SR-167/SR-52 Corridor Feasibility Study

BUILD-0167(517) – 100071526

Feasibility Study for Improving SR-167 from Florida State Line to the Intersection of SR-192 (US-84 Bypass) in Enterprise and SR-52 from Geneva to SR-167 in Hartford

Southeast Alabama Regional Planning and Development Commission

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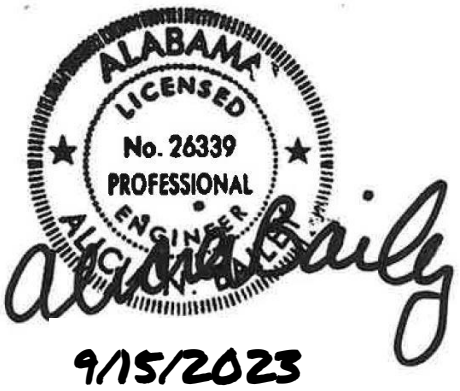

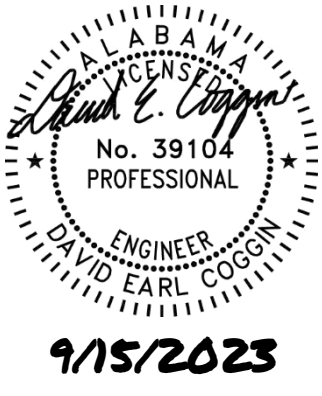

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Southeast Alabama Regional Planning and Development Commission

Admonition

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Executive Summary

Study Initiation and Study Area

The study was initiated by the Southeast Alabama Regional Planning and Development Commission (SEARPDC) with support from the Wiregrass Economic Development Corporation (Wiregrass EDC) and the Dothan Chamber of Commerce. SEARPC was awarded a $450,000 Better Utilizing Investment to Leverage Development (BUILD) planning grant from the United States Department of Transportation (USDOT) for a long-range transportation study to improve State Route 167 (SR-167) and State Route 52 (SR-52). The grant was awarded for the Fiscal Year (FY) 2020 program cycle.

The study area consists of SR-167 from SR-192 (US-84 Bypass / Boll Weevil Circle) to the Florida State Line and SR-52 from SR-196 in Geneva to SR-167 in Hartford. The SR-167 segment is approximately 24 miles long, while the SR-52 segment is approximately 12.4 miles long. The following intersections were evaluated as part of this study:

- SR-167 at SR-192
- SR-167 at CR-9
- SR-167 at CR-61/SR-123
- SR-167 at SR-52
- SR-167 at SR-85
- SR-167 at SR-92
- SR-52 at Live Oak St/Glenn St
- SR-52 at SR-27/Commerce St
- SR-52 at SR-27
- SR-52 at McDougald St/Martin Rd
- SR-52 at CR-4
- SR-52 at CR-41

Study Purpose

The purpose of this study is to evaluate the feasibility of improving SR-167 and SR-52 within the study limits. The following tasks were undertaken as a part of the study:

- Collect Traffic Data
- Conduct Field Review
- Summarize Existing Documents and Adjacent Projects
- Analyze Existing Conditions Traffic
- Analyze Crash Data Trends
- Perform Pre-NEPA Evaluation
- Develop Purpose and Need Statement
- Forecast Future Traffic Volumes
- Develop Improvement Alternatives
- Analyze Future Conditions Traffic
- Evaluate Safety Performance
- Analyze Hurricane Evacuation
- Develop Opinions of Probable Cost
- Tabulate an Evaluation Matrix for Improvement Alternatives

Improvement Alternatives

The following alternatives were developed and evaluated along the SR-167 study corridor:

- No Build Alternative
- Alternative A – Widen to Four Lanes from SR-192 in Enterprise to Florida State Line
- Alternative B – Add Intermittent Passing Lanes and Intersection Improvements

The following alternatives were developed and evaluated along the SR-52 study corridor:

- No Build Alternative
- Alternative A – Widen to Four Lanes from Existing Four-Lane Section in Geneva to SR-167 in Hartford
- Alternative B – Add Intermittent Passing Lanes* and Intersection Improvements

*Further evaluation of SR-52 Alternative B resulted in no logical locations identified for additional passing lanes. One passing lane in each direction exists between M.P. 36 and M.P. 37 of SR-52, approximately halfway between Geneva and Hartford.

Opinions of Probable Cost

The planning-level opinions of probable cost provided in this report are based on the engineer's experiences and qualifications and represents the engineer's best judgment within the industry. The engineer does not guarantee that proposals, bids, or actual costs will not vary from the engineer's opinion of probable cost. The opinions of probable cost below assume one project per study corridor.

The opinions of probable cost were prepared for the 2023 planning year. This number should be increased to account for rising costs due to inflation, should the improvements not be implemented in 2023.

Study Corridor	Alternative	Opinion of Probable Cost
SR-167	A – Widen to Four Lanes	$242 million
	B – Install Passing Lanes & Intersection Improvements	$41 million
SR-52	A – Widen to Four Lanes with Option 1 (South Bypass)	$220 million
	A – Widen to Four Lanes with Option 2 (South Bypass)	$237 million
	A – Widen to Four Lanes with Option 3 (Existing Alignment)	$188 million
	B – Intersection Improvements	$6.8 million

Next Steps

If it is decided to move forward with implementing a federally funded project, the next step would be to request inclusion of a project in the ALDOT Statewide Transportation Improvement Plan (STIP). Once funds are in place for a project an environmental document will need to be prepared. The environmental document must include technical studies and public involvement outreach necessary to comply with procedures of the National Environmental Policy Act (NEPA). Once the environmental study has been completed, design would be finalized, followed by construction. Right-of-way acquisition would be conducted prior to construction.

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1 Introduction

The study was initiated by SEARPDC with support from the Wiregrass EDC and the Dothan Chamber of Commerce. SEARPC was awarded a $450,000 BUILD planning grant from the USDOT for a long-range transportation study to improve SR-167 and SR-52. The grant was awarded for the FY 2020 program cycle.

The BUILD grant program, which was previously known as the Transportation Investment Generating Economic Recovery (TIGER) from 2009 through 2017, is now entitled the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program as of FY 2021. The BUILD grant program had three rounds of funding awarded from FY 2018 through FY 2020. The USDOT released a facts sheet for each project awarded in the FY2020 grant cycle. The facts sheet for this study is included in **Appendix A**. The following project description was included for this study:

"This planning grant will fund the technical and economic feasibility study of two projects on approximately 24 miles of SR-167 and SR-52. The first project would widen approximately 24 miles of SR-167 in Alabama from a two-lane undivided roadway to a four-lane divided roadway from the Alabama State Line to US-84. The second project would widen approximately 13 miles of SR-52, extending a segment from Geneva to Dothan that is currently being widened to SR-167.

The study will assess how to enable the safe passing of heavy trucks navigating the numerous steep grades on SR-167, which is a major evacuation route. By expanding capacity on the two routes, quality of life benefits from increased flow of traffic could be expected." (Source: USDOT 2020 BUILD Facts Sheet)

The purpose of this study is to evaluate the feasibility of improving SR-167 and SR-52 within the study area. The study area consists of SR-167 from SR-192 to the Florida State Line and SR-52 from Geneva to SR-167 in Hartford. The SR-167 segment is approximately 24 miles long, while the SR-52 segment is approximately 12.4 miles long. The following tasks were undertaken as a part of the study:

- Collect Traffic Data
- Conduct Field Review
- Summarize Existing Documents and Adjacent Projects
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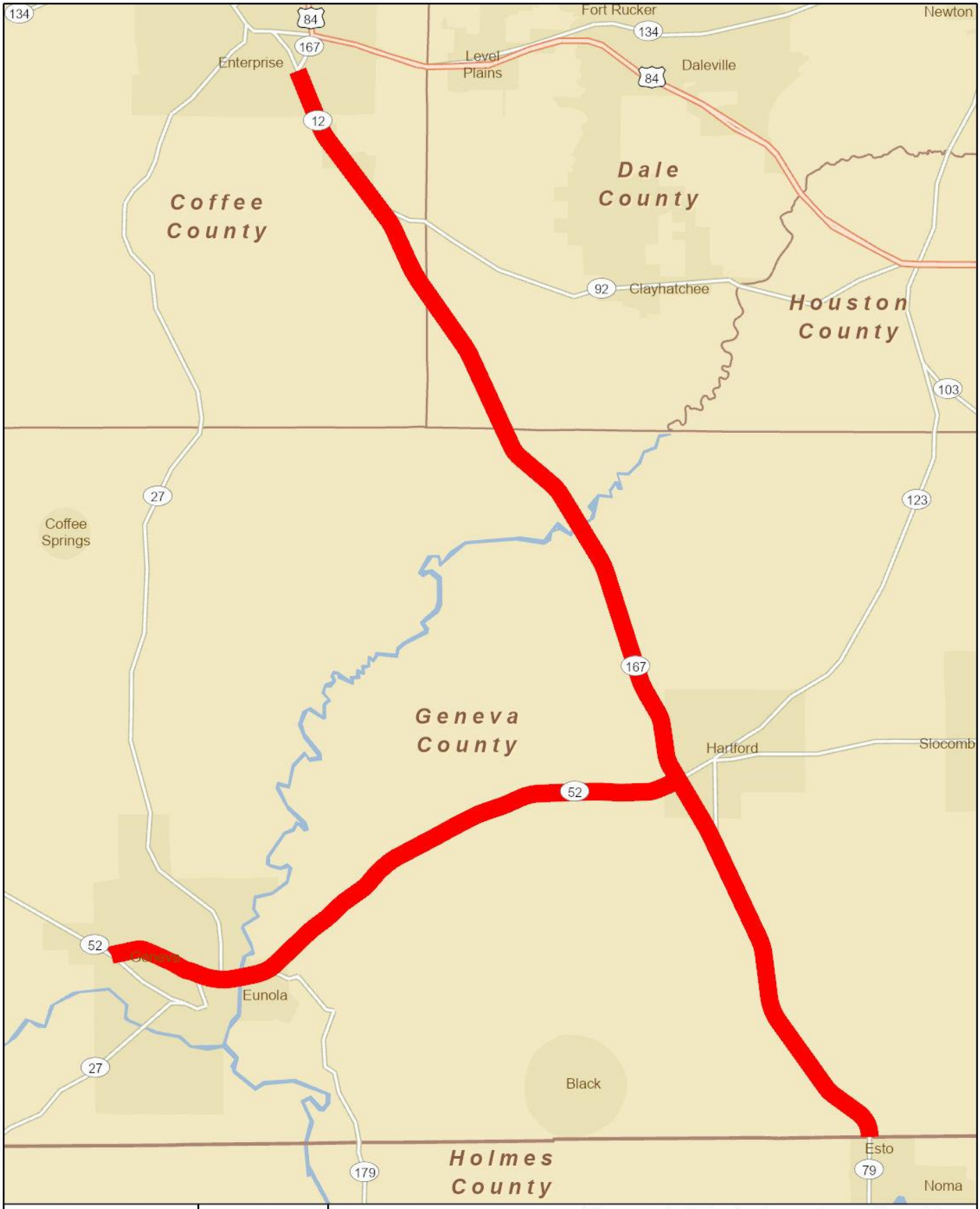
- Develop Opinions of Probable Cost
- Tabulate an Evaluation Matrix for Improvement Alternatives

The project team includes SEARPDC, Sain Associates, Barge Design Solutions, and the Alabama Department of Transportation (ALDOT).

Figure 1 shows the location of the study area.



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SAIN ASSOCIATES

NOT TO SCALE

Figure 1: Study Area Location Map

SR-167/SR-52 Corridor Feasibility Study

2 Existing Conditions

Sain Associates performed an assessment of existing conditions within the study area. Stretching from the Florida state line to US-231 in Troy, Alabama. SR-167 serves as a key north-south connector for the cities of Enterprise, Fort Rucker, Troy, and Hartford. South of the state line, SR-167 becomes Florida State Route 79 (FL-79) and intersects Interstate 10 (I-10) approximately 16 miles south of the Alabama-Florida state line. Along with US-231, the SR-167, FL-79 route provides most of the Wiregrass Region of nine counties with interstate access.

SR-52 is a key east-west connector from US-331 in Opp to the Georgia state line, serving the cities of Dothan, Taylor, Malvern, Slocomb, Hartford, Geneva, Samson, and Kinston. Existing projects to widen SR-52 from Malvern to SR-167 in Hartford are in the design and construction stages. Sustained growth on the western side of the City of Dothan has been a major catalyst for widening SR-52.

At the time of this study, the only four lane highway in Geneva County is the two-mile stretch of SR-52 from the Houston County line to just east of Malvern. Despite ranking 39th of 67 counties in total population, Geneva County is one of three counties in Alabama without meaningful four-lane highway access, U.S. highway access, or interstate access. As of the 2020 Census, the population of Geneva County (26,659) is more than the other two counties, Wilcox and Clay, combined (24,836).

1.1 Roadway Characteristics

Within the study area, SR-167 and SR-52 are two-lane, undivided roadways classified as rural minor arterials, according to the ALDOT Highway Functional Classification Map. Land use along the study corridors is a mix of agricultural, residential, and commercial. SR-167 intersects SR-52 on the west side of Hartford. The intersection is all-way stop-controlled (AWSC) with channelized right turn lanes on each approach and a crosswalk on the northbound approach of SR-167. Both roadways have paved shoulders and rumble strips on each side of the roadway.

SR-52 has a passing lane in both directions approximately halfway between Hartford and Geneva. This segment is a four-lane, undivided cross-section with a full lane width for approximately 0.55 miles in each direction.

Table 1 summarizes other geometric features of each roadway.

Table 1: Summary of Study Corridor Geometric Elements

Roadway*	Speed Limit	Lane Width	Paved Shoulder Width	Right-of-Way Width
State Route 167	55 MPH	12 ft	4 ft (Rumble Strips)	Varies (80-140 ft)
State Route 52	55 MPH	12 ft	2 ft (Rumble Strips)	Varies (80-250 ft)

*SR-167 and SR-52 intersect at mile point 8.1 of SR-167 and mile point 41.1 of SR-52

Within the study area, several state routes and notable county roads intersect SR-167 and SR-52. **Table 2** summarizes the functional classification and mile points of each notable intersecting roadway.

Table 2: Notable Intersecting Roadway Characteristics

Intersecting Roadway (CR = County Road, SR = State Route)	Functional Classification	Intersecting Route	Mile Point
Geneva CR-9	Major Collector	SR-167	0.0
Geneva CR-4	Major Collector	SR-167	2.0
Geneva CR-67	Local	SR-167	3.5
Geneva CR-18	Local	SR-167	5.5
Geneva CR-16	Major Collector	SR-167	5.9
SR-123, Geneva CR-61	Major Collector	SR-167	6.9
Geneva CR-38	Minor Collector	SR-167	9.4
Geneva CR-36	Local	SR-167	10.0
Geneva CR-45	Major Collector	SR-167	11.5
Geneva CR-41	Major Collector	SR-167	12.4
SR-85	Minor Arterial	SR-167	16.2
Dale CR-1	Major Collector	SR-167	18.1
Coffee CR-22	Local	SR-167	19.2
Coffee CR-721, CR-718	Local	SR-167	19.8
Coffee CR-719	Local	SR-167	20.6
SR-92	Minor Arterial	SR-167	20.9
Coffee CR-709	Major Collector	SR-167	22.9
SR-192	Principal Arterial	SR-167	24.0
SR-196	Major Collector	SR-52	28.7
SR-27 / Commerce St	Minor Arterial	SR-52	30.6
SR-27	Minor Arterial	SR-52	31.0
Geneva CR-4	Major Collector	SR-52	32.0
Geneva CR-41	Major Collector	SR-52	33.5
Geneva CR-16	Minor Collector	SR-52	37.1
Geneva CR-38	Local	SR-52	37.7
Geneva CR-55	Minor Collector	SR-52	39.0
Geneva CR-34	Minor Collector	SR-52	39.5
Geneva CR-101	Local	SR-52	40.3

1.2 Traffic Data

On behalf of Sain Associates, Quality Counts, LLC, collected 96-hours of bi-directional machine counts at seven (7) locations along the study corridors. **Table 3** summarizes the traffic volumes for each 24-hour day from Thursday, May 12, 2022, through Sunday, May 15, 2022. The 2022 average annual daily traffic (AADT) volume from each location is included for comparison to the collected volumes, according to the ALDOT Traffic Data website.

Table 3: 24-Hour Traffic Volume Summary

Route	Location	2022 AADT	Thursday 5/12/2022	Friday 5/13/2022	Saturday 5/14/2022	Sunday 5/15/2022
SR-167	CR-9 to CR-4	3,976	3,840	5,273	5,925	5,721
	CR-61 to SR-52	4,380	4,689	5,812	6,101	5,935
	CR-36 to CR-45	4,562	5,130	6,238	6,134	5,873
	CR-709 to SR-192	6,564	7,730	8,844	7,933	7,299
SR-52	CR-38 to CR-55	3,774	4,774	4,638	3,149	2,495
	CR-4 to CR-41	5,096	5,756	5,738	4,051	3,325
	SR-27 to SR-27	11,162	12,877	13,662	9,754	7,835

At two of the three locations along SR-52, the highest 24-hour volume occurred on Thursday. Along SR-167, two locations recorded the highest 24-hour volume on Friday, while the other two locations recorded their highest 24-hour volume on Saturday. This indicates that SR-52 follows a more traditional commuter pattern, while SR-167 is used by the high volume of motorists traveling to and from the Gulf Coast beaches.

Turning movement count data was collected by Quality Counts, LLC on Thursday, May 12, 2022, from 7:00 to 9:00 AM and from 4:00 to 6:00 PM at the following locations:

- SR-167 at SR-192
- SR-167 at CR-9
- SR-167 at CR-61/SR-123
- SR-167 at SR-52
- SR-167 at SR-85
- SR-167 at SR-92
- SR-52 at Live Oak St/Glenn St
- SR-52 at SR-27/Commerce St
- SR-52 at SR-27
- SR-52 at McDougald St/Martin Rd
- SR-52 at CR-4
- SR-52 at CR-41

The overall peak hour for SR-167 study corridor is 12:00 PM – 1:00 PM on weekend days. The weekday commuter peak hours for the SR-167 study corridor are 7:00 AM – 8:00 AM and 5:00 PM – 6:00 PM. The overall and weekday commuter peak hours for SR-52 study corridor are 7:00 AM – 8:00 AM and 4:00 PM – 5:00 PM.

The peak hour turning movement counts are illustrated in **Figures 2 – 4**. The raw traffic count data is included in **Appendix B**.

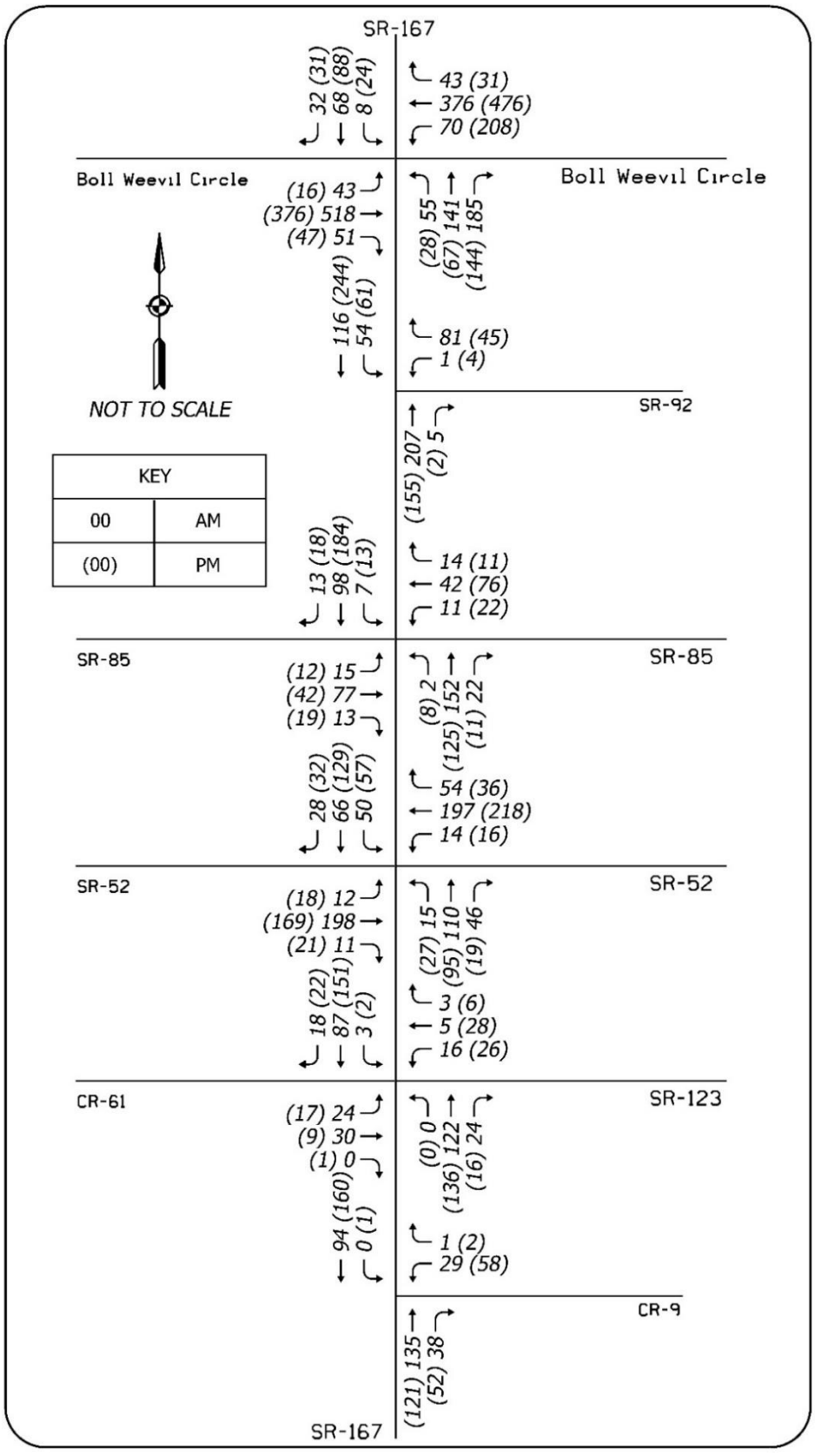


Figure 2: Existing Traffic Volumes – SR-167 from SR-192 to CR-9

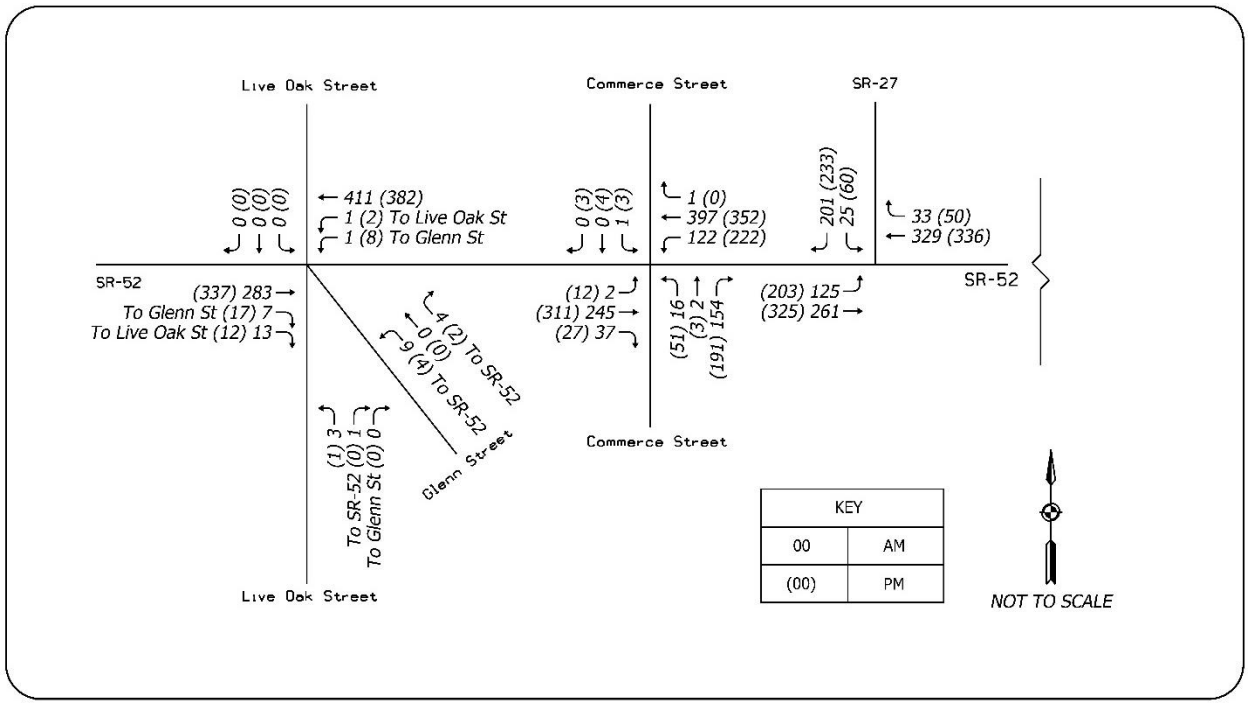


Figure 3: Existing Traffic Volumes – SR-52 between SR-196 and SR-27

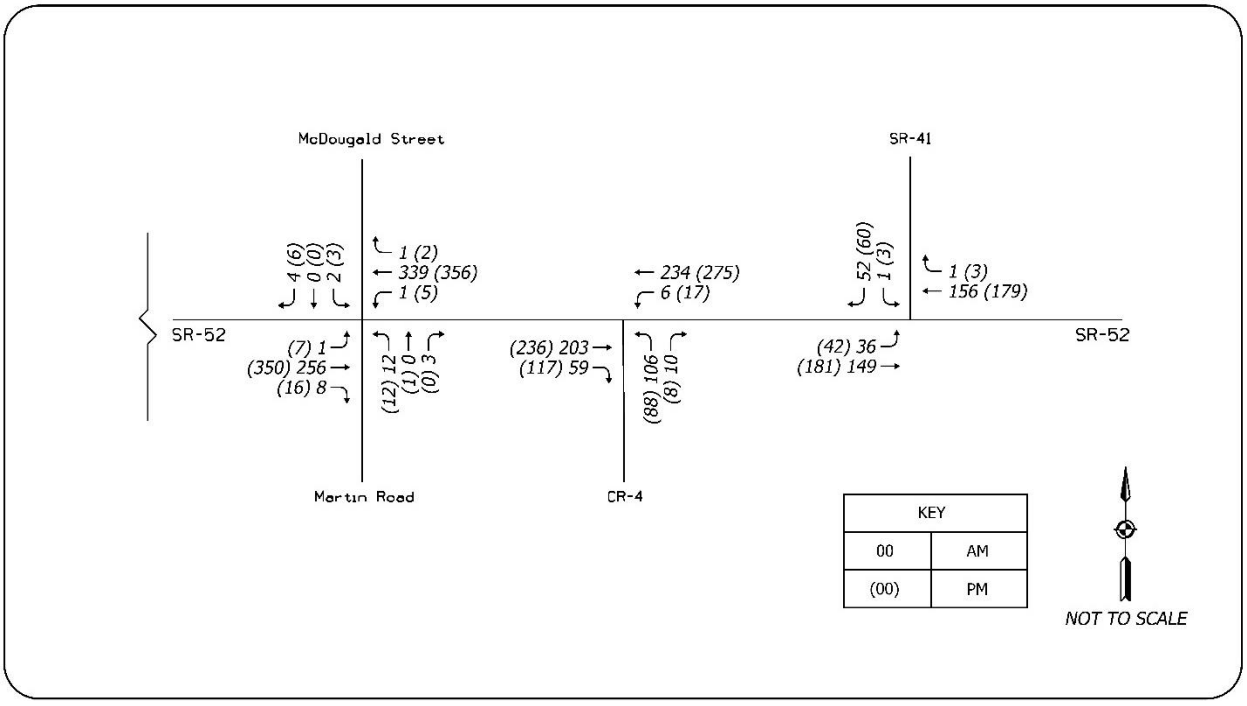


Figure 4: Existing Traffic Volumes – SR-52 between SR-27 and CR-41

1.3 Field Review

A field review was conducted by Barge Design Solutions on June 7-8, 2022. The project team noted drainage features, structures, and general traffic observations utilizing a specialized geographic information systems (GIS) web application.

Photo 1 shows the SR-167 intersection with CR-9, which is located at the Alabama-Florida state line. The 24-mile SR-167 study corridor begins at the Florida state line and ends at SR-192 (US-84 Bypass), which is also referred to as Boll Weevil Circle.

Photo 1: SR-167 at CR-9 (Florida-Alabama State Line)

The two highest-volume intersections along the SR-167 study corridor are located at SR-192 in Enterprise and SR-52 in Hartford. The SR-167 intersection with SR-52 is an all-way stop controlled (AWSC) intersection, as shown in **Photo 2**. The intersection is not amenable to heavy vehicle left turning movements, most notably from SR-167 northbound to SR-52 westbound and SR-52 eastbound to SR-167 northbound. If a WB-40 or WB-64 vehicle is attempting a left turn from SR-167 or SR-52, a vehicle adjacent to the target lane must stop several feet prior to the stop line to allow the truck to complete the turn. **Figure 5** shows an aerial view of the intersection.

Figure 5: SR-167 at SR-52 Intersection Configuration

Photo 2: SR-167 at SR-52, View from Southwest Corner of Intersection

The project team also observed farm equipment traveling along SR-167 and SR-52 on multiple occasions. **Photo 3** shows an example of vehicles queueing behind a tractor along SR-167 at the intersection with CR-38, despite this area of SR-167 containing several long passing zones denoted by dashed yellow centerlines. The 4 feet wide paved shoulder allows the tractor to stay within the travel lane.

Photo 3: Farm Equipment Observed along SR-167 with Queueing

The 12.4-mile SR-52 study corridor begins at SR-196 in Geneva and ends at SR-167 in Hartford. The highest level of traffic activity occurs on the east and west ends of the study corridor in Geneva and Hartford. In Geneva, intersections with SR-196, Commerce Street, and SR-27 have the highest volumes during morning and afternoon peak hours. These three intersections are signalized. In Hartford, the aforementioned SR-167 at SR-52 intersection experiences high activity during the AM and PM peak hours.

Along SR-52, a four-lane undivided typical section begins at SR-196 and transitions down to a two-lane undivided typical section just west of Live Oak Street. The remaining study corridor between Live Oak Street and SR-167 has a two-lane undivided typical section. There is one passing lane in each direction along SR-52 between M.P. 36 and M.P. 37, approximately midway between Geneva and Hartford. Each passing lane has a full-lane width and are approximately 3000 feet (0.57 miles) plus 750 feet in taper length per direction.

There are five major bridge structures along the study corridors. Three bridges are located along SR-167 at the Choctawhatchee River, and two bridges are located along SR-52 at the Choctawhatchee River in Geneva. **Table 4** summarizes the bridge ratings from recent ALDOT bridge inspection reports.

Table 4: Study Area Bridge Rating Summary

BIN	Location	Inspection Date	Deck Rating	Superstructure Rating	Substructure Rating	Channel & Channel Protection Rating
006715	SR-167 MP 13.4	2/9/2021	5	6	7	6
006716	SR-167 MP 13.7	2/8/2021	5	6	7	7
006717	SR-167 MP 13.9	2/8/2021	6	7	7	7
007693	SR-52 MP 30.9	4/13/2022	6	6	6	6
009120	SR-52 MP 31.3	7/6/2022	6	6	6	6

SR-167 crosses the Choctawhatchee River at MP 13.4, 13.7, and 13.9. SR-52 crosses the Choctawhatchee River at MP 30.9 and 31.3.

Much of the City of Geneva is below the base flood elevation and protected by a levee. The levee stretches approximately 2.7 miles on the east and south sides of town, terminating at SR-52 just east of Commerce Street.

Mapping of utilities and miscellaneous structures from the field review are included in **Appendix C**.

1.4 Existing Document and Adjacent Project Review

Several documents and adjacent projects were referenced to determine their impacts on the study area and potential alternatives for improvement.

Cost-Benefit Analysis of Widening Alabama SR-167 (2020)

The Wiregrass Economic Development Commission (Wiregrass EDC) engaged the Alabama Transportation Institute (ATI) to perform a cost-benefit analysis of widening along SR-167. The study assumes widening SR-167 from two lanes to four lanes between the Florida State Line and SR-192 (US-84 Bypass/Boll Weevil Circle) in Enterprise. ATI prepared this report to quantify and compare the public benefits and costs associated with the proposed widening.

ATI conducted traffic volume analysis, speed & travel time analysis, and traffic safety analysis to determine the potential benefits and economic impacts of the proposed project. **Table 5** summarizes the results of the analysis for the 20-year period of 2026-2045.

Table 5: Summary of Benefits & Economic Impacts from ATI Report (2026-2045)

Type of Benefit	Value Change
Vehicle Operating Cost Savings	$49,500,000
Value of Time Savings	$286,600,000
Environmental Savings	$400,000
Safety Savings	$27,300,000 - $68,200,000
Number of Crashes Reduced	235 fewer crashes
Total Evacuation Route Benefits	$2,400,000
Employment	11,191 job-years
State & Local Tax Impact	$124,500,000
Total Economic Output	$2,100,000,000

Florida Department of Transportation (FDOT) SR-79 PD&E Study (2018)

A project development and environment (PD&E) study for Florida SR-79 from I-10 to the Alabama State Line was completed in 2018 by H.W. Lochner, Inc. (HWL) for FDOT District Three. The recommended alternative between the City of Bonifay, Florida, and the Alabama State Line included the following improvements:

- Provide edgeline rumble strips on the existing shoulder from CR-177 to Florida SR-2
- Provide guardrail near culverts and ditches from CR-177 to Florida SR-2
- Realign Florida SR-2 to reduce the skew angle with Florida SR-79
- Various access management recommendations for businesses

Between the City of Bonifay, Florida, and the Alabama State Line, all recommendations from the PD&E study were safety related. Mainline widening was included in the recommendations for Florida SR-79 from I-10 to US-90 in Bonifay.

A supporting traffic analysis technical memorandum was also performed by FDOT. The technical memorandum summarized existing traffic and safety conditions, future traffic conditions, methodology for traffic forecasting, and a description of proposed alternatives. The Northwest Florida Regional Planning Model (NWFRPM) was utilized as the preferred forecasting method, with average growth rates ranging from 0.5% per year to 2.5% per year.

Alternatives considered for Florida SR-79 from I-10 to the Alabama State Line included the following:

- No Build Alternative
- Transportation Systems Management & Operations (TSM&O) Alternative
- Widening to Four Lane Alternative (Bonifay Only or I-10 to State Line)
- One-Way Pair Alternative (One Lane and Two Lane)
- Bypass Alternative (Two Lane and Four Lane)

Based on the NWFRPM, widening Florida SR-79 would induce an estimated 1-2% more traffic volume above projected No Build conditions.

Roadway Widening on SR-52

Two projects are currently underway to widen SR-52 from the existing four lane section in Malvern to SR-167 in Hartford. The first project (ALDOT Project No. RAED-031-052-005), which is in the construction phase, is located between Scott Road in Malvern to East Cox Street in Slocomb. The second project (RAED-031-052-004), which is in the design phase, is located between Slocomb and Hartford.

The ALDOT Maintenance Bureau's Traffic Monitoring Section provided traffic projections for the first SR-52 widening project in April 2021. A compounded annual growth rate of 2.0% per year was used to grow traffic volumes for the first project from Malvern to Slocomb. **Table 6** shows the design years and grown AADT for each condition.

Table 6: ALDOT Traffic Forecasts for RAED-031-052-05

Location	Projected 2022 AADT	Projected 2042 AADT
SR-52 from CR-73 to Scott Road	7,038	10,458
SR-52 from East Cox Street to CR-73	7,541	11,205

The traffic design data provided by the ALDOT Maintenance Bureau can be found in **Appendix B**.

Florida Statewide Regional Evacuation Study Program – Emerald Coast Regional Council Report (2021)

The Northeast Florida Regional Planning Council engaged Cambridge Systematics, Inc., alongside the University of Central Florida (UCF) and Whitman, Requardt and Associates, LLP (WRA), to perform a regional behavioral analysis for hurricane evacuation events for counties within the Emerald Coast Regional Council.

The purpose of the regional behavior analysis was to provide updated evacuation trip generation rates for each geographic area, hurricane category, and home type (site-build versus mobile or manufactured home) that could feed a travel demand model used for hurricane evacuation planning. The study utilized survey data and location-based services data collected during Hurricanes Matthew, Irma, and Michael.

I-10 Connector Comprehensive Traffic and Revenue Study (2009)

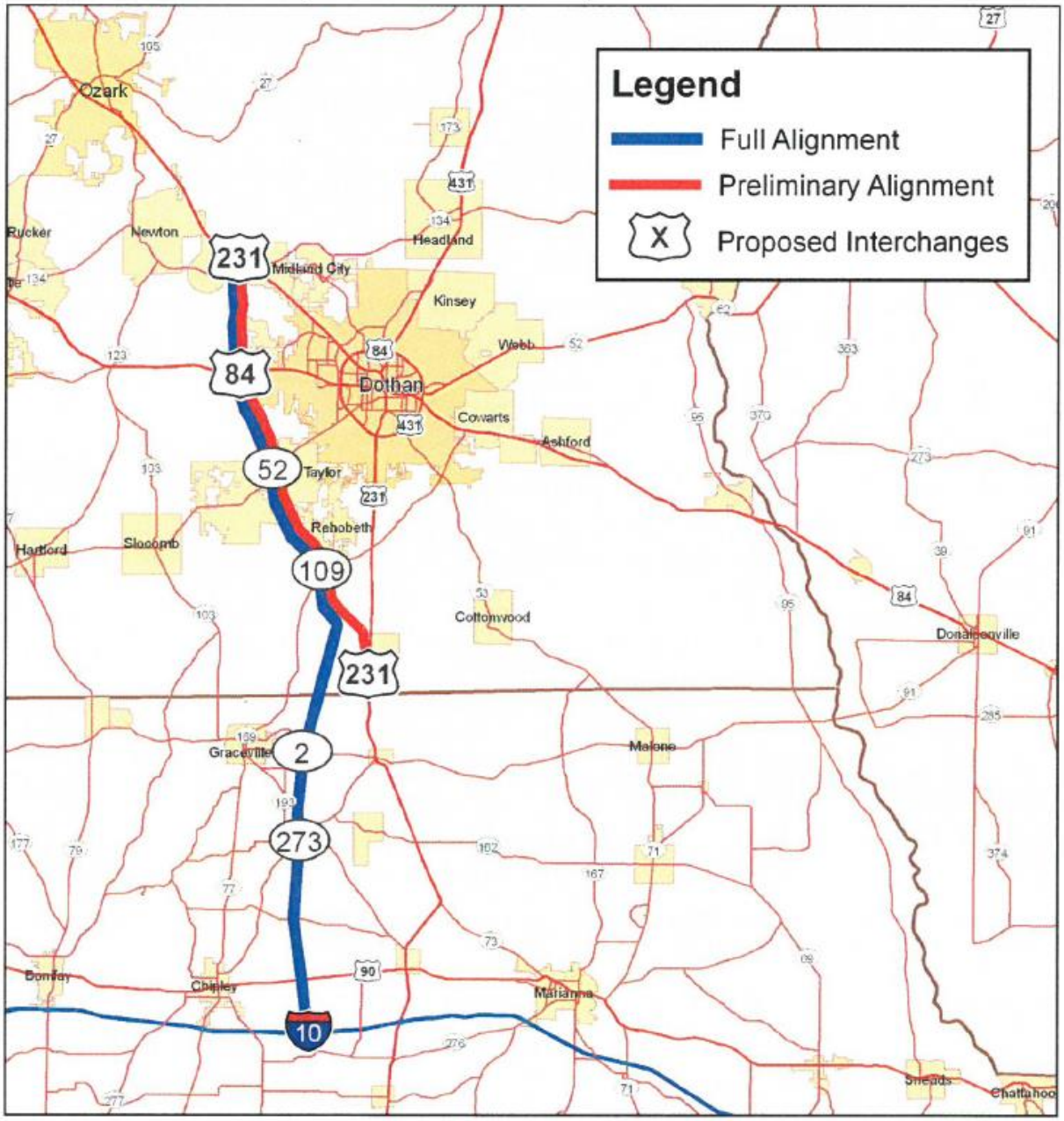
Wilbur Smith Associates (WSA) performed a comprehensive traffic and revenue study for the proposed I-10 Connector, which was ALDOT project number HPP-1602(507). The proposed alignment at that time was located east of the SR-167 study area, closer to the City of Dothan. An environmental document was prepared and approved in 2007. The environmental document included a proposal to build a limited access facility from US-231 north of the city of Dothan to the Alabama Florida State Line. The purpose and need for improvement centered upon congestion in Dothan along Ross Clark Circle and reducing the crash rate in Houston County. The document included analysis and information for three alternatives in addition to the No Build Alternative.

After the approval of the environmental document, ALDOT requested a traffic and revenue study to explore tolls as a potential funding source to finance the project. The I-10 Connector Traffic and Revenue Study provided toll revenue estimates to determine the feasibility of using tolls. The study included two alignments:

1. "Preliminary" – A shorter alternative entirely in Alabama, connecting to US-231 at the State Line.
2. "Full" – A longer alternative passing through Alabama and Florida directly to I-10.

Figure 1-1 from the WSA report, which shows a location map of the two alignments, is included on the following page. Each alignment was comprised of two northbound travel lanes and two southbound travel lanes. Traffic volume estimates for year 2030 ranged from 6,850 to 9,750 average vehicles per day along the Preliminary alignment, while year 2030 traffic volume estimates ranged from 7,600 to 10,500 average vehicles per day along the Full alignment.

Figure 1-1. I-10 Connector Alignment Alternatives



The study included unified traffic model development, origin-destination survey, independent corridor growth analysis, and a stated preference survey. A 40-year gross revenue stream estimate was also prepared for years 2013 through 2052. The "Preliminary" alignment toll revenue estimates were $3.8 million per year in 2013 and increased to $57.4 million per year in 2052. The "Full" alignment toll revenue estimates were $6.4 million per year in 2013 and $78 million per year in 2052. These estimates include adjustments for expected inflation based on 20-year historical inflation growth prior to the study.

1.5 Existing Conditions Traffic Analysis

Capacity analyses were performed for segments of the corridor and each intersection included in data collection efforts.

Corridor Capacity Analysis

Sain Associates utilized McTrans' HCS 7 software and methods described in the Transportation Research Board's *Highway Capacity Manual 7th Edition* (HCM) to determine segment levels of service (LOS) along SR-167 and SR-52. Segment LOS is based on several geometric and operational parameters of the roadway, such as lane width, segment length, passing conditions, directional volumes, and travel speeds. A description of segment level of service based on the HCM 7th Edition is included in **Appendix D**. After reviewing applicable traffic data, the following continuous segments were determined for analysis:

- SR-167 (SR-192/US-84 Bypass to CR-41)
- SR-167 (CR-41 to SR-52)
- SR-167 (SR-52 to CR-67)
- SR-167 (CR-67 to CR-9)
- SR-52 (Commerce Street/SR-27 to SR-27)
- SR-52 (SR-27 to CR-41)
- SR-52 (CR-41 to SR-167)

The results of the analysis are summarized in **Table 7**. Saturday volumes were analyzed for SR-167, since the largest volume coincides with non-resident beach traffic. Thursday volumes were analyzed for SR-52, as this roadway primarily services local traffic with traditional commuter AM and PM peak hours. Further information regarding traffic projections can be found in Section 2.3.

Table 7: Existing Segment LOS (2022)

Study Corridor	Analysis Segment		Existing LOS
SR-167	NB-SB	SR-192/US-84 Bypass to SR-92	B
	NB-SB	SR-92 to CR-41	B
	NB-SB	CR-41 to SR-52	B
	NB-SB	SR-52 to CR-67	B
	NB-SB	CR-67 to CR-9	B
SR-52	EB-WB	Commerce St (SR-27) to SR-27	C
	EB-WB	SR-27 to CR-41	A
	EB-WB	CR-41 to SR-167	A

Based on the existing conditions segment capacity analysis, each study segment operates at an acceptable LOS. Detailed LOS reports are included in **Appendix E**.

Intersection Capacity Analysis

Using the methods described in the HCM, Sain Associates analyzed the existing traffic conditions at the study area intersections. According to this method of analysis, traffic capacities are expressed as levels of service (LOS) ranging from "A" (free-flow conditions) to "F" (very congested conditions) for both signalized and unsignalized intersections. A detailed description of each LOS designation is included in **Appendix D**. Generally, LOS "C" is considered desirable, while LOS "D" is considered acceptable during peak hours of traffic flow. The analysis was conducted using Trafficware's Synchro 11 software.

The results of the existing conditions capacity analysis are summarized in **Table** and **Table 9**. Intersection traffic analysis reports are provided in **Appendix E.** According to the existing conditions intersection capacity analysis, the study intersections are currently operating at an acceptable LOS.

Table 8: SR-167 Existing Intersection LOS (2022)

Intersection	Approach		AM Peak	PM Peak
SR-192 at SR-167 (Signalized)	NB	SR-167	B	B
	SB	SR-167	C	C
	EB	US-84	B	B
	WB	US-84	B	C
			B	***B***
SR-92 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	WB	SR-92	B	A
SR-85 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	EB	SR-85	B	B
	SB	SR-85	B	B
SR-52 at SR-167 (Unsignalized)	NB	SR-167	B	B
	SB	SR-167	B	B
	EB	SR-52	B	B
	WB	SR-52	B	B
CR-61 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	EB	CR-61	B	B
	WB	CR-61	A	B
CR-9 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	WB	CR-9	B	B

Table 9: SR-52 Existing Intersection LOS (2022)

Intersection	Approach		AM Peak	PM Peak
CR-41 at SR-52 (Unsignalized)	SB	CR-41	A	A
	EB	SR-52	A	A
	WB	SR-52	A	A
CR-4 at SR-52 (Unsignalized)	NB	CR-4	B	C
	EB	SR-52	A	A
	WB	SR-52	A	A
McDougald St/ Martin Rd at SR-52 (Unsignalized)	NB	McDougald St	B	C
	SB	Martin Rd	B	B
	EB	SR-52	A	A
	WB	SR-52	A	A
SR-27 at SR-52 (Signalized)	SB	SR-27	A	A
	EB	SR-52	A	A
	WB	SR-52	B	B
			A	***B***
SR-52 at SR-27/ Commerce St (Signalized)	NB	SR-27/Commerce Street	B	B
	SB	Commerce Street	B	B
	EB	SR-52	B	B
	WB	SR-52	A	A
			A	***B***

1.6 Crash Data Analysis

The information presented in this section is exempt from open records, discovery or admission under Alabama Law and 23 U.S.C. §§ 148(h)(4) and 409). The collection of safety data is encouraged to actively address safety issues on regional, local, and site-specific levels. Congress has laws, 23 U.S.C. § 148(h)(4) and 23 U.S.C. § 409 which prohibit the production under open records and the discovery or admission of crash and safety data from being admitted into evidence in a Federal or state court proceeding. This document contains text, charts, tables, graphs, lists, and diagrams for the purpose of identifying and evaluating safety enhancements in the project area. These materials are protected under 23 U.S.C. §409 and 23 U.S.C. § 148(h)(4). In addition, the Supreme Court in Ex parte Alabama Dept. of Trans., 757 So. 2d 371 (Ala. 1999) found that these are sensitive materials exempt from the Alabama Open Records Act.

Crashes are, to some degree, random events; therefore, crash frequencies naturally fluctuate over time at a given site. This randomness indicates that short-term crash frequencies alone are not a reliable estimator of long-term crash frequency. The crash fluctuation over time makes it difficult to determine whether changes in the observed crash frequency are due to changes in site conditions or are due to natural fluctuations. When a period with high crash frequency is observed, it is statistically probable that the following period will have low crash frequency. This tendency is known as regression to the mean (RTM). Not accounting for the effects of RTM introduces the potential for RTM bias (refer to the Highway Safety Manual for more information). Therefore, the observations noted herein from the crash data should be used with caution.

Crash data for this analysis was provided by the ALDOT Traffic and Safety Planning Office using the Critical Analysis Reporting Environment (CARE) database maintained by the Center for Advanced Public Safety (CAPS) at The University of Alabama. Data included crash information from January 2017 to December 2021 from police reports. A summary of this crash data was prepared solely for the purpose of identifying, evaluating, and planning safety improvements on public roads; and is therefore exempt from open records, discovery, or admission under Alabama law and 23 U.S.C. §§ 148(h)(4), and 409. The reported crash data is summarized as follows:

- **SR-167 (Florida State Line to SR-192 in Enterprise)**
  - Two-hundred nineteen (219) total crashes reported
  - Three (3) fatal crashes
  - Five (5) incapacitating injury crashes
  - Twenty-nine (29) non-incapacitating injury crashes
  - Twenty-five (25) possible injury crashes
  - One hundred fifty-six (156) property damage only crashes
  - Two (2) crashes indicated no crash severity
- **SR-52 (Geneva to Hartford)**
  - One-hundred one (101) total crashes reported
  - One (1) fatal crash
  - One (1) incapacitating injury crash
  - Ten (10) non-incapacitating injury crashes
  - Eight (8) possible injury crashes
  - Seventy-six (76) property damage only crashes
  - Five (5) crashes indicated no crash severity

The crash data is broken down into categories and illustrated in the following figures:

- **Figure 6** – SR-167 Collision Type
- **Figure 7** – SR-167 Severity
- **Figure 8** – SR-167 Day of the Week
- **Figure 9** – SR-52 Collision Type
- **Figure 10** – SR-52 Severity
- **Figure 11** – SR-52 Day of the Week

AASHTO's *Highway Safety Manual* (HSM) provides typical distributions for crashes by collision type and by severity. Each severity category was represented approximately as expected according to the HSM distributions.

Along SR-167, single-vehicle crashes made up only 36% of the reported data versus the expected HSM value of 69%. Additionally, angle collisions were reported in 36% of the crashes versus the expected 9%.

Along SR-52, single-vehicle crashes made up only 24% of the reported data versus the expected HSM value of 69%. Additionally, angle collisions were reported in 27% of the crashes versus the expected 9%. Rear-end collisions were reported in 35% of crashes compared to the HSM value of 14%.

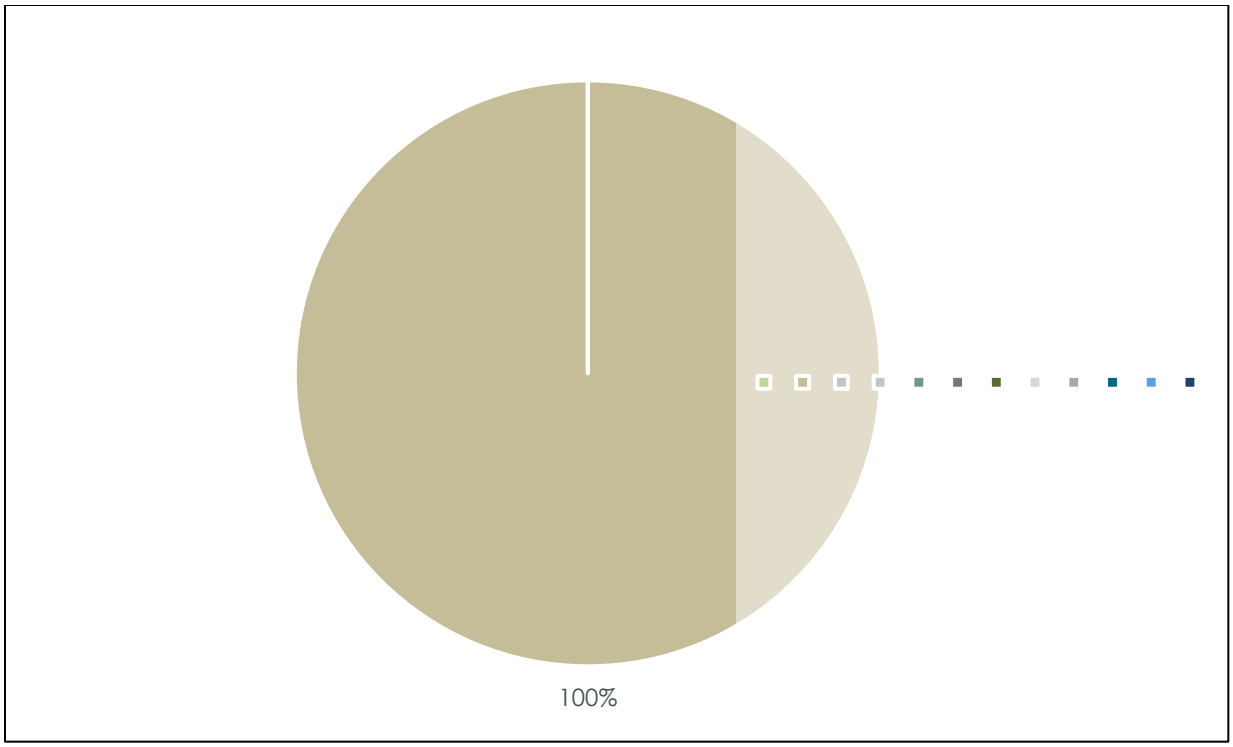


Figure 6: SR-167 Crash Data by Collision Type

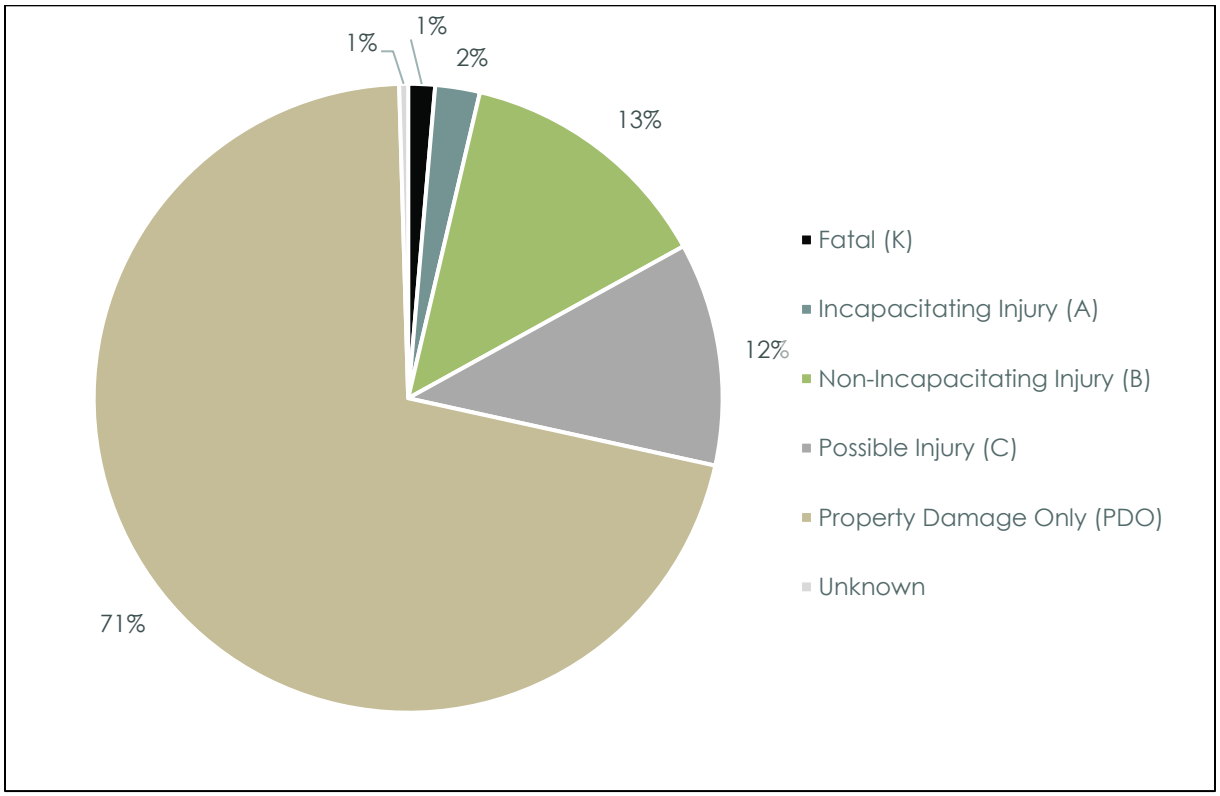


Figure 7: SR-167 Crash Data by Severity

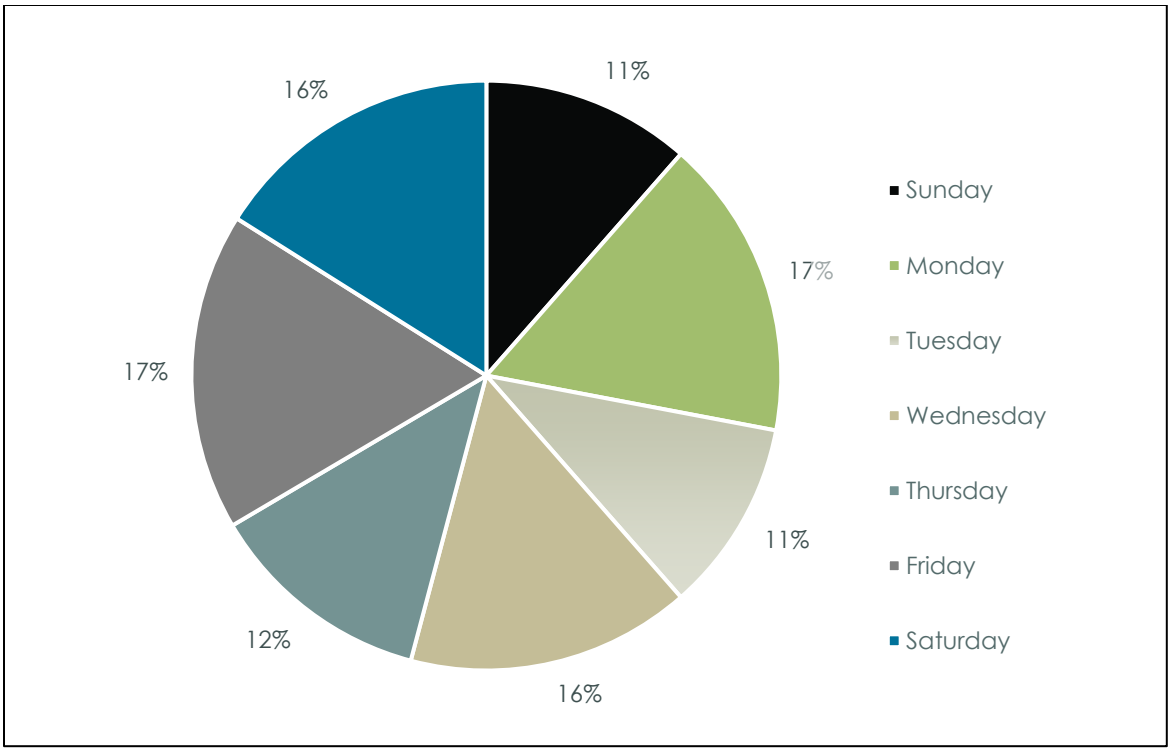


Figure 8: SR-167 Crash Data by Day of the Week

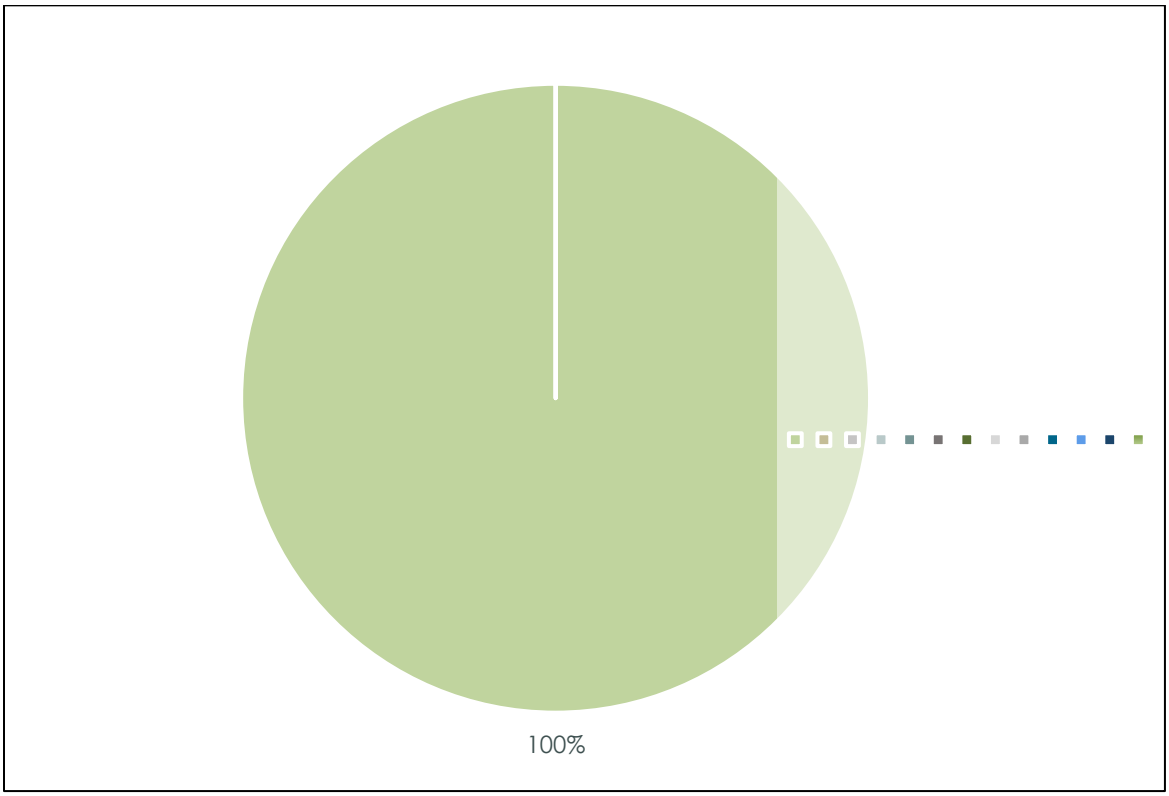


Figure 9: SR-52 Crash Data by Collision Type

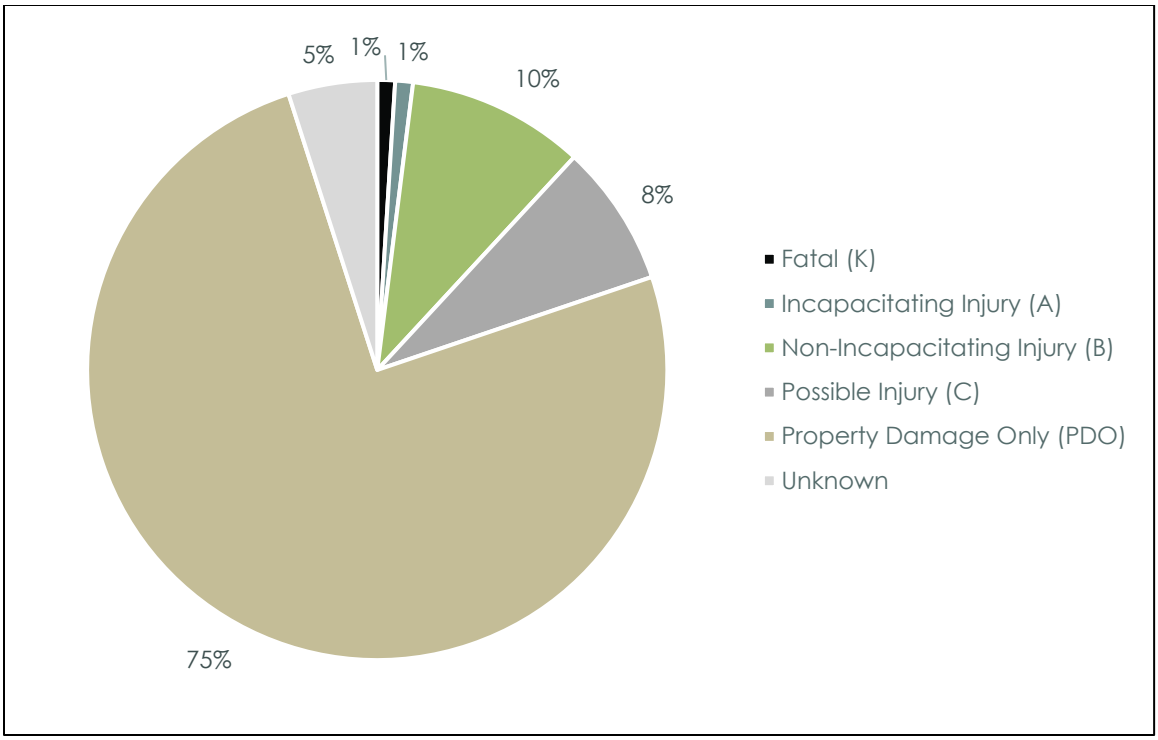


Figure 10: SR-52 Crash Data by Severity

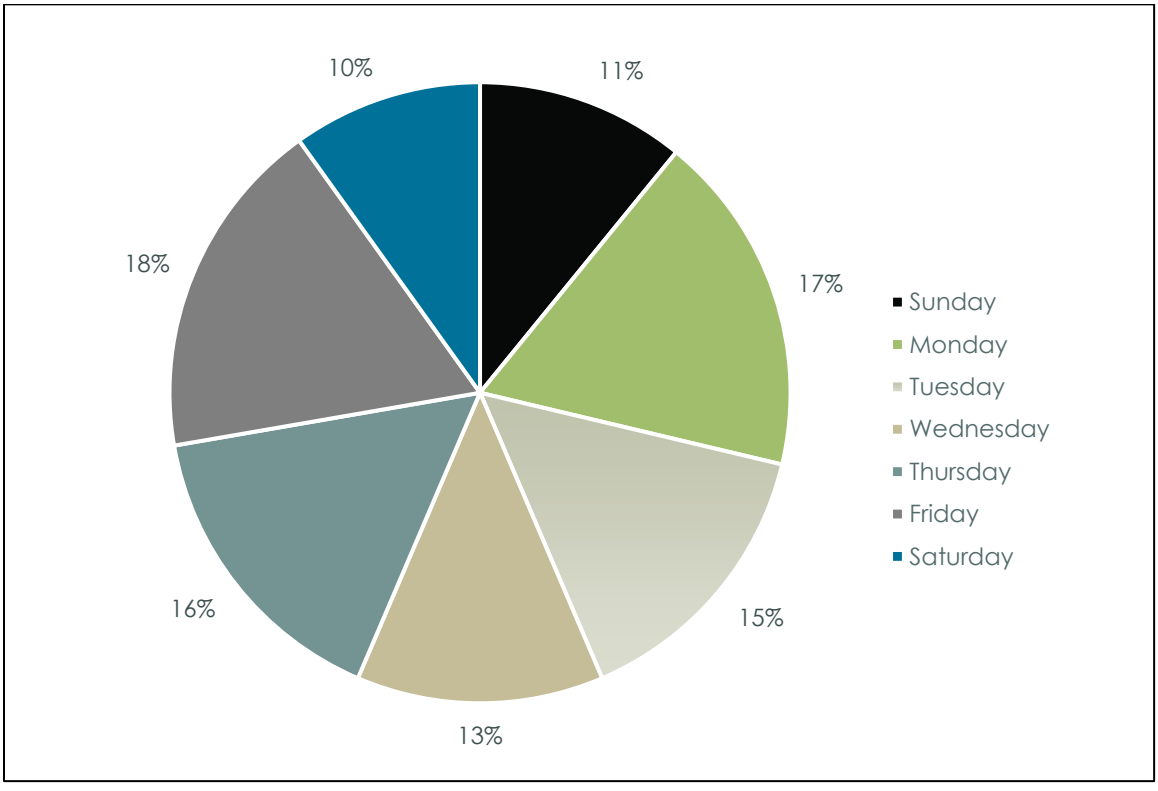


Figure 11: SR-52 Crash Data by Day

Highway Safety Manual – Predictive Method

ATI's *Cost-Benefit Analysis of Widening Alabama SR-167: A Macroscopic Study* (2020) included an evaluation of crash data using the predictive method described in AASHTO's *Highway Safety Manual* (HSM) for SR-167 based on reported crashes from 2014 to 2018. The following analysis serves as an update to the previous study's predictive method results based on data from 2017 to 2021. Using the HSM predictive method, the number of expected crashes along the study corridors was estimated. Because the predictive method applies to rural highway segments, only segment-related crashes were analyzed; intersection-related crashes were excluded based on a Critical Analysis Reporting Environment CARE) database field for crash location.

Table 10 outlines segment-related crashes for both corridors for the period of 2017-2021. The crash totals are broken down by crash severity and single- or multi-vehicle crashes. There were 140 total crashes on SR-167 and 79 total crashes on SR-52 during the analysis period.

Table 10: Segment Crashes by Severity and Number of Involved Vehicles (2017-2021)

SR-167	Crashes by Severity (KABCO Scale)						Crashes by # of Vehicles		Total # of Crashes
Year	K	A	B	C	PDO	U	Single-vehicle	Multi-vehicle	
2017	0	0	2	0	27	0	16	13	29
2018	0	1	4	3	17	0	17	8	25
2019	0	0	2	1	19	0	9	13	22
2020	1	0	2	3	23	0	10	19	29
2021	1	2	6	5	21	0	18	17	35
TOTAL	**2**	**3**	**16**	**12**	**107**	**0**	**70**	**70**	**140**
SR-52	**Crashes by Severity (KABCO Scale)**						**Crashes by # of Vehicles**		**Total # of Crashes**
Year	**K**	**A**	**B**	**C**	**PDO**	**U**	**Single-vehicle**	**Multi-vehicle**	
2017	0	1	2	0	10	1	6	8	14
2018	0	0	1	1	17	2	8	13	21
2019	0	0	2	1	12	0	5	10	15
2020	0	0	2	3	5	1	1	10	11
2021	1	0	1	2	14	0	3	15	18
TOTAL	**1**	**1**	**8**	**7**	**58**	**4**	**23**	**56**	**79**

Chapter 10 of the *HSM* outlines the predictive method for rural, two-lane roads. Equation 10-6 gives the safety performance function (SPF) for predicted crash frequency. Equation A-1 gives the calibration factor to be applied to the results of equation 10-6.

$$\text{(Eq. 10-6)} \quad N_{spf\,rs} = AADT \times L \times 365 \times 10^{-6} \times e^{(-0.312)}$$

$$\text{(Eq. A-1)} \quad Avg.C_r = \frac{\frac{\sum observed\ crashes}{\sum predicted\ crashes}}{\#\ of\ years}$$

Using these equations, the projected number of crashes for years 2022 through 2045 were calculated. **Table 11** gives the projected crashes for each study corridor for the two-lane, undivided scenario. The HSM provides separate factors to calculate all predicted crashes and fatal or injury crashes only; property damage only (PDO) crashes were calculated by subtracting the fatal or injury crashes from the total predicted crashes.

Table 11: Predicted Crashes (2022-2045)

Year	SR-167			SR-52		
	Fatal & Injury Crashes	PDO Crashes	Total # of Crashes	Fatal & Injury Crashes	PDO Crashes	Total # of Crashes
2022	2.03	4.28	6.31	0.80	1.70	2.50
2023	2.12	4.49	6.61	0.84	1.78	2.62
2024	2.22	4.69	6.91	0.88	1.86	2.74
2025	2.32	4.90	7.21	0.92	1.94	2.86
2026	2.41	5.10	7.51	0.96	2.02	2.98
2027	2.51	5.30	7.81	0.99	2.10	3.10
2028	2.60	5.51	8.11	1.03	2.18	3.22
2029	2.70	5.71	8.41	1.07	2.26	3.34
2030	2.80	5.92	8.71	1.11	2.35	3.45
2031	2.89	6.12	9.01	1.15	2.43	3.57
2032	2.99	6.32	9.31	1.19	2.51	3.69
2033	3.09	6.53	9.61	1.22	2.59	3.81
2034	3.18	6.73	9.92	1.26	2.67	3.93
2035	3.28	6.94	10.22	1.30	2.75	4.05
2036	3.38	7.14	10.52	1.34	2.83	4.17
2037	3.47	7.34	10.82	1.38	2.91	4.29
2038	3.57	7.55	11.12	1.41	2.99	4.41
2039	3.67	7.75	11.42	1.45	3.07	4.53
2040	3.76	7.96	11.72	1.49	3.15	4.65
2041	3.86	8.16	12.02	1.53	3.24	4.76
2042	3.95	8.36	12.32	1.57	3.32	4.88
2043	4.05	8.57	12.62	1.61	3.40	5.00
2044	4.15	8.77	12.92	1.64	3.48	5.12
2045	4.24	8.98	13.22	1.68	3.56	5.24
TOTAL	**75.23**	**159.13**	**234.36**	**29.82**	**63.09**	**92.91**

According to the calculations, for the period of 2022-2045, SR-167 is anticipated to experience approximately 234 total crashes, including 159 PDO crashes and 75 fatal or injury crashes; and SR-52 is anticipated to experience approximately 93 total crashes, including 63 PDO crashes and 30 fatal or injury crashes.

2 Corridor Feasibility Analysis

The feasibility analysis for SR-167 and SR-52 included the evaluation of environmentally sensitive areas, traffic projections, roadway alignment, typical sections, and phasing of roadway improvements. Additionally, one of the foundational elements of any roadway project is defining the purpose and need for any recommended improvements. This section documents the analyses and evaluation associated with each of these items.

2.1 Purpose and Need

Developing a purpose and need statement for a potential roadway project is an integral part of kicking off the project development life cycle. The purpose and need statement should describe the challenges facing the transportation network under existing and future conditions and how the solutions may address those challenges.

The purpose and need for improvement of SR-167 and SR-52 includes issues related to economic development, hurricane evacuation, roadway safety, increasing rural access to basic services, and accommodating ongoing and future growth from the Dothan area. In both cases SR-167 and SR-52, regional stakeholders are united in the effort to enhance these corridors and improve quality of life for the traveling public. Local governments, economic development commissions, chambers of commerce, and private business owners have joined forces to participate in this study and be champions for growth, mobility, and transportation safety in the Wiregrass region.

According to The Alabama Education Lab at AL.com, Geneva County School System ranks first in Alabama for college and career readiness, with 98.3% of 2023 graduates having attained at least one indicator of college or career readiness. With quality workforce prospects in Geneva County and surrounding areas, capitalizing on economic development opportunities is crucial to the sustainability of the region.

Purpose and Need for Improving SR-167

Accommodate Beach Traffic & Major Hurricane Evacuation Events

Since 2016, four categorized hurricanes have directly impacted the Florida-Alabama gulf coast region. During evacuations, mobility for Geneva County residents is severely restricted, and the current facilities carrying evacuees are above capacity according to estimates modeled by the Florida Department of Transportation. The Wiregrass region also serves as a staging area for relief efforts in the months following the event.

Capitalize on Economic Development Opportunity

Access to a multi-lane highway is critical for growing industries. Industrial development prospects typically cite access to a multi-lane highway as a non-negotiable, baseline requirement. Two of the largest industries in the region are military contracting and food distribution, which rely heavily on the surrounding infrastructure for mobility and market access. The study area is adjacent to several disadvantaged communities, as defined by the Biden-Harris Justice40 Initiative.

Improve Roadway Safety Performance

Nearly 64% of reported crashes along SR-167 from 2017-2021 were denoted as segment-related or non-intersection-related crashes. Rolling terrain along State Route 167 results in long following queues and impatient drivers stuck behind heavy vehicles and farming equipment without regular opportunity to pass. As following delays persist, motorists attempt risky maneuvers along the existing two-lane roadway to pass slower vehicles.

According to the ATI study all project-associated economic impacts total an output of $2.1 billion from 2026 to 2045, as shown in **Table 12**. This projection assumes an improvement project of widening SR-167 from two to four lanes within the study area.

Table 12: ATI Cost-Benefit Analysis Results

Type of Benefit	Benefit Value
Vehicle Operating Cost Savings	$49,500,000
Value of Time Savings	$286,600,000
Environmental Savings	$400,000
Safety Savings	$27,300,000 - $68,200,000
Number of Crashes Reduced	235 fewer crashes
Total Evacuation Route Benefits	$2,400,000
Employment	11,191 job-years
State & Local Tax Impact	$124,500,000
Total Economic Output	**$2,100,000,000**

Purpose and Need for Improving SR-52

Capitalize on Economic Development Opportunity

SR-52 is the backbone of Geneva County, connecting each of the four cities in the county to key services and employment opportunities. Nine of the ten largest employers in Geneva County lie within two miles of State Route 52. Access to a multi-lane highway is critical for growing industries. Industrial development prospects typically cite access to a multi-lane highway as a non-negotiable, baseline requirement. The study area is adjacent to several disadvantaged communities, as defined by the Biden-Harris Justice40 Initiative.

Over 78% of reported crashes along SR-52 from 2017-2021 were denoted as segment-related or non-intersection-related crashes. Heavy vehicles and farm equipment frequent State Route 52, creating a need to address large speed differentials and increase safer passing opportunities.

Improve Roadway Safety Performance

Increase Rural Access to Basic Services

Growth on the western side of Dothan played a major role in the decision to widen SR-52 from Malvern to Hartford. Dothan's population grew more than 8.5% (+6,773 people) from 2010 to 2020, making it the 8th largest city and 10th fastest growing city in the state of

Improving SR-52 would expand basic service access and critical healthcare access to underserved communities in Geneva County. Many citizens rely on rural transit services for regular trips to medical appointments, especially patients requiring weekly dialysis treatments, in the regional healthcare hub of Dothan.

Alabama over the same period. According to the Wiregrass Economic Development Commission, the average commute for a resident of Geneva County is 28 minutes, implying that a considerable percentage of the workforce commutes to surrounding cities for employment.

Connecting the multi-lane sections of SR-52 between Geneva and Hartford would allow Geneva County to have a seat at the economic development table in the Wiregrass region, especially for industrial developments citing access to a four-lane highway as a non-negotiable, baseline requirement. According to The Education Lab at AL.com, Geneva County High School (located in Geneva) is one of nine schools in Alabama which graduated 100% of their students with at least one college or career ready indicator in 2023. This infers that Geneva County has the workforce available to take advantage of economic development made possible by the improvement of SR-52.

2.2 Pre-NEPA Evaluation

A pre-NEPA (National Environmental Policy Act) screening was performed for the study area. This screening included:

- preliminary identification of streams and wetlands,
- preliminary identification of threatened and endangered species,
- background research for cultural resources,
- identification of publicly owned properties,
- identification of prime and unique farmlands,
- research for hazardous materials sites, and
- identification of potential environmental justice issues.

This section summarizes the results of the pre-NEPA screening. Should federal funds be used to implement roadway widening a NEPA document would be required.

Environmental Justice

Environmental Justice is a component of NEPA that seeks to ensure that all socio-economic groups share in the benefits and burdens of Federal transportation projects. Two areas of environmental justice that frequently become a concern are areas with a high minority population or areas where the majority of the inhabitants are members of low-income households.

The Environmental Protection Agency's (EPA) Environmental Justice Screening Tool (EJ Screen) was used to determine the presence of EJ communities. **Table 13** provides a brief overview of the socioeconomic demographics within the study area and compares those numbers to the county, state, EPA Region, and country.

Table 13: Environmental Justice Screening Tool Summary

Socioeconomic Indicator	Area of Evaluation					
	Study Corridor	Coffee County	Geneva County	State Avg	EPA Avg	USA Avg
Demographic Index	41%	32%	29%	36%	37%	36%
People of Color	35%	30%	16%	34%	39%	40%
Low Income	47%	33%	42%	35%	35%	31%
Unemployment Rate	5%	6%	5%	6%	6%	5%
Linguistically Isolated	1%	1%	0%	1%	3%	5%
Less Than High School Education	19%	14%	20%	14%	13%	12%
Under Age 5	6%	6%	5%	6%	6%	6%
Over Age 64	18%	17%	20%	17%	17%	16%

When compared to data for Coffee and Geneva Counties, the state, the EPA region, and the country, it can be concluded that the study area has a larger percentage of EJ communities. It is imperative that the implementation of improvements not create

disproportionately adverse effects on these EJ communities. If federal monies are used to install improvements, the sponsoring agency will need to ensure that all planning and outreach components of the project comply with environmental justice regulations under NEPA.

Additionally, the United States Department of Transportation (USDOT) has developed mapping of underserved communities throughout the United States to identify areas eligible for Rebuilding America's Infrastructure with Sustainability and Equity (RAISE) grants. Within the RAISE mapping, Census Tracts 108.00, 113.00, 212.00, 503.00, and 504.00 were identified as Historically Disadvantaged Community Tracts. Census Tracts 113.00 and 503.00 were identified as Persistent Poverty Tracts. The RAISE grant program is discussed in detail in Section 4 of this document (Funding Sources).

The USDOT's Equitable Transportation Community (ETC) Explorer is another mapping source for environmental justice implications. The ETC Explorer is a product of the Biden-Harris administration's Justice40 Initiative. The Justice40 initiative aims to provide 40% of benefits from many of the grant programs to disadvantaged communities.

Streams and Wetlands

BioResources, LLC. performed a preliminary field assessment of the study area for the presence of Waters of the U.S. (wetlands and streams under the jurisdiction of the U.S. Army Corps of Engineers (USACE)). The field assessment is not final and has not been submitted to the USACE. Findings from the streams and wetlands evaluation include:

- Many jurisdictional wetlands were identified in the study area
- Numerous jurisdictional streams were identified including perennial and intermittent streams
- No ephemeral streams were observed in the study area
- Impoundments classified as deepwater habitats were observed in the study area. These features are classified as Waters of the U.S. but are considered to be "low quality" and typically do not require mitigation when impacted.
- Four jurisdictional ditches were observed within the study area. Three of these ditches are located on the north side of SR-52 and the east side of SR-167. These ditches are manmade but provide connection to other jurisdictional features and are, therefore, Waters of The United States (WOTUS). They are considered low quality, but wetland mitigation credits are typically required when they are impacted.
- Several non-jurisdictional water features were observed throughout the study area. These features currently have no hydrologic connection to other Waters of the U.S.; however, they should be noted as future federal guidance could categorize them as Waters of the U.S.

Impacts to jurisdictional streams and wetlands will require a USACE permit. Recommendations tend to change with time and regulations. Due to a recent U.S.

Supreme Court Ruling, Sackett v. Environmental Protection Agency (EPA), federal regulation of WOTUS will be updated in the near future. Currently, the USACE Mobile District is not issuing Jurisdictional Determinations (JD) until new guidance is developed. At this point, it is likely that wetlands, perennial streams, intermittent streams will remain unchanged. Ponds and ditches may be affected by changes. Isolated wetlands will likely be excluded from jurisdiction. Project stakeholders should continue to monitor developments of WOTUS legislation and how they may affect the project.

The results of the field assessment should be reevaluated for a JD within an environmental document. Mapping was produced to identify jurisdictional wetlands, jurisdictional streams, deepwater habitats, jurisdictional ditches, and non-jurisdictional water features. Non-jurisdictional water features are not considered Waters of the U.S. The report prepared by BioResources, LLC. is included in **Appendix F**.

Threatened and Endangered Species

BioResources, LLC also identified federally listed species that may exist within the study area or lack appropriate habitat within the study area. The United States Fish and Wildlife Services (USFWS) IPaC lists eight federally endangered and threatened species as possible protected inhabitants of the study area. **Table 14** lists the common name, scientific name, and federal status of each species. The full report produced by BioResources, LLC can be found in **Appendix F.**

Table 14: Potential Threatened and Endangered Species

Common Name	Scientific Name	Federal Status
Wood Stork (bird)	Mycteria Americana	Threatened
Eastern Indigo Snake (reptile)	Drymarchon Corais Couperi	Threatened
Gopher Tortoise (reptile)	Gopherus Polyphemus	Candidate
Gulf Sturgeon (fish)	Acipenser Oxyrinchus Desotoi	Threatened
Choctaw Bean (mussel)	Villosa Choctawensis	Endangered
Fuzzy Pigtoe (mussel)	Pleurobema Strodeanum	Threatened
Southern Kidneyshell (mussel)	Ptychobranchus Jonesi	Endangered
Southern Sandshell (mussel)	Hamiota Australis	Threatened
Tapered Pigtoe (mussel)	Fusconaia Burkei	Threatened

Gopher tortoises are federally listed as Threatened west of the Mobile and Tombigbee Rivers; east of the Mobile and Tombigbee Rivers (including the corridor study area), they are not federally listed. However, throughout Alabama, the gopher tortoise is a state protected nongame wildlife species with no authorized taking allowed, and personal possession only allowed by permit. Their burrows are known to provide refugia to federally listed species, including the Threatened eastern indigo snake (Drymarchon corais couperi). Burrows typically occur in sandy soils in non-wetland areas. No gopher tortoises, gopher tortoise burrows, or eastern indigo snakes were observed. Detailed surveys are recommended once alternatives have been developed.

All the protected aquatic species require large streams or rivers with sand, gravel, or gravel-cobble substrates to survive and reproduce; the Choctawhatchee River is the only waterbody in the study area that could provide adequate habitat to the protected species. The Choctawhatchee River at the SR-167 crossing is recognized as Critical Habitat for all of the aquatic species; the river at the SR-52 crossing is not recognized as Critical Habitat. Impacts to the protected species and their aquatic habitat could be avoided if the river was spanned.

Cultural Resources

MRS Consultants, LLC conducted background research related to the identification of cultural resources within the study area. This research was performed by record review only, and recommendations may change with detailed field assessment. The report has not been submitted to the State Historical Preservation Office (SHPO) for review or concurrence. It has been approximately 40 years since a detailed field assessment was performed near the study area. A summary document for the performed background research is included in **Appendix G**. The background research focused on the SR-167 and SR-52 study corridors but also included an additional one-mile search area around the two corridors. **Table 15** summarizes the background research findings.

Table 15: Cultural Resources Background Research Summary

Source	Focus	Findings
Alabama Online Cultural Resources Database (AOCRD)	Previously Recorded Archaeological Sites	11 recorded sites within a 1-mile radius; 1 site (1Ge77) located near SR-167 (just north of the Choctawhatchee River) could potentially be impacted by proposed improvements
Phase 1 Surveys	Previously prepared cultural resource surveys	23 CRS documented within a 1-mile radius; 6 of 23 are located within the study corridor; 5 of 6 studies resulted in "No cultural resources identified"; the remaining study was performed in 1995 and included several locations in the area of the corridor study. The results of that study were not able to be located.
National Register of Historic Places (NRHP)	NRHP listed properties	No NRHP properties exist in the study corridor or within a 1-mile radius of the study corridor
Alabama Register of Landmarks and Heritage (ARLH)	ARLH listed properties	4 ARLH listed properties (all in Geneva, Alabama); 2 of these have since been demolished
Alabama Historic Cemetery Register	Known cemeteries	Eunola Cemetery (Geneva) located approximately 1600 feet southeast of SR-52; Hartford City Cemetery located in Hartford and just east of SR-167
Alabama Historical Commission (AHC) Files	Recorded Historical Resources	Numerous historic resources recorded in and near Enterprise but not within the study area; 1979 study prepared for Geneva County identified 52 historic resources in the cities of Geneva and Hartford, some of which are located within the study corridor. At the time NRHP eligibility was not determined but re-evaluation should be done since the survey is over 40 years old.

Based on the background research performed by MRS, Inc. there does not appear to be any cultural resources existing within the project corridor that would prohibit the project from moving forward. Should federal funds be used to implement proposed

improvements, a Phase 1 Cultural Resources survey should be completed as part of the NEPA document.

Publicly Owned Properties – Section 4(f) and 6(f)

The U.S. Department of Transportation Act of 1996 included a Section 4(f) which provided for consideration of park and recreation areas, wildlife and waterfowl refuges, and historic sites during transportation project development. Although this Act is now implemented by the Federal Highway Administration (FHWA) through the regulation 23 Code of Federal Regulations (CFR) 774, Section 4(f) is still used to describe the above-mentioned property types.

Section 6(f) is included in the Land and Water Conservation Act of 1965. The Land and Water Conservation Fund (LWCF) was established to assist federal, state, and local governments in acquiring land and water properties for the benefit of all recreating Americans. It is prohibited to convert property acquired or developed with LWCF monies to non-recreational purposes without approval from the National Park Service (NPS).

There is one property adjacent to the study area that is considered Section 4(f). The James S. Radford Recreation Park in Hartford, Alabama is in the southwest corner of SR-167 and SR-52. It is home to youth baseball fields, a basketball court, a playground, and a walking trail. Additionally, Radford Park was constructed in part with Section 6(f) funds.

Considering the Section 4(f) and 6(f) designations associated with Radford Park, impact to this area should be avoided. If impact cannot be avoided, coordination with the Federal Highway Administration (FHWA) and the National Park Service must take place.

To address Section 4(f) interests, a specific approval process through the Federal Highway Administration (FHWA) must be completed. This process can add time to a project development schedule. For Section 4(f) permitting, documentation must be provided to prove there is no feasible and prudent alternative to the use of land and the action includes all possible planning to minimize harm to the property resulting from use. FHWA may allow for a *de minimis* to be obtained. To obtain a *de minimis* it must be confirmed that the same type of park offering will be maintained after any project is completed. This could be on the same site by reconfiguration of the park or by relocating the park. However, there is no guarantee at this stage that a *de minimis* could be successfully obtained given the facility locations and the proposed improvements.

To address Section 6(f) interests, the project sponsor will have to request conversion approval from the National Park Service (NPS) through ADECA since ADECA administers LWCF funds for the state of Alabama. Conversion approval may be provided if the project sponsor can satisfy the requirements set forth by NPS. These requirements are likely to include the installation of a similar recreation park in another location. Failure to alert NPS of the conversion could result in the project sponsor being ineligible for future funding. More specifics related to the conversion request process can be found in the

document titled *Land and Water Conservation Fund State Assistance Program* issued by the U.S. Department of the Interior National Park Service.

Prime and Unique Farmlands

For highway projects using federal funds, the Farmland Protection Policy Act applies. This means for federal highway projects that have the potential to convert important farmland to a non-farm use, the land must be evaluated using the Natural Resources Conservation Service's (NRCS) Land Evaluation and Site Assessment (LESA) system. The LESA system establishes a farmland conversion impact rating score, and this score is used to determine if potential adverse impacts on the farmland exceed the recommended allowable level. A search of the NRCS Web Soil Survey was used to determine the potential for prime and unique farmlands within the study area. Mapping generated by the Web Soil Survey website is provided in **Appendix H**. The NRCS Web Soil Survey shows that the study corridor is made up primarily of prime farmland. Additionally, it appears that large tracts of land along the SR-167 and SR-52 corridors are used for farming.

Should the implementation of improvements take place, an AD-1006 Farmland Conversion Rating form will be required. The site assessment portion of this form which assesses non-soil related criteria is completed by the sponsoring agency and the USDA makes the final determination. Mitigation may be required as a result of impacts to prime farmlands.

Hazardous Materials

A search using the Alabama Department of Environmental Management's (ADEM) GIS Inspector tool was performed. This search revealed no brownfield sites located within the study area. There are eight (8) sites along the study corridor that have active, regulated underground storage tanks (USTs). All of these are active gas stations as well as the ALDOT office on SR-167. There are five (5) sites along SR-52 that have experienced or are currently addressing UST incidents. **Table 16** provides a summary of these sites.

Table 16: UST Incident Summary

Site Name	Address	Status
Wiregrass Hospital	1200 W. Maple Avenue, Geneva	Cleanup ended 1/20/2000
Maple Avenue BP	608 W. Maple Avenue, Geneva	Property has redeveloped and is no longer a gas station; however, the site has not been cleared and is still being monitored
A.W. Herndon #104 (Marathon Station)	517 E Maple Avenue, Geneva	Cleanup ended 7/1/2014
Cotton's Service Station (now Inland Station)	Highway 52 East, Geneva	Cleanup ended 9/14/2000
Super C #5 (now Citgo Station)	10045 Hwy 52 E, Hartford	Cleanup ended 3/7/2017

Should the implementation of proposed improvements move forward using Federal or State money, a hazardous material clearance letter will have to be obtained from ALDOT's Environmental Technical Section (ETS).

2.3 Traffic Projections

Given the location of the study area, a travel demand model was not applicable for determining a growth rate for future traffic volumes. Travel demand modeling would be more applicable in an urban setting, and the Dothan Area travel demand model does not reach the segments of SR-167 or SR-52 included in this study. Therefore, alternative methods of traffic volume forecasting were required. In this case, design year traffic volumes were forecasted for the corridors using existing traffic volumes and a linear annual growth rate.

Forecasting Methodology

A straight-line annual growth rate method was utilized to forecast design year daily traffic volumes. Using ALDOT Traffic Data website's AADT (average annual daily traffic) volumes from 2014 – 2021 and data collection from May 2022, a trendline was established for each location. The 2020 AADT volume was removed from trendline calculations due to fluctuations in traffic volumes during the COVID-19 pandemic.

Table 17 outlines the annual growth rate estimates for each location along SR-167 and their corresponding coefficient of determination, or R^2, value. The coefficient of determination measures how well a model predicts an outcome. A higher R^2 value indicates a stronger trendline, but there is no one-size-fits-all standard for a minimum suitable R^2 value in the field of traffic forecasting.

Table 17: SR-167 Annual Growth Rate Trendline Analysis Results

Location	Linear Annual Growth Rate (2014-2022)*	Trend R^2
SR-167 from CR-709 to SR-192	5.1%	0.58
SR-167 from CR-36 to CR-45	6.1%	0.92
SR-167 from CR-61 to SR-52	5.2%	0.85
SR-167 from CR-9 to CR-4	4.1%	0.54

*2020 AADT Omitted from trendline analysis due to COVID-19 Pandemic

The R^2 values in **Table 18** indicate that the trendlines used to calculate the annual growth rates represent reasonable correlation for use in forecasting future traffic volumes. In this case, it was determined that a **growth rate of 5.0% per year** is appropriate in forecasting design year volumes for SR-167.

Table 18 outlines the annual growth rate estimates for each location along SR-52 and their corresponding R^2 value.

Table 18: SR-52 Annual Growth Rate Trendline Analysis Results

Location	Linear Annual Growth Rate (2014-2022)*	Trend R^2
SR-52 from CR-38 to CR-55	0.5%	0.09
SR-52 from CR-4 to CR-41	-0.1%	0.03
SR-52 from Commerce St to SR-27	1.5%	0.37

*2020 AADT Omitted from trendline analysis due to COVID-19 Pandemic

Due to weak correlation in traffic volume data for locations along SR-52, it was determined that using historical traffic trends was not an appropriate traffic forecasting method along SR-52. A straight-line, annual **growth rate of 2.0% per year** was deemed appropriate to be consistent with traffic forecasting used by ALDOT during the SR-52 widening project from Malvern to Slocomb.

Future Year Traffic Forecasts

Further investigation into the traffic volume data was required to establish what period to analyze for peak conditions in each corridor. The purpose of this investigation was to identify a peak day of the week, peak month of the year, and any appropriate seasonal adjustment factors for each corridor.

Due to fluctuations in traffic along SR-167 from month to month, traffic data from ALDOT Automatic Traffic Recorder (ATR) Count Station Geneva 806 was analyzed to establish the appropriate day and month to utilize in capacity analysis. In special circumstances where a seasonal adjustment factor is appropriate, a multiplier can be applied to volumes to be converted to peak seasons. **Figure 12** displays average traffic volume by month in 2021 along SR-167 between SR-52 in Hartford and the Alabama-Florida State Line.

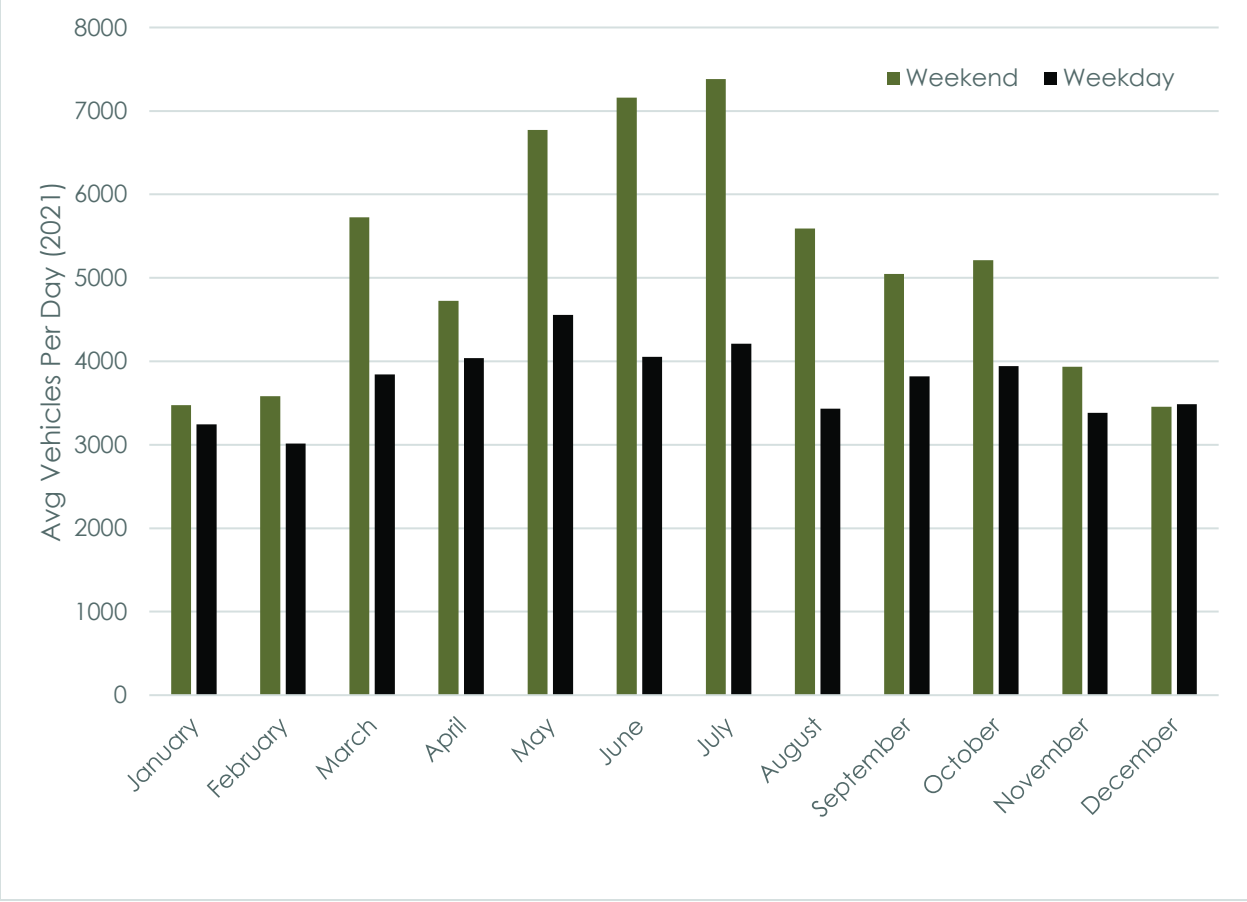


Figure 12: Average Daily Traffic Volume - Weekday vs Weekend (2021)

During the peak months of beach travel, weekend traffic volumes exceed weekday traffic volumes. In July 2021, the average weekend daily traffic volume was approximately 75% higher than the average weekday daily traffic volume. This trend continued in 2022, with the average weekend daily traffic volume measuring approximately 43% higher than the average weekday daily traffic volume. This trend is consistent through the peak months of March, May, June, July, and August. Based on this analysis, it was determined that corridor capacity analysis of SR-167 should consider the average Saturday in July to be the peak of daily traffic volumes.

To convert traffic volumes collected in May to July, a seasonal adjustment factor of 1.09 was applied to the existing traffic volume collected on May 14, 2022. The seasonal adjustment factor was only applied to SR-167 volumes.

SR-52 possesses a traditional commuter peak travel pattern with less fluctuation in traffic volumes month-to-month. Therefore, a seasonal adjustment factor would not be appropriate for SR-52 traffic volumes. Collected traffic volumes from a typical Thursday in May is sufficient for traffic analysis on SR-52.

Table 19 summarizes the annual growth rates, day of week, month, and seasonal adjustment factor utilized in determining the appropriate traffic volumes for capacity analysis of the SR-167 and SR-52 corridors. The day of week and month of year were determined using collected traffic volumes described in Section 1.2 and historical traffic data from ALDOT ATR Count Station 806.

Table 19: Selected Annual Growth Rates, Day of Week, Month, and Seasonal Adjustment Factors

Route	Annual Growth Rate (% per year)	Day of Week	Month	Seasonal Adjustment Factor
SR-167	5.0%	Saturday	July	1.09
SR-52	2.0%	Thursday	May	N/A

Existing volumes for the peak day of the week were grown to establish design year traffic forecasts for the year 2045. **Table 20** summarizes the resulting collected, projected, and seasonally adjusted volumes used in the corridor capacity analysis.

Table 20: Daily Volumes for Future Conditions

Segment		Approach/Location	2045 Projected Volume	2045 Adjusted Volume
SR-167	NB-SB	CR-9 to CR-4	12,739	13,885
	NB-SB	CR-61 to SR-52	13,117	14,298
	NB-SB	CR-36 to CR-45	13,188	14,375
	NB-SB	CR-709 to SR-192	17,056	18,591
SR-52	EB-WB	CR-38 to CR-55	6,970	
	EB-WB	CR-4 to CR-41	8,404	
	EB-WB	SR-27/Commerce St to SR-27	18,800	

2.4 Improvement Alternatives

Baseline alternatives for improvement and preliminary alignments for each study corridor were evaluated as a part of this study. **Figure 13** further outlines the relationship of alternatives, typical sections, and alignments for SR-167 and SR-52.

SR-167 Alternatives

The following alternatives were developed and evaluated along the SR-167 study corridor:

- No Build Alternative
- Alternative A – Widen to Four Lanes from SR-192 in Enterprise to Florida State Line
- Alternative B – Add Intermittent Passing Lanes and Intersection Improvements

SR-52 Alternatives

The following alternatives were developed and evaluated along the SR-52 study corridor:

- No Build Alternative
- Alternative A – Widen to Four Lanes from Existing Four-Lane Section in Geneva to SR-167 in Hartford
- Alternative B – Add Intermittent Passing Lanes* and Intersection Improvements

*Further evaluation of SR-52 Alternative B resulted in no logical locations identified for additional passing lanes. One passing lane in each direction exists between M.P. 36 and M.P. 37 of SR-52, approximately halfway between Geneva and Hartford.

Figure 13: Alternatives, Typical Sections, and Alignments Relationship

Intersection Improvements

In addition to the signalization of SR-167 at SR-52, the following turn lane improvements were included in Alternative A and Alternative B. At each arterial or collector roadway, right and left turn lanes are recommended along each mainline approach. Existing side street approach lane geometry is assumed to remain under each alternative. Recommended turn lane improvements should be reevaluated during the preliminary engineering phase, if either alternative moves forward.

- SR-167 at Geneva CR-9
  - Northbound Right
  - Southbound Left
- SR-167 at Geneva CR-4
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at Geneva CR-61/SR-123
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at Geneva CR-38*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at Geneva CR-45*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at Geneva CR-41*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at SR-85
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at Dale CR-1*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-167 at SR-92
  - Northbound Right
  - Southbound Left
- SR-167 at Coffee CR-709*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-52 at SR-27/Commerce St
  - Eastbound Left and Right
  - Westbound Left and Right
- SR-52 at SR-27
  - Westbound Right
- SR-52 at Geneva CR-4
  - Eastbound Left and Right
  - Westbound Left and Right
- SR-52 at Geneva CR-4
  - Eastbound Left
  - Westbound Right
- SR-52 at Geneva CR-41
  - Eastbound Left and Right
  - Westbound Left and Right
- SR-52 at Geneva CR-16*
  - Eastbound Left and Right
  - Westbound Left and Right
- SR-52 at Geneva CR-55*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-52 at Geneva CR-34*
  - Northbound Left and Right
  - Southbound Left and Right
- SR-52 at SR-167
  - Eastbound Left and Right
  - Westbound Left and Right
  - Northbound Left and Right
  - Southbound Left and Right

*Turning movement counts not collected

Turn lane storage and taper lengths were modeled according to guidance in the *ALDOT Access Management Manual* (2022). For sections of the study corridors with a 45 MPH speed limit, the minimum recommended storage lane lengths and taper lengths are 215 feet and 160 feet, respectively. For sections of the study corridors with a 55 MPH speed limit, the minimum recommended storage lane lengths and taper lengths are 295 feet and 180 feet, respectively.

Base Typical Sections

A base typical section was developed for each alternative. This provides a default cross-section for the roadway. This does not represent the proposed typical section at all locations on the study corridor, because the cross-section will change at intersections and locations where topography or existing development dictates a condensed cross-section. In this case, the base typical section will be prevalent in rural areas, while deviations from the base typical section will be prevalent closer to urban areas. If needed, the outside shoulders and ditches could be replaced with curb and gutter to accommodate sidewalks in urban areas. High resolution versions of each typical section can be found in **Appendix I**.

The base typical section for Alternative A, which is shown in **Figure 14**, was derived from the existing SR-52 cross section between Dothan and Malvern.

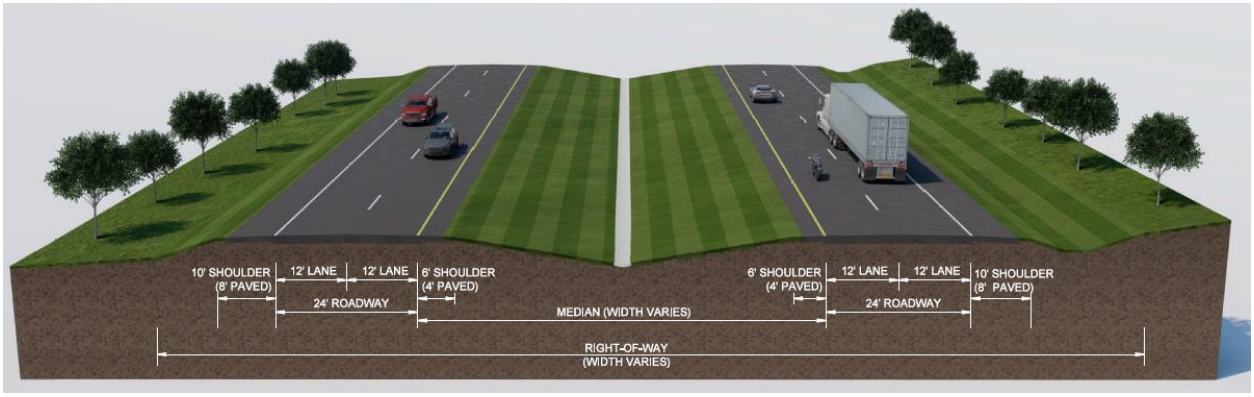


Figure 14: Alternative A – Base Typical Section

Table 21 summarizes each element of the base typical section for Alternative A. Each element of the typical section was cross-checked with ALDOT Standard Drawings and guidance provided in the American Association of State highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets* (2018).

Table 21: Base Typical Section Elements of Alternative A

Typical Section Element	Element Width (ft)
Travel Lanes (x4)	12
Paved Inside Shoulder (x2)	4
Unpaved Inside Shoulder (x2)	2
Paved Outside Shoulder (x2)	8
Unpaved Outside Shoulder (x2)	2
Grassed Median (x1)	60
Base Typical Section Width*	**140 feet**
Right-of-Way Width**	**Varies**

*Edge of Outside Shoulder to Edge of Outside Shoulder

**For the purposes of this study, evaluation of impacts is based on an estimated right-of-way width of 250'.

Where topography or existing development dictates, the typical section can vary between a four-lane divided section and a five-lane typical section. For Alternative A, **Figure 15** shows a five-lane typical section which maintains the two through lanes in each direction and employs a two-way-left-turn-lane (TWLTL) in the center. Note that the paved shoulders displayed in **Figure 15** can be replaced or complemented by curb and gutter to accommodate drainage. If Alternative A was constructed, the locations where the cross-section of the roadway diverges from the base typical section would be decided upon during the design phase of the project.

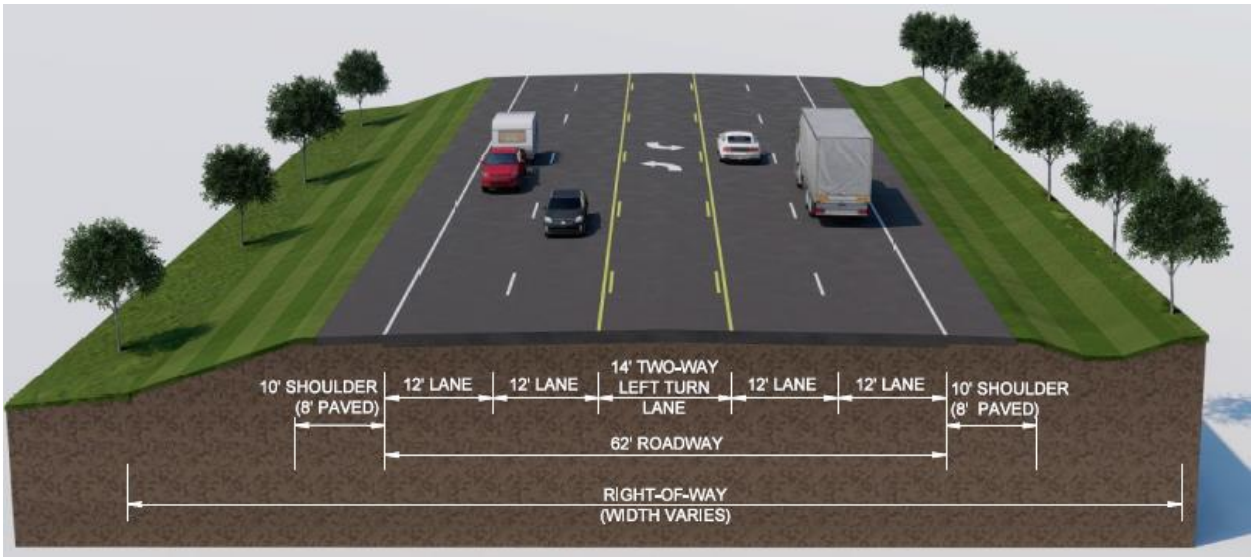


Figure 15: Alternative A – Five-Lane Typical Section

Table 22 summarizes an example of a condensed urban typical section for Alternative A.

Table 22: Alternative A - Condensed Urban Typical Section Elements

Typical Section Element	Element Width (ft)
Travel Lanes (x4)	12
Two-Way Left Turn Lane (x1)	14
Paved Outside Shoulder (x2)	8
Unpaved Outside Shoulder (x2)	2
Base Typical Section Width*	**82 feet**
Right-of-Way Width	**Varies**

*Edge of Outside Shoulder to Edge of Outside Shoulder

The base typical section for Alternative B depends on the location and direction of any proposed passing lane. Where a passing lane is recommended, **Figure 16** shows the base typical section of the roadway. The following locations were identified as potentially locations for passing lanes:

- SR-167, between MP 1.0 and MP 3.0
- SR-167, between MP 4.5 and MP 6.0
- SR-167, between CR-36 (MP 10.0) and CR-45 (MP 11.5)
- SR-167, between SR-85 (MP 16.2) and MP 18

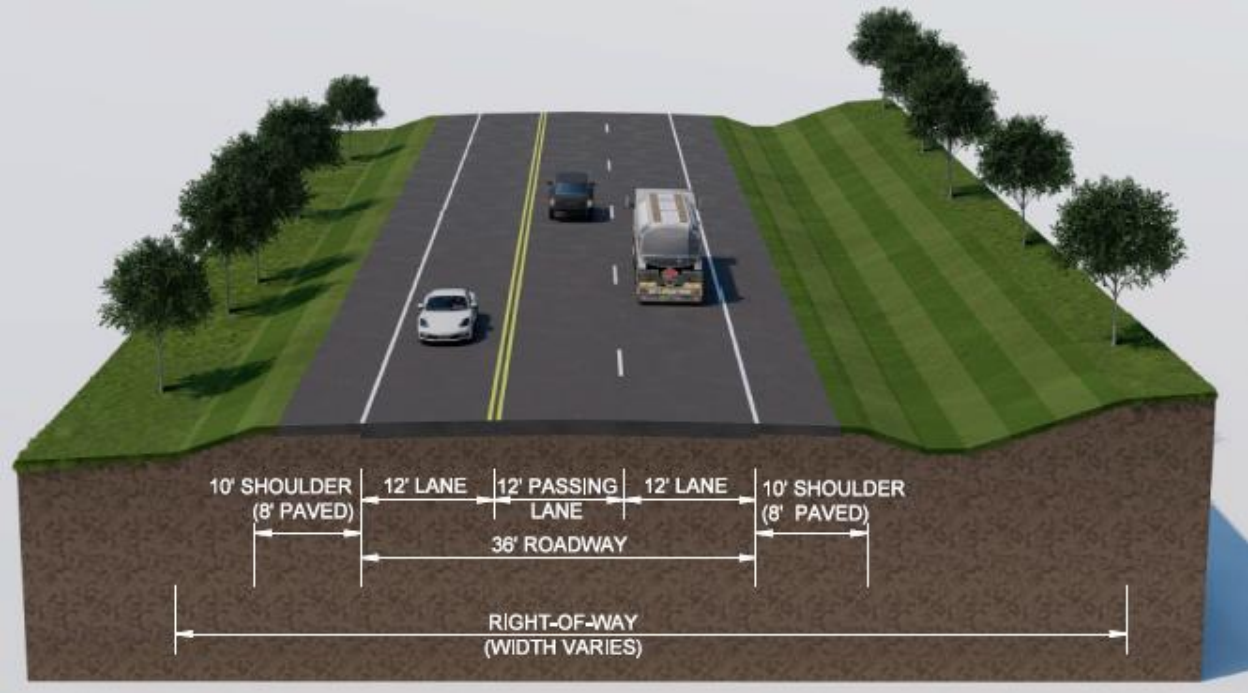


Figure 16: Alternative B – Base Typical Section

Table 23 summarizes each element of the typical section for Alternative B, where applicable.

Table 23: Base Typical Section Elements of Alternative B

Typical Section Element	Element Width (ft)
Travel Lanes (x2)	12
Passing Lane (x1)	12
Paved Outside Shoulder (x2)	8
Unpaved Outside Shoulder (x2)	2
Base Typical Section Width*	**56 feet**
Right-of-Way Width	**Varies**

*Edge of Outside Shoulder to Edge of Outside Shoulder

Alignments

Within each alternative, the alignment of the improved roadway can vary from widening to the right, widening to the left, or widening symmetrically. Asymmetrical widening from two lanes to four lanes is typically achieved by utilizing the existing two-lane roadway for one direction of travel lanes and constructing new location roadway for the other direction of travel lanes.

Table 24 outlines a planning-level view of SR-167 Alternative A's potential impacts to parcels and structures, according to the projected base typical section shown in **Figure 14**. Actual impacts would need to be verified or amended during the environmental and design phases of any future project. Parcels impacted were measured by count of parcels which were likely to be impacted by right-of-way acquisition for each alignment. Likely displacements were measured by number of structures within the anticipated footprint of the base typical section. In **Table 24**, MP 0 represents the distance from MP 0 to MP 1, MP 1 represents the distance from MP 1 to MP 2, and so on.

Table 24: Planning-Level Assessment of Impacts for SR-167 Alternative A Alignments

	Parcels Impacted			Likely Displacements		
MP	**West**	**Symm.**	**East**	**West**	**Symm.**	**East**
0	5	11	6	1	1	1
1	12	18	6	3	2	2
2	7	15	10	2	2	2
3	10	19	9	6	8	4
4	7	16	9	2	4	6
5	5	10	6	0	0	1
6	6	10	4	0	0	0
7	8	17	10	1	1	2
8	8	19	13	2	1	1
9	5	10	5	0	0	0
10	4	8	4	1	1	0
11	6	12	6	1	0	0
12	6	10	4	0	0	0
13	4	7	4	0	0	0
14	4	7	5	0	0	1
15	2	3	1	0	1	0
16	4	8	4	1	3	2
17	16	20	6	2	1	2
18	11	20	10	1	1	0
19	21	38	17	4	1	5
20	7	24	20	2	6	7
21	18	43	29	5	8	12
22	14	22	9	6	2	0
23	12	29	17	3	12	9
Totals	**214**	**396**	**202**	**57**	**55**	**43**

*None: No stream or wetland impacts are anticipated, based on the available information at this time.

Where relatively high number of likely displacements are noted, a condensed urban typical section may be beneficial in minimizing impacts.

Projected impact to streams and wetlands was measured according to mapping provided by BioResources during the pre-NEPA evaluation phase of this study. Anticipated stream and wetland impact along SR-167 is estimated at 22.4 acres for Alternative A compared to 3.9 acres for Alternative B. Each SR-167 alignment is anticipated to have comparable impacts overall from MP 0 to MP 24, but anticipated impacts vary mile to mile throughout the study area.

Table 25 outlines a planning-level view of SR-52 Alternative A's potential impacts to parcels and structures, according to the projected base typical section shown in **Figure 14**. Actual impacts would need to be verified or amended during the environmental and design phases of any future project.

Table 25: Planning-Level Assessment of Impacts for SR-52 Alternative A Alignments

	Parcels Impacted			Likely Displacements		
MP	**North**	**Symm.**	**South**	**North**	**Symm.**	**South**
28	4	8	4	1	1	5
29	29	65	40	22	35	26
30	28	53	31	7	18	12
31	10	18	10	2	4	3
32	18	40	22	7	4	9
33	7	16	10	3	1	4
34	6	9	3	1	0	0
35	6	12	6	1	5	5
36	4	15	11	0	2	3
37	14	19	5	9	7	2
38	7	13	6	4	2	2
39	8	12	4	0	1	2
40	11	17	6	6	4	1
Totals	**152**	**297**	**158**	**63**	**84**	**74**

*None: No stream or wetland impacts are anticipated, based on the available information at this time.

Anticipated stream and wetland impacts along SR-52 are estimated at 5.7 acres for Alternative A. Each SR-52 alignment is anticipated to have comparable impacts overall from MP 28 to MP 40, but anticipated impacts vary mile to mile throughout the study area.

Tables 24 – 25 are specific to Alternative A for each study corridor. Planning-level assessment of impacts were not tabulated for Alternative B.

SR-52 Hartford Bypass Options

At the time of this study, ALDOT has no plans for a bypass around Hartford. However, if Alternative A from this study moves forward to widen SR-52 to four lanes from Geneva to Hartford, evaluating a connection through or bypass around downtown Hartford is a logical need. ALDOT Projects RAED-031-052-004 and RAED-031-052-005 are currently slated to widen SR-52 from Malvern to Hartford, tying into the existing alignment of SR-52 just east of downtown Hartford. To connect the existing four-lane widening projects (RAED-031-052-004 and RAED-031-052-005) east of Hartford to a potential future four-lane widening project west of Hartford, three swaths are shown in **Figure 17** at the conceptual level. The SR-52 scope of this study terminates at SR-167. Should Alternative A move forward, the options in **Figure 17** should be evaluated further.

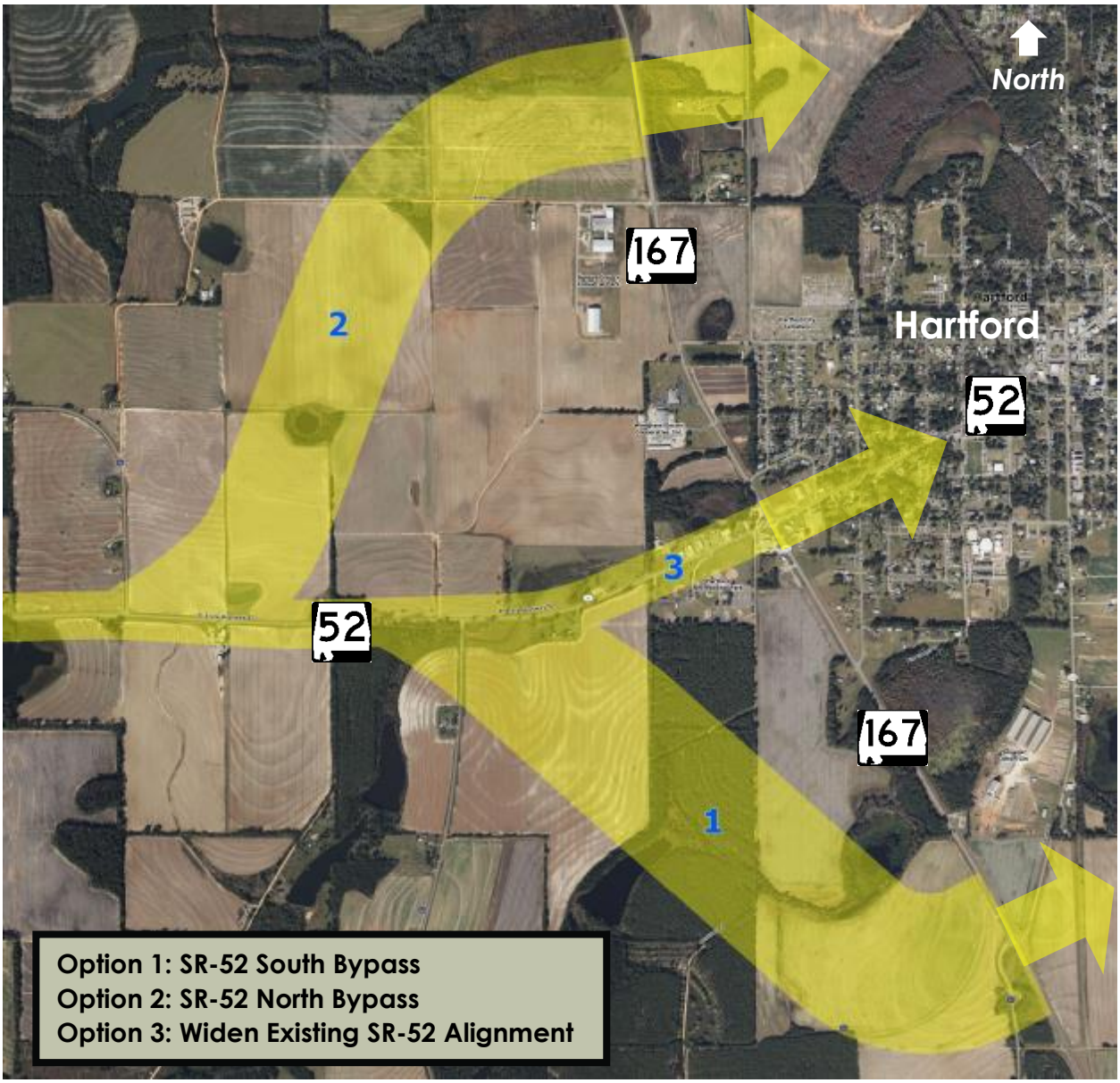


Figure 17: Potential SR-52 Hartford Bypass Options for Further Study

2.5 Future Conditions Traffic Analysis

Capacity analyses were performed for segments of the corridor and each study intersection using the alternative conditions.

Corridor Capacity Analysis

The same methodology from the existing conditions traffic analysis was applied to the future conditions to project segment LOS along SR-167 and SR-52. HCS and methods described in the HCM 7th Edition were utilized for future conditions segment analysis.

The LOS results for each segment and study corridor are listed in **Table 26**.

Table 26: Future Segment Levels of Service (2045)

Study Corridor	Analysis Segment		No Build Alternative	Alternative A	Alternative B
SR-167	NB-SB	SR-192 to SR-92	C	A	C
	NB-SB	SR-92 to CR-41	C	A	C
	NB-SB	CR-41 to SR-52	C	A	C
	NB-SB	SR-52 to CR-67	C	A	C
	NB-SB	CR-67 to CR-9	C	A	C
SR-52	EB-WB	SR-27/Commerce St to SR-27	D	A	-
	EB-WB	SR-27 to CR-41	B	A	-
	EB-WB	CR-41 to SR-167	B	A	-

Along SR-167, Alternative A is anticipated to improve all segments to LOS A, while Alternative B is anticipated to operate at LOS C. Full Highway Capacity Software analysis reports can be found in **Appendix J**.

Intersection Capacity Analysis

The same methodology from the existing conditions traffic analysis was applied to the future conditions to project intersection LOS along SR-167 and SR-52. Trafficware's Synchro 11 software and methods described in the HCM 7th Edition were used in future conditions intersection analysis.

The results of the No-Build Alternative capacity analysis are summarized in **Table 27.** Full intersection traffic analysis reports are provided in **Appendix J.**

Future conditions capacity analysis results for each improvement alternative are shown in **Table 28.** Intersections approaches anticipated to operate with LOS E or F should be monitored closely after the construction of any alternative, and additional improvements should be considered during the preliminary engineering phase. Signal warrant evaluations should be performed periodically if Alternative A is implemented.

Table 27: Future No Build Intersection LOS (2045)

Intersection	Approach		No Build LOS	
			AM Peak	PM Peak
SR-192 at SR-167 (Signalized)	NB	SR-167	D	C
	SB	SR-167	D	D
	EB	US-84	D	C
	WB	US-84	C	C
		Intersection	***D***	***C***
SR-92 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	WB	SR-92	D	C
SR-85 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	EB	SR-85	**F**	**F**
	SB	SR-85	**F**	**F**
SR-52 at SR-167 (All-Way Stop Controlled)	NB	SR-167	**F**	**F**
	SB	SR-167	**F**	**F**
	EB	SR-52	**F**	**F**
	WB	SR-52	**F**	**F**
CR-61 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	EB	CR-61	**E**	**F**
	WB	CR-61	D	**F**
CR-9 at SR-167 (Unsignalized)	NB	SR-167	A	A
	SB	SR-167	A	A
	WB	CR-9	C	**E**
CR-41 at SR-52 (Unsignalized)	SB	CR-41	B	B
	EB	SR-52	A	A
	WB	SR-52	A	A
CR-4 at SR-52 (Unsignalized)	NB	CR-4	D	**E**
	EB	SR-52	A	A
	WB	SR-52	A	A
McDougald St/ Martin Rd at SR-52 (Unsignalized)	NB	McDougald St	C	D
	SB	Martin Rd	C	C
	EB	SR-52	A	A
	WB	SR-52	A	A
SR-27 at SR-52 (Signalized)	SB	SR-27	**F**	**F**
	EB	SR-52	A	A
	WB	SR-52	B	B
		Intersection	**C**	***F***
SR-52 at SR-27/ Commerce St (Signalized)	NB	SR-27/Commerce St	C	C
	SB	Commerce St	C	B
	EB	SR-52	A	B
	WB	SR-52	A	A
		Intersection	***A***	***B***

Table 28: Improvement Alternatives Intersection LOS (2045)

Intersection	Approach		Alt A LOS		Alt B LOS	
			AM Peak	PM Peak	AM Peak	PM Peak
SR-192 at SR-167 (Signalized)	NB	SR-167	C	C	C	C
	SB	SR-167	D	D	D	D
	EB	US-84	C	C	C	C
	WB	US-84	C	C	C	C
		Intersection	**C**	**C**	**C**	**C**
SR-92 at SR-167 (Unsignalized)	NB	SR-167	A	A	A	A
	SB	SR-167	A	A	A	A
	WB	SR-92	C	B	D	C
SR-85 at SR-167 (Unsignalized)	NB	SR-167	A	A	A	A
	SB	SR-167	A	A	A	A
	EB	SR-85	**F**	**F**	**F**	**F**
	SB	SR-85	**F**	**F**	**F**	**F**
SR-52 at SR-167 (Signalized)	NB	SR-167	B	B	C	B
	SB	SR-167	B	B	C	C
	EB	SR-52	B	B	C	B
	WB	SR-52	B	B	B	C
		Intersection	***B***	***B***	**C**	***B***
CR-61 at SR-167 (Unsignalized)	NB	SR-167	A	A	A	A
	SB	SR-167	A	A	A	A
	EB	CR-61	D	**E**	**E**	**F**
	WB	CR-61	C	**F**	D	**F**
CR-9 at SR-167 (Unsignalized)	NB	SR-167	A	A	A	A
	SB	SR-167	A	A	A	A
	WB	CR-9	C	C	C	**E**
CR-41 at SR-52 (Unsignalized)	SB	CR-41	A	B	B	B
	EB	SR-52	A	A	A	A
	WB	SR-52	A	A	A	A
CR-4 at SR-52 (Unsignalized)	NB	CR-4	C	C	C	D
	EB	SR-52	A	A	A	A
	WB	SR-52	A	A	A	A
McDougald St / Martin Rd at SR-52 (Unsignalized)	NB	McDougald St	C	C	C	D
	SB	Martin Rd	B	B	C	C
	EB	SR-52	A	A	A	A
	WB	SR-52	A	A	A	A
SR-27 at SR-52 (Signalized)	SB	SR-27	D	**F**	**E**	**F**
	EB	SR-52	A	A	A	B
	WB	SR-52	B	B	C	D
		Intersection	***B***	***D***	**C**	***E***
SR-52 at SR-27/ Commerce St (Signalized)	NB	SR-27/Commerce St	B	B	B	B
	SB	Commerce St	B	B	B	B
	EB	SR-52	B	A	B	B
	WB	SR-52	A	A	A	A
		Intersection	***A***	***A***	***A***	***B***

According to the intersection capacity analysis, the following study intersection approaches are anticipated to experience LOS E or F under future No Build conditions:

- Eastbound and westbound approaches of SR-85 at SR-167 during both peak hours
- All approaches of SR-52 at SR-167 during both peak hours
- Eastbound and westbound approaches of CR-61 at SR-167 during the PM peak hour
- Westbound approach of CR-9 at SR-167 during the PM peak hour
- Northbound approach of CR-4 at SR-52 during the PM peak hour
- Southbound approach of SR-27 at SR-52 during the both peak hours

According to the intersection capacity analysis, the following study intersection approaches are anticipated to experience LOS E or F under Build Alternative A conditions:

- Eastbound and westbound approaches of SR-85 at SR-167 during both peak hours
- Eastbound and westbound approach of CR-61 at SR-167 during the PM peak hour
- Southbound approach of SR-27 at SR-52 during the PM peak hour

According to the intersection capacity analysis, the following study intersection approaches are anticipated to experience LOS E or F under Build Alternative B conditions:

- Eastbound and westbound approaches of SR-85 at SR-167 during both peak hours
- Eastbound approach of CR-61 during the AM peak hour
- Eastbound and westbound approach of CR-61 at SR-167 during the PM peak hour
- Westbound approach of CR-9 at SR-167 during the PM peak hour
- Southbound approach of SR-27 at SR-52 during the PM peak hour

2.6 Safety Performance Evaluation

ATI performed a traffic safety analysis in their report *Cost-Benefit Analysis of Widening Alabama SR-167: A Macroscopic Study* using CARE crash data from 2014-2018 and the predictive methodology outlined in the *HSM*. Sain Associates performed an updated safety analysis using crash data from the period of 2017-2021 for both the SR-167 and SR-52 corridors. Only segment-related crashes were included in the analysis; intersection-related crashes were excluded from the predictive crash analysis for each study corridor. Chapter 11 of the *HSM* outlines the predictive method for rural two-lane, two-way roads. Equation 11-9 and Equation A-1 described in Section 1.6 were utilized for analysis.

To compare projected safety performance between alternatives, crash modification factors (CMF) were applied to the no-build crash totals based on the improvements contained in each alternative. In the case of Alternative A, a CMF of 0.50 was applied to account for widening a two-lane, two-way rural roadway to a four-lane divided rural roadway. Alternative A's CMF follows the methodology for the CMF used in the *Cost-Benefit Analysis of Widening Alabama SR-167* for the same improvement scenario.

In the case of Alternative B, a CMF of 0.65 (CMF ID 4082, Park et al., 2012) was applied to account for installation of intermittent passing lanes along a two-lane, two-way rural roadway. Alternative B's CMF was sourced from the CMF Clearinghouse, because the *Cost-Benefit Analysis of Widening Alabama SR-167* study did not evaluate intermittent passing lanes.

Tables 29 – 30 summarize the results of the predictive crash analysis for each alternative for the years 2022 through 2045. **Table 29** contains results for the SR-167 study corridor, while **Table 30** contains results for the SR-52 study corridor.

Table 29: Predictive Crash Analysis (SR-167)

Crash Types		2022-2045 No Build	2022-2045 Alt. A	Alt. A vs No-Build	2022-2045 Alt. B	Alt. B vs No Build
Fatal & Injury Crashes	Single-vehicle F&I Crashes	52.13	20.54	-31.60	33.89	-18.25
	Multi-vehicle F&I Crashes	23.10	9.10	-14.00	15.01	-8.08
Grand Total		**75.23**	**29.64**	**-45.60**	**48.90**	**-26.33**

Results of the SR-167 analysis for both alternatives are anticipated to provide safety performance benefits above the No Build Alternative conditions. Alternative A is expected to result in approximately 30 fatal or injury crashes along the SR-167 study corridor, while Alternative B is expected to result in approximately 49 fatal or injury crashes along the SR-167 study corridor.

Table 30: Predictive Crash Analysis (SR-52)

Crash Types		2022-2045 No Build	2022-2045 Alternative A	Alt. A vs No Build
Fatal & Injury Crashes	Single-vehicle F&I Crashes	16.48	8.11	-8.37
	Multi-vehicle F&I Crashes	7.30	3.59	-3.71
Grand Total		**23.78**	**11.71**	**-12.07**

SR-52 Alternative A is expected to provide safety performance benefits above the No Build Alternative. Alternative A is expected to result in approximately 12 fatal or injury crashes along the SR-52 study corridor. As mentioned in Section 2.4, it was determined that no additional locations for passing lanes are recommended along SR-52. Therefore, a CMF for Alternative B was not applicable to the predictive crash analysis for SR-52.

Tables 31 – 32 provide per-year breakdowns of the predictive crash analysis for each study corridor's alternatives. Furthermore, the projected crash totals are separated by crash severity. The two designations are fatal and injury (KABC) and property damage only (PDO) crashes. **Table 31** contains the yearly breakdown for the SR-167 study corridor, while **Table 32** contains the yearly breakdown for the SR-52 study corridor.

Table 31: SR-167 Projected Crashes (2026-2045)

Year	No-Build Alternative – 2-Lane Undivided			Alternative A – 4-Lane Divided			Alternative B – 2-Lane Undivided with Passing Lanes		
	Crashes by Severity		Total Crashes	Crashes by Severity		Total Crashes	Crashes by Severity		Total Crashes
	KABC	PDO		KABC	PDO		KABC	PDO	
2026	2.41	5.10	7.51	0.96	0.80	1.76	1.57	4.28	6.67
2027	2.51	5.30	7.81	1.00	0.83	1.83	1.63	4.49	6.93
2028	2.60	5.51	8.11	1.03	0.87	1.91	1.69	4.69	7.20
2029	2.70	5.71	8.41	1.07	0.91	1.98	1.76	4.90	7.47
2030	2.80	5.92	8.71	1.11	0.95	2.05	1.82	5.10	7.73
2031	2.89	6.12	9.01	1.14	0.98	2.13	1.88	5.30	8.00
2032	2.99	6.32	9.31	1.18	1.02	2.20	1.94	5.51	8.27
2033	3.09	6.53	9.61	1.22	1.06	2.28	2.01	5.71	8.53
2034	3.18	6.73	9.92	1.25	1.10	2.35	2.07	5.92	8.80
2035	3.28	6.94	10.22	1.29	1.14	2.43	2.13	6.12	9.07
2036	3.38	7.14	10.52	1.33	1.18	2.50	2.19	6.32	9.33
2037	3.47	7.34	10.82	1.36	1.21	2.58	2.26	6.53	9.60
2038	3.57	7.55	11.12	1.40	1.25	2.65	2.32	6.73	9.87
2039	3.67	7.75	11.42	1.44	1.29	2.73	2.38	6.94	10.13
2040	3.76	7.96	11.72	1.47	1.33	2.80	2.44	7.14	10.40
2041	3.86	8.16	12.02	1.51	1.37	2.88	2.51	7.34	10.67
2042	3.95	8.36	12.32	1.54	1.41	2.95	2.57	7.55	10.94
2043	4.05	8.57	12.62	1.58	1.45	3.03	2.63	7.75	11.20
2044	4.15	8.77	12.92	1.62	1.49	3.11	2.70	7.96	11.47
2045	4.24	8.98	13.22	1.65	1.53	3.18	2.76	8.16	11.74
TOTAL	**75.23**	**159.13**	**234.36**	**29.64**	**26.01**	**55.64**	**48.90**	**159.13**	**208.03**

Table 32: SR-52 Projected Crashes (2026-2045)

Year	No Build Alternative – 2-Lane Undivided			Alternative A – 4-Lane Divided		
	Crashes by Severity		Total Crashes	Crashes by Severity		Total Crashes
	KABC	PDO		KABC	PDO	
2026	0.76	1.61	2.37	0.38	0.17	0.56
2027	0.79	1.68	2.47	0.40	0.18	0.58
2028	0.82	1.74	2.56	0.41	0.19	0.60
2029	0.85	1.81	2.66	0.43	0.20	0.63
2030	0.88	1.87	2.75	0.44	0.21	0.65
2031	0.91	1.93	2.85	0.45	0.22	0.67
2032	0.95	2.00	2.94	0.47	0.23	0.70
2033	0.98	2.06	3.04	0.48	0.24	0.72
2034	1.01	2.13	3.13	0.50	0.25	0.74
2035	1.04	2.19	3.23	0.51	0.26	0.77
2036	1.07	2.26	3.32	0.53	0.27	0.79
2037	1.10	2.32	3.42	0.54	0.27	0.82
2038	1.13	2.39	3.51	0.56	0.28	0.84
2039	1.16	2.45	3.61	0.57	0.29	0.86
2040	1.19	2.52	3.70	0.58	0.30	0.89
2041	1.22	2.58	3.80	0.60	0.31	0.91
2042	1.25	2.64	3.89	0.61	0.32	0.94
2043	1.28	2.71	3.99	0.63	0.33	0.96
2044	1.31	2.77	4.08	0.64	0.34	0.98
2045	1.34	2.84	4.18	0.66	0.35	1.01
TOTAL	**23.78**	**50.30**	**74.09**	**11.71**	**5.90**	**17.61**

2.7 Hurricane Evacuation Analysis

During hurricane evacuations, mobility is severely restricted for residents of the Wiregrass region, and the current facilities carrying evacuees are above capacity according to Evacuation Model Technical Document from the Florida Division of Emergency Management (FDEM). Data was collected from the Emerald Coast Regional Council and FDEM for a planning level assessment of the evacuation time and volume for each hurricane category. FDEM model evacuation traffic volumes from Bay County, Washington County, and Holmes County were distributed across three adjacent hurricane evacuations routes established by the ALDOT Statewide Transportation Plan: AL-167/FL-79, AL-109/FL-77, and US-231.

Figure 18 displays a map of the planning-level assessment of the three Florida counties, the evacuation routes, and the percentage of traffic from each county assigned to each evacuation route.

According to the FDEM models, evacuation levels correlate to the Saffir-Simpson Hurricane Scale and the anticipated level of storm surge that could be expected from a particular storm. These are categorized as Levels A (Category 1), B (Category 2), C (Category 3), D (Category 4), and E (Category 5).

Table 33 shows FDEM's regional clearance times in relation to evacuation levels. Volume to capacity (V/C) ratio is a common metric used in travel demand modeling to evaluate the overall capacity. V/C ratios across the clearance times were used to compare the No Build and Build Alternative A scenarios. Evacuation time capacity is a measure of the number of vehicles that can be evacuated across the evacuation time interval.

Existing capacity represents the system-wide capacity for the three routes, measured in vehicles per day (VPD), while the improved capacity represents the capacity if SR-167/FL-79 were widened to four lanes from I-10 to Enterprise, Alabama. The 2025 Operational Scenario was used for analysis.

Table 33: FDEM Model Regional Clearance Times

Scenario Type	Clearance Time Type	Evacuation Level Clearance Time (Hours)				
		Level A	Level B	Level C	Level D	Level E
2020 Base	Regional	16.5	20	21.5	34.5	36
2025 Base	Regional	17	21	23.5	41.5	42
2020 Operational	Regional	15.5	17	20.5	26	30
2025 Operational	Regional	15.5	18	21	27.5	35

Modeled evacuation times and capacities were compared in both the No Build and Alternative A scenarios, which are outlined in **Table 34**.

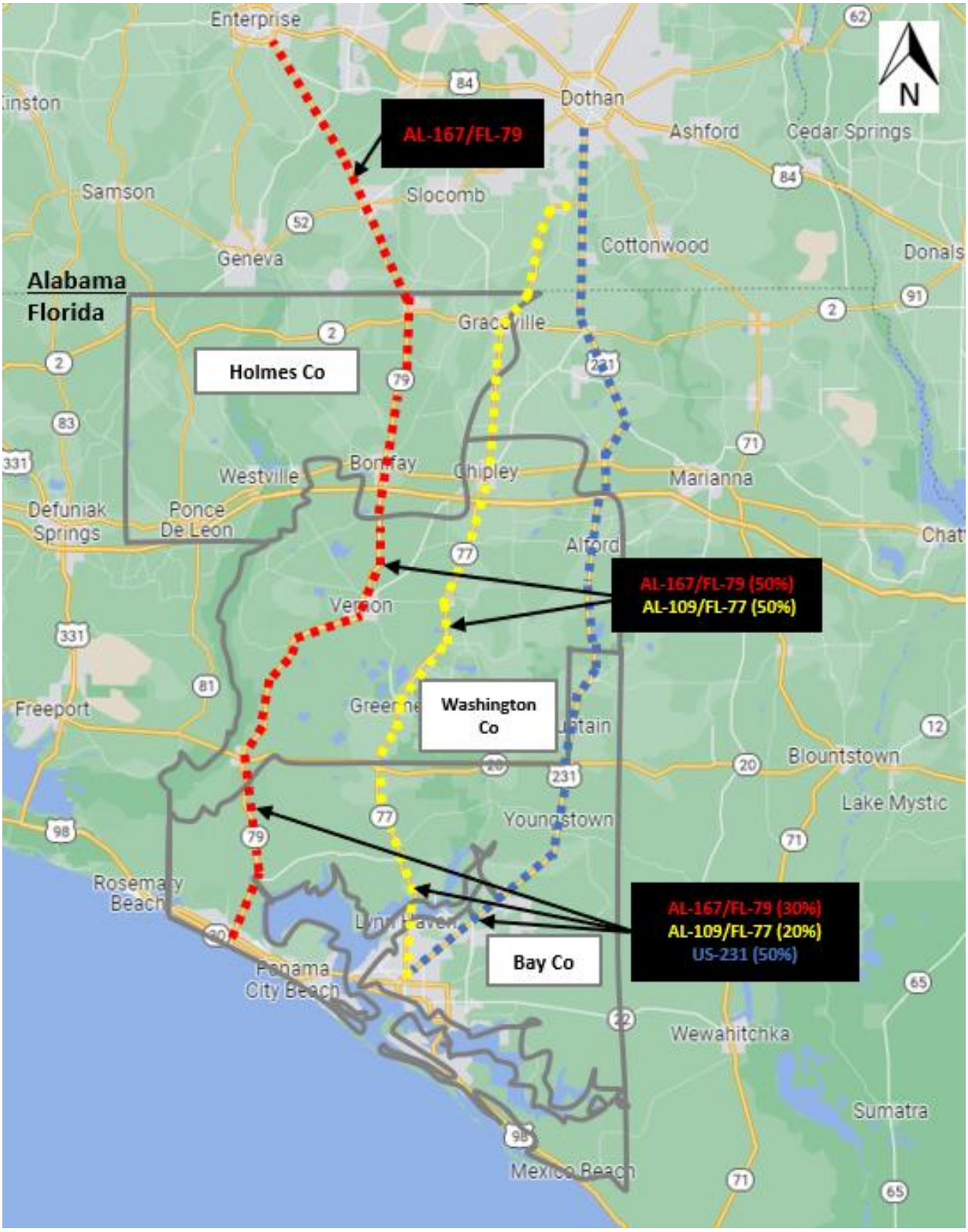


Figure 18: Planning-Level Hurricane Evacuation Analysis System Map

Table 34: Evacuation Time and System Capacity

Evacuation Level	Hurricane Category	Clearance Time (Hours)	No Build System Capacity (VPD)	Alternative A System Capacity (VPD)
A	1	15.5	61,450	69,500
B	2	17.0	61,450	69,500
C	3	21.0	61,450	69,500
D	4	27.5	61,450	69,500
E	5	35.0	61,450	69,500

*Alternative A: Widen AL-167 and FL-79 to Four Lane Divided Typical Section from I-10 to Enterprise

Table 35 contains the results of the planning-level evacuation assessment. A V/C ratio of 1.0 or greater indicates that a roadway is above capacity.

Table 35: Planning-Level Evacuation Assessment Results

Evacuation Level	No Build Evacuation Time Capacity	Alt A Evacuation Time Capacity	No Build V/C	Alt A V/C	Increased Evacuation Capacity
A	39,686	44,885	1.06	0.94	13.1%
B	46,088	52,125	1.12	0.99	13.1%
C	53,769	60,813	1.49	1.32	13.1%
D	70,411	79,635	1.28	1.13	13.1%
E	89,615	101,354	1.05	0.93	13.1%

Based on this planning-level assessment of modeled hurricane evacuation scenarios, widening AL-167 and FL-79 to four lanes from I-10 to Enterprise, Alabama, is estimated to increase the evacuation capacity of Bay, Washington, and Holmes Counties by approximately 13%. Notably, this increase in evacuation capacity would bring Evacuation Level A and Evacuation Level E from above evacuation time capacity to an acceptable evacuation time in the 2025 Operation scenario.

2.8 Opinions of Probable Cost

The planning-level opinions of probable cost provided in this report are based on engineering experiences and represent the best judgment within the industry. The engineer does not guarantee that proposals, bids, or actual costs will not vary from the engineer's opinion of probable cost.

Construction engineering and inspection (CE&I – 15%), preliminary engineering (PE – 15%), ALDOT indirect costs (13.7%), and contingency (15%) were included in the opinions of probable cost. The percentages for these services are typical of projects where federal funding is used. The 15% for Preliminary Engineering is associated with preparing the NEPA

environmental document, performing survey, geotechnical services, traffic signal design, and roadway design. Right-of-way acquisition and utility relocation costs are included in the opinions of probable cost, but both are highly variable and dependent on several factors not known at this time. Costs do not include estimates for environmental mitigation, which should be anticipated and budgeted for the overall project cost.

One project per study corridor is assumed. **Table 36** provides the opinions of probable cost for each alternative along SR-167, and **Table 37** provides the opinions of probable cost for each alternative along SR-52. Detailed breakdowns of each opinion of probable cost are included in **Appendix K**.

Table 36: Opinions of Probable Cost for SR-167 Alternatives

Category Description	Alternative A	Alternative B
Construction, Contingency, and CE&I	$154 million	$25 million
Preliminary Engineering (15%)	$23 million	$3.8 million
Utility Relocation	$18 million	$3.3 million
Right-of-Way Acquisition	$18 million	$3.4 million
ALDOT Indirect Costs (13.7%)	$29 million	$4.9 million
Project Total	**$242 million**	**$41 million**

Table 37: Opinions of Probable Cost for SR-52 Alternatives

Category Description	Alternative A & Option 1 (South)	Alternative A & Option 2 (North)	Alternative A & Option 3 (Existing Alignment)	Alternative B (No Bypass)
Construction, Contingency, & CE&I	$146 million	$156 million	$127 million	$2.6 million
Preliminary Engineering (15%)	$22 million	$23 million	$19 million	$0.4 million
Utility Relocation	$12 million	$13 million	$9.4 million	$1.7 million
Right-of-Way Acquisition	$14 million	$16 million	$9.5 million	$1.7 million
ALDOT Indirect Costs (13.7%)	$26 million	$29 million	$23 million	$0.4 million
Project Total	**$220 million**	**$237 million**	**$188 million**	**$6.8 million**

Planning-level opinions of probable cost were developed on a per-mile basis, utilizing FDOT Cost Per Mile Models Reports for corridor widening. Opinions of probable cost for structures were calculated based on the square footage, while turn lane improvements and traffic signal improvements were captured as lump sum costs. However, intersection configuration is expected to fluctuate as the project progresses.

Utility and right-of-way costs were projected based on the ALDOT Estimate Chart (2010) and adjusted for inflation. The opinions of probable cost were prepared for the 2023 planning year. This number should be increased to account for rising costs due to inflation, since the improvements will not be implemented in 2023.

2.9 Evaluation Matrix

An evaluation matrix was compiled to compare the benefits and challenges of each study corridor's improvement alternatives. **Table 38** summarizes SR-167 alternatives, while **Table 39** summarizes SR-52 alternatives.

Table 38: SR-167 Alternatives Evaluation Matrix

Category Description	No Build Alternative	Alternative A	Alternative B
Addresses Evacuation Capacity Purpose & Need	No	Yes – Increases Capacity by 13%, Brings Category 1 and 5 Hurricane Scenarios below Capacity	Neutral – Marginal Improvement to Capacity Metrics
Addresses Economic Development Purpose & Need	No	Yes – Provides Multilane Highway Access to Developable Land near Workforce	Neutral
Addresses Roadway Safety Performance Purpose & Need	No – Service Life Projection of 75 fatal or injury crashes	Yes – Service Life Projection of 30 fatal or injury crashes	Yes – Service Life Projection of 49 fatal or injury crashes
Segment-Based Traffic Operations	LOS C	LOS A	LOS C
Opinion of Probable Cost	Routine Maintenance	$234 million	$28 million
Environmental Impact	Neutral	Considerable	Moderate
Major Structure Impacts	None	Three (Choctawhatchee River)	None

Table 39: SR-52 Alternatives Evaluation Matrix

Category Description	No Build Alternative	Alternative A	Alternative B
Addresses Economic Development Purpose & Need	No	Yes – Provides Multilane Highway Access to Developable Land near Workforce	No
Addresses Roadway Safety Performance Purpose & Need	No – Service Life Projection of 24 fatal or injury crashes	Yes – Service Life Projection of 12 fatal or injury crashes	Partial – Service Life Projection of 24 fatal or injury crashes
Addresses Rural Access to Basic Services Purpose & Need	No	Yes – Continuous Multilane Highway between Geneva & Dothan	No
Segment-Based Traffic Operations	LOS B – D	LOS A	LOS B – D
Opinion of Probable Cost	Routine Maintenance	$175 million to $192 million (See Table 40 for Bypass Option Evaluation Matrix)	$6.7 million
Environmental Impact	Neutral	Considerable	Moderate
Major Structure Impacts	None	Two (Choctawhatchee River)	None

Table 40 includes an evaluation matrix comparing each preliminary Hartford bypass option for SR-52 to connect the future four-lane section east of Hartford to the four-lane segment proposed in Alternative A.

Table 40: SR-52 Alternative A – Preliminary Hartford Bypass Options

Category Description	Option 1 (South Bypass)	Option 2 (North Bypass)	Option 3 (Widen Existing)
Opinion of Probable Cost (Including Alternative A on SR-52)	$220 million	$237 million	$187 million
Approximate Bypass Length	3 to 4 miles	4 to 5 Miles	2.5 miles (Existing SR-52 Alignment)
Environmental Impact	Considerable	Considerable	Considerable; 6(f) Hartford Recreational Park
Property Impacts	Mostly Agricultural, Some Residential	Mostly Agricultural, Some Residential	Town Center (Residential, Commercial)

2.10 Phasing and Prioritization

Should any alternative move forward, the cost to implement improvements along either study corridor is considerable. Constructing the full buildout of either alternative at one time may not be financially feasible. Developing an implementation plan that identifies phasing and prioritization will provide a guide to move forward with the project. Phasing can be driven by geography, constructability, or outside factors increasing the urgency to implement improvements between logical termini.

If the study corridor is further divided into phases, each phase must maintain *logical termini*. The USDOT defines logical termini as "rational endpoints for a transportation improvement and rational endpoints for a review of environmental impacts." If federal funding is utilized, the study corridor would need to be evaluated based on logical termini of any one phase prior to initiating design and construction. Securing federal funding to purchase project right-of-way for full buildout while only pursuing the actual construction of a partial typical section can be difficult, because the need for the entire study area's right-of-way must be justified. All federal guidelines must be followed when purchasing right-of-way if federal money is utilized.

A review of rational locations to split for geographical phasing of potential projects was completed. Along SR-167, the following logical termini between SR-192 and the Florida State Line should be considered:

- State Route 92 (Traffic Volume Differential North and South of Intersection)
- Choctawhatchee River (Three Bridge Structures to be Replaced or Upgraded)
- City of Hartford (Intersection with SR-52)

It should be noted that FHWA may not consider the state line as a logical terminus for Alternative A, if FL-79 remains a two-lane highway without a programmed project for widening.

Along SR-52, the following logical termini for Individual phasing between SR-196 and SR-167 should be considered:

- Existing Passing Lane (Four-Lane Section of Pavement Exists)
- Choctawhatchee River (Two Bridge Structures to be Replaced or Upgraded)

Should Alternative B move forward, passing lanes and intersection improvements could be designed and constructed one at a time as funding becomes available.

If phased, a project should then be prioritized to determine the order of construction. Factors affecting prioritization include funding, public involvement, political priorities, and operational analysis. According to the traffic and safety operations analysis performed in this study, no operational conditions are anticipated to warrant prioritization of a specific segment. If the decision is made to phase the project, prioritization should be examined further during the environmental document phase.

3 Stakeholder Involvement

The stakeholder group assembled by the project team included local government officials, state government officials, local chambers of commerce, business owners, and utility companies. **Table 41** lists the stakeholder group and project team members.

Table 41: Stakeholder Group & Project Team Members

Agency	Name(s)
Office of Senator Tommy Tuberville	Josh Ferguson
Office of Senator Katie Britt	Melanie Hill
Office of Congressman Barry Moore (AL-02)	Alex Reynolds, Shannon Smith
Alabama State Senate District 29	Senator Donnie Chesteen
Alabama State Senate District 31	Senator Josh Carnley
Alabama State House District 87	Representative Jeff Sorrells
Alabama State House District 91	Representative Rhett Marques
Alabama State House District 93	Representative Steve Clouse
ALDOT – Southeast Region	Daryl Calhoun, Justin Palmer, Mark Graham
Barge Design Solutions	Gregg Bissot, Michael Cole, Joe Nieder
Coffee County	Rod Morgan
Couch Aggregate	Steve Shaw
Dale County	Steve McKinnon
Dothan, City of	Mayor Mark Saliba, Kevin Cowper
Dothan Area Chamber of Commerce	Colton Cureton, Lori Wilcoxon, Matt Parker
Enterprise, City of	Mayor William Cooper, Jonathan Tullos
Geneva, City of	Mayor David Hayes
Geneva County	Justin Barfield
Geneva County Commission	Toby Seay
Hartford, City of	Mayor Wendel Nolen
Houston County	Brandon Shoupe, Mark Culver
Sain Associates	Alicia Bailey, Becky White, David Coggin, Jack Kimbrough, Jr., Nathan Currie
SEARPDC	Scott Farmer, Emily Van Scyoc, Chris Rush
Wiregrass EDC	Jessie Quillen
Wiregrass Electric Cooperative	Brad Kimbro, Jennifer Ward
Wiregrass Foundation	Troy Fountain

Meeting minutes and attendance records from each stakeholder group meeting are included in **Appendix L**.

Project Kickoff Meeting

A project kickoff meeting was held on May 25, 2022, at the Wiregrass Electric Cooperative office in Hartford, Alabama. The purpose of the meeting was to discuss the project background, identify study priorities, and determine expectations for the study. The project team and representatives from the stakeholder group were present at the meeting.

Stakeholder Group Progress Meeting #1

A project progress meeting was held on August 11, 2022, at the Wiregrass Electric Cooperative office in Hartford, Alabama. The purpose of the meeting was to discuss the existing conditions transportation analysis results, the purpose and need for improvements, the pre-NEPA environmental evaluation, public involvement strategy, and next steps for the study. The project team and representatives from the stakeholder group were present at the meeting.

Stakeholder Group Progress Meeting #2

A project progress meeting was held on January 18, 2023, at the Wiregrass Electric Cooperative office in Hartford, Alabama. The purpose of the meeting was to discuss the format of public involvement meetings, the public involvement meeting materials, and project deliverables. The project team and representatives from the stakeholder group were present at the meeting.

Public Involvement Meetings

Two public involvement meetings with identical content were facilitated during the study. The purpose of the meetings was to solicit feedback on alternative from the public and gather local knowledge from nearby residents. The first meeting was held on Tuesday, March 7, 2023, from 5:00 PM to 7:00 PM at the Enterprise Civic Center in Enterprise, Alabama. The second meeting was held on Tuesday, March 14, 2023, from 5:00 PM to 7:00 PM at the Wiregrass Electric Cooperative office in Hartford, Alabama. Advertisement for each meeting included social media outreach, newspaper advertisements, and word-of-mouth outreach to local community organizations.

The meetings were open house format with no formal presentation. At the first station, a slideshow played on loop throughout the meeting with the following information:

- Instructions for attendees and the role of public input in the project
- Current stage of the project development process
- Purpose and goals of the study
- Purpose and need for improvement along each study corridor
- Project challenges

A second station displayed maps of the study corridor for attendees to identify property and points of interest along the corridor, while a third station contained the typical

sections of Alternative A and Alternative B. Attendees were encouraged to complete a comment form for submission at the meeting or by mail for the duration of the comment period, which was two weeks following the meeting. **Photos 4 – 5** show images from the meeting held in Enterprise Civic Center. Public involvement materials shown at the meeting are included in **Appendix M**, and completed comment forms are included in **Appendix N**.

Photo 4: Attendees discuss the study area with SEARPDC's Executive Director Scott Farmer

Photo 5: View of Slides at Station #1

Stakeholder Group Progress Meeting #3

The final project progress meeting was held on August 23, 2023, at the Wiregrass Electric Cooperative office in Hartford, Alabama. The purpose of the meeting was to discuss the results of the study and solicit final comments on the draft report, which was submitted to SEARPDC on June 23, 2023. The project team and representatives from the stakeholder group were present at the meeting.

4 Funding Sources

Costs associated with the design and construction of alternatives is expected to exceed current available resources. Federal, state, and local funding sources are available to pursue. Federal programs are administered by ALDOT.

Table 42 details funding sources, the category of the source and type of project for which the funding can be used. Funding sources are complex and constantly evolving. The Bipartisan Infrastructure Law (BIL) passed in 2022 authorized many new competitive grant programs and re-authorized many of the formula funding from the previous transportation bill, the Fixing America's Surface Transportation (FAST) Act, from FY 2016 – FY 2020 and further extended in FY 2021.

Table 42: Funding Source Options

Funding Source	Category	Match Type
Surface Transportation Block Grant (STBG)	Federal	80% Federal / 20% Local
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	Federal	80% Federal* / 20% Local
Infrastructure for Rebuilding America (INFRA)**	Federal	80% Federal* / 20% Local
Mega Grant Program (Mega)**	Federal	80% Federal* / 20% Local
Rural Surface Transportation Grant (Rural)**	Federal	80% Federal* / 20% Local
Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)	Federal	80% Federal* / 20% Local
Alabama Transportation Infrastructure Bank (ATIB)	State	Loan
Alabama Transportation Rehabilitation and Improvement Program – II (ATRIP-II)	State	Up to 100% State

*Federal match can increase above 80% if a project is located in a Historically Disadvantaged Community or Area of Persistent Poverty, as defined by USDOT.

**Part of the three-program Multimodal Project Discretionary Grant Opportunity (MPDG) in FY 2022.

SR-167 and SR-52 are eligible facilities under each program listed in **Table 42**. SEARPDC, cities, counties, or a combination of multiple entities are all eligible to apply for funding in each of the programs from **Table 42**, except for the STBG. This study was funded through a BUILD planning grant, which is a former iteration of RAISE.

Federal

Federal funding is ideal for large transportation projects which require more detailed engineering design, right-of-way acquisition, and utility relocation. To move forward with implementing a federally funded project, the next step is to request inclusion of a project in the Alabama Statewide Transportation Improvement Plan (STIP). Once funds are in place, an environmental document will need to be prepared. The environmental document must include technical studies and public involvement outreach necessary to comply with procedures of NEPA. Once the environmental study has been completed, design will be finalized, followed by construction. If additional right-of-way is required, acquisition would be conducted prior to construction.

Federal funding programs have varying funding amounts, and each program has specific requirements and stipulations associated with project eligibility. Since the BIL was passed, the USDOT releases a Notice of Funding Opportunity (NOFO) whenever the application acceptance period begins for each program's fiscal year. A summary of each federal funding source from **Table 42** is included below.

The **Surface Transportation Block Grant (STBG)** is a federal aid program included in BIL and administered by ALDOT. STGB provides "flexible funding that may be used by States and localities for projects to preserve and improve the conditions and performance on any Federal-aid highway." As a formula-based federal aid program, the STBG differs from the competitive grant programs such as RAISE, INFRA, Mega, Rural, and PROTECT. STBG funds may be used to match federal funds in certain competitive grant programs such as PROTECT, but this is not permitted in most competitive grant programs (RAISE, INFRA, Mega, Rural).

The **Rebuilding American Infrastructure with Sustainability and Equity (RAISE)** competitive grant program provides funding through the USDOT and replaced the BUILD and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. One benefit of RAISE grant funds is that they allow project sponsors to obtain funding for multi-modal and multi-jurisdictional projects that are typically difficult to fund using traditional programs. Construction and pre-construction activities are RAISE eligible. Applications for RAISE funding should include a benefit-cost analysis for the proposed project. $1.5 billion was the total funding amount authorized by the BIL for FY2023, not including the additional $800 million for the program from the FY 2023 Appropriations Act. The minimum award size in FY 2023 for rural areas was $1 million, while the maximum award was $25 million. Any FY 2023 funding is required to be expended by September 2032. The FY 2024 NOFO is expected to be released in early 2024. If the project is located in an area of persistent poverty (APP) or historically disadvantaged community (HDC), the cost share can be up to 100% federally funded.

The **Infrastructure for Rebuilding America (INFRA)** competitive grant program which "awards project of national or regional significance to improve the safety, efficiency,

and reliability of the movement of freight and people in and across rural and urban areas." The primary focus of the program is to fund projects which eliminate freight bottlenecks and improve critical freight movements. INFRA is known statutorily as the Nationally Significant Multimodal Freight and Highway Projects program. $8 billion is the total funding amount for FY 2022 – 2026 nationwide.

The **Mega Grant Program (Mega)** is a competitive grant program which funds "large, complex projects that are difficult to fund by other means and likely to generate national or regional economic, mobility, or safety benefits." Mega is known statutorily as the National Infrastructure Project Assistance program. Eligible projects must be located along the National Multimodal Freight Network, the National Highway Freight Network, or the National Highway System. Applications should include a benefit-cost analysis for the proposed project. $5 billion is the total funding amount for FY 2022 – 2026 nationwide.

The **Rural Surface Transportation Grant Program (Rural)** is a competitive grant program supporting "projects to improve and expand the surface transportation infrastructure in rural areas to increase connectivity, improve the safety and reliability of the movement of people and freight, and generate regional economic growth and improve quality of life." Applications should include a benefit-cost analysis for the proposed project. The total funding amount for FY 2022 – FY 2026 is $2 billion nationwide.

For FY 2022, the INFRA, Mega, and Rural grant programs were part of a three-program NOFO entitled **Multimodal Project Discretionary Grant Opportunity (MPDG)**. Provides Federal financial assistance to highway and bridge, intercity passenger rail, railway-highway grade and separation, wildlife crossing, public transportation, marine highway, and freight and multimodal projects, or groups of such projects, of national or regional significance, as well as to projects to improve and expand the surface transportation infrastructure in rural areas. Applications should include a benefit-cost analysis for the proposed project. For FY 2022, MPDG authorized up to $1 billion in Mega funding, up to $1.55 billion in INFRA funding, and up to $300 million in Rural funding.

The **Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)** program is a discretionary grant program aimed at funding projects "to address the climate change crisis by improving the resilience of the transportation system." PROTECT targets the improvement of evacuation routes as a specific application. Additionally, PROTECT funding is eligible for the percentage of the project improvements which directly address the resiliency of a transportation facility. Applications should include a benefit-cost analysis for the proposed project. Across FY 2022 and FY 2023, a total of $848 million is available nationwide for the PROTECT discretionary grant program. PROTECT is unique in allowing other federal funds to be used for the local cost match.

For additional details on all BIL competitive grant programs, the following USDOT link provides resources for applicants:
https://www.fhwa.dot.gov/bipartisan-infrastructure-law/grant_programs.cfm

State

Alabama Transportation Infrastructure Bank (ATIB) was created in 2021 by ALDOT with a primary focus on assisting in financing major qualified projects which improve transportation facilities for public purposes. The minimum loan amount is $5,000,000, and the loan term is not to exceed the useful life of the project. Any government entity or joint group of government entities are eligible to apply. Applications are accepted throughout the year.

Alabama Transportation Rehabilitation and Improvement Program-II (ATRIP II) was created in 2019 by the Rebuild Alabama Act and is administered by ALDOT. Eligible projects include transportation projects that improve any state-maintained highway system. Projects with a primary focus on local roads are not eligible. For ATRIP II projects, ALDOT will perform the preliminary engineering as an eligible cost to the project if it has the capacity to do so. A project sponsor can request to perform the preliminary engineering; however, preliminary engineering performed by any entity other than ALDOT is not eligible for ATRIP II funding. Right-of-way acquisition is an ATRIP II eligible activity, but utility relocation is not. For FY 2023, the maximum funding amount per project was set at $2 Million. Because of the maximum funding amount per project, this funding source is only feasible for individual implementation of passing lanes within Alternative B or specific intersection improvements within Alternative B.

5 Next Steps

This report documents the study undertaken to further evaluate the improvement of SR-167 from SR-192 in Enterprise to the Florida State Line and SR-52 from SR-196 in Geneva to SR-167 in Hartford.

If it is decided to move forward with implementing a federally funded project, the next step would be to request inclusion of a project in the ALDOT STIP. Once funds are in place for a project an environmental document will need to be prepared. The environmental document must include technical studies and public outreach necessary to comply with procedures of NEPA. Once the environmental study has been completed, design will be finalized, followed by construction. Right-of-way acquisition will be conducted prior to construction.