

Draft
Project Traffic Analysis Report (PTAR)

SR 70
Project Development and Environment (PD&E) Study
From West of S Jefferson Avenue to East of CR 29

Highlands County, Florida

FPID 414506-1-22-01

FAP No. 1502-018-P

Prepared for:



Florida Department of Transportation
District One

Prepared for:

FDOT District One

801 N Broadway Avenue

Bartow, Florida 33830

June 2026

The environmental review, consultation, and other actions required by applicable federal environmental laws for the project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and FDOT.

PROFESSIONAL ENGINEER CERTIFICATE

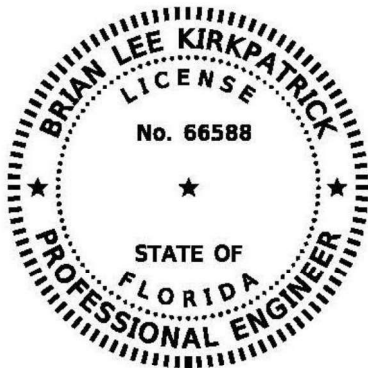
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PROJECT: State Road 70 from West of Jefferson to CR 29 PD&E Study
Project Traffic Analysis Report (PTAR)

LOCATION: Highlands County, Florida

FPID-NUMBER: 414506-1-22-01

This report contains a summary of data collection efforts, safety analysis, operational analysis, discussion of Build Alternatives, and summary of conclusions. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.



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EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) District One is conducting a Project Development and Environment (PD&E) study along State Road 70 (SR 70) in Highlands County to evaluate roadway and safety improvements along the corridor. The study limits extend for 7.027 miles from west of South Jefferson Avenue to east of CR 29 in Highlands County. The study will evaluate the effects of widening this section of SR 70 from a two-lane undivided roadway to a four-lane divided roadway and will also assess existing and future traffic operations, access management, and freight mobility.

The PD&E study is supported by preliminary engineering design activities and will determine the proposed Build Alternative, which will be depicted on typical roadway sections and conceptual design plans. The Build Alternative and the No-Build, or “no action,” alternative will be evaluated and compared to assess potential effects to the natural and physical environment, to determine their ability to meet the project’s Purpose and Need, to obtain and consider agency and public comments, and to ensure compliance with all applicable federal and state laws. The proposed Build Alternative will include the construction of stormwater management facilities (SMFs) and floodplain compensation (FPC) sites. The No-Build Alternative maintains the current 2-lane undivided typical section. A Type 2 Categorical Exclusion (Type 2 CE) is being prepared as the environmental document for this study.

This Project Traffic Analysis Report was prepared to evaluate the traffic operations and safety of the future No-Build condition and the future Build condition (roadway widening and intersection improvements). Intersection Control Evaluation (ICE) was conducted at two intersections within the study area to determine the preferred future control type and configuration in terms of safety and overall operations.

As a result of the ICE analysis, it is recommended that SR 70 and US 27 be converted into a Median U-Turn (MUT) and a traffic signal is recommended at the re-aligned intersection at Old SR 8.

A Highway Safety Manual based safety analysis indicates that the proposed Build improvements would reduce crashes when compared with the No-Build Alternative. Over the project’s 20-year design life, the Build Alternative is expected to result in lower fatal and injury crashes as well as fewer property-damage-only crashes, yielding an estimated present value benefit of approximately \$44 million. The proposed Build Alternative design concept, which may be refined as the project advances, is included in **Appendix K**.

TABLE OF CONTENTS

SECTION 1	Introduction.....	1-1
1.1	Project Description.....	1-1
1.2	Project Purpose and Need.....	1-3
1.3	Existing Facility and Proposed Improvements.....	1-5
1.3.1	Existing Typical Section.....	1-5
1.4	Proposed Improvements.....	1-7
1.4.1	Segment A – MP 10.217 to MP 12.349.....	1-7
1.4.2	Segment B – MP 12.349 to MP 15.090.....	1-8
1.4.3	Segment C - MP 15.090 to MP 17.245.....	1-9
1.5	Purpose of this Report.....	1-11
SECTION 2	Methodology.....	2-1
2.1	Area of Influence.....	2-1
2.2	Analysis Years.....	2-1
2.3	Data Collection.....	2-2
2.3.1	4-hour Turning Movement Counts.....	2-2
2.3.2	48-hour Vehicle Volume Counts.....	2-3
2.3.3	Florida Traffic Online (FTO) Historical AADT Counts.....	2-3
2.3.4	Intersection Geometry and Signal Timings.....	2-6
2.4	Traffic Factors and Characteristics.....	2-6
2.5	Level of Service Target.....	2-8
2.6	Analysis Procedures.....	2-8
SECTION 3	Existing Conditions Analysis.....	3-1
3.1	Existing Conditions (2022).....	3-1
3.2	Existing Year (2022) Intersection Analysis.....	3-7
3.3	Existing Year (2022) Roadway Segment LOS.....	3-12
3.4	Crash History.....	3-13
3.4.1	Overall Crash Statistics.....	3-13
3.4.2	Summary of All Fatal Crashes.....	3-21
SECTION 4	Future Traffic Forecasting.....	4-1
4.1	Alternatives.....	4-1
4.1.1	No-Build Alternative.....	4-1
4.1.2	Build Alternative.....	4-1
4.2	Travel Demand Modeling (TDM).....	4-1
4.3	Development of Design Year (2052) Traffic Volumes.....	4-2
4.3.1	Selection of Growth Rates.....	4-2
4.3.2	Design Year (2052) Annual Average Daily Traffic (AADT) Volumes.....	4-4
4.3.3	Design Year (2052) Directional Design Hour Volumes (DDHVs) and Turning Movement Volumes.....	4-10
4.3.4	Opening Year (2032) Annual Average Daily Traffic (AADT) Volumes.....	4-10
4.3.5	Opening Year (2032) Directional Design Hour Volumes (DDHVs) and Turning Movement Volumes.....	4-16
SECTION 5	Evaluation of Design Year Operations.....	5-1
5.1	Design Year (2052) No-Build Alternative Intersection Analysis.....	5-1

5.2	Design Year (2052) No-Build Alternative Roadway Segment LOS.....	5-9
5.3	Design Year (2052) Build Alternative Intersection Analysis	5-9
5.4	Design Year (2052) ICE Analysis.....	5-21
5.5	Design Year (2052) Build Alternative Roadway Segment LOS.....	5-23
5.6	HSM Predictive Safety Analysis	5-24
5.6.1	No-Build HSM Analysis	5-24
5.6.2	Build Alternative HSM Analysis.....	5-25
5.6.3	Median U-Turn (MUT) Crash Modification Factors	5-26
5.6.4	HSM Analysis Results Comparison.....	5-27
SECTION 6	Evaluation of Opening Year Operations	6-1
6.1	Opening Year (2032) No-Build Alternative Intersection Analysis.....	6-1
6.2	Opening Year (2032) Build Alternative Intersection Analysis	6-9
SECTION 7	Conclusions and Recommendations	7-19

LIST OF FIGURES

Figure 1-1: Project Location Map	1-2
Figure 1-2: Existing Typical Section	1-6
Figure 1-3: Segment A Preferred Alternative Typical Section	1-8
Figure 1-4: Segment B Preferred Alternative Typical Section	1-9
Figure 1-5: Segment C Preferred Alternative Typical Section without Canal (MP 15.090 to MP 16.845)	1-10
Figure 1-6: Segment C Preferred Typical Section with Canal (MP 16.845 to MP 17.245).....	1-10
Figure 2-1: Traffic Data Collection Map.....	2-4
Figure 3-1: Existing Year (2022) Lane Configurations & AADTs.....	3-3
Figure 3-2: Existing Year (2022) Hourly AM (PM) Volumes.....	3-5
Figure 3-3: 5-Year Historical Crash Severities Map	3-16
Figure 3-4: 5-Year Historical Crash Types Map.....	3-18
Figure 3-5: 5-Year Historical Crash Heat Map	3-20
Figure 4-1: Design Year (2052) No-Build Lane Configurations & AADTs	4-6
Figure 4-2: Design Year (2052) Build Lane Configurations & AADTs	4-8
Figure 4-3: Opening Year (2032) No-Build Lane Configurations & AADTs	4-12
Figure 4-4: Opening Year (2032) Build Lane Configurations & AADTs	4-14
Figure 5-1: Design Year (2052) No-Build Hourly AM (PM) Volumes	5-2
Figure 5-2: Design Year (2052) Build Hourly AM (PM) Volumes	5-11
Figure 6-1: Opening Year (2032) No-Build Hourly AM (PM) Volumes	6-2
Figure 6-2: Opening Year (2032) Build Hourly AM (PM) Volumes	6-10

LIST OF TABLES

Table 2-1: Existing Year (2022) Traffic Factors	2-6
Table 3-1: Existing Year (2022) SR 70 AADT Development	3-1
Table 3-2: Existing Year (2022) Cross Street AADT Development	3-2
Table 3-3: Existing Year (2022) Overall Intersection Operations	3-7
Table 3-4: Existing Year (2022) AM Peak Hour Intersection Operations	3-8
Table 3-5: Existing Year (2022) PM Peak Hour Intersection Operations.....	3-10
Table 3-6: Existing Year (2022) Roadway Segment LOS	3-12
Table 3-7: 5-Year Historical Crash Data, by Severity (2021-2025)	3-13
Table 3-8: 5-Year Historical Crash Data, by Type and Severity (2021-2025).....	3-14
Table 3-9: 5-Year Historical Crash Data, by Condition and Severity (2021-2025).....	3-14
Table 3-10: Roadway Segment Crash Rates (2021-2025)	3-15
Table 4-1: SR 70 from Placid Lakes Boulevard/S Jefferson Avenue to East of CR 29 Growth Rates ...	4-3
Table 4-2: Design Year (2052) AADT Volume Development	4-5
Table 4-3: Opening Year (2032) AADT Volume Development.....	4-11
Table 5-1: Design Year (2052) No-Build Overall Intersection Operations.....	5-4
Table 5-2: Design Year (2052) No-Build AM Peak Hour Intersection Operations	5-5
Table 5-3: Design Year (2052) No-Build PM Peak Hour Intersection Operations	5-7
Table 5-4: Design Year (2052) No-Build Roadway Segment LOS.....	5-9
Table 5-5: Design Year (2052) Build Overall Intersection Operations.....	5-13
Table 5-6: Design Year (2052) Build AM Peak Hour Intersection Operations	5-14
Table 5-7: Design Year (2052) Build PM Peak Hour Intersection Operations	5-17
Table 5-8: Build Alternative Recommended Turn Lane Lengths	5-20
Table 5-9: Design Year (2052) Build Alternative Stage One ICE Summary	5-22
Table 5-10: Design Year (2052) Build Alternative Stage Two ICE Summary	5-22
Table 5-11: Design Year (2052) Build Alternative Roadway Segment LOS.....	5-23
Table 5-12: No-Build HSM Analysis Segmentation.....	5-24
Table 5-13: No-Build HSM Analysis Results (2032-2052)	5-25
Table 5-14: Build Alternative HSM Analysis Segmentation.....	5-25
Table 5-15: Build Alternative HSM Analysis Results (2032-2052)	5-26
Table 5-16: CMF Clearinghouse – Convert intersection to median U-turn (MUT) intersection	5-26
Table 5-17: HSM Analysis Overall Results Comparison.....	5-27
Table 6-1: Opening Year (2032) No-Build Alternative Intersection Analysis Summary	6-4
Table 6-2: Opening Year (2032) No-Build Alternative AM Peak Hour Operations.....	6-5
Table 6-3: Opening Year (2032) No-Build Alternative PM Peak Hour Operations	6-7
Table 6-4: Opening Year (2032) Build Alternative Intersection Analysis Summary	6-12
Table 6-5: Opening Year (2032) Build AM Peak Hour Intersection Operations	6-13
Table 6-6: Opening Year (2032) Build PM Peak Hour Intersection Operations	6-16

APPENDICES

Appendix A	SR 70 PD&E Study: Design Traffic Technical Memorandum
Appendix B	Raw Traffic Data and Adjustment Factor Reports
Appendix C	US 27 Signalization Plans
Appendix D	Existing Year (2022) Synchro Analysis
Appendix E	Raw Crash Data and Serious Crash Summaries
Appendix F	SR 70 Traffic Forecast Modeling Technical Memorandum
Appendix G	Highlands County BEBR, Florida Traffic Online (FTO) Historical AADTs, & Trends Analysis
Appendix H	No-Build (2052) Synchro Analysis
Appendix I	Build (2052) Synchro Analysis
Appendix J	Supporting ICE Material
Appendix K	Roadway Concepts
Appendix L	Highway Safety Manual (HSM) Analysis Documentation
Appendix M	No-Build (2032) Synchro Analysis
Appendix N	Build (2032) Synchro Analysis
Appendix O	Target Speed and Context Classification Memorandums

All appendices are provided electronically.

SECTION 1 INTRODUCTION

1.1 PROJECT DESCRIPTION

Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate options for widening State Road (S.R.) 70 in Highlands County. The project limits cover approximately seven miles of S.R. 70 beginning west of Jefferson Avenue/Placid Lakes Boulevard (Milepost (MP) 10.217) and ending at County Road (C.R.) 29 (MP 17.245). Due to the length of the corridor and differing existing right-of-way (ROW) widths, the project was divided into three (3) segments to aid in the description of the corridor, the project limits and segments are shown in **Figure 1-1**. S.R. 70 is a Strategic Intermodal System (SIS) facility with daily truck percentages as high as 33% and it is a designated emergency evacuation route. The PD&E study limits have been divided into two Design segments due to concurrent PD&E and Design phases, with U.S. 27 as the break line. 414506-3 is west of U.S. 27 and 414506-4 is east of U.S. 27.

The objective of the PD&E study is to evaluate widening the existing two-lane undivided roadway to a four-lane divided roadway. Project improvements will include wildlife crossing features, roadway signing and pavement markings, a shared use path, and the construction of stormwater management facilities, including treatment ponds and floodplain compensation sites.

The project was evaluated through FDOT's Efficient Transportation Decision Making (ETDM) process as project #3054. An ETDM Programming Screen Summary Report containing comments from the Environmental Technical Advisory Team (ETAT) was published on July 7, 2016. The ETAT evaluated the project's effects on various social, cultural, natural, and physical resources.

Upon completion, the study will meet all requirements of the National Environmental Policy Act of 1969 (NEPA) as administered for the FDOT by the FDOT Office of Environmental Management (OEM) and the requirements of other federal and state laws to qualify the proposed project for federal-aid funding.

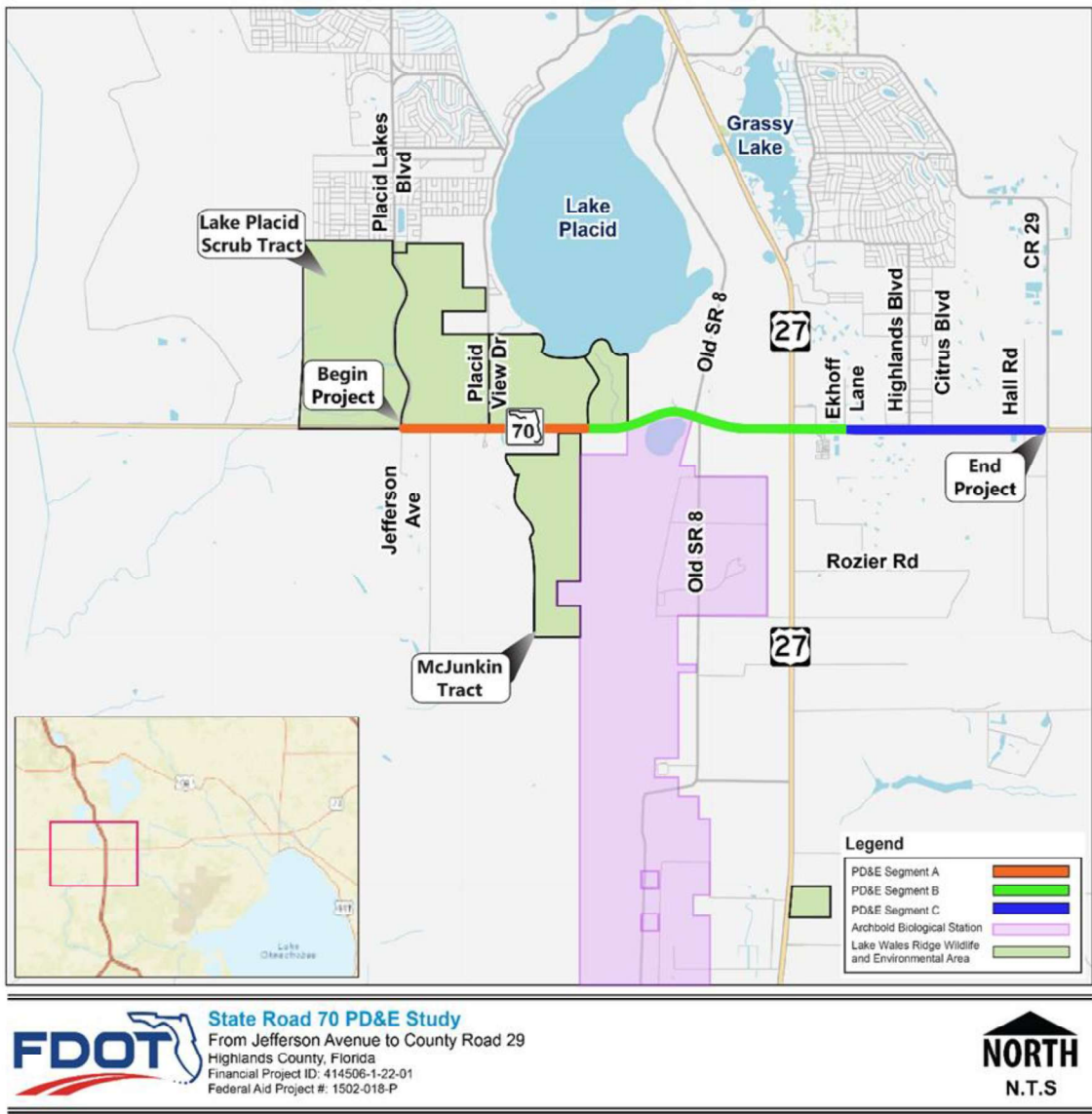


Figure 1-1: Project Location Map

1.2 PROJECT PURPOSE AND NEED

The purpose of this project is to improve operational conditions for emergency evacuations along the S.R. 70 corridor from Jefferson Avenue to C.R. 29. The Florida Division of Emergency Management (FDEM) Statewide Regional Evacuation Study Program determined the segment of S.R. 70 between United States (U.S.) 27 to east of the end project limits at C.R. 29 to be a critical segment with the longest vehicle queues among all roadways in the Central Florida region. The need for the project is based on the following primary and secondary criteria:

Primary Criteria**OPERATIONAL CONDITIONS: Improve Operational Capacity for Emergency Evacuations**

This widening project is anticipated to improve traffic operations along S.R. 70 where emergency evacuation traffic modeling performed by the FDEM identified the roadway to include a critical segment with highest vehicle queues. Although nearly all roadways will have extended vehicle queues during an emergency evacuation, S.R. 70 from U.S. 27 to east of the end project limit demonstrated evacuation vehicle queues lasting among the longest time periods in the region under multiple evacuation scenarios.

Delay caused by traffic congestion contributes to prolonged clearance times. According to the Florida Statewide Regional Evacuation Study Program, key transportation improvement projects can impact the anticipated evacuation clearance times. The widening of S.R. 70 is anticipated to reduce evacuating vehicle queues and thereby reduce the clearance time during an evacuation by:

- Increasing the capacity of the roadway to accommodate evacuating vehicles, and
- Improving shoulders and roadside slopes to meet current criteria in order to better accommodate removal of disabled vehicles which can obstruct evacuating vehicles during an emergency.

Secondary Criteria**Roadway Deficiencies: Correct Existing Inadequate Cross-Section and Substandard Geometrics**

The entire project segment of S.R. 70 is included in Florida's Strategic Intermodal System (SIS). These facilities generally support major flows of interregional, interstate, and international travel and commerce. Facilities on the SIS are subject to special standards and criteria for number of lanes, design speed, access, level of service and other requirements. For SIS facilities, the minimum design speed is 65 miles per hour (mph) within C1 Natural or C2 Rural context classifications, and 50 mph within a C3C (Suburban Commercial) context classification. Cross sectional elements and geometrics along the existing S.R. 70 corridor are inadequate for an SIS facility with these context classifications.

The existing S.R. 70 facilities exhibit the following:

- Shoulder widths are required to be a minimum of 10 feet (ft) in width with five-ft paved. Existing S.R. 70 includes substandard eight-foot (ft) shoulders with four-ft paved.

- Front slopes are required at 1:6 or flatter for fill heights up to five-ft. For significant sections of the project limits, S.R. 70 includes existing front slopes steeper than 1:6.
- A clear zone with 36-ft of recoverable terrain free of obstructions is required from through travel lanes. Deficient existing clear zones provide recoverable areas less than 18-ft in some segments.
- An offset of 12-ft is required to guardrail. Existing guardrail offsets are less than seven-ft from the travel lanes.

The improvements to S.R. 70 will widen the existing shoulders, flatten roadside slopes, extend clear zones, and increase offsets to guardrails to meet the respective criteria.

Further, the primary function of SIS highway components is to provide for efficient interregional traffic movements. Access is highly regulated to accommodate high-speed and high-volume facilities that support these movements. FDOT criteria state that controlled access segments of the SIS highway component shall be consistent with Access Class 2 or 3 of the Florida Administrative Code (FAC) Rule 14-97. These access classifications include restrictive medians which physically prevent vehicle crossings. The widening of S.R. 70 to a four-lane divided facility will introduce a median capable of restricting these movements.

Safety: Increase in Vehicular Safety

Historical crash data was collected and evaluated as part of this study. Crash data was acquired for the time periods spanning from January 1, 2015 to December 31, 2019, and from January 1, 2020 to October 31, 2022.

For the five-year study period from 2015 through 2019, the crash data collected within the entire PD&E study limits showed a total of 82 crashes, including two (2) fatalities, 35 injury crashes (causing 92 injuries) and 45 property damage only crashes. The project portion from the western terminus near Lightsey Ranch Road to U.S. 27 had 37 crashes and the calculated crash rate of 0.755 per million vehicle miles (MVM) in this section was less than the statewide average crash rate of 0.802 MVM for comparable facilities (6% lower). The portion from U.S. 27 to C.R. 29 had 45 crashes and the calculated crash rate of 1.590 MVM in this section exceeded the statewide average crash rate of 0.802 MVM (98% higher).

For the study period spanning January 1, 2020 – October 31, 2022, the crash data collected within the entire PD&E showed a total of 71 crashes, including nine (9) fatalities, 33 injury crashes (causing 66 injuries) and 33 property damage only crashes. The project portion from the western terminus near Lightsey Ranch Road to U.S. 27 had 40 crashes and the calculated crash rate of 1.441 MVM in this section exceeded the statewide average crash rate of 0.802 MVM for comparable facilities (80% higher). The section from U.S. 27 to C.R. 29 had 31 crashes and the calculated crash rate of 1.932 MVM in this section exceeded the statewide average crash rate of 0.802 MVM (141% higher).

Economic Development: Rural Area of Opportunity

The Governor of the State of Florida pursuant to Florida Statute (FS) Section 228.0656(7) issued Executive Order 11-81 which included Highlands County among six counties identified as the South-Central Rural Area of Opportunity. The Florida Department of Economic Opportunity, Rural Economic Development Initiative (REDI) established a Sebring Highlands County Catalyst industrial development project adjacent to the Sebring Airport in Highlands County. The objective of the project is to create a significant economic effect to the entire region that will result in the development of high-wage and highly skilled jobs.

The REDI Sebring Highlands County Catalyst development is consistent with the stated goals for the Florida SIS which includes strengthening the linkage between transportation and economic development, assisting rural area of opportunity and enhancing economic competitiveness. The catalyst site connects to S.R. 70 via a second SIS highway component, U.S. 27, which intersects S.R. 70 within the project limits. The S.R. 70 corridor is the nearest east-west SIS highway component providing interregional connectivity from the catalyst site directly to both coasts.

As described above, the existing project limits of the S.R. 70 are deficient for multiple criteria governing SIS highway components. Widening improvements to S.R. 70 will enhance its ability to function as a SIS highway component and accomplish SIS objectives for interregional transportation linked to economic development.

1.3 EXISTING FACILITY AND PROPOSED IMPROVEMENTS**1.3.1 Existing Typical Section**

S.R. 70 is designated as a rural principal arterial highway, an SIS highway, and an evacuation route throughout the limits of this study. The existing S.R. 70 facility consists of a two-lane undivided roadway with 12-ft travel lanes, five-ft paved shoulders and open roadside ditches within varying existing ROW widths from 45-ft to 214-ft as shown in **Figure 1-2**.



Figure 1-2: Existing Typical Section

The MP ranges along with a description of the existing segments are as follows:

Segment A – MP 10.217 to MP 12.349

Segment A begins at the western project limit at Jefferson Avenue/Placid Lakes Boulevard (MP 10.217) and extends 2.1 miles to approximately 1.18 miles east of Placid View Drive (MP 12.349). The eastern half of Segment A is located within the Lake Placid urban area buffer beginning just west of Placid View Drive and extending 1.2 miles through the eastern limit of the segment. This segment contains a narrow, existing ROW corridor with a width ranging from 60-ft to 66-ft.

The entirety of Segment A runs parallel to the Florida Gas Transmission (FGT) gas pipeline easement, located approximately 30-ft south of the ROW, and to the north by both a Florida Power & Light (FPL) overhead transmission easement and the Lake Wales Ridge Wildlife and Environmental Area (LWRWEA). The properties bordering Segment A are a mix of agricultural, residential, and conservation parcels.

Segment B – MP 12.349 to MP 15.090

Segment B begins approximately 1.18 miles east of Placid View Drive (MP 12.349) and extends 2.7 miles to Ekhoﬀ Lane (MP 15.090). Segment B is typically located within the Lake Placid urban area except for the section from just east of Old S.R. 8 through U.S. 27. This segment contains an existing ROW corridor with a typical width of 200-ft. There is an approximately 750-ft segment of the roadway located east of U.S. 27 where the existing ROW varies from 164 to 214-ft.

The western end of this segment is bordered to the south by an existing FGT gas pipeline easement. The FGT easement crosses underneath S.R. 70 just west of Nursery Lane and proceeds east along the northern side of S.R. 70 up until the Old S.R. 8 intersection. At Old S.R. 8, the FGT easement once again crosses underneath S.R. 70 and continues south along the southern leg of Old S.R. 8. There are also existing FPL overhead electric transmission lines located along the northern edge of the existing ROW throughout the entirety of the segment.

Segment B is bordered along its northern side by the LWRWEA for approximately 2,000-ft from the beginning segment limits to just west of Nursery Lane. Segment B is also bordered to the south by the Archbold Biological Station from just west of Nursery Lane to the South Central Florida Express (SCFE) railroad crossing (Crossing No. 627642Y).

The western limits of Segment B typically contain a combination of agricultural and conservation parcels while the eastern limits are a combination of residential, agricultural, and industrial parcels. Segment B also contains a major intersection with U.S. 27, which is a SIS component and a designated evacuation route.

Segment C – MP 15.090 to MP 17.245

Segment C begins at Ekhoﬀ Lane (MP 15.090) and extends 2.2 miles to the eastern project limit at C.R. 29 (MP 17.245). Nearly all of Segment C is located within the Lake Placid urban area buffer. The urban buffer limits continue 1.9 miles from the western boundary of the segment to just east of Hall Road. The existing ROW is typically 200-ft in width from Ekhoﬀ Lane to approximately 1,600-ft west of Hall Road (MP 16.691). The existing ROW varies from 45 to 65-ft from MP 16.691 to the end project limit at C.R. 29.

Segment C also contains existing FPL overhead electric transmission lines along the northern edge of the existing ROW from the beginning of the segment limit to approximately 400-ft east of Citrus Boulevard.

The adjacent land use along the north side of Segment C is predominantly low density residential. There is an existing parallel local road network providing access to most of these residential parcels. The adjacent land use along the south side of Segment C is predominantly citrus groves and other agricultural uses.

1.4 PROPOSED IMPROVEMENTS

To meet the Purpose and Need, the Preferred Alternative will widen S.R. 70 from two to four lanes throughout the study limits. A description of the proposed corridor through each segment is provided within the sections below. For more information regarding the Preferred Alternative please see the Preliminary Engineering Report (PER).

1.4.1 Segment A – MP 10.217 to MP 12.349

Segment A is a four-lane typical section with median guardrail that maintains the existing southern S.R. 70 ROW boundary and realigns the roadway to the far north (**Figure 1-3**) to avoid impacting the existing FP&L poles. The typical section consists of a 26.5-ft paved median. The roadway features 12-ft travel lanes, a 12-ft shared use path within the existing ROW, and open roadside ditches/linear stormwater treatment ponds. The design, target, and posted speeds are 65 mph. A median width variation has been approved for this segment. The proposed ROW for this typical section varies from 170 to 173-ft.

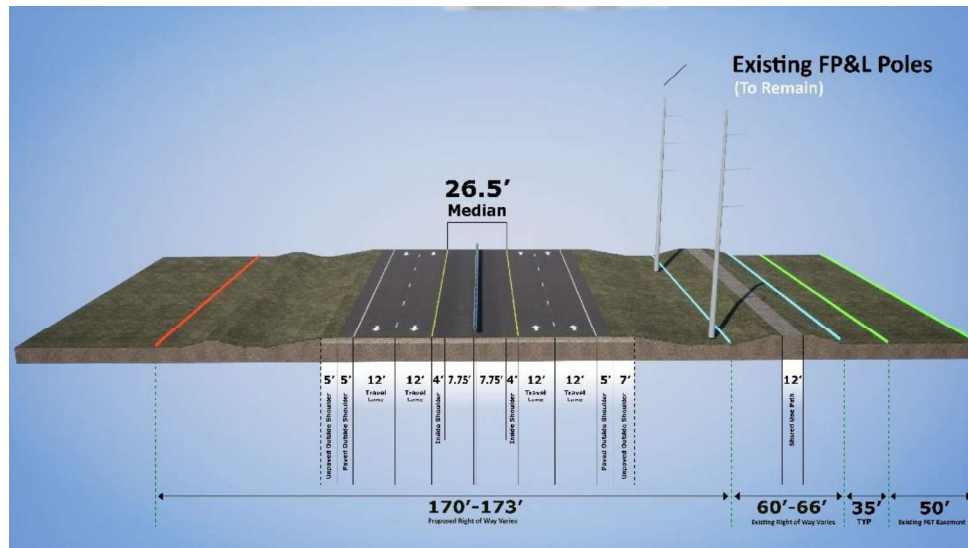


Figure 1-3: Segment A Preferred Alternative Typical Section

This alternative impacts the LWRWEA and existing FPL easement located on the north side of the roadway; however, this alternative avoids impacts to the FGT easement along the south side of the corridor. Based on coordination with Florida Fish and Wildlife Conservation (FWC), FDOT will mitigate for the loss of approximately 46.37 acres of impacts to the LWRWEA and further evaluate the wildlife crossings within this segment during the design phase of this project.

1.4.2 Segment B – MP 12.349 to MP 15.090

Segment B includes 12-ft travel lanes, a 30-ft median including four-ft paved median shoulders, and a Type E curb and gutter. A 10 to 12-ft shared use path is proposed on the south side of the roadway (**Figure 1-4**). The design, target, and posted speeds are 55 mph; a SIS design speed variation has been approved for this segment. The proposed ROW width is typically 200 to 336-ft. Segment B includes 12-ft travel lanes, a 30-ft median including four-ft paved median shoulders, and a Type E curb and gutter.

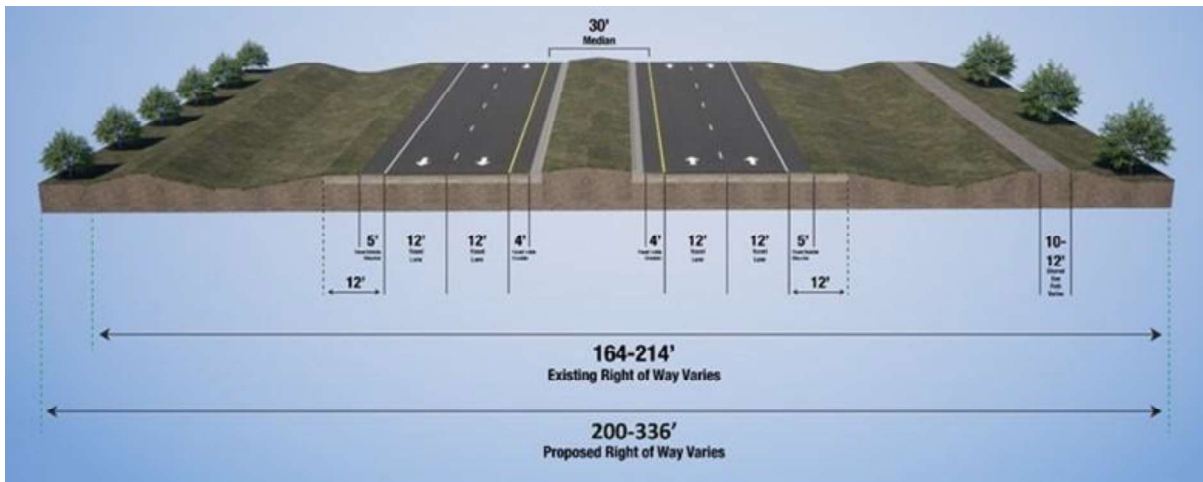


Figure 1-4: Segment B Preferred Alternative Typical Section

1.4.3 Segment C - MP 15.090 to MP 17.245

Segment C has two typical sections, the first is from MP 15.090 to MP 16.845, this typical section consists of a 40-ft median, 12-ft travel lanes, and open roadside ditches. A 12-ft shared use path is included on the south side. The total proposed ROW width varies from 215 to 359-ft, (**Figure 1-5**) with the existing ROW being 45 to 200-ft. The widening will occur to the south. The design, target, and posted speeds are 65 mph.

From MP 16.845 to MP 17.245, there is an existing canal located on the south side of the existing corridor. The existing ROW is 45 to 65-ft. The proposed typical section accommodates the canal in the proposed ROW. The total proposed ROW is 313 to 322-ft, widening to the south. The typical section with the canal consists of a 40-ft median, 12-ft travel lanes, and open roadside ditches (**Figure 1-6**).

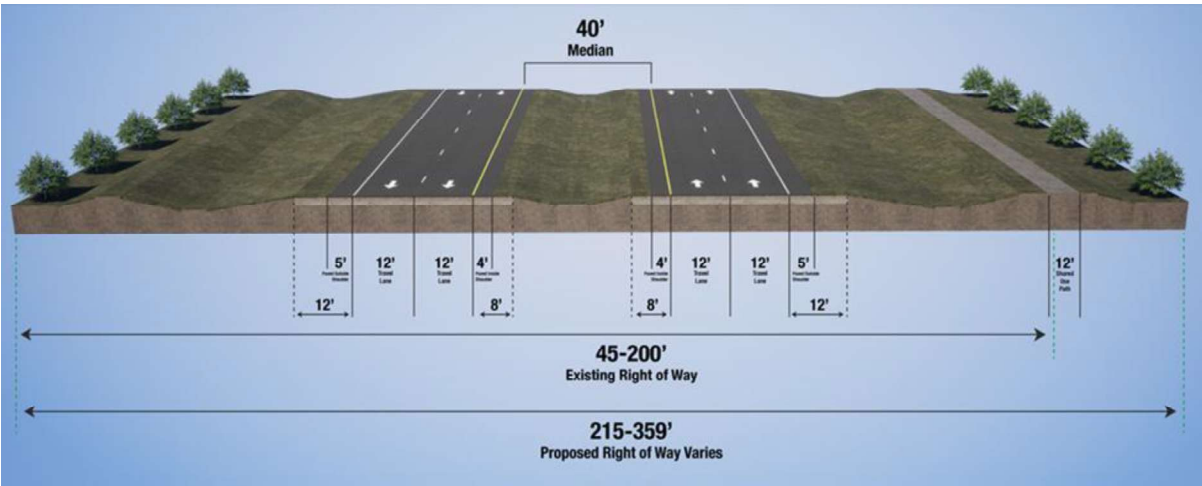


Figure 1-5: Segment C Preferred Alternative Typical Section without Canal (MP 15.090 to MP 16.845)



Figure 1-6: Segment C Preferred Typical Section with Canal (MP 16.845 to MP 17.245)

1.5 PURPOSE OF THIS REPORT

The purpose of this PTAR is to quantify and compare the potential impacts of the proposed widening of SR 70 from two (2) to four (4) lanes and identify potential additional improvements. This PTAR was prepared in accordance with the FDOT PD&E Manual to meet the requirements of the National Environmental Policy Act (NEPA) and other associated federal and state laws, rules, and regulations.

As previously stated, a Design Traffic Technical Memorandum for the previous PD&E study along this corridor was prepared in March 2017 (see **Appendix A**). The purpose of the project was to improve operational conditions for emergency evacuations along the SR 70 corridor from west of S Jefferson Ave to east of CR 29. Crash, hurricane evacuation transportation, intersection, and arterial analyses were all conducted as part of the study. The memo concluded that widening the corridor from two to four lanes should be considered as an alternative.

This PTAR is intended to document the analysis of Existing (2022) Conditions, a summary of crash history, Opening Year (2032) and Design Year (2052) traffic forecasts for the No-Build and Build Alternatives, an analysis of No-Build and Build conditions and the results of ICE analysis for the project at two locations. Also included in this submittal are HSM-based predictive crash analyses for the No-Build and Build Alternatives in accordance with Part 2, Chapter 2 of the PD&E Manual.

SECTION 2 METHODOLOGY

2.1 AREA OF INFLUENCE

The area of influence, depicted in the Project Location Map (**Figure 1-1**) and other figures encompasses the extents of SR 70 from west of Jefferson Avenue/Placid Lakes Boulevard and ending at County Road (C.R.) 29. The purpose of the previous traffic study was to evaluate conditions beyond the limits of the current project, extending west of Lightsey Ranch. The following existing study intersections are included within the area of influence.

1. Placid Lakes Boulevard/S Jefferson Avenue
2. Park Land Drive
3. Placid View Drive
4. Old State Route 8 (North)
5. Old State Route 8 (South)
6. Distribution Boulevard
7. Glades Electric Driveway
8. Wedgworth Driveway
9. US 27
10. Myers Road/Placid Pine Drive
11. N Edge
12. Broward Avenue
13. Highlands Boulevard
14. Citrus Boulevard
15. Bear Road
16. Hall Road/Turner Too Road
17. CR 29/KW Farms Road

2.2 ANALYSIS YEARS

The following analysis years have been established for this study:

- Existing Year: 2022
- Opening Year: 2032
- Design Year: 2052

This PTAR presents the Existing Conditions (2022) analysis and the Opening Year (2032) and Design Year (2052) analysis results for the No-Build and Build Alternatives.

2.3 DATA COLLECTION

A variety of transportation data was collected as part of this study. The following sections describe the types and methods of data collection that were employed.

2.3.1 4-hour Turning Movement Counts

Four-hour vehicle and bicycle/pedestrian turning movement counts (TMCs) were performed at the following SR 70 intersections along the corridor:

1. Placid Lakes Boulevard/S Jefferson Avenue
2. Park Land Drive
3. Placid View Drive
4. Old State Route 8 (North)
5. Old State Route 8 (South)
6. Distribution Boulevard
7. Glades Driveway
8. Wedgworth Driveway
9. US 27
10. Myers Road/Placid Pines Drive
11. N Edge
12. Broward Avenue
13. Highlands Boulevard
14. Citrus Boulevard
15. Bear Road
16. Hall Road/Turner Too Road
17. CR 29/KW Farms Road

2.3.2 48-hour Vehicle Volume Counts

48-hour traffic machine counts (approach volumes and departure volumes at 15-minute increments), collected on Wednesday, November 2, 2022, and Thursday, November 3, 2022, were performed at the following locations:

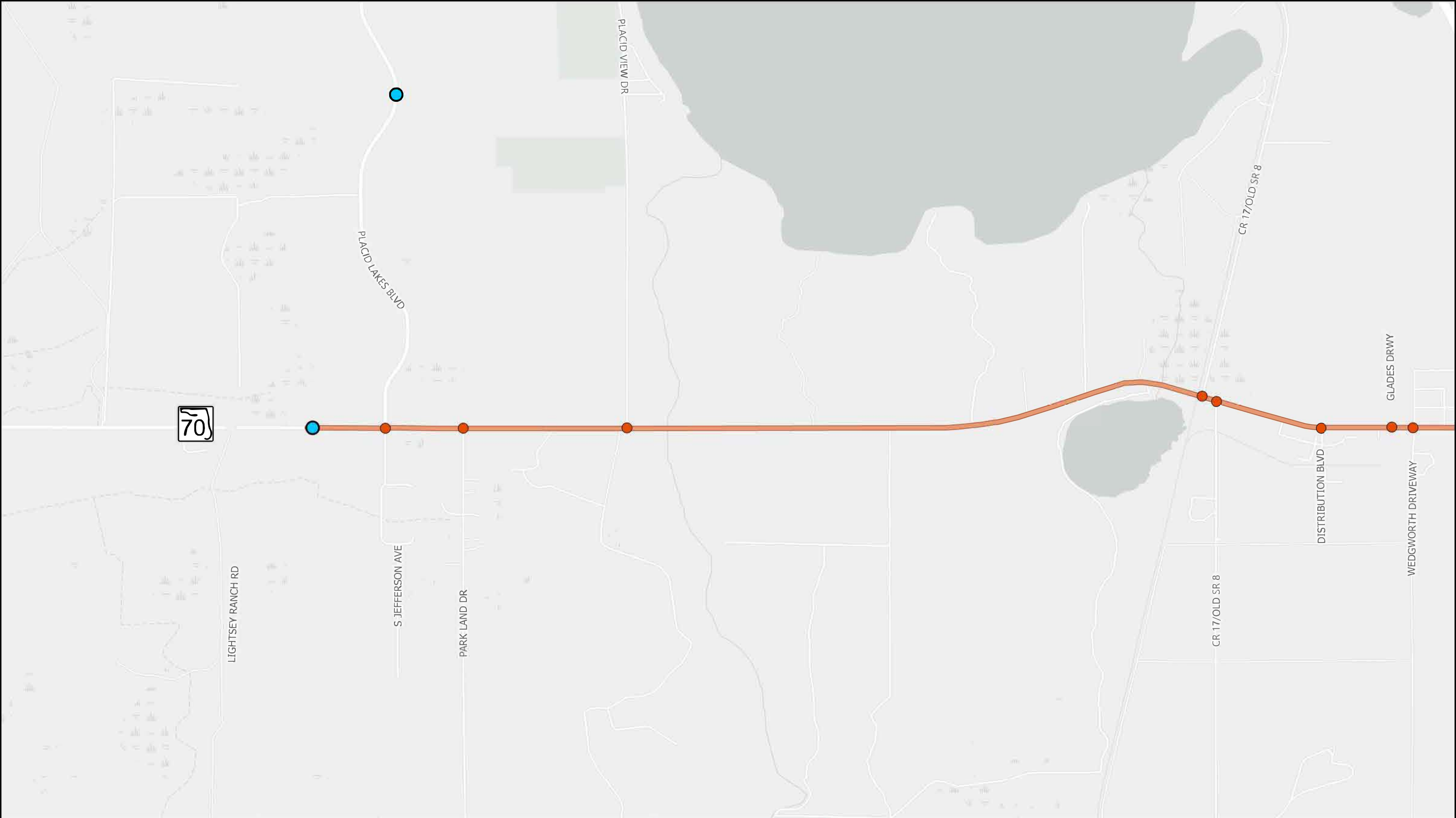
1. US 27 South of SR 70
2. CR 29 North of SR 70

All data collected has been provided in **Appendix B** and count locations are depicted in **Figure 2-1**.

2.3.3 Florida Traffic Online (FTO) Historical AADT Counts

The Historical AADT data was collected from the FTO database at the following locations:

1. 090033 – SR 70, West of S Jefferson Avenue
2. 094182 – Placid Lakes Boulevard, North of SR 70
3. 094189 – Placid View Drive, South of Lincoln Road
4. 094186 – CR 17/Old SR 8, North of SR 70
5. 094185 – CR 17/Old SR 8, 0.9 mi North of Heritage Oaks Road, Lake Placid
6. 090002 – SR 70, West of SR 25/US 27
7. 090005 – SR 25/US 27, North of SR 70
8. 090327 – SR 25/US 27, 2.7 mi South of SR 70
9. 090003 – SR 70, East of SR 25/US 27
10. 094204 – CR 29, South of Jack Weisser Boulevard



	Legend 4-Hour Turning Movement Counts (9) - FTO Count Sites (2) - Project Limits		N 0 1,000 Feet	Figure 2-1 Traffic Data Collection Map Sheet 1 of 2
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Legend

-  48-Hour Volume Counts (2)
-  4-Hour Turning Movement Counts (9)
-  FTO Count Sites (3)
-  Project Limits



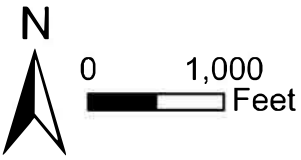


Figure 2-1
Traffic Data Collection Map

Sheet 2 of 2

2.3.4 Intersection Geometry and Signal Timings

Existing roadway features and intersection configurations were obtained from field reviews and aerial imagery. The traffic signal timing plan for the lone signalized study intersection (US 27) was obtained from FDOT and is included in the Signalization Plans (**Appendix C**).

2.4 TRAFFIC FACTORS AND CHARACTERISTICS

Traffic characteristics were developed from the data collected, including directional (D) factors, truck (T) factors, and K-factors. The K-factor is the proportion of annual average daily traffic (AADT) occurring in the peak hour. Daily truck factors were selected for each roadway segment based on a review of FTO data, project classification counts, and TMC truck percentages during the peak periods (where no other data was available). More consideration was given to FTO data and classification count data. In locations where only TMC data was available, approximate average peak period truck percentages were calculated and then rounded. Design hour truck percentages are estimated to be half of the daily truck percentage. These traffic factors were utilized in the development of future design hour volumes (see **SECTION 5**). **Table 2-1** summarizes the existing traffic factors for the study roadway segments.

Table 2-1: Existing Year (2022) Traffic Factors

SR 70 Intersection	Intersection Leg	Selected Traffic Factors									
		K-Factor	D-Factor	AM Peak Direction	PM Peak Direction	Calculated T-Factor			DHT Factor	T ₂₄ Factor	PHF*
						AM	PM	24-hr			
Placid Lakes Boulevard	East (SR 70)	9.5%	58.0%	WB	EB	26%	8%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	32%	12%	35%	16.0%	32%	0.88
	North (Placid Lakes Blvd)	9.5%	75.0%	SB	NB	2%	3%	15%	7.5%	15%	0.88
	South (S Jefferson Ave)	9.5%	60.0%	NB	SB	9%	18%	-	7.5%	15%	0.88
Park Land Drive	East (SR 70)	9.5%	58.0%	WB	EB	25%	9%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	24%	14%	-	16.0%	32%	0.88
	South (Park Land Dr)	9.5%	75.0%	NB	SB	17%	11%	-	10.0%	20%	0.88
Placid View Drive	East (SR 70)	9.5%	58.0%	WB	EB	24%	9%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	24%	13%	-	16.0%	32%	0.88
	North (Placid View Dr)	9.5%	70.0%	SB	NB	5%	0%	15%	7.5%	15%	0.88
Old SR 8 (North)	East (SR 70)	9.5%	58.0%	EB	WB	27%	9%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	22%	14%	-	16.0%	32%	0.88
	North (Old SR 8)	9.5%	70.0%	SB	NB	1%	18%	15%	7.5%	15%	0.88
Old SR 8 (South)	East (SR 70)	9.5%	58.0%	WB	EB	26%	10%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	EB	WB	17%	18%	-	16.0%	32%	0.88
	South (Old SR 8)	9.5%	70.0%	SB	NB	16%	9%	15%	7.5%	15%	0.88

SECTION 2 METHODOLOGY

SR 70 Intersection	Intersection Leg	Selected Traffic Factors									
		K-Factor	D-Factor	AM Peak Direction	PM Peak Direction	Calculated T-Factor			DHT Factor	T ₂₄ Factor	PHF*
						AM	PM	24-hr			
Distribution Boulevard	East (SR 70)	9.5%	58.0%	WB	EB	25%	10%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	25%	15%	-	16.0%	32%	0.88
	South (Distribution Blvd)	9.5%	75.0%	SB	NB	71%	25%	-	40.0%	80%	0.88
Glades Driveway	East (SR 70)	9.5%	58.0%	WB	EB	25%	12%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	26%	16%	-	16.0%	32%	0.88
	North (Glades Drwy)	9.5%	60.0%	NB	SB	29%	0%	-	15.0%	30%	0.88
Wedgworth Driveway	East (SR 70)	9.5%	58.0%	WB	EB	24%	12%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	26%	15%	-	16.0%	32%	0.88
	South (Wedgworth Drwy)	9.5%	70.0%	NB	NB	60%	0%	-	30.0%	60%	0.88
US 27	East (SR 70)	9.5%	53.0%	WB	EB	15%	10%	24%	16.0%	32%	0.88
	West (SR 70)	9.5%	58.0%	WB	EB	24%	16%	32%	16.0%	32%	0.88
	North (US 27)	9.5%	60.0%	SB	NB	24%	20%	35%	16.5%	33%	0.88
	South (US 27)	9.5%	60.0%	SB	NB	34%	18%	30%	16.5%	33%	0.88
Myers Road/ Placid Pines Drive	East (SR 70)	9.5%	53.0%	WB	EB	24%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	WB	EB	21%	13%	-	16.0%	32%	0.88
	North (Myers Rd)	9.5%	75.0%	NB	SB	0%	0%	-	2.5%	5%	0.88
	South (Placid Pines Dr)	9.5%	70.0%	NB	SB	0%	0%	-	2.5%	5%	0.88
N Edge	East (SR 70)	9.5%	53.0%	WB	EB	25%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	WB	EB	21%	15%	-	16.0%	32%	0.88
	North (N Edge)	9.5%	75.0%	SB	NB	11%	0%	-	5.0%	10%	0.88
Broward Avenue	East (SR 70)	9.5%	53.0%	EB	EB	26%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	EB	20%	15%	-	16.0%	32%	0.88
	North (Broward Ave)	9.5%	70.0%	SB	NB	9%	0%	-	5.0%	10%	0.88
Highlands Boulevard	East (SR 70)	9.5%	53.0%	EB	EB	30%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	EB	21%	15%	-	16.0%	32%	0.88
	North (Highlands Blvd)	9.5%	75.0%	SB	NB	3%	5%	-	4.0%	8%	0.88
Citrus Boulevard	East (SR 70)	9.5%	53.0%	EB	EB	31%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	EB	21%	17%	-	16.0%	32%	0.88
	North (Citrus Blvd)	9.5%	70.0%	SB	NB	0%	0%	-	2.5%	5%	0.88
Bear Road	East (SR 70)	9.5%	53.0%	EB	EB	31%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	EB	21%	17%	-	16.0%	32%	0.88
	North (Bear Rd)	9.5%	65.0%	SB	NB	0%	0%	-	2.5%	5%	0.88
Hall Road	East (SR 70)	9.5%	53.0%	EB	WB	33%	16%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	WB	22%	18%	-	16.0%	32%	0.88
	North (Hall Rd)	9.5%	65.0%	NB	SB	50%	0%	-	15.0%	30%	0.88
	South (Turner Too Rd)	9.5%	55.0%	SB	NB	0%	0%	-	2.5%	5%	0.88

SECTION 2 METHODOLOGY

SR 70 Intersection	Intersection Leg	Selected Traffic Factors									
		K-Factor	D-Factor	AM Peak Direction	PM Peak Direction	Calculated T-Factor			DHT Factor	T ₂₄ Factor	PHF*
						AM	PM	24-hr			
CR 29	East (SR 70)	9.5%	53.0%	EB	WB	33%	15%	-	16.0%	32%	0.88
	West (SR 70)	9.5%	53.0%	EB	WB	24%	18%	-	16.0%	32%	0.88
	North (CR 29)	9.5%	65.0%	SB	NB	5%	0%	15%	7.5%	15%	0.88
	South (KW Farms Rd)	9.5%	55.0%	NB	SB	0%	0%	-	2.5%	5%	0.88

*Selected based on guidance from FDOT Traffic Analysis Handbook (2021): Rural Area = 0.88

2.5 LEVEL OF SERVICE TARGET

FDOT maintains minimum acceptable operating Level of Service (LOS) targets for the State Highway System as well as the Strategic Intermodal System (SIS). The term LOS is defined as the system of six designated ranges from “A” (best) to “F” (worst) used to evaluate roadway facility performance. The FDOT minimum acceptable operating LOS targets as per Policy 000-525-006 Level of Service Targets for the SHS were used for this study. The LOS target for all study intersections (outside urbanized areas) is LOS “C”.

2.6 ANALYSIS PROCEDURES

This study was conducted based on guidance contained in FDOT’s PD&E Manual, Traffic Analysis Handbook, and Project Traffic Forecasting Handbook. Traffic analysis was conducted in two ways: a traditional Synchro analysis for all 17 unsignalized study intersections along the corridor, and an ICE analysis for the signalized US 27 intersection. Trafficware’s *Synchro, Versions 11 & 12*, was used for the evaluation of intersection operations for the existing and future scenarios. Intersection and movement vehicular delays, queues, and Levels of Service based on Highway Capacity Manual (HCM) 6th Edition procedures were used as Measures of Effectiveness (MOEs). This document presents the results of both the Stage 1 and Stage 2 ICE analyses including CAP-X, SPICE, and Synchro results.

SECTION 3 EXISTING CONDITIONS ANALYSIS

3.1 EXISTING CONDITIONS (2022)

To serve as an assessment of current operations and a baseline for comparison to future scenarios, an Existing Conditions analysis was conducted for all 18 existing study intersections. This analysis is representative of typical, weekday traffic conditions in the year 2022. It is not intended to represent special conditions, such as holidays or major events. Morning (AM) and evening (PM) peak hours were identified for the network to be 7:00-8:00 AM and 4:15-5:15 PM, respectively. Peaking characteristics were generally consistent throughout the network.

Existing annual average daily traffic (AADT) volumes were developed using the collected volume/classification counts, seasonal factors, and axle correction factors (as necessary). Seasonal factor and axle correction factor reports used are provided in **Appendix B**. The development of 2022 AADTs is documented in **Table 3-1** and **Table 3-2**. AADTs along SR 70 were developed using Florida Traffic Online (FTO) Historical AADT data for 2021 and grown by one year using an assumed 2% annual growth rate. AADTs for cross streets were developed slightly differently as volume counts were not available for every cross street. Based on the turning movement volume counts, the PM peak hour experienced the highest traffic volumes across most intersections. For intersections where an AADT from FTO was available, a “peak hour to daily volume factor” was developed, dividing the daily volume by the PM peak hour approach volume. On average, this factor was approximately 10. For cross streets without a volume count, the selected Existing Year (2022) AADT was calculated as the PM peak hour approach volume multiplied by 10. A minimum AADT of 100 was also assumed for cross streets where the calculated AADT was less than 100.

Existing AM and PM peak hour volumes collected as part of this study were utilized in the existing intersection analysis. Volumes were then balanced along the corridor in one of two ways: adding right-turn vehicles upstream/downstream of an intersection or using a dummy node as a sink/source to represent various minor access points (e.g., driveways).

Existing intersection lane configurations and AADT Volumes are depicted in **Figure 3-1**. Existing AM/PM peak hour intersection volumes and intersection Levels of Service (LOS) are shown in **Figure 3-2**. Due to proximity to the project limits, the Lightsey Ranch Road intersection is included in some of the traffic figures for informational purposes.

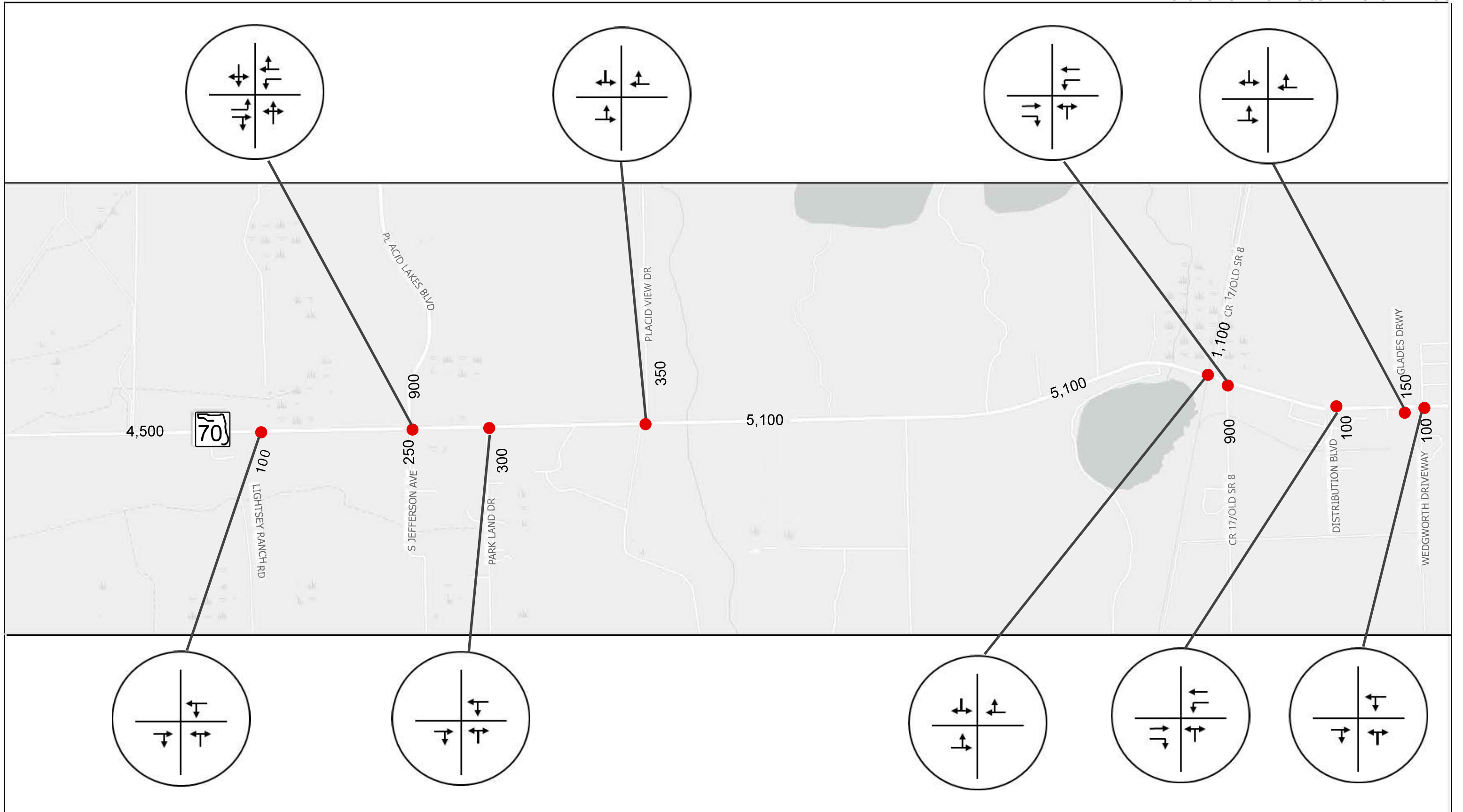
Table 3-1: Existing Year (2022) SR 70 AADT Development

SR 70 Roadway Segment	2021 FTO AADT	Assumed Annual Growth %	Estimated 2022 AADT	Selected Rounded Existing (2022) AADT
West of Lightsey Ranch to Placid Lakes Blvd	4,400	2%	4,500	4,500
Placid Lakes Blvd to US 27	5,000	2%	5,100	5,100
US 27 to CR 29	5,500	2%	5,600	5,600

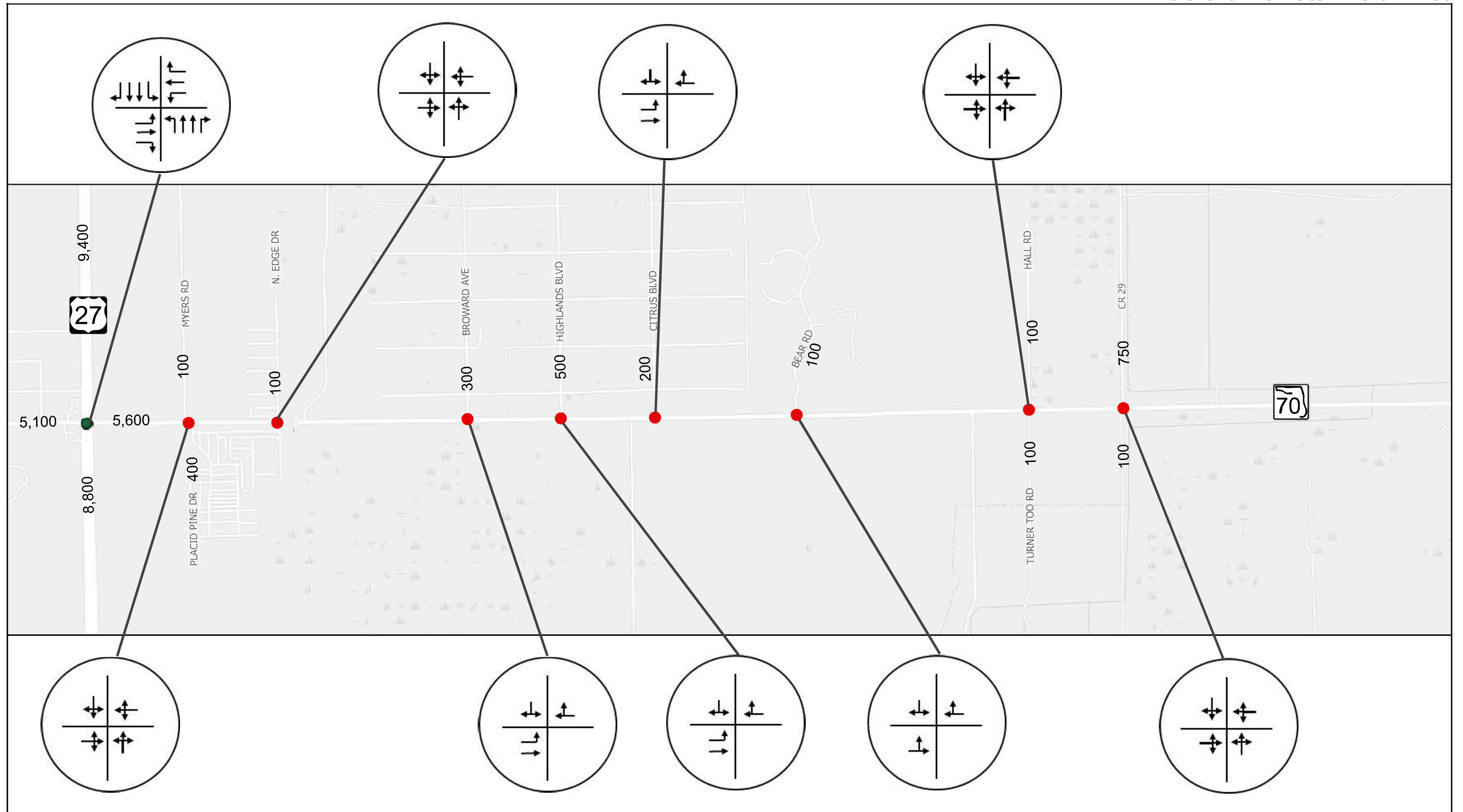
SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-2: Existing Year (2022) Cross Street AADT Development

Intersecting Roadway Segment	2021 FTO AADT	PM Peak Hour Volume (5PM-6PM)	PM Peak Hour to Daily Volume Factor	Selected Factor (Peak to Daily)	Estimated 2022 AADT	Selected Rounded Existing (2022) AADT
Placid Lakes Blvd North of SR 70	900	94	9.57	-	-	900
S Jefferson Ave South of SR 70	-	24	-	9.5%	253	250
Park Land Dr South of SR 70	-	29	-	9.5%	305	300
Placid View Dr North of SR 70	1,250	35	35.71	9.5%	368	350
Old SR 8 North of SR 70	1,100	124	8.87	-	-	1,100
Old SR 8 South of SR 70	900	106	8.49	-	-	900
Distribution Boulevard South of SR 70	-	6	-	9.5%	63	100
Glades Driveway North of SR 70	-	13	-	9.5%	137	150
Wedgworth Driveway South of SR 70	-	6	-	9.5%	63	100
US 27 North of SR 70	9,400	770	12.21	-	-	9,400
US 27 South of SR 70	8,765	744	11.78	-	-	8,800
Myers Rd North of SR 70	-	0	-	9.5%	0	100
Placid Pines Dr South of SR 70	-	37	-	9.5%	389	400
N Edge North of SR 70	-	5	-	9.5%	53	100
Broward Ave North of SR 70	-	30	-	9.5%	316	300
Highland Ave North of SR 70	-	49	-	9.5%	516	500
Citrus Blvd North of SR 70	-	20	-	9.5%	211	200
Bear Rd North of SR 70	-	8	-	9.5%	84	100
Hall Rd North of SR 70	-	4	-	9.5%	42	100
Turner Too Rd South of SR 70	-	0	-	9.5%	0	100
CR 29 North of SR 70	750	39	19.23	-	-	750
KW Farms Road South of SR 70	-	2	-	9.5%	21	100



	Legend ● Unsignalized (9) ● Signalized (0) ➔ Lane Configuration X,XXX Annual Average Daily Traffic (AADT)		N 0 1,000 Feet	Figure 3-1 Existing Year (2022) Lane Configurations and AADTs Sheet 1 of 2
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Legend

- Unsignalized (8)
- Signalized (1)
- Lane Configuration

X,XXX Annual Average Daily Traffic (AADT)

Figure 3-1
Existing Year (2022)
Lane Configurations and AADTs
Sheet 2 of 2



Legend

- Unsignalized (9)
- Signalized (0)
- ⬆️⬆️ Turning Movements

xxx (xxx) AM (PM) Volumes

Figure 3-2
Existing Year (2022)
Hourly Volumes
Sheet 1 of 2



Legend

- Unsignalized (8)
- Signalized (1)
- + Turning Movements

xxx (xxx) AM (PM) Volumes

Figure 3-2
Existing Year (2022)
Hourly Volumes
Sheet 2 of 2

3.2 EXISTING YEAR (2022) INTERSECTION ANALYSIS

Trafficware's *Synchro, Version 11*, was used to analyze each of the study intersections and Highway Capacity Manual (HCM) 6th Edition Methodology was used to report the performance measures. The HCM 6th Edition reports for the Existing Year peak hour intersection analyses are included in **Appendix D**.

Table 3-3, **Table 3-4**, and **Table 3-5** summarize the results of the *Synchro* intersection analysis for overall intersection performance, AM peak performance by movement, and PM peak performance by movement. Overall intersection operations perform generally well, with all intersections operating at LOS "C" or better. All individual movements currently operate at LOS D or better.

In summary, the existing intersection analysis reveals that most movements are operating well along this corridor. All movements in both the AM and PM peak hours operate at LOS C or better except for two that operate at LOS D: the northbound and southbound left turns on US 27.

Table 3-3: Existing Year (2022) Overall Intersection Operations

SR 70 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay ¹	LOS ²	Delay ¹	LOS ²
Placid Lakes Boulevard/S Jefferson Avenue	TWSC ³	10.6 (SB)	B	11.9 (SB)	B
Park Land Drive	TWSC (T-intersection) ³	9.4 (NB)	A	10.8 (NB)	B
Placid View Drive	TWSC (T-intersection) ³	10.5 (SB)	B	11.1 (SB)	B
Old State Route 8 (North)	TWSC (T-intersection) ³	10.9 (SB)	B	12.5 (SB)	B
Old State Route 8 (South)	TWSC (T-intersection) ³	10.8 (NB)	B	12.9 (NB)	B
Distribution Boulevard	TWSC (T-intersection) ³	10.8 (NB)	B	10.4 (NB)	B
Glades Driveway	TWSC (T-intersection) ³	10.9 (SB)	B	11.4 (SB)	B
Wedgworth Driveway	TWSC (T-intersection) ³	10.8 (NB)	B	10.0 (NB)	B
US 27	Signalized	24.1	C	25.5	C
Myers Road/Placid Pines Drive	TWSC ³	11.9 (SB)	B	13.4 (NB)	B
N Edge	TWSC ³	9.6 (SB)	A	9.6 (SB)	A
Broward Avenue	TWSC (T-intersection) ³	9.5 (SB)	A	9.5 (SB)	A
Highlands Boulevard	TWSC (T-intersection) ³	9.5 (SB)	A	9.8 (SB)	A
Citrus Boulevard	TWSC (T-intersection) ³	9.1 (SB)	A	9.5 (SB)	A
Bear Road	TWSC (T-intersection) ³	9.3 (SB)	A	9.4 (SB)	A
Hall Road/Turner Too Road	TWSC ³	11.8 (SB)	B	12.1 (NB)	B
CR 29	TWSC ³	10.9 (SB)	B	10.7 (SB)	B

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-4: Existing Year (2022) AM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.0	A	0.0	510
		Through/Right	0.0	A	-	-
	SB	Left/Through/Right	10.6	B	7.5	-
	WB	Left	7.7	A	0.0	510
		Through/Right	0.0	A	-	-
	NB	Left/Through/Right	9.2	A	0.0	-
Park Land Drive	EB	Through/Right	0.0	A	-	-
	WB	Left/Through	7.8	A	0.0	-
	NB	Left/Right	9.4	A	0.0	-
Placid View Drive	EB	Left/Through	7.9	A	0.0	-
	SB	Left/Right	10.5	B	2.5	-
	WB	Through/Right	0.0	A	-	-
Old State Route 8 (North)	EB	Left/Through	7.9	A	2.5	-
	SB	Left/Right	10.9	B	12.5	-
	WB	Through/Right	0.0	A	-	-
Old State Route 8 (South)	EB	Through	0.0	A	-	-
		Right	0.0	A	-	350
	WB	Left	8.1	A	2.5	400
		Through	0.0	A	-	-
	NB	Left/Right	10.8	B	7.5	-
Distribution Boulevard	EB	Through	0.0	A	-	-
		Right	0.0	A	-	300
	WB	Left	7.8	A	0.0	385
		Through	0.0	A	-	-
	NB	Left/Right	10.8	B	0.0	-
Glades Driveway	EB	Left/Through	8.0	A	0.0	-
	SB	Left/Right	10.9	B	0.0	-
	WB	Through/Right	0.0	A	-	-
Wedgworth Driveway	EB	Through/Right	0.0	A	-	-
	WB	Left/Through	7.8	A	0.0	-
	NB	Left/Right	10.8	B	2.5	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-4: Existing Year (2022) AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	20.0	B	25.0	490
		Through/Right	23.7	C	60.0	-
	SB	Left	44.0	D	50.0	565
		Through	18.8	B	52.5	-
		Right	0.0	A	0.0	510
	WB	Left	19.8	B	22.5	385
		Through/Right	24.9	C	85.0	-
	NB	Left	49.5	D	40.5	565
		Through	18.7	B	37.5	-
		Right	0.0	A	0.0	600
Myers Road/Placid Pine Drive	EB	Left/Through/Right	7.9	A	0.0	-
	SB	Left/Through/Right	11.9	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	11.5	B	2.5	-
N Edge	EB	Left/Through/Right	7.9	A	0.0	-
	SB	Left/Through/Right	9.6	A	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	7.9	A	0.0	595
		Through	0.0	A	-	-
	SB	Left/Right	9.5	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Highlands Boulevard	EB	Left	7.8	A	0.0	595
		Through	0.0	A	-	-
	SB	Left/Right	9.5	A	2.5	-
	WB	Through/Right	0.0	A	-	-
Citrus Boulevard	EB	Left	7.8	A	0.0	595
		Through	0.0	A	-	-
	SB	Left/Right	9.1	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Bear Road	EB	Left/Through	7.7	A	0.0	-
	SB	Left/Right	9.3	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	7.7	A	0.0	-
	SB	Left/Through/Right	11.8	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
CR 29	EB	Left/Through/Right	7.8	A	0.0	-
	SB	Left/Through/Right	10.9	B	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-5: Existing Year (2022) PM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	7.8	A	2.5	510
		Through/Right	0.0	A	-	-
	SB	Left/Through/Right	11.9	B	5.0	-
	WB	Left	7.8	A	0.0	510
		Through/Right	0.0	A	-	-
	NB	Left/Through/Right	11.6	B	2.5	-
Park Land Drive	EB	Through/Right	0.0	A	-	-
	WB	Left/Through	7.9	A	0.0	-
	NB	Left/Right	10.8	B	0.0	-
Placid View Drive	EB	Left/Through	7.8	A	0.0	-
	SB	Left/Right	11.1	B	0.0	-
	WB	Through/Right	0.0	A	-	-
Old State Route 8 (North)	EB	Left/Through	8.1	A	2.5	-
	SB	Left/Right	12.5	B	7.5	-
	WB	Through/Right	0.0	A	-	-
Old State Route 8 (South)	EB	Through	0.0	A	-	-
		Right	0.0	A	-	350
	WB	Left	7.9	A	0.0	400
		Through	0.0	A	-	-
	NB	Left/Right	12.9	B	20	-
Distribution Boulevard	EB	Through	0.0	A	-	-
		Right	0.0	A	-	300
	WB	Left	0.0	A	0.0	385
		Through	0.0	A	-	-
	NB	Left/Right	10.4	B	2.5	-
Glades Driveway	EB	Left/Through	7.8	A	0.0	-
	SB	Left/Right	11.4	B	2.5	-
	WB	Through/Right	0.0	A	-	-
Wedgworth Driveway	EB	Through/Right	0.0	A	-	-
	WB	Left/Through	7.9	A	0.0	-
	NB	Left/Right	10.0	B	0.0	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-5: Existing Year (2022) PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	21.1	C	50.0	490
		Through/Right	25.7	C	107.5	-
	SB	Left	42.4	D	70.0	565
		Through	19.9	B	57.5	-
		Right	0.0	A	0.0	510
	WB	Left	21.1	C	25.0	385
		Through/Right	27.5	C	110.0	-
	NB	Left	45.0	D	62.5	565
		Through	21.4	C	80.0	-
		Right	0.0	A	0.0	600
Myers Road/Placid Pine Drive	EB	Left/Through/Right	0.0	A	0.0	-
	SB	Left/Through/Right	13.3	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	13.4	B	2.5	-
N Edge	EB	Left/Through/Right	8.0	A	0.0	-
	SB	Left/Through/Right	9.6	A	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	7.9	A	0.0	595
		Through	0.0	A	-	-
	SB	Left/Right	9.5	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Highlands Boulevard	EB	Left	8.0	A	2.5	595
		Through	0.0	A	-	-
	SB	Left/Right	9.8	A	2.5	-
	WB	Through/Right	0.0	A	-	-
Citrus Boulevard	EB	Left	7.9	A	0.0	595
		Through	0.0	A	-	-
	SB	Left/Right	9.5	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Bear Road	EB	Left/Through	7.9	A	0.0	-
	SB	Left/Right	9.4	A	0.0	-
	WB	Through/Right	0.0	A	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	7.9	A	0.0	-
	SB	Left/Through/Right	9.9	A	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	12.1	B	0.0	-
CR 29	EB	Left/Through/Right	7.9	A	0.0	-
	SB	Left/Through/Right	10.7	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

3.3 EXISTING YEAR (2022) ROADWAY SEGMENT LOS

Three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's 2023 Multimodal Quality/Level of Service Handbook. The Motor Vehicle Highway Generalized Service Volume tables for C1&C2 classified roadways were utilized to assess the LOS for each SR 70 segment.

All segments of SR 70 operate at LOS C or better in the Existing Conditions. **Table 3-6** lists the LOS for each direction of each roadway segment.

Table 3-6: Existing Year (2022) Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length (miles)	Existing Year (2022)			
					Typical Section	DDHV	Target LOS Volume Capacity ¹	LOS
SR 70	EB	West of S Jefferson Avenue	Old SR 8 (North)	4.25	2-Lane, Undivided with LT Only	265	430	C
	WB				2-Lane, Undivided with LT Only	212	430	B
	EB	Old SR 8 (North)	US 27	1.08	2-Lane, Undivided with LT & RT	282	430	C
	WB				2-Lane, Undivided, with LT Only	252	430	C
	EB	US 27	CR 29	2.76	2-Lane, Undivided, with LT Only	305	430	C
	WB				2-Lane, Undivided, with LT Only	267	430	C

¹LOS Target is LOS C.

3.4 CRASH HISTORY

Historical crash data was collected and evaluated as part of this study. Crash data was acquired for the last five (5) years (spanning from January 1, 2021 to December 31, 2025) via the Signal Four Analytics platform. The crash data has been organized by severity, type, and field conditions in **Table 3-7**, **Table 3-8**, and **Table 3-9**, respectively, with corresponding spatial representations shown in **Figure 3-3**, **Figure 3-4**, and **Figure 3-5**. Roadway segment crash rates were also calculated and are shown in **Table 3-10**. The following sections summarize the overall crash statistics and provide detailed information related to severe crash events.

3.4.1 Overall Crash Statistics

The five-year crash data **Tables 3-7** through **3-9** indicate a total of 135 crashes, including 39 serious injuries and four (4) fatalities, with yearly totals varying but severity trends remaining generally consistent (**Table 3-7**). Rear-end crashes were the most frequent crash type, accounting for 30.4% of all crashes (41 total), though most resulted in no injury (**Table 3-8**). In contrast, angle, left-turn, and off-road crashes contributed a higher proportion of injury severity relative to their occurrence.

Crash occurrence was highest during daylight conditions (65.2%), reflecting typical traffic exposure; however, dark conditions accounted for nearly 29% of crashes and a notable share of severe outcomes (**Table 3-9**). Similarly, most crashes occurred in clear weather (77.0%) and on dry pavement (85.9%), though wet surface conditions (13.3%) and rain events (9.6%) show a comparatively higher association with severe crashes (**Table 3-9**).

Overall, while crash frequency is greatest under normal driving conditions, more severe crashes tend to occur under reduced lighting and adverse surface conditions, as well as for specific crash types such as angle and left-turn collisions. Detailed crash reports and summaries of severe and fatal crashes are provided in **Appendix E**.

Table 3-7: 5-Year Historical Crash Data, by Severity (2021-2025)

Severity	2021	2022	2023	2024	2025	Grand Total
Fatality	1	2	0	1	0	4
Serious Injury	6	9	7	7	10	39
Injury	3	3	1	2	3	12
No Injury	14	20	13	24	9	80
Grand Total	24	34	21	34	22	135

SECTION 3 EXISTING CONDITIONS ANALYSIS

Table 3-8: 5-Year Historical Crash Data, by Type and Severity (2021-2025)

Crash Type	Serious Injury	Fatal	Injury	No Injury	Total Occurrences	% of Total Crashes
Rear End	2	0	14	25	41	30.4%
Sideswipe	0	0	5	13	18	13.3%
Rollover	1	0	0	1	2	1.5%
Left Turn	2	1	5	7	15	11.1%
Other	0	0	3	5	8	5.9%
Angle	3	0	6	10	19	14.1%
Animal	0	0	0	9	9	6.7%
Off Road	2	1	3	9	15	11.1%
Head On	1	2	2	0	5	3.7%
Pedestrian	1	0	0	0	1	0.7%
Right turn	0	0	1	1	2	1.5%
Total	12	4	39	80	135	100%

Table 3-9: 5-Year Historical Crash Data, by Condition and Severity (2021-2025)

Lighting						
Condition	Serious Injury	Fatal	Injury	No Injury	No. of Crashes	% of Total Crashes
Dark - Lighted	0	0	6	6	12	8.9%
Dark - Not Lighted	4	1	9	13	27	20.0%
Dark - Unknown Lighting	0	0	1	0	1	0.7%
Daylight	8	3	20	57	88	65.2%
Dawn	0	0	2	1	3	2.2%
Dusk	0	0	1	2	3	2.2%
Unknown	0	0	0	1	1	0.7%
Total	12	4	39	80	135	100.0%
Weather						
Condition	Serious Injury	Fatal	Injury	No Injury	No. of Crashes	% of Total Crashes
Rain	3	1	2	7	13	9.6%
Clear	5	3	31	65	104	77.0%
Cloudy	3	0	2	5	10	7.4%
Fog, Smog, Smoke	1	0	4	2	7	5.2%
Other	0	0	0	1	1	0.7%
Total	12	4	39	80	135	100%

SECTION 3 EXISTING CONDITIONS ANALYSIS

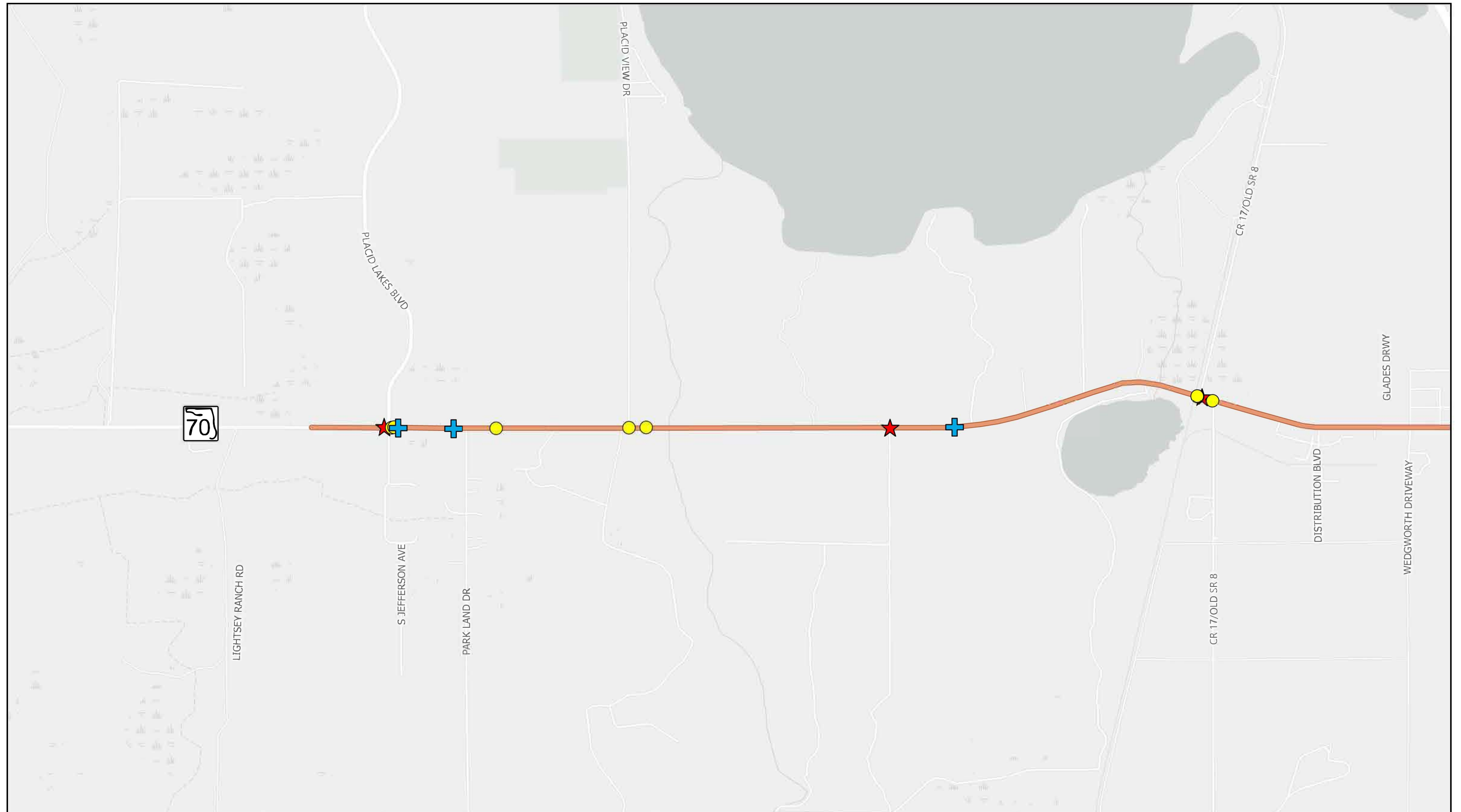
Road Surface						
Condition	Serious Injury	Fatal	Injury	No Injury	No. of Crashes	% of Total Crashes
Dry	9	3	35	69	116	85.9%
Wet	3	1	4	10	18	13.3%
Unknown	0	0	0	1	1	0.7%
Total	12	4	39	80	135	100%

Table 3-10: Roadway Segment Crash Rates (2021-2025)

Segment	Facility Type	# of Crashes	Years of Data	Length of Segment (miles)	Average AADT (vpd)	Calculated Crash Rate (MVM)	Statewide Average Crash Rate ¹
From Placid Lakes Boulevard/S Jefferson Avenue to US 27	Rural 2-3 Lane, 2 Way, Undivided	78	5	4.36	5,000	1.960	0.588
From US 27 to CR 29		57	5	2.77	5,600	2.013	0.588

¹ Obtained from Signal Four Analytics, based on 2020-2024 crash data (latest available 5-year average)

RED value indicates a calculated crash rate higher than the statewide average.



Legend

- ★ Fatal
- Injury
- + Serious Injury
- Project Limits

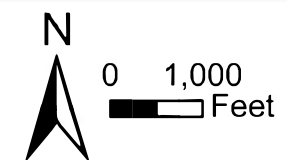
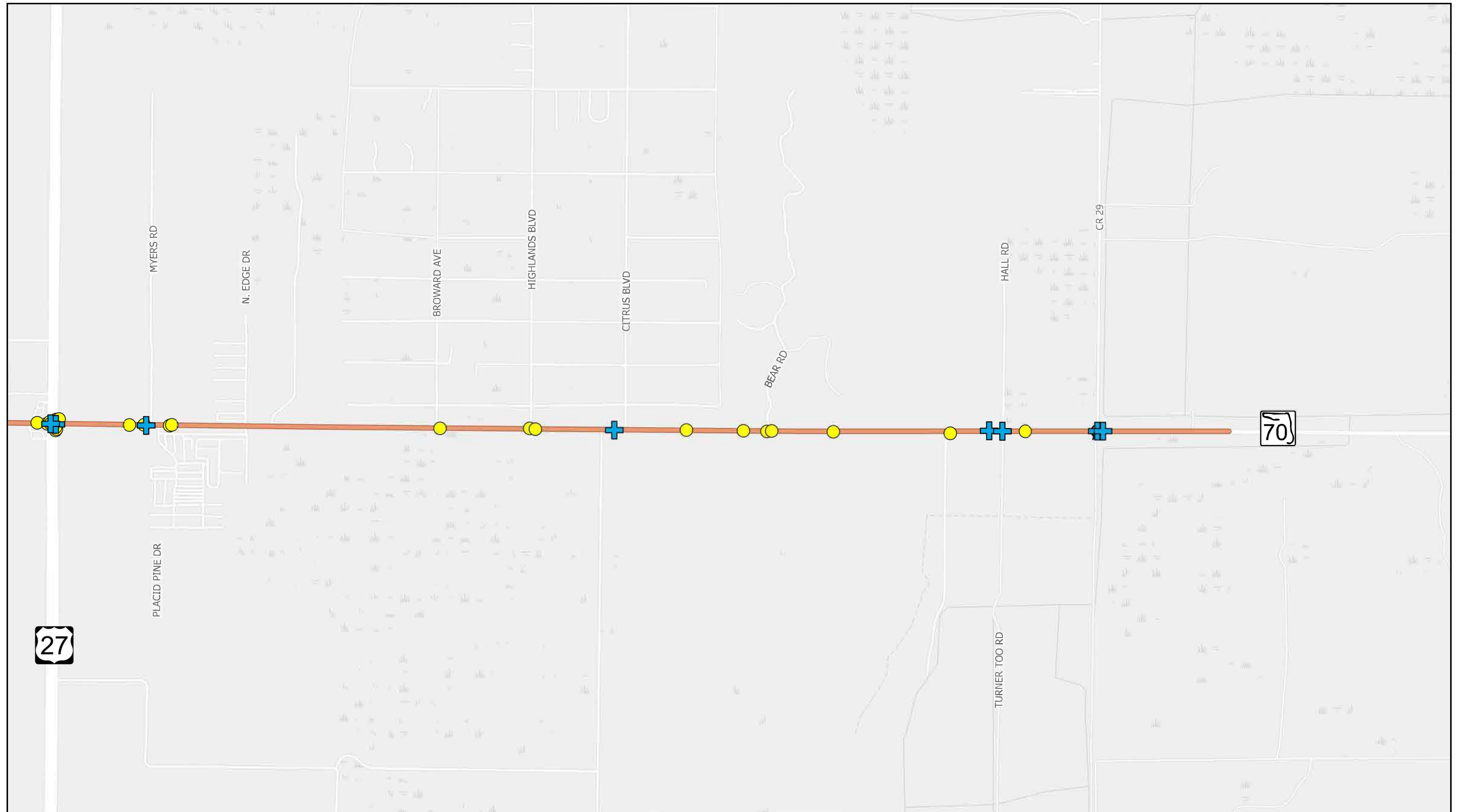
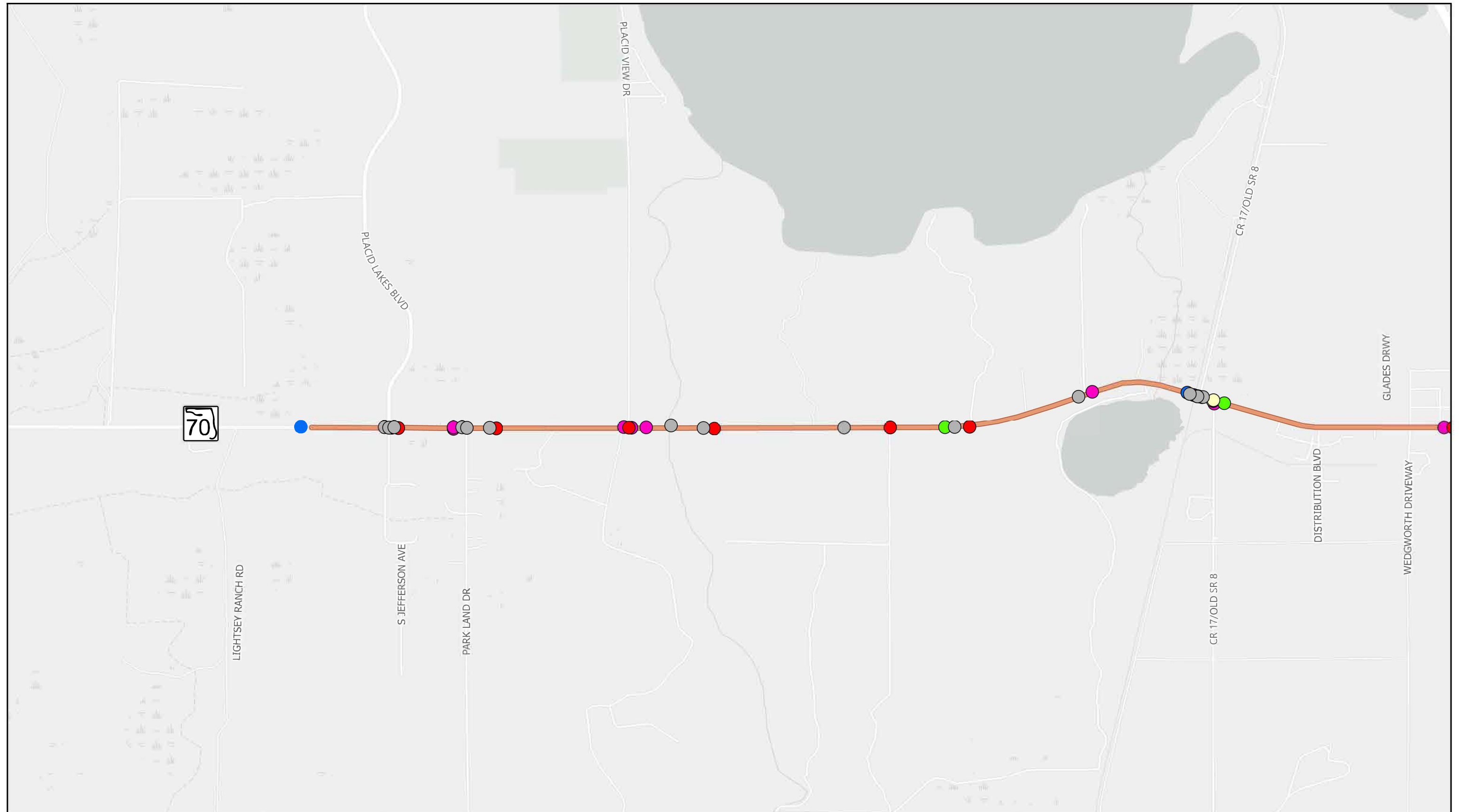


Figure 3-3
5-Year Historical Crash Severities Map
(2021-2025)

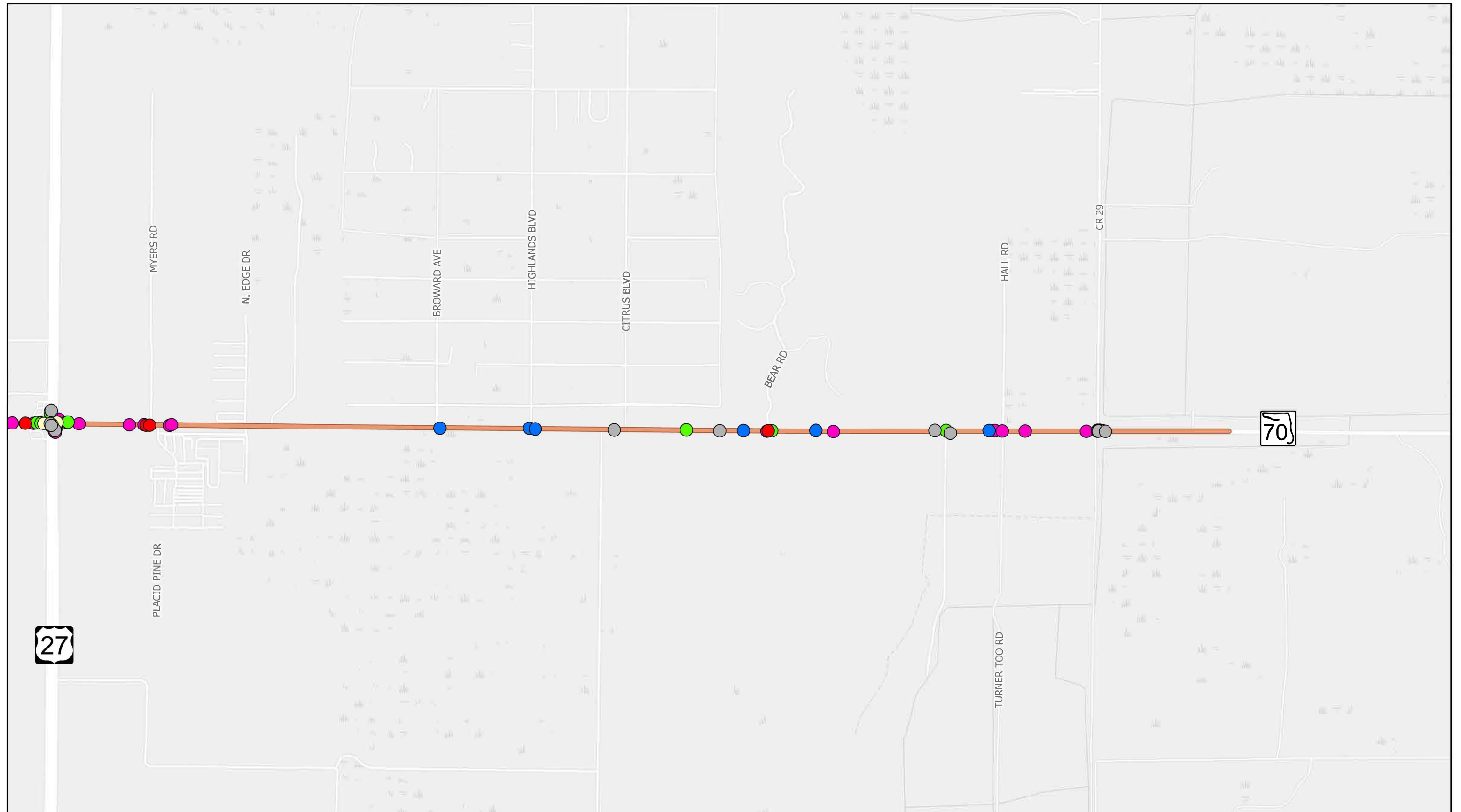
Sheet 1 of 2



	Legend ★ Fatal ● Injury ✚ Serious Injury — Project Limits		N 0 1,000 Feet	Figure 3-3 5-Year Historical Crash Severities Map (2021-2025) Sheet 2 of 2
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	Legend <table border="0"> <tr> <td>● Rear End (41)</td> <td>● Off Road (15)</td> <td>— Project Limits</td> </tr> <tr> <td>● Angle (19)</td> <td>● Left Turn (15)</td> <td></td> </tr> <tr> <td>● Sideswipe (18)</td> <td>● Other</td> <td></td> </tr> </table>	● Rear End (41)	● Off Road (15)	— Project Limits	● Angle (19)	● Left Turn (15)		● Sideswipe (18)	● Other			N 0 1,000 Feet	Figure 3-4 5-Year Historical Crash Types Map (2021-2025) Sheet 1 of 2
● Rear End (41)	● Off Road (15)	— Project Limits											
● Angle (19)	● Left Turn (15)												
● Sideswipe (18)	● Other												



Legend

- Rear End (41)
- Angle (19)
- Sideswipe (18)
- Off Road (15)
- Left Turn (15)
- Other
- Project Limits

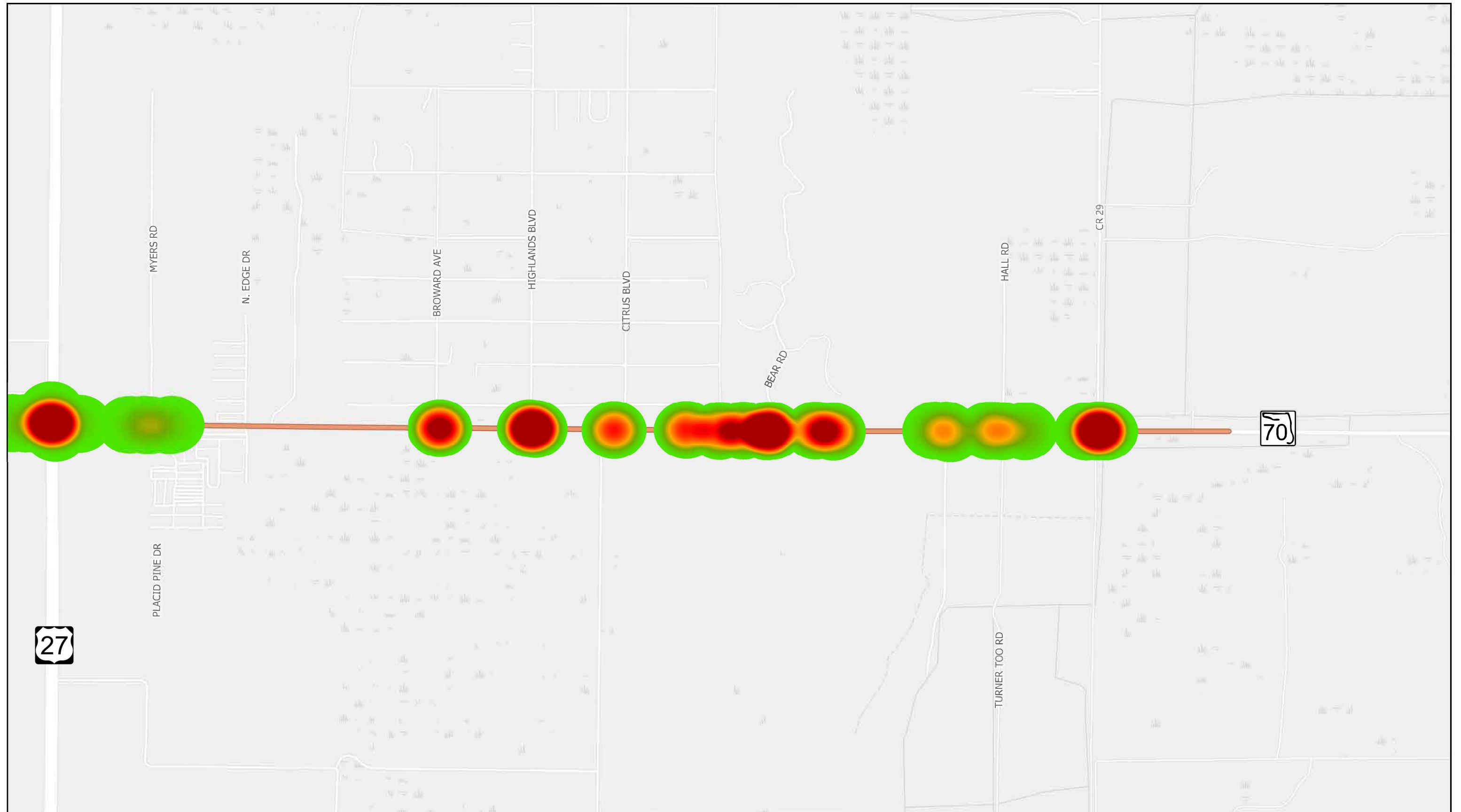


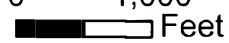
Figure 3-4
5-Year Historical Crash Types Map
(2021-2025)

Sheet 2 of 2



	Legend Low High Project Limits		N 0 1,000 Feet	Figure 3-5 5-Year Historical Crash Heat Map (2021-2025) Sheet 1 of 2
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	Legend Low High Project Limits		N  0 1,000 Feet 	Figure 3-5 5-Year Historical Crash Heat Map (2021-2025) Sheet 2 of 2
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3.4.2 Summary of All Fatal Crashes

A total of two (4 fatal crashes and 35 injury crashes occurred along the project study limits within the five-year period (2021 – 2025) analyzed). All the fatal crash events are briefly summarized below.

Fatal Injury Crashes (2021-2025)

1. This fatal crash (Report No. 88444605) occurred at 1:30 AM on 5/8/2021 in clear weather and dark, unlighted conditions. Vehicle #1 was traveling westbound on SR 70 approaching Placid View Drive when it traveled off the roadway onto both shoulders. The driver overcorrected, causing the vehicle to rotate and collide with a tree, resulting in ejection of the driver. Vehicle #1 continued west, struck a utility pole, and overturned, ejecting the passenger. Vehicle #2 traveling eastbound collided with Vehicle #1, followed by additional secondary crashes involving Vehicles #3 and #4. The driver and passenger of Vehicle #1 and the driver of Vehicle #4 sustained fatal injuries, while other drivers sustained incapacitating injuries.
2. This fatal crash (Report No. 24900580) occurred at 6:35 PM on 3/22/2022 in clear weather. Vehicle #1 (semi-truck) was traveling eastbound on SR 70 approaching County Road 29 and initiated a left turn at the intersection. Vehicle #1 failed to yield to Vehicle #2, which was traveling westbound on SR 70, and crossed into its path. As a result, Vehicle #2 collided with the front of Vehicle #1. The driver of Vehicle #2 and two passengers in Vehicle #2 sustained fatal injuries.
3. This fatal crash (Report No. 24980109) occurred at 4:53 PM on 7/16/2022 in rainy weather with wet roadway conditions. Vehicle #1 was traveling eastbound on SR 70 approaching Placid Lakes Boulevard when the driver lost control while reacting to surrounding traffic. Vehicle #1 crossed the centerline into the westbound lane and collided head-on with Vehicle #2. A passenger in Vehicle #2 sustained fatal injuries, while both drivers sustained incapacitating injuries.
4. This fatal crash (Report No. 26313211) occurred at 10:29 AM on 3/25/2024 in clear weather. Vehicle #1 (semi-truck) was traveling eastbound on SR 70 approaching CR-17 (Old SR 8) and crossed the centerline into the westbound lane. Vehicle #1 entered the path of Vehicle #2, which was traveling westbound, resulting in a head-on collision. The driver of Vehicle #2 sustained fatal injuries, while the driver of Vehicle #1 sustained non-incapacitating injuries.

SECTION 4 FUTURE TRAFFIC FORECASTING

4.1 ALTERNATIVES

4.1.1 No-Build Alternative

In the No-Build Alternative, SR 70 remains a 2-lane undivided highway. At the time this report was initiated, the SR 70 and US 27 intersection was undergoing changes as part of a concrete pavement project (FPID 439827-1-52-01). The project includes the addition of exclusive right turn lanes for the eastbound and westbound movements. The northbound and southbound right turn lanes will be signalized rather than yield controlled. The intersection also has the addition of signalized crosswalks. These intersection changes are reflected in the No-Build Alternative. **Figure 4-1** depicts the design year No-Build Lane configuration and AADT volumes, while **Figure 4-3** depicts the same for the opening year.

4.1.2 Build Alternative

As stated in Section 1.3.2, in the Build Alternative SR 70 will operate as a four-lane divided highway. An access management evaluation was conducted to determine the most appropriate median treatments at intersections and major driveways. The project's access management plan and roadway design (see Appendix K) are subject to change as the project progresses through the final design phase.

4.2 TRAVEL DEMAND MODELING (TDM)

The latest available future land use data was obtained as part of the travel demand forecasting process for this study. Anticipated socioeconomic and roadway network changes to the study subarea were incorporated into the modeling effort that is documented within the SR 70 Traffic Forecast Modeling Technical Memorandum completed in December 2022 (see **Appendix F**). The modeling effort involved conducting a sub-area base year (2015) validation refinement for the study area, as well as development of refined horizon year (2045) models. The regional travel demand model applied for this study was based on the adopted District One 2045 Regional Planning Model (D1RPM v2.0), which was the current/latest model at the time in 2022. The D1RPM is a travel demand forecasting tool developed by FDOT District One, in conjunction with the six District Metropolitan Planning Organizations/Transportation Planning Organizations (MPOs/TPOs) in support of their 2045 Long Range Transportation Plans (LRTP).

Following the development of the 2045 Model, which represents the traffic growth in the No-Build Alternative, a Build Alternative model was developed. The Build Alternative model plot is also included in **Appendix F**. The 2045 No-Build Alternative only incorporates adjacent projects that are included in the respective LRTP Cost Feasible Plans. The 2045 Build Alternative consists of SR 70 operating as a four-lane arterial from the DeSoto County line to CR 559/128th Avenue in Okeechobee County.

4.3 DEVELOPMENT OF DESIGN YEAR (2052) TRAFFIC VOLUMES**4.3.1 Selection of Growth Rates**

Both the TDM No-Build and Build volume forecasts have been reviewed for reasonableness by comparison to historical traffic trends analysis and population projections from the Bureau of Economic and Business Research (BEBR) where applicable. Based on this comparison, Build and No-Build Alternative traffic growth rates for the study area have been developed and are presented in **Table 4-1**. After a review of model growth, historical trends, and population growth forecasts, the corridor was segmented based on anticipated growth rates. Growth rates for each segment were selected for each segment based primarily on average model growth estimates, with consideration given to other data sources where appropriate. On average, the Build scenario is expected to experience 1.0-1.5% more annual growth along SR 70 beyond the No Build scenario. Growth rates for minor side streets were based on regional historical trends, facility type, and network connection, with a minimum rate of 2% selected for side streets. The Highlands County BEBR Population Projection report, Florida Traffic Online (FTO) Historical AADT reports, and trends analysis are included in **Appendix G**.

Table 4-1: SR 70 from Placid Lakes Boulevard/S Jefferson Avenue to East of CR 29 Growth Rates

Location		Base Year TDM AADT (2015)	Future Year No-Build TDM AADT (2045)	No-Build TDM Annual Growth Rate	Future Year Build TDM AADT (2045)	Build TDM Annual Growth Rate	Historic Trends	R ² Value ¹	BEBR Low	BEBR Medium	BEBR High	Selected Growth Rate (No-Build)	Selected Growth Rate (Build)
SR 70	Between Placid Lakes Boulevard/S Jefferson Avenue and Placid View Dr	2,688	5,579	3.59%	6,744	5.03%						4.0%	5.0%
	Between Placid View Dr and Old SR 8 (North)	2,338	5,165	4.03%	6,290	5.63%							
	Between Old SR 8 (North) and Old SR 8 (South)	2,359	5,221	4.04%	6,358	5.65%							
	Between Old SR 8 (South) and Distribution Blvd	2,335	5,156	4.03%	6,287	5.64%							
	Between Distribution Blvd and US 27	2,544	5,500	3.87%	6,624	5.35%	0.00%	0.16%				2.5%	4.0%
	Between US 27 and Highlands Blvd	4,530	7,532	2.21%	9,743	3.84%	0.31%	3.08%					
	Between Highlands Blvd and CR 29	4,709	7,883	2.25%	10,166	3.86%							
	East of CR 29	4,939	7,968	2.04%	10,268	3.60%							
Cross Streets	Placid Lakes Blvd North of SR 70	1,816	2,883	1.96%	3,090	2.34%	22.22%	90.19%	-0.42%	0.37%	1.16%	3.0%	4.0%
	Placid View Dr North of SR 70	812	1,225	1.70%	1,310	2.04%	5.56%	43.43%					
	Old SR 8 (North) North of SR 70	71	140	3.24%	155	3.94%	4.94%	48.76%					
	Old SR 8 (South) South of SR 70	24	86	8.61%	91	9.31%	11.11%	28.25%				3.5%	4.0%
	US 27 North of SR 70	8,027	15,910	3.27%	17,387	3.89%	-0.81%	15.42%					
	US 27 South of SR 70	7,072	14,464	3.48%	14,889	3.68%	1.72%	8.17%				3.0%	4.0%
	CR 29 North of SR 70	371	581	1.89%	693	2.89%	13.89%	75.76%					
	All Other Minor Cross Streets												

Selected average annual growth rates along SR 70 range from 2.5% to 4.0% for the No-Build scenario and 4.0% to 5.0% in the Build scenario. The selected growth rates for the cross streets in the study area range from 3.0% to 3.5% for the No-Build scenario and 4.0% for all cross streets in the Build scenario.

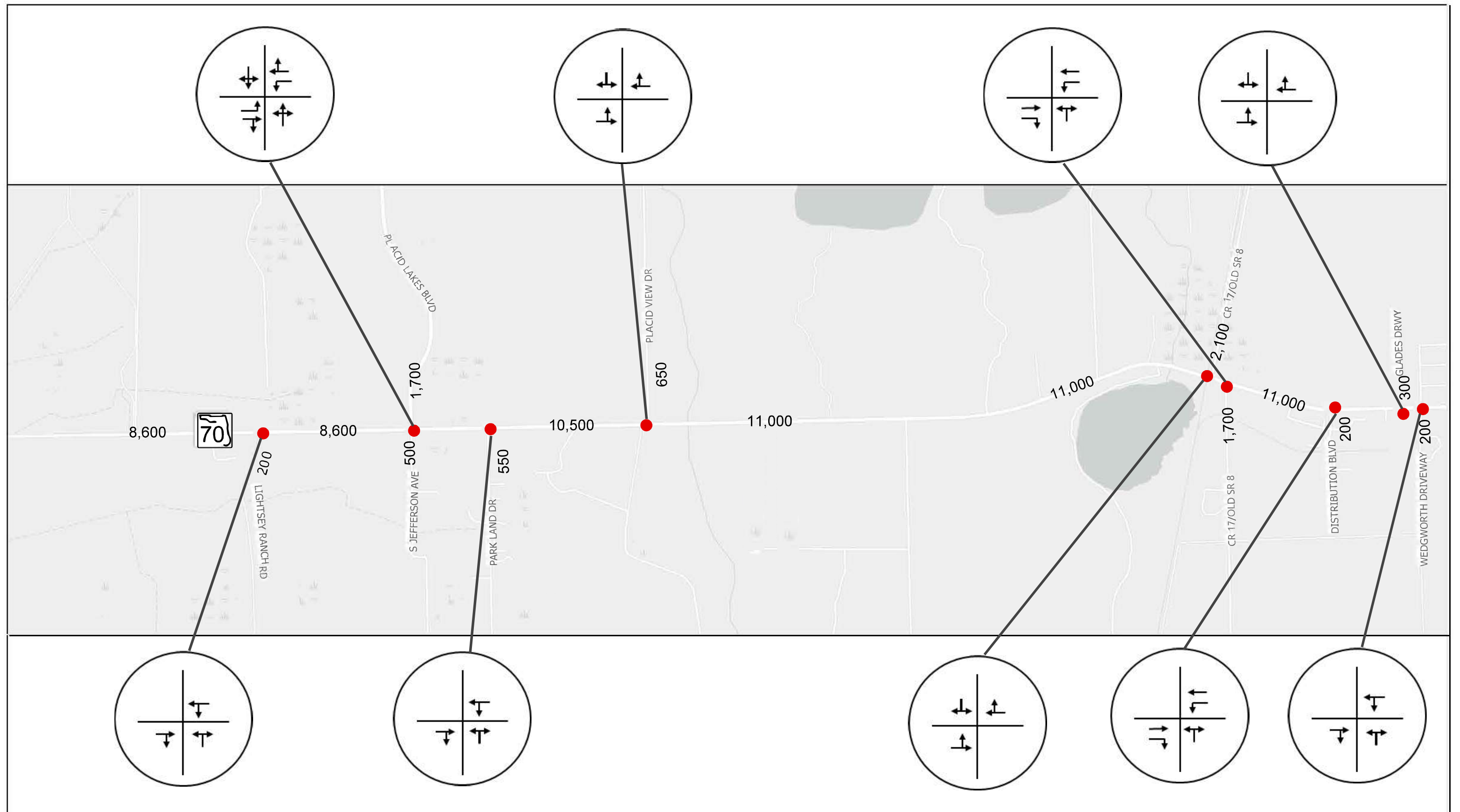
4.3.2 Design Year (2052) Annual Average Daily Traffic (AADT) Volumes

Future design year daily (AADT) volumes were developed for the No-Build and Build Alternatives by linearly growing the Existing (2022) AADTs by the respective selected growth rates to the design year of 2052. In both the No-Build and Build scenarios, some manual adjustments of AADTs were required to maintain AADT balance. No-Build AADTs and lane configuration are shown in **Figure 4-1**. Build AADTs and lane configuration are shown in **Figure 4-2**. The development of the No-Build and Build AADT volumes for the design year is documented in **Table 4-2**.

Table 4-2: Design Year (2052) AADT Volume Development

SR 70 Location	Existing	No-Build			Build		
	Existing Year (2022) AADT	Selected Growth Rate	Design Year (2052) AADT	Rounded AADT	Selected Growth Rate	Design Year (2052) AADT	Rounded AADT
Between S Jefferson Ave/Placid Lakes Blvd and Park Land Dr	5,100	4.0%	10,500 ¹	10,500 ¹	5.0%	12,000	12,000
Between Park Land Dr and Placid View Dr			11,220	11,000		12,750	13,000
Between Placid View Dr and Old SR 8 (North)							
Between Old SR 8 (North) and Old SR 8 (South)							
Between Old SR 8 (South) and Distribution Blvd							
Between Distribution Blvd and Glades Driveway							
Between Glades Driveway and Wedgworth Driveway							
Between Wedgworth Driveway and US 27							
Between US 27 and Myers Rd/Placid Pines Dr	5,600	2.5%	9,800	9,800	4.0%	12,320	12,500
Between Myers Rd/Placid Pines Dr and N Edge							
Between N Edge and Broward Ave							
Between Broward Ave and Highlands Ave							
Between Highlands Ave and Citrus Blvd							
Between Citrus Blvd and Bear Rd							
Between Bear Rd and Hall Rd							
Between Hall Rd and CR 29							
Cross Street Location	Existing	No-Build			Build		
	Existing Year (2022) AADT	Selected Growth Rate	Design Year (2052) AADT	Rounded AADT	Selected Growth Rate	Design Year (2052) AADT	Rounded AADT
Placid Lakes Blvd North of SR 70	900	3.0%	1,710	1,700	4.0%	1,980	2,000
S Jefferson Ave South of SR 70	250	3.0%	475	500	4.0%	550	550
Park Land Dr South of SR 70	300	3.0%	570	550	4.0%	660	650
Placid View Dr North of SR 70	350	3.0%	665	650	4.0%	770	750
Old SR 8 (North) North of SR 70	1,100	3.0%	2,090	2,100	4.0%	2,420	2,400
Old SR 8 (South) South of SR 70	900	3.0%	1,710	1,700	4.0%	1,980	2,000
Distribution Blvd South of SR 70	100	3.0%	190	200	4.0%	220	200
Glades Driveway North of SR 70	150	3.0%	285	300	4.0%	330	350
Wedgworth Driveway South of SR 70	100	3.0%	190	200	4.0%	220	200
US 27 North of SR 70	9,400	3.5%	19,270	19,000	4.0%	20,680	20,500
US 27 South of SR 70	8,800	3.0%	16,720	16,500	4.0%	19,360	19,500
Myers Rd North of SR 70	100	3.0%	190	200	4.0%	220	200
Placid Pines Dr South of SR 70	400	3.0%	760	750	4.0%	880	900
N Edge North of SR 70	100	3.0%	190	200	4.0%	220	200
Broward Ave North of SR 70	300	3.0%	570	550	4.0%	660	650
Highland Ave North of SR 70	500	3.0%	950	950	4.0%	1,100	1,100
Citrus Blvd North of SR 70	200	3.0%	380	400	4.0%	440	450
Bear Rd North of SR 70	100	3.0%	190	200	4.0%	220	200
Hall Rd North of SR 70	100	3.0%	190	200	4.0%	220	200
Turner Too Rd South of SR 70	100	3.0%	190	200	4.0%	220	200
CR 29 North of SR 70	750	3.0%	1,425	1,400	4.0%	1,650	1,700
KW Farms Road South of SR 70	100	3.0%	190	200	4.0%	220	200

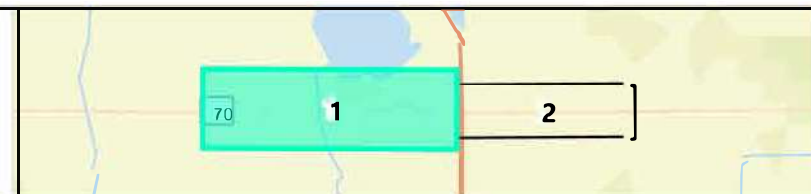
¹AADT adjusted for balancing between intersections as needed.



Legend

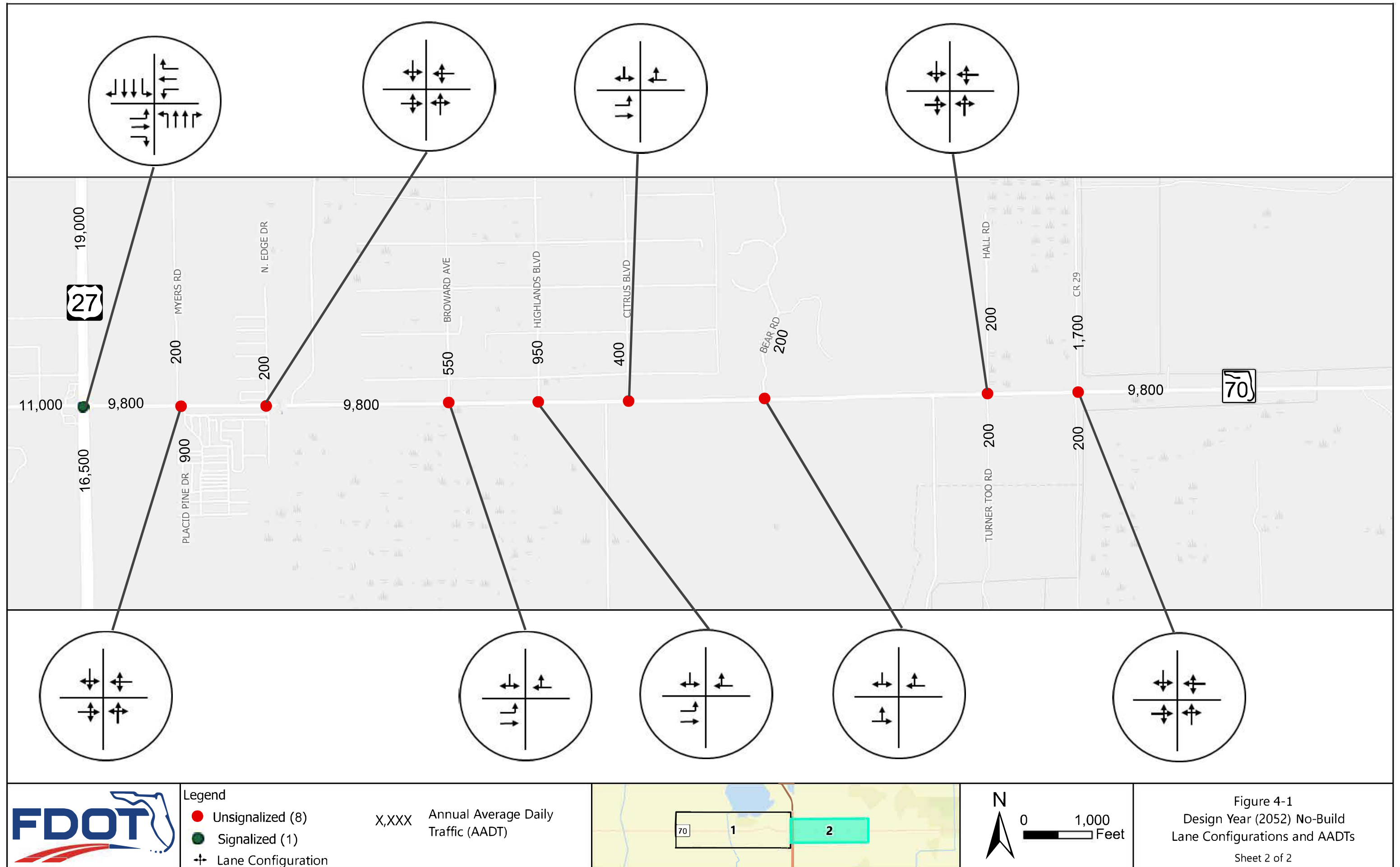
- Unsignalized (9)
- Signalized (0)
- ⬆️ Lane Configuration

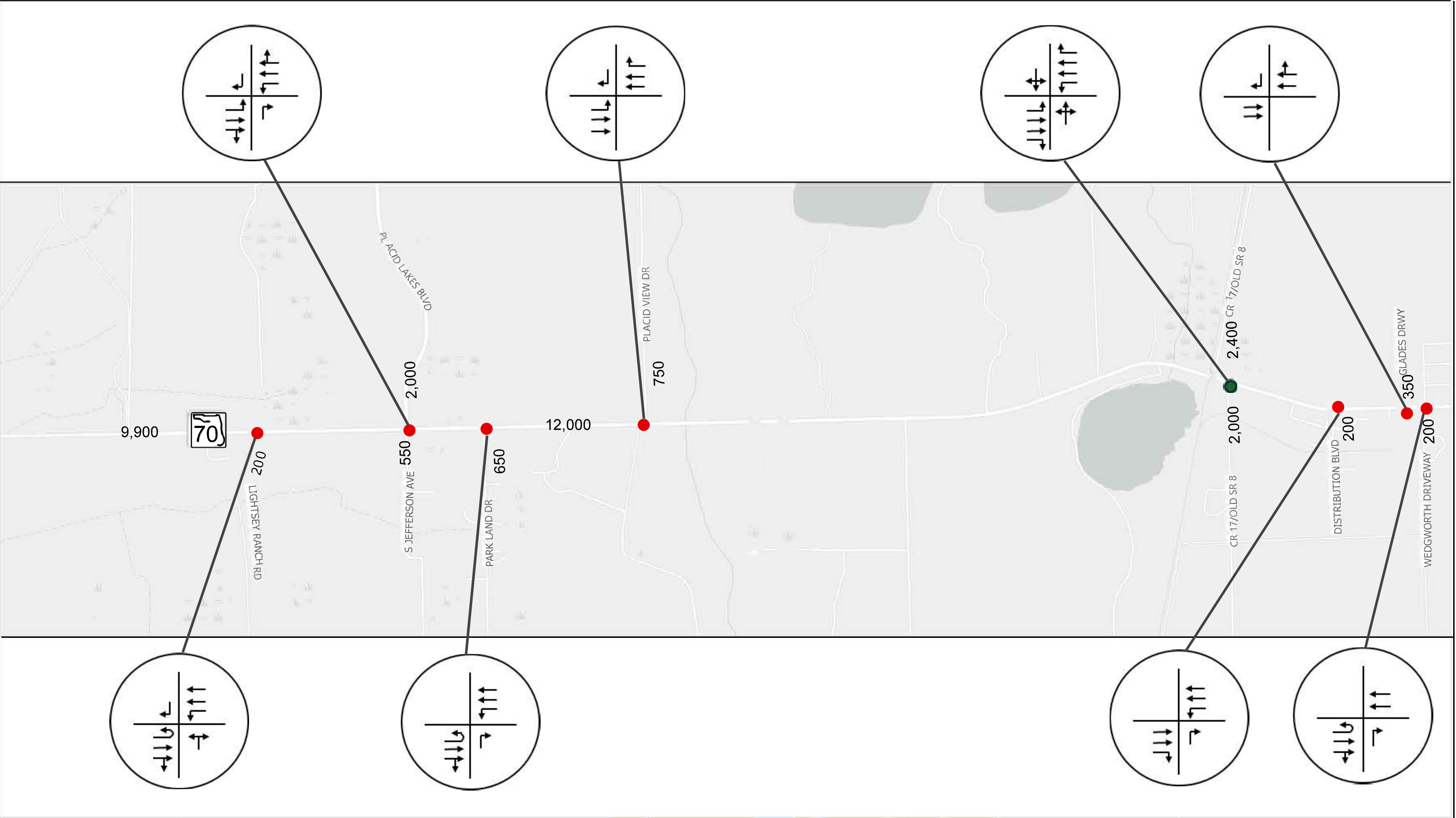
X,XXX Annual Average Daily Traffic (AADT)



0 1,000 Feet

Figure 4-1
Design Year (2052) No-Build
Lane Configurations and AADTs
Sheet 1 of 2



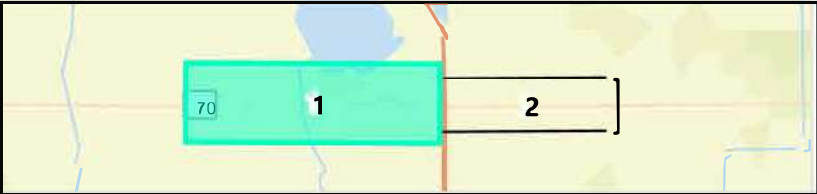




Legend

- Unsignalized (7)
- Signalized (1)
- ↔ Lane Configuration

X,XXX Annual Average Daily Traffic (AADT)



N



0 1,000 Feet

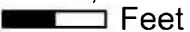


Figure 4-2
Design Year (2052) Build Lane Configurations and AADTs

Sheet 1 of 2





Legend

- Unsignalized (9)
- Signalized (3)
- ⬆ Lane Configuration

X,XXX Annual Average Daily Traffic (AADT)

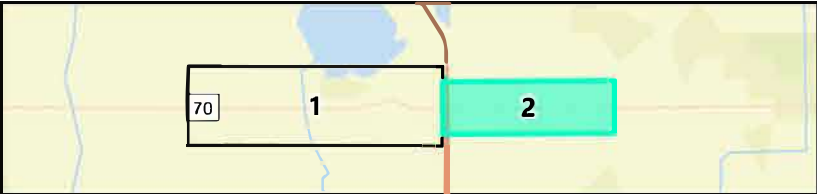




Figure 4-2
Design Year (2052) Build
Lane Configurations and AADTs
Sheet 2 of 2

4.3.3 Design Year (2052) Directional Design Hour Volumes (DDHVs) and Turning Movement Volumes

Design year (2052) directional design hourly volumes (DDHVs) were developed in accordance with FDOT's Project Traffic Forecasting Handbook (2019) by applying selected K and D factors to the 2052 AADT values. Peak hour turning movement volumes were developed at study intersections by applying the existing turning movement percentages to the DDHVs. The resulting volume distribution was smoothed to replicate logical corridor distribution, ensuring that calculated values are not lower than existing values and accounting for volume imbalances between intersections (where appropriate). **Table 2-1** in **Section 2.4** documents the K and D factors used in developing peak hour volumes for both the No-Build and Build scenarios. Also included in **Table 2-1** are the T-factors and peak hour factors (PHFs) used in the No-Build and Build analysis.

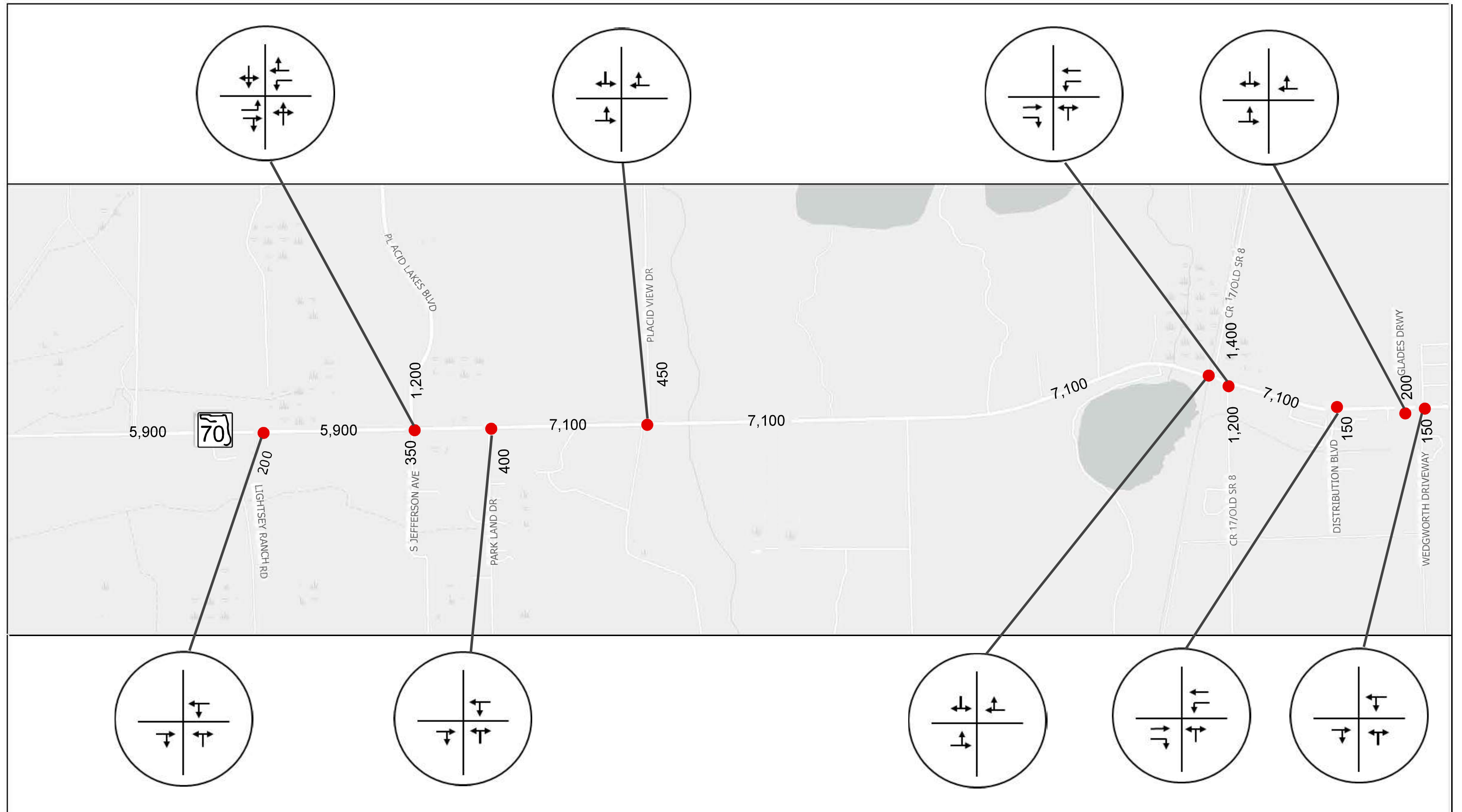
For both the No-Build and Build scenarios, some manual adjustments were necessary to achieve better balance and proper traffic growth. No-Build turning movement volumes are shown in **Figure 5-1** and Build turning movement volumes are shown in **Figure 5-2**. Following the 2023 PTAR submittal, design changes were implemented that modified intersection configurations and operations. Design hour traffic volumes have been adjusted to account for these design changes.

4.3.4 Opening Year (2032) Annual Average Daily Traffic (AADT) Volumes

Opening year daily (AADT) volumes were developed for the No-Build and Build Alternatives by linearly growing the Existing (2022) AADTs by the respective selected growth rates to the opening year of 2032. No-Build AADTs and lane configuration are shown in **Figure 4-3**. Build AADTs and lane configuration are shown in **Figure 4-4**. The development of the No-Build and Build AADT volumes for the opening and design year is documented in **Table 4-3**.

Table 4-3: Opening Year (2032) AADT Volume Development

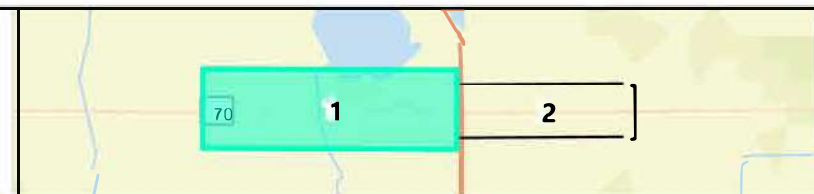
SR 70 Location	Existing	No-Build			Build		
	Existing Year (2022) AADT	Selected Growth Rate	Design Year (2032) AADT	Rounded AADT	Selected Growth Rate	Design Year (2032) AADT	Rounded AADT
Between Lightsey Ranch Rd and S Jefferson Ave/Placid Lakes Blvd	4,500	3.0%	5,850	5,900	4.0%	6,300	6,300
Between S Jefferson Ave/Placid Lakes Blvd and Park Land Dr	5,100	4.0%	7,140	7,100	5.0%	7,650	7,700
Between Park Land Dr and Placid View Dr							
Between Placid View Dr and Old SR 8 (North)							
Between Old SR 8 (North) and Old SR 8 (South)							
Between Old SR 8 (South) and Distribution Blvd							
Between Distribution Blvd and Glades Driveway							
Between Glades Driveway and Wedgworth Driveway							
Between Wedgworth Driveway and US 27							
Between US 27 and Myers Rd/Placid Pines Dr	5,600	2.5%	7,000	7,000	4.0%	7,840	7,800
Between Myers Rd/Placid Pines Dr and N Edge							
Between N Edge and Broward Ave							
Between Broward Ave and Highlands Ave							
Between Highlands Ave and Citrus Blvd							
Between Citrus Blvd and Bear Rd							
Between Bear Rd and Hall Rd							
Between Hall Rd and CR 29							
Cross Street Location	Existing	No-Build			Build		
	Existing Year (2022) AADT	Selected Growth Rate	Design Year (2032) AADT	Rounded AADT	Selected Growth Rate	Design Year (2032) AADT	Rounded AADT
Placid Lakes Blvd North of SR 70	900	3.0%	1,170	1,200	4.0%	1,260	1,300
S Jefferson Ave South of SR 70	250	3.0%	325	350	4.0%	350	350
Park Land Dr South of SR 70	300	3.0%	390	400	4.0%	420	400
Placid View Dr North of SR 70	350	3.0%	455	450	4.0%	490	500
Old SR 8 (North) North of SR 70	1,100	3.0%	1,430	1,400	4.0%	1,540	1,500
Old SR 8 (South) South of SR 70	900	3.0%	1,170	1,200	4.0%	1,260	1,300
Distribution Blvd South of SR 70	100	3.0%	130	150	4.0%	140	150
Glades Driveway North of SR 70	150	3.0%	195	200	4.0%	210	200
Wedgworth Driveway South of SR 70	100	3.0%	130	150	4.0%	140	150
US 27 North of SR 70	9,400	3.5%	12,690	12,500	4.0%	13,160	13,000
US 27 South of SR 70	8,800	3.0%	11,440	11,500	4.0%	12,320	12,500
Myers Rd North of SR 70	100	3.0%	130	150	4.0%	140	150
Placid Pines Dr South of SR 70	400	3.0%	520	500	4.0%	560	550
N Edge North of SR 70	100	3.0%	130	150	4.0%	140	150
Broward Ave North of SR 70	300	3.0%	390	400	4.0%	420	400
Highland Ave North of SR 70	500	3.0%	650	650	4.0%	700	700
Citrus Blvd North of SR 70	200	3.0%	260	250	4.0%	280	300
Bear Rd North of SR 70	100	3.0%	130	150	4.0%	140	150
Hall Rd North of SR 70	100	3.0%	130	150	4.0%	140	150
Turner Too Rd South of SR 70	100	3.0%	130	150	4.0%	140	150
CR 29 North of SR 70	750	3.0%	975	1,000	4.0%	1,050	1,100
KW Farms Road South of SR 70	100	3.0%	130	150	4.0%	140	150



Legend

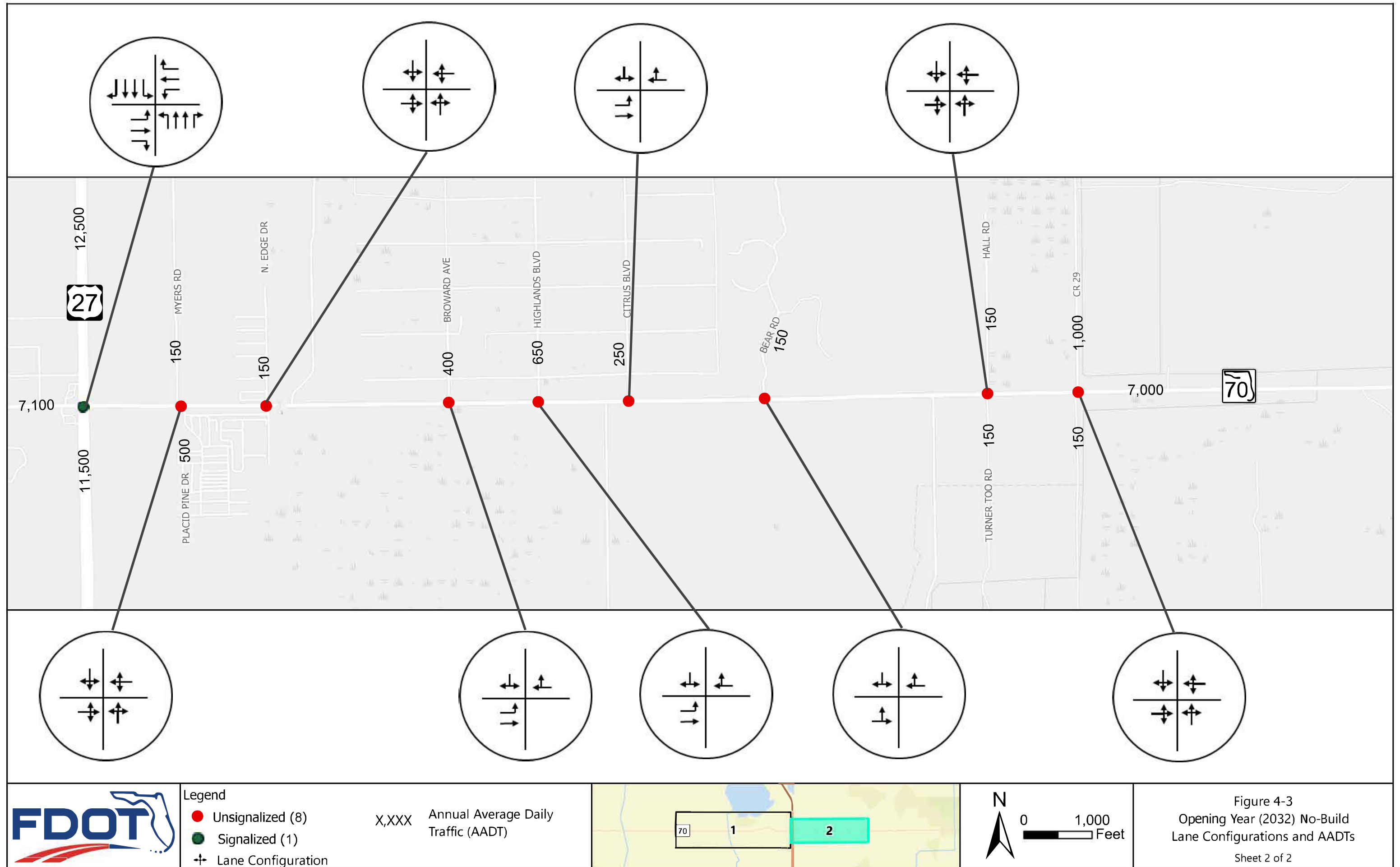
- Unsignalized (9)
- Signalized (0)
- ⬆️ Lane Configuration

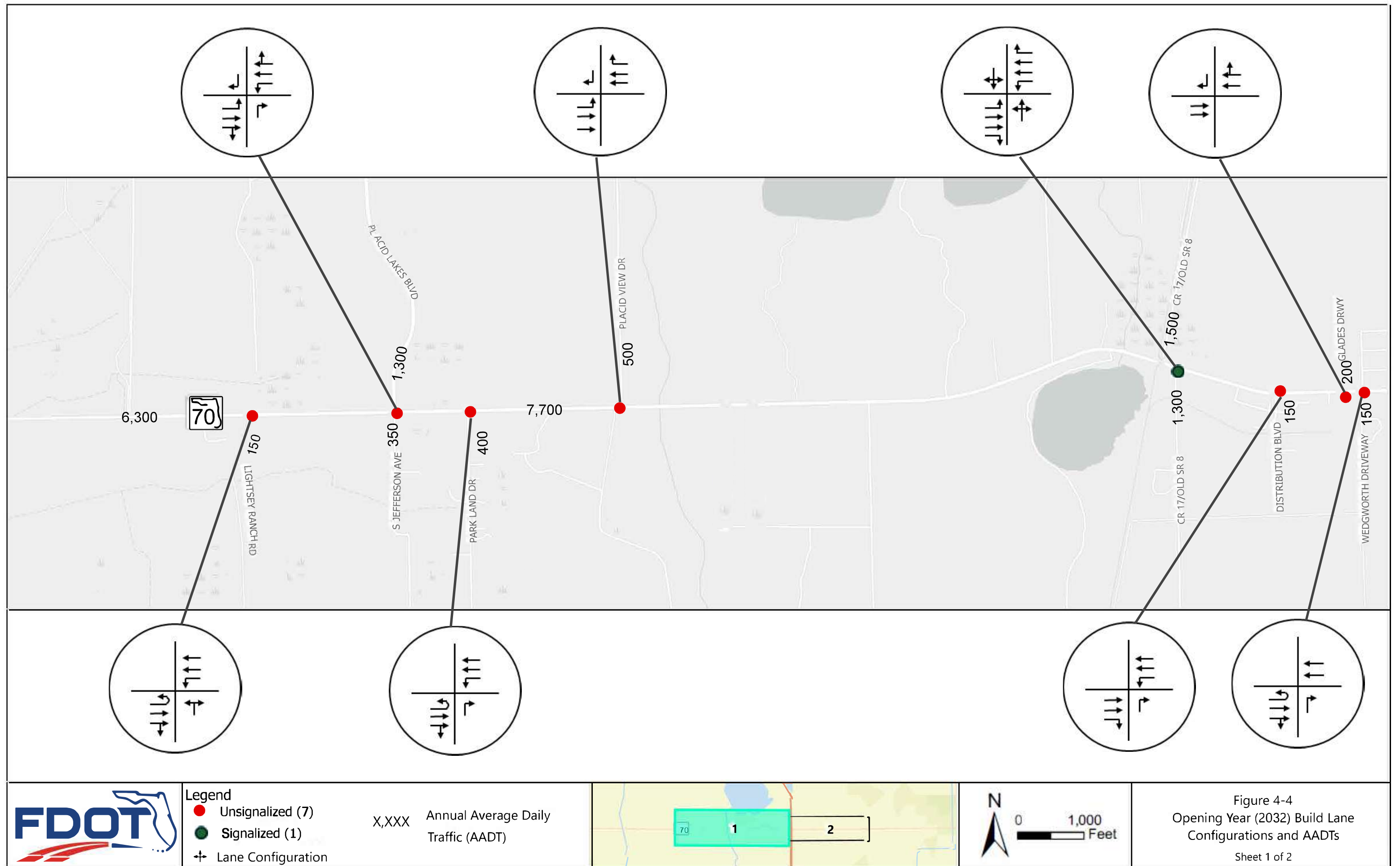
X,XXX Annual Average Daily Traffic (AADT)

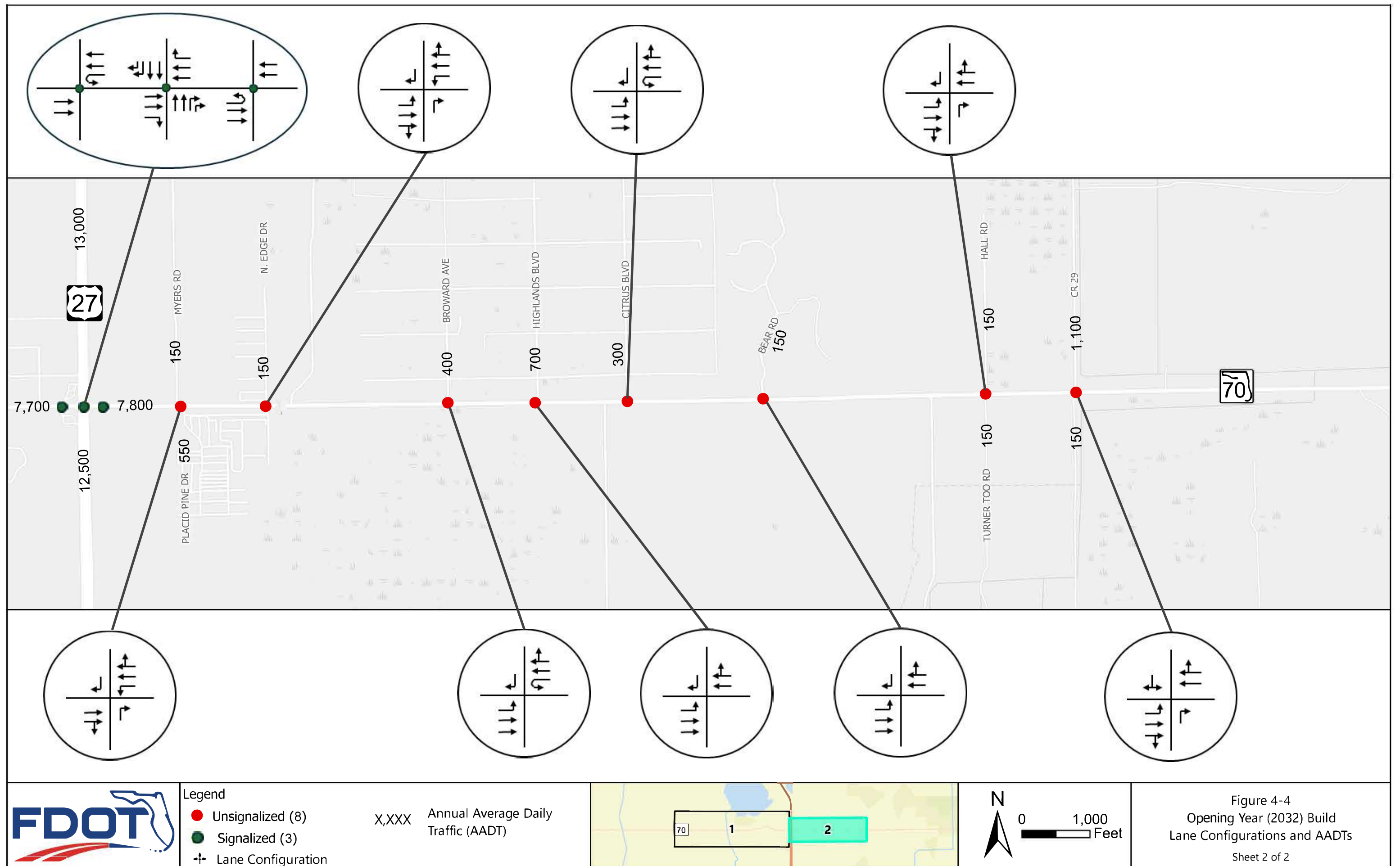


0 1,000 Feet

Figure 4-3
Opening Year (2032) No-Build
Lane Configurations and AADTs
Sheet 1 of 2







4.3.5 Opening Year (2032) Directional Design Hour Volumes (DDHVs) and Turning Movement Volumes

Opening year (2032) directional design hourly volumes (DDHVs) were developed in slightly different manners between the No-Build and Build scenarios based on differences in access points along the corridor. The Opening Year No-Build turning movement volumes were linearly interpolated between Existing and Design Year No-Build turning movement volumes. The Opening Year Build DDHVs were developed by the application of negative growth to the design year Build hourly volumes. The resulting volume distribution was smoothed to replicate logical corridor distribution, ensuring that calculated values are not lower than existing values and accounting for volume imbalances between intersections (where appropriate).

For both the No-Build and Build scenarios, some manual adjustments were necessary to achieve better balance and proper traffic growth. No-Build turning movement volumes are shown in **Figure 6-1** and Build turning movement volumes are shown in **Figure 6-2**.

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

The following sections contain the results of the operational analyses for the No-Build and Build Alternatives for design year (2052) conditions.

5.1 DESIGN YEAR (2052) NO-BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2052 design hour traffic volumes, the 2052 No-Build Alternative was analyzed for intersection performance in *Synchro 12* using Highway Capacity Manual (HCM) 6th Edition methodology, like the analysis of Existing Conditions. Future signal timings at US 27 were optimized for 2052 conditions in the No-Build scenario to represent a realistic condition. The US 27 intersection is also undergoing geometric changes that are reflected in the Synchro analysis. The No-Build Alternative hourly traffic conditions are depicted in **Figure 5-1**. The signalized intersection at US 27 is anticipated to operate with an overall LOS worse than the target of LOS “C” by the year 2052 and many of the unsignalized intersections are anticipated to operate with at least one movement LOS worse than the target of LOS “C” by the year 2052. Overall intersection operations are summarized in **Table 5-1**. Detailed results, by movement, are summarized in **Table 5-2** and **Table 5-3**. No-Build Alternative HCM 6th Edition reports can be found in **Appendix H**.



Legend

- Unsignalized (9)
- Signalized (0)
- ⬆️ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 5-1
Design Year (2052) No-Build AM (PM) Hourly
Volumes
Sheet 1 of 2



Legend

- Unsignalized (8)
- Signalized (1)
- ⊕ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 5-1
Design Year (2052) No-Build AM (PM) Hourly
Volumes
Sheet 2 of 2

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-1: Design Year (2052) No-Build Overall Intersection Operations

SR 70 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay ¹	LOS ²	Delay ¹	LOS ²
Placid Lakes Boulevard/S Jefferson Avenue	TWSC ³	28.9 (SB)	D	28.2 (SB)	D
Park Land Drive	TWSC (T-intersection) ³	12.6 (NB)	B	17.9 (NB)	C
Placid View Drive	TWSC (T-intersection) ³	21.7 (SB)	C	20.3 (SB)	C
Old SR 8 (North)	TWSC (T-intersection) ³	64.5 (SB)	F	53.0 (SB)	F
Old SR 8 (South)	TWSC (T-intersection) ³	30.0 (NB)	D	88.8 (NB)	F
Distribution Boulevard	TWSC (T-intersection) ³	19.5 (NB)	C	16.7 (NB)	C
Glades Driveway	TWSC (T-intersection) ³	22.6 (SB)	C	21.1 (SB)	C
Wedgworth Driveway	TWSC (T-intersection) ³	19.9 (NB)	C	14.5 (NB)	B
US 27	Signalized	79.1	E	75.2	E
Myers Road/Placid Pine Drive	TWSC ³	36.8 (NB)	E	30.7 (NB)	D
N Edge	TWSC ³	13.3 (SB)	B	11.4 (SB)	B
Broward Avenue	TWSC (T-intersection) ³	13.3 (SB)	B	11.3 (SB)	B
Highland Avenue	TWSC (T-intersection) ³	13.9 (SB)	B	12.1 (SB)	B
Citrus Boulevard	TWSC (T-intersection) ³	11.5 (SB)	B	11.1 (SB)	B
Bear Road	TWSC (T-intersection) ³	12.4 (SB)	B	11.0 (SB)	B
Hall Road/Turner Too Road	TWSC ³	26.1 (SB)	D	22.4 (NB)	C
CR 29/KW Farms Road	TWSC ³	31.4 (SB)	D	17.5 (SB)	C

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-2: Design Year (2052) No-Build AM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	9.5	A	2.5	460
		Through/Right	-	-	-	-
	SB	Left/Through/Right	28.9	D	60.0	-
	WB	Left	8.4	A	0.0	460
		Through/Right	-	-	-	-
	NB	Left/Through/Right	12.0	B	5.0	-
Park Land Drive	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.6	A	0.0	-
	NB	Left/Right	12.6	B	7.5	-
Placid View Drive	EB	Left/Through	9.3	A	2.5	-
	SB	Left/Right	21.7	C	15.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (North)	EB	Left/Through	9.3	A	7.5	-
	SB	Left/Right	64.5	F	150.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (South)	EB	Through	0.0	A	-	-
		Right	0.0	A	-	110
	WB	Left	10.7	B	15.0	350
		Through	-	-	-	-
	NB	Left/Right	30.0	D	30.0	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	250
	WB	Left	8.8	A	5.0	335
		Through	0.0	A	-	-
	NB	Left/Right	19.5	C	2.5	-
Glades Driveway	EB	Left/Through	9.5	A	0.0	-
	SB	Left/Right	22.6	C	5.0	-
	WB	Through/Right	-	-	-	-
Wedgworth Driveway	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.8	A	2.5	-
	NB	Left/Right	19.9	C	5.0	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-2: Design Year (2052) No-Build AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	33.7	C	95.0	395
		Through	50.2	D	287.5	-
		Right	26.7	C	70.0	395
	SB	Left	252.0	F	475.0	560
		Through	79.6	F	442.5	-
		Right	32.3	C	175.0	455
	WB	Left	29.1	C	95.0	395
		Through	132.0	F	655.0	-
		Right	27.8	C	105.0	395
	NB	Left	166.1	F	275.0	550
		Through	32.1	C	177.5	-
		Right	27.1	C	80.0	620
Myers Road/Placid Pine Drive	EB	Left/Through/Right	9.3	A	0.0	-
	SB	Left/Through/Right	31.6	D	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	36.8	E	32.5	-
N Edge	EB	Left/Through/Right	9.3	A	0.0	-
	SB	Left/Through/Right	13.3	B	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	9.1	A	2.5	545
		Through	-	-	-	-
	SB	Left/Right	13.0	B	10.0	-
	WB	Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	8.9	A	2.5	545
		Through	-	-	-	-
	SB	Left/Right	13.9	B	17.5	-
	WB	Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.7	A	0.0	545
		Through	-	-	-	-
	SB	Left/Right	11.5	B	5.0	-
	WB	Through/Right	-	-	-	-
Bear Road	EB	Left/Through	8.6	A	0.0	-
	SB	Left/Right	12.4	B	2.5	-
	WB	Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	8.7	A	0.0	-
	SB	Left/Through/Right	26.1	D	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
CR 29	EB	Left/Through/Right	8.8	A	2.5	-
	SB	Left/Through/Right	31.4	D	47.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-3: Design Year (2052) No-Build PM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.6	A	5.0	460
		Through/Right	-	-	-	-
	SB	Left/Through/Right	28.2	D	22.5	-
	WB	Left	8.8	A	0.0	460
		Through/Right	-	-	-	-
	NB	Left/Through/Right	19.8	C	7.5	-
Park Land Drive	EB	Through/Right	-	-	-	-
	WB	Left/Through	9.0	A	2.5	-
	NB	Left/Right	17.9	C	2.5	-
Placid View Drive	EB	Left/Through	8.8	A	2.5	-
	SB	Left/Right	20.3	C	7.5	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (North)	EB	Left/Through	9.8	A	12.5	-
	SB	Left/Right	53.0	F	60.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (South)	EB	Through	-	-	-	-
		Right	-	-	-	110
	WB	Left	9.5	A	5.0	350
		Through	-	-	-	-
	NB	Left/Right	88.8	F	170.0	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	250
	WB	Left	0.0	A	0.0	335
		Through	-	-	-	-
	NB	Left/Right	16.7	C	5.0	-
Glades Driveway	EB	Left/Through	8.5	A	0.0	-
	SB	Left/Right	21.1	C	5.0	-
	WB	Through/Right	0.0	A	-	-
Wedgworth Driveway	EB	Through/Right	-	-	-	-
	WB	Left/Through	9.1	A	0.0	-
	NB	Left/Right	14.5	B	2.5	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-3: Design Year (2052) No-Build PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	82.6	F	215.0	395
		Through	132.5	F	655.0	-
		Right	25.5	C	50.0	395
	SB	Left	189.7	F	385.0	560
		Through	28.7	C	195.0	-
		Right	23.0	C	45.0	455
	WB	Left	25.7	C	60.0	395
		Through	48.4	D	310.0	-
		Right	27.3	C	97.5	395
	NB	Left	257.6	F	397.5	550
		Through	50.6	D	320.0	-
		Right	28.6	C	127.5	620
Myers Road/Placid Pine Drive	EB	Left/Through/Right	0.0	A	0.0	-
	SB	Left/Through/Right	30.3	D	7.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	30.7	D	12.5	-
N Edge	EB	Left/Through/Right	8.7	A	2.5	-
	SB	Left/Through/Right	11.4	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	8.7	A	2.5	545
		Through	-	-	-	-
	SB	Left/Right	11.3	B	2.5	-
	WB	Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	9.0	A	10.0	545
		Through	-	-	-	-
	SB	Left/Right	12.1	B	5.0	-
	WB	Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.6	A	2.5	545
		Through	-	-	-	-
	SB	Left/Right	11.1	B	2.5	-
	WB	Through/Right	-	-	-	-
Bear Road	EB	Left/Through	8.5	A	0.0	-
	SB	Left/Right	11.0	B	0.0	-
	WB	Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	8.7	A	0.0	-
	SB	Left/Through/Right	13.3	B	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	22.4	C	5.0	-
CR 29	EB	Left/Through/Right	8.8	A	0.0	-
	SB	Left/Through/Right	17.5	C	12.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS C or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

5.2 DESIGN YEAR (2052) NO-BUILD ALTERNATIVE ROADWAY SEGMENT LOS

As was done for the Existing Conditions analysis, three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's 2023 Multimodal Quality/Level of Service Handbook. The Motor Vehicle Highway Generalized Service Volume tables for C1 & C2 classified roadways were utilized to assess the LOS for each SR 70 segment.

All segments of SR 70 operate at LOS D in the No-Build condition. **Table 5-4** shows the LOS for each direction of each roadway segment.

Table 5-4: Design Year (2052) No-Build Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length (miles)	Existing Year (2022)			
					Typical Section	DDHV	Target LOS Volume Capacity ¹	LOS
SR 70	EB	West of S Jefferson Avenue	Old SR 8 North	4.25	2-Lane, Undivided with LT Only	686	430	D
	WB				2-Lane, Undivided with LT Only	635	430	D
	EB	Old SR 8 North	US 27	1.08	2-Lane, Undivided with LT & RT	649	430	D
	WB				2-Lane, Undivided, with LT Only	705	430	D
	EB	US 27	CR 29	2.76	2-Lane, Undivided, with LT Only	706	430	D
	WB				2-Lane, Undivided, with LT Only	647	430	D

¹LOS Target is LOS C.

5.3 DESIGN YEAR (2052) BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2052 design hour traffic volumes, the 2052 Build Alternative was analyzed for intersection performance in *Synchro 12* using Highway Capacity Manual (HCM) 6th Edition methodology and FDOT's Intersection Control Evaluation (ICE) process. The intersection of SR 70 & US 27 was analyzed using ICE and the selected build configuration is a full Median U-turn (MUT). Separately, the Old SR 8 intersection was also analyzed using the ICE process. The details of the ICE analysis are discussed in **Section 5.4**. The following other study intersections were evaluated using only *Synchro 12*. Their assumed median access configuration is in parentheses.

- Placid Lakes Boulevard/S Jefferson Avenue (bidirectional median opening)
- Park Land Drive (bidirectional median opening)
- Placid View Drive (directional median opening)
- Old State Route 8 (traffic signal, ICE evaluation by others)
- Distribution Boulevard (directional median opening)
- Glades Driveway (directional median opening)

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

- Wedgworth Driveway (directional median opening)
- Myers Road/Placid Pine Drive (directional median opening)
- N Edge Street (bidirectional median opening)
- Broward Avenue (bidirectional median opening)
- Highlands Boulevard (directional median opening)
- Citrus Boulevard (bidirectional median opening)
- Bear Road (directional median opening)
- Hall Road/Turner Too Road (directional median opening)
- CR 29/KW Farms Road (bidirectional median opening)

The Build Alternative hourly traffic conditions, including the US 27 intersection evaluated using ICE, are depicted in **Figure 5-2**. Overall intersection operations are summarized in **Table 5-5**. Detailed results, by movement, are summarized in **Table 5-6** and **Table 5-7**. Build Alternative HCM 6th Edition reports can be found in **Appendix I**. Simtraffic reports, for the US 27 MUT operations, can be found in **Appendix J**.

Recommended left turn lane lengths are shown in **Table 5-8**. The turn lane lengths are based on the 95th percentile queue length and appropriate deceleration lane length based on design speed as defined in *Chapter 212* in the *FDOT Design Manual (FDM)*. Concepts representing the Build Alternative, including proposed intersection configurations, are presented in **Appendix K**.



Legend

- Unsignalized (7)
- Signalized (1)
- ↑↑↑ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 5-2
Design Year (2052) Build AM (PM) Hourly Volumes
Sheet 1 of 2



Legend

- Unsignalized (8)
- Signalized (3)
- ↑↑↑ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 5-2
Design Year (2052) Build AM (PM)
Hourly Volumes
Sheet 2 of 2

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-5: Design Year (2052) Build Overall Intersection Operations

SR 70 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay ¹	LOS ²	Delay ¹	LOS ²
Placid Lakes Boulevard/S Jefferson Avenue	TWSC ³	12.6 (SB)	B	11.1 (NB)	B
Park Land Drive	TWSC (T-intersection) ³	10.6 (NB)	B	11.2 (NB)	B
Placid View Drive	TWSC (T-intersection) ³	11.2 (SB)	B	10.2 (SB)	B
Old SR 8	Signalized Intersection	12.5	B	14.2	B
Distribution Boulevard	TWSC (T-intersection) ³	11.4 (NB)	B	13.1 (NB)	B
Glades Driveway	TWSC (T-intersection) ³	12.9 (SB)	B	11.6 (SB)	B
Wedgworth Driveway	TWSC (T-intersection) ³	12.3 (NB)	B	13.6 (NB)	B
US 27	Median U-Turn (MUT) ⁴	35.0	C	37.3	D
Myers Road/Placid Pine Drive	TWSC ³	11.5 (NB)	B	12.1 (NB)	B
N Edge	TWSC ³	11.7 (SB)	B	11.1 (SB)	B
Broward Avenue	TWSC (T-intersection) ³	11.5 (SB)	B	10.7 (SB)	B
Highland Avenue	TWSC (T-intersection) ³	11.2 (SB)	B	10.5 (SB)	B
Citrus Boulevard	TWSC (T-intersection) ³	10.6 (SB)	B	10.3 (SB)	B
Bear Road	TWSC (T-intersection) ³	10.3 (SB)	B	10.2 (SB)	B
Hall Road/Turner Too Road	TWSC ³	11.4 (SB)	B	11.9 (SB)	B
CR 29/KW Farms Road	TWSC ³	44.2 (SB)	E	18.7 (SB)	C

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

4: Delay results for MUT are average of all vehicle delay for 10 Simtraffic runs; HCM 6th methodology not compatible with MUT configuration

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-6: Design Year (2052) Build AM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	10.4	B	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	12.6	B	25.0	-
	WB	Left	9.0	A	0.0	560
		Through	0.0	A	-	-
		Through/Right	0.0	A	-	-
	NB	Right	10.2	B	2.5	-
Park Land Drive	EB	U-Turn	12.5	B	0.0	560
		Through/Right	-	-	-	-
	WB	Left	9.0	A	0.0	560
		Through	-	-	-	-
	NB	Right	10.6	B	5.0	-
Placid View Drive	EB	Left	10.7	B	2.5	560
		Through	-	-	-	-
	WB	Right	11.2	B	7.5	-
		Through	-	-	-	-
		Right	-	-	-	460
Old State Route 8	EB	Left	16.3	B	35.0	450
		Through	9.7	A	45.0	-
		Right	12.2	B	70.0	450
	SB	Left/ Through/Right	16.4	B	57.5	-
	WB	Left	18.0	B	57.5	450
		Through	11.5	B	75.0	-
		Right	8.3	A	12.5	450
	NB	Left/ Through/Right	15.4	B	35.0	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	350
	WB	Left	10.1	B	10.0	450
		Through	-	-	-	-
	NB	Right	11.4	B	0.0	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-6: Design Year (2052) Build AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Glades Driveway	EB	Through	-	-	-	-
	SB	Right	12.9	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Wedgworth Driveway	EB	U-Turn	15.5	C	2.5	450
		Through/Right	-	-	-	-
	WB	Through	-	-	-	-
	NB	Right	12.3	B	2.5	-
US 27 MUT (Western U-Turn Intersection) ⁵	EB	Through	18.6	B	230.0	-
	WB	U-Turn	15.7	B	261.0	590
		Through	3.5	A	0.0	-
US 27 MUT (Main Intersection) ⁵	EB	Through	19.1	B	295.0	-
		Right	17.3	A	208.0	560
	SB	Through	17.9	B	336.0	-
		Right	13.2	B	163.0	625
	WB	Through	20.0	B	350.0	-
		Right	18.4	B	255.0	605
	NB	Through	13.3	B	194.0	-
		Right	12.0	B	98.0	605
US 27 MUT (Eastern U-Turn Intersection) ⁵	EB	U-Turn	14.6	B	215.0	670
		Through	3.6	A	0.0	-
	WB	Through	19.5	B	326.0	-
Myers Road/Placid Pine Drive	EB	Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	11.4	B	0.0	-
	WB	Left	11.2	B	2.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	11.5	B	10.0	-
N. Edge	EB	U-Turn/Left	14.5	B	15.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	11.7	B	5.0	-
	WB	U-Turn/Left	12.5	B	0.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

5: Simtraffic delay values

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-6: Design Year (2052) Build AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Broward Avenue	EB	Left	9.9	A	2.5	560
		Through	-	-	-	-
	SB	Right	11.5	B	7.5	-
	WB	U-Turn	12.5	B	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	9.6	A	2.5	560
		Through	-	-	-	-
	SB	Right	11.2	B	10.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	9.4	A	0.0	560
		Through	-	-	-	-
	SB	Right	10.6	B	5.0	-
	WB	U-Turn	12.0	B	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
Bear Road	EB	Left	9.4	A	2.5	560
		Through	-	-	-	-
	SB	Right	10.3	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left	9.3	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	11.4	B	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-
CR 29	EB	Left	9.6	A	5.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Left/Right	44.2	E	77.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-7: Design Year (2052) Build PM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	9.7	A	7.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	10.3	B	5.0	-
	WB	Left	9.9	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	11.1	B	2.5	-
Park Land Drive	EB	U-Turn	10.7	B	2.5	560
		Through/Right	-	-	-	-
	WB	Left	10.1	B	5.0	560
		Through	-	-	-	-
	NB	Right	11.2	B	2.5	-
Placid View Drive	EB	Left	9.9	A	2.5	560
		Through	-	-	-	-
	WB	Right	10.2	B	2.5	-
		Through	-	-	-	-
		Right	-	-	-	460
Old State Route 8	EB	Left	19.2	B	62.5	450
		Through	12.7	B	82.5	-
		Right	10.3	B	20.0	450
	SB	Left/ Through/Right	14.0	B	25.0	-
	WB	Left	16.8	B	22.5	450
		Through	12.5	B	72.5	-
		Right	12.0	B	60.0	450
	NB	Left/ Through/Right	18.9	B	137.5	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	350
	WB	Left	13.2	B	5.0	450
		Through	-	-	-	-
	NB	Right	13.1	B	2.5	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-7: Design Year (2052) Build PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Glades Driveway	EB	Through	-	-	-	-
	SB	Right	11.6	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Wedgworth Driveway	EB	U-Turn	12.1	B	2.5	450
		Through/Right	-	-	-	-
	WB	Through	-	-	-	-
	NB	Right	13.6	B	2.5	-
US 27 MUT (Western U-Turn Intersection) ⁵	EB	Through	14.3	B	116.0	-
	WB	U-Turn	14.3	B	28.0	590
		Through	3.3	A	0.0	-
US 27 MUT (Main Intersection) ⁵	EB	Through	17.6	B	197.0	-
		Right	5.7	A	73.0	560
	SB	Through	15.4	B	85.0	-
		Right	4.4	A	36.0	625
	WB	Through	17.6	B	153.0	-
		Right	6.7	A	169.0	605
	NB	Through	15.0	B	118.0	-
		Right	6.5	A	51.0	605
US 27 MUT (Eastern U-Turn Intersection) ⁵	EB	U-Turn	13.4	B	15.0	670
		Through	3.3	A	0.0	-
	WB	Through	13.1	B	103.0	-
Myers Road/Placid Pine Drive	EB	Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	10.7	B	2.5	-
	WB	Left	12.2	B	5.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	12.1	B	5.0	-
N. Edge	EB	U-Turn/Left	11.3	B	7.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	11.1	B	5.0	-
	WB	U-Turn/Left	14.3	B	2.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

5: Simtraffic delay values

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-7: Design Year (2052) Build PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Broward Avenue	EB	Left	9.5	A	2.5	560
		Through	-	-	-	-
	SB	Right	10.7	B	2.5	-
	WB	U-Turn	13.6	B	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	9.9	A	10.0	560
		Through	-	-	-	-
	SB	Right	10.5	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	9.5	A	2.5	560
		Through	-	-	-	-
	SB	Right	10.3	B	2.5	-
	WB	U-Turn	11.9	B	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
Bear Road	EB	Left	9.4	A	2.5	560
		Through	-	-	-	-
	SB	Right	10.2	B	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left	9.6	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	11.9	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-
CR 29	EB	Left	9.8	A	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Left/Right	18.7	C	20.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-8: Build Alternative Recommended Turn Lane Lengths

Intersection	Build Configuration	Turn Lane	Recommended Turn Lane Length (ft) ¹
Placid Lakes Boulevard/S Jefferson Avenue	Convert into Bidirectional Median-Opening	EBL	560
		WBL	560
Park Land Drive	Convert into Directional Median-Opening	EBL	560
		WBL	560
Placid View Drive	Convert into Directional Median-Opening	EBL	560
		WBR	460
Old State Route 8	Convert into Signalized Intersection	EBL	450
		EBR	450
		WBR	450
		WBL	450
Distribution Boulevard	Convert into Directional Median-Opening	EBR	350
		WBL	450
Wedgworth Driveway	Convert into Directional Median-Opening	EB U-turn	450
US 27	Convert into Median U-turn (MUT) Intersection	WBU	590
		EBR	560
		NBR	605
		SBR	625
		WBR	605
		EBU	670
Myers Road/Placid Pine Drive	Convert into Bidirectional Median-Opening	WBL	450
N. Edge	Convert into Bidirectional Median-Opening	EB L/U-Turn	450
		WB L/U-Turn	450
Broward Avenue	Convert into Directional Median-Opening	EBL	560
		WB U-Turn	560
Highlands Boulevard	Convert into Directional Median-Opening	EBL	560
Citrus Boulevard	Convert into Directional Median-Opening	EBL	560
		WB L/U-Turn	560
Bear Road	Convert into Directional Median-Opening	EBL	560
Hall Road / Turner Too Road	Convert into Bidirectional Median-Opening	EBL	560
CR 29 / KW Farms Road	Convert into Bidirectional Median-Opening	EBL	560

1: Turn lane lengths are based on the 95th percentile queue length and appropriate deceleration lane length based on design speed as defined in Chapter 212 in the FDOT Design Manual

5.4 DESIGN YEAR (2052) ICE ANALYSIS

Intersection Control Evaluation (ICE) can be performed up to 3 Stages depending on the level of detailed analysis necessary in selecting a preferred intersection configuration. The ICE for this study included a Stage 1 and Stage 2 analysis for the intersection at US 27. Stage 1 ICE consists of Capacity Analysis for Planning of Junctions (CAP-X) and Safety Performance for Intersection Control Evaluation (SPICE). Stage 2 ICE consists of *Synchro* analysis of alternative intersection configurations, a more detailed SPICE analysis and a Benefit-Cost (B/C) comparison of alternatives.

When performing the ICE analysis, several important factors were considered. This intersection serves as the primary crossroads for freight truck traffic in the area, with 30% daily truck factors on either roadway. The area is highly rural with mostly agricultural land use surrounding the intersection.

Based on Stage 1 ICE Analysis, the base traffic signal and a full MUT were considered viable options for US 27 and were recommended for Stage 2 ICE analysis. The configuration of the base traffic signal was the same for all four approaches: 1 left-turn lane, 1 right-turn lane, and 2 through lanes. The configuration for the full MUT was as follows: 1 right-turn lane & 2 through lanes on the eastbound/westbound approaches, 2 right-turn lanes & 2 through lanes on the northbound/southbound approaches, and 1-lane U-turns at auxiliary signalized intersections on SR 70, east and west of US 27. The Stage 2 ICE Tool B/C analysis comparing the Traffic Signal and the MUT revealed that the MUT provided a safety and operational delay benefit over the Traffic Signal.

The results and final recommendations of the ICE analyses are summarized in **Table 5-9** and **Table 5-10**. The comparison of operational results between the signal and full MUT shown in **Table 5-10** was conducted using Simtraffic average vehicle delay after 10 simulation runs. HCM 6th Edition is unable to produce results for clustered intersections (full MUT) so a comparison of average delay from Simtraffic was the most appropriate metric for evaluation.

Extensive coordination took place during the ICE process between the project team, District Traffic Operations, and District Management, including multiple submittals, reviews, and a multidisciplinary meeting to review and discuss the ICE alternatives. Following the ICE review process, the decision was made to select the MUT alternative, due to its safety and operational performance. Due to the dual right turn lanes proposed, proper signage design will be important to inform drivers of the appropriate lane to utilize when navigating northbound and southbound right turns. During this study, single northbound/southbound right turn lanes were also evaluated and showed acceptable operations in *Synchro*. During the final design phase, the intersection design may be further optimized, if necessary.

Based on the Stage 2 ICE analysis, the MUT alternative is expected to result in a relative B/C ratio of 11.53 and a relative Net Present Value of Improvement of \$9,990,955. Supporting ICE material, including the finalized and signed Stage 2 ICE form, can be found in **Appendix J**.

Separately, a signal warrant and ICE analysis were conducted by others for the re-aligned intersection of Old SR 8 (north leg to be re-aligned to create 4-legged intersection) as part of the Build Alternative.

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

This analysis resulted in the selection of a traffic signal control for this location. ICE documentation for this intersection is also provided in Appendix J.

Table 5-9: Design Year (2052) Build Alternative Stage One ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	SSI Ranking	CAP-X				Advance to Stage 2?
				Ped. Accom.	Bike Accom.	Overall AM V/C Ratio	Overall PM V/C Ratio	
US 27	Signal (Base Build)	7	4	3.62	4.17	0.64	0.69	Yes
	Roundabout (2x2)	1	1	4.46	4.17	1.11	1.18	No
	Full Median U-turn	2	6	2.72	4.17	0.49	0.54	Yes
	Partial Median U-turn	4	5	2.65	4.17	0.57	0.62	No
	RCUT (Signalized)	3	2	2.58	3.83	1.11	0.97	No
	Full Displaced Left-Turn	5	7	2.79	2.83	0.40	0.44	No
	Partial Displaced Left-Turn	6	7	2.72	2.83	0.51	0.53	No
	Signalized Thru-cut	-	3	3.37	4.25	0.69	0.73	No
	Bowtie	-	9	4.19	4.17	0.85	0.77	No

Table 5-10: Design Year (2052) Build Alternative Stage Two ICE Summary

Intersection	Intersection Configurations	SPICE Ranking	SSI Ranking	Opening Year (2032) Delay (s)		Design Year (2052) Delay (s)		Overall B/C Ratio	Selected Alternative?
				AM	PM	AM	PM		
US 27	Signal (Base Build)	2	1	27.7	31.1	40.9	45.3	N/A ¹	No
	Full Median U-turn	1	2	22.9	26.8	35.0	37.3	11.53	Yes

1: Relative B/C ratio so base condition has no value.

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

5.5 DESIGN YEAR (2052) BUILD ALTERNATIVE ROADWAY SEGMENT LOS

As was done for the Existing Conditions and Design Year No-Build analyses, three major roadway segments within the project limits were analyzed using the Generalized Level of Service tables provided in FDOT's 2023 Multimodal Quality/Level of Service Handbook. The Motor Vehicle Highway Generalized Service Volume tables for C1 & C2 classified roadways were utilized to assess the LOS for each SR 70 segment.

All segments of SR 70 operate at LOS B in the Build condition. **Table 5-11** shows the LOS for each direction of each roadway segment.

Table 5-11: Design Year (2052) Build Alternative Roadway Segment LOS

Roadway Segment	Direction	From	To	Segment Length (miles)	Design Year (2052)			
					Typical Section	DDHV	Target LOS Volume Capacity ¹	LOS
SR 70	EB	West of S Jefferson Avenue	Old SR 8	4.25	4-Lane, Divided with LT Only	821	2,390	B
	WB				4-Lane, Divided with LT Only	820	2,390	B
	EB	Old SR 8	US 27	1.08	4-Lane, Divided with LT & RT	859	2,390	B
	WB				4-Lane, Divided with LT Only	835	2,390	B
	EB	US 27	CR 29	2.76	4-Lane, Divided with LT Only	844	2,390	B
	WB				4-Lane, Divided with LT Only	804	2,390	B

¹LOS Target is LOS C

5.6 HSM PREDICTIVE SAFETY ANALYSIS

To quantify the effect of the proposed improvements to the corridor, a safety analysis was conducted following Highway Safety Manual (HSM) Part C predictive method procedures. The HSM Part C provides a predictive method for estimating expected average crash frequencies at individual sites. This method relies on safety performance functions (SPFs) that estimate predicted average crash frequency as a function of traffic volume and roadway characteristics (e.g., number of lanes, median type, intersection control, number of approach legs). The HSM analyses span the life of the project (20 years), from the opening year (2032) to the design year (2052).

5.6.1 No-Build HSM Analysis

The No-Build HSM predictive method analysis was conducted using the Chapter 10 (Rural Two-Lane Roads) FDOT HSM spreadsheet tool (**Appendix L**). The study area was segmented by characteristics including traffic volume (AADT) and presence of horizontal curves. Only the intersection of SR 70 and US 27 was analyzed as it is the only intersection within the study limits for which all approaches are under traffic control. The segmentation of the study area for the purposes of the HSM analysis is documented in **Table 5-12** and the analysis results are documented in **Table 5-13**.

The analysis results listed in **Table 5-13** include the predicted number of crashes within each study segment between the opening and design years (2032 and 2052, respectively) along with the total present value of all predicted crashes (fatal, injury, and PDO) along the segments. The total present value is calculated by applying the most recently available FDOT KABCO crash costs to the number of predicted crashes by respective severity. The annual crash costs can then be calculated before converting the cost for each future year to the present year by applying an assumed annual rate of return (4%). The sum of these annual costs results in the total present value of crashes.

Table 5-12: No-Build HSM Analysis Segmentation

Segment Number	Segment Name	Segment Length (mi)	HSM Tool
1	S Jefferson Avenue to Placid View Dr.	0.93	Rural Two-Lane
2	Placid View Dr. to Worley Rd.	1.8	Rural Two-Lane
3	Worley Rd. to Old State Route 8 (North)	0.46	Rural Two-Lane
4	Old State Route 8 (North) to US 27	1.08	Rural Two-Lane
5	US 27 to eastern study limit	2.76	Rural Two-Lane
Intersection Number	Intersection Name	Milepost	HSM Tool
1	SR 70 at US 27	14.49	Rural Two-Lane

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-13: No-Build HSM Analysis Results (2032-2052)

Segment Number	Segment Name	Fatal	Injury	PDO	Total Present Value
1	S Jefferson Avenue to Placid View Dr.	1.32	21.82	24.09	\$11,429,103
2	Placid View Dr. to Worley Rd.	2.55	42.06	46.43	\$22,026,209
3	Worley Rd. to Old State Route 8 (North)	0.68	11.26	12.43	\$5,881,969
4	Old State Route 8 (North) to US 27	1.62	26.73	29.51	\$13,969,842
5	US 27 to eastern study limit	3.80	62.64	69.15	\$40,067,344
Intersection Number	Intersection Name	Fatal	Injury	PDO	Total Present Value
1	SR 70 at US 27	2.31	38.96	41.10	\$19,951,744
2	Old State Route 8 (North)	1.50	24.76	27.33	\$12,835,746
3	Old State Route 8 (South)	0.63	10.43	11.51	\$6,545,679

5.6.2 Build Alternative HSM Analysis

The Build HSM predictive method analysis was conducted using the Chapter 11 (Rural Multilane Highway) FDOT HSM spreadsheet tool (**Appendix L**). The study area was segmented by characteristics including traffic volume (AADT) and proposed typical section. The intersections at Old SR 8 and at US 27 were analyzed separately for the Build condition as they are the only intersections within the study limits for which all approaches are under traffic control.

Several ICE submittals and coordination meetings resulted in the selection of the MUT as the recommended configuration at the US 27 intersection. However, the HSM Part C Predictive Method is currently limited to only evaluate conventional traffic signal configurations. Thus, the HSM analysis performed for the US 27 intersection below is reflective of a traditional traffic signal layout rather than the MUT. A related evaluation of crash modification factors (CMFs) is discussed in **Section 5.6.3**. The segmentation of the study area for the purposes of the HSM analysis is documented in **Table 5-14** and the analysis results are documented in **Table 5-15**.

The analysis results listed in **Table 5-15** include the predicted number of crashes within each study segment between the opening and design years (2032 and 2052, respectively) along with the total present value of all predicted crashes (fatal, injury, and PDO) along the segments.

Table 5-14: Build Alternative HSM Analysis Segmentation

Segment Number	Segment Name	Segment Length (mi)	HSM Tool
1	S Jefferson Avenue to East of Monroe St.	2.11	Rural Multilane Highway
2	East of Monroe St. to East of Ekhoﬀ Ln	2.76	Rural Multilane Highway
3	East Of Ekhoﬀ Ln to West of Hall Rd.	1.60	Rural Multilane Highway
4	West of Hall Rd. to CR 29	0.55	Rural Multilane Highway
Intersection Number	Intersection Name	Milepost	HSM Tool
1	SR 70 at US 27	14.49	Rural Multilane Highway
2	SR 70 at Old SR 8	13.30	Rural Multilane Highway

SECTION 5 EVALUATION OF DESIGN YEAR OPERATIONS

Table 5-15: Build Alternative HSM Analysis Results (2032-2052)

Segment Number	Segment Name	Fatal	Injury	PDO	Total Present Value
1	S Jefferson Avenue to East of Monroe St.	1.66	27.96	29.50	\$14,106,003
2	East of Monroe St. to East of Ekhoﬀ Ln	2.17	36.62	38.63	\$18,471,510
3	East Of Ekhoﬀ Ln to West of Hall Rd.	1.24	21.00	22.16	\$10,596,148
4	West of Hall Rd. to CR 29	0.42	7.13	7.52	\$3,609,269
Intersection Number	Intersection Name	Fatal	Injury	PDO	Total Present Value
1	SR 70 at US 27	3.03	51.26	54.07	\$25,937,255
2	SR 70 at Old SR 8	1.92	32.51	34.30	\$16,415,275

5.6.3 Median U-Turn (MUT) Crash Modification Factors

The predicted crash values for the intersection of SR 70 and US 27 presented in **Table 5-15** above is reflective of a traditional traffic signal layout since the HSM Part C is unable to predict crashes for a MUT at this time. Based on the SPICE analysis performed as part of the ICE process, it is expected that the MUT would experience 30% fewer fatal/injury crashes and 15% fewer total crashes over a 20-year design life. The CMFs used for SPICE are derived from the NCHRP Report 420: Impacts of Access Management Techniques (TRB, 1999).

A search was also conducted through the CMF Clearinghouse for applicable CMF/CRFs for converting a traditional 4-leg signalized intersection into a signalized MUT. **Table 5-16** below summarizes the CMFs derived from the *Safety Evaluation of Median U-Turn Crossover-based Intersections (2020)* study which included data from Michigan, North Carolina, and Ohio. It should be noted that the CMFs documented in **Table 5-16** below are only applicable for urban/suburban area types. There is not currently adequate research on MUTs in rural area types at this time to support a CMF specific to rural areas like the study corridor.

Table 5-16: CMF Clearinghouse – Convert intersection to median U-turn (MUT) intersection

CMF ID	CMF	CRF (%)	Quality ¹	Crash Type	Crash Severity	Area Type
10851	0.633	36.7	★★★★★	All	All	Urban & Suburban
10852	0.7732	22.68	★★★★★	All	K (fatal), A (serious injury), B (minor injury), C (possible injury)	Urban & Suburban
10854	0.5984	40.16	★★★★★	All	O (PDO)	Urban & Suburban

¹ CMFs have a star rating indicating the quality or confidence in the results of the study producing the CMF (1 to 5; 5 being the best)

5.6.4 HSM Analysis Results Comparison

The total number of fatal and injury crashes as well as the total present value of all crashes for the No-Build and Build scenarios are presented in **Table 5-17**. The Build Alternative scenario results in a reduction of approximately \$44 million in present value of crashes.

Table 5-17: HSM Analysis Overall Results Comparison

Scenario	Fatal	Injury	PDO	Total Present Value
No-Build	14.41	238.66	261.55	\$132,707,637
Build	10.45	176.48	186.19	\$89,135,460
Change	-3.96	-62.17	-75.36	-\$43,572,177

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

The following sections contain the results of the operational analyses for the No-Build and Build Alternatives for opening year (2032) conditions.

6.1 OPENING YEAR (2032) NO-BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2032 design hour traffic volumes, the 2032 No-Build Alternative was analyzed for intersection performance in *Synchro 12* using Highway Capacity Manual (HCM) 6th Edition methodology. The No-Build Alternative hourly traffic conditions are depicted in **Figure 6-1**. The signalized intersection at US 27 is anticipated to operate at a LOS of C by the year 2032, higher than the target of LOS “C”. All movement at the unsignalized intersections are anticipated to operate better than the target of LOS “C” by the year 2032. Overall intersection operations are summarized in **Table 6-1**. Detailed results, by movement, are summarized in **Table 6-2** and **Table 6-3**. No-Build Alternative HCM 6th Edition reports can be found in **Appendix M**.



Legend

- Unsignalized (9)
- Signalized (0)
- ⬅➡ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 6-1
Opening Year (2032) No-Build Hourly
Volumes
Sheet 1 of 2



Legend

- Unsignalized (8)
- Signalized (1)
- ⬆️ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 6-1
Opening Year (2032) No-Build Hourly
Volumes
Sheet 2 of 2

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-1: Opening Year (2032) No-Build Alternative Intersection Analysis Summary

SR 70 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay ¹	LOS ²	Delay ¹	LOS ²
Placid Lakes Boulevard/S Jefferson Avenue	TWSC ³	13.1 (SB)	B	14.8 (SB)	B
Park Land Drive	TWSC (T-intersection) ³	10.3 (NB)	B	12.5 (NB)	B
Placid View Drive	TWSC (T-intersection) ³	12.7 (SB)	B	13.3 (SB)	B
Old SR 8 (North)	TWSC (T-intersection) ³	14.7 (SB)	B	17.0 (SB)	C
Old SR 8 (South)	TWSC (T-intersection) ³	13.7 (NB)	B	18.3 (NB)	C
Distribution Boulevard	TWSC (T-intersection) ³	12.8 (NB)	B	11.9 (NB)	B
Glades Driveway	TWSC (T-intersection) ³	13.5 (SB)	B	13.6 (SB)	B
Wedgworth Driveway	TWSC (T-intersection) ³	12.6 (NB)	B	11.0 (NB)	B
US 27	Signalized	28.0	C	30.4	C
Myers Road/Placid Pine Drive	TWSC ³	15.8 (SB)	C	17.2 (NB)	C
N Edge	TWSC ³	10.6 (SB)	B	10.2 (SB)	B
Broward Avenue	TWSC (T-intersection) ³	10.5 (SB)	B	10.1 (SB)	B
Highland Avenue	TWSC (T-intersection) ³	10.5 (SB)	B	10.5 (SB)	B
Citrus Boulevard	TWSC (T-intersection) ³	9.8 (SB)	A	10.0 (SB)	B
Bear Road	TWSC (T-intersection) ³	10.0 (SB)	B	9.9 (SB)	A
Hall Road/Turner Too Road	TWSC ³	14.8 (SB)	B	14.5 (NB)	B
CR 29/KW Farms Road	TWSC ³	13.8 (SB)	B	12.2 (SB)	B

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-2: Opening Year (2032) No-Build Alternative AM Peak Hour Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.4	A	0.0	460
		Through/Right	-	-	-	-
	SB	Left/Through/Right	13.1	B	15.0	-
	WB	Left	7.9	A	0.0	460
		Through/Right	-	-	-	-
	NB	Left/Through/Right	10.0	B	2.5	-
Park Land Drive	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.0	A	0.0	-
	NB	Left/Right	10.3	B	2.5	-
Placid View Drive	EB	Left/Through	8.3	A	0.0	-
	SB	Left/Right	12.7	B	5.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (North)	EB	Left/Through	8.3	A	2.5	-
	SB	Left/Right	14.7	B	25.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (South)	EB	Through	-	-	-	-
		Right	-	-	-	110
	WB	Left	8.7	A	5.0	350
		Through	-	-	-	-
	NB	Left/Right	13.7	B	10.0	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	250
	WB	Left	8.1	A	2.5	335
		Through	-	-	-	-
	NB	Left/Right	12.8	B	0.0	-
Glades Driveway	EB	Left/Through	8.4	A	0.0	-
	SB	Left/Right	13.5	B	2.5	-
	WB	Through/Right	-	-	-	-
Wedgworth Driveway	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.1	A	0.0	-
	NB	Left/Right	12.6	B	2.5	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-2: Opening Year (2032) No-Build Alternative AM Peak Hour Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	21.7	C	40.0	395
		Through	27.7	C	120.0	-
		Right	23.8	C	35.0	395
	SB	Left	50.5	D	102.5	560
		Through	23.5	C	117.5	-
		Right	22.0	C	65.0	455
	WB	Left	21.1	C	37.5	395
		Through	32.2	C	175.0	-
		Right	24.1	C	47.5	395
	NB	Left	58.1	E	82.5	550
		Through	23.3	C	72.5	-
		Right	22.1	C	37.5	620
Myers Road/Placid Pine Drive	EB	Left/Through/Right	8.3	A	0.0	-
	SB	Left/Through/Right	15.8	C	0.0	-
	WB	Left/Through/Right	-	-	-	-
	NB	Left/Through/Right	15.4	C	5.0	-
N Edge	EB	Left/Through/Right	8.3	A	0.0	-
	SB	Left/Through/Right	10.6	B	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	8.3	A	0.0	545
		Through	-	-	-	-
	SB	Left/Right	10.5	B	2.5	-
	WB	Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	8.1	A	0.0	545
		Through	-	-	-	-
	SB	Left/Right	10.5	B	7.5	-
	WB	Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.0	A	0.0	545
		Through	-	-	-	-
	SB	Left/Right	9.8	A	2.5	-
	WB	Through/Right	-	-	-	-
Bear Road	EB	Left/Through	8.0	A	0.0	-
	SB	Left/Right	10.0	B	0.0	-
	WB	Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	8.0	A	0.0	-
	SB	Left/Through/Right	14.8	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	0.0	-
CR 29	EB	Left/Through/Right	8.1	A	2.5	-
	SB	Left/Through/Right	13.8	B	7.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-3: Opening Year (2032) No-Build Alternative PM Peak Hour Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.0	A	2.5	460
		Through/Right	-	-	-	-
	SB	Left/Through/Right	14.8	B	7.5	-
	WB	Left	8.1	A	0.0	460
		Through/Right	-	-	-	-
	NB	Left/Through/Right	13.4	B	2.5	-
Park Land Drive	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.2	A	2.5	-
	NB	Left/Right	12.5	B	2.5	-
Placid View Drive	EB	Left/Through	8.1	A	0.0	-
	SB	Left/Right	13.3	B	2.5	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (North)	EB	Left/Through	8.5	A	5.0	-
	SB	Left/Right	17.0	C	15.0	-
	WB	Through/Right	-	-	-	-
Old State Route 8 (South)	EB	Through	-	-	-	-
		Right	-	-	-	110
	WB	Left	8.4	A	2.5	350
		Through	-	-	-	-
	NB	Left/Right	18.3	C	37.5	-
Distribution Boulevard	EB	Through	-	-	-	-
		Right	-	-	-	250
	WB	Left	0.0	A	5.0	335
		Through	-	-	-	-
	NB	Left/Right	11.9	B	2.5	-
Glades Driveway	EB	Left/Through	8.0	A	0.0	-
	SB	Left/Right	13.6	B	2.5	-
	WB	Through/Right	-	-	-	-
Wedgworth Driveway	EB	Through/Right	-	-	-	-
	WB	Left/Through	8.3	A	0.0	-
	NB	Left/Right	11.0	B	0.0	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-3: Opening Year (2032) No-Build Alternative PM Peak Hour Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Provided Turn Lane Length ⁴
US 27	EB	Left	22.9	C	75.0	395
		Through	36.8	D	215.0	-
		Right	22.8	C	27.5	395
	SB	Left	52.1	D	117.5	560
		Through	23.8	C	97.5	-
		Right	21.2	C	25.0	455
	WB	Left	22.3	C	35.0	395
		Through	29.9	C	160.0	-
		Right	25.2	C	57.5	395
	NB	Left	59.7	E	115.0	550
		Through	27.0	C	140.0	-
		Right	24.2	C	67.5	620
Myers Road/Placid Pine Drive	EB	Left/Through/Right	0.0	A	0.0	-
	SB	Left/Through/Right	17.1	C	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	17.2	C	5.0	-
N Edge	EB	Left/Through/Right	8.2	A	0.0	-
	SB	Left/Through/Right	10.2	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-
Broward Avenue	EB	Left	8.2	A	2.5	545
		Through	-	-	-	-
	SB	Left/Right	10.1	B	0.0	-
	WB	Through/Right	-	-	-	-
Highlands Boulevard	EB	Left	8.3	A	5.0	545
		Through	-	-	-	-
	SB	Left/Right	10.5	B	2.5	-
	WB	Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.1	A	0.0	545
		Through	-	-	-	-
	SB	Left/Right	10.0	B	0.0	-
	WB	Through/Right	-	-	-	-
Bear Road	EB	Left/Through	8.1	A	0.0	-
	SB	Left/Right	9.9	A	0.0	-
	WB	Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left/Through/Right	8.1	A	0.0	-
	SB	Left/Through/Right	10.6	B	0.0	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	14.5	B	0.0	-
CR 29	EB	Left/Through/Right	8.2	A	0.0	-
	SB	Left/Through/Right	12.2	B	2.5	-
	WB	Left/Through/Right	0.0	A	0.0	-
	NB	Left/Through/Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service (LOS D or worse in Red)

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper

6.2 OPENING YEAR (2032) BUILD ALTERNATIVE INTERSECTION ANALYSIS

Using estimated 2032 design hour traffic volumes, the 2032 Build Alternative was analyzed for intersection performance in *Synchro 12* using Highway Capacity Manual (HCM) 6th Edition methodology. The preferred intersection configuration of a full MUT at the US 27 intersection was selected as a result of the ICE analysis. HCM 6th Edition does not support clustered intersection analysis so results for the MUT analysis are the averages from 10 Simtraffic simulation runs. The following other study intersections were evaluated using only *Synchro 12*. Their assumed median access configuration is the same as previously stated in **Section 5.3**.

The Build Alternative hourly traffic conditions are depicted in **Figure 6-2**. Overall intersection operations are summarized in **Table 6-4**. Detailed results, by movement, are summarized in **Table 6-5** and **Table 6-6**. Build Alternative HCM 6th Edition reports can be found in **Appendix N**. Simtraffic reports, for the US 27 MUT operations, can be found in **Appendix J**.



Legend

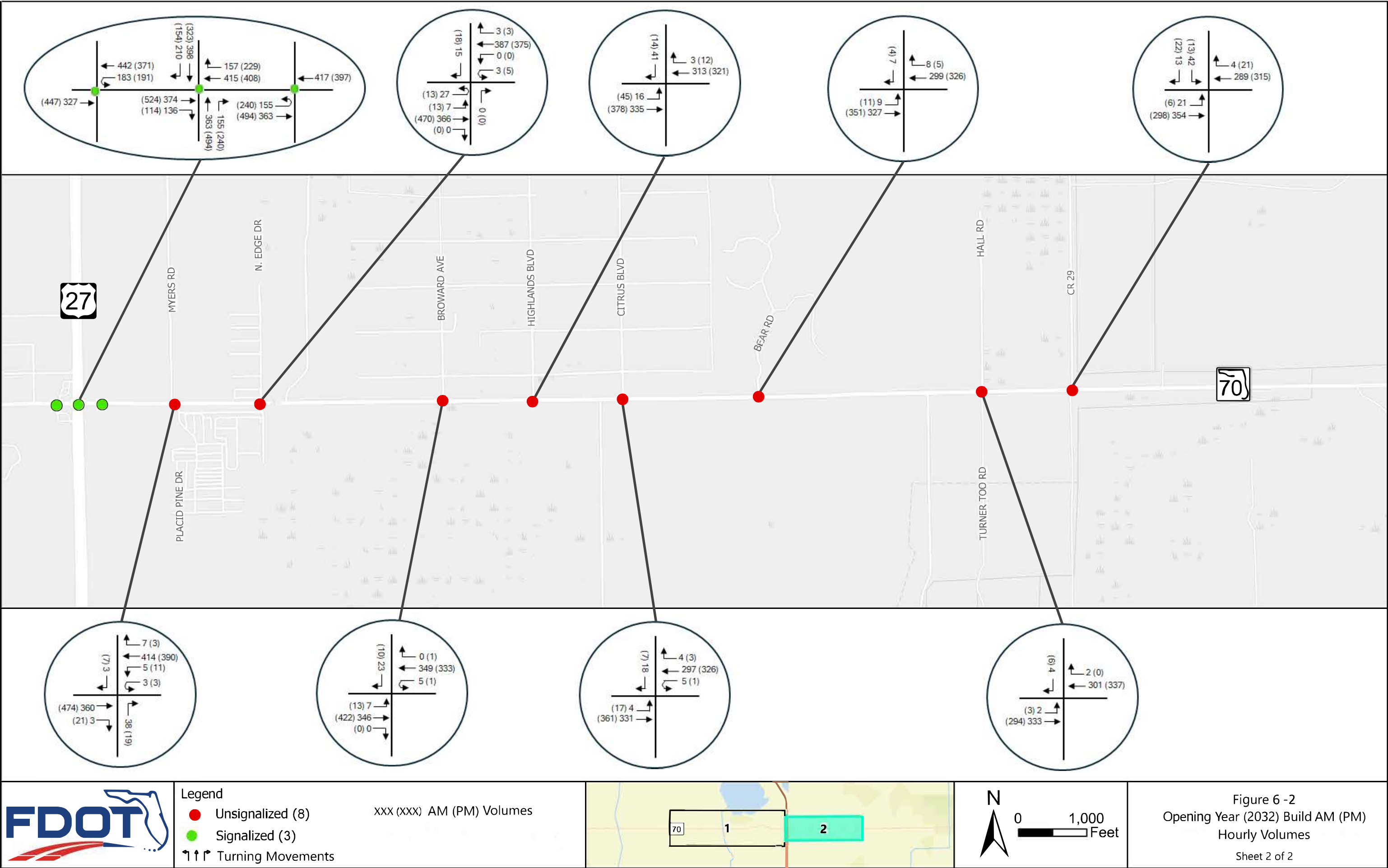
- Unsignalized (7)
- Signalized (1)
- ↑↑↑ Turning Movements

xxx (xxx) AM (PM) Volumes

N

0 1,000 Feet

Figure 6-2
Opening Year (2032) Build AM (PM)
Hourly Volumes
Sheet 1 of 2



SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-4: Opening Year (2032) Build Alternative Intersection Analysis Summary

SR 70 Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay ¹	LOS ²	Delay ¹	LOS ²
Placid Lakes Boulevard/S Jefferson Avenue	TWSC ³	9.9 (SB)	A	9.6 (NB)	A
Park Land Drive	TWSC (T-intersection) ³	9.4 (NB)	A	9.7 (NB)	A
Placid View Drive	TWSC (T-intersection) ³	9.6 (SB)	A	9.2 (SB)	A
Old SR 8	Traffic Signal	9.6	A	10.4	B
Distribution Boulevard	TWSC (T-intersection) ³	10.1 (NB)	B	10.8 (NB)	B
Glades Driveway	TWSC (T-intersection) ³	10.4 (SB)	B	10.1 (SB)	A
Wedgworth Driveway	TWSC (T-intersection) ³	10.5 (NB)	B	11.1 (NB)	B
US 27	Median U-Turn (MUT)	22.9	C	26.8	C
Myers Road/Placid Pine Drive	TWSC ³	9.7 (SB)	A	10.1 (NB)	B
N Edge	TWSC ³	9.8 (SB)	A	9.8 (SB)	A
Broward Avenue	TWSC (T-intersection) ³	9.7 (SB)	A	9.6 (SB)	A
Highland Avenue	TWSC (T-intersection) ³	9.5 (SB)	A	9.4 (SB)	A
Citrus Boulevard	TWSC (T-intersection) ³	9.3 (SB)	A	9.3 (SB)	A
Bear Road	TWSC (T-intersection) ³	9.2 (SB)	A	9.3 (SB)	A
Hall Road/Turner Too Road	TWSC ³	10.0 (SB)	A	10.2 (SB)	B
CR 29/KW Farms Road	TWSC ³	14.1 (SB)	B	11.4 (SB)	B

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: For unsignalized intersections, worst approach delay is presented rather than overall intersection delay

4: FDOT D7 project recommending a signalized alternative for this intersection and will conduct an ICE analysis

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-5: Opening Year (2032) Build AM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.7	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.9	A	7.5	-
	WB	Left	8.2	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
Park Land Drive	EB	Right	9.2	A	2.5	-
		U-Turn	9.5	A	0.0	560
	WB	Through/Right	-	-	-	-
		Left	8.2	A	0.0	560
	NB	Through	-	-	-	-
Placid View Drive	EB	Right	9.4	A	2.5	-
		Left	8.8	A	0.0	560
	WB	Through	-	-	-	-
		Right	-	-	-	460
		Through/Right	-	-	-	-
Old State Route 8	EB	Through	-	-	-	-
		Through/Right	-	-	-	450
		Left	8.6	A	2.5	450
	WB	Right	10.1	B	0.0	-
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Left	9.9	A	17.5	450
		Through	8.5	A	30.0	-
Distribution Boulevard	EB	Right	7.4	A	7.5	450
		Right/Through/left	15.4	B	17.5	-
	WB	Left	9.9	A	17.5	450
		Through	8.5	A	30.0	-
Glades Driveway	EB	Right	7.4	A	7.5	450
		Right/Through/left	15.4	B	17.5	-
	WB	Left	9.9	A	17.5	450
		Through	8.5	A	30.0	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-5: Opening Year (2032) Build AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Wedgworth Driveway	EB	U-turn	10.3	B	0.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	WB	Through	-	-	-	-
	NB	Right	10.5	B	0.0	-
US 27 MUT (Western U-Turn Intersection) ⁵	EB	Through	10.0	A	61.0	-
	WB	U-Turn	16.8	B	1.0	590
		Through	3.2	A	0.0	-
US 27 MUT (Main Intersection) ⁵	EB	Through	10.0	A	121.0	-
		Right	5.5	A	78.0	560
	SB	Through	12.0	B	82.0	-
		Right	4.6	A	40.0	625
	WB	Through	18.0	B	135.0	-
		Right	5.5	A	93.0	605
	NB	Through	11.3	B	55.0	-
		Right	2.9	A	27.0	605
US 27 MUT (Eastern U-Turn Intersection) ⁵	EB	U-Turn	16.4	B	0.0	670
		Through	3.3	A	0.0	-
	WB	Through	9.5	A	78.0	-
Myers Road/Placid Pine Drive	EB	Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.7	A	0.0	-
	WB	Left	9.0	A	0.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	9.7	A	5.0	-
N Edge	EB	Left	9.8	A	2.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.8	A	2.5	-
	WB	Left	9.5	A	0.0	450
		Through	-	-	-	-
	WB	Through/Right	-	-	-	-
Broward Avenue	EB	Right	0.0	A	-	-
		Through	8.5	A	0.0	560
	SB	Through	-	-	-	-
		Right	9.7	A	2.5	-
	WB	U-Turn	9.5	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

5: Simtraffic delay values

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-5: Opening Year (2032) Build AM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Highlands Boulevard	EB	Left	8.4	A	0.0	560
		Through	-	-	-	-
	SB	Right	9.5	A	5.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.3	A	0.0	560
		Through	-	-	-	-
	SB	Right	9.3	A	2.5	-
	WB	U-Turn	9.3	A	0.0	560
		Through	-	-	-	-
Bear Road	EB	Left	8.3	A	0.0	560
		Through	-	-	-	-
	SB	Right	9.2	A	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left	8.3	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	10.0	B	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
CR 29	NB	Right	0.0	A	-	-
	EB	Left	8.4	A	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right/Left	14.1	B	12.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-6: Opening Year (2032) Build PM Peak Hour Intersection Operations

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Placid Lakes Boulevard/S Jefferson Avenue	EB	Left	8.5	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.2	A	2.5	-
	WB	Left	8.5	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
NB	Right	9.6	A	2.5	-	
Park Land Drive	EB	U-Turn	8.8	A	0.0	560
		Through/Right	-	-	-	-
	WB	Left	8.6	A	2.5	560
		Through	-	-	-	-
	NB	Right	9.7	A	0.0	-
Placid View Drive	EB	Left	8.5	A	0.0	560
		Through	-	-	-	-
	SB	Right	9.2	A	0.0	-
	WB	Through	-	-	-	-
		Right	-	-	-	460
Old State Route 8	EB	Left	10.2	B	17.5	450
		Through	8.7	A	30.0	-
		Right	7.9	A	7.5	450
	SB	Right/Through/left	14.9	B	12.5	-
	WB	Left	9.8	A	7.5	450
		Through	8.6	A	25.0	-
		Right	8.5	A	22.5	450
	NB	Right/Through/left	16.9	B	60.0	-
Distribution Boulevard	EB	Through	-	-	-	-
		Through/Right	-	-	-	450
	WB	Left	9.6	A	0.0	450
		Through	-	-	-	-
Glades Driveway	EB	Through	-	-	-	-
	SB	Right	10.1	B	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-6: Opening Year (2032) Build PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Wedgworth Driveway	EB	U-turn	9.7	A	0.0	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	WB	Through	-	-	-	-
	NB	Right	11.1	B	0.0	-
US 27 MUT (Western U-Turn Intersection) ⁵	EB	Through	14.3	B	116.0	-
	WB	U-Turn	14.3	B	28.0	590
		Through	3.3	A	0.0	-
US 27 MUT (Main Intersection) ⁵	EB	Through	17.6	B	197.0	-
		Right	5.7	A	73.0	560
	SB	Through	15.4	B	85.0	-
		Right	4.4	A	36.0	625
	WB	Through	17.6	B	153.0	-
		Right	6.7	A	169.0	605
	NB	Through	15.0	B	118.0	-
		Right	6.5	A	51.0	605
US 27 MUT (Eastern U-Turn Intersection) ⁵	EB	U-Turn	13.4	B	15.0	670
		Through	3.3	A	0.0	-
	WB	Through	13.1	B	103.0	-
Myers Road/Placid Pine Drive	EB	Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.6	A	0.0	-
	WB	Left	9.5	A	2.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	10.1	B	2.5	-
N Edge	EB	Left	9.3	A	2.5	450
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	9.8	A	2.5	-
	WB	Left	10.4	B	0.0	450
		Through	-	-	-	-
	WB	Through/Right	-	-	-	-
Broward Avenue	EB	Right	0.0	A	-	-
		Through	8.4	A	0.0	560
	SB	Right	-	-	-	-
	WB	Right	9.6	A	0.0	-
		U-Turn	10.0	B	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

5: Simtraffic delay values

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Table 6-6: Opening Year (2032) Build PM Peak Hour Intersection Operations (cont.)

SR 70 Intersection	Approach	Movement	Delay ¹	LOS ²	95% Queue ³	Proposed Turn Lane Length ⁴
Highlands Boulevard	EB	Left	8.5	A	2.5	560
		Through	-	-	-	-
	SB	Right	9.4	A	2.5	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Citrus Boulevard	EB	Left	8.4	A	2.5	560
		Through	-	-	-	-
	SB	Right	9.3	A	0.0	-
	WB	U-Turn	9.5	A	0.0	560
		Through	-	-	-	-
Bear Road	EB	Left	8.4	A	0.0	560
		Through	-	-	-	-
	SB	Right	9.3	A	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
Hall Road/Turner Too Road	EB	Left	8.4	A	0.0	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right	10.2	B	0.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-
CR 29	EB	Left	8.5	A	2.5	560
		Through	-	-	-	-
		Through/Right	-	-	-	-
	SB	Right/Left	11.4	B	5.0	-
	WB	Through	-	-	-	-
		Through/Right	-	-	-	-
	NB	Right	0.0	A	-	-

1: Average Delay (Seconds/Vehicle)

2: Level of Service

3: 95th-percentile Queue Length (Feet)

4: Total Turn Lane Length (Feet) including taper (minimum 100 ft queue storage provided)

SECTION 7 CONCLUSIONS AND RECOMMENDATIONS

As part of the SR 70 PD&E Study, this Project Traffic Analysis Report documents the Existing Conditions Analysis, Historical Crash Review, No-Build/Build Traffic Forecasts, No-Build/Build Traffic Operations Analysis, and a predictive Safety Analysis. As described in this document, the Existing Conditions do not show current intersection LOS failures, but with forecasted traffic growth, intersection improvements and corridor widening will be needed before the project's design year (2052).

With a widening from two to four-lane typical section, an intersection and access management evaluation has been conducted to identify preferred intersection configurations and median treatments. The median opening recommendation for all non-ICE SR 70 study intersections is presented below:

- Placid Lakes Boulevard/S Jefferson Avenue (bidirectional median opening)
- Park Land Drive (bidirectional median opening)
- Placid View Drive (directional median opening)
- Distribution Boulevard (directional median opening)
- Glades Driveway (directional median opening)
- Wedgworth Driveway (directional median opening)
- Myers Road/Placid Pine Drive (directional median opening)
- N Edge Street (bidirectional median opening)
- Broward Avenue (bidirectional median opening)
- Highlands Boulevard (directional median opening)
- Citrus Boulevard (bidirectional median opening)
- Bear Road (directional median opening)
- Hall Road/Turner Too Road (directional median opening)
- CR 29/KW Farms Road (bidirectional median opening)

The intersection of SR 70 & US 27 is the only existing signalized study intersection and it was evaluated following ICE procedures. Based on the ICE analysis, the recommended configuration of the intersection is a full MUT with 1 right-turn lane and 2 through lanes along SR 70, 2 right-turn lanes and two through lanes along US 27, and 1-lane U-turns at auxiliary signalized intersections on SR 70, east and west of US 27. Additionally, a separate ICE analysis was conducted by others for the re-aligned intersection at Old SR 8. This analysis resulted in the selection of a traffic signal for this location as part of the proposed Build Alternative.

SECTION 6 EVALUATION OF OPENING YEAR OPERATIONS

Based on the HSM safety analysis, the Build Alternative, which includes the intersection improvements described above and the widening from a 2-lane typical section to a 4-lane typical section, is anticipated to eliminate nearly \$44 million worth of crash-related costs when compared to the No-Build.

APPENDICES

Appendix A	SR 70 PD&E Study: Design Traffic Technical Memorandum
Appendix B	Raw Traffic Data and Adjustment Factor Reports
Appendix C	US 27 Signalization Plans
Appendix D	Existing Year (2022) HCM 6th Edition Reports
Appendix E	Raw Crash Data and Serious Crash Summaries
Appendix F	SR 70 Traffic Forecast Modeling Technical Memorandum
Appendix G	Highlands County BEBR, Florida Traffic Online (FTO) Historical AADTs, & Trends Analysis
Appendix H	No-Build (2052) HCM 6th Edition Reports
Appendix I	Build (2052) HCM 6th Edition Reports
Appendix J	Supporting ICE Material
Appendix K	Roadway Concepts
Appendix L	Highway Safety Manual (HSM) Analysis Documentation
Appendix M	No-Build (2032) HCM 6th Edition Reports
Appendix N	Build (2032) HCM 6th Edition Reports
Appendix O	Target Speed and Context Classification Memorandums