

*The findings and recommendations provided in this document are provided for discussion purposes only.  
This document is not complete and the process of acquiring relevant data is still on-going.*

## **INTERSECTION ANALYSIS**

**DRAFT**

**State Road 514 at Interstate 95 Southbound and Northbound Ramps**

Section 70180

MP 2.523 & MP 2.628

Brevard County

Prepared for:

**FLORIDA DEPARTMENT OF TRANSPORTATION  
DISTRICT 5 TRAFFIC OPERATIONS**

719 South Woodland Boulevard, MS 3-562

DeLand, Florida 32720



Continuing Service Contract for Traffic Operations  
Financial Project Identification Number: 237974-1-32-17  
Contract Number: CA652  
SCI Contract Number: 30860  
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Study: 3

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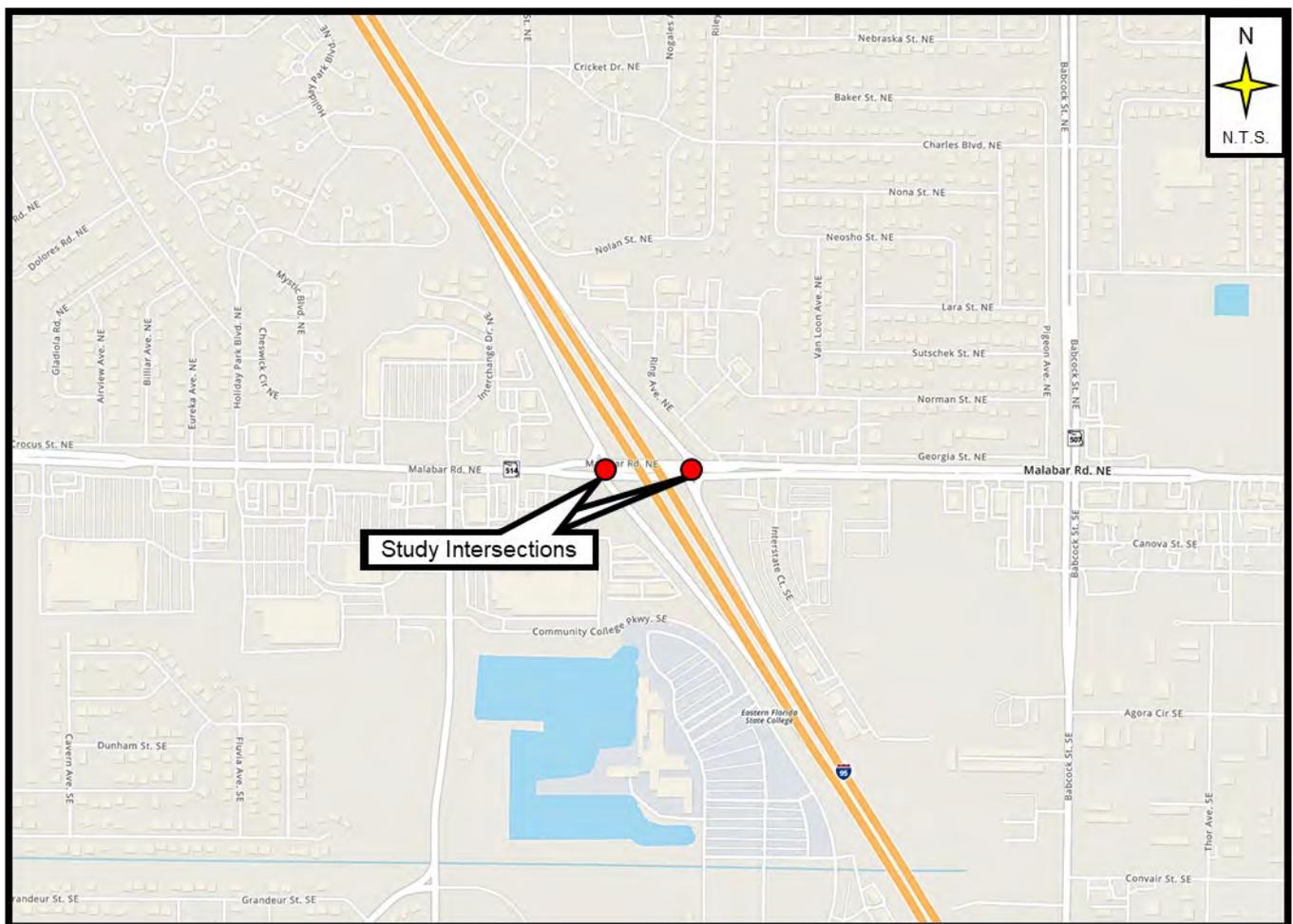
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## **INTRODUCTION**

Stanley Consultants, Inc. was retained on behalf of the Florida Department of Transportation (FDOT) to conduct an Intersection Analysis for the intersections of State Road (SR) 514 at the Interstate 95 (I-95) southbound and northbound ramps, located in Palm Bay (Brevard County), Florida. A location map of the study intersection is shown below as **Figure 1**.

The study was initiated by FDOT following requests to evaluate the ramp regarding excessive queue backups, specifically for the southbound I-95 off-ramp to SR 514. The analysis methods used in completing this study are consistent with the Manual on Uniform Traffic Control Devices (MUTCD), FDOT's Manual on Uniform Traffic Studies (MUTS), the Traffic Engineering Manual (TEM), and engineering judgment. This report documents existing conditions, vehicle / pedestrian / bicycle counts, collision analysis, qualitative assessment, and recommendations.

**Figure 1**  
**General Location Map**

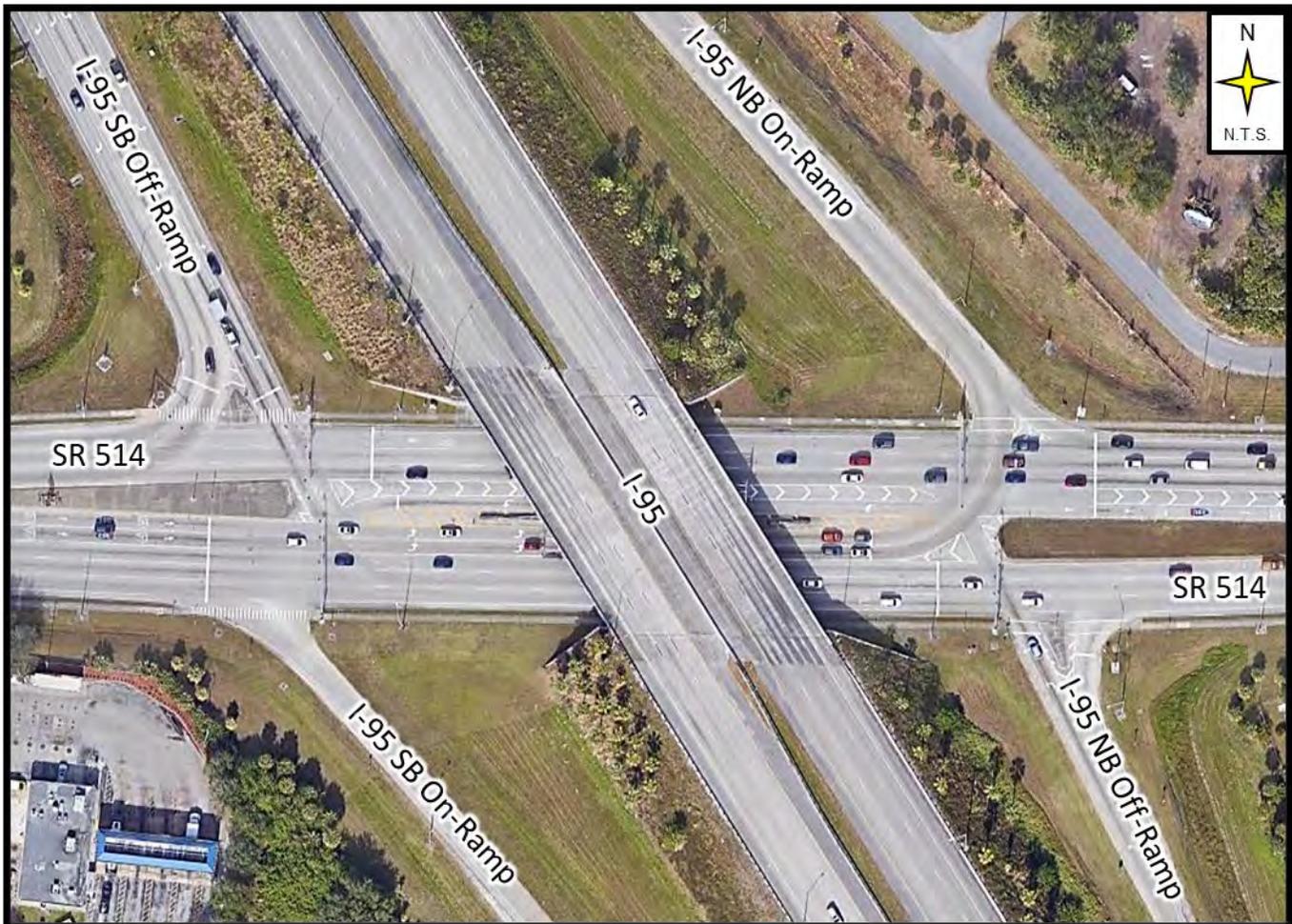


Source: MapQuest

## **EXISTING CONDITIONS**

SR 514 is an east/west arterial that extends from west of the I-95 southbound ramps to US 1 in Palm Bay. At the study intersections, SR 514 is a six-lane divided arterial with four-foot shoulders and curb and gutter. I-95 is a north/south interstate highway that extends from the Indian River/Brevard County line to the Brevard/Volusia County line and beyond. The diamond interchange (exit 173) consists of the southbound ramp as the west ramp terminal and the northbound ramp as the east ramp terminal. A location aerial is shown below in **Figure 2**.

**Figure 2**  
**General Location Aerial**

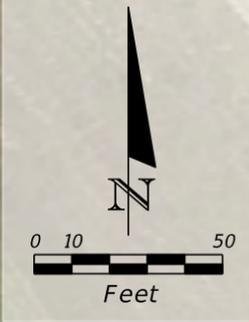
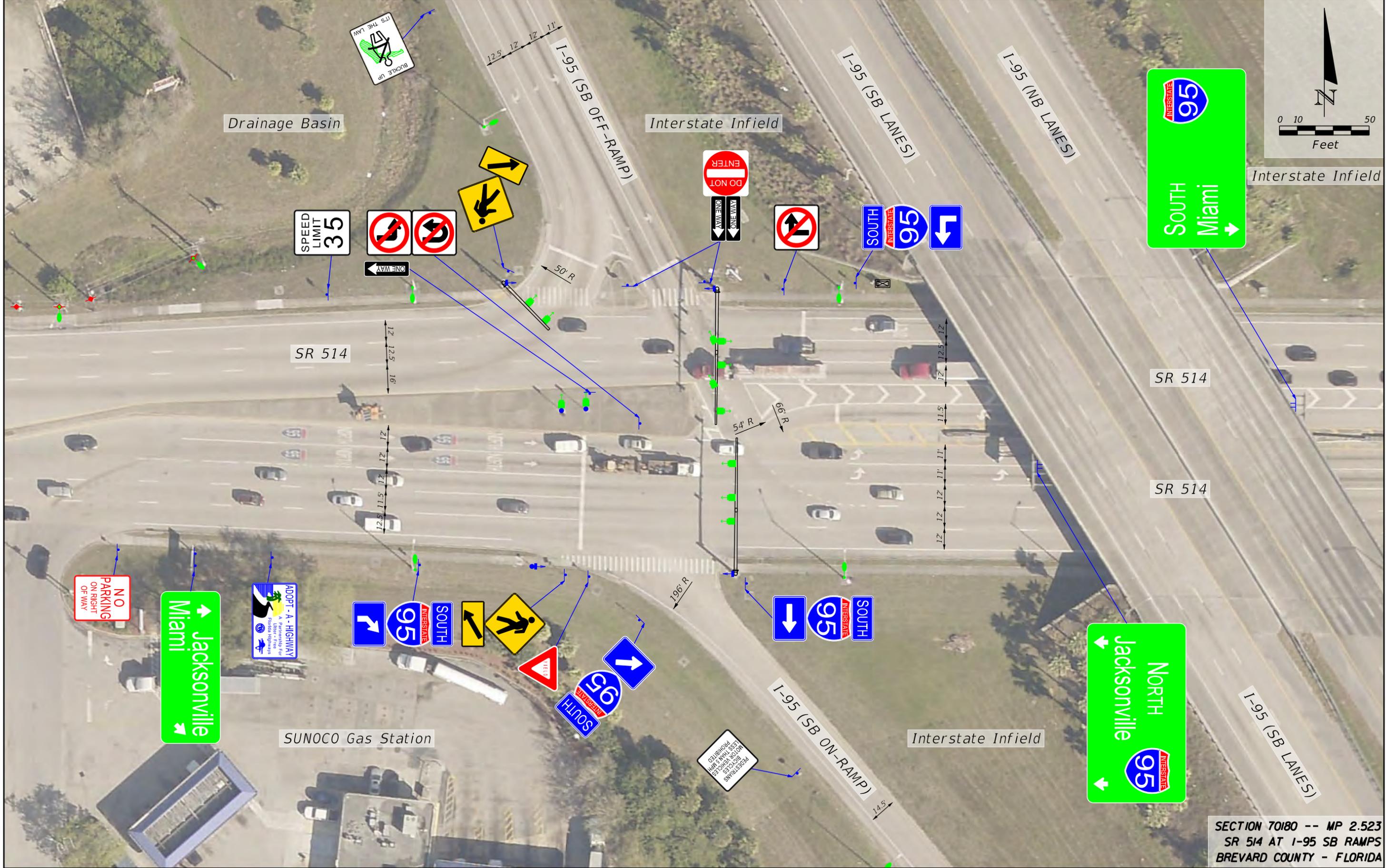


Source: Google Earth

**Table 1** on the following page summarizes the existing conditions for the study locations. An existing condition diagram is provided as **Figure 3** and photographs of the study intersections are included within this study. A straight-line diagram is also included in the **Appendix**.

**Table 1  
Existing Conditions**

Feature	Description
<b>Main Street</b>	<ul style="list-style-type: none"> <li>• SR 514</li> </ul>
<b>Side Street</b>	<ul style="list-style-type: none"> <li>• I-95 Southbound and Northbound Ramps</li> </ul>
<b>Area Location</b>	<ul style="list-style-type: none"> <li>• Palm Bay, Brevard County, Florida</li> </ul>
<b>Adjacent Land Uses</b>	<ul style="list-style-type: none"> <li>• <u>Northeast</u>: Residential</li> <li>• <u>Northwest</u>: Mobil Gas Station</li> <li>• <u>Southeast</u>: Shell Gas Station Plaza</li> <li>• <u>Southwest</u>: Sunoco Gas Station</li> </ul>
<b>Traffic Control</b>	<ul style="list-style-type: none"> <li>• Signalized Intersections (both ramps)</li> </ul>
<b>Adjacent Signalized Intersections</b>	<ul style="list-style-type: none"> <li>• <u>North</u>: None</li> <li>• <u>South</u>: None</li> <li>• <u>East</u>: Babcock Street – 0.47 miles</li> <li>• <u>West</u>: San Filippo Drive/Interchange Drive – 980 feet</li> </ul>
<b>SR 514</b>	<ul style="list-style-type: none"> <li>• <u>Cross Section</u>: Six-lane divided arterial with a 4-foot paved shoulder and curb and gutter</li> <li>• <u>Posted Speed Limit</u>: 45 mph</li> <li>• <u>AADT (2021)</u>: 23,000 vehicles per day (vpd) west of the intersection and 51,500 east of the intersection</li> <li>• <u>Eastbound Approach Lanes (SB ramps)</u>: Two left-turn lanes (for northbound I-95 ramp) two through lanes, and one through/right-turn lane</li> <li>• <u>Westbound Approach Lanes (SB ramps)</u>: One left-turn lane and three through lanes</li> <li>• <u>Eastbound Approach Lanes (NB ramps)</u>: Two left-turn lanes and three through lanes</li> <li>• <u>Westbound Approach Lanes (NB ramps)</u>: One through lane (for southbound I-95 ramp) two through lanes, and one through/right-turn lane</li> <li>• <u>Pedestrian Crossings</u>: None</li> <li>• <u>Sidewalks</u>: Along both sides of the roadway</li> <li>• <u>Utilities</u>: None</li> <li>• <u>Street Lighting</u>: Along both sides of the roadway</li> </ul>
<b>I-95 Southbound Ramps</b>	<ul style="list-style-type: none"> <li>• <u>Cross Section</u>: Single lane interstate off-ramp that expands into four-lanes with paved shoulders</li> <li>• <u>Posted Speed Limit</u>: 35 mph (advisory)</li> <li>• <u>AADT (2021)</u>: 19,500 vpd</li> <li>• <u>Southbound Approach Lanes</u>: Two left-turn lanes and two right-turn lanes</li> <li>• <u>Pedestrian Crossings</u>: Across both legs of the intersection</li> <li>• <u>Sidewalks</u>: None</li> <li>• <u>Utilities</u>: None</li> <li>• <u>Street Lighting</u>: Along the outside of both ramps</li> </ul>
<b>I-95 Northbound Ramps</b>	<ul style="list-style-type: none"> <li>• <u>Cross Section</u>: Single lane interstate off-ramp that expands into two-lanes with paved shoulders</li> <li>• <u>Posted Speed Limit</u>: 35 mph (advisory)</li> <li>• <u>AADT (2021)</u>: 4,300 vpd</li> <li>• <u>Northbound Approach Lanes</u>: One left-turn lane and one right-turn lane</li> <li>• <u>Pedestrian Crossings</u>: Across both legs of the intersection</li> <li>• <u>Sidewalks</u>: None</li> <li>• <u>Utilities</u>: None</li> <li>• <u>Street Lighting</u>: Along the outside of both ramps</li> </ul>



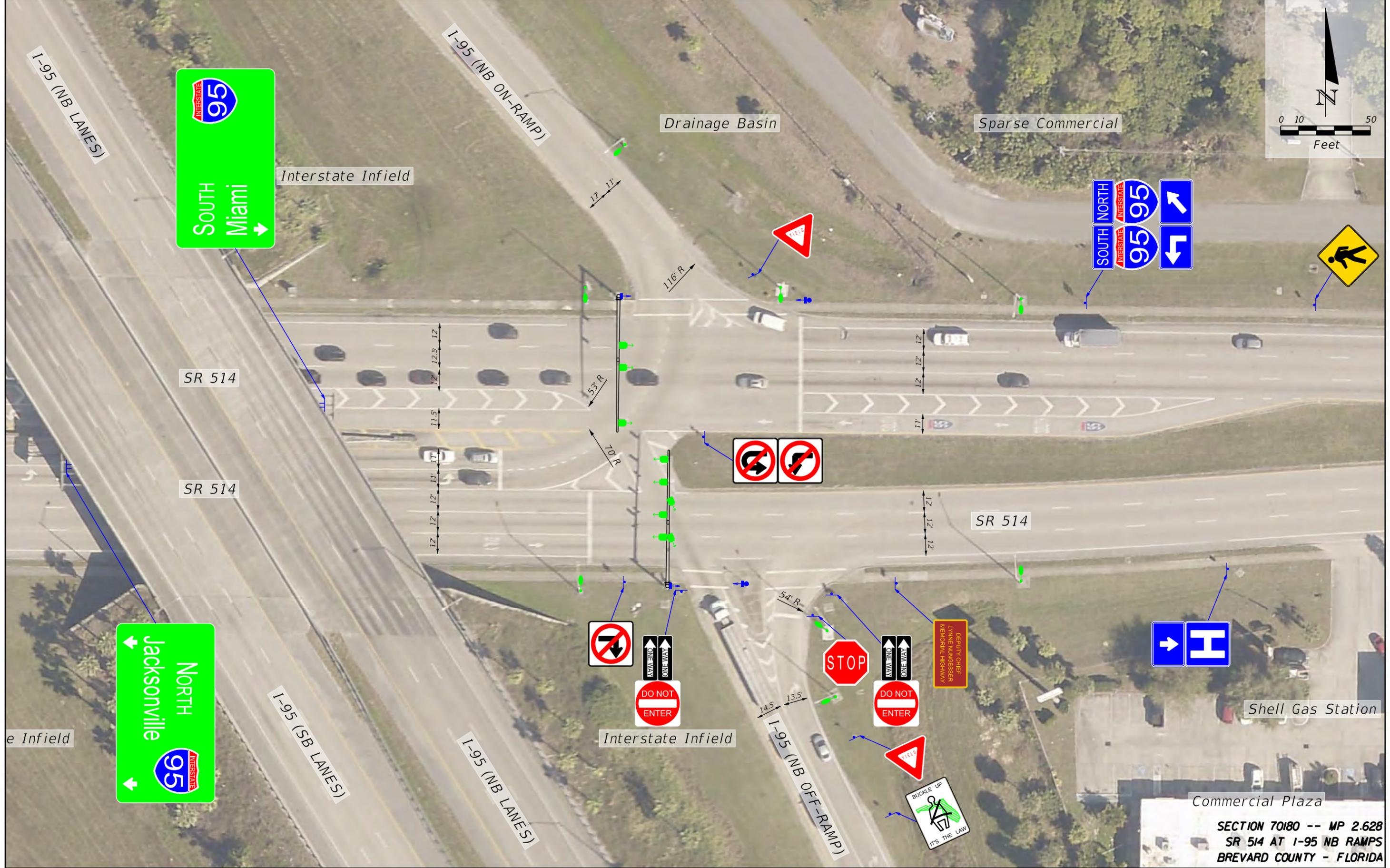
SECTION 70180 -- MP 2.523  
 SR 514 AT I-95 SB RAMPS  
 BREVARD COUNTY - FLORIDA

<ul style="list-style-type: none"> <li>◆ Utility Pole</li> <li>● Traffic Sign</li> <li>● Luminaire</li> </ul>	<p>Symbols:</p> <ul style="list-style-type: none"> <li>⊠ Traffic Controller Cabinet</li> <li>□ Ditch Bottom Inlet</li> </ul>	<ul style="list-style-type: none"> <li>⊙ Signal Pole</li> <li>● Pedestrian Signal Pole</li> <li>□ Drainage Inlet</li> </ul>
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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

FIGURE 3  
 EXISTING CONDITIONS DIAGRAM  
 SR 514 AT I-95 SOUTHBOUND RAMPS



SECTION 70180 -- MP 2.628  
 SR 514 AT I-95 NB RAMPS  
 BREVARD COUNTY - FLORIDA

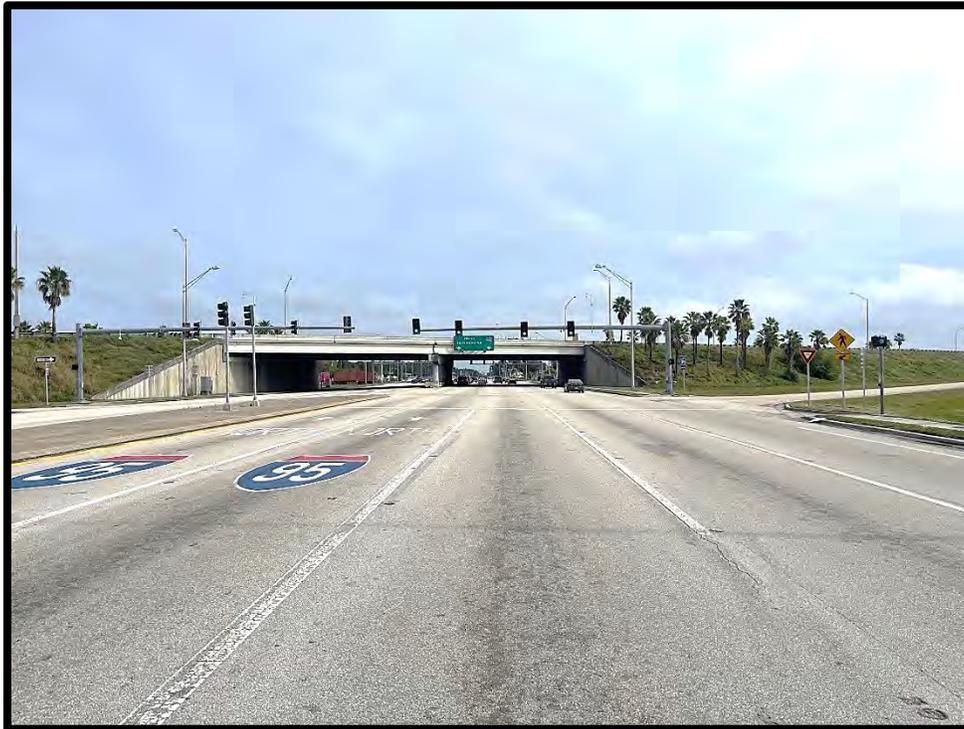
<ul style="list-style-type: none"> <li>◆ Utility Pole</li> <li>⦿ Traffic Sign</li> <li>● Luminaire</li> </ul>	<p>Symbols:</p> <ul style="list-style-type: none"> <li>⊠ Traffic Controller Cabinet</li> <li>□ Ditch Bottom Inlet</li> </ul>	<ul style="list-style-type: none"> <li>⊙ Signal Pole</li> <li>⦿ Pedestrian Signal Pole</li> <li>⊠ Drainage Inlet</li> </ul>
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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

FIGURE 3  
 EXISTING CONDITIONS DIAGRAM  
 SR 514 AT I-95 NORTHBOUND RAMPS

**Eastbound Approach Photographs  
SR 514 at I-95 Southbound Ramps**



Looking East Towards Intersection

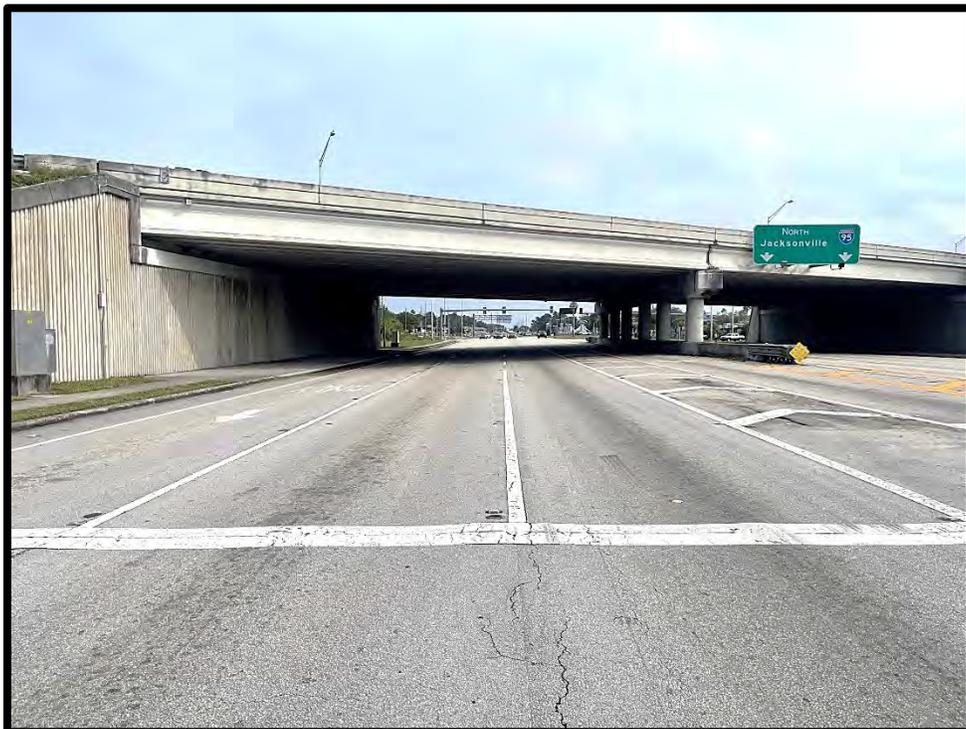


Looking West Away from Intersection

**Westbound Approach Photographs  
SR 514 at I-95 Southbound Ramps**



Looking West Towards Intersection



Looking East Away from Intersection

**Southbound Approach Photographs  
SR 514 at I-95 Southbound Ramps**



Looking South Towards Intersection



Looking North Away from Intersection

**Eastbound Approach Photographs  
SR 514 at I-95 Northbound ramps**



Looking East Towards Intersection



Looking West Away from Intersection

**Westbound Approach Photographs  
SR 514 at I-95 Northbound ramps**

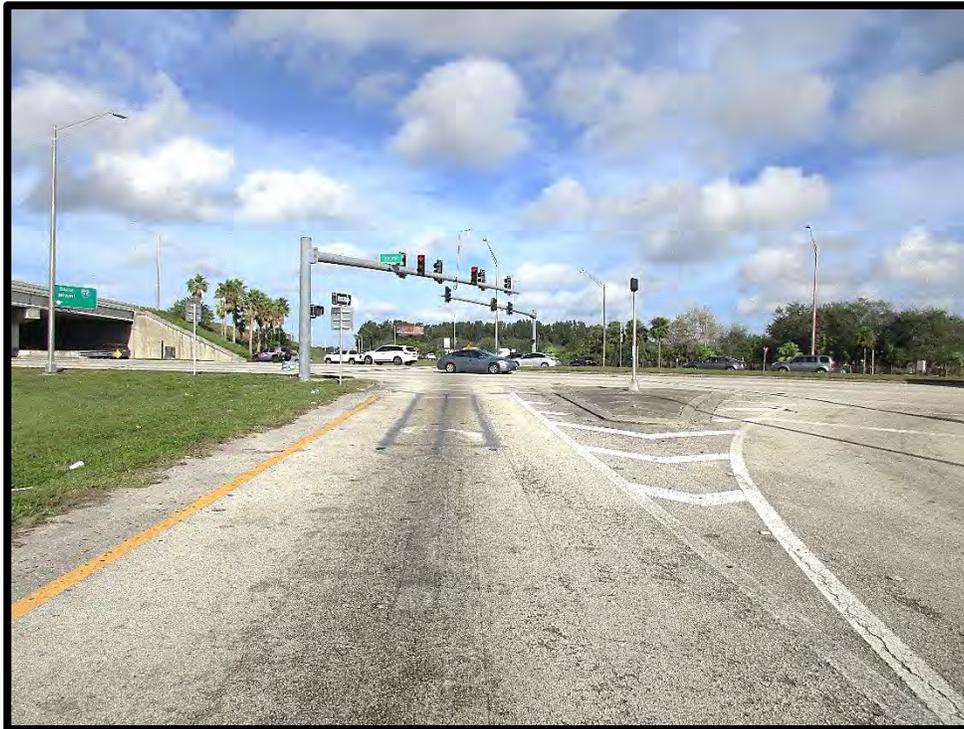


Looking West Towards Intersection



Looking East Away from Intersection

**Northbound Approach Photographs  
SR 514 at I-95 Northbound ramps**



Looking North Towards Intersection

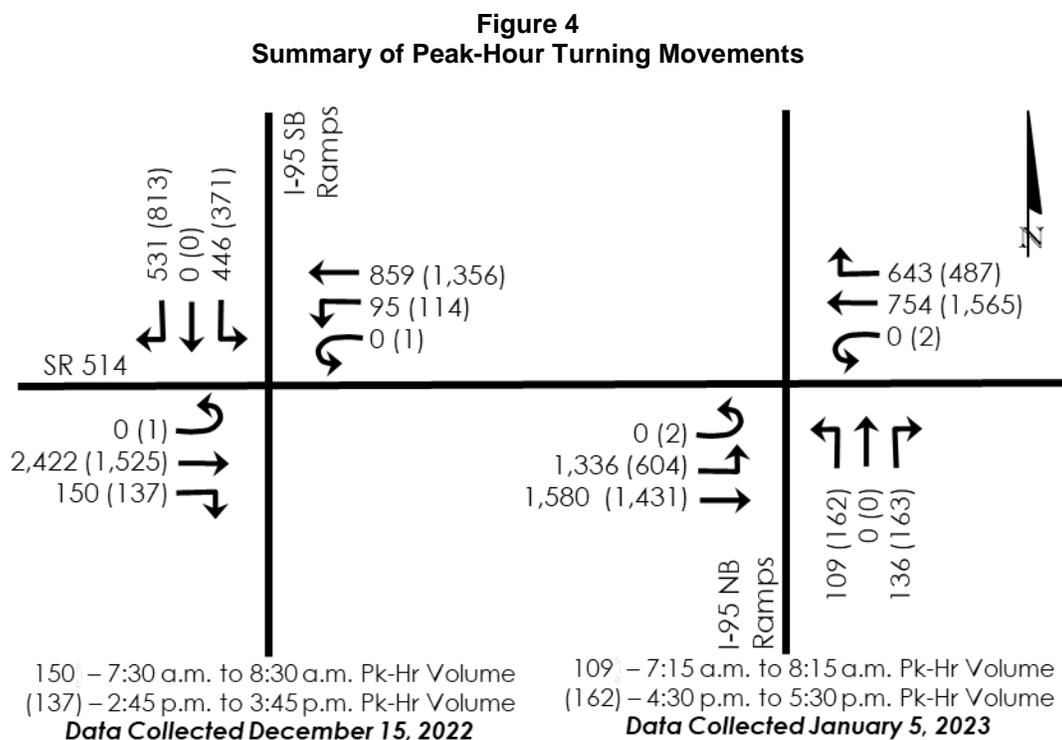


Looking South Away from Intersection

### Traffic Volumes:

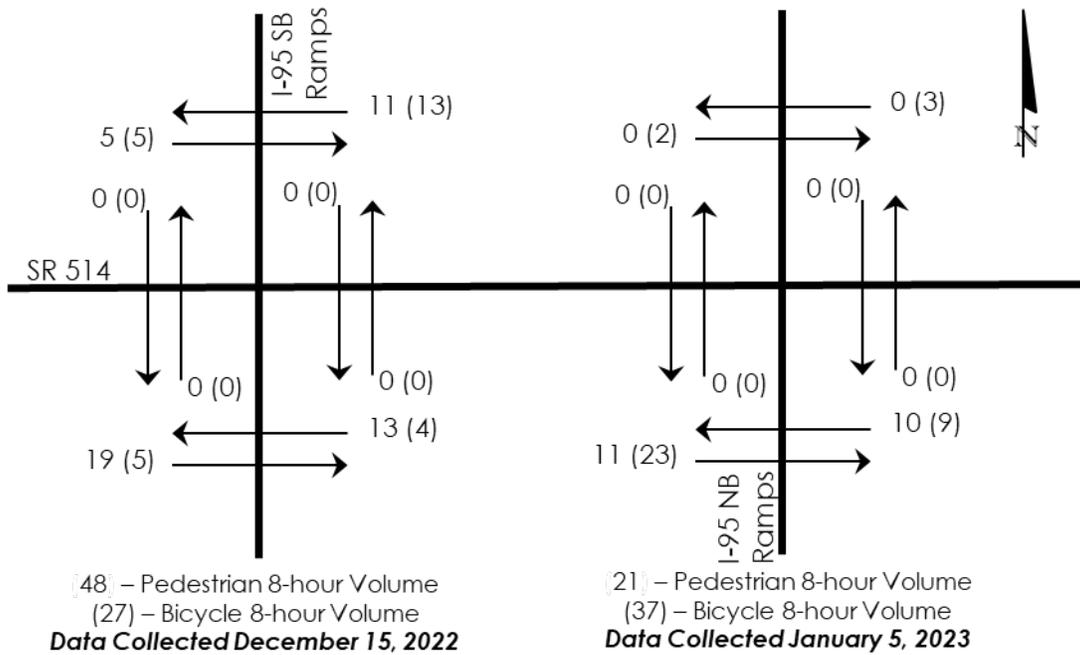
Eight hours of manual turning movement counts were collected from 7:00 to 9:00 a.m., 11:00 a.m. to 1:00 p.m., and 2:00 to 6:00 p.m. on a weekday at SR 514 at the I-95 southbound and northbound ramps (included in the **Appendix**).

- At the southbound ramp intersection, the morning peak hour occurred from 7:30 to 8:30 a.m. while the afternoon peak hour occurred from 2:45 to 3:45 p.m. As summarized below in **Figure 4**, 4,503 and 4,318 vehicles were counted entering the intersection during the morning and afternoon peak hours, respectively.
- At the northbound ramp intersection, the morning peak hour occurred from 7:15 to 8:15 a.m. while the afternoon peak hour occurred from 4:30 to 5:30 p.m. As summarized below in **Figure 4**, 4,558 and 4,416 vehicles were counted entering the intersection during the morning and afternoon peak hours, respectively.



- During the eight hours of manually collected turning movement counts, heavy trucks, which include single-unit trucks such as delivery trucks (Class 5 to 7) and tractor-trailer trucks (Class 8 to 15), accounted for approximately 2.5% of the traffic passing through both intersections.
- During the eight hours of manually collected turning movement counts, 48 pedestrians and 27 bicyclists were observed traversing the southbound ramp intersection and 21 pedestrians and 37 bicyclists were observed traversing the northbound ramp intersection. These movements are summarized in **Figure 5**.

**Figure 5**  
**Summary of Pedestrian and Bicycle Crossing Movements**



Collision Analysis:

Crash data for the 36-month period between January 1, 2020 and December 31, 2022 was obtained from the University of Florida's *Signal Four Analytics*. A total of 167 crashes were reported at both intersections, with crashes occurring at the I-95 southbound ramps detailed below, and those occurring at the I-95 northbound ramps on the following page.

SR 514 at I-95 southbound ramps:

100 crashes were reported, consisting of the following crash types:

- 63 rear-end;
- 13 side-swipe;
- 10 angle;
- Four left-turn;
- Four right-turn;
- Three bicycle;
- Two fixed-object; and
- One rollover

- The crashes resulted in 52 injuries and \$588,599 in estimated property damage.
- 80 crashes occurred during the day and 20 crashes occurred at night.
- 82 of the crashes occurred under dry pavement conditions, 17 crashes occurred under wet conditions, and one occurred with oil on the road surface.
- 32 rear-end crashes occurred on the southbound off-ramp approach, with the majority occurring in either of the right-turn lanes.
- 28 rear-end crashes occurred on the SR 514 westbound approach.
- 10 angle crashes occurred when drivers disregarded the red signal as described below:
  - Eight occurred between westbound and southbound vehicles
  - Two occurred between eastbound and southbound vehicles
  - These crashes resulted in eight injuries ranging from possible to non-incapacitating in severity
- Six of the 13 side-swipe crashes occurred between southbound approaching vehicles (five right-turning and one left-turning)
- Four left-turn crashes occurred between eastbound through and westbound left-turning drivers disregarding the red traffic signal. Three of these crashes occurred at night.
- Four right-turn crashes occurred between southbound right-turning drivers and westbound vehicles.

In addition to the collisions shown in **Figure 6** within the area of influence of the off-ramp intersection, 19 crashes were identified as the result of traffic backing up from the southbound off-ramp onto the interstate mainline including 16 rear-end crashes, two side-swipe crashes, and one fixed-object crash as a result of an evasive maneuver to avoid traffic stopped on the interstate mainline.

SR 514 at I-95 northbound ramps:

- 67 crashes were reported, consisting of the following crash types:
  - 46 rear-end;
  - Nine side-swipe;
  - Six left-turn;
  - Three angle;
  - One backed-into;
  - One fixed-object; and,
  - One right-turn
- The crashes resulted in 29 injuries and \$277,570 in estimated property damage.
- 54 crashes occurred during the day and 13 crashes occurred at night.
- 58 of the crashes occurred under dry pavement conditions, and nine crashes occurred under wet conditions.
- 25 rear-end crashes occurred on the SR 514 westbound approach.
- 17 rear-end crashes occurred on the SR 514 eastbound approach, including seven queued to turn left onto I-95 northbound.
- Five left-turn crashes occurred when eastbound left-turning or westbound drivers ran a red light. Two occurred at night, one occurred at night and on wet pavement.
- Four angle crashes occurred between eastbound and northbound vehicles when two northbound and two eastbound drivers ran a red light. One crash occurred at night on wet pavement
- Of the nine side-swipe crashes, three occurred between eastbound left-turning drivers within the intersection approaching the northbound on-ramp.

In addition to the collisions within the area of influence of the off-ramp intersection, one crash (rear-end) was identified resulting from traffic backing up further along the ramp from the intersection.

A detailed collision summary is provided on the following page in **Table 2**. A collision diagram is provided as **Figure 6**.

**Table 2  
Summary of Collision Data  
SR 514 at I-95 SB Ramps and NB Ramps**

FLORIDA DEPARTMENT OF TRANSPORTATION													
COLLISION SUMMARY													
Section:		70180000				State Road: 514				County: Brevard			
Intersecting route:		I-95 SB RampS & NB Ramps				Milepost: 2.523 & 2.628				Data by: CAR			
Study period:		1/1/2020 to 12/31/2022								Date: 1/21/2023			
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	FORM LENGTH	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
1	01/09/20	Thursday	21:10	0	1	2-Possible Injury	\$240	Bicycle	Long	No	Night	Dry	FTYROW
2	02/03/20	Monday	5:17	0	0	1-No Injury	\$0	Side-Swipe	Short	No	Night	Dry	Careless Driving
3	02/04/20	Tuesday	10:24	0	0	1-No Injury	\$300	Rear-End	Short	No	Day	Dry	Careless Driving
4	02/07/20	Friday	10:37	0	1	3-Non-Incapacitating Injury	\$5,000	Rear-End	Long	No	Day	Dry	Careless Driving
5	02/07/20	Friday	10:44	0	1	2-Possible Injury	\$50	Bicycle	Long	No	Day	Dry	FTYROW
6	02/10/20	Monday	12:15	0	0	1-No Injury	\$10	Rear-End	Long	No	Day	Dry	Careless Driving
7	04/02/20	Thursday	15:34	0	0	1-No Injury	\$1,500	Rear-End	Short	No	Day	Dry	Careless Driving
8	04/03/20	Friday	7:27	0	1	3-Non-Incapacitating Injury	\$2,500	Rear-End	Long	No	Day	Dry	Careless Driving
9	04/04/20	Saturday	15:22	0	2	3-Non-Incapacitating Injury	\$15,000	Angle	Long	No	Day	Dry	Ran Red Light
10	04/04/20	Saturday	15:57	0	0	1-No Injury	\$100	Rear-End	Short	No	Day	Dry	Careless Driving
11	04/18/20	Saturday	8:02	0	0	1-No Injury	\$6,000	Angle	Short	No	Day	Dry	Ran Red Light
12	05/02/20	Saturday	12:29	0	0	1-No Injury	\$3,500	Right-Turn	Short	No	Day	Dry	FTYROW
13	05/02/20	Saturday	20:08	0	0	1-No Injury	\$2,500	Side-Swipe	Long	No	Night	Dry	Careless Driving
14	05/22/20	Friday	18:22	0	0	1-No Injury	\$0	Side-Swipe	Short	No	Day	Dry	Careless Driving
15	06/01/20	Monday	22:53	0	0	1-No Injury	\$10,000	Angle	Long	No	Night	Dry	Ran Red Light
16	06/02/20	Tuesday	10:00	0	1	3-Non-Incapacitating Injury	\$6,000	Rear-End	Long	No	Day	Wet	Careless Driving
17	06/08/20	Monday	15:30	0	1	2-Possible Injury	\$25	Rear-End	Long	No	Day	Dry	Careless Driving
18	06/16/20	Tuesday	16:53	0	2	3-Non-Incapacitating Injury	\$9,000	Angle	Long	No	Day	Dry	Ran Red Light
19	06/20/20	Saturday	21:07	0	0	1-No Injury	\$1,900	Rear-End	Short	No	Night	Wet	Careless Driving
20	06/25/20	Thursday	14:25	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving
21	07/03/20	Friday	11:06	0	0	1-No Injury	\$5,500	Rear-End	Short	No	Day	Dry	Careless Driving
22	07/03/20	Friday	14:34	0	0	1-No Injury	\$1,500	Rear-End	Short	No	Day	Wet	Careless Driving
23	07/09/20	Thursday	9:04	0	0	1-No Injury	\$8,000	Left-Turn	Long	No	Day	Dry	Ran Red Light
24	07/10/20	Friday	10:23	0	0	1-No Injury	\$1,000	Side-Swipe	Short	No	Day	Dry	Careless Driving
25	07/12/20	Sunday	17:37	0	0	1-No Injury	\$400	Left-Turn	Short	No	Day	Dry	Ran Red Light
26	07/15/20	Wednesday	17:02	0	1	4-Incapacitating Injury	\$4,500	Rear-End	Long	No	Day	Dry	Careless Driving
27	07/15/20	Wednesday	18:31	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving
28	07/19/20	Sunday	19:20	0	1	3-Non-Incapacitating Injury	\$5,000	Rollover	Long	No	Night	Oil	Roadway Surface Condition
29	07/20/20	Monday	9:47	0	1	2-Possible Injury	\$120	Rear-End	Long	No	Day	Dry	Following Too Closely
30	07/24/20	Friday	17:43	0	0	1-No Injury	\$500	Rear-End	Long	No	Day	Dry	Careless Driving
31	07/31/20	Friday	17:30	0	1	3-Non-Incapacitating Injury	\$11,000	Rear-End	Long	No	Day	Dry	Careless Driving
32	08/12/20	Wednesday	10:30	0	0	1-No Injury	\$1,100	Side-Swipe	Long	No	Day	Dry	Careless Driving
33	08/31/20	Monday	14:13	0	0	1-No Injury	\$3,500	Rear-End	Short	No	Day	Dry	Careless Driving
34	09/04/20	Friday	9:51	0	0	1-No Injury	\$7,000	Rear-End	Short	No	Day	Dry	Careless Driving
35	09/08/20	Tuesday	22:27	0	1	2-Possible Injury	\$5,000	Left-Turn	Long	No	Night	Dry	Ran Red Light
36	09/09/20	Wednesday	10:35	0	0	1-No Injury	\$4,000	Rear-End	Short	No	Day	Dry	Careless Driving
37	09/11/20	Friday	20:01	0	2	2-Possible Injury	\$1,500	Rear-End	Long	No	Night	Wet	Careless Driving
38	09/24/20	Thursday	13:57	0	1	3-Non-Incapacitating Injury	\$19,000	Angle	Long	No	Day	Dry	Ran Red Light
39	09/26/20	Saturday	22:02	0	0	1-No Injury	\$700	Side-Swipe	Short	No	Night	Dry	Careless Driving
40	09/27/20	Sunday	11:01	0	3	3-Non-Incapacitating Injury	\$3,800	Angle	Long	No	Day	Dry	Ran Red Light
41	09/28/20	Monday	13:51	0	0	1-No Injury	\$2,000	Rear-End	Long	No	Day	Dry	Careless Driving
42	09/29/20	Tuesday	17:49	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving
43	10/06/20	Tuesday	15:29	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Wet	Careless Driving
44	10/08/20	Thursday	16:30	0	0	1-No Injury	\$11,000	Rear-End	Long	No	Day	Dry	Careless Driving
45	10/19/20	Monday	16:43	0	0	1-No Injury	\$5,500	Rear-End	Long	No	Day	Dry	Following Too Closely
46	11/21/20	Saturday	9:52	0	1	2-Possible Injury	\$1,000	Rear-End	Long	No	Day	Wet	Following Too Closely
47	11/21/20	Saturday	17:48	0	0	1-No Injury	\$13,000	Side-Swipe	Long	No	Day	Dry	Careless Driving
48	11/24/20	Tuesday	16:53	0	0	1-No Injury	\$1,000	Side-Swipe	Long	No	Day	Dry	Careless Driving
49	11/25/20	Wednesday	20:16	0	0	1-No Injury	\$2,000	Rear-End	Short	No	Night	Dry	Careless Driving
50	12/06/20	Sunday	21:33	0	2	4-Incapacitating Injury	\$12,500	Rear-End	Long	No	Night	Dry	Careless Driving
51	12/07/20	Monday	17:07	0	1	2-Possible Injury	\$6,500	Rear-End	Long	No	Day	Dry	Careless Driving
52	12/13/20	Sunday	20:48	0	1	2-Possible Injury	\$3,000	Fixed-Object	Long	Yes	Night	Dry	Evasive Maneuver
53	12/17/20	Thursday	13:19	0	0	1-No Injury	\$7,000	Left-Turn	Long	No	Day	Dry	Ran Red Light
54	12/18/20	Friday	14:46	0	0	1-No Injury	\$7,000	Rear-End	Long	No	Day	Dry	Following Too Closely
55	12/26/20	Saturday	17:35	0	0	1-No Injury	\$6,500	Rear-End	Long	No	Day	Dry	Careless Driving
56	12/29/20	Tuesday	17:27	0	0	1-No Injury	\$2,300	Rear-End	Short	No	Day	Dry	Following Too Closely
57	12/30/20	Wednesday	10:09	0	0	1-No Injury	\$2,000	Rear-End	Short	No	Day	Dry	Careless Driving
58	12/30/20	Wednesday	11:23	0	0	1-No Injury	\$2,000	Rear-End	Short	No	Day	Dry	Careless Driving
59	01/07/21	Thursday	5:52	0	0	1-No Injury	\$500	Rear-End	Long	No	Night	Dry	Careless Driving
60	01/24/21	Sunday	15:34	0	1	2-Possible Injury	\$8,000	Angle	Long	No	Day	Dry	Ran Red Light

(Continued)

**Table 2  
Summary of Collision Data  
SR 514 at I-95 SB Ramps and NB Ramps**

FLORIDA DEPARTMENT OF TRANSPORTATION													
COLLISION SUMMARY													
Section: 70180000			State Road: 514				County: Brevard						
Intersecting route: I-95 SB RampS & NB Ramps			Milepost: 2.523 & 2.628				Data by: CAR						
Study period: 1/1/2020 to 12/31/2022							Date: 1/21/2023						
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	FORM LENGTH	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE
61	01/25/21	Monday	10:58	0	0	1-No Injury	\$4,500	Rear-End	Short	No	Day	Dry	Careless Driving
62	01/26/21	Tuesday	11:29	0	0	1-No Injury	\$550	Rear-End	Short	No	Day	Dry	Careless Driving
63	01/27/21	Wednesday	10:00	0	0	1-No Injury	\$1,500	Rear-End	Short	No	Day	Dry	Careless Driving
64	02/04/21	Thursday	7:46	0	0	1-No Injury	\$1,100	Side-Swipe	Long	No	Day	Dry	Careless Driving
65	02/04/21	Thursday	7:46	0	0	1-No Injury	\$1,000	Backed-Into	Long	No	Day	Dry	Careless Driving
66	02/19/21	Friday	17:04	0	3	4-Incapacitating Injury	\$14,000	Rear-End	Long	No	Day	Dry	Careless Driving
67	03/07/21	Sunday	2:00	0	3	2-Possible Injury	\$16,000	Rear-End	Long	No	Night	Wet	Careless Driving
68	03/11/21	Thursday	15:45	0	0	1-No Injury	\$7,500	Rear-End	Short	No	Day	Dry	Careless Driving
69	03/19/21	Friday	13:45	0	0	1-No Injury	\$500	Rear-End	Short	No	Day	Dry	Careless Driving
70	03/30/21	Tuesday	15:40	0	0	1-No Injury	\$1,500	Side-Swipe	Short	No	Day	Dry	Careless Driving
71	03/31/21	Wednesday	18:07	0	0	1-No Injury	\$500	Rear-End	Short	No	Day	Dry	Careless Driving
72	04/01/21	Thursday	16:06	0	0	1-No Injury	\$800	Rear-End	Short	No	Day	Dry	Following Too Closely
73	04/07/21	Wednesday	11:05	0	3	3-Non-Incapacitating Injury	\$25,000	Rear-End	Long	No	Day	Dry	Careless Driving
74	04/11/21	Sunday	15:32	0	3	3-Non-Incapacitating Injury	\$11,000	Rear-End	Long	No	Day	Wet	Careless Driving
75	04/14/21	Wednesday	18:03	0	1	2-Possible Injury	\$500	Rear-End	Long	No	Day	Dry	Careless Driving
76	05/01/21	Saturday	19:53	0	0	1-No Injury	\$1,200	Rear-End	Short	No	Night	Dry	Careless Driving
77	05/04/21	Tuesday	10:10	0	0	1-No Injury	\$500	Rear-End	Long	No	Day	Dry	Careless Driving
78	05/09/21	Sunday	16:50	0	0	1-No Injury	\$1,000	Rear-End	Short	No	Day	Dry	Careless Driving
79	05/21/21	Friday	18:52	0	0	1-No Injury	\$7,000	Right-Turn	Long	No	Day	Dry	FTYROW
80	05/23/21	Sunday	19:35	0	1	3-Non-Incapacitating Injury	\$10,000	Left-Turn	Long	No	Night	Dry	Ran Red Light
81	05/28/21	Friday	14:20	0	0	1-No Injury	\$1,750	Side-Swipe	Short	No	Day	Dry	Careless Driving
82	06/02/21	Wednesday	14:58	0	0	1-No Injury	\$2,500	Rear-End	Short	No	Day	Dry	Careless Driving
83	06/11/21	Friday	17:00	0	1	2-Possible Injury	\$4,500	Rear-End	Long	No	Day	Dry	Careless Driving
84	06/14/21	Monday	21:25	0	1	2-Possible Injury	\$20,000	Left-Turn	Long	No	Night	Wet	Ran Red Light
85	06/16/21	Wednesday	17:00	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Wet	Careless Driving
86	07/08/21	Thursday	16:12	0	3	3-Non-Incapacitating Injury	\$0	Rear-End	Long	No	Day	Wet	Careless Driving
87	07/11/21	Sunday	16:50	0	0	1-No Injury	\$7,500	Rear-End	Long	No	Day	Dry	Careless Driving
88	07/12/21	Monday	15:09	0	0	1-No Injury	\$25	Bicycle	Long	No	Day	Dry	Ped FTYROW
89	07/21/21	Wednesday	17:03	0	1	3-Non-Incapacitating Injury	\$7,000	Rear-End	Long	No	Day	Dry	Careless Driving
90	07/28/21	Wednesday	10:35	0	0	1-No Injury	\$4,500	Rear-End	Short	No	Day	Dry	Careless Driving
91	08/03/21	Tuesday	14:24	0	2	3-Non-Incapacitating Injury	\$8,000	Rear-End	Long	No	Day	Dry	Careless Driving
92	08/16/21	Monday	12:05	0	1	2-Possible Injury	\$6,000	Rear-End	Long	No	Day	Dry	Careless Driving
93	08/17/21	Tuesday	20:59	0	0	1-No Injury	\$1,000	Right-Turn	Long	No	Night	Dry	FTYROW
94	08/29/21	Sunday	16:15	0	0	1-No Injury	\$20,000	Rear-End	Long	No	Day	Dry	Careless Driving
95	09/02/21	Thursday	13:50	0	1	2-Possible Injury	\$5,500	Rear-End	Long	No	Day	Dry	Following Too Closely
96	09/03/21	Friday	18:30	0	0	1-No Injury	\$0	Side-Swipe	Long	No	Day	Wet	Careless Driving
97	09/04/21	Saturday	10:34	0	3	3-Non-Incapacitating Injury	\$35,000	Rear-End	Long	No	Day	Dry	Careless Driving
98	10/07/21	Thursday	10:31	0	1	4-Incapacitating Injury	\$3,500	Side-Swipe	Long	No	Day	Dry	Careless Driving
99	10/11/21	Monday	23:04	0	1	2-Possible Injury	\$8,000	Right-Turn	Long	No	Night	Dry	FTYROW
100	10/18/21	Monday	10:00	0	0	1-No Injury	\$6,500	Angle	Long	No	Day	Dry	FTYROW
101	11/04/21	Thursday	18:34	0	1	2-Possible Injury	\$300	Rear-End	Long	No	Day	Dry	Careless Driving
102	11/10/21	Wednesday	10:35	0	1	2-Possible Injury	\$8,000	Rear-End	Long	No	Day	Wet	Careless Driving
103	11/10/21	Wednesday	14:06	0	0	1-No Injury	\$1,000	Rear-End	Short	No	Day	Wet	Careless Driving
104	11/16/21	Tuesday	14:35	0	0	1-No Injury	\$5,500	Right-Turn	Short	No	Day	Dry	FTYROW
105	12/01/21	Wednesday	17:26	0	0	1-No Injury	\$300	Rear-End	Short	No	Day	Dry	Careless Driving
106	12/02/21	Thursday	8:19	0	1	2-Possible Injury	\$7,000	Left-Turn	Long	No	Day	Dry	Ran Red Light
107	12/02/21	Thursday	16:30	0	0	1-No Injury	\$1,500	Side-Swipe	Short	No	Day	Dry	Careless Driving
108	12/02/21	Thursday	18:08	0	1	2-Possible Injury	\$3,500	Rear-End	Long	No	Day	Dry	Careless Driving
109	12/11/21	Saturday	21:04	0	0	1-No Injury	\$2,000	Rear-End	Short	No	Night	Dry	Careless Driving
110	12/14/21	Tuesday	12:28	0	0	1-No Injury	\$300	Rear-End	Long	No	Day	Dry	Careless Driving
111	12/15/21	Wednesday	15:27	0	0	1-No Injury	\$15,500	Rear-End	Long	No	Day	Wet	Careless Driving
112	12/15/21	Wednesday	20:28	0	0	1-No Injury	\$0	Rear-End	Long	No	Night	Wet	Careless Driving
113	12/31/21	Friday	17:34	0	0	1-No Injury	\$2,500	Rear-End	Short	No	Day	Dry	Careless Driving
114	01/05/22	Wednesday	7:40	0	0	1-No Injury	\$51,000	Rear-End	Long	No	Day	Dry	Careless Driving
115	01/07/22	Friday	14:55	0	0	1-No Injury	\$4,000	Rear-End	Short	No	Day	Dry	Following Too Closely
116	01/17/22	Monday	9:45	0	0	1-No Injury	\$2,500	Rear-End	Long	No	Day	Dry	Careless Driving
117	01/20/22	Thursday	15:30	0	0	1-No Injury	\$10,000	Angle	Short	No	Day	Dry	Ran Red Light
118	01/26/22	Wednesday	10:00	0	0	1-No Injury	\$10,000	Fixed-Object	Long	No	Day	Wet	Evasive Maneuver
119	01/26/22	Wednesday	17:04	0	0	1-No Injury	\$700	Rear-End	Short	No	Day	Wet	Careless Driving
120	01/27/22	Thursday	8:25	0	1	2-Possible Injury	\$12,000	Rear-End	Long	No	Day	Dry	Careless Driving

(Continued)

**Table 2  
Summary of Collision Data  
SR 514 at I-95 SB Ramps and NB Ramps**

FLORIDA DEPARTMENT OF TRANSPORTATION														
COLLISION SUMMARY														
Section: 70180000				State Road: 514				County: Brevard						
Intersecting route: I-95 SB RampS & NB Ramps				Milepost: 2.523 & 2.628				Data by: CAR						
Study period: 1/1/2020 to 12/31/2022				Date: 1/21/2023										
NO.	DATE	DAY	TIME	FATAL	INJURY	INJURY SEVERITY	PROPERTY DAMAGE	HARMFUL EVENT	FORM LENGTH	DUI	DAY / NIGHT	WET / DRY	CONTRIBUTING CAUSE	
121	02/01/22	Tuesday	20:48	0	0	1-No Injury	\$500	Rear-End	Long	No	Night	Dry	Careless Driving	
122	02/03/22	Thursday	12:05	0	0	1-No Injury	\$2,000	Side-Swipe	Long	No	Day	Dry	Careless Driving	
123	02/03/22	Thursday	17:43	0	1	3-Non-Incapacitating Injury	\$5,500	Rear-End	Long	No	Day	Dry	Careless Driving	
124	02/09/22	Wednesday	21:30	0	0	1-No Injury	\$500	Side-Swipe	Long	No	Night	Dry	Careless Driving	
125	02/10/22	Thursday	6:43	0	0	1-No Injury	\$1,000	Side-Swipe	Short	No	Night	Dry	Careless Driving	
126	02/23/22	Wednesday	16:07	0	0	1-No Injury	\$1,500	Side-Swipe	Short	No	Day	Dry	Careless Driving	
127	02/23/22	Wednesday	23:40	0	0	1-No Injury	\$2,500	Side-Swipe	Long	No	Night	Dry	Careless Driving	
128	02/25/22	Friday	8:30	0	1	2-Possible Injury	\$750	Rear-End	Long	No	Day	Dry	Careless Driving	
129	04/04/22	Monday	16:16	0	0	1-No Injury	\$1,300	Rear-End	Short	No	Day	Dry	Careless Driving	
130	04/13/22	Wednesday	8:02	0	0	1-No Injury	\$3,000	Rear-End	Long	No	Day	Dry	Careless Driving	
131	04/14/22	Thursday	10:12	0	1	3-Non-Incapacitating Injury	\$6,500	Rear-End	Long	No	Day	Dry	Careless Driving	
132	04/17/22	Sunday	16:50	0	0	1-No Injury	\$300	Rear-End	Short	No	Day	Dry	Careless Driving	
133	04/25/22	Monday	12:25	0	0	1-No Injury	\$1,000	Rear-End	Short	No	Day	Dry	Careless Driving	
134	05/06/22	Friday	1:00	0	0	1-No Injury	\$2,500	Fixed-Object	Long	No	Night	Dry	Careless Driving	
135	05/06/22	Friday	16:25	0	1	2-Possible Injury	\$3,000	Rear-End	Long	No	Day	Dry	Careless Driving	
136	05/08/22	Sunday	17:20	0	1	2-Possible Injury	\$2,000	Rear-End	Long	No	Day	Dry	Careless Driving	
137	05/25/22	Wednesday	14:08	0	0	1-No Injury	\$3,000	Rear-End	Short	No	Day	Dry	Careless Driving	
138	06/02/22	Thursday	5:44	0	0	1-No Injury	\$5,000	Left-Turn	Long	No	Night	Dry	Ran Red Light	
139	06/12/22	Sunday	17:23	0	0	1-No Injury	\$3,000	Rear-End	Short	No	Day	Dry	Careless Driving	
140	06/15/22	Wednesday	17:01	0	0	1-No Injury	\$22,000	Rear-End	Long	No	Day	Dry	Careless Driving	
141	06/26/22	Sunday	18:31	0	0	1-No Injury	\$300	Rear-End	Long	No	Day	Wet	Careless Driving	
142	06/29/22	Wednesday	6:23	0	1	3-Non-Incapacitating Injury	\$899	Rear-End	Long	No	Night	Dry	Careless Driving	
143	06/30/22	Thursday	8:43	0	0	1-No Injury	\$3,000	Rear-End	Long	No	Day	Dry	Careless Driving	
144	07/01/22	Friday	10:15	0	0	1-No Injury	\$2,000	Rear-End	Short	No	Day	Dry	Evasive Maneuver	
145	07/10/22	Sunday	21:30	0	2	2-Possible Injury	\$40,000	Angle	Long	No	Night	Wet	Ran Red Light	
146	07/19/22	Tuesday	10:00	0	0	1-No Injury	\$5,000	Rear-End	Short	No	Day	Dry	Careless Driving	
147	07/19/22	Tuesday	12:26	0	0	1-No Injury	\$500	Rear-End	Long	No	Day	Dry	Following Too Closely	
148	07/19/22	Tuesday	18:46	0	0	1-No Injury	\$2,500	Rear-End	Long	No	Day	Wet	Careless Driving	
149	07/23/22	Saturday	14:56	0	0	1-No Injury	\$9,000	Rear-End	Long	No	Day	Dry	Careless Driving	
150	07/28/22	Thursday	8:25	0	0	1-No Injury	\$1,600	Side-Swipe	Long	No	Day	Dry	Careless Driving	
151	08/03/22	Wednesday	22:51	0	0	1-No Injury	\$3,000	Left-Turn	Long	No	Night	Dry	Ran Red Light	
152	08/14/22	Sunday	18:15	0	0	1-No Injury	\$1,000	Side-Swipe	Short	No	Day	Wet	Improper Lane Change	
153	08/28/22	Sunday	14:45	0	0	1-No Injury	\$1,300	Rear-End	Short	No	Day	Wet	Too Fast For Conditions	
154	09/19/22	Monday	15:48	0	2	4-Incapacitating Injury	\$3,500	Rear-End	Long	No	Day	Wet	Careless Driving	
155	09/27/22	Tuesday	15:40	0	0	1-No Injury	\$1,000	Rear-End	Short	No	Day	Wet	Careless Driving	
156	10/14/22	Friday	21:33	0	3	3-Non-Incapacitating Injury	\$20,000	Left-Turn	Long	No	Night	Dry	Ran Red Light	
157	10/16/22	Sunday	16:00	0	0	1-No Injury	\$650	Angle	Short	No	Day	Dry	Ran Red Light	
158	10/18/22	Tuesday	14:41	0	0	1-No Injury	\$1,000	Rear-End	Short	No	Day	Dry	Careless Driving	
159	10/28/22	Friday	17:45	0	0	1-No Injury	\$8,000	Rear-End	Short	No	Day	Dry	Careless Driving	
160	11/03/22	Thursday	14:27	0	0	1-No Injury	\$1,500	Angle	Short	No	Day	Dry	Ran Red Light	
161	11/07/22	Monday	7:58	0	0	1-No Injury	\$1,300	Rear-End	Short	No	Day	Dry	Careless Driving	
162	11/16/22	Wednesday	14:49	0	0	1-No Injury	\$700	Rear-End	Short	No	Day	Dry	Careless Driving	
163	11/20/22	Sunday	20:00	0	2	3-Non-Incapacitating Injury	\$31,000	Angle	Long	No	Night	Wet	Ran Red Light	
164	12/03/22	Saturday	14:30	0	0	1-No Injury	\$1,500	Rear-End	Long	No	Day	Dry	Mechanical	
165	12/03/22	Saturday	14:40	0	0	1-No Injury	\$2,000	Side-Swipe	Short	No	Day	Dry	Evasive Maneuver	
166	12/06/22	Tuesday	19:06	0	1	3-Non-Incapacitating Injury	\$1,000	Rear-End	Long	No	Night	Dry	Careless Driving	
167	12/24/22	Saturday	15:55	0	4	2-Possible Injury	\$7,000	Rear-End	Long	No	Day	Dry	Careless Driving	
<b>TOTAL</b>				<b>0</b>	<b>81</b>		<b>\$866,169</b>							
TOTAL NO.	Injury Severity			Angle	Side-Swipe	Rear-End	Bicycle	Rollover	Fixed-Object	Backed-Into	Left-Turn	Right-Turn		
	Property Damage Only	Injury	Fatality											
167	113	54	0	13	22	109	3	1	3	1	10	5	0	
Percent	68%	32%	0%	8%	13%	65%	2%	1%	2%	1%	6%	3%	0%	
CONTRIB-CAUSE	Time of Day		Pavement Cond.		FTYROW	Roadway Surface Condition	Following Too Closely	Evasive Maneuver	Ped FTYROW	Too Fast For Conditions	Improper Lane Change	Mechanical	Ran Red Light	Careless Driving
	Day	Night	Dry	Wet										
Total	134	33	140	26	8	1	9	4	1	1	1	1	22	119
Percent	80%	20%	84%	16%	5%	1%	5%	2%	1%	1%	1%	1%	13%	71%



**COLLISION SYMBOLS**

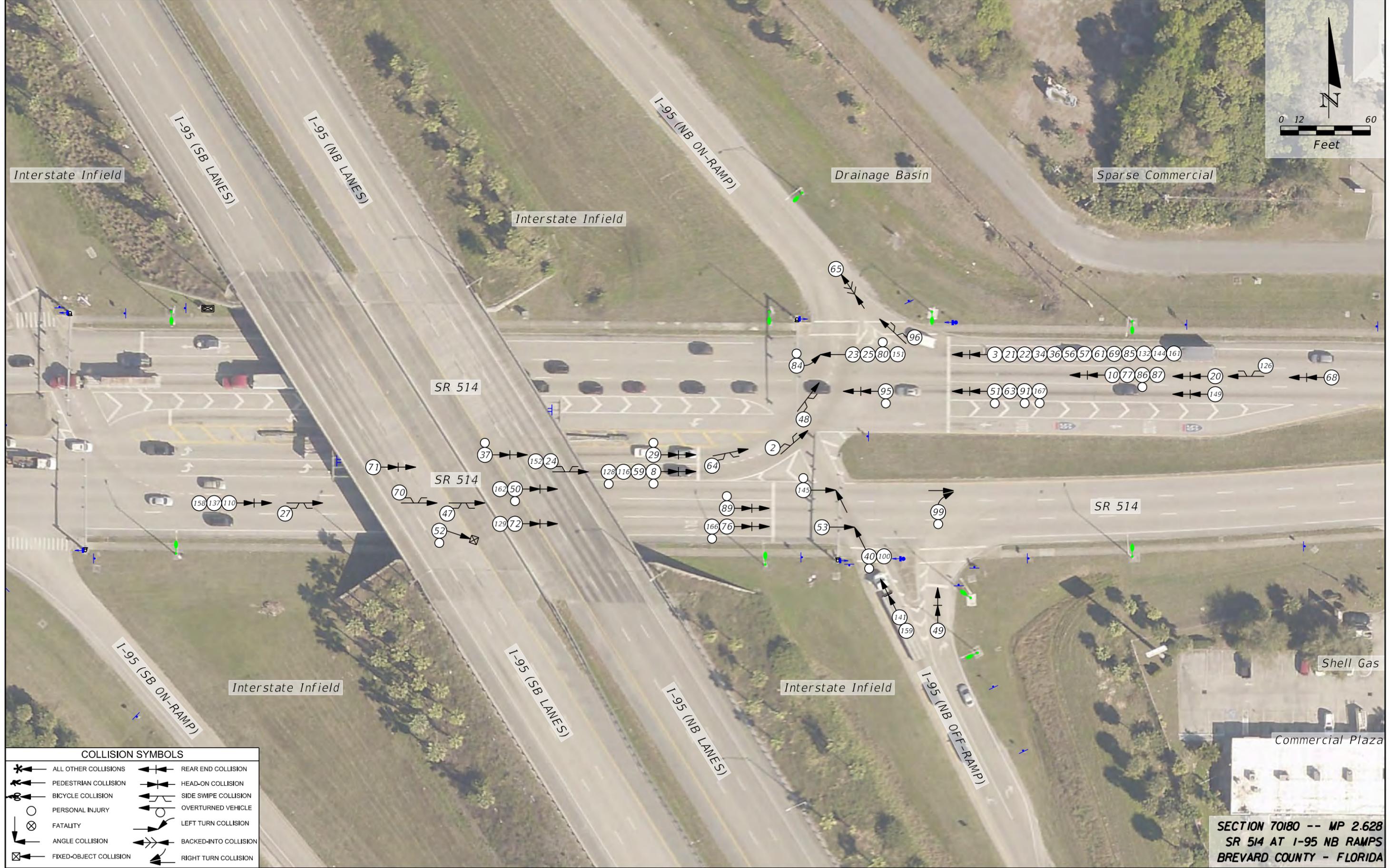
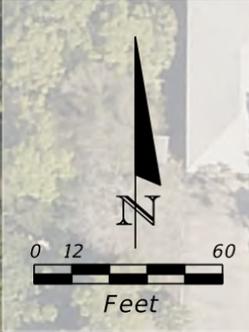
	ALL OTHER COLLISIONS		REAR END COLLISION
	PEDESTRIAN COLLISION		HEAD-ON COLLISION
	BICYCLE COLLISION		SIDE SWIPE COLLISION
	PERSONAL INJURY		OVERTURNED VEHICLE
	FATALITY		LEFT TURN COLLISION
	ANGLE COLLISION		BACKED-INTO COLLISION
	FIXED-OBJECT COLLISION		RIGHT TURN COLLISION

	Utility Pole		Signal Pole
	Traffic Sign		Pedestrian Signal Pole
	Luminaire		Ditch Bottom Inlet
			Drainage Inlet

*Stanley Consultants, Inc.*  
 80 Spring Vista Drive Phone: 386.753.0558  
 DeBary, FL 32713 Fax: 386.753.0778

STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

FIGURE 6  
 COLLISION DIAGRAM  
 SR 514 AT I-95 SOUTHBOUND RAMPS  
 (1/1/2020 - 12/31/2022)



COLLISION SYMBOLS	
	ALL OTHER COLLISIONS
	PEDESTRIAN COLLISION
	BICYCLE COLLISION
	PERSONAL INJURY
	FATALITY
	ANGLE COLLISION
	FIXED-OBJECT COLLISION
	REAR END COLLISION
	HEAD-ON COLLISION
	SIDE SWIPE COLLISION
	OVERTURNED VEHICLE
	LEFT TURN COLLISION
	BACKED-INTO COLLISION
	RIGHT TURN COLLISION

Symbols:			
	Utility Pole		Signal Pole
	Traffic Sign		Pedestrian Signal Pole
	Luminaire		Ditch Bottom Inlet
			Drainage Inlet

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STATE OF FLORIDA  
 DEPARTMENT OF TRANSPORTATION

FIGURE 6  
 COLLISION DIAGRAM  
 SR 514 AT I-95 NORTHBOUND RAMPS  
 (1/1/2020 - 12/31/2022)

PAGE NO.  
 20

SECTION 70180 -- MP 2.628  
 SR 514 AT I-95 NB RAMPS  
 BREVARD COUNTY - FLORIDA

## **QUALITATIVE ASSESSMENT**

The intersections of SR 514 at the I-95 southbound and northbound ramps were observed by a registered professional engineer during the morning and afternoon peak periods. The goal of the observations was to determine the need for any improvements to enhance the safety and efficiency of the study intersection.

### **Operations:**

Operations include the efficiency of operation and interaction of motor vehicles, pedestrians, and bicycles at the intersection.

- SR 514 serves as an east/west arterial roadway while Interstate 95 serves as a north/south interstate roadway throughout Florida and the eastern seaboard of the United States. SR 514 provides access to commercial businesses, local streets, and beaches. This condition leads to intersection usage by local residents as well as travelers unfamiliar with the area searching for fuel and other travel-related needs.
- Travelling southbound on I-95, approaching the SR 514 interchange, a single exit lane is provided and widens to three lanes and then four lanes on the approach to SR 514. The total length of the ramp is 2,900 feet, 1,100 feet of single lane prior to the exit gore, 800 feet of single lane after the exit gore, 350 feet of three lanes (two right-turn and one left-turn) and 650 feet of four lanes (two right-turn and two left-turn). An overhead Dynamic Message System (DMS) sign located 1,700 feet north of the ramp lane displays the message “CONGESTION EXIT 173 USE CAUTION” and “RIGHT LANE BE PREPARED TO STOP” to warn approaching drivers of the potential congestion. This was in place during the afternoon peak observation but was not observed in the morning peak hours.
- While approaching the interchange in the southbound direction, drivers immediately accessed the ramp lane and slowed down. During the afternoon peak period (highest ramp volumes), these slowing queues did extend the full length of the ramp lane and caused the drivers within the inside through lane to slow their speed 10-15 mph below the posted 70-mph speed limit. This then resulted in lane changing along I-95 within the adjacent middle and inside through lanes.
- During the 8-hour count period, pedestrian activity through the intersections was moderate with 48 pedestrians and 27 bicyclists at the southbound ramp intersection and 21 pedestrians and 37 bicyclists at the northbound ramp intersection. It should be noted the data collection at each of these intersections was completed on different days. Pedestrians were observed using the pedestrian pushbutton and crossing during the WALK pedestrian phase. Some bicyclists used the pedestrian pushbutton; however, many crossed within vehicle gaps without conflict.
- Vehicles traveling on SR 514 were generally observed to be traveling at or below the 45-mph posted speed limit during the peak periods.
- Adjacent signalized intersections are located at Babcock Street (0.47 miles east of the northbound ramp intersection) and San Filippo Drive/Interchange Drive (980 feet west of the southbound ramp intersection). Eastbound U-turns are prohibited at Babcock Street and westbound U-turns are prohibited at San Filippo Drive/Interchange Drive.
- There is a two-way directional median opening approximately 600 feet west of the southbound ramp intersection and 450 feet east of San Filippo Drive/Interchange Drive. This median opening serves gas stations, restaurants, a hotel, and stores on both sides of SR 514. Access to these properties is also provided via San Filippo Drive and Interchange Drive. Westbound U-turns are prohibited at this location.

- During the field observations, many semi-trailers were observed using this median opening to access the Sunoco gas station on the south side of SR 514. The drivers typically used the inside (left) right-turn lane on the southbound off-ramp, knowing they intended to access the directional median opening. During off-peak periods, drivers were able to use gaps in eastbound traffic (created by the signal at San Filippo Drive/Interchange Drive) to complete their turn without conflict. During periods of heavy congestion, eastbound queues on SR 514 typically left a gap to allow the westbound left-turn movement. Up to six semi-trucks were queued within the parking lot area, waiting to access fuel pumps at the Sunoco station. The EOR spoke with several of the truck drivers while they were queued at the gas station, all drivers indicated they stopped at this location because of the easy access, low gas prices, or their corporate routing system telling them to stop at this location (due to gas pricing).
- Challenges were observed with eastbound left-turning drivers attempting to navigate through westbound queues to access the businesses on the north side of SR 514. The presence of semi-trailers in the westbound left-turn presented sight distance restrictions for eastbound left-turning drivers. Gaps in westbound approaching traffic were not frequent due to the RTOR vehicles at the southbound ramp, resulting in fewer gaps for eastbound left-turning drivers.



- Westbound queues from the San Filippo Drive/Interchange Drive intersection extended near (but not beyond) the southbound ramp intersection and cleared quickly to accommodate westbound drivers released from the northbound ramp signal. Westbound left-turning queues at San Filippo Drive/Interchange Drive extended beyond the storage length of the left-turn lane, blocking the inside westbound through lane.
- Westbound queues from the northbound ramp intersection typically extended to Tango Avenue (1,100 feet east) but did not block access to the intersection. With these queues, access to the westbound left-turn lane (to access the southbound on-ramp) was blocked; however westbound left-turning volumes were low and no phase failures or excessive queuing was noted for this movement.
- At the northbound ramp, dual eastbound left-turn lanes are provided, with the ramp merging to a single lane within 500 feet, before merging with northbound I-95. Eastbound left-turn volumes were high, averaging 735 vph during the 8-hour count period and peaking at 1,307 from 7:00 to 8:00 am. While drivers appeared aggressive (blocking a merging vehicle, merging within small gaps, honking) when travelling on the ramp, all drivers were travelling at slower speeds. These slower speeds appeared to impact the capacity of the northbound ramp intersection, resulting in phase failures for the movement. **Consideration should be given to providing a longer section of two-lane ramp to improve merging efficiency on the ramp.**

- With the heavy eastbound left-turn movement at the northbound ramp during the morning peak hour, most eastbound drivers appeared to stage themselves in the inside through lane in preparation for their turn. Eastbound queues in the inside through lane extended nearly 2,000 feet from the southbound ramp intersection during the morning peak hour (beyond the San Filippo Drive/Interchange Drive intersection). These long queues appeared to create challenges for northbound right-turning and southbound left-turning drivers from San Filippo Drive/ Interchange Drive who desired to travel northbound on I-95. Eastbound queues in the middle and outside lanes varied, typically extending to just beyond San Filippo Drive/Interchange Drive.
- The two ramp intersections are 600 feet apart and within a coordinated signal system. Circulation between both intersections appeared efficient with phase failures during the peak hour for the eastbound left-turn queues. In general, queued drivers did not block the southbound ramp intersection; however, red light running was observed most frequently during the morning peak hour for the eastbound left-turn queues for the northbound ramp. Phase failures and red light running occurred at the southbound ramp when eastbound left-turn queues extend from the northbound ramp and beyond the southbound ramp.
- Dual left-turn lanes and dual right-turn lanes are provided on the I-95 southbound off-ramp approach. The southbound off-ramp volumes are high, averaging 1,029 vph during the 8-hour count period. Right-turn volumes make up 67% of the approach volumes, peaking at 904 vph during the 4:00 pm hour. The southbound left-turn volumes peak at 391 vph during the 3:00 pm hour. The southbound signal phase (left- and right-turn) is concurrent with the eastbound through signal phase at the northbound ramp intersection.
- Southbound right-turn-on-red (RTOR) movements were observed at the southbound ramp, with the following challenges observed:
  - Leading drivers were observed creeping forward to gain a view of westbound vehicles, while following drivers assumed the leading driver was continuing forward but the leading driver stopped. This potential for rear end crashes is supported by the crash history for this movement.
  - From the southbound right-turn lane stop bar, visibility to the east can be restricted by queued southbound left-turning drivers (depending on where they've stopped on the approach). Most southbound right-turning drivers were observed stopping on the crosswalk or beyond to get a better view of oncoming westbound through vehicles. No conflicts were noted with this action.
  - As noted previously, semi drivers typically queued in the inside (left) right-turn lane. These drivers typically did not make a RTOR movement, which resulted in longer queues and honking drivers.
  - Most of the southbound RTOR movements occurred during the eastbound left-turn movement for the northbound ramp (and eastbound/westbound through movement for the southbound ramp). Given there are no westbound approaching vehicles during this time (due to being stopped at the northbound ramp), RTOR movements were typically made without stopping. Rear end conflicts arose when a leading driver stopped while the following driver did not anticipate the stop. **It is recommended an overlap be implemented, allowing for a southbound right-turn phase (at the southbound ramp) concurrently with the eastbound left-turn phase (at the northbound ramp).** This modification can reduce the queues on the southbound ramp and may require retiming of the adjacent signals within the coordinated system to the west.

**Safety:**

In addition to the collision analysis, the following observations were made with respect to the safety of the study intersection:

- A collision summary was performed for the 36-month period from January 1, 2020 and December 31, 2022. A total of 167 collisions were reported at the interchange (both ramp intersections), 81 injuries (no fatalities) and \$866,169 in estimated property damage.
- At the southbound ramp:
  - A total of 32 rear end crashes were reported on the southbound ramp approach, with 29 of these being between right-turning drivers and 17 of those occurring in the outside right-turn lane.
  - Seven of the eight angle crashes occurred when westbound drivers disregarded the red traffic signal. Five of these crashes occurred between 2:00 and 4:00 pm.
  - Four right-turn crashes occurred when southbound right-turning drivers failed to yield to westbound vehicles.
- At the northbound ramp:
  - While not included in the intersection crash analysis, nine crashes occurred on the northbound on-ramp (travelling away from the study intersection) during the 36-month period. These crashes included five sideswipe and four rear end crashes within the merging area of the ramp.
  - Three sideswipe crashes occurred between eastbound left-turning drivers, within the intersection (not on the on-ramp).
- Based on field observations, it appears the existing diamond interchange configuration is over-capacity during the peak periods (this is not based on an operational analysis). Given the congestion and operations, **consideration should be given to conducting a full interchange evaluation to determine if alternative interchange configurations would more adequately accommodate the existing (and future) traffic demands.** This may have been conducted as part of the previous I-95 Systems Operational Analysis Reports (SOAR); however, interchange improvements don't appear to be programmed at the time of this report.
- While a crash analysis at the two-way directional median opening west of the interchange was not included in this analysis, a brief review of the crashes was conducted. Over the 36-month crash analysis period, 16 left-turn crashes have been reported. **Consideration should be given to modifying this median opening, at a minimum to restrict the eastbound left-turn movement.** Access to the properties on the north side of SR 514 is provided via Interchange Drive and the removal of the eastbound left turn lane would allow for the extension of the dual westbound left-turn lanes at San Filippo Drive (reducing the occurrence of westbound left-turn spillback). Given the volume of semi-trailers served by the Sunoco gas station and the impact of those semis being rerouted to San Filippo Drive and through the Lowe's parking lot, **removal of the westbound left-turn movement should be further evaluated.**

### Maintenance:

During the various field reviews, the condition of the pavement, striping and signing were observed at both intersections. The following are observations based on the various field reviews of the intersections:

- The signs, pavement markings and pavement conditions appeared to be in fair condition, noting the following:
  - The pavement is worn with signs of cracking and unravelling throughout the interchange (both intersections). FPID 448977-1 and 448977-2 are resurfacing projects for I-95, from SR 514 to north of SR 519. These projects will also include traffic signal enhancements at some interchanges; however, it does not appear resurfacing of the study interchange is included.
  - Backplates are provided on most of the signal heads at both intersections. **It is recommended retroreflective strips be added to the existing backplates.** Backplates are not provided on the northbound ramp approach, the southbound ramp median-mounted right-turn signal heads, and the signal head over the westbound middle lane (southbound ramp). **It is recommended retroreflective flexible backplates be added to these signal heads.**
  - The crosswalk and stop bar on the southbound off-ramp approach (dual right-turn lanes) is faded (nearly missing). **It is recommended the crosswalk and stop bar be restriped.**



- The crosswalks on all other ramp approaches are in good condition; however, the markings do not meet current FDOT standards. **It is recommended the crosswalks be restriped during a future resurfacing project.**
- A tactile mat is provided in the northwest corner of the southbound off-ramp intersection. Tactile mats are not provided at any other locations at either intersection. **It is recommended tactile mats be installed at all crosswalks of both ramp intersections.**
- In the northeast corner of the northbound ramp intersection, the pedestrian crossing instructional sign is missing. **It is recommended a pedestrian crossing instructional sign be installed for pedestrians crossing the northbound on-ramp.**
- The pedestrian pushbutton on the center island of the northbound off-ramp is facing west. **It is recommended the pedestrian pushbutton (and instructional sign) be rotated to face north (in alignment with the pedestrian crossing).**

## **IMPROVEMENT RECOMMENDATIONS**

Based on the data collected, field observations, and engineering judgment, the following improvements are recommended for the intersection of SR 514 at I-95 southbound and northbound ramps, located in Palm Bay (Brevard County), Florida:

- Install retroreflective strips on the signal heads with existing backplates.
- Install retroreflective flexible backplates on the signal heads of the northbound ramp approach, the southbound ramp median-mounted right-turn signal heads, and the signal head over the westbound middle lane (southbound ramp).
- Restripe all crosswalks and the stop bar on the southbound ramp right-turn approach.
- Install tactile mats at all crosswalks of both ramp intersections (except the northwest corner of the southbound ramp).
- Install a pedestrian crossing instructional sign for pedestrians crossing the northbound on-ramp (in the northeast corner).
- Rotate the pedestrian pushbutton (and instructional sign) in the center island of the northbound off-ramp to face north (in alignment with the pedestrian crossing).
- Consider providing a longer section of two-lane ramp to improve merging efficiency on the northbound on-ramp.

### *Other considerations:*

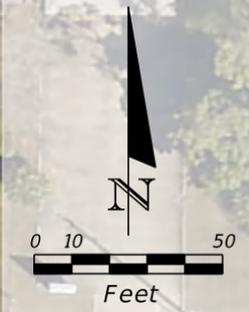
- Conduct a full interchange evaluation to determine if alternative interchange configurations would more adequately accommodate the existing (and future) traffic demands.
- Modify the two-way directional median opening west of the southbound ramp intersection to restrict the eastbound left-turn movement and extend the dual westbound left-turn lanes for San Filippo Drive/Interchange Drive.
- Further evaluate the feasibility of restricting the westbound left-turn movement at the directional opening, taking into consideration the impact of rerouting existing semi-trailer traffic to San Filippo Drive/Interchange Drive.

These improvements are depicted on the following page as an Improvements Diagram in **Figure 7**.



CONSIDER EVALUATING ALTERNATIVE INTERCHANGE CONFIGURATIONS FOR EXISTING AND FUTURE TRAFFIC DEMANDS

CONSIDER PROVIDING A LONGER SECTION OF TWO-LANE RAMP



Interstate Infield

MODIFY SIGNAL TIMING TO ALLOW SOUTHBOUND RIGHT-TURNS CONCURRENT WITH EASTBOUND LEFT-TURNS

Drainage Basin

Sparse Commercial

-UPDATE CROSSWALK MARKINGS TO CURRENT FDOT STANDARDS  
-INSTALL TACTILE MATS AT PEDESTRIAN RAMPS

INSTALL PEDESTRIAN INSTRUCTION SIGN



ADD RETROREFLECTIVE STRIPS TO EXISTING SIGNAL BACKPLATES

SR 514

SR 514

ADD RETROREFLECTIVE FLEXIBLE BACKPLATES

ROTATE PUSHBUTTON AND INSTRUCTION SIGN NORTH

SR 514



Shell Gas Station

-UPDATE CROSSWALK MARKINGS TO CURRENT FDOT STANDARDS  
-INSTALL TACTILE MATS AT PEDESTRIAN RAMPS

Interstate Infield

I-95 (NB OFF-RAMP)



Commercial Plaza

SECTION 70180 -- MP 2.628  
SR 514 AT I-95 NB RAMPS  
BREVARD COUNTY - FLORIDA

MAINTENANCE ITEM QUANTITIES			
12" WHITE THERMOPLASTIC	---	570	LF
24" WHITE THERMOPLASTIC	---	400	LF
DETECTABLE WARNING MATS	---	66	SF
BACKPLATE WITH REFLECTIVE BORDER	---	21	EA
SIGN PANEL, UP TO 12 SF	---	1	EA
PEDESTRIAN SIGNAL, RELOCATE	---	1	AS

◆ Utility Pole	Symbols:	⊙ Signal Pole
⊙ Traffic Sign	⊠ Traffic Controller Cabinet	⊙ Pedestrian Signal Pole
● Luminaire	⊠ Ditch Bottom Inlet	⊠ Drainage Inlet

Stanley Consultants, Inc.  
80 Spring Vista Drive DeBary, FL 32713  
Phone: 386.753.0558 Fax: 386.753.0778

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION

FIGURE 7  
IMPROVEMENTS DIAGRAM  
SR 514 AT I-95 NORTHBOUND RAMPS

PAGE NO.  
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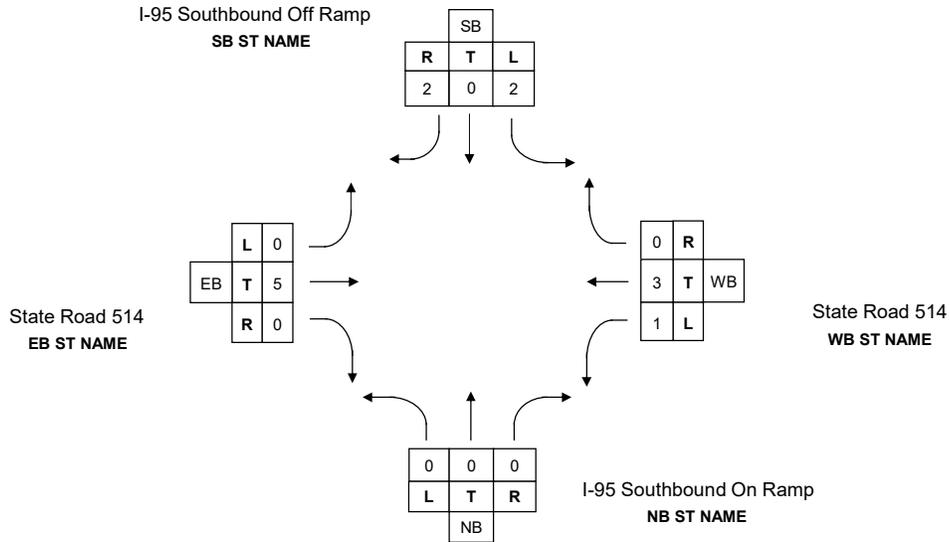
# **APPENDIX**



**FLORIDA DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF VEHICLE MOVEMENTS**

SECTION 70180000 CITY Palm Bay COUNTY Brevard  
 STATE ROUTE State Road 514 INTERSECTING ROUTE I-95 Southbound Ramps  
 OBSERVER TEDS DATE 12/15/2022 MILEPOST 2.513 - 2.525  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 FORM COMPLETED BY CML DATE 01/17/23



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL			
	BEGIN/END	L	T	R	U	TOT	L	T	R	U		TOT	N/S	L	T	R	U	TOT	L	T	R		U	TOT	E/W
7:00 - 8:00	0	0	0	0	0	0	369	0	451	0	820	820	0	2,412	167	0	0	2,579	83	778	0	0	0	861	3,440
8:00 - 9:00	0	0	0	0	0	0	375	0	555	0	930	930	0	2,171	174	0	0	2,345	81	827	0	1	0	909	3,254
11:00 - 12:00	0	0	0	0	0	0	292	0	578	0	870	870	0	1,711	100	0	0	1,811	68	1,030	0	3	0	1,101	2,912
12:00 - 1:00	0	0	0	0	0	0	346	0	595	0	941	941	0	1,568	114	0	0	1,682	83	1,102	0	0	0	1,185	2,867
2:00 - 3:00	0	0	0	0	0	0	385	0	832	0	1,217	1,217	0	1,601	124	0	0	1,725	94	1,167	0	3	0	1,264	2,989
3:00 - 4:00	0	0	0	0	0	0	391	0	843	0	1,234	1,234	0	1,433	135	1	0	1,569	115	1,393	0	1	0	1,509	3,078
4:00 - 5:00	0	0	0	0	0	0	322	0	904	0	1,226	1,226	0	1,354	113	0	0	1,467	91	1,470	0	1	0	1,562	3,029
5:00 - 6:00	0	0	0	0	0	0	261	0	734	0	995	995	0	1,364	119	0	0	1,483	108	1,482	0	1	0	1,591	3,074
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,741</b>	<b>0</b>	<b>5,492</b>	<b>0</b>	<b>8,233</b>	<b>8,233</b>	<b>0</b>	<b>13,614</b>	<b>1,046</b>	<b>1</b>	<b>0</b>	<b>14,661</b>	<b>723</b>	<b>9,249</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>9,982</b>	<b>24,643</b>

Percentage	0%	0%	0%	0%		33%	0%	67%	0%			0%	93%	7%	0%		7%	93%	0%	0%		
Average	0	0	0	0	0	343	0	687	0	1,029		0	1,702	131	0	1,833	90	1,156	0	1	1,248	
Maximum	0	0	0	0		391	0	904	0			0	2,412	174	1		115	1,482	0	3		
Minimum	0	0	0	0		261	0	451	0			0	1,354	100	0		68	778	0	0		

FLORIDA DEPARTMENT OF TRANSPORTATION

**PEDESTRIAN MOVEMENT SUMMARY**

<b>SECTION</b>	70180000	CITY Palm Bay	COUNTY Brevard
<b>STATE ROUTE</b>	State Road 514	<b>INTERSECTING ROUTE</b>	I-95 Southbound Ramps
<b>OBSERVER</b>	TEDS	<b>DATE</b>	12/15/2022

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML                      DATE 01/17/23

H O U R S	West side of			East side of			North side of			South side of			<u>GRAND TOTAL</u>
	<u>I-95 Southbound Ramps</u>			<u>I-95 Southbound Ramps</u>			<u>State Road 514</u>			<u>State Road 514</u>			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	0	0	0	2	2	4	<u>4</u>
8:00 - 9:00	0	0	0	0	0	0	1	2	3	2	1	3	<u>6</u>
11:00 - 12:00	0	0	0	0	0	0	2	3	5	3	3	6	<u>11</u>
12:00 - 1:00	0	0	0	0	0	0	0	1	1	3	1	4	<u>5</u>
2:00 - 3:00	0	0	0	0	0	0	1	3	4	1	0	1	<u>5</u>
3:00 - 4:00	0	0	0	0	0	0	0	0	0	3	1	4	<u>4</u>
4:00 - 5:00	0	0	0	0	0	0	0	0	0	2	2	4	<u>4</u>
5:00 - 6:00	0	0	0	0	0	0	1	2	3	3	3	6	<u>9</u>
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>16</b>	<b>19</b>	<b>13</b>	<b>32</b>	<u><b>48</b></u>

FLORIDA DEPARTMENT OF TRANSPORTATION

**BICYCLE MOVEMENT SUMMARY**

SECTION 70180000 CITY Palm Bay COUNTY Brevard  
 STATE ROUTE State Road 514 INTERSECTING ROUTE I-95 Southbound Ramps  
 OBSERVER TEDS DATE 12/15/2022

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 01/17/23

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	I-95 Southbound Ramps			I-95 Southbound Ramps			State Road 514			State Road 514			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	1	1	2	2	0	2	<u>4</u>
8:00 - 9:00	0	0	0	0	0	0	2	2	4	1	0	1	<u>5</u>
11:00 - 12:00	0	0	0	0	0	0	1	2	3	0	0	0	<u>3</u>
12:00 - 1:00	0	0	0	0	0	0	1	0	1	0	3	3	<u>4</u>
2:00 - 3:00	0	0	0	0	0	0	0	2	2	1	0	1	<u>3</u>
3:00 - 4:00	0	0	0	0	0	0	0	1	1	0	1	1	<u>2</u>
4:00 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	<u>0</u>
5:00 - 6:00	0	0	0	0	0	0	0	5	5	1	0	1	<u>6</u>
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>18</b>	<b>5</b>	<b>4</b>	<b>9</b>	<u><b>27</b></u>

Stanley Consultants, Inc.

File Name : SR 514 at I-95 SB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 12/15/2022

Page No : 1

Groups Printed- Passenger Vehicles - Heavy Trucks

Start Time	I-95 SOUTHBOUND ON RAMP Northbound					I-95 SOUTHBOUND OFF RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
07:00 AM	0	0	0	0	0	85	0	108	0	193	0	542	69	0	611	17	154	0	0	171	975
07:15 AM	0	0	0	0	0	61	0	115	0	176	0	625	41	0	666	21	170	0	0	191	1033
07:30 AM	0	0	0	0	0	113	0	103	0	216	0	591	32	0	623	19	200	0	0	219	1058
07:45 AM	0	0	0	0	0	110	0	125	0	235	0	654	25	0	679	26	254	0	0	280	1194
Total	0	0	0	0	0	369	0	451	0	820	0	2412	167	0	2579	83	778	0	0	861	4260
08:00 AM	0	0	0	0	0	116	0	172	0	288	0	640	49	0	689	17	221	0	0	238	1215
08:15 AM	0	0	0	0	0	107	0	131	0	238	0	537	44	0	581	33	184	0	0	217	1036
08:30 AM	0	0	0	0	0	68	0	124	0	192	0	529	39	0	568	17	212	0	1	230	990
08:45 AM	0	0	0	0	0	84	0	128	0	212	0	465	42	0	507	14	210	0	0	224	943
Total	0	0	0	0	0	375	0	555	0	930	0	2171	174	0	2345	81	827	0	1	909	4184
*** BREAK ***																					
11:00 AM	0	0	0	0	0	60	0	129	0	189	0	429	26	0	455	22	249	0	2	273	917
11:15 AM	0	0	0	0	0	85	0	146	0	231	0	418	32	0	450	10	283	0	0	293	974
11:30 AM	0	0	0	0	0	79	0	153	0	232	0	431	20	0	451	12	250	0	1	263	946
11:45 AM	0	0	0	0	0	68	0	150	0	218	0	433	22	0	455	24	248	0	0	272	945
Total	0	0	0	0	0	292	0	578	0	870	0	1711	100	0	1811	68	1030	0	3	1101	3782
12:00 PM	0	0	0	0	0	106	0	162	0	268	0	393	23	0	416	22	289	0	0	311	995
12:15 PM	0	0	0	0	0	79	0	157	0	236	0	414	35	0	449	23	253	0	0	276	961
12:30 PM	0	0	0	0	0	68	0	122	0	190	0	396	30	0	426	15	293	0	0	308	924
12:45 PM	0	0	0	0	0	93	0	154	0	247	0	365	26	0	391	23	267	0	0	290	928
Total	0	0	0	0	0	346	0	595	0	941	0	1568	114	0	1682	83	1102	0	0	1185	3808
*** BREAK ***																					
02:00 PM	0	0	0	0	0	125	0	219	0	344	0	405	34	0	439	35	281	0	1	317	1100
02:15 PM	0	0	0	0	0	84	0	221	0	305	0	405	36	0	441	20	268	0	0	288	1034
02:30 PM	0	0	0	0	0	104	0	205	0	309	0	393	24	0	417	21	314	0	1	336	1062
02:45 PM	0	0	0	0	0	72	0	187	0	259	0	398	30	0	428	18	304	0	1	323	1010
Total	0	0	0	0	0	385	0	832	0	1217	0	1601	124	0	1725	94	1167	0	3	1264	4206
03:00 PM	0	0	0	0	0	100	0	147	0	247	0	393	36	1	430	37	354	0	0	391	1068
03:15 PM	0	0	0	0	0	94	0	225	0	319	0	363	39	0	402	31	350	0	0	381	1102
03:30 PM	0	0	0	0	0	105	0	254	0	359	0	371	32	0	403	28	348	0	0	376	1138
03:45 PM	0	0	0	0	0	92	0	217	0	309	0	306	28	0	334	19	341	0	1	361	1004
Total	0	0	0	0	0	391	0	843	0	1234	0	1433	135	1	1569	115	1393	0	1	1509	4312
04:00 PM	0	0	0	0	0	90	0	214	0	304	0	329	31	0	360	25	323	0	0	348	1012
04:15 PM	0	0	0	0	0	96	0	279	0	375	0	323	24	0	347	26	356	0	0	382	1104
04:30 PM	0	0	0	0	0	80	0	218	0	298	0	360	34	0	394	23	380	0	1	404	1096
04:45 PM	0	0	0	0	0	56	0	193	0	249	0	342	24	0	366	17	411	0	0	428	1043
Total	0	0	0	0	0	322	0	904	0	1226	0	1354	113	0	1467	91	1470	0	1	1562	4255
05:00 PM	0	0	0	0	0	83	0	195	0	278	0	351	28	0	379	27	359	0	0	386	1043
05:15 PM	0	0	0	0	0	60	0	186	0	246	0	303	37	0	340	30	396	0	1	427	1013
05:30 PM	0	0	0	0	0	52	0	195	0	247	0	355	28	0	383	27	372	0	0	399	1029
05:45 PM	0	0	0	0	0	66	0	158	0	224	0	355	26	0	381	24	355	0	0	379	984
Total	0	0	0	0	0	261	0	734	0	995	0	1364	119	0	1483	108	1482	0	1	1591	4069
Grand Total	0	0	0	0	0	2741	0	5492	0	8233	0	13614	1046	1	14661	723	9249	0	10	9982	32876
Apprch %	0	0	0	0	0	33.3	0	66.7	0	0	0	92.9	7.1	0	0	7.2	92.7	0	0.1	0	
Total %	0	0	0	0	0	8.3	0	16.7	0	25	0	41.4	3.2	0	44.6	2.2	28.1	0	0	30.4	
Passenger Vehicles	0	0	0	0	0	2612	0	5350	0	7962	0	13312	955	1	14268	683	9089	0	10	9782	32012
% Passenger Vehicles	0	0	0	0	0	95.3	0	97.4	0	96.7	0	97.8	91.3	100	97.3	94.5	98.3	0	100	98	97.4
Heavy Trucks	0	0	0	0	0	129	0	142	0	271	0	302	91	0	393	40	160	0	0	200	864
% Heavy Trucks	0	0	0	0	0	4.7	0	2.6	0	3.3	0	2.2	8.7	0	2.7	5.5	1.7	0	0	2	2.6

Stanley Consultants, Inc.

File Name : SR 514 at I-95 SB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 12/15/2022

Page No : 2

Start Time	I-95 SOUTHBOUND ON RAMP Northbound					I-95 SOUTHBOUND OFF RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	113	0	103	0	216	0	591	32	0	623	19	200	0	0	219	1058
07:45 AM	0	0	0	0	0	110	0	125	0	235	0	<b>654</b>	25	0	679	26	<b>254</b>	0	0	<b>280</b>	1194
08:00 AM	0	0	0	0	0	<b>116</b>	0	<b>172</b>	0	<b>288</b>	0	640	<b>49</b>	0	<b>689</b>	17	221	0	0	238	<b>1215</b>
08:15 AM	0	0	0	0	0	107	0	131	0	238	0	537	44	0	581	<b>33</b>	184	0	0	217	1036
Total Volume	0	0	0	0	0	446	0	531	0	977	0	2422	150	0	2572	95	859	0	0	954	4503
% App. Total	0	0	0	0	0	45.6	0	54.4	0		0	94.2	5.8	0		10	90	0	0		
PHF	.000	.000	.000	.000	.000	.961	.000	.772	.000	.848	.000	.926	.765	.000	.933	.720	.845	.000	.000	.852	.927
Passenger Vehicles	0	0	0	0	0	426	0	502	0	928	0	2380	140	0	2520	88	826	0	0	914	4362
% Passenger Vehicles	0	0	0	0	0	95.5	0	94.5	0	95.0	0	98.3	93.3	0	98.0	92.6	96.2	0	0	95.8	96.9
Heavy Trucks	0	0	0	0	0	20	0	29	0	49	0	42	10	0	52	7	33	0	0	40	141
% Heavy Trucks	0	0	0	0	0	4.5	0	5.5	0	5.0	0	1.7	6.7	0	2.0	7.4	3.8	0	0	4.2	3.1

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:30 AM					07:15 AM					07:45 AM				
+0 mins.	0	0	0	0	0	113	0	103	0	216	0	625	41	0	666	26	<b>254</b>	0	0	<b>280</b>
+15 mins.	0	0	0	0	0	110	0	125	0	235	0	591	32	0	623	17	221	0	0	238
+30 mins.	0	0	0	0	0	<b>116</b>	0	<b>172</b>	0	<b>288</b>	0	<b>654</b>	25	0	679	<b>33</b>	184	0	0	217
+45 mins.	0	0	0	0	0	107	0	131	0	238	0	640	<b>49</b>	0	<b>689</b>	17	212	0	0	230
Total Volume	0	0	0	0	0	446	0	531	0	977	0	2510	147	0	2657	93	871	0	1	965
% App. Total	0	0	0	0	0	45.6	0	54.4	0		0	94.5	5.5	0		9.6	90.3	0	0.1	
PHF	.000	.000	.000	.000	.000	.961	.000	.772	.000	.848	.000	.959	.750	.000	.964	.705	.857	.000	.250	.862
Passenger Vehicles	0	0	0	0	0	426	0	502	0	928	0	247	138	0	2610	87	844	0	1	932
% Passenger Vehicles	0	0	0	0	0	95.5	0	94.5	0	95	0	98.5	93.9	0	98.2	93.5	96.9	0	100	96.6
Heavy Trucks	0	0	0	0	0	20	0	29	0	49	0	38	9	0	47	6	27	0	0	33
% Heavy Trucks	0	0	0	0	0	4.5	0	5.5	0	5	0	1.5	6.1	0	1.8	6.5	3.1	0	0	3.4

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:15 AM

11:15 AM	0	0	0	0	0	85	0	146	0	231	0	418	<b>32</b>	0	450	10	283	0	0	293	974
11:30 AM	0	0	0	0	0	79	0	153	0	232	0	431	20	0	451	12	250	0	<b>1</b>	263	946
11:45 AM	0	0	0	0	0	68	0	150	0	218	0	<b>433</b>	22	0	<b>455</b>	<b>24</b>	248	0	0	272	945
12:00 PM	0	0	0	0	0	<b>106</b>	0	<b>162</b>	0	<b>268</b>	0	393	23	0	416	<b>22</b>	<b>289</b>	0	0	<b>311</b>	<b>995</b>
Total Volume	0	0	0	0	0	338	0	611	0	949	0	1675	97	0	1772	68	1070	0	1	1139	3860
% App. Total	0	0	0	0	0	35.6	0	64.4	0		0	94.5	5.5	0		6	93.9	0	0.1		
PHF	.000	.000	.000	.000	.000	.797	.000	.943	.000	.885	.000	.967	.758	.000	.974	.708	.926	.000	.250	.916	.970
Passenger Vehicles	0	0	0	0	0	317	0	589	0	906	0	1626	82	0	1708	62	1045	0	1	1108	3722
% Passenger Vehicles	0	0	0	0	0	93.8	0	96.4	0	95.5	0	97.1	84.5	0	96.4	91.2	97.7	0	100	97.3	96.4
Heavy Trucks	0	0	0	0	0	21	0	22	0	43	0	49	15	0	64	6	25	0	0	31	138
% Heavy Trucks	0	0	0	0	0	6.2	0	3.6	0	4.5	0	2.9	15.5	0	3.6	8.8	2.3	0	0	2.7	3.6

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	10:00 AM					11:30 AM					11:00 AM					12:00 PM				
+0 mins.	0	0	0	0	0	79	0	153	0	232	0	429	26	0	<b>455</b>	22	289	0	0	<b>311</b>
+15 mins.	0	0	0	0	0	68	0	150	0	218	0	418	<b>32</b>	0	450	<b>23</b>	253	0	0	276
+30 mins.	0	0	0	0	0	<b>106</b>	0	<b>162</b>	0	<b>268</b>	0	431	20	0	451	15	<b>293</b>	0	0	308
+45 mins.	0	0	0	0	0	79	0	157	0	236	0	<b>433</b>	22	0	455	23	267	0	0	290
Total Volume	0	0	0	0	0	332	0	622	0	954	0	1711	100	0	1811	83	1102	0	0	1185
% App. Total	0	0	0	0	0	34.8	0	65.2	0		0	94.5	5.5	0		7	93	0	0	
PHF	.000	.000	.000	.000	.000	.783	.000	.960	.000	.890	.000	.988	.781	.000	.995	.902	.940	.000	.000	.953
Passenger Vehicles	0	0	0	0	0	310	0	600	0	910	0	166	86	0	1747	74	107	0	0	1149
% Passenger Vehicles	0	0	0	0	0	93.4	0	96.5	0	95.4	0	97.1	86	0	96.5	89.2	97.5	0	0	97
Heavy Trucks	0	0	0	0	0	22	0	22	0	44	0	50	14	0	64	9	27	0	0	36
% Heavy Trucks	0	0	0	0	0	6.6	0	3.5	0	4.6	0	2.9	14	0	3.5	10.8	2.5	0	0	3

Stanley Consultants, Inc.

File Name : SR 514 at I-95 SB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 12/15/2022

Page No : 3

Start Time	I-95 SOUTHBOUND ON RAMP Northbound					I-95 SOUTHBOUND OFF RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	0	0	0	0	0	72	0	187	0	259	0	<b>398</b>	30	0	428	18	304	0	<b>1</b>	323	1010
03:00 PM	0	0	0	0	0	100	0	147	0	247	0	393	36	<b>1</b>	<b>430</b>	<b>37</b>	<b>354</b>	0	0	<b>391</b>	1068
03:15 PM	0	0	0	0	0	94	0	225	0	319	0	363	<b>39</b>	0	402	31	350	0	0	381	1102
03:30 PM	0	0	0	0	0	<b>105</b>	0	<b>254</b>	0	<b>359</b>	0	371	32	0	403	28	348	0	0	376	<b>1138</b>
Total Volume	0	0	0	0	0	371	0	813	0	1184	0	1525	137	1	1663	114	1356	0	1	1471	4318
% App. Total	0	0	0	0	0	31.3	0	68.7	0		0	91.7	8.2	0.1		7.7	92.2	0	0.1		
PHF	.000	.000	.000	.000	.000	.883	.000	.800	.000	.825	.000	.958	.878	.250	.967	.770	.958	.000	.250	.941	.949
Passenger Vehicles	0	0	0	0	0	355	0	805	0	1160	0	1478	125	1	1604	108	1347	0	1	1456	4220
% Passenger Vehicles	0	0	0	0	0	95.7	0	99.0	0	98.0	0	96.9	91.2	100	96.5	94.7	99.3	0	100	99.0	97.7
Heavy Trucks	0	0	0	0	0	16	0	8	0	24	0	47	12	0	59	6	9	0	0	15	98
% Heavy Trucks	0	0	0	0	0	4.3	0	1.0	0	2.0	0	3.1	8.8	0	3.5	5.3	0.7	0	0	1.0	2.3

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM					03:30 PM					02:00 PM					04:30 PM				
+0 mins.	0	0	0	0	0	<b>105</b>	0	254	0	359	0	<b>405</b>	34	0	439	23	380	0	<b>1</b>	404
+15 mins.	0	0	0	0	0	92	0	217	0	309	0	405	<b>36</b>	0	<b>441</b>	17	<b>411</b>	0	0	<b>428</b>
+30 mins.	0	0	0	0	0	90	0	214	0	304	0	393	24	0	417	27	359	0	0	386
+45 mins.	0	0	0	0	0	96	0	<b>279</b>	0	<b>375</b>	0	398	30	0	428	<b>30</b>	396	0	1	427
Total Volume	0	0	0	0	0	383	0	964	0	1347	0	1601	124	0	1725	97	1546	0	2	1645
% App. Total	0	0	0	0	0	28.4	0	71.6	0		0	92.8	7.2	0		5.9	94	0	0.1	
PHF	.000	.000	.000	.000	.000	.912	.000	.864	.000	.898	.000	.988	.861	.000	.978	.808	.940	.000	.500	.961
Passenger Vehicles	0	0	0	0	0	371	0	954	0	1325	0	1554	111	0	1665	95	1526	0	2	1623
% Passenger Vehicles	0	0	0	0	0	96.9	0	99	0	98.4	0	97.1	89.5	0	96.5	97.9	98.7	0	100	98.7
Heavy Trucks	0	0	0	0	0	12	0	10	0	22	0	47	13	0	60	2	20	0	0	22
% Heavy Trucks	0	0	0	0	0	3.1	0	1	0	1.6	0	2.9	10.5	0	3.5	2.1	1.3	0	0	1.3

Stanley Consultants, Inc.

File Name : SR 514 at I-95 SB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 12/15/2022

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Groups Printed- Heavy Trucks

Start Time	I-95 SOUTHBOUND ON RAMP Northbound					I-95 SOUTHBOUND OFF RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
07:00 AM	0	0	0	0	0	6	0	7	0	13	0	5	3	0	8	0	9	0	0	9	30
07:15 AM	0	0	0	0	0	0	0	2	0	2	0	9	4	0	13	0	4	0	0	4	19
07:30 AM	0	0	0	0	0	6	0	7	0	13	0	8	2	0	10	3	12	0	0	15	38
07:45 AM	0	0	0	0	0	3	0	5	0	8	0	10	0	0	10	2	6	0	0	8	26
Total	0	0	0	0	0	15	0	21	0	36	0	32	9	0	41	5	31	0	0	36	113
08:00 AM	0	0	0	0	0	4	0	11	0	15	0	11	3	0	14	0	8	0	0	8	37
08:15 AM	0	0	0	0	0	7	0	6	0	13	0	13	5	0	18	2	7	0	0	9	40
08:30 AM	0	0	0	0	0	5	0	5	0	10	0	16	7	0	23	2	6	0	0	8	41
08:45 AM	0	0	0	0	0	5	0	15	0	20	0	13	5	0	18	2	6	0	0	8	46
Total	0	0	0	0	0	21	0	37	0	58	0	53	20	0	73	6	27	0	0	33	164
*** BREAK ***																					
11:00 AM	0	0	0	0	0	3	0	7	0	10	0	7	2	0	9	1	7	0	0	8	27
11:15 AM	0	0	0	0	0	6	0	5	0	11	0	18	6	0	24	3	9	0	0	12	47
11:30 AM	0	0	0	0	0	4	0	5	0	9	0	11	3	0	14	0	5	0	0	5	28
11:45 AM	0	0	0	0	0	3	0	8	0	11	0	14	3	0	17	2	4	0	0	6	34
Total	0	0	0	0	0	16	0	25	0	41	0	50	14	0	64	6	25	0	0	31	136
12:00 PM	0	0	0	0	0	8	0	4	0	12	0	6	3	0	9	1	7	0	0	8	29
12:15 PM	0	0	0	0	0	7	0	5	0	12	0	4	5	0	9	2	5	0	0	7	28
12:30 PM	0	0	0	0	0	3	0	6	0	9	0	9	2	0	11	1	10	0	0	11	31
12:45 PM	0	0	0	0	0	8	0	3	0	11	0	7	4	0	11	5	5	0	0	10	32
Total	0	0	0	0	0	26	0	18	0	44	0	26	14	0	40	9	27	0	0	36	120
*** BREAK ***																					
02:00 PM	0	0	0	0	0	8	0	4	0	12	0	7	4	0	11	2	4	0	0	6	29
02:15 PM	0	0	0	0	0	6	0	5	0	11	0	13	3	0	16	1	5	0	0	6	33
02:30 PM	0	0	0	0	0	12	0	5	0	17	0	14	2	0	16	1	0	0	0	1	34
02:45 PM	0	0	0	0	0	1	0	4	0	5	0	13	4	0	17	1	4	0	0	5	27
Total	0	0	0	0	0	27	0	18	0	45	0	47	13	0	60	5	13	0	0	18	123
03:00 PM	0	0	0	0	0	3	0	3	0	6	0	12	3	0	15	2	3	0	0	5	26
03:15 PM	0	0	0	0	0	5	0	0	0	5	0	15	4	0	19	2	1	0	0	3	27
03:30 PM	0	0	0	0	0	7	0	1	0	8	0	7	1	0	8	1	1	0	0	2	18
03:45 PM	0	0	0	0	0	2	0	2	0	4	0	5	1	0	6	0	2	0	0	2	12
Total	0	0	0	0	0	17	0	6	0	23	0	39	9	0	48	5	7	0	0	12	83
04:00 PM	0	0	0	0	0	2	0	3	0	5	0	6	1	0	7	0	4	0	0	4	16
04:15 PM	0	0	0	0	0	1	0	4	0	5	0	12	0	0	12	2	1	0	0	3	20
04:30 PM	0	0	0	0	0	1	0	1	0	2	0	7	2	0	9	1	5	0	0	6	17
04:45 PM	0	0	0	0	0	2	0	1	0	3	0	8	1	0	9	0	9	0	0	9	21
Total	0	0	0	0	0	6	0	9	0	15	0	33	4	0	37	3	19	0	0	22	74
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	1	3	0	0	4	11
05:15 PM	0	0	0	0	0	0	0	5	0	5	0	8	4	0	12	0	3	0	0	3	20
05:30 PM	0	0	0	0	0	1	0	2	0	3	0	5	1	0	6	0	1	0	0	1	10
05:45 PM	0	0	0	0	0	0	0	1	0	1	0	3	2	0	5	0	4	0	0	4	10
Total	0	0	0	0	0	1	0	8	0	9	0	22	8	0	30	1	11	0	0	12	51
Grand Total	0	0	0	0	0	129	0	142	0	271	0	302	91	0	393	40	160	0	0	200	864
Apprch %	0	0	0	0	0	47.6	0	52.4	0	0	0	76.8	23.2	0	0	20	80	0	0	0	
Total %	0	0	0	0	0	14.9	0	16.4	0	31.4	0	35	10.5	0	45.5	4.6	18.5	0	0	23.1	

Stanley Consultants, Inc.

File Name : SR 514 at I-95 SB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 12/15/2022

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Start Time	I-95 SOUTHBOUND ON RAMP Northbound					I-95 SOUTHBOUND OFF RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	4	0	11	0	15	0	11	3	0	14	0	8	0	0	8	37
08:15 AM	0	0	0	0	0	7	0	6	0	13	0	13	5	0	18	2	7	0	0	9	40
08:30 AM	0	0	0	0	0	5	0	5	0	10	0	16	7	0	23	2	6	0	0	8	41
08:45 AM	0	0	0	0	0	5	0	15	0	20	0	13	5	0	18	2	6	0	0	8	46
Total Volume	0	0	0	0	0	21	0	37	0	58	0	53	20	0	73	6	27	0	0	33	164
% App. Total	0	0	0	0	0	36.2	0	63.8	0		0	72.6	27.4	0		18.2	81.8	0	0		
PHF	.000	.000	.000	.000	.000	.750	.000	.617	.000	.725	.000	.828	.714	.000	.793	.750	.844	.000	.000	.917	.891

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					08:00 AM					08:00 AM					07:30 AM				
+0 mins.	0	0	0	0	0	4	0	11	0	15	0	11	3	0	14	3	12	0	0	15
+15 mins.	0	0	0	0	0	7	0	6	0	13	0	13	5	0	18	2	6	0	0	8
+30 mins.	0	0	0	0	0	5	0	5	0	10	0	16	7	0	23	0	8	0	0	8
+45 mins.	0	0	0	0	0	5	0	15	0	20	0	13	5	0	18	2	7	0	0	9
Total Volume	0	0	0	0	0	21	0	37	0	58	0	53	20	0	73	7	33	0	0	40
% App. Total	0	0	0	0	0	36.2	0	63.8	0		0	72.6	27.4	0		17.5	82.5	0	0	
PHF	.000	.000	.000	.000	.000	.750	.000	.617	.000	.725	.000	.828	.714	.000	.793	.583	.688	.000	.000	.667

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:15 AM

11:15 AM	0	0	0	0	0	6	0	5	0	11	0	18	6	0	24	3	9	0	0	12	47
11:30 AM	0	0	0	0	0	4	0	5	0	9	0	11	3	0	14	0	5	0	0	5	28
11:45 AM	0	0	0	0	0	3	0	8	0	11	0	14	3	0	17	2	4	0	0	6	34
12:00 PM	0	0	0	0	0	8	0	4	0	12	0	6	3	0	9	1	7	0	0	8	29
Total Volume	0	0	0	0	0	21	0	22	0	43	0	49	15	0	64	6	25	0	0	31	138
% App. Total	0	0	0	0	0	48.8	0	51.2	0		0	76.6	23.4	0		19.4	80.6	0	0		
PHF	.000	.000	.000	.000	.000	.656	.000	.688	.000	.896	.000	.681	.625	.000	.667	.500	.694	.000	.000	.646	.734

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	10:00 AM					11:30 AM					11:00 AM					12:00 PM				
+0 mins.	0	0	0	0	0	4	0	5	0	9	0	7	2	0	9	1	7	0	0	8
+15 mins.	0	0	0	0	0	3	0	8	0	11	0	18	6	0	24	2	5	0	0	7
+30 mins.	0	0	0	0	0	8	0	4	0	12	0	11	3	0	14	1	10	0	0	11
+45 mins.	0	0	0	0	0	7	0	5	0	12	0	14	3	0	17	5	5	0	0	10
Total Volume	0	0	0	0	0	22	0	22	0	44	0	50	14	0	64	9	27	0	0	36
% App. Total	0	0	0	0	0	50	0	50	0		0	78.1	21.9	0		25	75	0	0	
PHF	.000	.000	.000	.000	.000	.688	.000	.688	.000	.917	.000	.694	.583	.000	.667	.450	.675	.000	.000	.818

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM

02:00 PM	0	0	0	0	0	8	0	4	0	12	0	7	4	0	11	2	4	0	0	6	29
02:15 PM	0	0	0	0	0	6	0	5	0	11	0	13	3	0	16	1	5	0	0	6	33
02:30 PM	0	0	0	0	0	12	0	5	0	17	0	14	2	0	16	1	0	0	0	1	34
02:45 PM	0	0	0	0	0	1	0	4	0	5	0	13	4	0	17	1	4	0	0	5	27
Total Volume	0	0	0	0	0	27	0	18	0	45	0	47	13	0	60	5	13	0	0	18	123
% App. Total	0	0	0	0	0	60	0	40	0		0	78.3	21.7	0		27.8	72.2	0	0		
PHF	.000	.000	.000	.000	.000	.563	.000	.900	.000	.662	.000	.839	.813	.000	.882	.625	.650	.000	.000	.750	.904

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

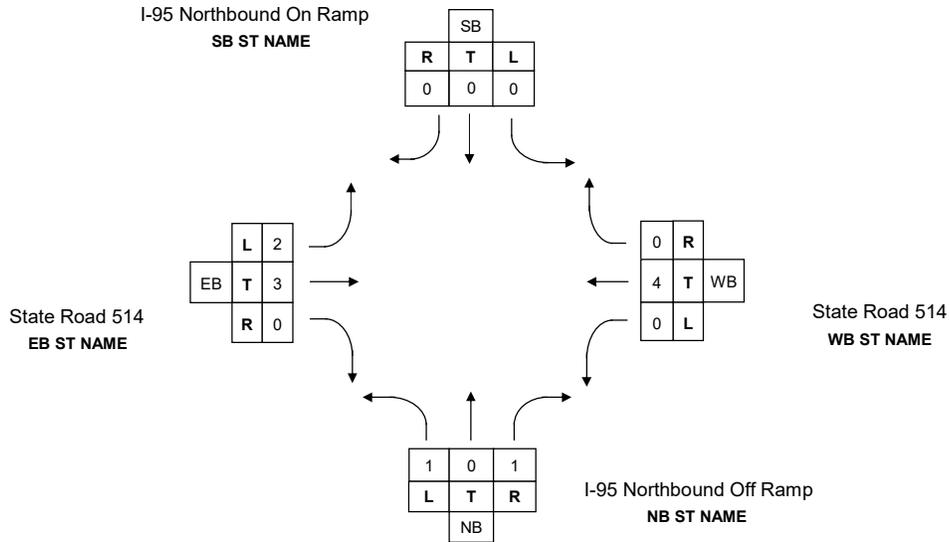
Peak Hour for Each Approach Begins at:

	02:00 PM					02:00 PM					02:30 PM					04:00 PM				
+0 mins.	0	0	0	0	0	8	0	4	0	12	0	14	2	0	16	0	4	0	0	4
+15 mins.	0	0	0	0	0	6	0	5	0	11	0	13	4	0	17	2	1	0	0	3
+30 mins.	0	0	0	0	0	12	0	5	0	17	0	12	3	0	15	1	5	0	0	6
+45 mins.	0	0	0	0	0	1	0	4	0	5	0	15	4	0	19	0	9	0	0	9
Total Volume	0	0	0	0	0	27	0	18	0	45	0	54	13	0	67	3	19	0	0	22
% App. Total	0	0	0	0	0	60	0	40	0		0	80.6	19.4	0		13.6	86.4	0	0	
PHF	.000	.000	.000	.000	.000	.563	.000	.900	.000	.662	.000	.900	.813	.000	.882	.375	.528	.000	.000	.611

**FLORIDA DEPARTMENT OF TRANSPORTATION**

**SUMMARY OF VEHICLE MOVEMENTS**

SECTION 70180000 CITY Palm Bay COUNTY Brevard  
 STATE ROUTE State Road 514 INTERSECTING ROUTE I-95 Northbound Ramps  
 OBSERVER TEDS DATE 1/5/2023 MILEPOST 2.626 - 2.641  
 WEATHER Sunny ROAD CONDITION Good  
 REMARKS \_\_\_\_\_  
 \_\_\_\_\_  
 FORM COMPLETED BY CML DATE 01/17/23



TIME	NORTHBOUND					SOUTHBOUND					TOTAL	EASTBOUND					WESTBOUND					TOTAL
	L	T	R	U	TOT	L	T	R	U	TOT		N/S	L	T	R	U	TOT	L	T	R	U	
7:00 - 8:00	100	0	125	0	225	0	0	0	0	0	225	1,307	1,496	0	0	2,803	0	690	634	0	1,324	4,127
8:00 - 9:00	93	0	115	0	208	0	0	0	0	0	208	976	1,452	0	0	2,428	0	747	472	0	1,219	3,647
11:00 - 12:00	105	0	114	0	219	0	0	0	0	0	219	598	1,259	0	3	1,860	0	1,033	376	0	1,409	3,269
12:00 - 1:00	107	0	123	0	230	0	0	0	0	0	230	598	1,280	0	4	1,882	0	1,086	388	0	1,474	3,356
2:00 - 3:00	109	0	115	0	224	0	0	0	0	0	224	591	1,287	0	1	1,879	0	1,162	419	0	1,581	3,460
3:00 - 4:00	135	0	104	0	239	0	0	0	0	0	239	612	1,487	0	0	2,099	0	1,389	492	0	1,881	3,980
4:00 - 5:00	121	0	147	0	268	0	0	0	0	0	268	591	1,481	0	2	2,074	0	1,548	476	0	2,024	4,098
5:00 - 6:00	180	0	139	0	319	0	0	0	0	0	319	605	1,369	0	2	1,976	0	1,511	455	2	1,968	3,944
<b>TOTAL</b>	<b>950</b>	<b>0</b>	<b>982</b>	<b>0</b>	<b>1,932</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,932</b>	<b>5,878</b>	<b>11,111</b>	<b>0</b>	<b>12</b>	<b>17,001</b>	<b>0</b>	<b>9,166</b>	<b>3,712</b>	<b>2</b>	<b>12,880</b>	<b>29,881</b>

<b>Percentage</b>	49%	0%	51%	0%		0%	0%	0%	0%			35%	65%	0%	0%		0%	71%	29%	0%		
<b>Average</b>	119	0	123	0	242	0	0	0	0	0		735	1,389	0	2	2,125	0	1,146	464	0	1,610	
<b>Maximum</b>	180	0	147	0		0	0	0	0			1,307	1,496	0	4		0	1,548	634	2		
<b>Minimum</b>	93	0	104	0		0	0	0	0			591	1,259	0	0		0	690	376	0		

FLORIDA DEPARTMENT OF TRANSPORTATION

**PEDESTRIAN MOVEMENT SUMMARY**

SECTION 70180000 CITY Palm Bay COUNTY Brevard  
 STATE ROUTE State Road 514 INTERSECTING ROUTE I-95 Northbound Ramps  
 OBSERVER TEDS DATE 1/5/2023

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 01/17/23

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	I-95 Northbound Ramps			I-95 Northbound Ramps			State Road 514			State Road 514			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	0	0	0	1	1	2	<u>2</u>
8:00 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	<u>0</u>
11:00 - 12:00	0	0	0	0	0	0	0	0	0	0	3	3	<u>3</u>
12:00 - 1:00	0	0	0	0	0	0	0	0	0	1	1	2	<u>2</u>
2:00 - 3:00	0	0	0	0	0	0	0	0	0	4	1	5	<u>5</u>
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	1	1	<u>1</u>
4:00 - 5:00	0	0	0	0	0	0	0	0	0	0	3	3	<u>3</u>
5:00 - 6:00	0	0	0	0	0	0	0	0	0	5	0	5	<u>5</u>
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>10</b>	<b>21</b>	<u><b>21</b></u>

FLORIDA DEPARTMENT OF TRANSPORTATION

**BICYCLE MOVEMENT SUMMARY**

SECTION 70180000 CITY Palm Bay COUNTY Brevard  
 STATE ROUTE State Road 514 INTERSECTING ROUTE I-95 Northbound Ramps  
 OBSERVER TEDS DATE 1/5/2023

REMARKS \_\_\_\_\_

FORM COMPLETED BY CML DATE 01/17/23

H O U R S	West side of			East side of			North side of			South side of			GRAND TOTAL
	I-95 Northbound Ramps			I-95 Northbound Ramps			State Road 514			State Road 514			
	NB	SB	TOTAL	NB	SB	TOTAL	EB	WB	TOTAL	EB	WB	TOTAL	
7:00 - 8:00	0	0	0	0	0	0	1	0	1	2	0	2	<u>3</u>
8:00 - 9:00	0	0	0	0	0	0	0	0	0	2	2	4	<u>4</u>
11:00 - 12:00	0	0	0	0	0	0	0	0	0	1	3	4	<u>4</u>
12:00 - 1:00	0	0	0	0	0	0	0	1	1	2	1	3	<u>4</u>
2:00 - 3:00	0	0	0	0	0	0	1	0	1	1	0	1	<u>2</u>
3:00 - 4:00	0	0	0	0	0	0	0	0	0	6	2	8	<u>8</u>
4:00 - 5:00	0	0	0	0	0	0	0	1	1	3	0	3	<u>4</u>
5:00 - 6:00	0	0	0	0	0	0	0	1	1	6	1	7	<u>8</u>
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>5</b>	<b>23</b>	<b>9</b>	<b>32</b>	<u><b>37</b></u>

Groups Printed- Passenger Vehicles - Heavy Trucks

Start Time	I-95 NORTHBOUND OFF RAMP Northbound					I-95 NORTHBOUND ON RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
07:00 AM	16	0	24	0	40	0	0	0	0	0	307	300	0	0	607	0	136	125	0	261	908
07:15 AM	24	0	39	0	63	0	0	0	0	0	354	383	0	0	737	0	162	169	0	331	1131
07:30 AM	31	0	33	0	64	0	0	0	0	0	337	388	0	0	725	0	191	189	0	380	1169
07:45 AM	29	0	29	0	58	0	0	0	0	0	309	425	0	0	734	0	201	151	0	352	1144
Total	100	0	125	0	225	0	0	0	0	0	1307	1496	0	0	2803	0	690	634	0	1324	4352
08:00 AM	25	0	35	0	60	0	0	0	0	0	336	384	0	0	720	0	200	134	0	334	1114
08:15 AM	24	0	31	0	55	0	0	0	0	0	244	376	0	0	620	0	178	111	0	289	964
08:30 AM	25	0	24	0	49	0	0	0	0	0	182	351	0	0	533	0	200	114	0	314	896
08:45 AM	19	0	25	0	44	0	0	0	0	0	214	341	0	0	555	0	169	113	0	282	881
Total	93	0	115	0	208	0	0	0	0	0	976	1452	0	0	2428	0	747	472	0	1219	3855
*** BREAK ***																					
11:00 AM	28	0	29	0	57	0	0	0	0	0	147	320	0	1	468	0	236	83	0	319	844
11:15 AM	28	0	39	0	67	0	0	0	0	0	127	307	0	0	434	0	279	91	0	370	871
11:30 AM	22	0	23	0	45	0	0	0	0	0	164	285	0	2	451	0	270	101	0	371	867
11:45 AM	27	0	23	0	50	0	0	0	0	0	160	347	0	0	507	0	248	101	0	349	906
Total	105	0	114	0	219	0	0	0	0	0	598	1259	0	3	1860	0	1033	376	0	1409	3488
12:00 PM	23	0	33	0	56	0	0	0	0	0	133	280	0	1	414	0	301	97	0	398	868
12:15 PM	32	0	34	0	66	0	0	0	0	0	159	314	0	1	474	0	246	111	0	357	897
12:30 PM	26	0	24	0	50	0	0	0	0	0	139	358	0	1	498	0	291	90	0	381	929
12:45 PM	26	0	32	0	58	0	0	0	0	0	167	328	0	1	496	0	248	90	0	338	892
Total	107	0	123	0	230	0	0	0	0	0	598	1280	0	4	1882	0	1086	388	0	1474	3586
*** BREAK ***																					
02:00 PM	24	0	27	0	51	0	0	0	0	0	137	308	0	0	445	0	269	90	0	359	855
02:15 PM	35	0	29	0	64	0	0	0	0	0	164	329	0	0	493	0	291	103	0	394	951
02:30 PM	22	0	31	0	53	0	0	0	0	0	146	331	0	1	478	0	319	106	0	425	956
02:45 PM	28	0	28	0	56	0	0	0	0	0	144	319	0	0	463	0	283	120	0	403	922
Total	109	0	115	0	224	0	0	0	0	0	591	1287	0	1	1879	0	1162	419	0	1581	3684
03:00 PM	33	0	17	0	50	0	0	0	0	0	134	365	0	0	499	0	350	116	0	466	1015
03:15 PM	35	0	30	0	65	0	0	0	0	0	156	358	0	0	514	0	341	116	0	457	1036
03:30 PM	25	0	30	0	55	0	0	0	0	0	160	346	0	0	506	0	334	139	0	473	1034
03:45 PM	42	0	27	0	69	0	0	0	0	0	162	418	0	0	580	0	364	121	0	485	1134
Total	135	0	104	0	239	0	0	0	0	0	612	1487	0	0	2099	0	1389	492	0	1881	4219
04:00 PM	29	0	27	0	56	0	0	0	0	0	155	369	0	0	524	0	387	111	0	498	1078
04:15 PM	25	0	33	0	58	0	0	0	0	0	141	369	0	0	510	0	389	114	0	503	1071
04:30 PM	31	0	42	0	73	0	0	0	0	0	156	401	0	0	557	0	368	123	0	491	1121
04:45 PM	36	0	45	0	81	0	0	0	0	0	139	342	0	2	483	0	404	128	0	532	1096
Total	121	0	147	0	268	0	0	0	0	0	591	1481	0	2	2074	0	1548	476	0	2024	4366
05:00 PM	44	0	32	0	76	0	0	0	0	0	164	365	0	0	529	0	405	116	1	522	1127
05:15 PM	51	0	44	0	95	0	0	0	0	0	145	323	0	0	468	0	388	120	1	509	1072
05:30 PM	42	0	26	0	68	0	0	0	0	0	149	349	0	0	498	0	370	129	0	499	1065
05:45 PM	43	0	37	0	80	0	0	0	0	0	147	332	0	2	481	0	348	90	0	438	999
Total	180	0	139	0	319	0	0	0	0	0	605	1369	0	2	1976	0	1511	455	2	1968	4263
Grand Total	950	0	982	0	1932	0	0	0	0	0	5878	11111	0	12	17001	0	9166	3712	2	12880	31813
Apprch %	49.2	0	50.8	0		0	0	0	0	0	34.6	65.4	0	0.1		0	71.2	28.8	0		
Total %	3	0	3.1	0	6.1	0	0	0	0	0	18.5	34.9	0	0	53.4	0	28.8	11.7	0	40.5	
Passenger Vehicles	874	0	932	0	1806	0	0	0	0	0	5725	10904	0	12	16641	0	9033	3566	2	12601	31048
% Passenger Vehicles	92	0	94.9	0	93.5	0	0	0	0	0	97.4	98.1	0	100	97.9	0	98.5	96.1	100	97.8	97.6
Heavy Trucks	76	0	50	0	126	0	0	0	0	0	153	207	0	0	360	0	133	146	0	279	765
% Heavy Trucks	8	0	5.1	0	6.5	0	0	0	0	0	2.6	1.9	0	0	2.1	0	1.5	3.9	0	2.2	2.4

Stanley Consultants, Inc.

File Name : SR 514 at I-95 NB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 1/5/2023

Page No : 2

Start Time	I-95 NORTHBOUND OFF RAMP Northbound					I-95 NORTHBOUND ON RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	24	0	<b>39</b>	0	63	0	0	0	0	0	<b>354</b>	383	0	0	<b>737</b>	0	162	169	0	331	1131
07:30 AM	<b>31</b>	0	33	0	<b>64</b>	0	0	0	0	0	337	388	0	0	725	0	191	<b>189</b>	0	<b>380</b>	<b>1169</b>
07:45 AM	29	0	29	0	58	0	0	0	0	0	309	<b>425</b>	0	0	734	0	<b>201</b>	151	0	352	1144
08:00 AM	25	0	35	0	60	0	0	0	0	0	336	384	0	0	720	0	200	134	0	334	1114
Total Volume	109	0	136	0	245	0	0	0	0	0	1336	1580	0	0	2916	0	754	643	0	1397	4558
% App. Total	44.5	0	55.5	0		0	0	0	0	0	45.8	54.2	0	0		0	54	46	0		
PHF	.879	.000	.872	.000	.957	.000	.000	.000	.000	.000	.944	.929	.000	.000	.989	.000	.938	.851	.000	.919	.975
Passenger Vehicles	99	0	131	0	230	0	0	0	0	0	1317	1555	0	0	2872	0	728	617	0	1345	4447
% Passenger Vehicles	90.8	0	96.3	0	93.9	0	0	0	0	0	98.6	98.4	0	0	98.5	0	96.6	96.0	0	96.3	97.6
Heavy Trucks	10	0	5	0	15	0	0	0	0	0	19	25	0	0	44	0	26	26	0	52	111
% Heavy Trucks	9.2	0	3.7	0	6.1	0	0	0	0	0	1.4	1.6	0	0	1.5	0	3.4	4.0	0	3.7	2.4

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM					07:00 AM					07:15 AM					07:15 AM					
+0 mins.	24	0	<b>39</b>	0	63	0	0	0	0	0	<b>354</b>	383	0	0	<b>737</b>	0	162	169	0	331	1131
+15 mins.	<b>31</b>	0	33	0	<b>64</b>	0	0	0	0	0	337	388	0	0	725	0	191	<b>189</b>	0	<b>380</b>	<b>1169</b>
+30 mins.	29	0	29	0	58	0	0	0	0	0	309	<b>425</b>	0	0	734	0	<b>201</b>	151	0	352	1144
+45 mins.	25	0	35	0	60	0	0	0	0	0	336	384	0	0	720	0	200	134	0	334	1114
Total Volume	109	0	136	0	245	0	0	0	0	0	1336	1580	0	0	2916	0	754	643	0	1397	4558
% App. Total	44.5	0	55.5	0		0	0	0	0	0	45.8	54.2	0	0		0	54	46	0		
PHF	.879	.000	.872	.000	.957	.000	.000	.000	.000	.000	.944	.929	.000	.000	.989	.000	.938	.851	.000	.919	.975
Passenger Vehicles	99	0	131	0	230	0	0	0	0	0	131	155	0	0	2872	0	728	617	0	1345	4447
% Passenger Vehicles	90.8	0	96.3	0	93.9	0	0	0	0	0	98.6	98.4	0	0	98.5	0	96.6	96	0	96.3	97.6
Heavy Trucks	10	0	5	0	15	0	0	0	0	0	19	25	0	0	44	0	26	26	0	52	111
% Heavy Trucks	9.2	0	3.7	0	6.1	0	0	0	0	0	1.4	1.6	0	0	1.5	0	3.4	4	0	3.7	2.4

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:45 AM

11:45 AM	27	0	23	0	50	0	0	0	0	0	<b>160</b>	347	0	0	<b>507</b>	0	248	101	0	349	906
12:00 PM	23	0	33	0	56	0	0	0	0	0	133	280	0	<b>1</b>	414	0	<b>301</b>	97	0	<b>398</b>	868
12:15 PM	<b>32</b>	0	<b>34</b>	0	<b>66</b>	0	0	0	0	0	159	314	0	1	474	0	246	<b>111</b>	0	357	897
12:30 PM	26	0	24	0	50	0	0	0	0	0	139	<b>358</b>	0	1	498	0	291	90	0	381	<b>929</b>
Total Volume	108	0	114	0	222	0	0	0	0	0	591	1299	0	3	1893	0	1086	399	0	1485	3600
% App. Total	48.6	0	51.4	0		0	0	0	0	0	31.2	68.6	0	0.2		0	73.1	26.9	0		
PHF	.844	.000	.838	.000	.841	.000	.000	.000	.000	.000	.923	.907	.000	.750	.933	.000	.902	.899	.000	.933	.969
Passenger Vehicles	91	0	108	0	199	0	0	0	0	0	568	1270	0	3	1841	0	1061	379	0	1440	3480
% Passenger Vehicles	84.3	0	94.7	0	89.6	0	0	0	0	0	96.1	97.8	0	100	97.3	0	97.7	95.0	0	97.0	96.7
Heavy Trucks	17	0	6	0	23	0	0	0	0	0	23	29	0	0	52	0	25	20	0	45	120
% Heavy Trucks	15.7	0	5.3	0	10.4	0	0	0	0	0	3.9	2.2	0	0	2.7	0	2.3	5.0	0	3.0	3.3

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					10:00 AM					11:45 AM					11:15 AM					
+0 mins.	23	0	33	0	56	0	0	0	0	0	<b>160</b>	347	0	0	<b>507</b>	0	279	91	0	370	906
+15 mins.	<b>32</b>	0	<b>34</b>	0	<b>66</b>	0	0	0	0	0	133	280	0	<b>1</b>	414	0	270	<b>101</b>	0	371	868
+30 mins.	26	0	24	0	50	0	0	0	0	0	159	314	0	1	474	0	248	101	0	349	897
+45 mins.	26	0	32	0	58	0	0	0	0	0	139	<b>358</b>	0	1	498	0	<b>301</b>	97	0	<b>398</b>	929
Total Volume	107	0	123	0	230	0	0	0	0	0	591	1299	0	3	1893	0	1098	390	0	1488	3600
% App. Total	46.5	0	53.5	0		0	0	0	0	0	31.2	68.6	0	0.2		0	73.8	26.2	0		
PHF	.836	.000	.904	.000	.871	.000	.000	.000	.000	.000	.923	.907	.000	.750	.933	.000	.912	.965	.000	.935	.969
Passenger Vehicles	90	0	115	0	205	0	0	0	0	0	568	1270	0	3	1841	0	1086	399	0	1448	3600
% Passenger Vehicles	84.1	0	93.5	0	89.1	0	0	0	0	0	96.1	97.8	0	100	97.3	0	98.4	94.4	0	97.3	96.7
Heavy Trucks	17	0	8	0	25	0	0	0	0	0	23	29	0	0	52	0	18	22	0	40	120
% Heavy Trucks	15.9	0	6.5	0	10.9	0	0	0	0	0	3.9	2.2	0	0	2.7	0	1.6	5.6	0	2.7	3.3

Stanley Consultants, Inc.

File Name : SR 514 at I-95 NB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 1/5/2023

Page No : 3

Start Time	I-95 NORTHBOUND OFF RAMP Northbound					I-95 NORTHBOUND ON RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	31	0	42	0	73	0	0	0	0	0	156	<b>401</b>	0	0	<b>557</b>	0	368	123	0	491	1121
04:45 PM	36	0	<b>45</b>	0	81	0	0	0	0	0	139	342	0	<b>2</b>	483	0	404	<b>128</b>	0	<b>532</b>	1096
05:00 PM	44	0	32	0	76	0	0	0	0	0	<b>164</b>	365	0	0	529	0	<b>405</b>	116	<b>1</b>	522	<b>1127</b>
05:15 PM	<b>51</b>	0	44	0	<b>95</b>	0	0	0	0	0	145	323	0	0	468	0	388	120	1	509	1072
Total Volume	162	0	163	0	325	0	0	0	0	0	604	1431	0	2	2037	0	1565	487	2	2054	4416
% App. Total	49.8	0	50.2	0		0	0	0	0		29.7	70.3	0	0.1		0	76.2	23.7	0.1		
PHF	.794	.000	.906	.000	.855	.000	.000	.000	.000	.000	.921	.892	.000	.250	.914	.000	.966	.951	.500	.965	.980
Passenger Vehicles	160	0	157	0	317	0	0	0	0	0	589	1411	0	2	2002	0	1555	478	2	2035	4354
% Passenger Vehicles	98.8	0	96.3	0	97.5	0	0	0	0	0	97.5	98.6	0	100	98.3	0	99.4	98.2	100	99.1	98.6
Heavy Trucks	2	0	6	0	8	0	0	0	0	0	15	20	0	0	35	0	10	9	0	19	62
% Heavy Trucks	1.2	0	3.7	0	2.5	0	0	0	0	0	2.5	1.4	0	0	1.7	0	0.6	1.8	0	0.9	1.4

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM					02:00 PM					03:45 PM					04:45 PM				
+0 mins.	31	0	42	0	73	0	0	0	0	0	<b>162</b>	<b>418</b>	0	0	<b>580</b>	0	404	128	0	<b>532</b>
+15 mins.	36	0	<b>45</b>	0	81	0	0	0	0	0	155	369	0	0	524	0	<b>405</b>	116	<b>1</b>	522
+30 mins.	44	0	32	0	76	0	0	0	0	0	141	369	0	0	510	0	388	120	1	509
+45 mins.	<b>51</b>	0	44	0	<b>95</b>	0	0	0	0	0	156	401	0	0	557	0	370	<b>129</b>	0	499
Total Volume	162	0	163	0	325	0	0	0	0	0	614	1557	0	0	2171	0	1567	493	2	2062
% App. Total	49.8	0	50.2	0		0	0	0	0		28.3	71.7	0	0		0	76	23.9	0.1	
PHF	.794	.000	.906	.000	.855	.000	.000	.000	.000	.000	.948	.931	.000	.000	.936	.000	.967	.955	.500	.969
Passenger Vehicles	160	0	157	0	317	0	0	0	0	0	598	1530	0	0	2128	0	1560	481	2	2043
% Passenger Vehicles	98.8	0	96.3	0	97.5	0	0	0	0	0	97.4	98.3	0	0	98	0	99.6	97.6	100	99.1
Heavy Trucks	2	0	6	0	8	0	0	0	0	0	16	27	0	0	43	0	7	12	0	19
% Heavy Trucks	1.2	0	3.7	0	2.5	0	0	0	0	0	2.6	1.7	0	0	2	0	0.4	2.4	0	0.9

Stanley Consultants, Inc.

File Name : SR 514 at I-95 NB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 1/5/2023

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Groups Printed- Heavy Trucks

Start Time	I-95 NORTHBOUND OFF RAMP Northbound					I-95 NORTHBOUND ON RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
07:00 AM	5	0	1	0	6	0	0	0	0	0	4	6	0	0	10	0	4	3	0	7	23
07:15 AM	1	0	3	0	4	0	0	0	0	0	6	4	0	0	10	0	6	6	0	12	26
07:30 AM	3	0	0	0	3	0	0	0	0	0	0	4	0	0	4	0	5	6	0	11	18
07:45 AM	4	0	2	0	6	0	0	0	0	0	6	8	0	0	14	0	6	8	0	14	34
Total	13	0	6	0	19	0	0	0	0	0	16	22	0	0	38	0	21	23	0	44	101
08:00 AM	2	0	0	0	2	0	0	0	0	0	7	9	0	0	16	0	9	6	0	15	33
08:15 AM	3	0	3	0	6	0	0	0	0	0	3	12	0	0	15	0	2	5	0	7	28
08:30 AM	3	0	2	0	5	0	0	0	0	0	2	5	0	0	7	0	5	5	0	10	22
08:45 AM	2	0	1	0	3	0	0	0	0	0	6	8	0	0	14	0	2	2	0	4	21
Total	10	0	6	0	16	0	0	0	0	0	18	34	0	0	52	0	18	18	0	36	104
*** BREAK ***																					
11:00 AM	1	0	5	0	6	0	0	0	0	0	1	5	0	0	6	0	2	9	0	11	23
11:15 AM	1	0	1	0	2	0	0	0	0	0	7	8	0	0	15	0	6	4	0	10	27
11:30 AM	2	0	0	0	2	0	0	0	0	0	6	9	0	0	15	0	5	5	0	10	27
11:45 AM	2	0	1	0	3	0	0	0	0	0	3	7	0	0	10	0	4	7	0	11	24
Total	6	0	7	0	13	0	0	0	0	0	17	29	0	0	46	0	17	25	0	42	101
12:00 PM	7	0	0	0	7	0	0	0	0	0	5	6	0	0	11	0	3	6	0	9	27
12:15 PM	3	0	4	0	7	0	0	0	0	0	8	10	0	0	18	0	10	4	0	14	39
12:30 PM	5	0	1	0	6	0	0	0	0	0	7	6	0	0	13	0	8	3	0	11	30
12:45 PM	2	0	3	0	5	0	0	0	0	0	6	9	0	0	15	0	6	8	0	14	34
Total	17	0	8	0	25	0	0	0	0	0	26	31	0	0	57	0	27	21	0	48	130
*** BREAK ***																					
02:00 PM	2	0	3	0	5	0	0	0	0	0	5	2	0	0	7	0	7	5	0	12	24
02:15 PM	3	0	3	0	6	0	0	0	0	0	10	5	0	0	15	0	2	2	0	4	25
02:30 PM	1	0	3	0	4	0	0	0	0	0	10	7	0	0	17	0	2	4	0	6	27
02:45 PM	3	0	1	0	4	0	0	0	0	0	4	10	0	0	14	0	2	5	0	7	25
Total	9	0	10	0	19	0	0	0	0	0	29	24	0	0	53	0	13	16	0	29	101
03:00 PM	5	0	0	0	5	0	0	0	0	0	6	9	0	0	15	0	3	3	0	6	26
03:15 PM	5	0	0	0	5	0	0	0	0	0	5	3	0	0	8	0	10	6	0	16	29
03:30 PM	2	0	3	0	5	0	0	0	0	0	7	6	0	0	13	0	6	2	0	8	26
03:45 PM	1	0	2	0	3	0	0	0	0	0	2	8	0	0	10	0	3	11	0	14	27
Total	13	0	5	0	18	0	0	0	0	0	20	26	0	0	46	0	22	22	0	44	108
04:00 PM	2	0	1	0	3	0	0	0	0	0	4	7	0	0	11	0	2	6	0	8	22
04:15 PM	2	0	0	0	2	0	0	0	0	0	4	8	0	0	12	0	0	2	0	2	16
04:30 PM	0	0	2	0	2	0	0	0	0	0	6	4	0	0	10	0	4	0	0	4	16
04:45 PM	1	0	2	0	3	0	0	0	0	0	4	6	0	0	10	0	2	7	0	9	22
Total	5	0	5	0	10	0	0	0	0	0	18	25	0	0	43	0	8	15	0	23	76
05:00 PM	1	0	2	0	3	0	0	0	0	0	2	7	0	0	9	0	2	2	0	4	16
05:15 PM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	6	0	2	0	0	2	8
05:30 PM	1	0	0	0	1	0	0	0	0	0	3	2	0	0	5	0	1	3	0	4	10
05:45 PM	1	0	1	0	2	0	0	0	0	0	1	4	0	0	5	0	2	1	0	3	10
Total	3	0	3	0	6	0	0	0	0	0	9	16	0	0	25	0	7	6	0	13	44
Grand Total	76	0	50	0	126	0	0	0	0	0	153	207	0	0	360	0	133	146	0	279	765
Apprch %	60.3	0	39.7	0		0	0	0	0		42.5	57.5	0	0		0	47.7	52.3	0		
Total %	9.9	0	6.5	0	16.5	0	0	0	0		20	27.1	0	0	47.1	0	17.4	19.1	0	36.5	

Stanley Consultants, Inc.

File Name : SR 514 at I-95 NB Ramps TMC (8-hr)

Site Code : 00000000

Start Date : 1/5/2023

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Start Time	I-95 NORTHBOUND OFF RAMP Northbound					I-95 NORTHBOUND ON RAMP Southbound					STATE ROAD 514 Eastbound					STATE ROAD 514 Westbound					Int. Total
	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	4	0	2	0	6	0	0	0	0	0	6	8	0	0	14	0	6	8	0	14	34
08:00 AM	2	0	0	0	2	0	0	0	0	0	7	9	0	0	16	0	9	6	0	15	33
08:15 AM	3	0	3	0	6	0	0	0	0	0	3	12	0	0	15	0	2	5	0	7	28
08:30 AM	3	0	2	0	5	0	0	0	0	0	2	5	0	0	7	0	5	5	0	10	22
Total Volume	12	0	7	0	19	0	0	0	0	0	18	34	0	0	52	0	22	24	0	46	117
% App. Total	63.2	0	36.8	0		0	0	0	0		34.6	65.4	0	0		0	47.8	52.2	0		
PHF	.750	.000	.583	.000	.792	.000	.000	.000	.000	.000	.643	.708	.000	.000	.813	.000	.611	.750	.000	.767	.860

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:45 AM					07:15 AM									
+0 mins.	5	0	1	0	6	0	0	0	0	0	6	8	0	0	14	0	6	6	0	12
+15 mins.	1	0	3	0	4	0	0	0	0	0	7	9	0	0	16	0	5	6	0	11
+30 mins.	3	0	0	0	3	0	0	0	0	0	3	12	0	0	15	0	6	8	0	14
+45 mins.	4	0	2	0	6	0	0	0	0	0	2	5	0	0	7	0	9	6	0	15
Total Volume	13	0	6	0	19	0	0	0	0	0	18	34	0	0	52	0	26	26	0	52
% App. Total	68.4	0	31.6	0		0	0	0	0		34.6	65.4	0	0		0	50	50	0	
PHF	.650	.000	.500	.000	.792	.000	.000	.000	.000	.000	.643	.708	.000	.000	.813	.000	.722	.813	.000	.867

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:00 PM

12:00 PM	7	0	0	0	7	0	0	0	0	0	5	6	0	0	11	0	3	6	0	9	27
12:15 PM	3	0	4	0	7	0	0	0	0	0	8	10	0	0	18	0	10	4	0	14	39
12:30 PM	5	0	1	0	6	0	0	0	0	0	7	6	0	0	13	0	8	3	0	11	30
12:45 PM	2	0	3	0	5	0	0	0	0	0	6	9	0	0	15	0	6	8	0	14	34
Total Volume	17	0	8	0	25	0	0	0	0	0	26	31	0	0	57	0	27	21	0	48	130
% App. Total	68	0	32	0		0	0	0	0		45.6	54.4	0	0		0	56.2	43.8	0		
PHF	.607	.000	.500	.000	.893	.000	.000	.000	.000	.000	.813	.775	.000	.000	.792	.000	.675	.656	.000	.857	.833

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					10:00 AM					12:00 PM									
+0 mins.	7	0	0	0	7	0	0	0	0	0	5	6	0	0	11	0	3	6	0	9
+15 mins.	3	0	4	0	7	0	0	0	0	0	8	10	0	0	18	0	10	4	0	14
+30 mins.	5	0	1	0	6	0	0	0	0	0	7	6	0	0	13	0	8	3	0	11
+45 mins.	2	0	3	0	5	0	0	0	0	0	6	9	0	0	15	0	6	8	0	14
Total Volume	17	0	8	0	25	0	0	0	0	0	26	31	0	0	57	0	27	21	0	48
% App. Total	68	0	32	0		0	0	0	0		45.6	54.4	0	0		0	56.2	43.8	0	
PHF	.607	.000	.500	.000	.893	.000	.000	.000	.000	.000	.813	.775	.000	.000	.792	.000	.675	.656	.000	.857

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	5	0	0	0	5	0	0	0	0	0	6	9	0	0	15	0	3	3	0	6	26
03:15 PM	5	0	0	0	5	0	0	0	0	0	5	3	0	0	8	0	10	6	0	16	29
03:30 PM	2	0	3	0	5	0	0	0	0	0	7	6	0	0	13	0	6	2	0	8	26
03:45 PM	1	0	2	0	3	0	0	0	0	0	2	8	0	0	10	0	3	11	0	14	27
Total Volume	13	0	5	0	18	0	0	0	0	0	20	26	0	0	46	0	22	22	0	44	108
% App. Total	72.2	0	27.8	0		0	0	0	0		43.5	56.5	0	0		0	50	50	0		
PHF	.650	.000	.417	.000	.900	.000	.000	.000	.000	.000	.714	.722	.000	.000	.767	.000	.550	.500	.000	.688	.931

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM					02:00 PM					02:15 PM									
+0 mins.	2	0	3	0	5	0	0	0	0	0	10	5	0	0	15	0	10	6	0	16
+15 mins.	3	0	3	0	6	0	0	0	0	0	10	7	0	0	17	0	6	2	0	8
+30 mins.	1	0	3	0	4	0	0	0	0	0	4	10	0	0	14	0	3	11	0	14
+45 mins.	3	0	1	0	4	0	0	0	0	0	6	9	0	0	15	0	2	6	0	8
Total Volume	9	0	10	0	19	0	0	0	0	0	30	31	0	0	61	0	21	25	0	46
% App. Total	47.4	0	52.6	0		0	0	0	0		49.2	50.8	0	0		0	45.7	54.3	0	
PHF	.750	.000	.833	.000	.792	.000	.000	.000	.000	.000	.750	.775	.000	.000	.897	.000	.525	.568	.000	.719