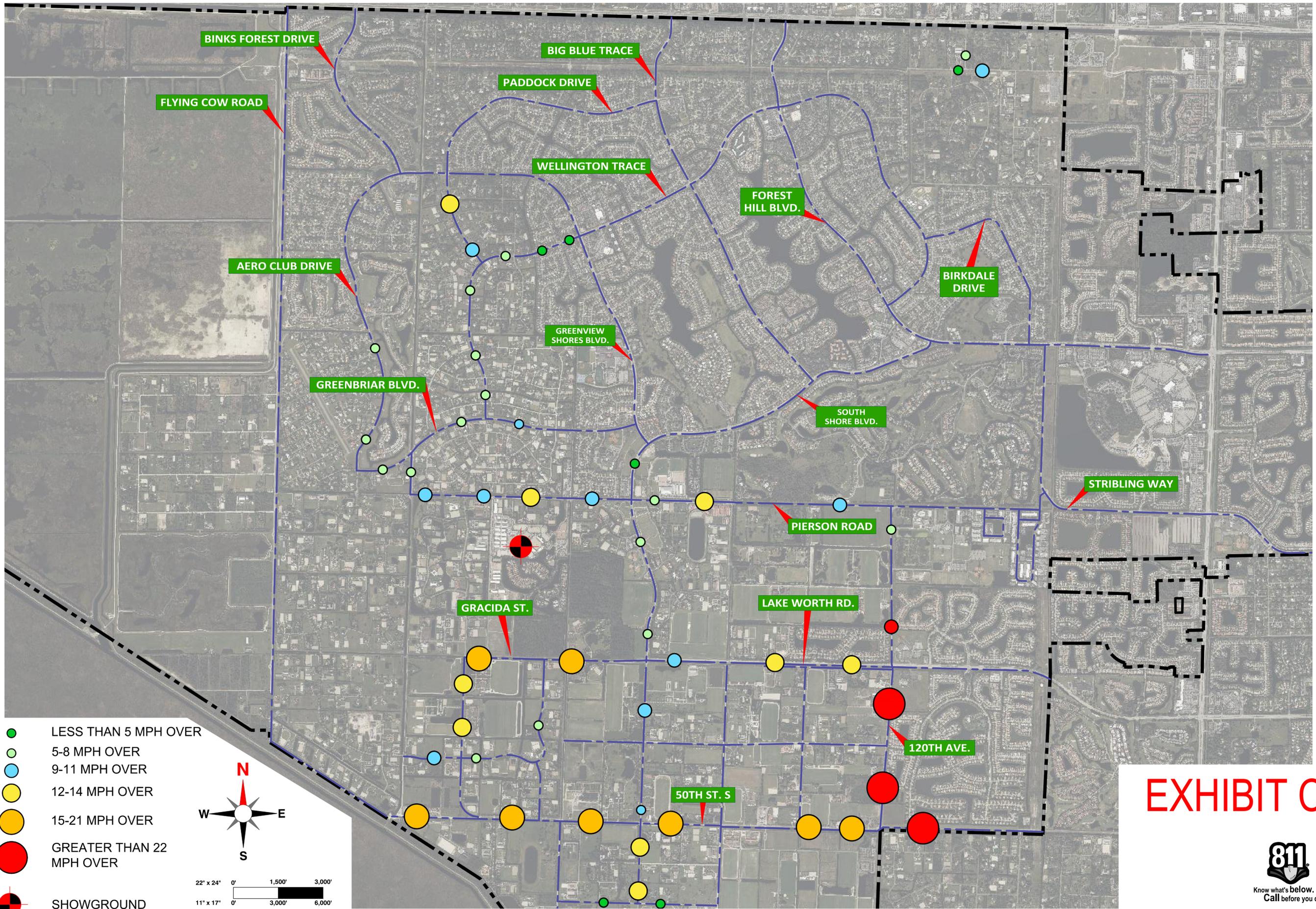
NO.	DATE	REMARKS	BY

SPEED / COUNT COLLECTION LOCATIONS
FOR
EQUESTRIAN PRESERVE COMMITTEE

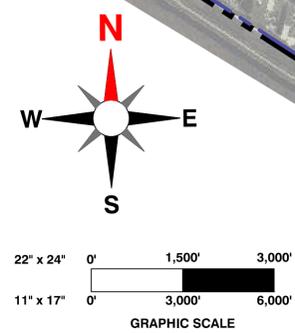


START DATE	07 / 24 / 2023
DRAWN	JRR
REQUESTED	HAARON
PROJECT MANAGER	JRR
CHECKED	JRR
ENG JOB NO.	EPC

W:\DEPARTMENT\ENGINEERING\0_CAD\0_PROJECTS\MISC\LEPC\STREETLIGHT\STREETLIGHT.DWG



- LESS THAN 5 MPH OVER
- 5-8 MPH OVER
- 9-11 MPH OVER
- 12-14 MPH OVER
- 15-21 MPH OVER
- GREATER THAN 22 MPH OVER
- SHOWGROUND



NO.	DATE	REVISIONS	BY

+/- SPEED LIMIT ANALYSIS
FOR
EQUESTRIAN PRESERVE COMMITTEE



START DATE	07/24/2023
DRAWN	JRR
REQUESTED	HAARON
PROJECT MANAGER	JRR
CHECKED	JRR
ENG JOB NO.	EPC

EXHIBIT C



09 / 06 / 2023 EPC MEETING EXHIBIT

W:\DEPARTMENT\ENGINEERING\0_CAD\0_PROJECTS\MISC\LEPC\STREETLIGHT\STREETLIGHT-SPEED LIMIT.DWG

EXHIBIT C.1.1
January 2023 Counts and Speeds
Weekday (MPH)

Collection Point	Posted Speed	ADT	Weekday 85th Percentile Speeds					Average.
			Mon.	Tues.	Wed.	Thurs.	Fri.	
120th Ave. 1	25	3259	48	47	47	48	47	47
120th Ave. 2	25	1830	48	47	48	46	47	47
120th Ave. 3	35	5348	50	49	48	48	49	49
50t St. 1	30	982	45	44	43	44	43	44
50t St. 2	30	1475	44	45	46	45	46	45
50t St. 3	30	2042	46	45	46	46	45	46
50t St. 4	30	3144	48	47	47	46	47	47
50t St. 5	30	3432	48	47	47	48	48	48
50t St. 6	30	3464	47	46	46	47	47	46
50t St. 7	30	4395	54	53	54	53	54	54
55th St 1	30	80						
55th St 2	30	166						
Acme Rd 1	30	535	29	29	28	29	28	29
Acme Rd 2	30	742	40	40	39	39	40	40
Aero Club 1	40	3946	47	47	46	46	46	46
Aero Club 2	40	4599	47	47	47	47	47	47
Gracida 1	25	1390	38	38	37	39	42	39
Gracida 2	25	1369	41	41	40	41	42	41
Greenbriar Blvd. 1	35	5394	42	42	41	42	42	42
Greenbriar Blvd. 2	35	4005	46	45	45	45	45	45
Greenbriar Blvd. 3	35	4081	46	45	45	44	44	45
Lake Worth 1	40	12458	50	49	49	49	49	49
Lake Worth 2	40	14278	54	53	53	52	53	53
Lake Worth 3	40	14574	53	53	53	53	52	53
Ousley 1	30	3954	41	40	40	40	40	40
Paddock 1	30	1445	40	39	40	39	40	40
Paddock 2	30	1445	42	42	43	42	42	42
Palm Beach Point 1	30	918	40	39	39	37	39	39
Palm Beach Point 2	30	404						
Palm Beach Point 3	30	681	37	38	38	38	38	38
Pierson 1	30	4579	40	39	39	39	39	39
Pierson 2	30	4474	42	40	39	38	38	39
Pierson 3	30	5059	42	42	41	40	40	41
Pierson 4	30	5319	42	41	40	40	40	40
Pierson 5	30	5248	38	37	37	37	36	37
Pierson 6	30	5155	42	41	41	42	41	41
Pierson 7	30	5605	40	39	39	39	39	39
South Rd 1	30	947	44	40	41	41	40	41
South Rd 2	30	614	44	41	41	40	38	41
South Shore Blvd. 1	30	415						
South Shore Blvd. 2	30	634	45	43	44			44
South Shore Blvd. 3	30	830	43	43	42	42	41	42
South Shore Blvd. 4	30	3076	40	40	40	41	40	40
South Shore Blvd. 5	35	3740	45	44	45	44	44	44

EXHIBIT C.1.1
January 2023 Counts and Speeds
Weekday (MPH)

			Weekday 85th Percentile Speeds					
Collection Point	Posted Speed	ADT	Mon.	Tues.	Wed.	Thurs.	Fri.	Average.
South Shore Blvd. 6	35	15680	43	42	43	42	43	43
South Shore Blvd. 7	45	17740	45	44	44	44	44	44
Wellington Rd 1	30	1605	36	36	36	36	36	36
Wellington Trace 1	35	3272	41	41	41	40	41	41
Wellington Trace 2	35	3215	41	40	40	40	40	40
Wellington Trace 3	35	3133	42	41	41	41	41	41
Wellington Trace 4	35	2789	42	41	41	41	41	41
Wellington Trace 5	35	3192	36	35	35	36	35	35
Wellington Trace 6	35	5937	33	33	33	33	33	33

EXHIBIT C.1.2

January 2023 Counts and Speeds Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
120th Ave. 1	25	2957	48	47	47
120th Ave. 2	25	1458	47	48	48
120th Ave. 3	35	5747	49	47	48
50t St. 1	30	606	42	45	44
50t St. 2	30	1117	46	46	46
50t St. 3	30	1406	46	46	46
50t St. 4	30	2220	48	48	48
50t St. 5	30	2414	48	49	49
50t St. 6	30	2511	47	48	48
50t St. 7	30	3254	54	54	54
55th St 1	30	29			
55th St 2	30	133			
Acme Rd 1	30	500			
Acme Rd 2	30	539	39	39	39
Aero Club 1	40	3390	47	48	47
Aero Club 2	40	3787	48	48	48
Gracida 1	25	1085	40	41	41
Gracida 2	25	1134	40	41	41
Greenbriar Blvd. 1	35	4591	42	42	42
Greenbriar Blvd. 2	35	3233	45	45	45
Greenbriar Blvd. 3	35	2855	45	45	45
Lake Worth 1	40	9794	50	51	51
Lake Worth 2	40	10901	55	55	55
Lake Worth 3	40	11084	54	55	55
Ousley 1	30	3888	40	41	40
Paddock 1	30	1080	39	39	39
Paddock 2	30	1005	41	41	41
Palm Beach Point 1	30	624	40	40	40
Palm Beach Point 2	30	238			
Palm Beach Point 3	30	429	38	38	38
Pierson 1	30	3904	39	40	39
Pierson 2	30	4086	38	39	39
Pierson 3	30	4462	41	41	41
Pierson 4	30	5244	40	41	40
Pierson 5	30	4811	37	37	37
Pierson 6	30	4785	42	42	42
Pierson 7	30	4862	40	40	40
South Rd 1	30	783	40	41	41
South Rd 2	30	487	42	40	41
South Shore Blvd. 1	30	349			

EXHIBIT C.1.2
January 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
South Shore Blvd. 2	30	480	44		44
South Shore Blvd. 3	30	647	42	44	43
South Shore Blvd. 4	30	2071	41	41	41
South Shore Blvd. 5	35	2569	45	46	45
South Shore Blvd. 6	35	11888	43	44	43
South Shore Blvd. 7	45	14520	44	46	45
Wellington Rd 1	30	1070	36	36	36
Wellington Trace 1	35	2383	40	41	40
Wellington Trace 2	35	2262	40	40	40
Wellington Trace 3	35	2413	41	42	41
Wellington Trace 4	35	2139	41	42	41
Wellington Trace 5	35	2584	36	37	37
Wellington Trace 6	35	5116	34	34	34

EXHIBIT C.2.1
February 2023 Counts and Speeds
Weekday (MPH)

Collection Point	Posted Speed	ADT	Weekday 85th Percentile Speeds					Average.
			Mon.	Tues.	Wed.	Thurs.	Fri.	
120th Ave. 1	25	3420	47	47	47	47	47	47
120th Ave. 2	25	1904	47	46	47	47	47	47
120th Ave. 3	35	5626	48	48	49	48	49	48
50t St. 1	30	882	45	44	44	45	44	44
50t St. 2	30	1484	45	44	46	45	47	45
50t St. 3	30	2046	46	45	46	46	45	46
50t St. 4	30	2926	47	47	46	47	47	47
50t St. 5	30	3346	48	47	47	48	47	47
50t St. 6	30	3404	47	45	45	46	47	46
50t St. 7	30	4795	53	53	53	53	54	53
55th St 1	30	84						
55th St 2	30	188						
Acme Rd 1	30	628	29	29	29	30	29	29
Acme Rd 2	30	822	39	40	39	39	39	39
Aero Club 1	40	4524	46	46	47	46	46	46
Aero Club 2	40	5020	47	47	47	47	47	47
Gracida 1	25	1202	40	40	38	40	41	40
Gracida 2	25	1372	41	40	40	41	40	40
Greenbriar Blvd. 1	35	5686	42	42	42	41	42	42
Greenbriar Blvd. 2	35	4383	46	45	44	45	45	45
Greenbriar Blvd. 3	35	4038	46	44	44	44	44	44
Lake Worth 1	40	13135	49	49	49	49	49	49
Lake Worth 2	40	14253	53	53	53	53	53	53
Lake Worth 3	40	14374	53	52	52	52	52	52
Ousley 1	30	4559	41	40	40	40	40	40
Paddock 1	30	1492	40	39	37	40	38	39
Paddock 2	30	1482	42	41	42	41	41	41
Palm Beach Point 1	30	875	41	38	39	38	37	39
Palm Beach Point 2	30	412						
Palm Beach Point 3	30	601	35	37	37	37	37	37
Pierson 1	30	4738	40	39	39	39	39	39
Pierson 2	30	4763	41	39	38	39	38	39
Pierson 3	30	5249	42	41	41	41	40	41
Pierson 4	30	5683	41	41	40	40	39	40
Pierson 5	30	5267	38	38	37	36	35	37
Pierson 6	30	5192	42	42	41	41	41	41
Pierson 7	30	5867	39	39	39	39	39	39
South Rd 1	30	897	43	42	42	41	42	42
South Rd 2	30	537	43	42	42	40	42	42
South Shore Blvd. 1	30	425						
South Shore Blvd. 2	30	520		44	43	43	44	44
South Shore Blvd. 3	30	827	41	43	41	42	42	42
South Shore Blvd. 4	30	2965	40	40	39	40	40	40
South Shore Blvd. 5	35	3433	44	44	43	44	44	44

EXHIBIT C.2.1
February 2023 Counts and Speeds
Weekday (MPH)

			Weekday 85th Percentile Speeds					
Collection Point	Posted Speed	ADT	Mon.	Tues.	Wed.	Thurs.	Fri.	Average.
South Shore Blvd. 6	35	16159	43	42	42	42	42	42
South Shore Blvd. 7	45	18016	45	44	44	44	44	44
Wellington Rd 1	30	1762	36	36	36	36	36	36
Wellington Trace 1	35	3266	42	41	41	41	41	41
Wellington Trace 2	35	3260	41	40	40	40	40	40
Wellington Trace 3	35	3220	42	42	41	41	42	42
Wellington Trace 4	35	2635	42	41	41	41	41	41
Wellington Trace 5	35	3193	35	35	35	34	35	35
Wellington Trace 6	35	6087	31	31	31	31	31	31

EXHIBIT C.2.2
February 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
120th Ave. 1	25	3179	47	46	47
120th Ave. 2	25	1414	47	47	47
120th Ave. 3	35	5763	48	46	47
50t St. 1	30	643	45		45
50t St. 2	30	1333	45	47	46
50t St. 3	30	1930	46	46	46
50t St. 4	30	2420	48	47	47
50t St. 5	30	2746	47	49	48
50t St. 6	30	2809	47	47	47
50t St. 7	30	3642	55	54	55
55th St 1	30	52			
55th St 2	30	170			
Acme Rd 1	30	536	28		
Acme Rd 2	30	642	40	40	40
Aero Club 1	40	3999	47	47	47
Aero Club 2	40	4314	47	48	48
Gracida 1	25	1468	44	41	43
Gracida 2	25	1543	42	41	41
Greenbriar Blvd. 1	35	4998	42	42	42
Greenbriar Blvd. 2	35	4368	45	45	45
Greenbriar Blvd. 3	35	3617	45	45	45
Lake Worth 1	40	11944	50	50	50
Lake Worth 2	40	12985	54	55	55
Lake Worth 3	40	13073	54	54	54
Ousley 1	30	4805	40	40	40
Paddock 1	30	1255	39	38	39
Paddock 2	30	1165	43	42	43
Palm Beach Point 1	30	802	40	38	39
Palm Beach Point 2	30	358			
Palm Beach Point 3	30	599	37	37	37
Pierson 1	30	4985	39	39	39
Pierson 2	30	4924	38	38	38
Pierson 3	30	5453	41	41	41
Pierson 4	30	6426	39	41	40
Pierson 5	30	4528	36	37	37
Pierson 6	30	4354	42	42	42
Pierson 7	30	5039	40	39	40
South Rd 1	30	900	42	42	42
South Rd 2	30	537	41	41	41
South Shore Blvd. 1	30	324			

EXHIBIT C.2.2
February 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
South Shore Blvd. 2	30	422			
South Shore Blvd. 3	30	714	42	42	42
South Shore Blvd. 4	30	2655	41	41	41
South Shore Blvd. 5	35	3068	44	45	45
South Shore Blvd. 6	35	14486	43	43	43
South Shore Blvd. 7	45	16681	44	45	45
Wellington Rd 1	30	1400	36	36	36
Wellington Trace 1	35	3045	41	41	41
Wellington Trace 2	35	3014	40	41	40
Wellington Trace 3	35	2976	42	42	42
Wellington Trace 4	35	2573	41	42	42
Wellington Trace 5	35	3078	35	35	35
Wellington Trace 6	35	5734	33	33	33

EXHIBIT C.3.1
March 2023 Counts and Speeds
Weekday (MPH)

Collection Point	Posted Speed	ADT	Weekday 85th Percentile Speeds					Average.
			Mon.	Tues.	Wed.	Thurs.	Fri.	
120th Ave. 1	25	3553	48	47	47	47	47	47
120th Ave. 2	25	2137	47	46	47	47	48	47
120th Ave. 3	35	5802	49	48	49	49	48	48
50t St. 1	30	850	45	44	45	46	48	46
50t St. 2	30	1591	46	46	47	47	45	46
50t St. 3	30	2300	45	46	46	47	46	46
50t St. 4	30	3509	47	46	47	47	47	47
50t St. 5	30	3586	47	47	48	48	48	47
50t St. 6	30	3587	47	46	46	47	47	47
50t St. 7	30	4712	53	53	53	54	55	54
55th St 1	30	70						
55th St 2	30	128						
Acme Rd 1	30	628	29	29	28	28	28	28
Acme Rd 2	30	876	40	39	40	40	40	40
Aero Club 1	40	4462	47	47	46	47	46	47
Aero Club 2	40	4808	47	48	47	47	47	47
Gracida 1	25	1455	40	40	41	39	41	40
Gracida 2	25	1562	42	41	41	40	42	41
Greenbriar Blvd. 1	35	5597	43	41	42	42	42	42
Greenbriar Blvd. 2	35	4334	46	45	45	46	45	45
Greenbriar Blvd. 3	35	4316	46	45	45	45	45	45
Lake Worth 1	40	13572	49	49	49	49	49	49
Lake Worth 2	40	14787	52	53	53	53	53	53
Lake Worth 3	40	15031	52	52	52	52	52	52
Ousley 1	30	4628	41	40	40	40	40	40
Paddock 1	30	1799	41	39	40	39	39	40
Paddock 2	30	1817	43	43	43	42	42	43
Palm Beach Point 1	30	1146	41	40	39	40	40	40
Palm Beach Point 2	30	569		38	35	37	37	
Palm Beach Point 3	30	765	38	38	36	37	38	37
Pierson 1	30	4899	40	39	39	39	39	39
Pierson 2	30	4834	41	40	39	38	38	39
Pierson 3	30	5113	42	41	41	41	41	41
Pierson 4	30	5891	41	41	40	40	40	41
Pierson 5	30	5490	38	37	37	37	36	37
Pierson 6	30	5368	42	42	41	42	41	42
Pierson 7	30	6078	40	39	39	39	39	39
South Rd 1	30	1146	43	41	41	42	42	42
South Rd 2	30	632	41	41	41	40	42	41
South Shore Blvd. 1	30	538		41	40	41	41	
South Shore Blvd. 2	30	591		43	42	44	43	43
South Shore Blvd. 3	30	1030	41	42	41	41	41	41
South Shore Blvd. 4	30	3064	40	40	40	40	40	40
South Shore Blvd. 5	35	3859	44	44	43	44	44	44

EXHIBIT C.3.1
March 2023 Counts and Speeds
Weekday (MPH)

			Weekday 85th Percentile Speeds					
Collection Point	Posted Speed	ADT	Mon.	Tues.	Wed.	Thurs.	Fri.	Average.
South Shore Blvd. 6	35	16918	42	42	42	42	42	42
South Shore Blvd. 7	45	17517	44	44	44	44	44	44
Wellington Rd 1	30	1758	36	36	36	36	36	36
Wellington Trace 1	35	3347	41	41	41	41	41	41
Wellington Trace 2	35	3254	40	40	40	40	40	40
Wellington Trace 3	35	3329	42	42	41	42	41	42
Wellington Trace 4	35	2967	41	41	41	41	41	41
Wellington Trace 5	35	3251	35	35	35	35	35	35
Wellington Trace 6	35	5964	32	32	33	32	33	33

EXHIBIT C.3.2**March 2023 Counts and Speeds
Weekend (MPH)****Weekend 85th Percentile Speeds**

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
120th Ave. 1	25	3402	48	46	47
120th Ave. 2	25	1594	46	48	47
120th Ave. 3	35	6079	49	46	47
50t St. 1	30	601			
50t St. 2	30	1388	47	46	46
50t St. 3	30	2082	46	46	46
50t St. 4	30	2915	48	48	48
50t St. 5	30	2836	49	50	49
50t St. 6	30	2821	48	49	49
50t St. 7	30	3492	54	55	55
55th St 1	30	99			
55th St 2	30	71			
Acme Rd 1	30	476			
Acme Rd 2	30	671	39	39	39
Aero Club 1	40	3950	47	47	47
Aero Club 2	40	4203	47	48	47
Gracida 1	25	1719	45	40	43
Gracida 2	25	1748	41	41	41
Greenbriar Blvd. 1	35	5066	42	42	42
Greenbriar Blvd. 2	35	4338	45	46	45
Greenbriar Blvd. 3	35	3874	45	45	45
Lake Worth 1	40	11991	50	50	50
Lake Worth 2	40	13028	55	54	55
Lake Worth 3	40	13368	54	54	54
Ousley 1	30	4866	40	40	40
Paddock 1	30	1667	39	39	39
Paddock 2	30	1554	43	42	43
Palm Beach Point 1	30	994	41	40	40
Palm Beach Point 2	30	460			
Palm Beach Point 3	30	657	38	36	37
Pierson 1	30	5124	39	39	39
Pierson 2	30	5023	37	38	38
Pierson 3	30	5318	41	41	41
Pierson 4	30	6605	39	41	40
Pierson 5	30	4770	37	38	38
Pierson 6	30	4529	42	42	42
Pierson 7	30	5151	40	40	40
South Rd 1	30	1114	41	43	42
South Rd 2	30	615	42	42	42
South Shore Blvd. 1	30	453			

EXHIBIT C.3.2
March 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
South Shore Blvd. 2	30	466			
South Shore Blvd. 3	30	797	41	42	42
South Shore Blvd. 4	30	2648	40	41	41
South Shore Blvd. 5	35	3283	45	45	45
South Shore Blvd. 6	35	14693	42	43	43
South Shore Blvd. 7	45	15770	44	45	45
Wellington Rd 1	30	1330	38	36	37
Wellington Trace 1	35	3007	41	41	41
Wellington Trace 2	35	2878	40	41	40
Wellington Trace 3	35	2997	41	42	42
Wellington Trace 4	35	2797	41	41	41
Wellington Trace 5	35	3013	35	36	35
Wellington Trace 6	35	5515	33	34	34

EXHIBIT C.4.1
April 2023 Counts and Speeds
Weekday (MPH)

			Weekday 85th Percentile Speeds					
Collection Point	Posted Speed	ADT	Mon.	Tues.	Wed.	Thurs.	Fri.	Average.
120th Ave. 1	25	2955	48	48	48	48	49	48
120th Ave. 2	25	1780	48	48	47	47	46	47
120th Ave. 3	35	5183	49	49	50	50	49	49
50t St. 1	30	772	45	46	46	45	46	46
50t St. 2	30	1348	47	47	47	48	49	48
50t St. 3	30	1658	47	47	48	46	47	47
50t St. 4	30	2740	47	46	47	48	48	47
50t St. 5	30	3010	48	48	49	48	49	48
50t St. 6	30	3103	47	46	47	47	48	47
50t St. 7	30	4306	54	54	54	54	55	54
55th St 1	30	67						
55th St 2	30	140						
Acme Rd 1	30	701	30	29	29	31	30	30
Acme Rd 2	30	788	41	40	41	41	41	41
Aero Club 1	40	4025	47	47	47	47	48	47
Aero Club 2	40	4521	48	48	48	48	48	48
Gracida 1	25	998	40	39	40	38	39	39
Gracida 2	25	1153	44	42	41	42	42	42
Greenbriar Blvd. 1	35	5394	43	43	42	43	43	43
Greenbriar Blvd. 2	35	3691	47	46	47	47	46	47
Greenbriar Blvd. 3	35	3561	46	46	46	46	46	46
Lake Worth 1	40	11677	50	50	50	50	50	50
Lake Worth 2	40	13016	53	53	53	53	54	53
Lake Worth 3	40	13218	53	52	52	53	53	53
Ousley 1	30	3886	42	42	41	42	42	42
Paddock 1	30	1475	40	40	39	39	39	39
Paddock 2	30	1456	43	43	43	42	43	43
Palm Beach Point 1	30	717	42	42	41	42	42	42
Palm Beach Point 2	30	301						
Palm Beach Point 3	30	489		37	37	38		37
Pierson 1	30	3895	41	41	40	41	41	41
Pierson 2	30	4086	42	42	42	41	41	42
Pierson 3	30	4411	43	44	43	43	43	43
Pierson 4	30	5164	42	42	42	41	42	42
Pierson 5	30	5390	39	39	39	38	38	39
Pierson 6	30	5381	43	43	42	42	42	42
Pierson 7	30	5427	39	39	39	39	40	40
South Rd 1	30	778	44	44	44	45	43	44
South Rd 2	30	484		43	42		43	43
South Shore Blvd. 1	30	364						
South Shore Blvd. 2	30	508	44	44	43		44	44
South Shore Blvd. 3	30	724	42	42	42	42	42	42
South Shore Blvd. 4	30	2488	40	41	40	40	41	40
South Shore Blvd. 5	35	3174	44	45	45	44	45	45

EXHIBIT C.4.1
April 2023 Counts and Speeds
Weekday (MPH)

			Weekday 85th Percentile Speeds					
Collection Point	Posted Speed	ADT	Mon.	Tues.	Wed.	Thurs.	Fri.	Average.
South Shore Blvd. 6	35	14356	43	43	43	43	43	43
South Shore Blvd. 7	45	17064	44	45	44	44	45	44
Wellington Rd 1	30	1559	37	37	37	38	37	37
Wellington Trace 1	35	2900	42	42	41	41	41	41
Wellington Trace 2	35	2779	41	41	41	41	41	41
Wellington Trace 3	35	2905	42	42	42	42	42	42
Wellington Trace 4	35	2469	41	41	41	42	42	41
Wellington Trace 5	35	2967	36	37	37	36	37	36
Wellington Trace 6	35	5800	33	33	33	33	33	33

EXHIBIT C.4.2
April 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
120th Ave. 1	25	2957	48	47	48
120th Ave. 2	25	1458	49	50	50
120th Ave. 3	35	5747	50	47	49
50t St. 1	30	606	48		48
50t St. 2	30	1117	47	48	47
50t St. 3	30	1406	47	47	47
50t St. 4	30	2220	48	49	48
50t St. 5	30	2414	49	50	50
50t St. 6	30	2511	47	48	48
50t St. 7	30	3254	55	56	56
55th St 1	30	29			
55th St 2	30	133			
Acme Rd 1	30	500	29		29
Acme Rd 2	30	539	43	42	43
Aero Club 1	40	3390	48	48	48
Aero Club 2	40	3787	48	49	49
Gracida 1	25	1085	40	40	40
Gracida 2	25	1134	43	43	43
Greenbriar Blvd. 1	35	4591	43	43	43
Greenbriar Blvd. 2	35	3233	46	47	47
Greenbriar Blvd. 3	35	2855	45	47	46
Lake Worth 1	40	9794	50	51	51
Lake Worth 2	40	10901	54	55	54
Lake Worth 3	40	11084	54	54	54
Ousley 1	30	3888	41	42	42
Paddock 1	30	1080	39	39	39
Paddock 2	30	1005	42	43	43
Palm Beach Point 1	30	624	43	42	43
Palm Beach Point 2	30	238			
Palm Beach Point 3	30	429	39		39
Pierson 1	30	3904	41	41	41
Pierson 2	30	4086	40	42	41
Pierson 3	30	4462	42	43	43
Pierson 4	30	5244	42	43	42
Pierson 5	30	4811	39	39	39
Pierson 6	30	4785	42	43	43
Pierson 7	30	4862	40	40	40
South Rd 1	30	783	43	43	43
South Rd 2	30	487	43	43	43
South Shore Blvd. 1	30	349	41		41

EXHIBIT C.4.2
April 2023 Counts and Speeds
Weekend (MPH)

Weekend 85th Percentile Speeds

Collection Point	Posted Speed	ADT	Sat.	Sun.	Average.
South Shore Blvd. 2	30	480	43	45	44
South Shore Blvd. 3	30	647	44	44	44
South Shore Blvd. 4	30	2071	41	42	41
South Shore Blvd. 5	35	2569	46	46	46
South Shore Blvd. 6	35	11888	44	44	44
South Shore Blvd. 7	45	14520	45	46	45
Wellington Rd 1	30	1070	39	38	38
Wellington Trace 1	35	2383	41	42	42
Wellington Trace 2	35	2262	41	42	41
Wellington Trace 3	35	2413	43	43	43
Wellington Trace 4	35	2139	42	42	42
Wellington Trace 5	35	2584	37	36	36
Wellington Trace 6	35	5116	34	34	34



STREETLIGHT **InSight**

StreetLight Speed Validation

Version 1.1
July 2021

Table of Contents

Speed Metric Summary.....	2
85 th Percentile Validation.....	2
Speed Distribution Validation	4
Hourly Speed Validation.....	5
About StreetLight Data.....	6

Speed Metric Summary

We are continuously improving our Metrics in order to bring the best results possible to our customers. StreetLight's Speed Metric algorithm has been enhanced in order to improve speed accuracy on curves, and eliminate mode confusion near transit, higher speeds near freeways, and extreme outlier speeds. This paper demonstrates data validation for three of StreetLight's available Speed Metrics: 85th percentile speeds, speed distributions and hourly speeds.

In order to validate StreetLight's Speed Metric, we looked for the highest quality publicly available speed data published by state agencies for comparison. Specifically, we utilized speed reports provided by Washington State Department of Transportation (WSDOT)¹ which published 85th percentile speeds as well as speed distributions for select locations. To evaluate hourly speed data, we relied on data published by the California Department of Transportation's Performance Management System (PeMS)².

In total we utilized 202 sample locations from WSDOT and 71 sample locations from PeMS for this validation. Both state agencies used permanent loop counters to collect speed data. Permanent loop counters are prone to error, however, since some counters detect only speeds within a certain range, or estimate speeds in cases of single (as opposed to dual) loop detectors. Meanwhile, StreetLight speeds may be subject to error in scenarios where trip samples are limited, or road network configuration contributes to trip-locking challenges. In order to avoid atypical speeds that might have occurred in 2020 due to the COVID-19 pandemic, we compared StreetLight's Speed Metric from 2019 to published speeds from the same year. All locations were uploaded as line segment zones and run as Segment Analyses within StreetLight InSight®. StreetLight InSight® Speed Metrics are available in both the U.S. and Canada. Even though this validation just looks at locations from the U.S., the latest Metric improvements apply to Segment Analyses, Origin-Destination Analyses, and Origin-Destination through Middle Filter analyses run in both the U.S. and Canada.

85th Percentile Validation

Traffic engineers use the 85th percentile speed as a standard to set the speed limit at a safe speed, thus minimizing crashes and promoting uniform traffic flow along a corridor. For the sampled locations, StreetLight's 85th percentile speeds had a strong correlation with an R² value of 0.91.

¹ <https://www.wsdot.wa.gov/mapsdata/travel/speedreport.htm>

² <https://pems.dot.ca.gov/>

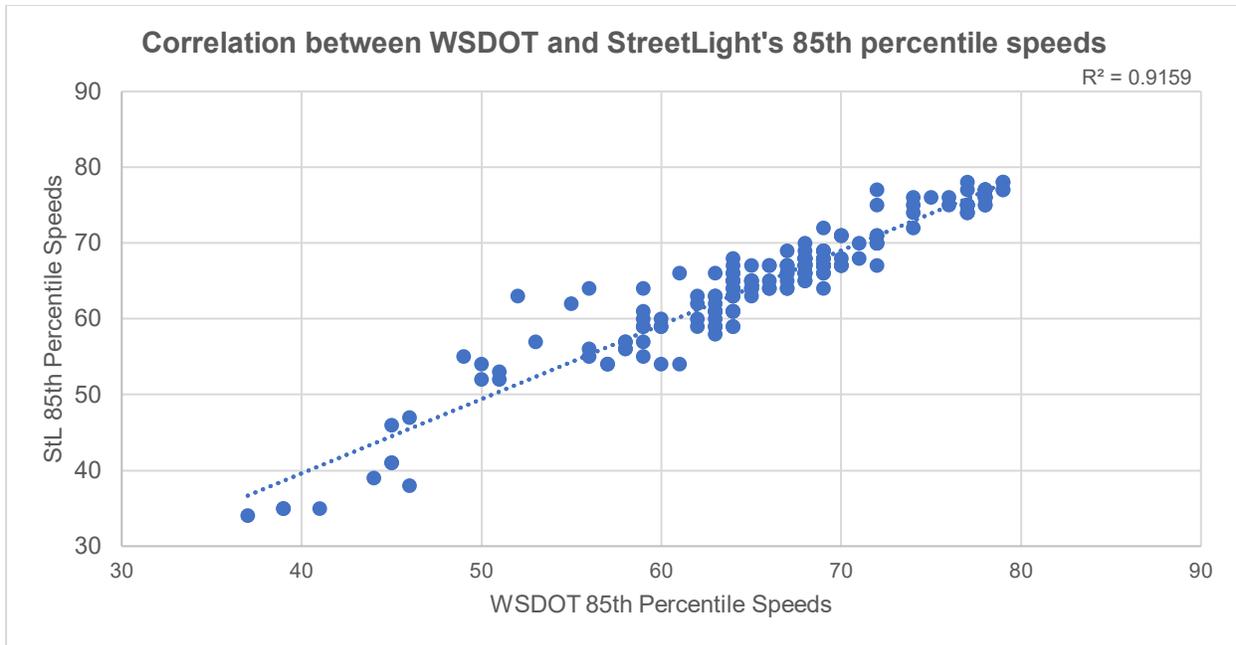


Figure 1: Scatter plot illustrating the correlation between WSDOT’s 85th Percentile speeds and those reported by StreetLight. The plot shows strong correlation with an R^2 of 0.91.

Table 1 highlights the difference between StreetLight’s 85th percentile speeds and WSDOT’s reported values for the same locations over an entire day. Therefore, if WSDOT reports a speed of 70 mph and StreetLight reports a speed of 71 mph, the difference is “1.” Table 1 illustrates the distribution of those differences as percentiles, while Figure 2 illustrates the distribution as a histogram.

Bias - 50 th Percentile Difference (mph)	25 th Percentile Absolute Difference (mph)	50 th Percentile Absolute Difference (mph)	75 th Percentile Absolute Difference (mph)	95 th Percentile Absolute Difference (mph)
-1	1	2	3	6

Table 1: Distribution of the difference between StreetLight’s reported 85th percentile speed and those reported by WSDOT for the same locations for an average day in April 2019. Two outliers were removed due to insufficient sample.

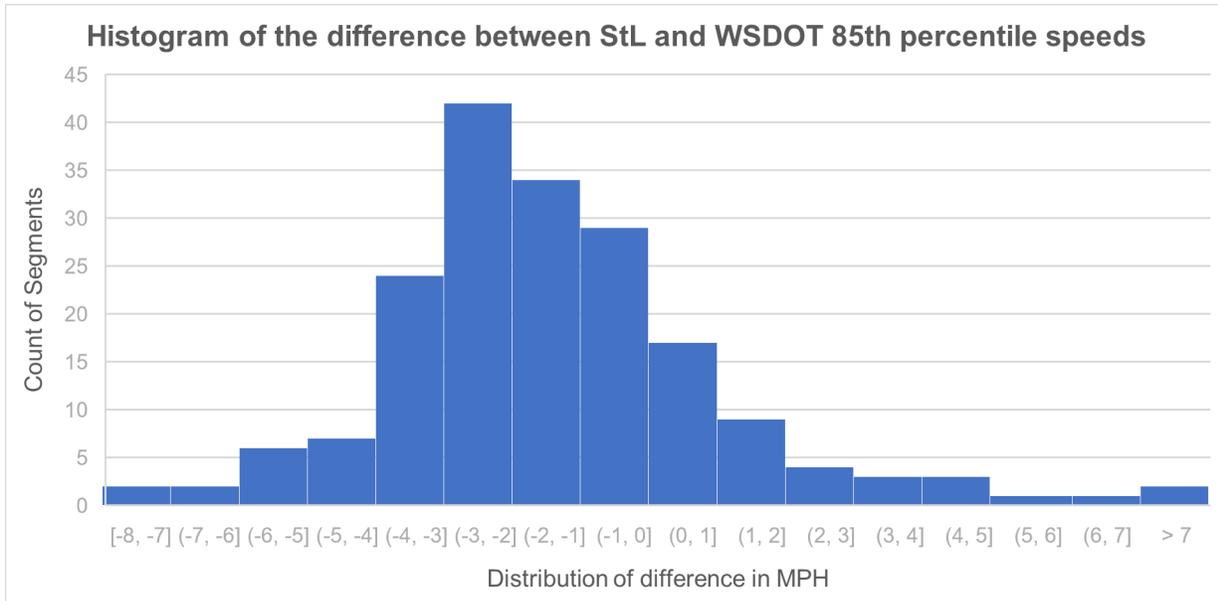


Figure 2: Histogram illustrating the difference between StreetLight’s reported 85th percentile speed and those reported by WSDOT for the same locations for average days in April 2019. The majority of locations are within 3 mph of WSDOT’s published values.

Speed Distribution Validation

WSDOT also published the distribution of vehicle speeds over an average day at 5 mph intervals. StreetLight evaluated similar speed distributions for the same locations across Washington State. The following figures illustrate the comparison between speed distributions at select locations. We look for the distribution between the two sources to have a similar shape, with highs and lows clustered around the same 5 mph bins.

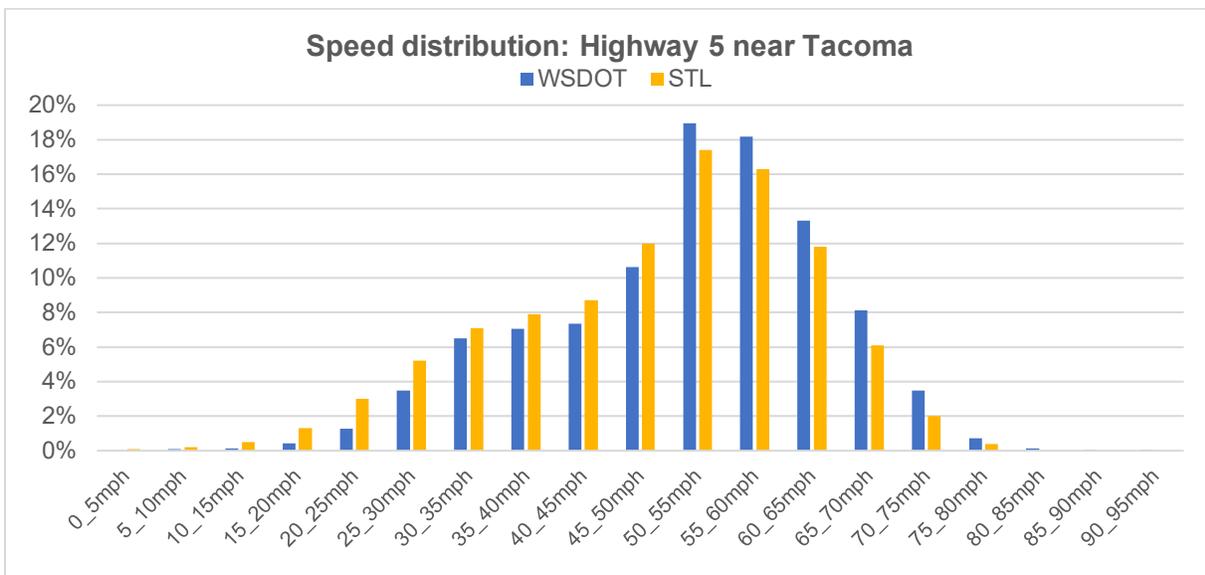


Figure 3: Comparison of speed distributions across 5 mph bins at a site on Highway 5 near Tacoma, Washington.

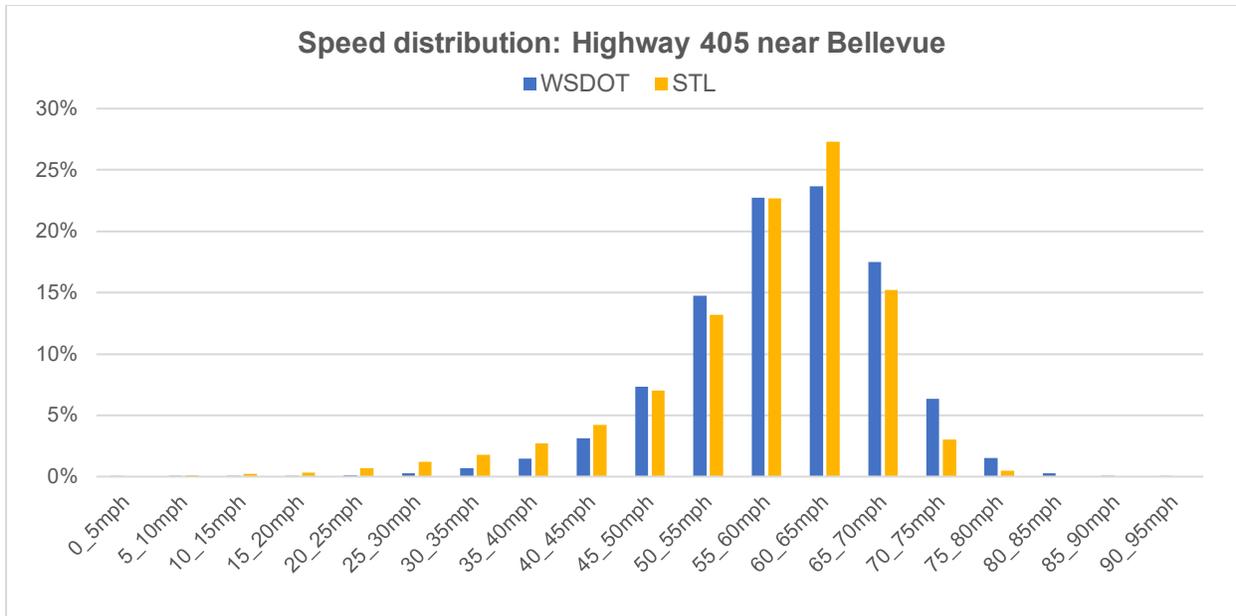


Figure 4: Comparison of speed distributions across 5 mph bins at a site on Highway 405 near Bellevue, Washington.

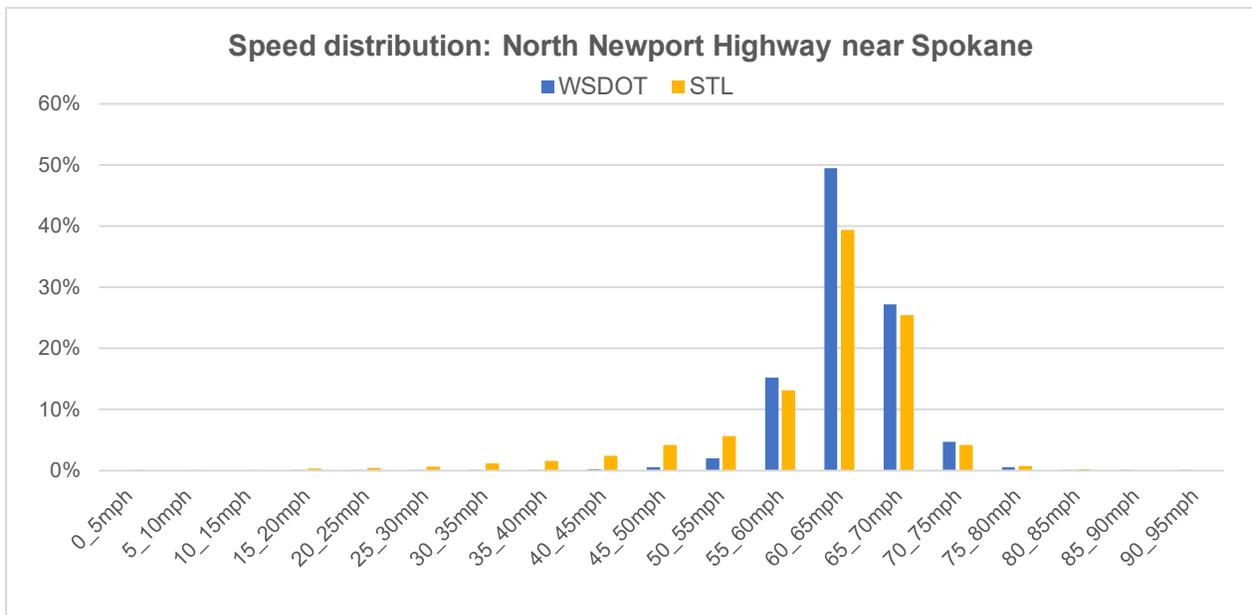


Figure 5: Comparison of speed distributions across 5 mph bins at a site on North Newport Highway near Spokane, Washington.

Hourly Speed Validation

The following validation compares 2019 PeMS speed metrics to average hourly speeds from StreetLight. In the following figures, we compare hourly average speeds across the two sources for a select location on average weekdays and weekends across 2019. For the select site, both sources show slower speeds at the peak AM and PM hours during weekdays, and relatively consistent speeds across the day on average weekends.

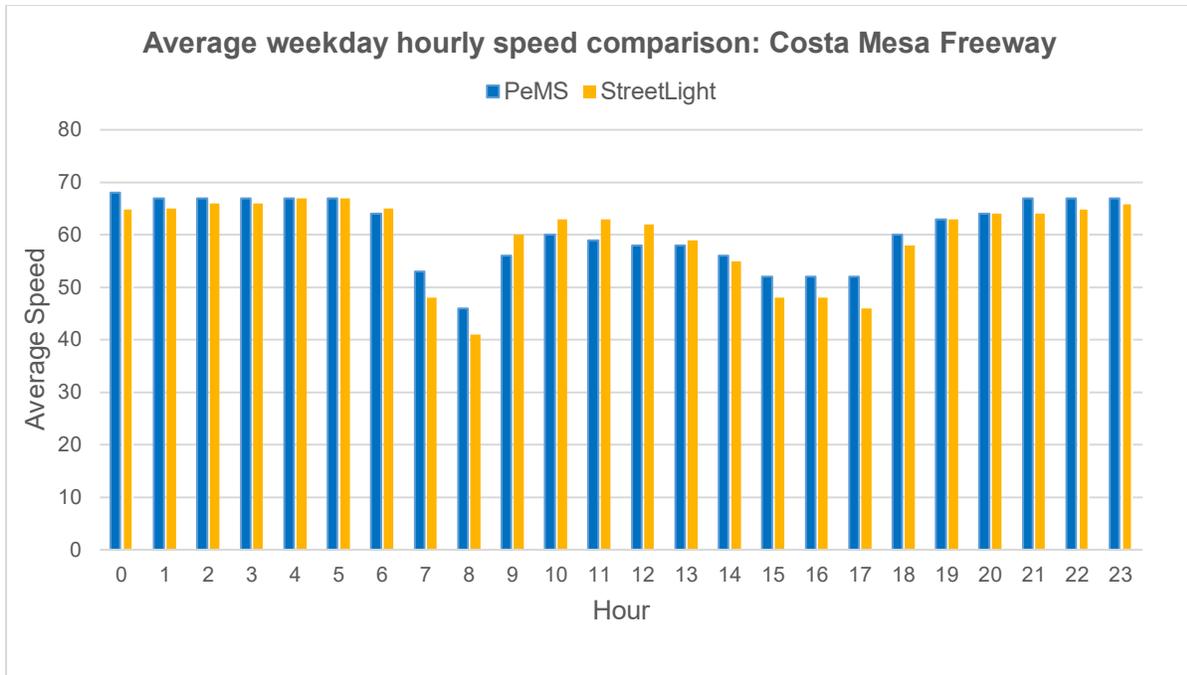


Figure 6: Comparison of average hourly speeds on weekdays at a site on Costa Mesa Highway in Orange County, California.

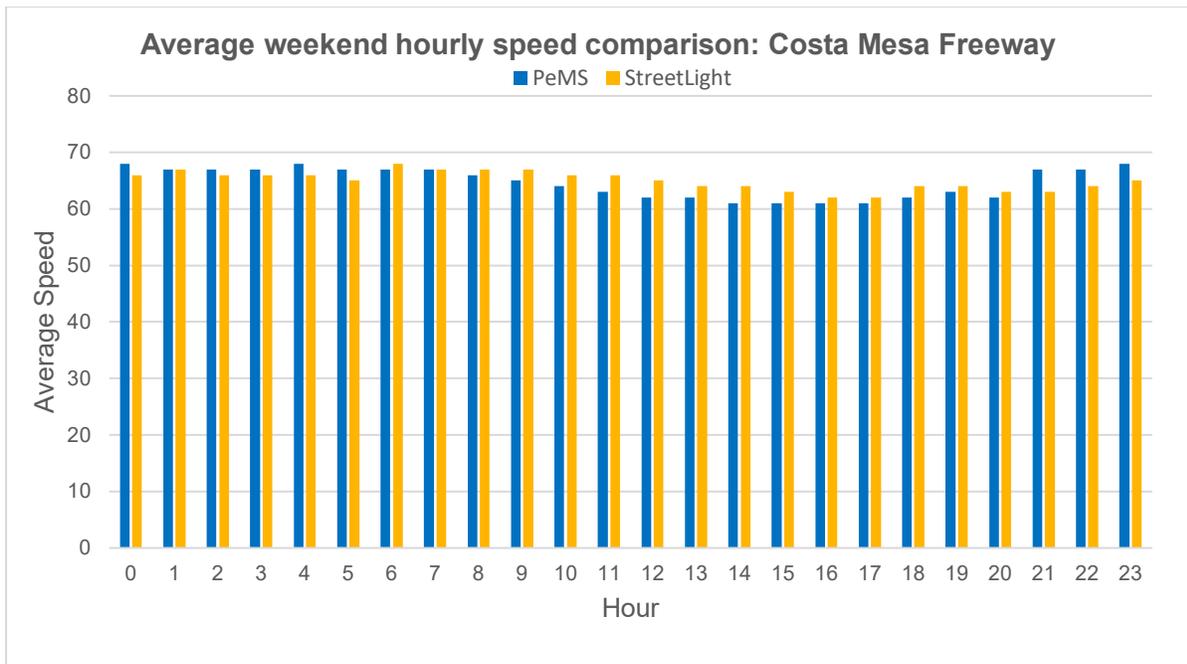


Figure 7: Comparison of average hourly speeds on weekends at a site on Costa Mesa Highway in Orange County, California.

About StreetLight Data

[StreetLight Data, Inc.](#) pioneered the use of Big Data analytics to help transportation professionals solve their biggest problems. Applying proprietary machine-learning algorithms to over four trillion spatial data points over time, StreetLight measures multimodal travel patterns

and makes them available on-demand via the world's first SaaS platform for mobility, StreetLight InSight®. From identifying sources of congestion to optimizing new infrastructure to planning for autonomous vehicles, StreetLight powers more than 6,000 global projects every month.



STREETLIGHT DATA

© StreetLight Data 2021