

# SPOT SPEED STUDY

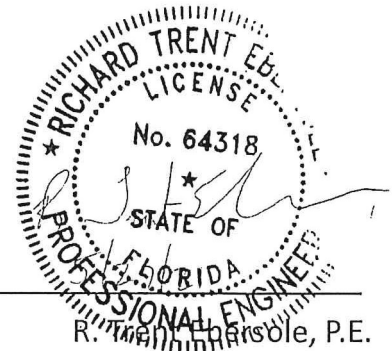
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SR 60 – Vero Beach

Indian River County, FL

Traffic Operations Continuing Services

FM NO.: 229944-5-32-01  
CONTRACT NO.: C-9W04  
TASK WORK ORDER NO.: 82  
FDOT PROJECT MANAGER: Nadir Rodrigues, P.E.  
McMAHON PROJECT MANAGER: R. Trent Ebersole, P.E.



R. Trent Ebersole, P.E.  
Professional Engineering License No. 64318  
State of Florida, Board of Professional Engineers  
Certificate of Authorization No. 4908

prepared for



District 4

Prepared by:  
McMahon Associates, Inc.

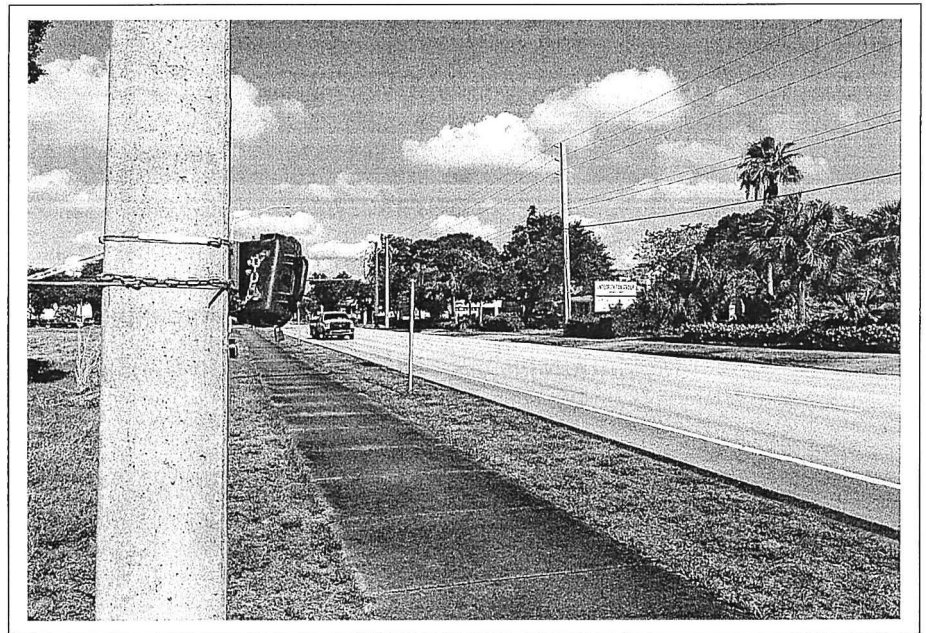
# Traffic Operations Continuing Services

Task Work Order No. 82

## Spot Speed Study

SR 60 – Vero Beach

Indian River County, FL



Prepared for



District 4

Prepared by:  
McMahon Associates, Inc.

May 2021

## TECHNICAL MEMORANDUM

**Date:** May 27, 2021  
**Client:** Florida Department of Transportation – District 4  
**Project:** SR 60 – Vero Beach Spot Speed Study  
**County:** Indian River County  
**Roadway ID No.:** 88060001; 88060000  
**SLDMP:** 0.276 to 1.293; 29.665 to 30.665  
**Contract No.:** C9W04  
**Payment FM No.:** 229944-5-32-01  
**Task Work Order No.:** 82  
**McMahon Project No.:** L17149.82

McMahon Associates, Inc. (McMahon) used automatic traffic recorder (ATR) machines to collect eastbound and westbound 24-hour vehicle speeds at four (4) locations along SR 60 between 20 Avenue and 8 Avenue, in Indian River County. **Appendix A** provides an aerial photograph showing the data collection locations. This section of SR 60 is typically a two-way pair, with three (3) lanes in the eastbound direction and four (4) lanes in the westbound direction. The posted speed limit is 40 miles per hour (MPH). The area is surrounded by residential, institutional, and retail land uses. The data was collected on May 25, 2021 and is included as **Appendix B**.

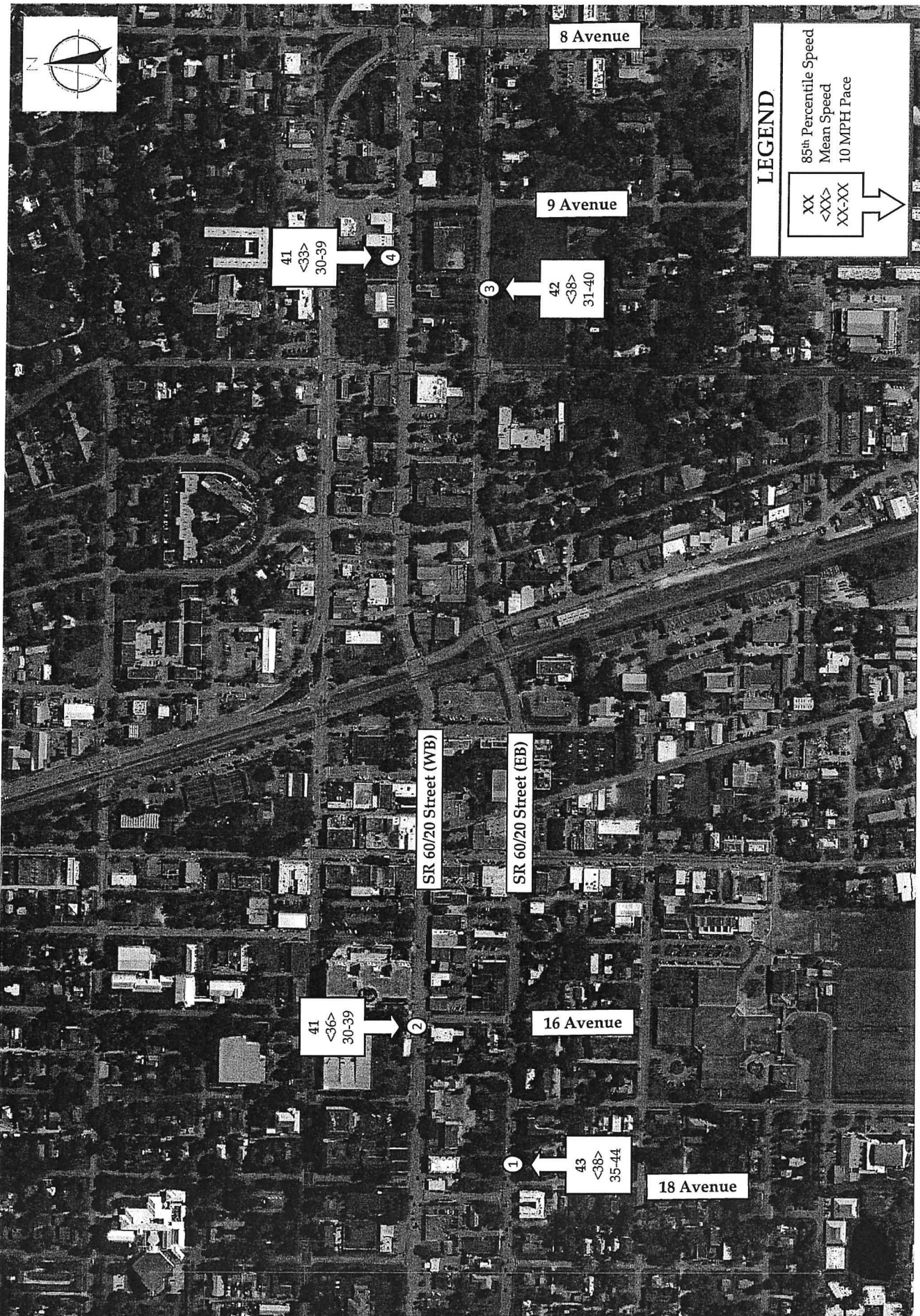
**Table 1** summarizes the date, posted speed limit, 85<sup>th</sup> percentile speed, average speed, and 10 MPH pace for each direction. The 85<sup>th</sup> percentile speeds for the eastbound direction range between 42 and 43 MPH and equal 41 MPH for the westbound direction. The results are graphically shown on Figure A-1, attached in Appendix A.

**Table 1: Data Collection Summary**

No.	Location Street	Posted Speed Limit (MPH)	Direction	Date	85 <sup>th</sup> Percentile Speed (MPH)	Average Speed (MPH)	10 MPH Pace Speed (MPH)
1	SR 60 (E. of 18 Avenue)	40	Eastbound	5/25/2021	43	38	35-44
2	SR 60 (W. of 16 Avenue)	40	Westbound	5/25/2021	41	36	30-39
3	SR 60 (W. of 9 Avenue)	40	Eastbound	5/25/2021	42	38	31-40
4	SR 60 (W. of 9 Avenue)	40	Westbound	5/25/2021	41	33	30-39

# Appendix A

## Spot Speed Locations



A-1

Collection Locations and Summary  
 Vero Beach Spot Speed Study  
 River County, Florida

McMahon Associates, Inc.

Appendix B

Speed Data

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Speed Study

File Name: Loc1-EB  
 Date Printed: 5/27/2021  
 Start Date: 5/25/2021  
 End Date: 5/26/2021

n: Eastbound	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
10 AM	0	2	1	4	6	6	4	0	1	0	0	0	24
1:00	0	0	0	1	3	9	2	0	0	0	0	0	15
2:00	1	0	0	2	4	9	2	1	0	0	0	0	19
3:00	2	1	2	2	7	4	3	2	0	0	0	0	23
4:00	0	0	0	1	3	6	1	2	0	0	0	0	13
5:00	1	0	5	5	19	28	8	10	0	0	0	0	78
6:00	2	1	2	22	55	83	46	13	2	0	0	0	226
7:00	6	3	3	67	195	190	68	18	2	1	1	1	559
8:00	6	7	13	95	253	188	50	15	2	1	0	0	656
9:00	5	9	19	89	203	139	32	4	1	0	0	0	527
10:00	5	3	15	119	195	136	35	12	3	0	1	0	549
11:00	1	5	10	144	255	113	22	6	2	0	0	0	597
10 PM	5	2	14	171	217	122	34	14	0	1	0	0	629
1:00	2	6	22	159	242	110	22	9	1	1	0	0	631
2:00	4	4	11	130	216	115	24	8	1	1	0	0	566
3:00	5	2	21	109	207	148	42	10	2	0	0	0	573
4:00	5	3	20	113	231	90	47	4	0	0	0	0	537
5:00	4	6	17	75	180	138	27	7	3	0	0	0	486
6:00	3	1	2	53	196	108	39	7	1	0	0	0	423
7:00	2	1	8	24	112	135	34	10	2	1	0	1	337
8:00	0	3	7	26	89	91	25	6	4	1	0	0	255
9:00	1	1	3	11	60	70	22	8	1	2	0	2	183
10:00	0	1	1	10	34	42	23	7	2	0	0	0	122
11:00	0	1	2	1	17	23	14	3	1	0	0	0	63
Total	60	62	186	1433	2999	2103	626	176	31	9	2	4	8091

Stats	15th Percentile	50th Percentile	85th Percentile	95th Percentile
Mean Speed (Average) Speed	31.9	37.9	42.9	46.9
10 MPH Pace Speed	35-44			
Number in Pace	5089			
Percent in Pace	63.0%			
Number > 40 MPH	2951			
Percent > 40 MPH	36.7%			

File Name: Loc2-WB  
 Date Printed: 5/27/2021  
 Start Date: 5/25/2021  
 End Date: 5/26/2021

Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
5/2021														
1:00 AM	0	0	0	1	7	10	8	1	1	1	0	0	0	29
2:00	0	0	0	1	2	9	3	1	0	0	0	0	0	16
3:00	0	0	0	0	1	7	5	0	0	0	0	0	0	13
4:00	0	0	1	1	1	2	5	1	0	0	0	0	0	11
5:00	0	0	1	0	4	6	5	2	0	0	0	0	0	18
6:00	1	1	2	2	3	22	11	3	0	0	0	0	0	45
7:00	0	1	4	5	16	53	41	2	0	1	0	0	0	123
8:00	0	5	13	15	41	145	66	13	5	0	0	0	0	303
9:00	1	12	28	23	103	135	80	20	6	1	0	0	0	409
10:00	2	13	22	37	98	194	81	22	5	0	0	0	0	474
11:00	4	16	21	42	165	240	84	16	1	0	0	0	0	589
12:00 PM	2	7	23	60	164	235	77	8	1	0	0	0	0	577
1:00	13	13	27	59	198	248	111	21	1	0	0	0	0	678
2:00	0	18	35	71	179	262	97	15	0	0	0	0	0	677
3:00	1	6	14	59	195	292	109	8	0	0	0	0	0	684
4:00	3	15	24	55	218	262	102	18	4	0	0	0	0	701
5:00	2	16	39	34	190	282	101	18	3	1	0	0	0	686
6:00	0	15	19	39	157	293	123	26	8	0	0	1	0	681
7:00	1	3	12	28	112	169	115	31	4	0	0	0	0	475
8:00	2	4	8	14	76	144	95	24	5	2	0	0	0	372
9:00	0	5	9	17	106	130	57	10	4	0	1	0	0	341
10:00	0	2	3	11	43	77	45	8	3	0	0	0	0	192
11:00	0	3	2	5	22	50	23	8	3	0	0	0	0	116
Total	19	157	307	583	2107	3291	1460	279	56	8	1	1	0	8269

Stats	15th	50th	85th	95th
Mean Speed (Average)	30.3	36.6	40.9	44.6
10 MPH Pace Speed	36.0			
Number in Pace	30-39			
Percent in Pace	5344			
Number > 40 MPH	65.0%			
Percent > 40 MPH	1805			
	21.9%			



File Name: Loc3-EB  
 Date Printed: 5/27/2021  
 Start Date: 5/25/2021  
 End Date: 5/26/2021

Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
5/2021														
00 AM	0	0	0	2	4	5	3	4	2	0	0	0	0	20
1:00	0	0	0	0	1	5	5	1	1	0	0	0	0	13
2:00	0	0	1	0	2	5	3	1	0	1	0	0	0	13
3:00	0	0	2	0	3	3	1	3	1	0	0	0	0	13
4:00	0	1	0	3	1	4	2	0	0	0	0	0	0	11
5:00	0	0	1	3	8	18	12	10	3	3	0	0	0	55
6:00	0	0	0	4	19	40	39	15	2	1	0	0	0	120
7:00	0	0	7	10	65	104	122	45	6	1	1	0	0	361
8:00	2	5	7	27	93	181	161	37	7	2	0	0	0	522
9:00	1	2	6	34	138	174	100	20	1	0	1	0	0	477
10:00	1	1	6	30	142	244	98	23	4	0	0	0	0	549
11:00	1	0	3	47	189	239	104	23	4	2	0	0	1	613
00 PM	0	1	5	41	203	252	111	22	3	3	0	0	0	641
1:00	0	0	17	57	169	274	83	15	1	3	0	0	0	619
2:00	1	0	4	42	154	218	123	23	7	0	0	0	0	572
3:00	1	2	2	29	144	259	90	16	4	0	0	0	0	547
4:00	2	0	0	28	126	234	87	23	5	1	0	0	0	506
5:00	2	0	8	25	107	203	99	30	9	1	1	0	0	486
6:00	1	4	2	15	71	166	106	29	8	1	0	0	0	403
7:00	2	0	0	7	70	121	76	28	6	0	1	0	0	311
8:00	0	0	5	13	68	83	66	24	1	1	0	0	0	261
9:00	1	0	0	3	52	61	37	20	9	1	0	0	0	184
10:00	0	0	0	1	10	44	33	15	5	2	2	1	0	113
11:00	0	0	1	5	8	21	15	6	1	0	0	0	0	57
Total	15	16	77	426	1847	2958	1576	433	90	20	6	2	1	7467

Stats  
 Percentile Speed  
 15th 31.9  
 50th 36.9  
 85th 41.9  
 95th 45.9  
 Mean Speed (Average) 37.5  
 10 MPH Pace Speed 31-40  
 Number in Pace 4756  
 Percent in Pace 64.0%  
 Number > 40 MPH 2128  
 Percent > 40 MPH 28.6%

our Speed Study

File Name: Loc4-WB  
 Date Printed: 5/27/2021  
 Start Date: 5/25/2021  
 End Date: 5/26/2021

Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
2:00 AM	0	0	2	0	3	6	6	1	0	0	0	0	0	18
1:00	0	0	1	0	0	1	4	3	0	0	0	0	0	9
2:00	0	0	0	0	5	5	2	0	0	0	0	0	0	12
3:00	0	0	0	0	0	3	1	2	0	0	0	0	0	6
4:00	0	0	0	0	2	2	6	1	0	0	0	0	0	11
5:00	0	0	0	3	8	4	13	3	0	0	0	0	0	31
6:00	0	0	2	10	22	22	18	2	2	0	0	0	0	78
7:00	0	2	9	27	48	59	30	14	3	2	0	0	1	195
8:00	7	5	28	69	55	67	44	12	3	0	0	0	0	290
9:00	3	14	37	60	72	86	49	12	0	0	0	0	0	333
10:00	5	24	47	91	83	69	49	9	2	0	0	0	0	379
11:00	10	30	50	68	85	96	39	4	0	1	0	0	0	383
2:00 PM	13	31	72	87	106	87	46	17	1	0	0	0	0	460
1:00	5	16	75	107	123	78	52	15	4	3	0	0	0	478
2:00	6	30	54	101	110	79	59	12	1	1	1	0	0	454
3:00	14	16	56	82	89	113	54	15	1	1	0	0	0	441
4:00	6	11	45	72	76	112	69	12	3	0	0	0	0	406
5:00	2	14	55	98	107	77	37	11	6	2	0	0	1	410
6:00	1	4	27	53	56	80	47	22	2	0	0	0	0	292
7:00	1	6	20	46	51	57	46	9	4	0	1	0	0	241
8:00	0	2	7	23	50	55	37	9	1	1	0	0	0	185
9:00	0	0	1	7	27	37	34	11	1	1	1	0	0	120
10:00	0	0	1	1	9	22	18	10	3	0	1	0	0	65
11:00	0	0	0	1	5	14	11	2	1	0	0	0	0	34
Total	73	205	589	1006	1192	1231	771	208	38	12	4	0	2	5331

Stats	15th Percentile Speed	50th Percentile Speed	85th Percentile Speed	95th Percentile Speed
Mean Speed (Average)	24.8	33.5	40.9	44.6
10 MPH Pace Speed	33.4			
Number in Pace	30-39			
Percent in Pace	2418			
Number > 40 MPH	46.0%			
Percent > 40 MPH	1035			
	19.7%			