Alternative Corridor Evaluation Report (DRAFT)

August 2022 ***Draft for Environmental Technical Advisory Team (ETAT) Review***

FPID: 438139-1-24-01; ETDM No.: 14450

The environmental review, consultation, and other actions required by applicable federal environmental laws for this 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 (FHWA) and FDOT.

This planning product may be adopted into the environmental review process, pursuant to Title 23 USC § 168(4)(d), or the state project development process.

Alternative Corridor Evaluation Report

Draft for Environmental Technical Advisory Team (ETAT) Review

Florida Department of Transportation

District 3

Northwest Crestview Bypass

Project Limits: US 90 between County Road 4 and Old Bethel Road, northeasterly to SR 85

Location: Okaloosa County, Florida, and City of Crestview

FPID: 438139-1-24-01

ETDM No.: 14450

Date: August 2022

Prepared by: Okaloosa County (HDR Engineering)

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Contents

Figures

Tables

Appendices

Acronyms and Abbreviations

ACE	Alternative Corridor Evaluation
ACER	Alternative Corridor Evaluation Report
ACS	American Community Survey
AFB	Air Force Base
BEBR	Bureau of Economic and Business Research
CAR	FDOT Crash Analysis Reporting System
CFR	Code of Federal Regulations
CR	County Road
EFH	Essential Fish Habitat
EST	Environmental Screening Tool
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FDEO	Florida Department of Economic Opportunity
FDOS	Florida Department of State
FDOT	Florida Department of Transportation
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FGDL	Florida Geographic Data Library
FHWA	Federal Highway Administration
FNAI	Florida Natural Areas Inventory
FPID	Financial Project Identification
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
LOS	Level of Service
LRE	Long Range Estimate
MM	Methodology Memorandum
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWFWMD	Northwest Florida Water Management District
NWI	National Wetlands Inventory
OEM	Office of Environmental Management
O-W TPO	Okaloosa-Walton Transportation Planning Organization
PD&E	Project Development and Environment
RCRA	Resource Conservation and Recovery Act
SDR	Sociocultural Data Report
SHPO	State Historic Preservation Officer
SR	State Road
TRIP	Transportation Regional Incentive Program
USACE	United State Army Corps of Engineers
USC	United States Code
USCG	United States Coast Guard
USDA	United States Department of Agriculture

USEPA/EPA	United States Environmental Protection Agency
USFWS/FWS	United States Fish and Wildlife Service
V/MSV	Volume to maximum service volume ratio

Executive Summary

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. Corridor options considered potential future connections to a potential eastern Crestview bypass, which has been considered in multiple planning studies.

This project is being developed by Okaloosa County, in partnership with the FDOT District 3, and the City of Crestview. FDOT is providing state funding assistance through the Transportation Regional Incentive Program (TRIP). County matching funds are provided through county surtax and gas tax revenue. The study process is following the FDOT Alternative Corridor Evaluation (ACE) process and was reviewed through the FDOT Efficient Transportation Decision Making (ETDM) process as project #14450.

Section 4.0 of the report describes the evaluation methodology, which is based on the approved Methodology Memorandum in Appendix C. The evaluation process began with an assessment of each corridor’s ability to meet the project’s primary purpose and need (as explained in Section 6.1). Alternatives failing to meet the primary purpose and need were eliminated from further consideration and the evaluation process continued only for those alternatives that met the primary purpose and need. The remaining viable corridors were refined (as explained in Section 6.2) and evaluated based on secondary purpose and need (explained in Section 6.3), and then using environmental (explained in Section 6.4), engineering (explained in Section 6.5), and cost considerations (explained in Section 6.6).

Six alternative corridors are being evaluated. The primary purpose and need evaluation resulted in elimination of Alternative Corridors 1, 2, and 6 from further consideration.

- Alternative Corridor 1 does not meet the consistency with local plans criteria because it encroaches the floodplains and wetlands of the Yellow River and hence is incompatible with the Okaloosa County 2020 Comprehensive Plan River Protection Zone Conservation Element Policies 7.1 – 7.5.
- Alternative Corridor 2 does not meet the criteria to improve regional connectivity as it would utilize only an existing local road (Old Bethel Road) and would function as a local or parallel route to SR 85 through reliance on the existing road network even when the roadway is widened. Alternative 2 would not serve regional trips nor support potential new growth areas outside the City of Crestview.
- Alternative Corridor 6 does not meet any of the primary purpose and need criteria. Alternative 6 does not improve regional connectivity within the western parts of the county as it would function more as a local or parallel route to SR 85. Based on its

proximity to SR 85, Alternative 6 would mostly serve local trips between US 90 and Old Bethel Road. Alternative 6 does not provide direct linkage with the Southwest Crestview Bypass since it would utilize part of US 90 to connect to the Southwest Crestview Bypass. Additionally, Alternative 6 is inconsistent with local plans because it would not support four developments noted by the City of Crestview.

All remaining viable corridors were evaluated using environmental, engineering, and cost.

Evaluation scores are assigned where 1 represents the corridor having the best performance (least impact, most benefit, etc.) and the highest score represents the alternative performing the worst. The highest score corresponds to the total number of alternatives analyzed. Alternatives with equal impacts or benefits (alternatives that are tied) were scored the same. When an alternative did not involve a criterion, it was assigned a score of zero. Following the evaluation of all the criteria in an evaluation category, the criteria scores for each corridor were summed to determine the corridor's overall evaluation category score. A corridor having the best overall performance (least impact, most benefit, etc.) had the lowest total score.

Okaloosa County has determined that a formal recommendation of a corridor to advance into the PD&E Study will be made after ETAT and the public have had an opportunity to review this report. Once ETAT review is complete and input from the public is received through the Alternative Corridor Public Meeting, the report will be finalized and submitted to FDOT Office of Environmental Management (OEM) for approval.

1.0 Introduction

1.1 Purpose of the Alternative Corridor Evaluation Report

The Alternative Corridor Evaluation (ACE) process, as defined in the Project Development and Environment (PD&E) Manual and the Efficient Transportation Decision Making (ETDM) Manual, meets the intent of the Code of Federal Regulations (CFR), Title 23, Part 450 (Planning Regulations) and 23 U.S. Code (USC) §168 (Integration of Planning and Environmental Review) of streamlining the planning and environmental review process. It is the intent to conduct the ACE for the Northwest Crestview Bypass so that planning decisions can be adopted or incorporated by reference into the National Environmental Policy Act (NEPA) process. The goal of the ACE is to identify, evaluate, and eliminate alternatives based on consideration of meeting the project purpose and need, avoidance and/or minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency / public input. The ACE process ensures that all viable alternatives are evaluated consistently.

1.2 Project Background

1.2.1 ETDM Screening

The ETDM Programming Screen for ETDM #14450 [Northwest Crestview Bypass from US 90 (SR 10) to SR 85] was initiated on May 7, 2021 with the Preliminary Programming Screen Summary Report published on October 4, 2021. Six alternatives were screened to help identify sensitive resources and other fatal flaws that should be avoided. The naming of each alternative identified in the ETDM Screening will remain consistent throughout the ACE process and be carried through the PD&E phase. A summary of the agency input is found in Section 8.0 of this report.

1.2.2 Project Status

The Northwest Crestview Bypass project is identified as a non-Strategic Intermodal System priority #6 for the Okaloosa-Walton Transportation Planning Organization (O-W TPO) to provide four lanes of capacity as FPID 438139-1. The Northwest Crestview Bypass is included in the O-W TPO 2045 Cost Feasible Plan for Project Development and Environment (PD&E) in fiscal years 2026 – 2030, Design in fiscal years 2031 – 2035, and Construction in fiscal years 2036 - 2045.

The PD&E phase for the Northwest Crestview Bypass is not currently included in the O-W TPO Transportation Improvement Program or the FDOT State Transportation Improvement Program.

The Okaloosa County Comprehensive Plan includes the Northwest Crestview Bypass. Policy 1.3.2 in Chapter 2.2 Transportation states, “Coordinate with the Okaloosa – Walton TPO in the development of the Crestview Bypass, a parallel 4-lane roadway, to reduce traffic congestion on SR 85 and to foster interstate commerce.”

The City of Crestview Comprehensive Plan does not specifically discuss a bypass but contains multiple objectives and policies aimed to address congestion on SR 85. Objective 8.A.6 states, “The City shall continually take steps and actions designed to relieve congestion on area roadways, especially SR 85”. Policy 8.A.2.2 states, “The City shall continue to use funds from various sources so as to complete the improvements listed in Table 14-1-T, thereby providing relief to SR-85.” Policy 13.A.2.8 states, “The City will also participate in regional efforts to develop and implement other transportation demand management strategies to reduce peak travel demand on SR 85.”

The City of Crestview Strategic Plan (June 2019) does not specifically discuss a bypass but contains a Goal to “Provide safe, efficient and accessible means for mobility.”

1.3 Project Description

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. An overview of the study area is provided in **Figure 1-1**. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass (currently under construction) near the intersection of US 90 and Old Bethel Road (CR 188) and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85 as well as alternative new corridors. The project study area is shown in **Figure 1-2**. The project study area was established through coordination with Okaloosa County and the City of Crestview, by considering logical termini of the proposed bypass and avoidance/minimization of potential environmental impacts. The Northwest Crestview Bypass would begin along US 90 between County Road (CR) 4 and Old Bethel Road, then extend northeasterly to terminate at existing intersections along SR 85. The western study area boundary was set to avoid or minimize impacts to the Yellow River Wildlife Management Area. The northern boundary was set to include potential east-west streets that could provide a logical end point of the bypass at SR 85 and potentially connect to a future eastern Crestview bypass, which has been considered in multiple planning studies.

This project is being developed by Okaloosa County, in partnership with the FDOT District 3, and the City of Crestview. FDOT is providing state funding assistance through the Transportation Regional Incentive Program (TRIP). County matching funds are provided through county surtax and gas tax revenue. The Project Development and Environment, or NEPA process, will follow approval of the FDOT ACE.

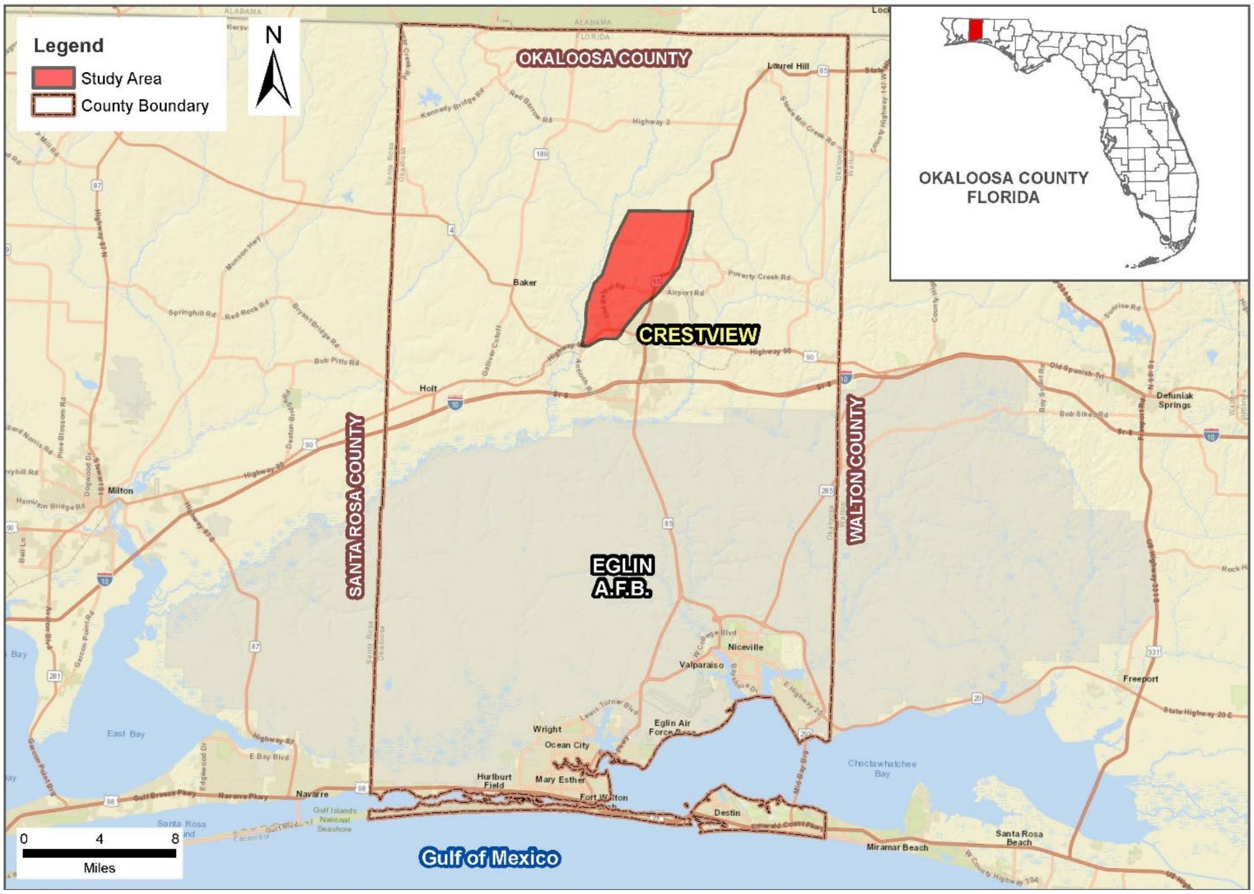


Figure 1-1 | Study Area Overview

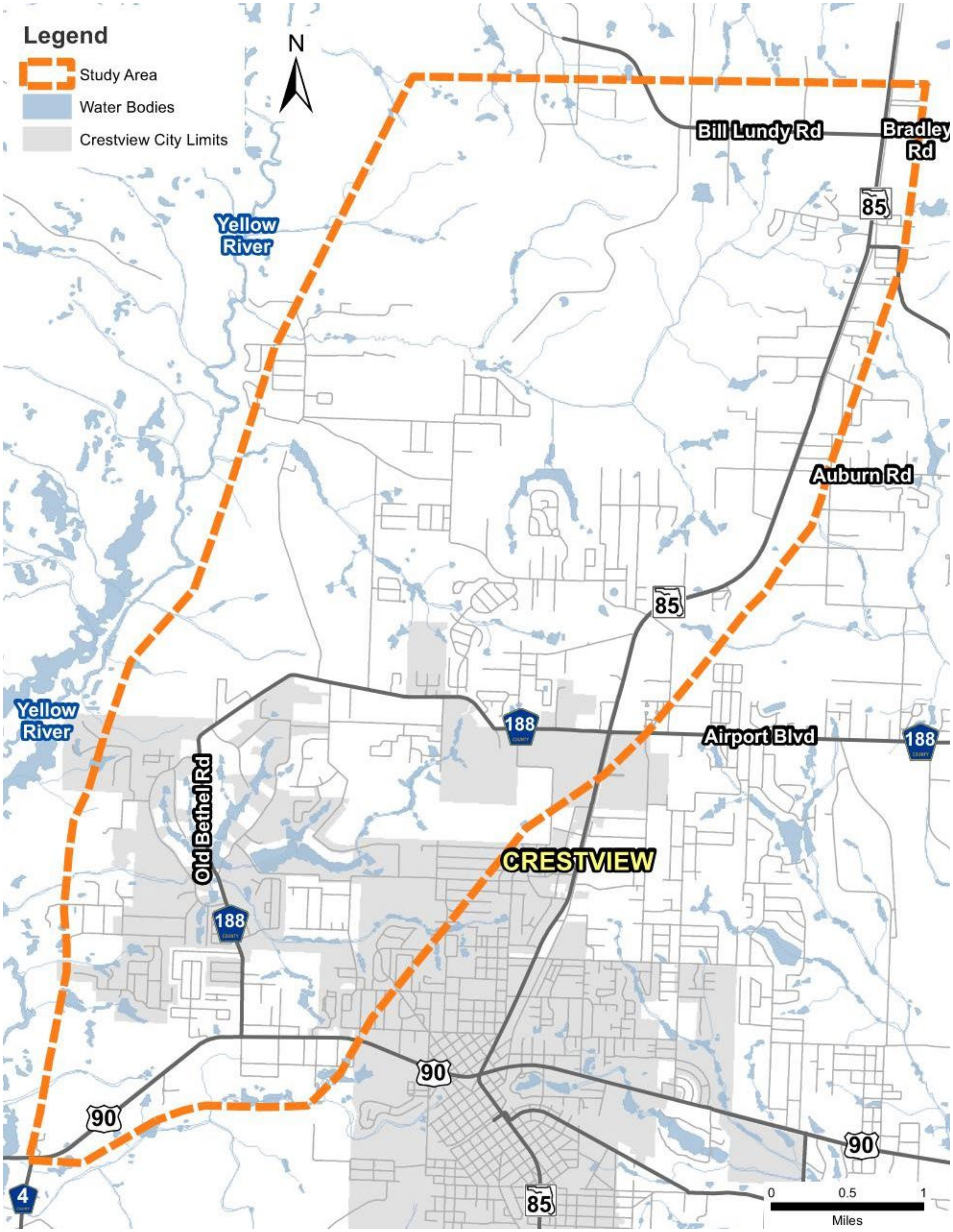


Figure 1-2 | Project Study Area

There are six alternatives considered, which are generally described as follows and shown on **Figure 1-3**:

- Alternative 1: New alignment from the intersection of Enzor Road and Cayson Avenue bearing northwest to the boundary of the Yellow River Wildlife Management Area and then north and east to the intersection of SR 85 and Auburn Road.
- Alternative 2: Capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85 near Airport Road.
- Alternative 3: Capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and new alignment north and east to the intersection of Auburn Road and SR 85.
- Alternative 4: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Auburn Road and SR 85.
- Alternative 5: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Bill Lundy Road and SR 85.
- Alternative 6: Follow US 90 from the intersection of Old Bethel Road and US 90 to the intersection of US 90 and Cayson Avenue, then north and east on new alignment to the intersection of Old Bethel Road and SR 85.

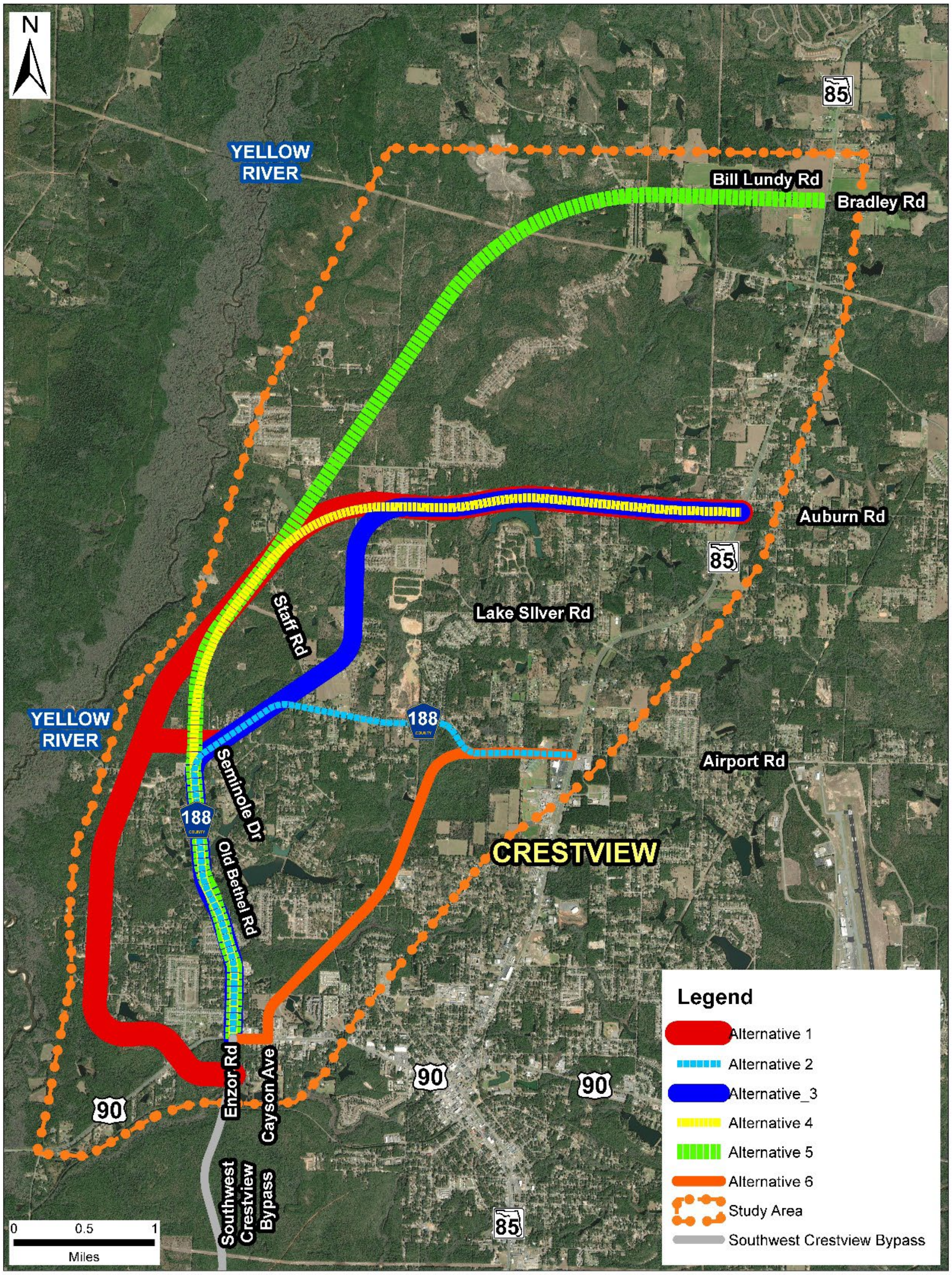


Figure 1-3 | Alternative Corridors

1.3.1 Other Related Studies and Projects

A Crestview bypass was first evaluated in a feasibility study completed in 2004. The 2004 Feasibility Study considered three corridors including a western bypass, an eastern bypass east of Shoal River and an eastern bypass further east near the Shoal River Ranch Development of Regional Impact. During the feasibility study, Eglin identified unacceptable mission impacts for all options traversing Eglin Air Force Base (AFB) in the southeast quadrant of I-10 and SR 85 and recommended a corridor west of SR 85. Ultimately, an eastern corridor that incorporated improvements to I-10 and SR 85 and avoided Eglin impacts was included for further study. The three corridors went through FDOT’s Efficient Transportation Decision Making planning screen (#2891). The western bypass moved into the programming screen; however, the eastern bypasses did not.

The O-W TPO 2035 Needs Plan included an Eastern and Western Crestview Bypass. In the 2040 Long Range Transportation Plan, the O-W TPO removed the Eastern Crestview Bypass with the intent of focusing on the Western Crestview Bypass options. In December 2017, O-W TPO passed Resolution 17-17 to begin the process to amend the 2040 Long Range Transportation Plan to also include an Eastern Crestview Bypass and restarted the process of evaluating a bypass focusing east of Crestview. The Eastern Crestview Bypass is included in the O-W TPO 2045 Needs Plan.

FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019. The project limits began along SR 85 north of Shoal River, extended north with SR 85 as the western boundary, Shoal River and Bob Sikes Airport as the eastern boundary, and finished at Airport Road as the northern terminus. Three build alternatives and a no build alternative were analyzed. Through the desktop planning level analysis of the proposed impacts associated with the three build alternatives, it was determined that the project would not result in a significant enough reduction in congestion along SR 85 to justify the social, environmental, construction, and right-of-way costs associated with the three build alternatives. The feasibility study recommended to continue with the PD&E Studies for a Western Crestview Bypass and the capacity improvements along SR 85 shown currently within the O-W TPO Cost Feasible Plan. As these ongoing projects advance to stages where operational improvements can be analyzed, further coordination should continue with local planning partners to determine if the regional traffic concerns are addressed by these existing projects, or if a more detailed traffic analysis related to the Eastern Crestview Bypass should be completed.

The Western Crestview Bypass consists of the Northwest Crestview Bypass (north of US 90) and the Southwest Crestview Bypass (South of US 90). The Southwest Crestview Bypass will route around Crestview to the southwest beginning at Wild Horse Drive and P.J. Adams Parkway and ending at US 90 and County Road (CR) 188. The Southwest Crestview Bypass project is underway through several projects which include P.J. Adams Parkway Widening from Crab Apple Avenue to Wildhorse Drive [Financial Project Identification (FPID) 421997-9], I-10 at Antioch Road Interchange (FPID 407918-5), and the Southwest Crestview Bypass from I-10 to US 90. All three segments are under construction.

Other regional projects include I-10 Improvements from the Santa Rosa County line to SR 85 (FPIDs 413062-5 & 441038 -1, -2, -3, -4), SR 85 Resurfacing from SR 123 to I-10 (FPID 441548-1), SR 85 Access Management Project from Southcrest Drive to Hospital Drive (FPID 443672-1), and SR 85 Widening from SR 123 to Mirage Avenue (FPID 220171-2). The I-10 Improvements and SR 85 Widening projects are currently in the PD&E Phase. The SR 85 Access Management project is currently in the design phase. The SR 85 Resurfacing Project has completed design and will be bid for construction.

An overview of regional projects is shown in **Figure 1-4**.

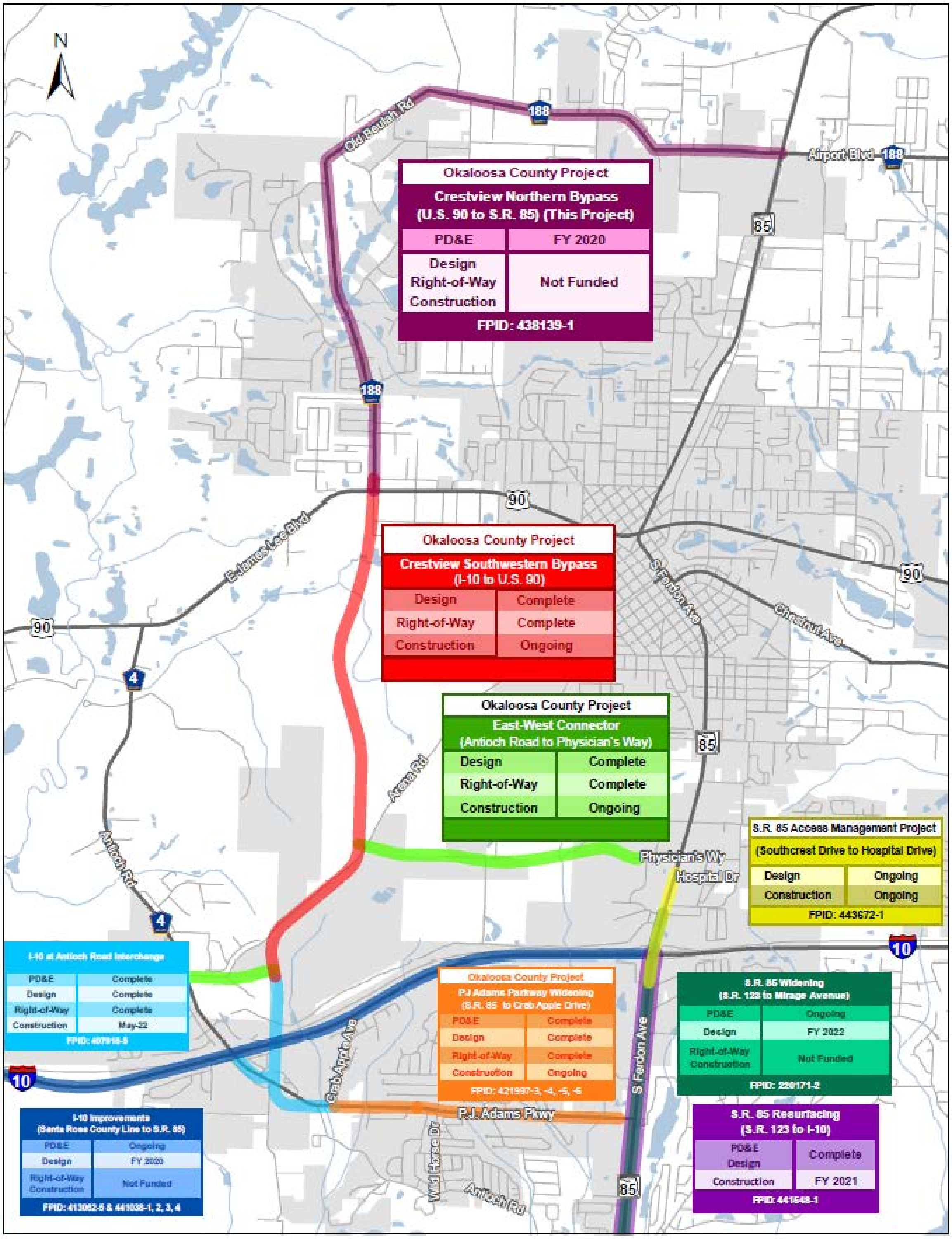


Figure 1-4 | Overview of Regional Projects

2.0 Purpose and Need

2.1 Purpose

The primary purpose of the Northwest Crestview Bypass project is to provide regional system connectivity to improve mobility through and around the City of Crestview by providing an alternative to SR 85 and completing the Western Bypass around the City of Crestview, consistent with local plans. The secondary purposes are to address safety and hurricane evacuation, support anticipated growth, and improve mobility in Okaloosa County.

2.2 Need

The project is needed to improve regional connectivity, mobility, safety, and hurricane evacuation.

Project Status

The Northwest Crestview Bypass project is identified as a Need in the Okaloosa-Walton Transportation Planning Organization 2045 Long Range Transportation Plan, and Cost Feasible Plan for development of the next phase, which is a Project Development and Environment Study. Section 1.2.2 provides an update of status.

System Linkage

Providing safe and efficient mobility through and around the City of Crestview is critical not only to the City and Okaloosa County, but to the region as a whole which will better serve critical components of the northwest Florida economy such as the Bob Sikes Airport, Eglin Air Force Base (AFB), Hurlburt and Duke Fields, and tourism.

The Southwest Crestview Bypass currently under construction will terminate at US 90. To continue north, vehicles would have to travel along US 90 and then north on SR 85 through the City of Crestview. Currently, the segment of SR 85 through the City of Crestview and the segment of US 90 from Antioch Road to SR 85 are operating at level of service (LOS) F. Regional traffic from the coastal communities of Okaloosa County and Eglin AFB currently rely heavily on SR 85 which is the only north-south corridor in Okaloosa County directly connecting these communities to the region north of I-10. Thus, there is a need to complete the Western Crestview Bypass in order to provide an alternative route to SR 85 that would enhance the transportation network's connectivity and relieve SR 85 and US 90 from both regional and local traffic.

Additionally, the Florida Division of Emergency Management's Regional Evacuation Study Program Evacuation Transportation Analysis, Volume 4-1 (covering West Florida Region) recommended that the state and local counties continue developing north-south evacuation routes to reduce evacuation clearance times. Thus, completion of the Western Crestview Bypass will improve the evacuation process by providing evacuees with an alternative route to heavily congested SR 85.

Capacity

Segments of SR 85 within the City of Crestview currently experience severe congestion and queuing that routinely backs up for several miles. The 2040 deficiency analysis in the O-W TPO 2040 LRTP shows SR 85 from 77th Special Forces Way to Airport Road as very congested (with higher than a 1.3 volume to capacity ratio), and US 90 from Antioch Road to SR 85 as congested (with 1.0 to 1.3 volume to capacity ratios).

Furthermore, the congestion analysis conducted for roadways within the study area supports the need for improved mobility within and around the City of Crestview. The 2018 Minor Update of the O-W TPO's Congestion Management Process Plan shows that the SR 85 segments from Antioch Road to I-10 and from I-10 to US 90 are very congested and have operated at LOS F since 2007. These segments are projected to continue to operate with LOS F through 2027 if no capacity improvements are made. The segment from US 90 to Airport Road/CR 188 is shown as LOS C and projected to continue as LOS C through 2027. Traffic analysis performed for the Eastern Crestview Bypass Feasibility Study published in July 2019 shows the segment of SR 85 from US 90 to 3rd Avenue failing (LOS E or worse) in 2030. Thus, there is a need to provide alternative routes to SR 85 which would enhance movement of people and goods in and around the City of Crestview.

Transportation Demand

A factor contributing to the amount of traffic on the roadway network is population growth in Okaloosa County. Okaloosa County has grown from 180,822 residents in 2010 to approximately 201,514 residents in 2019, an average annual increase of approximately 1.3 percent. The Bureau of Economic and Business Research (BEBR) medium estimate projects a population of 242,300 by 2045.

The study area is within Okaloosa County's Planning Area 32536 (Crestview/Auburn). The Okaloosa County Planning Area 32536 Crestview/Auburn Profile (2018) shows a higher growth rate for the period from 2010-2017 for this area (19.18%) than the county (8.11%). The study area is expected to continue to grow as is evidenced by the BEBR estimates and the county's future land use maps which plan for additional residential lands compared to what is existing. Residential development is planned where there are currently upland forests. The expected growth will continue to increase the demand to use both major arterial and local roads in the project study area.

Safety

Analysis of crashes in the State Safety Office Geographic Information System indicated that there were 857 crashes reported on state and local roadways within and adjacent to the study area from 2014 to 2018. Of these, there were seven (7) fatal crashes and 30 incapacitating injury crashes. The top three crash types in the study area were rear end, angle and sideswipe crashes. The majority of crashes were located on SR 85 with the highest concentration at the US 90 intersection. The crash rates per million vehicle miles traveled for suburban and rural sections of SR 85 are 3.200 and 6.458, respectively. The average statewide crash rate for suburban arterials is 1.722 and for rural arterials is 0.831, which are substantially lower than the actual crash rates. Thus, there is a need for transportation improvements to increase overall safety in the area.

3.0 Existing and Future Conditions

3.1 Roadway and Environmental

An Existing Conditions Report was prepared for this study in January 2021 and is included in **Appendix A** of this document. The report documents roadway characteristics, drainage systems, traffic and safety, and structures for state roads and selected local roads within the study area. SR 85 and US 90 (SR 10) are the only state roads in the study area. The following local roads were selected for review: Old Bethel Road, CR 4, Lake Silver Road, Enzor Road, Auburn Road, and Bill Lundy Road.

The Existing Conditions Report also documents existing environmental characteristics for the study area. Of note, several tributaries of the Yellow River and associated wetlands and floodplains are within in the study area (**Figure 6-10**). Existing environmental features are shown in the figures in Section 6.4 Environmental Evaluation. Future conditions were considered through review of the City of Crestview and Okaloosa County future land use plans, and coordination with the city and county. Future land use plans anticipate additional residential development in the study area, including west and north of Old Bethel Road.

Please refer to the Existing Conditions Report in **Appendix A** for more information.

3.2 Traffic and Safety

An ACE Traffic Analysis Report documenting existing and future traffic and safety conditions was prepared for this study and is included in **Appendix B**. Note that existing traffic and safety conditions were previously discussed in Section 2.2.

Traffic analysis was conducted to determine the traffic operational performance for no build conditions and six alternative corridors. Analysis results show that some sections of SR 85 are anticipated to operate below the FDOT LOS target with or without the Northwest Crestview Bypass in place in opening year 2035. However, sections of SR 85 north of I-10 and north of US 90, as well as US 90 west of SR 85 are anticipated to improve in volume to maximum service volume ratios (v/MSV) with the Northwest Crestview Bypass in place compared to the No Build scenario.

In design year 2055, the LOS target is not anticipated to be met on SR 85 south of Live Oak Church Road, and north of I-10. In addition, PJ Adams Parkway west of SR 85 and the Southwest Crestview Bypass (Shown in **Figure 1-4**) are anticipated to operate below LOS targets in 2055. The v/MSV results show an improvement with the Northwest Crestview Bypass in place on SR 85 north of US 90, and US 90 west of SR 85 compared to the No Build scenario.

An existing safety analysis was conducted utilizing crash data from January 1st, 2014 to December 31st, 2018 obtained from FDOT Crash Analysis Reporting (CAR) system and Signal Four Analytics. Signal Four Analytics data was used to assess if there were any recent significant change in total crash trends. Safety analysis results showed on SR 85, 3.8 percent of the crashes were fatal or incapacitating injury; on US 90, 4.3 percent of the crashes were fatal or incapacitating injury; and on Old Bethel Road, 3.6 percent of the crashes were fatal or incapacitating injury.

Future conditions safety analysis was completed for the study roadways (US 90 from Antioch Road to SR 85, SR 85 from US 90 to Bill Lundy Road/Bradley Road, and Old Bethel Road from US 90 to SR 85) plus the Northwest Crestview Bypass. The future conditions crash analysis was conducted using the Highway Safety Manual (HSM) Predictive Method for the study area roadways and the proposed Northwest Crestview Bypass alternative corridors for 2035 and 2055 for conditions. Overall, the results showed that the safety performance of the study area roadways was directly proportional to the forecasted volumes in 2035 and 2055. In other words, the number of crashes increased or decreased when the volumes increased or decreased respectively.

Please refer to the Traffic Analysis Report in **Appendix B** for more information.

4.0 Alternative Evaluation Methodology

The alternative evaluation methodology is documented in detail in the Methodology Memorandum (MM) included in **Appendix C**. The MM proposed to evaluate corridors based on consideration of meeting the project purpose and need, avoidance and/or minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency/public input. The evaluation process began with an assessment of each corridor's ability to meet the project's primary purpose and need. Any alternative failing to meet the project's primary purpose and need was eliminated from further consideration and the evaluation process continued only for those alternatives that meet the project's primary purpose and need. All remaining viable corridors were evaluated using environmental, engineering, and cost considerations.

The evaluation score for secondary purpose and need, engineering and environmental impacts were developed based on traffic analysis, safety analysis, and the order of magnitude impact estimates from the typical section width centered on the full corridor centerline. Because there are different scenarios on how a criterion may be evaluated and scored, for clarity and comparative purposes, the evaluation criteria were converted to a numerical score. **A score of 1 represents the corridor having the best performance (least impact, most benefit, etc.) and the highest score represents the alternative performing the worst.** The highest score corresponds to the total number of alternatives analyzed. Alternatives with equal impacts or benefits (alternatives that are tied) were scored the same. When an alternative did not involve a criterion, it was assigned a score of zero. Following the evaluation of all the criteria in an evaluation category, the criteria scores for each corridor were summed to determine the corridor's overall evaluation category score. A corridor having the **best overall performance** (least impact, most benefit, etc.) had the **lowest total score**.

The MM was provided to the ETAT and public to review beginning December 27, 2021. The ETAT indicated they understood the MM and some members provided comments. The MM was approved by the Office of Environmental Management (OEM) on January 25, 2022. The MM is provided in **Appendix C.**

5.0 Initial Corridors and Alternatives

Six alternative corridors were developed. The corridors begin along US 90 between County Road (CR) 4 and Old Bethel Road, providing a connection to the Southwest Crestview Bypass. Various intersections along SR 85 were considered to provide a logical end point of the bypass. GIS data and aerial imagery were used to avoid and minimize impacts to existing infrastructure and environmentally sensitive features to the extent possible. An opportunities and constraints map, shown in **Figure 5-1**, was prepared and reviewed with the County to develop the initial alternative corridors.

These initial six corridors were developed for initial agency coordination. Refinement of the initial corridors is further discussed in Section 6.0 of this report.

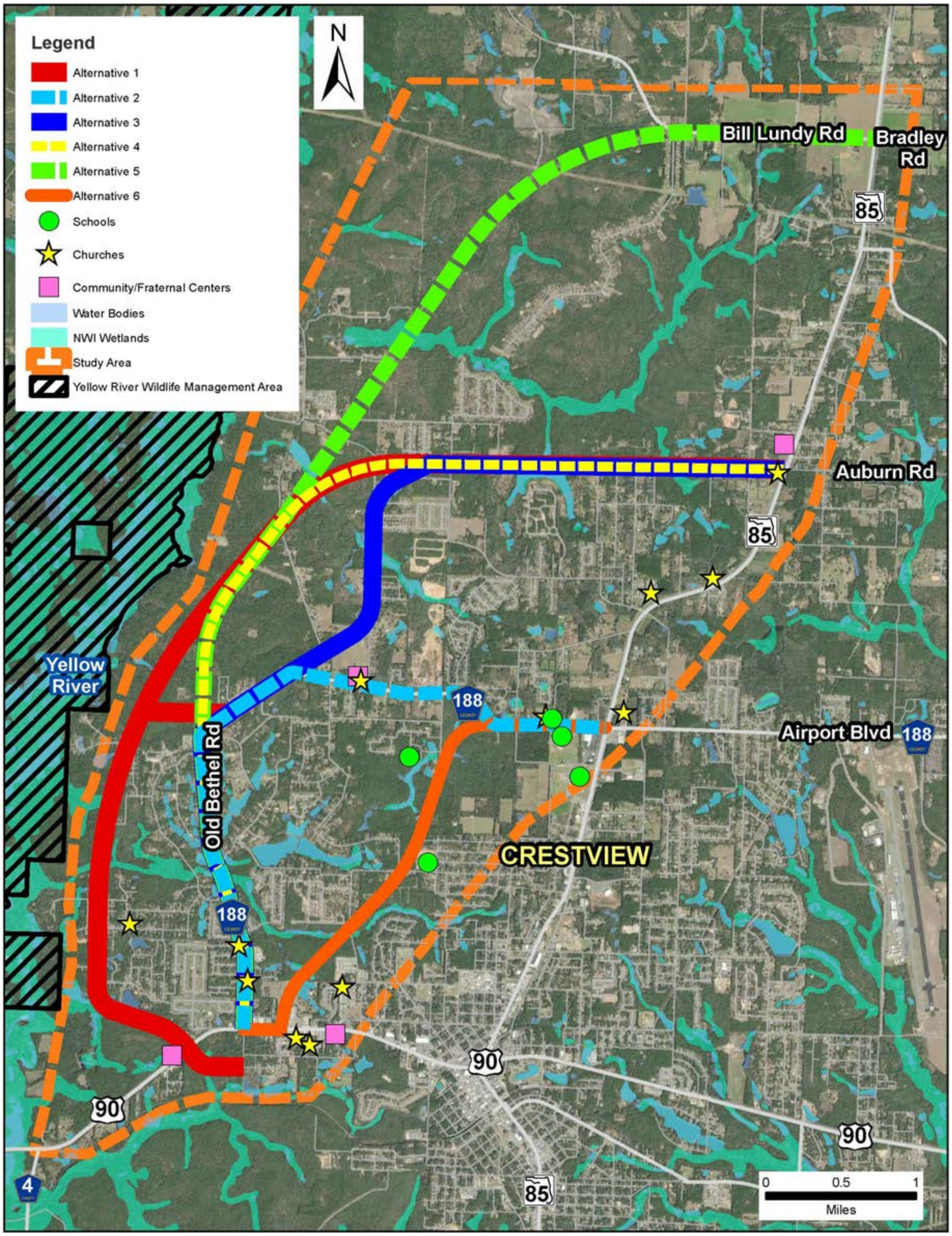


Figure 5-1 | Opportunities and Constraints Map

5.1 Design Controls

Alternative corridors were developed using design criteria outlined in the Florida Greenbook (2018) and FDOT Design Manual (2021). For this level of study, the typical section designs to be applied to each corridor alternative were based on consistency with the Southwest Crestview Bypass projects under construction and projected traffic demand. Consistent with the Southwest Crestview Bypass projects under construction, a four-lane divided typical section with a 45 mph design speed was developed. A right-of-way width of 250 feet was used for flexibility in developing proposed alignments that avoid potential constraints. The corridor width also allows for multimodal accommodations including sidewalks, bike lanes, recreational trail, and transit, as applicable in urbanized areas. The context classification, design speed, and design standards will be further defined or developed in the PD&E Study. The PD&E Study may consider 55 mph in rural sections, which could be accommodated within the right-of-way width of 250 feet.

Table 5-1 summarizes the typical section criteria used for this analysis.

Table 5-1 | Design Criteria for 45 mph Typical Section

Element	Criteria	Source
Functional Classification	Minor Arterial	Florida Greenbook, Table 1-1
Context Classification	C3R	Florida Greenbook, Figure 1-1
Design Speed	45 mph	Florida Greenbook, Table 3-1
Number of Travel Lanes	4	Typical Section
Lane Width	11 ft	Florida Greenbook, Table 3-20
Median Width	22 ft	Florida Greenbook, Table 3-23
Bike Lanes	7 ft	FDM, Table 223.2.1.1
Sidewalk Width	5 ft	FDM, Table 222.2.1
Minimum Horizontal Curve Length	675 ft	Florida Greenbook, Table 3-8
Maximum Superelevation (e)	0.05	Florida Greenbook, Section 3.C.4.c.2

The typical section design criteria summarized above resulted in the roadway typical section shown in **Figure 5-2**, and bridge typical section shown in **Figure 5-3**.

Figure 5-2 | Corridor Roadway Typical Section (45 mph)

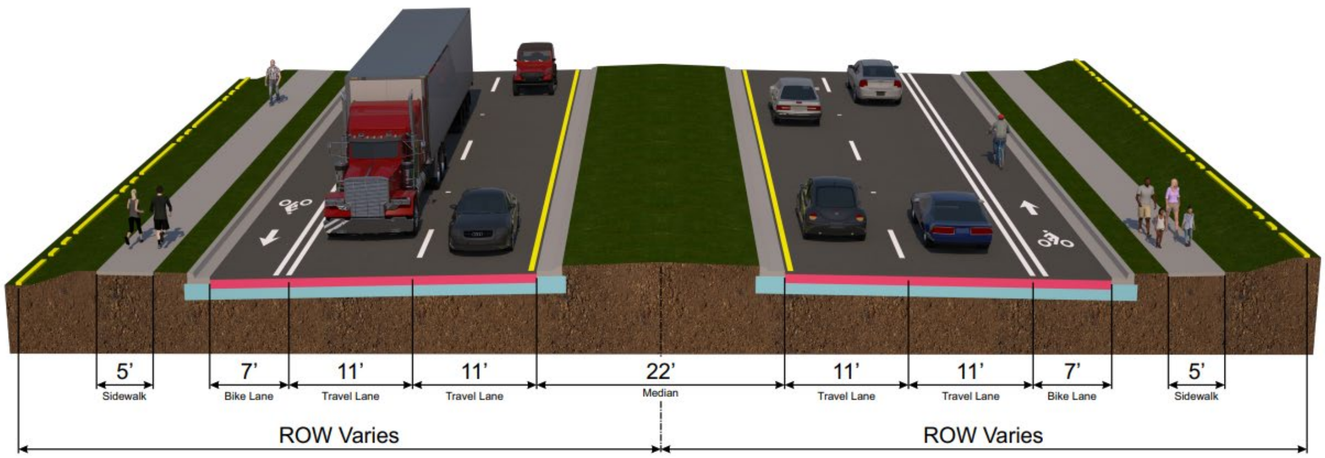
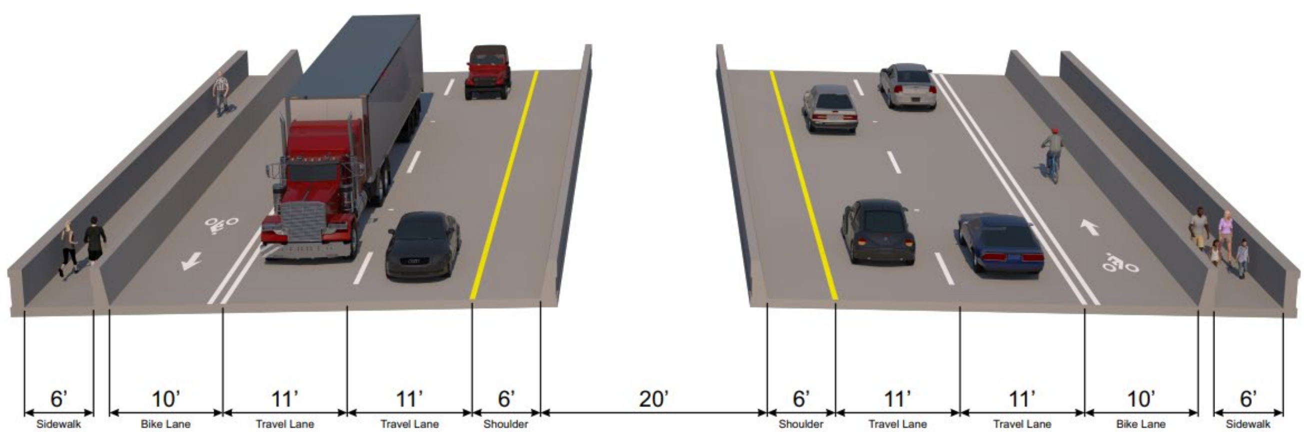


Figure 5-3 | Corridor Bridge Typical Section



5.2 Description of Alternative Corridors

5.2.1 Alternative 1

Alternative 1 begins at the intersection of Enzor Road and Cayson Avenue and travels northwest around residential areas. The southern terminus was set at Cayson Avenue for Alternative 1 to avoid using US 90 and impacting existing residences in the northwest quadrant of the US 90 intersection. Before the boundary of the Yellow River Wildlife Management Area and near the western terminus of Seneca Trail, Alternative 1 curves to travel north. A connection to Old Bethel Road is provided. After crossing Mathison Creek, Alternative 1 travels northeast through mostly undeveloped areas. Around Lake Silver Road, Alternative 1 travels east on new alignment until reaching Adams Road. Alternative 1 includes capacity improvements along Adams Road to SR 85. The total distance of Alternative 1 is 8.7 miles. Alternative 1 is displayed in **Figure 5-4.**

Table 5-2 | Alternative 1 Segments

Segment	Roadway Utilized	Length (mi)
Enzor Road to Adams Road	New Alignment	7.65
Section tying into Old Bethel Road	New Alignment	0.56
Adams Road to SR 85	Adams Road	0.49
Alternative 1 Overall Length		**8.7**

5.2.2 Alternative 2

Alternative 2 consists of capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85. The total distance of Alternative 2 is 4.91 miles. Alternative 2 is displayed in **Figure 5-5.**

Table 5-3 | Alternative 2 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to SR 85	Old Bethel Road	4.91
Alternative 2 Overall Length		**4.91**

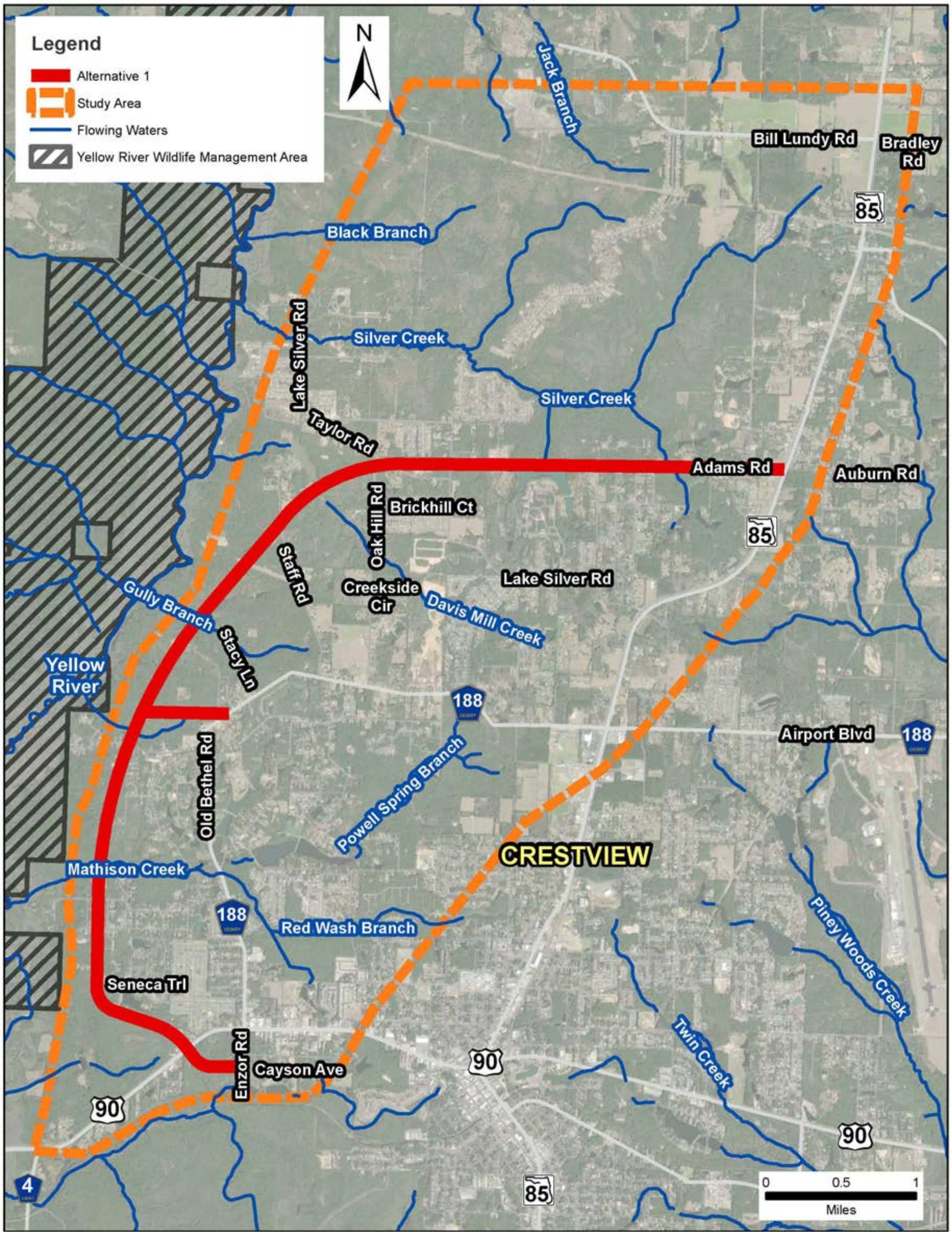


Figure 5-4 | Alternative 1

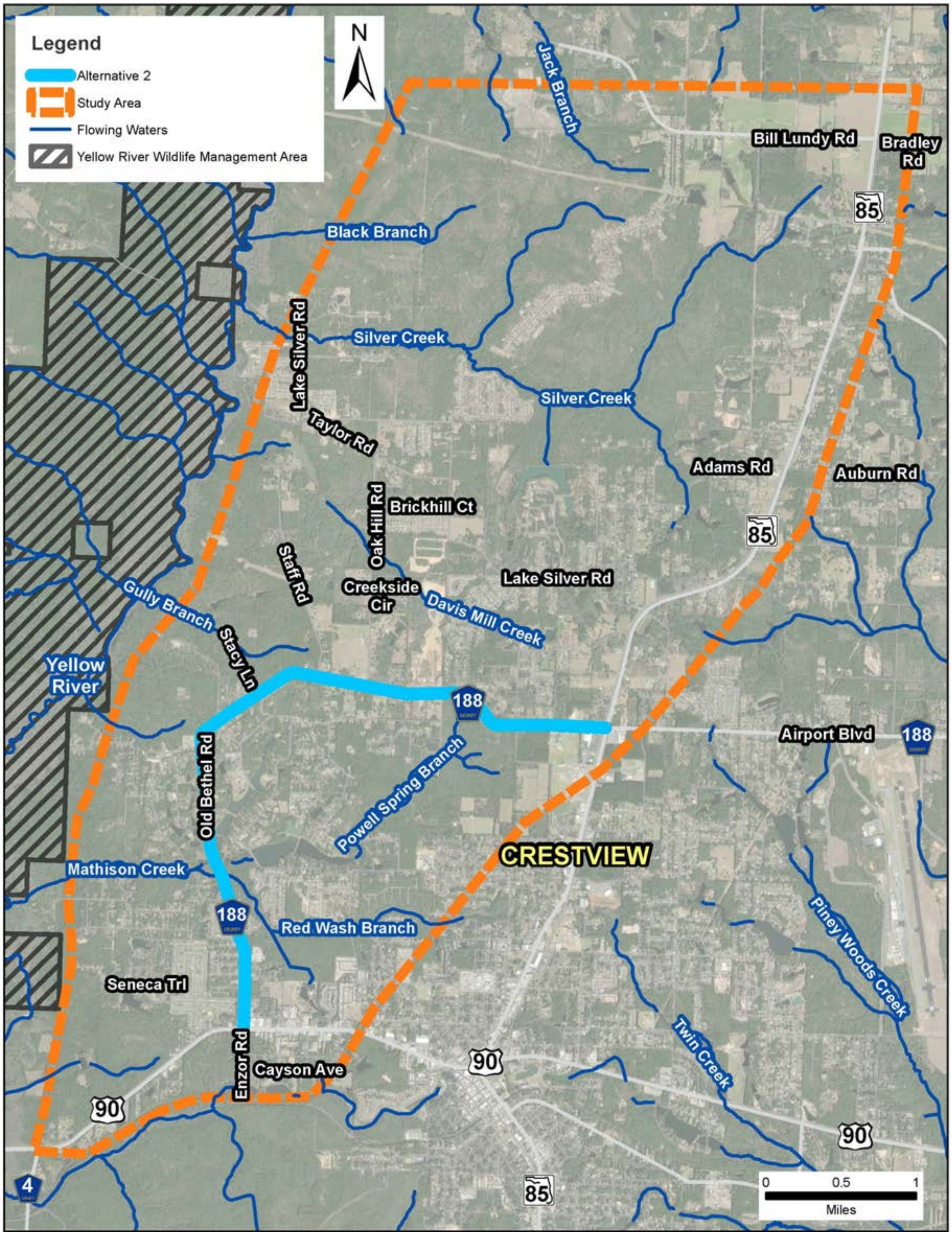


Figure 5-5 | Alternative 2

5.2.3 Alternative 3

Alternative 3 includes capacity improvements to Old Bethel Road from its intersection with US 90 to approximately 1,000 feet west of Staff Road. From west of Staff Road, Alternative 3 travels north and east on new alignment until reaching Oak Hill Road near Creekside Circle. It then includes capacity improvements along Oak Hill Road heading north. Near Brick Hill Court, Alternative 3 travels east on new alignment until reaching Adams Road. Alternative 3 includes capacity improvements along Adams Road to SR 85. The total distance of Alternative 3 is 6.96 miles. Alternative 3 is displayed in **Figure 5-6.**

Table 5-4 | Alternative 3 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to west of Staff Road	Old Bethel Road	2.75
West of Staff Road to Oak Hill Road	New Alignment	0.72
Oak Hill Road to Brick Hill Court	Oak Hill Road	0.59
Brick Hill Court to Adams Road	New Alignment	2.41
Adams Road to SR 85	Adams Road	0.49
Alternative 3 Overall Length		**6.96**

5.2.4 Alternative 4

Alternative 4 includes capacity improvements to Old Bethel Road from its intersection with US 90 to the location where Old Bethel Road curves northeast (west of Seminole Drive). From there, Alternative 4 travels north and east until reaching Taylor Road where it curves to travel east. Alternative 4 then travels east on new alignment until reaching Adams Road. Alternative 4 includes capacity improvements along Adams Road to SR 85. The total distance of Alternative 4 is 7.06 miles. Alternative 4 is displayed in **Figure 5-7.**

Table 5-5 | Alternative 4 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to west of Seminole Drive	Old Bethel Road	2.02
West of Seminole Drive to Adams Road	New Alignment	4.55
Adams Road to SR 85	Adams Road	0.49
Alternative 4 Overall Length		**7.06**

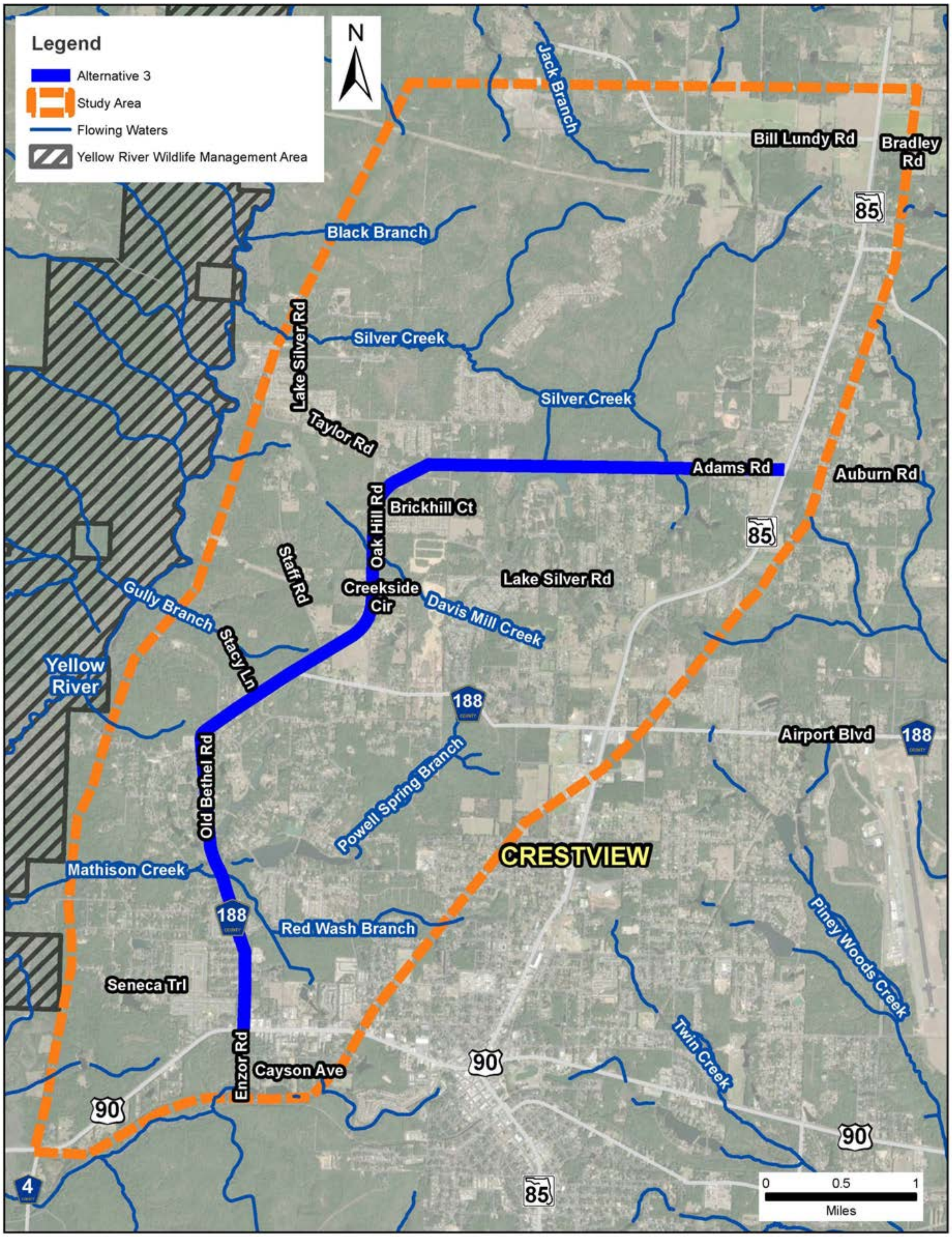


Figure 5-6 | Alternative 3

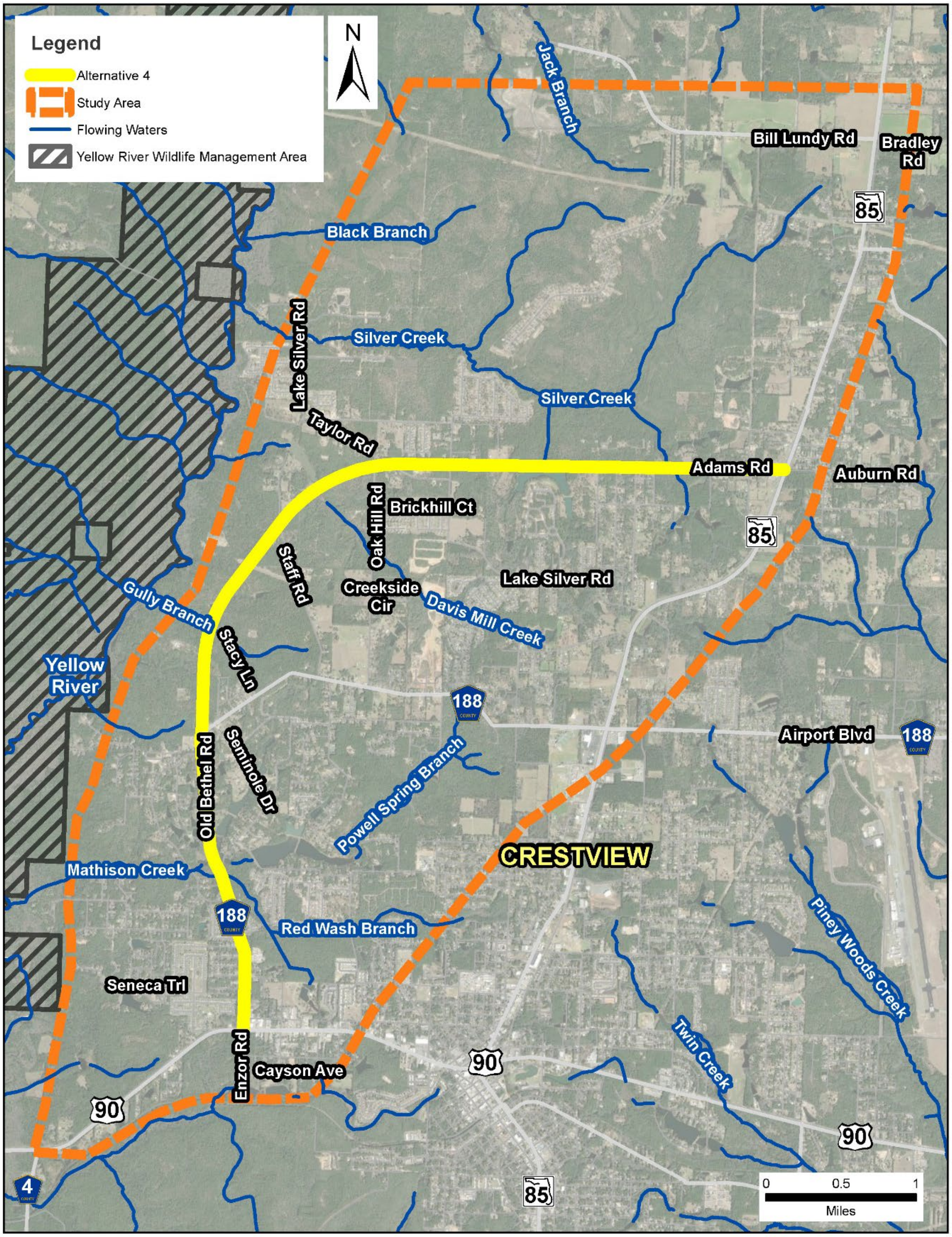


Figure 5-7 | Alternative 4

5.2.5 Alternative 5

Alternative 5 includes improvements to Old Bethel Road from its intersection with US 90 to the location where Old Bethel Road curves northeast (west of Seminole Drive). From there, Alternative 5 travels on new alignment north and east past the west side of a private airstrip through mostly undeveloped land until reaching Bill Lundy Road near Owens Road. Alternative 5 includes capacity improvements along Bill Lundy Road to SR 85. The total distance of Alternative 5 is 8.76 miles. Alternative 5 is displayed in **Figure 5-8**.

Table 5-6 | Alternative 5 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to west of Seminole Drive	Old Bethel Road	2.01
West of Seminole Drive to Bill Lundy Road	New Alignment	5.48
Bill Lundy Road to SR 85	Bill Lundy Road	1.27
Alternative 5 Overall Length		**8.76**

5.2.6 Alternative 6

Alternative 6 begins at the intersection of US 90 and Old Bethel Road and travels east along US 90 to Cayson Avenue where it travels north and east on new alignment. On new alignment, Alternative 6 travels between two established neighborhoods and through a platted but undeveloped area. Alternative 6 then passes immediately west of Bob Sikes Elementary School and through undeveloped land to Old Bethel Road. Alternative 6 utilizes Old Bethel Road, with capacity improvements, to travel east to its terminus at SR 85. The total distance of Alternative 6 is 3.6 miles. Alternative 6 is displayed in **Figure 5-9**.

Table 5-7 | Alternative 6 Segments

Segment	Roadway Utilized	Length (mi)
Old Bethel Road to Cayson Avenue	US 90	0.25
Cayson Avenue to Old Bethel Road	New Alignment	2.6
Old Bethel Road to SR 85	Old Bethel Road	0.75
Alternative 6 Overall Length		**3.6**

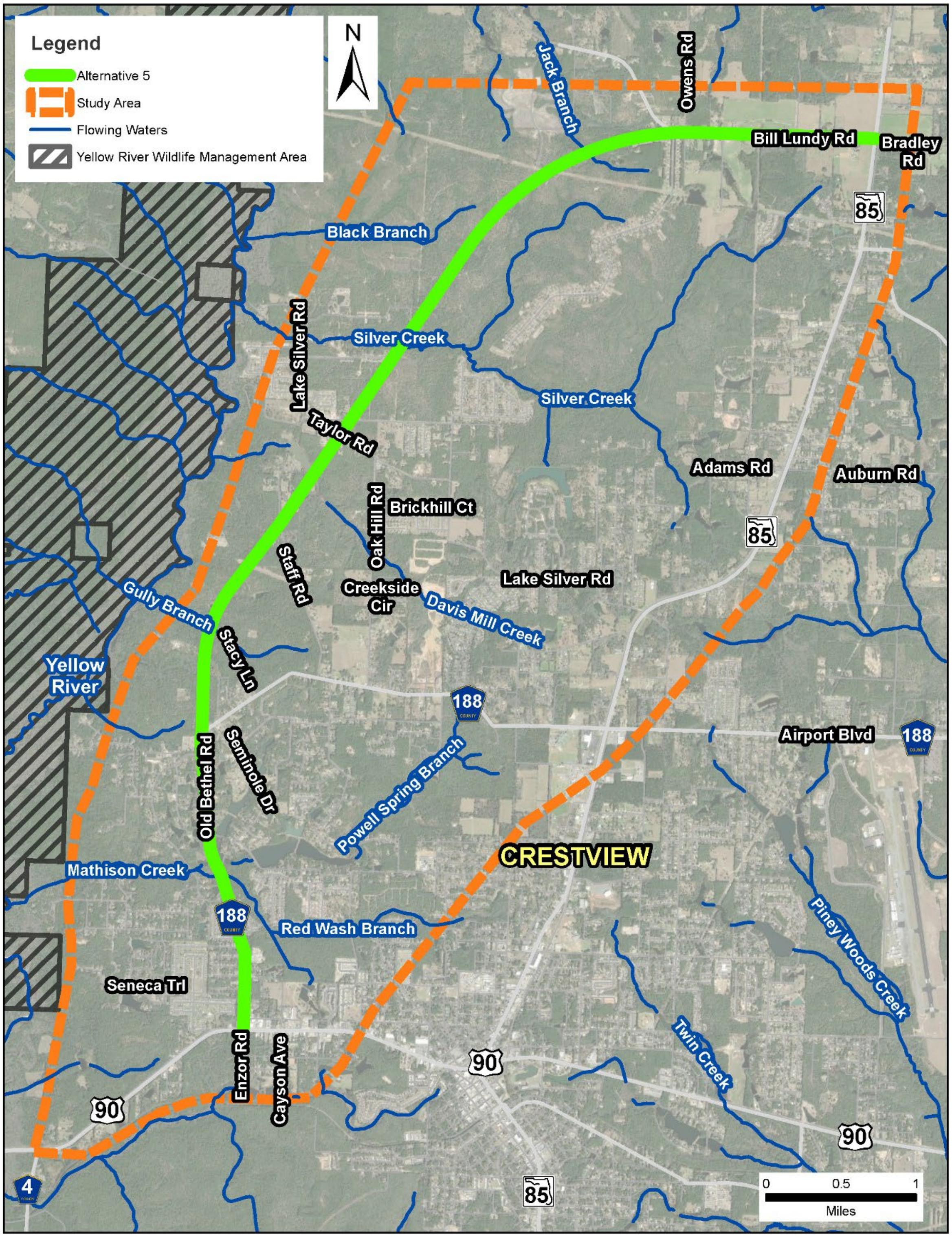


Figure 5-8 | Alternative 5

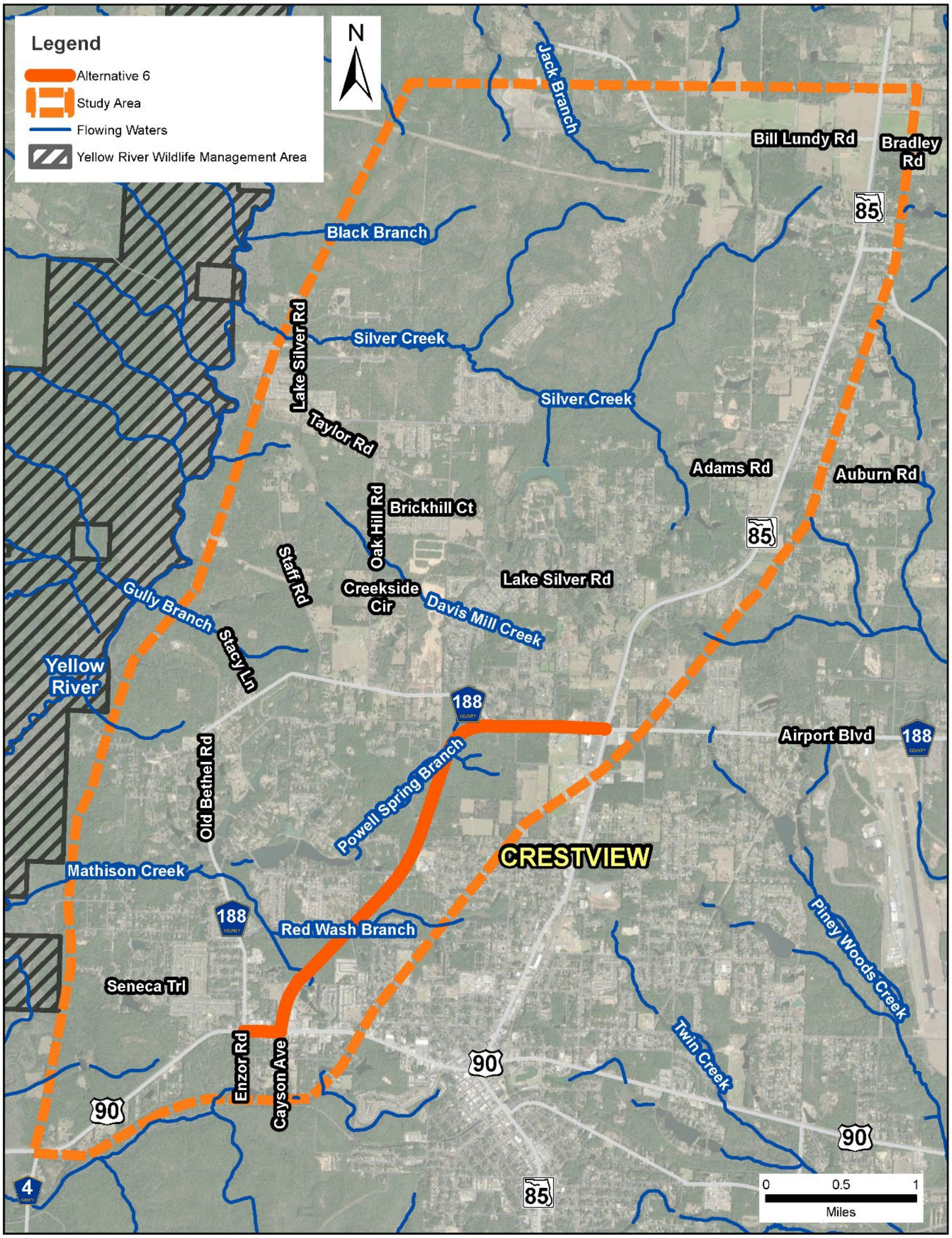


Figure 5-9 | Alternative 6

6.0 Alternatives Evaluation

In accordance with the approved Methodology Memorandum, the evaluation of the alternative corridors required a comparative analysis of each alternative's involvement with a variety of factors, grouped into evaluation categories, that characterize the relevant issues associated with the study area. In instances where the appropriate measurement for a criterion was qualitative rather than quantitative (or vice versa), both measures were provided.

The project alternatives were evaluated for their involvement with five evaluation categories:

- Primary Purpose and Need;
- Secondary Purpose and Need;
- Environmental Considerations;
- Engineering Considerations; and
- Estimated Costs.

The evaluation began with an assessment of each corridor's ability to meet the primary project's purpose and need. Any alternative failing to meet the project's primary purpose and need was documented and eliminated from further consideration as part of the evaluation process.

6.1 Primary Purpose and Need Evaluation

Alternative corridors were initially screened on their ability to meet the primary purpose and need, based on the following:

- Provide improved connectivity within the western parts of Okaloosa County, with the ability to function as a regional route.
- Provide direct connection with the Southwest Crestview Bypass.
- Be consistent with the Okaloosa County Comprehensive Plan and City of Crestview Comprehensive Plan. Comprehensive Plan evaluation included both the Transportation Element and Conservation Element of the Comprehensive Plan.

Regional connectivity was evaluated considering the Okaloosa County transportation circulation plan west of SR 85. The Okaloosa County Future Transportation Map adopted in May 2000 is incorporated in the County's 2020 Comprehensive Plan. The County indicated that the Map is being revised to add the Southwest Crestview Bypass. An update is anticipated in 2023. By focusing on regional connectivity, neither Alternative 2 nor Alternative 6 meet the primary purpose and need.

- Alternative 2 does not improve regional connectivity as it would utilize an existing local road and would function as a local, parallel route to SR 85 through reliance on the existing road even when the roadway is widened. Alternative 2 would not serve regional trips nor support potential new growth areas outside the City of Crestview.
- Alternative 6 does not improve regional connectivity within the western parts of the county as it would function more as a local or parallel route to SR 85. Based on its proximity to SR 85, Alternative 6 would mostly serve local trips between US 90 and Old Bethel Road.

With respect to route directness of the bypass, Alternative 6 does not provide direct linkage with the Southwest Crestview Bypass since it would utilize part of US 90 to connect to the Southwest Crestview Bypass.

Evaluation of alternative corridors consistency with local plans showed Alternative 1 and Alternative 6 were incompatible with the local plans.

- Alternative 1 was found to be incompatible with the County's River Protection Zone (River Protection Zone Conservation Element Policies 7.1 – 7.5) because it encroaches on the floodplains and wetlands of the Yellow River, as shown in **Figure 6-1**. Shifting Alternative 1 to the east to avoid this encroachment would require impacting existing residences.
- The City of Crestview noted several developments in various stages of consideration which would not be supported by Alternative 6 (**Figure 6-1**). These developments include:
  - Freedom Walk Subdivision (530 lots), Parcels 32-4N-23-0000-0029-0020, 05-3N-23-0000-0006-0000, and 05-3N-23-0000-0004-0000
  - Adams Estates (167 lots), Parcel 07-3N-23-0000-0001-0000
  - Phillips Energy Truck Stop (4,000 sq. ft. bldg.), Parcel 18-3N-23-0340-0000-0100
  - Pandora Drive apartments on 21 acres, Parcels 07-3N-23-0000-0013-0000 and 07-3N-23-0000-0005-0260.

The results of the primary purpose and need evaluation are presented in **Table 6-1**.

Table 6-1 | Primary Purpose and Need Evaluation

Category	Criteria	Measure (Yes or No)	Alternative Meets Primary Purpose and Need (Y/N)					
			1	2	3	4	5	6
Primary Purpose and Need	Improved connectivity with the western part of Okaloosa County	Y/N	Y	**N**	Y	Y	Y	**N**
	Provide a direct connection to the Southwest Crestview Bypass	Y/N	Y	Y	Y	Y	Y	**N**
	Consistency with local plans	Y/N	**N**	Y	Y	Y	Y	**N**
Screening Summary: Eliminate Alternatives 1, 2, and 6			**N**	**N**	Y	Y	Y	**N**

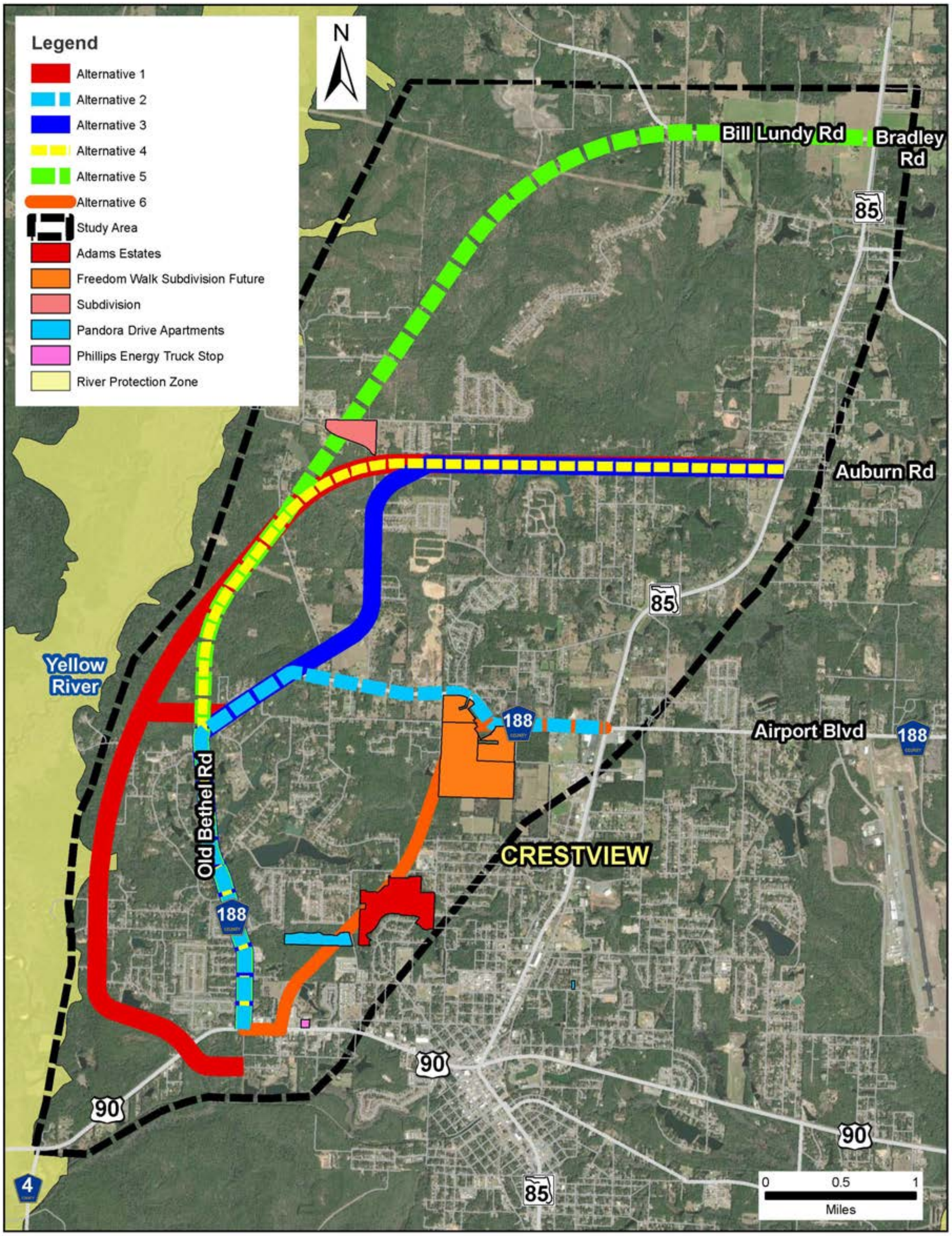


Figure 6-1 | Alternative Corridors and Local Plans

Alternative corridors that failed to meet the primary purpose and need were eliminated from further consideration. Alternative corridors that met the primary purpose and need were refined to minimize potential impacts to environmental resources through desktop and field reviews before they were evaluated in detail with respect to the secondary purpose and need, environmental, engineering, and cost criteria.

Based on the primary purpose and need evaluation, Alternatives 1, 2, and 6 were eliminated from further consideration and are not carried through the remaining screening.

6.2 Alternative Corridor Refinement

Alternatives carried forward for detailed evaluation were first refined before their performance, potential impacts and relative costs were compared. Based on Environmental Technical Advisory Team (ETAT) commentary from the ETDM Programming Screen, and input from Okaloosa County, features identified as important considerations include but are not limited to Yellow River which is a habitat for freshwater mussels and sturgeon, wetlands, stream systems and their crossings, minority and low-income populations, archaeological and historic resources (including Old Bethel Church and cemetery), and infrastructure facilities such as the water tower and dam at the Nature Lake subdivision. Alternative corridors passing the primary purpose and need evaluation were refined to avoid and minimize impacts to these features. The refined alternative corridors were used for the remainder of the analysis.

6.2.1 Alternative 3

Minor adjustments were made to Alternative 3 but no major route changes. The intersection with Staff Road was adjusted to avoid the water tower on Staff Road. Between Lake Silver Road and Dogwood Drive, Alternative 3 was shifted to the north to avoid impact to a Nature Lake Subdivision dam. Adjusted segmentation for the refined Alternative 3 is shown in **Table 6-2. Figure 6-2** shows the refined Alternative 3.

Table 6-2 | Alternative 3 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to west of Staff Road	Old Bethel Road	3.58
West of Staff Road to Oak Hill Road	New Alignment	0.53
Oak Hill Road to Brick Hill Court	Oak Hill Road	0.59
Brick Hill Court to Adams Road	New Alignment	2.52
Adams Road to SR 85	Adams Road	0.49
Alternative 3 Overall Length		**7.71**

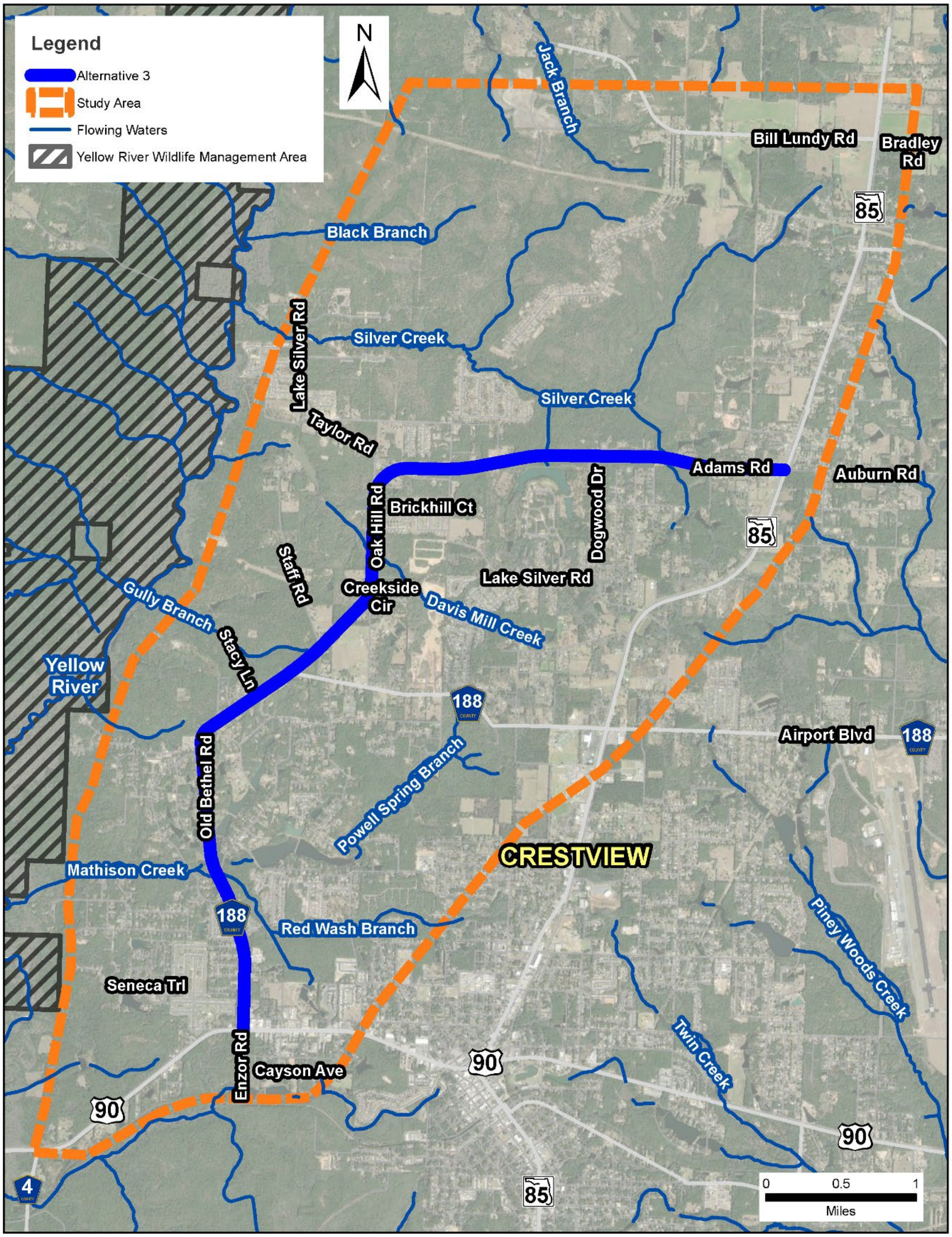


Figure 6-2 | Alternative 3

6.2.2 Alternative 4

Alternative 4 was refined to include capacity improvements on Old Bethel Road for an additional 0.71 miles to the location where Old Bethel Road curves to the east (west of Staff Road) to avoid the new water tower on Old Bethel Road. From there, Alternative 4 ties into and co-locates with Staff Road. From Staff Road, Alternative 4 follows a similar route to the initial corridor but was shifted southeast to minimize impacts to Davis Mills Creek. Between Oak Hill Road and Taylor Road, Alternative 4 was modified to minimize impacts to homes. Between Lake Silver Road and Adams Road, Alternative 4 was shifted to avoid impact to a Nature Lake Subdivision dam. Adjusted segmentation for the refined Alternative 4 is shown in **Table 6-3. Figure 6-3** shows the refined Alternative 4.

Table 6-3 | Alternative 4 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to Old Bethel Road	Old Bethel Road	2.73
Leg tying into Staff Road	New Alignment	0.45
Staff Road	Staff Road	0.47
Staff Road to Adams Road	New Alignment	3.09
Adams Road to SR 85	Adams Road	0.49
Alternative 4 Overall Length		**7.23**

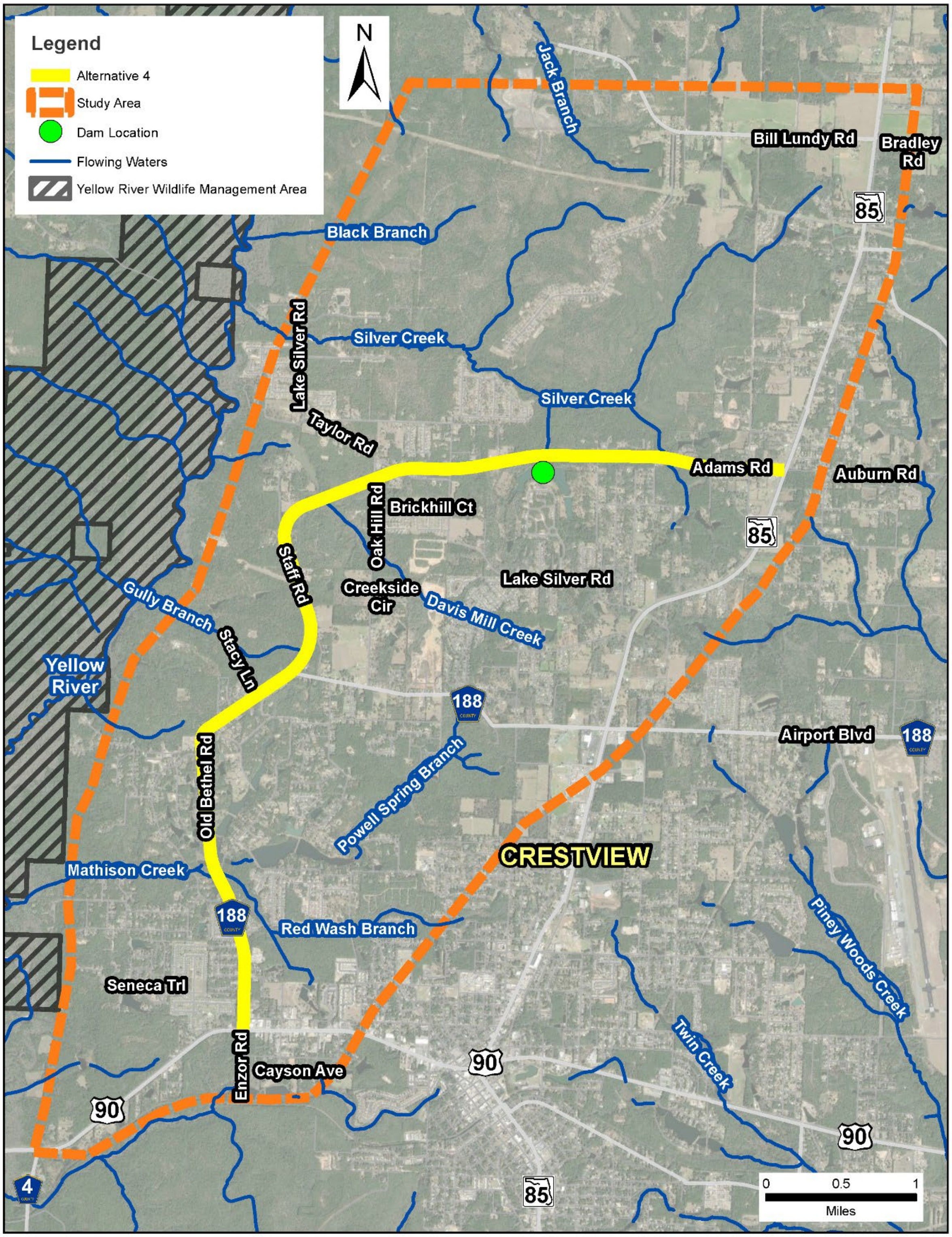


Figure 6-3 | Alternative 4

6.2.3 Alternative 5

Alternative 5 was refined to include capacity improvements on Old Bethel Road for an additional 0.43 miles (east of Stacy Lane) to avoid the new water tower. From there, Alternative 5 travels on new alignment north and slightly west to avoid an airstrip and then northeast towards Staff Road. Between Staff Road and Taylor Road, Alternative 5 was shifted southeast to minimize impacts to Davis Mills Creek. Between Taylor Road and Silver Creek, Alternative 5 was shifted to minimize impact to a new platted subdivision. Adjusted segmentation for the refined Alternative 5 is shown in **Table 6-4. Figure 6-4** shows the refined Alternative 5.

Table 6-4 | Alternative 5 Segments

Segment	Roadway Utilized	Length (mi)
US 90 to east of Stacy Lane	Old Bethel Road	2.44
East of Stacy Lane to Bill Lundy Road	New Alignment	5.46
Bill Lundy Road to SR 85	Bill Lundy Road	1.27
Alternative 5 Overall Length		**9.17**

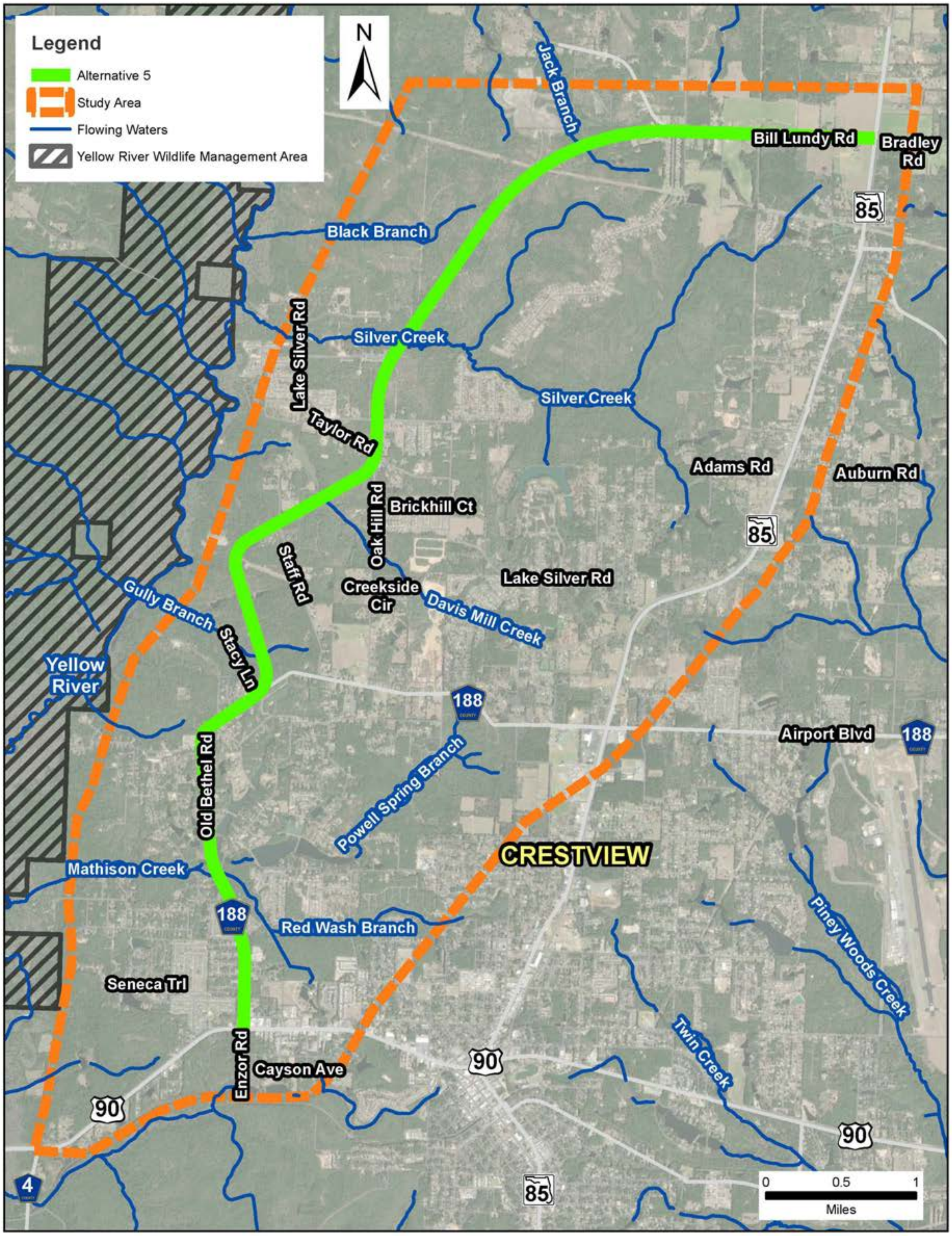


Figure 6-4 | Alternative 5

6.3 Secondary Purpose and Need Evaluation

The remaining alternatives were screened on their ability to meet the secondary purpose and need with respect to the following factors.

- Improve safety
- Reduce demand
- Improve mobility

The following describes how each criterion was evaluated. Based on the evaluation, scores were assigned where 1 represents the corridor having the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. A lower score in the secondary purpose and need evaluation indicates a better performance.

Safety is measured by the total number of predicted crashes in the study area for year 2055. Demand is measured by the reduction in traffic (AADT) along SR 85 north of US 90 when compared with the No Build in 2055. Mobility is measured by the number of state road segments in the study area operating at LOS E or F in 2055. Traffic analysis to determine operational and safety performance of each corridor is documented in the Traffic Analysis Report which is provided in **Appendix B**. Both Alternatives 3 and 4 are the same in terms of number of segments operating at LOS E or F in 2055. Alternatives 3 and 4 are the most favorable in terms of reducing demand on SR 85, as compared to the No Build in 2055. Alternative 5 reduces demand the least.

In order to provide a relative comparison of the networkwide safety performance, the number of predicted crashes in 2055 for each alternative was compared with no build conditions. It should be noted that the trend in crashes directly correlates to the daily traffic forecasted in the study area. As such, it is expected that new corridors will be predicted to have more crashes than no build conditions. Alternative 3 performed most favorably in terms of predicted number crashes in 2055. Alternatives 5 is predicted to have the highest number of crashes because a combination of traffic volumes and length of the corridor.

The results of the secondary purpose and need evaluation are presented in **Table 6-5**.

Table 6-5 | Secondary Purpose and Need Evaluation

Category	Criteria	Unit of Measure (Year 2055)	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Secondary Purpose and Need	Improve safety	Number of Crashes	125.0	1	128.3	2	135.5	3
	Reduce demand	Demand	-4000	1	-4000	1	-2500	3
	Improve mobility	LOS	4	2	4	2	3	1
Secondary Purpose and Need Score				**4**		**5**		**7**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.3 above.

6.4 Environmental Evaluation

The potential environmental effects were considered for each alternative corridor that meets the project's purpose and need. Because a study area's environment encompasses numerous issues, most with more than one criterion to be evaluated, separate evaluation matrices were developed for each of the four environmental evaluation categories: social and economic, cultural resources, natural, and physical. The matrices were populated using quantifiable data from the applicable GIS layers identified in **Table 6-6** using the refined alternative corridors**.** GIS data sources included datasets from the Florida Geographical Data Library (FGDL), the Northwest Florida Water Management District (NWFWMD), the Florida Fish and Wildlife Conservation Commission (FWC), the Florida Natural Areas Inventory (FNAI), the National Park Service (NPS), the Federal Emergency Management Agency (FEMA), the U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), the Florida Department of Environmental Protection (FDEP), the National Wetland Inventory (NWI), U.S. Census American Community Survey (ACS), Okaloosa County, and the City of Crestview.

Potential environmental impacts were calculated using a centerline with a 125-foot buffer (250-foot total width). Actual impacts should be less since the 250-foot corridor provides space in which to shift alignments to avoid and/or minimize impacts.

In instances where the project would be involved with a resource that was not quantifiable, it is qualitatively discussed in the narrative assessment. The rankings of each of the four environmental evaluation categories were summed to provide an overall environmental score and corresponding rank in **Table 9-1**.

Table 6-6 | GIS Data Layers

GIS Data Layer	Source	Year
Social and Economic		
Public and Private Schools	FGDL	2020
Religious Centers	FGDL	2015
Health Facility Parcels	FGDL	2010
Fire Department and Emergency Facilities	FGDL	2018
Government Buildings	FGDL	2016
Law Enforcement Facilities	FGDL	2018
Cemeteries	FGDL	2019
Minority and Low-Income Population	US Census ACS 2019 5-Year Estimates and Census 2020	2019 & 2020
Farmland	FGDL	2018
Existing Land Use	Okaloosa County/City of Crestview	2021
Future Land Use	Okaloosa County/City of Crestview	2021
Public Lands	FGDL	2011

GIS Data Layer	Source	Year
Cultural Resources		
Florida State Parks	FGDL/ FDEP	2019
American Indian Lands	FGDL	2017
Historic Sites, Railroads, Structures and Districts	FGDL/ Bureau of Archaeological Research	2021
Parks and Recreational Facilities Boundaries in Florida	FGDL	2019
National Register of Historic Places	NPS	2021
State Historic Preservation Officer (SHPO) Bridges	FGDL/ Bureau of Archaeological Research	2021
SHPO Cemeteries	FGDL/ Bureau of Archaeological Research	2021
SHPO Resource Groups	FGDL/ Bureau of Archaeological Research	2021
SHPO Structures	FGDL/ Bureau of Archaeological Research	2021
Soils	NRCS	2020
Trails	FGDL	2019
Natural Environment		
Aquatic Preserve Boundaries	FGDL/FDEP	2019
Bald Eagle Nesting Territories	FGDL/FDEP	2017
Bear Kill Locations	FGDL/FWC	2018
FDEP Ecosystem Management Areas	FGDL/FDEP	1999
FDEP Mitigation Banks	FDEP	2021
FEMA Flood Hazard Zones	FGDL/FEMA	2020
FNAI Managed Conservation Areas	FGDL/FNAI	2020
Gulf Sturgeon Critical Habitat	USFWS	2003
Red Cockaded Woodpecker Habitat	FGDL/FFWCC	2005
Outstanding Florida Waters	FDEP	2019
Wetlands	NWI	2020
Wetlands and Water Land Uses	FGDL/FDEP	2018
Wildlife Observations	FGDL/FFWCC	2015
Physical Environment		
Brownfields	FGDL	2019
Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Regulated Facilities	FGDL	2020
Hazardous Materials Generator Sites	FDEP	2021
Landfills	Okaloosa County/FGDL	2021

GIS Data Layer	Source	Year
Petroleum Contamination Monitoring Sites	FGDL	2020
Solid Waste Facilities	FGDL	2021
Storage Tanks Contamination Monitoring	FGDL	2021
Superfund Sites	FGDL	2020

6.4.1 Social and Economic Evaluation

Social and economic criteria evaluated include incompatible land use, relocations, community facilities, community cohesion, special populations, and farmlands impacts. The following describes how each criterion was evaluated. Based on the evaluation, scores were assigned where 1 represents the corridor having the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. **Table 6-7** tabulates the results of the evaluation.

- Land Use: The land use criterion specifically refers to *incompatible* land use. Any area with new corridor was considered an incompatible land use. The land use criterion is measured by miles of new corridor alignment where no road currently exists. **Figure 6-5** shows the existing land use with the alternative corridors overlaid.
- Potential Residential Displacements: Potential residential displacements were calculated using Okaloosa County parcel data downloaded in December 2021. Parcels within the corridor with a use of residential and not marked as vacant parcels were counted.
- Potential Business Displacements: Potential business displacements were calculated using Okaloosa County parcel data downloaded in December 2021. Parcels within the corridor with a use of commercial were counted.
- Community Facilities: Community facilities in the study area included churches, cemeteries, schools, public buildings, and community centers. Potential involvement with these facilities was measured as the number of community facilities within or immediately adjacent to an alternative corridor that could be affected by displacement, change in access, noise, or visual impact. Community facilities potentially affected by the alternative corridor include churches and the Old Bethel Cemetery, as shown in **Figure 6-6**.
- Community Cohesion: The community cohesion criterion measures the potential effect to residential connectivity and social interaction by the number of neighborhoods split by the corridor. Neighborhoods were defined using the Okaloosa County subdivision GIS layer downloaded in December 2021, as shown in **Figure 6-7**.
- Potential Impact to Special Populations: Special populations were those under represented populations protected by Title VI of the Civil Rights Act of 1964 and Executive Order 12898, Environmental Justice. For this study, the analysis was limited to low income and minority populations. Minority populations were identified as Census blocks with 50

percent or greater minority derived from Census 2020 Table P2. Low income populations were determined from census block groups with greater than 20 percent of households below poverty (defined as low-income community by 15 U.S. Code 689) according to 2019 American Community Survey (Census 2020 data not available for this topic). This criterion was measured by the number of special populations crossed by the corridor, as shown in **Figure 6-8**.

- Prime Farmland: The prime farmland criterion was measured by the acres of potential prime farmlands, including farmlands of local importance, as defined by the Farmland Protection Policy Act (FPPA) of 1981, within the corridor. **Figure 6-9** displays prime farmlands overlaying lands designated for agricultural use.

Table 6-7 | Social Resources Evaluation

Category	Criteria	Unit of Measure	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Social	Land use	Miles	3.35	**1**	3.57	**2**	5.23	**3**
	Potential residential displacements	Number	115	**3**	113	**2**	107	**1**
	Potential business displacements	Number	4	**1**	4	**1**	4	**1**
	Community facilities	Number	3	**2**	3	**2**	2	**1**
	Community cohesion	Number	2	**1**	2	**1**	2	**1**
	Potential impact to special populations	Number	2	**1**	2	**1**	2	**1**
	Prime farmland	Acres	9.7	**2**	7.65	**1**	22.21	**3**
Social Resources Score				**11**		**10**		**11**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.4.1.

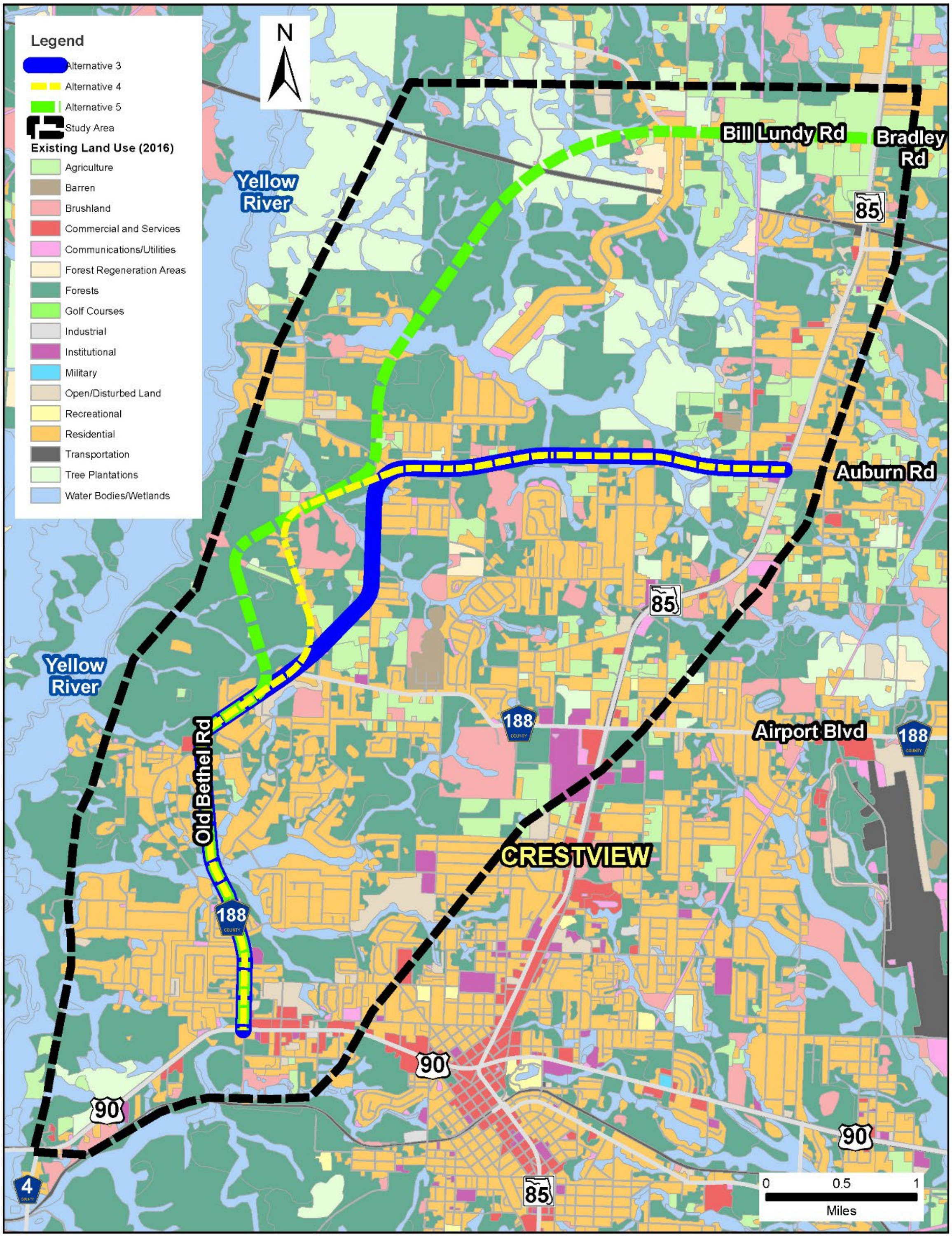


Figure 6-5 | Existing Land Use

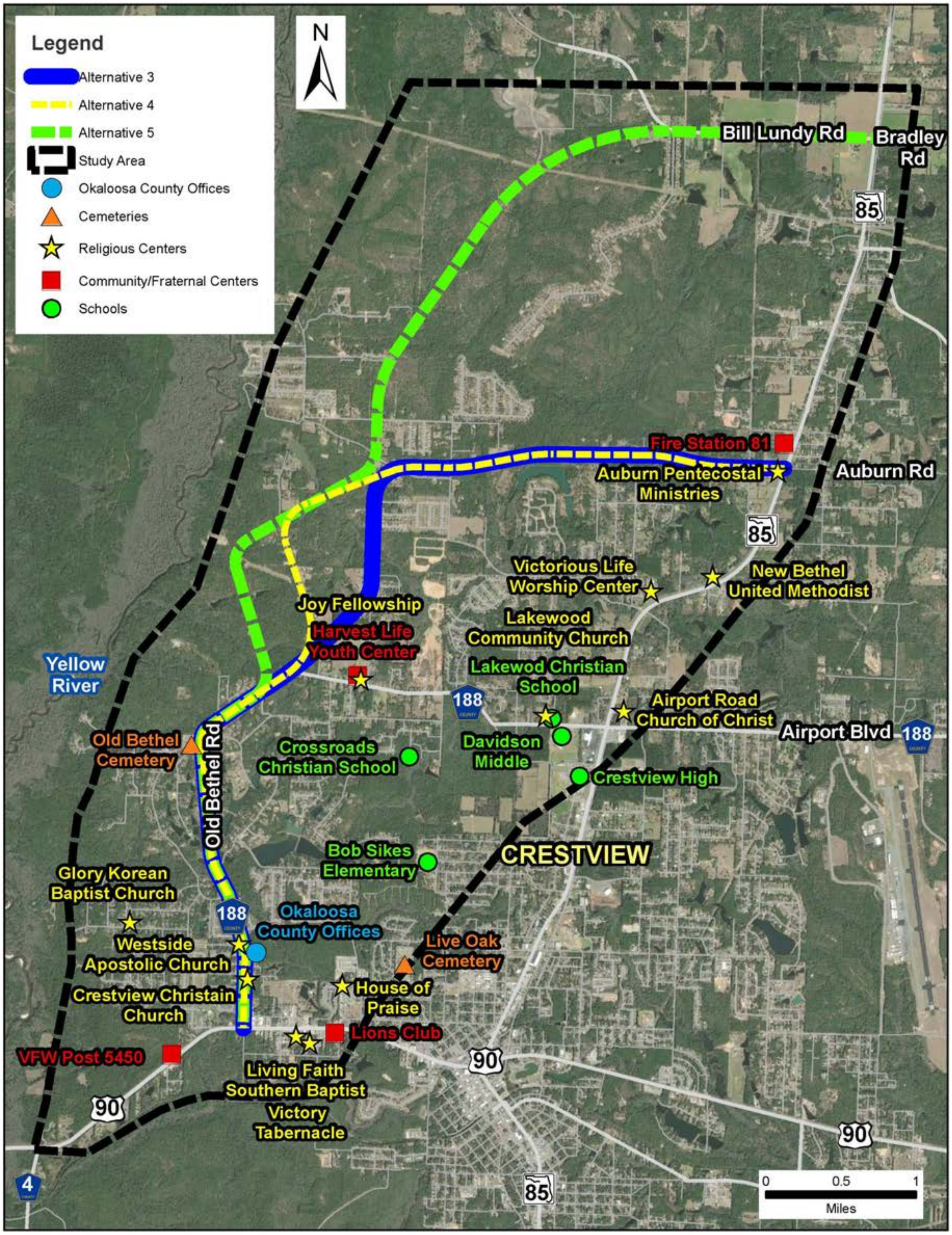


Figure 6-6 | Community Facilities

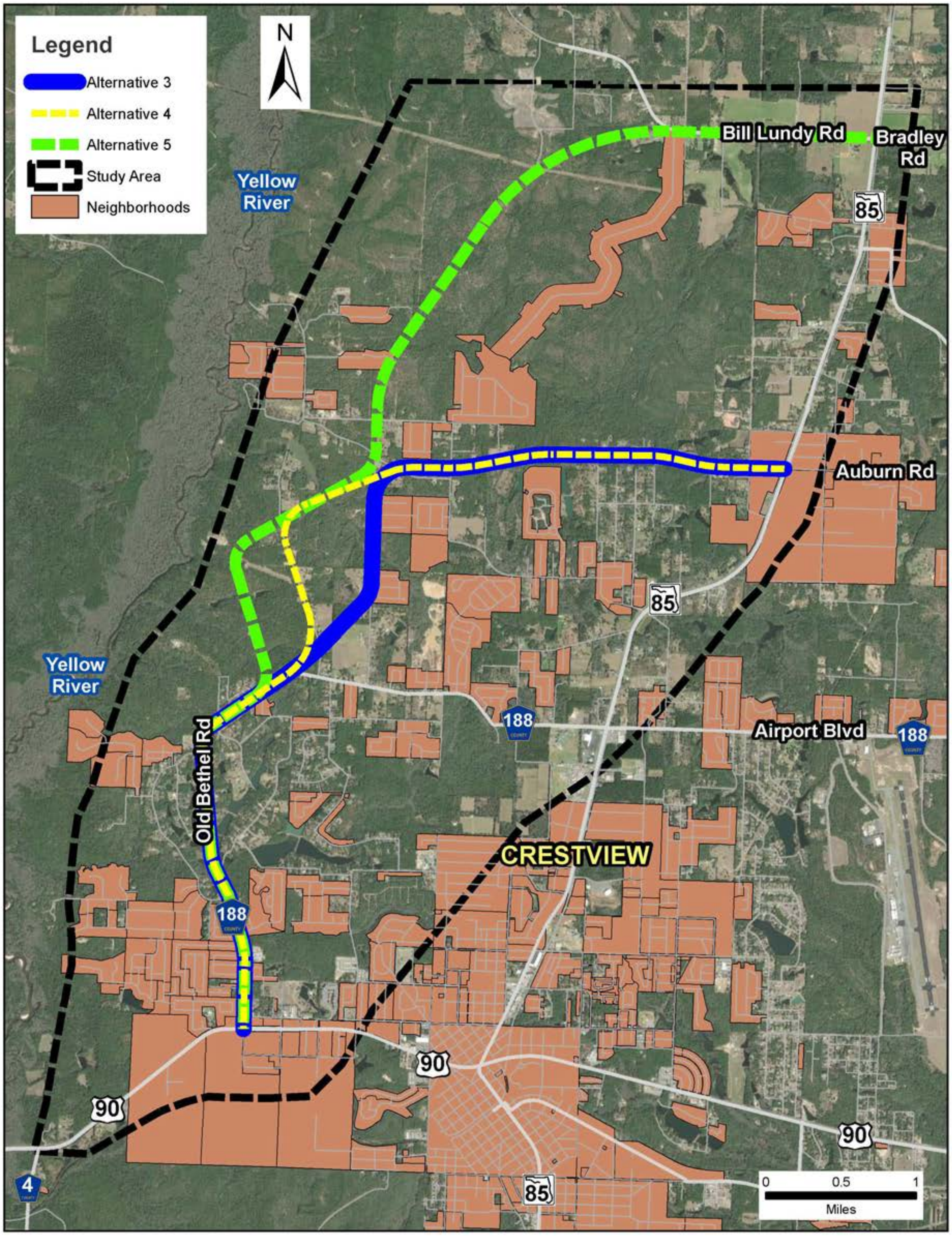


Figure 6-7 | Neighborhoods

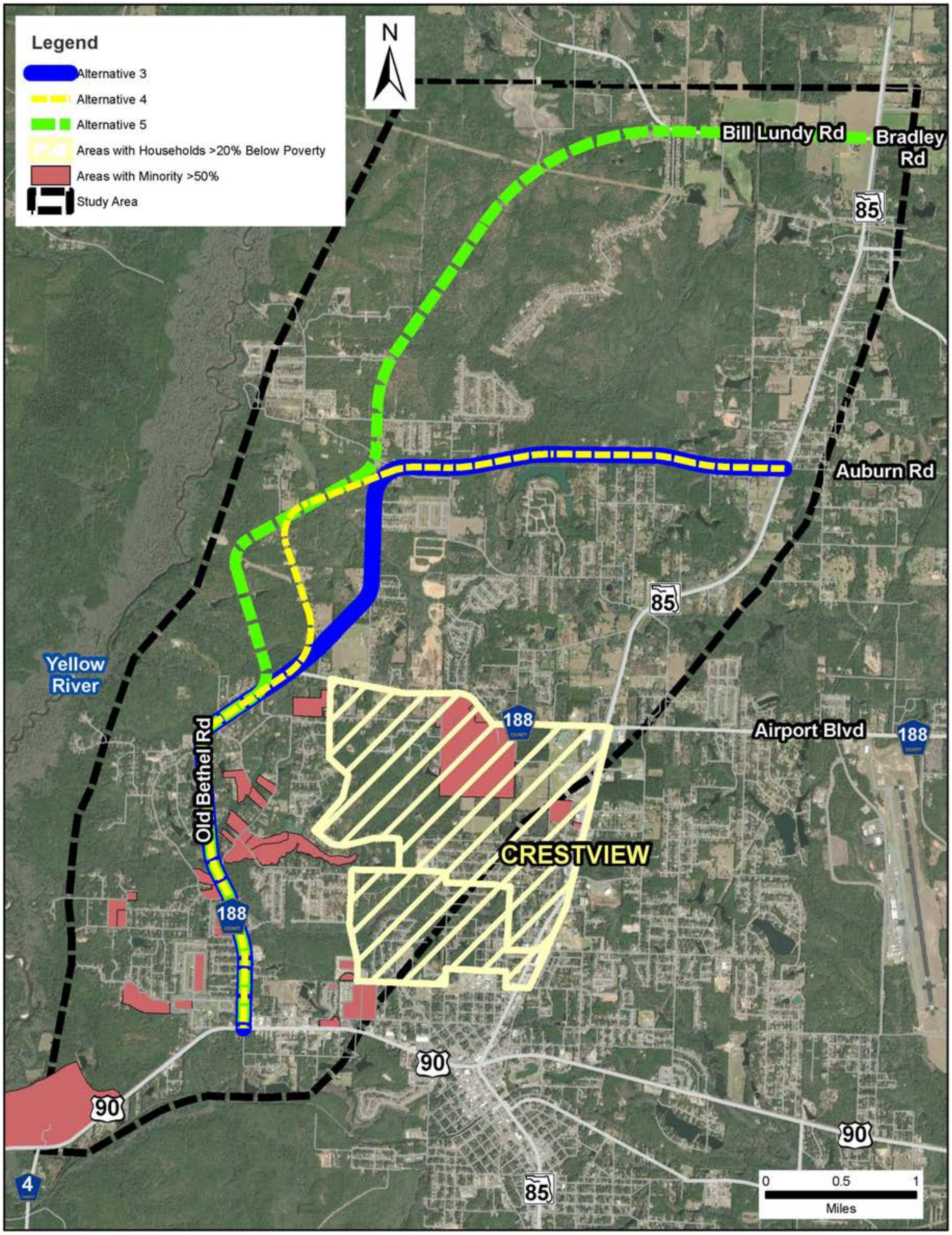


Figure 6-8 | Special Populations

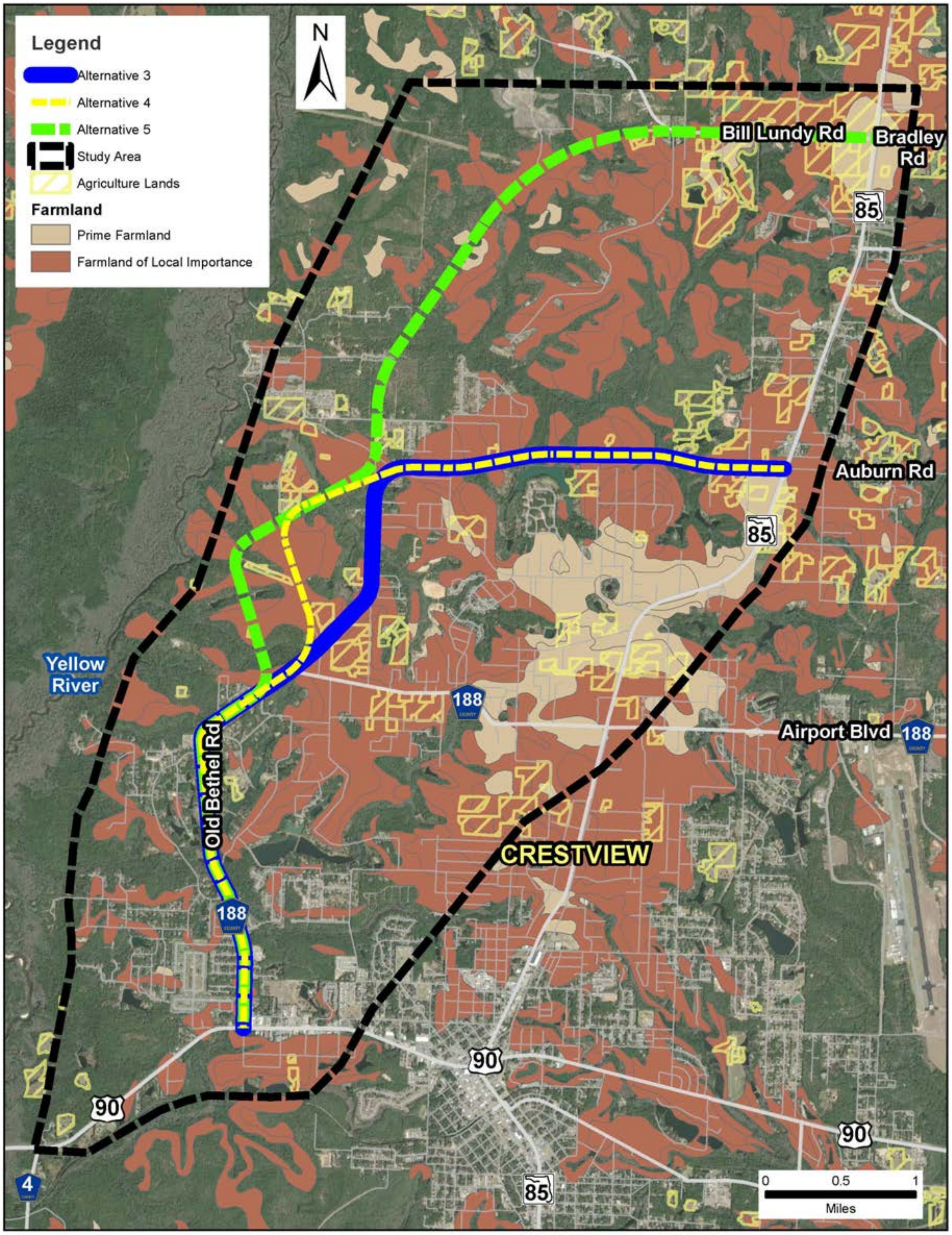


Figure 6-9 | Prime Farmland

6.4.2 Cultural Resources Evaluation

Cultural resources evaluated included archaeological and historic sites, recreational areas, and potential resources protected by Section 4(f) of the Department of Transportation Act of 1966. The following describes how each criterion was evaluated. Based on the evaluation, scores were assigned where 1 represents the corridor having the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. **Table 6-8** tabulates the results of the evaluation. **Appendix D** provides the desktop analysis of the cultural resources screening.

- Archaeological Sites: Archaeological sites potentially protected under Chapter 267, F.S. were reviewed using the Florida Master Site File (FMSF) database and various environmental conditions. No sites within any of the alternative corridors were identified.
- Historic Sites: The historic sites criterion was measured by the number of historic sites potentially protected under Chapter 267, F.S. within the alternative corridors plus a 328-foot (100-meter) buffer. Potentially historic sites were identified using the FMSF database and Okaloosa County Property Appraiser's GIS database to determine if parcels containing structures constructed prior to 1978 were within the study area.
- Recreational Areas: The recreational areas criterion was measured by the number of such lands falling within the corridor. One recreational resource was identified in the study area, US 90 Connector Trail (Florida National Scenic Trail and Shared Use Nonmotorized Network) which is within all alternatives.[1]
- Potential Section 4(f) Resources: The Section 4(f) criterion was measured by the number of recreational areas within the alternative corridors. Archaeological and historic sites were not evaluated for section 4(f) for this high-level study. Thus, Section 4(f) has the same quantities and scores as recreational areas.

Table 6-8 | Cultural Resources Evaluation

Category	Criteria	Unit of Measure	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Cultural	Archaeological sites	Number	0	**1**	0	**1**	0	**1**
	Historic sites	Number	40	**2**	41	**3**	36	**1**
	Recreational areas	Number	1	**1**	1	**1**	2	**3**
	Potential Section 4(f) resources	Number	1	**1**	1	**1**	1	**1**
Cultural Resources Score				**5**		**6**		**6**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.4.2.

[1] Some GIS data layers show Lake Silver Park. Okaloosa County, as the Official with Jurisdiction, confirmed on April 11, 2022 that this parcel does not function as, and is not managed as, a public park or recreation area. While the parcel is owned by the county, it was a former surface water impoundment, but no longer serves any purpose. The entire parcel is undeveloped and not accessible to the public. The county may use it for future stormwater management facility, however, there is no identified future use.

6.4.3 Natural Resources Evaluation

Natural resources evaluated water quality, floodplains, wetlands, species, conservation/managed lands, and habitat. The following describes how each criterion was evaluated. Based on the evaluation, scores were assigned where 1 represents the corridor have in the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. **Table 6-9** tabulates the results of the evaluation of these environmental parameters. **Figure 6-10** displays the resources in relation to the alternative corridors.

- Water Quality: The water quality criterion was measured by the length of roadway crossing flowing and surface waters. Flowing waters in the study area include Davis Mill Creek, Bully Branch, Jack Branch, Mathison Creek/Red Wash Branch, Powell Spring Branch, Pump Branch and Silver Creek.
- 100-Year Floodplain: The 100-year floodplain criterion was measured by the acres of 100-year floodplain within the corridor.
- Wetlands: Wetlands were measured by the acres of wetlands within the corridor.[2]
- Listed Species Occurrence Potential: The listed species occurrence potential criterion was measured qualitatively by desktop review of USFWS Information for Planning and Consultation Species List, FNAI Biodiversity Matrix, water crossings, and habitat along the corridors. Three federal listed species were identified as potentially present in the study area: red-cockaded woodpecker, eastern indigo snake and wood stork. Five state listed species were identified as potentially present in the study area: gopher tortoise, Florida pine snake, blackmouth shiner, bluenose shiner, and the Florida bog frog. Although direct impacts are not expected, Alternative Corridor 5 crosses tributaries draining to the Yellow River which is designated critical habitat for the Atlantic (gulf) sturgeon and four federal listed mollusks. Each corridor was given a rank of low, medium, or high.
  - Low: Species documented within Okaloosa County, but with a low likelihood to occur within the study area due to the limited presence of suitable habitat.
  - Medium: Species documented within Okaloosa County and for which suitable habitat was present within the study area; however, no documented occurrences exist.
  - High: Species likely to occur within the project study area based on known habitat ranges and existence of suitable habitat. Species known to occur within or adjacent to the study area or have been documented within the vicinity of the project.

[2] This represents a minor change from the approved Methodology Memorandum which included High Quality and Low to Moderate Quality Wetlands evaluated separately; whereas, here they are evaluated together.

- Conservation/Managed Lands: The conservation/managed lands criterion was measured by the acres of conservation/managed lands within the corridor.
- Designated Critical Habitat or Habitat Suitable for Listed Species: The designated critical habitat or habitat suitable for listed species criterion was measured by the number of acres of critical habitat as determined by USFWS GIS layers, within the corridor.

Table 6-9 | Natural Resources Evaluation

Category	Criteria	Units	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Natural	Water Quality (crossing surface and flowing waters)	Miles	0.37	**1**	0.41	**2**	0.48	**3**
	100-year floodplain	Acres	7.97	**1**	7.97	**1**	13.71	**3**
	Wetlands	Acres	7.96	**1**	8.04	**2**	19.88	**3**
	Listed species occurrence potential	Degree	Low	**1**	Mod.	**2**	High	**3**
	Conservation/ managed lands	Acres	0	**1**	0	**1**	6.74	**3**
	Designated critical habitat or habitat suitable for listed species	Acres	0	**-**	0	**-**	0	**-**
Natural Resources Score				**5**		**8**		**15**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.4.3.

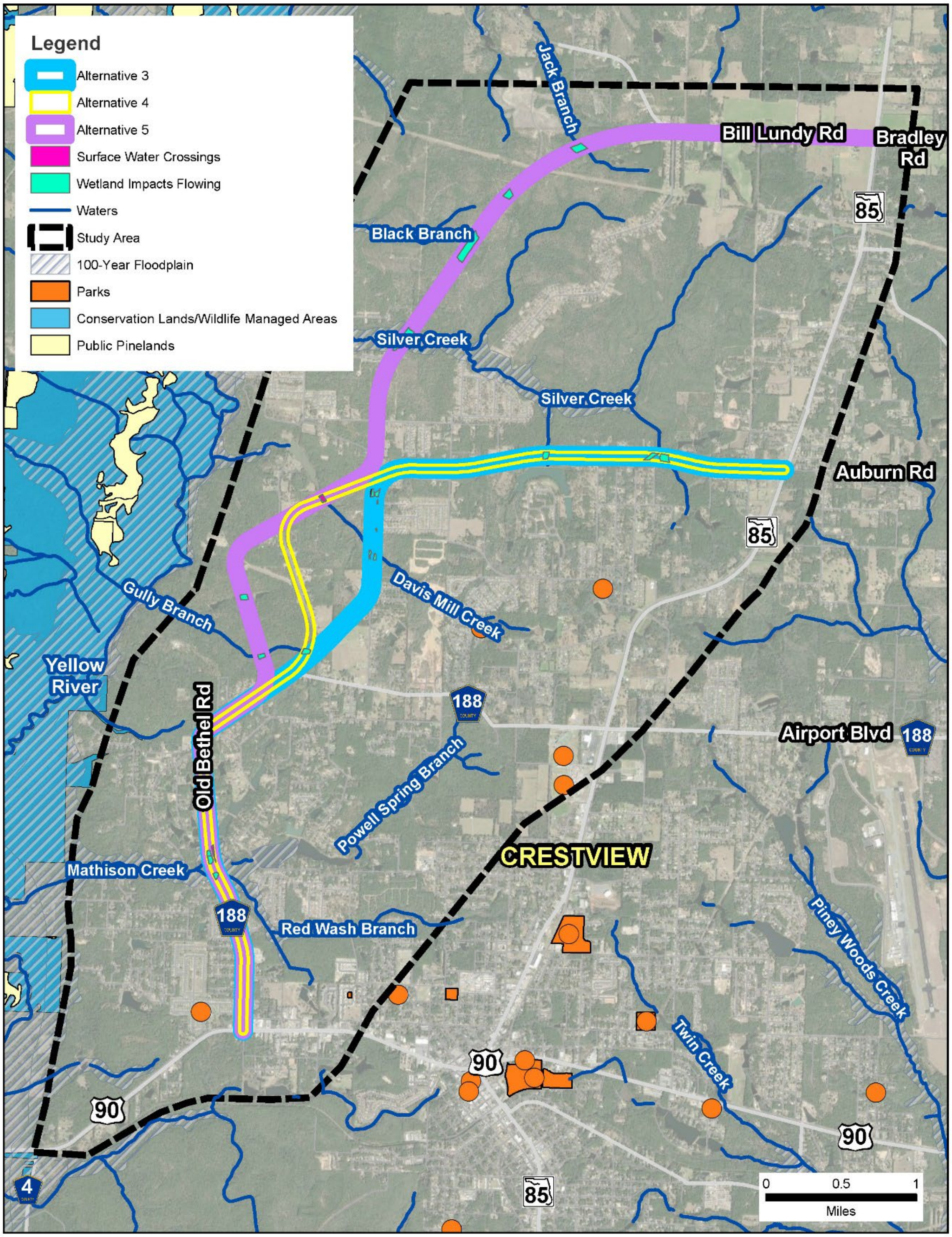


Figure 6-10 | Natural Resources

6.4.4 Physical Resources Evaluation

Physical criteria evaluated include noise and contamination. The following paragraphs describe how each criterion was evaluated. Based on the evaluation, scores were assigned where 1 represents the corridor have in the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. **Table 6-10** tabulates the results of the evaluation.

- Potential Contamination Sites: Contamination sites were identified using the FDEP Oculus website. The number of potentially contaminated sites within the appropriate buffer distances (recommended in the FDOT PD&E Manual) were counted. **Figure 6-11** displays the contaminated sites in relation to the alternative corridors. Buffer distances are as follows:
  - 500 feet from the right-of-way line for petroleum, drycleaners, and non-petroleum sites
  - 1,000 feet from the right-of-way line for non-landfill solid waste sites (such as recycling facilities, transfer stations, and debris placement area)
  - 1/2-mile from the right-of-way line for Comprehensive Environmental Response, Compensation, and Liability Act National Priorities List Superfund sites, or Landfill sites
- Potential Noise Sensitive Sites: The potentially noise sensitive sites criterion was measured by the number of sites within 200 feet of the centerline. Potentially noise sensitive sites included recreational resources, Old Bethel Cemetery, and residences adjacent to but not within the corridor.

Table 6-10 | Physical Resources Evaluation

Category	Criteria	Unit of Measure	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Physical	Potential contamination sites	Number	5	3	4	2	3	1
	Potential noise sensitive sites	Number	50	1	54	2	56	3
Physical Resources Score				**4**		**4**		**4**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.4.4.

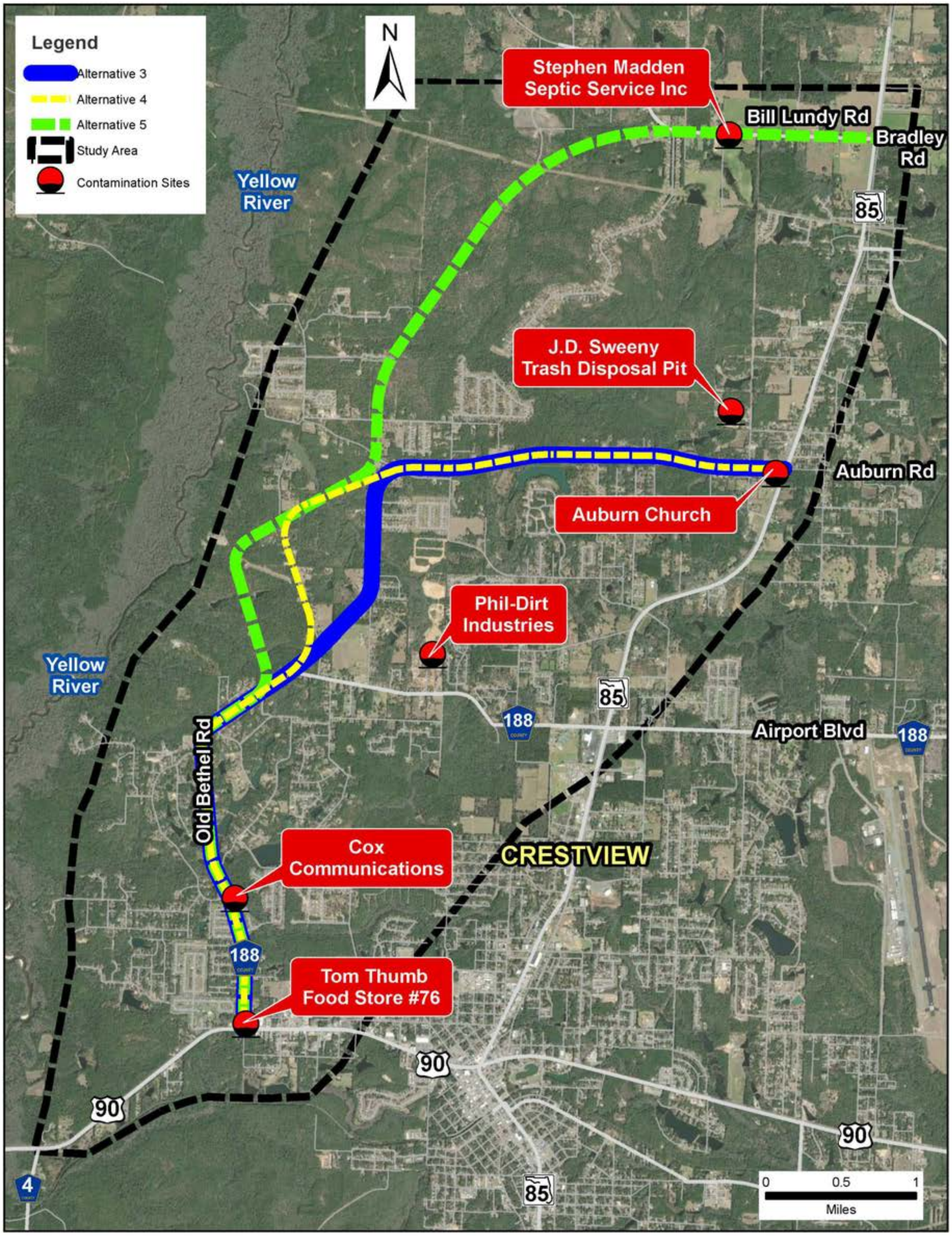


Figure 6-11 | Contaminated Sites

6.4.5 Environmental Factors Summary

A summary of environmental factors is presented in **Table 6-11**. In terms of environmental factors, Alternative 3 is the most favorable alternative, followed closely by Alternative 4. Alternative 5 is the least favorable alternative.

Table 6-11 | Environmental Evaluation Summary

Category	Score		
	Alternative 3	Alternative 4	Alternative 5
Social and Economic	11	10	11
Cultural	5	6	6
Natural	5	8	15
Physical	4	4	4
Environmental Total Score	**25**	**28**	**36**

Table note: These scores are summary roll-up from Table 6-7 (Social), Table 6-8 (Cultural), Table 6-9 (Natural), and Table 6-10 (Physical).

6.5 Engineering Evaluation

Engineering evaluation was based on the following criteria:

- Major utility conflicts
- Bridge involvement
- Drainage basins
- Stormwater ponds

6.5.1 Utilities

The impacts to utilities were based on identifying locations and determining the number of potential major utility impacts by each alternative corridor. These are areas where extensive coordination would be required in the next phases of the project development process. Utility data available at the time of this analysis included electric power transmission lines, natural gas pipelines, and Okaloosa County water mains. Additionally, there is a water tower with a wellhead protection zone. Alternative Corridor 5 is the only alternative that crosses the electric power transmission line and natural gas pipeline. All alternative corridors have conflicts with Okaloosa County eight-inch and 10-inch water mains along Old Bethel Road. All alternative corridors are within the wellhead protection zone but avoid the water tower. **Figure 6-12** displays major utilities in relation to the alternative corridors. Potential conflicts with major utilities are documented in **Table 6-15**.

A Sunshine One-Call was initiated to identify additional utilities present in each alternative corridor and support future phases. Utility agency owners in the area include AT&T Distribution, Auburn Water System, Centurylink, Chelco, City of Crestview, Cox Communications, Florida Power and Light – Northern, Okaloosa Gas, Okaloosa County Water and Sewer, and Uniti. Responses from the utility agency owners are documented in **Table 6-12**. This report will be updated prior to approval by OEM to document any additional responses received.

Table 6-12 | Utilities

Utility Agency Owner	Potential Conflicts		
	Alternative 3	Alternative 4	Alternative 5
Chelco	Potential for relocation of Phase 3 overhead lines along Oak Hill Road, the crossings at Taylor Road and Lake Silver Road, and at the intersection of Adams Road and SR 85.	Potential for relocation of Phase 3 overhead lines at the crossing of Taylor Road and the intersection of Adams Road and SR 85.	Potential for relocation of Phase 3 overhead lines at the intersection of Oak Hill Road and Taylor Road and along Bill Lundy Road.
Florida Power and Light	Potential for relocation of overhead lines along Old Bethel Road up to the water tower adjacent to Seminole Drive.	Potential for relocation of overhead lines along Old Bethel Road up to the water tower adjacent to Seminole Drive.	Potential for relocation of overhead lines along Old Bethel Road up to the water tower adjacent to Seminole Drive.
Okaloosa County Water and Sewer	Potential for relocation of 8" and 12" water main along Old Bethel Road from SR 10 to Staff Road.	Potential for relocation of 8" and 12" water main along Old Bethel Road from SR 10 to Staff Road.	Potential for relocation of 8" and 12" water main along Old Bethel Road from SR 10 to Staff Road.
Uniti	Potential for relocation of aerial and underground fiber along Old Bethel Road from SR 10 to Staff Road.	Potential for relocation of aerial and underground fiber along Old Bethel Road from SR 10 to Staff Road.	Potential for relocation of aerial and underground fiber along Old Bethel Road from SR 10 to Staff Road. Potential for relocation of underground fiber along Bill Lundy Road.

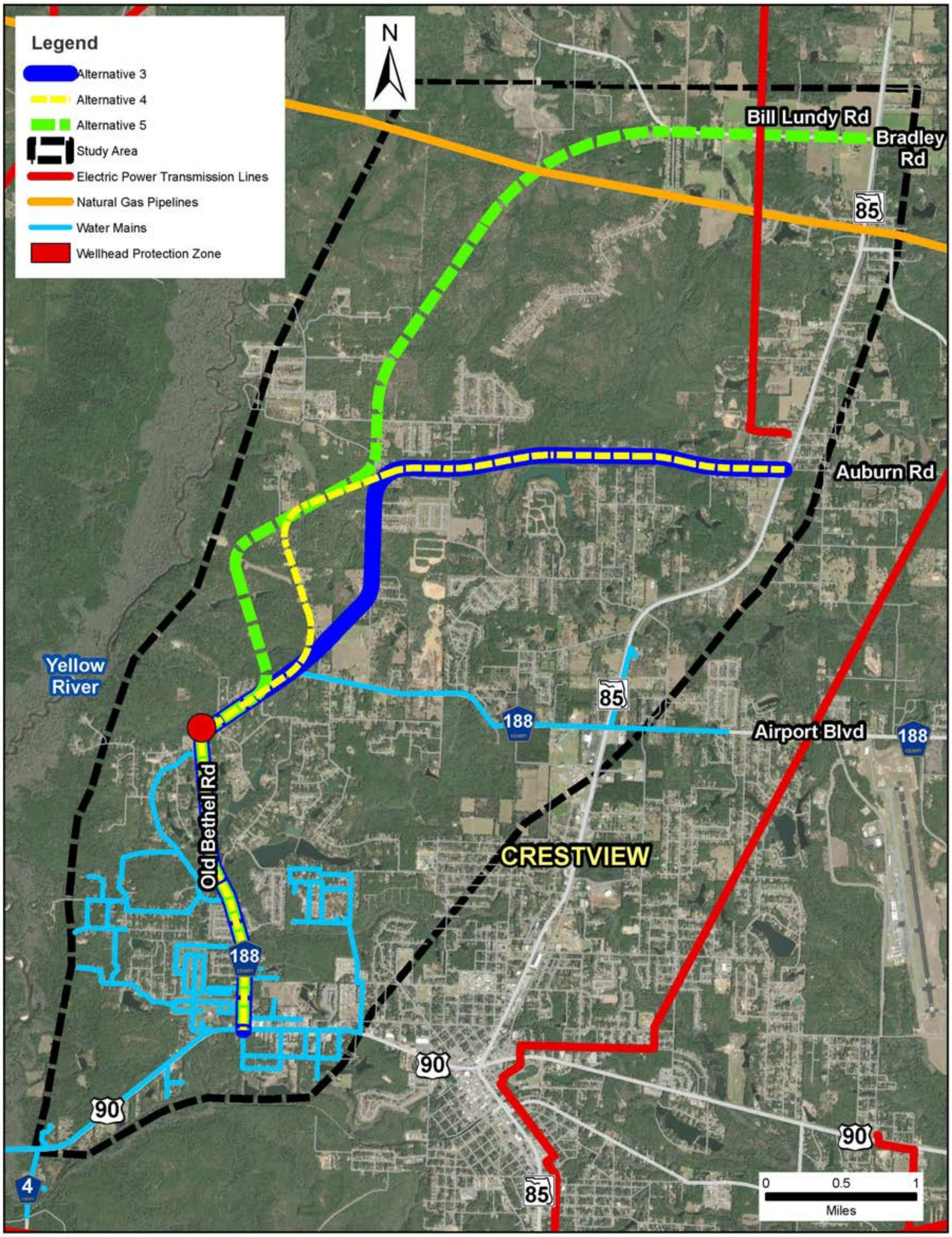


Figure 6-12 | Utilities

6.5.2 Bridges and Structures

A review of each alternative was conducted to determine locations where bridges and box culverts would be needed for each alternative corridor. The review only looked at locations where the corridors cross existing creeks and wetlands. A field review was conducted to evaluate existing creek crossing structures for both type and size. Similar structure types and sizes were recommended for alternative corridors that cross the same creek.

For this analysis, an urban four-lane typical section (**Figure 5-2**) was used to determine the width of proposed bridges and the length of proposed box culverts. Based on this typical section, a single bridge structure such as one shown in FDM Figure 260.1.4 with a total width of 102-feet would be used. For box culverts, a length of 104-feet was utilized which would place the box outside the limits of the sidewalk.

The FDOT Long Range Estimate (LRE) system was utilized to determine the average cost per square foot for the bridges. For this analysis, a cost of $175 per square foot has been used to determine bridge cost. The FDOT LRE system was also used for each box culvert cost based on the size of each box opening with a total length of 104-feet.

The proposed locations of each bridge and box culvert are shown on **Figure 6-13** through **Figure 6-15** and a summary of the cost for each option in **Table 6-13**.

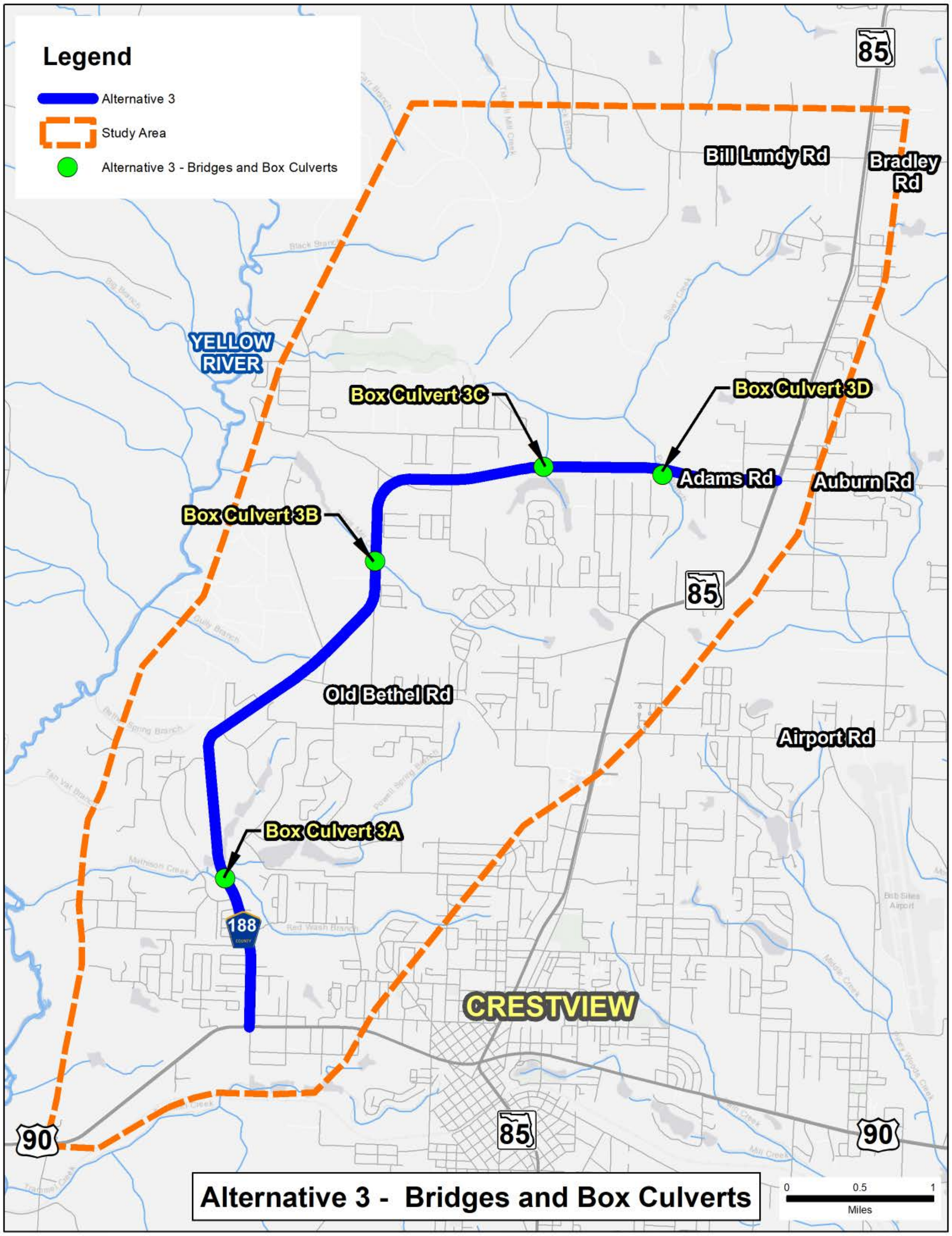


Figure 6-13 | Bridge and Box Culvert Locations at Alternative Corridor 3

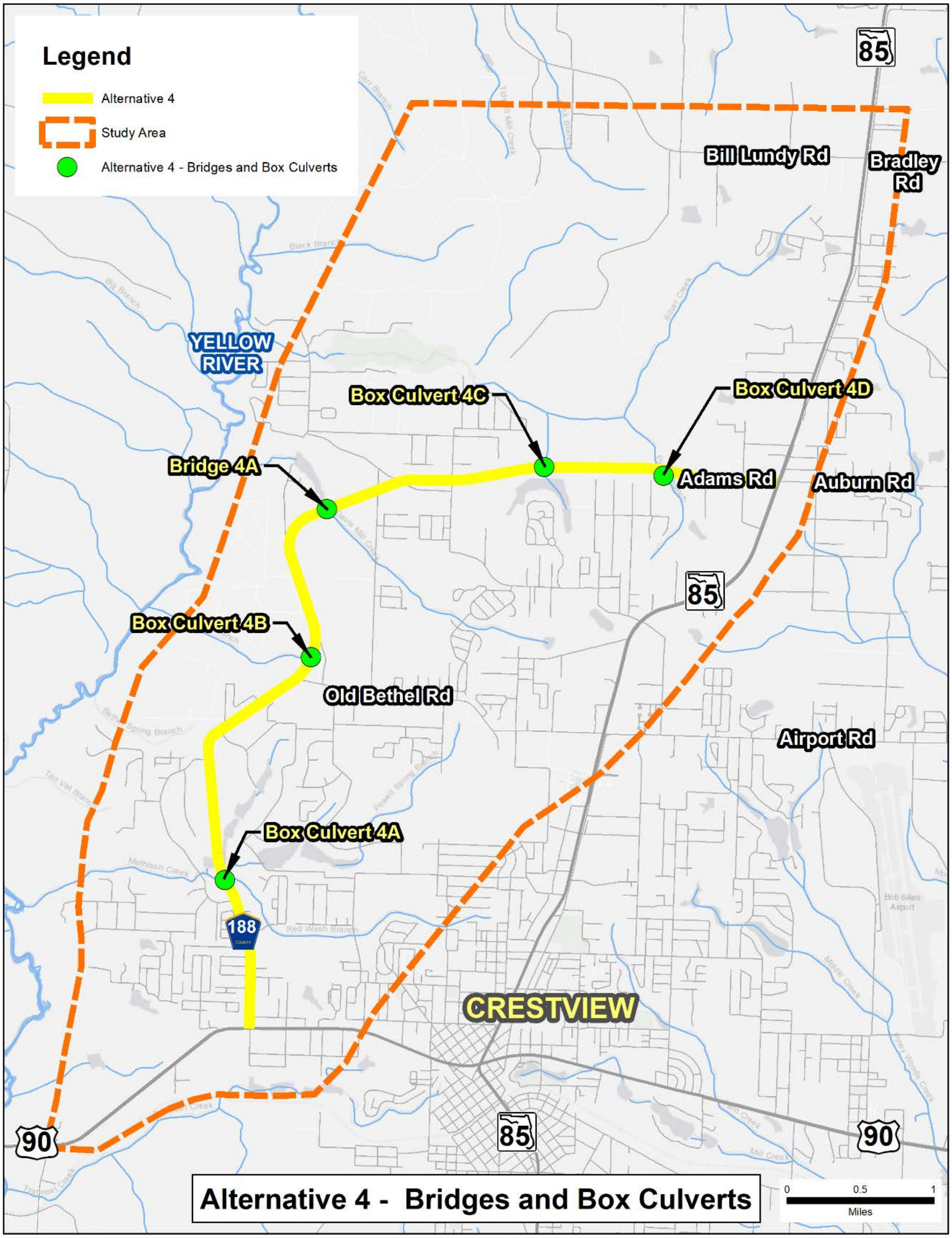


Figure 6-14 | Bridge and Box Culvert Locations at Alternative Corridor 4

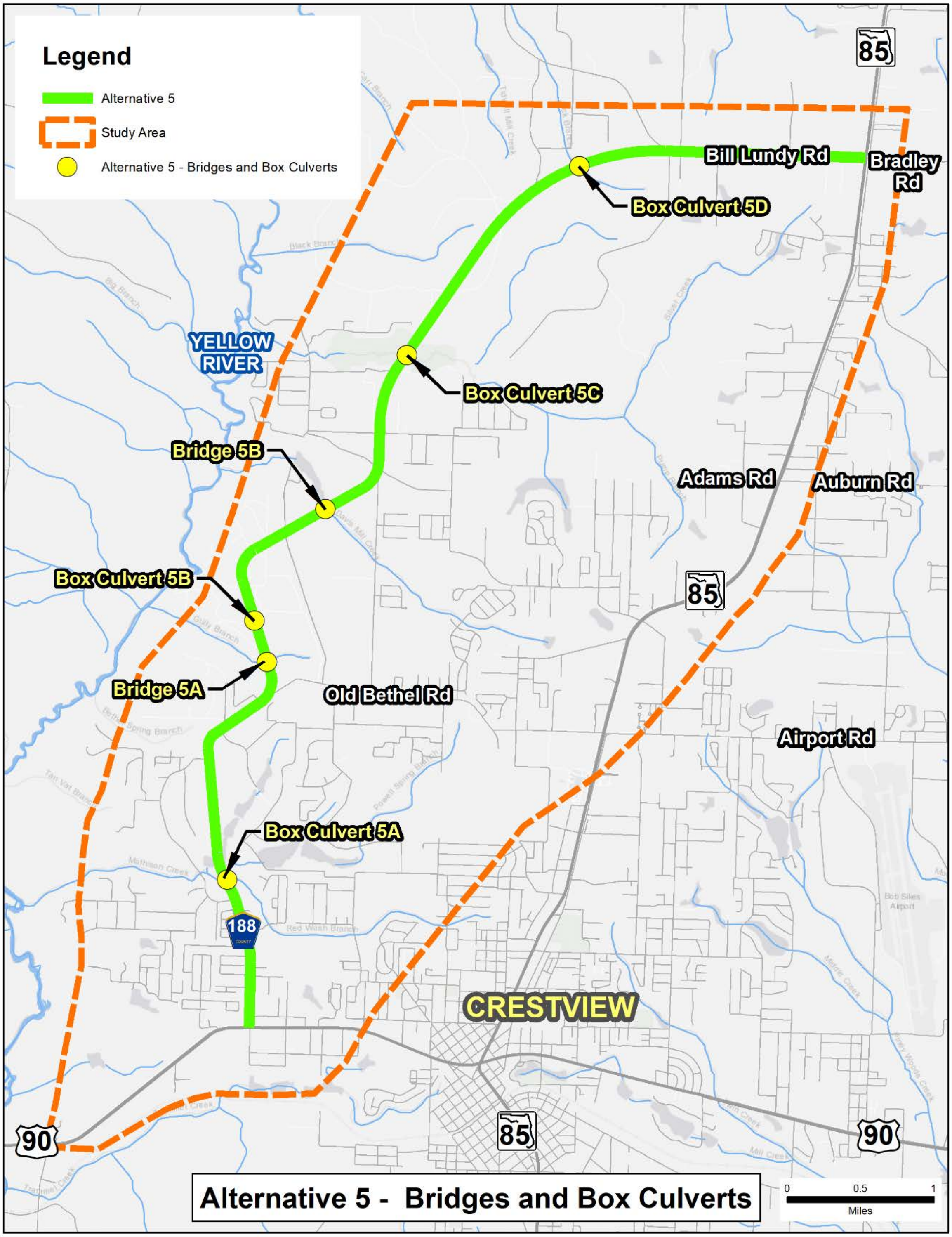


Figure 6-15 | Bridge and Box Culvert Locations at Alternative Corridor 5

Table 6-13 | Summary of Bridges and Box Culverts

Alternative Corridor	Structure Type	Width/Box Size	Length (ft)	Estimated Cost
Alternative 3	Box Culvert 3A	Dbl. 12x10	104’	$854,000
	Box Culvert 3B	12x8	104’	$425,000
	Box Culvert 3C	12x8	104’	$425,000
	Box Culvert 3D	12x8	104’	$425,000
Alternative 4	Box Culvert 4A	Dbl. 12x10	104’	$854,000
	Box Culvert 4B	12x8	104’	$425,000
	Bridge 4A	102’	200’	$3,570,000
	Box Culvert 4C	12x8	104’	$425,000
	Box Culvert 4D	12x8	104’	$425,000
Alternative 5	Box Culvert 5A	Dbl. 12x10	104’	$854,000
	Box Culvert 5B	12x8	104’	$425,000
	Bridge 5A	102’	160’	$2,856,000
	Bridge 5B	102’	400’	$7,140,000
	Box Culvert 5C	12x8	104’	$425,000
	Box Culvert 5D	12x8	104’	$425,000

6.5.3 Drainage and Stormwater

Each corridor was evaluated based on the number of basins (**Figure 6-16**) crossed and the acreage of stormwater ponds needed to meet permit requirements. The stormwater attenuation storage required for each alternative corridor was determined based on the location and length of the alternative, soil conditions, existing land use, and proposed roadway typical section. **Table 6-14** shows attenuation volumes, drainage area and estimates of pond sizes.

Table 6-14 | Stormwater Management Needs

Alternative Corridor	Drainage Area (Ac.)	Pond Size (Ac.)	Attenuation Volume (Ac-Ft)
Alternative 3	135.09	17.00	36.81
Alternative 4	138.90	19.20	44.22
Alternative 5	173.65	25.00	56.72

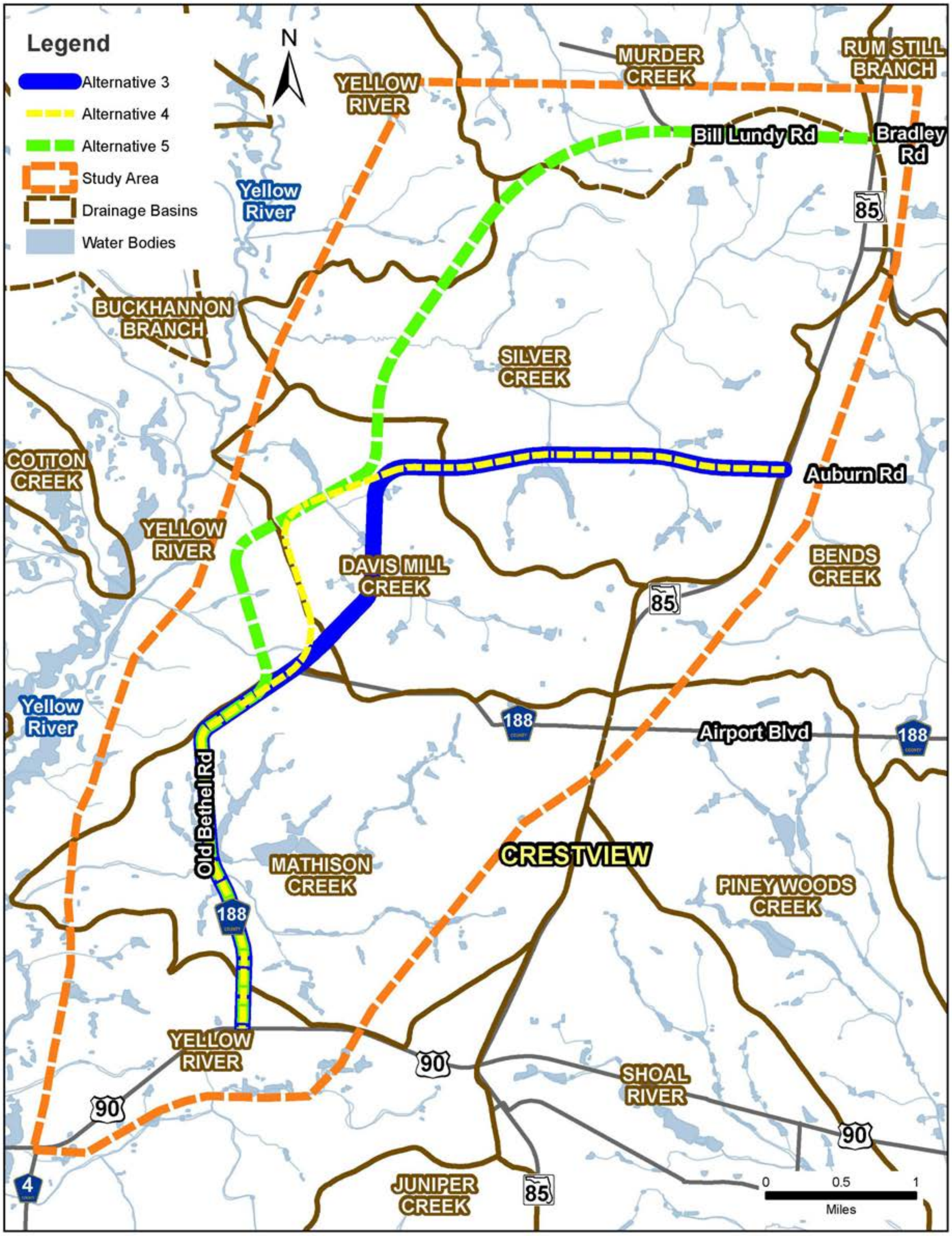


Figure 6-16 | Drainage Basins

6.5.4 Engineering Factors Summary

A summary of engineering factors is presented in **Table 6-15**. Based on the evaluation of criteria documented in Sections 6.5.1 through 6.5.3, scores were assigned where 1 represents the corridor having the best performance (e.g., least impact, most benefit) and 3 represents the alternative performing the worst. In terms of engineering factors, Alternative 3 is the most favorable and Alternative 5 is the least favorable alternative corridor.

Table 6-15 | Engineering Considerations

Category	Criteria	Unit of Measure	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Engineering	Major utility conflicts	Number	1	**1**	1	**1**	3	**3**
	Bridge involvement	Number	4	**1**	5	**2**	6	**3**
	Drainage basins	Number	4	**1**	4	**1**	5	**3**
	Stormwater ponds	Acres	17	**1**	19.2	**2**	25	**3**
Engineering Score				**4**		**6**		**12**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Sections 6.5.1 through 6.5.3.

6.6 Estimated Costs Evaluation

The estimated costs include construction, wetland mitigation and right-of-way cost listed in **Table 6-16**.

Construction costs were estimated based on FDOT generic cost / mile models using the length of the project, typical section used and whether the corridor will be a new alignment or will utilize existing alignment. The cost also includes bridge and box culverts.

Wetland mitigation costs are based price per acre of each wetland impacted that are published in the FDOT Work Program.

Right-of-way costs were estimated based on cost per mile derived from the PJ Adams Parkway Project (FPID 421997-3, 421997-8, 421997-9). Right-of-way costs are not based on an appraisal of values.

Engineering design, subsurface data collection, and coordination of utility conflicts with utility owners to minimize impacts is needed to estimate the cost of potential utility relocations. Therefore, the cost of utility relocations was not considered and will be determined in future phases.

Table 6-16 | Estimated Costs Comparison

Category	Criteria	Unit of Measure	Alternative 3		Alternative 4		Alternative 5	
			Quantity	Score	Quantity	Score	Quantity	Score
Costs	Construction Cost	Million $	60.33	**1**	65.99	**2**	92.08	**3**
	Wetland Mitigation	Million $	0.99	**1**	1.00	**2**	2.46	**3**
	Right-of-Way	Million $	16.34	**2**	16.31	**1**	19.73	**3**
		Costs Score		**4**		**5**		**9**

Table note: Methodology used to determine scores is described in Section 4.0 and the basis for the measures is described in Section 6.6 above.

7.0 Narrative Assessment by Corridor

As part of the alternative corridor evaluation, a narrative assessment of each corridor alternative is provided in compliance with elements and issues contained in 23 U.S.C. 168(c). These narratives provide a discussion of the affected environment and the advantages and disadvantages of each alternative corridor and highlight any specific factors that may result in an unreasonable corridor. Public and agency input, such as input received from the ETAT, local government, and the public, is also summarized in the narrative. The narratives are not an exhaustive discussion of each corridor but instead summarize the main characteristics of each alternative corridor that led to a determination of feasibility and a recommendation of whether the alternative should be further studied during a future PD&E phase.

7.1 Alternative 3

7.1.1 Corridor Analysis Results

Alternative 3 would provide capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and continue on new alignment north and east to the intersection of Auburn Road and SR 85. Alternative 3 would enhance the existing transportation network and would improve overall Okaloosa County network connectivity by providing bypass options around the City of Crestview. Alternative 3 meets the primary purpose and need and was therefore further evaluated for secondary purpose and need, environmental, engineering, and cost considerations. Of the three alternatives (Alternatives 3, 4, and 5) evaluated in detail, Alternative 3:

- Is estimated to have the greatest reduction in traffic demand on SR 85 north of US 90 (tied with Alternative 4).
- Is estimated to have the lowest number of predicted crashes.
- Is estimated to have the lowest environmental impacts.
- Requires the least number of stormwater ponds and least number of waterway crossings.

Additionally, Alternative 3 provides the opportunity for a future phase connecting with Bill Lundy Road by utilizing a connector segment from Oak Hill Road to the north segment of Alternative 5. A future corridor connecting to Bill Lundy Road could support and provide a backbone element for the development of a future transportation network further north in Okaloosa County and may support a logical integration of arterial roadways into the system as development and growth needs occurs.

The advantages and disadvantages from the Alternative 3 corridor analysis are summarized in **Table 7-1**.

7.1.2 Public Feedback

No public input was received as part of the ETDM Advance Notification review. Public input will be requested at the public meeting to be scheduled in 2022 prior to finalizing this report.

7.1.3 Agency Feedback

Agency feedback was obtained through the ETDM Advance Notification process for project # 14450, as documented in the Preliminary Programming Screen Summary Report, published on October 4, 2021. Overall, Alternatives 3, 4, and 5 were equally considered the third most favorable overall among the six alternatives considered by the ETAT due to reliance on the existing roadway network and avoiding planned development closer to the Yellow River floodplain and Wildlife Management Area. Agency concerns were identified for potential disruption to established neighborhoods and the potential for disproportionate impacts to minority and low-income communities.

7.1.4 Conclusion

The recommendation for Alternative 3 is to be determined following public input.

Table 7-1 | Alternative 3 Corridor Evaluation Summary

Alternative 3	
Advantages	**Disadvantages**
Provide for the greatest reduction in traffic demand on SR 85 north of US 90.	Could have unavoidable right-of-way impacts to residential development, including relocations to residential development along Old Bethel Road.
Expected to have the least total crashes on SR 85.	Potential for proximity impacts to Old Bethel Church and Cemetery which could be avoided during design.
Expands regional connectivity and provides for new network options by creating a new northerly connection to Auburn Road.	May result in the greatest number of potential residential relocations.
Requires the least number of stormwater ponds and least number of waterway crossings.	After Alternative 5, Alternatives 3 and 4 attract the least amount of traffic to the Northwest Crestview Bypass.
Requires the lowest anticipated wetlands mitigation.	Alternative 3 and Alternative 4 have the greatest length of conflict with water mains on Old Bethel Road.
Is estimated to have the lowest anticipated construction cost.	
Provides the lowest environmental impacts when compared to Alternative 4 and Alternative 5.	
Has the least right-of-way needs compared to Alternative 4 and Alternative 5.	
Provides the opportunity for a future connection with Bill Lundy Road utilizing a connector segment from Oak Hill Road to the north segment of Alternative 5.	
The recommendation for Alternative 3 is to be determined following public input.	

7.2 Alternative 4

7.2.1 Corridor Analysis Results

Alternative 4 would provide capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and continue on new alignment north and east to the intersection of Auburn Road and SR 85. Alternative 4 follows a route similar to Alternative 3 but utilizes a more westerly corridor between SR 188 and the connection to Auburn Road. Alternative 4 would enhance the existing transportation network and would improve overall Okaloosa County network connectivity by providing bypass options around the City of Crestview. Alternative 4 meets the primary purpose and need and was therefore further evaluated for secondary purpose and need, environmental, engineering, and cost considerations. Of the three alternatives (Alternatives 3, 4, and 5) evaluated in detail, Alternative 4:

- Is estimated to have the greatest reduction in traffic demand on SR 85 north of US 90 (tied with Alternative 3).
- Is estimated to have a moderate number of predicted crashes (less than Alternative 5, but greater than Alternative 3).
- Is estimated to have moderate environmental impacts (less than Alternative 5, but greater than Alternative 3).
- Requires a moderate number of stormwater ponds (less than Alternative 5, but greater than Alternative 3), but more waterway crossings than Alternative 3.

The advantages and disadvantages from the Alternative 4 corridor analysis are summarized in **Table 7-2**.

7.2.2 Public Feedback

No public input was received as part of the ETDM Advance Notification review. Public input will be requested at the public meeting to be scheduled in 2022 prior to finalizing this report.

7.2.3 Agency Feedback

Agency feedback was obtained through the ETDM Advance Notification process for project # 14450, as documented in the Preliminary Programming Screen Summary Report, published October 4, 2021. Overall, Alternatives 3, 4, and 5 were equally considered the third most favorable overall among the six alternatives reviewed by the ETAT due to reliance on the existing roadway network and avoiding planned development closer to the Yellow River floodplain and Wildlife Management Area. However, the FWC does not favor Alternative 4 due to new alignment through previously undeveloped areas. Agency concerns were identified for potential disruption to established neighborhoods and the potential for disproportionate impacts to minority and low-income communities.

7.2.4 Conclusion

The recommendation for Alternative 4 is to be determined following public input.

Table 7-2 | Alternative 4 Corridor Evaluation Summary

Alternative 4	
Advantages	**Disadvantages**
Provides for the greatest reduction in traffic demand on SR 85 north of US 90.	Could have unavoidable right-of-way impacts to residential development, including relocations to residential development along Old Bethel Road.
Provides for a moderate number of predicted crashes (less than Alternative 5, but greater than Alternative 3).	Potential for proximity impacts to Old Bethel Church and Cemetery which could be avoided during design.
Expands regional connectivity and provides for new network options by creating a new northerly connection to Auburn Road.	May result in a moderate number of potential residential relocations (less than Alternative 3, but greater than Alternative 5).
Provides for moderate environmental impacts (less than Alternative 5, but greater than Alternative 3).	After Alternative 5, Alternatives 3 and 4 attract the least amount of traffic to the Northwest Crestview Bypass.
Requires the second-most number of stormwater ponds (less than Alternative 5, but greater than Alternative 3).	Provides for an increase in environmental impacts including wetlands and species over Alternative 3, due to closer proximity to the Yellow River.
Provides for a moderate anticipated construction cost (less than Alternative 5, but greater than Alternative 3).	Alternative 3 and Alternative 4 have the greatest length of conflict with water mains on Old Bethel Road.
Provides for the lowest right-of-way needs (less than either Alternative 3 or Alternative 5).	
The recommendation for Alternative 4 is to be determined following public input.	

7.3 Alternative 5

7.3.1 Corridor Analysis Results

Alternative 5 would provide capacity improvements to Old Bethel Road from its intersection with US 90 to east of Stacy Lane, and continue on new alignment north and east to the intersection of Auburn Road and SR 85. Alternative 5 would enhance the existing transportation network and would improve overall Okaloosa County network connectivity by providing bypass options around the City of Crestview. Alternative 5 meets the primary purpose and need and was, therefore, further evaluated for environmental, engineering, and cost considerations. Of the three alternatives (Alternatives 3, 4, and 5) evaluated in detail, Alternative 5:

- Provides the least reduction in traffic demand on SR 85 north of US 90;
- Is estimated to have the most predicted crashes (greater than Alternative 3 and Alternative 4).
- Is estimated to have the most environmental impacts, including the most impacts to wetlands, floodplains, and species (greater than Alternative 3 or Alternative 4).
- Requires the greatest number of stormwater ponds (greater than Alternative 3 and Alternative 4), and requires more waterway crossings than Alternative 3.

The advantages and disadvantages from the Alternative 5 corridor analysis are summarized in **Table 7-3.**

7.3.2 Public Feedback

No public input was received as part of the ETDM Advance Notification review. Public input will be requested at the public meeting to be scheduled in summer 2022 prior to finalizing this report.

7.3.3 Agency Feedback

Agency feedback was obtained through the ETDM Advance Notification process for project # 14450, as documented in the Preliminary Programming Screen Summary Report, published October 4, 2021. Overall, Alternatives 3, 4, and 5 were equally considered the third most favorable overall among the six alternatives considered by the ETAT due to reliance on the existing roadway network and avoiding new development where none currently exists closer to the Yellow River floodplain and Wildlife Management Area. However, the USFWS commented that the Yellow River and its associated species and habitats are their primary concern in this area (mussels and sturgeon). The further away from the river development occurs, fewer impacts are anticipated as a result. Because of this, the USFWS preferred Alternative 6, and would argue against Alternatives 1 and 5. The USFWS recommended that the County choose a shorter alignment farther away from the river that does not extend beyond the existing fringe of development. Likewise, the FWC did not favor Alternative 5 due to the westerly shift toward the Yellow River. Agency concerns were identified for potential disruption to established neighborhoods and the potential for disproportionate impacts to minority and low-income communities.

7.3.4 Conclusion

The recommendation for Alternative 5 is to be determined following public input.

Table 7-3 | Alternative 5 Corridor Evaluation Summary

Alternative 5	
Advantages	**Disadvantages**
Alternative 5 would expand regional connectivity by providing a new northerly connection to Bill Lundy Road.	Would affect existing residences and businesses along Old Bethel Road.
Reduces potential for community and neighborhood impacts compared to Alternative 3 and Alternative 4 as it traverses in undeveloped lands north of Old Bethel Road.	Potential for proximity impacts to Old Bethel Church and Cemetery which could be avoided during design.
Shorter distance of utility conflicts on Old Bethel Road compared to Alternative 3 and Alternative 4.	Provides the least reduction in traffic demand on SR 85 north of US 90 compared to Alternative 3 and Alternative 4.
Has the least number of potential residential relocations compared to Alternative 3 and Alternative 4.	Would result in the most predicted crashes Compared to Alternative 3 and Alternative 4.
Best accommodates future growth beyond Crestview compared to Alternative 3 and Alternative 4.	Is anticipated to have the most environmental impacts compared to Alternative 3 and Alternative 4 due to its greater length and the amount of corridor on new alignment.
	Has the highest anticipated construction cost compared to Alternative 3 and Alternative 4.
	Improves operational performance on SR 85 north of I-10 the least.
	Crosses electric power transmission line and gas transmission line.
The recommendation for Alternative 5 is to be determined following public input.	

8.0 Public Involvement and Agency Coordination

8.1 Agency Coordination

Agency coordination started during the initial stages of the project's development and continued through the ACE process to engage stakeholders to identify environmental and community values and concerns that may affect the development and evaluation of corridors. Throughout development and evaluation of the corridors, the project team involved and coordinated with Okaloosa County and the City of Crestview. This coordination helped to introduce the project, obtain background information, set expectations for the project, present existing conditions, discuss analysis findings, refine alternative corridors, and obtain feedback.

Early agency coordination was also obtained through the Efficient Transportation Decision Making (ETDM) process with the Environmental Technical Advisory Team (ETAT). ETAT members and the public had the opportunity to provide input to the FDOT regarding a project's potential effects on the natural, physical, cultural, and community resources throughout the planning phase of project delivery.

For this study, the ETAT included representatives from the following agencies:

- FDEO (Florida Department of Economic Opportunity)
- FHWA (Federal Highway Administration)
- USEPA (US Environmental Protection Agency)
- NRCS (Natural Resources Conservation Service)
- NPS (National Park Service)
- FDOS (Florida Department of State)
- NMFS (National Marine Fisheries Service)
- FDEP (Florida Department of Environmental Protection)
- NWFWMD (Northwest Florida Water Management District)
- USFWS (US Fish and Wildlife Service)
- USACE (US Army Corps of Engineers)
- FWC (Florida Fish and Wildlife Conservation Commission)
- USCG (US Coast Guard).

For this study, Tribal coordination was initiated in parallel with the agency notification. The Advance Notification package was sent to the federally-recognized tribes by certified mail on June 2, 2021, or as otherwise notified by e-mail in accordance with protocol established between individual tribes and the FDOT Office of Environmental Management.

The following project milestones were met, and coordination meetings held, as listed in **Table 8-1.**

Table 8-1 | Agency and Tribal Coordination

Date	Organization	Topic
November 20, 2020	Okaloosa County, FDOT	Project initiation meeting to clarify scope and schedule
January 14, 2021	Okaloosa County, FDOT, City of Crestview	Project coordination meeting. Existing conditions discussion, traffic methodology discussion, and discussion to identify four preliminary corridors.
February 25, 2021	Okaloosa County, FDOT, City of Crestview	Project coordination meeting. Six potential corridors were refined in preparation for initial agency review in ETDM.
May 19, 2021	FDOT, Okaloosa County, ETAT	**Advance Notification process initiated** for ETDM Project Number 14450.
June 2, 2021	Okaloosa County	Certified mail to federally-recognized Tribes.
June 10, 2021	Seminole Nation	Reply by Seminole Nation (no concerns).
July 7, 2021	Muscogee (Creek) Nation	Reply by Muscogee (Creek) Nation for request to review Cultural Resources Survey when available. No other Tribal input received.
July 12, 2021	Okaloosa County, FDOT, City of Crestview	**Project coordination meeting. Traffic forecast and analysis discussed. Initial agency review input discussed based on ETDM review in progress. Environmental methodology memorandum reviewed.**
October 4, 2021	FDOT, Okaloosa County	ETDM 14450 **Preliminary Programming Screen Summary Report published**. Degree of Effect determinations finalized for the six corridors.
December 27, 2021	FDOT, Okaloosa County, ETAT	ETAT review of **Methodology Memorandum initiated**.
January 26, 2022	FDOT, Okaloosa County	ETAT review of **Methodology Memorandum completed**.
February 17, 2022	Okaloosa County, FDOT, City of Crestview	Project coordination meeting. ETDM Programming Screen results reviewed. Preliminary screening results discussed: purpose and need, environmental, engineering, and cost. **Okaloosa County and City of Crestview concurred with preliminary screening results and alternatives to be recommended for elimination.**
March 25, 2022	Okaloosa County	Refinement of alternatives.
June 1, 2022	Okaloosa County	Town Hall noticed public meeting with Commissioners Mixon (District 1) and Boyles (District 3).
TBD	Okaloosa County, FDOT, ETAT	Agency review of draft Alternative Corridor Evaluation Report in ETDM.
TBD	FDOT, Okaloosa County.	Approval of draft Alternative Corridor Evaluation Report.
TBD	Okaloosa County.	Public meeting on draft Alternative Corridor Evaluation Report
TBD	FDOT, Okaloosa County, ETAT	Agency review of final Alternative Corridor Evaluation Report
TBD	FDOT	Approval of Alternative Corridor Evaluation Report and ETDM publication of Final Programming Screen Summary Report with Alternatives Eliminated.

8.1.1 Summary of ETDM Comments

ETAT members used the ETDM Environmental Screening Tool to review project information, identify potential project effects, and submit comments as part of the ETDM Programming Screen on the six corridors. The Preliminary Programming Screen Summary Report was published on October 4, 2021. This report summarizes the results of the ETAT review of the six corridor alternatives, provides details concerning agency comments about potential effects to the natural, cultural, and community resources; and provides additional documentation of activities related to future development of the project. The report included a Degree of Effect chart (**Figure 8-1**) that summarized the potential impact of each alternative, as well as the response to each Degree of Effect finding. A lower Degree of Effect was considered more favorable (fewer impacts).

Figure 8-1 | ETAT Degree of Effect Results

NA	*Not Applicable*
1	*Enhanced*
2	*Minimial*
3	*Moderate*
4	*Substantial*
5	*Dispute*

	Social and Economic							Cultural and Tribal			Natural					Physical					
	Social	Economic	Land Use Changes	Mobility	Aesthetic Effects	Relocation Potential	Farmlands	Section 4(f) Potential	Historic and Archaeological Sites	Recreational and Protected Lands	Wetlands and Surface Waters	Water Resources	Floodplains	Protected Species and Habitat	Coastal and Marine	Noise	Air Quality	Contamination	Infrastructure	Navigation	Special Designations
Alternative 1 From: Enzor Road To: Auburn Rd and SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	3	3	2	2	1	4	4	3	3	2	3	2	3	2	N/A	N/A
Alternative 2 From: US 90 To: SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	3	3	2	2	1	2	3	3	3	2	3	2	3	2	N/A	N/A
Alternative 3 From: US 90 To: Auburn Rd. and SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	3	3	2	2	1	3	3	3	3	2	3	2	3	2	N/A	N/A
Alternative 4 From: US 90 To: Auburn Rd. and SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	3	3	2	2	1	3	3	3	3	2	3	2	3	2	N/A	N/A
Alternative 5 From: US 90 To: Billy Lundy Rd. and SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	3	3	2	2	1	3	3	3	3	2	3	2	3	2	N/A	N/A
Alternative 6 From: US 90 To: Old Bethel Rd. and SR 85 *Published: 10/04/2021 Reviewed from 05/27/2021 to 07/11/2021)*	3	1	2	1	3	2	3	2	2	1	2	3	2	3	2	3	2	3	2	N/A	N/A

The highest Degree of Effect score (4) was assigned in the Natural Environment category relating to water resources and wetlands for Alternative 1, due to physical proximity to the Yellow River and the Wildlife Management Areas associated with the Yellow River floodplain.

The USFWS expressed concern for Alternatives 1 and 5 due to potential for environmental impacts with undeveloped areas and the Yellow River floodplain and proximity to the Yellow River which is designated Critical Habitat for several federally-protected species of freshwater mussels. The FWC expressed concern for Alternatives 4 and 5 due to potential environmental impacts with undeveloped areas.

8.2 Public Comments

Public comment will be summarized following public outreach to be completed.

8.3 Outstanding Issues

Following public input, any remaining outstanding issues will be identified to be resolved in the PD&E phase.

9.0 Recommendations

9.1 Summary Alternative Corridor Evaluation

To determine how the alternative corridors performed overall in comparison to each other, an overall performance score was calculated by summing the scores in each evaluation category for each alternative corridor. A summary comparative evaluation matrix reflecting how the alternative corridors performed in each category is shown in **Table 9-1**. Since Alternatives 1, 2, and 6 did not meet the primary purpose and need and did not qualify for further evaluation, their rows are greyed out.

Table 9-1 | Summary of Comparative Evaluation

Alternative Corridor	Purpose and Need Scores		Evaluation Criteria Scores				Total Score	Recommended for Further Consideration
	Primary	Secondary	Environmental Impacts	Engineering Performance	Public Support	Cost		
Alternative 1	N							Eliminated based on primary purpose and need
Alternative 2	N							Eliminated based on primary purpose and need
Alternative 3	Y	4	25	4		4		TBD
Alternative 4	Y	5	28	6		5		TBD
Alternative 5	Y	7	36	12		9		TBD
Alternative 6	N							Eliminated based on primary purpose and need

Table note: Lower score = better

9.2 Alternatives Eliminated

The primary purpose and need evaluation resulted in elimination of Alternative Corridors 1, 2, and 6 from further consideration.

- Alternative Corridor 1 does not meet the consistency with local plans criterion because it encroaches the floodplains and wetlands of the Yellow River and hence is incompatible with the Okaloosa County 2020 Comprehensive Plan River Protection Zone Conservation Element Policies 7.1 – 7.5.
- Alternative Corridor 2 does not meet the criterion to improve regional connectivity as it would utilize only an existing local road (Old Bethel Road) and would function as a local or parallel route to SR 85 through reliance on the existing road network even when the roadway is widened. Alternative 2 would not serve regional trips nor support potential new growth areas outside the City of Crestview.

- Alternative Corridor 6 does not meet any of the primary purpose and need criteria. Alternative 6 does not improve regional connectivity within the western parts of the county as it would function more as a local or parallel route to SR 85. Based on its proximity to SR 85, Alternative 6 would mostly save local trips between US 90 and Old Bethel Road. Alternative 6 does not provide direct linkage with the Southwest Crestview Bypass since it would utilize part of US 90 to connect to the Southwest Crestview Bypass. Additionally, Alternative 6 is inconsistent with local plans because it would not support four developments noted by the City of Crestview.

9.3 Alternative Recommended for PD&E Study

Okaloosa County has determined that a formal recommendation of a corridor to advance into the PD&E Study will be made after ETAT and the public have had an opportunity to review this report. Once ETAT review is complete and input from the public is received through the Alternative Corridor Public Meeting, the report will be finalized and submitted to FDOT Office of Environmental Management (OEM) for approval.

10.0 Appendices

Appendix A | Existing and Future Conditions Report

Appendix B | Traffic Analysis Report and Methodology Memorandum

Appendix C | Approved Methodology Memorandum

Appendix D | Cultural Resources Desktop Analysis

Appendix A | Existing and Future Conditions Report

Existing Conditions Report

FPID: 438139-1-24-01; ETDM 14450

January 2021

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

This planning product may be adopted into the environmental review process, pursuant to Title 23 USC § 168(4)(d), or the state project development process.

CONTENTS

FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AFB	Air Force Base
AOI	Area of Interest
CCTV	Closed Circuit Television
CR	County Road
EPA	U.S. Environmental Protection Agency
FDOT	Florida Department of Transportation
FDEP	Florida Department of Environmental Protection
FLUCCS	Florida Land Use and Land Cover Classification System
FPID	Financial Project Identification
FTO	Florida Traffic Online
FWC	Florida Fish and Wildlife Conservation Commission’s
IPaC	Information for Planning and Consultation
ITS	Intelligent Transportation System
NWFWMD	Northwest Florida Water Management District
NWI	National Wetlands Inventory
O-W TPO	Okaloosa-Walton Transportation Planning Organization
PD&E	Project Development and Environment
SDR	Sociocultural Data Report
SR	State Road
SSOGis	State Safety Office Geographic Information System
WMA	Wildlife Management Area
WMD	Water Management District
USFWS	United States Fish and Wildlife Service
WBID	Water Body Identification

1.0 Introduction

1.1 Purpose of this Report

The purpose of this report is to document existing engineering and environmental conditions within the study area. Existing conditions will inform development of potential corridors. These existing conditions may be expanded in future phases of the project as corridors are defined and the study area(s) narrowed.

1.2 Project Description

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will integrate with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road to the west and will connect to State Road (SR) 85 at the northern end of Crestview. The project length is approximately five miles. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85N (North Ferdon Boulevard) as well as alternative corridors. The study area is shown in **Figure 1-1**. This study is being developed by Okaloosa County as the Lead Agency, in partnership with the FODT District 3, and the City of Crestview as a Participating Agency. FDOT is providing state funding assistance through the Transportation Regional Incentive Program. County matching funds are provided through County surtax and gas tax revenue. The study process will follow the FDOT Alternative Corridor Evaluation process to maintain federal funding eligibility.

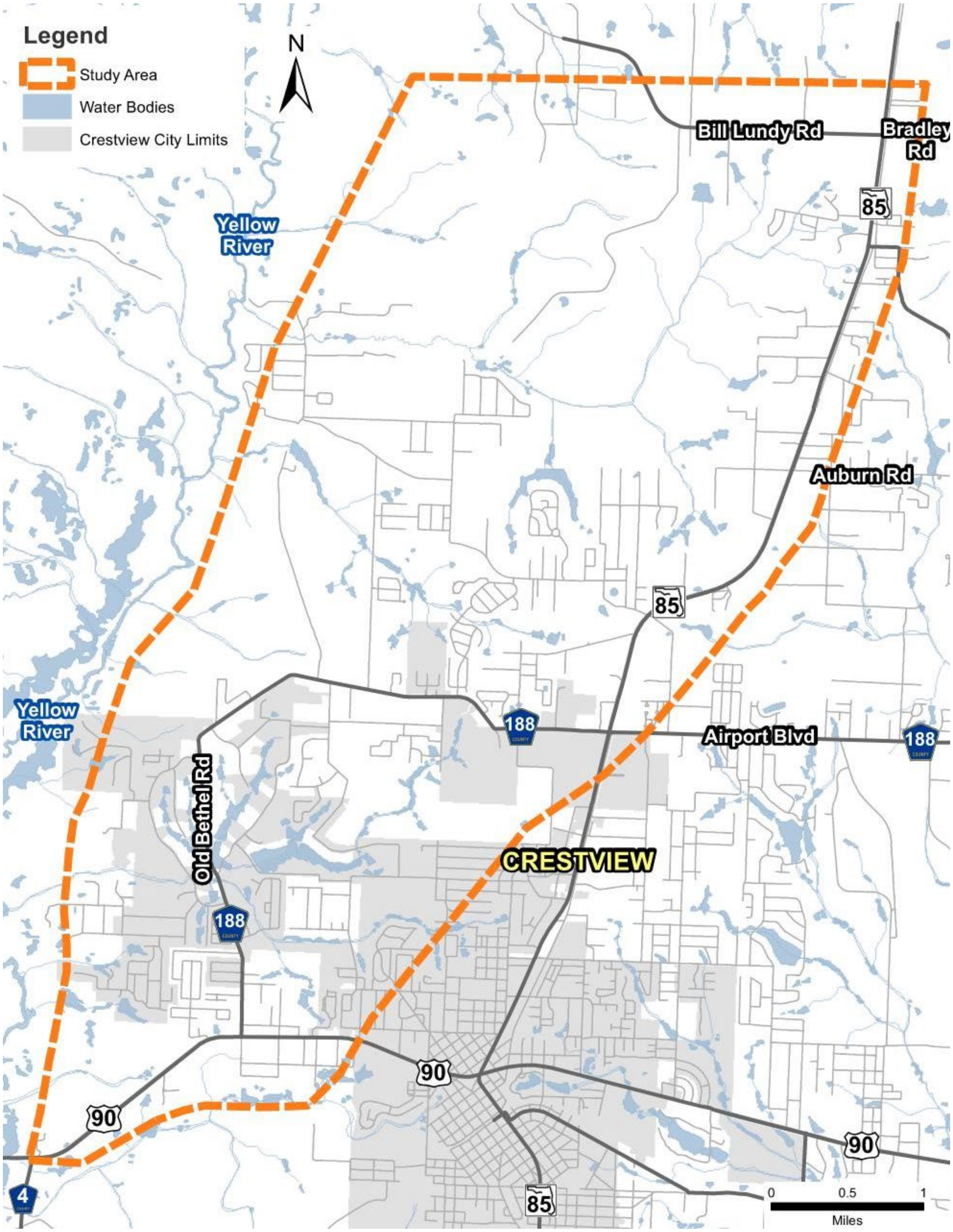


Figure 1-1 | Project Study Area

1.2.1 Local, Regional and State Transportation Plans

The Northwest Crestview Bypass from US 90 to SR 85 North is included in the Okaloosa- Walton Transportation Planning Organization (O-W TPO) 2040 Cost Feasible Plan for Project Development and Environment (PD&E) in fiscal years 2021 – 2025 and Design in fiscal years 2026 – 2030. The Western Crestview Bypass, which includes this corridor, was also shown in the 2030 and 2035 Needs Plans. The Crestview Bypass West project (design phase) is identified as a non-Strategic Intermodal System priority #8 for the O-W TPO to provide four lanes of capacity as FPID 438139-1.

The project is not currently included in the O-W TPO Transportation Improvement Program or the FDOT State Transportation Improvement Program.

The Okaloosa County Comprehensive Plan includes the Crestview Bypass. Policy 1.3.2 in Chapter 2.2 Transportation states, "Coordinate with the Okaloosa – Walton TPO in the development of the Crestview Bypass, a parallel 4-lane roadway, to reduce traffic congestion on SR 85 and to foster interstate commerce."

The City of Crestview Comprehensive Plan does not specifically discuss a bypass but contains multiple objectives and policies aimed to address congestion on SR 85. Objective 8.A.6 states, "The City shall continually take steps and actions designed to relieve congestion on area roadways, especially SR 85". Policy 8.A.2.2 states, "The City shall continue to use funds from various sources so as to complete the improvements listed in Table 14-1-T, thereby providing relief to SR-85." Policy 13.A.2.8 states, "The City will also participate in regional efforts to develop and implement other transportation demand management strategies to reduce peak travel demand on SR 85."

The City of Crestview Strategic Plan (June 2019) does not specifically discuss a bypass but contains a Goal to "Provide safe, efficient and accessible means for mobility."

1.2.2 Other Regional Projects

The Crestview Bypass was first evaluated in a Feasibility Study completed in 2004. The 2004 Feasibility Study considered three corridors including western, middle and eastern alignments. The three corridors went through FDOT's Efficient Transportation Decision Making planning project (#2891). During the study, Eglin identified unacceptable mission impacts for all options traversing Eglin Air Force Base (AFB) in the southeast quadrant of I-10 and SR 85 and recommended a corridor west of SR 85. Ultimately, an eastern route that incorporated improvements to I-10 and SR 85 and avoided Eglin impacts was selected for further study.

The O-W TPO 2035 Needs Plan included an Eastern and Western Crestview Bypass. In the 2040 Long Range Transportation Plan, the O-W TPO removed the Eastern Crestview Bypass with the intent of focusing on the Western Bypass options. In December 2017, O-W TPO passed Resolution 17-17 to begin the process to amend the 2040 Long Range Plan to include an Eastern Crestview Bypass and restarted the process of evaluating a bypass focusing east of Crestview.

FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019. The project limits began along SR 85 north of Shoal River, extended north with SR 85 as the western boundary, Shoal River and Bob Sikes Airport as the eastern boundary, and finished at Airport Road as the northern terminus. Three build alternatives and a no build alternative were analyzed. Through the desktop planning level analysis of the proposed impacts associated with the three build alternatives, it was determined that the project would not result in a significant enough reduction in congestion along SR 85 to justify the social, environmental, construction, and right-of-way costs associated with the three build alternatives. The feasibility study recommended to continue with the PD&E Studies for a Western Crestview Bypass and the capacity improvements along SR 85 shown currently within the O-W TPO Cost Feasible Plan. As these ongoing projects advance to stages where operational improvements can be analyzed, further coordination should continue with local planning partners to determine if the regional traffic concerns are addressed by these existing projects, or if a more detailed traffic analysis related to the Eastern Crestview Bypass should be completed.

The Southwest Crestview Bypass will around Crestview to the southwest beginning at Wild Horse Drive and P.J. Adams Parkway and ending at US 90 and County Road (CR) 188. The Southwest Crestview Bypass project is underway through several projects which include P.J. Adams Parkway Widening from Crab Apple Avenue to Wildhorse Drive [Financial Project Identification (FPID) 421997-9], I-10 at Antioch Road Interchange (FPID 407918-5), and the Southwest Crestview Bypass from I-10 to US 90**.** FPIDs 421997-9 ad 407918-5 make up the Southwest Crestview Bypass from Wild Horse Drive to I-10 which is included in the 2040 O-W TPO Cost Feasible Plan for Construction 2031 - 2040. Construction of P.J. Adams Widening from Crab Apple Avenue to Wildhorse Drive and design of I-10 at Antioch Road Interchange are currently ongoing. The Southwest Crestview Bypass from I-10 to US 90 is included in the O-W TPO Cost Feasible Plan for Design phase 2021 – 2025 and Right of Way phase 2026 – 2030.

Other regional projects include I-10 Improvements from the Santa Rosa County line to SR 85 (FPIDs 413062-5 & 441038 -1, -2, -3, -4), SR 85 Resurfacing from SR 123 to I-10 (FPID 441548-1), SR 85 Access Management Project from Southcrest Drive to Hospital Drive (FPID 443672-1), and SR 85 Widening from SR 123 to Mirage Avenue (FPID 220171-2). The I-10 Improvements and SR 85 Widening projects are currently in the PD&E Phase. The SR 85 Resurfacing and SR 85 Access Management projects are currently in the design phase.

An overview of regional projects is shown in **Figure 1-2**.

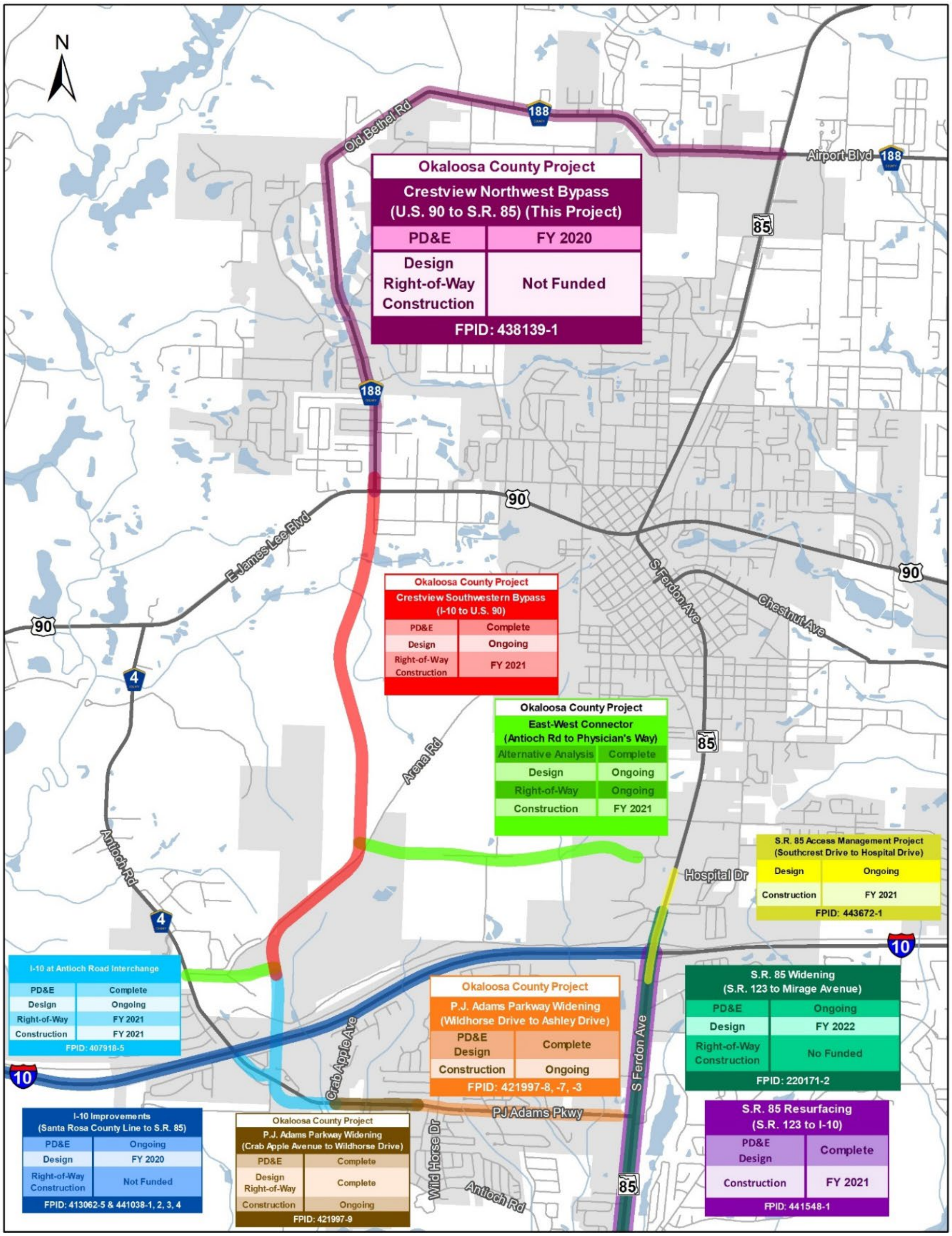


Figure 1-2 | Overview of Regional Projects

2.0 Existing Conditions

The following sections describe the existing engineering and environmental conditions within the project study area.

2.1 Existing Roadway Characteristics

2.1.1 Roadway Classifications, Posted Speed, and Typical Sections

In the study area for the Northwest Crestview Bypass, seven existing roadway corridors were selected for further study: SR 85, US 90 (SR 10/ James Lee Boulevard), CR 188 (Old Bethel Road), CR 4 (Antioch Road), Lake Silver Road, Enzor Road, Auburn Road, and Bill Lundy Road (CR 85A). SR 85 is a major north-south arterial in the study area and US 90 is a major east-west arterial in the study area. CR 188 and CR 4 were selected since they are existing roadway corridors within proposed alignments for the bypass. Finally, Lake Silver Road, Enzor Road, and Auburn Road were selected for study due to interest from Okaloosa County in potentially including the roadway in a proposed bypass. Roadway classifications and posted speed limits are provided in **Table 2-1**. Details for each roadway's typical section is provided in **Table 2-2**.

Table 2-1 | Roadway Classifications and Posted Speed

Roadway	Functional Classification[1]	Access Management Classification[1]	Context Classification[1]	Posted Speed (mph)
SR 85	Urban Principal Arterial	6 (S of CR 188) 3 (N of CR 388)	C3C (S of CR 188) C2 (N of CR 388)	45 (S of CR 188) 55 (N of CR 188)
US 90 (SR 10)	Urban Minor Arterial	6	C3C	45
CR 188 (Old Bethel Road)	Local Road	N/A	C2T	25/30
CR 4 (Antioch Road)	Local Road	N/A	C2T	45
Lake Silver Road	Local Road	N/A	C2T	30
Enzor Road	Local Road	N/A	C2	40
Auburn Road	Local Road	N/A	C2T	40
Bill Lundy Road	Local Road	N/A	C2	45

[1]Roadway classification information of State Roads and U.S. Routes was obtained from the roadway's straight line diagram. All other roadway classification information was determined using the descriptions provided in the Florida Design Manual Section 200.

Table 2-2 | Roadway Typical Section Features

Roadway	Number of Lanes	Divided or Undivided	Shoulder Treatment	Sidewalks	Bike Lanes
SR 85	4	Divided	Flush Shoulder	SB direction, S of CR 188	Not provided
US 90 (SR 10)	5	Undivided	Curb and Gutter	Provided on Both Sides	Not provided
CR 188 (Old Bethel Road)	2	Undivided	Flush Shoulder	Not provided	Not provided
CR 4 (Antioch Road)	2	Undivided	Flush Shoulder	Not provided	Not provided
Lake Silver Road	2	Undivided	Flush Shoulder	Not provided	Not provided
Enzor Road	2	Undivided	Flush Shoulder	Not provided	Not provided
Auburn Road	2	Undivided	Flush Shoulder	Not provided	Not provided
Bill Lundy Road	2	Undivided	Flush Shoulder	Not provided	Not provided

2.1.2 Multimodal Facilities

Limited multimodal facilities exist within the study area for the Northwest Crestview Bypass. Of the four roadways previously listed, only US 90 and SR 85 have sidewalks. None of the roadways contain bicycle lanes or shared use paths. Okaloosa County's transit service, Emerald Coast Rider, provides transit service within the study area; however, the only active route is along SR 85 and terminates at the intersection of SR 85 and US 90. No other routes overlap with existing roadways identified as part of the proposed bypass. An existing railroad crossing, owned by Florida Gulf & Atlantic, is located on CR 4 approximately 0.5 miles south of US 90, outside the study area.

2.1.3 Utilities

A utility design ticket will be submitted at a later phase of project development. However, previous projects within the vicinity of the study area were reviewed to compile a list of utility owners operating within the study area. **Table 2-3** displays the utility owners.

Table 2-3 | Utility Owners

Utility Owner Name	Utility Owner Name
AT&T Florida	Okaloosa Gas
AT&T Transmission	Okaloosa IT
Centurylink	Okaloosa Traffic
Cox Communications	Okaloosa Water & Sewer
City of Crestview	Uniti Fiber

Utility Owner Name	Utility Owner Name
Gulf Power	Verizon (Sprint/MCI)
Florida Power and Light	

2.1.4 Soil Conditions

A multitude of soil types are present within the study area. An approximation of the in-situ soil types and locations is displayed in **Figure 2-1**. Soils in the study area are comprised primarily of Lakeland soils on the southern end of the study area, Troup soils throughout the study area, and Kinston soils on the northern end of the study area. Lakeland and Troup soils are characterized by their excessive drainage, rapid permeability, and slow runoff. Kinston soils are characterized by their poor drainage, moderate permeability, and slow runoff.

2.2 Drainage

2.2.1 Floodplain Crossings

They study area is within the Federal Emergency Management Agency Digital Flood Insurance Rate Map panels 12091C0155H, 12091C0160H, 12091C0165H, and 12091C0170H. Within the study area, there are 219 acres (3.3 percent) in flood zone A and 34.8 acres (0.5 percent) in flood zone AE. Flood zones A and AE are both within the 100-year floodplain. Flood zone A does not have base flood elevations determined and flood zone AE does have base flood elevations determined. The majority of the 100-year floodplain surrounds the Yellow River, which is a regulatory floodway. However, a section of the floodplain stemming from Mathison Creek extends into the center of the study area. The rest of the study area is outside the 100-year floodplain. The 100-year floodplain is displayed in **Figure 2-2**.

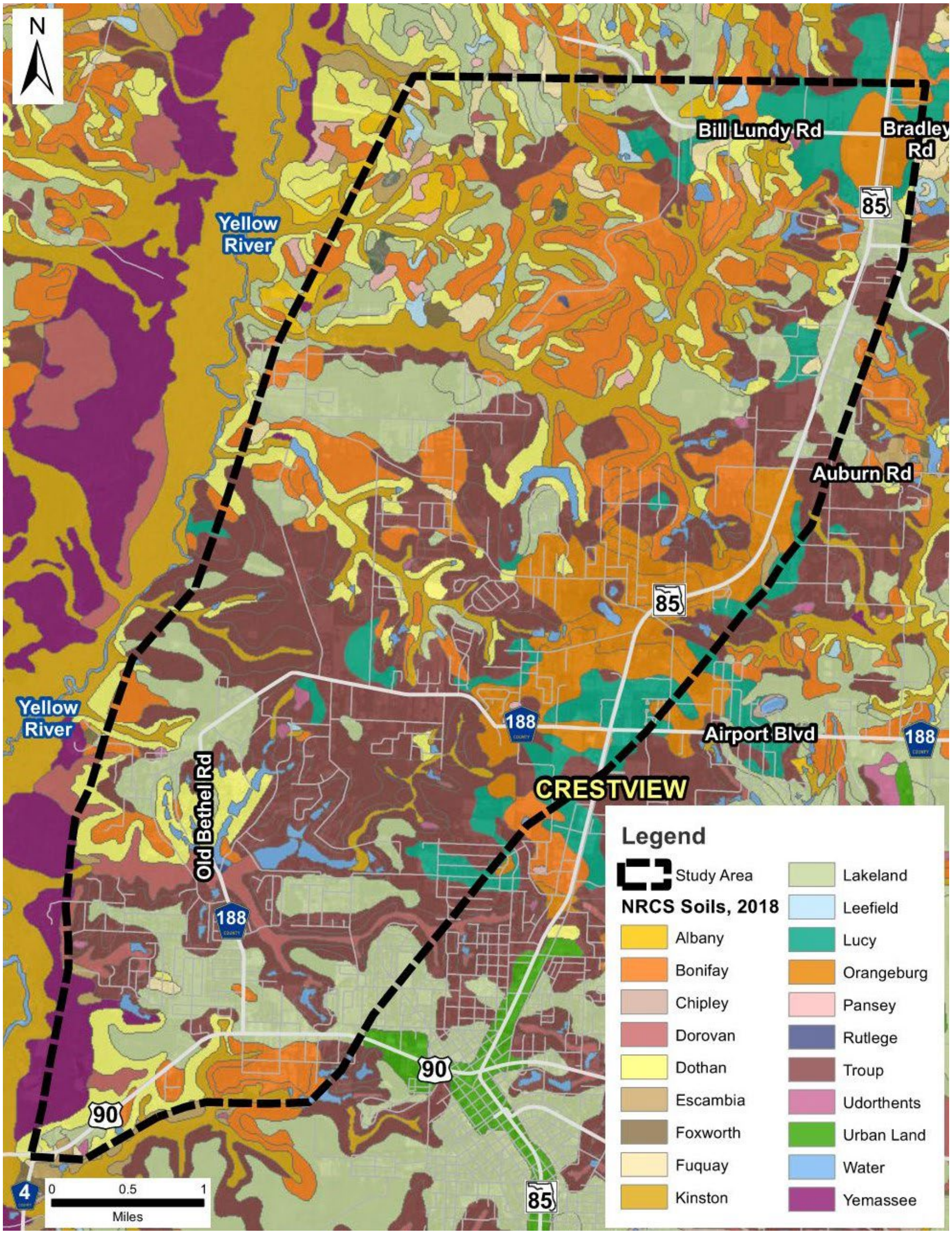


Figure 2-1 | Soils Map

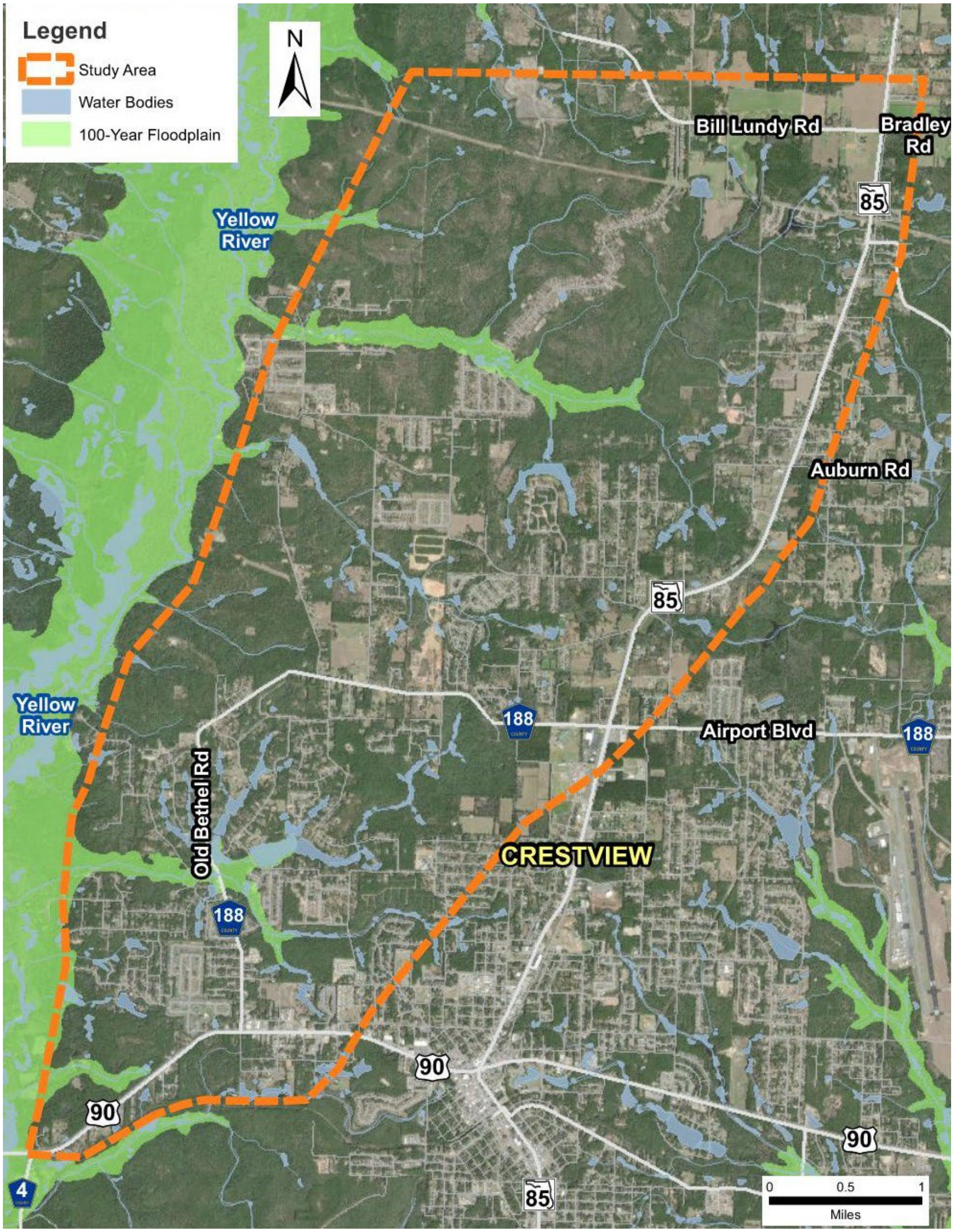


Figure 2-2 | 100-Year Floodplain

2.2.2 Drainage Systems in Place

Within the study area, SR 85 has a divided typical section where stormwater runs off to median and roadside ditches. CR 188, CR 4, Lake Silver Road, Enzor Road, Auburn Road, and Bill Lundy Road have rural typical sections where stormwater runs off to roadside ditches. US 90 has a rural typical section west of CR 188. In this section, stormwater runs off to roadside ditches on both the north and south sides of US 90. East of CR 188, US 90 transitions to an urban typical section, utilizing curb and gutter and inlets to convey stormwater runoff. Several box culverts are also present in the study area. On CR 4, box culverts are used to convey flow from Gully Branch and Trammel Creek under the roadway. On CR 188, a box culvert is used to convey flow from Red Wash Branch underneath the roadway.

2.3 Existing Traffic and Safety

2.3.1 Existing Traffic Conditions

FDOT 2019 Florida Traffic Online (FTO) Data was used to determine the existing (2019) average annual daily traffic (AADT) volumes for roadways in the study area, which are shown in **Figure 2-4**. The 2019 AADT for the four existing roadway corridors selected for further study are shown in **Table 2-4**.

Table 2-4 | FTO 2019 AADTs

Roadway	2019 AADT
SR 85	10,000 – 25,500
US 90 (SR 10)	21,000
CR 188 (Old Bethel Road)	6,400
CR 4 (Antioch Road)	9,600
Lake Silver Road	N/A
Enzor Road	N/A
Auburn Road	N/A
Bill Lundy Road	550

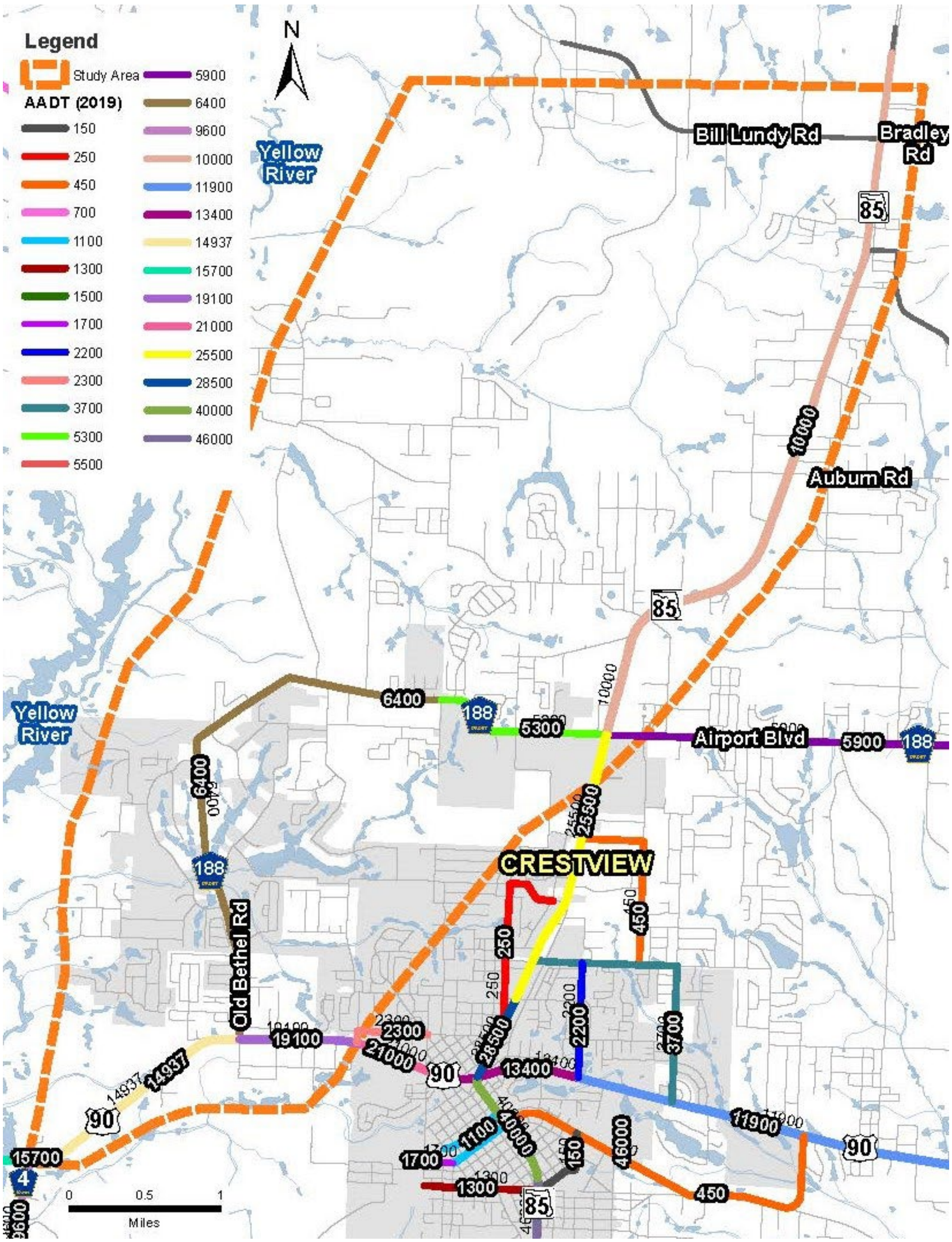


Figure 2-3 | FTO 2019 AADT

2.3.2 Crash Data

The State Safety Office Geographic Information System (SSOGis) Crash Query Tool was utilized to query crash data for the study area. As shown in **Figure 2-4** there were 1489 crashes in the study area. The heatmap for crashes in the area shows the highest concentration of crashes was at the US 90 (SR 10) / SR 85 intersection and along SR 85, as shown in **Figure 2-5**.

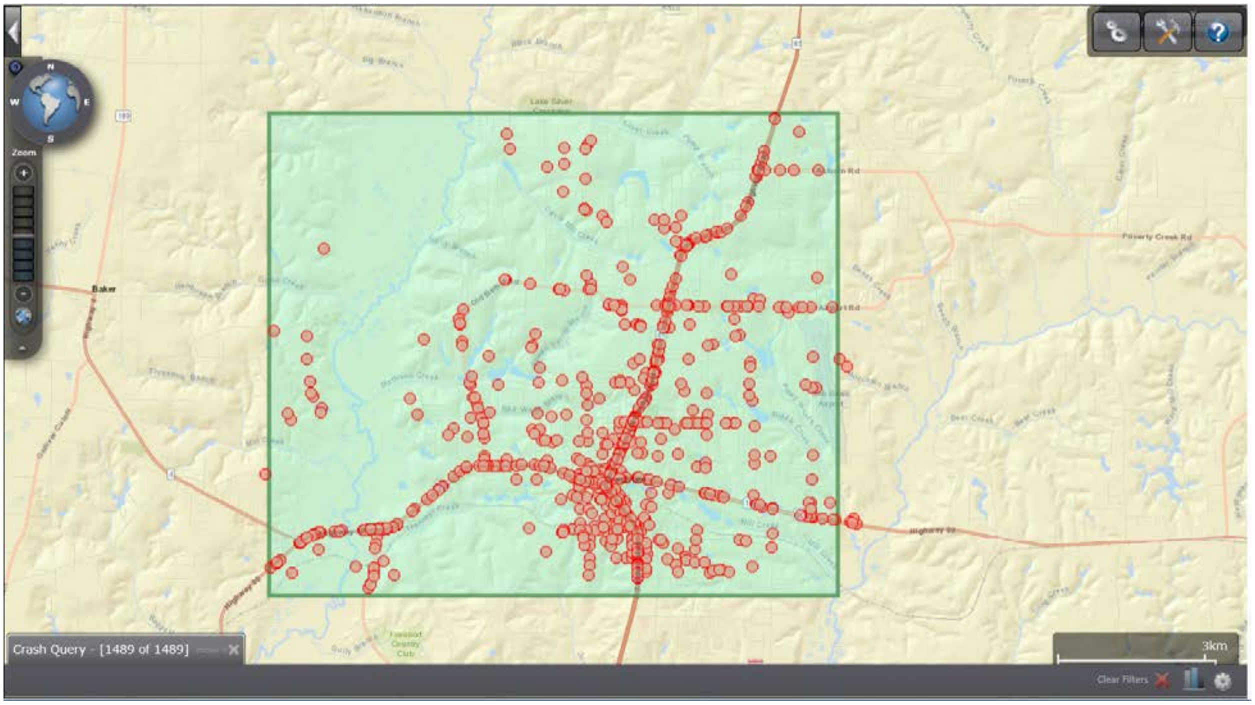


Figure 2-4 | Crashes in the Study Area

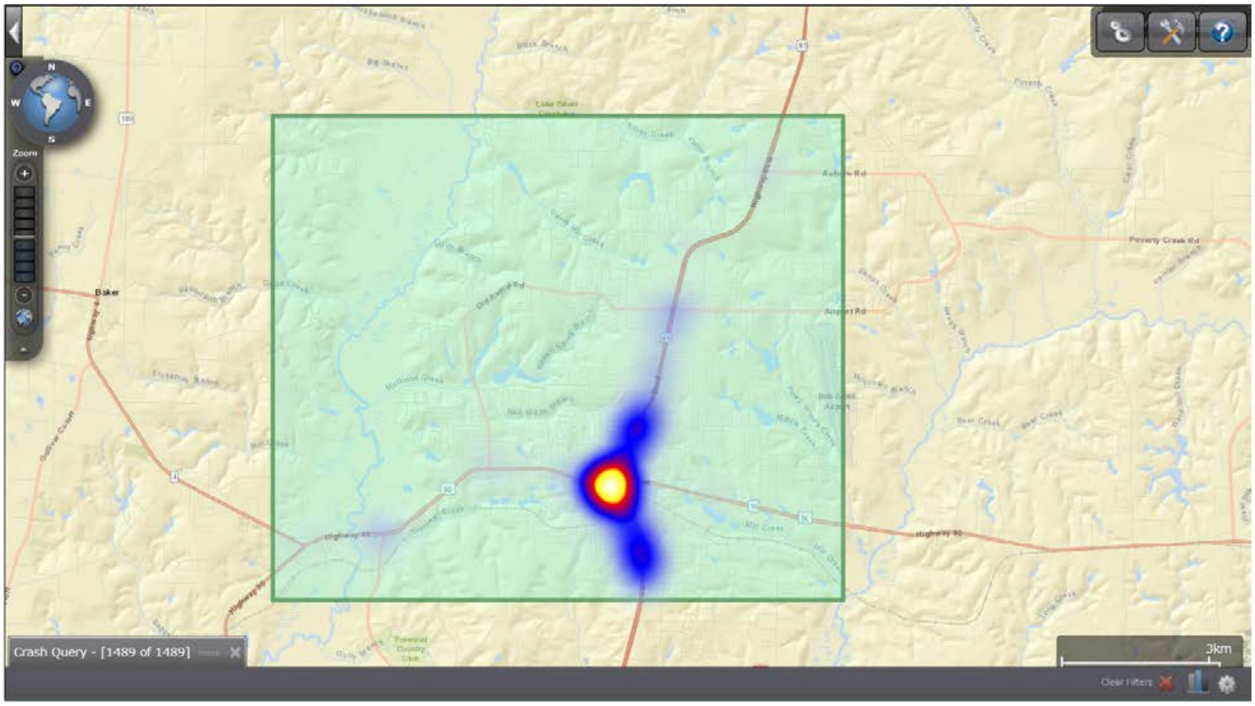


Figure 2-5 | Crash Heatmap

Table 2-5 and **Table 2-6**, show the crashes by type and by crash injury severity**.** The top three crash types in the area were rear ends, angle and sideswipe crashes. There were 18 fatal crashes 57 incapacitating injury crashes, 221 non-incapacitating crashes, 272 possible crashes and 862 no injury crashes.

Table 2-5 | Crash Types

Year	Rear End	Angle	Sideswipe, Same Direction	Head On	Sideswipe, Opposite Direction	Rear to Side	Rear to Rear	Other	Unknown	Not Coded	Total
2014	96	78	29	15	5	5	4	91	4	0	327
2015	101	85	22	15	16	5	1	84	8	0	337
2016	76	72	15	16	6	2	1	87	2	0	277
2017	75	61	16	13	2	3	1	85	3	1	260
2018	68	100	21	18	3	1	0	77	0	0	288
Total	**416**	**396**	**103**	**77**	**32**	**16**	**7**	**424**	**17**	**1**	**1489**

Table 2-6 | Crash Injury Severity

Year	Fatal	Incapacitating	Non-Incapacitating	Possible	No Injury	Unknown	Total
2014	3	22	32	48	214	8	327
2015	4	9	44	48	221	11	337
2016	2	8	58	51	148	10	277
2017	7	14	42	50	135	12	260
2018	2	4	45	75	144	18	288
Total	**18**	**57**	**221**	**272**	**862**	**59**	**1489**

2.3.3 Intelligent Transportation Systems

According to the *"Regional Intelligent Transportation Systems Plan 2019 Progress Report on Implementation"* adopted by the Okaloosa-Walton TPO on September 16, 2010, through Resolution O-W 10-27, Okaloosa County has an extensive Intelligent Transportation System (ITS) already in place. More specifically there are 13 Closed Circuit Televisions (CCTV) in the Crestview area as of 2019. According to the Regional ITS Plan, Okaloosa County would benefit from additional fiber optic cable, CCTVs, and dynamic messaging signs.

2.4 Existing Structures

A desktop survey was conducted to obtain a representative sample of existing bridges within the study area. Each of the selected bridges reviewed crossed a waterbody. Of the four bridges, only Bridge 574001 (along Old Bethel Road) is functionally obsolete. None of the bridges are structurally deficient. A summary of the bridges identified in the survey is provided in **Table 2-7** and **Table 2-8**.

Table 2-7 | Existing Bridges Summary

Bridge No.	Route Carried	Facility Crossed	Year Built	Year Modified
570172	US 90 (SR 10)	Yellow River	2015	N/A
570015	Old River Road	Mill Creek	1957	N/A
574001	Old Bethel Road	Mathison Creek	1976	N/A
574134	Lake Silver Road	Silver Creek	1998	N/A

Table 2-8 | Existing Bridges Health Data

Bridge No.	Health Index	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
570172	99.45	96.7	N/A	N/A
570015	66.60	95.3	N/A	N/A
574001	92.32	77.5	F.O.	N/A
574134	83.23	94.3	N/A	N/A

2.5 Existing Environmental Characteristics

FDOT's Area of Interest (AOI) Environmental Screening Tool was the primary resource used to identify environmental features within the study area. Other sources were used as mentioned in the following resource sections.

2.5.1 Social and Economic

Resources discussed in this section include Social, Economic, Land Use, and Farmland resources. Mobility resources are discussed in the Multimodal Facilities section of this report and will be discussed in the purpose and need. There are no scenic highways present in the study area.

2.5.1.1 Social

The AOI Sociocultural Data Report (SDR) developed using FDOT's Environmental Screening Tool was used to obtain study area demographic data. Census tracts and block groups within the study area were used to approximate demographic data using the 2019 American Community Survey (Census block groups: 120910206003, 120910203022, 120910205003, 120910205002, 120910205001, 120910203011, 120910203012, and 120910205005). The SDR identified 3,178 households and a population of 9,814 people. The study area median household income is approximately $68,975 annually, with 9.4 percent of households below the poverty level. Okaloosa County's median household income is approximately $63,412 annually, with 9.9 percent of households below poverty level. Approximately 1.95 percent of households in the study area receive some form of public assistance. Median income data at the Census tract level was also reviewed. Census tract 203.01 has a higher median income than Okaloosa County at $68,288. Census tract 205 has a lower median income than Okaloosa County at $57,127, or approximately 90 percent of the median income of Okaloosa County.

The minority population comprises approximately 27.3 percent of the total population within the study area. Of the total study area population, 1,003 people, or 10.2 percent, identified as "Black or African American Alone"; 1,075 people, or 11 percent, identified as "Hispanic or Latino of Any Race"; and 609 people, or 6.2 percent, "Claimed 2 or More Races". Minority data was also reviewed at the Census block group level. None of the Census block groups had 50 percent or more minority population (Council on Environmental Quality's *Environmental Justice Guidance under NEPA* defines high minority concentration as >50%).

The SDR indicates that there is limited potential for disproportionately high and adverse effects on minority and low-income populations. However, proactive measures will be taken to involve the affected community in alternative selection decisions, impact analysis, and mitigation.

Most of the study area population can speak English with approximately 100 people, or 1.1 percent of the population, not able to speak English well.

The median age of persons in the study area is 35, with persons age 65 and over comprising approximately 13 percent of the population. Approximately 814 people, or 14.9 percent of the population, who are between the ages of 20 and 64 that have a disability. **Table 2-9** summarizes the demographic characteristics of the study area and Okaloosa County.

Table 2-9 | Demographic Characteristics

Geography	2019 Population	Median Household Income	% HH Below Poverty	% Minority	Avg. Median Age	% with Disability
Study Area	9,814	$68,975	9.4%	27.3%	35	14.9%
Okaloosa County	203,794	$63,412	9.9%	26.4%	37	12.6%

Source: ACS 2018 5-Year Estimates

According to the SDR, community facilities within the study area include three community and fraternal centers, 12 religious centers, five schools (three public and two private), a cemetery, and county government office complex as shown in **Table 2-10** and **Figure 2-6**. The study area intersects the school zones for Crestview High School, Davidson Middle School, Antioch Elementary School, Bob Sikes Elementary School, and Northwood Elementary School. The Okaloosa County School District 2018 Survey showed that Crestview High School, Davidson Middle School, and Antioch Elementary School all had student enrollment exceeding their maximum capacity in 2018.

Table 2-10 | Community Facilities

Type	Facility Name	Address	Zip Code
Community and Fraternal Centers	VFW Post 5450 – Crestview	2240 W James Lee Boulevard	32536
	Lions Club – Crestview	605 W James Lee Boulevard	32536
	Harvest Life Church Youth Center	5978 Old Bethel Rd	32536
	Airport Road Church of Christ	2845 Airport Road	32539

Type	Facility Name	Address	Zip Code
Religious Centers	Auburn Pentecostal Church	6144 Hwy 85 N	32536
	Crestview Christian Church	5451 Old Bethel Rd	32536
	Glory Korean Baptist Church	108 Navajo Trace	32536
	House of Praise	217 Lakeview Dr	32536
	Joy Fellowship	5978 Old Bethel Rd	32536
	Lakewood Community Church	6250 Old Bethel Rd	32536
	Living Faith Southern Baptist	807 W James Lee Boulevard	32536
	New Bethel United Methodist	5986 Hwy 85 N	32536
	Victorious Life Worship Center	5973 Victorious Life Pl	32536
	Victory Tabernacle	179 Kit Dr	32536
	Westside Apostolic Church	5502 Old Bethel Rd	32536
	First Baptist Church Garden City	3140 Haskell Langley	32539
Schools	Davidson Middle School	6261 Old Bethel Rd	32536
	Crestview High School	1250 N Ferdon Boulevard	32536
	Bob Sikes Elementary School	425 Adams Dr	32536
	Lakewood Christian School	6250 Old Bethel Rd	32536
	Crossroads Christian School, Inc.	PO Box 295	32536
Cemeteries	Old Bethel Cemetery	Old Bethel Rd	32536
	Live Oak Cemetery	112 E North Ave	32536
Government Buildings	County Government Offices	5489 Old Bethel Rd	32536
Emergency Services	North Okaloosa Fire Department Station 81	3186 SR 85	32536

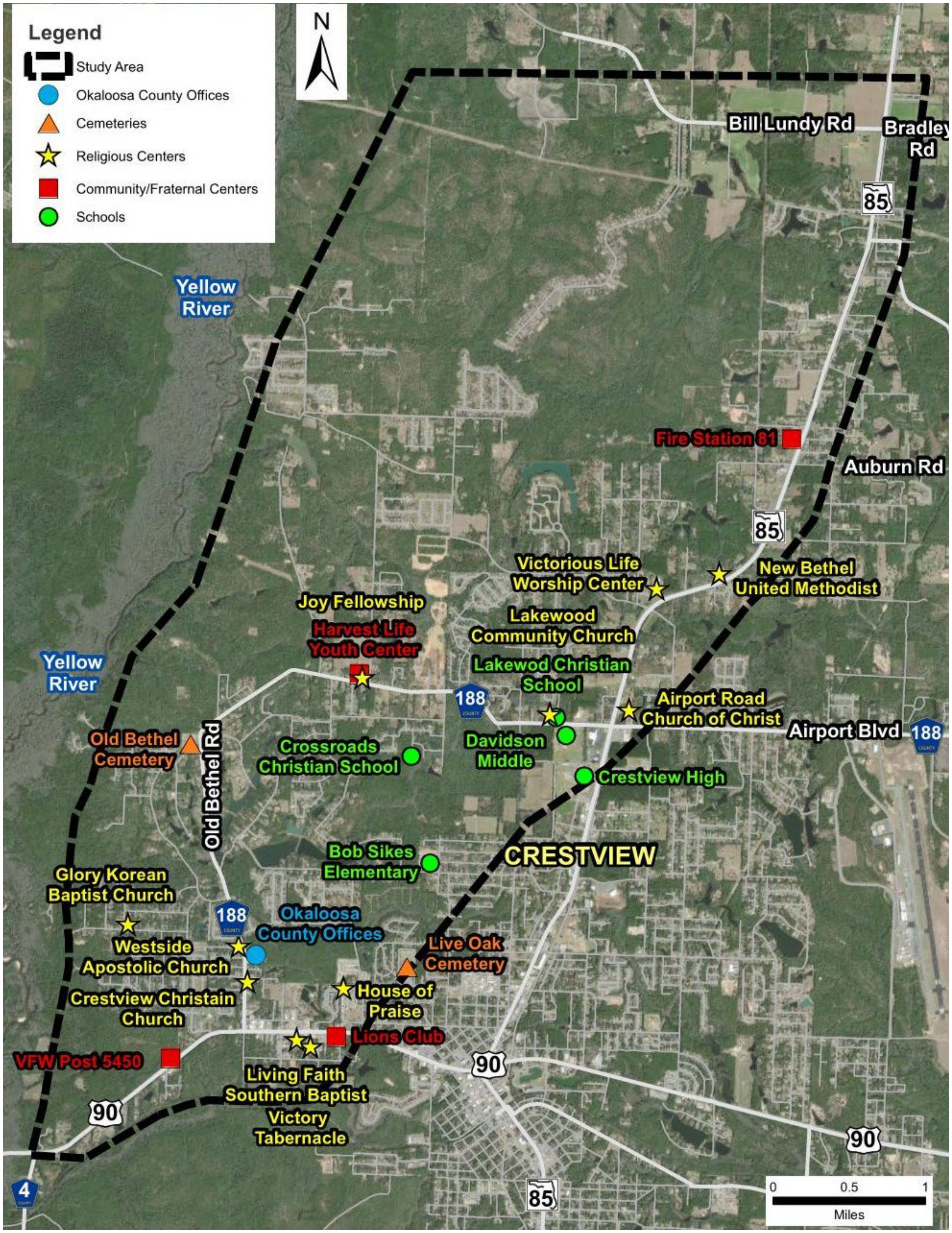


Figure 2-6 | Community Facilities

2.5.1.2 Land Use

The Water Management District (WMD) Florida Land Use and Land Cover Classification System (FLUCCS) identifies the predominant land uses in the study area as residential and upland forests, as is evident in **Figure 2-7**. **Table 2-11** identifies the various land uses in the study area. Of note, there is a large dirt pit north of CR 188 which is identified as barren land.

Table 2-11 | Existing Land Uses in the Study Area

Land Use Category	Acres	Percent
Agriculture	1214	6.5%
Barren Land	49	0.3%
Rangeland	547	2.9%
Transportation, Communication and Utilities	1182	6.3%
Upland Forests	8262	44%
Urban and Built-Up		
Residential	4734	25%
Other	599	3.2%
Water	302	1.6%
Wetlands	1913	10%

Source: NWFWMD, 2016

Future land use plans for Okaloosa County and the City of Crestview were reviewed and mapped (**Figure 2-8**). Future land use plans anticipate additional residential development in the study area where there are currently upland forests. Additionally, future land use plans show all agricultural uses in the study area being located adjacent to the Yellow River Wildlife Management Area (WMA).

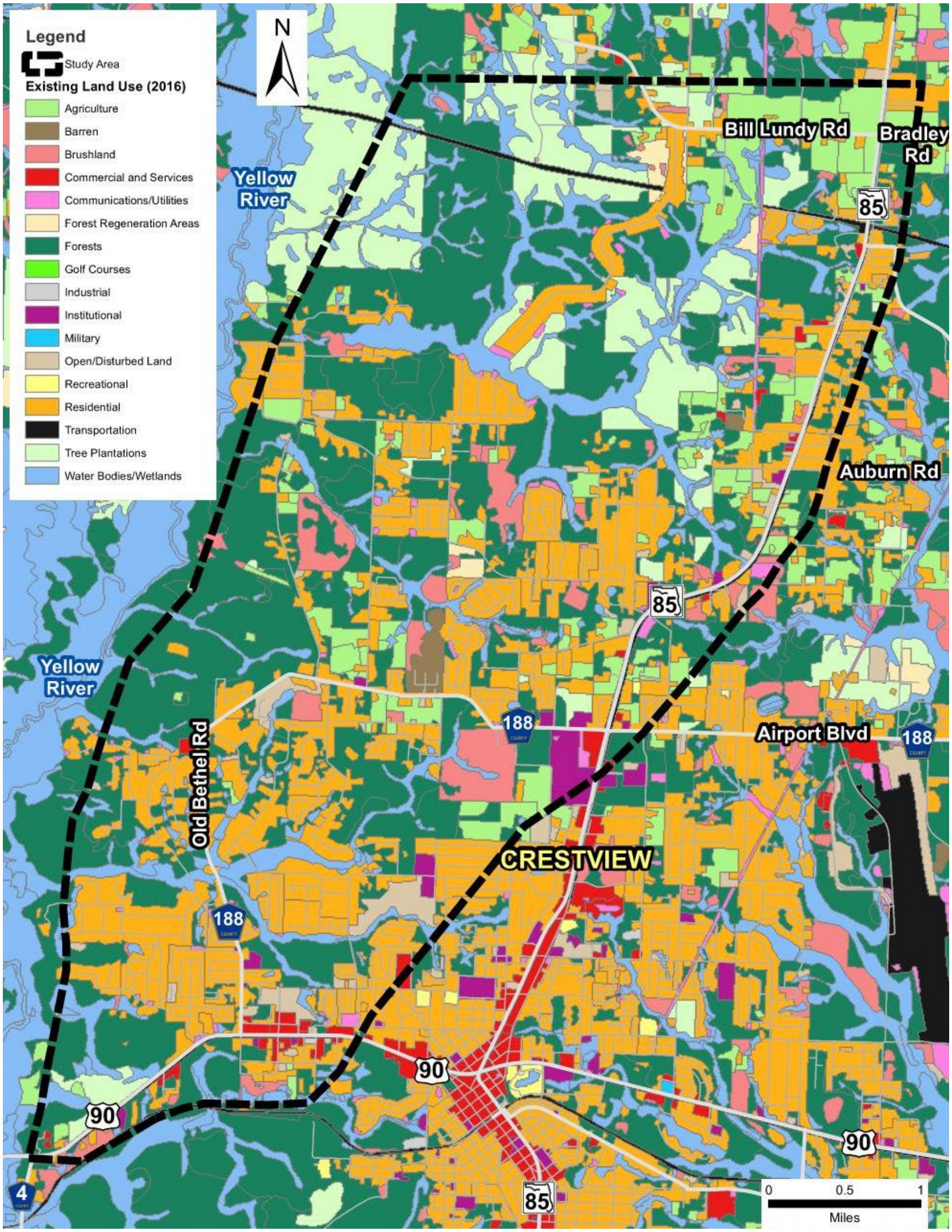


Figure 2-7 | Existing Land Uses

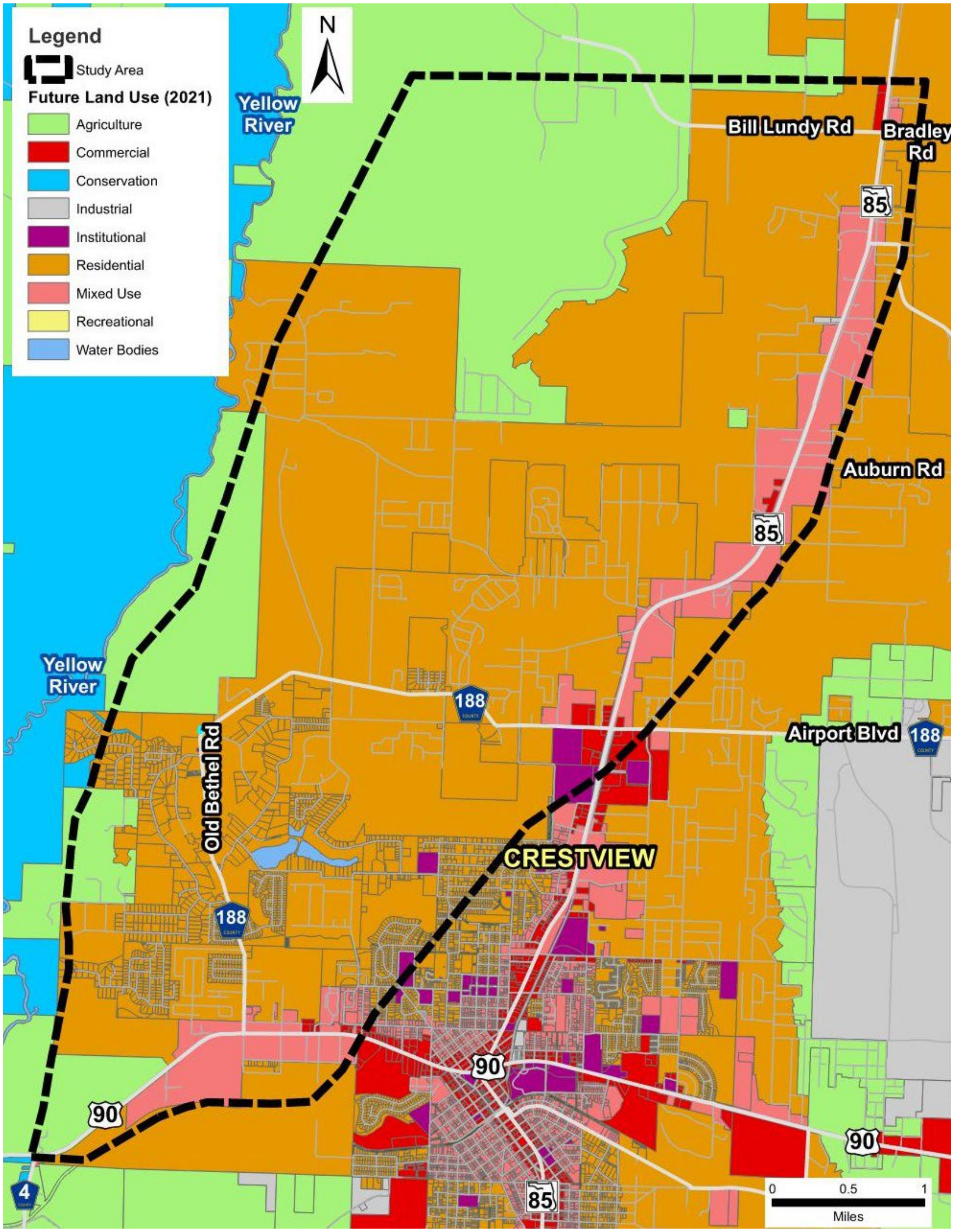


Figure 2-8 | Future Land Uses

2.5.1.3 Economic

Approximately 2.8 percent of the study area land use is classified as commercial and services, industrial or institutional. Most of these uses are along US 90 and SR 85. Within the study area, the largest employer is Okaloosa County School District. Within the County, major employers include the Eglin AFB, the school district, Fort Walton Beach Medical Center, Walmart, Publix and the County. Many Crestview residents, including those in the study area, commute to Eglin AFB and cities in southern Okaloosa County for work. The mean commute time for Census Tract 203.01 is 37 minutes and for Census Tract 205 is 28 minutes (ACS 2019 Five Year Estimates Table S0801).

New employment opportunities are expected in the Crestview area. The Shoal River Ranch is a 2,000+ acre industrial development site that is sponsored by Okaloosa County. The property is located west of the Shoal River and east of Crestview between I-10 and U.S. 90. The first phase of the Shoal River Ranch process includes the construction of a large warehouse expected to create 500 additional jobs. Additional phases have not been finalized. Over the course of the development of the property, several thousand jobs would be created from both the incoming business and construction activities, creating additional demand on the regional transportation network.

2.5.1.4 Farmland

Within the study area, the Natural Resources Conservation Service layers identified 1,279 acres (9.2 percent) of land designated as “all areas are prime farmland”, as well as 5,371 acres (38.5 percent) of land as “farmland of local importance”. The WMD prime farmland layer identified 843.4 acres (6.05 percent) of prime and local farmland currently being used for agriculture. **Figure 2-9** shows the prime farmlands and lands being used for agriculture according to the WMD FLUCCS.

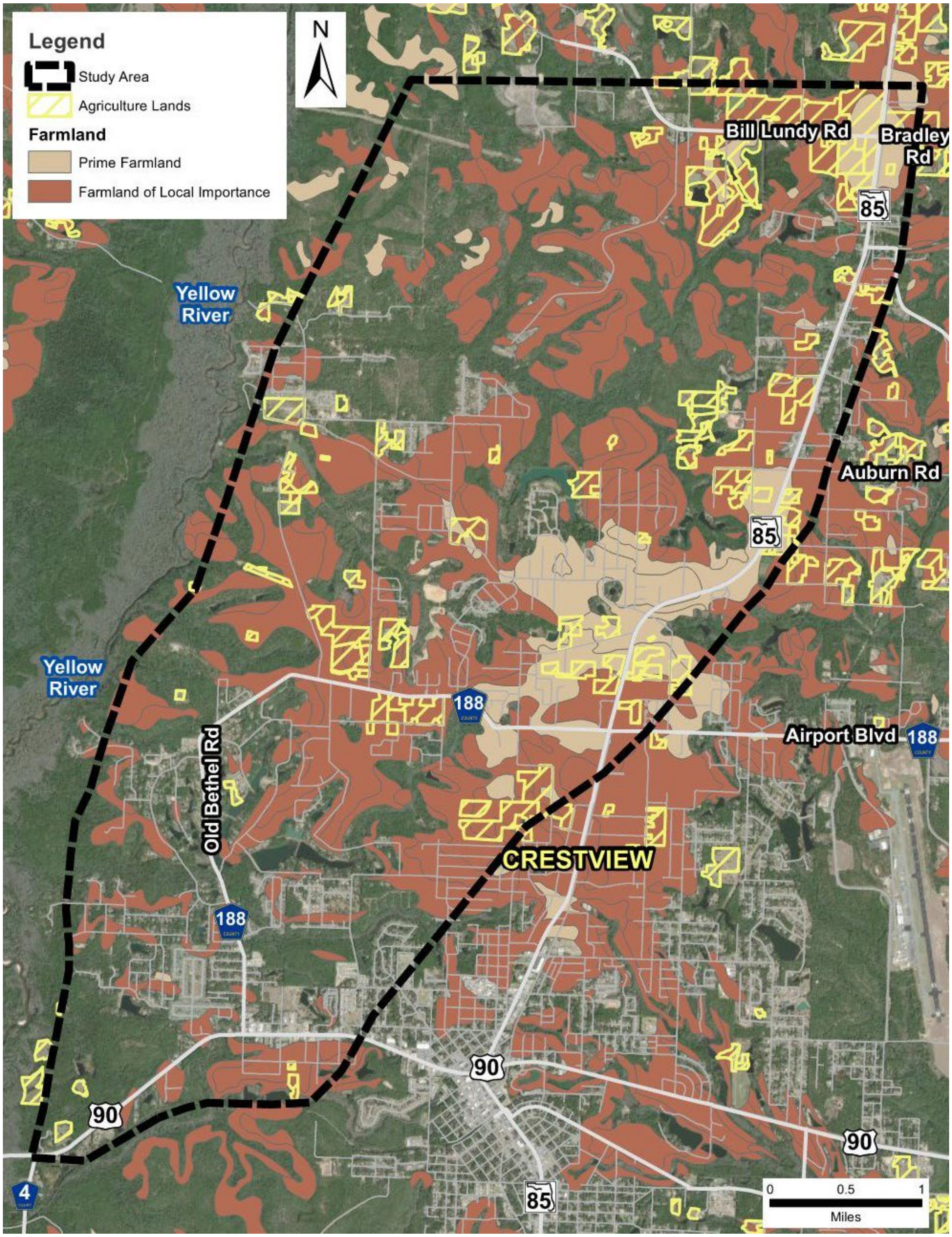


Figure 2-9 | Prime Farmland and Agricultural Land Use

2.5.2 Cultural Resources

Cultural resources include Historic and Archaeological resources and Recreation and Section 4(f) resources. No Section 6(f) Land and Water Conservation Fund lands have been identified in the study area.

2.5.2.1 Historic and Archaeological

Within the study area, there have been 26 field survey projects. Previously recorded sites within the study area include nine archaeological sites, one cemetery, and 11 historic standing structures, as listed in **Table 2-12**. None of the sites have been identified as eligible for listing in the National Register of Historic Places. Additionally, there are 171 structures built prior to 1980. A cultural resources survey will be conducted after alternative corridors are defined.

Table 2-12 | Previously Identified Cultural Resources in the Study Area

Site ID	Name	Type	Survey Evaluation	SHPO Evaluation
OK00077	Powell Springs	Artifact Scatter	Not Evaluated	Not Evaluated
OK02058	Country Estates 1	Terrestrial	Ineligible	Ineligible
OK00112	Silver Creek	Campsite (Prehistoric)	Not Evaluated	Not Evaluated
OK00132	E H & A Okaloosa 1	Terrestrial	Ineligible	Ineligible
OK00648	Site 4	Campsite (Prehistoric)	Ineligible	Not Evaluated
OK00649	Site 5	Campsite (Prehistoric)	Ineligible	Not Evaluated
OK00650	Site 6	Terrestrial	Ineligible	Ineligible
OK02156	Country Estates 2	Campsite (Prehistoric)	Ineligible	Ineligible
OK02173	Country Estates 3	Homestead	Ineligible	Ineligible
OK02825	Old Bethel Cemetery	Cemetery	Not Evaluated	Not Evaluated
OK00580	5902 Hwy 85 North	Structure	Ineligible	Ineligible
OK00581	SR 85 House #1	Structure	Ineligible	Ineligible
OK00582	NN	Structure	Ineligible	Ineligible
OK00592	SR 85 House #5	Structure	Ineligible	Ineligible
OK00736	2756 Lake Silver Rd	Structure	Ineligible	Not Evaluated
OK00737	2853 Airport Rd	Structure	Ineligible	Not Evaluated
OK00738	5966 Old Bethel Rd	Structure	Ineligible	Not Evaluated
OK00739	VFW Post 5450	Structure	Ineligible	Not Evaluated
OK00741	Garrison, Bill House	Structure	Ineligible	Not Evaluated
OK00742	US Hwy 90 E, RT 1 Box	Structure	Ineligible	Not Evaluated
OK00735	SR 85, RT 4 Box 65	Structure	Ineligible	Not Evaluated

2.5.2.2 Recreation and Section 4(f)

Recreational resources within the study area include trails, local parks, and managed lands as shown in **Figure 2-10**. These resources may be protected under Section 4(f) of the U.S. Department of Transportation Act of 1966. Determinations of applicability will be prepared once alternatives are developed.

The US 90 Connector is the only existing trail in the study area. The US 90 Connector is part of the Florida National Scenic Trail designated by the National Trails System Act of 1968 (Public Law 90-543) and supported by Florida Statute 260.012(6). It connects to the Eglin AFB to Hwy 90 Trail Connector at SR 85. US 90 within the study area is also identified by the Florida Department of Environmental Protection (FDEP) Office of Greenways and Trails as a multi-use trail priority and a land trail opportunity, and is a Shared-Use Nonmotorized Trail unfunded gap.

The FDEP Office of Greenways and Trails also identifies the Crestview to Florala Corridor as a multi-use trail opportunity in the study area. The proposed Crestview to Florala Corridor begins at US 90 and CR 188 and travels northeast toward the intersection of SR 85 and CR 188 and then continues north on SR 85.

Local parks within the study area include Cleo Park, Crestview Housing Authority Park, and Lake Silver Crestview. Cleo Park is a neighborhood park with a playground and pavilion located in the Lee Farms community. Crestview Housing Authority Park is a playground area located off Edgewater Drive. Lake Silver Crestview is a nature park with water access located off of Lakeview Drive.

The Yellow River WMA is located near the western boundary of the study area. The Yellow River WMA is managed by the Florida Fish and Wildlife Conservation Commission (FWC) in cooperation with the NWFWMD and the Florida Forest Service. The Yellow River WMA covers more than 28,000 acres between Milton and Crestview in Santa Rosa and Okaloosa Counties. The area runs for 20 miles along the Yellow River. A wide variety of natural communities which support various species are found on the area including sandhill, upland pine forests, slope forests, wet prairie and floodplain forests. Recreational activities include hunting, fishing, boating, canoeing, primitive camping and wildlife viewing. Camping is permitted throughout the area. Numerous boat landings along the Yellow River provide access to the area. Vehicular access is limited but is available on River Road located north of Milligan and Trawick Creek Road near Holt (Okaloosa County), and Ward Basin Road (Santa Rosa County).

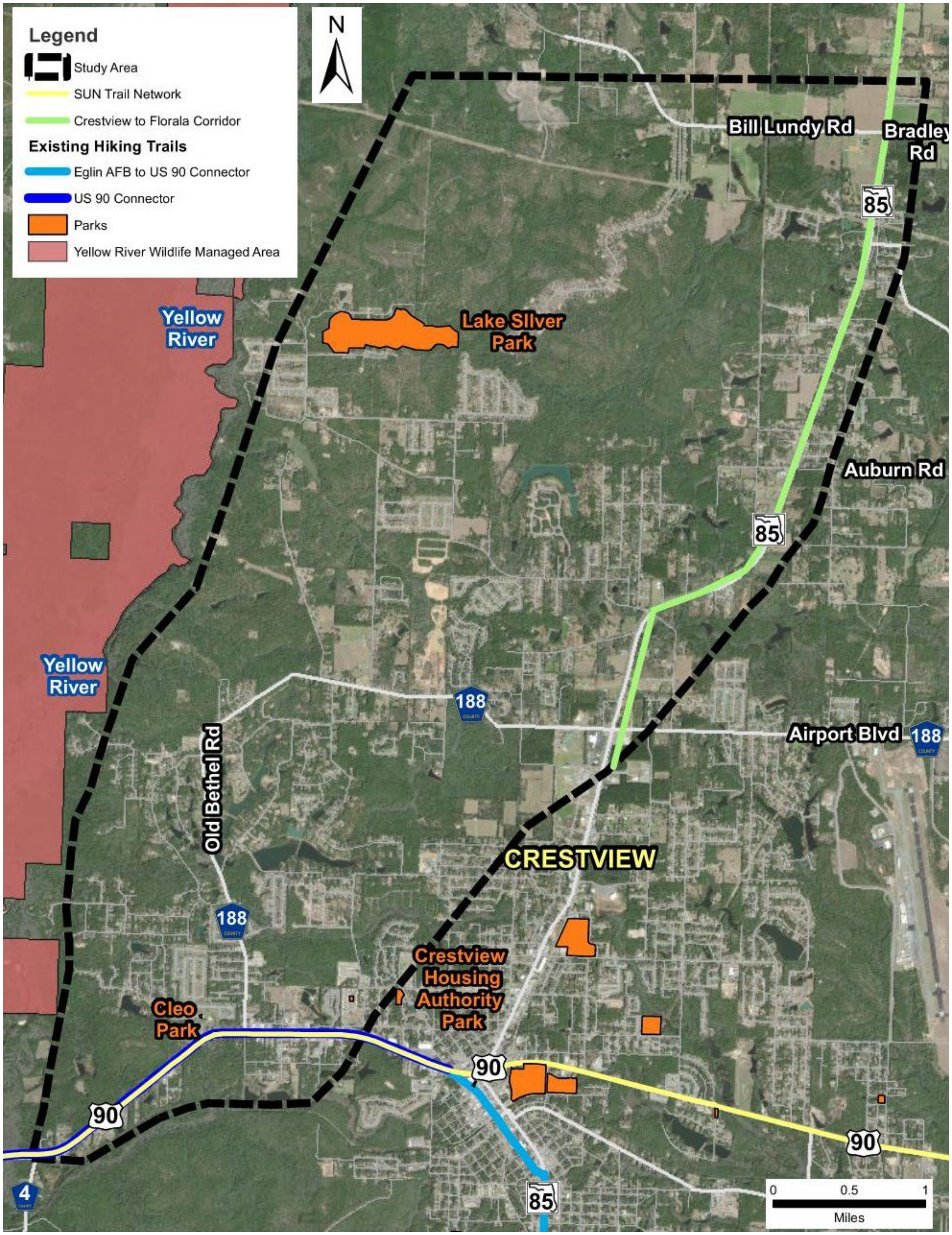


Figure 2-10 | Recreation Areas

2.5.3 Natural Resources

Natural resources not present in the project area were omitted from this section including the following: aquatic preserves, coastal barrier resources, essential fish habitat, Outstanding Florida Waters, and wild and scenic rivers.

2.5.3.1 Protected Species and Habitats

Based on the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) Resource Trust List and Florida Natural Areas Inventory Biodiversity Matrix, **Table 2-13** lists protected species with potential to occur in the study area and their status under the Federal Endangered Species Act and the State of Florida. Note that IPaC lists four sea turtles; however, these were removed from the table due to lack of habitat in the study area.

Table 2-13 | Protected Species

Common Name	Scientific Name	Federal Listing Status	State Listing Status
Fishes			
Atlantic Sturgeon (Gulf subspecies)	*Acipenser oxyrinchus*	Threatened	-
Okaloosa Darter	*Etheostoma okaloosae*	Threatened	-
Blackmouth Shiner	*Notropis melanostonous*	-	Threatened
Bluenose Shiner	*Pteronotropis welaka*	-	Species of Special Concern
Clams			
Choctaw Bean	*Villosa choctawensis*	Endangered	-
Fuzzy Pigtoe	*Pleurobema strodeanum*	Threatened	-
Narrow Pigtoe	*Fusconaia escambia*	Threatened	-
Southern Sandshell	*Hamiota australis*	Threatened	-
Lichens			
Florida Perforate Cladonia	*Cladonia perforata*	Endangered	-
Mammals			
Choctawhatchee Beach Mouse	*Peromyscus polionotus allophrys*	Endangered	-
West Indian Manatee	*Trichechus manatus*	Threatened	-
Eastern Chipmunk	*Tamias striatus*	-	Species of Special Concern
Birds			
Piping Plover	*Charadrius melodus*	Threatened	-
Red Knot	*Calidris canutus rufa*	Threatened	-
Red-cockaded Woodpecker	*Picoides borealis*	Endangered	-
Wood Stork	*Mycteria Americana*	Threatened	-
Reptiles			
Eastern Indigo Snake	*Drymarchon corais couperi*	Threatened	-
Gopher Tortoise	*Gopherus Polyphemus*	Candidate	Threatened
Alligator Snapping Turtle	*Macrocheyls temminckii*	-	Species of Special Concern
Florida Pine Snake	*Pituophis melanoleucus mugitus*	-	Species of Special Concern
Amphibians			

Common Name	Scientific Name	Federal Listing Status	State Listing Status
Reticulated Flatwoods Salamander	*Ambystoma bishop*	Endangered	-
Gopher Frog	*Lithobates capito*	-	Species of Special Concern
Plants			
Arkansas Oak	Quercus arkansana	-	Threatened
Ashe’s Magnolia	Magnolia ashei	-	Endangered
Baltzell’s Sedge	Carex baltzellii	-	Threatened
Bog Button	Lachnocaulon digynum	-	Threatened
Dwarf Witch-alder	Fothergilla gardenia	-	Endangered
Florida Flame Azalea	Rhododendron austrinum	-	Endangered
Hairy Wild Indigo	Baptisia calycosa var. villosa	-	Threatened
Hairy-penduncled Beaksedge	Rhynchospora crinipes	-	Endangered
Harper’s Yellow-eyed Grass	Xyris scabrifolia	-	Threatened
Hummingbird Flower	Macranthera flammea	-	Endangered
Naked-stemmed Panicgrass	Panicum nudicaule	-	Threatened
Pandhandle Meadowbeauty	Rhexia salicifolia	-	Threatened
Panhandle Lily	Lilium iridollae	-	Endangered
Pineland Hoary-pea	Tephrosia mohrii	-	Threatened
Pine-woods Bluestern	Andropogon arctatus	-	Threatened
Primrose-flowered Butterwort	Pinguicula primuliflora	-	Endangered
Small-flowered Meadowbeauty	Rhexia parviflora	-	Endangered
Toothed Savory	Calamintha dentata	-	Threatened
White-top Pitcherplant	Sarracenia leucophylla	-	Endangered
Yellow Fringeless Orchid	Platanthera integra	-	Endangered

The FWC Potential Habitat Richness database ranks 88.51 acres (0.6 percent) of the study area as high quality habitat and 1,454 acres (10.4 percent) as moderately high quality habitat. The entire study area is within USFWS-designated Consultation Area for red-cockaded woodpecker and is within Florida black bear range. The Yellow River provides critical habitat for the Atlantic sturgeon and five clams including the Choctaw bean, fuzzy pigtoe, narrow pigtoe, southern sandshell, and tapered pigtoe.

The project does not occur within the core foraging areas of any wood stork nesting colonies, and there are no documented eagle nests within 1,000 feet of the study area.

2.5.3.2 Wetlands and Other Surface Waters

The National Wetlands Inventory (NWI) dataset identified 695.09 acres (4.93 percent) of palustrine wetlands, 59.62 acres (0.43 percent) of lacustrine wetlands, and 48.01 acres (0.26 percent) of riverine wetlands within the study area. The WMD identified 1,316 acres of wetlands (9.5 percent of the study area). The WMD FLUCCS breaks down the wetland type further as shown in **Table 2-14**. **Figure 2-11** shows the locations of NWI wetlands.

Table 2-14 | WMD Wetlands

Classification	Acres	Percent
Mixed Wetland Hardwoods	72.53	0.52
Gum Swamps	0.75	0.01
Cypress	10.39	0.08
Hydric Pine Flatwoods	784.89	5.67
Wetland Forested Mixed	316.01	2.28
Wet Prairies	11.6	0.07
Freshwater Marshes	7.24	0.05
Treeless Hydric Savanna	111.91	0.8
Intermittent Ponds	0.8	0.01

The state regulatory jurisdiction of this project is the NWFWMD. The project area is not within an existing wetland mitigation bank service area.

Other surface waters in the study area include the Yellow River; fourteen creeks: Bends Creek, Black Branch, Carr Branch, Davis Mill Creek, Gully Branch, Jack Branch, Mathison Creek, Powell Spring Branch, Pump Branch, Red Wash Branch, Silver Creek, Tidwell Mill Creek, Trammel Creek, and an unnamed stream; and three small lakes: A J Kennedy Pond One, Lake Kennedy, and one unnamed lake.

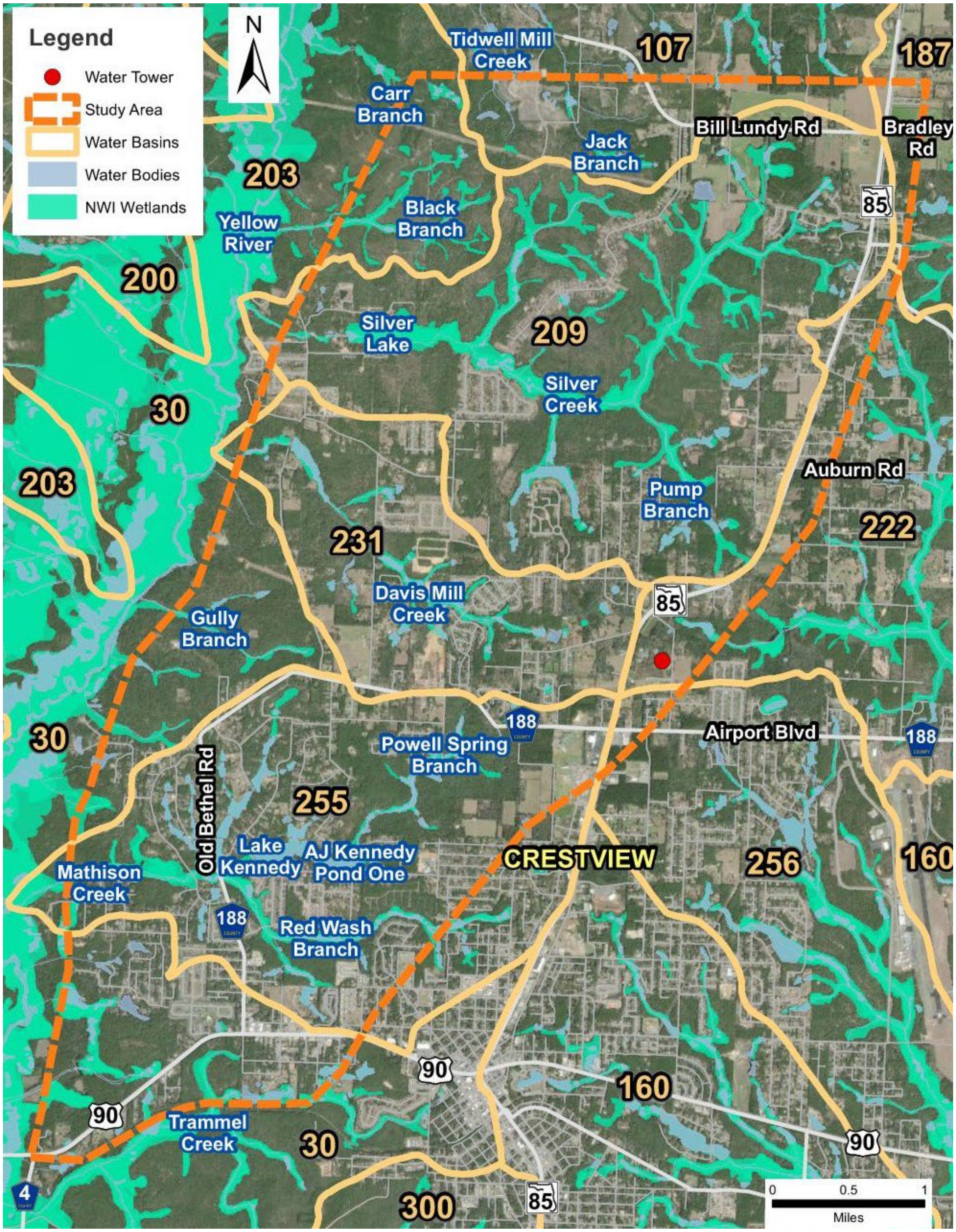


Figure 2-11 | Natural Resources

2.5.3.3 Water Resources

The study area is within one major watershed, the Pensacola Bay System, and nine water basin IDs (WBIDs): 30G (Trammel Creek), 255 (Mathison Creek), 256 (Piney Woods Creek), 209 (Silver Creek), 222 (Bends Creek), 231 (Davis Mills Creek), 30 (Yellow River), 187 (Rum Still Branch), and 107 (Murder Creek) as shown in **Figure 2-11**. The Yellow River [WBID 30] does not attain standards for fecal coliform has state-adopted and U.S. Environmental Protection Agency (EPA) approved Total Maximum Daily Loads.

In addition to the Yellow River, there are fourteen flowing water resources in the study area: Bends Creek, Black Branch, Carr Branch, Davis Mill Creek, Gully Branch, Jack Branch, Mathison Creek, Powell Spring Branch, Pump Branch, Red Wash Branch, Silver Creek, Tidwell Mill Creek, Trammel Creek, and an unnamed stream. There are also three small lakes, A J Kennedy Pond One, Lake Kennedy and one unnamed lake.

The project is underlain by the Floridan Aquifer System. Over 80 percent of the study area recharges the aquifer by less than one percent.

There is one water tower, Mid-County Tank Number 4, in the study area located at 5890 Houston Lane.

2.5.4 Physical

The following resources are discussed in this section: Highway Traffic Noise, Air Quality, and Contamination. Infrastructure is included in the Existing Roadway Characteristics and Existing Structures Sections. Navigation is not discussed because the AOI analysis identified no potential navigable waterways.

2.5.4.1 Highway Traffic Noise

Federal Highway Administration Noise Abatement Criteria categorizes land uses into activity categories that have similar sensitivity levels. The study area consists primarily of residential land uses (Activity Category B) which are noise sensitive. Other potential noise sensitive uses in the study area include recreation, as discussed in Section 2.5.2.2, and commercial uses with outdoor areas. The corridor also includes vacant land that may be developed as noise-sensitive land uses.

2.5.4.2 Air Quality

The proposed project is in Okaloosa County which is currently designated as being in attainment for all Clean Air Act National Ambient Air Quality Standards.

2.5.4.3 Contamination

The AOI analysis identified the following potentially contaminated sites within the study area: eight Petroleum Contamination Monitoring Sites, 10 Hazardous Waste Facilities, 1,974 Onsite Sewage Systems, 17 Storage Tank Contamination Monitoring sites, eight Super Act Risk Sources, five Super Act

Wells, 63 EPA National Pollutant Discharge Elimination System site, 12 EPA Resource Conservation and Recovery Act Regulated Facilities, one Waste Cleanup Responsible Party Sites – Closed, and seven Solid Waste Facilities. Most sites are located along US 90 and SR 85 near CR 188. Individual sites will be reviewed and provided Contamination Risk Ratings after alternative corridors are developed.

3.0 References

Council on Environmental Quality, *Environmental Justice Guidance under NEPA*. 1997.

City of Crestview, *Comprehensive Plan: 2020*. October 24, 2016.

FDEP, *Final TMBL Report: Fecal Coliform TMDL for Yellow River (WBID 30)*. September 2012.

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FDOT, *SR 85 Eastern Crestview Bypass Feasibility Study*. July 2019.

FEMA, https://msc.fema.gov/portal. 2020.

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Okaloosa County

NORTHWEST CRESTVIEW BYPASS

Appendix B | Traffic Analysis Report and Methodology Memorandum

Alternative Corridor Evaluation

Traffic Analysis Report

October 2021

CONTENTS

FIGURES

TABLES

APPENDICES

1.0 Introduction

The purpose of this report is to document the existing and future traffic and crash analysis conducted for the Northwest Crestview Bypass Alternative Corridor Evaluation (ACE).

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85 as well as alternative new corridors. The general area for the Northwest Crestview Bypass is depicted in Figure 1.

The purpose of the Northwest Crestview Bypass project is to provide regional system connectivity and improve mobility through and around the City of Crestview by providing an alternative to SR 85 and completing the Western Crestview Bypass around the City of Crestview. Additional goals for the project are to address safety and hurricane evacuation and support anticipated growth in Okaloosa County.

This project is being developed by Okaloosa County as the Lead Agency, in partnership with the Florida Department of Transportation (FDOT) District 3.

Traffic will be evaluated in two phases. The ACE traffic analysis (Phase I) will include a high-level traffic analysis to support evaluation of six (6) alternative corridors. Phase II will include a detailed traffic analysis of the selected corridor and preparation of a Project Traffic Analysis Report (PTAR). This report serves to document the ACE traffic analysis (Phase I).

1.1 Background

The Crestview Bypass was first evaluated in a Feasibility Study completed in 2004. The Okaloosa-Walton Transportation Planning Organization (O-W TPO) 2035 Needs Plan included an Eastern and Western Crestview Bypass. FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019; the project concluded that while the project was not recommended based on the findings, a more detailed analysis of the Eastern Crestview Bypass could be completed in the future if other area projects did not address regional traffic concerns.

The Southwest Crestview Bypass project, currently underway, will traverse around Crestview to the southwest beginning at Wild Horse Drive and P.J. Adams Parkway and ending at US 90 and Old Bethel Road (CR 188).

In addition to the Bypass projects, there are other ongoing projects in the area. An overview of regional projects is shown in Figure 2.

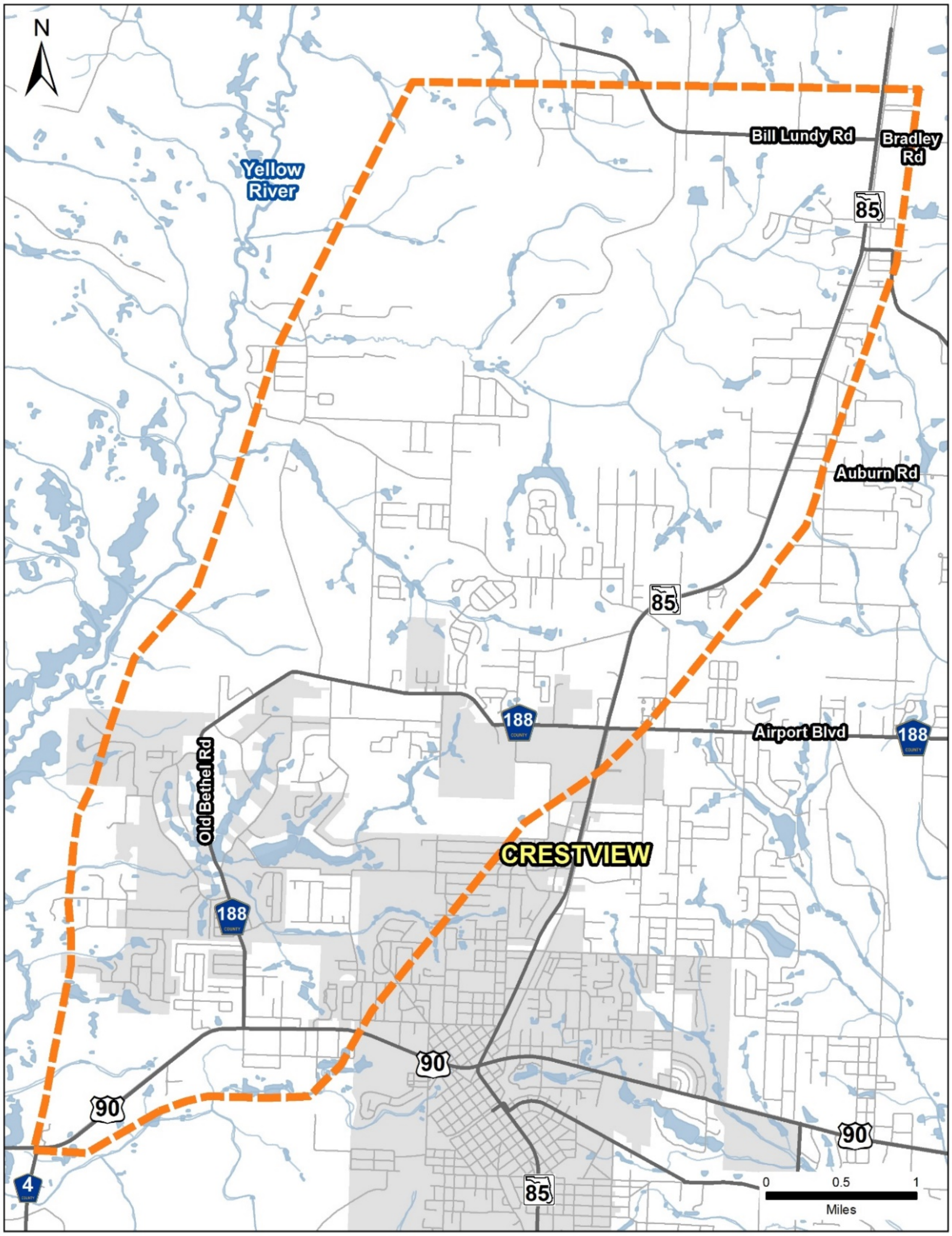


Figure 1 | Northwest Crestview Bypass ACE Study Area

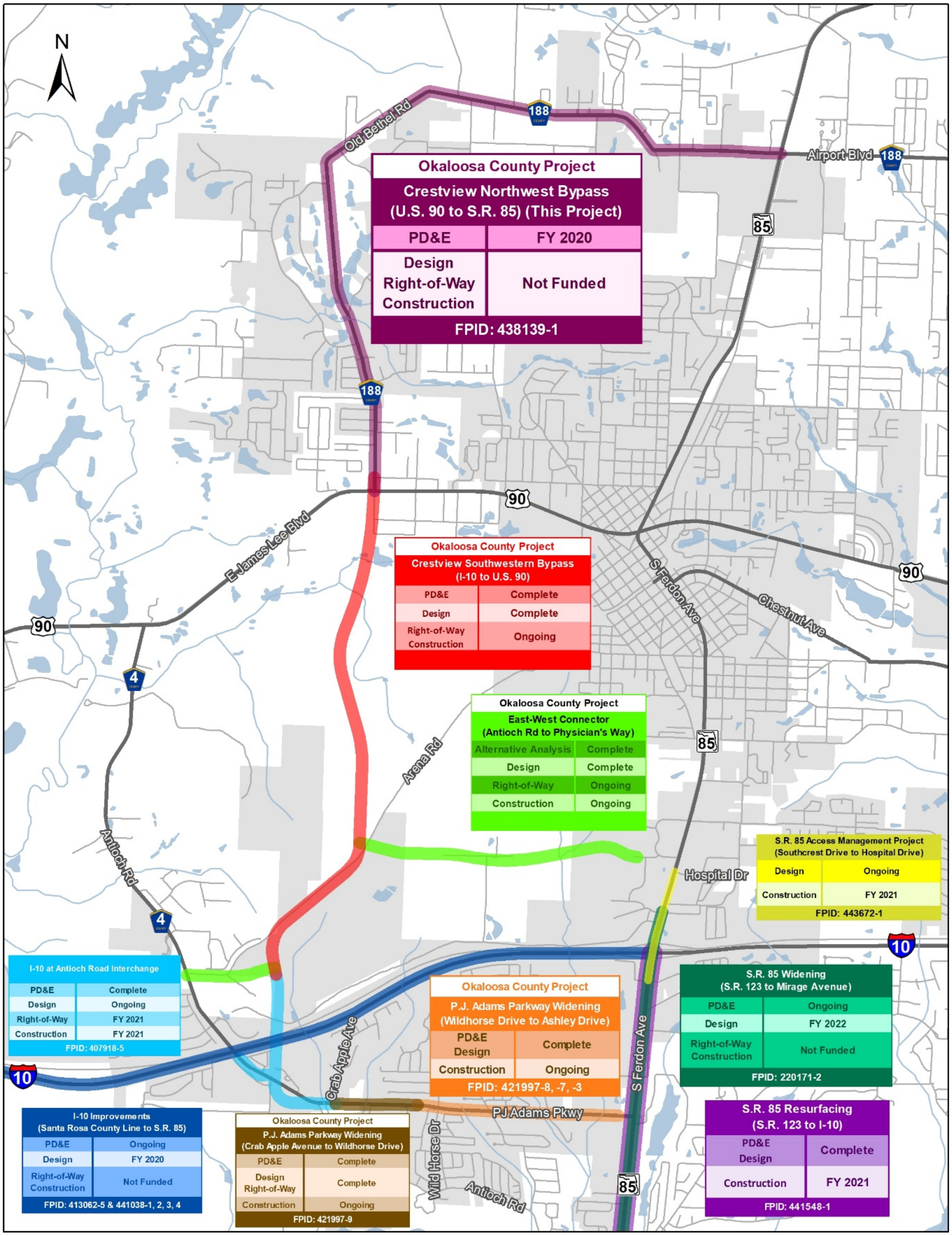


Figure 2 | Overview of Regional Projects

2.0 Traffic Analysis

2.1 Approach

The traffic analysis was conducted to support the evaluation of six (6) alternative corridors for the Northwest Crestview Bypass. The objective of this analysis is to determine the traffic operational and safety performance of each corridor. The traffic analysis was performed consistent with the FDOT 2020 PD&E Manual, 2019 Project Traffic Forecasting Handbook, and 2014 Traffic Analysis Handbook guidelines.

2.2 Methodology

The methodology for the traffic analysis was conducted consistent with the ACE Traffic Methodology Memorandum provided in **Appendix A**.

2.2.1 Analysis Roadways

Roadway segment level traffic operational assessments were conducted for the Northwest Crestview Bypass alternatives and for the following study area roadways:

- Old Bethel Road – from US 90 to SR 85
- Bill Lundy Road – from west of SR 85 to east of SR 85
- SR 85 – from south of Live Oak Church Road / Antioch Road to north of Bill Lundy Road
- US 90 – from west of Old Bethel Road to east of Eastern Crestview Bypass
- Antioch Road – from PJ Adams Parkway to US 90
- PJ Adams Parkway – from Antioch Road to SR 85
- I-10 – from west of Antioch Road to east of SR 85

2.2.2 Analysis Years

The ACE traffic analysis was conducted for Opening Year 2035, and Design Year 2055.

2.2.3 Analysis Method

Traffic forecasting was conducted to develop the design year and opening year Annual Average Daily Traffic (AADT) volumes for the Northwest Crestview Bypass alternatives. The projected AADT volumes for the alternative corridors was used to estimate roadway level of service (LOS). Planning level traffic LOS analysis was conducted for Northwest Crestview Bypass alternative corridors and study area roadways using the FDOT Generalized Service Volume Tables (GSVT).

2.2.4 Project Traffic Forecasting

As detailed in the ACE Traffic Forecasting Memorandum (**Appendix B**), the Northwest Florida Regional Planning Model (NWFRPM) subarea model validation based on the existing year 2019 traffic conditions was conducted to develop the future year forecasting model for the Crestview Bypass alternative corridors traffic projections.

A subarea model validation was performed which consisted of creating a 2019 scenario for the model and then validating that scenario against FDOT 2019 AADT counts and 2019 StreetLight Origin-Destination trips within Okaloosa County. The focus of the validation was on Okaloosa County and while the 2019 scenario covers the entire region, the detailed validation work was mostly done within the Okaloosa County area of the model. The model was revised to better reflect socioeconomic data and TAZ adjustments were made. Funded background improvements were also incorporated into the model's 2045 Existing + Committed network.

The future year model development and evaluation was conducted for no build conditions and six alternative corridors. In order to obtain forecasts for future years 2035 and 2055, demographic model inputs for these years were created by interpolation between the 2019 and 2045 demographic inputs for 2035 and extrapolation for 2055. In total, 26 alternative scenarios were run using NWFRPM within the Cube modeling software. The future projected Opening Year 2035 and Design Year 2055 AADTs were obtained from the NWFRPM output. Volumes were estimated along the alternative corridors as well as the surrounding roadway network by utilizing growth rates derived from model results.

2.2.5 Data Collection

Year 2019 socio-economic and traffic data was obtained from the following sources to perform the existing year 2019 NWFRPM subarea validation.

- Northwest Florida Regional Planning Model (NWFRPM) version 3.1
- American Community Survey (ACS) 5-Year Population by block group for 2015 and 2019
- U.S. Bureau of Labor Statistics (BLS) Employment from the Quarterly Census of Employment and Wages (QCEW) for 2015 and 2019.
- FDOT 2019 AADT counts
- 2019 StreetLight Origin-Destination trips within Okaloosa County
- Review of Previous Studies and Comprehensive/Long Range Plans

2.2.6 Planned Improvements

As previously discussed, there are several projects near the study area which are shown in Figure 2. The projects were reviewed to include committed projects in No Build conditions.

2.2.7 Project Alternative Corridors Analysis

Six alternative corridors were identified for the Northwest Crestview Bypass. The alternative corridors are depicted in Figure 3 and described below.

- Alternative 1: New alignment from the intersection of Enzor Road and Cayson Avenue bearing northwest to the boundary of the Yellow River Wildlife Management Area and then north and east to the intersection of SR 85 and Auburn Road.
- Alternative 2: Capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85.
- Alternative 3: Capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and new alignment north and east to the intersection of Auburn Road and SR 85.
- Alternative 4: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Auburn Road and SR 85.
- Alternative 5: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Bill Lundy Road and SR 85.
- Alternative 6: Follow US 90 from the intersection of Old Bethel Road and US 90 to the intersection of US 90 and Cayson Avenue, then north and east on new alignment to the intersection of Old Bethel Road and SR 85.

In addition to the funded projects described in Figure 2, an Eastern Crestview Bypass was coded into the network for use in testing its impact on Northwest Crestview Bypass traffic. The Eastern Crestview Bypass was assumed to start near the Shoal River Bridge south of Crestview, then curve northwest towards I-10 and crosses US 90, then curve northwest to toward SR 85 and terminate near the intersection of SR 85 and either Airport Road, Auburn Road, or Billy Lundy Road depending on the Northwest Crestview Bypass alternative corridor being considered.

The future year model development and evaluation of six alternative corridors were conducted for 26 scenarios, as listed below:

- Opening Year No Build
- Opening Year Build with the Northwest Crestview Bypasses (for 6 corridors)
- Opening Year Build with the Northwest + Eastern Crestview Bypasses (for 6 corridors)
- Design Year No Build
- Design Year Build with the Northwest Crestview Bypasses (for 6 corridors)
- Design Year Build with the Northwest + Eastern Crestview Bypasses (for 6 corridors)

2.2.8 Performance Measures of Effectiveness (MOEs)

The projected Opening Year and Design Year AADT, the LOS estimated using the GSVT, and the volume to maximum service volume ratios (v/MSV) were used as the performance measures of effectiveness (MOEs) to compare the alternative corridors. The MOE's comparison were conducted for the study area roadways.

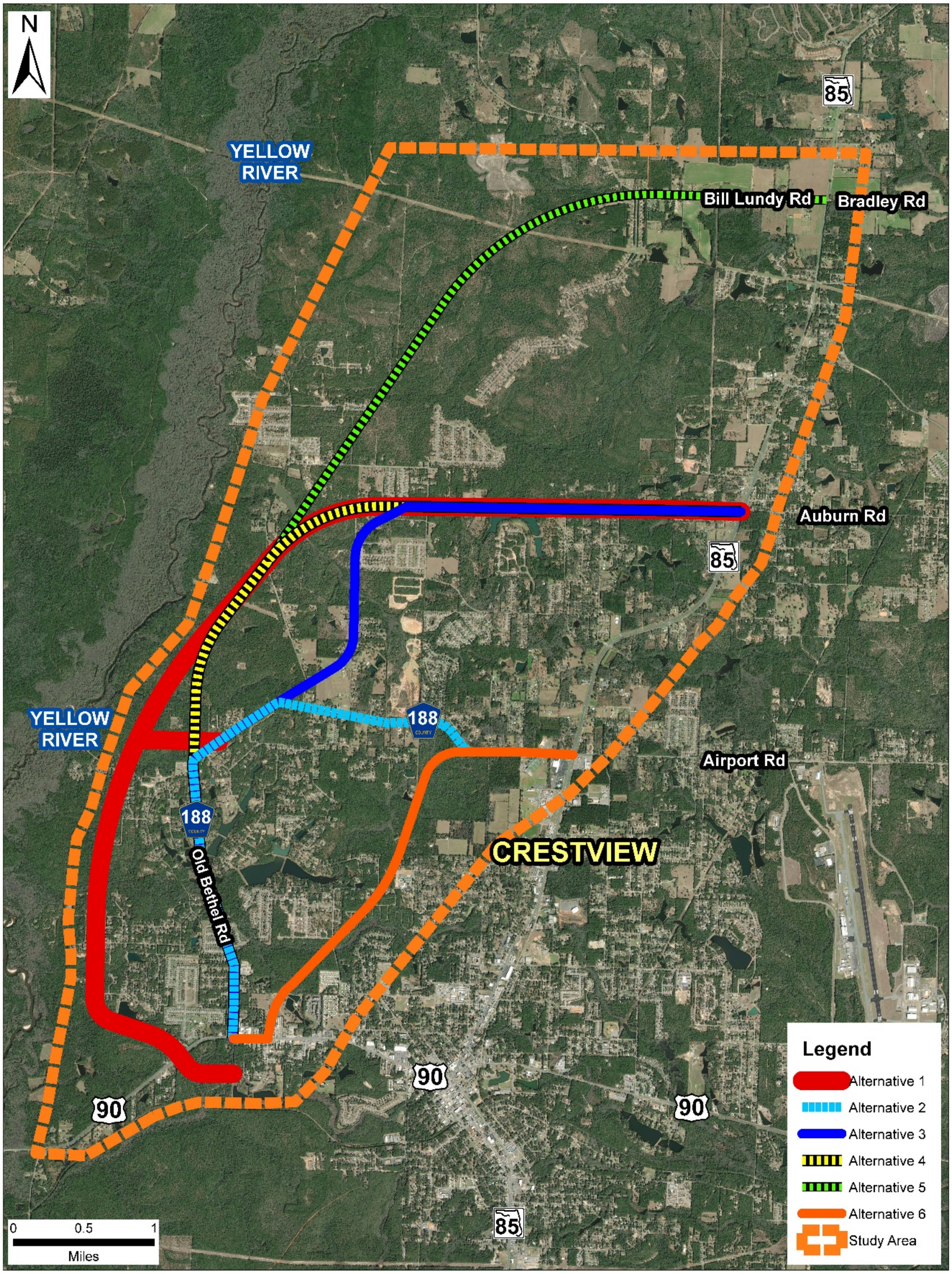


Figure 3 | Northwest Crestview Bypass Alternative Corridors

2.3 Future Traffic Forecasts

Existing 2019 AADT data was obtained from FDOT's Florida Traffic Online (Figure 4). The future projected Opening Year 2035 and Design Year 2055 AADTs were obtained by applying a linear growth rate derived from the model output and applied to existing 2019 volumes. This methodology was utilized to account for future changes in travel patterns due to background improvements such as the new Southwestern Crestview Bypass, Antioch Road interchange, East-West Connector, etc.

2.3.1 Year 2035 – No Eastern Crestview Bypass

Table 1 and Figure 5 show a comparison of the Opening Year 2035 AADTs for all Alternative Corridors for the scenario not including the Eastern Crestview Bypass. Under this scenario, the Northwest Crestview Bypass would operate with AADTs between 11,000 and 25,000 with the highest traffic volumes shown for Alternatives 2 and 6. Old Bethel Road would experience a significant increase in traffic volumes, particularly for Alternative 2 (increase of 13,500). Compared to the No-Build under this scenario the traffic volumes along SR 85 show a reduction with the alternatives in place, with the most reduction shown for Alternative 6 (decrease of 7,500 north of US 90). A traffic volume reduction is also shown on US 90 between Old Bethel Road and SR 85, the highest reduction shown for Alternative 6 (decrease of 7,000) followed by Alternative 2 (decrease of 5,000).

2.3.2 Year 2035 - With Eastern Crestview Bypass

The AADTs for Opening Year 2035 including the Eastern Crestview Bypass are presented in Table 2. Figure 6 shows the comparison between alternative corridors for each roadway segment. Under this scenario, the Northwest Crestview Bypass would operate with AADTs between 10,000 and 23,000, slightly lower than the alternative without the Eastern Crestview Bypass. Similar to the scenario without the Eastern Crestview Bypass, the highest traffic volumes along the Bypass are shown for Alternatives 2 (AADT of 22,000) and 6 (AADT of 23,000). Traffic volumes along SR 85 are generally reduced with all alternatives with similar volumes compared to the scenario without the Eastern Crestview Bypass. A traffic volume reduction is also shown on US 90 between Old Bethel Road and SR 85, the highest reduction shown for Alternative 6 (decrease of 8,000) followed by Alternative 2 (decrease of 6,000).

2.3.3 Year 2055 - No Eastern Crestview Bypass

Table 3 and Figure 7 show the Design Year 2055 AADTs for the scenario not including the Eastern Crestview Bypass. The Northwest Crestview Bypass would operate with AADTs between 12,000 and 27,000 with the highest traffic volumes shown for Alternatives 2 (AADT of 26,000) and 6 (AADT of 26,500). Similar to 2035, the traffic volumes are reduced along SR 85 and US 90 west of SR 85 with all alternatives. The largest reduction on SR 85 north of US 90 is shown for Alternative 6 (decrease of 6,000) followed by Alternative 2 (decrease of 5,000). The largest reduction on US 90 west of SR 85 is shown for Alternative 6 (decrease of 6,500) followed by Alternative 2 (decrease of 4,000).

2.3.4 Year 2055 - With Eastern Crestview Bypass

The AADTs for Design Year 2055 including the Eastern Crestview Bypass are presented in Table 4. Figure 8 shows the comparison between alternative corridors. Under this scenario, the Northwest Crestview Bypass would operate with AADTs between 11,000 and 26,000 with the highest traffic volumes for Alternatives 2 (AADT of 25,000) and 6 (AADT of 26,000). Similar to other scenarios, the traffic volumes are reduced along SR 85 and US 90 west of SR 85 with all alternatives in place. The largest reduction on SR 85 north of US 90 is shown for Alternative 6 (decrease of 6,500) followed by Alternative 2 (decrease of 5,500). The largest reduction on US 90 west of SR 85 is shown for Alternative 6 (decrease of 7,000) followed by Alternative 2 (decrease of 5,000).

Figure 4 - Existing 2019 AADTs

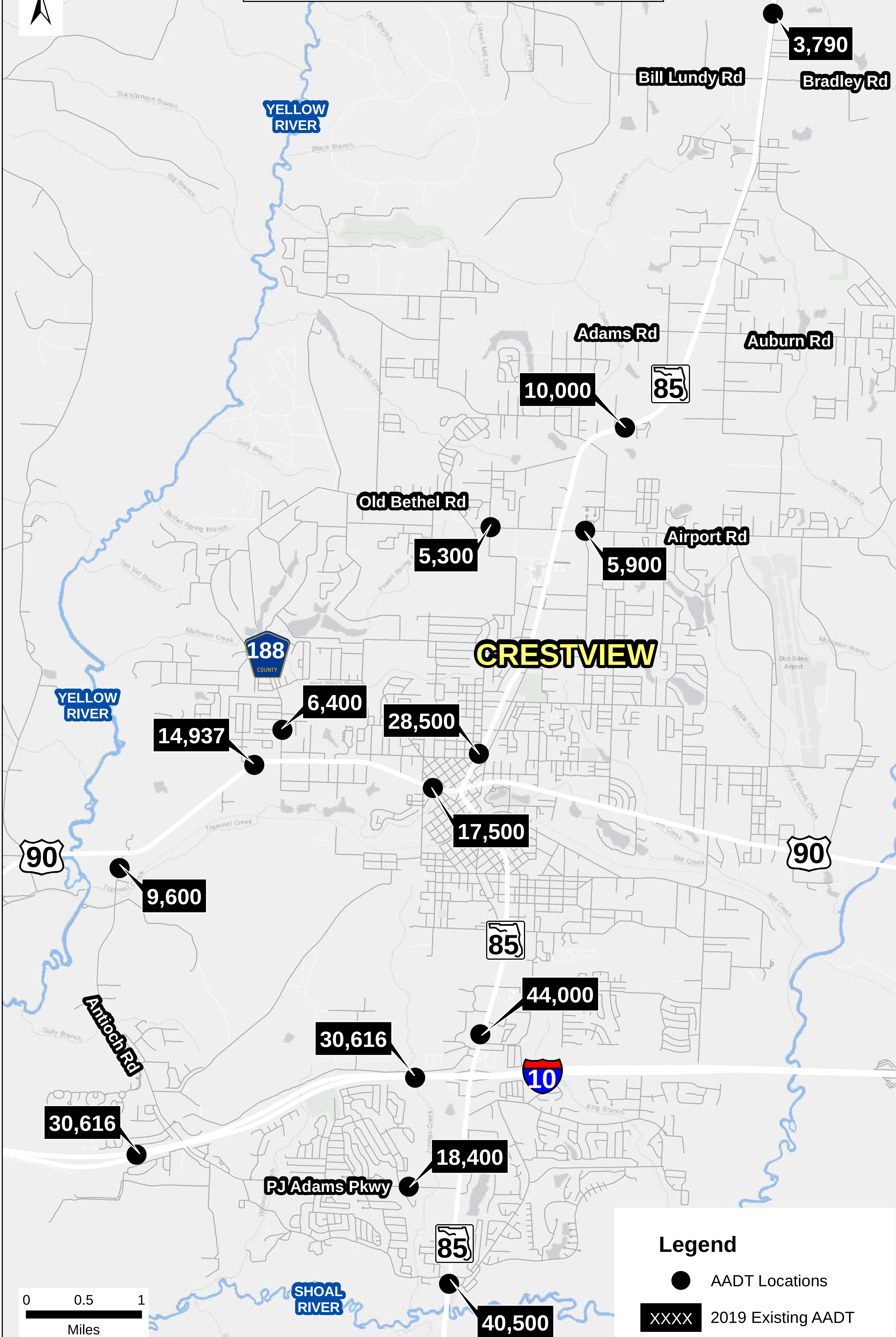


Table 1 | 2035 AADTs No Eastern Crestview Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	6,700	5,300	20,000	4,900	4,900	5,400	23,000
Old Bethel Rd north of US 90	10,000	8,000	23,500	23,000	22,500	22,000	8,400
Airport Rd east of SR 85	7,300	7,300	8,000	7,300	7,300	7,300	8,100
SR 85 south of Live Oak Church	50,500	51,000	51,000	51,000	51,000	51,500	51,000
SR 85 north of Bill Lundy Rd	8,500	10,000	9,900	10,500	10,500	12,000	10,500
SR 85 north of I-10	45,500	44,500	44,000	44,000	44,500	45,000	44,000
SR 85 north of US 90	31,000	27,500	25,000	26,000	26,500	27,500	23,500
SR 85 north of Old Bethel Rd	16,000	11,500	16,500	10,500	10,500	12,000	17,000
US 90 west of Old Bethel Rd	15,500	16,000	15,000	15,000	15,000	15,000	15,500
US 90 west of SR 85	19,000	16,000	14,000	15,000	15,500	16,000	12,000
US 90 east of Eastern Bypass	10,000	9,900	10,000	10,000	10,000	10,000	10,000
Antioch Rd south of US 90	10,500	9,800	10,500	10,500	10,500	10,500	10,500
P J Adams Pkwy west of SR 85	26,000	27,000	27,500	27,500	28,000	26,500	28,000
I-10 west of Antioch Rd	50,500	52,000	52,000	52,500	52,500	52,500	52,500
I-10 west of SR 85	42,500	42,500	42,000	42,000	42,000	42,500	42,500
I-10 east of Eastern Bypass	32,500	32,500	32,500	32,000	32,500	32,000	32,500
NW Bypass midpoint	-	12,000	17,500	13,000	13,000	11,500	24,500
SW Bypass	29,000	33,500	33,000	33,000	33,000	33,000	32,000

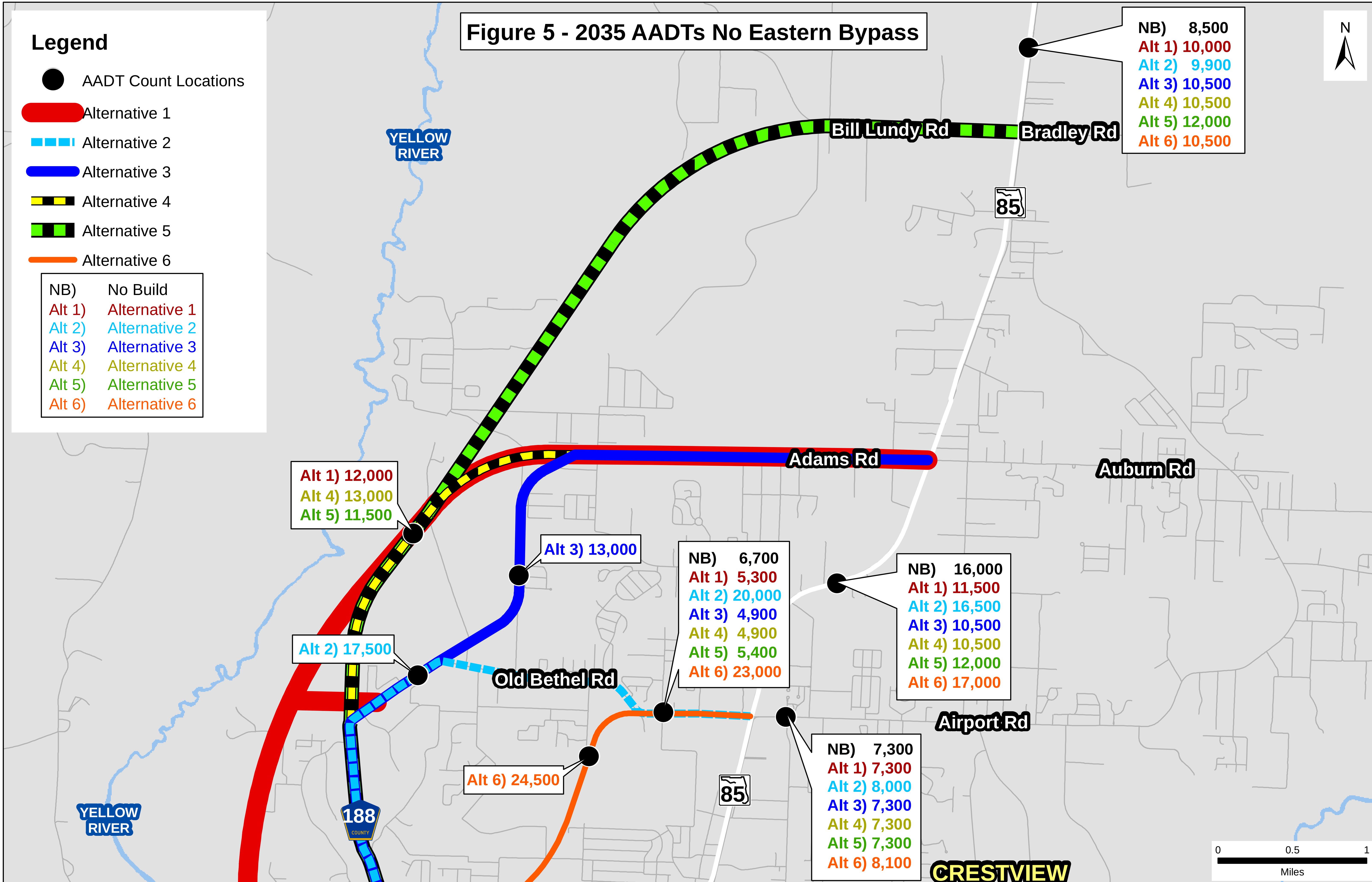


Figure 5 - 2035 AADTs No Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
YELLOW RIVER
Bill Lundy Rd
Bradley Rd
NB) 8,500
Alt 1) 10,000
Alt 2) 9,900
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 12,000
Alt 6) 10,500
85
Adams Rd
Auburn Rd
Alt 1) 12,000
Alt 4) 13,000
Alt 5) 11,500
Alt 3) 13,000
NB) 6,700
Alt 1) 5,300
Alt 2) 20,000
Alt 3) 4,900
Alt 4) 4,900
Alt 5) 5,400
Alt 6) 23,000
NB) 16,000
Alt 1) 11,500
Alt 2) 16,500
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 12,000
Alt 6) 17,000
Alt 2) 17,500
Old Bethel Rd
Airport Rd
Alt 6) 24,500
NB) 7,300
Alt 1) 7,300
Alt 2) 8,000
Alt 3) 7,300
Alt 4) 7,300
Alt 5) 7,300
Alt 6) 8,100
YELLOW RIVER
188
COUNTY
85
CRESTVIEW
N
0
0.5
1
Miles

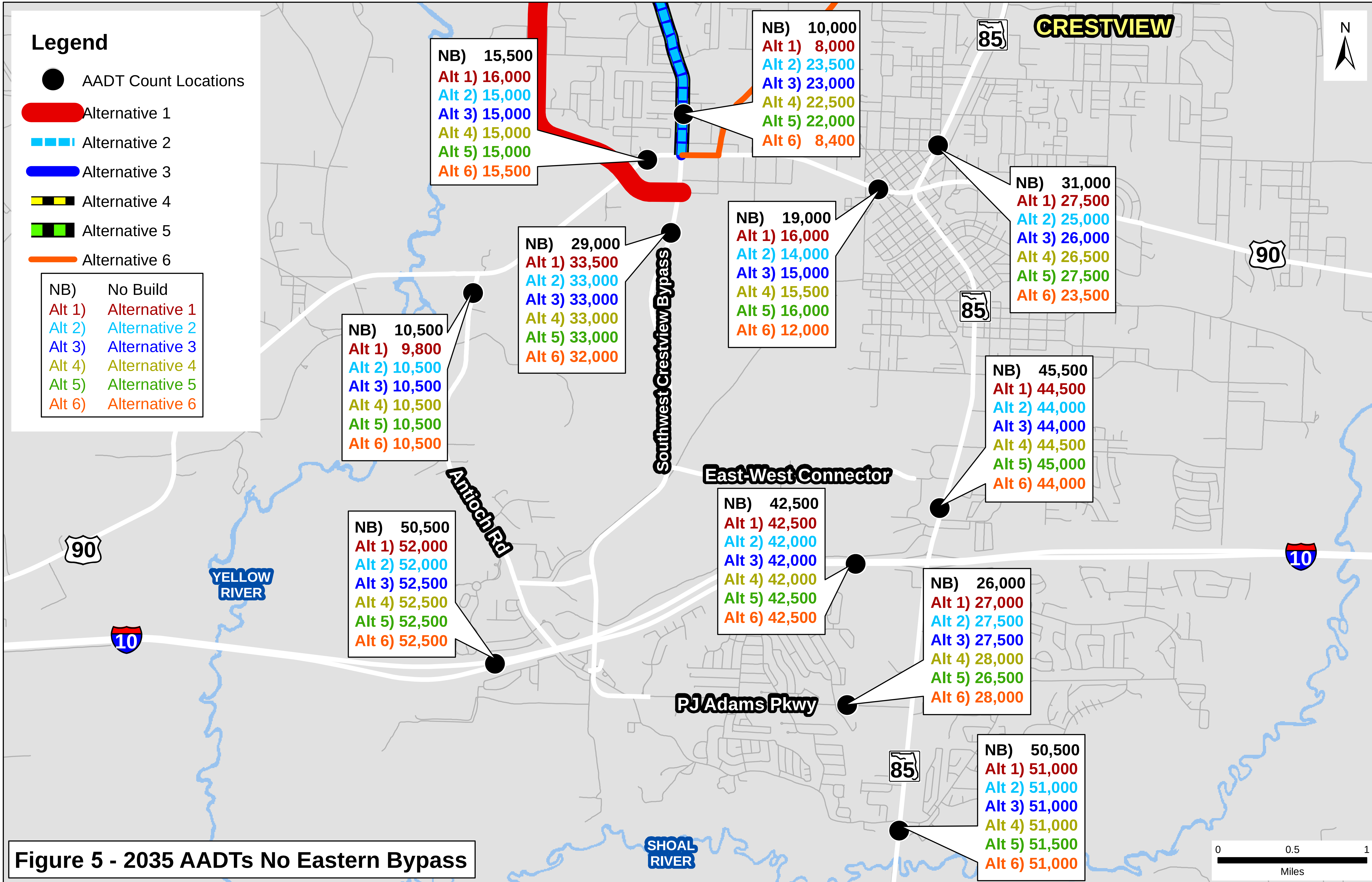


Figure 5 - 2035 AADTs No Eastern Bypass

Table 2 | 2035 AADTs With Eastern Crestview Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	6,700	5,100	20,000	4,900	4,800	5,200	22,500
Old Bethel Rd north of US 90	10,000	7,900	22,000	21,000	20,500	20,500	8,400
Airport Rd east of SR 85	7,300	7,200	14,500	7,200	7,200	7,200	15,000
SR 85 south of Live Oak Church	50,500	52,000	52,000	52,000	52,000	52,000	52,000
SR 85 north of Bill Lundy Rd	8,500	8,200	8,200	8,300	8,300	11,000	8,400
SR 85 north of I-10	45,500	44,500	44,000	44,000	44,000	45,000	43,500
SR 85 north of US 90	31,000	27,500	25,000	26,000	26,000	27,000	23,500
SR 85 north of Old Bethel Rd	16,000	11,500	14,500	10,500	10,500	11,500	14,500
US 90 west of Old Bethel Rd	15,500	16,500	15,500	15,500	15,000	15,000	15,500
US 90 west of SR 85	19,000	16,000	13,000	14,500	15,000	15,500	11,000
US 90 east of Eastern Bypass	10,000	9,700	9,500	9,600	9,600	6,800	9,200
Antioch Rd south of US 90	10,500	9,600	10,500	10,500	10,500	10,500	10,500
P J Adams Pkwy west of SR 85	26,000	26,500	28,000	27,500	27,500	26,000	28,000
I-10 west of Antioch Rd	50,500	52,500	52,500	52,500	52,500	53,000	53,000
I-10 west of SR 85	42,500	46,000	45,000	45,500	45,500	43,000	45,500
I-10 east of Eastern Bypass	32,500	34,500	34,500	34,500	34,500	34,500	34,500
NW Bypass midpoint	-	10,000	16,000	11,000	11,000	10,000	23,000
SW Bypass	29,000	31,500	31,000	31,000	31,000	32,000	30,500

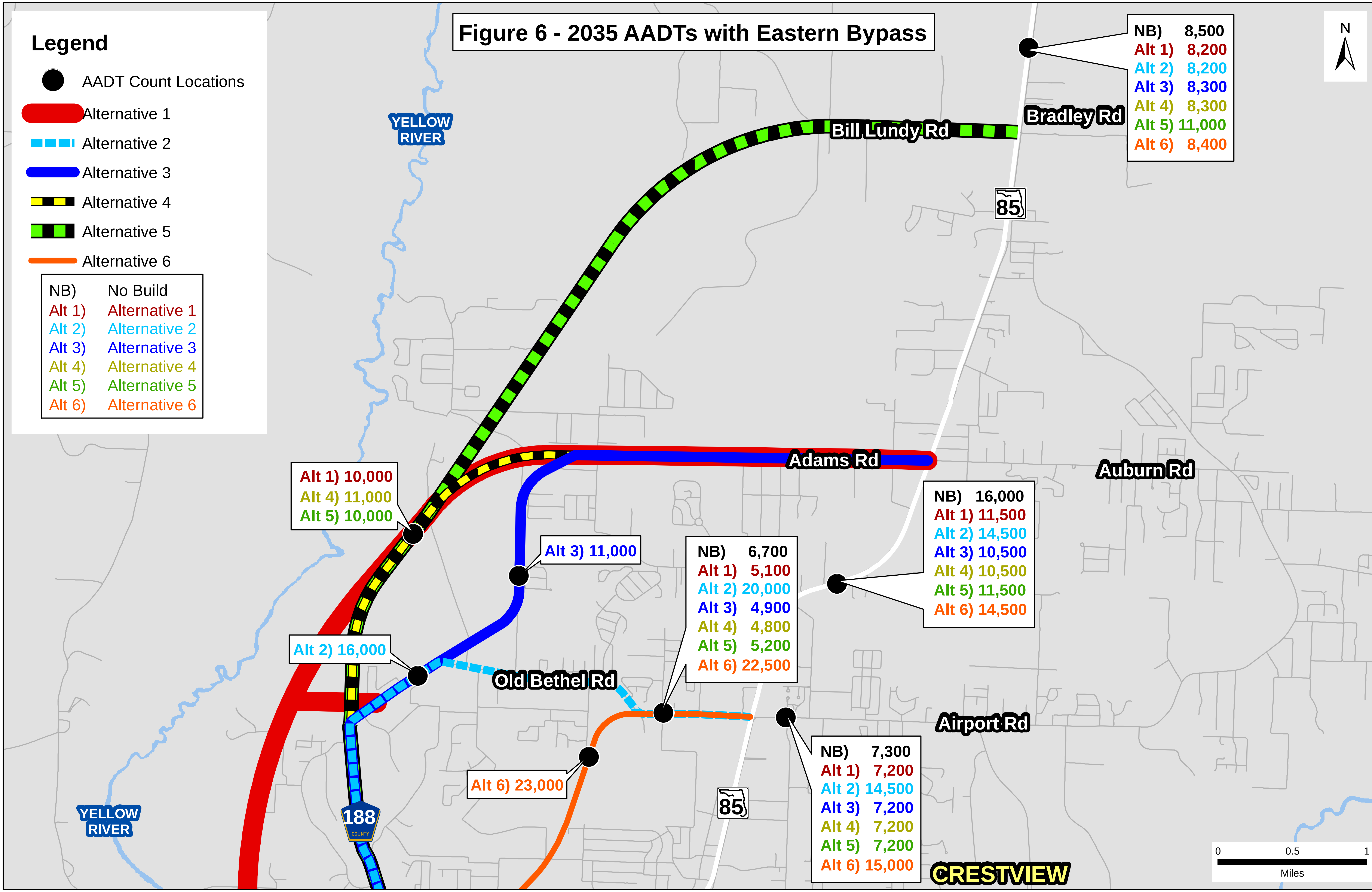


Figure 6 - 2035 AADTs with Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
YELLOW RIVER
NB) 8,500
Alt 1) 8,200
Alt 2) 8,200
Alt 3) 8,300
Alt 4) 8,300
Alt 5) 11,000
Alt 6) 8,400
Bradley Rd
Bill Lundy Rd
85
Adams Rd
Auburn Rd
Alt 1) 10,000
Alt 4) 11,000
Alt 5) 10,000
Alt 3) 11,000
NB) 16,000
Alt 1) 11,500
Alt 2) 14,500
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 11,500
Alt 6) 14,500
NB) 6,700
Alt 1) 5,100
Alt 2) 20,000
Alt 3) 4,900
Alt 4) 4,800
Alt 5) 5,200
Alt 6) 22,500
Alt 2) 16,000
Old Bethel Rd
Airport Rd
NB) 7,300
Alt 1) 7,200
Alt 2) 14,500
Alt 3) 7,200
Alt 4) 7,200
Alt 5) 7,200
Alt 6) 15,000
Alt 6) 23,000
85
188
YELLOW RIVER
CRESTVIEW
0 0.5 1
Miles
N

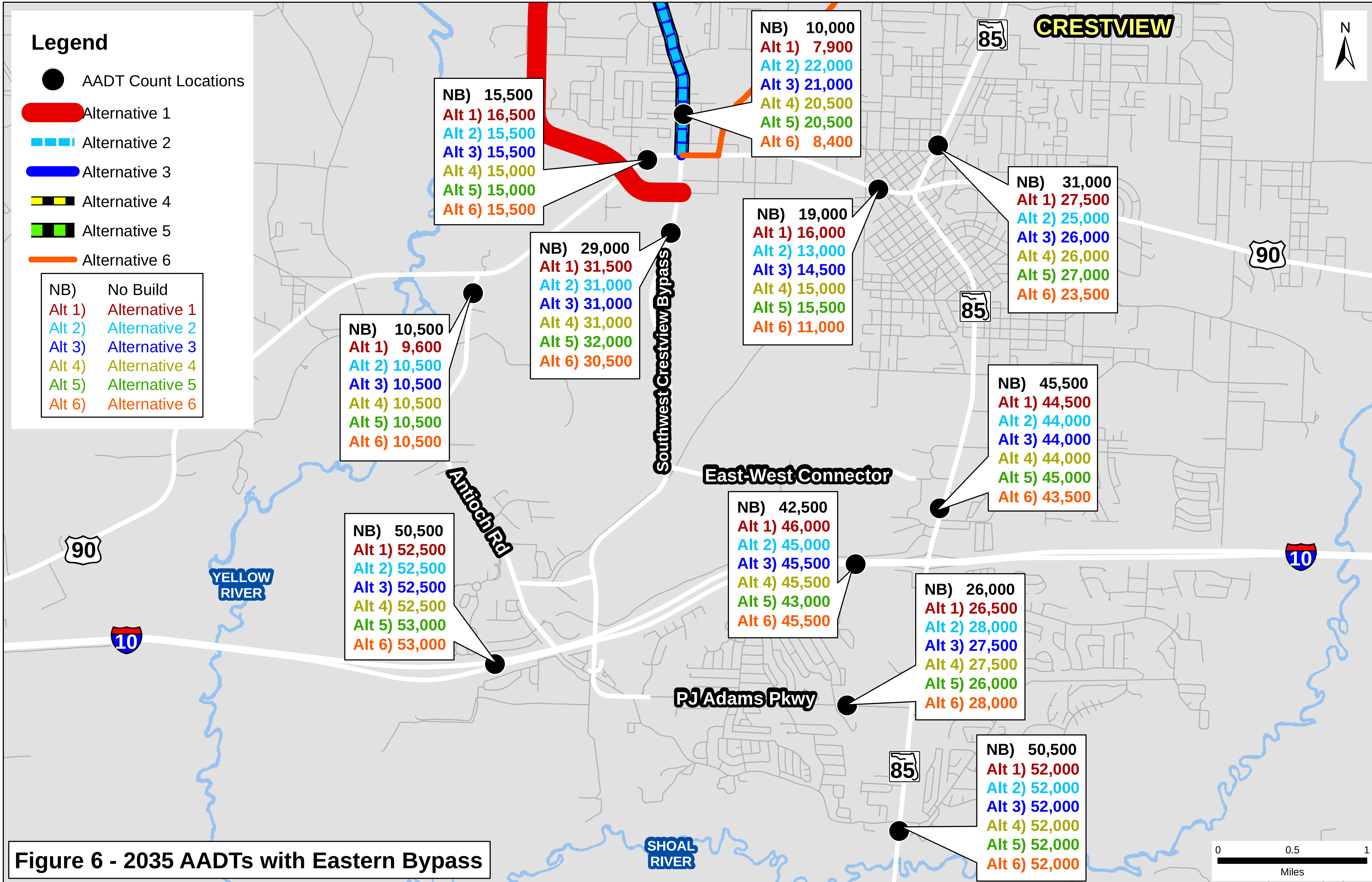


Figure 6 - 2035 AADTs with Eastern Bypass

Table 3 | 2055 AADTs No Eastern Crestview Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	7,100	5,500	22,000	5,300	5,300	5,800	24,000
Old Bethel Rd north of US 90	10,000	8,500	26,000	25,500	25,500	25,000	8,400
Airport Rd east of SR 85	8,100	7,500	8,300	7,500	7,400	7,600	8,400
SR 85 south of Live Oak Church	55,500	56,000	56,000	56,000	56,000	56,000	56,000
SR 85 north of Bill Lundy Rd	7,800	10,000	9,800	10,500	10,500	12,500	9,900
SR 85 north of I-10	48,000	48,000	47,500	48,000	47,500	48,500	48,000
SR 85 north of US 90	31,500	29,000	26,500	27,500	27,500	29,000	25,500
SR 85 north of Old Bethel Rd	17,000	12,500	18,000	12,000	11,500	13,000	19,000
US 90 west of Old Bethel Rd	19,500	21,000	20,000	20,000	20,000	20,500	20,500
US 90 west of SR 85	19,500	17,000	15,500	16,500	16,500	17,500	13,000
US 90 east of Eastern Bypass	12,500	12,000	12,000	12,000	12,000	12,000	12,000
Antioch Rd south of US 90	11,000	10,500	11,500	11,500	11,500	11,500	11,500
P J Adams Pkwy west of SR 85	30,000	31,500	32,000	31,500	31,500	30,500	32,000
I-10 west of Antioch Rd	58,000	59,000	59,000	59,500	59,500	61,000	59,000
I-10 west of SR 85	50,500	50,500	50,000	50,000	50,500	51,000	50,500
I-10 east of Eastern Bypass	37,500	37,500	37,500	37,000	37,000	37,000	37,500
NW Bypass midpoint	-	12,500	20,000	15,000	15,000	14,500	26,500
SW Bypass	32,000	37,500	35,500	36,000	36,000	36,500	34,000

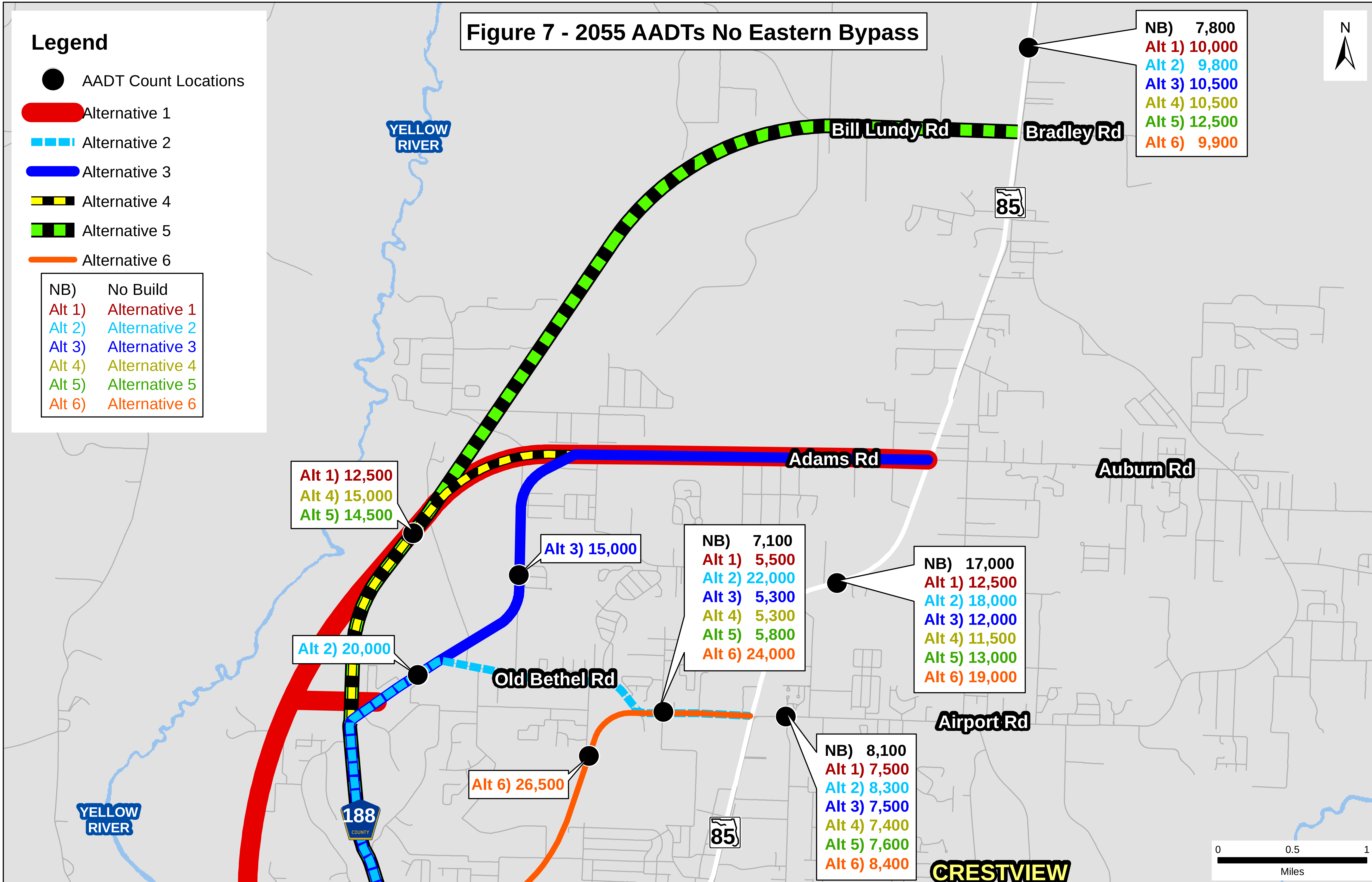


Figure 7 - 2055 AADTs No Eastern Bypass

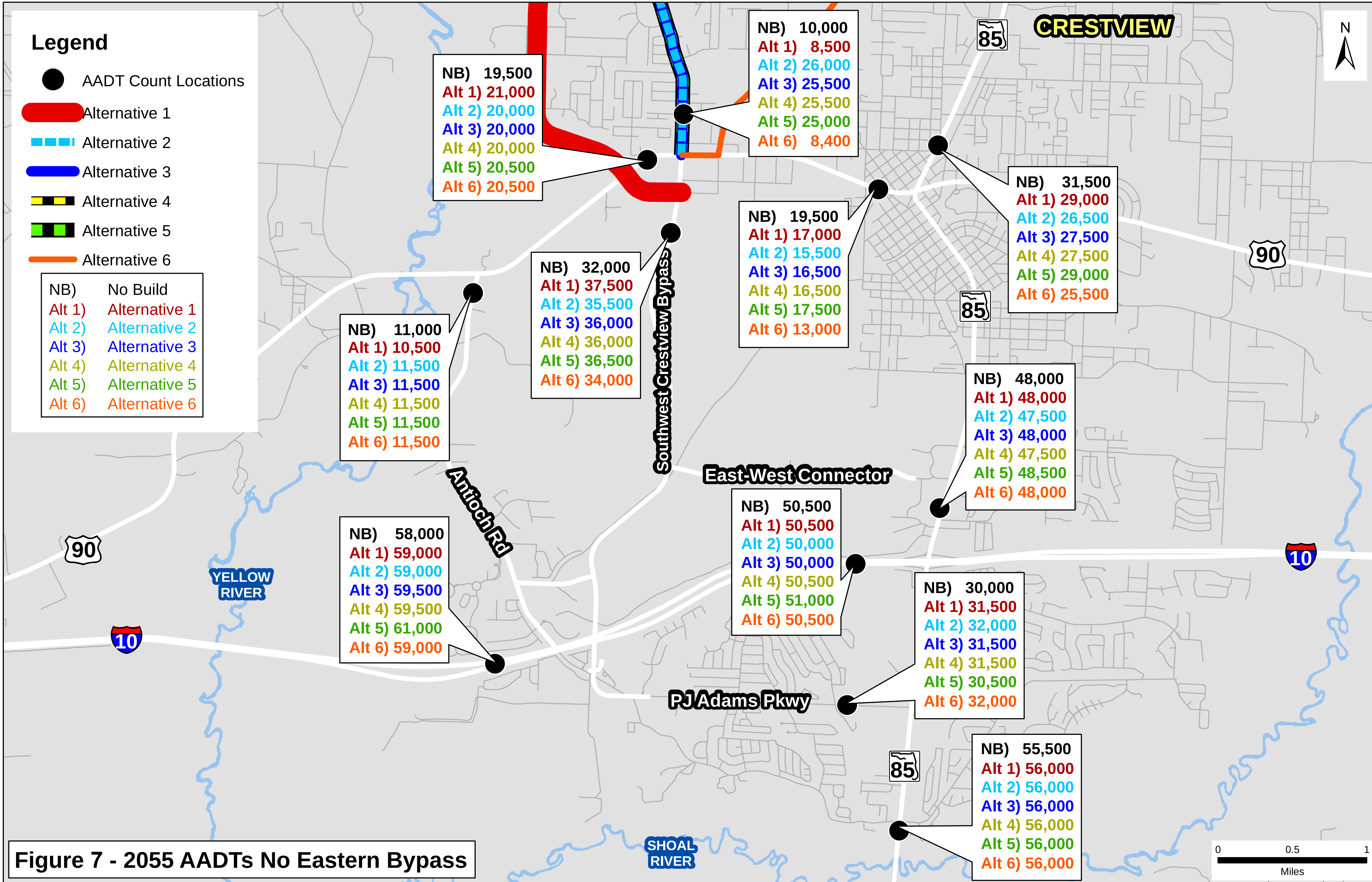


Figure 7 - 2055 AADTs No Eastern Bypass

Table 4 | 2055 AADTs With Eastern Crestview Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	7,100	5,500	21,500	5,300	5,200	5,600	24,500
Old Bethel Rd north of US 90	10,000	8,400	25,000	23,500	23,500	22,500	8,300
Airport Rd east of SR 85	8,100	7,500	16,000	7,500	7,400	7,500	16,500
SR 85 south of Live Oak Church	55,500	57,000	57,000	57,000	57,000	57,000	57,000
SR 85 north of Bill Lundy Rd	7,800	8,600	8,500	9,000	9,000	10,500	8,800
SR 85 north of I-10	48,000	47,500	47,000	47,500	47,500	47,500	47,000
SR 85 north of US 90	31,500	29,000	26,000	27,000	27,000	28,500	25,000
SR 85 north of Old Bethel Rd	17,000	12,500	16,000	12,000	11,500	13,000	16,500
US 90 west of Old Bethel Rd	19,500	21,500	20,000	20,500	20,500	20,500	21,000
US 90 west of SR 85	19,500	17,000	14,500	16,000	16,000	17,000	12,500
US 90 east of Eastern Bypass	12,500	13,000	12,500	13,000	13,000	12,500	12,500
Antioch Rd south of US 90	11,000	10,500	11,000	11,000	11,000	11,000	11,000
P J Adams Pkwy west of SR 85	30,000	31,500	32,000	31,500	31,500	30,500	31,500
I-10 west of Antioch Rd	58,000	60,000	60,000	60,500	60,500	61,000	60,500
I-10 west of SR 85	50,500	53,500	53,500	53,500	53,500	53,000	53,500
I-10 east of Eastern Bypass	37,500	39,000	39,000	39,000	39,000	39,000	39,000
NW Bypass midpoint	-	11,000	19,000	13,000	13,000	11,500	26,000
SW Bypass	32,000	35,000	34,000	34,000	34,000	34,000	32,500

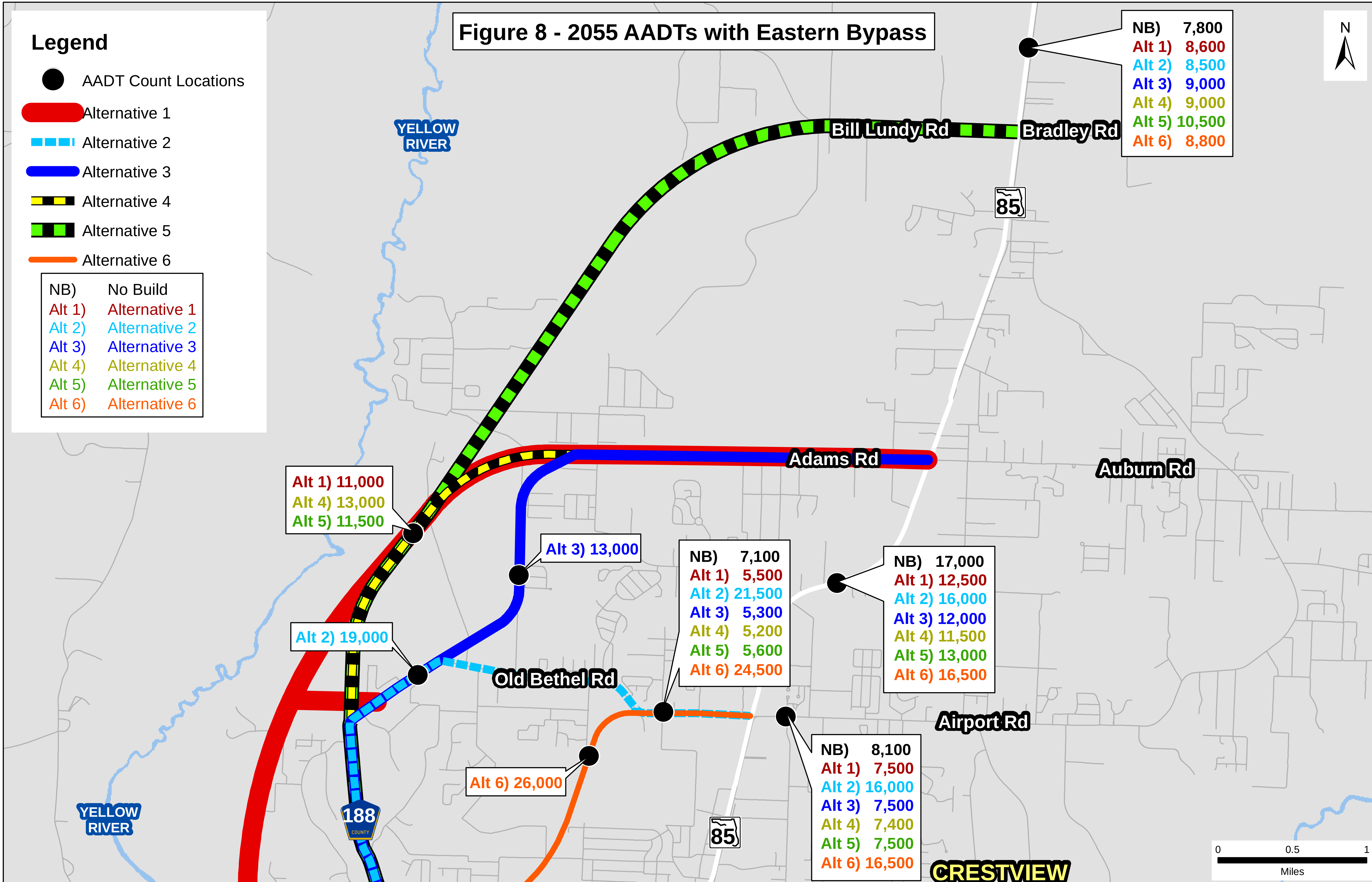


Figure 8 - 2055 AADTs with Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
N
YELLOW RIVER
Bill Lundy Rd
Bradley Rd
85
NB) 7,800
Alt 1) 8,600
Alt 2) 8,500
Alt 3) 9,000
Alt 4) 9,000
Alt 5) 10,500
Alt 6) 8,800
Adams Rd
Auburn Rd
Alt 1) 11,000
Alt 4) 13,000
Alt 5) 11,500
Alt 3) 13,000
NB) 7,100
Alt 1) 5,500
Alt 2) 21,500
Alt 3) 5,300
Alt 4) 5,200
Alt 5) 5,600
Alt 6) 24,500
NB) 17,000
Alt 1) 12,500
Alt 2) 16,000
Alt 3) 12,000
Alt 4) 11,500
Alt 5) 13,000
Alt 6) 16,500
Alt 2) 19,000
Old Bethel Rd
Airport Rd
NB) 8,100
Alt 1) 7,500
Alt 2) 16,000
Alt 3) 7,500
Alt 4) 7,400
Alt 5) 7,500
Alt 6) 16,500
Alt 6) 26,000
YELLOW RIVER
188
COUNTY
85
CRESTVIEW
0 0.5 1
Miles

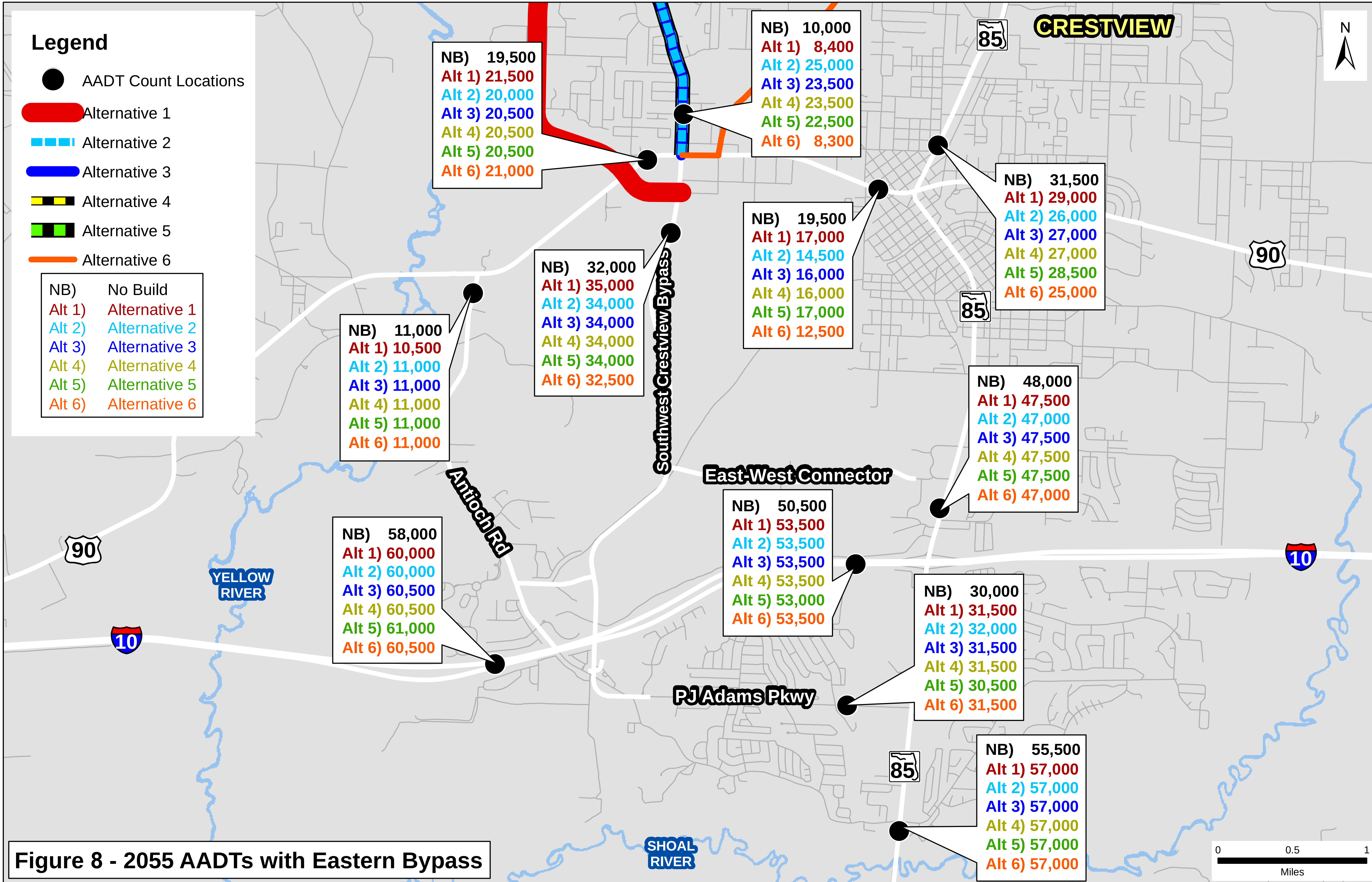


Figure 8 - 2055 AADTs with Eastern Bypass

2.4 Future Traffic Analysis

The LOS and v/MSV were estimated for the study area roadways for each alternative using the FDOT 2020 Quality/Level of Service Handbook GSVT's for the projected 2035 and 2055 AADT. The v/MSV ratio was utilized for this analysis to compare the anticipated traffic volumes to the maximum service volume as per the FDOT 2020 Quality/Level of Service Handbook. The v/MSV was utilized instead of the volume to capacity (v/c) ratio because the v/c ratio compares traffic volumes to capacity, or the maximum volume that a roadway can accommodate. In contrast, the maximum service volume is the highest volume a roadway can accommodate at the adopted LOS standard or target. To understand the future LOS of the study roadways, the v/MSV was utilized to provide a ratio that compares the traffic volumes to the LOS maximum service volume.

Table 5 provides the maximum service volumes for the study area roadways for existing, future no build, and future build conditions under each scenario. The maximum service volume varied if capacity improvements are planned along the roadway. For instance, the maximum service volume on Old Bethel Road increases under the alternatives where the Northwest Crestview Bypass alignment runs along the roadway and a four-lane divided facility was used to match the Southwest Crestview Bypass.

Table 5 | Maximum Service Volume

Location	LOS Target	Existing	Future No Build	Future Build Alt 1	Future Build Alt 2	Future Build Alt 3	Future Build Alt 4	Future Build Alt 5	Future Build Alt 6
Old Bethel Rd west of SR 85	D	24,200	24,200	24,200	37,611	24,200	24,200	24,200	37,611
Old Bethel Rd north of US 90	D	24,200	24,200	24,200	37,611	37,611	37,611	37,611	24,200
Airport Rd east of SR 85	D	24,200	24,200	24,200	24,200	24,200	24,200	24,200	24,200
SR 85 south of Live Oak Church	D	41,790	41,790	41,790	41,790	41,790	41,790	41,790	41,790
SR 85 north of Bill Lundy Rd	C	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700
SR 85 north of I-10	D	41,790	41,790	41,790	41,790	41,790	41,790	41,790	41,790
SR 85 north of US 90	D	32,400	32,400	32,400	32,400	32,400	32,400	32,400	32,400
SR 85 north of Old Bethel Rd	D	39,800	39,800	39,800	39,800	39,800	39,800	39,800	39,800
US 90 west of Old Bethel Rd	D	39,800	39,800	39,800	39,800	39,800	39,800	39,800	39,800
US 90 west of SR 85	D	32,400	32,400	32,400	32,400	32,400	32,400	32,400	32,400
US 90 east of Eastern Bypass	C	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700
Antioch Rd south of US 90	C	15,700	15,700	15,700	15,700	15,700	15,700	15,700	15,700
P J Adams Pkwy west of SR 85	D	13,986	30,618	30,618	30,618	30,618	30,618	30,618	30,618
I-10 west of Antioch Rd	D	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600
I-10 west of SR 85	D	75,600	75,600	75,600	75,600	75,600	75,600	75,600	75,600
I-10 east of Eastern Bypass	C	48,000	48,000	48,000	48,000	48,000	48,000	48,000	48,000
NW Bypass midpoint	D	-	-	35,820	35,820	35,820	35,820	35,820	35,820
SW Bypass	D	-	35,820	35,820	35,820	35,820	35,820	35,820	35,820

Tables 6 and 7 show the estimated LOS and v/MSV, respectively, for study area roadways in year 2035. As shown, sections of SR 85 are anticipated to operate below the LOS target in conditions with or without (No Build) the Northwest Crestview Bypass in place. However, sections of SR 85 north of I-10 and north of US 90, as well as US 90 west of SR 85 are anticipated to improve in v/MSV with the Northwest Crestview Bypass in place in 2035.

The LOS and v/MSV results for year 2055 are provided in Tables 8 and 9, respectively. The LOS target is not anticipated to be met on SR 85 south of Live Oak Church Road, and north of I-10. In addition, PJ Adams Parkway west of SR 85 and the Southwest Crestview Bypass without the Eastern Crestview Bypass are anticipated to operate below LOS targets in 2055. The v/MSV results show an improvement with the Northwest Crestview Bypass in place on SR 85 north of US 90, and US 90 west of SR 85.

Table 6 | 2035 Roadway Segments LOS Results

Location	LOS Target	2019	2035												
			No Build	Without Eastern Crestview Bypass						With Eastern Crestview Bypass					
				Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Old Bethel Rd west of SR 85	D	B	B	B	C	B	B	B	C	B	C	B	B	B	C
Old Bethel Rd north of US 90	D	B	B	B	C	C	C	C	B	B	C	C	C	C	B
Airport Rd east of SR 85	D	B	B	B	B	B	B	B	B	B	C	B	B	B	C
SR 85 south of Live Oak Church	D	D	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
SR 85 north of Bill Lundy Rd	C	B	B	B	B	C	C	C	C	B	B	B	B	C	B
SR 85 north of I-10	D	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
SR 85 north of US 90	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SR 85 north of Old Bethel Rd	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C
US 90 west of Old Bethel Rd	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C
US 90 west of SR 85	D	D	D	D	C	D	D	D	C	D	C	D	D	D	C
US 90 east of Eastern Bypass	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Antioch Rd south of US 90	C	B	C	B	C	C	C	C	C	B	C	C	C	C	C
P J Adams Pkwy west of SR 85	D	**F**	D	D	D	D	D	D	D	D	D	D	D	D	D
I-10 west of Antioch Rd	D	B	C	C	C	C	C	C	C	C	C	C	C	C	C
I-10 west of SR 85	D	B	B	B	B	B	B	B	B	C	B	B	B	B	B
I-10 east of Eastern Bypass	C	B	B	B	B	B	B	B	B	B	B	B	B	B	B
NW Bypass midpoint	D	-	-	C	C	C	C	C	C	C	C	C	C	C	C
SW Bypass	D	-	C	C	C	C	C	C	C	C	C	C	C	C	C

Table 7 | 2035 Roadway Segments v/MSV Results

Location	2019	2035												
		No Build	Without Eastern Crestview Bypass						With Eastern Crestview Bypass					
			Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Old Bethel Rd west of SR 85	0.22	0.28	0.22	0.53	0.20	0.20	0.22	0.61	0.21	0.53	0.20	0.20	0.21	0.60
Old Bethel Rd north of US 90	0.26	0.41	0.33	0.62	0.61	0.60	0.58	0.35	0.33	0.58	0.56	0.55	0.55	0.35
Airport Rd east of SR 85	0.24	0.30	0.30	0.33	0.30	0.30	0.30	0.33	0.30	0.60	0.30	0.30	0.30	0.62
SR 85 south of Live Oak Church	0.97	1.21	1.22	1.22	1.22	1.22	1.23	1.22	1.24	1.24	1.24	1.24	1.24	1.24
SR 85 north of Bill Lundy Rd	0.24	0.54	0.64	0.63	0.67	0.67	0.76	0.67	0.52	0.52	0.53	0.53	0.70	0.54
SR 85 north of I-10	1.05	1.09	1.06	1.05	1.05	1.06	1.08	1.05	1.06	1.05	1.05	1.05	1.08	1.04
SR 85 north of US 90	0.88	0.96	0.85	0.77	0.80	0.82	0.85	0.73	0.85	0.77	0.80	0.80	0.83	0.73
SR 85 north of Old Bethel Rd	0.25	0.40	0.29	0.41	0.26	0.26	0.30	0.43	0.29	0.36	0.26	0.26	0.29	0.36
US 90 west of Old Bethel Rd	0.38	0.39	0.40	0.38	0.38	0.38	0.38	0.39	0.41	0.39	0.39	0.38	0.38	0.39
US 90 west of SR 85	0.54	0.59	0.49	0.43	0.46	0.48	0.49	0.37	0.49	0.40	0.45	0.46	0.48	0.34
US 90 east of Eastern Bypass	0.52	0.64	0.63	0.64	0.64	0.64	0.64	0.64	0.62	0.61	0.61	0.61	0.43	0.59
Antioch Rd south of US 90	0.61	0.67	0.62	0.67	0.67	0.67	0.67	0.67	0.61	0.67	0.67	0.67	0.67	0.67
P J Adams Pkwy west of SR 85	1.32	0.85	0.88	0.90	0.90	0.91	0.87	0.91	0.87	0.91	0.90	0.90	0.85	0.91
I-10 west of Antioch Rd	0.40	0.67	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.70	0.70
I-10 west of SR 85	0.40	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.61	0.60	0.60	0.60	0.57	0.60
I-10 east of Eastern Bypass	0.46	0.68	0.68	0.68	0.67	0.68	0.67	0.68	0.72	0.72	0.72	0.72	0.72	0.72
NW Bypass midpoint	-	-	0.34	0.49	0.36	0.36	0.32	0.68	0.28	0.45	0.31	0.31	0.28	0.64
SW Bypass	-	0.81	0.94	0.92	0.92	0.92	0.92	0.89	0.88	0.87	0.87	0.87	0.89	0.85

Table 8 | 2055 Roadway Segments LOS Results

Location	LOS Target	2019	2055												
			No Build	Without Eastern Crestview Bypass						With Eastern Crestview Bypass					
				Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Old Bethel Rd west of SR 85	D	B	B	B	C	B	B	B	C	B	C	B	B	B	C
Old Bethel Rd north of US 90	D	B	B	B	C	C	C	C	B	B	C	C	C	C	B
Airport Rd east of SR 85	D	B	B	B	B	B	B	B	B	B	C	B	B	B	C
SR 85 south of Live Oak Church	D	D	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
SR 85 north of Bill Lundy Rd	C	B	B	B	B	C	C	C	B	B	B	B	B	C	B
SR 85 north of I-10	D	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
SR 85 north of US 90	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
SR 85 north of Old Bethel Rd	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C
US 90 west of Old Bethel Rd	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C
US 90 west of SR 85	D	D	D	D	D	D	D	D	C	D	D	D	D	D	C
US 90 east of Eastern Bypass	C	B	C	C	C	C	C	C	C	C	C	C	C	C	C
Antioch Rd south of US 90	C	B	C	C	C	C	C	C	C	C	C	C	C	C	C
P J Adams Pkwy west of SR 85	D	**F**	D	**E**	**F**	**E**	**E**	D	**F**	**E**	**F**	**E**	**E**	D	**E**
I-10 west of Antioch Rd	D	B	C	C	C	C	C	C	C	C	C	C	C	C	C
I-10 west of SR 85	D	B	C	C	C	C	C	C	C	C	C	C	C	C	C
I-10 east of Eastern Bypass	C	B	C	C	C	C	C	C	C	C	C	C	C	C	C
NW Bypass midpoint	D	-	-	C	C	C	C	C	C	C	C	C	C	C	C
SW Bypass	D	-	C	**E**	D	**E**	**E**	**E**	C	D	C	C	C	C	C

Table 9 | 2055 Roadway Segments v/MSV Results

Location	2019	2055												
		No Build	Without Eastern Crestview Bypass						With Eastern Crestview Bypass					
			Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Old Bethel Rd west of SR 85	0.22	0.29	0.23	0.58	0.22	0.22	0.24	0.64	0.23	0.57	0.22	0.21	0.23	0.65
Old Bethel Rd north of US 90	0.26	0.41	0.35	0.69	0.68	0.68	0.66	0.35	0.35	0.66	0.62	0.62	0.60	0.34
Airport Rd east of SR 85	0.24	0.33	0.31	0.34	0.31	0.31	0.31	0.35	0.31	0.66	0.31	0.31	0.31	0.68
SR 85 south of Live Oak Church	0.97	1.33	1.34	1.34	1.34	1.34	1.34	1.34	1.36	1.36	1.36	1.36	1.36	1.36
SR 85 north of Bill Lundy Rd	0.24	0.50	0.64	0.62	0.67	0.67	0.80	0.63	0.55	0.54	0.57	0.57	0.67	0.56
SR 85 north of I-10	1.05	1.15	1.15	1.14	1.15	1.14	1.16	1.15	1.14	1.12	1.14	1.14	1.14	1.12
SR 85 north of US 90	0.88	0.97	0.90	0.82	0.85	0.85	0.90	0.79	0.90	0.80	0.83	0.83	0.88	0.77
SR 85 north of Old Bethel Rd	0.25	0.43	0.31	0.45	0.30	0.29	0.33	0.48	0.31	0.40	0.30	0.29	0.33	0.41
US 90 west of Old Bethel Rd	0.38	0.49	0.53	0.50	0.50	0.50	0.52	0.52	0.54	0.50	0.52	0.52	0.52	0.53
US 90 west of SR 85	0.54	0.60	0.52	0.48	0.51	0.51	0.54	0.40	0.52	0.45	0.49	0.49	0.52	0.39
US 90 east of Eastern Bypass	0.52	0.80	0.76	0.76	0.76	0.76	0.76	0.76	0.83	0.80	0.83	0.83	0.80	0.80
Antioch Rd south of US 90	0.61	0.70	0.67	0.73	0.73	0.73	0.73	0.73	0.67	0.70	0.70	0.70	0.70	0.70
P J Adams Pkwy west of SR 85	1.32	0.98	1.03	1.05	1.03	1.03	1.00	1.05	1.03	1.05	1.03	1.03	1.00	1.03
I-10 west of Antioch Rd	0.40	0.77	0.78	0.78	0.79	0.79	0.81	0.78	0.79	0.79	0.80	0.80	0.81	0.80
I-10 west of SR 85	0.40	0.67	0.67	0.66	0.66	0.67	0.67	0.67	0.71	0.71	0.71	0.71	0.70	0.71
I-10 east of Eastern Bypass	0.46	0.78	0.78	0.78	0.77	0.77	0.77	0.78	0.81	0.81	0.81	0.81	0.81	0.81
NW Bypass midpoint	-	-	0.35	0.56	0.42	0.42	0.40	0.74	0.31	0.53	0.36	0.36	0.32	0.73
SW Bypass	-	0.89	1.05	0.99	1.01	1.01	1.02	0.95	0.98	0.95	0.95	0.95	0.95	0.91

3.0 Safety Analysis

3.1 Safety Analysis Approach

The safety analysis was conducted to evaluate existing crash conditions and common contributing factors in the study area to identify locations with potential for safety improvement, and to estimate future crash conditions on the system to determine the relative benefits of each alternative corridor under consideration.

3.1.1 Study Roadways and Intersections

The existing conditions safety analysis was conducted on Old Bethel Road, SR 85 and US 90 within the project limits (Figure 9). Eight intersections were also identified for analysis in the existing and future conditions:

- US 90 / Old Bethel Road
- US 90 / Hickory Avenue
- US 90 / SR 85
- SR 85 / Stillwell Boulevard
- SR 85 / Old Bethel Road
- SR 85 / Houston Lane
- SR 85 / Adams Road / Auburn Road
- SR 85 / Bill Lundy Road / Bradley Road

The identified study intersections had the highest crash frequency and crash severity (i.e., fatal and incapacitating injury) of all signalized and unsignalized intersections in the study area (Figure 9).

Future crash conditions under each alternative corridor were estimated considering the forecast crash frequency and severity along the proposed alternative corridors plus forecast crashes on US 90 from Antioch Road (County Road 4) to SR 85, on SR 85 from US 90 to Bill Lundy Road/Bradley Road, and on Old Bethel Road from SR 85 to US 90. Therefore, a system/network evaluation was conducted considering the safety performance under each alternative corridor represented by forecast crashes on the alternative corridors itself plus the number of crashes on US 90, SR 85, and Old Bethel Road in the study area.

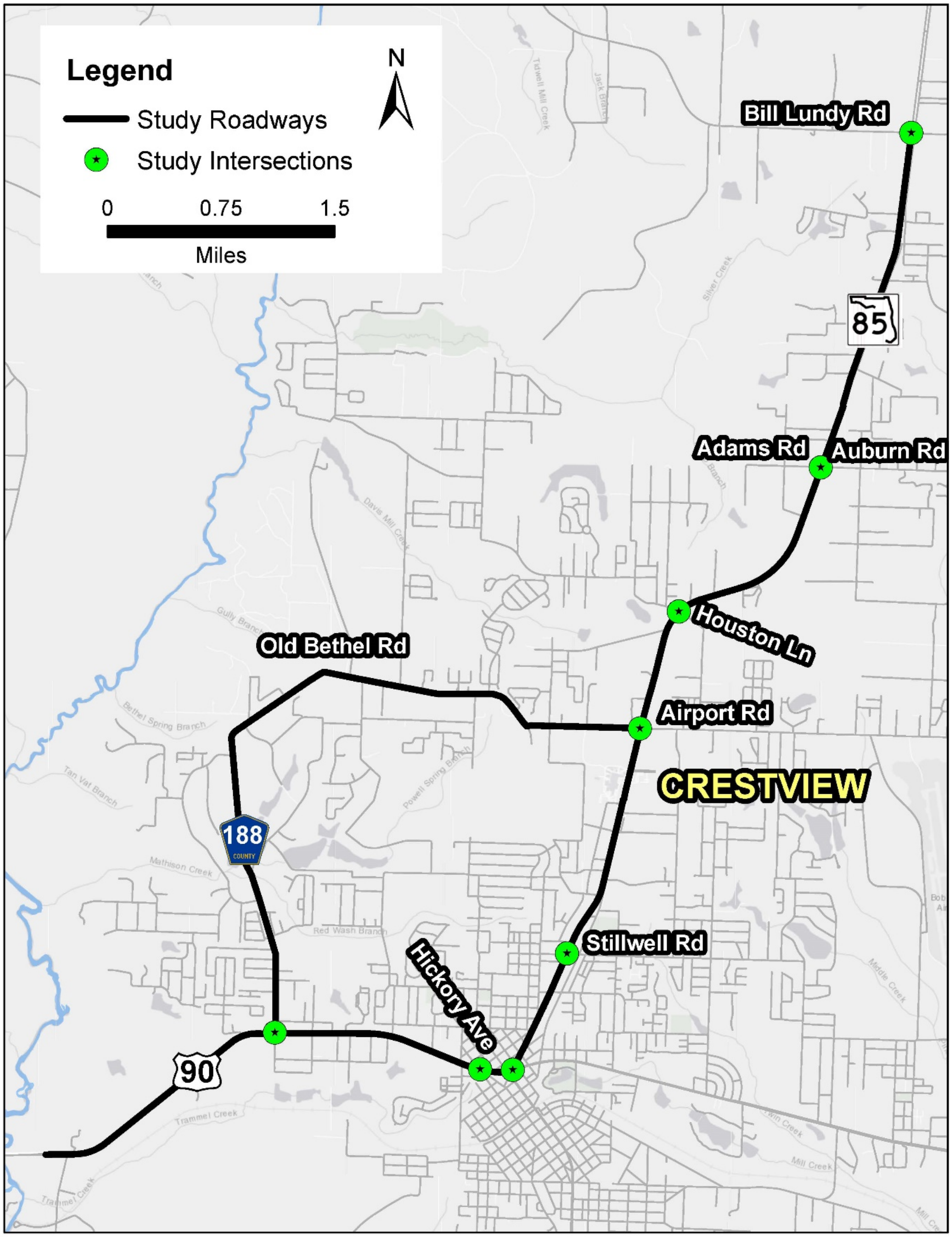


Figure 9 | Study Roadways and Intersections for Safety Analysis

3.1.2 Scenarios

The safety analysis was conducted for the following scenarios:

- Existing Conditions
- 2035 Opening Year
    - No Build
    - Build with the Northwest Crestview Bypass (i.e., proposed alternative corridors)
    - Build with the Northwest Crestview (i.e., proposed alternative corridors) + Eastern Crestview Bypass
- 2055 Design Year
    - No Build
    - Build with the Northwest Crestview Bypass (i.e., proposed alternative corridors)
    - Build with the Northwest Crestview Bypass (i.e., proposed alternative corridors) + Eastern Crestview Bypass

3.1.3 Methodology

3.1.3.1 Existing Conditions

The existing conditions crash descriptive analysis summarizes the number of crashes by year, severity, location, type, time of day, and contributing factors to identify any overall pattern of crashes in the study area. The existing conditions descriptive analysis was conducted at the study intersections using January 2014 to December 2018 crash data from the FDOT Crash Analysis Reporting (CAR) database. Consistent with FDOT guidance, the CAR data analysis was supplemented with an assessment of more recent (i.e., January 2019 to July 2021) crash data from Signal Four Analytics. The Signal Four Analytics data was only used to identify any substantive changes in total crash trends since 2018.

In addition, the CAR data were used to calculate total economic cost of existing crashes. Finally, fatal crash reports from January 2014 to July 2021 were acquired and reviewed in detail to identify any potential mitigations which should be integrated into future project development.

3.1.3.2 Future Conditions

Future crash conditions under each alternative corridor (the proposed Northwest Crestview Bypass alignment plus US 90, SR 85, and Old Bethel Road study corridors) were estimated using the American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual (HSM) predictive method for urban and suburban arterials. The method was applied using the National Cooperative Highway Research Program (NCHRP) Urban and Suburban Arterial HSM Spreadsheets. The predictive method was used to estimate future crash frequency, and severity on the study network (under each alternative corridor). Safety performance was estimated at a “planning-level” meaning input data for the models were not collected to a design-level of precision, but rather as trends related to high-impact changes in cross-sections, volumes, and roadside characteristics. Table 10 shows the FDOT calibration factors that were used:

Table 10 | Summary of FDOT Calibration Factors

Facility Type	Abbreviation	Calibration Factor
Urban 2-lane Undivided Roadway	U2U	1.02
Urban 4-lane Divided Roadway	U4D	1.63
Urban 5-lane Roadway with a Center TWLTL	U52LT	0.70
Urban 4-Leg Signalized Intersection	U4SG	1
Urban 4-Leg Stop-Controlled Intersection	Not Available	Not Available

Source – 2012 Highway Safety Manual Calibration Factors, link: https://www.fdot.gov/docs/default-source/safety/11a-safetyengineering/TransSafEng/strategicplandocs/FDOTCalibrationFactors2012.pdf

3.2 Results

3.2.1 Existing Conditions

The most recent crash data from 2014 to 2018 obtained from FDOT Crash Analysis Reporting (CAR) database were reviewed. Signal Four Analytics data was used to assess if there were any recent significant change in total crash trends.

3.2.1.1 Roadways

The three study roadways are US 90 (3.4 miles) from Antioch Road (County Road 4) to SR 85, SR 85 (7 miles) from US 90 to Bill Lundy Road/Bradley Road and Old Bethel Road (5 miles) from US 90 to SR 85 (Figure 9). Figure 10 presents the total crashes by year on the segments and intersections within the three study roadways. Overall, most crashes occurred on SR 85. Crashes on Old Bethel Road are lower than SR 85 and US 90 given the traffic volume of the roads. For all three study roads, the total number of crashes started to decrease after 2015 and began increasing in 2018. In 2020, there were 39 percent fewer crashes on SR 85 and 54 percent fewer crashes on US 90 compared to 2019. However, the COVID-19 pandemic began in 2020, so these conditions may not reflect longer term trends on the corridor.

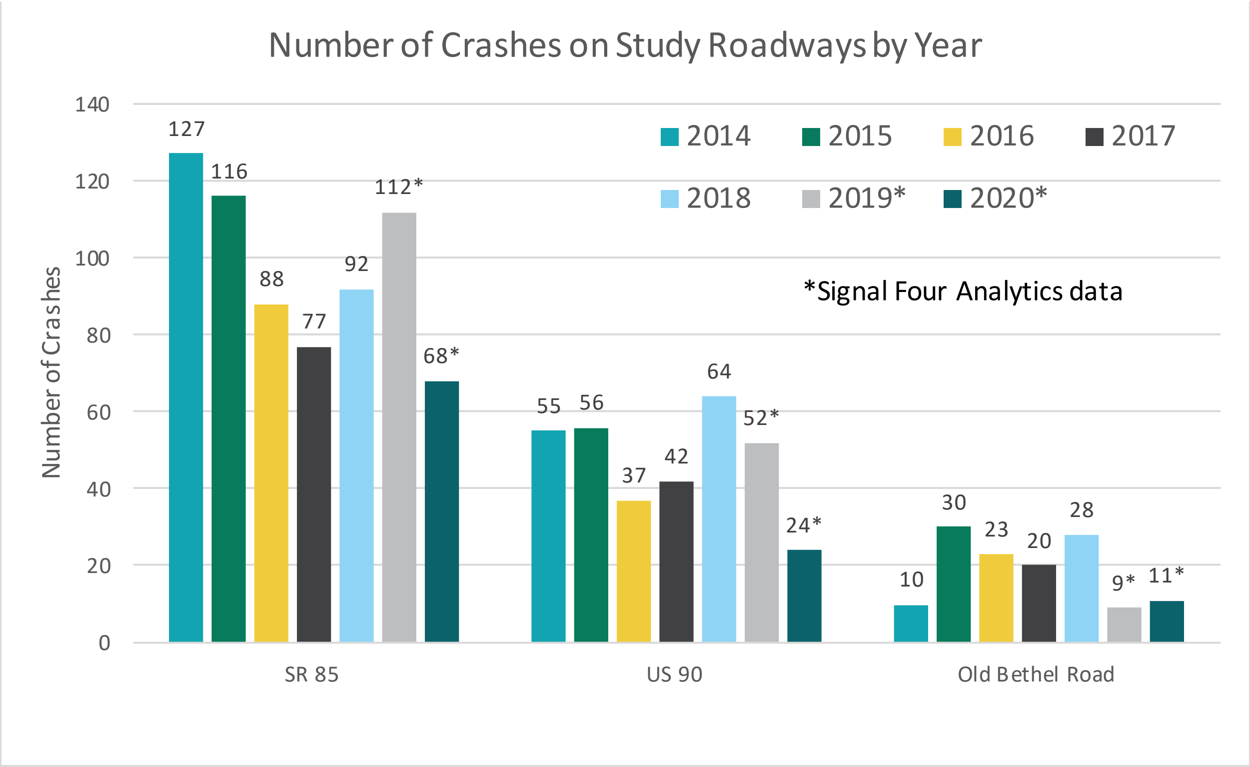


Figure 10 | Number of Crashes on US 90, SR 85, and Old Bethel Road by Year

Table 11 presents the summary of crashes and percentage distribution by crash severity based only on the CAR data. On SR 85, 3.8 percent of the crashes were fatal or incapacitating injury; on US 90, 4.3 percent of the crashes were fatal or incapacitating injury; and on Old Bethel Road, 3.6 percent of the crashes were fatal or incapacitating injury.

Table 11 | Percentage Distribution by Crash Severity on Study Roadways (2014-2018)

Crash Severity	SR 85		US 90		Old Bethel Road	
	Total Crashes	Percentage	Total Crashes	Percentage	Total Crashes	Percentage
Fatal	2	0.4%	1	0.4%	2	1.8%
Incapacitating Injury	17	3.4%	10	3.9%	2	1.8%
Non-Incapacitating Injury	74	14.8%	43	16.9%	22	19.8%
Possible Injury	102	20.4%	55	21.7%	19	17.1%
No Injury	301	60.2%	142	55.9%	63	56.8%
Unknown	4	0.8%	3	1.2%	3	2.7%
Total	**500**	**100.0%**	**254**	**100.0%**	**111**	**100.0%**

Figure 11 presents the summary of crashes by time of day. During the day, the crashes along SR 85 increase steadily until 2:00 PM after which the trend decreases. On US 90 there is a peak in the number of crashes during the AM peak period from 7:00 to 10:00 AM followed by a peak again at 3:00 PM and then starts declining. Old Bethel Road shows a peak in the number of crashes during the AM peak period, again midday at 2:00 PM, with a small peak later in evening at 10:00 PM.

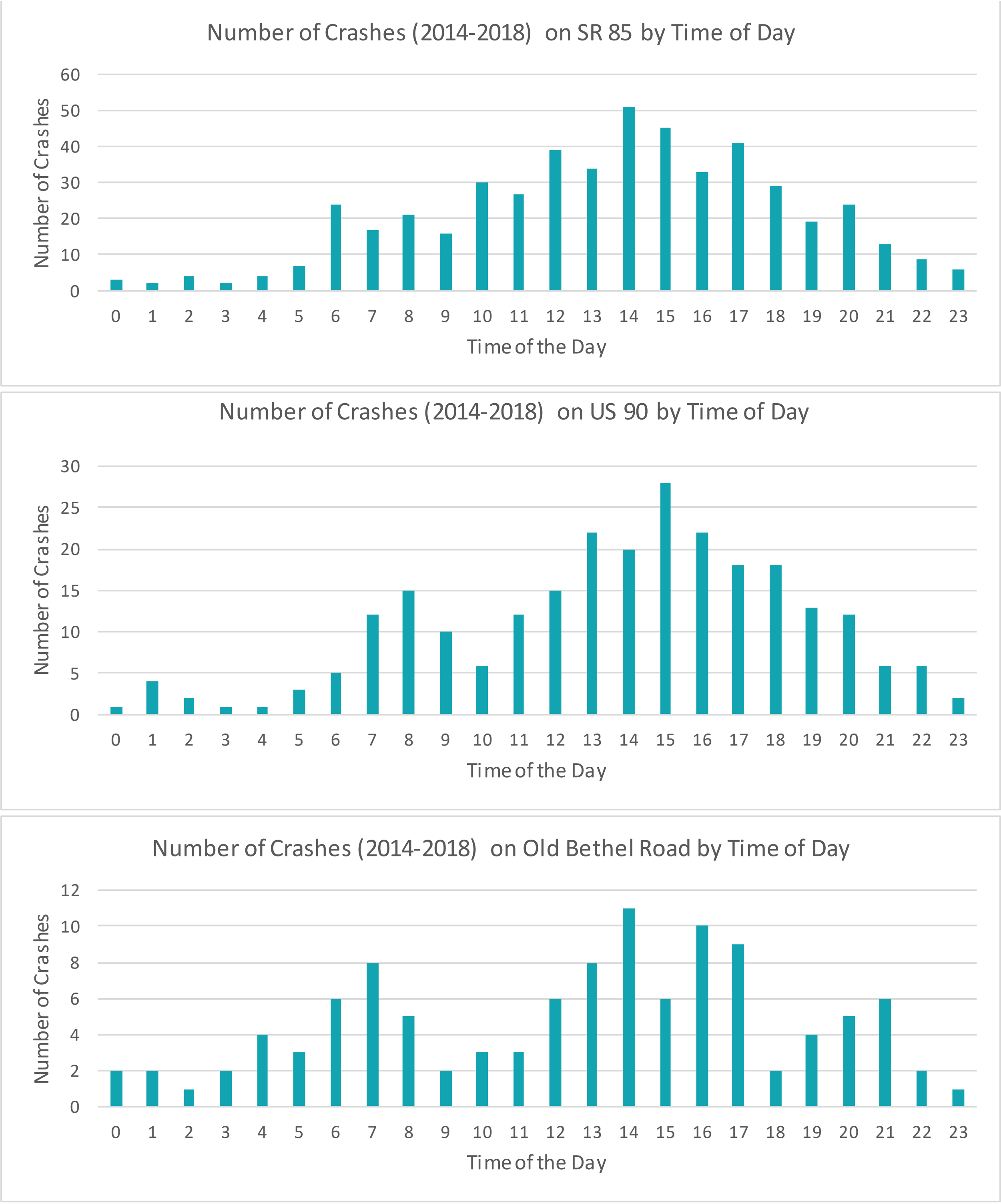


Figure 11 | Number of Crashes at Study Roadways by Time of the Day (2014 – 2018)

Figure 12 presents the summary of crashes by crash collision types. On all three study roadways, the most common collision type is front to rear end (approximately one-third of all crashes). The second most frequent collision type was angle crashes (23 percent on Old Bethel Road and 31 percent on SR 85 and US 90). Rear end crashes are common in congested conditions and intersections and the angle crashes are typical at the many intersections along these roadways.

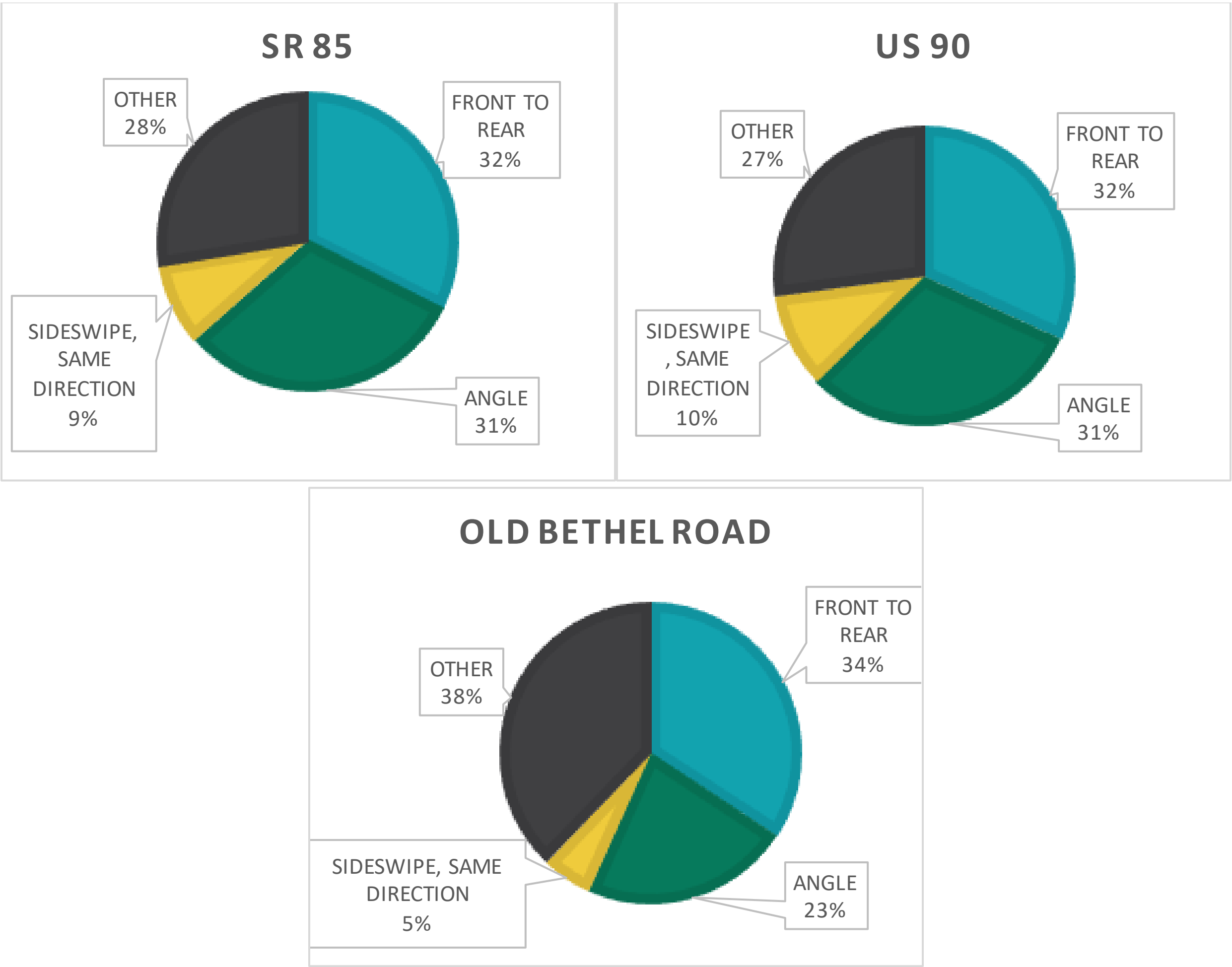


Figure 12 | Summary of Crashes on Study Roadways by Collision Type (2014 – 2018)

Figure 13 presents the summary of crashes on the three study roadways by the “driver action” information provided in the crash reports and subsequently the CAR crash data. On all three roads, careless or negligence is a relatively high percentage of the crashes (Old Bethel Road, 42 percent; SR 85, 27 percent; and US 90, 26 percent). Failure to yield the right of way was also fairly common (SR 85, 30 percent; US 90, 25 percent; and Old Bethel Road, 17 percent).

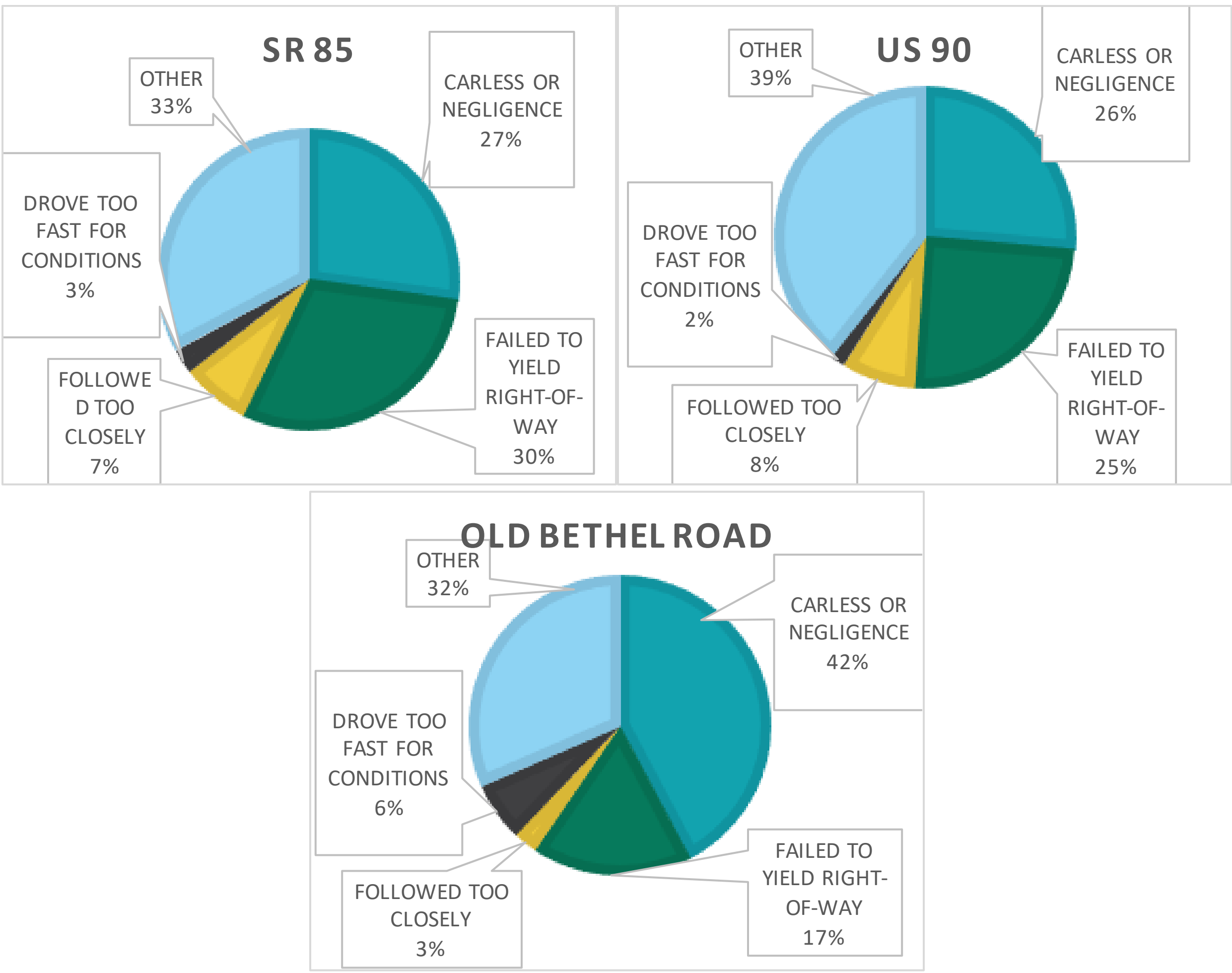


Figure 13 | Summary of Crashes on Study Roadways by Driver Action (2014 – 2018)

3.2.1.2 Fatal Crash Analysis

The CAR (2014-2018) and Signal Four Analytics (2019 through July 2021) fatal crash reports for the three study roadways were reviewed to identify potential contributing factors or trends. As shown in Figure 14, the most fatal crashes occurred in 2019 and currently 2021 (seven months); there were no fatal crashes in 2016. Figure 15 presents the summary of fatal crashes geolocated on the study roadways. A summary of the fatal crashes in the study area follows:

- Seven out of nine fatal crashes involved a motorcycle.
  - Four of these crashes were due to failure to yield the right of way at the intersection.
  - Two motorcyclists ran off the roadway near the curve at Springwood Circle and Old Bethel Road. There was no lighting present when the crash occurred.
- There was a pedestrian related fatal crash that occurred in a dark-lighted condition. The pedestrian was walking on the outside lane in the westbound direction near the intersection of US 90 and Antioch Road.

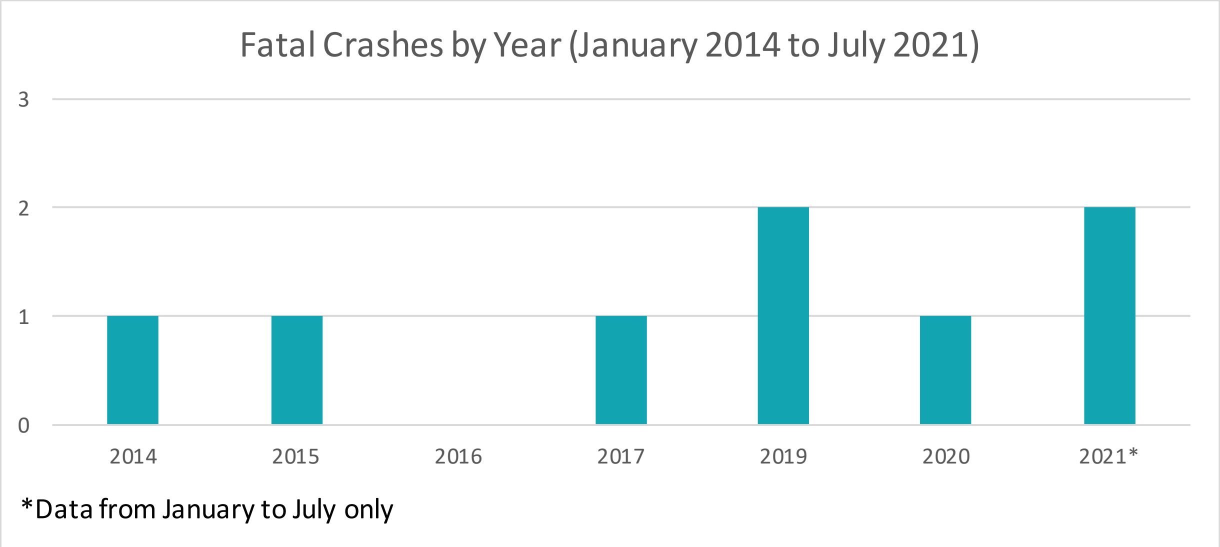


Figure 14 | Number of Fatal Crashes by Year (CAR and Signal Four Analytics)

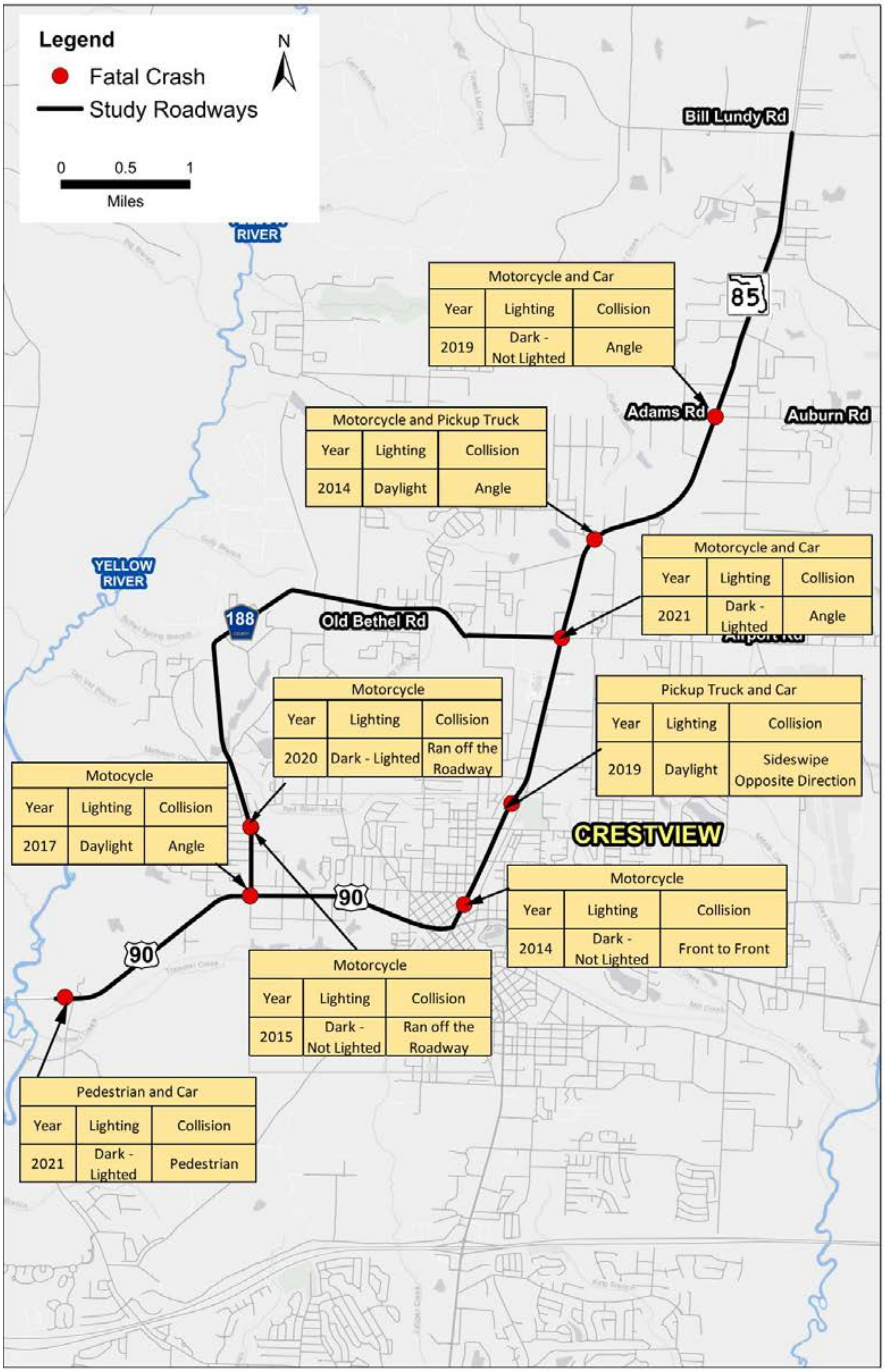


Figure 15 | Fatal Crashes on Study Roadways from January 2014 to July 2021

3.2.1.3 Economic Cost of Crashes Analysis

Crash costs by severity (Table 12) were taken from the FDOT Roadway Design Bulletin 14-12, and State Safety Office Bulletin 14-01.

Table 13 presents the summary of crash costs by crash severity for each roadway. Note, there were crashes with unknown severity on each roadway (Table 11); these crashes were excluded from the analysis. The five-year crash cost is highest for SR 85 with $58.32 million dollars. Figure 16 shows crash cost per year per mile of roadway. From this perspective crash costs are highest on US 90 with $ 1.87 million dollar per year per mile – largely due to the higher crash severity on this road.

Table 12 | FDOT KABCO Crash Cost (2013 dollars)

Crash Severity	Comprehensive Crash Costs
Fatal (K)	$10,100,000
Incapacitating Injury (A)	$818,636
Non-Incapacitating Injury, Moderate Injury (B)	$163,254
Possible Injury, Minor Injury (C)	$99,645
No Injury, Property Damage Only (O)	$6,500

Source: Florida Department of Transportation Crash Analysis Reporting (C.A.R.) System, link: https://www.fdot.gov/docs/default-source/roadway/Bulletin/RDB14-12.pdf

Table 13 | Summary of 2014 – 2018 Crash Cost (in million dollar) by Severity

Crash Severity	SR 85	US 90	Old Bethel Road
Fatal	$20.20	$10.10	$20.20
Incapacitating Injury	$13.92	$8.19	$1.64
No-Incapacitating Injury	$12.08	$7.02	$3.59
Possible Injury	$10.16	$5.48	$1.89
No Injury	$1.96	$0.92	$0.41
Total	$58.32	$31.71	$27.73

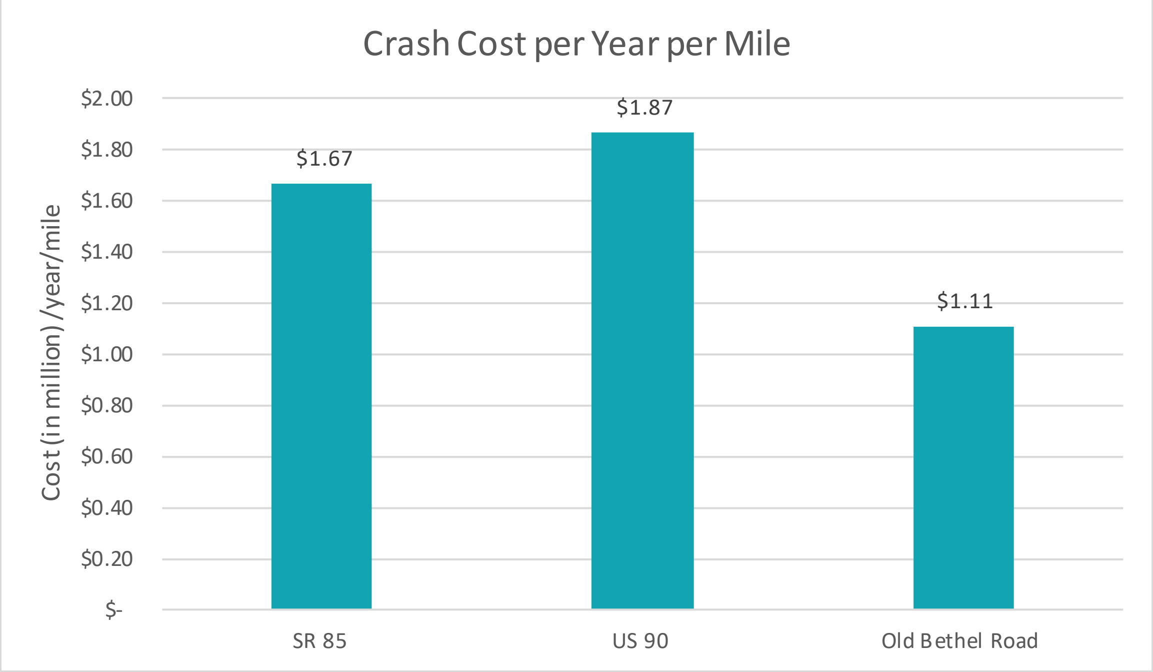


Figure 16 | Crash Cost per Year per Mile for Study Roadways

3.2.1.4 Intersections

The crash analysis for the eight intersections listed in Figure 9 was done using the crash data from CAR. All crashes within 250 feet of the intersection were considered as intersection related. Table 14 presents the summary of crashes by severity type. One fatal crash occurred at both the intersections of SR 85/Houston Lane and US 90/Old Bethel Road. There were three incapacitating injury crashes at intersection of US 90 / SR 85.

Table 14 | Summary of Crashes at Study Intersections by Crash Severity (2014-2018)

Intersection Names	Fatal	Incapacitating Injury	Non-Incapacitating Injury	Possible Injury	No Injury	Unknown	Total
SR 85 / US 90	0	3	8	14	55	0	80
SR 85 / Stillwell Road	0	2	10	12	22	1	47
SR 85 / Old Bethel Road	0	0	3	9	28	0	40
SR 85 / Auburn Road / PJ Adams Road	0	1	7	5	12	0	25
US 90 / Old Bethel Road	1	1	7	3	8	0	20
US 90 / Hickory Avenue	0	0	4	3	7	0	14
SR 85 / Houston Lane	1	1	4	3	3	0	12
SR 85 / Bill Lundy Road / Bradley Road	0	2	0	0	5	0	7

Table 15 presents a summary of crashes by collision type. Front to rear and angle crashes were the most frequent. Overall, these two crash types account for more than 70 percent of the intersection crashes at the intersections of SR 85 / Old Bethel Road, and SR 85 / Auburn Road / Adams Road and more than 55 percent of the intersection crashes at all of the study intersections. The two fatal crashes at the intersections were angle collision attributed to driver's failure to yield right of way.

Table 15 | Summary of Crashes at Study Intersections by Collision Type (2014-2018)

Intersection	Front To Rear	Angle	Sideswipe, Same Direction	Front To Front	Sideswipe, Opposite Direction	Rear To Side	Other	Total
SR 85 / US 90	32	23	9	7	1	1	7	80
SR 85 / Stillwell Road	19	13	5	5	0	0	5	47
SR 85 / Old Bethel Road	20	10	3	2	0	0	5	40
SR 85 / Auburn Road / PJ Adams Road	2	16	0	0	0	0	7	25
US 90 / Old Bethel Road	7	6	3	0	1	0	3	20
US 90 / Hickory Avenue	7	2	2	1	0	0	2	14
SR 85 / Houston Lane	1	6	1	0	0	0	4	12
SR 85 / Bill Lundy Road / Bradley Road	3	1	0	0	0	0	3	7

3.2.2 Future Conditions

The HSM Predictive Method was used to estimate safety performance for the three study roadways and for each of the Northwest Crestview Bypass alternative corridors for No-Build, and with and without the Eastern Crestview Bypass (2035 and 2055). Safety performance for each alternative corridor is estimated as the total number of crashes on the proposed bypass, plus the total number of crashes on US 90, SR 85, and Old Bethel Road with the given bypass constructed. The six proposed Northwest Crestview Bypass alternative corridors are presented in Figure 3. The AADT for 2035 and 2055 are presented in Section 2.3. The cross-section of the proposed bypass is shown in Section 3.2.2.3.

The following sections summarize the safety performance (i.e., all crash severities, and fatal and injury crashes) on study roadways and Northwest Crestview Bypass alternative corridors with and without the Eastern Crestview Bypass. The safety performance results are organized by the networkwide, each study roadway, and finally the Northwest Crestview Bypass alternatives corridors.

3.2.2.1 Networkwide Safety Performance

Table 16 to Table 19 show the total number of crashes and number of fatal and injury crashes for the system (i.e., US 90, SR 85, Old Bethel Road and the proposed Northwest Crestview Bypass) in 2035 and 2055 without and with the Eastern Crestview Bypass. The trend in crashes correlates to the daily traffic forecasted for the study corridors and the bypass. As traffic volume increases on the roadway, so do the forecasted crashes. Overall, the forecasted AADT on the study corridors and the Northwest Crestview Bypass alternative corridors is lower with the Eastern Crestview Bypass than without the Eastern Crestview Bypass; therefore, system crashes are lower with the Eastern Crestview Bypass due to the lower volumes.

In 2035 and 2055, Alternative 2 with the Eastern Crestview Bypass (Table 17 and Table 19) has the lowest number of total, and fatal and injury crashes. With this alternative corridor, the proposed Northwest Crestview Bypass is located along Old Bethel Road itself and therefore the number of system crashes is a summation of crashes on only three corridors (US 90, SR 85, and Old Bethel Road) rather than four corridors (US 90, SR 85, Old Bethel Road and the Northwest Crestview Bypass).

Alternatives 5 and 6, without the Eastern Crestview Bypass is forecasted to have the highest number of total and fatal and injury crashes. This is due to a combination of traffic volumes and the length of the bypass.

Table 16 | Total, Fatal and Injury Crashes - 2035 Without Eastern Crestview Bypass

Crash Type	No Build	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Total Crashes	105.1	114.8	101.7	107.5	111.6	114.4	118.1
Fatal and Injury Crashes	32.0	34.2	30.6	32.0	33.2	34.0	35.3

Table 17 | Total, Fatal and Injury Crashes - 2035 With Eastern Crestview Bypass

Crash Type	No Build	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Total Crashes	105.1	110.5	97.3	103.0	105.7	108.6	112.9
Fatal and Injury Crashes	32.0	32.9	29.3	30.7	31.5	32.3	33.7

Table 18 | Total, Fatal and Injury Crashes - 2055 Without Eastern Crestview Bypass

Crash Type	No Build	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Total Crashes	114.2	127.9	117.9	125.0	128.3	135.5	134.2
Fatal and Injury Crashes	34.8	38.2	35.6	37.4	38.3	40.4	40.2

Table 19 | Total, Fatal and Injury Crashes - 2055 With Eastern Crestview Bypass

Crash Type	No Build	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Total Crashes	114.2	124.8	112.9	119.6	122.5	126.1	130.7
Fatal and Injury Crashes	34.8	37.4	34.1	35.8	36.6	37.7	39.1

3.2.2.2 Study Roadways Safety Performance

While from an overall perspective Alternative 2 has the lowest total crashes and number of fatal and injury crashes, each study roadway has a different safety performance with each alternative corridor.

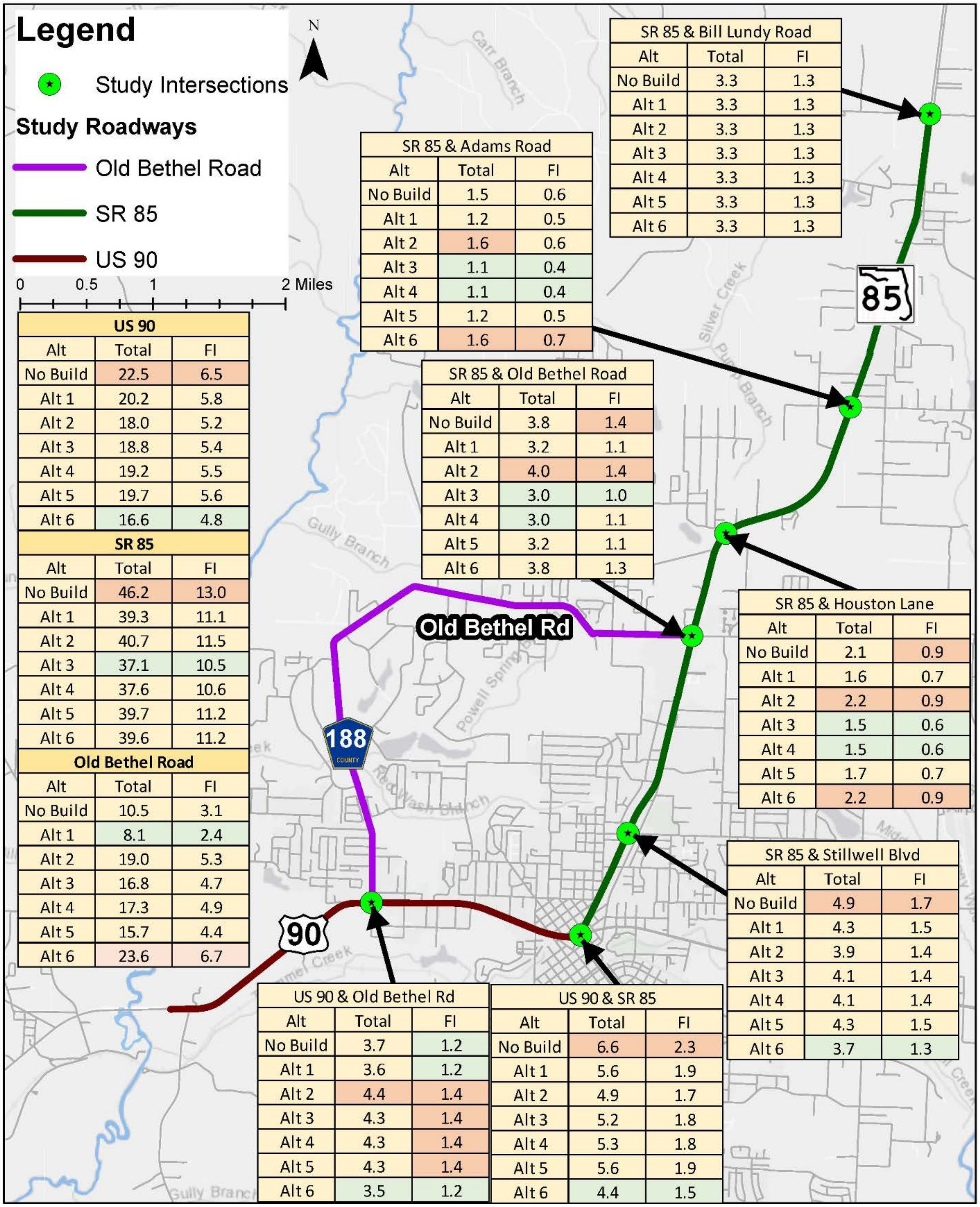
Figure 17 and Figure 19 present the segment and intersection crashes on study roadways without the Eastern Crestview Bypass and Figure 18 to Figure 20 present the segment and intersection crashes on study roadways with the Eastern Crestview Bypass. The following provides a summary of safety performance on each roadway under each alternative corridor. Only the study intersections were included in the analysis and crashes at other intersections on the study roadways were not accounted in this study.

- Overall, the crashes on study corridors (SR 85, US 90, and Old Bethel Road) with the Eastern Crestview Bypass is lower compared to crashes without the Eastern Crestview Bypass. On SR 85 and US 90, the total crashes with the Eastern Crestview Bypass is 0 to 3.1 crashes lower than without the Eastern Crestview Bypass for all the alternative corridors except Alternative 1 for US 90 which is 0.4 crashes higher than without the Eastern Crestview Bypass. On Old Bethel Road, the total crashes with the Eastern Crestview Bypass is 0 to 1.9 crashes lower than without the Eastern Crestview Bypass.
- Under each scenario of with and without the Eastern Crestview Bypass, the following are the observations:
  - Alternative 1
    - Old Bethel Road - Alternative 1 is proposed west of Old Bethel Road and terminates at the intersection of SR 85/Auburn Road/Adams Road. The AADT on Old Bethel Road under the scenario is lowest of all the alternative corridors. Therefore, crashes on Old Bethel Road would be lowest with this alternative corridor.
    - US 90 and SR 85 – Traffic volumes on US 90 study corridor and SR 85 from US 90 to Old Bethel Road stay the highest under this alternative corridor. Therefore, with this alternative corridor the crashes are forecast to be the higher on these roads compared to other alternative corridors.
  - Alternative 2
    - Old Bethel Road - Alternative 2 would use the existing Old Bethel Road alignment and terminates at the intersection of Old Bethel Road/SR 85. This alternative corridor increases traffic volume on SR 85 north to Auburn Road/Adams Road. Thus, the predicted crashes at the intersections and on the segments on this section of SR 85 corridor are higher than other alternative corridors.
  - Alternative 3 and 4
    - SR 85 - Approximately 50% of Alternatives 3 and 4 overlap with Old Bethel Road and terminate at the intersection of SR 85 and Auburn Road/Adams Road. These alternative corridors yield the lowest traffic volumes on SR 85 between Old Bethel Road and Auburn Road/Adams Road; therefore SR 85 between Old Bethel Road and

Auburn Road/Adams Road has the lowest crash frequency in these alternative corridors.

- Alternative 5
  - US 90 and SR 85 – In this alternative corridor, traffic volumes stay relatively high on US 90 from Old Bethel Road to SR 85 and on SR 85 from US 90 to Old Bethel Road; therefore, crashes on these sections of roadways are relatively high in this alternative corridor compared to other alternative corridors.
- Alternative 6
  - SR 85 – Similar to Alternative 2, this alternative corridor increases traffic volume on SR 85 between Old Bethel Road and Auburn Road/Adams Road. Thus, the predicted crashes on intersections and segments on this section of SR 85 corridor are higher than other alternative corridors.
  - US 90 – This alternative corridor is proposed between Old Bethel and SR 85 and yields the lowest volumes on US 90; hence the predicted crashes are lowest with this alternative corridor for this section of US 90.
  - Old Bethel Road – In Alternative 6, there are no changes to Old Bethel Road, and Old Bethel Road traffic volumes are highest under this alternative corridor; hence the forecast number of crashes on Old Bethel Road are highest with this alternative corridor.

2035 Predicted Crashes - Without Eastern Bypass Scenario



US 90		
Alt	Total	FI
No Build	22.5	6.5
Alt 1	20.2	5.8
Alt 2	18.0	5.2
Alt 3	18.8	5.4
Alt 4	19.2	5.5
Alt 5	19.7	5.6
Alt 6	16.6	4.8

SR 85		
Alt	Total	FI
No Build	46.2	13.0
Alt 1	39.3	11.1
Alt 2	40.7	11.5
Alt 3	37.1	10.5
Alt 4	37.6	10.6
Alt 5	39.7	11.2
Alt 6	39.6	11.2

Old Bethel Road		
Alt	Total	FI
No Build	10.5	3.1
Alt 1	8.1	2.4
Alt 2	19.0	5.3
Alt 3	16.8	4.7
Alt 4	17.3	4.9
Alt 5	15.7	4.4
Alt 6	23.6	6.7

SR 85 & Bill Lundy Road		
Alt	Total	FI
No Build	3.3	1.3
Alt 1	3.3	1.3
Alt 2	3.3	1.3
Alt 3	3.3	1.3
Alt 4	3.3	1.3
Alt 5	3.3	1.3
Alt 6	3.3	1.3

SR 85 & Adams Road		
Alt	Total	FI
No Build	1.5	0.6
Alt 1	1.2	0.5
Alt 2	1.6	0.6
Alt 3	1.1	0.4
Alt 4	1.1	0.4
Alt 5	1.2	0.5
Alt 6	1.6	0.7

SR 85 & Old Bethel Road		
Alt	Total	FI
No Build	3.8	1.4
Alt 1	3.2	1.1
Alt 2	4.0	1.4
Alt 3	3.0	1.0
Alt 4	3.0	1.1
Alt 5	3.2	1.1
Alt 6	3.8	1.3

SR 85 & Houston Lane		
Alt	Total	FI
No Build	2.1	0.9
Alt 1	1.6	0.7
Alt 2	2.2	0.9
Alt 3	1.5	0.6
Alt 4	1.5	0.6
Alt 5	1.7	0.7
Alt 6	2.2	0.9

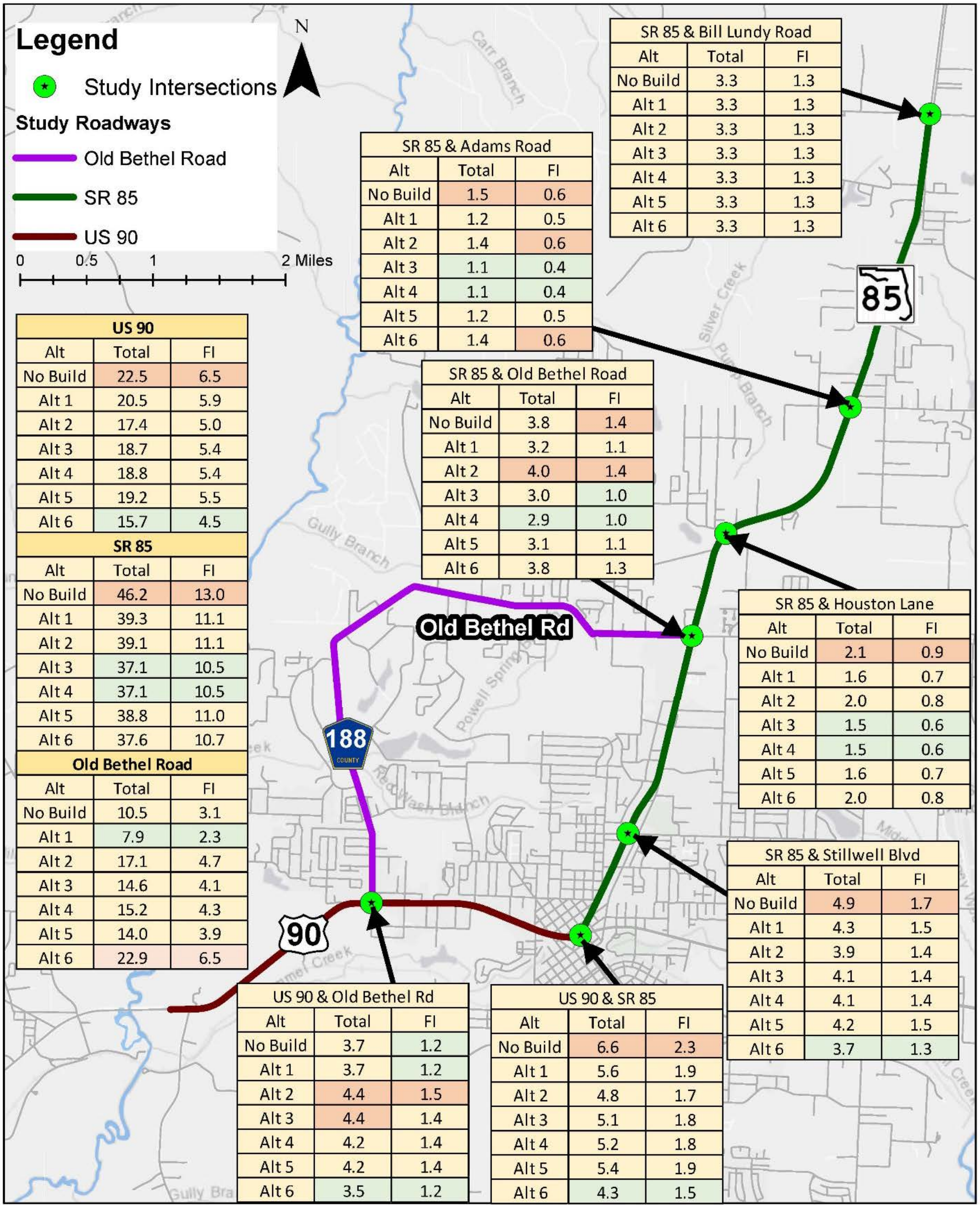
SR 85 & Stillwell Blvd		
Alt	Total	FI
No Build	4.9	1.7
Alt 1	4.3	1.5
Alt 2	3.9	1.4
Alt 3	4.1	1.4
Alt 4	4.1	1.4
Alt 5	4.3	1.5
Alt 6	3.7	1.3

US 90 & Old Bethel Rd		
Alt	Total	FI
No Build	3.7	1.2
Alt 1	3.6	1.2
Alt 2	4.4	1.4
Alt 3	4.3	1.4
Alt 4	4.3	1.4
Alt 5	4.3	1.4
Alt 6	3.5	1.2

US 90 & SR 85		
Alt	Total	FI
No Build	6.6	2.3
Alt 1	5.6	1.9
Alt 2	4.9	1.7
Alt 3	5.2	1.8
Alt 4	5.3	1.8
Alt 5	5.6	1.9
Alt 6	4.4	1.5

Figure 17 | 2035 Predicted Crashes on Study Roadways Without the Eastern Crestview Bypass

2035 Predicted Crashes - With Eastern Bypass Scenario



US 90		
Alt	Total	FI
No Build	22.5	6.5
Alt 1	20.5	5.9
Alt 2	17.4	5.0
Alt 3	18.7	5.4
Alt 4	18.8	5.4
Alt 5	19.2	5.5
Alt 6	15.7	4.5

SR 85		
Alt	Total	FI
No Build	46.2	13.0
Alt 1	39.3	11.1
Alt 2	39.1	11.1
Alt 3	37.1	10.5
Alt 4	37.1	10.5
Alt 5	38.8	11.0
Alt 6	37.6	10.7

Old Bethel Road		
Alt	Total	FI
No Build	10.5	3.1
Alt 1	7.9	2.3
Alt 2	17.1	4.7
Alt 3	14.6	4.1
Alt 4	15.2	4.3
Alt 5	14.0	3.9
Alt 6	22.9	6.5

SR 85 & Bill Lundy Road		
Alt	Total	FI
No Build	3.3	1.3
Alt 1	3.3	1.3
Alt 2	3.3	1.3
Alt 3	3.3	1.3
Alt 4	3.3	1.3
Alt 5	3.3	1.3
Alt 6	3.3	1.3

SR 85 & Adams Road		
Alt	Total	FI
No Build	1.5	0.6
Alt 1	1.2	0.5
Alt 2	1.4	0.6
Alt 3	1.1	0.4
Alt 4	1.1	0.4
Alt 5	1.2	0.5
Alt 6	1.4	0.6

SR 85 & Old Bethel Road		
Alt	Total	FI
No Build	3.8	1.4
Alt 1	3.2	1.1
Alt 2	4.0	1.4
Alt 3	3.0	1.0
Alt 4	2.9	1.0
Alt 5	3.1	1.1
Alt 6	3.8	1.3

SR 85 & Houston Lane		
Alt	Total	FI
No Build	2.1	0.9
Alt 1	1.6	0.7
Alt 2	2.0	0.8
Alt 3	1.5	0.6
Alt 4	1.5	0.6
Alt 5	1.6	0.7
Alt 6	2.0	0.8

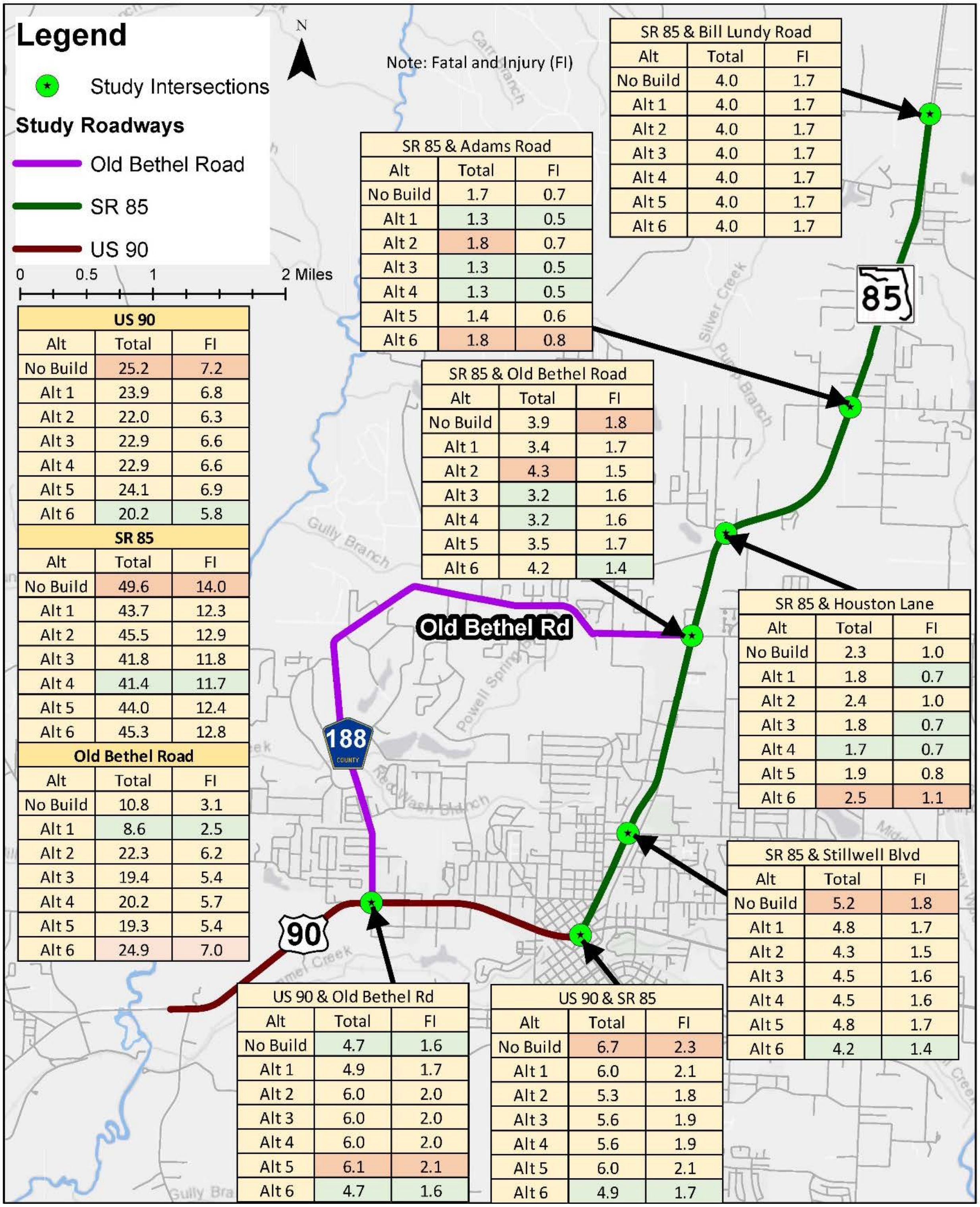
SR 85 & Stillwell Blvd		
Alt	Total	FI
No Build	4.9	1.7
Alt 1	4.3	1.5
Alt 2	3.9	1.4
Alt 3	4.1	1.4
Alt 4	4.1	1.4
Alt 5	4.2	1.5
Alt 6	3.7	1.3

US 90 & Old Bethel Rd		
Alt	Total	FI
No Build	3.7	1.2
Alt 1	3.7	1.2
Alt 2	4.4	1.5
Alt 3	4.4	1.4
Alt 4	4.2	1.4
Alt 5	4.2	1.4
Alt 6	3.5	1.2

US 90 & SR 85		
Alt	Total	FI
No Build	6.6	2.3
Alt 1	5.6	1.9
Alt 2	4.8	1.7
Alt 3	5.1	1.8
Alt 4	5.2	1.8
Alt 5	5.4	1.9
Alt 6	4.3	1.5

Figure 18 | 2035 Predicted Crashes on Study Roadways With the Eastern Crestview Bypass

2055 Predicted Crashes - Without Eastern Bypass Scenario



US 90		
Alt	Total	FI
No Build	25.2	7.2
Alt 1	23.9	6.8
Alt 2	22.0	6.3
Alt 3	22.9	6.6
Alt 4	22.9	6.6
Alt 5	24.1	6.9
Alt 6	20.2	5.8

SR 85		
Alt	Total	FI
No Build	49.6	14.0
Alt 1	43.7	12.3
Alt 2	45.5	12.9
Alt 3	41.8	11.8
Alt 4	41.4	11.7
Alt 5	44.0	12.4
Alt 6	45.3	12.8

Old Bethel Road		
Alt	Total	FI
No Build	10.8	3.1
Alt 1	8.6	2.5
Alt 2	22.3	6.2
Alt 3	19.4	5.4
Alt 4	20.2	5.7
Alt 5	19.3	5.4
Alt 6	24.9	7.0

SR 85 & Adams Road		
Alt	Total	FI
No Build	1.7	0.7
Alt 1	1.3	0.5
Alt 2	1.8	0.7
Alt 3	1.3	0.5
Alt 4	1.3	0.5
Alt 5	1.4	0.6
Alt 6	1.8	0.8

SR 85 & Bill Lundy Road		
Alt	Total	FI
No Build	4.0	1.7
Alt 1	4.0	1.7
Alt 2	4.0	1.7
Alt 3	4.0	1.7
Alt 4	4.0	1.7
Alt 5	4.0	1.7
Alt 6	4.0	1.7

SR 85 & Old Bethel Road		
Alt	Total	FI
No Build	3.9	1.8
Alt 1	3.4	1.7
Alt 2	4.3	1.5
Alt 3	3.2	1.6
Alt 4	3.2	1.6
Alt 5	3.5	1.7
Alt 6	4.2	1.4

SR 85 & Houston Lane		
Alt	Total	FI
No Build	2.3	1.0
Alt 1	1.8	0.7
Alt 2	2.4	1.0
Alt 3	1.8	0.7
Alt 4	1.7	0.7
Alt 5	1.9	0.8
Alt 6	2.5	1.1

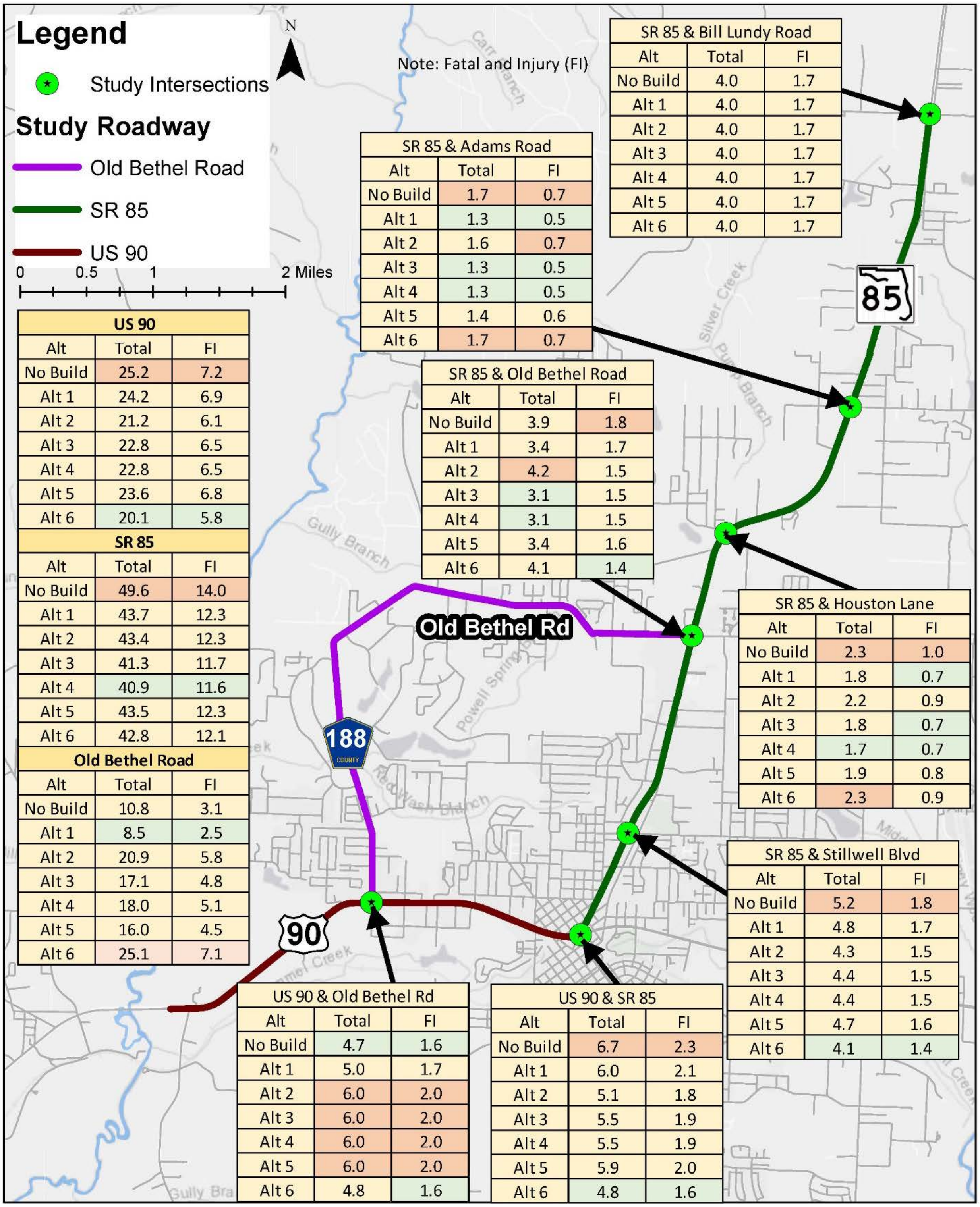
SR 85 & Stillwell Blvd		
Alt	Total	FI
No Build	5.2	1.8
Alt 1	4.8	1.7
Alt 2	4.3	1.5
Alt 3	4.5	1.6
Alt 4	4.5	1.6
Alt 5	4.8	1.7
Alt 6	4.2	1.4

US 90 & Old Bethel Rd		
Alt	Total	FI
No Build	4.7	1.6
Alt 1	4.9	1.7
Alt 2	6.0	2.0
Alt 3	6.0	2.0
Alt 4	6.0	2.0
Alt 5	6.1	2.1
Alt 6	4.7	1.6

US 90 & SR 85		
Alt	Total	FI
No Build	6.7	2.3
Alt 1	6.0	2.1
Alt 2	5.3	1.8
Alt 3	5.6	1.9
Alt 4	5.6	1.9
Alt 5	6.0	2.1
Alt 6	4.9	1.7

Figure 19 | 2055 Predicted Crashes on Study Roadways Without the Eastern Crestview Bypass

2055 Predicted Crashes - With Eastern Bypass Scenario



US 90		
Alt	Total	FI
No Build	25.2	7.2
Alt 1	24.2	6.9
Alt 2	21.2	6.1
Alt 3	22.8	6.5
Alt 4	22.8	6.5
Alt 5	23.6	6.8
Alt 6	20.1	5.8
SR 85		
Alt	Total	FI
No Build	49.6	14.0
Alt 1	43.7	12.3
Alt 2	43.4	12.3
Alt 3	41.3	11.7
Alt 4	40.9	11.6
Alt 5	43.5	12.3
Alt 6	42.8	12.1
Old Bethel Road		
Alt	Total	FI
No Build	10.8	3.1
Alt 1	8.5	2.5
Alt 2	20.9	5.8
Alt 3	17.1	4.8
Alt 4	18.0	5.1
Alt 5	16.0	4.5
Alt 6	25.1	7.1

SR 85 & Bill Lundy Road		
Alt	Total	FI
No Build	4.0	1.7
Alt 1	4.0	1.7
Alt 2	4.0	1.7
Alt 3	4.0	1.7
Alt 4	4.0	1.7
Alt 5	4.0	1.7
Alt 6	4.0	1.7

SR 85 & Adams Road		
Alt	Total	FI
No Build	1.7	0.7
Alt 1	1.3	0.5
Alt 2	1.6	0.7
Alt 3	1.3	0.5
Alt 4	1.3	0.5
Alt 5	1.4	0.6
Alt 6	1.7	0.7

SR 85 & Old Bethel Road		
Alt	Total	FI
No Build	3.9	1.8
Alt 1	3.4	1.7
Alt 2	4.2	1.5
Alt 3	3.1	1.5
Alt 4	3.1	1.5
Alt 5	3.4	1.6
Alt 6	4.1	1.4

SR 85 & Houston Lane		
Alt	Total	FI
No Build	2.3	1.0
Alt 1	1.8	0.7
Alt 2	2.2	0.9
Alt 3	1.8	0.7
Alt 4	1.7	0.7
Alt 5	1.9	0.8
Alt 6	2.3	0.9

SR 85 & Stillwell Blvd		
Alt	Total	FI
No Build	5.2	1.8
Alt 1	4.8	1.7
Alt 2	4.3	1.5
Alt 3	4.4	1.5
Alt 4	4.4	1.5
Alt 5	4.7	1.6
Alt 6	4.1	1.4

US 90 & Old Bethel Rd		
Alt	Total	FI
No Build	4.7	1.6
Alt 1	5.0	1.7
Alt 2	6.0	2.0
Alt 3	6.0	2.0
Alt 4	6.0	2.0
Alt 5	6.0	2.0
Alt 6	4.8	1.6

US 90 & SR 85		
Alt	Total	FI
No Build	6.7	2.3
Alt 1	6.0	2.1
Alt 2	5.1	1.8
Alt 3	5.5	1.9
Alt 4	5.5	1.9
Alt 5	5.9	2.0
Alt 6	4.8	1.6

Figure 20 | 2055 Predicted Crashes on Study Roadways With the Eastern Crestview Bypass

3.2.2.3 Northwest Crestview Bypass Alternative Corridors Safety Performance

The six proposed Northwest Crestview Bypass alternative corridors were modeled with the same cross-section configuration. Figure 21 shows the assumed cross-section: four-lane divided facility with seven-foot buffered bike lanes, curb and gutter, and six-foot sidewalks. Alternative 1 is the longest at 8.7 miles followed by Alternative 5 which is 8.6 miles. The shortest bypass is Alternative 6 at 3.6 miles.

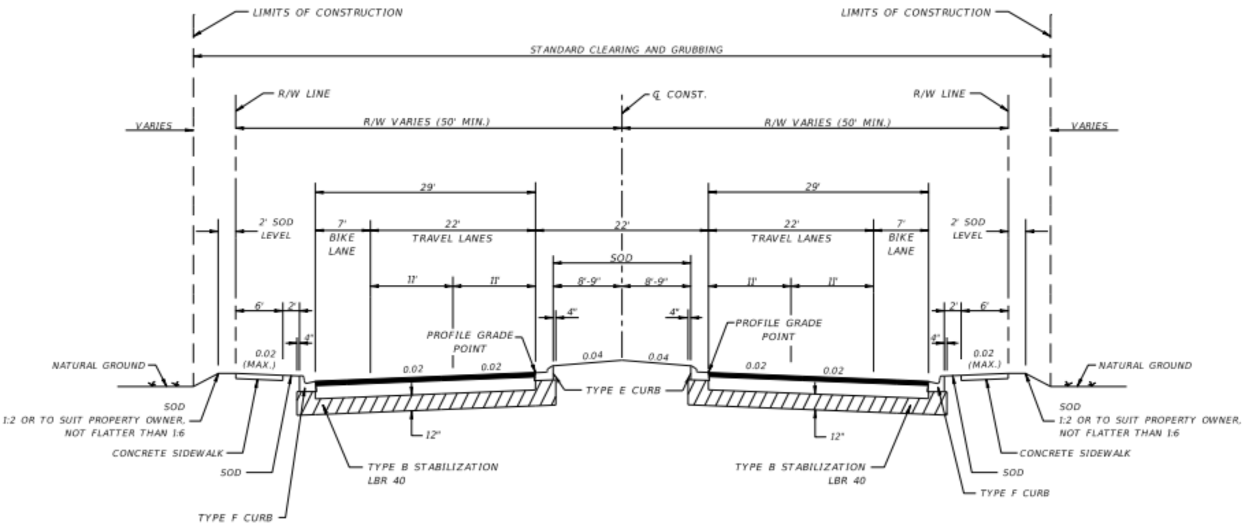


Figure 21 | Cross-section of the Proposed Northwest Crestview Bypass Alternative Corridor

Figure 22 present a summary of predicted crashes on the Northwest Crestview Bypass alternative corridors.

Table 20 present a summary of predicted crash rates on the Northwest Crestview Bypass alternative corridors. In summary:

- For all the alternative corridors, the predicted number of total crashes in without the Eastern Crestview Bypass is 1.5 to 4.5 crashes higher than with the Eastern Crestview Bypass. The combined fatal and injury crashes without the Eastern Crestview Bypass option is 0.4 to 1.3 crashes higher than with the Eastern Crestview Bypass option.
- In 2035, Alternative 1 without the Eastern Crestview Bypass option has the highest number of predicted crashes. In 2055, Alternative 5 without the Eastern Crestview Bypass has the highest number of predicted crashes. Alternative 5 has the highest change (26 percent) in AADT.
- Alternative 6 has the lowest number of total crashes but the highest crash rates in both analysis years, with and without the Eastern Crestview Bypass. This alternative corridor is the shortest in length and has the highest AADT compared to others.

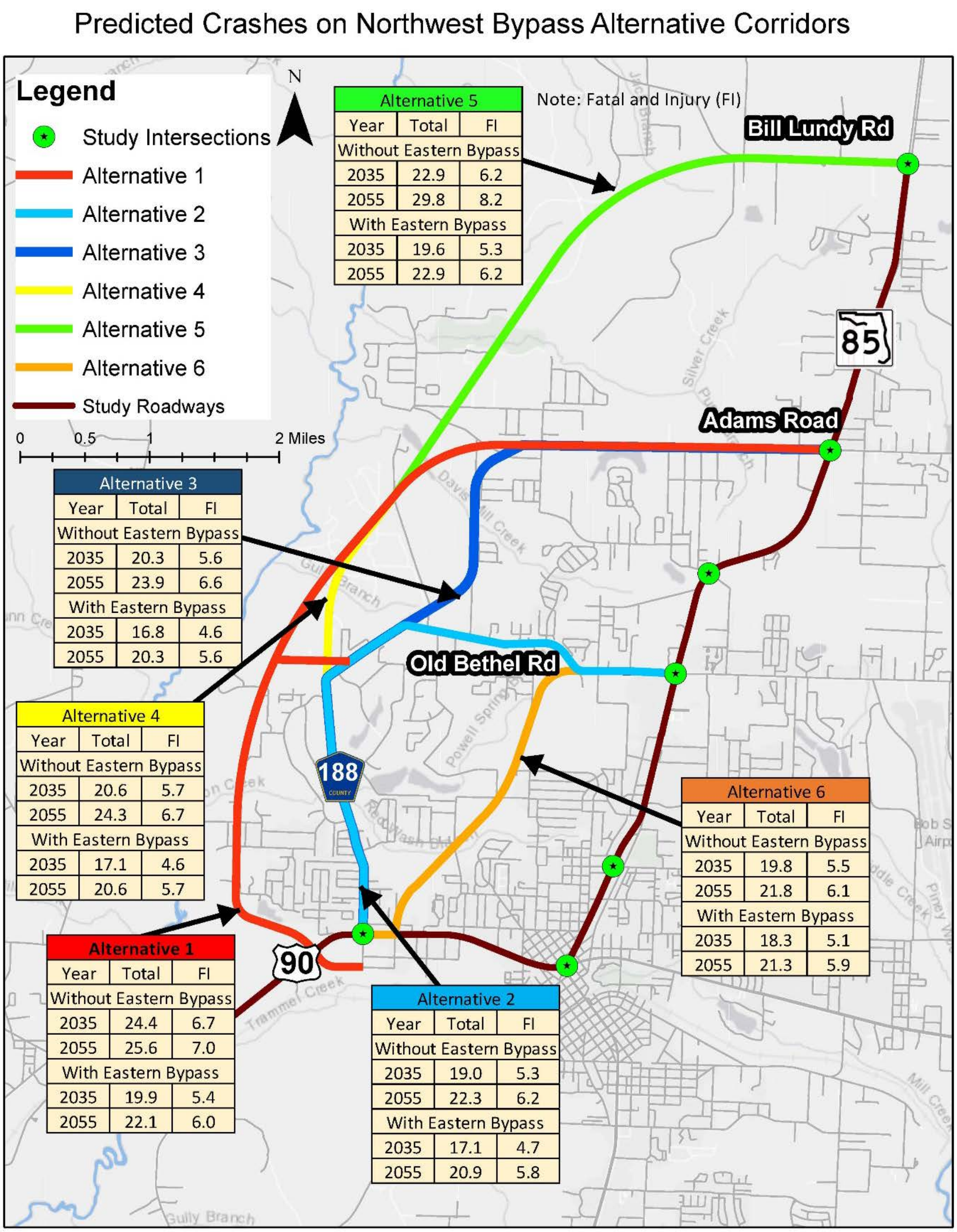


Figure 22 | 2035 and 2055 Predicted Crashes on Northwest Crestview Bypass Alternative Corridors

Table 20 | HSM Predicted Crash Rates for 2035 and 2055 on the Northwest Crestview Bypass Alternative Corridors (crashes/mi/year)

HSM Predicted Total Crash Rates on the Northwest Crestview Bypass				
Scenarios	2035 Without E Bypass	2035 With E Bypass	2055 Without E Bypass	2055 With E Bypass
Alternative 1	2.8	2.3	2.9	2.5
Alternative 2	3.9	3.5	4.5	4.2
Alternative 3	2.9	2.4	3.4	2.9
Alternative 4	2.9	2.4	3.4	2.9
Alternative 5	2.7	2.3	3.5	2.7
Alternative 6	5.5	5.1	6.1	5.9
HSM Predicted Fatal and Injury Crash Rates on the Northwest Crestview Bypass				
Scenarios	2035 Without E Bypass	2035 With E Bypass	2055 Without E Bypass	2055 With E Bypass
Alternative 1	0.8	0.6	0.8	0.7
Alternative 2	1.1	1.0	1.3	1.2
Alternative 3	0.8	0.7	0.9	0.8
Alternative 4	0.8	0.7	1.0	0.8
Alternative 5	0.7	0.6	1.0	0.7
Alternative 6	1.5	1.4	1.7	1.6

3.2.2.4 Future Conditions Summary

A summary of the future safety performance analysis results are provided in Tables 21 and 22 for conditions with and without the Eastern Crestview Bypass, respectively. Overall, the results showed that the safety performance of the study roadways was directly proportional to the forecasted volumes in 2035 and 2055.

As shown, the alternative corridor with the lowest crashes varies by location. In general, Alternative 2 shows the lowest total and fatal and injury crashes from a networkwide perspective for both analysis years and for with and without the Eastern Crestview Bypass. SR 85 shows the most reductions in crashes with Alternative 3 for conditions without the Bypass, but Alternative 3 and/or 4 for conditions with the Eastern Crestview Bypass. US 90 shows the lowest crashes for all scenarios with Alternative 6. The future traffic volumes on Old Bethel Road are the lowest with Alternative 1 since it is the only alternative corridor that does not utilize Old Bethel Road (alternative corridors along Old Bethel Road increase the volume by adding new Northwest Crestview Bypass traffic) and actually shifts traffic away; as such, Alternative 1 shows the lowest crashes Old Bethel Road. The lowest number of crashes on the Northwest Crestview Bypass itself varied by analysis year and scenario.

Table 21 | Alternative Corridor with Lowest Crashes - Without Eastern Crestview Bypass (alternative corridor, crashes)

Location	2035		2055	
	Lowest Total Crashes	Lowest Fatal and Serious Injury Crashes	Lowest Total Crashes	Lowest Fatal and Serious Injury Crashes
Networkwide	Alt 2, 101.7	Alt 2, 30.6	Alt 2, 117.9	Alt 2, 35.6
SR 85	Alt 3, 50.1	Alt 3, 15.3	Alt 3, 56.6	Alt 3, 17.4
US 90	Alt 6, 24.5	Alt 6, 7.4	Alt 6, 29.8	Alt 6, 9.1
Old Bethel Road	Alt 1, 8.1	Alt 1, 2.4	Alt 1, 8.6	Alt 1, 2.5
Northwest Bypass	Alt 2, 19.0	Alt 2, 5.3	Alt 6, 21.8	Alt 6, 6.1

Table 22 | Alternative Corridor with Lowest Crashes - With Eastern Crestview Bypass (alternative corridor, crashes)

Location	2035		2055	
	Lowest Total Crashes	Lowest Fatal and Serious Injury Crashes	Lowest Total Crashes	Lowest Fatal and Serious Injury Crashes
Networkwide	Alt 2, 97.3	Alt 2, 29.3	Alt 2, 112.9	Alt 2, 34.1
SR 85	Alt 3, 50.1 Alt 4, 50.1	Alt 3, 15.3 Alt 4, 15.3	Alt 4, 55.5	Alt 4, 17.1
US 90	Alt 6, 23.6	Alt 6, 7.2	Alt 6, 29.7	Alt 6, 9.0
Old Bethel Road	Alt 1, 7.9	Alt 1, 2.3	Alt 1, 8.5	Alt 1, 2.5
Northwest Bypass	Alt 2, 17.1 Alt 4, 17.1	Alt 3, 4.6 Alt 4, 4.6	Alt 3, 20.3	Alt 3, 5.6

4.0 Summary

This document provides the existing and future traffic and crash analyses conducted for the Northwest Crestview Bypass ACE. The results of these analyses will be used in the evaluation of the alternative corridors as well as the PTAR (Phase II), as appropriate.

4.1 Traffic Analysis

A traffic analysis was conducted to determine the traffic operational performance of each alternative corridor. The traffic analysis was performed consistent with the FDOT 2020 PD&E Manual, 2019 Project Traffic Forecasting Handbook, and 2014 Traffic Analysis Handbook guidelines.

Roadway segment level traffic operational assessments were conducted for the Northwest Crestview Bypass alternative corridors and for study area roadways. The alternative corridor evaluation traffic analysis was conducted for Opening Year 2035, and Design Year 2055. The future year model development and evaluation was conducted for no build conditions and six alternative corridors. In total, 26 alternative scenarios were run using NWFRPM within the Cube modeling software. Volumes were estimated along the alternative corridors as well as the surrounding roadway network by utilizing growth rates derived from model results.

The LOS and v/MSV were estimated for the study area roadways for each alternative corridor using the FDOT 2020 Quality/Level of Service Handbook GSVT's for the projected 2035 and 2055 AADT. Analysis results show that some sections of SR 85 are anticipated to operate below the LOS target with or without the Northwest Crestview Bypass in place in 2035. However, sections of SR 85 north of I-10 and north of US 90, as well as US 90 west of SR 85 are anticipated to improve in v/MSV with the Northwest Crestview Bypass in place compared to the No Build scenario.

In 2055, the LOS target is not anticipated to be met on SR 85 south of Live Oak Church Road, and north of I-10. In addition, PJ Adams Parkway west of SR 85 and the Southwest Crestview Bypass are anticipated to operate below LOS targets in 2055. The v/MSV results show an improvement with the Northwest Crestview Bypass in place on SR 85 north of US 90, and US 90 west of SR 85 compared to the No Build scenario.

4.2 Safety Analysis

The existing and future conditions safety analysis was completed for the study roadways (US 90 from Antioch Road to SR 85, SR 85 from US 90 to Bill Lundy Road/Bradley Road, and Old Bethel Road from US 90 to SR 85) plus the Northwest Crestview Bypass for future conditions.

The most recent crash data (2014 to 2018) was obtained from FDOT Crash Analysis Reporting (CAR) and from January 2019 to July 2021 from Signal Four Analytics. The most common type of crash collisions were angle and front to rear type. The most common driver actions were careless or negligence and failure to yield the right of way. There were nine fatal crashes from January 2014 to July 2021. Seven of them involved a motorcyclist where the crashes were related to either failure to yield right of way or run off the roadway.

The future conditions crash analysis was conducted using the HSM Predictive Method for the study roadways and the proposed Northwest Crestview Bypass alternative corridors. Crashes were forecasted for 2035 and 2055 for conditions without and with the Eastern Crestview Bypass. Overall, the results showed that the safety performance of the study roadways was directly proportional to the forecasted volumes in 2035 and 2055. In other words, the number of crashes increased or decreased when the volumes increased or decreased respectively.

Networkwide (the aggregation of US 90, SR 85, Old Bethel Road, and the Northwest Crestview Bypass alternative corridor), Alternative 2 with the Eastern Crestview Bypass is forecasted to have the lowest number of total crashes and fatal and injury crashes compared to the other alternative corridors. Additionally, Alternative 2 is projected to have fewer total crashes than No Build conditions for all scenarios except 2055 without the Eastern Crestview Bypass. The only other Alternative and scenario that shows fewer networkwide total crashes than No Build conditions is Alternative 3 in 2035 with the Eastern Crestview Bypass. All alternative corridors and scenarios show fewer networkwide crashes with the Eastern Crestview Bypass in place compared to conditions without the Eastern Crestview Bypass.

The results for just SR 85 and US 90 show that the forecasted total crashes and fatal and injury crashes are expected to be lower than No Build conditions for all alternative corridors and scenarios. This is consistent with the fact that the traffic volumes are anticipated to be reduced within the limits of the study roadways for all alternative corridors. Similar to the networkwide results, the crashes with the Eastern Crestview Bypass are anticipated to be lower than without the Eastern Crestview Bypass; the only exception is on US 90 for Alternative 1 in which the crashes are higher with the Eastern Crestview Bypass. For conditions with and without the Eastern Crestview Bypass, Alternatives 3 and 4 are anticipated to have lowest crash frequency on SR 85. For conditions with and without the Eastern Crestview Bypass, crash frequency on US 90 is forecasted to be lowest under Alternative 6.

For Old Bethel Road, Alternative 1 has the lowest number of forecasted crashes of the alternative corridors. Alternative 1 is also the only alternative corridor where the crash frequency is expected to be lower than the No Build scenario. This is due to the lower projected traffic volumes on Old Bethel Road for Alternative 1 compared to No Build and other alternative corridors: it is the only alternative corridor that does not utilize Old Bethel Road, which would increase traffic volumes by adding new Northwest Crestview Bypass trips, but also shifts traffic away from the corridor. Similar to other study roadways, the crashes on Old Bethel Road will be lower with the Eastern Crestview Bypass compared to without the Eastern Crestview Bypass.

On the proposed Northwest Crestview Bypass alternative corridors, the total crashes will be lower with the Eastern Crestview Bypass compared to without the Eastern Crestview Bypass. The lowest number of predicted crashes is anticipated for Alternatives 2, 3, 4, or 6, depending on the year and scenario. The highest number of predicted crashes in 2035 with and without the Eastern Crestview Bypass is anticipated for Alternative 1. The highest number of predicted crashes in 2055 with and without the Eastern Crestview Bypass is anticipated for Alternative 5.

Appendix A – ACE Traffic Methodology Memorandum

Alternative Corridor Evaluation

Traffic Methodology Memo

April 15, 2021

CONTENTS

FIGURES

1.0 Introduction

The purpose of this memo is to document the analysis approach and assumptions to be used in the traffic analysis for the Northwest Crestview Bypass Alternative Corridor Evaluation (ACE).

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85 as well as alternative new corridors. The general area for the Northwest Crestview Bypass is depicted in Figure 1.

The purpose of the Northwest Crestview Bypass project is to provide regional system connectivity and improve mobility through and around the City of Crestview by providing an alternative to SR 85 and completing the Western Bypass around the City of Crestview. Additional goals for the project are to address safety and hurricane evacuation and support anticipated growth in Okaloosa County.

This project is being developed by Okaloosa County as the Lead Agency, in partnership with the Florida Department of Transportation (FDOT) District 3, and the City of Crestview as a Participating Agency.

Traffic will be evaluated in two phases. The ACE traffic analysis (Phase I) will include a high-level traffic analysis to support evaluation of up to six (6) corridors. Phase II will include a detailed traffic analysis of the selected corridor and preparation of a Project Traffic Analysis Report (PTAR). The methodology in this document pertains to the ACE traffic analysis (Phase I).

1.1 Background

The Crestview Bypass was first evaluated in a Feasibility Study completed in 2004. The Okaloosa-Walton Transportation Planning Organization (O-W TPO) 2035 Needs Plan included an Eastern and Western Crestview Bypass. FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019; the project concluded that while the project was not recommended based on the findings, a more detailed analysis of the Eastern Crestview Bypass could be completed in the future if other area projects did not address regional traffic concerns.

The Southwest Crestview Bypass project is currently underway will traverse around Crestview to the southwest beginning at Wild Horse Drive and P.J. Adams Parkway and ending at US 90 and Old Bethel Road (CR 188).

In addition to the Bypass projects, there are other ongoing projects in the area. An overview of regional projects is shown in Figure 2.

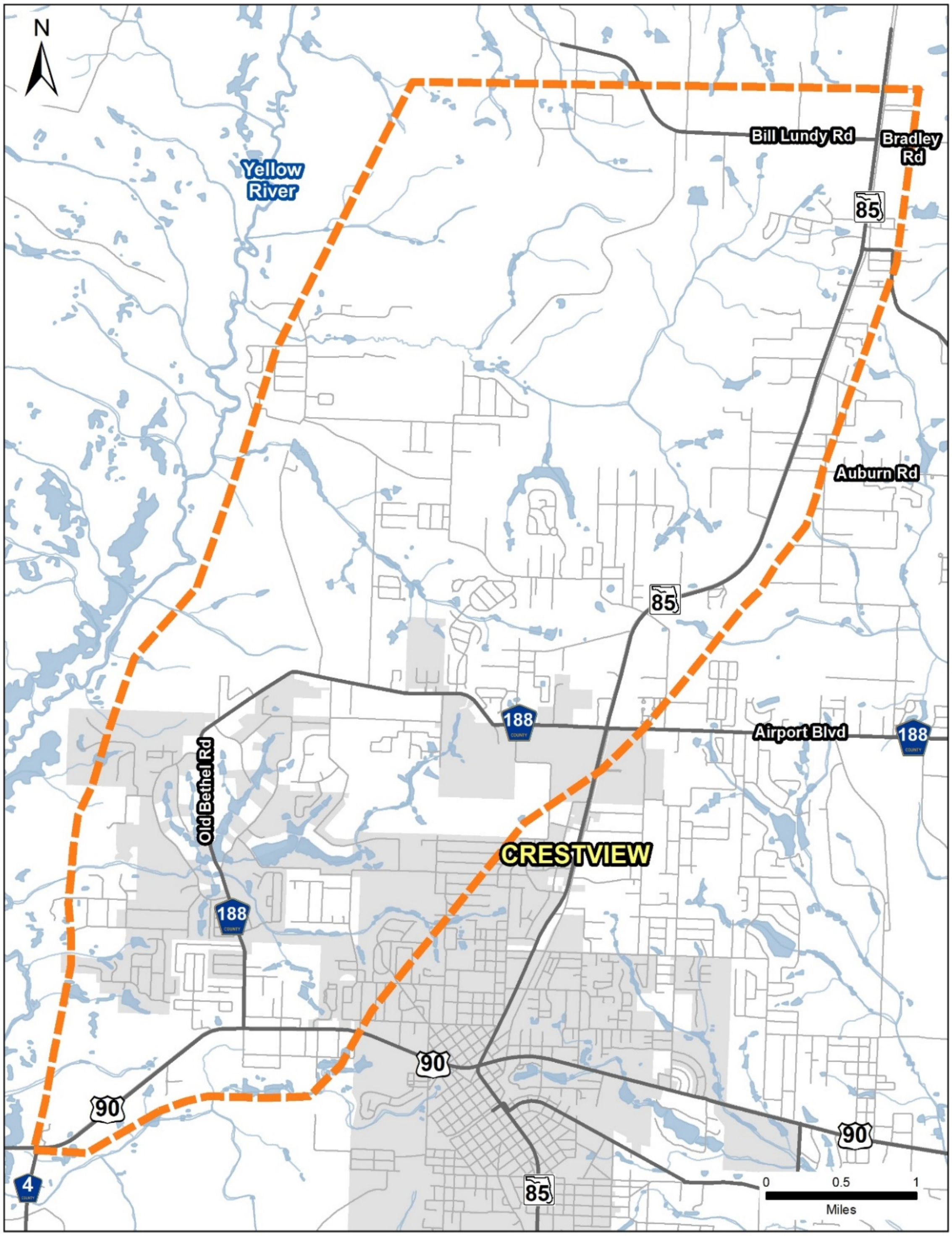


Figure 1 | Northwest Crestview Bypass ACE Study Area

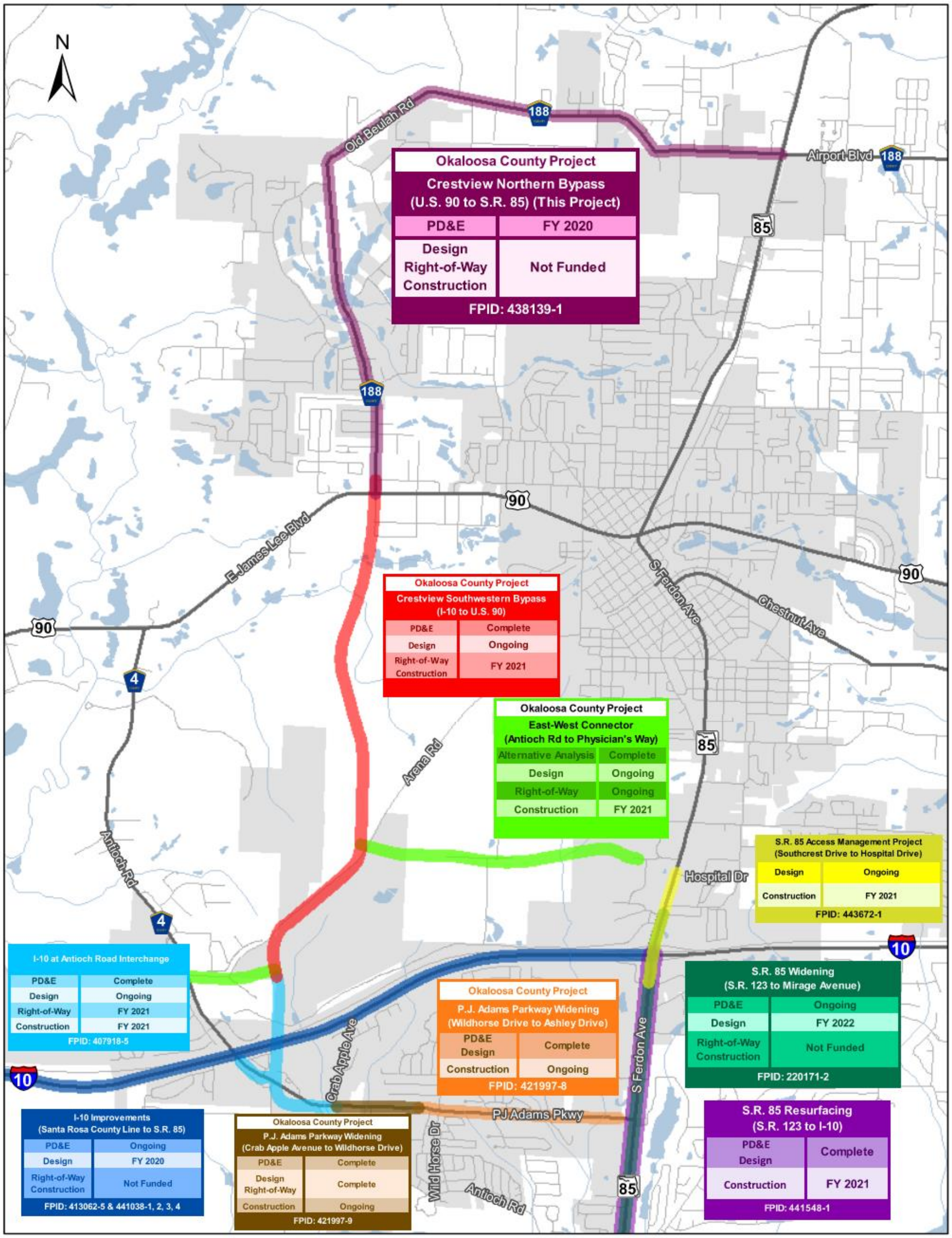


Figure 2 | Overview of Regional Projects

2.0 Traffic Analysis Approach

The traffic analysis will be conducted to support the evaluation of up to six (6) preliminary alternative alignments identified for the Northwest Crestview Bypass corridor development. The objective of this analysis is to determine the traffic operational and safety performance of each alignment. The traffic analysis will be performed consistent with the FDOT 2020 PD&E Manual, 2019 Project Traffic Forecasting Handbook, and 2014 Traffic Analysis Handbook guidelines.

2.1 Analysis Roadways

Roadway segment level traffic operational assessment will be conducted for the Northwest Crestview Bypass alternatives and for the following study area roadways:

- Old Bethel Road – from US 90 to SR 85
- Bill Lundy Road – from west SR 85 to east of SR 85
- SR 85 – from south of Live Oak Church Road / Antioch Road to north of Bill Lundy Road
- US 90 – west of Old Bethel Road to east of Eastern Bypass
- Antioch Road – from PJ Adams Parkway to US 90
- PJ Adams Parkway – from Antioch Road to SR 85
- I-10 – from west of Antioch Road to east of SR 85

2.2 Analysis Years

The alternative corridor evaluation traffic analysis will be conducted for the following years:

- Opening Year – 2035
- Design Year – 2055

2.3 Analysis Method

Traffic forecasting will be conducted to develop the design year and opening year Annual Average Daily Traffic (AADT) volumes for the Northwest Crestview Bypass alternatives. The projected AADT volumes for the corridor alternatives will be used to estimate roadway level of service (LOS). Planning level traffic LOS analysis will be conducted for Northwest Crestview Bypass alternative segments and study area roadways using the FDOT Generalized Service Volume Tables (GSVT) for daily volumes.

2.4 Project Traffic Forecasting

The NWFRPM subarea model validation based on the existing year 2019 traffic conditions will be conducted to develop the future year forecasting model for the Crestview Bypass alternatives traffic projections. The Okaloosa County area will be considered for the subarea model validation. The year 2019 model development effort will consist of updating the base year 2015 model with the year 2019 socio-economic input data and the model roadway network. The model validation will focus on matching the FDOT 2019 AADT counts and StreetLight Origin-Destination trips within Okaloosa county. Based on the subarea model validation, the future year models for the corridor alternatives will be developed to generate the traffic projections.

2.5 Data Collection

Year 2019 socio-economic and traffic data will be obtained from the following sources to perform the existing year 2019 Northwest Florida Regional Planning Model (NWFRPM) subarea validation.

- Northwest Florida Regional Planning Model (NWFRPM) version 3.1
- American Community Survey (ACS) 5-Year Population by block group for 2015 and 2019
- U.S. Bureau of Labor Statistics (BLS) Employment from the Quarterly Census of Employment and Wages (QCEW) for 2015 and 2019.
- FDOT 2019 AADT counts
- StreetLight Origin-Destination trips within Okaloosa County
- Review of Previous Studies and Comprehensive/Long Range Plans

2.6 Planned Improvements

As previously discussed, there are several projects near the study area. The projects will be reviewed to include committed projects in No Build conditions.

2.7 Project Alternatives Analysis

The future year model development and evaluation of up to six alternative corridor alignments will be conducted for up to 26 scenarios related to Southwest, Northwest, and Eastern Bypass roadways in the planning stages within the study area, as listed below:

- Opening Year No Build
- Opening Year Build with the Northwest Bypasses (for up to 6 corridors)
- Opening Year Build with the Northwest + Eastern Bypasses (for up to 6 corridors)
- Design Year No Build
- Design Year Build with the Northwest Bypasses (for up to 6 corridors)
- Design Year Build with the Northwest + Eastern Bypasses (for up to 6 corridors)

2.8 Performance Measures of Effectiveness (MOEs)

The projected Opening Year and Design Year AADT, the LOS estimated using the FDOT Generalized Service Volume Tables (GSVT), and the volume to maximum service volume ratios (v/MSV) will be used as the performance measures of effectiveness (MOEs) to compare the corridor alternatives. The MOE's comparison will be conducted for the study area roadways.

3.0 Safety Analysis Approach

The existing conditions traffic safety analysis will be conducted with the most recent five calendar years of state crash data (source confirmed with FDOT) according to guidance specified in Chapter 4 of the "FDOT Safety Analysis Guidebook for PD&E Studies." The study area for the existing conditions analysis will consist of the segments on Old Bethel Rd between US 90 and SR 85, the segments on SR 85 from US 90 to Airport Road, the segments on US 90 from Antioch Road to SR 85, and up to six total signalized intersections along these corridor segments.

Observed crash trends will be summarized by year, severity, location, type, time of day, and contributing factors to determine overall patterns. Total economic cost of crashes will be computed using FDOT equivalent crash costs. For fatal crashes, the crash reports will be reviewed for more detailed descriptions of the crash event (up to 10 fatal crash reports). Crash rates will be computed and compared to statewide crash rates on comparable facilities. In addition, a Potential for Safety Improvement analysis will be performed in which the expected crash frequency (Highway Safety Manual (HSM) Empirical-Bayes method) is compared to the predicted crash frequency (HSM non-Empirical Bayes method) to evaluate locations where potential for safety improvement is present within the study area. An interactive dashboard will be developed using PowerBI, a data visualization software developed by Microsoft. The dashboard will be used to facilitate discussions of the findings of the existing conditions analysis.

A future conditions analysis will be performed to evaluate the relative safety performance of the network under each of the optional alignments (up to six alternatives) and each of the traffic scenarios identified in the traffic analysis scope. Federal Highway Administration's (FHWA) Interactive Highway Safety Design Model (IHSDM) software will be used to develop planning-level crash prediction models consistent with HSM methodologies to estimate relative future crash frequency, severity, and rates on the study network (under each optional alignment and traffic volume scenario). "Planning-level" indicates input data for the models will not be collected to a design-level of precision, but rather as trends related to high-impact changes in cross-sections, volumes, and roadside characteristics.

FDOT calibration factors will be applied to each model. The prediction network will include the segments on:

- Old Bethel Road from US 90 to SR 85
- SR 85 from US 90 to Bill Lundy Road / Bradley Road
- US 90 from Antioch Road to SR 85
- The optional alignments

The results of the analysis will be integrated into the PowerBI dashboard to facilitate comparison of alternatives.

4.0 Documentation

The operational and safety analysis results will be used in the ACE prioritization process to assess the overall benefit of each alternative alignment.

Traffic projections for the Crestview Bypass alternatives and the forecasting methodology details will be documented in the ACE Traffic Forecasting Memorandum.

The traffic analysis findings including the AADT and LOS comparison of corridor alternatives, and recommendations will be documented in the ACE Traffic Analysis Report.

Appendix B – ACE Traffic Forecasting Memorandum

Alternative Corridor Evaluation
Traffic Forecasting Memo

September 2021

CONTENTS

FIGURES

TABLES

1.0 Introduction

The purpose of this memo is to document the traffic forecast used in the traffic analysis for the Northwest Crestview Bypass Alternative Corridor Evaluation (ACE).

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85 as well as alternative new corridors. The general area for the Northwest Crestview Bypass is depicted in Figure 1.

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This project is being developed by Okaloosa County as the Lead Agency, in partnership with the Florida Department of Transportation (FDOT) District 3, and the City of Crestview as a Participating Agency.

Traffic is evaluated in two phases. The ACE traffic analysis (Phase I) includes a high-level traffic analysis to support evaluation six corridors. Phase II will include a detailed traffic analysis of the selected corridor and preparation of a Project Traffic Analysis Report (PTAR). The traffic forecast discussed in this document pertains to the ACE traffic analysis (Phase I) and will also be carried forward for use in the PTAR (Phase II).

1.1 Background

The Crestview Bypass was first evaluated in a Feasibility Study completed in 2004. The Okaloosa-Walton Transportation Planning Organization (O-W TPO) 2035 Needs Plan included an Eastern and Western Crestview Bypass. FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019; the study concluded that while the project was not recommended based on the findings, a more detailed analysis of the Eastern Crestview Bypass could be completed in the future if other area projects did not address regional traffic concerns.

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In addition to the Bypass projects, there are other ongoing projects in the area. An overview of regional projects is shown in Figure 2.

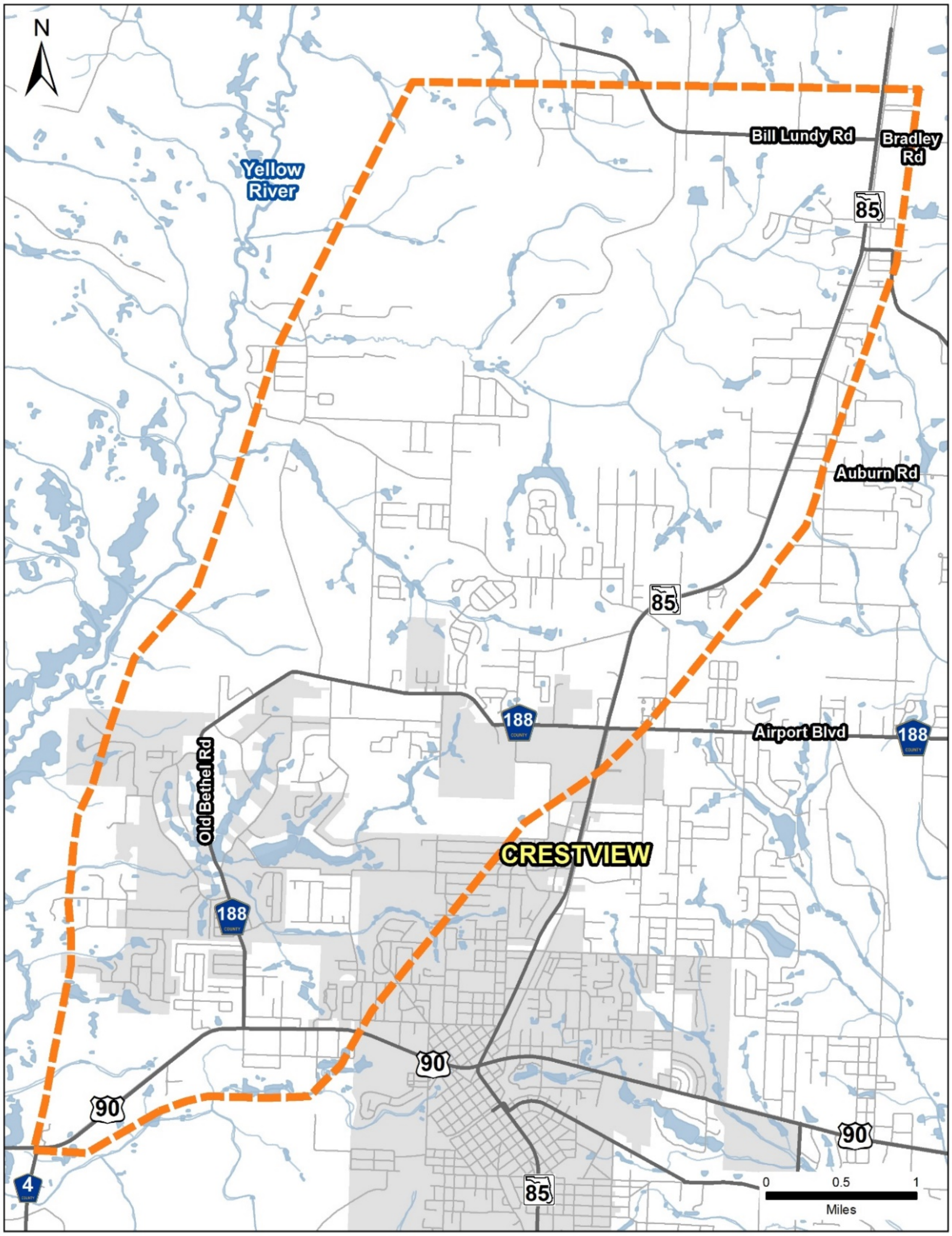


Figure 1 | Northwest Crestview Bypass ACE Study Area

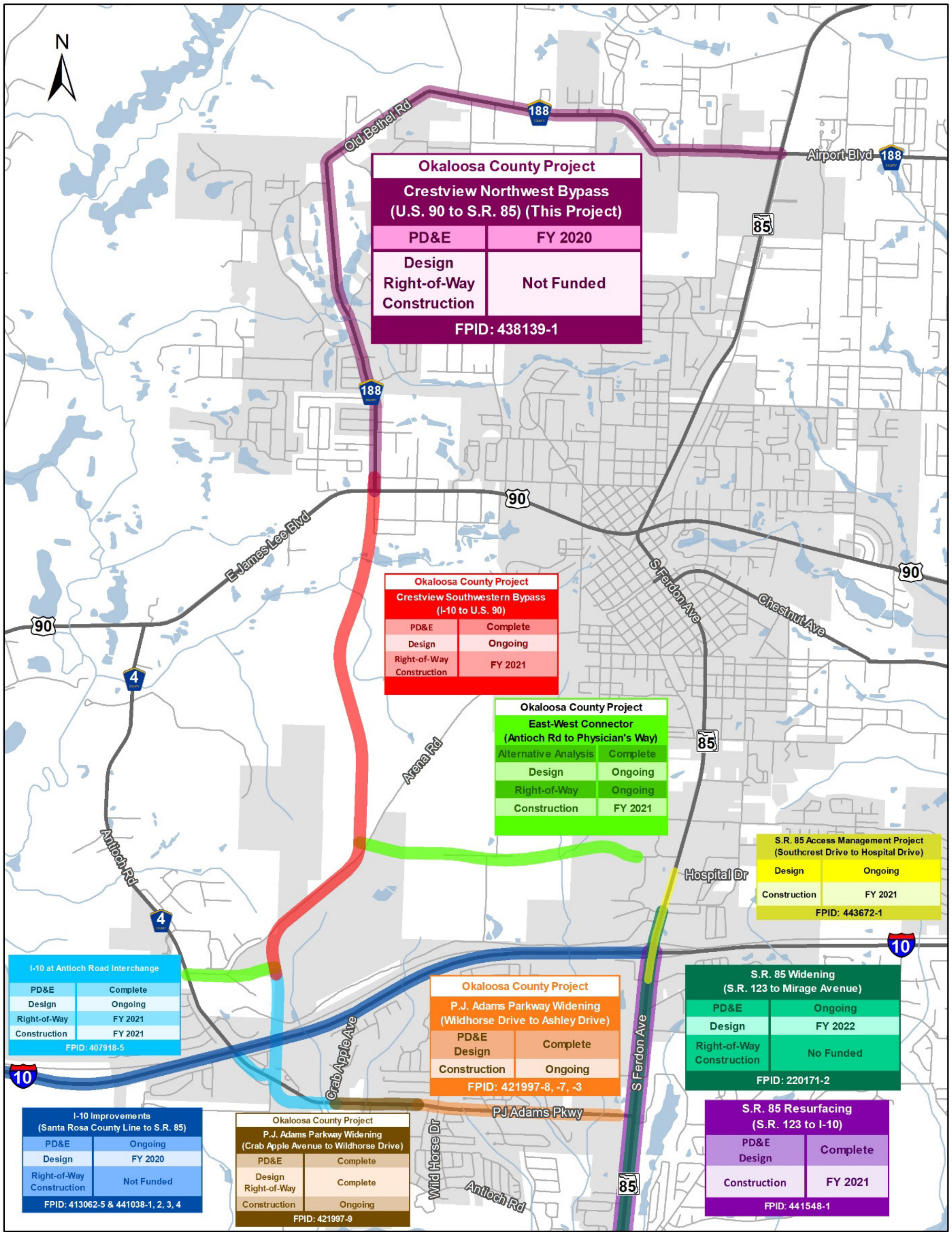


Figure 2 | Overview of Regional Projects

2.0 Travel Demand Forecasting Methodology

Project traffic forecasting was conducted for the alternative corridors identified for the Northwest Crestview Bypass. The Northwest Florida Regional Planning Model (NWFRPM) version 3.1, which considers future land use, roadway projects, and socio-economic data, was used to develop future year traffic volumes. The model provides a base year of 2015 and a horizon year of 2045. Annual average daily traffic (AADT) was developed for the following years:

- Opening Year – 2035
- Design Year – 2055

Demographic model inputs for 2035 and 2055 were created by interpolation between the 2019 (created as described below) and 2045 demographic inputs.

The NWFRPM version 3.1 was reviewed for its ability to reflect observed traffic conditions within the study area. A subarea model validation was performed which consisted of creating a 2019 scenario for the model and then validating that scenario against FDOT 2019 AADT counts and StreetLight Origin-Destination trips within Okaloosa County, provided in Appendix A. The focus of the validation was on Okaloosa County. While the 2019 scenario covers the entire region, the detailed validation work was mostly done within the Okaloosa County area of the model.

2.1 Socioeconomic Model Data Review

The first step in creating the 2019 scenario was to create 2019 demographic inputs. The following data sources were used to adjust the 2015 demographic inputs and factor them up to 2019:

- American Community Survey (ACS) 5-Year Population by block group for 2015 and 2019
- U.S. Bureau of Labor Statistics (BLS) Employment from the Quarterly Census of Employment and Wages (QCEW) for 2015 and 2019

The 2019 population by Traffic Analysis Zone (TAZ) was estimated by the following process. First, a block group level growth rate for the entire region was calculated from the 2015 and 2019 ACS population estimates. Next, a GIS intersection process was used to assign the growth rates from the block groups to each TAZ in the NWFRPM region. Third, the 2015 model input single- and multi-family population and housing units were factored to 2019 using the TAZ level growth rates that were calculated from the block group growth rates. Finally, the 2019 TAZ county level population and housing units were adjusted to match the 2019 ACS county level population. Table 1 shows the population computed by this process.

The 2019 employment by TAZ was estimated by the following process. First, a county level employment growth rate by employment category (industrial, commercial, service) was created by comparing the BLS QCEW data for 2015 and 2019. The TAZ level 2015 employment from NWFRPM was then factored by the computed county level growth factors. Table 2 shows the employment by county computed by this process.

Table 1 | Population by County

County	2015 Population	2019 Population	Population Change (2015-2019)	Population Growth (percent)
Bay	175,353	182,159	6,806	3.88%
Calhoun	14,615	14,366	-249	-1.70%
Escambia	306,327	313,490	7,163	2.34%
Franklin	11,628	11,809	181	1.56%
Gadsden	46,424	45,951	-473	-1.02%
Gulf	15,785	15,575	-210	-1.33%
Holmes	19,635	19,435	-200	-1.02%
Jackson	48,900	47,949	-951	-1.94%
Jefferson	14,198	14,164	-34	-0.24%
Leon	282,940	289,773	6,833	2.41%
Liberty	8,295	8,344	49	0.59%
Okaloosa	192,237	203,787	11,550	6.01%
Santa Rosa	161,021	174,757	13,736	8.53%
Wakulla	31,128	32,322	1,194	3.84%
Walton	59,487	68,259	8,772	14.75%
Washington	24,629	24,764	135	0.55%
Total	**1,412,602**	**1,466,904**	**54,302**	**3.88%**

Table 2 | Employment by County

County	2015 Employment	2019 Employment	Employment Change (2015-2019)	Employment Growth (percent)
Bay	88,933	87,466	-1,467	-1.65%
Calhoun	4,062	4,049	-13	-0.32%
Escambia	160,928	176,970	16,042	9.97%
Franklin	4,077	4,089	12	0.29%
Gadsden	12,380	13,878	1,498	12.10%
Gulf	4,691	4,677	-14	-0.30%
Holmes	3,686	3,955	269	7.30%
Jackson	14,887	15,264	377	2.53%
Jefferson	2,902	2,908	6	0.21%
Leon	158,945	170,428	11,483	7.22%
Liberty	1,105	1,097	-8	-0.72%
Okaloosa	84,580	90,400	5,820	6.88%
Santa Rosa	38,107	43,695	5,588	14.66%
Wakulla	5,793	6,445	652	11.25%
Walton	25,323	29,731	4,408	17.41%
Washington	6,591	7,276	685	10.39%
Total	**616,990**	**662,328**	**45,338**	**7.35%**

2.1.1 Network Adjustments

The 2019 special generator trips were created by comparing the NWFRPM 2015 special generator trips to the 2019 AADT counts and referencing the 2045 special generator trips to see forecasted growth. Included in the 2019 special generator trips are 53,000 trips for Eglin Air Force Base (AFB) and 15,000 trips for the Destin-Fort Walton Beach Airport. The 2019 External-to-External (EE) and External-to-Internal (EI) trips were created by using the 2019 counts at external connectors to factor the 2015 EE and EI trips.

A few changes were made to the TAZ structure in the southwest quadrant of I-10 at SR 85: TAZ 841 was split into two (TAZ 841 and TAZ 902) along Juniper Creek. This allows the businesses along Highway 85 to load trips onto Highway 85 while the residential neighborhoods west of Juniper Creek load trips onto P. J. Adams Pkwy. The centroid of TAZ 842 was also adjusted and a new connector added to P. J. Adams Pkwy. The centroid of TAZ 840 was also moved to better align with the development within the TAZ. Figure 3 shows the changed centroids and connectors.

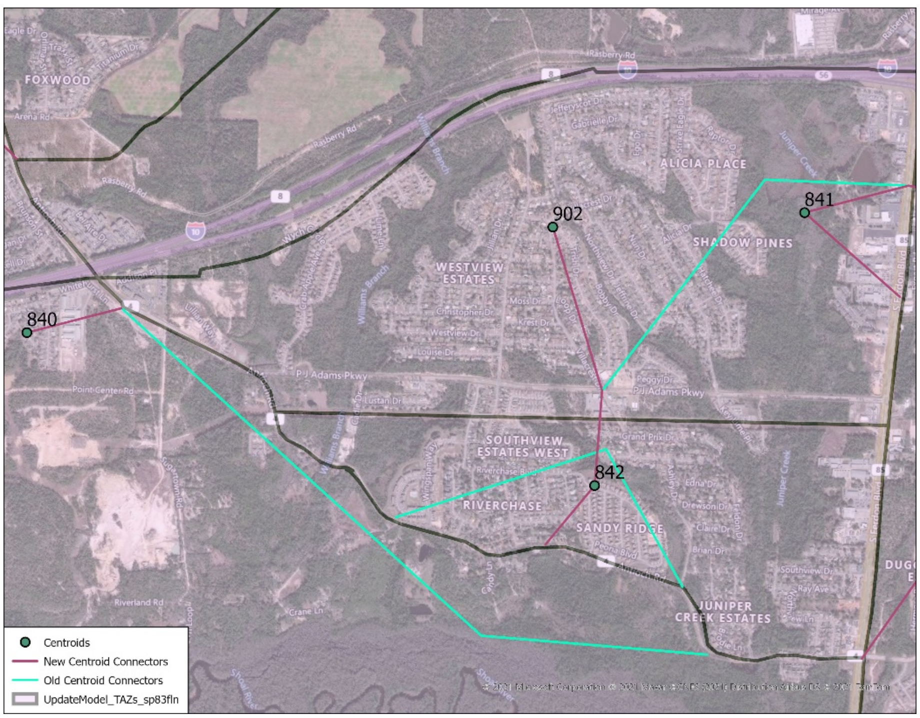


Figure 3 | TAZ Adjustments

The highway network for 2019 was kept mostly the same as the 2015 network. In a few cases, the facility type was changed to match the existing roadway usage characteristics. For example: P. J. Adams Parkway was changed from a local collector to a minor arterial to better match the model speed and capacity to the existing roadway. To help the model appropriately validate to the 2019 FDOT AADT traffic counts, the linkage between the model highway network links and the count site locations was verified. The Telemetered Traffic Monitor Site (TTMS) locations were checked to verify that they were assigned to the correct model link across the entire NWFRPM highway network, and corrections were made as appropriate. The Portable Traffic Monitor Site (PTMS) locations were also checked and corrected within the Okaloosa County portion of the highway network and within portions of the adjoining counties.

2.2 Subarea Model Validation

The 2019 inputs were used in a new scenario created in NWFRPM 3.1 and the results of this model scenario were validated against FDOT 2019 AADT counts and StreetLight OD trips for Okaloosa County. Additionally, model statistics were checked against Florida Standard Urban Transportation Model Structure (FSUTMS) model validation standards.

The initial checks showed that overall, the model was producing fewer trips than the StreetLight OD and FDOT AADT showed. The comparison to FSTUMS trip production standards showed that Non-Home Based (NHB) trip generation was too low. Also, the volume to count ratio in the Okaloosa/Walton region of NWFRPM was 0.83, which is lower than the desired 1.0.

Changes were made to trip generation. NHB trip production and attraction were factored by 1.25 and overall trip production and attraction in Okaloosa was factored by 1.20 in NWFRPM trip generation. Additionally, Eglin AFB special generator inputs were grown by 35%.

These changes brought the Okaloosa-Walton volume to count ratio to 1.0. The Okaloosa-Walton percent-root-mean-square-error (%RMSE) by volume group is also within the acceptable range, with most %RMSE very close to the preferable standard, as shown in Table 3.

Table 3 | 2019 Model RMSE Statistics

FROM Volume	TO Volume	Observations	% RMSE	Acceptable %	Preferable %
1	5000	340	73.73	100	45
5000	10000	102	43.26	45	35
10000	20000	115	31.74	32	26
20000	30000	72	22.10	27	15
30000	40000	4	3.69	25	15
1	500000	633	39.87	45	35

The district level trips within Okaloosa County also compare favorably between the model and O-D data from StreetLight. At the level of total trip origin and destination by district, the RMSE is 38%. Comparing the district-to-district trips, for trip flows greater than 250 daily trips the model RMSE is 29%. While there is not a current FSUTMS standard for OD RMSE, these values to compare favorable to the RMSE standards for counts by volume group.

As discussed, the base year 2019 model results were compared to FDOT 2019 AADT counts. Table 4 shows how the adjustments improved the model's ability to reflect observed traffic conditions within the study area.

Table 4 | Validation Comparison

Location	2019 AADT Counts	Original 2019 Base Year Model	Original Percent Difference	Validated 2019 Base Year Model	Validated Percent Difference
Old Bethel Rd west of SR 85	5,300	6,639	-20%	5,774	-8%
Old Bethel Rd north of US 90	6,400	3,411	88%	6,639	-4%
Airport Rd east of SR 85	5,900	6,664	-11%	6,572	-10%
SR 85 south of Live Oak Church	40,500	27,887	45%	40,062	1%
SR 85 north of Bill Lundy Rd	3,790	4,861	-22%	3,716	2%
SR 85 north of I-10	44,000	37,955	16%	43,455	1%
SR 85 north of US 90	28,500	27,173	5%	30,931	-8%
US 90 west of Old Bethel Rd	14,937	11,489	30%	14,692	2%
US 90 west of SR 85	17,500	19,471	-10%	21,823	-20%
US 90 east of Eastern Bypass	8,200	7,233	13%	6,531	26%
Antioch Rd south of US 90	9,600	5,199	85%	9,915	-3%
P J Adams Pkwy west of SR 85	18,400	8,775	110%	18,624	-1%
I-10 west of Antioch Rd	30,616	25,466	20%	23,888	28%
I-10 east of Eastern Bypass	22,000	18,254	21%	18,899	16%

2.3 Future Roadway Network Review

As previously discussed, there are several projects within and near the study area. The projects were reviewed to include committed projects in No Build conditions. Funded projects that were not included in the 2045 Existing + Committed network were added to the model. Table 5 lists the projects that were added to the model.

In addition to the funded projects added to the future network, an Eastern Bypass was coded into the network for use in testing its impact on NW Bypass traffic. The Eastern Bypass connects from SR 85 south of I-10, connecting to I-10 at Mason Cemetery Rd., and connecting to the NW Bypass at either Auburn Rd, Airport Rd, or Bill Lundy Rd, depending on the NW Bypass alternative considered.

Finally, the facility type of some sections of SR 85 was changed to correspond with the increasing usage and land use density in the future.

Table 5 | Committed Projects

FPID	Project	Description	Limits	Phase	Year Funded
Okaloosa County	Crestview Southwestern Bypass	Widening of PJ Adams/Antioch Road Crestview SW Bypass from I-10 to SR 10 (US 90) to 4 lanes.	I-10 to US 90	Design	Ongoing
				Right-of-Way / Construction	FY 2021
Okaloosa County	East-West Connector	Widening of East-West Connector from Antioch Road to Physician's Drive to 2 lanes.	Antioch Rd to Physician's Way	Alternative Analysis	Complete
				Design / Right-of-Way	Ongoing
				Construction	FY 2021
407918-5	I-10 at Antioch Rd Interchange	Construction of a new interchange west of Crestview at SR 8 (I-10) from CR 4 (Antioch Road)/PJ Adams Parkway to N. of Rasberry Road.		PD&E	Complete
				Design	Ongoing
				Right-of-Way / Construction	FY 2021
421997-9	P.J Adams Pkwy Widening	Widening to 4 lanes	Crab Apple to Wildhorse Dr	PD&E / Design / Right-of-Way	Completed
				Construction	Ongoing
421997-8	P.J. Adams Pkwy Widening	Widening to 4 lanes	Wildhorse Dr to Ashley Dr	PD&E / Design / Right-of-Way	Complete
				Construction	Ongoing
421997-7	P.J Adams Pkwy Widening	Widening to 4 lanes	Key Lime Pl to Ashley Dr	PD&E / Design / Right-of-Way	Completed
				Construction	Ongoing
421997-3	P.J. Adams Pkwy Widening	Widening to 4 lanes	SR 85 to Key Lime Pl	PD&E / Design / Right-of-Way	Complete
				Construction	Ongoing

3.0 Alternative Corridors

Six alternative corridor alignments were identified for the NW Crestview Bypass. The alternatives are depicted in Figure 4 and described below:

- Alternative 1: New alignment from the intersection of Enzor Road and Cayson Avenue bearing northwest to the boundary of the Yellow River Wildlife Management Area and then north and east to the intersection of SR 85 and Auburn Road.
- Alternative 2: Capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85.
- Alternative 3: Capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and new alignment north and east to the intersection of Auburn Road and SR 85.

- Alternative 4: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Auburn Road and SR 85.
- Alternative 5: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Bill Lundy Road and SR 85.
- Alternative 6: Follow US 90 from the intersection of Old Bethel Road and US 90 to the intersection of US 90 and Cayson Avenue, then north and east on new alignment to the intersection of Old Bethel Road and SR 85.

Scenarios with and without the Eastern Bypass were analyzed using the travel demand model. FDOT completed a Feasibility Study for a SR 85 Eastern Crestview Bypass in July 2019. The project limits began along SR 85 north of the Shoal River, extended north with SR 85 as the western boundary, the Shoal River and Bob Sikes Airport as the eastern boundary, and finished at Airport Road as the northern terminus. As previously discussed, the Feasibility Study for the Eastern Bypass concluded that while the project was not recommended to be advanced based on the findings, a more detailed analysis should be done in the future if other area projects do not address regional traffic concerns. Based on coordination with Okaloosa County, the Eastern Bypass was assumed to align with Mason Cemetery Road to the east and tie back in with SR 85 south of I-10 to the south. The northern terminus of the Eastern Bypass was shifted on SR 85 to match each NW Bypass Alternative's tie in with SR 85. Model plots of each scenario are provided in Appendix B.

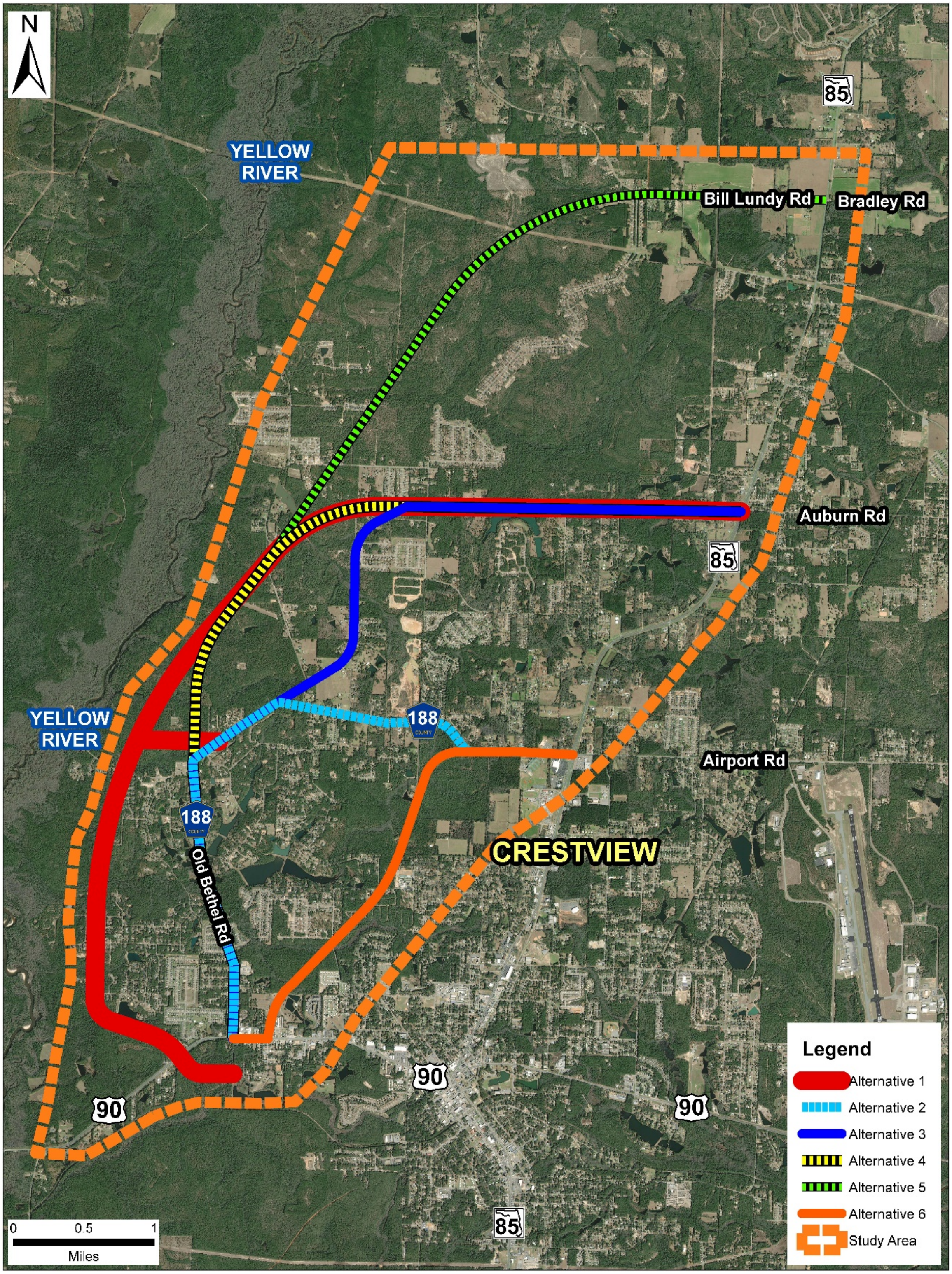


Figure 4 | Northwest Crestview Bypass Alternative Corridors

The future year model development and evaluation was conducted for no build conditions and six alternative corridor alignments. In total, 26 alternative scenarios were run using NWFRPM as detailed in Table 6. Results were extracted from the scenarios in tabular and shape file format.

Table 6 | Regional Model Run Scenarios

Scenario	Model Year	NW Bypass Alternative #	Eastern Bypass Included?
1	2035	No Build	No
2	2035	Alt 1	No
3	2035	Alt 2	No
4	2035	Alt 3	No
5	2035	Alt 4	No
6	2035	Alt 5	No
7	2035	Alt 6	No
8	2035	Alt 1	Yes
9	2035	Alt 2	Yes
10	2035	Alt 3	Yes
11	2035	Alt 4	Yes
12	2035	Alt 5	Yes
13	2035	Alt 6	Yes
14	2055	No Build	No
15	2055	Alt 1	No
16	2055	Alt 2	No
17	2055	Alt 3	No
18	2055	Alt 4	No
19	2055	Alt 5	No
20	2055	Alt 6	No
21	2055	Alt 1	Yes
22	2055	Alt 2	Yes
23	2055	Alt 3	Yes
24	2055	Alt 4	Yes
25	2055	Alt 5	Yes
26	2055	Alt 6	Yes

4.0 AADT Volumes

Existing 2019 AADT data was obtained from FDOT's Florida Traffic Online (Figure 5). The future projected Opening Year 2035 and Design Year 2055 AADTs were obtained by applying a linear growth rate derived from the model output and applied to existing 2019 volumes. This methodology was utilized to account for future changes in travel patterns due to background improvements such as the new Southwestern Bypass, Antioch Road interchange, East-West Connector, etc.

4.1 Year 2035 – No Eastern Bypass

Table 7 and Figure 6 show a comparison of the Opening Year 2035 AADTs for all Alternative Corridors for the scenario not including the Eastern Bypass. Under this scenario, the NW Bypass would operate with AADTs between 11,000 and 25,000 with the highest traffic volumes shown for Alternatives 2 and 6. Old Bethel Road would experience a significant increase in traffic volumes, particularly for Alternative 2. Compared to the No-Build under this scenario the traffic volumes along SR 85 show a reduction with the alternatives in place, with the most reduction shown for Alternative 6. A traffic volume reduction is also shown on US 90 between Old Bethel Road and SR 85, the highest reduction shown for Alternative 6 followed by Alternative 2.

4.2 Year 2035 - With Eastern Bypass

The AADTs for Opening Year 2035 including the Eastern Bypass are presented in Table 8. Figure 7 shows the comparison between project alternatives for each roadway segment. Under this scenario, the NW Bypass would be operating with AADTs between 10,000 and 23,000, slightly lower than the alternative without the Eastern Bypass. Similar to the scenario without the Eastern Bypass, the highest traffic volumes along the Bypass are shown for Alternatives 2 and 6. Traffic volumes along SR 85 are generally reduced with all alternatives with similar volumes compared to the scenario without the Eastern Bypass. A traffic volume reduction is also shown on US 90 between Old Bethel Road and SR 85, the highest reduction shown for Alternative 6 followed by Alternative 2.

4.3 Year 2055 - No Eastern Bypass

Table 9 and Figure 8 show the Design Year 2055 AADTs for the scenario not including the Eastern Bypass. The NW Bypass would operate with AADTs between 12,000 and 27,000 with the highest traffic volumes shown for Alternatives 2 and 6. Similar to other scenarios, the traffic volumes are reduced along SR 85 and US 90 west of SR 85 with all alternatives in place.

4.4 Year 2055 - With Eastern Bypass

The AADTs for Design Year 2055 including the Eastern Bypass are presented in Table 10. Figures 9 shows the comparison between project alternatives. Under this scenario, the NW Bypass would be operating with AADTs between 11,000 and 26,000 with the highest traffic volumes for Alternatives 2 and 6. Similar to other scenarios, the traffic volumes are reduced along SR 85 and US 90 west of SR 85 with all alternatives in place.

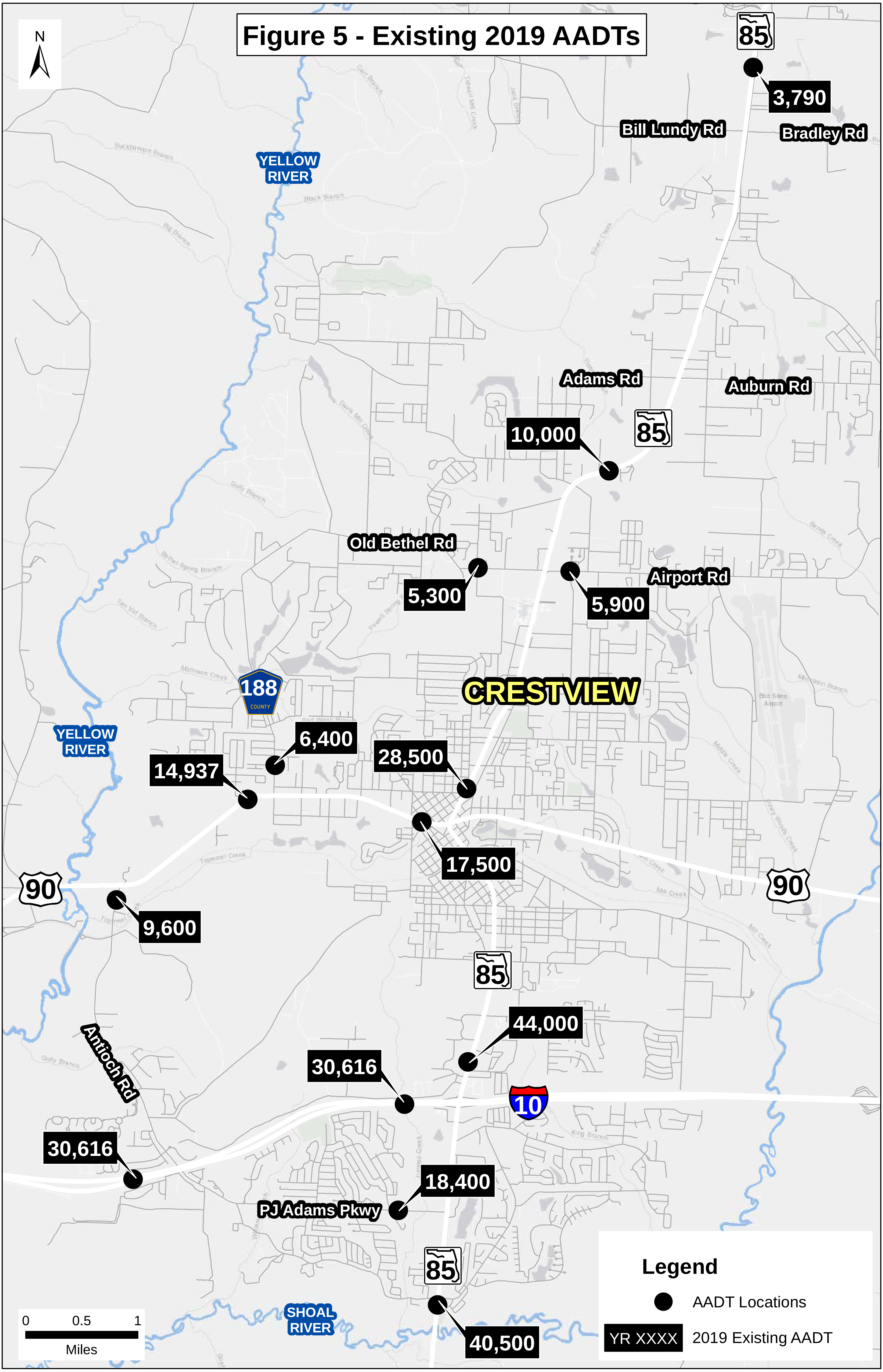


Figure 5 - Existing 2019 AADTs
N
85
3,790
Bill Lundy Rd
Bradley Rd
YELLOW RIVER
Adams Rd
Auburn Rd
10,000
85
Old Bethel Rd
5,300
5,900
Airport Rd
CRESTVIEW
188
COUNTY
YELLOW RIVER
6,400
14,937
28,500
17,500
90
90
9,600
85
44,000
30,616
10
Antioch Rd
30,616
18,400
PJ Adams Pkwy
85
SHOAL RIVER
40,500
0
0.5
1
Miles
Legend
AADT Locations
YR XXXX
2019 Existing AADT

Table 7 | 2035 AADTs No Eastern Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	6,700	5,300	20,000	4,900	4,900	5,400	23,000
Old Bethel Rd north of US 90	10,000	8,000	23,500	23,000	22,500	22,000	8,400
Airport Rd east of SR 85	7,300	7,300	8,000	7,300	7,300	7,300	8,100
SR 85 south of Live Oak Church	50,500	51,000	51,000	51,000	51,000	51,500	51,000
SR 85 north of Bill Lundy Rd	8,500	10,000	9,900	10,500	10,500	12,000	10,500
SR 85 north of I-10	45,500	44,500	44,000	44,000	44,500	45,000	44,000
SR 85 north of US 90	31,000	27,500	25,000	26,000	26,500	27,500	23,500
SR 85 north of Old Bethel Rd	16,000	11,500	16,500	10,500	10,500	12,000	17,000
US 90 west of Old Bethel Rd	15,500	16,000	15,000	15,000	15,000	15,000	15,500
US 90 west of SR 85	19,000	16,000	14,000	15,000	15,500	16,000	12,000
US 90 east of Eastern Bypass	10,000	9,900	10,000	10,000	10,000	10,000	10,000
Antioch Rd south of US 90	10,500	9,800	10,500	10,500	10,500	10,500	10,500
P J Adams Pkwy west of SR 85	26,000	27,000	27,500	27,500	28,000	26,500	28,000
I-10 west of Antioch Rd	50,500	52,000	52,000	52,500	52,500	52,500	52,500
I-10 west of SR 85	42,500	42,500	42,000	42,000	42,000	42,500	42,500
I-10 east of Eastern Bypass	32,500	32,500	32,500	32,000	32,500	32,000	32,500
NW Bypass midpoint	-	12,000	17,500	13,000	13,000	11,500	24,500
SW Bypass	29,000	33,500	33,000	33,000	33,000	33,000	32,000

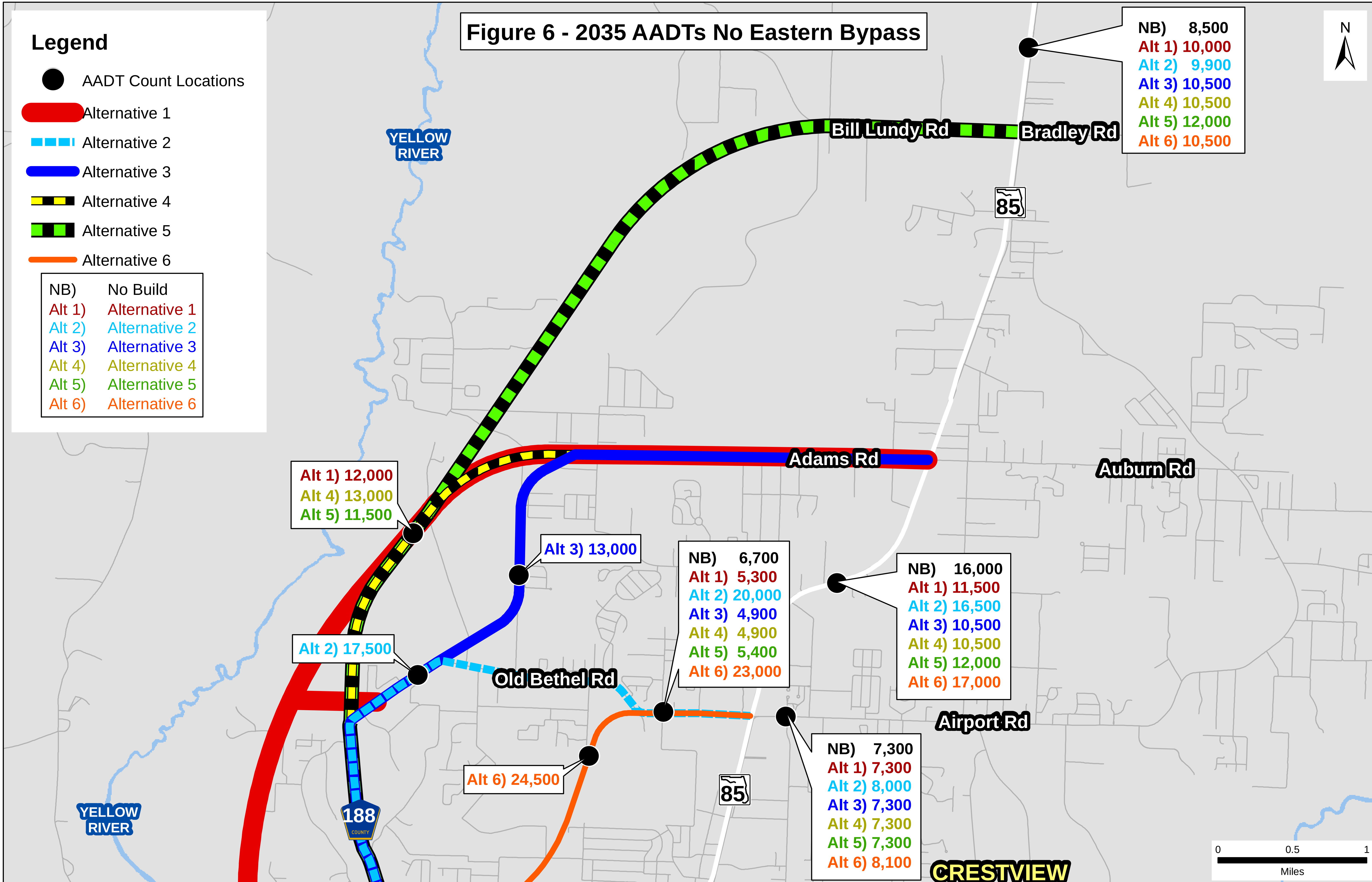


Figure 6 - 2035 AADTs No Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
NB) 8,500
Alt 1) 10,000
Alt 2) 9,900
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 12,000
Alt 6) 10,500
N
YELLOW RIVER
Bill Lundy Rd
Bradley Rd
85
Adams Rd
Auburn Rd
Alt 1) 12,000
Alt 4) 13,000
Alt 5) 11,500
Alt 3) 13,000
NB) 6,700
Alt 1) 5,300
Alt 2) 20,000
Alt 3) 4,900
Alt 4) 4,900
Alt 5) 5,400
Alt 6) 23,000
NB) 16,000
Alt 1) 11,500
Alt 2) 16,500
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 12,000
Alt 6) 17,000
Alt 2) 17,500
Old Bethel Rd
Airport Rd
Alt 6) 24,500
NB) 7,300
Alt 1) 7,300
Alt 2) 8,000
Alt 3) 7,300
Alt 4) 7,300
Alt 5) 7,300
Alt 6) 8,100
85
188
COUNTY
YELLOW RIVER
CRESTVIEW
0 0.5 1
Miles

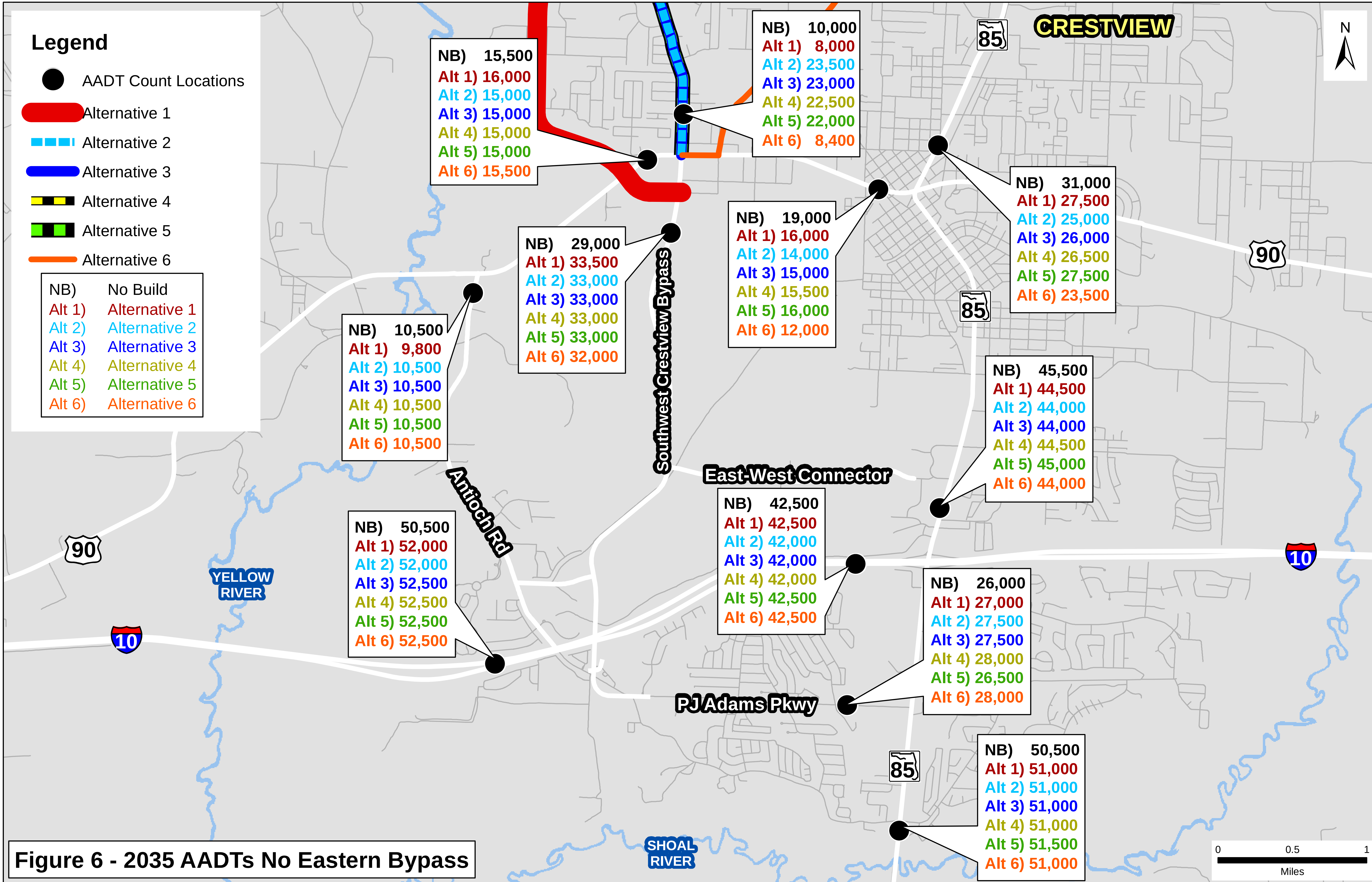


Figure 6 - 2035 AADTs No Eastern Bypass

Table 8 | 2035 AADTs With Eastern Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	6,700	5,100	20,000	4,900	4,800	5,200	22,500
Old Bethel Rd north of US 90	10,000	7,900	22,000	21,000	20,500	20,500	8,400
Airport Rd east of SR 85	7,300	7,200	14,500	7,200	7,200	7,200	15,000
SR 85 south of Live Oak Church	50,500	52,000	52,000	52,000	52,000	52,000	52,000
SR 85 north of Bill Lundy Rd	8,500	8,200	8,200	8,300	8,300	11,000	8,400
SR 85 north of I-10	45,500	44,500	44,000	44,000	44,000	45,000	43,500
SR 85 north of US 90	31,000	27,500	25,000	26,000	26,000	27,000	23,500
SR 85 north of Old Bethel Rd	16,000	11,500	14,500	10,500	10,500	11,500	14,500
US 90 west of Old Bethel Rd	15,500	16,500	15,500	15,500	15,000	15,000	15,500
US 90 west of SR 85	19,000	16,000	13,000	14,500	15,000	15,500	11,000
US 90 east of Eastern Bypass	10,000	9,700	9,500	9,600	9,600	6,800	9,200
Antioch Rd south of US 90	10,500	9,600	10,500	10,500	10,500	10,500	10,500
P J Adams Pkwy west of SR 85	26,000	26,500	28,000	27,500	27,500	26,000	28,000
I-10 west of Antioch Rd	50,500	52,500	52,500	52,500	52,500	53,000	53,000
I-10 west of SR 85	42,500	46,000	45,000	45,500	45,500	43,000	45,500
I-10 east of Eastern Bypass	32,500	34,500	34,500	34,500	34,500	34,500	34,500
NW Bypass midpoint	-	10,000	16,000	11,000	11,000	10,000	23,000
SW Bypass	29,000	31,500	31,000	31,000	31,000	32,000	30,500

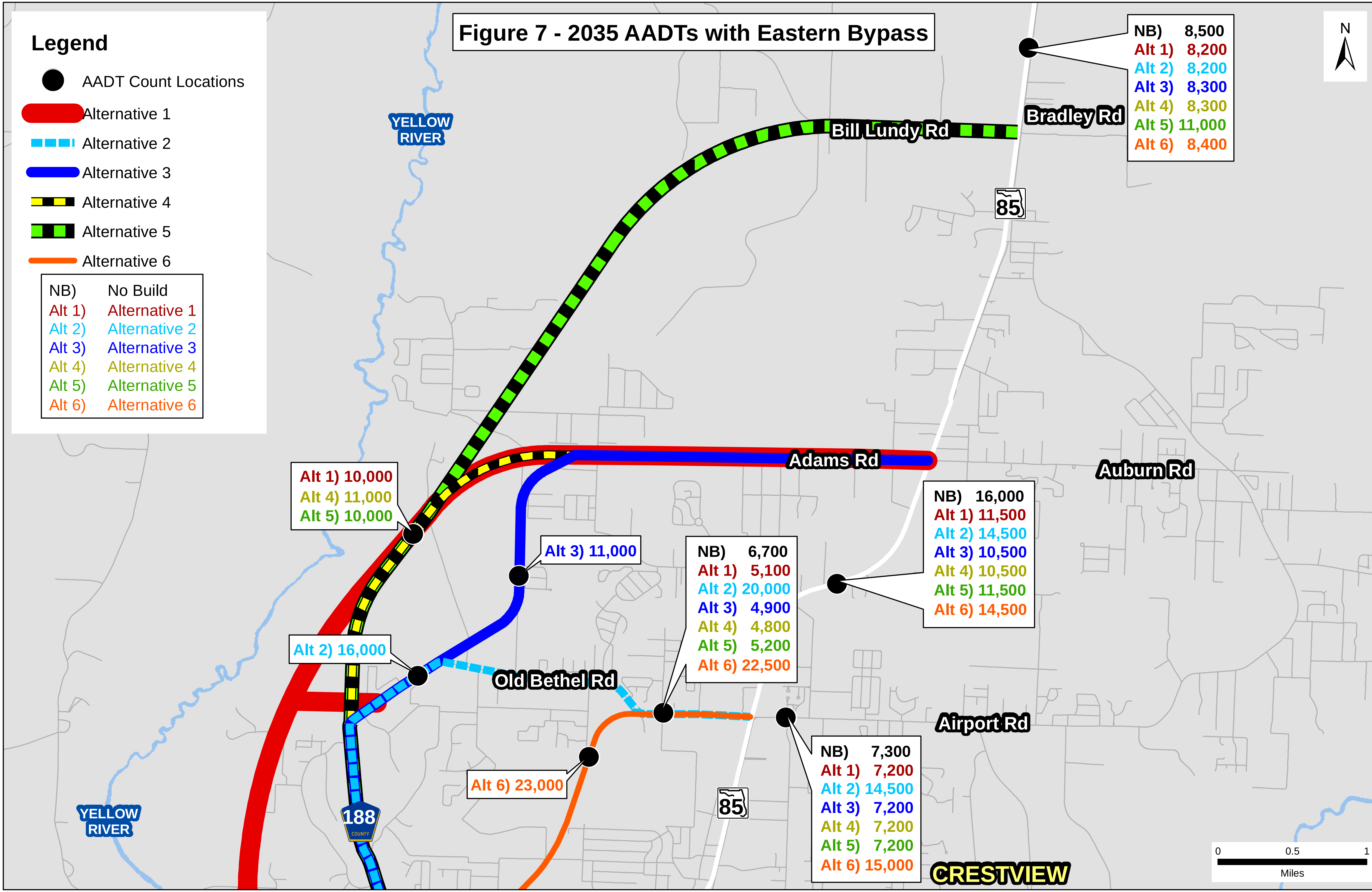


Figure 7 - 2035 AADTs with Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
N
YELLOW RIVER
NB) 8,500
Alt 1) 8,200
Alt 2) 8,200
Alt 3) 8,300
Alt 4) 8,300
Alt 5) 11,000
Alt 6) 8,400
Bradley Rd
Bill Lundy Rd
85
Adams Rd
Auburn Rd
Alt 1) 10,000
Alt 4) 11,000
Alt 5) 10,000
Alt 3) 11,000
NB) 6,700
Alt 1) 5,100
Alt 2) 20,000
Alt 3) 4,900
Alt 4) 4,800
Alt 5) 5,200
Alt 6) 22,500
NB) 16,000
Alt 1) 11,500
Alt 2) 14,500
Alt 3) 10,500
Alt 4) 10,500
Alt 5) 11,500
Alt 6) 14,500
Alt 2) 16,000
Old Bethel Rd
Airport Rd
NB) 7,300
Alt 1) 7,200
Alt 2) 14,500
Alt 3) 7,200
Alt 4) 7,200
Alt 5) 7,200
Alt 6) 15,000
Alt 6) 23,000
188
COUNTY
85
YELLOW RIVER
CRESTVIEW
0 0.5 1
Miles

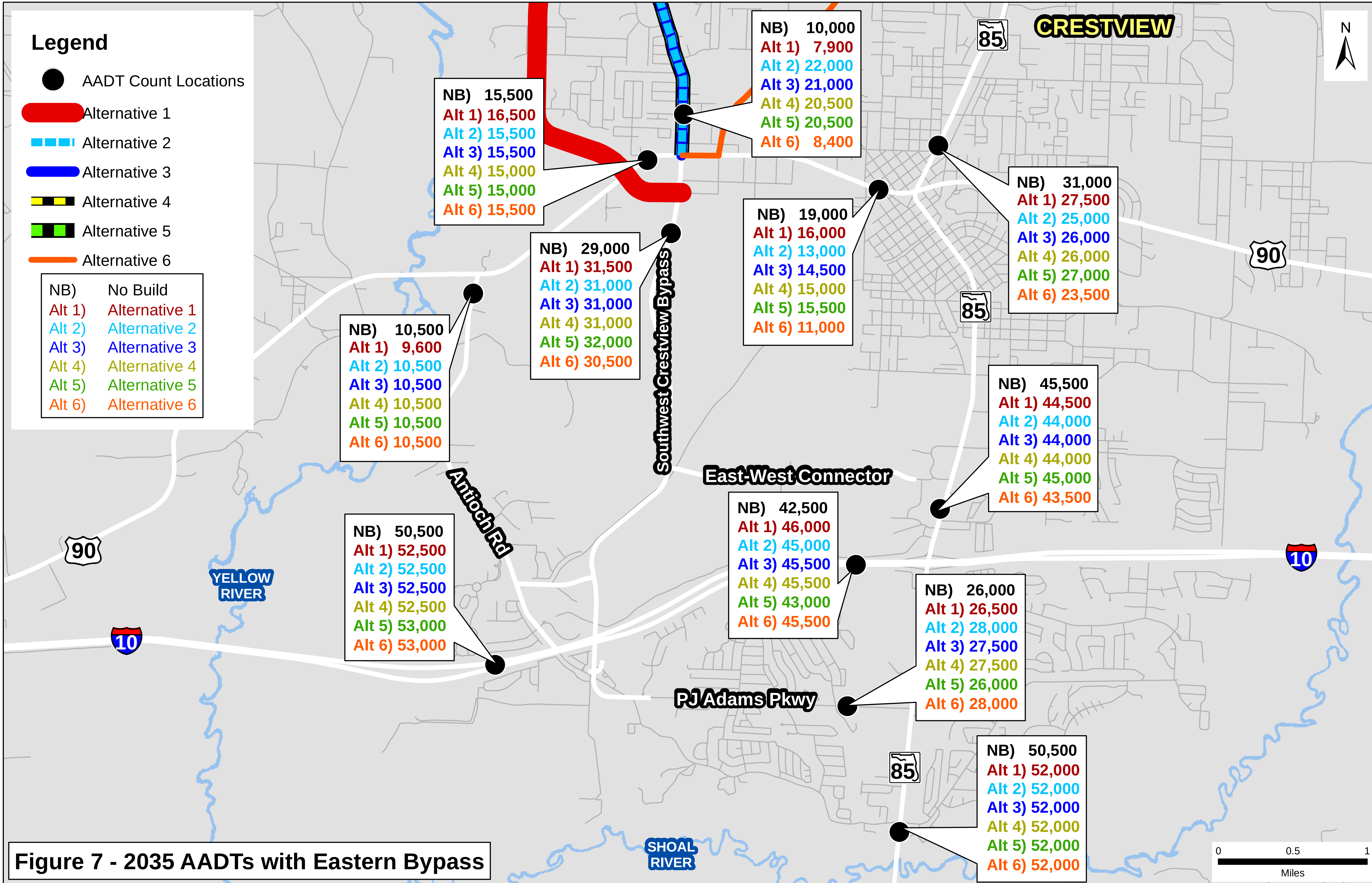
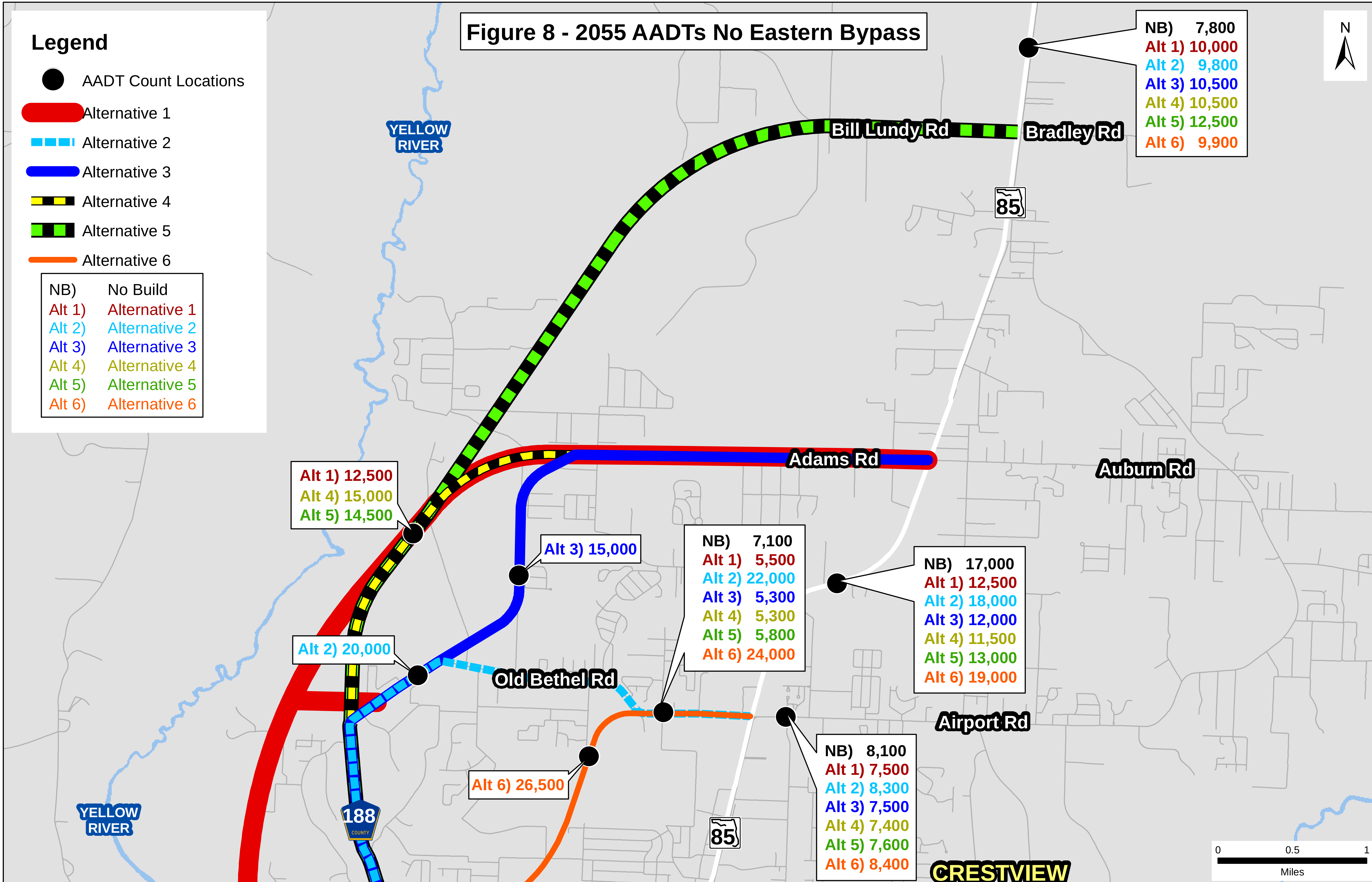


Figure 7 - 2035 AADTs with Eastern Bypass

Table 9 | 2055 AADTs No Eastern Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	7,100	5,500	22,000	5,300	5,300	5,800	24,000
Old Bethel Rd north of US 90	10,000	8,500	26,000	25,500	25,500	25,000	8,400
Airport Rd east of SR 85	8,100	7,500	8,300	7,500	7,400	7,600	8,400
SR 85 south of Live Oak Church	55,500	56,000	56,000	56,000	56,000	56,000	56,000
SR 85 north of Bill Lundy Rd	7,800	10,000	9,800	10,500	10,500	12,500	9,900
SR 85 north of I-10	48,000	48,000	47,500	48,000	47,500	48,500	48,000
SR 85 north of US 90	31,500	29,000	26,500	27,500	27,500	29,000	25,500
SR 85 north of Old Bethel Rd	17,000	12,500	18,000	12,000	11,500	13,000	19,000
US 90 west of Old Bethel Rd	19,500	21,000	20,000	20,000	20,000	20,500	20,500
US 90 west of SR 85	19,500	17,000	15,500	16,500	16,500	17,500	13,000
US 90 east of Eastern Bypass	12,500	12,000	12,000	12,000	12,000	12,000	12,000
Antioch Rd south of US 90	11,000	10,500	11,500	11,500	11,500	11,500	11,500
P J Adams Pkwy west of SR 85	30,000	31,500	32,000	31,500	31,500	30,500	32,000
I-10 west of Antioch Rd	58,000	59,000	59,000	59,500	59,500	61,000	59,000
I-10 west of SR 85	50,500	50,500	50,000	50,000	50,500	51,000	50,500
I-10 east of Eastern Bypass	37,500	37,500	37,500	37,000	37,000	37,000	37,500
NW Bypass midpoint	-	12,500	20,000	15,000	15,000	14,500	26,500
SW Bypass	32,000	37,500	35,500	36,000	36,000	36,500	34,000

Figure 8 - 2055 AADTs No Eastern Bypass



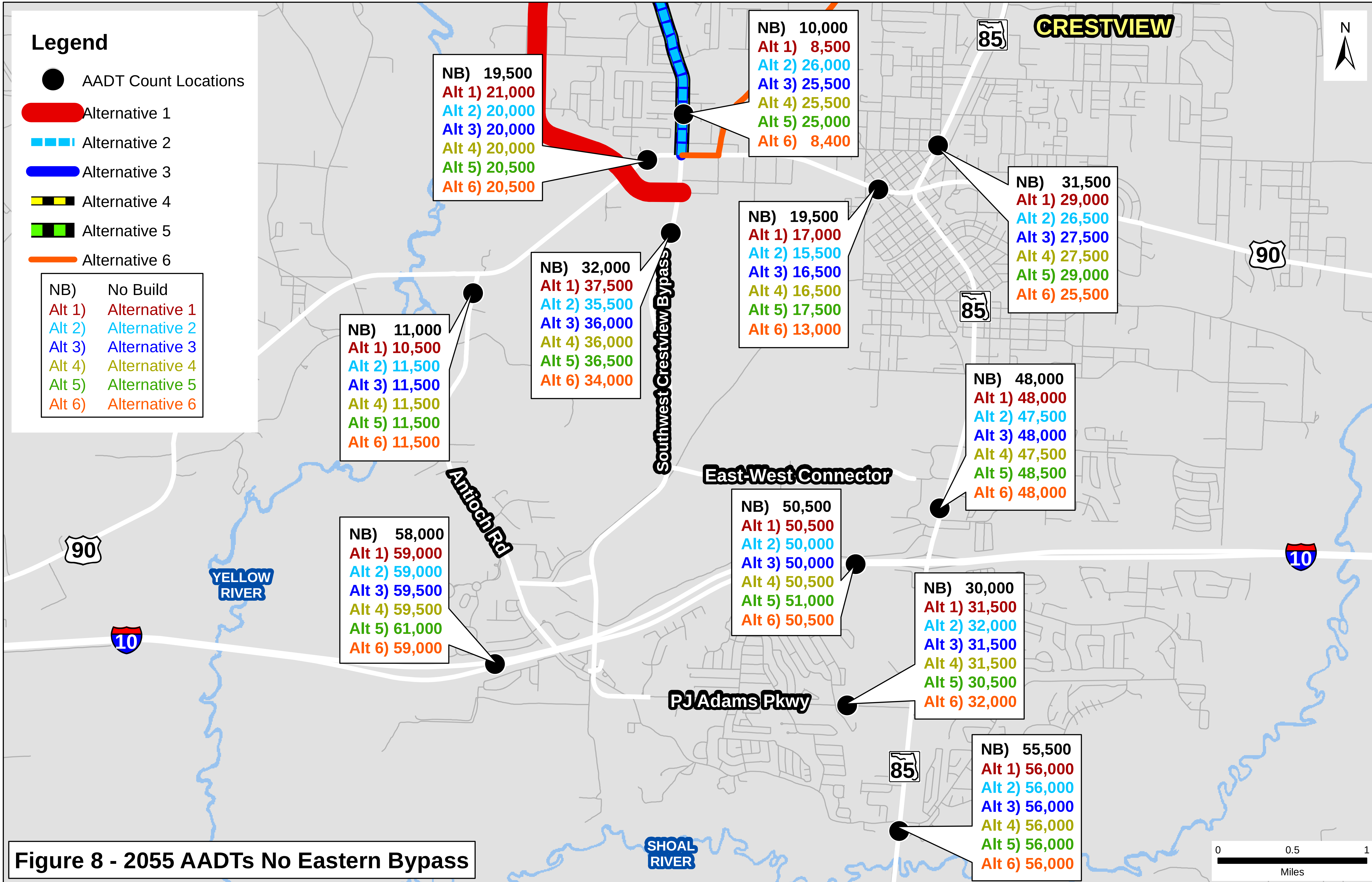


Figure 8 - 2055 AADTs No Eastern Bypass

Table 10 | 2055 AADTs With Eastern Bypass

Location	No Build	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Old Bethel Rd west of SR 85	7,100	5,500	21,500	5,300	5,200	5,600	24,500
Old Bethel Rd north of US 90	10,000	8,400	25,000	23,500	23,500	22,500	8,300
Airport Rd east of SR 85	8,100	7,500	16,000	7,500	7,400	7,500	16,500
SR 85 south of Live Oak Church	55,500	57,000	57,000	57,000	57,000	57,000	57,000
SR 85 north of Bill Lundy Rd	7,800	8,600	8,500	9,000	9,000	10,500	8,800
SR 85 north of I-10	48,000	47,500	47,000	47,500	47,500	47,500	47,000
SR 85 north of US 90	31,500	29,000	26,000	27,000	27,000	28,500	25,000
SR 85 north of Old Bethel Rd	17,000	12,500	16,000	12,000	11,500	13,000	16,500
US 90 west of Old Bethel Rd	19,500	21,500	20,000	20,500	20,500	20,500	21,000
US 90 west of SR 85	19,500	17,000	14,500	16,000	16,000	17,000	12,500
US 90 east of Eastern Bypass	12,500	13,000	12,500	13,000	13,000	12,500	12,500
Antioch Rd south of US 90	11,000	10,500	11,000	11,000	11,000	11,000	11,000
P J Adams Pkwy west of SR 85	30,000	31,500	32,000	31,500	31,500	30,500	31,500
I-10 west of Antioch Rd	58,000	60,000	60,000	60,500	60,500	61,000	60,500
I-10 west of SR 85	50,500	53,500	53,500	53,500	53,500	53,000	53,500
I-10 east of Eastern Bypass	37,500	39,000	39,000	39,000	39,000	39,000	39,000
NW Bypass midpoint	-	11,000	19,000	13,000	13,000	11,500	26,000
SW Bypass	32,000	35,000	34,000	34,000	34,000	34,000	32,500

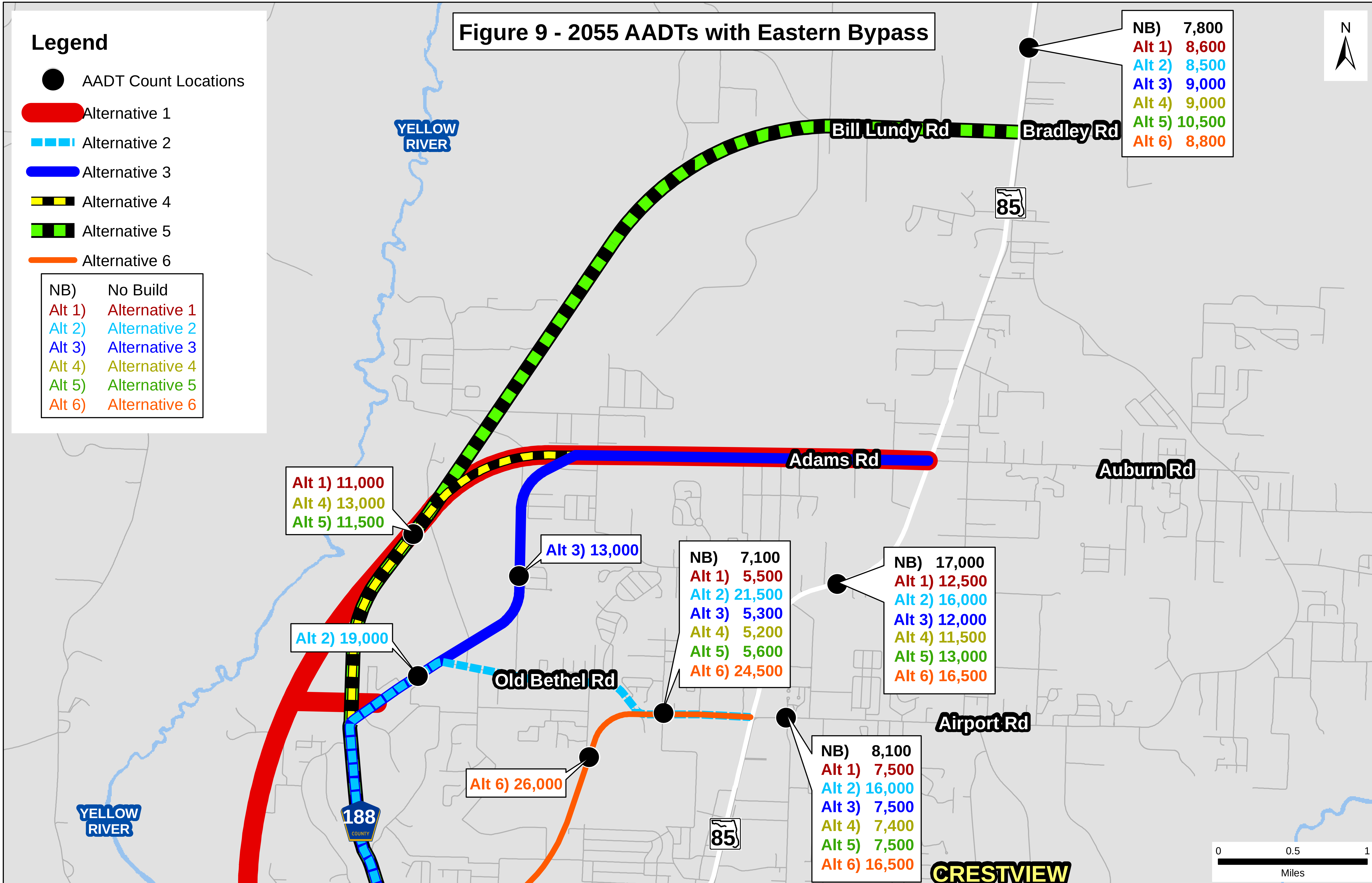


Figure 9 - 2055 AADTs with Eastern Bypass
Legend
AADT Count Locations
Alternative 1
Alternative 2
Alternative 3
Alternative 4
Alternative 5
Alternative 6
NB) No Build
Alt 1) Alternative 1
Alt 2) Alternative 2
Alt 3) Alternative 3
Alt 4) Alternative 4
Alt 5) Alternative 5
Alt 6) Alternative 6
YELLOW RIVER
NB) 7,800
Alt 1) 8,600
Alt 2) 8,500
Alt 3) 9,000
Alt 4) 9,000
Alt 5) 10,500
Alt 6) 8,800
Bill Lundy Rd
Bradley Rd
85
Adams Rd
Auburn Rd
Alt 1) 11,000
Alt 4) 13,000
Alt 5) 11,500
Alt 3) 13,000
NB) 7,100
Alt 1) 5,500
Alt 2) 21,500
Alt 3) 5,300
Alt 4) 5,200
Alt 5) 5,600
Alt 6) 24,500
NB) 17,000
Alt 1) 12,500
Alt 2) 16,000
Alt 3) 12,000
Alt 4) 11,500
Alt 5) 13,000
Alt 6) 16,500
Alt 2) 19,000
Old Bethel Rd
Airport Rd
Alt 6) 26,000
NB) 8,100
Alt 1) 7,500
Alt 2) 16,000
Alt 3) 7,500
Alt 4) 7,400
Alt 5) 7,500
Alt 6) 16,500
188
COUNTY
YELLOW RIVER
85
CRESTVIEW
0 0.5 1
Miles
N

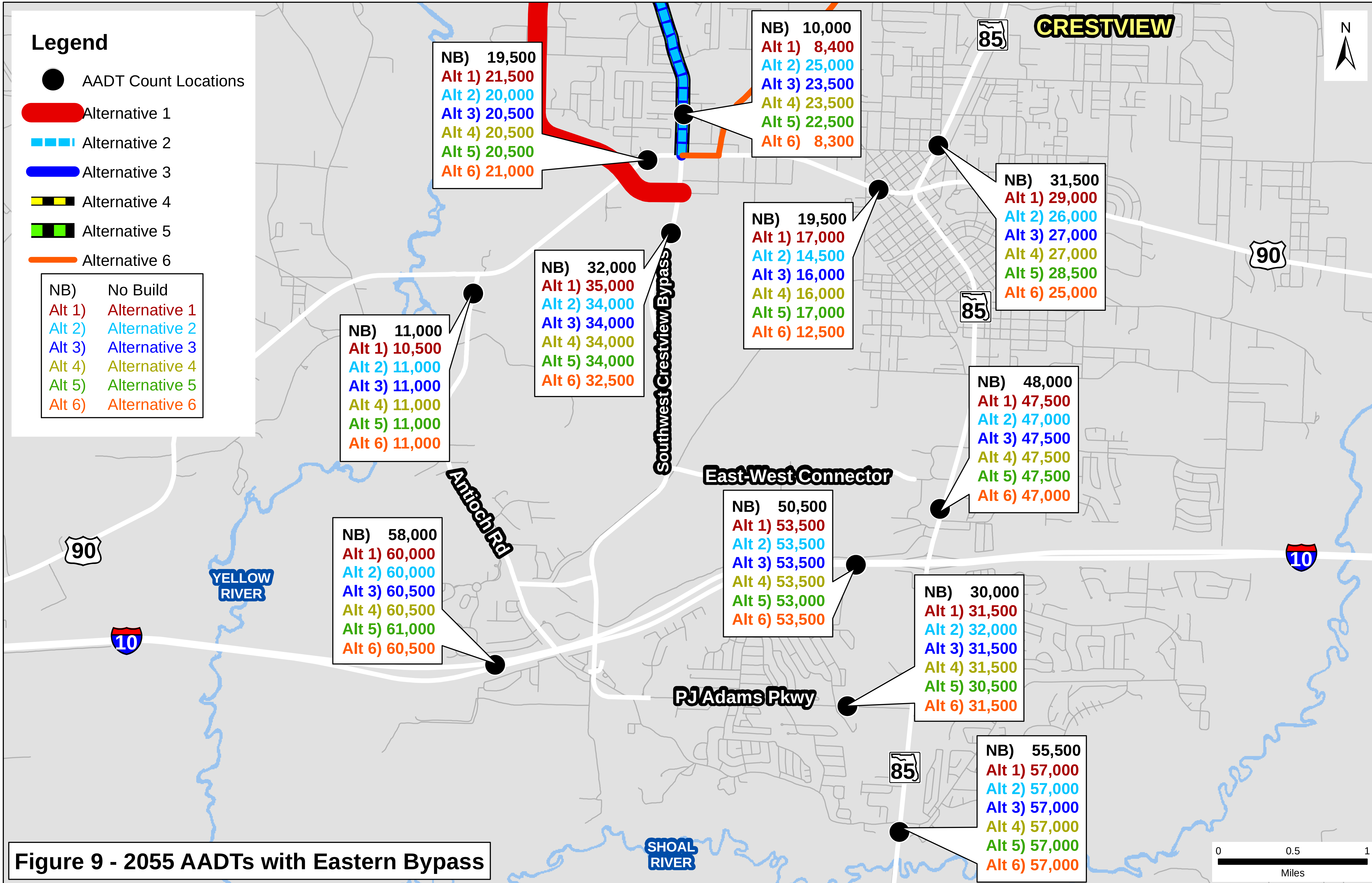


Figure 9 - 2055 AADTs with Eastern Bypass

4.5 Alternatives Comparison

Key observations for the alternatives are described below.

- The traffic volumes on SR 85 are expected to decrease with all alternatives. On SR 85 north of US 90 in year 2055 without the Eastern Bypass, the volumes on SR 85 are decreased by 8-19% with the alternatives in place compared to No Build conditions. Alterative 6 has the highest percent decrease at 19%, followed by Alternative 2 at 16%.
- A significant decrease in traffic volumes on US 90 is shown between Old Bethel Road and SR 85. In year 2055 without the Eastern Bypass, the volumes on US 90 are decreased by 10-33% for all alternatives compared to No Build conditions. Alterative 6 has the highest percent decrease at 33%, followed by Alternative 2 at 21%.
- For all alternatives, the AADTs along the bypass are similar or slightly lower with the Eastern Bypass in place, compared to the scenario without the Eastern Bypass.
- Higher traffic volumes are shown at the end points for most of the alternative alignments.
- In general, Alternative 6 is expected to carry the highest traffic volumes followed by Alternative 2.
- Alternatives 3 and 4 are expected to carry similar volumes along the bypass. Alternative 1 is expected to carry slightly lower volumes than Alternatives 3 and 4.
- Alternatives 1 and 5 are shown to carry the lowest volumes along the bypass compared to other alternatives.
- Volumes along the Southwest Bypass are expected to increase with all alternatives in place with similar volumes for all alternatives.

5.0 Conclusion

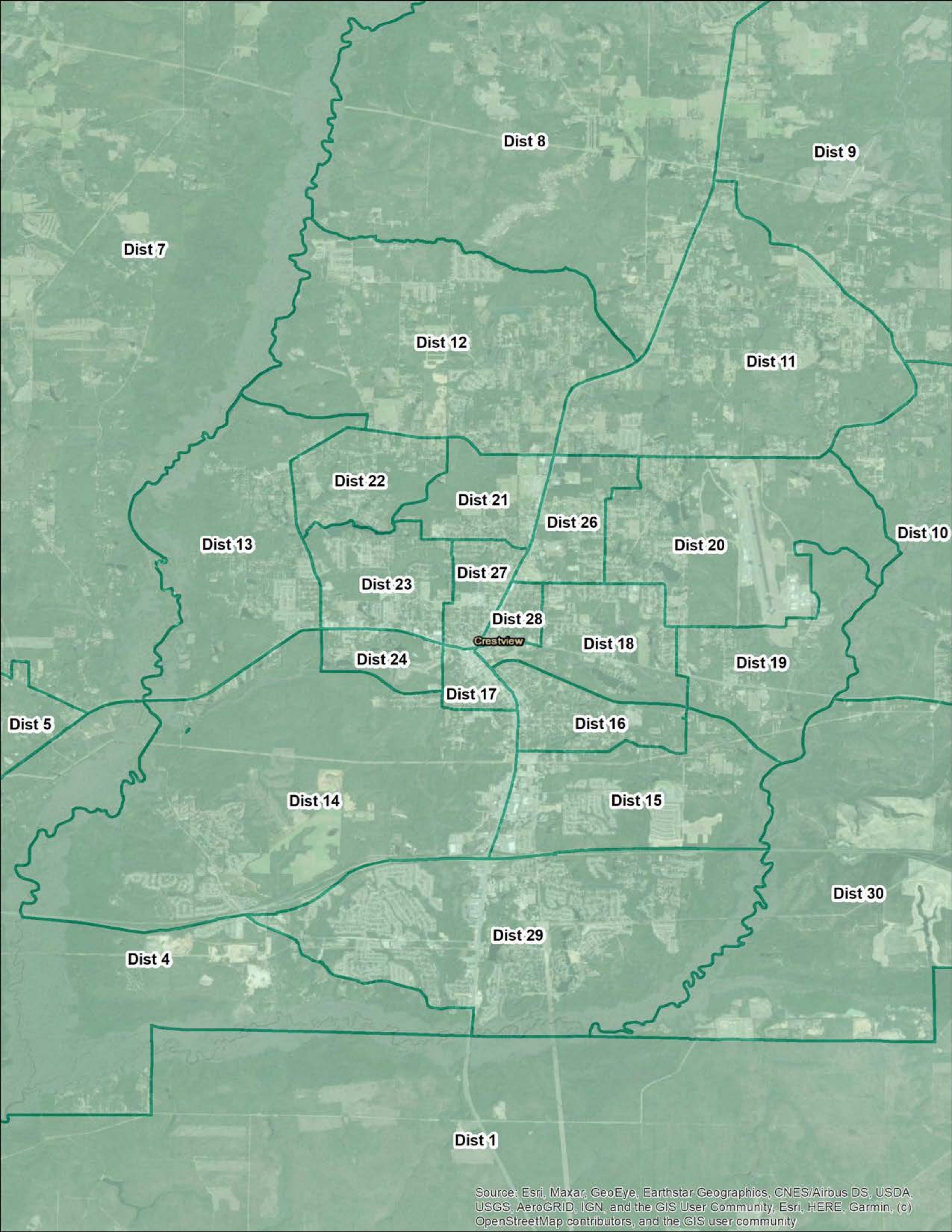
This document provides a summary of the traffic volume forecasting for the NW Crestview Bypass project. The traffic forecast will be used in the ACE traffic analysis (Phase I) and will also be carried forward for use in the PTAR (Phase II). The NWFRPM version 3.1 was used to develop model growth rates to project future volumes for Opening Year 2035 and Design Year 2055.

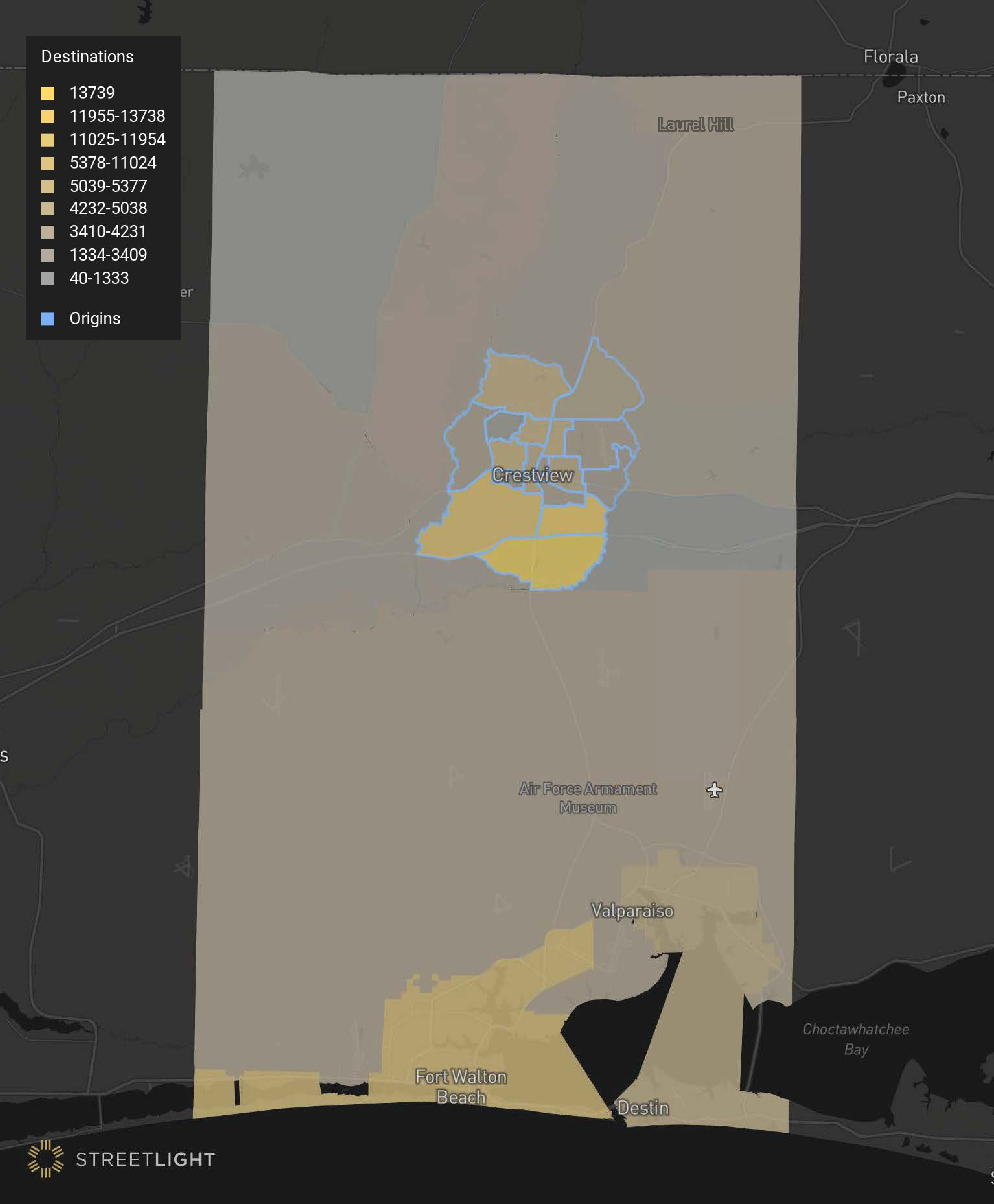
A subarea model validation was performed which consisted of creating a 2019 scenario for the model and then validating that scenario against FDOT 2019 AADT counts and StreetLight Origin-Destination trips within Okaloosa County. The focus of the validation was on Okaloosa County and while the 2019 scenario covers the entire region, the detailed validation work was mostly done within the Okaloosa County area of the model. The model was revised to better reflect socioeconomic data and TAZ adjustments were made. Funded background improvements were also incorporated into the model's 2045 Existing + Committed network.

The future year model development and evaluation was conducted for no build conditions and six alternative corridor alignments. In order to obtain forecasts for future years 2035 and 2055, demographic model inputs for these years were created by interpolation between the 2019 and 2045 demographic inputs. In total, 26 alternative scenarios were run using NWFRPM within the Cube modeling software. The future projected Opening Year 2035 and Design Year 2055 AADTs were obtained from the NWFRPM output (Tables 7 through 10). Volumes were estimated along the alignments as well as the surrounding roadway network by utilizing growth rates derived from model results.

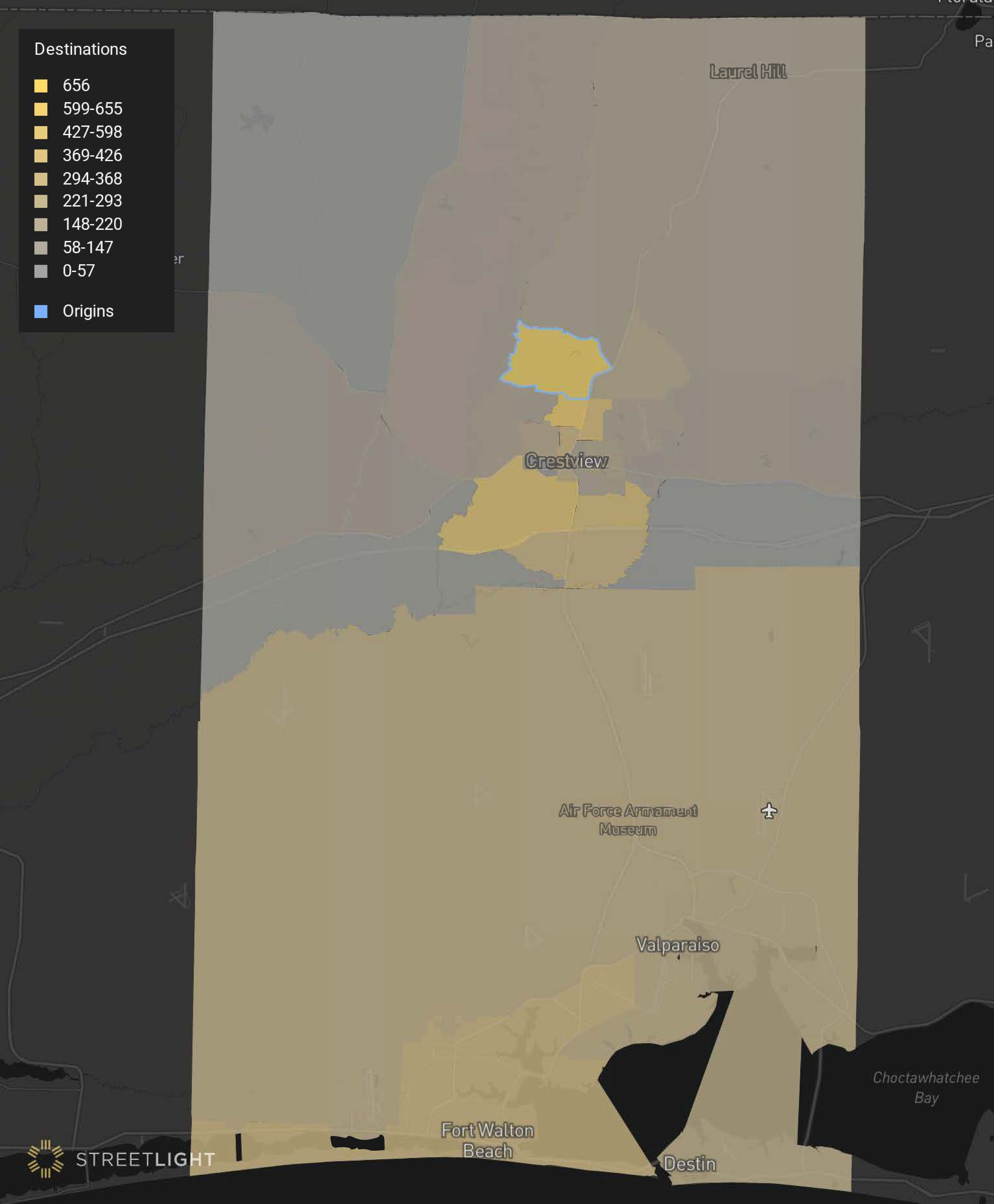
Appendix A – StreetLight Data


Laurel Hill
Dist 6
Dist 7
Dist 8
Dist 9
Dist 12
Dist 11
Baker
Dist 22
Dist 21
Dist 13
Dist 20
Dist 10
Dist 5
Dist 23
Crestview
Dist 18
Dist 19
Dist 24
Dist 16
Dist 14
Dist 15
Dist 30
Holt
Dist 29
Dist 4
Dist 1
Niceville
Valparaiso
Eglin Air Force Base
Wright
Dist 3
Ocean City
Dist 2
Hurlburt Field
Mary Esther
Fort Walton Beach
Destin
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

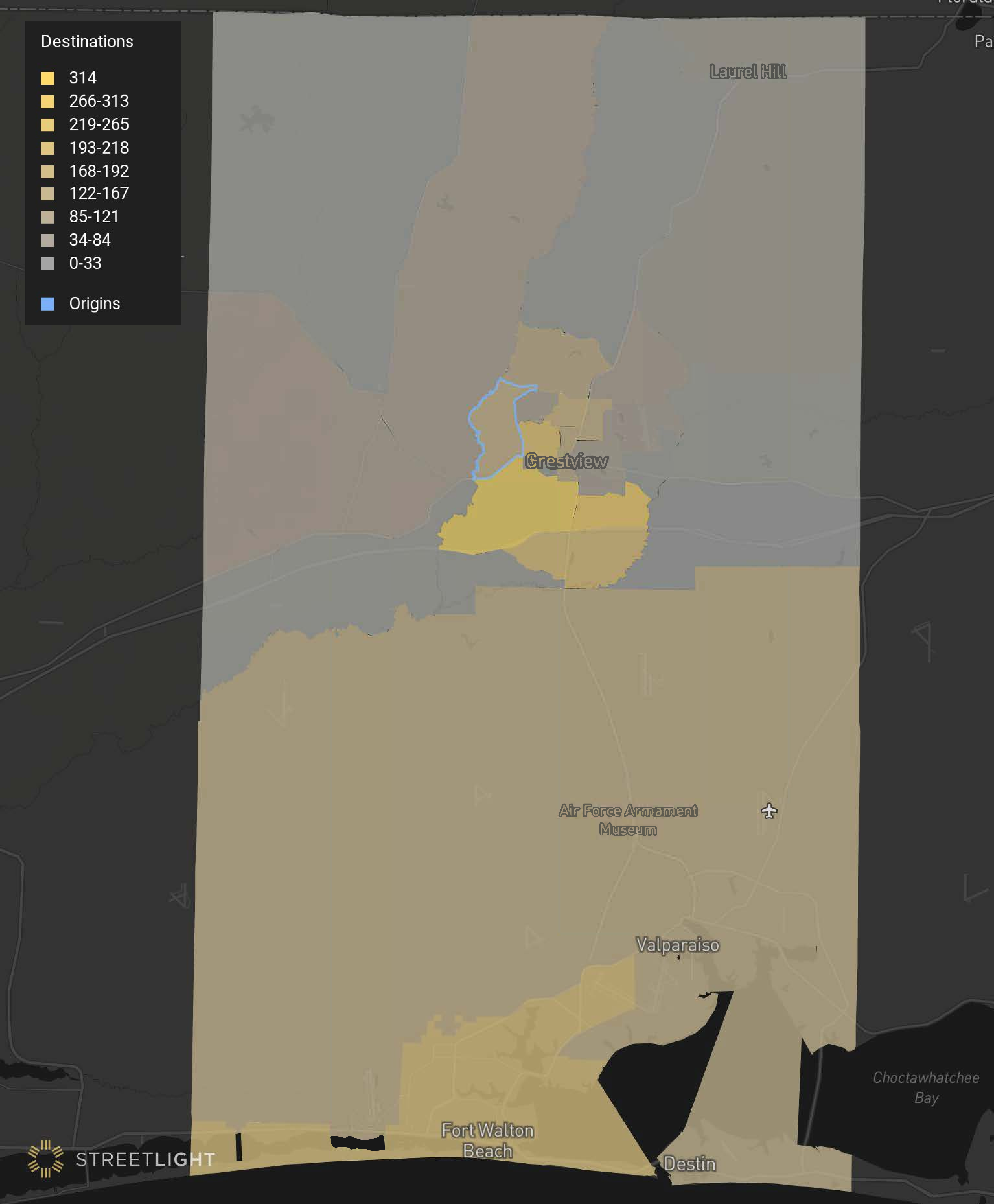

Dist 8
Dist 9
Dist 7
Dist 12
Dist 11
Dist 22
Dist 21
Dist 26
Dist 10
Dist 13
Dist 20
Dist 27
Dist 23
Dist 28
Crestview
Dist 18
Dist 24
Dist 19
Dist 17
Dist 5
Dist 16
Dist 14
Dist 15
Dist 30
Dist 29
Dist 4
Dist 1
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community



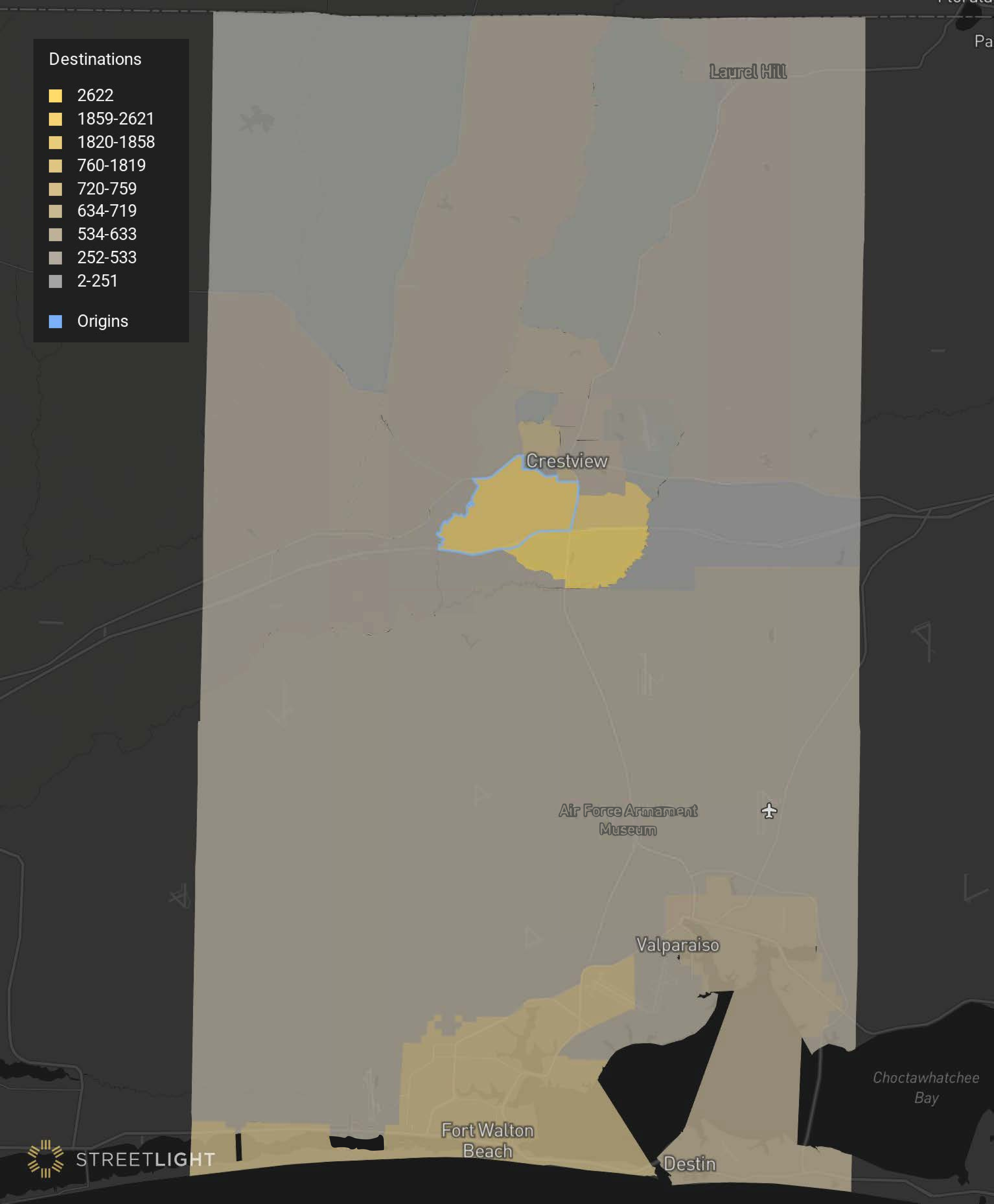
Destinations
13739
11955-13738
11025-11954
5378-11024
5039-5377
4232-5038
3410-4231
1334-3409
40-1333
Origins
Florala
Paxton
Laurel Hill
Crestview
Air Force Armament Museum
Valparaiso
Fort Walton Beach
Destin
Choctawhatchee Bay
STREETLIGHT



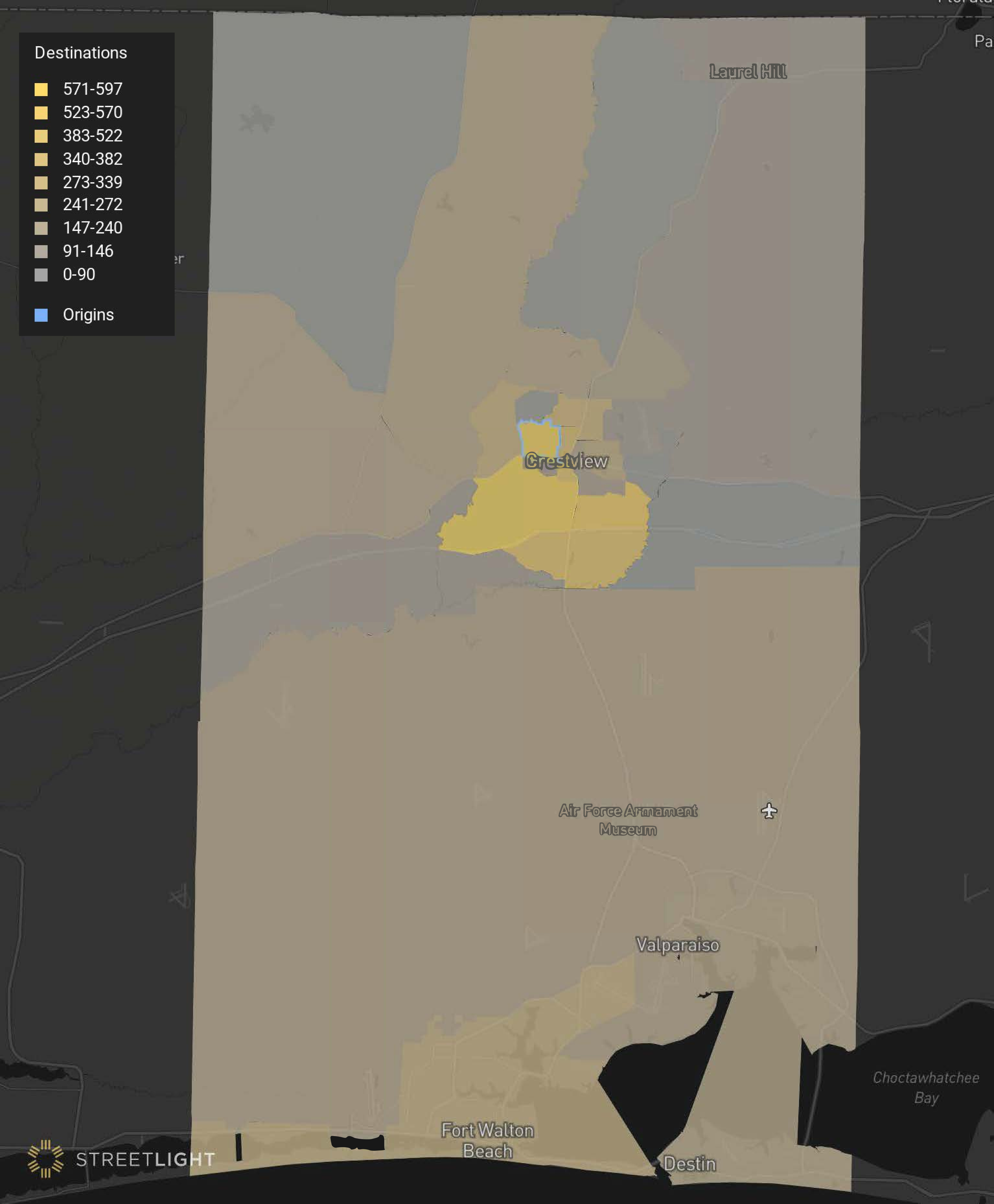
Destinations
656
599-655
427-598
369-426
294-368
221-293
148-220
58-147
0-57
Origins
Laurel Hill
Crestview
Air Force Armament Museum
Valparaiso
Choctawhatchee Bay
Fort Walton Beach
Destin
STREETLIGHT



Destinations
314
266-313
219-265
193-218
168-192
122-167
85-121
34-84
0-33
Origins
Laurel Hill
Crestview
Air Force Armament Museum
Valparaiso
Fort Walton Beach
Destin
Choctawhatchee Bay
STREETLIGHT



Destinations
2622
1859-2621
1820-1858
760-1819
720-759
634-719
534-633
252-533
2-251
Origins
Laurel Hill
Crestview
Air Force Armament Museum
Valparaiso
Fort Walton Beach
Destin
Choctawhatchee Bay
STREETLIGHT



Destinations
571-597
523-570
383-522
340-382
273-339
241-272
147-240
91-146
0-90
Origins
Laurel Hill
Crestview
Air Force Armament Museum
Valparaiso
Fort Walton Beach
Destin
Choctawhatchee Bay
STREETLIGHT

Appendix B –Model Outputs

No-Build Scenario

Alternative 1 without Eastern Bypass Scenario

Alternative 1 with Eastern Bypass Scenario

Alternative 2 without Eastern Bypass Scenario

Alternative 2 with Eastern Bypass Scenario

Alternative 3 without Eastern Bypass Scenario

Alternative 3 with Eastern Bypass Scenario

Alternative 4 without Eastern Bypass Scenario

Alternative 4 with Eastern Bypass Scenario

Alternative 5 without Eastern Bypass Scenario

Alternative 5 with Eastern Bypass Scenario

Alternative 6 without Eastern Bypass Scenario

Alternative 6 with Eastern Bypass Scenario


Okaloosa County
NORTHWEST
CRESTVIEW
BYPASS

Appendix C | Approved Methodology Memorandum

Alternative Corridor Evaluation Methodology Memorandum

FPID: 438139-1-24-01; ETDM 14450

January 2022

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

This planning product may be adopted into the environmental review process, pursuant to Title 23 USC § 168(4)(d), or the state project development process.

Contents

Figures

Tables

Acronyms and Abbreviations

ACE	Alternative Corridor Evaluation
ACER	Alternative Corridor Evaluation Report
ACS	American Community Survey
AFB	Air Force Base
BEBR	Bureau of Economic and Business Research
CFR	Code of Federal Regulations
CR	County Road
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
EST	Environmental Screening Tool
ETAT	Environmental Technical Advisory Team
ETDM	Efficient Transportation Decision Making
FDOT	Florida Department of Transportation
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FGDL	Florida Geographic Data Library
FHWA	Federal Highway Administration
FNAI	Florida Natural Areas Inventory
FPID	Financial Project Identification
FWC	Florida Fish and Wildlife Conservation Commission
GIS	Geographic Information System
LOS	Level of Service
LRE	Long Range Estimate
MM	Methodology Memorandum
NEPA	National Environmental Policy Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NWFWMD	Northwest Florida Water Management District
NWI	National Wetlands Inventory
OEM	Office of Environmental Management
O-W TPO	Okaloosa-Walton Transportation Planning Organization
PD&E	Project Development and Environment
RCRA	Resource Conservation and Recovery Act
SDR	Sociocultural Data Report
SHPO	State Historic Preservation Officer
SR	State Road
SSOGis	State Safety Office Geographic Information System
TRIP	Transportation Regional Incentive Program
USC	United States Code
USFWS	United States Fish and Wildlife Service

Methodology Memorandum

Northwest Crestview Bypass Alternative Corridor Evaluation

FPID:	438139-1-24-01
ETDM No.:	14450
Location:	Okaloosa County
Project Limits:	Begin along US 90 between County Road (CR) 4 and Old Bethel Road, then extend northeasterly to terminate at existing intersections along SR 85
Prepared by:	Okaloosa County
Date:	August 2021
Subject:	Alternative Corridor Evaluation Methodology Memorandum

The purpose of this Methodology Memorandum (MM) is to describe the process to be used to evaluate and recommend alternative corridors for the Northwest Crestview Bypass that will be advanced for detail evaluation during the Project Development and Environment (PD&E) study. The memorandum provides the goals of the evaluation, the methodology to be used, how coordination with stakeholders will occur, and the basis for decision-making. The evaluation of the alternative corridors will be documented in an Alternative Corridor Evaluation Report (ACER).

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016, and executed by the Federal Highway Administration (FHWA) and the Florida Department of Transportation (FDOT).

This planning product may be adopted into the environmental review process, pursuant to Title 23 USC § 168(4)(d), or the state project development process.

1.0 Background

The background section of this memorandum provides contact information for the project, a description of the project, and a summary of the project's purpose and need.

1.1 Contact Personnel

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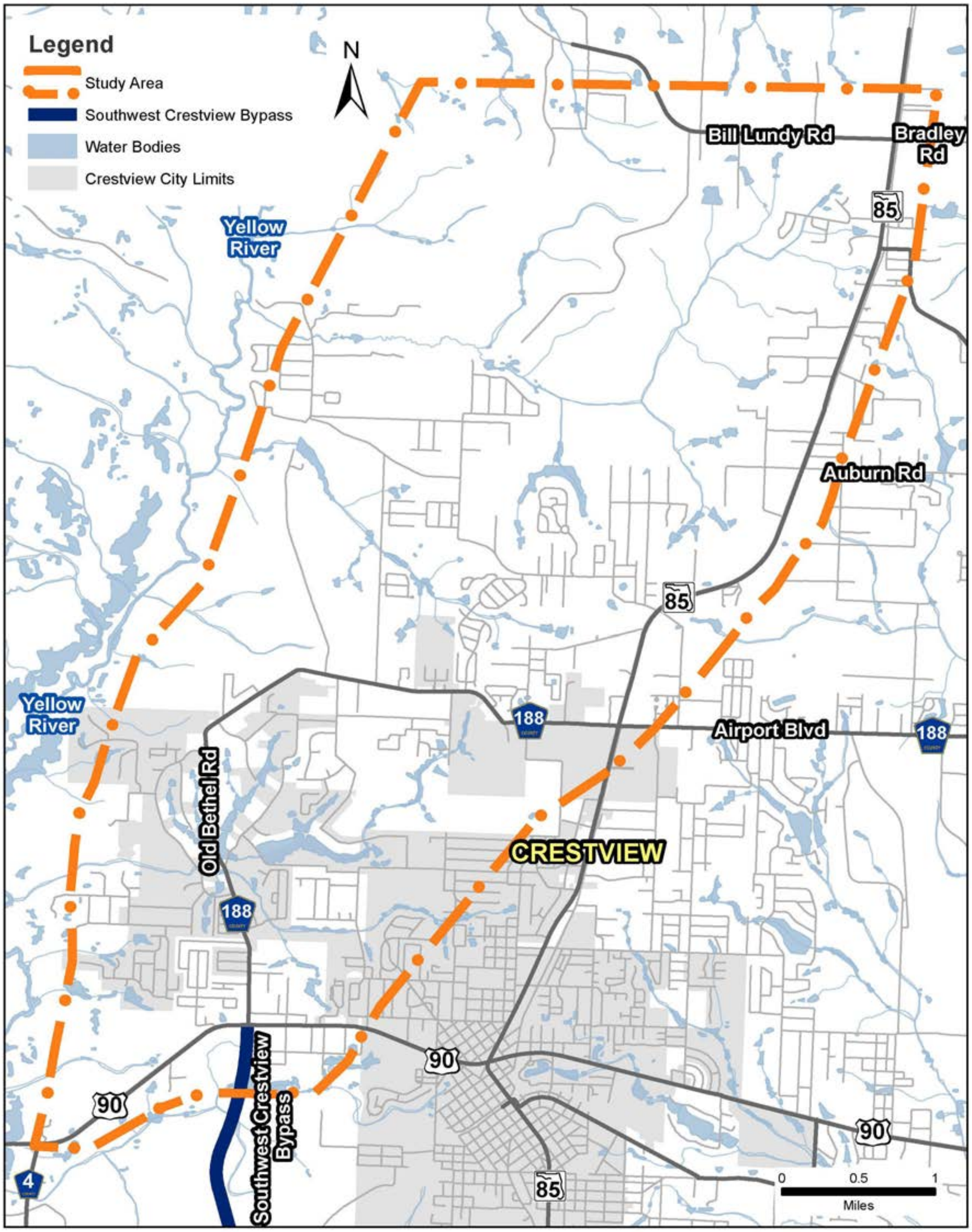
John.Wimberly@hdrinc.com

1.2 Project Description

Okaloosa County is evaluating transportation corridor alternatives for the northwest segment of a bypass around the City of Crestview in Okaloosa County, Florida. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard) north of Crestview. The project will consider improvements to the existing Old Bethel Road from US 90 to SR 85 as well as alternative new corridors. The study area is shown in **Figure 1-1**. The study area was established by considering logical termini of the proposed bypass and avoidance/minimization of potential environmental impacts. If developed, the bypass would begin along US 90 between County Road (CR) 4 and Old Bethel Road, then extend northeasterly to terminate at existing intersections along SR 85. The western study area boundary was set to avoid or minimize impacts to the Yellow River Wildlife Management Area. The northern boundary was set to include potential east-west streets that could provide a logical end point of the bypass at SR 85 and potentially connect to a future Eastern Bypass.

This project is being developed by Okaloosa County, in partnership with the FDOT District 3, and the City of Crestview. FDOT is providing state funding assistance through the Transportation Regional Incentive Program (TRIP). County matching funds are provided through county surtax and gas tax revenue. The study process will follow the FDOT Alternative Corridor Evaluation (ACE) process.



Some corridors are drawn wider to show areas over overlapping

Figure 1-1 Project Study Area

There are six alternatives being considered as follows and shown on **Figure 1-2**:

- Alternative 1: New alignment from the intersection of Enzor Road and Cayson Avenue bearing northwest to the boundary of the Yellow River Wildlife Management Area and then north and east to the intersection of SR 85 and Auburn Road.

- Alternative 2: Capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85.

- Alternative 3: Capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road, and new alignment north and east to the intersection of Auburn Road and SR 85.

- Alternative 4: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Auburn Road and SR 85.

- Alternative 5: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive, and new alignment north and east to the intersection of Bill Lundy Road and SR 85.

- Alternative 6: Follow US 90 from the intersection of Old Bethel Road and US 90 to the intersection of US 90 and Cayson Avenue, then north and east on new alignment to the intersection of Old Bethel Road and SR 85.

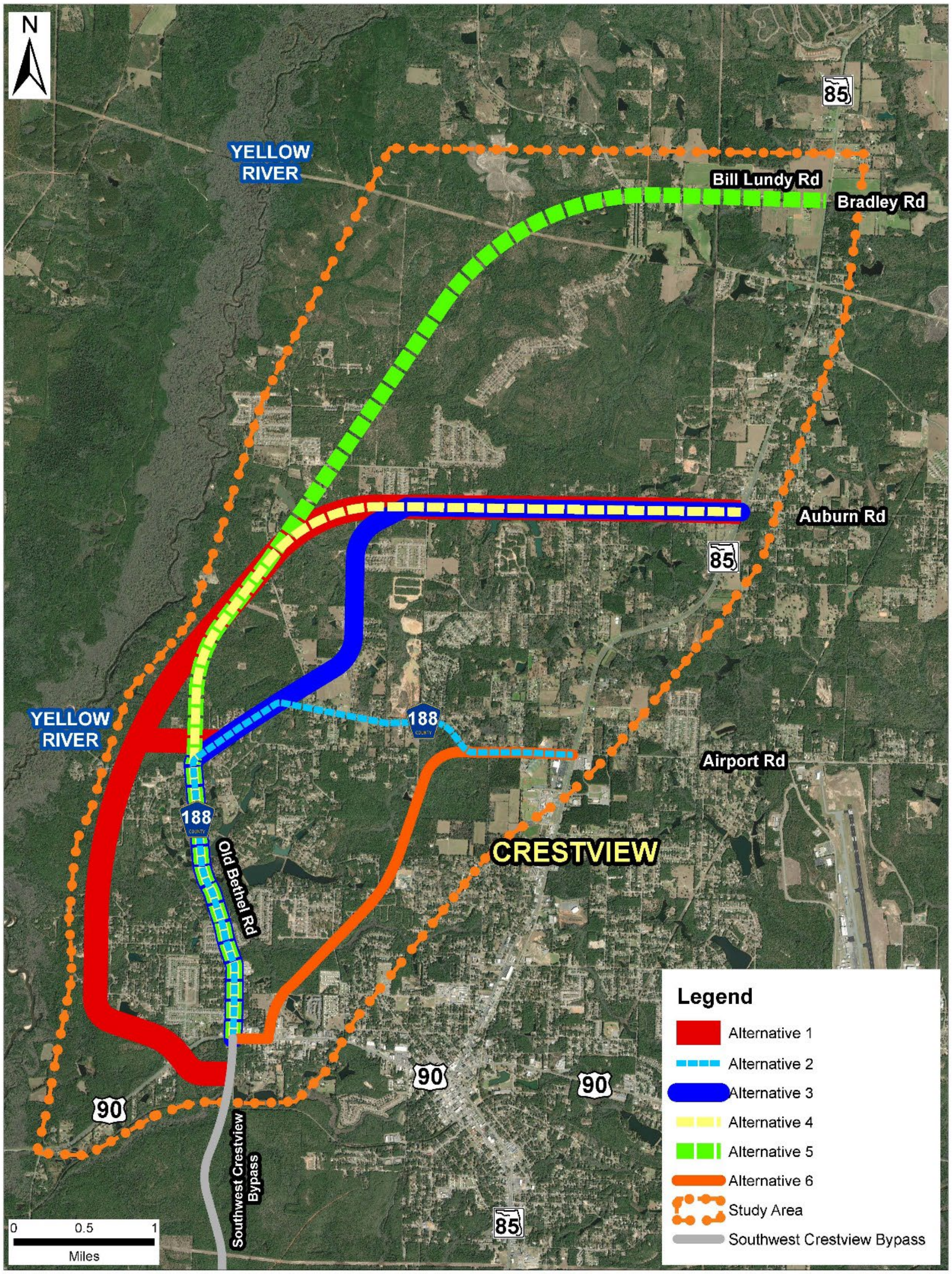


Figure 1-2 Alternative Corridors

1.3 Purpose and Need

1.3.1 Purpose

The primary purpose of the Northwest Crestview Bypass project is to provide regional system connectivity and improve mobility through and around the City of Crestview by providing an alternative to SR 85 and completing the Western Bypass around the City of Crestview. The secondary purposes are to address safety and hurricane evacuation and support anticipated growth in Okaloosa County.

1.3.2 Need

The project is needed to improve regional connectivity, mobility, safety, and hurricane evacuation.

Project Status

The Northwest Crestview Bypass from US 90 to SR 85 North is included in the Okaloosa-Walton Transportation Planning Organization (O-W TPO) 2040 Cost Feasible Plan for PD&E in fiscal years 2021 – 2025 and Design in fiscal years 2026 – 2030. The Western Crestview Bypass, which includes this corridor, was also shown in the 2030 and 2035 O-W TPO Needs Plans. The Crestview Bypass West project (design phase) is identified as a non-Strategic Intermodal System priority #8 for the O-W TPO to provide four lanes of capacity as Financial Project Identification (FPID) 438139-1.

The project is not currently included in the O-W TPO Transportation Improvement Program or the FDOT State Transportation Improvement Program.

The Okaloosa County Comprehensive Plan includes the Crestview Bypass as one of the county's highest priority transportation improvements that will relieve existing traffic congestion. Policy 1.3.2 in Chapter 2.2 Transportation states, "Coordinate with the Okaloosa – Walton TPO in the development of the Crestview Bypass, a parallel 4-lane roadway, to reduce traffic congestion on SR 85 and to foster interstate commerce."

The City of Crestview Comprehensive Plan does not specifically discuss a bypass but contains multiple objectives and policies aimed to address congestion on SR 85. Objective 8.A.6 states, "The City shall continually take steps and actions designed to relieve congestion on area roadways, especially SR 85." Policy 8.A.2.2 states, "The City shall continue to use funds from various sources so as to complete the improvements listed in Table 14-1-T, thereby providing relief to SR 85." Policy 13.A.2.8 states, "The City will also participate in regional efforts to develop and implement other transportation demand management strategies to reduce peak travel demand on SR 85."

The City of Crestview Strategic Plan (June 2019) does not specifically discuss a bypass but contains a Goal to "Provide safe, efficient and accessible means for mobility."

System Linkage

Providing safe and efficient mobility through and around the City of Crestview is critical not only to the city and Okaloosa County, but to the region as a whole which will better serve critical components of the northwest Florida economy such as the Bob Sikes Airport, Eglin Air Force Base (AFB), Hurlburt and Duke Fields, and tourism.

The Southwest Crestview Bypass currently under construction will terminate at US 90. To continue north, vehicles would have to travel along US 90 and then north on SR 85 through the City of Crestview. Currently, the segment of SR 85 through the City of Crestview and the segment of US 90 from Antioch Road to SR 85 are operating at level of service (LOS) F. Regional traffic from the coastal communities of Okaloosa County and Eglin AFB currently rely heavily on SR 85 which is the only north-south corridor in Okaloosa County directly connecting these communities to the region north of I-10. Thus, there is a need to complete the Western Bypass in order to provide an alternative route to SR 85 that would enhance the transportation network's connectivity and relieve SR 85 and US 90 from both regional and local traffic.

Additionally, the Regional Evacuation Study recommended that the state and local counties continue developing north-south evacuation routes to reduce evacuation clearance times. Thus, completion of the Crestview Bypass will improve the evacuation process by providing evacuees with an alternative route to heavily congested SR 85.

Capacity

Segments of SR 85 within the City of Crestview currently experience severe congestion and queuing that routinely backs up for several miles. The O-W TPO 2040 LRTP 2040 deficiency analysis shows SR 85, from 77th Special Forces Way to Airport Road, and Antioch Road as very congested (with higher than a 1.3 volume to capacity ratio), and US 90 from Antioch Road to SR 85 as congested (with 1.0 to 1.3 volume to capacity ratios).

Furthermore, the congestion analysis conducted for roadways within the study area supports the need for improved mobility within and around the City of Crestview. The 2018 Minor Update of the O-W TPO's Congestion Management Process Plan shows that the SR 85 segments from Antioch Road to I-10 and from I-10 to US 90 are very congested and have operated at LOS F since 2007. These segments are projected to continue to operate with LOS F through 2027 if no capacity improvements are made. The segment from US 90 to Airport Road/CR 188 is shown as LOS C and projected to continue as LOS C through 2027. Traffic analysis performed for the Eastern Crestview Bypass Feasibility Study published in July 2019 shows the segment of SR 85 from US 90 to 3rd Avenue failing (LOS E or worse) in 2030. Thus, there is a need to provide alternative routes to SR 85 which would enhance movement of people and goods in and around the City of Crestview.

Transportation Demand

A factor contributing to the amount of traffic on the roadway network is population growth in Okaloosa County. Okaloosa County has grown from 180,822 residents in 2010 to approximately 201,514 residents in 2019, an average annual increase of approximately 1.3 percent. The Bureau of Economic and Business Research (BEBR) medium estimate projects a population of 242,300 by 2045.

The study area is within Planning Area 32536 (Crestview/Auburn). Okaloosa County's Planning Profile for this area shows a higher growth rate from 2010-2017 in the Crestview/Auburn area (19.18%) than the county (8.11%). The study area is expected to continue to grow as is evidenced by the BEBR estimates and the county's future land use maps which plan for additional residential lands compared to what is existing. The expected growth will continue to increase the demand to use both major arterial and local roads in the project study area.

Safety

Analysis of crashes in the State Safety Office Geographic Information System (SSOGis) indicated that there were 857 crashes reported in the state and local roadways within and adjacent to the study area from 2014 to 2018. Of these, there were seven (7) fatal crashes and 30 incapacitating injury crashes. The top three crash types in the study area were rear end, angle and sideswipe crashes. The majority of crashes were located on SR 85 with the highest concentration at the US 90 intersection. The crash rates per million vehicle miles traveled for suburban and rural sections of SR 85 are 3.200 and 6.458, respectively. The average statewide crash rates for suburban arterials are 1.722 and 0.831 for rural arterials, which are substantially lower than the actual crash rates. Thus, there is a need for transportation improvements to increase overall safety in the area.

2.0 Goals and Objectives

2.1 Goals and Intent of the Alternative Corridor Evaluation

The ACE process, as defined in the PD&E Manual and the Efficient Transportation Decision Making (ETDM) Manual, meets the intent of the Code of Federal Regulations (CFR), Title 23, Part 450 (Planning Regulations) and 23 U.S. Code (USC) §168 (Integration of Planning and Environmental Review) of streamlining the planning and environmental review process. It is the intent to conduct the ACE for the Northwest Crestview Bypass so that planning decisions can be adopted or incorporated by reference into the National Environmental Policy Act (NEPA) process. The goal of the ACE is to identify, evaluate, and eliminate alternatives based on consideration of meeting the project purpose and need, avoidance and/or minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency/public input. The ACE process ensures that all viable alternatives are evaluated consistently.

2.2 Status in Project Delivery

The ETDM Programming Screen for ETDM #14450 [Northwest Crestview Bypass from US 90 (SR 10) to SR 85] was initiated on May 7, 2021 with the Preliminary Programming Screen Summary Report published on October 4, 2021. Six alternatives were screened to help identify sensitive resources and other fatal flaws that should be avoided. The naming of each corridor or alternative identified in the ACE will remain consistent throughout the ACE process and be carried through the PD&E phase.

2.3 Decision Points and Milestones

This Draft MM will be distributed to the ETAT for review and comment through the Environmental Screening Tool (EST). The ETAT has 30 days in which to comment on the Draft MM. Once comments on the Draft MM have been incorporated, the revised MM will be included in the republished Programming Screen Summary Report.

The revised MM and implementation of the ACE process will be documented in the ACER. The Draft ACER will be distributed to the ETAT for review and comment through the EST. The ETAT has 30 days in which to comment on the Draft ACER. A corridor information meeting will be held to share and discuss the results of the ACE and to obtain input regarding proposed alternative corridor(s) recommended for evaluation during the PD&E study.

After ETAT review, the ACER will be submitted to the FDOT Office of Environmental Management (OEM), the Lead Agency under the NEPA Assignment Program, for acceptance and concurrence. After acceptance and concurrence from OEM, the Programming Screen Summary Report will be republished with the MM and ACER.

3.0 Alternative Corridor Evaluation Methodology

3.1 Data Collection

The data used to evaluate the project corridor’s social, cultural, natural, and physical environmental impacts will be derived from (GIS) data sources, literature reviews, and field verification, where appropriate. Various GIS datasets within the Florida Geographical Data Library (FGDL), the Northwest Florida Water Management District (NWFWMD), the Florida Fish and Wildlife Conservation Commission (FWC), the Florida Natural Areas Inventory (FNAI), the

National Park Service (NPS), the Federal Emergency Management Agency (FEMA), the U.S. Department of Agriculture's (USDA) Natural Resource Conservation Service (NRCS), the Florida Department of Environmental Protection (FDEP), the National Wetland Inventory (NWI), U.A. Census American Community Survey (ACS), Okaloosa County, and the City of Crestview will be used as data sources. A preliminary list of GIS data layers that may be used in the assessment of the project study area is provided in **Table 3-1**.

Table 3-1 GIS Data Layers

GIS Data Layer	Source	Year
Social and Economic		
Public and Private Schools	FGDL	2020
Religious Centers	FGDL	2015
Health Facility Parcels	FGDL	2010
Fire Department and Emergency Facilities	FGDL	2018
Government Buildings	FGDL	2016
Law Enforcement Facilities	FGDL	2018
Cemeteries	FGDL	2019
Minority and Low-Income Population	US Census ACS	2019
Farmland	FGDL	2018
Existing Land Use	Okaloosa County/City of Crestview	2021
Future Land Use	Okaloosa County/City of Crestview	2021
Public Lands	FGDL	2011
Cultural Resources		
Florida State Parks	FGDL/ FDEP	2019
American Indian Lands	FGDL	2017
Historic Sites, Railroads, Structures and Districts	FGDL/ Bureau of Archaeological Research	2021
Parks and Recreational Facilities Boundaries in Florida	FGDL	2019
National Register of Historic Places	NPS	2021
State Historic Preservation Officer (SHPO) Bridges	FGDL/ Bureau of Archaeological Research	2021
SHPO Cemeteries	FGDL/ Bureau of Archaeological Research	2021
SHPO Resource Groups	FGDL/ Bureau of Archaeological Research	2021
SHPO Structures	FGDL/ Bureau of Archaeological	2021

GIS Data Layer	Source	Year
	Research	
Soils	NRCS	2020
Trails	FGDL	2019
Natural Environment		
Aquatic Preserve Boundaries	FGDL/FDEP	2019
Bald Eagle Nesting Territories	FGDL/FDEP	2017
Bear Kill Locations	FGDL/FWC	2018
FDEP Ecosystem Management Areas	FGDL/FDEP	1999
FDEP Mitigation Banks	FDEP	2021
FEMA Flood Hazard Zones	FGDL/FEMA	2020
FNAI Managed Conservation Areas	FGDL/FNAI	2020
Gulf Sturgeon Critical Habitat	USFWS	2003
Red Cockaded Woodpecker Habitat	FGDL/FFWCC	2005
Outstanding Florida Waters	FDEP	2019
Wetlands	NWI	2020
Wetlands and Water Land Uses	NWFWMD	2018
Wildlife Observations	FGDL/FFWCC	2015
Physical Environment		
Brownfields	FGDL	2019
Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Regulated Facilities	FGDL	2020
Hazardous Materials Generator Sites	FDEP	2021
Landfills	Okaloosa County/FGDL	2021
Petroleum Contamination Monitoring Sites	FGDL	2020
Solid Waste Facilities	FGDL	2021
Storage Tanks Contamination Monitoring	FGDL	2021
Superfund Sites	FGDL	2020

3.2 Study Area

The study area used for the ETDM Preliminary Programming Screen is the same as the ACE study area shown in **Figure 1-1**.

3.3 Identify Alternative Corridor Constraints

GIS data will be used to refine alternative corridors to avoid and minimize impacts to environmental sensitive features to the extent possible. The data sources included in **Table 3-1** will be used to locate environmental constraints including social, cultural, natural, and physical constraints within the study area. Based on ETAT commentary from the ETDM Programming Screen, features identified as important considerations include but are not limited to Yellow River which is a habitat for freshwater mussels and sturgeon, wetlands, stream systems and their crossings, minority and low-income populations, archaeological and historic resource (including Old Bethel Church), and infrastructure facilities such as the dam at the Nature Lake subdivision.

3.4 Alternative Corridor Width

The six alternative corridors that were screened through the ETDM Programming Screen will be further developed to allow a planning-level corridor evaluation as part of this ACE. Travel demand forecast and traffic analysis will be performed as part of the ACE to evaluate general traffic operations for each alternative corridor and to confirm number of lanes required to meet the goals of the project.

It is anticipated that a four- lane divided typical section will be developed for corridor consistency with the Southwest Bypass and to accommodate the projected future traffic demand. Potential typical sections include a standard urban typical section requiring 110 feet of right of way, a high-speed urban typical section requiring 148 feet of right of way, and a rural typical section requiring 192 feet of right of way.

Alternative corridors with a width of 250 feet will be developed for evaluation purposes. This corridor width will allow for flexibility in developing proposed alignments that avoid potential constraints. The corridor width also will allow for multimodal accommodations including sidewalks, bike lanes, recreational trail, and transit.

3.5 Alternative Corridor Analysis and Evaluation Criteria

The corridors will be evaluated based on consideration of meeting the project purpose and need, avoidance and/or minimization of potential impacts to environmental resources, engineering feasibility, a narrative assessment of the corridors, and agency/public input.

The evaluation process to be utilized is described below. It should be noted, there may be unidentified issues or impacts that emerge during the ACE process. Should this occur, the new issue or impact will be included in the appropriate evaluation category.

The evaluation process begins with an assessment of each corridor’s ability to meet the project’s purpose and need. Any alternative failing to meet the project’s purpose and need may be eliminated from further consideration and the evaluation process will continue only for those alternatives that meet the project’s purpose and need.

3.5.1 Evaluation Score

The ability of an alternative to meet the primary purpose and need described in Section 3.5.3 will be evaluated as Yes or No with a supporting narrative. Any corridor that does not satisfy the stated primary purpose and need criteria will be eliminated. All remaining viable corridors will be evaluated using environmental, engineering, and cost considerations.

The evaluation score for secondary purpose and need (described in Section 3.5.4), engineering and environmental impacts will be developed based on traffic analysis, safety analysis, and the order of magnitude impact estimates from the typical section width centered on the full corridor centerline. Because there are different scenarios on how a criterion may be evaluated and scored, for clarity and comparative purposes, the evaluation criteria will be converted to a numerical score. A score of 1 represents the corridor having the best performance (least impact, most benefit, etc.) and the highest score represents the alternative performing the worst. The highest score will be equal to the total number of alternatives analyzed. Alternatives with equal impacts or benefits (alternatives that are tied) will be scored the same. When an alternative will not involve a criterion, it will be assigned a score of zero. Following the evaluation of all the criteria in an evaluation category, the criteria scores for each corridor will be summed to determine the corridor's overall evaluation category score.

The evaluation matrix tables in this section are examples to demonstrate how they may look in the ACER.

3.5.2 Basis for Rankings

To assess, compare and rank the alternative corridors that meet the primary purpose and need, the total score for each alternative corridor will be computed by summing their individual scores in each evaluation criteria. Therefore, each corridor's involvement with a criterion is compared and ranked for each attribute or combination of attributes defining that criterion. A corridor having the best overall performance (least impact, most benefit, etc.) will have the lowest total score.

3.5.3 Primary Purpose and Need Screening

Each alternative corridor will be evaluated for how well it satisfies the primary purpose and need (**Table 3-2**). For an alternative to meet the project's primary purpose and need, it will be required to provide improved connectivity within the western parts of Okaloosa County, direct connection with the Southern Bypass and be consistent with the Okaloosa County Comprehensive Plan and City of Crestview Comprehensive Plan.

- Improved connectivity within the western parts of the county will be assessed by the ability of the alternative corridor to function as a regional alternate route and a high-capacity facility that services through traffic, destined for locations outside the City of Crestview, over an extended distance.

- The alternative corridors will be evaluated for the directness of their connectivity with the Southern Bypass to serve through traffic that would bypass the City of Crestview.
- Compatibility with local plans will be generally assessed on how well each alternative corridor conforms to the plans and measured as either compatible or incompatible.

Any alternative corridor that does not satisfy all stated primary purpose and need criteria will be eliminated. All remaining viable corridors will be evaluated using secondary purpose and need, environmental, engineering, and cost considerations.

Table 3-2 Primary Purpose and Need Screening

Criteria	Unit of Measure	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Improved connectivity on the western part of Okaloosa County	Y/N						
Provide a direct connection to the Southern Bypass	Y/N						
Consistency with local plans	Y/N						

3.5.4 Secondary Purpose and Need Evaluation

Secondary purpose and need will be considered as a ranking criterion. Measures to evaluate additional goals for the project (secondary purpose and need) include:

- Improve mobility measured by Level of Service (LOS) on other roads within the study area
- Reduce demand volume on SR 85 north of I-10
- Improve the safety on the roadway network within the study area measured by potential crash reduction

Alternative Corridors will be evaluated for their overall ability to satisfy the secondary purpose and need by totaling the number of criteria that are met. **Table 3-3** provides the secondary purpose and need screening criteria.

Table 3-3 Secondary Purpose and Need Screening

Category	Criteria	Unit of Measure	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
			Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score
Category	Improve Mobility	LOS												
	Reduce Demand	Demand												
	Improve safety	Crashes												

3.5.5 Environmental Evaluation

Potential environmental effects will be considered for each alternative corridor that meets the project's primary purpose and need. Separate evaluation tables will be used for each of the four environmental categories (social environment, cultural resources, natural environment, and physical environment). The tables will be populated with quantifiable data from the applicable GIS layers identified in **Table 3-1** using the corridor shape files shown in **Figure 1-2**.

Non-quantifiable factors will be given a likelihood of impact rating as low, medium, or high. For listed species occurrence potential, an assessment of likelihood of impact will be made by a qualified biologist through the review of species occurrence databases from the sources identified in **Table 3-1**, as well as limited pedestrian wildlife surveys within the ACE study area shown in **Figure 1-1**.

3.5.5.1 Social and Economic Evaluation

Social environment criteria descriptive of the social environment and quantifiable measures include:

- Miles of corridor traversing incompatible land use
- Number of potential residential displacements
- Number of potential business displacements
- Number of impacted community facilities
- Effect to residential connectivity and social interaction (community cohesion) measured by total number of neighborhoods split
- Socioeconomic impact to special population measured by the number of census blocks with substantial populations protected under Title VI that are crossed as defined by Executive Order 12898, Environmental Justice
- Acres of potential prime farmland impact as defined by the Farmland Protection Policy Act (FPPA) of 1981

Table 3-4 Social, Economic, and Environmental Evaluation Criteria

Category	Criteria	Unit of Measure	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
			Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score
Social	Land use	Miles												
	Potential residential displacements	Number												
	Potential business displacements	Number												
	Community facilities	Number												
	Community cohesion	Number												
	Potential impact to special populations	Number												

Category	Criteria	Unit of Measure	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
			Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score
	Prime farmland	Acres												
	Social Resources Score													
Cultural	Historic resources	Number												
	Archeological resources	Number												
	Potential Section 4(f) resources	Number												
	Recreational areas	Number												
	Cultural Resources Score													
Natural	Water Quality (Mileage crossing water bodies)	Miles												
	100-year floodplain	Acres												
	High Quality wetlands	Acres												
	Low to Moderate Quality wetlands	Acres												
	Listed species occurrence potential	Degree												
	Conservation/ managed lands	Acres												
	Designated critical habitat or habitat suitable for listed species	Acres												
	Natural Resources Score													
Physical	Potential contamination sites	Number												
	Potential noise sensitive sites	Number												
	Physical Resources Score													

3.5.5.2 Cultural Resources Evaluation

For archaeological and historic sites, a GIS assessment will be performed for the study area and the number of potential sites protected under Chapter 267, F.S. that fall within or immediately adjacent to the alternative corridors will determine an alternative corridor's potential involvement. Corridor involvement with parks and recreation sites including those protected by Section 4(f) of the Department of Transportation Act of 1966 will be measured by the number of such lands falling within or immediately adjacent to a corridor.

3.5.5.3 Natural Environment Evaluation

The evaluation criteria and measures in the natural resource evaluation matrix are:

- Water quality will be measured by miles of corridor crossing water bodies, water quality monitoring stations and dams.
- Floodplain impacts will be measured by the acres of 100-year floodplains that are traversed by a corridor.
- Forested wetlands (high quality) will be measured as acres of corridor within high quality wetlands.
- Wetlands (low to moderate quality) will be measured as acres of corridor within low to moderate quality wetlands.
- Wildlife and Habitat will be measured in acres of impact to designated critical habitat or habitat suitable for listed plant and animal species known to occur in the study area.
- Managed lands impact will be measured in acres of impact to managed conservation lands

3.5.5.4 Physical Environment Evaluation

The evaluation criteria and measures to be used to evaluate and compare alternative corridors' involvement with the physical environment are:

- Noise impacts will be measured by the number of noise sensitive sites adjacent to a corridor.
- Contamination involvement will be measured by the number of potential contamination sites in or adjacent to a corridor.

3.5.6 Engineering Evaluation

Engineering considerations used to screen corridors are listed in **Table 3-5**. Engineering factors include major utility conflicts, involvement of infrastructure items such as bridges crossings, drainage basins involved, acreage of required stormwater ponds, and acres of new right of way required. Due to the extensive scope of work required to estimate drainage and utility conflict costs for all of the corridor alternatives and considering that these costs may not be a major consideration for comparative purposes, drainage and utility conflict cost estimates will be provided during the PD&E phase.

Table 3-5 Evaluation of Engineering Consideration

Criteria	Unit of Measure	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
		Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score
Major utility conflicts	Number												
Bridge involvement	Number												
Drainage basins	Number												
Stormwater ponds	Acres												
Engineering Score													

3.5.7 Estimated Costs Evaluation

The estimated construction, wetland mitigation, and right of way costs will be listed in **Table 3-6** below. Construction costs for each corridor will be developed utilizing FDOT Long Range Estimates (LRE). Right of way costs will be estimated based upon general costs of land and buildings in the study area by land use type and unit right of way costs based on representative property values for the land use types crossed by each alternative applied to the required acreage through each land use category. Wetland mitigation costs will be based on the FDOT mitigation cost index.

Table 3-6 Evaluation of Estimated Costs

Criteria	Unit of Measure	Alternative 1		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
		Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score	Quantity	Score
Construction cost	Million USD												
Wetland mitigation	Million USD												
Right of way	Million USD												
Estimated Costs Score													

3.5.8 Narrative of Assessment

Based on the corridor evaluations described above, a narrative discussion and assessment of each of the corridors will be prepared in compliance with elements and issues contained in 23 USC §168(c). This narrative will provide a discussion of the affected environment, advantages and limitations of each corridor, potential safety improvements, and highlight any specific factors that may result in non-viable corridor. Public and agency input (consideration of input received from the ETAT, project stakeholders and the general public) will be summarized in the narrative.

3.5.9 Public and Agency Considerations

Public, agency and ETAT members input received during the ETDM process and MM review will be used to refine the purpose and need, corridor locations, and evaluation criteria. A complete description of the opportunities for public input into the ACE process is in Section 4.0, Stakeholder Coordination. The results documented in the ACER will be made available to the ETAT through the EST for a 30-calendar day review period. Notification of the public meetings will be distributed to all the individuals on the project mailing list including local officials, agencies, appropriate Native American tribes, stakeholders, special interest groups and property owners within the affected study area. If additional meetings are needed to explain the results of the ACER, they will be scheduled as necessary.

3.6 Approach to Eliminating Non-Viable Alternatives

Alternative corridors that do not meet the primary purpose and need for the project or that have disproportionate or significant impacts to environmental resources will be eliminated from further consideration, upon OEM approval. The alternative corridors considered viable for detailed study as a result of the primary purpose and need evaluation will be compared using the criteria described in Section 3.5.3. Corridor evaluation will involve both quantitative and qualitative comparisons of the evaluation criteria. The comparative analysis will include the following:

- Environmental impacts and construction cost estimates (quantitative)
- Engineering factors (technical feasibility) (quantitative)
- Narrative assessment (advantages and limitations) (qualitative)
- Public support including plan consistency and controversy potential (qualitative)

The rating process is discussed further in Section 3.6.1. Upon completion of this assessment and OEM approval, viable corridors will be carried forward into the PD&E Study. The evaluation criteria and units of measure used to evaluate and compare alternatives will include resources issues that are consistent and acceptable to each respective resource agency.

3.6.1 Summary Corridor Ratings

A summary comparative evaluation matrix will be utilized to facilitate the overall comparison of alternative corridors and recommendation of corridors to be advanced to the PD&E study. The summary comparative evaluation matrix (**Table 3-7**) will reflect the alternative corridors in each of the evaluation categories.

Table 3-7 Summary of Comparative Evaluation

Alternative Corridor	Purpose and Need		Evaluation Criteria Scores				Recommended for Further Consideration
	Primary	Secondary	Environmental Impacts	Engineering Performance	Public Support	Cost	
Alternative 1							
Alternative 2							
Alternative 3							
Alternative 4							
Alternative 5							
Alternative 6							

3.7 Alternative Corridor Evaluation Report

The results of the analysis described above will be summarized in the ACER. This report will be submitted to the ETAT and interested stakeholders through the EST for a 30-calendar day period. Once comments are addressed, a corridor public workshop will be held to allow the public to provide input. The appropriate decision-making matrices will be included in the ACER to substantiate findings, provide reasons for eliminating corridors, and to identify corridors that will be carried forward into the PD&E phase. The ACER will be included in the republished Programming Screen Summary Report.

4.0 Stakeholder Coordination

Public outreach during the ACE will be used to engage stakeholders to identify community values and concerns that may affect the development and evaluation of corridors. **Table 4-1** lists the public and agency events that will be conducted to facilitate public and agency input on the expectations, purpose and recommendations of the ACE. Public input will be used to identify community values and concerns that may affect the development of the project. In addition, other meetings with the public, elected officials, special interest groups or public agencies may occur, as needed. Additional communication aids such as a project website and newsletters will be utilized throughout the ACE public engagement process.

Table 4-1 Scheduled Public Meetings

Meeting	Purpose	Schedule
Elected Officials/Agency Kick-off Meeting	To introduce the project, set expectations for the project and present the project schedule.	Beginning of ACE Study (Fall 2021)
Small Group Meetings	To discuss project purpose and progress and to seek project input	Throughout ACE Study
Alternative Corridors Public Workshop	To present the results of the ACE and seek public opinion on corridor recommendations	After Draft ACER (May 2022)

In compliance with the ETDM Master Agreement, agency involvement regarding project needs, issues, evaluation criteria, avoidance, minimization, decisions, and preliminary mitigation concepts will be a continuous effort throughout the ETDM and ACE processes. Agency coordination was initiated with the ETAT review during the Programming Screening. ETAT coordination will continue throughout the ACE process with ETAT reviews of the MM and the ACER.

5.0 Conclusion

In conclusion, the purpose of this MM is to document and describe the ACE methodology to be conducted for the Northwest Crestview Bypass. The memorandum details the goals of the evaluation, methodology, stakeholder coordination process, and the basis for decision-making. The evaluation of the corridors will be documented in the ACER and the results will identify the viable alternatives recommended for NEPA analysis.

#14450 - Northwest Crestview Bypass from US 90 (SR 10) to SR 85

Planning Organization: FDOT District 3
District: District 3
From: US 90 (SR 10)
Plan ID:
Federal Involvement: FHWA Funding, Other Federal Permit
Phase: Programming Screen
County: Okaloosa
To: SR 85
Financial Management No.: 438139-1-24-01

Contact Information: Name: Victoria White Phone: (850) 330-1455 E-mail: tori.white@dot.state.fl.us
Snapshot Data From: Current Draft Data

Review Event

Event Type	Review Period
MM ETAT	12/27/2021 - 01/26/2022

Documents

Document (PDF)	Size (MB)	Description
MM_DRAFT_111621.pdf	2.9	Northwest Crestview Bypass Alternative Corridor Evaluation Methodology Memorandum

Review Comments/Responses

FDOT Office of Environmental Management

Reviewer	Acknowledge	Review Date
Brittany Ann Bianco	Understood	01/25/2022

FL Department of Agriculture and Consumer Services

Reviewer	Acknowledge	Review Date
Mark Kiser	Understood	01/18/2022

Comments:
No further comments.

FL Department of Environmental Protection

Reviewer	Acknowledge	Review Date
Chris Stahl	Understood	01/06/2022

FL Department of State

Reviewer	Acknowledge	Review Date
Marcy Welch	Understood	01/05/2022

FL Fish and Wildlife Conservation Commission

Reviewer	Acknowledge	Review Date
Laura DiGruttolo	Understood	01/20/2022

National Marine Fisheries Service

Reviewer	Acknowledge	Review Date
David A. Rydene	Understood	12/27/2021

Comments:

NMFS staff has reviewed the Alternative Corridor Evaluation Methodology Memorandum for the Northwest Crestview Bypass (ETDM 14450; FPID 438139-1-24-01) in Okaloosa County. NMFS finds the corridor evaluation process to be satisfactory for assessing the proposed corridor alternatives.

Northwest Florida Water Management District

Reviewer	Acknowledge	Review Date
Ted Reese	Understood	01/04/2022

US Army Corps of Engineers

Reviewer	Acknowledge	Review Date
Cynthia Ovdenk	Understood	12/27/2021

US Environmental Protection Agency

Reviewer	Acknowledge	Review Date
Amanetta Somerville	Understood	01/05/2022

Comments:

The U.S. Environmental Protection Agency reviewed the Alternative Corridor Evaluation Report Methodology Memorandum for Project #14450 Northwest Crestview Bypass from US 90 (SR 10) to SR 85 in Okaloosa County, Florida. The Florida Department of Transportation (FDOT) provided a detailed methodology of alternative evaluation corridor evaluation process. The EPA has no comment and awaits the draft Alternative Corridor Evaluation Report.

US Fish and Wildlife Service

Reviewer	Acknowledge	Review Date
Zakia Williams	Understood	01/18/2022

Comments:

The Service has reviewed the information outlined in the Methodology Memorandum, at this time the Service has no further comments or recommendations.

West Florida Regional Planning Council

Reviewer	Acknowledge	Review Date
Jill Nobles	Understood	01/25/2022

The following organizations have been notified but have not submitted a review.

Organization	Extension Start Date - End Date
Bay County TPO	No extension requested
FL Department of Economic Opportunity	No extension requested
Florida - Alabama TPO	No extension requested
Natural Resources Conservation Service	No extension requested
Okaloosa-Walton TPO	No extension requested
Seminole Tribe of Florida	No extension requested
US Coast Guard	No extension requested

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated 12/14/2016 and executed by FHWA and FDOT.


Okaloosa County
NORTHWEST
CRESTVIEW
BYPASS

Appendix D | Cultural Resources Desktop Analysis

Cultural Resource Desktop Analysis
Northwest Crestview Bypass Alternative Corridor Evaluation, Okaloosa County, Florida

CONSULTANT:	SEARCH 700 N. 9th Avenue, Pensacola, Florida 32501
PRINCIPAL INVESTIGATOR:	Steven RabbySmith, MA, RPA
ARCHAEOLOGIST:	Bianca Book, MS
CLIENT:	HDR, Inc.
DATE:	April 2022
FINANCIAL MANAGEMENT (FM) #:	438139-1-24-01
SEARCH PROJECT #:	T20221

In April 2022, SEARCH completed a cultural resource desktop analysis in support of the Northwest Crestview Bypass Alternative Corridor Analysis in Okaloosa County, Florida (**Figure 1**). Okaloosa County, in partnership with the Florida Department of Transportation, District 3, and the City of Crestview, are evaluating transportation alternatives for the northwest segment of a bypass around the city of Crestview. The project, known as the Northwest Crestview Bypass, will connect with the Southwest Crestview Bypass near the intersection of US 90 and Old Bethel Road and will terminate at State Road (SR) 85 (North Ferdon Boulevard), north of Crestview. The Project Development and Environment study includes seven alternatives (**Figures 2** and **3**):

- Alternative 1: New alignment from the intersection of Enzor Road and Cayson Avenue to the intersection of SR 85 and Auburn Road. This alternative is approximately 8.6 miles (13.9 kilometers) in length.

- Alternative 2: Capacity improvements to Old Bethel Road from its intersection with US 90 to its intersection with SR 85. This alternative is approximately 4.9 miles (7.9 kilometers) in length.

- Alternative 3: Capacity improvements to Old Bethel Road from its intersection with US 90 to west of Staff Road and new alignment north and east to the intersection of Auburn Road and SR 85. This alternative is 7.1 miles (11.4 kilometers) in length.

- Alternative 4: Capacity improvements to Old Bethel Road from its intersection at US 90 to south of Seminole Drive and new alignment north and east to the intersection of Auburn Road and SR 85. This alternative is approximately 7.2 miles (11.6 kilometers) in length.

- Alternative 5: Capacity improvements to Old Bethel Road from its intersection with US 90 to south of Seminole Drive and new alignment north and east to the intersection of Bill Lundy Road and SR 85. This alternative is 9.2 miles (14.8 kilometers) in length.

- Alternative 5-A: Combination of Alternative 3 and Alternative 5 along Oak Hill Road. Use Alternative 3 from US 90 and continue along Oak Hill Road to connect to and use the Alternative 5 path. This alternative is 8.9 miles (14.4 kilometers) in length.

- Alternative 6: Follows US 90 from the intersection of Old Bethel Road and US 90 to the intersection of US 90 and Cayson Avenue and new alignment north and east to the intersection of Old Bethel Road and SR 85. This alternative is 3.6 miles (5.8 kilometers) in length.

SEARCH has been tasked by HDR, Inc., with evaluating the project corridor alternatives with the purpose of identifying cultural resource potential and previously recorded historic properties that are listed, or may be eligible for listing, in the National Register of Historic Places (NRHP). The Florida Master Site File (FMSF) database was reviewed for any previous cultural resource surveys or previously recorded resources. Archaeological site probability was evaluated based on various environmental conditions demonstrated to be reliable indicators for past human occupation, including topography, soil drainage, distance to water, and prior disturbance. In addition, the Okaloosa County Property Appraiser's Geographic Information System database was reviewed to determine if parcels containing structures constructed prior to 1978 are located within the study area. For the purposes of this desktop analysis, the study area was defined as the construction footprint for each of the seven alternatives plus a 328-foot (100-meter) buffer (see **Figures 2** and **3**).

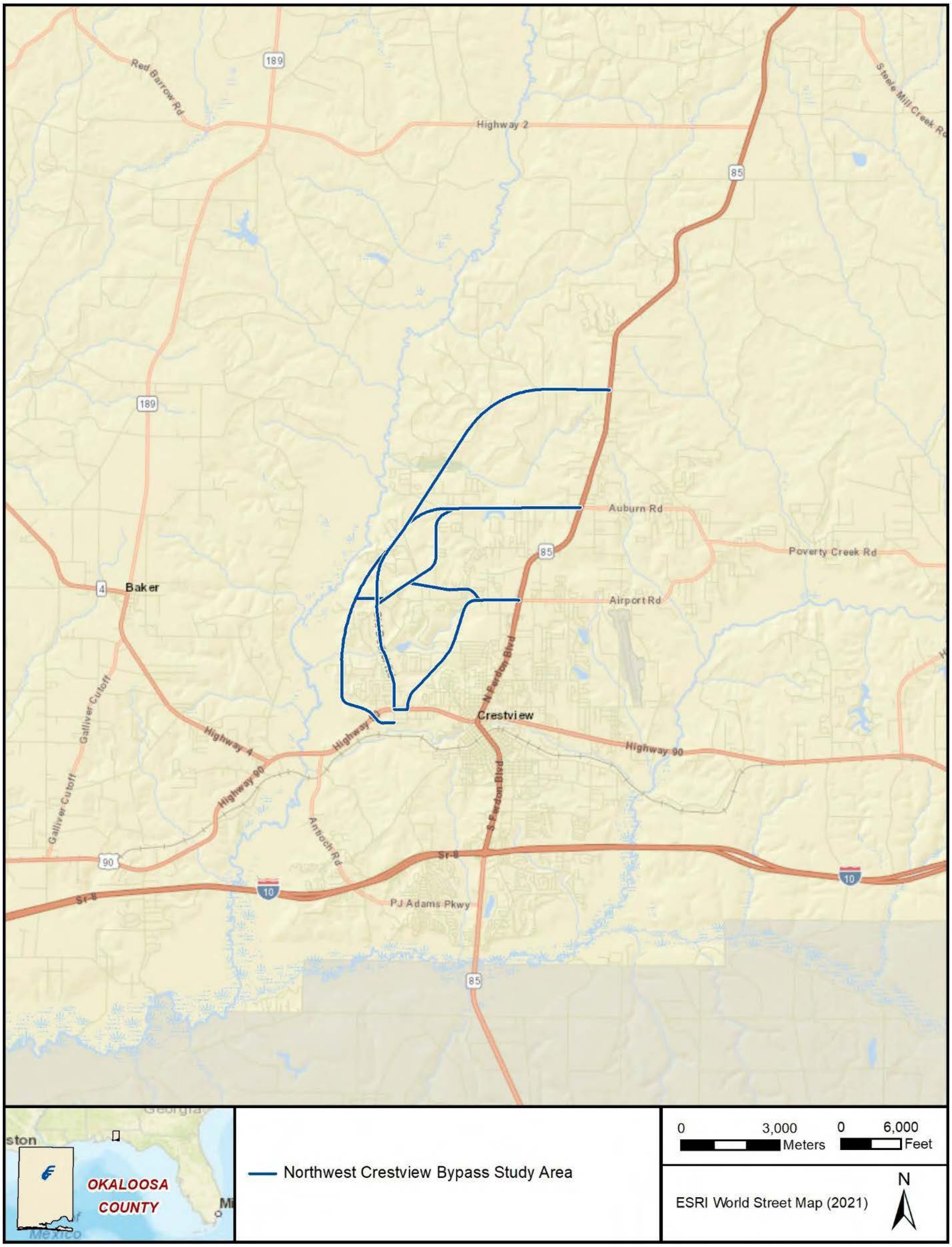


Figure 1. Location of the Northwest Crestview Bypass study area in Okaloosa County, Florida.

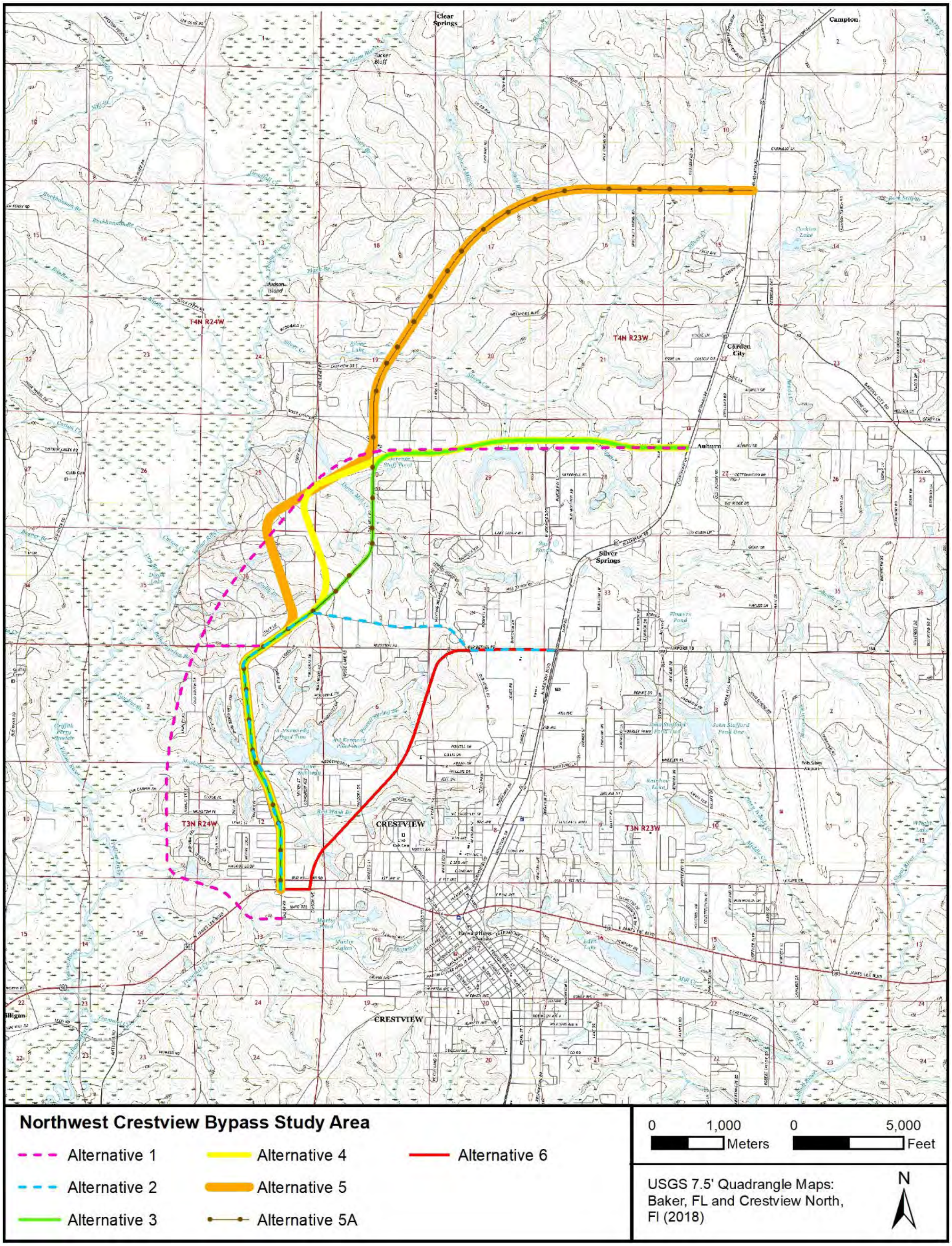


Figure 2. Topographic map depicting the Northwest Crestview Bypass study area alternatives, Okaloosa County, Florida.

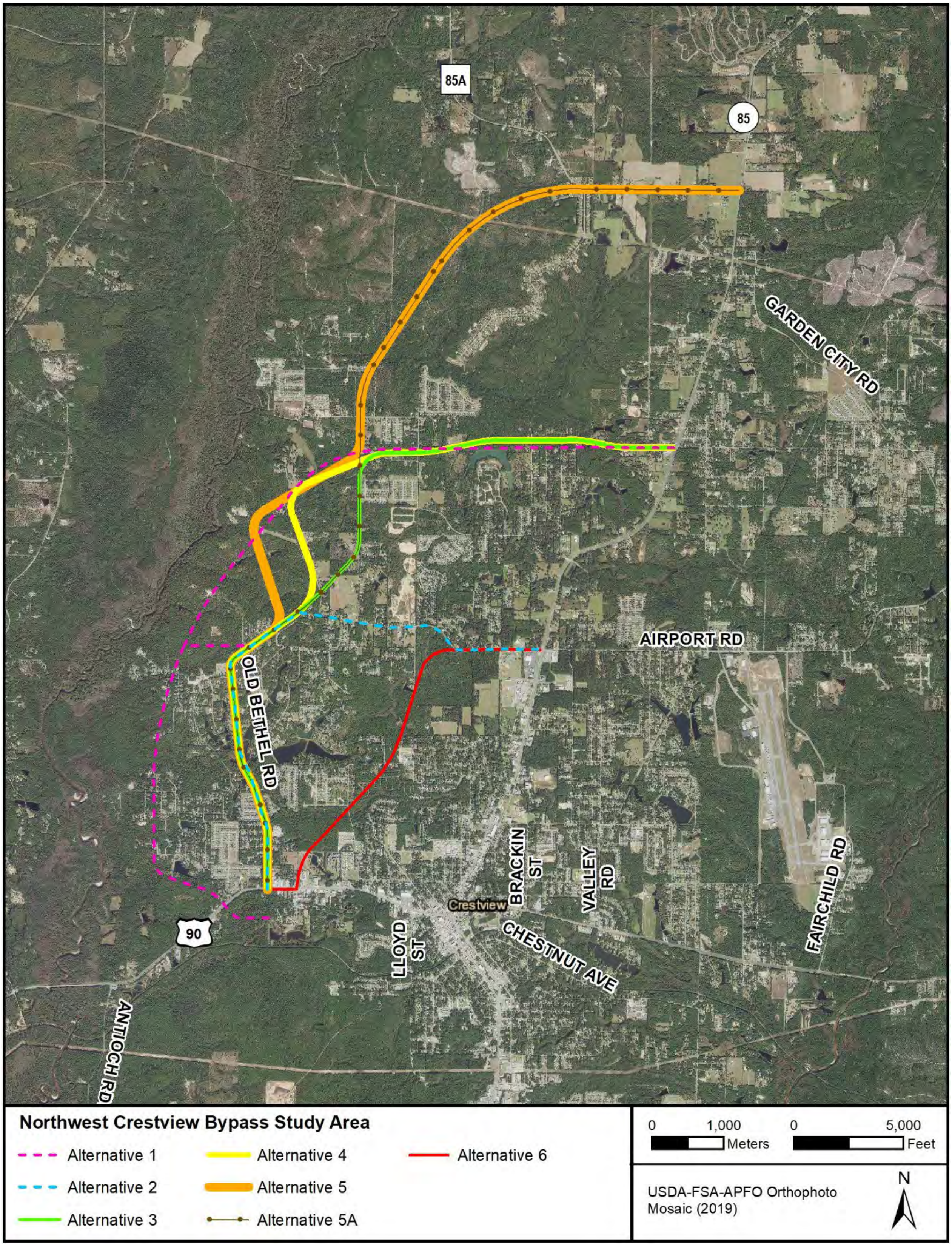


Figure 3. Aerial imagery of the Northwest Crestview Bypass study area alternatives, Okaloosa County, Florida.

ENVIRONMENT

Location and Modern Conditions

The Northwest Crestview Bypass study area is north of the City of Crestview in central Okaloosa County and parallel to the Yellow River Wildlife Management Area. The study area is characterized by intermittent residential and commercial development, undeveloped cleared and wooded parcels, low rolling hills, natural streams, and scattered natural and artificial ponds. The total length of the seven proposed alternatives is approximately 49.6 miles (79.8 kilometers).

The study area is within the following Public Land Survey System coordinates.

- Alternative 1: Sections 1, 2, 11, 12, 13, 14, 25, 35, and 36 of Township 3 North, Range 24 West, and Sections 27, 28, 29, and 30 of Township 4 North, Range 23 West.

- Alternative 2: Sections 1, 12, and 13 of Township 3 North, Range 24 West; Section 36 of Township 4 North, Range 24 West; Sections 31, 32, and 33 of Township 4 North, Range 23 West; and Sections 4 and 5 of Township 3 North, Range 23 West.

- Alternative 3: Sections 1, 12, and 13 of Township 3 North, Range 24 West; Section 36 of Township 4 North, Range 24 West; and Sections 27, 28, 29, 30, and 31 of Township 4 North, Range 23 West.

- Alternative 4: Sections 1, 12, and 13 of Township 3 North, Range 24 West; Sections 25 and 36 of Township 4 North, Range 24 West; and Sections 27, 28, 29, and 30 of Township 4 North, Range 23 West.

- Alternative 5: Section 1, 12, and 13 of Township 3 North, Range 24 West; Sections 25 and 36 of Township 4 North, Range 24 West; and Sections 9, 10, 15, 16, 17, 18, 19, 20, and 30 of Township 4 North, Range 23 West.

- Alternative 5A: Section 1, 12, and 13 of Township 3 North, Range 24 West; Section 36 of Township 4 North, Range 24 West; and Sections 9, 10, 15, 16, 17, 18, 19, 20, 30, and 31 of Township 4 North, Range 23 West.

- Alternative 6: Sections 12 and 13 of Township 3 North, Range 24 West; Sections 5, 6, and 7 of Township 3 North, Range 23 West; and Sections 32 and 33 of Township 4 North, Ranges 23 West.

Geologically, the study area is located within the Southern Pine Hills district of the larger Gulf Coastal Plain province (Brooks 1981). This area is characterized by clastic sediments and thick, rocky deposits. The uplands are sculpted from an alluvial plain underlain by sand, gravel, salt, and clay. This study area is bisected into two subdistricts: Blackwater Hills to the north and Milton-

Crestview Ridge to the south. The Blackwater Hills subdistrict is characterized by a mature landscape dissected by south-southwestward flowing streams. The tops of ridges and hills in this subdistrict range from 200 to 300 feet (60.96 to 91.44 meters) in elevation. The Milton-Crestview Ridge subdistrict is described as a broad, arcuate belt, consisting of a distinct broad ridge bounded to the north and south by stream valleys. The crest of this ridge is approximately 200 feet (60.96 meters) in elevation. Its upper sands consist of accreted coastal deposits modified by weathering. Longleaf pine, a variety of oaks, magnolia, and hickory form the native woodlands of this section.

Elevation in this study area ranges from 99 to 275 feet (30.17 to 83.82 meters) above mean sea level. Soil drainage within the Northwest Crestview Bypass study area ranges from very poorly drained to excessively drained; however, the vast majority of the study area typically displays well drained and (somewhat) excessively drained soils (**Table 1; Figure 4**).

Table 1. Soil Conditions within the Northwest Crestview Bypass Study Area.

Area Name	Length	Soil Drainage	Soil Type
Alternative 1	8.6 miles (13.9 kilometers)	Very Poorly drained; poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained	Dorovan muck, frequently flooded; Lakeland sand; Udorthents, nearly level; Troup sand; Bonifay sand; Fuquay loamy fine sand; Kinston, Johnston, and Bibb soils; Orangeburg sandy loam; Bonifay-Dothan-Angie complex; Yemassee, Garcon, and Bigbee soils, occasionally flooded; Troup-Orangeburg-Cowarts complex; Escambia fine sandy loam; water
Alternative 2	4.9 miles (7.9 kilometers)	Very Poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained	Lucy loamy sand; Rutlege fine sand; Pansey sandy loam, depressional; Dorovan muck, frequently flooded; Lakeland sand; Udorthents, nearly level; Troup sand; Bonifay sand; Orangeburg sandy loam; Bonifay-Dothan-Angie complex; Troup-Orangeburg-Cowarts complex; water
Alternative 3	7.1 miles (11.4 kilometers)	Very Poorly drained; poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained	Dorovan muck, frequently flooded; Lakeland sand; Udorthents, nearly level; Kinston, Johnston, and Bibb soils; Orangeburg sandy loam; Bonifay-Dothan-Angie complex; Troup-Orangeburg-Cowarts complex; Lucy loamy sand; Rutlege fine sand; Troup sand; Bonifay sand; water
Alternative 4	7.2 miles (11.6 kilometers)	Very Poorly drained; poorly drained;	Fuquay loamy fine sand; Kinston, Johnston, and Bibb soils,

Table 1. Soil Conditions within the Northwest Crestview Bypass Study Area.

Area Name	Length	Soil Drainage	Soil Type
		somewhat excessively drained; excessively drained; well drained	frequently flooded; Dorovan muck, frequently flooded; Lakeland sand; Orangeburg sandy loam; Bonifay-Dothan-Angie complex; Troup-Orangeburg-Cowarts complex; Rutlege fine sand; Troup sand; Bonifay sand; water
Alternative 5	9.2 miles (14.8 kilometers)	Very Poorly drained; poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained; moderately well drained	Foxworth sand; Lucy loamy sand; Udorthents, nearly level; Troup sand; Albany loamy sand; Dothan loamy sand; Kinston, Johnston, and Bibb soils, frequently flooded; Leefield-Stilson complex; Orangeburg sandy loam; Yemassee, Garcon, and Bigbee soils, occasionally flooded; Fuquay loamy fine sand; Dorovan muck, frequently flooded; Lakeland sand; Bonifay-Dothan-Angie complex; Troup-Orangeburg-Cowarts complex; Rutlege fine sand; Bonifay sand; water
Alternative 5-A	8.9 miles (14.4 kilometers)	Very Poorly drained; poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained; moderately well drained	Orangeburg sandy loam; Lucy loamy sand; Bonifay sand; Udorthents, nearly level; Yemassee, Garcon, and Bigbee soils, occasionally flooded; Bonifay-Dothan-Angie complex; Dothan loamy sand; Lakeland sand; Troup sand; Troup-Orangeburg-Cowarts complex; Leefield-Stilson complex; Kinston, Johnston, and Bibb soils, frequently flooded; Rutlege fine sand; water
Alternative 6	3.6 miles (5.8 kilometers)	Very Poorly drained; poorly drained; somewhat poorly drained; excessively drained; somewhat excessively drained; well drained	Lakeland sand; Pansey sandy loam, depressional; Lucy loamy sand; Udorthents, nearly level; Troup sand; Kinston, Johnston, and Bibb soils, frequently flooded; Orangeburg sandy loam; Dorovan muck, frequently flooded; Troup-Orangeburg-Cowarts complex; Bonifay sand; water

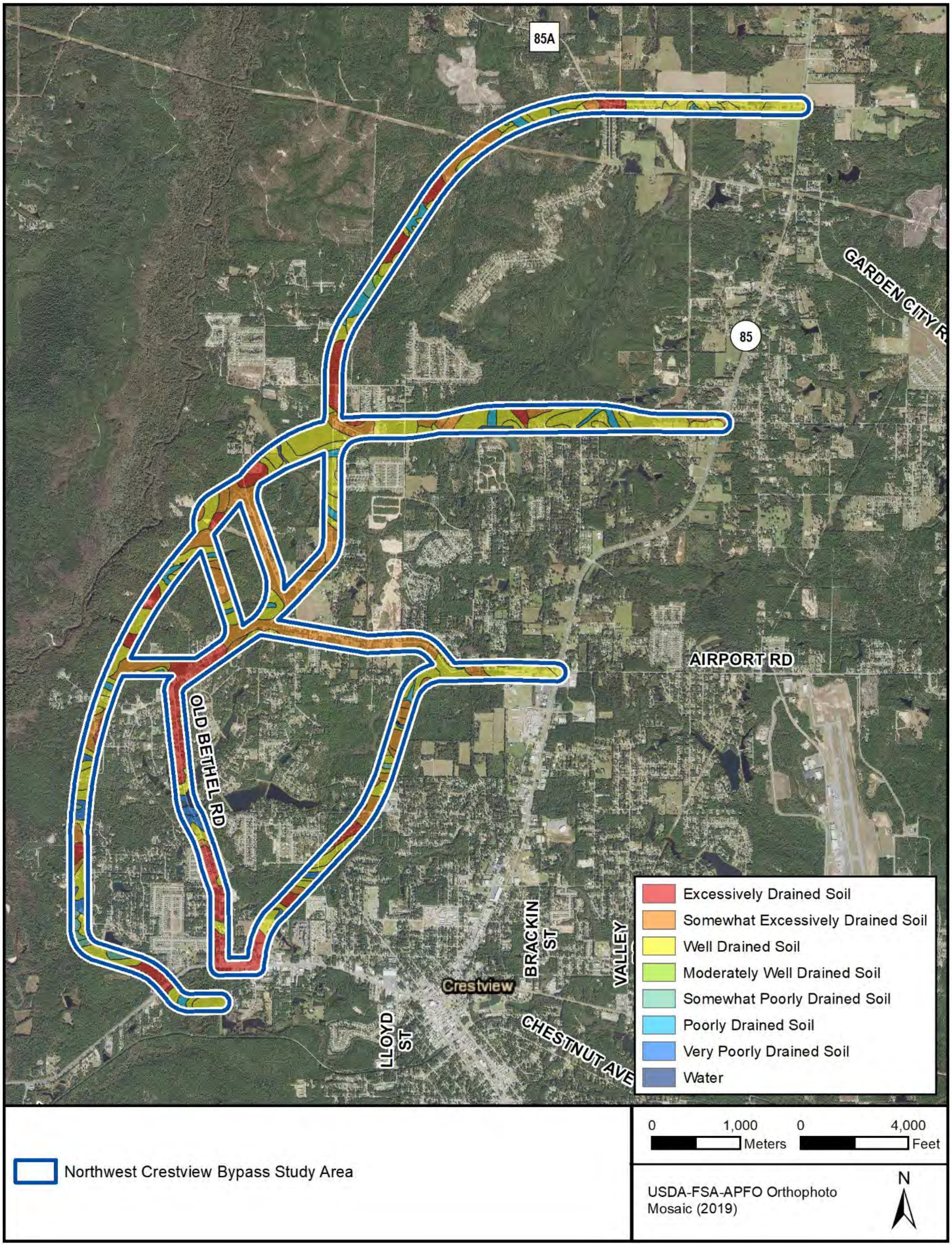


Figure 4. Soil drainage within the Northwest Crestview Bypass study area.

BACKGROUND RESEARCH

Florida Master Site File Review

A review of the FMSF database (updated January 2022) indicates that 14 previous cultural resource surveys intersect a portion of the Northwest Crestview Bypass study area (**Table 2; Figure 5**).

Table 2. Cultural Resource Surveys Conducted within the Northwest Crestview Bypass Study Area.

FMSF No.	Title	Year	Reference
49	*An Archaeological and Historical Survey of the Crestview 201 Wastewater Treatment Facility*	1976	Cultural Resource Management, Inc.
291	*A Cultural Resources Survey of the Zachary-Fort Lauderdale Pipeline Construction and Conversion Project: Alternate II/Florida*	1980	Espey, Huston and Associates, Inc.
3093	*A Cultural Resource Assessment of the Auburn Jct to Auburn 115 KV Transmission Line Corridor in Okaloosa County, Florida*	1992	Troy State University
*3167	*Historic Building Survey of Okaloosa County*	1992	Historic Property Associates, Inc.
3431	*A Cultural Resource Assessment Survey of SR 85 from Airport Road, North of Crestview to Alabama State Line, Okaloosa and Walton Counties, Florida*	1992	Archaeological Consultants, Inc.
4382	*Phase I Cultural Resource Investigation (C.R.I.) of the 453.18 KM (281.60 MI) Florida Portion on the Proposed Florida Gas Transmission (F.G.T.) Company Phase III Expansion Project*	1993	R. Christopher Goodwin & Associates, Inc.
18584	*Cultural Resources Assessment of a Segment of SR 85, From SR 10 (US 90) to the End of the Four-Lane North of CR 188, Crestview*	1999	PBS & J, Inc.
19080	*Cultural Resources Assessment of a Segment of State Road 85 from the End of the Three Lane North of Crestview to County Road 85A (Bill Lundy Road)*	2002	PBS & J, Inc.
11496	*Phase I Cultural Resource Survey of the Country Ridge Estates Tract in Okaloosa County, Florida*	2005	Panamerican Consultants, Inc.
17291	*Phase I Cultural Resources Survey and Archaeological Inventory of Loops 2, 3, 4, 5, 6, and Greenfield 1 of the Florida Gas Transmission Company, LLC Phase VIII Expansion Project, Escambia, Santa Rosa, Okaloosa, Walton, Washington, Bay, Calhoun, Jackson*	2008	R. Christopher Goodwin & Associates, Inc.
16532	*Florida Gas Transmission Phase VIII First Addendum Report Related to Report Nos. 2008 -07035 and 2008 -07036*	2009	R. Christopher Goodwin & Associates, Inc.
16938	*Florida Gas Transmission Phase VIII Second Addendum Report Related to Report Nos. 2008-07035 and 2008-07036 (Goodwin & Coughlin et al. 2010)*	2010	R. Christopher Goodwin & Associates, Inc.
26426	*A Phase I Cultural Resource Survey of the Ridgeway Landing Residential Development, Crestview, Okaloosa County, Florida*	2019	Contact Archaeology, Inc
27380	*Cultural Resource Assessment Survey for the Southwest Crestview Bypass, Phase V: North-South Alignment, Okaloosa County, Florida*	2020	SEARCH, Inc.

** Not depicted in Figure 5.*

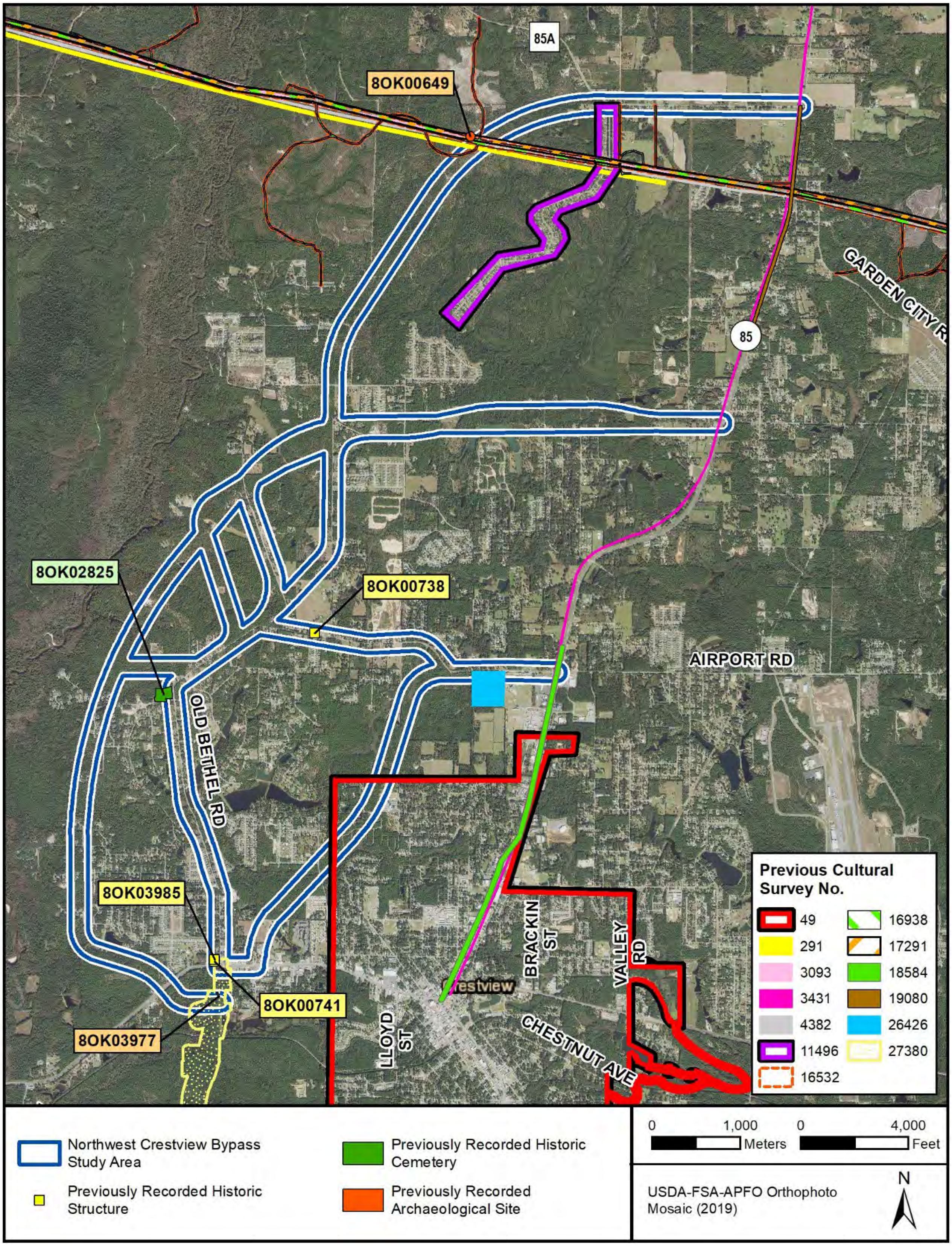


Figure 5. Previously conducted cultural resource surveys and previously documented resources within the Northwest Crestview Bypass study area.

FMSF Survey No. 49 was conducted in 1976 by Cultural Resource Management, Inc., and included an archaeological and historic structure survey of 5.63 square miles (1,458 hectares). This survey intersects 0.79 miles (1.27 kilometers) of Alternative 6 within the area surrounding the intersection of Adams Drive and Ridge Lake Road. Subsurface testing was conducted within this project's APE, but these test locations are not evident in the report. This survey did not result in the discovery of archaeological or historical resources.

FMSF Survey No. 291 is a 100-acre (40.46-hectare) cultural resource assessment survey (CRAS) conducted in 1980 by Espey, Huston and Associates, Inc., in support of the Zachary/Fort Lauderdale Pipeline. This survey intersects 0.17 miles (0.27 kilometers) of Alternative 5 at the far northern end. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report. This survey resulted in the discovery of 62 newly recorded archaeological resources.

FMSF Survey No. 3093 is a 4.81-mile (7.74 kilometers) CRAS conducted in 1992 by Troy State University in support of the Auburn JCT to Auburn 115 KV transmission line. This survey intersects 0.18 miles (0.29 kilometers) of Alternative 5 at the far northern end. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report. This survey resulted in the discovery of five newly recorded archaeological resources.

FMSF Survey No. 3167 is a historic building survey of Okaloosa County conducted in 1992 by Historic Property Associates, Inc. This survey envelopes the entirety of the study area. FMSF Survey 3167 resulted in the discovery of 94 newly recorded historic resources, two of which (8OK00738 and 8OK00741) are located within the current study area. This survey is not depicted in **Figure 5**.

FMSF Survey No. 3431 is a 20-mile (32.18-kilometer) CRAS conducted in 1992 by Archaeological Consultants, Inc., along SR 85 from Airport Road to the Alabama state line. This survey intersects approximately 0.13 miles (0.21 kilometers) of all six alternatives at their far eastern ends. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report. This survey resulted in the discovery of three newly recorded archaeological resources, 68 historic resources, and five cemeteries.

FMSF Survey No. 4382 is a 2,553-acre (1,033.16-hectare) cultural resource investigation conducted in 1993 by R. Christopher Goodwin & Associates, Inc., in support of the Florida Gas Transmission Phase III Expansion Project. This survey intersects approximately 0.18 miles (0.29 kilometers) of Alternative 5 at the far northern end. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report. This survey resulted in the discovery of 207 newly recorded archaeological resources and three historic resources.

FMSF Survey No. 18584 is a 1.66-mile (4.28-kilometer) CRAS conducted in 1999 by PBS & J, Inc., in 1999 along SR 85 from SR 10 to the end of the four-lane roadway north of CR 188. This survey intersects 0.12 miles (0.20 kilometers) of Alternative 2 at its far eastern end. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report.

FMSF Survey No. 19080 is a 1.72-mile (2.78-kilometer) CRAS conducted in 2002 by PBS & J, Inc., along SR 85 from the end of the three-lane roadway north of Crestview to County Road 85A. This survey intersects 0.07 miles (0.11 kilometers) of Alternative 5 at its far northern end. Subsurface testing was conducted within this study area; however, test locations are not depicted in the survey report.

FMSF Survey No. 11496 is a 212-acre (85.79-hectare) CRAS conducted in 2005 by Panamerican Consultants, Inc., within the vicinity of the Country Ridge Estates Tract. This survey intersects an area of approximately 7.26 acres (2.94 hectares) within the far northern end of Alternative 5**.** The survey resulted in the discovery of three newly recorded archaeological resources. None of the subsurface tests excavated during this survey intersect the current study area.

FMSF Survey No. 17291 is a 5,675.70-acre (2,296.87-hectare) CRAS conducted in 2008 by R. Christopher Goodwin & Associates, Inc. This project was conducted in support of the Florida Gas Transmission Expansion Project. This survey intersects approximately 0.19 miles (0.30 kilometers) of Alternative 5 at the far northern end. This survey resulted in the discovery of 36 newly recorded archaeological resources. None of the subsurface testing conducted during this survey occurred within the current study area.

FMSF Survey No. 16532 is an 8,612.32-acre (3,485.28-hectare) CRAS conducted in 2009 by R. Christopher Goodwin & Associates, Inc. in support of the Florida Gas Transmission Phase VIII Expansion Project. This survey intersects approximately 0.32 miles (0.51 kilometers) of Alternative 5 at the far northern end. This survey resulted in the discovery of 42 newly recorded archaeological resources and three historic resources. None of the subsurface tests excavated during this survey intersect the current study area.

FMSF Survey No. 16938 is a 970.60-acre (392.78-hectare) CRAS conducted in 2010 by R. Christopher Goodwin & Associates, Inc. This project served as an addendum to reports written for FMSF Survey No. 16532 and was conducted in support of the Florida Gas Transmission Phase VIII Expansion Project. This survey intersects approximately 0.32 miles (0.51 kilometers) of Alternative 5 at the far northern end. This survey resulted in the discovery of nine newly recorded archaeological resources and one historical resource. None of the subsurface testing conducted during this survey overlaps the current study area.

FMSF Survey No. 26426 is a 32-acre (12.94-hectare) CRAS conducted in 2019 by Contact Archaeology, Inc., in support of the Ridgeway Landing Residential Development. This survey intersects an area of approximately 8.72 acres (3.52 hectares) within Alternatives 2 and 6 at their far eastern end. Thirty negative shovel tests conducted during this survey were excavated within the current study area. No cultural resources were documented during this investigation.

FMSF Survey No. 27380 is a 403-acre (163.08-hectare) CRAS conducted in 2020 by SEARCH, Inc., in support of the Southwest Crestview Bypass. This survey intersects an area of approximately 13.73 acres (5.56 hectares) within Alternative 1; 6.05 acres (2.45 hectares) within Alternative 6**;** and 6.60 acres (2.67 hectares) within Alternatives 2, 3, 4, and 5 at the intersection of West James Lee Boulevard and Old Bethel Road. Subsurface archaeological testing and pedestrian survey was conducted within each alternative's study area. This testing resulted in the discovery of one historical archaeological site, 8OK03977, within the study area of Alternative 1, and two historic structures, one of which, 8OK03985, is located within the study area of Alternatives 2, 3, 4, 5, and 6.

The FMSF review further indicates that three previously recorded historic structures, two archaeological sites, and one historic cemetery are located within the project study area (**Table 3;** see **Figure 5**). Each of these six resources intersect the study area of at least one proposed alternative. None have been determined eligible for listing in the NRHP by the State Historic Preservation Officer (SHPO).

Table 3. Previously Recorded Resources within Northwest Crestview Bypass Study Area.

Historic Structures				
FMSF No.	**Address**	**Year Built**	**Surveyor Evaluation**	**SHPO Evaluation**
8OK00738	5966 Old Bethel Road	ca. 1935	Not Evaluated	Not Evaluated
8OK03985	2349 James Lee Boulevard West	ca. 1952	Ineligible for NRHP	Ineligible for NRHP
8OK00741	2349 James Lee Boulevard West US Highway 90 East, RT 1 Box 52	ca. 1940 ca. 1952	Ineligible for NRHP	Ineligible for NRHP
Archaeological Sites				
FMSF No.	**Name**	**Time Period**	**Surveyor Evaluation**	**SHPO Evaluation**
8OK00649	Site 5	Pre-contact, 20th century	Ineligible for NRHP	Not Evaluated
8OK03977	Dr. Enzor Site	Mid-20th century	Ineligible for NRHP	Ineligible for NRHP
Historic Cemeteries				
FMSF No.	**Name**	**Year Established**	**Surveyor Evaluation**	**SHPO Evaluation**
8OK02825	Old Bethel Cemetery	ca. 1860	Insufficient Information	Not Evaluated

Unrecorded Architectural Resources

In addition to the FMSF, the Okaloosa County Property Appraiser's database was reviewed to identify parcels containing unrecorded structures of historic age (i.e., structures with Actual Year Built dates earlier than 1978). This search identified 107 parcels within the study area that have an Actual Year Built date earlier than 1978 (**Table 4; Figure 6**). These 107 parcels intersect Alternatives 1, 2, 3, 4, 5, 5A and 6.

Table 4. Parcels with Unrecorded Architectural Resources within the Northwest Crestview Bypass Study Area.

Parcel ID	Address	Year Built	Alternatives Intersected
15-4N-23-0000-0006-0010	6590 Fisherman Lane	1936	5, 5A
12-3N-24-0000-0009-0000	5433 Old Bethel Road	1936	2, 3, 4, 5, 5A
18-3N-23-1800-0000-005C	894 James Lee Blvd W	1936	6
12-3N-24-0660-0002-0160	2357 Susan Drive	1940	2, 3, 4, 5, 5A
31-4N-23-0000-0003-010A	6090 Old Bethel Road	1944	2
12-3N-24-0000-0005-0000	88 Old Milligan Road	1945	6
12-3N-24-0000-0029-0000	184 Mary Lane	1945	2, 3, 4, 5, 5A
13-3N-24-1811-0000-0070	2249 James Lee Blvd W	1945	1
13-3N-24-1811-0000-010A	2240 Highway 90 W	1947	1
27-4N-23-1820-0000-0120	6180 Highway 85 N	1948	1, 3, 4
16-4N-23-0000-0007-0000	6544 Bill Lundy Road	1950	5, 5A
14-3N-24-0000-0001-0000	2188 James Lee Blvd E	1950	1
31-4N-23-0000-0020-0000	6002 Old Bethel Road	1950	2
31-4N-23-0000-0010-0000	5956 Old Bethel Road	1950	2
31-4N-23-0000-0018-0000	755 Ridge Lake Road	1950	2
12-3N-24-0000-0013-0000	86 Old Milligan Road	1950	6
12-3N-24-0000-0028-0000	5450 Old Bethel Road	1950	2, 3, 4, 5, 5A
18-3N-23-2640-0002-0080	931 James Lee Blvd W	1950	6
27-4N-23-1820-0000-013B	6174 Highway 85 N	1950	1, 3, 4
18-3N-23-2640-0002-0060	969 Highway 90 W	1950	6
32-4N-23-0000-0027-0000	6206 Old Bethel Road	1951	2, 6
27-4N-23-1820-0000-018B	3032 Adams Road	1952	1, 3, 4
12-3N-24-0000-0033-0000	5424 Old Bethel Road	1952	2, 3, 4, 5, 5A
13-3N-24-1810-0000-003A	2349 James Lee Blvd W	1952	2, 3, 4, 5, 5A
32-4N-23-0000-0025-0010	6230 Old Bethel Road	1953	2, 6
12-3N-24-0000-0023-0000	5403 Old Bethel Road	1953	2, 3, 4, 5, 5A
27-4N-23-1820-0000-018A	6144 Highway 85 N	1953	1, 3, 4
13-3N-24-0480-0000-001A	958 Highway 90 B	1953	6
13-3N-24-0480-0000-001B	958 Highway 90 W A	1953	6
15-4N-23-0000-0002-0000	6392 Bill Lundy Road	1954	5, 5A
12-3N-24-0000-0025-0000	5427 Old Bethel Road	1954	2, 3, 4, 5, 5A
13-3N-24-1811-0000-0020	2269 James Lee Blvd W	1954	1
18-3N-23-2640-0001-001B	131 Cayson Avenue	1954	6
18-3N-23-2640-0001-0030	861 Highway 90 W	1955	6
01-3N-24-0000-0001-0280	1033 Tallokas Road	1955	2, 3, 4, 5, 5A
18-3N-23-1800-0000-005B	892 Highway 90 W	1957	6
01-3N-24-0000-0001-0380	5686 Old Bethel Road	1958	2, 3, 4, 5, 5A
13-3N-24-0770-0001-0170	966 B Street	1958	1

Table 4. Parcels with Unrecorded Architectural Resources within the Northwest Crestview Bypass Study Area.

Parcel ID	Address	Year Built	Alternatives Intersected
13-3N-24-0480-0000-0060	900 Highway 90 W	1958	6
06-3N-23-0000-0014-0000	425 Adams Drive	1958	6
09-4N-23-0000-0004-0000	6569 Bill Lundy Road	1958	5, 5A
31-4N-23-0000-0015-0030	5930 Old Bethel Road	1959	2
32-4N-23-0000-0019-0000	6256 Davidson Lane	1959	2, 6
13-3N-24-1810-0000-007B	2350 James Lee Blvd W	1959	1, 2, 3, 4, 5, 5A, 6
07-3N-23-0000-0019-0010	200 Old Milligan Road	1959	6
28-4N-23-0000-0003-0000	6178 Barnes Road	1960	1, 3, 4
31-4N-23-0000-0021-0000	6036 Old Bethel Road	1960	2
12-3N-24-0660-0001-0030	2359 Hill Drive	1960	2, 3, 4, 5, 5A
12-3N-24-0000-0007-0000	5479 Old Bethel Road	1960	2, 3, 4, 5, 5A
16-4N-23-0000-0007-0030	6542 Bill Lundy Road	1961	5, 5A
27-4N-23-1820-0000-015B	3003 Adams Road	1961	1, 3, 4
27-4N-23-1820-0000-015A	3013 Adams Road	1961	1, 3, 4
12-3N-24-0660-0001-0050	2363 Hill Drive	1961	2, 3, 4, 5, 5A
16-4N-23-0000-0005-0000	6287 Will Owens Road	1962	5, 5A
31-4N-23-0000-0017-0000	6051 Old Bethel Road	1962	2
12-3N-24-0660-0002-0010	2352 Hill Drive	1962	2, 3, 4, 5, 5A
07-3N-23-0000-0019-0020	100 Old Milligan Road	1962	6
16-4N-23-0000-0011-0020	6596 Bill Lundy Road	1963	5, 5A
12-3N-24-0660-0002-0140	2361 Susan Drive	1963	2, 3, 4, 5, 5A
16-4N-23-0000-0001-0000	6510 Bill Lundy Road	1964	5, 5A
12-3N-24-0000-0035-0000	5404 Old Bethel Road	1964	2, 3, 4, 5, 5A
32-4N-23-0000-0024-0000	6250 Old Bethel Road	1964	2, 6
09-4N-23-0000-0002-0010	6509 Bill Lundy Road	1965	5, 5A
16-4N-23-0000-0003-0000	6534 Bill Lundy Road	1965	5, 5A
30-4N-23-0000-0004-0010	2531 Taylor Road	1965	1, 3, 4, 5, 5A
32-4N-23-0000-0029-0000	6143 Old Bethel Road	1965	2
12-3N-24-0660-0002-0030	5457 Old Bethel Road	1965	2, 3, 4, 5, 5A
33-4N-23-0000-0056-0000	5701 Highway 85 N	1966	2, 6
28-4N-23-0000-0006-0000	2961 Adams Road	1967	1, 3, 4
31-4N-23-0000-0016-0000	6077 Old Bethel Road	1967	2
31-4N-23-0000-0018-0030	6039 Old Bethel Road	1967	2
32-4N-23-0000-0030-0000	6167 Old Bethel Road	1967	2, 6
33-4N-23-0000-0057-0040	5720 Highway 85 N	1967	2, 6
30-4N-23-0000-0007-0000	2430 Taylor Road	1968	1, 4, 5
15-4N-23-0000-0004-0000	6416 Bill Lundy Road	1968	5, 5A
31-4N-23-0000-0015-001B	5957 Staff Road	1969	4
32-4N-23-0000-0026-0000	6222 Old Bethel Road	1969	2, 6
12-3N-24-1490-0002-0030	2337 Lewis Street	1969	2, 3, 4, 5, 5A
12-3N-24-1490-0002-0040	2335 Lewis Street	1969	2, 3, 4, 5, 5A
12-3N-24-1490-0002-0010	5502 Old Bethel Road	1969	2, 3, 4, 5, 5A
31-4N-23-0000-0013-0000	5991 Staff Road	1970	4
12-3N-24-0660-0001-0010	5461 Old Bethel Road	1970	2, 3, 4, 5, 5A
07-3N-23-0000-0005-0010	9 Pandora Drive	1970	6
09-4N-23-0000-0001-002Q	6583 Bill Lundy Road	1971	5, 5A
16-4N-23-0000-0004-0010	6554 Bill Lundy Road	1971	5, 5A
33-4N-23-0000-0057-0010	6288 Old Bethel Road	1971	2, 6

Table 4. Parcels with Unrecorded Architectural Resources within the Northwest Crestview Bypass Study Area.

Parcel ID	Address	Year Built	Alternatives Intersected
19-4N-23-0000-0007-0010	2509 Lake Silver Road	1972	5, 5A
36-4N-24-0000-0001-0000	5798 Ward Ranch Road	1972	1, 2, 3, 4, 5, 5A
01-3N-24-0000-0001-0030	5663 Old Bethel Road	1972	2, 3, 4, 5, 5A
10-4N-23-0000-0019-0030	6429 Bill Lundy Road	1974	5, 5A
19-4N-23-1411-0002-0140	2505 South Lakeview Drive	1974	2, 3, 4, 5, 5A
15-4N-23-0000-0001-0020	6350 Bill Lundy Road	1974	5, 5A
01-3N-24-0000-0001-0010	5643 Old Bethel Road	1974	2, 3, 4, 5, 5A
01-3N-24-0000-0001-0050	5687 Old Bethel Road	1974	2, 3, 4, 5, 5A
09-4N-23-0000-0005-0000	6537 Bill Lundy Road	1975	5, 5A
31-4N-23-0000-0009-0080	5966 Old Bethel Road	1975	2
01-3N-24-0000-0001-0020	5655 Old Bethel Road	1975	2, 3, 4, 5, 5A
30-4N-23-0000-0002-0010	2522 Lake Silver Road	1976	5, 5A
12-3N-24-1490-0003-0010	2342 Lewis Street	1976	2, 3, 4, 5, 5A
18-3N-23-2640-0002-0100	921 Highway 90 W	1976	6
07-3N-23-0000-0005-0080	8 Pandora Drive	1976	6
31-4N-23-0000-0018-001A	5981 Old Bethel Road	1976	2
16-4N-23-0000-0007-0020	6546 Bill Lundy Road	1977	5, 5A
31-4N-23-0000-0015-0020	5941 Staff Road	1977	3, 4, 5A
13-3N-24-0770-0001-016A	968 B Street	1977	1
13-3N-24-1810-0000-002E	984 James Lee Blvd	1977	6
13-3N-24-1810-0000-002A	980 Highway 90 W	1977	6

Archaeological and Historic Resource Potential

The potential for pre-contact sites to be identified within the Northwest Crestview Bypass study area was assessed based on an examination of environmental variables (soil drainage; access to streams, wetlands, and marine resources; relative elevation) and the results of previously conducted surveys. The highest probability for pre-contact sites is in elevated, well drained landforms near freshwater or marine resources. Areas of moderate probability have less well drained soils or are situated at a greater distance from freshwater or marine resources. Low probability areas generally include those portions of the study area that contain very poorly drained soils, sloping terrain, or significant levels of subsurface disturbance (e.g., buried utility lines or drainage features).

Due to predominantly well drained soils, the relatively level topography, and the presence of numerous freshwater drainages, the probability for unrecorded pre-contact sites within the entirety of the study area is moderate to high. Based on its proximity to the Yellow River flood plain and the number of intersecting confluences, the highest potential for pre-contact sites would be along Alternative 1. Due to a lower percentage of well drained soils, sloping topography, and relatively distant freshwater sources, Alternative 6 has the lowest probability for pre-contact sites. Alternatives 2–5 and 5-A are judged to have a moderate to high probability.

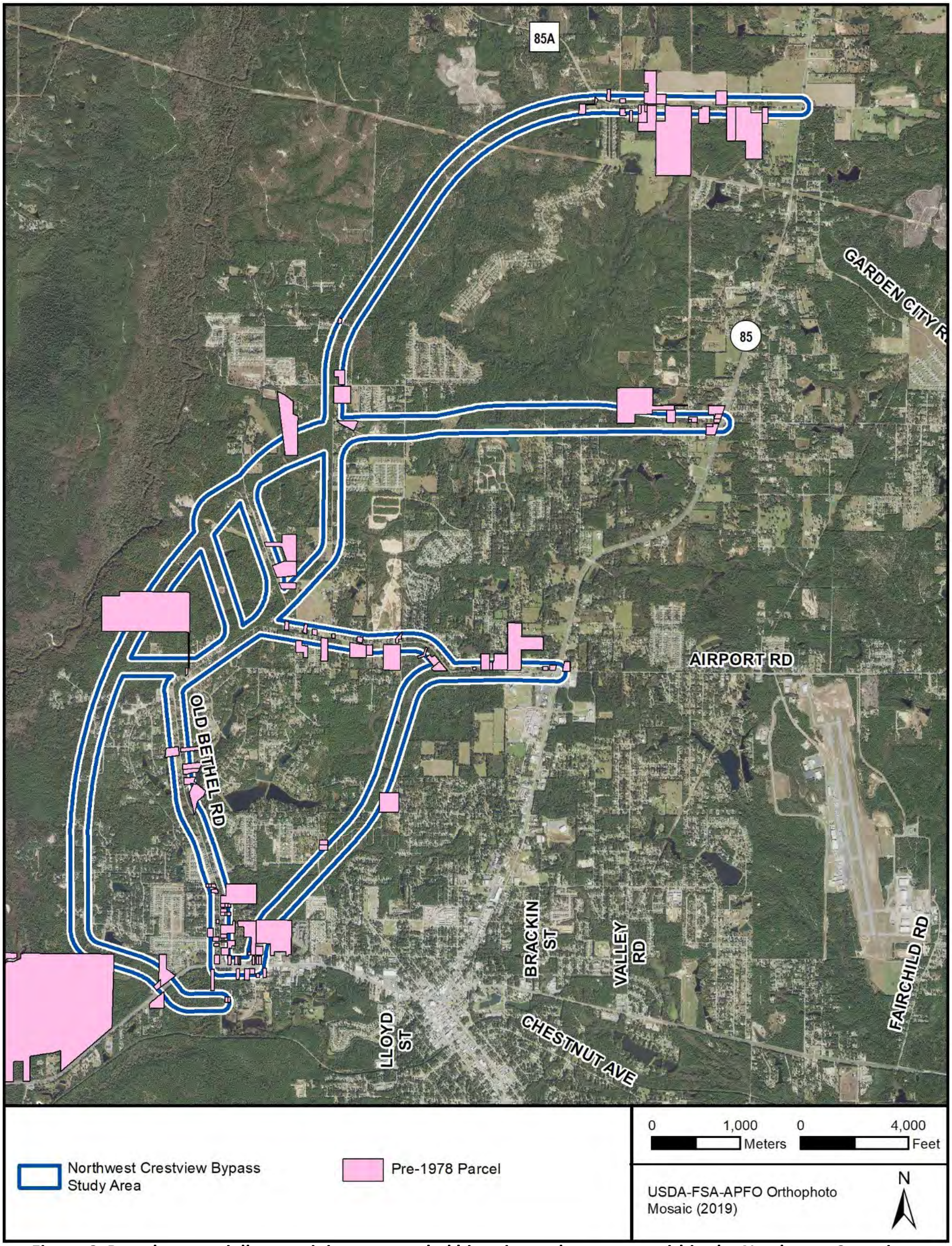


Figure 6. Parcels potentially containing unrecorded historic-aged resources within the Northwest Crestview Bypass study area.

Historic maps and aerial photographs were examined to identify past land use in the vicinity of the Northwest Crestview Bypass study area. General Land Office survey maps, created by government land surveyors during the nineteenth century as part of the surveying, platting, and sale of public lands, provide few details about this area. General Land Office maps of Florida Township 3 North, Ranges 23 and 24 West and Township 4 North, Ranges 23 and 24 West created between 1827 and 1829 illustrate only natural features within the vicinity of the study area. Some hydrological features are depicted, but no lines of transportation, structures, or individual plots of land are evident. On the later dependent resurvey maps from 1852, the Pensacola and Georgia Railroad is depicted crossing south of the study area in Townships 3 North, Ranges 23 and 24 West. The 1852 resurvey of Township 4 North, Range 23 West shows a small trail intersecting the positions of Alternatives 1, 3, 4, 5, and 5A in Sections 29 and 30. Aside from a few trail networks, no other evidence of habitation or activity is shown on the 1852 resurveys.

Topographic maps from the 1940s and 1970s offer some additional details about the land use within and around the study area (US Geological Survey USGS 1949, 1973). In the southern part of the study area, these maps depict buildings along the improved roadways (US 90 and Old Bethel Road). The 1949 *Crestview, Florida* topographic map depicts the City of Crestview to the east of the study area and a growing network of transportation features that cross the general vicinity including the Louisville Nashville Railroad and SR 85. A municipal airport is shown where Alternatives 2 and 6 intersect SR 85. Scattered buildings are depicted to the north at the eastern ends of Alternatives 1, 3, and 4 near the community of Auburn. Otherwise, development is sparse across most of the study area in the mid-twentieth century. 1940 and 1941 US Department of Agriculture aerial photographs generally confirm the observations of the 1949 topographic map (**Figure 7**). The 1973 *Crestview North* US Geological Survey topographic map (**Figure 8**) shows Crestview expanding in all directions and some minor increase in the number of buildings along US 90, Old Bethel Road, and around the community of Auburn. The municipal airport is no longer present near the east ends of Alternatives 2 and 6. Improved roadways are shown expanding across the more rural parts of the study area and there is a modest increase in the number buildings in these areas.

Based on this map review, the results of previously conducted cultural resource surveys, and the number of unrecorded historic-aged buildings in the Okaloosa County Property Appraiser’s database, the Northwest Crestview Bypass study area has been assessed with a high probability for historic archaeological resources and other unrecorded cultural resources.

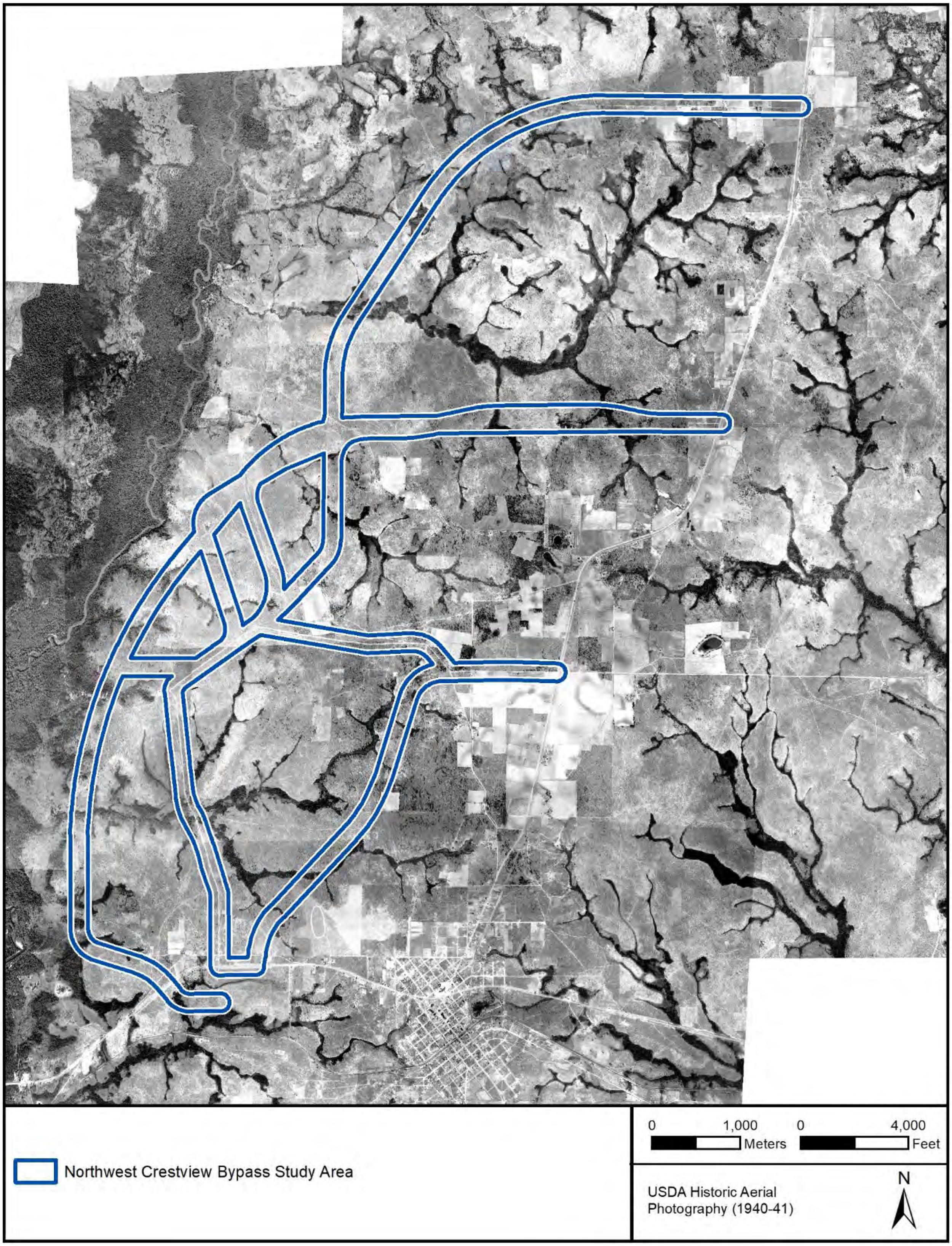


Figure 7. US Department of Agriculture aerial photograph of the NW Crestview Bypass Study Area, Okaloosa County, Florida.

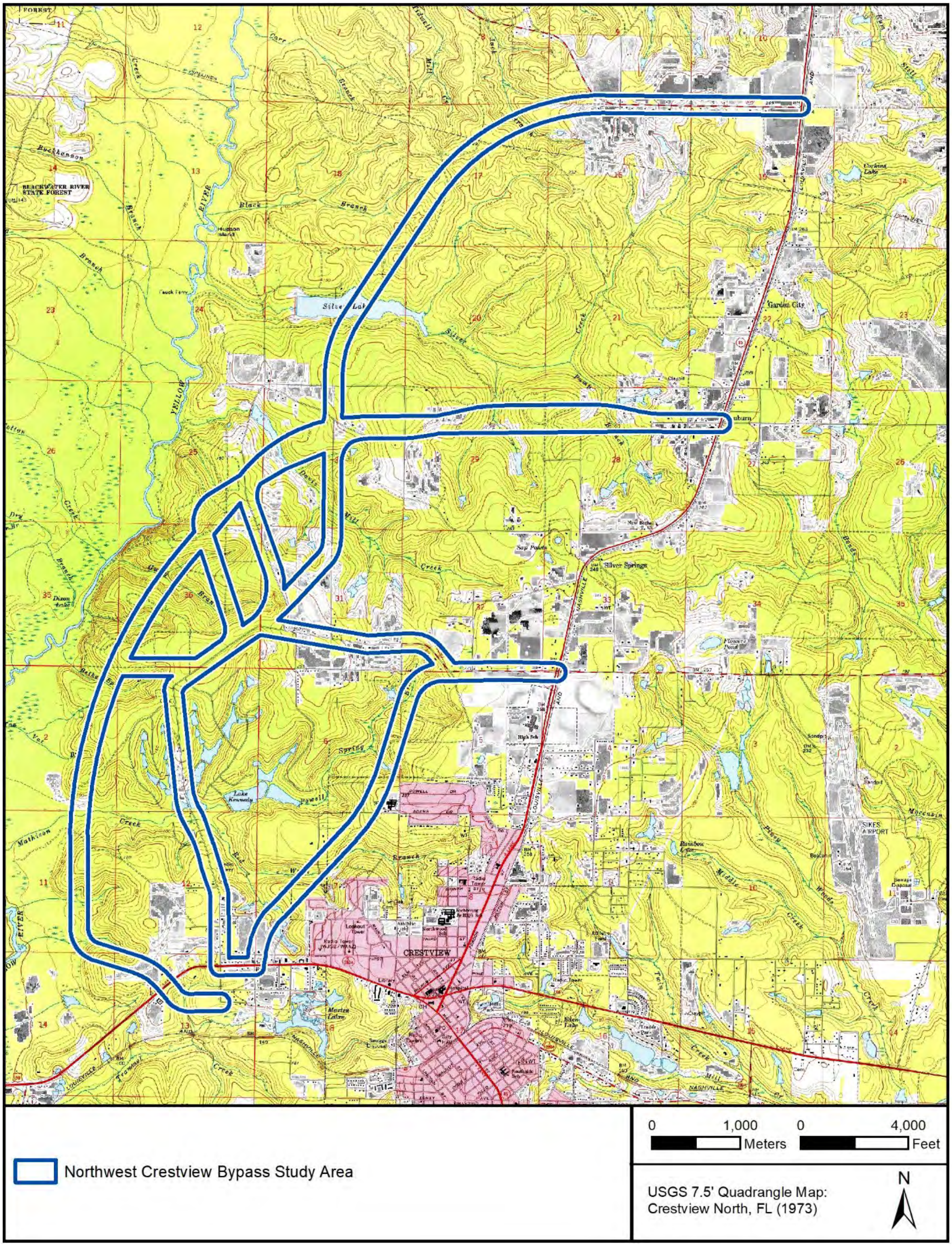


Figure 8. ***Crestview North, FL*** **US Geological Survey topographic map depicting the Northwest Crestview Bypass study area, Okaloosa County, Florida (1973).**

CULTURAL RESOURCE SUMMARY MATRIX

The findings of this desktop analysis relative to each of the alternatives and proposed pond locations are summarized in the cultural resource matrix (**Table 5**).

Table 5. Cultural Resource Matrix for Northwest Crestview Bypass Study Area.

Area Name	Previously Surveyed?	Historic Parcels	Previously Recorded Resources?	Pre-Contact Archaeological Probability	Post-Contact Archaeological Probability
Alternative 1	Partially (FMSF Survey Nos. 3167, 3431, 27380; Highway 85 right-of-way and 13.73 acres [5.56 hectares] of southernmost end)	Yes (17)	Yes: 8OK03977	High: Well drained soils near the Yellow River floodplain; numerous confluences with smaller streams	High
Alternative 2	Partially (FMSF Survey Nos. 3167, 3431, 18584, 26426, 27380; Highway 85 right-of-way, 8.72 acres [3.52 hectares] of the northeastern end, 6.60 acres [2.67 hectares] of southernmost end)	Yes (51)	Yes: OK02825, OK00738, OK03985, OK00741	Moderate to high: Well drained soils; level landforms within 200 meters of fresh water	High
Alternative 3	Partially (FMSF Survey Nos. 3167, 3431, 27380; Highway 85 right-of-way, 6.60 acres [2.67 hectares] of southernmost end)	Yes (39)	Yes: OK02825, OK03985, OK00741	Moderate to high: Well drained soils; level landforms within 200 meters of fresh water	High
Alternative 4	Partially (FMSF Survey Nos. 3167, 3431, 27380; Highway 85 right-of-way, 6.60 acres [2.67 hectares] of southernmost end)	Yes (40)	Yes: OK02825, OK03985, OK00741	Moderate to high: Well drained soils; level landforms within 200 meters of fresh water	High

Table 5. Cultural Resource Matrix for Northwest Crestview Bypass Study Area.

Area Name	Previously Surveyed?	Historic Parcels	Previously Recorded Resources?	Pre-Contact Archaeological Probability	Post-Contact Archaeological Probability
Alternative 5	Partially (FMSF Survey Nos. 291, 3093, 3167, 3431, 4382, 19080, 11496, 16532, 16938, 17291, 27380; 7.26 acres [2.94 hectares] of the northernmost end, Highway 85 right-of-way, 6.60 acres [2.67 hectares] of southernmost end)	Yes (35)	Yes: OK02825, OK03985, OK00741, OK00649	Moderate to high: Well drained soils; level landforms within 200 meters of fresh water	High
Alternative 5-A	Partially (FMSF Survey Nos. 291,3167, 3093, 3431, 4382, 19080, 11496, 16532, 16938, 17291, 27380; 7.26 acres [2.94 hectares] of the northernmost end, Highway 85 right-of-way, 6.60 acres [2.67 hectares] of southernmost end)	Yes (49)	Yes: OK02825, OK03985, OK00741, OK00649	Moderate to high: Well drained soils; level landforms within 200 meters of fresh water	High
Alternative 6	Partially (FMSF Survey Nos. 49, 3167, 3431, 26426, 27380; 0.79 miles [1.27 kilometers] within the center of the study area, Highway 85 right-of-way, 8.72 acres [3.52 hectares] of the northeastern end, 6.05 acres [2.45 hectares] of the southernmost end)	Yes (33)	Yes: OK03985, OK00741	Moderate: Well drained soils; more sloped terrain and more distant from freshwater drainages than other alternatives	High

RECOMMENDATIONS AND CONCLUSIONS

This desktop analysis has evaluated the seven alternatives of the Northwest Crestview Bypass Alternative Corridor Evaluation Study. Once a preferred alternative is selected for the proposed improvements, the project APE should be defined, and a Phase I CRAS should be conducted. Historic buildings, cemeteries, and other historic resources within the APE should be recorded and evaluated for NRHP eligibility. The construction area also should be subjected to subsurface testing according to probability for archaeological resources to determine if any pre-contact or post-contact archaeological sites are present. Generally, areas that have been sufficiently tested as part of a previous archaeological survey do not require further subsurface testing, except in the cases of previously identified but unevaluated sites. Given the limited nature of previously conducted systematic archaeological testing performed within the study area, the majority of the selected alternative will require testing. Historic resources and archaeological sites identified during survey of the Northwest Crestview Bypass project should be assessed for their potential eligibility for listing in the NRHP. As the project involves federal funds administered by the Florida Department of Transportation, the resulting CRAS report should be submitted to the SHPO for review and comment.

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Okaloosa County
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