

State Route **316** Planning Study

Final Report



State Route 316 Planning Study

Prepared By:

Arcadis U.S., Inc.
2839 Paces Ferry Road, Suite 1000
Atlanta, GA 30339
Phone: 770 431 8666
Fax: 770 435 2666

Modern Mobility Partners, LLC.
730 Peachtree Street NE, Suite 650
Atlanta, GA 30308
Phone: 404 623 6759

Our Ref:
30138009

Prepared For:

Georgia Department of Transportation
Office of Planning
600 W. Peachtree Street NW, 5th Floor
Atlanta, GA 30308

Contents

Acronyms and Abbreviations	vii	4.2 Future Traffic Volumes	25
Executive Summary	ES-1	4.2.1 Traffic Volumes	25
1 Study Overview	1	4.2.2 PM Peak Hour Speeds	25
1.1 Study Area and SR 316 Crossings	2	4.2.3 Level of Service	25
1.2 Previous Plan and Program Review	5	4.3 Baseline Alternative Conclusions	25
1.3 Developments of Regional Impact	6	5 Build Alternatives	31
2 Existing Conditions	9	5.1 Build Alternatives	31
2.1 Transportation System Data and Roadway Characteristics	9	5.1.1 Build 1 Alternative	31
2.1.1 Functional Classification	9	5.1.2 Build 2 Alternative	32
2.1.2 Number of Lanes	10	6 Evaluation and Comparison of Alternatives	35
2.1.3 Posted Speed Limits	10	6.1 Predicted Safety Analysis	35
2.1.4 Crossings	10	6.2 Corridor Delay and Level of Service	39
2.2 Existing Land Use	12	6.2.1 Delay	39
2.3 Crash Analysis	12	6.2.2 Level of Service	40
2.3.1 Crash Frequency by Severity	13	6.3 Speed	43
2.3.2 Crash Rates	14	6.3.1 Travel Speeds	43
2.4 Existing Traffic Operations	14	6.4 Capital Cost Estimates	47
2.4.1 Traffic Volumes	14	6.5 Benefit-Cost Analysis	49
2.4.2 Peak Travel Speeds	16	7 Additional Capacity and Operational Improvements	51
2.4.3 Origin-Destination Data	16	8 Stakeholder and Public Engagement	55
2.4.4 Level of Service	17	8.1 Materials and Resources	55
3 Growth Rates	19	8.2 Phase 1	55
4 Future Baseline Alternative	21	8.2.1 Stakeholder Meetings	55
4.1 Future Crash Rates	22	8.2.2 Public Meetings	56
4.1.1 Estimated Future Crash Frequency	22	8.2.3 Survey 1	57
4.1.2 Estimated Future Crash Rates	22	8.3 Phase 2	58
		8.3.1 Stakeholder Meetings	58
		8.3.2 Public Meetings	59

Appendices

8.3.3 Survey 2	60	Appendix A	Existing Conditions AM Peak Data
8.3.4 Additional Projects Based on Public Feedback	61	Appendix B	Volume Development
9 Recommended Alternative and Corridor Implementation Plan	63	Appendix C	Future Baseline AM Peak Data
9.1 Final Recommendations	64	Appendix D	Alternative Comparison Data
9.2 Implementation Plan	67	Appendix E	Capital Cost Estimates
9.2.1 Phase 1	67	Appendix F	Stakeholder and Public Engagement Materials
9.2.2 Phase 2	67		
9.2.3 Phase 3	69		
9.2.4 Final Plan Recommendations with Phasing	69		
10 Project Fact Sheets	71		

Tables

Table ES-1 SR 316 Recommendations and Phasing	ES-8	Table 8-5 Improvements Based on Public Feedback	61
Table ES-2 Additional Capacity and Operational Improvements	ES-9	Table 9-1 SR 316 Reconstruction Projects Versus SR 316 Planning Study Recommendations	65
Table 1-1 SR 316 Crossings	4	Table 9-2 Other Programmed Projects Near Study Area	65
Table 1-2 Previous Plans Reviewed	5	Table 9-3 Phase 1 Projects	67
Table 1-3 Developments of Regional Impact Near or Along SR 316	7	Table 9-4 Phase 2 Projects	67
Table 2-1 Auxiliary Lanes Along SR 316	10	Table 9-5 Phase 3 Projects	69
Table 2-2 Summary of Crashes by Severity (2016-2020)	13	Table 9-6 SR 316 At-Grade Crossing Improvement Recommendations and Phasing	70
Table 3-1 Traffic Count Growth Rates (2012-2021)	19		
Table 3-2 Future Traffic Count Growth Rates (2030 and 2050))	19		
Table 4-1 Crossing Improvements Assumed to Be Completed in Baseline Alternative	21		
Table 4-2 Future Estimated Crash Frequency	23		
Table 5-1 Build 1 Alternative Crossing Improvements	32		
Table 5-2 Build 2 Alternative Crossing Improvements	32		
Table 6-1 Build 1 Alternative Cost Estimates	47		
Table 6-2 Build 2 Alternative Cost Estimates	48		
Table 6-3 Benefit-Cost Analysis for Build 1 and Build 2 Alternatives	49		
Table 7-1 Additional Capacity and Operational Improvements	51		
Table 7-2 BCA for Additional Capacity and Operational Improvements	53		
Table 8-1 Phase 1 Stakeholder Engagement Meetings	56		
Table 8-2 Phase 1 Public Engagement Meetings	57		
Table 8-3 Phase 2 Stakeholder Engagement Meetings	59		
Table 8-4 Phase 2 Public Engagement Meetings	60		

Figures

Figure ES-1 Study Goals	ES-1	Figure 2-5 SR 316 Reconstruction Projects at Major Crossings	12
Figure ES-2 Study Area	ES-2	Figure 2-6 Gwinnett, Barrow, and Oconee County Land Use	13
Figure ES-3 Existing Condition Analysis Categories	ES-1	Figure 2-7 Crash Rates Along SR 316 Compared to Statewide Average	14
Figure ES-4 Existing Crash Rates Compared to Statewide Average	ES-3	Figure 2-8 SR 316 Existing Daily Volumes	15
Figure ES-5 Existing PM Travel Speeds	ES-3	Figure 2-9 SR 316 Existing PM Peak Volumes	15
Figure ES-6 Estimated Baseline 2050 Crash Rates	ES-4	Figure 2-10 SR 316 Existing Daily Volumes	16
Figure ES-7 Baseline 2050 PM Travel Speeds	ES-5	Figure 2-11 Origin-Destinations on SR 316	16
Figure ES-8 Crossing Types	ES-5	Figure 2-12 SR 316 Existing PM Peak Level of Service	17
Figure ES-9 Gwinnett County Final Recommendations	ES-10	Figure 4-1 Baseline Alternative Configuration Changes	21
Figure ES-9 Barrow County Final Recommendations	ES-10	Figure 4-2 2030 Baseline Crash Rates	24
Figure ES-9 Oconee County Final Recommendations	ES-11	Figure 4-3 2050 Baseline Crash Rates	24
Figure 1-1 SR 316 Study Area	2	Figure 4-4 2030 Daily Volumes	26
Figure 1-2 SR 316 in Gwinnett County Current Crossing Configurations	3	Figure 4-5 2030 PM Peak Hour Volumes	26
Figure 1-3 SR 316 in Barrow County Current Crossing Configurations	3	Figure 4-6 2050 Daily Volumes	27
Figure 1-4 SR 316 in Oconee County Current Crossing Configurations	4	Figure 4-7 2050 PM Peak Hour Volumes	27
Figure 1-5 Development of Regional Impact Locations in SR 316 Planning Study Area	8	Figure 4-8 Existing PM Peak Hour Speeds	28
Figure 2-1 Existing Condition Categories and Data	9	Figure 4-9 2030 PM Peak Hour Speeds	28
Figure 2-2 Roadway Functional Classification, Bridges, and Railroad Crossings Along SR 316	9	Figure 4-10 2050 PM Peak Hour Speeds	29
Figure 2-3 SR 316 Travel Lanes	11	Figure 4-11 Existing PM Peak Hour Level of Service	29
Figure 2-4 Posted Speed Limits Along SR 316	11	Figure 4-12 2030 PM Peak Hour Level of Services	30
		Figure 4-13 2050 PM Peak Hour Level of Service	30
		Figure 5-1 Crossing Improvements	31
		Figure 5-2 Build 1 Alternative Crossing Improvements	33
		Figure 5-3 Build 2 Alternative Crossing Improvements	33
		Figure 6-1 Predicted Crash Reduction Along SR 316 — Baseline to Build 1 Alternative in 2030	35

Figure 6-2 Predicted Crash Reduction Along SR 316 — Baseline to Build 2 Alternative in 2030	36	Figure 6-22 Predicted PM Speed for Build 2 Alternative in 2050	46
Figure 6-3 Predicted Crash Reduction Along SR 316 - Baseline to Build 1 Alternative in 2050	37	Figure 7-1 Additional Capacity and Operational Improvements	52
Figure 6-4 Predicted Crash Reduction Along SR 316 - Baseline to Build 2 Alternative in 2050	37	Figure 9-1 Recommended At-Grade Crossing Improvements	63
Figure 6-5 Total Predicted Crashes, 2030	38	Figure 9-2 Recommended Additional Capacity and Operational Improvements	64
Figure 6-6 Total Predicted Crashes, 2050	38	Figure 9-3 Final Recommendations Performance Measures	66
Figure 6-7 2030 PM Peak Hour Delay	38	Figure 9-4 Limited Access Segments After Phase 1	68
Figure 6-8 2050 PM Peak Hour Delay	38	Figure 9-5 Limited Access Segments After Phase 2	68
Figure 6-9 2030 PM Peak Hour Delay by County	39	Figure 9-6 Limited Access Segments After Phase 3	69
Figure 6-10 2050 PM Peak Hour Delay by County	39		
Figure 6-11 2030 PM Peak Hour LOS for Baseline Alternative	40		
Figure 6-12 2030 PM Peak Hour LOS for Build 1 Alternative	41		
Figure 6-13 2030 PM Peak Hour LOS for Build 2 Alternative	41		
Figure 6-14 2050 PM Peak Hour LOS for Baseline Alternative	42		
Figure 6-15 2050 PM Peak Hour LOS for Build 1 Alternative	42		
Figure 6-16 2050 PM Peak Hour LOS for Build 2 Alternative	43		
Figure 6-17 Predicted PM Speed for Baseline Alternative in 2030	44		
Figure 6-18 Predicted PM Speed for Build 1 Alternative in 2030	44		
Figure 6-19 Predicted PM Speed for Build 2 Alternative in 2030	45		
Figure 6-20 Predicted PM Speed for Baseline Alternative in 2050	45		
Figure 6-21 Predicted PM Speed for Build 1 Alternative in 2050	46		

Acronyms and Abbreviations

ARC	Atlanta Regional Commission
BCA	Benefit-Cost Analysis
BCR	Benefit-Cost Ratio
CMF	Crash Modification Factor
CR	County Road
DRI	Development of Regional Impact
GDOT	Georgia Department of Transportation
HSM	Highway Safety Manual
HSS	Highway Safety Software
I-85	Interstate 85
LOS	Level of Service
MPH	Miles Per Hour
MS	Microsoft
PDO	Property Damage Only
PE	Preliminary Engineering
REMI	Regional Economic Models, Inc
RIRO	Right-In, Right-Out
ROW	Right of Way
SPF	Safety Performance Function
SR	State Route
TADA	Traffic Analysis & Data Application
TDM	Travel Demand Model
US	U.S. Route
VHD	Vehicle Hours of Delay

Executive Summary

State Route (SR) 316 is a critical east-west highway and one of Georgia’s fastest-growing corridors, extending from the northeastern portion of metropolitan Atlanta east to Athens. It is one of the primary routes to the University of Georgia in Athens. Since its construction which began in the 1960s, traffic volumes have increased because of continued population and employment growth in the area. High crash rates and traffic congestion have been identified as major challenges for the corridor.

Background

The SR 316 Planning Study is the latest in a series of studies and plans for the SR 316 corridor, which is vital for east-west movement in northeastern Georgia. The Georgia Department of Transportation (GDOT) has completed six previous studies and plans since 2002 that recommend converting the highway to a limited-access corridor.

GDOT is currently undertaking several SR 316 reconstruction projects under an initiative referred to as Transforming State Route 316. As part of this initiative, multiple crossings between SR 20 in Gwinnett County and the SR 10 Loop in Oconee County are in various stages of being improved, from fully completed, under construction, or in

engineering design. After completion of the SR 316 reconstruction projects, 12 at-grade crossings will remain. This SR 316 Planning Study addresses these crossings for which decisions regarding improvement type, funding, and implementation time frame have not yet been finalized. The intent of these crossing improvements is to bring the corridor to a limited-access facility.

Study Goals

The study’s overall goal is to examine SR 316 holistically to identify and recommend potential improvements beyond those included in the SR 316 reconstruction projects. All recommendations within this study address one or more of the following benefits:

-  Reduce the severity and frequency of crashes.
-  Reduce congestion and improve mobility.
-  Accommodate growth and economic development.

Figure ES-1 Study Goals

Study Area

The study area includes the 40-mile corridor

from Interstate 85 (I-85) in Gwinnett County to SR 10 Loop in Oconee County. The study area captures the remaining at-grade crossings not addressed by the SR 316 reconstruction projects as well as arterials crossing SR 316 in need of additional capacity and operational improvements. (Figure ES-2)

Existing Conditions

To understand the improvements needed to support the goals of the study – reduce crash severity and frequency, reduce congestion, and accomodate economic growth, it is important to understand the existing conditions of the SR 316 corridor. Existing conditions cover the following categories:



Roadway Characteristics
Functional Classification, Number of Lanes, Intersections, Posted Speed Limits



Land Use



Safety
Crash Frequency, Crash Rates



Existing Traffic Conditions
Volumes, Peak Travel Speed, Origin-Destinations, Level of Service

Figure ES-3 Existing Condition Analysis Categories

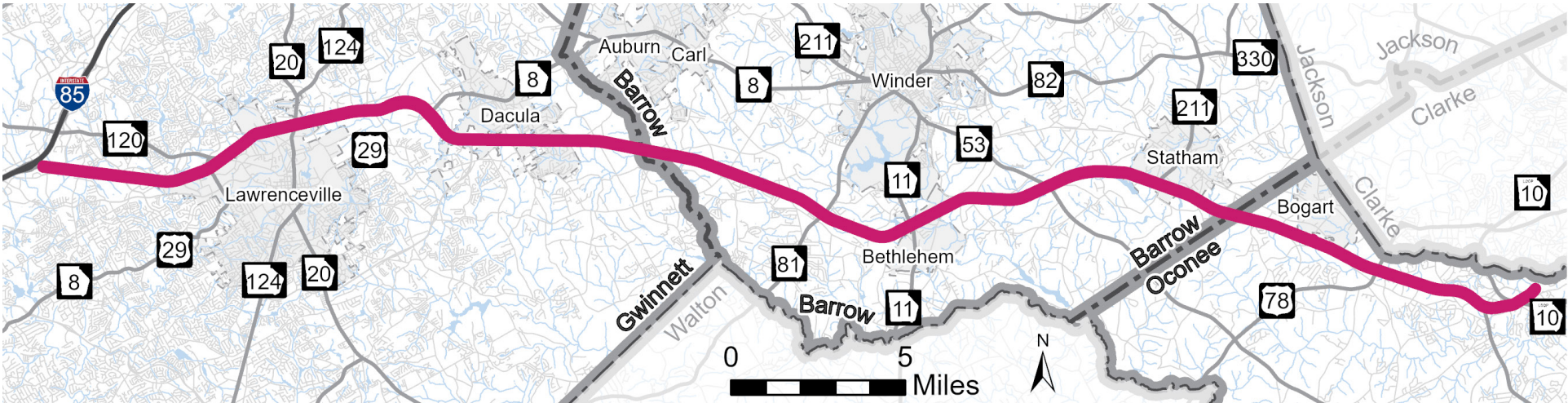


Figure ES-2 Study Area

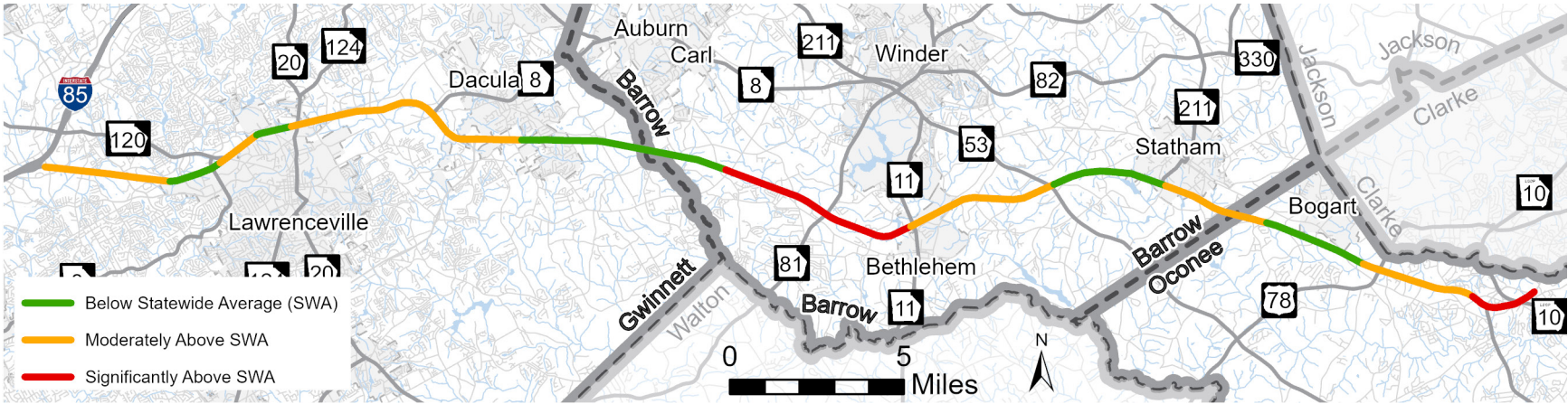


Figure ES-4 Existing Crash Rates Compared to Statewide Average

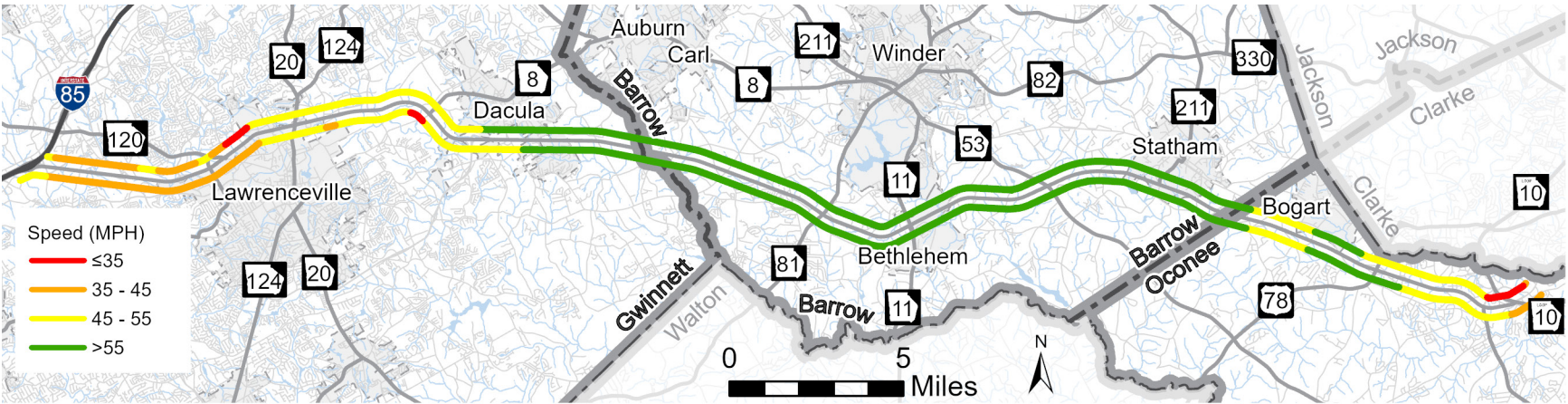


Figure ES-5 Existing PM Travel Speeds

SR 316 Planning Study

The major takeaway from the existing condition analysis is that crash rates along the corridor are significant and exceed the statewide average in many locations.

Motorists experience congestion and delay on either end of the corridor in Gwinnett and Oconee counties. Where congestion does not occur, high speeds and crashes do. The recommendations from this study intend to address both.

Baseline Alternative

An analysis was conducted to understand how the corridor will operate in the future if the SR 316 reconstruction projects planned to be under construction by 2025 are completed. To forecast traffic volumes and crash rates

as accurately as possible, the study team tested several growth percentages based on estimates from multiple reliable sources such as the Governor’s Office of Planning and Budget and the Atlanta Regional Commission.

The predicted crash rates for much of the corridor in 2050, with implementation of the SR 316 reconstruction projects, would be less than the current statewide average, with the exception of a small segment in Oconee County as there are no planned reconstruction projects in this area.

However, improvement in mobility, which is a key goal of the study, is still needed. Good mobility for motorists supports the economy by encouraging development and growth. Based on the evaluation of the Baseline

alternative, the results of the evaluation indicate additional improvements are needed to increase safety and mobility and to continue to support economic development. The SR 316 reconstruction projects will assist in reducing crashes, but they do not improve mobility to the extent needed to support continued development and growth along the corridor.

Alternatives Analysis

The SR 316 Planning Study focuses on the 12 at-grade crossings not included in the SR 316 reconstruction projects. These 12 crossings generally have lower traffic volumes than the SR 316 reconstruction project crossings.

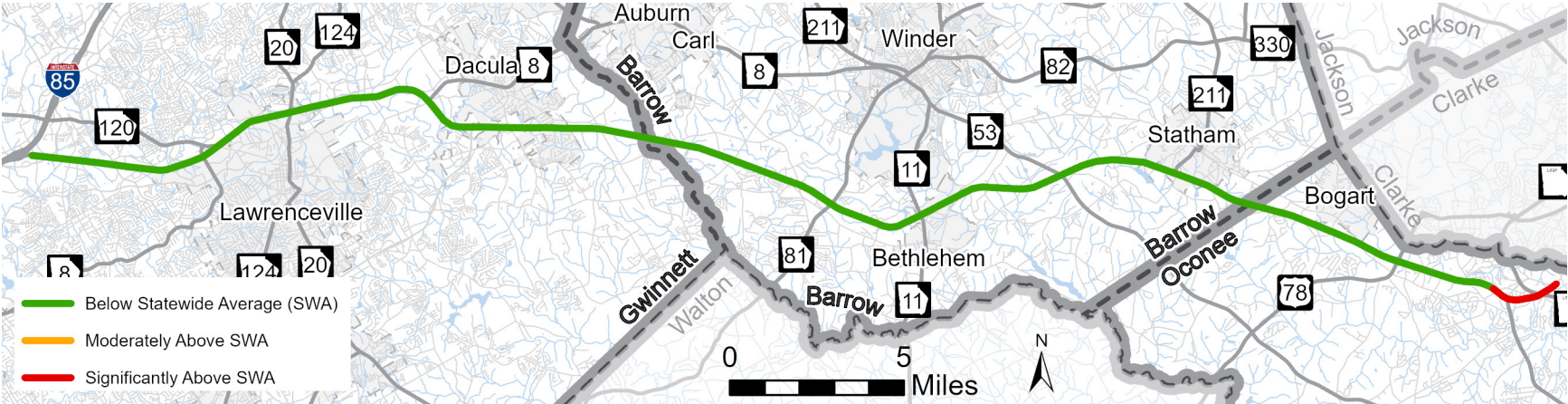


Figure ES-6 Estimated Baseline 2050 Crash Rates

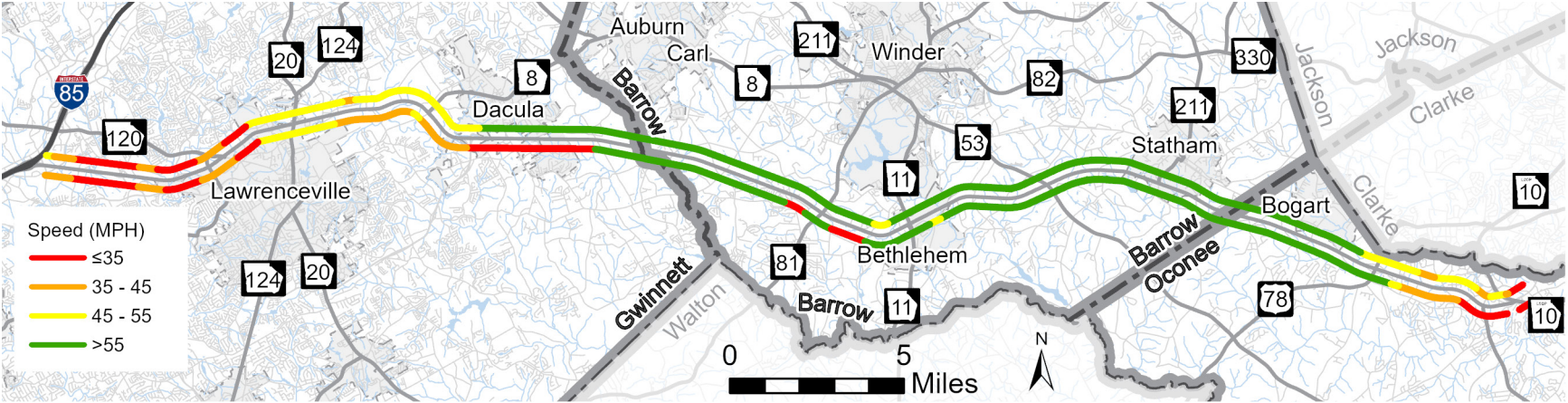


Figure ES-7 Baseline 2050 PM Travel Speeds

The goals for these remaining locations include:

-  Eliminate unsafe movements to reduce the severity and frequency of crashes.
-  Complete the transition of SR 316 to allow for free-flow movement to reduce congestion and improve mobility.
-  Maintain access to SR 316 or across SR 316 to accommodate future growth and economic development.

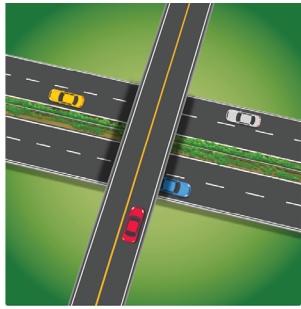
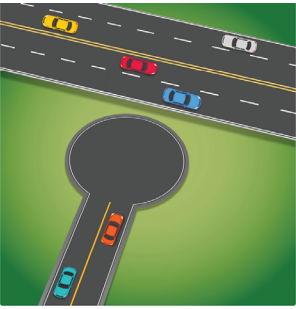
 Interchange SR 316 traverses over or under the side road with entrance and exit ramps. Rationale Connect SR 316 with high traffic arterials and major development.	 Grade Separation Side road bridges over SR 316 maintaining movement across SR 316. No access to or from SR 316 provided at side road. Rationale Facilitate movement across SR 316.	 Right-In, Right-Out Ramps offer access between SR 316 and the side road. Side road ends at SR 316. Rationale Facilitate access to SR 316 to support potential development.	 Traffic Reroute Side road access to SR 316 is closed, with alternative routes connecting to SR 316. Rationale Separate low-traffic residential or rural areas from high-speed roads with additional local road improvements.
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Figure ES-8 Crossing Types

SR 316 Planning Study

Two Build alternatives were developed and analyzed. The Build 1 and Build 2 alternatives propose changes in configurations to the 12 remaining at-grade access points. Build 1 reflects previously identified configurations, primarily interchanges, additional ramps, and at-grade crossings. Build 2 reflects some lower cost improvements at some access points such as traffic reroutes and right-in, right-out. These new improvements reflect input from stakeholders and the public and are intended to improve performance of SR 316 in terms of safety, delay reduction, and supporting economic development.

The Build 1 and 2 alternatives were compared against the Baseline alternative to determine which package of projects to advance to final recommendations. The comparison was based on four categories:

- **Safety** (Crash Reductions).
- **Corridor Delay** (Vehicle Hour Delay) as a measure of congestion.
- **Level of Service** (Vehicle to Capacity Ratio) as a measure of congestion.
- **Travel Speeds**.

A benefit-cost analysis was conducted for both Build alternatives to compare the value of the benefits that the alternative provides, which include safety, operations, and emission benefits, to the cost of the improvements. A ratio greater than 1.0

indicates the benefits outweigh the costs. Both Build alternatives have benefit-cost ratios over 1.0.

Additional Capacity and Operational Improvements

Based on comparison of the two Build alternatives and feedback received from stakeholders and the community, the study team determined that capacity and operational improvements are needed along SR 316 in addition to addressing the remaining at-grade crossings. These additional improvements are intended to target areas where level of service remains poor and where residents have expressed safety and mobility concerns. The additional improvements include a series of intersection improvements, widenings, and road extensions on arterials or crossroads of SR 316. These improvements also have a high benefit-cost ratio of 2.77.

Stakeholder and Public Engagement

Informing, engaging, and soliciting feedback from stakeholders and the public at-large are central to the success of the SR 316 Planning Study. Throughout the study, GDOT delivered accurate, timely, and relevant information while offering ongoing opportunities for the public to participate in

meaningful dialogue and feedback, leading to a more comprehensive transportation decision-making process.

To that end, GDOT:

- Advertised, coordinated, and conducted in-person and virtual stakeholder and public outreach meetings over two phases.
- Housed and updated study-related materials on a web page, <https://transformingsr316-gdot.hub.arcgis.com/pages/sr316planningstudy>, and distributed select materials in print.
- Responded to questions and comments received via email (sr316project@dot.ga.gov) and two hotlines (678-597-9850 [English] and 678-812-0246 [Spanish]).
- Promoted participation in two SR 316 Planning Study surveys, in digital and print form.
- Documented and incorporated stakeholder and public feedback, to the greatest extent practicable, into the study's final recommendations.

As noted, there were two stakeholder and public engagement phases during this plan's development. Phase 1 occurred from February 2023 through June 2023, and engaged 46 stakeholders (e.g., public agencies), 259 members of the public, and 313 survey respondents. Phase 2 occurred

from February 2024 through May 2024, and engaged 24 stakeholders, 183 members of the public, and 55 survey respondents.

Final Recommendations and Implementation

The final recommendations reflect a combination of keeping previously identified projects and updating recommendations to lower-cost options at others based on a thorough safety and operational analysis of the corridor. In addition, the capacity and operational improvements will move forward. Some projects were refined based on feedback from GDOT, stakeholders, and the public.

- **Williams Farm Drive** – potential interim implementation to improve the local road network of the property south of SR 316 to connect Williams Farm Drive with Drowning Creek Road. GDOT will continue to coordinate with the developers of the Rowen site, where this project is located, and Gwinnett County to understand if this connection can be implemented prior to the planned interchange at Williams Farm Drive.

- **Harry McCarty Road** – modified the improvement from a grade separation to a traffic reroute.

Phase 1 projects are identified as necessary for implementation in the immediate term. All Phase 1 projects address lower-traffic local roads, which have been identified by this study and by members of the community as top safety priorities. Phase 2 projects are identified as moderate priority items. These projects are a higher priority because of immediate safety concerns, particularly in terms of proximity to existing or planned interchanges. Projects identified in Phase 3 include lower priority intersection improvements.

Final project costs by phase were estimated to assist GDOT to program projects appropriately and to determine which projects should move into engineering design. The recommendations from this study will be eligible for inclusion in Atlanta Regional Commission's Transportation Improvement Program, (TIP), Madison Athens-Clarke Oconee Regional Transportation Study TIP, and GDOT's Statewide Transportation Improvement Program (STIP).

The order in which the projects are implemented should be informed by the study's goals and be responsive to community feedback. The 12 at-grade crossing improvement projects have been split into three phases for implementation. GDOT will lead the funding and implementation of these projects. For the additional capacity and operational improvement recommendations, an implementation order has not been determined. These projects span both county and state routes. The lead agency to fund and implement these projects has not yet been determined.

This plan is intended to be a guide for projects along the SR 316 corridor. Project costs, details, and designs are subject to change.

SR 316 Planning Study

Table ES-1 SR 316 Planning Study Recommendations and Phasing

PI No.	Location	Phase	Recommendation	Preliminary Engineering	Right of Way	Utilities	Construction	Total Cost
0013899	Oak Valley Road	1	Traffic Reroute	\$720,000	\$0	\$560,000	\$5,870,000	\$7,150,000
0013900	Williams Farm Drive *	1	Interchange	\$6,560,000	\$29,770,000	\$5,090,000	\$53,570,000	\$94,990,000
0013766	Julian Drive	1	Grade Separation	\$1,180,000	\$2,790,000	\$910,000	\$9,620,000	\$14,510,000
0013904	CR 110/Harry McCarty Road	1	Traffic Reroute	\$40,000	\$0	\$30,000	\$360,000	\$430,000
Phase 1 Total				\$8,500,000	\$32,560,000	\$6,590,000	\$69,420,000	\$117,080,000
0013908	Wall Road	2	RIRO	\$1,430,000	\$750,000	\$1,110,000	\$11,660,000	\$14,940,000
0013764	McNutt Creek Road	2	RIRO	\$1,470,000	\$750,000	\$1,140,000	\$11,980,000	\$15,330,000
0013765	Mars Hill Road	2	Traffic Reroute	\$30,000	\$0	\$30,000	\$270,000	\$330,000
Phase 2 Total				\$2,930,000	\$1,500,000	\$2,280,000	\$23,910,000	\$30,600,000
0013901	Drowning Creek Road	3	Grade Separation	\$930,000	\$1,550,000	\$720,000	\$7,590,000	\$10,800,000
0013905	Harrison Mill Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013906	CR 138/Smith Cemetery Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013907	CR 139/Jackson Trail Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013770	SR 10 Loop/Athens Perimeter	3	Interchange Upgrade	\$21,930,000	\$3,080,000	\$17,020,000	\$179,050,000	\$221,080,000
Phase 3 Total				\$29,730,000	\$5,530,000	\$22,870,000	\$240,430,000	\$298,570,000
All Phases Total				\$41,160,000	\$39,590,000	\$31,740,000	\$333,760,000	\$446,250,000

* GDOT to continue coordination with Rowen Development and Gwinnett County to understand potential to connect Williams Farm Drive to Drowning Creek Road in the interim prior to construction of interchange.

** Planning-level cost estimates are in 2023 dollars

There are additional capacity and operational projects that were identified as part of the planning process. These projects are listed in Table ES-2. These projects do not have identified project sponsors or

funding and further discussions between GDOT and Gwinnett, Bartow, and Oconee counties will need to continue to make these determinations.

Figure ES-9 illustrates all of the proposed

improvements along SR 316 which include the previously identified SR 316 reconstruction projects and the remaining at-grade intersection improvements listed in Table ES-1.

Table ES-2 Additional Capacity and Operational Improvements

Improvement Location	Improvement Type	Project Extent/Description
Sugarloaf Parkway	Widening	Bridge over SR 316.
Harbins Road	Widening	Between Dacula Ridge and West Drowning Creek Road.
Rowen Development	Interchange	A new interchange at the Rowen development if full buildout of Rowen occurs.
CR 416/Carl-Bethlehem Road	Widening	Between Tucker Road and 0.25 mile east of SR 81. Add roundabout at intersection with Haymond Morris Road and Hoyt King Road.
SR 81/Loganville Highway	Widening	Between Bethel Bower Road and Carter Hill Drive. Widen eastbound off-ramp from SR 316 to SR 81.
SR 11/Winder-Monroe Highway/ Christmas Avenue	Widening	Between Exchange Boulevard and Star Street. Widen westbound off-ramp from SR 316 to SR 11.
SR 53/Hog Mountain Road	Widening	Between Jackson Trail Road and Innovation Drive.
US 78/SR 10/Monroe Highway	Widening	Between Pete Dickens Road and 0.25 mile north of SR 316 interchange.
CR 929/Oconee Connector	Widening	Between Mars Hill Road and Virgil Langford Road.

SR 316 Planning Study

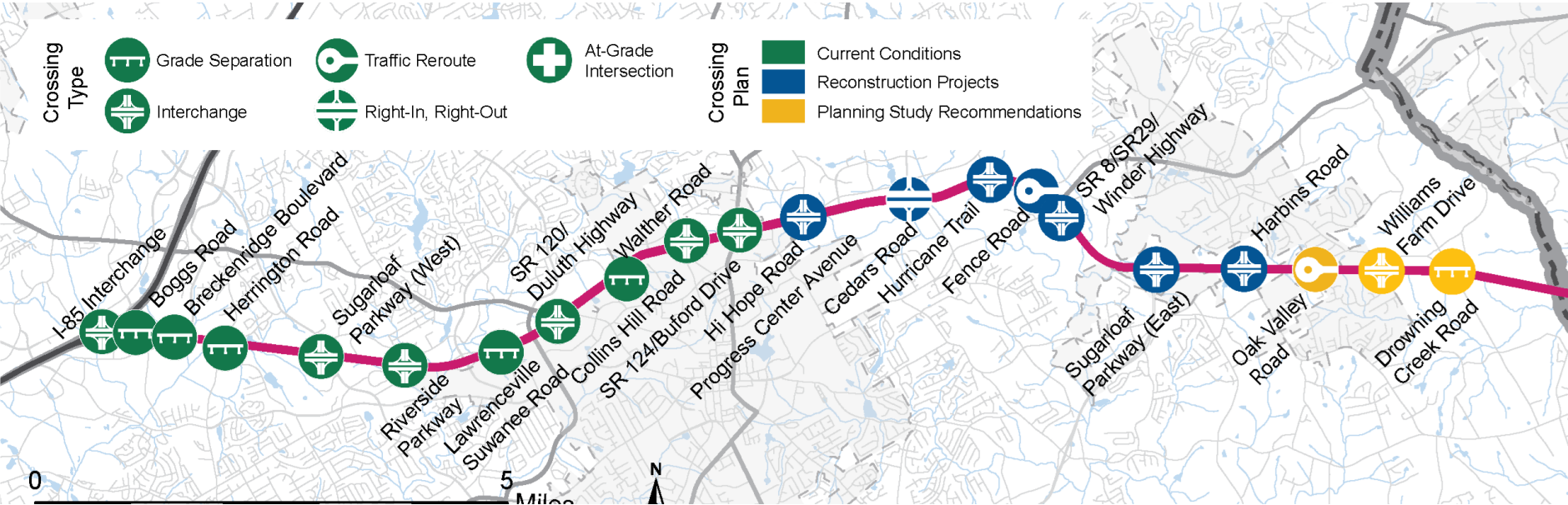


Figure ES-9 Gwinnett County Final Recommendations

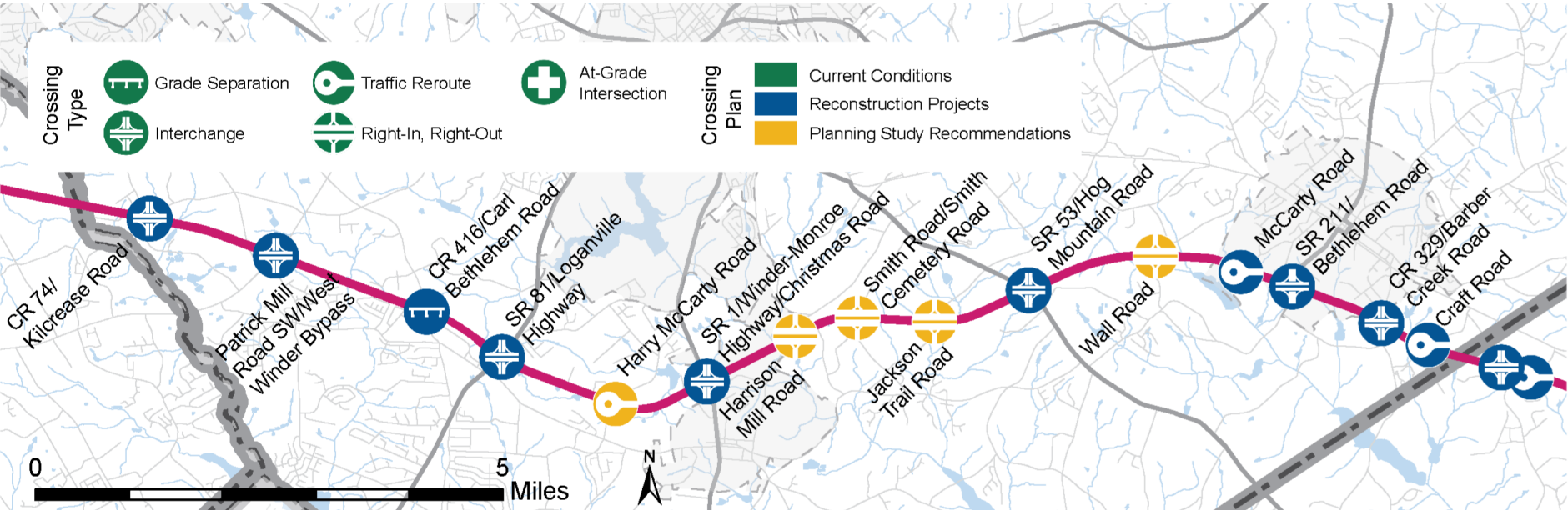


Figure ES-9 Barrow County Final Recommendations

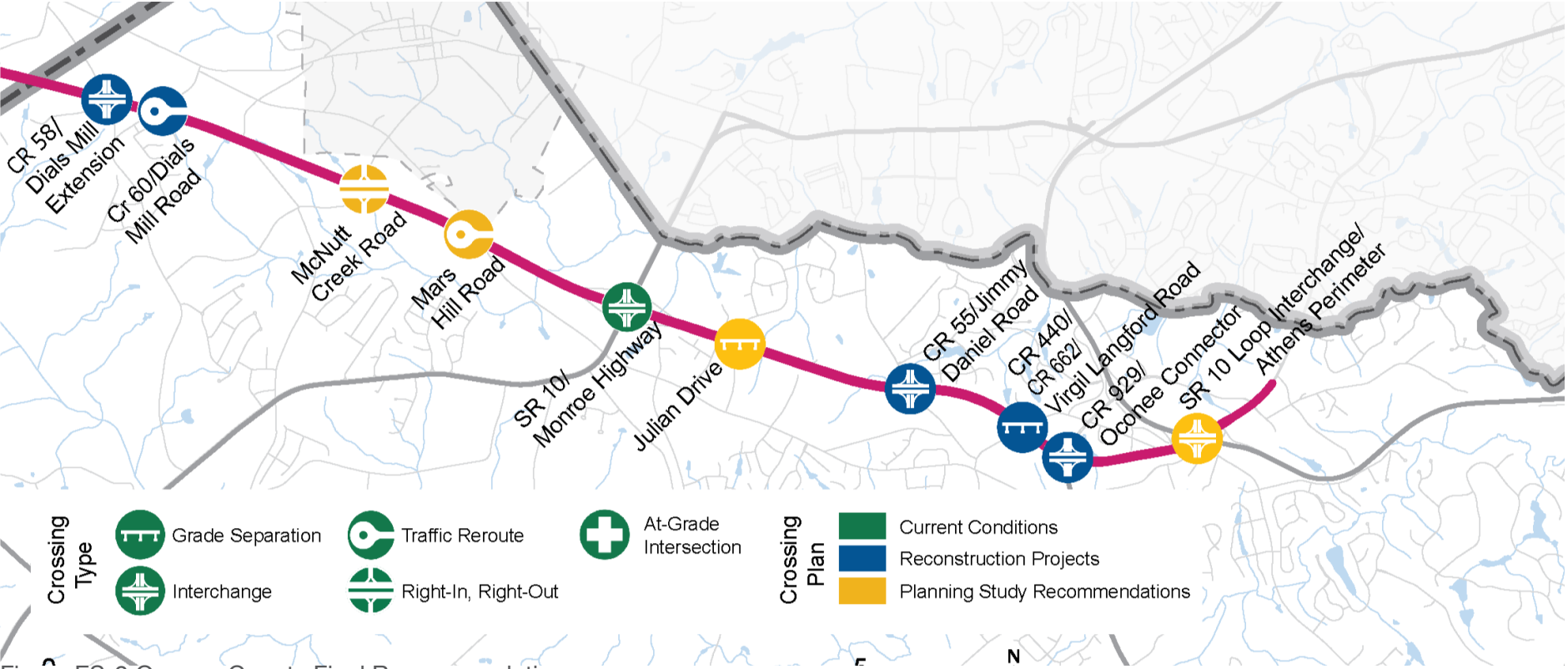


Figure ES-9 Oconee County Final Recommendations

1 Study Overview

The State Route (SR) 316 Planning Study is the latest in a series of studies and plans for the SR 316 corridor, which is vital for east-west movement in northeastern Georgia. SR 316 is a critical east-west highway and one of Georgia’s fastest-growing corridors, extending from the northeastern portion of metropolitan Atlanta east to Athens. It is one of the primary routes to the University of Georgia in Athens. Since its construction, which began in the 1960s, traffic volumes have increased because of continued population and employment growth in the area. As a result, high crash rates and traffic congestion have been identified as major challenges for the corridor. The Georgia Department of Transportation (GDOT) has completed previous studies and plans that recommend converting the highway to a limited-access facility. These previous plans include three corridor studies:

- [State Route 316 Corridor Study](#) (2002).
- [SR 316 Implementation Plan](#) (2009).
- [Atlanta to Athens: Connectivity and Mobility Study](#) (2014).

The comprehensive plans for the three counties that SR 316 traverses also discuss transitioning the corridor to a limited-access facility:

- [Destination 2040: Gwinnett County Comprehensive Transportation Plan](#) (2017).
- [Destination 2050: Gwinnett County Comprehensive Transportation Plan](#) (2024).
- [Oconee County Long Range Transportation Plan](#) (2019).
- [Barrow County Comprehensive Plan](#) (2023).

Additional information regarding these plans and studies is provided in Section 1.3.

GDOT is currently undertaking several SR 316 reconstruction projects under an initiative referred to as Transforming State Route 316. As part of this initiative, multiple crossings between SR 20 in Gwinnett County and the SR 10 Loop in Oconee County are in various stages of being improved, from fully completed, under construction, or in engineering design. Additional information

about these projects is provided in Section 4. After the completion of the SR 316 reconstruction projects, 12 at-grade crossings will remain. This SR 316 Planning Study addresses 12 of the crossings for which decisions regarding improvement type, funding, and implementation time frame have not yet been finalized. The intent of these crossing improvements is to bring the corridor closer to being a fully limited-access facility.

This SR 316 Planning Study recognizes that as a major east-west transportation artery, SR 316 will continue to experience high crash rates and congestion even with the 32 SR 316 reconstruction projects. Therefore, the study’s overall goal is to examine SR 316 holistically to identify and recommend potential improvements beyond those being implemented for the SR 316 reconstruction projects. The study area includes the 40-mile corridor from Interstate 85 (I-85) in Gwinnett County to SR 10 in Oconee County and captures the remaining at-grade crossings not addressed by the SR 316 reconstruction projects as well as arterials crossing SR 316 in need of additional capacity and operational improvements.

SR 316 Planning Study

All recommendations within this study address one or more of the following benefits:

-  Reduce the severity and frequency of crashes.
-  Reduce congestion and improve mobility.
-  Accommodate growth and economic development.

1.1 Study Area and SR 316 Crossings

The study area includes SR 316, traversing 40 miles from I-85 in Atlanta at the western extent through Gwinnett, Barrow, and Oconee Counties and the cities of Lawrenceville, Auburn, Dacula, Winder, Bethlehem, Carl, Statham, and Bogart to the SR 10 Loop/Athens Perimeter at the eastern extent as shown on Figure 1-1.

The study area encompasses 47 crossings, as illustrated on Figure 1-2 through Figure 1-4. Crossing configurations include four types as illustrated below:

-  At-grade intersections – signalized or unsignalized (stop signs).
-  Interchanges – ramps with intersections and a bridge or underpass.
-  Right-in, right-out (RIRO) – only right turns allowed on and off of side road.

 Grade separation – overpass bridge or underpass across SR 316.

The current crossing configurations on the 40-mile corridor include:

-  27 (57%) At-Grade Intersections
-  12 (26%) Interchanges
-  3 (6%) RIROs
-  5 (11%) Grade Separations

The current crossing configurations are listed in Table 1-1.

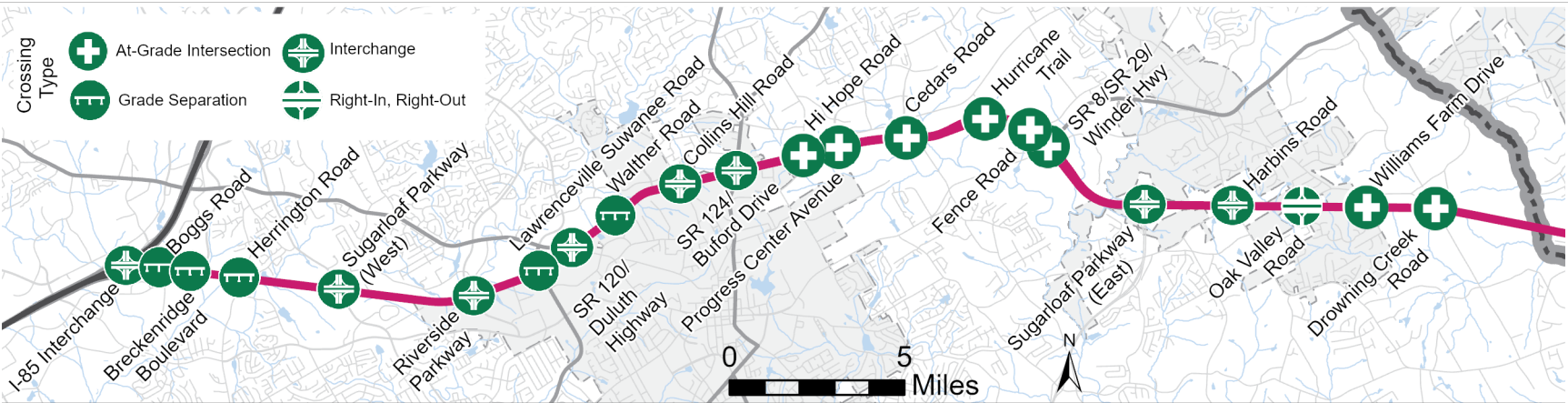


Figure 1-2 SR 316 in Gwinnett County Current Crossing Configurations

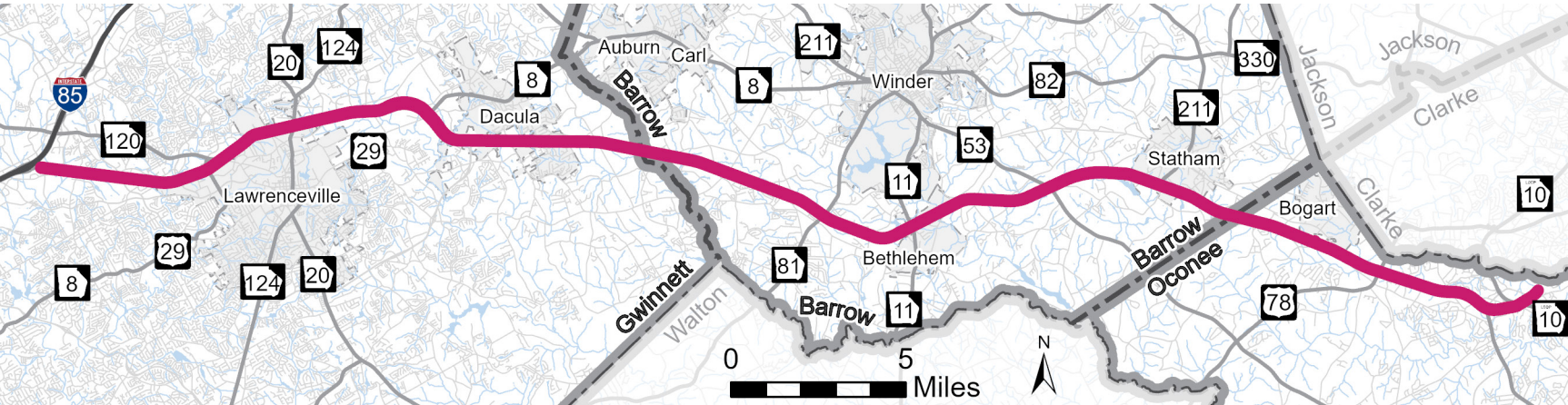


Figure 1-1 SR 316 Study Area

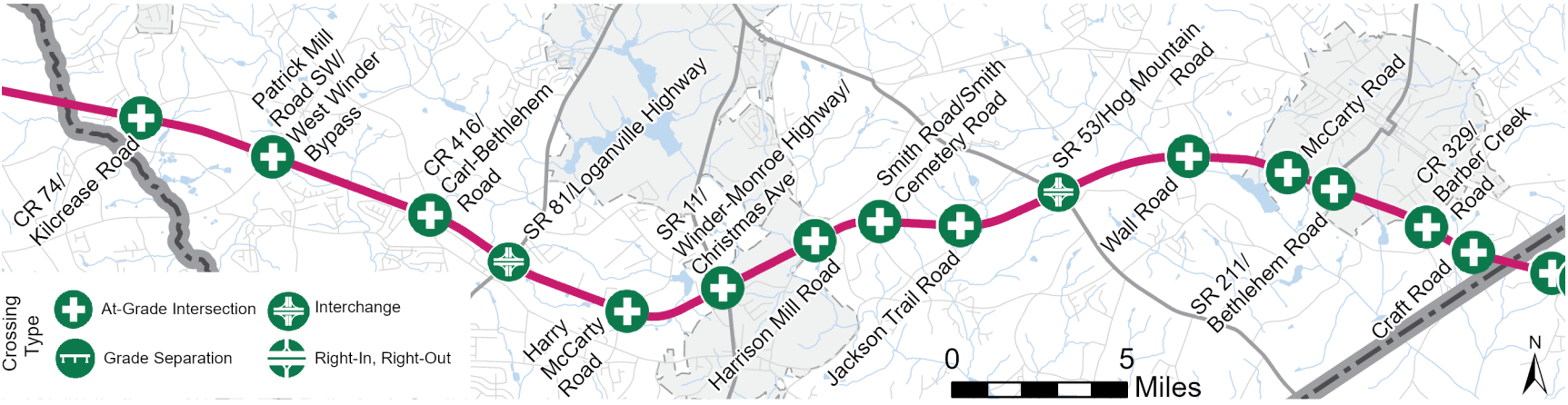


Figure 1-3 SR 316 in Barrow County Current Crossing Configurations

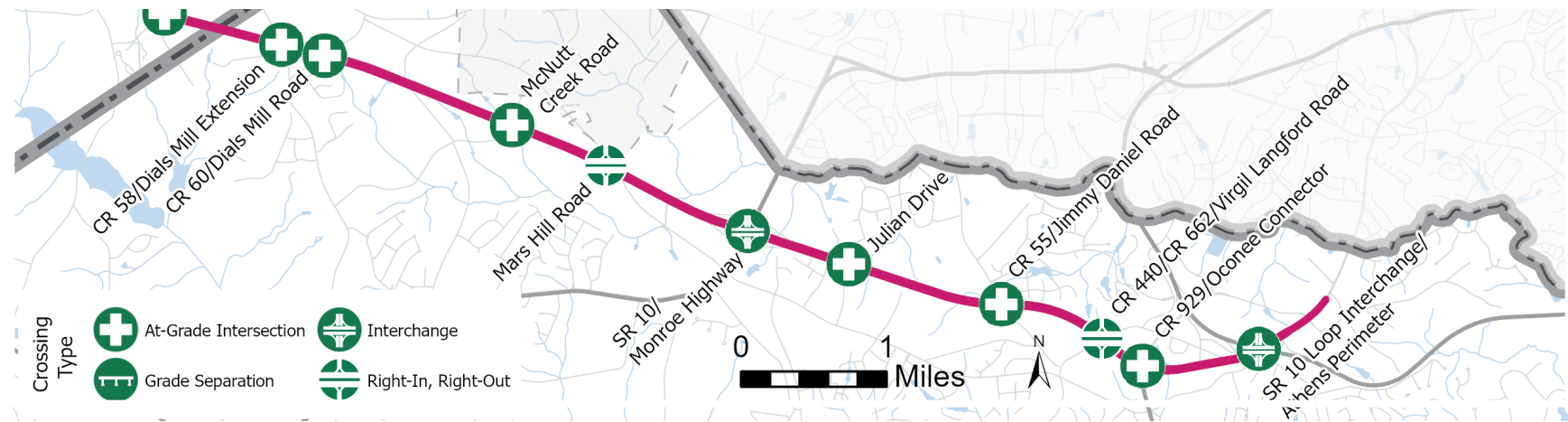


Figure 1-4 SR 316 in Oconee County Current Crossing Configurations

Table 1-1 SR 316 Crossings

Crossing Name	County	Current Configuration
I-85 Interchange	Gwinnett	Interchange
Boggs Road	Gwinnett	Grade Separation
Breckenridge Boulevard	Gwinnett	Grade Separation
Herrington Road	Gwinnett	Grade Separation
Sugarloaf Parkway (West)	Gwinnett	Interchange
Riverside Parkway	Gwinnett	Interchange
Lawrenceville Suwanee Road	Gwinnett	Grade Separation
SR 120/Duluth Highway	Gwinnett	Interchange
Walther Road	Gwinnett	Grade Separation
Collins Hill Road	Gwinnett	Interchange
SR 124/Buford Drive	Gwinnett	Interchange
Hi Hope Road	Gwinnett	At-Grade Intersection
Progress Center Avenue	Gwinnett	At-Grade Intersection
Cedars Road	Gwinnett	At-Grade Intersection

Crossing Name	County	Current Configuration
Hurricane Trail	Gwinnett	At-Grade Intersection
Fence Road	Gwinnett	At-Grade Intersection
SR 8/US 29/Winder Highway	Gwinnett	At-Grade Intersection
Sugarloaf Parkway (East)	Gwinnett	Interchange
Harbins Road	Gwinnett	Interchange
Oak Valley Road	Gwinnett	RIRO
Williams Farm Drive	Gwinnett	At-Grade Intersection
Drowning Creek Road	Gwinnett	At-Grade Intersection
County Road (CR) 74/Kilcrease Road	Barrow	At-Grade Intersection
Patrick Mill Road SW/West Winder Bypass	Barrow	At-Grade Intersection
CR 416/Carl-Bethlehem Road	Barrow	At-Grade Intersection
SR 81/Loganville Highway	Barrow	Interchange

Table 1-1 SR 316 Crossings

Crossing Name	County	Current Configuration
CR 110/Harry McCarty Road	Barrow	At-Grade Intersection
SR 11/Winder-Monroe Highway/Christmas Avenue	Barrow	At-Grade Intersection
Harrison Mill Road	Barrow	At-Grade Intersection
CR 138/Smith Cemetery Road	Barrow	At-Grade Intersection
CR 139/Jackson Trail Road	Barrow	At-Grade Intersection
SR 53/Hog Mountain Road	Barrow	Interchange
Wall Road	Barrow	At-Grade Intersection
McCarty Road	Barrow	At-Grade Intersection
SR 211/Bethlehem Road	Barrow	At-Grade Intersection
CR 329/Barber Creek Road	Barrow	At-Grade Intersection
Craft Road	Barrow	At-Grade Intersection
CR 58/Dials Mill Extension	Oconee	At-Grade Intersection
CR 60/Dials Mill Road	Oconee	At-Grade Intersection
McNutt Creek Road	Oconee	At-Grade Intersection
Mars Hill Road	Oconee	RIRO
US 78/SR 10/Monroe Highway	Oconee	Interchange
Julian Drive	Oconee	At-Grade Intersection
CR 55/Jimmy Daniel Road	Oconee	At-Grade Intersection
CR 440/CR 662/Virgil Langford Road	Oconee	RIRO
CR 929/Oconee Connector	Oconee	At-Grade Intersection
SR 10 Loop/Athens Perimeter	Oconee	Interchange

1.2 Previous Plan and Program Review

To understand the history of the SR 316 corridor and better formulate recommendations, previous plans for SR 316, the current SR 316 reconstruction projects, nearby corridor studies, and county-wide plans were reviewed as a first step of the SR 316 Planning Study. Previous plans reviewed are listed in Table 1-2.

Table 1-2 Previous Plans Reviewed

Plan	Plan Sponsor	Year
State Route 316 Corridor Study	GDOT	2002
SR 316 Implementation Plan	GDOT	2009
Atlanta to Athens: Connectivity and Mobility Study	GDOT	2014
Destination 2040: Gwinnett County Comprehensive Transportation Plan	Gwinnett County	2017
Oconee County Long Range Transportation Plan	Oconee County	2019
Barrow County Comprehensive Plan	Barrow County	2023
Destination 2050: Gwinnett County Comprehensive Transportation Plan	Gwinnett County	2024
SR 316 Reconstruction Projects	GDOT	Ongoing

Previous SR 316 plans and studies indicate that the best solution to address safety, congestion, and economic growth is to convert SR 316 between I-85 and the SR 10 Loop to a limited-access road (meaning to remove at-grade crossing configurations).

SR 316 Planning Study

GDOT has three existing plan documents for SR 316:

- [SR 316 Corridor Study](#) (2002).
- [SR 316 Implementation Plan](#) (2009).
- [Atlanta to Athens: Connectivity and Mobility Study](#) (2014).

The SR 316 Corridor Study found that portions of SR 316 in Gwinnett County that operated as limited-access segments had lower rates of crashes resulting in injuries or fatalities than other similar roadways in Georgia.¹ The study recommended converting the SR 316 corridor from SR 120 to the SR 10 Loop into a limited-access road to simulate these safety results along the entire corridor. The 2009 SR 316 Implementation Plan recommended the construction of interchanges at SR 81, SR 11, and SR 53 which would make progress towards the conversion of SR 316 to limited access.² The third GDOT study, Athens to Atlanta: Connectivity and Mobility Study, confirmed the 2009 Implementation

Plan recommendation to convert SR 316 to limited access. These plans ultimately resulted in “Transforming SR 316” (referred to as the SR 316 reconstruction projects), an initiative to continue the conversion of SR 316 to a limited-access facility. Specific information regarding the SR 316 reconstruction projects is provided in Section 4.³

Comprehensive transportation plans for Gwinnett, Barrow, and Oconee Counties also support improvements along SR 316 to better accommodate economic development and population growth and to improve mobility and safety along the corridor. Gwinnett County indicates support for limited access of SR 316 towards Athens in the 2040 Comprehensive Transportation Plan.⁴ The Destination 2050 Plan acknowledges the reconstruction projects and makes no new recommendations along the SR 316 corridor.⁵ In its comprehensive plan, Barrow County identifies a SR 316 “Innovation Corridor” and emphasizes mobility and population growth

along SR 316.⁶ Barrow County is supporting GDOT’s existing and planned intersection projects along SR 316. Oconee County’s Long Range Transportation Plan recommends coordination with GDOT on projects that impact roadway safety and level of service in the county, including several intersection improvements along SR 316.⁷

1.3 Developments of Regional Impact

Developments of regional impact (DRIs) are large scale developments that are expected to have transportation impacts beyond the jurisdiction in which they are located. The DRIs analysis was completed in 2022. There are 28 DRIs existing or planned along SR 316 that are expected to add more than 29 million square feet of development to the corridor and result in significant traffic growth. Although not every DRI planned in Georgia gets built, the volume of proposed developments is indicative of the growth occurring within the study area. Residential

and employment growth will continue to be exponential, resulting in more vehicles and more congestion. Eight DRIs in Gwinnett County, 10 in Barrow County, six in Oconee County, and one in Athens-Clarke County (outside of the three-county study area) were incorporated into the traffic analysis for

this study to capture any traffic generated from these large developments in traffic volume growth estimates. The Rowen development in Gwinnett County is one of the largest proposed developments to date in metropolitan Atlanta. Each DRI’s traffic impact analysis was reviewed, and the

estimated generated traffic volumes were incorporated into the traffic modeling analysis for this study. Table 1-3 below lists the ID number, name, expected completion year, primary land use, and county of the DRIs along the study area. Figure 1-5 illustrates the DRI locations.

Table 1-3 Developments of Regional Impact Near or Along SR 316

Map Label	DRI ID	Project Name	Estimated Completion Year	Primary Land Use	County
1	2305	Peak at University Parkway	2022	Mixed-Use	Gwinnett
2	2752	Celebration Village Snellville	2022	Mixed-Use	Gwinnett
3	3535	Project Whiplash	2023	Industrial	Gwinnett
4	3525	Lawrenceville Gateway	2023	Mixed-Use	Gwinnett
5	3650	Mixed-Use Development at Satellite Boulevard	2025	Mixed-Use	Gwinnett
6	3207	Inland Pass: A Planned Mixed-Use Development	2025	Mixed-Use	Gwinnett
7	3706	5030 Sugarloaf	2026	Multifamily Residential	Gwinnett
8	3700	Harbin II	2027	Mixed-Use	Gwinnett
9	3366	Rowen	2035	Mixed-Use	Gwinnett
10	3355	Project Tarpon	2022	Industrial	Barrow
11	2384	Parkside	2022	Mixed-Use	Barrow
12	3350	Project Paradise II/Euphoric Business Park	2022	Industrial	Barrow
13	3255	Accent Springs	2023	Residential	Barrow
14	3627	Statham Truck Stop	2023	Light Industrial, Commercial	Barrow
15	3286	Fowler Farm	2026	Residential	Barrow
16	2234	Barrow Landing	2026	Mixed-Use	Barrow
17	2311	One University Parkway	2027	Mixed-Use	Barrow
18	3557	Robertson Bridge Road Development	2027	Residential Single Family	Barrow

1 SR 316 Corridor Study: https://dlg.usg.edu/record/dlg_ggpd_s-ga-bt700-pp6-bm1-b2002-bt44-belec-p-btext

2 SR 316 Implementation Plan: https://www.dot.ga.gov/BuildSmart/Studies/Documents/316/sr316_implementation_plan.pdf

3 Transforming SR 316: <https://transformingsr316-gdot.hub.arcgis.com/>

4 Gwinnett 2040 Unified Plan: <https://www.gwinnettcountry.com/web/gwinnett/departments/planningdevelopment/services/landuseplanning/2040unifiedplan>

5 Destination 2050: 2024 Gwinnett County Comprehensive Transportation Plan

6 Barrow Comprehensive Plan: https://www.dca.ga.gov/sites/default/files/barrowcountycompplanadopted_0.pdf

7 Oconee County Long-Range Transportation Plan: www.oconeecounty.com/DocumentCenter/View/8465/Long-Range-Transportation-Plan?bidId=

Table 1-3 Developments of Regional Impact Near or Along SR 316

Map Label	DRI ID	Project Name	Estimated Completion Year	Primary Land Use	County
19	2846	Wastewater Treatment Facility Expansion, Phase 1, 2 & 3	2035	Public/Institutional	Barrow
20	3254	Tom Miller Road Project	TBD	Residential	Barrow
21	3220	Oconee Mercantile	2022	Mixed-Use	Oconee
22	3505	Vineyard Senior Assisted & Independent Living Campus	2023	Other	Oconee
23	3037	Celebration Village Age in Place Retirement Community	2024	Other	Oconee
24	3192	Oconee Connector Center	2025	Commercial Mixed-Use	Oconee
25	3324	Meadowlands	2027	Mixed-Use	Oconee
26	2303	Presbyterian Village	2028	Other	Oconee
27	3657	Shops of Oconee Crossing	2025	Mixed-Use	Oconee
28	3563	Georgia Square Mall Redevelopment	2022	Mixed-Use	Athens-Clarke

2 Existing Conditions

To determine the improvements needed to support the goals of the study – reduce crash rates and severity, reduce congestion, and support economic growth, it is important to understand the existing conditions of the SR 316 corridor. Existing conditions cover the following categories:

- Roadway Characteristics
 - ▶ Functional Classification
 - ▶ Number of Lanes
 - ▶ Intersections
 - ▶ Posted Speed Limits
- Safety
 - ▶ Crash Frequency
 - ▶ Crash Rates

- Land Use
- Existing Traffic Conditions
 - ▶ Volumes
 - ▶ Peak Travel Speeds
 - ▶ Origin-Destinations
 - ▶ Level of Service

2.1 Transportation System Data and Roadway Characteristics

2.1.1 Functional Classification

Figure 2-2 illustrates the functional classifications along SR 316. SR 316 falls under two different roadway functional classifications. Between I-85 and SR 20, the

Figure 2-1 Existing Condition Categories and Data

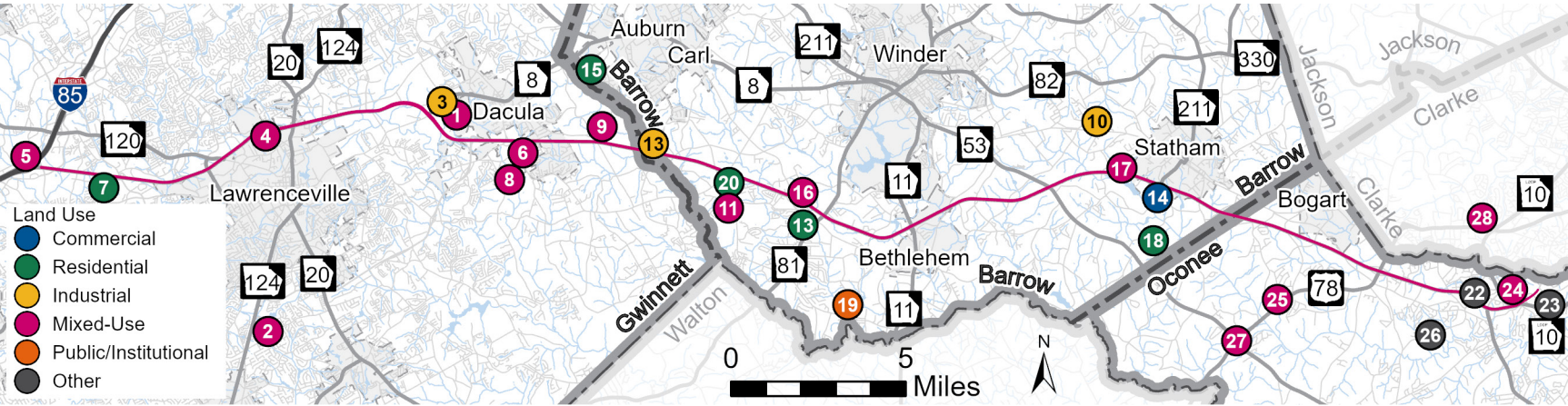
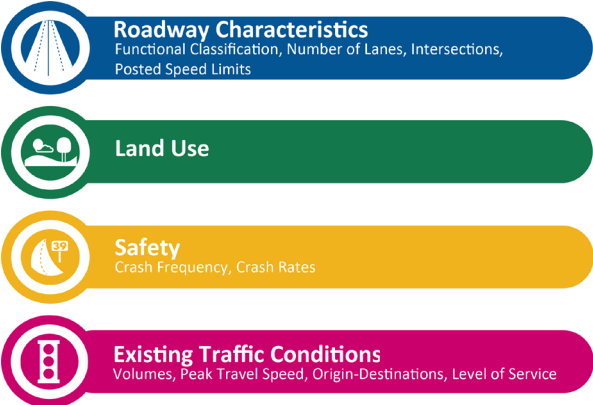


Figure 1-5 Development of Regional Impact Locations in SR 316 Planning Study Area

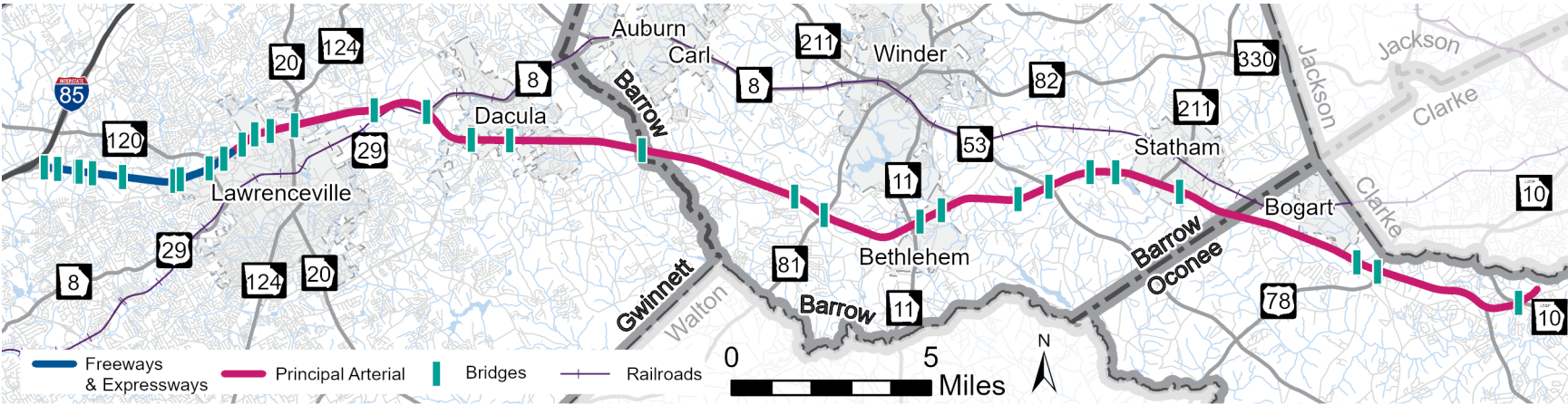


Figure 2-2 Roadway Functional Classification, Bridges, and Railroad Crossings Along SR 316

SR 316 Planning Study

road is classified as a Freeway/Expressway. For the remainder of the study area (SR 20 to the SR 10 Loop), SR 316 is classified as a Principal Arterial roadway. There are 39 bridge crossings within the study area, including over or under other roadways, and bridges and culverts over bodies of water and railroads. In Gwinnett County, SR 316 crosses over a CSX Transportation rail line immediately before converging with US 29.

2.1.2 Number of Lanes

For the entire length of the study area, SR 316 has two travel lanes in each direction. At approaches to interchanges or high-traffic intersections with other major roadways, such as US 78, there are often one or more auxiliary lanes to allow traffic to easily turn, exit, or merge on and off the route. Figure 2-3 illustrates the number of travel lanes along the corridor. Areas in green on the map denote a third auxiliary lane in the respective direction of travel. Table 2-1 below lists auxiliary lanes along SR 316 based on where the lane begins and ends and indicates the direction of travel from west to east.

2.1.3 Posted Speed Limits

The speed limit in both directions of SR 316 is 55 miles per hour (mph) between I-85 and US 29. From US 29 to just east of US 78,

the speed limit increases to 65 mph. From there, the speed limit returns to 55 mph until reaching the SR 10 Loop. East of the SR 10 Loop, the speed limit decreases to 45 mph approaching Athens. Figure 2-4 shows the speed limits along SR 316.

2.1.4 Crossings

The locations and types of existing crossings along SR 316 are described in Section 1.2. There are 47 crossings along SR 316 between I-85 and the SR 10 Loop. Crossings vary in distance along SR 316, with crossings in Gwinnett and Oconee Counties being spaced, on average, 0.8 mile apart and intersections in Barrow County spaced 1.1 miles apart. The spacing of crossings aligns with land use and densities of these counties. Several major roads cross SR 316, including nine state routes, in the study area: SR 120,

SR 20, SR 124, and SR 8 in Gwinnett County; SR 81, SR 11, SR 8, SR 53, and SR 211 in Barrow County; and SR 10 in Oconee County. US 29 near Dacula in Gwinnett County crosses SR 316 as well as US 78 and the SR 10 Loop in Oconee County. Figure 2-5 highlights the major crossings along SR 316. These are the crossings that have the highest volumes of traffic and crashes as discussed in Section 2.3 and Section 2.4. Six of these major crossing locations are part of the SR 316 reconstruction projects:

- PI# 0013897: SR 316 at SR 8/US 29/ Winder Highway.
- PI# 0008429: SR 316 at SR 81/ Loganville Highway.
- PI# 0008430: SR 316 at SR 11/Winder-Monroe Highway/Christmas Avenue.
- PI# 0008431: SR 316 at SR 53/Hog Mountain Road.

Table 2-1 Auxiliary Lanes Along SR 316

Auxiliary Lane Begins	Auxiliary Lane Ends	County	Direction
Boggs Road	Breckenridge Boulevard	Gwinnett	Eastbound
Breckenridge Boulevard	Boggs Road	Gwinnett	Westbound
Herrington Road	Sugarloaf Parkway (West)	Gwinnett	Eastbound
Sugarloaf Parkway (West)	Riverside Parkway	Gwinnett	Eastbound
Riverside Parkway	Sugarloaf Parkway (West)	Gwinnett	Westbound
Riverside Parkway	SR 210/Duluth Highway	Gwinnett	Eastbound
SR 210/Duluth Highway	Riverside Parkway	Gwinnett	Westbound
CR 929/Oconee Connector	SR 10 Loop/Athens Perimeter	Oconee	Eastbound

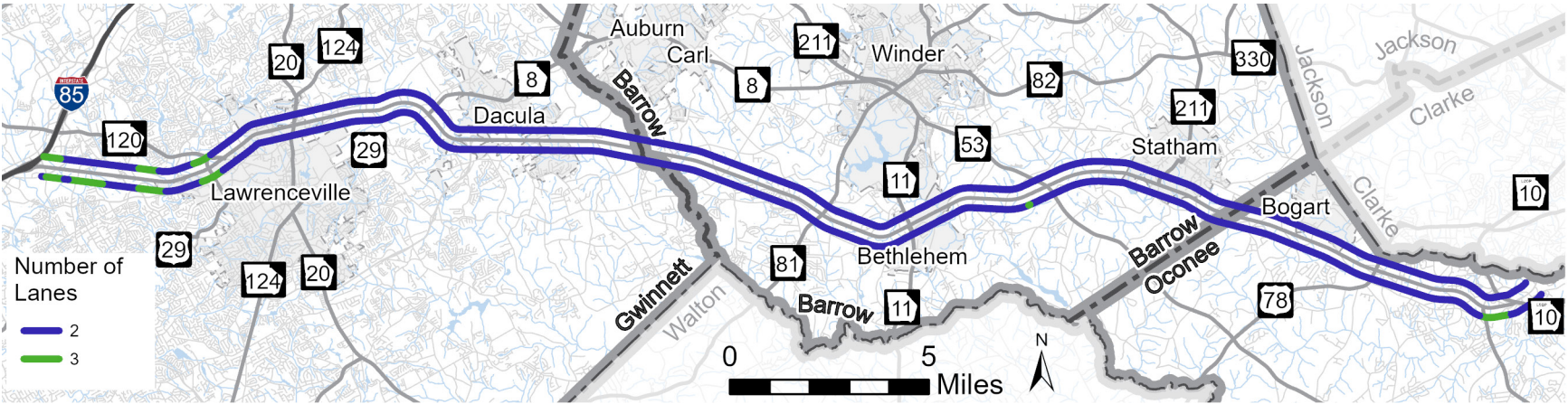


Figure 2-3 SR 316 Travel Lanes

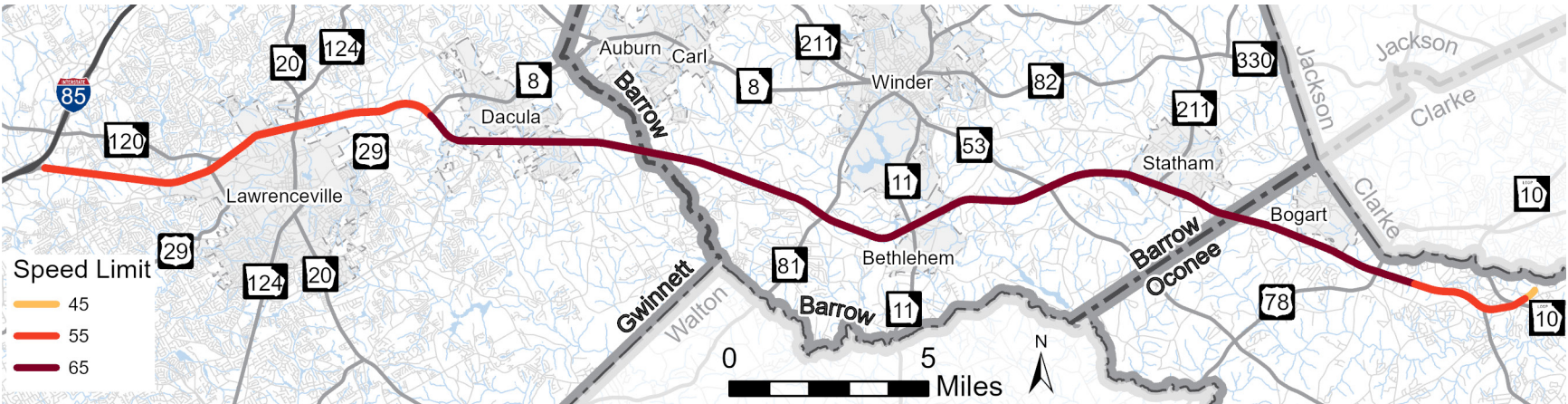


Figure 2-4 Posted Speed Limits Along SR 316

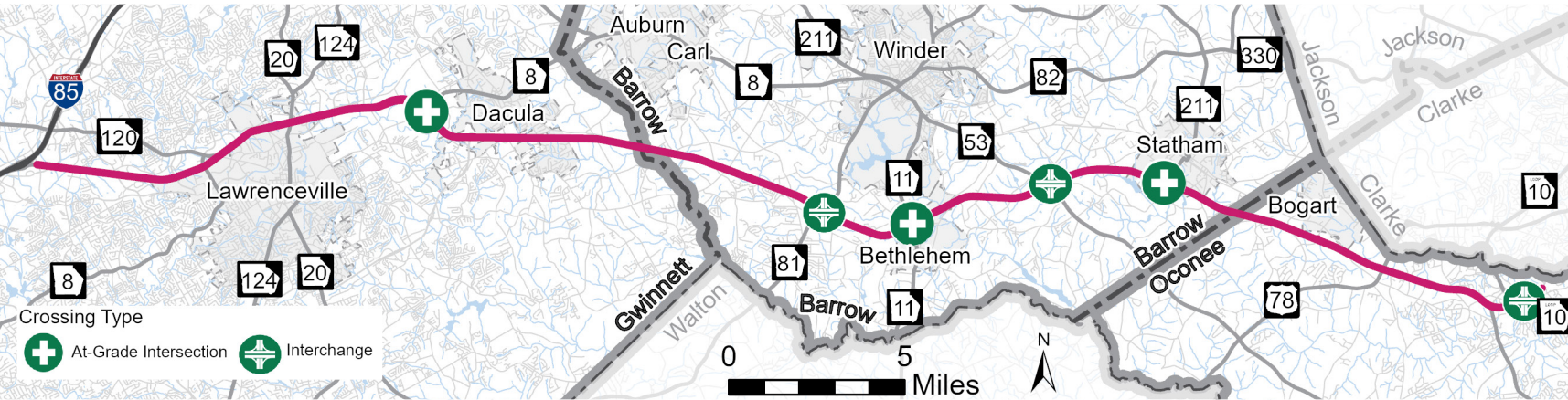


Figure 2-5 SR 316 Reconstruction Projects at Major Crossings

- PI# 0010352: SR 316 at SR 211/ Bethlehem Road.
- PI# 0013770: SR 316 at SR 10 Loop Interchange/Athens Perimeter.

2.2 Existing Land Use

Figure 2-6 shows current land use by county. In Gwinnett County, non-residential land use is most common near SR 316. Two incorporated municipalities are adjacent to the highway: Lawrenceville and Dacula. There is a wide variety of land uses in Lawrenceville around SR 316, including light and heavy industrial, commercial, and institutional. In Dacula, however, most of the

nearby land abutting the highway is zoned as agricultural or single-family residential.⁸ In Barrow County, SR 316 provides access to the cities of Bethlehem, Statham, and Winder. Land uses adjacent to SR 316 in Barrow County are mostly agricultural and industrial in unincorporated areas, and commercial and institutional near the municipalities.⁹ A mix of uses fronts SR 316 in Oconee County.¹⁰ The roadway passes the city of Bogart before crossing over US 78. There, land use varies with office, industrial,

residential, commercial, and agricultural lands adjacent to the stretch of SR 316 in the county.

2.3 Crash Analysis

Safety statistics for the study area were analyzed to identify the causes of crashes. In most cases, no single factor causes a crash; rather there are typically multiple underlying causes of each crash, including roadway geometry, weather conditions, driver behavior, traffic operations, on-road or roadside hazards, and construction

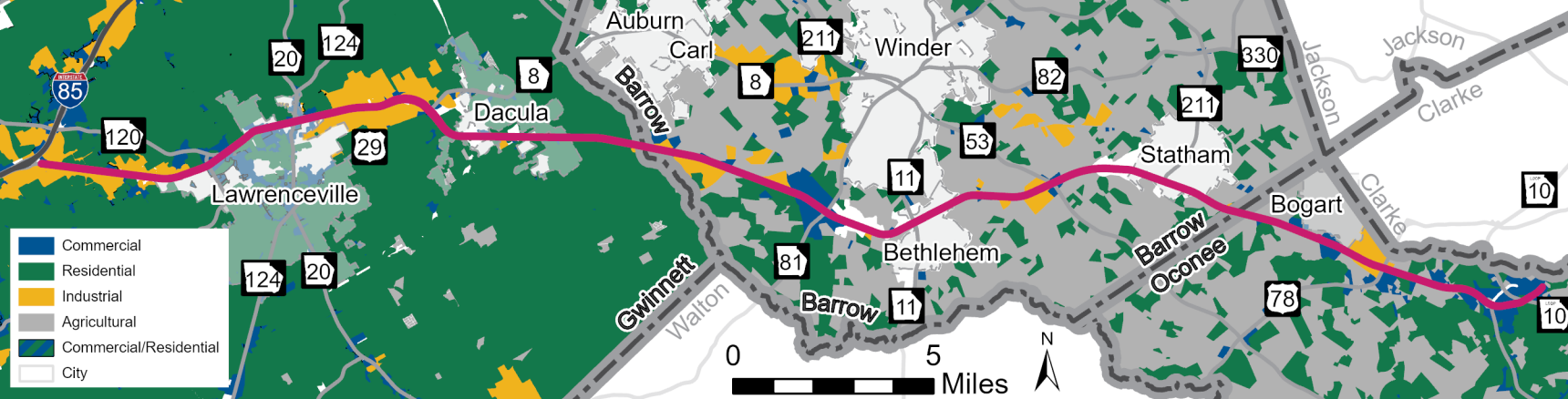


Figure 2-6 Gwinnett, Barrow, and Oconee County Land Use

activity. This section summarizes the crash analysis for the study area to determine where motorist safety may be improved by changing roadway geometry, installing safety-related features, and/or improving traffic conditions.

Historical crash data for the years 2016 through 2020 were obtained from GDOT’s Numetric service. The five years of crash data collected were analyzed to quantify the severity, type, and manner of crashes on SR 316 from the I-85 interchange in Gwinnett County to the SR 10 Loop in Oconee County. The data were further analyzed to determine crash rates, which are based on the frequency (number) of crashes and the traffic volumes and compared to rates for similar roadways across Georgia.

2.3.1 Crash Frequency by Severity

Crash data for 2016 through 2020 were categorized by severity into three types: fatal, injury, and property damage only (PDO). Crashes by severity along SR 316 are summarized in Table 2-2. A total of 13,389 crashes occurred along the SR 316 corridor from 2016 to 2020, of which 61% were rear-end crashes, which was the collision type with the highest frequency. Forty-three fatal crashes occurred during the five-year period, with 42% of these crash types being angle crashes. Overall, safety is the highest priority, and this planning effort focuses on reducing all crash types, but most importantly, fatality and injury crashes.

Table 2-2 Summary of Crashes by Severity (2016-2020)

Manner of Collision	Fatal	Injury	PDO	Total Crashes
Angle	18	1,097	1,541	2,656
Head On	3	96	74	173
Rear End	11	1,921	6,170	8,102
Sideswipe-Same Direction	2	127	1,051	1,180
Sideswipe-Opposite Direction	0	20	77	97
Not a Collision with Motor Vehicle	9	320	852	1,181
Total	43	3,581	9,765	13,389

8 https://gcgis-gwinnettcountyga.hub.arcgis.com/datasets/779b90b707d84e89917f3697b16e29cd_1/explore
9 https://www.barrowcountyplanning.org/_files/ugd/d11854_9c2a58fd3de04962a786ebc4b6b63ee4.pdf
10 <https://qpublic.schneidercorp.com/Application.aspx?AppID=686&LayerID=24480&PageTypeID=1>

SR 316 Planning Study

2.3.2 Crash Rates

To assess corridor safety for SR 316 (a freeway/expressway between I-85 and SR 20 and then a principal arterial east of SR 20), it is important to analyze crash rates in comparison to similar corridors statewide. A crash rate is defined as the number of crashes per million vehicle-miles traveled along a road segment. An average of the crash rates from 2016 to 2020 (the most recently available set of statewide information at the time of the study) was used for this analysis.

Approximately 65% of the SR 316 corridor had a crash rate exceeding the Georgia statewide average. The highest crash rate areas (more than 200% of the statewide

average), as indicated in red on Figure 2-7, occur between Patrick Mill Road SW/West Winder Bypass to SR 11/Winder-Monroe Highway/Christmas Avenue and from CR 440/CR 662/Virgil Langford Road to Epps Bridge Parkway at the Oconee Connector.

2.4 Existing Traffic Operations

2.4.1 Traffic Volumes

The traffic volume along SR 316 is nearly three times higher in Gwinnett County than in Barrow and Oconee Counties due to higher population and employment in Gwinnett County. Annual average daily traffic counts from GDOT's 2021 Traffic Analysis & Data Application (TADA) database

indicate approximately 105,000 vehicles per day travel along SR 316 in Gwinnett County compared to approximately 35,000 vehicles per day in both Barrow and Oconee Counties. Figure 2-8 illustrates these daily volumes.

Truck volumes along SR 316 are approximately twice as high in Gwinnett County compared to Barrow and Oconee Counties. On average, the daily truck volume in Gwinnett County in 2021 was approximately 7,000 trucks (6.6%), compared to 3,800 (10.9%) and 3,100 trucks (8.9%) per day in Barrow County and Oconee County, respectively.

During the PM peak hour (5:00PM-6:00PM), volumes vary along the corridor, with the

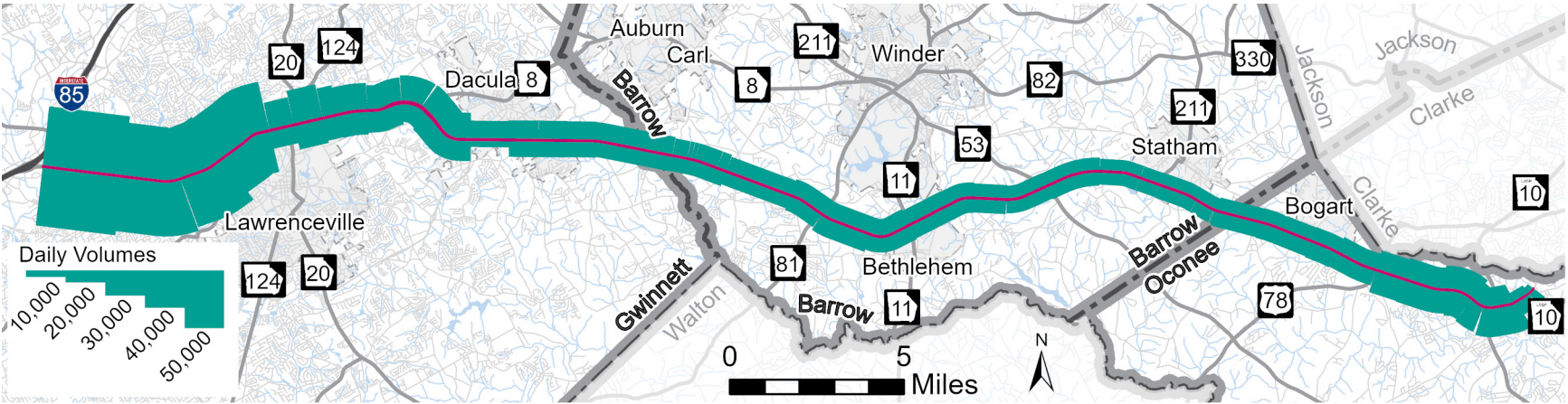


Figure 2-8 SR 316 Existing Daily Volumes

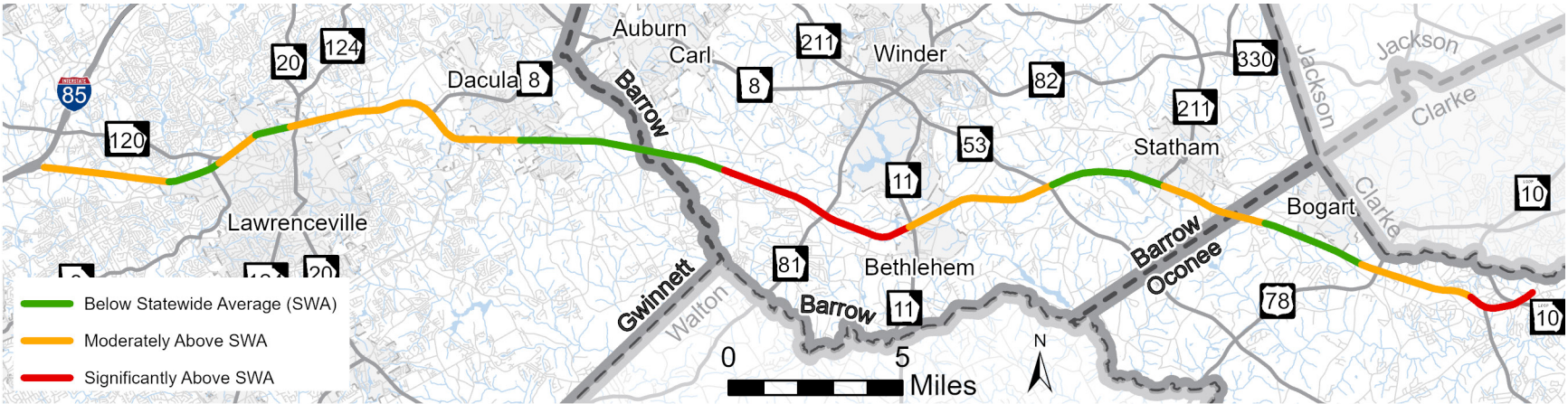


Figure 2-7 Crash Rates Along SR 316 Compared to Statewide Average

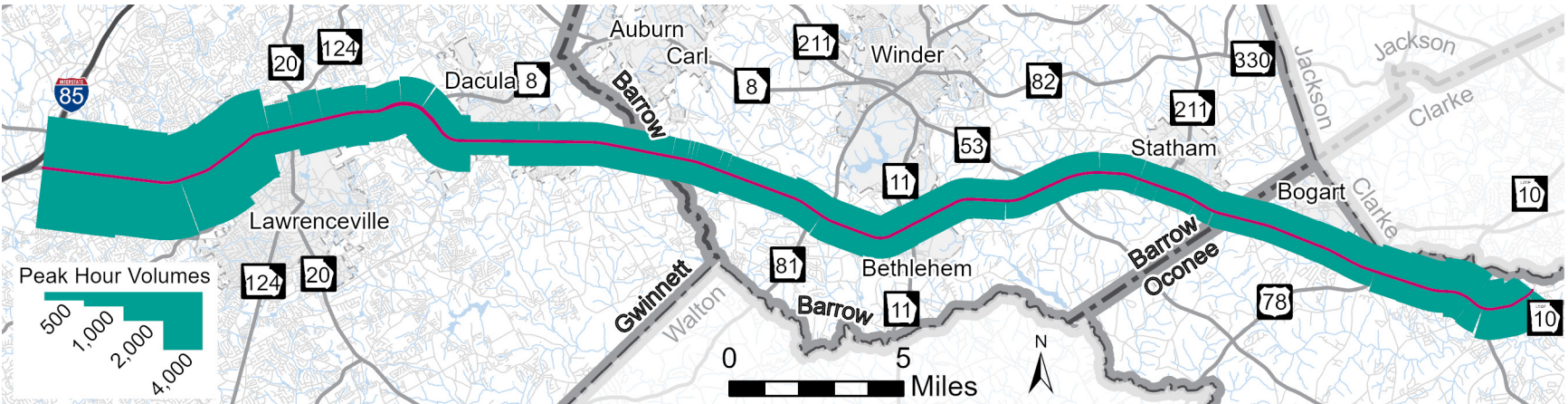


Figure 2-9 SR 316 Existing PM Peak Volumes

SR 316 Planning Study

majority of traffic in Gwinnett County. It should be noted that all existing AM peak hour volumes (7:15AM.-8:15AM) are in Appendix A. Volumes are more than 4,000 vehicles near I-85, tapering off gradually but still at approximately 2,000 vehicles in east Barrow and Oconee Counties until starting to increase again near Athens. Figure 2-9 displays the PM peak hour volumes along SR 316.

2.4.2 Peak Travel Speeds

While speed limits range from 45 to 65 mph (refer to Section 2.1.3), the PM peak hour actual travel speeds are less than posted speed limits in several areas along the corridor, primarily near the more densely populated areas in Gwinnett and Oconee

Counties as illustrated on Figure 2-10. Traffic speeds are slowest in the more densely populated areas of Gwinnett and Oconee Counties. On average, there will be a 4-minute delay to travel one to two crossings on SR 316 and a 12-minute delay to travel more than 10 crossings.

2.4.3 Origin-Destination Data

As part of the existing condition analysis, the study team reviewed origin and destination data to understand how people are using the SR 316 corridor and where people are traveling. As would be expected, there are several origin-destination pairs for a 40-mile corridor. The origin-destination data was analyzed to understand how far people travel along the SR 316 corridor and the results

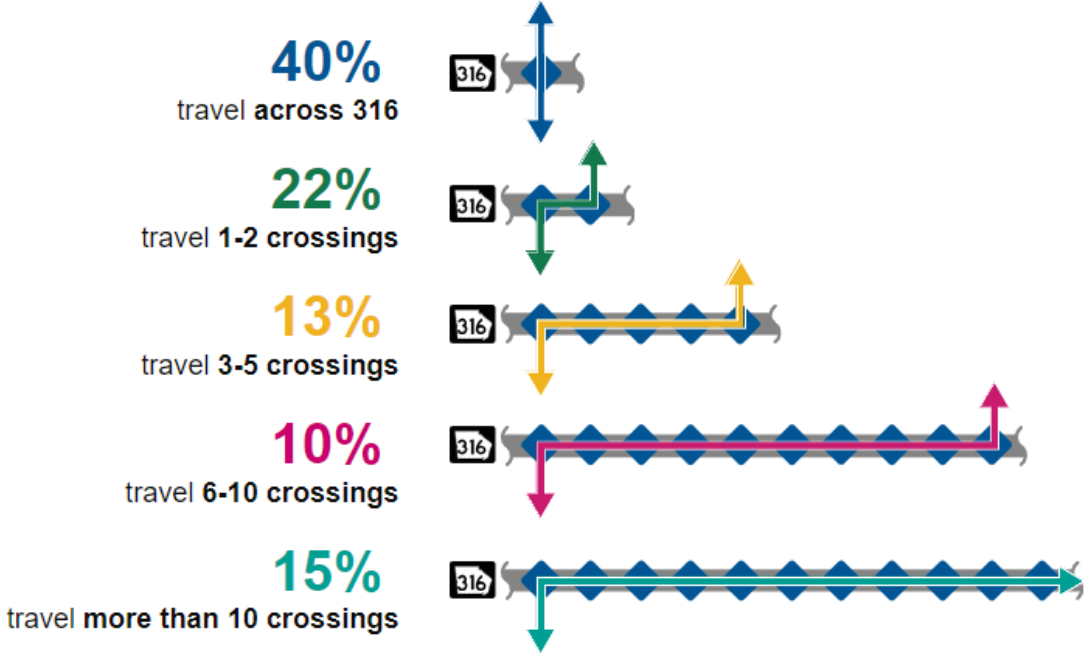


Figure 2-11 Origin-Destinations on SR 316

are illustrated in Figure 2-11. These are representative of all trips along the corridor.

2.4.4 Level of Service

Level of service (LOS) is a measurement of capacity based on the ratio of traffic volumes to roadway capacity. LOS is calculated using the travel demand model, and is measured on an alphabetical scale from A to F, where A indicates free-flow traffic operation and F indicates congested roadways with little movement. In an emerging metropolitan area, such as the study area, LOS E or F is unacceptable, with LOS D being on the fringe of requiring improvements. By comparison, in more urbanized areas, a lower LOS is acceptable given that lower

speeds are safer for urban environments where more pedestrians and bicyclists are present.

LOS is based on the capacity of the corridor, primarily the number of lanes. Based on this, the corridor appears to have sufficient capacity for the demand and volume of vehicles, as shown on Figure 2-12. However, LOS does not account for any delay caused by traffic signals and other traffic movements such as slowing vehicles and lane changes. The congestion along the corridor is much more significant than indicated by LOS and should also be based on other metrics such as speed as discussed previously.

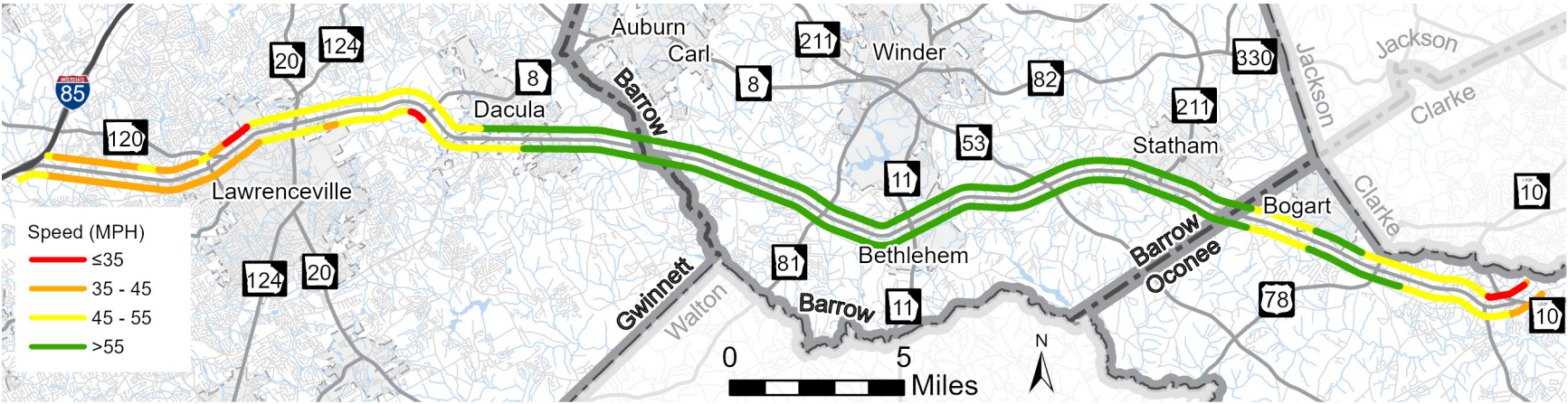


Figure 2-10 SR 316 Existing PM Speeds

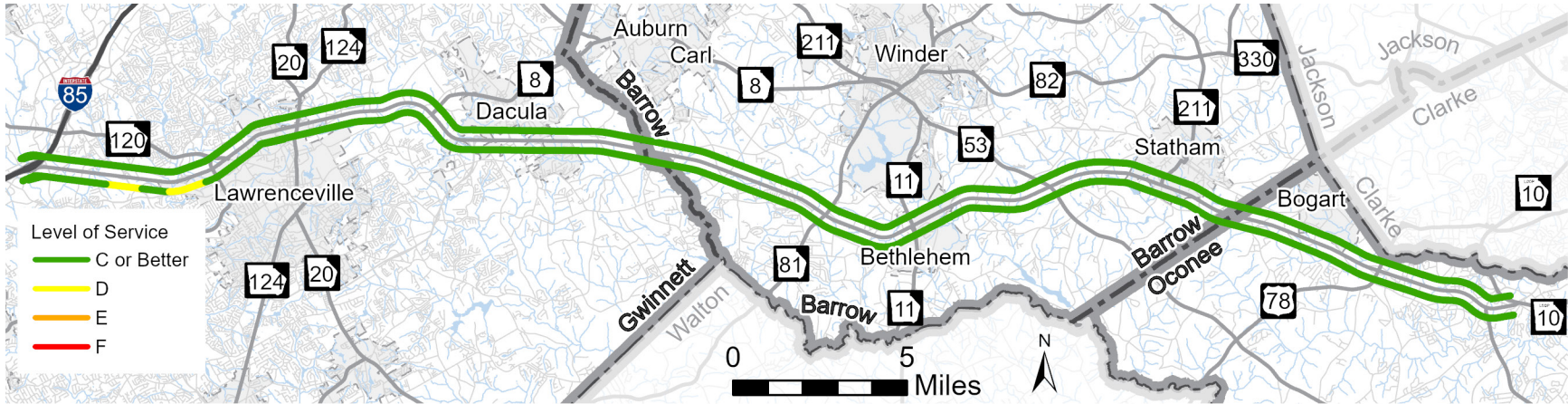


Figure 2-12 SR 316 Existing PM Peak Level of Service

3 Growth Rates

Future open year (2030) and design year (2050) volumes were calculated for the Baseline and Build alternatives. Open Year refers to when projects are anticipated to be completed and open to traffic and Design Year represents the typical life cycle of projects before more improvements are needed (generally 20 years). Baseline refers to the future condition if only the SR 316 reconstruction projects are completed, without any other improvements. Growth rates reflect the projected change in traffic volumes for a given period for a specific facility. Growth rate is typically calculated as:

$$Annual\ Growth\ Rate = \left(\frac{End\ Count}{Begin\ Count} \right)^{\frac{1}{End\ Year - Begin\ Year}}$$

Growth rates were calculated based on the GDOT Design Traffic Forecasting Manual, which relies on two important calculations:

- The existing traffic growth rate, based on an analysis of long-term (historical) trends in traffic volumes using actual traffic counts; and
- An estimated future annual traffic growth rate incorporating expected population and employment growth due to new development or

redevelopment based on documented, credible information sources.¹¹

The first set of growth rates were calculated using historical traffic count data from GDOT’s TADA for the period of 2012 to 2021 and are summarized by county in Table 3-1.

Table 3-1 Traffic Count Growth Rates (2012-2021)

County	Growth Rate
Gwinnett	1.62%
Barrow	1.72%
Oconee	2.08%

The second set of growth rates were calculated using population and employment data from the following sources:

- Governor’s Office of Planning and Budget (population growth data);
- Atlanta Regional Commission (ARC) travel demand model (TDM) and Athens Metropolitan Planning Organization TDM (employment growth data); and
- Regional Economic Models, Inc (REMI) (employment and population growth data).

These growth rates are summarized by county in Table 3-2.

Table 3-2 Future Traffic Count Growth Rates (2030 and 2050)

Socioeconomic Growth Rate		
County	2022-2030	2031-2050
Gwinnett	0.94%	0.86%
Barrow	1.25%	0.82%
Oconee	0.99%	0.89%

Finally, using results from the ARC TDM, traffic growth rates were calculated for AM and PM peak periods for designated zones. These rates vary from one zone to another, depending on the period of day and whether the zone is considered as the origin or destination. Growth rate and volume results are summarized in Appendix B.

Additional traffic volumes from 18 of the 28 DRIs described in Section 1.3 were incorporated to account for planned development along the corridor. Some of the DRIs were not included either because their construction year was before 2022 or because traffic impact analysis information

11 GDOT Design Forecasting Manual: <https://www.dot.ga.gov/PartnerSmart/DesignManuals/Planning/GDOT%20Design%20Traffic%20Forecasting%20Manual.pdf>

SR 316 Planning Study

was not available. Regardless, the 18 DRIs will account for additional growth above what is projected at the regional or state level. DRI volumes represent an additional 7% incorporated into the future open year 2030 and an additional 7% incorporated into the design year 2050 traffic estimates. The DRI volumes had a growth rate of 23% between 2030 and 2050.

The combination of these three growth rates (historical, socioeconomic, and ARC TDM growth rates) and DRI volumes were applied to existing year (2022) traffic volumes to estimate 2030 and 2050 volumes for the study area.

4 Future 2050 Baseline Alternative

The future Baseline alternative includes the committed SR 316 reconstruction projects that will be completed or under construction by 2025. This Baseline alternative assumes no improvements will be made other than these reconstruction projects. A map of crossings is illustrated on Figure 4-1 and the associated crossing information is listed in Table 4-1. Projects that are completed or under construction are denoted with an asterisk in the table.

Table 4-1 reflects project status as of May 2025.

Table 4-1 Crossing Improvements Assumed to Be Completed in Baseline Alternative

Location	Project ID	Proposed Improvement	County
Hi Hope Road	0013893	Interchange	Gwinnett
Cedars Road * **	0013894	RIRO	Gwinnett
Hurricane Trail	0013895	Interchange	Gwinnett
Fence Road	0013896	Traffic Reroute	Gwinnett
SR 8/US 29/Winder Highway	0013897	Interchange	Gwinnett
Harbins Road *	N/A	Interchange	Gwinnett
CR 74/Kilcrease Road	0013902	Interchange	Barrow
Patrick Mill Road SW/West Winder Bypass *	0010555	Interchange	Barrow
CR 416/Carl-Bethlehem Road	0013903	Grade Separation	Barrow

* Projects that are completed or under construction
** Cedars Road modeled as a RIRO on the north and traffic reroute on the south.

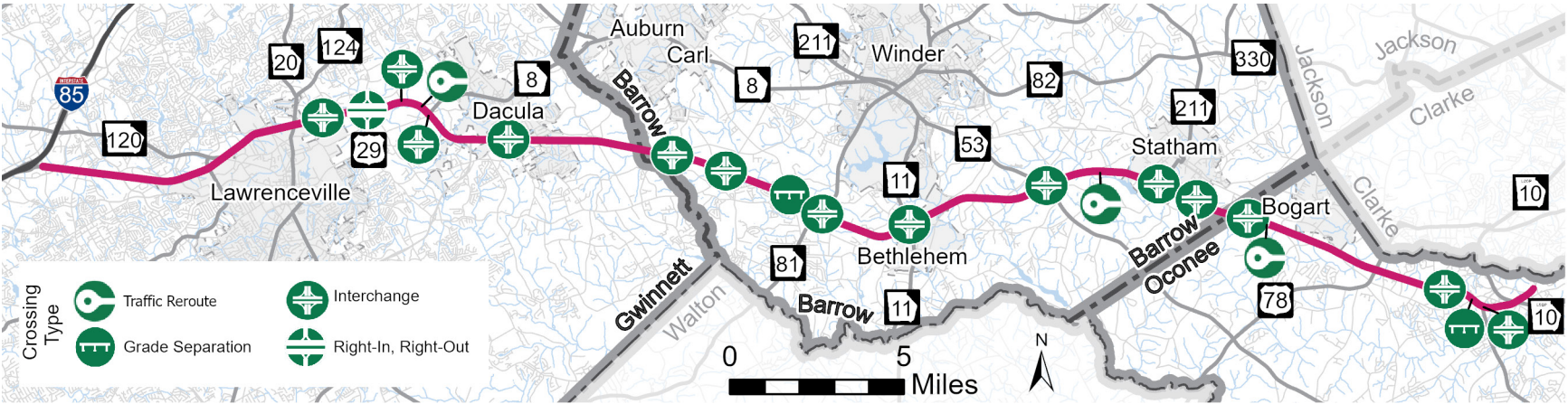


Figure 4-1 Baseline Alternative Configuration Changes

Table 4-1 Crossing Improvements Assumed to Be Completed in Baseline Alternative

Location	Project ID	Proposed Improvement	County
SR 81/Loganville Highway *	N/A	 Interchange	Barrow
SR 11/Winder-Monroe Highway/Christmas Ave*	N/A	 Interchange	Barrow
SR 53/Hog Mountain Road *	N/A	 Interchange	Barrow
SR 211/Bethlehem Road * **	0010352	 Interchange	Barrow
CR 329/Barber Creek Road *	0013910	 Interchange	Barrow
CR 60/Dials Mill Road and CR 58/Dials Mill Extension ***	0013763	 Interchange	Oconee
CR 55/Jimmy Daniel Road *	0013767	 Interchange	Oconee
CR 440/CR 662/Virgil Langford Road *	0013768	 Grade Separation	Oconee
CR 929/Oconee Connector *	0013769	 Interchange	Oconee

* Projects that are completed or under contruction

** Depicted as traffic reroute at McCarty Road and interchange at SR 211/Bethlehem Road in Figure 4-1 (depicted as two icons in Figure 4-1).

*** Depicted as interchange at CR 58/Dials Mill Extension and traffic reroute at CR 60/Dials Mill Road in Figure 4-1 (depicted as two icons in Figure 4-1).

4.1 Future Crash Rates

The study team estimated future crash rates by using the growth rates and then applying crash modification factors (CMFs) and safety performance functions (SPFs) The estimated future crash rates were determined based on a predictive crash analysis using Highway Safety Software (HSS) and the methodology outlined in the Highway Safety

Manual (HSM).¹² The quantitative safety analysis of future conditions incorporated HSM-based procedures to evaluate area-specific characteristics (geometry, traffic volumes, estimated crash rates, congestion) and mathematical equations (CMFs and SPFs) to objectively estimate the safety performance of the proposed future Baseline alternative compared to the existing condition. Section 6 presents a comparison

of the future Baseline alternative against alternatives with potential improvements to understand how future projects will impact safety, mobility, and economic development.

4.1.1 Estimated Future Crash Frequency

Table 4-2 lists segments along the corridor from west to east and the 2030 and 2050 estimated crash rates if no improvements were made to the corridor, and the rates for the Baseline alternative, which again reflects any SR 316 reconstruction projects under construction or completed by the end of 2025.

4.1.2 Estimated Future Crash Rates

As shown on Figure 4-2 and Figure 4-3, crash rates decrease some in the Baseline alternative; however, additional improvements can be implemented to further reduce crash rates along the corridor. The area in Oconee County near the SR 10 Loop/Athens Perimeter is still exhibiting much higher rates than the statewide average in the Baseline alternative. Details of the predictive crash analysis for additional improvements along the corridor are provided in Section 6.1.

Table 4-2 Estimated Crash Reduction from SR 316 Reconstruction Projects

Segment	County	2030 No-Improvements	2030 Baseline	% Crash Reduction	2050 No-Improvements	2050 Baseline	% Crash Reduction
I-85 to Sugarloaf Parkway	Gwinnett	143	143	0%	155	155	0%
Sugarloaf Parkway to Riverside Parkway	Gwinnett	178	178	0%	191	191	0%
Riverside Parkway to SR 120/Duluth Highway	Gwinnett	74	74	0%	86	86	0%
SR 120/Duluth Highway to Collins Hill Road	Gwinnett	120	120	0%	130	130	0%
Collin Hills Road to SR 124/Buford Drive	Gwinnett	34	34	0%	38	38	0%
SR 124/Buford Drive to Cedars Road	Gwinnett	167	149	-11%	186	166	-11%
Cedars Road to Fence Road	Gwinnett	132	85	-36%	146	94	-35%
Fence Road to Drowning Creek Road	Gwinnett	178	151	-19%	206	176	-18%
Drowning Creek Road to Patrick Mill Road SW/West Winder Bypass	Gwinnett/Barrow	49	41	0%	52	44	0%
Patrick Mill Road SW/West Winder Bypass to CR 416/Carl Bethlehem Road	Barrow	73	60	-16%	76	63	-15%
CR 416/Carl Bethlehem Road to SR 11/Winder-Monroe Highway/Christmas Avenue	Barrow	112	91	-17%	115	94	-17%
SR 11/Winder-Monroe Highway/Christmas Avenue to SR 53/Hog Mountain Road	Barrow	105	86	-19%	110	90	-19%
SR 53/Hog Mountain Road to SR 211/Bethlehem Road	Barrow	34	29	-18%	37	32	-18%
SR 211/Bethlehem Road to CR 60/Dials Mill Road	Barrow/Oconee	32	20	-14%	36	21	-13%
CR 60/Dials Mill Road to US 78/SR 10/Monroe Highway	Oconee	19	19	-36%	21	21	-40%
US 78/SR 10/Monroe Highway to CR 440/CR 662/Virgil Langford Road	Oconee	74	68	0%	80	73	0%
CR 440/CR 662/Virgil Langford Road to SR 10 Loop/Athens Perimeter	Oconee	293	267	-9%	308	282	-9%

12 FHWA Highway Safety Manual: <https://highways.dot.gov/safety/data-analysis-tools/highway-safety-manual>

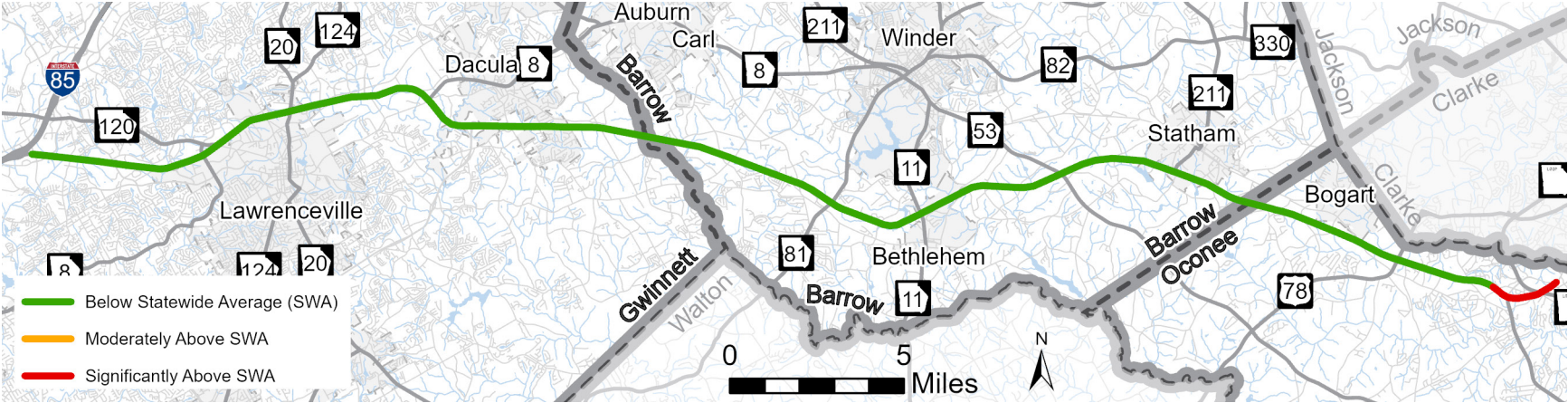


Figure 4-2 2030 Baseline Crash Rates

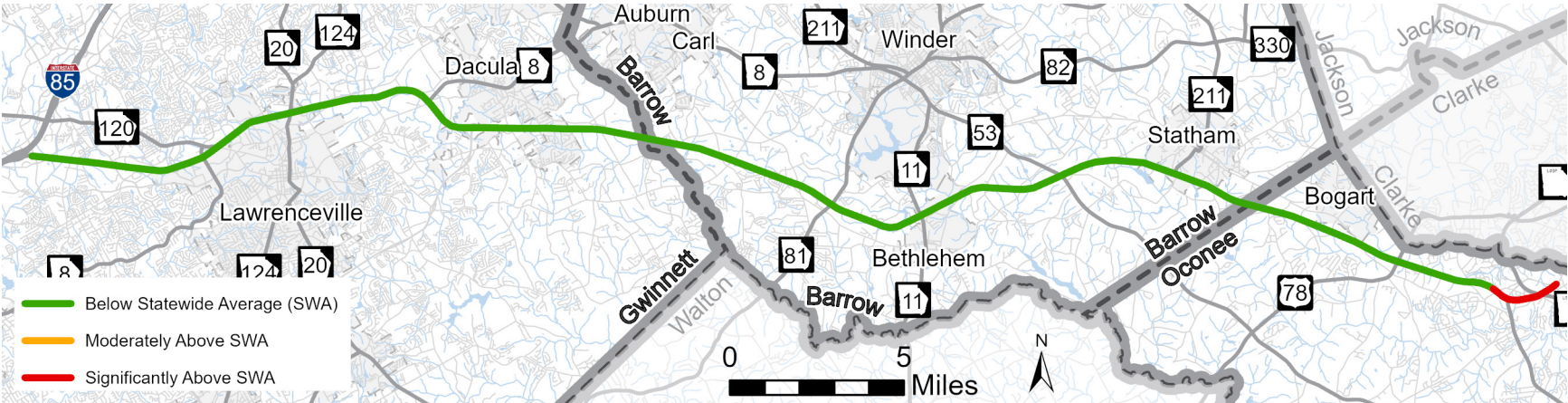


Figure 4-3 2050 Baseline Crash Rates

4.2 Future Traffic Volumes

Continued growth and development along SR 316 will result in additional traffic volumes, leading to reduced speeds and higher levels of congestion and delay. This section outlines the predicted traffic conditions for 2030 and 2050. Maps and discussion in this section focus on the PM peak hour to illustrate the worst conditions. Future Baseline AM peak hour maps are provided in Appendix C.

4.2.1 Traffic Volumes

Volumes on the corridor in 2030 remain consistent with the existing volumes presented in Section 2.4.1. Volumes are greatest in Gwinnett County and then taper off in Barrow and Oconee Counties. The volume growth to 2030 is not significant, with a few thousand more cars per day on average, as shown on Figure 4-4 and Figure 4-5.

As illustrated on Figure 4-6 and Figure 4-7, volumes continue to steadily increase to 2050, following the same pattern as in 2030, with the highest volumes in Gwinnett County, which then decrease some into Barrow and Oconee Counties before increasing again near Athens.

4.2.2 PM Peak Hour Speeds

Overall, by 2030, due to the growth in the

area and additional vehicles on the roads, speeds will decrease, increasing delay and travel time for motorists. On average, there will be a 6-minute delay to travel one to two crossings on SR 316 and a 24-minute delay to travel more than 10 crossings. The existing speeds are illustrated on Figure 4-8 for reference. The 2030 PM peak hour speeds showing the slowdowns are illustrated on Figure 4-9.

By 2050, speeds will decrease further compared to the existing and 2030 speeds. Figure 4-10 illustrates the 2050 speeds along SR 316. Speeds are low in 2050 for most of Gwinnett County compared to the existing year. Similarly, areas around Bethlehem in Barrow County experience lower speeds, and Oconee County experiences a mix of improved speeds and declining speeds.

4.2.3 Level of Service

Figure 4-11 illustrates existing PM LOS. In 2030, LOS is similar to existing conditions (Section 2.4.4). 2030 LOS is shown on Figure 4-12. As noted previously, LOS is based on the number of lanes and volumes of vehicles and does not account for delays caused by traffic signals and traffic movements.

However, by 2050, SR 316 will operate at a failing LOS in western and eastern

Gwinnett County, along SR 316 eastbound in Barrow County, and in some small areas in Oconee County, indicating that by 2050, the volume of vehicles is near or exceeds the available capacity as shown on Figure 4-13. It is important to note that the Baseline alternative includes already programmed SR 316 reconstruction projects constructed by 2025, and these results account for their construction, illustrating that additional improvements could be made to reduce congestion and ultimately support better mobility and continued economic development. This is important for eastern Gwinnett County and western Barrow County where the Rowen development is proposed, which will have a significant economic impact to the study area.

4.3 Baseline Alternative Conclusions

Based on the evaluation of the Baseline alternative, which includes SR 316 reconstruction projects completed or under construction by 2025, additional improvements are needed to increase safety and mobility and to support continued economic development. Crashes, while reduced, still occur along the corridor, and speeds and LOS indicate mobility is limited across the corridor, which will impede new development and continued growth.

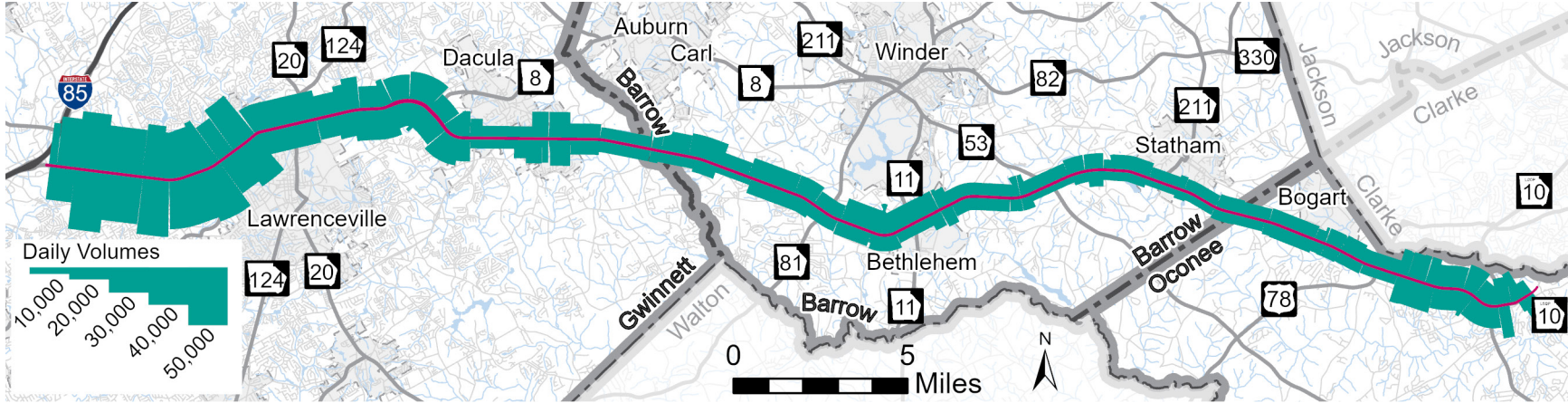


Figure 4-4 2030 Daily Volumes

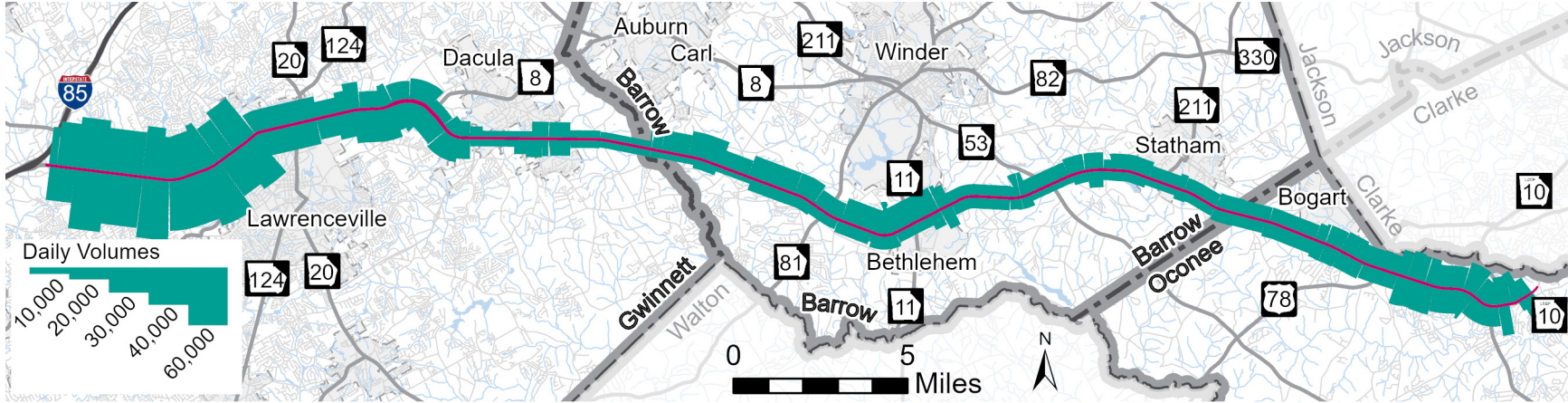


Figure 4-6 2050 Daily Volumes

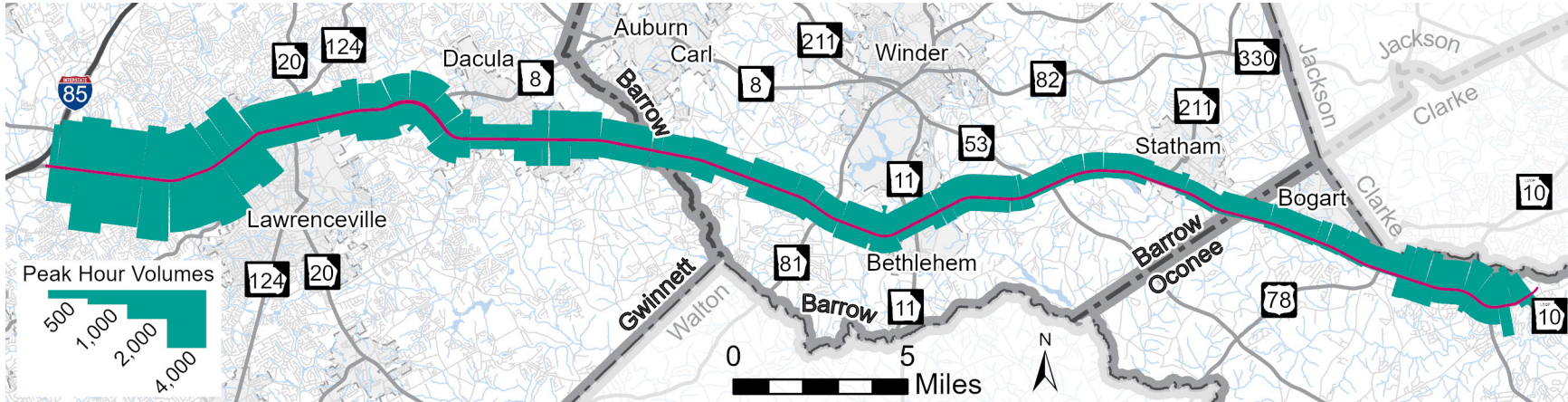


Figure 4-5 2030 PM Peak Hour Volumes

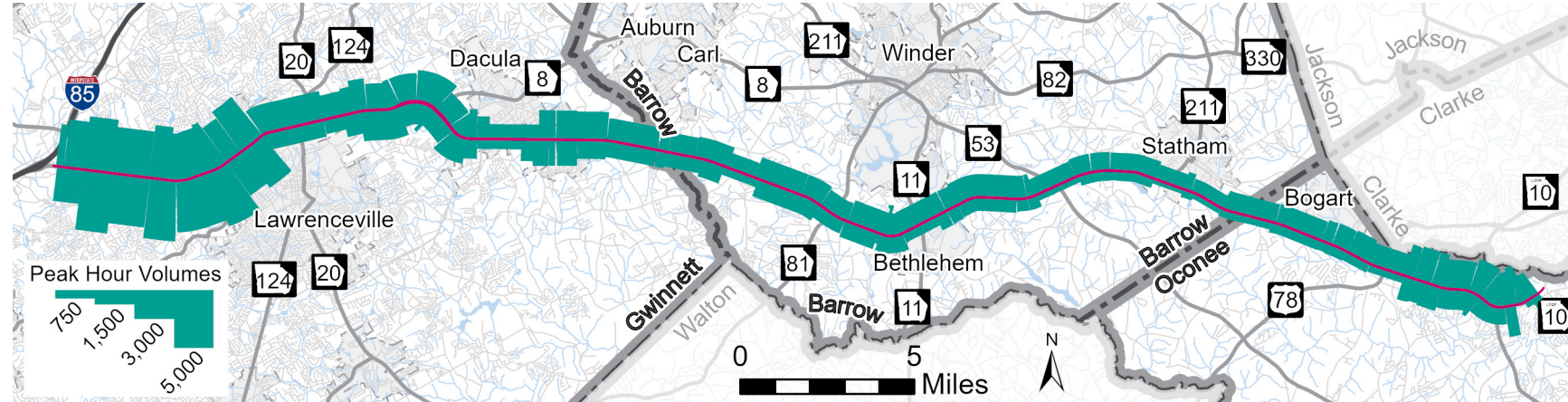


Figure 4-7 2050 PM Peak Hour Volumes

SR 316 Planning Study

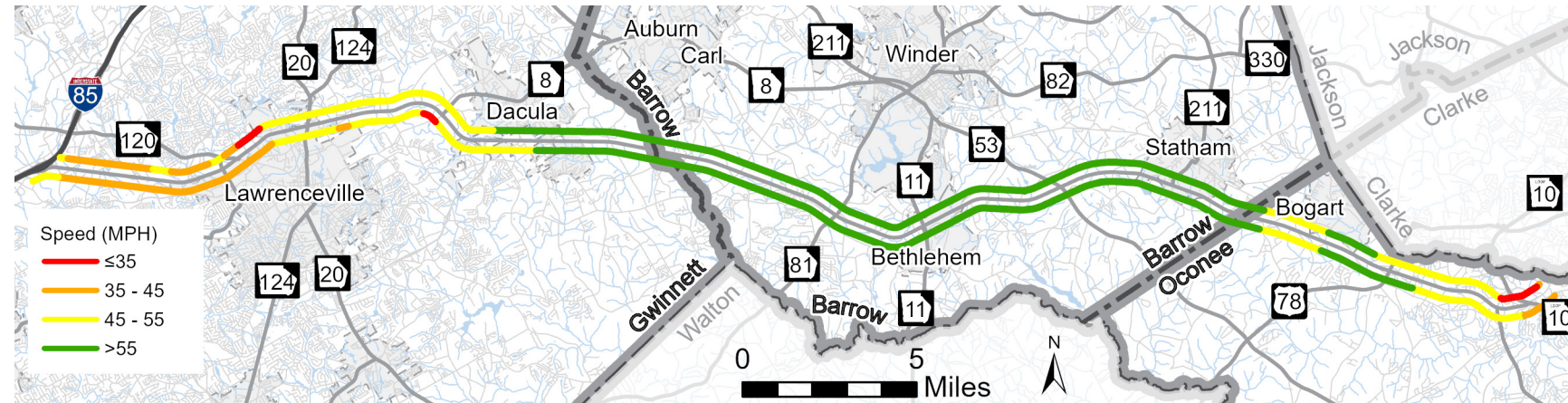


Figure 4-8 Existing PM Peak Hour Speeds

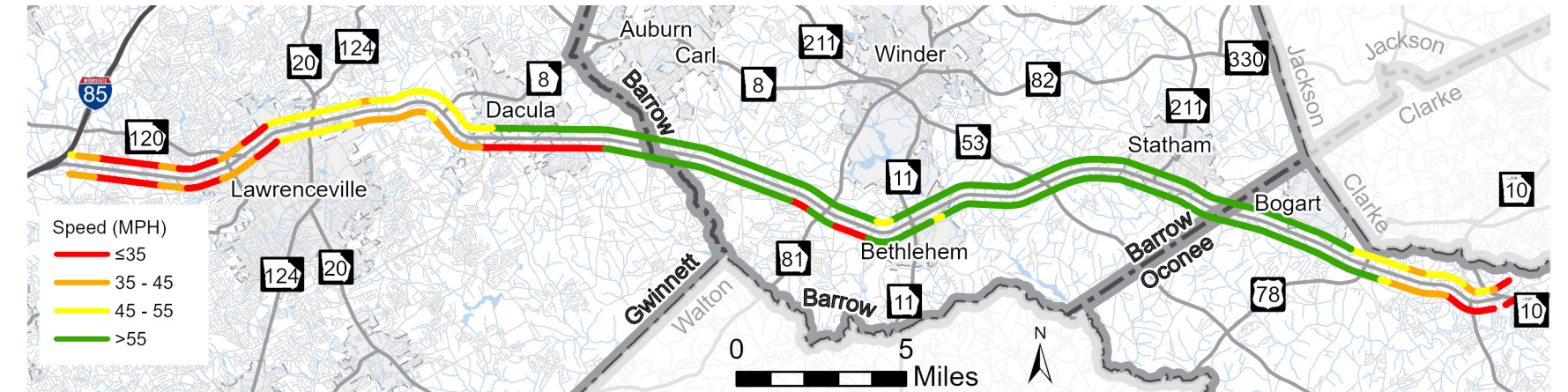


Figure 4-10 2050 PM Peak Hour Speeds

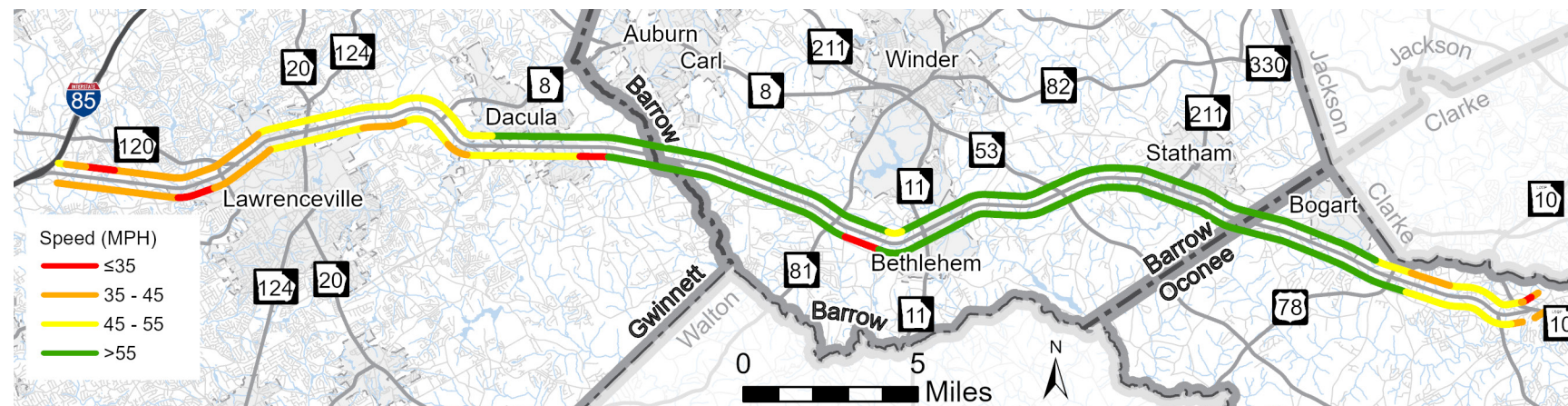


Figure 4-9 2030 PM Peak Hour Speeds

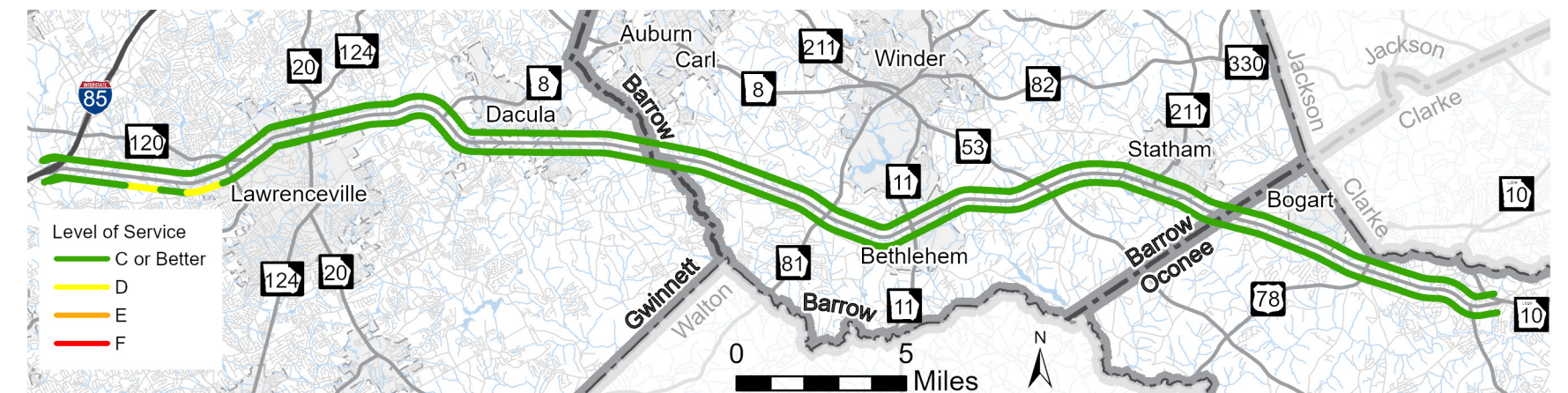


Figure 4-11 Existing PM Peak Hour Level of Service

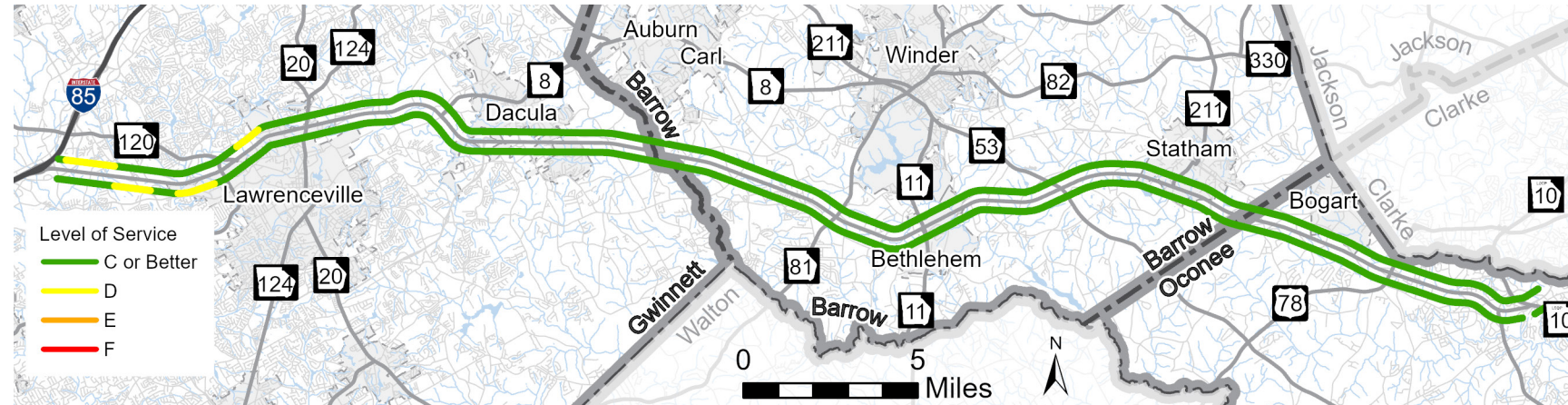


Figure 4-12 2030 PM Peak Hour Level of Service

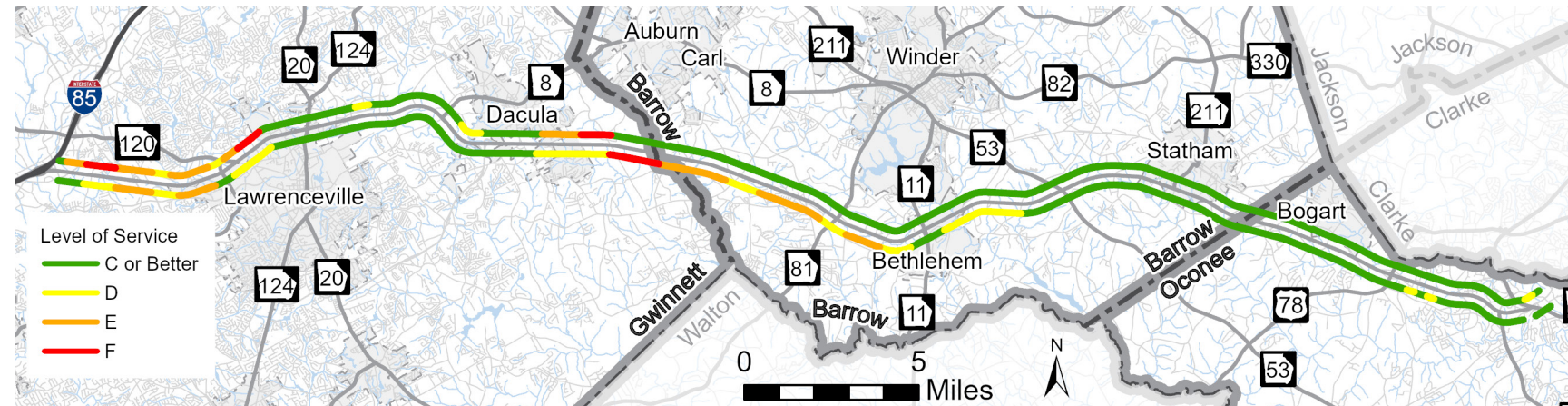


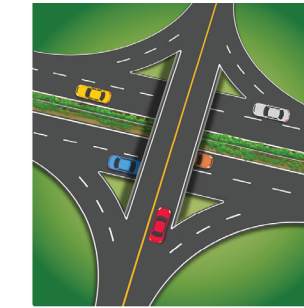
Figure 4-13 2050 PM Peak Hour Level of Service

5 Build Alternatives

The SR 316 reconstruction projects address most high-traffic, high-congestion crossings. However, as discussed in Section 4, not all safety, mobility, and economic development challenges are addressed, providing an opportunity for additional improvements within and around the SR 316 corridor. This Planning Study focuses on the 12 at grade crossings with lower traffic volumes that were not included in the SR 316 reconstruction projects. The focus areas for these remaining locations include:

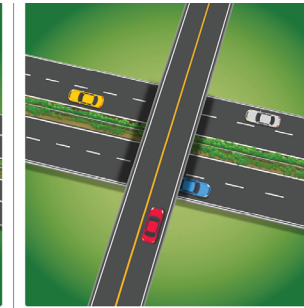
-  Eliminate unsafe movements to reduce the severity and frequency of crashes.
-  Complete the transition of SR 316 to allow for free-flow movement to reduce congestion and improve mobility.
-  Maintain access to SR 316 or across SR 316 where there is future development to accommodate future growth and economic development.

Four types of crossing improvements are considered and are illustrated on Figure 5-1.


Interchange

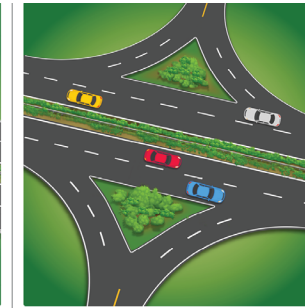
SR 316 traverses over or under the side road with entrance and exit ramps.

Rationale
Connect SR 316 with high traffic arterials and major development.


Grade Separation

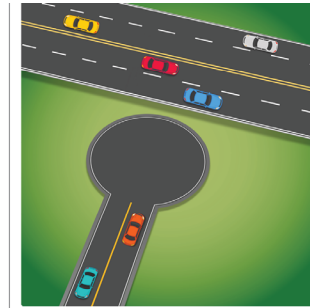
Side road bridges over SR 316 maintaining movement across SR 316. No access to or from SR 316 provided at side road.

Rationale
Facilitate movement across SR 316.


Right-In, Right-Out

Ramps offer access between SR 316 and the side road. Side road ends at SR 316.

Rationale
Facilitate access to SR 316 to support potential development.

 Traffic Reroute

Side road access to SR 316 is closed, with alternative routes connecting to SR 316.

Rationale
Separate low-traffic residential or rural areas from high-speed roads with additional local road improvements.

Figure 5-1 Crossing Improvements

5.1 Build Alternatives

Build alternatives represent various improvements that could be implemented. During transportation planning studies, it is common to have multiple Build alternatives to test and compare improvements. It is typical for studies to end with a list of recommended improvements that are a combination of the Build alternatives. For this study, two Build alternatives, Build 1 and Build 2, were analyzed. The

Build 1 alternative reflects the SR 316 reconstruction projects for the remaining at-grade crossings, and the Build 2 alternative includes modifications to some of the crossings to reflect input from stakeholders and the public.

5.1.1 Build 1 Alternative

The Build 1 alternative proposes a change in configuration to 11 of the 12 remaining at-grade access points (excluding SR

SR 316 Planning Study

10 Loop/Athens Perimeter) to match the reconstruction project descriptions. Build 1 alternative also includes the reconstruction projects from the Baseline alternative. The Build 1 alternative crossing improvements are listed in Table 5-1 and illustrated on Figure 5-2.

5.1.2 Build 2 Alternative

The Build 2 alternative proposes different improvements to some of the at-grade crossings included in the Build 1 alternative. These new improvements reflect input from stakeholders and the public and are intended to improve the performance of SR 316 in terms of safety, delay reduction,

and supporting economic development. A summary of stakeholder and community engagement and feedback is provided in Section 8. The Build 2 alternative at-grade crossing improvements are listed in Table 5-2 and illustrated on Figure 5-3. Existing and Build 1 alternative crossing configurations are provided in the table for reference.

Table 5-1 Build 1 Alternative Crossing Improvements

Access Points	GDOT PI No.	Existing Crossing	Build 1 Improvement
Oak Valley Road	0013899	RIRO	Traffic Reroute
Williams Farm Drive	0013900	At-Grade Intersection	Traffic Reroute
Drowning Creek Road	0013901	At-Grade Intersection	Interchange
CR 110/Harry McCarty Road	0013904	At-Grade Intersection	RIRO
Harrison Mill Road	0013905	At-Grade Intersection	RIRO
CR 138/Smith Cemetery Road	0013906	At-Grade Intersection	RIRO
CR 139/Jackson Trail Road	0013907	At-Grade Intersection	RIRO
Wall Road	0013908	At-Grade Intersection	RIRO
McNutt Creek Road	0013764	At-Grade Intersection	Interchange
Mars Hill Road	0013765	RIRO	Traffic Reroute
Julian Drive	0013766	At-Grade Intersection	Grade Separation

Table 5-2 Build 2 Alternative Crossing Improvements

Access Points	GDOT PI No.	Existing Crossing	Build 2 Improvement
Oak Valley Road	0013899	RIRO	Traffic Reroute
Williams Farm Drive	0013900	At-Grade Intersection	Interchange
Drowning Creek Road	0013901	At-Grade Intersection	Grade Separation
CR 110/Harry McCarty Road	0013904	At-Grade Intersection	Grade Separation
Harrison Mill Road	0013905	At-Grade Intersection	RIRO
CR 138/Smith Cemetery Road	0013906	At-Grade Intersection	RIRO
CR 139/Jackson Trail Road	0013907	At-Grade Intersection	RIRO
Wall Road	0013908	At-Grade Intersection	RIRO
McNutt Creek Road	0013764	At-Grade Intersection	RIRO
Mars Hill Road	0013765	RIRO	Traffic Reroute
Julian Drive	0013766	At-Grade Intersection	RIRO
SR 10 Loop/Athens Perimeter	0013770	Partial Interchange	Interchange Upgrade

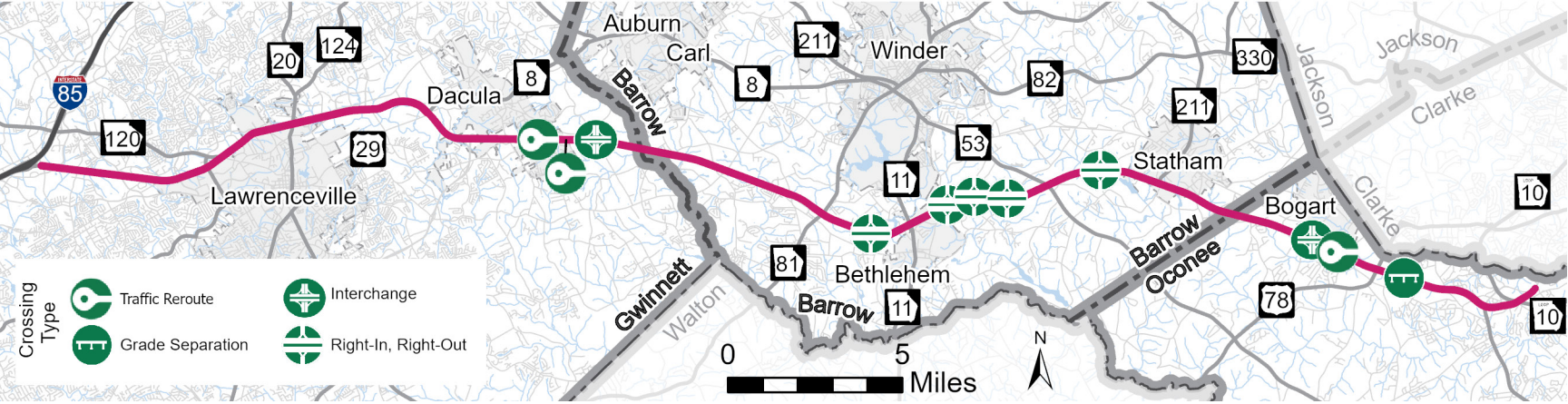


Figure 5-2 Build 1 Alternative Crossing Improvements

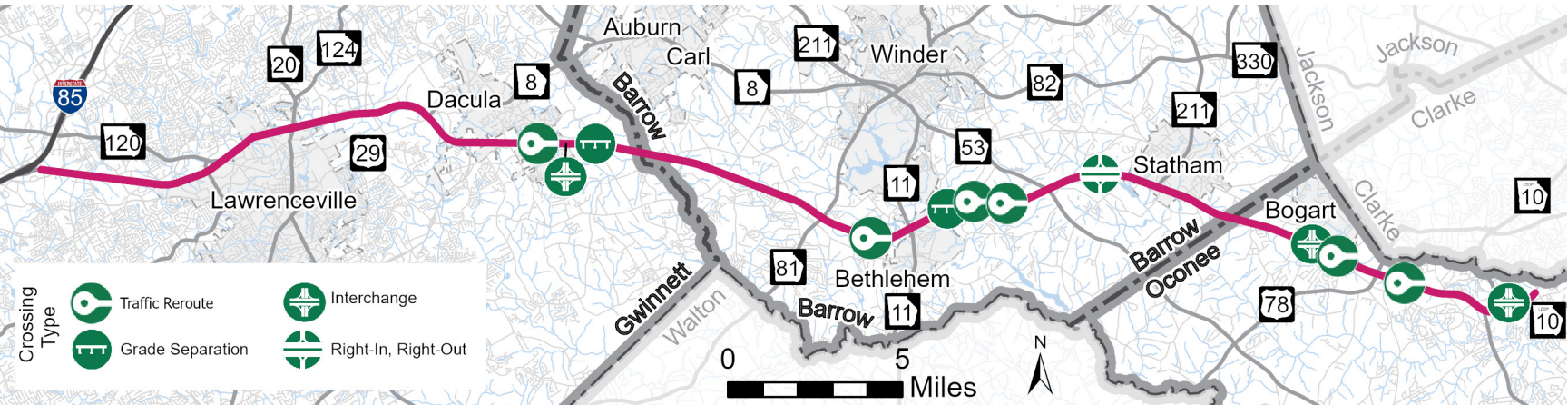


Figure 5-3 Build 2 Alternative Crossing Improvements

6 Evaluation and Comparison of Alternatives

This section presents a comparison of the Baseline alternative to the Build 1 and Build 2 alternatives to assess which projects from each alternative provide the greatest benefit regarding the three goals of the study – improve safety, reduce congestion, and support economic development. Several metrics were used to compare the alternatives including crash reduction, traffic volumes/delay, level of service, and travel speeds. The comparison is presented for both 2030 and 2050 to understand short-

term and long-term impacts of the crossing improvements. While the Build alternatives are compared as a package, the final list of projects includes a combination of projects from each alternative, projects supported by stakeholders and the public, and projects identified based on this comparison where more improvement is needed.

6.1 Predicted Safety Analysis

The first metric is safety. The predictive safety analysis estimates the number of crashes in the Build alternatives and compares them to the Baseline alternative to understand how many crashes are reduced due to the crossing improvements. This comparison was conducted using the predictive crash analysis methodology outlined in Section 4.1. Figure 6-1 and

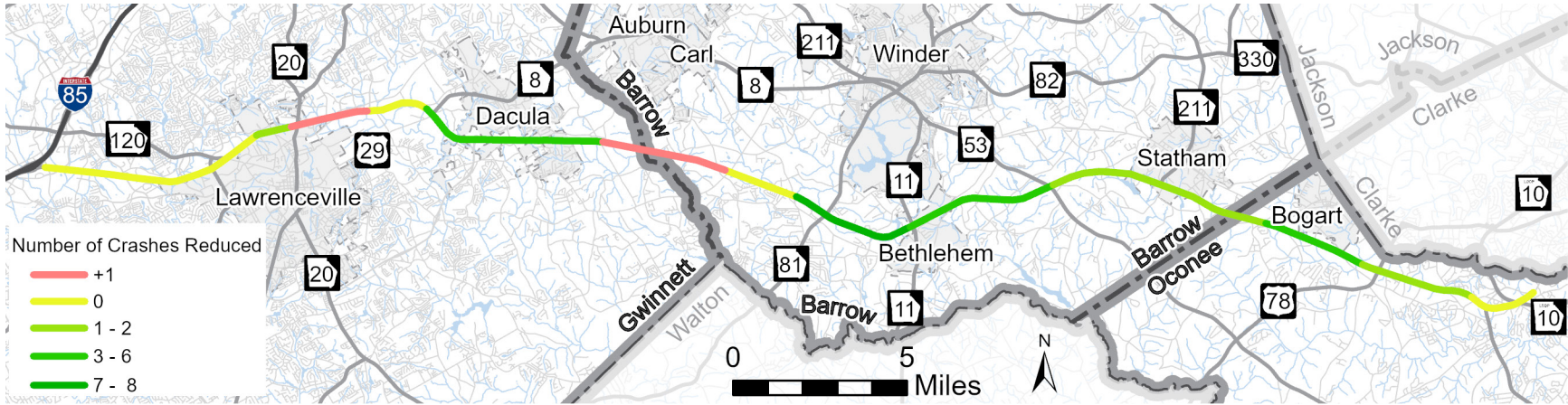


Figure 6-1 Predicted Crash Reduction Along SR 316 — Baseline to Build 1 Alternative in 2030

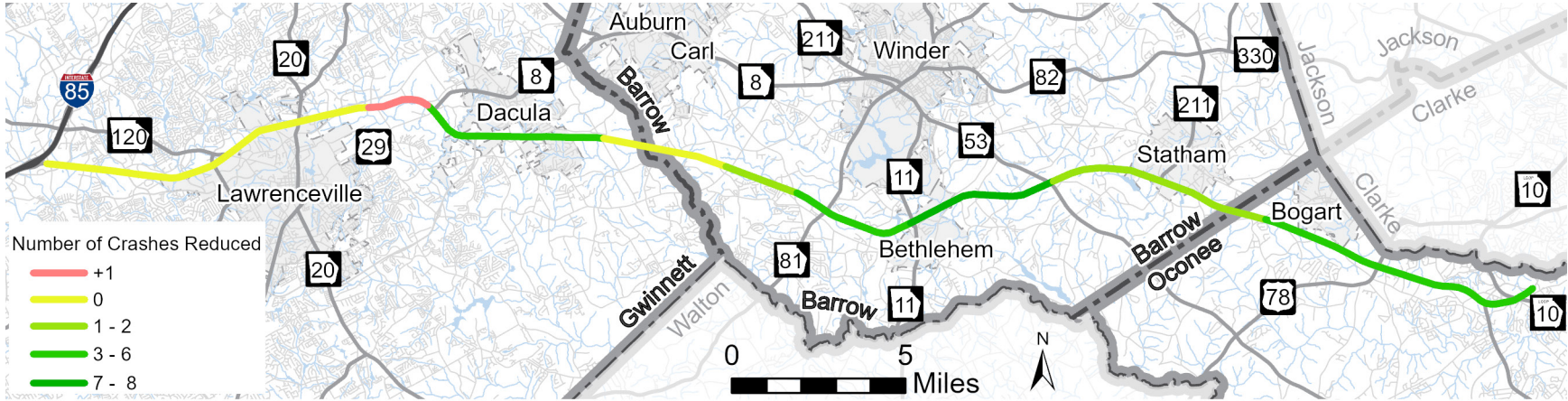


Figure 6-2 Predicted Crash Reduction Along SR 316 — Baseline to Build 2 Alternative in 2030

Figure 6-2 show the predicted crash reduction for 2030 in the Build 1 and Build 2 alternatives compared to the Baseline alternative. This was derived by subtracting the estimated crashes for each Build alternative from the Baseline estimates. Compared to the Baseline, the Build 1 and Build 2 alternatives exhibit a reduction in the number of predicted crashes in 2030; however, in both Build alternatives, improvements for some segments in

Gwinnett County are not addressing safety, with crash frequency estimated to increase. Overall, the Build 2 alternative performs slightly better than the Build 1 alternative in 2030, with 36 less crashes (2%) for the Build 2 alternative compared to 22 less crashes (1%) for the Build 1 alternative.

Figure 6-3 and Figure 6-4 show the 2050 predicted crash reduction in the Build 1 and Build 2 alternatives compared to the Baseline alternative. As with the 2030

analysis, 2050 predicts a greater reduction in crashes for the Build 2 alternative, with a greater number of crashes reduced for the Build 2 alternative (124 less crashes (6%)) compared to the Build 1 alternative (25 less crashes (1%)). Figure 6-5 and Figure 6-6 show the total number of predicted crashes for the Baseline and Build alternatives for 2030 and 2050, respectively.

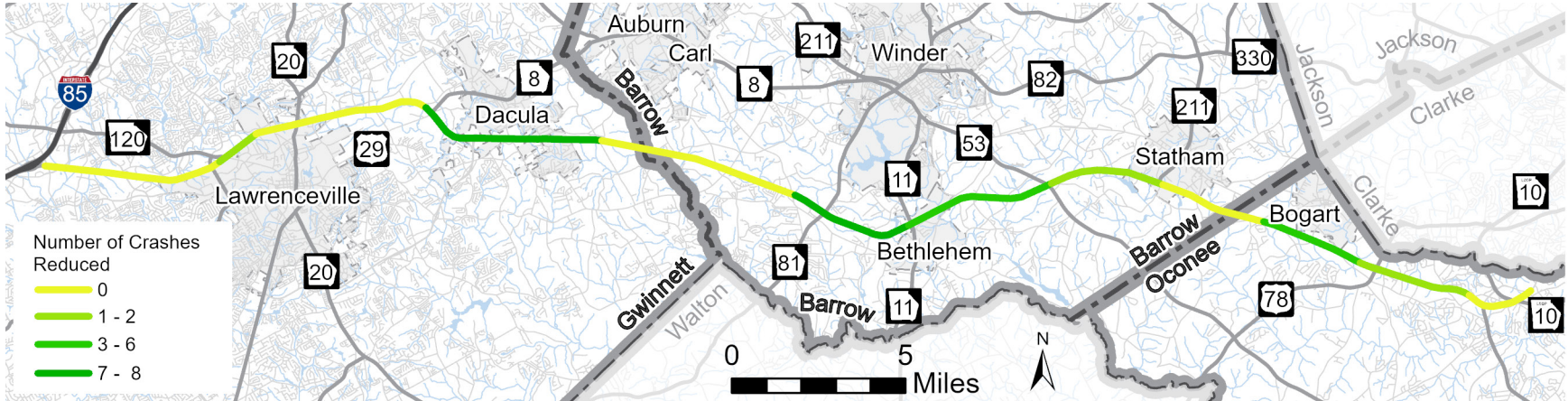


Figure 6-3 Predicted Crash Reduction Along SR 316 - Baseline to Build 1 Alternative in 2050

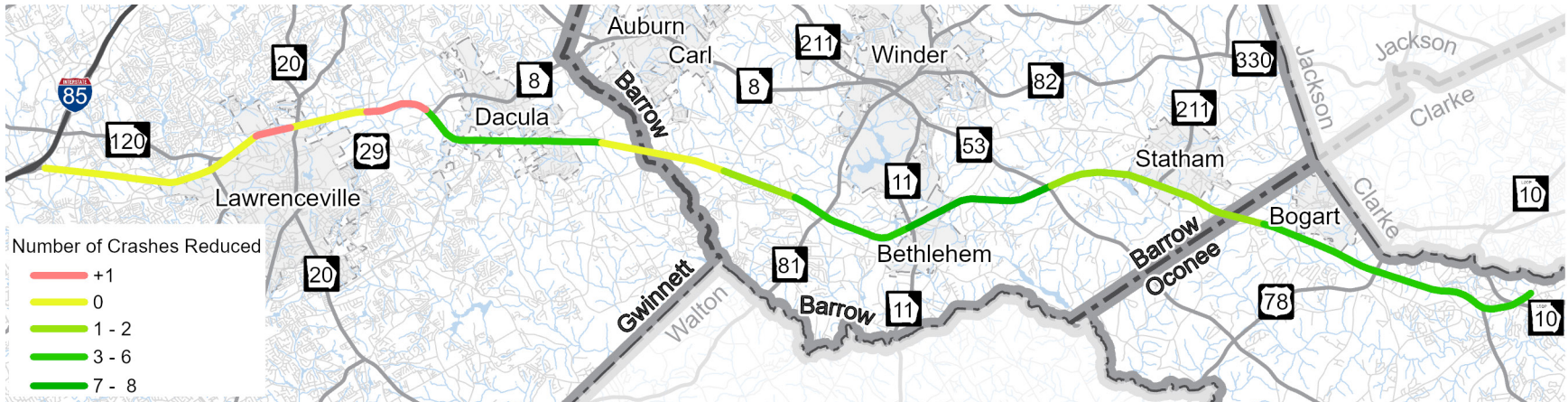


Figure 6-4 Predicted Crash Reduction Along SR 316 - Baseline to Build 2 Alternative in 2050

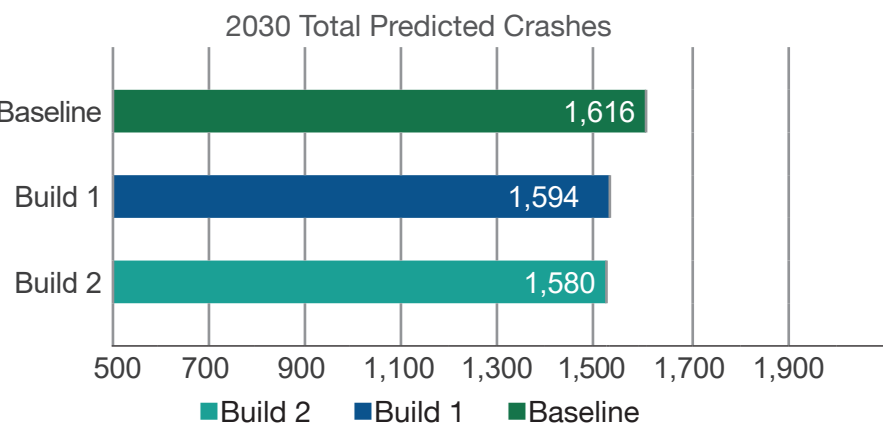


Figure 6-5 Total Predicted Crashes, 2030

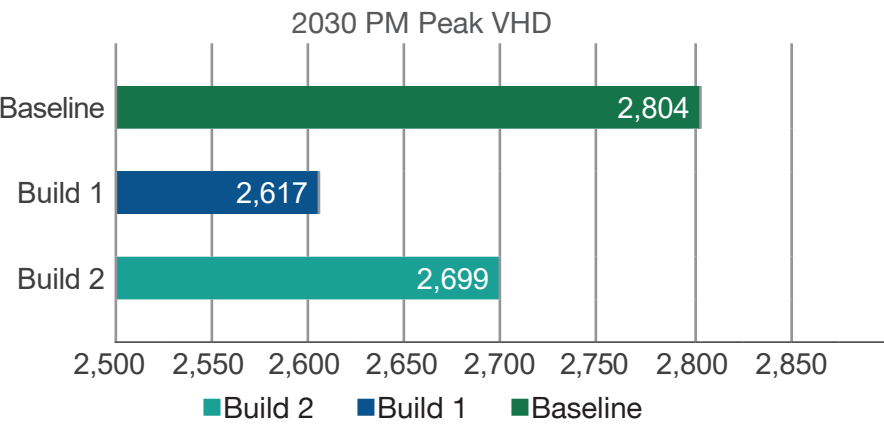


Figure 6-7 2030 PM Peak Hour Delay

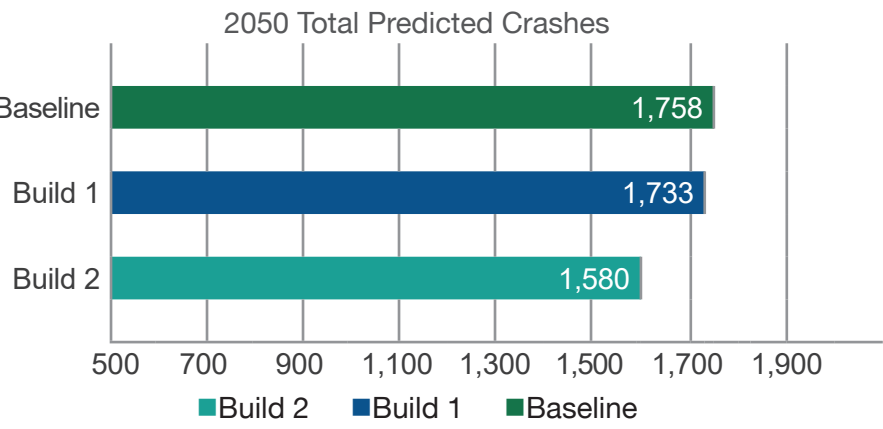


Figure 6-6 Total Predicted Crashes, 2050

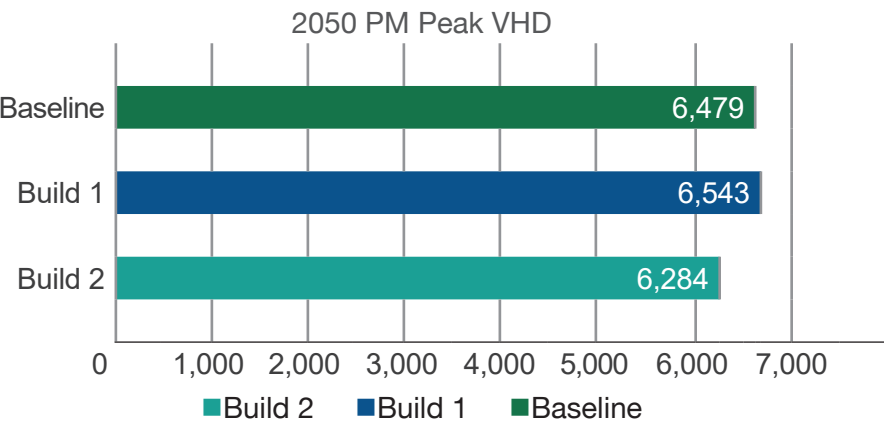


Figure 6-8 2050 PM Peak Hour Delay

6.2 Corridor Delay and Level of Service

Delay metrics are obtained through data-driven modeling and can be a daily average delay or delay in a peak travel period. For this analysis and comparison, the peak hour vehicle delay and peak hour LOS were used as measures of congestion in order to show the largest variance between the Baseline and Build alternatives. Often a daily average, because it includes overnight hours and midday hours, can be skewed and minimize the true congestion conditions

along a corridor. The backup data on the comparison analysis can be found in Appendix D.

6.2.1 Delay

Both the Build 1 and Build 2 alternatives, on average, reduce the overall corridor-level predicted peak vehicle hours of delay (VHD) in 2030 and 2050 compared to the Baseline alternative, as shown on Figure 6-7 and Figure 6-8. In both 2030 and 2050, the Build 2 alternative results in the greatest reduction in peak period VHD.

Figure 6-9 depicts 2030 PM peak VHD by county for Baseline, Build 1, and Build 2 conditions. In Gwinnett and Barrow Counties, the Build 1 and Build 2 alternatives result in some reduction in VHD in 2030. VHD increases slightly in Oconee County in 2030. In 2050, as illustrated on Figure 6-10, VHD decreases in Gwinnett County but increases in Barrow and Oconee Counties. The primary reason for the increases is the level of demand in the corridor due to increasing population and employment growth and economic

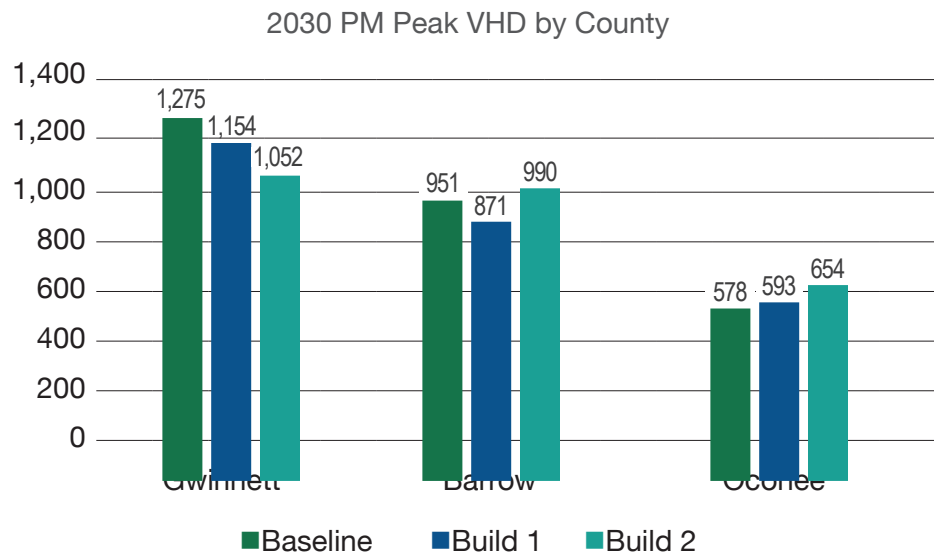


Figure 6-9 2030 PM Peak Hour Delay by County

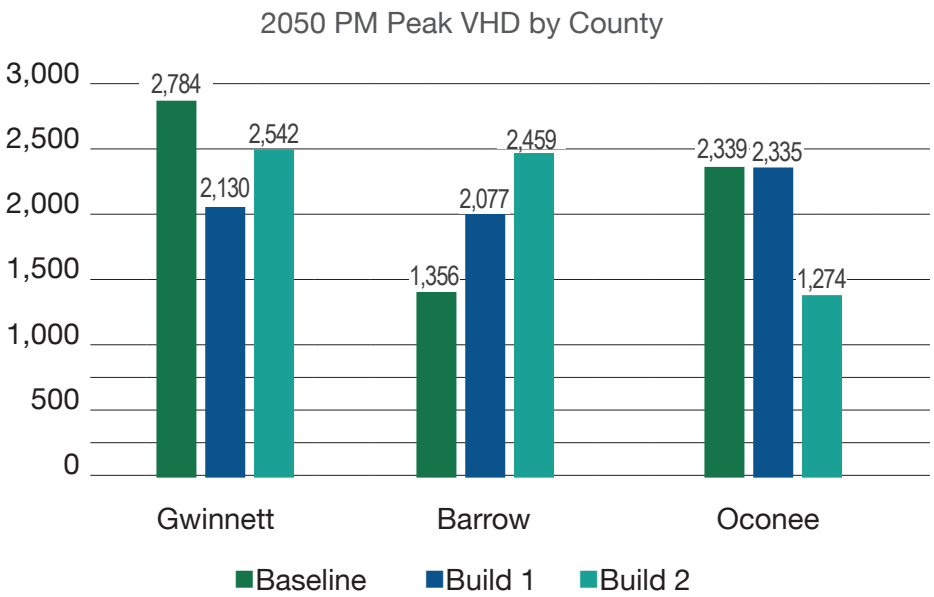


Figure 6-10 2050 PM Peak Hour Delay by County

SR 316 Planning Study

development as discussed in Section 1.3. In the model, the Baseline alternative shows unmet demand on the corridor (26% unmet demand), meaning that these vehicles are using alternate routes in certain segments because of a lack of available capacity on SR 316. For the Build alternatives, the models show that the improvements provide additional capacity, allowing some of the unmet demand in the Baseline alternative to use the SR 316 corridor. The unmet demand is reduced to 23% for the Build 1 alternative and to 18% for the Build 2 alternative. These results indicate that in addition to improving mobility conditions at the at-grade crossings, the Build alternatives allow more vehicles to use the corridor.

During the public engagement, it was determined that while the crossing improvements help the SR 316 corridor, the adjacent roads also experience congestion and safety concerns. As will be discussed in Section 7, additional operational and capacity improvements were identified after the Build comparative analysis to address concerns from the public.

6.2.2 Level of Service

LOS for the Build 1 and Build 2 alternatives was calculated and compared to the Baseline alternative. As indicated previously, LOS is a performance measure of congestion that compares a given roadway segment's

traffic volumes to its capacity (A indicates free flowing traffic to F which indicates grid lock traffic).

Figure 6-11 through Figure 6-13 illustrate the PM peak hour LOS for 2030 for the Baseline, Build 1, and Build 2 alternatives. In each of these alternatives, congestion is relatively minor, except for near I-85 in Gwinnett County. In these figures, LOS is calculated at the segment level; intersection level LOS analysis will likely show greater congestion at certain intersections despite LOS of C or greater at the segment level. However, by 2050, LOS declines significantly as shown on Figure 6-14 through Figure 6-16.

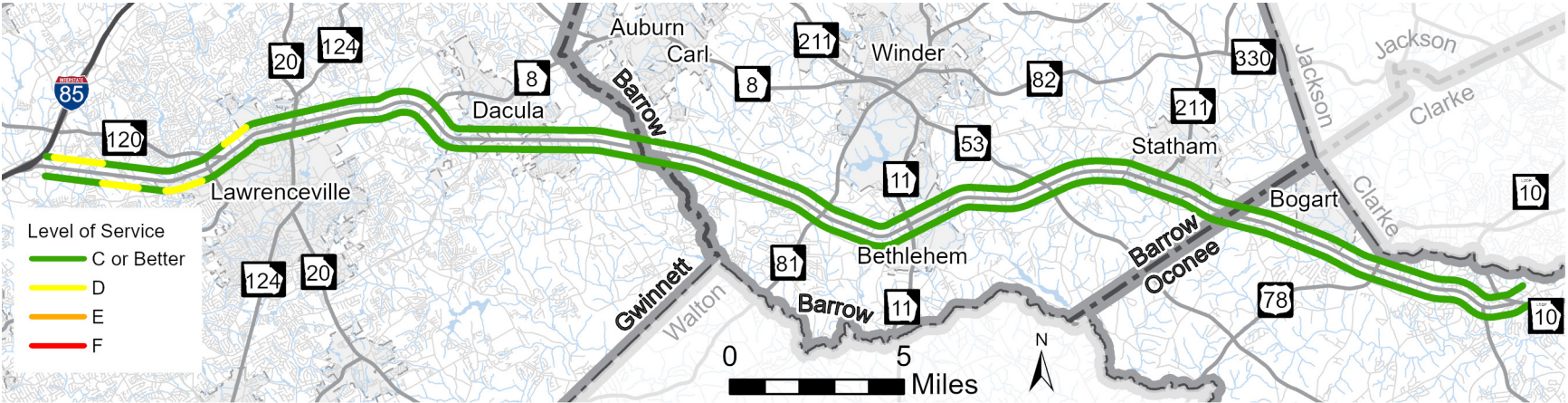


Figure 6-12 2030 PM Peak Hour LOS for Build 1 Alternative

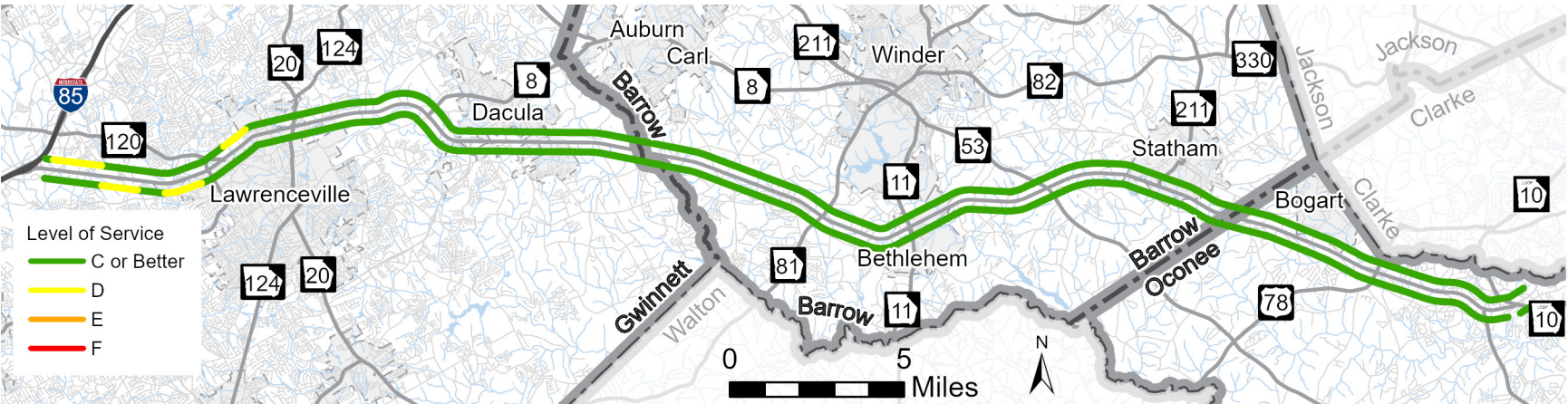


Figure 6-11 2030 PM Peak Hour LOS for Baseline Alternative

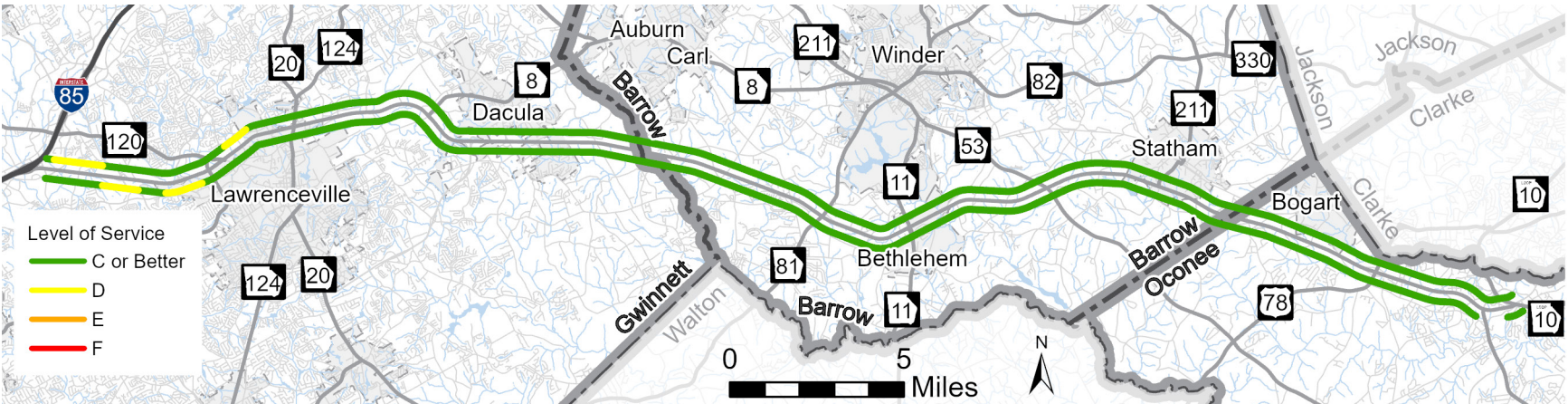


Figure 6-13 2030 PM Peak Hour LOS for Build 2 Alternative

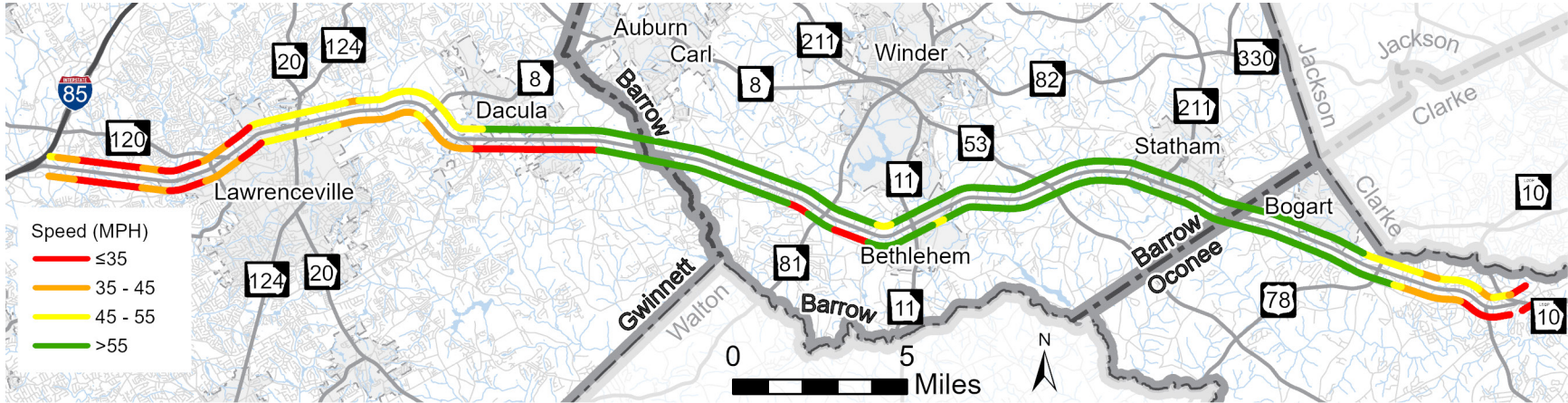


Figure 6-14 2050 PM Peak Hour LOS for Baseline Alternative

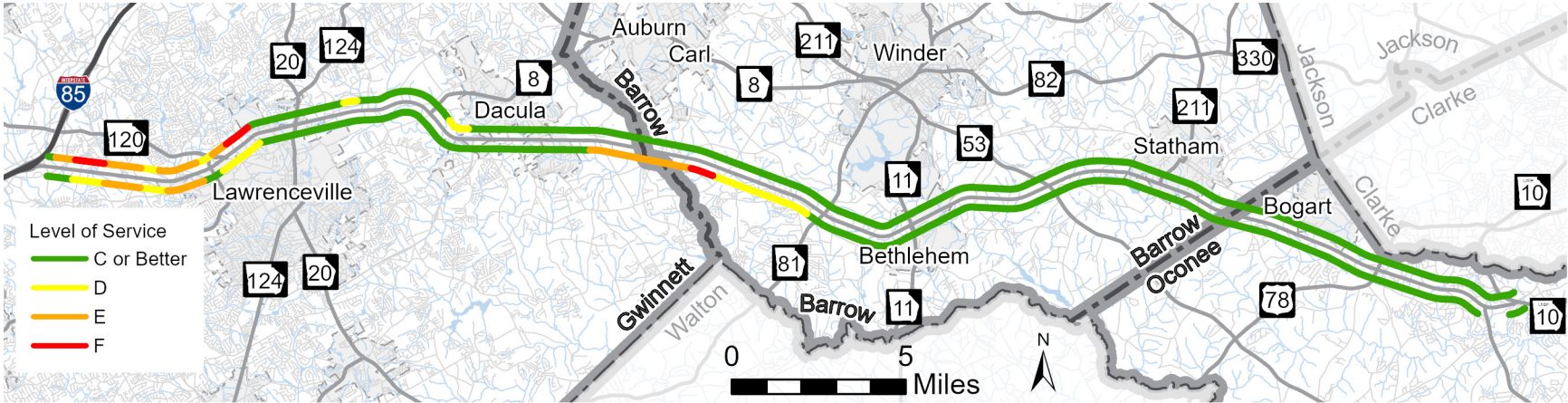


Figure 6-16 2050 PM Peak Hour LOS for Build 2 Alternative

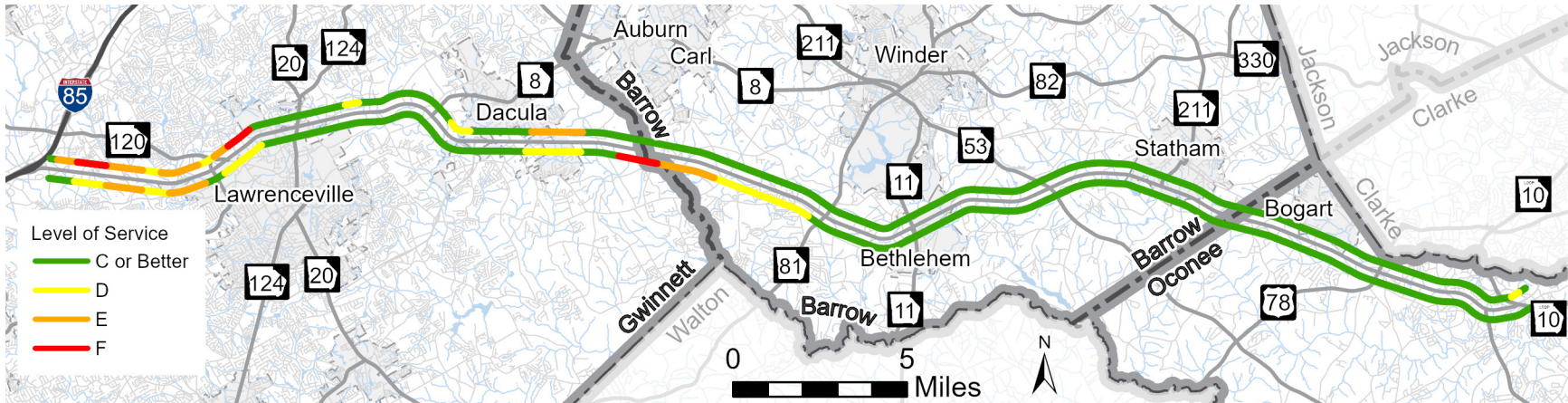


Figure 6-15 2050 PM Peak Hour LOS for Build 1 Alternative

Compared to the Baseline alternative, the Build 1 Alternative shows improvement in LOS in 2050 in both directions of travel, notably in eastern Gwinnett County and western Barrow County. The Build 2 alternative shows even greater improvement in LOS compared to the Baseline alternative and the Build 1 alternative in the same locations and eliminates delay in Oconee County. However, some congestion remains, which may be addressed by the additional capacity and operational projects discussed in Section 7.

6.3 Speed

6.3.1 Travel Speeds

The following series of maps (Figure 6-17 through Figure 6-22) compare the PM peak hour speeds for the Baseline, Build 1, and Build 2 alternatives for 2030 and 2050. While the Baseline meets two of the three goals, the improvements in the Build alternatives allow more of the unmet demand to use the SR 316 corridor which means more vehicles, which results in increased congestion and delay and slower speeds.

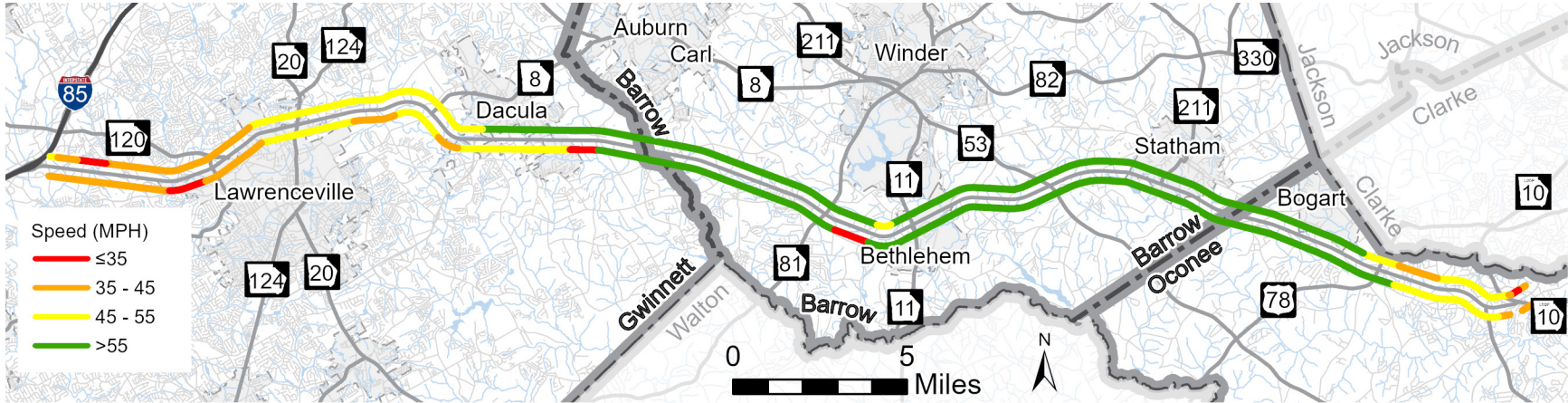


Figure 6-17 Predicted PM Speed for Baseline Alternative in 2030

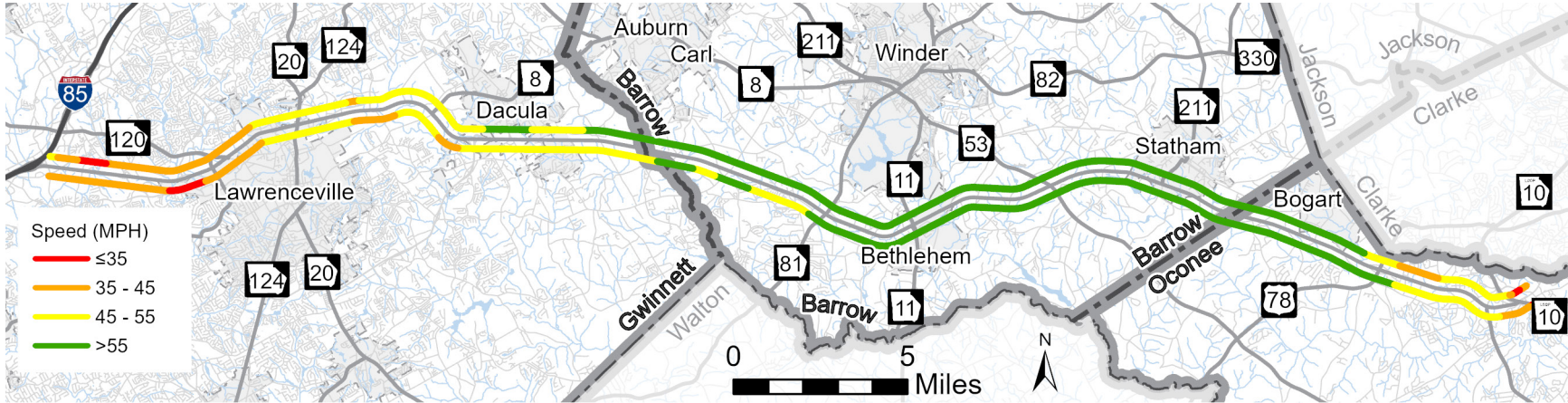


Figure 6-19 Predicted PM Speed for Build 2 Alternative in 2030

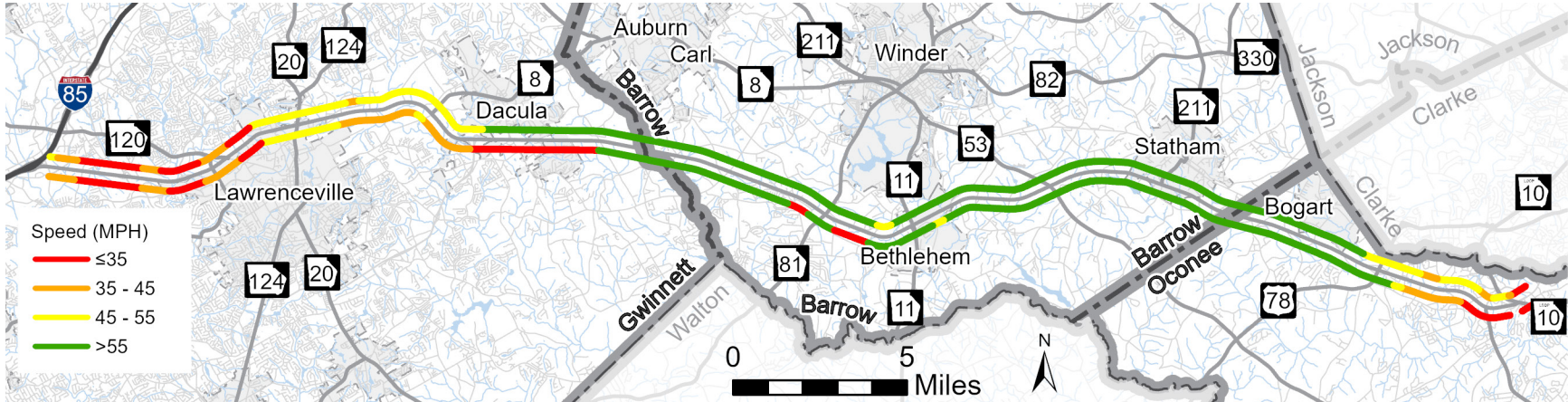


Figure 6-18 Predicted PM Speed for Build 1 Alternative in 2030

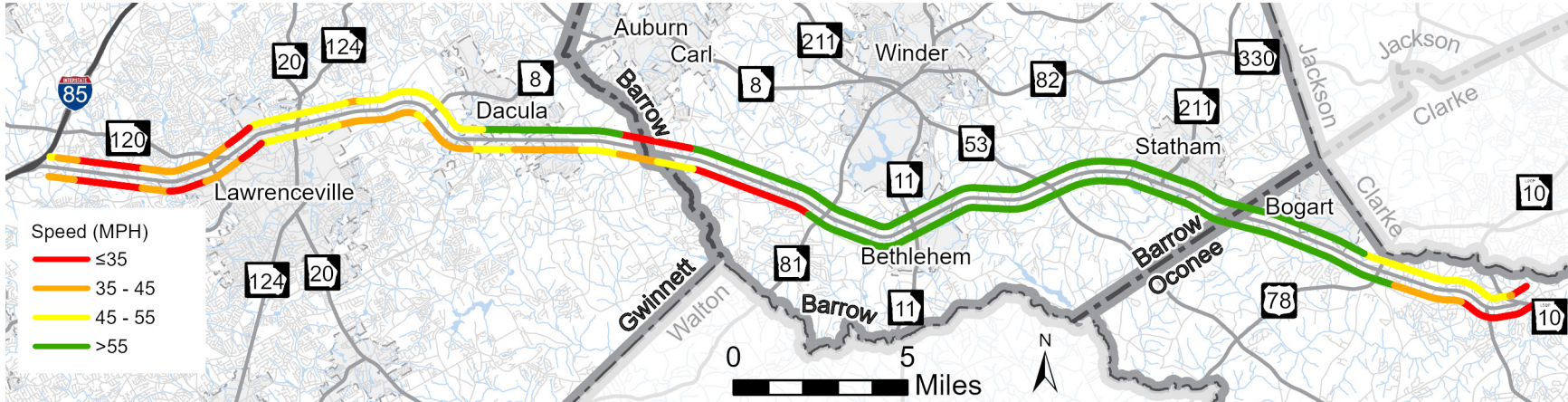


Figure 6-20 Predicted PM Speed for Baseline Alternative in 2050

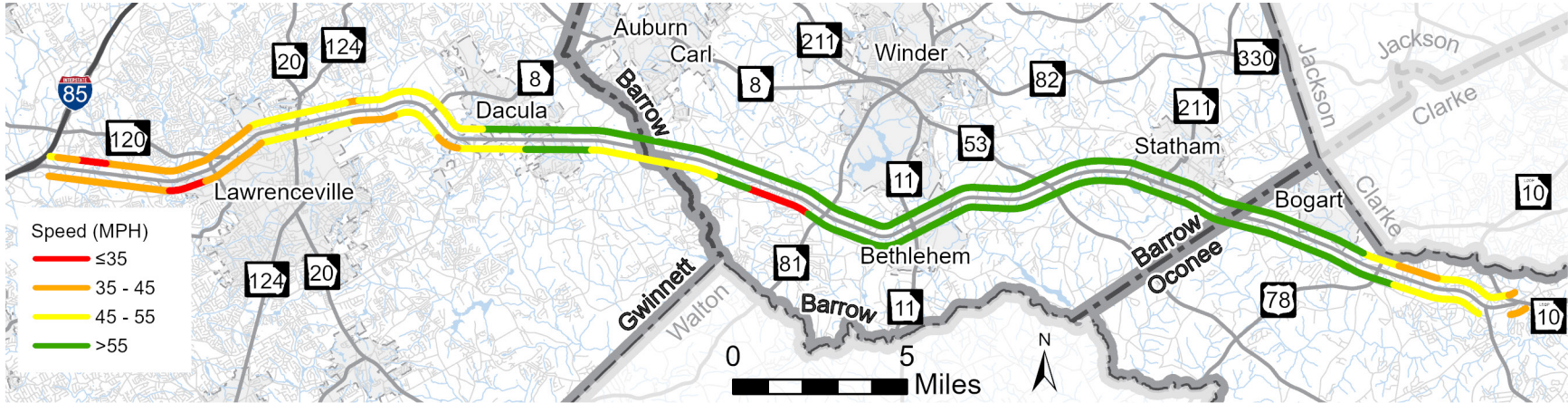


Figure 6-21 Predicted PM Speed for Build 1 Alternative in 2050

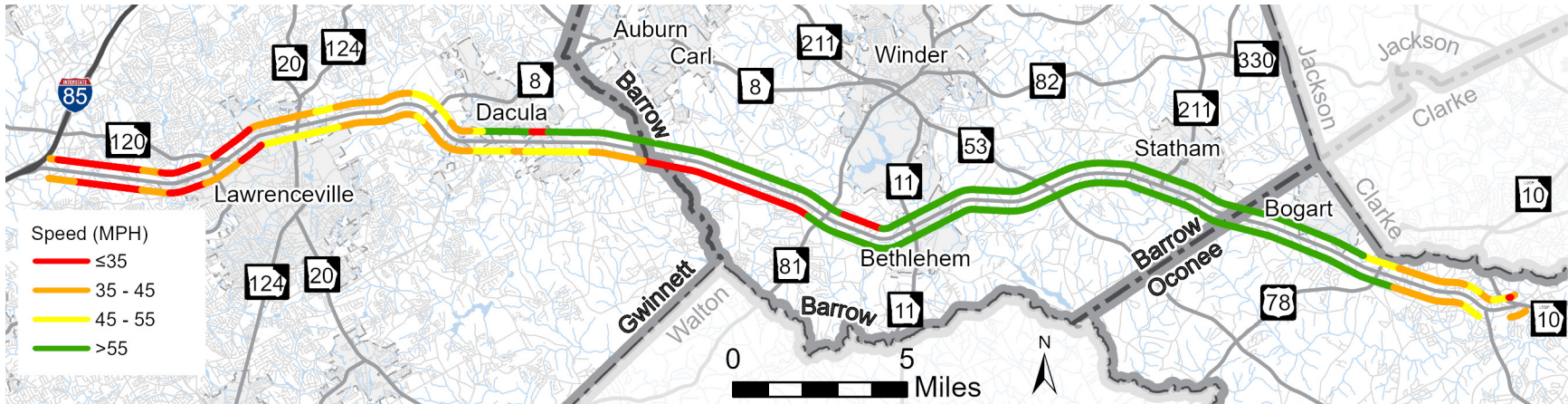


Figure 6-22 Predicted PM Speed for Build 2 Alternative in 2050

6.4 Planning Level Capital Cost Estimates

Planning level cost estimates were calculated for the Build 1 and Build 2 alternatives. Cost estimates are broken down by Preliminary Engineering (PE), Right of Way Acquisition (ROW), Utility (Utility), and Construction. The total cost of each improvement is the sum of PE, ROW, Utility, and Construction costs. Table 6-1 and Table 6-2 show cost estimates, rounded to the nearest \$100,000, for the Build 1 and Build 2 alternatives, respectively.

respectively. Any dollars spent on these PIs numbers is not included in these cost. Further, these costs are independent of any authorized funding.

The total cost for all projects is approximately \$219.1 million for the Build 1 alternative and approximately \$456.9 million for the Build 2 alternatives. The detailed cost estimates can be found in Appendix E.

Table 6-1 Build 1 Alternative Cost Estimates

Crossing Improvement	PI No.	Build 1 Crossing Improvements	PE	ROW	Utility	Construction	Total Cost
Oak Valley Road	0013899	Traffic Reroute	\$720,000	-	\$560,000	\$5,870,000	\$7,150,000
Williams Farm Drive	0013900	Traffic Reroute	\$740,000	-	\$570,000	\$6,040,000	\$7,360,000
Drowning Creek Road	0013901	Interchange	\$2,980,000	\$20,180,000	\$2,310,000	\$24,330,000	\$49,810,000
CR 110/Harry McCarty Road	0013904	RIRO	\$1,450,000	\$187,000	\$1,120,000	\$11,820,000	\$14,580,000
Harrison Mill Road	0013905	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
CR 138/Smith Cemetery Road	0013906	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
CR 139/Jackson Trail Road	0013907	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
Wall Road	0013908	RIRO	\$1,430,000	\$750,000	\$1,110,000	\$11,670,000	\$14,940,000
McNutt Creek Road	0013764	Interchange	\$2,290,000	\$20,990,000	\$1,780,000	\$18,670,000	\$43,730,000
Mars Hill Road	0013765	Traffic Reroute	\$30,000	-	\$30,000	\$270,000	\$330,000
Julian Drive	0013766	Grade Separation	\$1,180,000	\$2,790,000	\$910,000	\$9,620,000	\$14,510,000
All Phases Total			\$17,690,000	\$45,797,000	\$13,520,000	\$142,080,000	\$219,100,000

Table 6-2 Build 2 Alternative Cost Estimates

Crossing	PI No.	Build 2 Crossing Improvements	PE	ROW	Utility	Construction	Total Cost
Oak Valley Road	0013899	Traffic Reroute	\$720,000	-	\$560,000	\$5,870,000	\$7,150,000
Williams Farm Drive	0013900	Interchange	\$6,560,000	\$29,770,000	\$5,090,000	\$53,570,000	\$94,990,000
Drowning Creek Road	0013901	Grade Separation	\$930,000	\$1,550,000	\$720,000	\$7,590,000	\$10,800,000
CR 110/Harry McCarty Road	0013904	Grade Separation	\$1,110,000	\$14,070,000	\$860,000	\$9,070,000	\$25,110,000
Harrison Mill Road	0013905	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
CR 138/Smith Cemetery Road	0013906	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
CR 139/Jackson Trail Road	0013907	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
Wall Road	0013908	RIRO	\$1,430,000	\$750,000	\$1,110,000	\$11,670,000	\$14,940,000
McNutt Creek Road	0013764	RIRO	\$1,470,000	\$750,000	\$1,140,000	\$11,980,000	\$15,330,000
Mars Hill Road	0013765	Traffic Reroute	\$30,000	-	\$30,000	\$270,000	\$330,000
Julian Drive	0013766	Traffic Reroute	\$40,000	-	\$30,000	\$360,000	\$440,000
SR 10 Loop/Athens Perimeter	0013770	Interchange Upgrade	\$21,930,000	\$3,080,000	\$17,020,000	\$179,050,000	\$221,080,000
All Phases Total			\$43,380,000	\$50,870,000	\$31,690,000	\$333,220,000	\$456,860,000

6.5 Benefit-Cost Analysis

A benefit-cost analysis (BCA) was performed for the Build 1 and Build 2 alternatives following United States Department of Transportation 2024 BCA guidelines. Benefits include safety and operational improvements for both alternatives, where the safety benefits represent the monetary value of crash savings and operational benefits represent the monetary value of delay and emission savings. The monetary values of the benefits

are then compared to the total capital cost of the alternative. A benefit-cost ratio (BCR) greater than 1.0 indicates the benefits of the alternative surpass the cost. A higher BCR indicates a better return on investment. Both the Build 1 and Build 2 alternatives have a BCR greater than 1.0, although the Build 2 alternative has a slightly higher ratio. Table 6-3 summarizes the BCA for the Build 1 and Build 2 alternatives. BCAs were calculated using 2021 dollars discounted to their present value.

Table 6-3 Benefit-Cost Ratio for Build 1 and Build 2 Alternatives

Build Alternative	Present Value of Safety Benefits	Percent of Safety Benefits	Present Value of Operational Benefits	Percent of Operational Benefits	Present Value of Project Costs	BCR
Build 1	\$18,490,619	9.3%	\$179,959,927	90.7%	\$132,459,015	1.50
Build 2	\$28,283,374	5.6%	\$500,194,829	94.4%	\$273,929,540	1.93

Present value in 2021 \$

These costs and benefits are discounted from the total costs in Table 6-1 and 6-2, following USDOT guidance.

7 Additional Capacity and Operational Improvements

Based on the results presented in Section 6 for the two Build alternatives, and feedback received from stakeholders and the community (Section 8), the study team determined that additional capacity and operational improvements are needed along

SR 316 beyond those being implemented for the remaining at-grade crossings. These additional improvements are intended to target areas where LOS is still poor in the Build conditions and where residents have expressed safety and mobility concerns.

The additional improvements are listed in Table 7-1 and identified on the map on Figure 7-1.

The additional interchange at Rowen (identified as A3 on the figure) is dependent

Table 7-1 Additional Capacity and Operational Improvements

Improvement Location	Improvement Type	Project Extent/Description	Total Cost
Sugarloaf Parkway	Widening	Four to six lanes from north of Cisco Drive to Lakes Parkway and the SR 316 eastbound off-ramp from three to four lanes.	\$15,390,000
Harbins Road	Widening	Two to four lanes from Dacula Ridge to West Drowning Creek Road.	\$41,620,000
Rowen Development	Interchange	Add a new diamond interchange for Rowen development access.	\$108,050,00
CR 416/Carl-Bethlehem Road	Widening	Four to six lanes from Tucker Road to east of SR 81. Adds a roundabout at the intersection of Haymon Morris Road and Hoyt King Road.	\$59,930,000
SR 81/Loganville Highway	Widening	Four to six lanes from Bethel Bower Road to Carter Hill Drive and the eastbound off ramp.	\$34,400,000
SR 11/Winder-Monroe Highway/Christmas Avenue	Widening	Two to four lanes from Exchange Boulevard to Star Street the westbound off-ramp.	\$31,380,000
SR 53/Hog Mountain Road	Widening	Two to four lanes from CR 139/Jackson Trail Road to Innovation Drive.	\$17,540,000
US 78/SR 10/Monroe Highway	Widening	Four to six lanes from Pete Dickens Road north of SR 316.	\$38,940,000
CR 929/Oconee Connector	Widening	Four to six lanes from Mars Hill Road to Virgil Langford Road.	\$12,990,000

SR 316 Planning Study

on full buildout of the Rowen development. If that development does not come to fruition, only the Williams Farm Drive interchange will be needed. The additional projects will significantly reduce delays within the study area. If all the projects are built, in 2030, the study area will experience a total reduction in delay of nearly 4,000 hours. By 2050, this reduction in delay increases to 7,500 hours.

These projects do not have identified project sponsors or funding and further discussions between GDOT and Gwinnett, Bartow, and Oconee counties will need to continue to make these determinations.

A BCA was conducted for the additional capacity and operational improvements to compare the mobility benefits to project

costs. The methodology for the BCA was similar to that used for the Build 1 and Build 2 alternative analysis; however, safety benefits were not analyzed for capacity and operational projects.

The BCR for all capacity and operational improvements was determined to be 2.77. This is the incremental BCR of implementing

these improvements in addition to addressing the remaining at-grade access points.

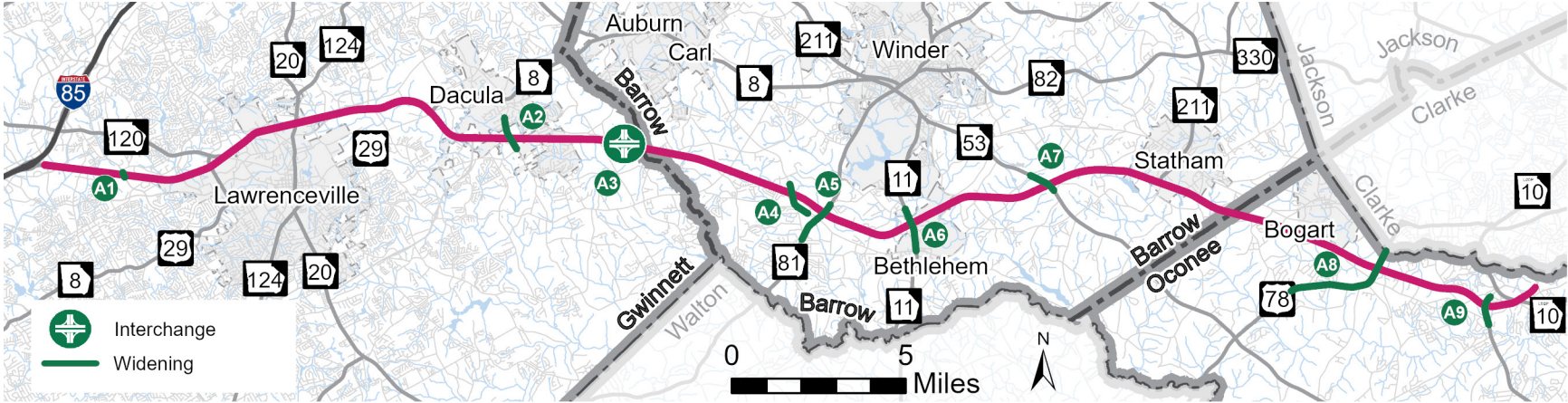
Table 7-2 summarizes the BCA for the capacity and operational improvements.

Table 7-2 Incremental BCR for Additional Capacity and Operational Improvements

	Present Value of Operational Benefits	Present Value of Cost	Estimated BCR
Additional Capacity and Operational Improvement Projects	\$600,229,147	\$216,704,601	2.77

Present value in 2021 \$

Safety benefits were not estimated due to inavailability of data.



- A1

Sugarloaf Parkway
- A2

Harbins Road
- A3

Additional interchange at Rowen**
- A4

Carl-Bethlehem Road
- A5

SR 81
- A6

SR 11
- A7

SR 53
- A8

SR 10/Monroe Highway
- A9

Oconee Connector

** This interchange is only recommended if development progresses as anticipated.

Figure 7-1 Additional Capacity and Operational Improvements

8 Stakeholder and Public Engagement

Informing, engaging, and soliciting feedback from stakeholders and the public at-large have been central to the success of the SR 316 Planning Study. Throughout the study, GDOT delivered accurate, timely, and relevant information about the study and provided opportunities for community stakeholders to participate in meaningful dialogue and provide feedback. This approach led to a more comprehensive transportation decision-making process.

To that end, GDOT:

- Advertised, coordinated, and conducted in-person and virtual stakeholder and public outreach meetings over two phases.
- Housed and updated study-related materials on a web page, <https://transformingsr316-gdot.hub.arcgis.com/pages/sr316planningstudy>, and distributed select materials in print.
- Responded to questions and comments received via email (sr316project@dot.ga.gov) and two hotlines (678-597-9850 [English] and 678-812-0246 [Spanish]).
- Promoted participation in two SR 316 Planning Study surveys, in digital and print form.
- Documented and incorporated

stakeholder and public feedback, to the greatest extent practicable, into the study’s final recommendations.

There were two stakeholder and public engagement phases during this plan’s development. Phase 1 occurred from February 2023 through June 2023 and engaged 46 stakeholders (e.g., public agencies), 259 members of the public, and 313 survey respondents. Phase 2 occurred from February 2024 through May 2024 and engaged 24 stakeholders, 183 members of the public, and 55 survey respondents.

8.1 Materials and Resources

Throughout the study, GDOT developed a series of materials to support audience understanding of the study. GDOT accomplished this through consistent, simple messaging with limited technical jargon, and by clearly stating the purpose of the study compared to the ongoing SR 316 reconstruction projects. Materials included a study fact sheet (English and Spanish), frequently asked questions (FAQs), informational boards for in-person meetings, and a comprehensive summary of public meetings. These materials were housed on

the study web page, which also featured the study’s key components, benefits, a map, a schedule, a photo gallery, and contact information.

8.2 Phase 1

Phase 1 took place between February and June 2023 and was the initial round of outreach for the study. Phase one activities included in person and virtual stakeholder meetings, a public survey, and in-person public meetings.

8.2.1 Stakeholder Meetings

Before the study began, GDOT identified nearly 400 primary and secondary stakeholders who represent or have a vested interest in the 40-mile study corridor. Within this list, GDOT selected four groups as primary stakeholders to invite to a series of in-person and virtual meetings that included a formal presentation and question and answer session. The four primary stakeholder groups consisted of city officials, county officials, business groups, and community/environmental justice groups. Table 8-1 defines each group and notes the date, location, and number of attendees at each meeting during Phase 1.

SR 316 Planning Study

Table 8-1 Phase 1 Stakeholder Engagement Meetings

Stakeholder Engagement, Phase 1	No. of Attendees	Date/Time of Meeting	Location
City Officials: Elected and appointed leaders in Lawrenceville, Auburn, Dacula, Winder, Bethlehem, Carl, Statham, and Bogart	6	Feb. 22, 2023 4PM-5:30PM	Virtual/Microsoft (MS) Teams
County Officials: Elected and appointed leaders in Gwinnett, Barrow, and Oconee Counties	13	March 9, 2023 4PM -5:30PM	Virtual/MS Teams
Business Groups: Business organizations, including chambers of commerce and community improvement districts	5	March 14, 2023 9AM -10:30AM	Virtual/MS Teams
Community/Environmental Justice Groups: Homeowner associations as well as select commuters, residents, and members of disadvantaged groups	22	March 26, 2023 4PM-5:30PM	Bethlehem Community Center 750 Manger Ave. E., Bethlehem, GA 30620
Virtual Makeup Session: Stakeholders who were unable to attend previous engagement sessions	10	March 15, 2023 11AM -12:30PM	Virtual/MS Teams

During the in-person meeting on March 26, 2023, GDOT provided a Spanish translator for stakeholders with limited English proficiency. To accommodate stakeholders unable to attend any of the meetings listed above, GDOT conducted a virtual makeup session.

During each meeting, GDOT summarized the following:

- The purpose of the study;
- Existing concerns, specifically traffic congestion and high crash rates;
- Future conditions without any improvements; and
- Types of transportation improvements under consideration in the study.

Several stakeholders recommended adding managed lanes and reducing speed limits along the corridor. However, the bulk of the stakeholder questions and feedback focused on the SR 316 reconstruction projects, including inquiries about a timeline for project-related property acquisition, design, and construction; concerns regarding traffic impacts to cities such as Auburn and Statham; and the status of potential noise walls near areas including Jimmy Daniel Road.

Stakeholders who did not fall within the four primary groups were also engaged. This secondary group of stakeholders consisted of state representatives and senators, emergency service personnel, school leaders, utility and rail personnel, University

of Georgia government relations officials, and Department of Natural Resources and other regional agency representatives. These stakeholders received email informational materials and were directed to the study web page for updates. They also had an opportunity to submit comments and questions via the study email address and hotline or through the study surveys.

8.2.2 Public Meetings

The public for this study consisted of community members, commuters, and others with an interest in the study corridor not already identified as primary or secondary stakeholders. GDOT conducted public engagement through in-person meetings approximately one month following each round of stakeholder

Table 8-2 Phase 1 Public Engagement Meetings

Phase 1 Public Engagement	No. of Attendees	No. of Elected Officials	Date/Time of Meeting	Location
Gwinnett County	17	3	May 23, 2023 4PM-6PM	Dacula Park Activity Building, 2735 Auburn Ave., Dacula, GA 30019
Oconee County	132	4	May 25, 2023 4PM-6PM	Bogart Community Center, 141 E. Thompson St., Bogart, GA 30622
Barrow County	110	1	June 6, 2023 4PM-6PM	Winder Public Library, 189 Bellview St., Winder, GA 30680

engagement. During the public meetings, eight informational boards were placed atop easels and set up around a large room for visitors to view general aspects of the study and ask questions of designated subject-matter experts. The boards provided the same information shown to city, county, business, and select community stakeholders at virtual and in-person meetings. In addition to the informational boards, GDOT set up two boards with a QR link to the study survey and encouraged attendees to provide feedback through the survey. Table 8-2 notes each public meeting’s date, location, and number of attendees and elected officials during Phase 1.

Safety was a common priority of the public expressed at public meetings. Community members in Barrow County requested safer

access to SR 316 from Smith Cemetery Road, Jackson Trail Road, and Harry McCarty Road. Improvements to SR 81 were also identified as a priority for the area, given that traffic from the bridge extends up to 1 mile from SR 316, affecting businesses and residents in the surrounding communities. Community members in Oconee County expressed concern regarding the Dials Mill Road/Dials Mill Extension project, which was already underway as part of the SR 316 reconstruction projects. McNutt Creek was also noted as a crossing of interest for community members and public officials because of its proximity to a fire station. In Gwinnett County, community members identified Williams Farm Drive as an unsafe crossing.

8.2.3 Survey 1

A 10-question survey was made available online February through May 2023. It was also shared directly with stakeholders and members of the public at the eight stakeholder and public meetings during Phase 1. Appendix F includes the full list of survey questions and responses for Survey 1.

There were 313 responses to the first public survey. Eighty percent (252) of respondents were residents of Gwinnett, Barrow, or Oconee County. The remaining respondents included commuters, recreational drivers, business owners, elected officials, commercial vehicle operators, and other SR 316 users. Eighty-five percent (267) of respondents commuted along SR 316 at least once a week. Most respondents were White/Caucasian (76%), and the largest age

SR 316 Planning Study

group of survey respondents was over 65 (25%).

Survey 1 included three open-response questions to collect qualitative feedback from community members. The first question was Are there any priorities not listed that are important to you? Responses to this question included feedback regarding the following:

- Noise, traffic, and congestion;
- Support or interest in converting SR 316 into a limited-access freeway;
- Timing and communication about the project from GDOT;
- Effects on nearby properties; and
- First responder access to SR 316.

Overall, respondents wanted existing, planned, and future SR 316 projects to be delivered in a timely manner while managing congestion and minimizing potentially harmful effects, such as noise pollution, on nearby roadways and properties. Traffic safety along SR 316 was also of top concern to respondents, with many stating that turning onto SR 316 at unprotected intersections was difficult and dangerous. First responders wanted existing access to the corridor to remain unchanged to preserve response times.

The second open-response question in the survey was Which intersection concerns

you the most and why? This was the most popular open-response question for survey respondents, with 93% (292) responses. Thirty percent (94) of the respondents were concerned about traffic reroutes (which, at the time of the survey, were called “full closures”) limiting access to SR 316 and causing congestion on nearby roads. Thirteen percent (42) of the respondents were concerned about RIRO intersections, noting that high-speed traffic makes it difficult to safely merge onto SR 316. Twelve percent (39) of the respondents expressed concerns about interchanges being too noisy, unsafe, or disruptive to adjacent properties and roadways. Four percent (11) of the respondents were concerned about losing access to SR 316 through grade separation. On the other hand, some respondents indicated support of grade separations because they maintain the flow of cross-road traffic while eliminating dangerous intersections with SR 316. Some respondents misinterpreted the question and expressed support for certain projects instead of raising concerns, while others discussed projects beyond the scope of this study.

The final open-response question was What additional/other transportation improvements would you recommend along this section of SR 316? Sixty-two percent

(194) answered this question. Responses included support for more interchanges and grade separations; widening of SR 316 to accommodate increased traffic; reduction or removal of traffic lights along the corridor; frontage roads; alternate transportation modes along the corridor; and additional signage, fencing, medians, and lighting to increase safety along SR 316.

8.3 Phase 2

Phase 2 took place between March and April 2024 and was the final round of outreach for the study. Phase 2 activities included in person and virtual stakeholder meetings, a public survey, and in-person public meetings.

8.3.1 Stakeholder Meetings

The second phase of public involvement followed a similar structure to Phase 1. Three stakeholder meetings were conducted with city and county officials, business groups, and environmental and community groups. Table 8-3 presents details of Phase 2 stakeholder engagement meetings, including meeting time, date, format, and number of attendees.

A GDOT-provided Spanish translator was present at the in-person meeting on March 19, 2024, for attendees with limited English-

Table 8-3 Phase 2 Stakeholder Engagement Meetings

Stakeholder Engagement, Phase 2	No. of Attendees	Date/Time of Meeting	Location
City and County Officials: Elected and appointed leaders in Lawrenceville, Auburn, Dacula, Winder, Bethlehem, Carl, Statham, and Bogart; elected and appointed leaders in Gwinnett, Barrow, and Oconee counties	11	March 26, 2024, 4:30PM-6PM	Virtual/MS Teams
Business Groups: Business organizations, including chambers of commerce and community improvement districts	9	March 20, 2024, 9AM-10:30AM	Virtual/MS Teams
Community/Environmental Justice Groups: Homeowner associations as well as select commuters, residents, and members of disadvantaged groups	4	March 19, 2024, 4:30PM-6PM	Bethlehem Community Center 750 Manger Ave. E., Bethlehem, GA 30620
Virtual Makeup Session: Stakeholders who were unable to attend previous engagement sessions	15	March 27, 2024, 11AM-12:30PM	Virtual/MS Teams

language proficiency. A virtual makeup session on March 27, 2024, from 11AM to 12:30PM, was provided for stakeholders who could not make any other scheduled times.

Each meeting began with an update from GDOT regarding the plan’s process and any significant changes since the previous phase of public involvement. The consultant study team provided rationale for and details of the four improvement configurations included in the alternatives, the study’s initial analysis and findings, and remaining community engagement initiatives in Phase 2.

An official from the City of Bogart mentioned that residents had been asking about the Dials Mill Road/Dials Mill Extension project; clarification about project outreach, phasing,

and details were provided by the consultant study team. Officials from the City of Bogart and Oconee County expressed concerns that implementing a RIRO intersection rather than an interchange at McNutt Creek Road would limit first responder access to SR 316. Oconee County officials also suggested maintaining Julian Drive access to SR 316.

There was minimal feedback from business leaders other than positive support for the continued improvements and momentum on projects implemented thus far along the corridor. Some community stakeholders had questions about how proposed projects would impact their properties. The consultant study team collected personal contact information from these stakeholders to be able to reach out separately in

response to specific questions.

8.3.2 Public Meetings

Phase 2 of public engagement followed the same format as Phase 1. GDOT conducted two public meetings during Phase 2 of engagement. The first meeting was in Gwinnett County, and the second meeting was in Oconee County. Meetings were held open-house style, where members of the public could gain information from 11 informational boards atop easels set up around a large room. The boards included the same information shown to city, county, business, and select community stakeholders during Phase 2 of engagement. A large map of the study corridor, which showed existing projects and proposed study recommendations, was placed on a

Table 8-4 Phase 2 Public Engagement Meetings

Public Engagement, Phase 2	No. of Attendees	No. of Elected Officials	Date/Time of Meeting	Location
Gwinnett County	51	5	April 17, 2024, 4:30PM-6:30PM	Dacula Park Activity Building, 2735 Auburn Ave., Dacula, GA 30019
Barrow and Oconee Counties	132	13	April 23, 2024, 4:30PM-6:30PM	Statham Community Center, 336 Jefferson St., Statham, GA 30666

table in the middle of the room. GDOT staff and project consultants were stationed throughout the room to answer any questions that the public may have had.

Based on feedback from Phase 1 of public engagement, in which members of the public asked for more seating and a formal presentation during the meetings, the study team lined the room with three dozen chairs. The team also created a webinar with a narrated walk-through of the study materials, including the public meeting display boards. Table 8-4 notes each public meeting’s date, location, and number of attendees and elected officials during Phase 2.

Attendees at both public meetings shared concerns about safety on SR 316 and the potential need for extra lanes such as turn lanes and roundabouts for safer

crossings, increased traffic on local roads, and how projects may impact access to SR 316 and cause disruption at adjacent properties. Community members also provided feedback regarding certain intersections along the corridor. Gwinnett County community members felt that rerouting Drowning Creek Road would limit access to SR 316, especially because of the increased traffic from the nearby Rowen development. Community members also expressed concerns about safety at the Oak Valley Road and Drowning Creek Road intersections. Barrow and Oconee County community members had many questions about the Dials Mill Road/Dials Mill Extension project. Attendees also expressed concerns about rerouting Julian Drive and limiting their access to SR 316. Several community members requested noise barriers in the Barber Creek Road area.

8.3.3 Survey 2

A 15-question public survey was made available online during Phase 2 of public engagement. The survey was also shared directly with stakeholders and made available via QR code at the public meetings. Survey questions were designed to obtain an understanding of participants’ thoughts about the proposed Build 2 alternative improvements. Appendix E includes the full list of survey questions and responses for Survey 2.

Fifty-five people responded to the second survey. Seventy-six percent (42) lived in Gwinnett, Barrow, or Oconee Counties. Eighty-two percent of respondents (45) traveled along SR 316 at least once a week. Sixty-six percent (36) respondents were White/Caucasian, and the largest age group (26 percent/14) of survey respondents were 55-64.

Responses to questions related to the proposed improvements were overwhelmingly positive. Ninety-two percent of respondents agreed with the proposed interchanges at Williams Farm Drive and SR 10 Loop/Athens Perimeter. Eighty-five percent of respondents agreed with the proposed grade separation at Drowning Creek Road and Harry McCarty Road.

Eighty-seven percent of respondents supported the proposed RIRO construction at Harrison Mill Road, Smith Cemetery Road, Jackson Trail Road, and McNutt Creek Road. Finally, 88% of respondents supported traffic reroutes at Oak Valley Road and Julian Drive.

Survey 2 included open-ended questions for respondents to share qualitative feedback on proposed interchanges, grade separations, RIROs, traffic reroutes, and potential additional capacity and operational projects. Respondents generally supported interchange projects converting SR 316 into a limited-access facility. Feedback regarding interchanges included making new and existing interchanges safer. Respondents expressed feedback about grade separations at Drowning Creek Road and Harry McCarty Road increasing traffic along the upcoming

Rowen interchange and SR 81, respectively. Respondents, in general, noted that the proposed RIRO at McNutt Creek Road may limit first responder access to SR 316, and mentioned that there will be a State Patrol office built in addition to the existing fire station on this road. Respondents raised concerns about rerouting access to SR 316 from Julian Drive and Mars Hill Road, which may create congestion on local roads. In terms of potential additional operational and capacity improvements, respondents wished that more information was available to make an informed decision about the Oconee Connector and Rowen projects. Other respondents expressed concerns about congestion at Carl-Bethlehem Road and wanted additional capacity improvements. Finally, respondents were generally positive

about the plan to convert SR 316 to a limited-access facility.

8.3.4 Additional Projects Based on Public Feedback

After meeting with stakeholders and the public and receiving feedback through the two surveys, it was determined that either additional projects or modifications to identified projects needed to be included in the recommendations for the SR 316 Planning Study. Table 8-5 lists the additional or modified projects intended to address stakeholder and public concerns.

Table 8-5 Modified or Additional Improvements Based on Public Feedback

Improvement Location	Improvement Type	Project Description
Potential interim improvement at Williams Farm Drive	Road Extension	Extend Williams Farm Drive to Drowning Creek Road within the Rowen development site to provide safer access between SR 316 and Williams Farm Drive prior to construction of interchange.
McNutt Creek Road	RIRO	Keep RIRO but add median access for emergency vehicles to make left turns.
Harry McCarty Road	Traffic Reroute	Close Harry McCarty Road north and south of SR 316 and reroute traffic to SR 81 and SR 11.

9 Recommended Alternative and Corridor Implementation Plan

The final project recommendations are presented in this section. They are based on: the results of the technical analysis presented in Section 6, feedback from stakeholders and the community regarding the remaining at-grade crossing improvements and additional capacity and operational projects described in Section 8.3, and discussions with offices and divisions within GDOT.

Funding for all phases of all projects is still being determined, but it is anticipated that GDOT will implement the at-grade crossing improvements shown in Figure 9-1.

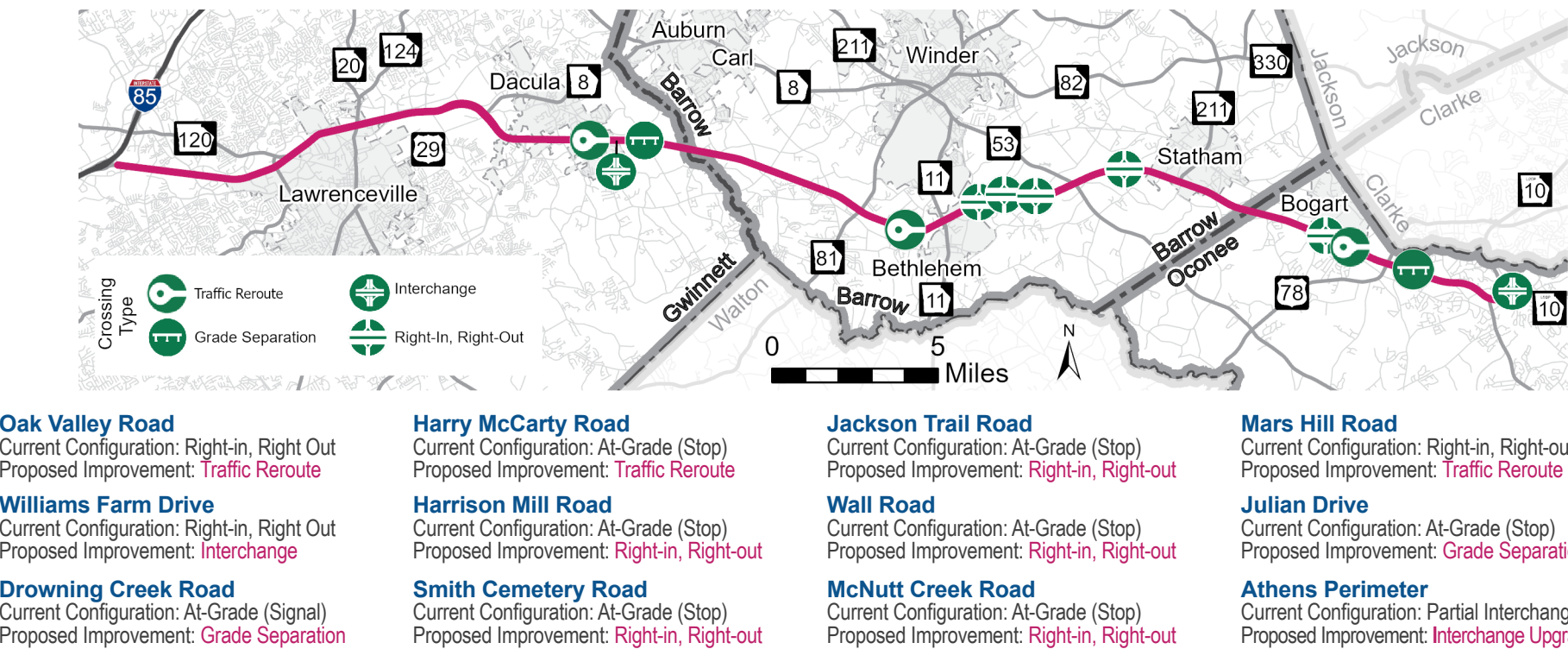


Figure 9-1 Recommended At-Grade Crossing Improvements

SR 316 Planning Study

9.1 Final Recommendations

For the remaining at-grade crossings, the Build 2 alternative is advanced to the final recommendations, with a couple of minor modifications. The additional capacity and operational improvements are also moving forward with a couple of minor modifications. The final recommendations are shown on Figure 9-1 and Figure 9-2.

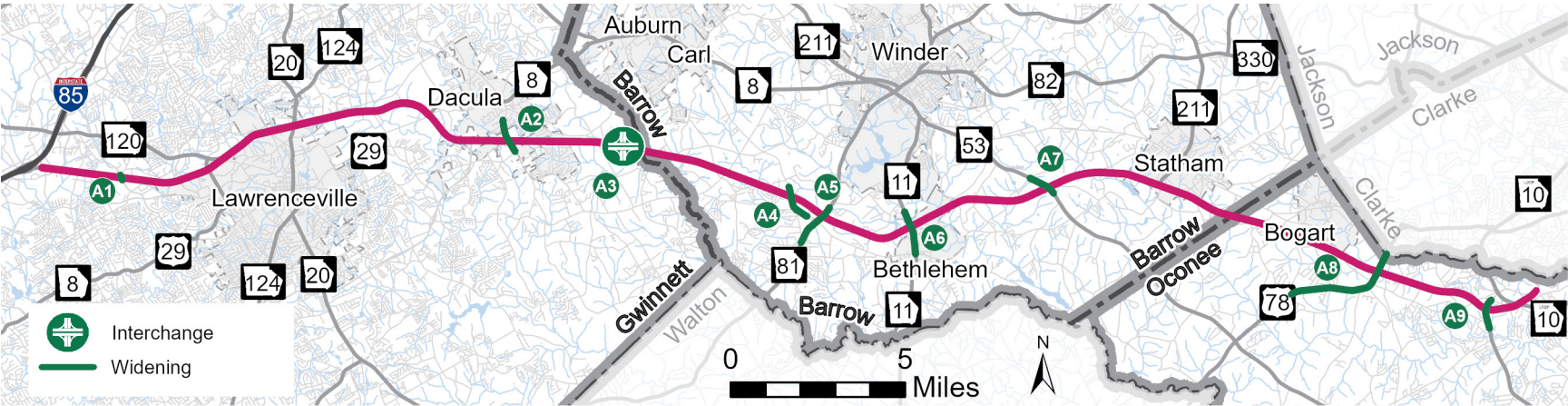
This planning study updates the recommended

improvements for some of the projects in GDOT’s current program. The final list of recommendations is provided in Table 9-1. The detailed planning-level cost estimates can be found in Appendix E. Some of the project costs decreased as a reflection of rescoping the project type from an interchange to a grade separation; however, other costs increased based on the analysis indicating that more significant improvements are needed (e.g., PI No. 0013900 was scoped as a new ramp, but this study is recommending a full interchange).

These costs are independent of any authorized funding and are above and beyond any dollars that have been spent under these PI numbers.

There are a few other projects planned or programmed around SR 316 that are in the construction work program or are identified but have long term timelines associated with them. Table 9-2 lists the projects and includes hyperlinks to more project information.

Figure 9-3 illustrates the performance of the



- A1

Sugarloaf Parkway
- A2

Harbins Road
- A3

Additional interchange at Rowen**
- A4

Carl-Bethlehem Road
- A5

SR 81
- A6

SR 11
- A7

SR 53
- A8

SR 10/Monroe Highway
- A9

Oconee Connector

** Additional interchange is dependent on full build out of Rowen Development.

Figure 9-2 Recommended Additional Capacity and Operational Improvements

Table 9-1 SR 316 Reconstruction Projects Versus SR 316 Planning Study Recommendations

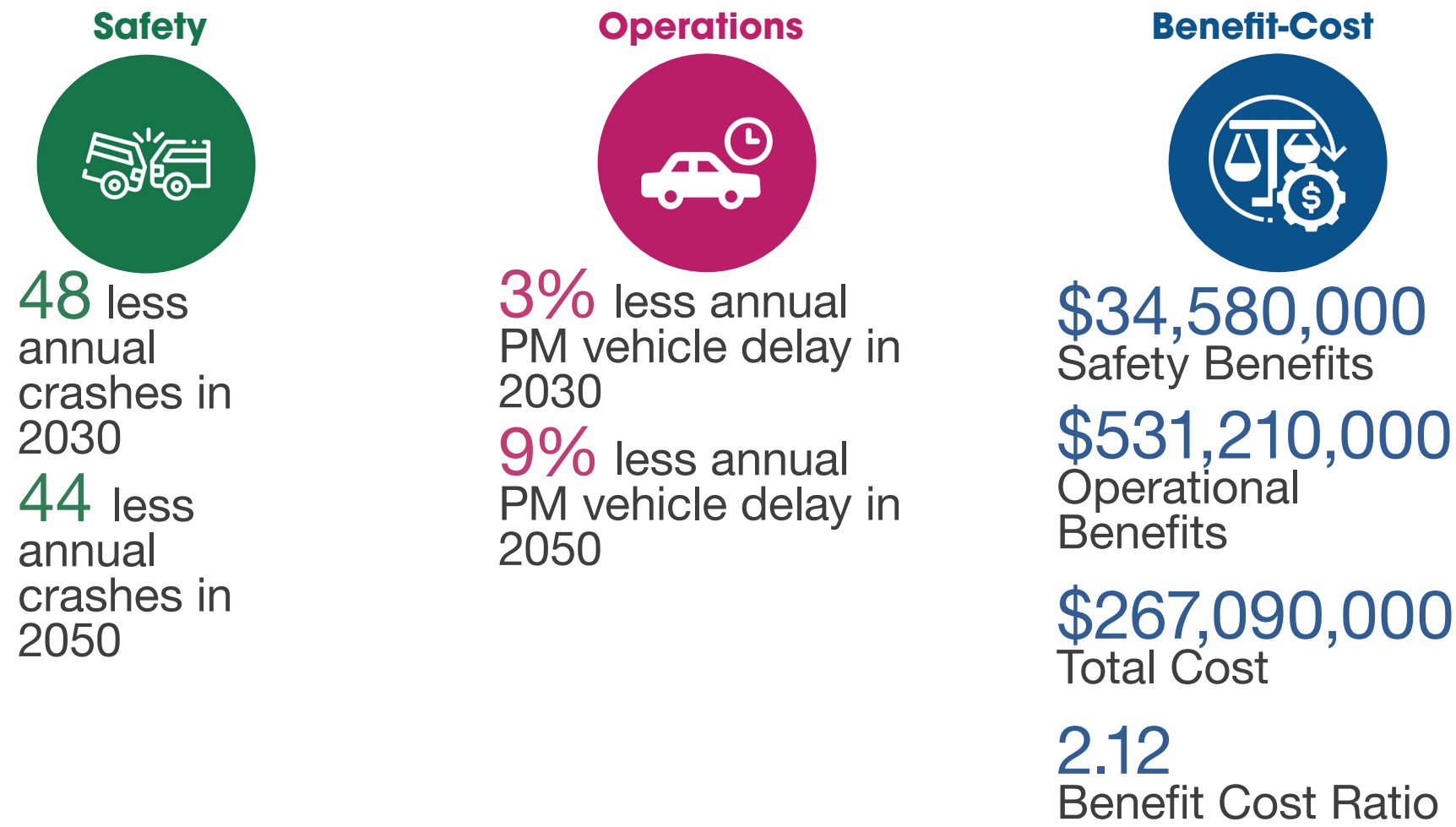
PI No.	Location	Current Programmed Construction Year	Project Type in Current GDOT Program	SR 316 Planning Study Recommendation	Current GDOT Program Project Cost	SR 316 Planning Study Total Cost
0013899	Oak Valley Road	2028	Ramp	Traffic Reroute	\$14,100,000	\$7,150,000
0013900	Williams Farm Drive	2028	Ramp	Interchange	\$5,900,000	\$94,990,000
0013901	Drowning Creek Road	2030	Interchange	Grade Separation	\$44,200,000	\$10,800,000
0013904	CR 110/Harry McCarty Road	2030	Grade Separation	Traffic Reroute	\$23,600,000	\$430,000
0013905	Harrison Mill Road	2031	Grade Separation	RIRO	\$23,100,000	\$22,230,000
0013906	CR 138/Smith Cemetery Road	2030	Grade Separation	RIRO	\$18,900,000	\$22,230,000
0013907	CR 139/Jackson Trail Road	2031	Grade Separation	RIRO	\$16,300,000	\$22,230,000
0013908	Wall Road	2032	Grade Separation	RIRO	\$19,100,000	\$14,940,000
0013764	McNutt Creek Road	2027	Ramp	RIRO	\$17,200,000	\$15,330,000
0013765	Mars Hill Road	2030	Grade Separation	Traffic Reroute	\$13,000,000	\$330,000
0013766	Julian Drive	2030	Grade Separation	Grade Separation	\$13,800,000	\$14,510,000
0013770	SR 10 Loop/Athens Perimeter	TBD	Interchange	Interchange Upgrade	\$10,900,000	\$221,080,000
Total					\$220,100,000	\$446,250,000

Table 9-2 Other Planned or Programmed Projects Near Study Area

PI No.	Project Name	Project Type	Project Status (as of March 2025)	Construction Year or Completion Date
0015323	Exchange Blvd Ext from CR 110/Harry McCarty Road to SR 11*	Frontage Road	Construction Work Program	2028
0020634	Stanley Road @ SR 8	Realignment	Construction Work Program	2025
0013974	SR 20 from SR 124 to CR 1940/Hurricane Road	Widening	Long Term	2034
0013375	West Pike Street from SR 316 to Hurricane Shoals Road – VRU	Intersection Improvement	Under Construction	2024
122760-	SR 316 from E of SR 20 to W of CR 183/Progress Center Avenue	Widening	Long Term	2051

* Project is a part of the SR 316 reconstruction projects.

Figure 9-3 Final Recommendations Performance Measures



final list of recommendations compared to the baseline. The figure only includes at-grade crossings, not the additional capacity and operational improvements outlined in Figure 9-2. This is because those are ancillary projects on crossing streets and there is no funding identified for these projects. Based on these performance results, the final recommendations perform better than either of the initial Build scenarios in Chapter 6.

9.2 Implementation Plan

Even more important than identifying the final recommendations is implementing them in an order that will positively impact safety, mobility, and economic development for the surrounding communities. It is also important to respond to community feedback on project importance and priorities. The projects have been split into three phases.

The 12 at-grade crossing improvement projects have been broken down into an implementation order while the additional capacity and operational improvements have not. GDOT is likely to lead the funding and implementation of the 12 at-grade crossing improvements. The lead agency to fund and implement the additional capacity and operational improvements has not yet been identified.

9.2.1 Phase 1

Phase 1 projects were identified as necessary for implementation in the immediate term. All Phase 1 projects are associated with lower-traffic local roads that have been identified in this study and by members of the community as top safety priorities. Phase 1 projects are listed in Table 9-3. Implementation of these Phase 1 projects will result in 90% of the corridor

operating as limited access (Figure 9-4).

9.2.2 Phase 2

Phase 2 projects were identified as moderate priority improvements. These projects are higher priority than Phase 3 projects because of immediate safety concerns, particularly their proximity to existing or planned interchanges. Phase 2 projects are listed in Table 9-4.

Table 9-3 Phase 1 Projects

Location	PI No.	Project Type	Crossing Improvement
Oak Valley Road	0013899	Address remaining at-grade crossing	Traffic Reroute
Julian Drive	0013766	Address remaining at-grade crossing	Grade Separation
Williams Farm Drive	0013900	Address remaining at-grade crossing	Interchange
CR 110/Harry McCarty Road	0013904	Address remaining at-grade crossing	Traffic Reroute

Table 9-4 Phase 2 Projects

Location	PI No.	Project Type	Crossing Improvement
Wall Road	0013908	Address remaining at-grade crossing	RIRO
McNutt Creek Road	0013764	Address remaining at-grade crossing	RIRO (with emergency left turn access)
Mars Hill Road	0013765	Address remaining at-grade crossing	Traffic Reroute

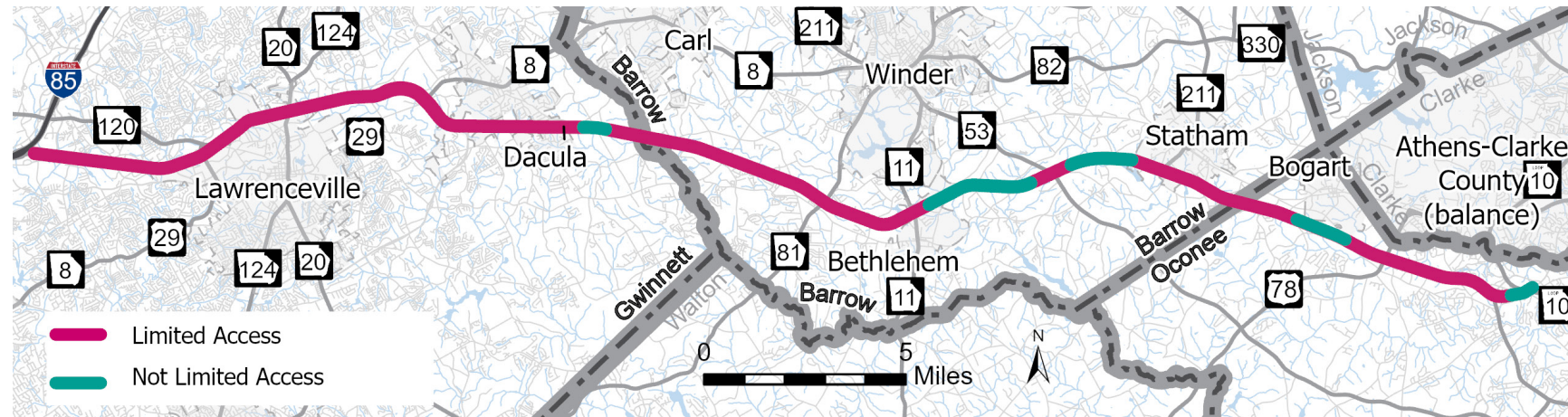


Figure 9-4 Limited Access Segments After Phase 1

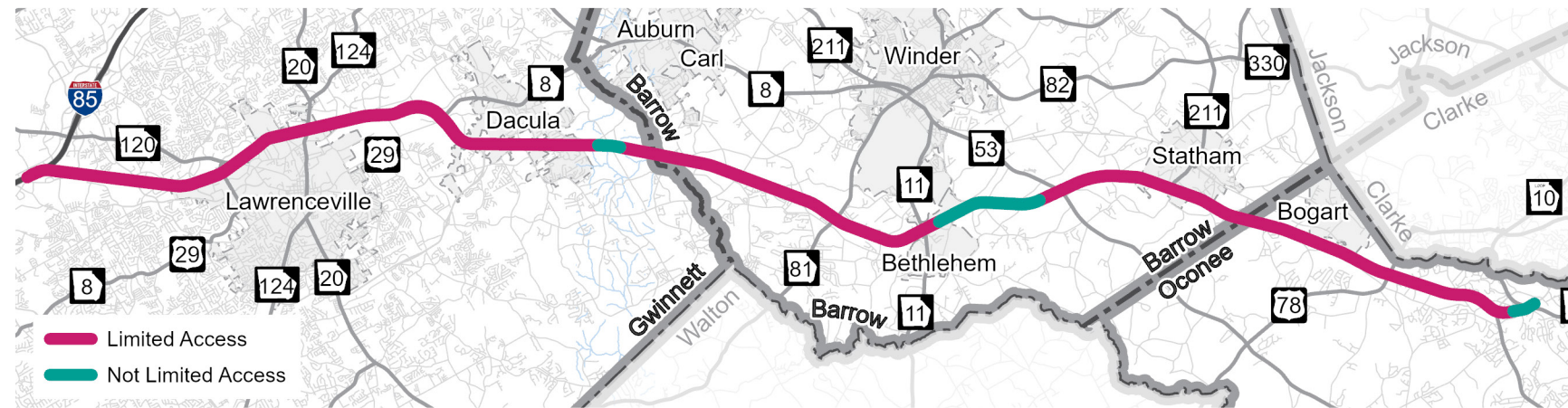


Figure 9-5 Limited Access Segments After Phase 2

Implementation of the Phase 2 projects will result in 95% of the corridor operating as limited access (Figure 9-5).

9.2.3 Phase 3

Projects identified in Phase 3 include lower priority intersection improvements. These projects are listed in Table 9-5.

Phase 3 includes completing the limited-access configuration of the corridor with the construction of the interchange upgrade at the SR 10 Loop/Athens Perimeter.

Harrison Mill Road, CR 138/Smith Cemetery Road, and CR 139/Jackson Trail Road are recommended to be configured as RIRO intersections off an access road connecting to SR 316. These projects should be completed simultaneously, resulting in a frontage road system. Upon completion of

Phase 3 projects, 100% of SR 316 will be limited access (Figure 9-6).

9.2.4 Final Plan Recommendations with Phasing

All projects and all phases, including detailed planning level cost estimates and total phase costs, are in Table 9-6. Cost estimates are rounded to the nearest \$10,000.

Table 9-5 Phase 3 Projects

Location	PI No.	Project Type	Crossing Improvement
Drowning Creek Road	0013901	Address remaining at-grade crossing	Grade Separation
Harrison Mill Road	0013905	Address remaining at-grade crossing	RIRO
CR 138/Smith Semetary Road	0013906	Address remaining at-grade crossing	RIRO
CR 139/Jackson Trail Road	0013907	Address remaining at-grade crossing	RIRO
SR 10 Loop/Athens Perimeter	0013770	Address remaining at-grade crossing	Interchange Upgrade

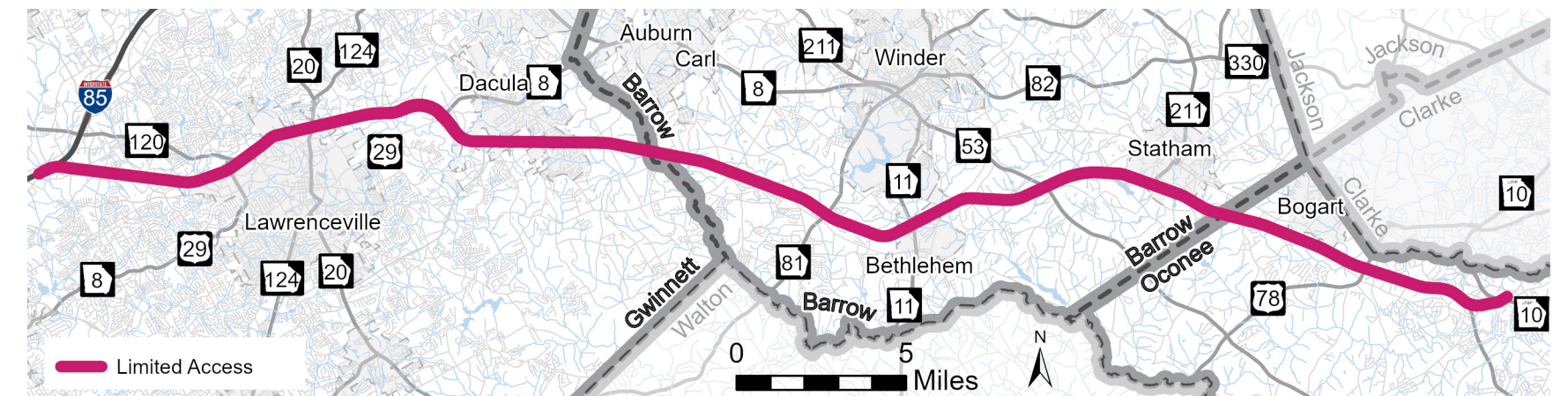


Figure 9-6 Limited Access Segments After Phase 3

Table 9-6 SR 316 At-Grade Crossing Improvement Recommendations and Phasing

PI No.	Location	Phase	Recommendation	Preliminary Engineering	Right of Way	Utilities	Construction	Total Cost
0013899	Oak Valley Road	1	Traffic Reroute	\$720,000	\$0	\$560,000	\$5,870,000	\$7,150,000
0013900	Williams Farm Drive *	1	Interchange	\$6,560,000	\$29,770,000	\$5,090,000	\$53,570,000	\$94,990,000
0013766	Julian Drive	1	Grade Separation	\$1,180,000	\$2,790,000	\$910,000	\$9,620,000	\$14,510,000
0013904	CR 110/Harry McCarty Road	1	Traffic Reroute	\$40,000	\$0	\$30,000	\$360,000	\$430,000
Phase 1 Total				\$8,500,000	\$32,560,000	\$6,590,000	\$69,420,000	\$117,080,000
0013908	Wall Road	2	RIRO	\$1,430,000	\$750,000	\$1,110,000	\$11,660,000	\$14,940,000
0013764	McNutt Creek Road	2	RIRO	\$1,470,000	\$750,000	\$1,140,000	\$11,980,000	\$15,330,000
0013765	Mars Hill Road	2	Traffic Reroute	\$30,000	\$0	\$30,000	\$270,000	\$330,000
Phase 2 Total				\$2,930,000	\$1,500,000	\$2,280,000	\$23,910,000	\$30,600,000
0013901	Drowning Creek Road	3	Grade Separation	\$930,000	\$1,550,000	\$720,000	\$7,590,000	\$10,800,000
0013905	Harrison Mill Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013906	CR 138/Smith Cemetery Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013907	CR 139/Jackson Trail Road	3	RIRO	\$2,290,000	\$300,000	\$1,710,000	\$17,930,000	\$22,230,000
0013770	SR 10 Loop/Athens Perimeter	3	Interchange Upgrade	\$21,930,000	\$3,080,000	\$17,020,000	\$179,050,000	\$221,080,000
Phase 3 Total				\$29,730,000	\$5,530,000	\$22,870,000	\$240,430,000	\$298,570,000
All Phases Total				\$41,160,000	\$39,590,000	\$31,740,000	\$333,760,000	\$446,250,000

* GDOT to continue coordination with Rowen Development and Gwinnett County to understand potential to connect Williams Farm Drive to Drowning Creek Road in the interim prior to construction of interchange.

** Costs are in 2023 dollars

10 Project Fact Sheets

This section contains fact sheets for projects included in the recommended alternative and additional capacity and operational improvements identified in Section 9 of this report. Each project fact sheet includes the name of the project; proposed improvement; sequencing; project description, benefits, and cost; and a context map.

Total project cost estimates on the fact sheets reflect rounded project costs, so there may be some discrepancies due to rounding. Please refer the Appendix E for detailed cost estimates of all projects included in this plan. Costs included in this plan, the fact sheets, and appendices are planning-level estimates and subject to change at any time.

SR 316 Planning Study

Oak Valley Road (PI: 0013899)

Existing Condition: Right-in, Right-out Location: Gwinnett County

PROPOSED IMPROVEMENT: Traffic Reroute



Phase 1

Project Description

Oak Valley Road is an existing Right-in,-Right-out along SR 316 in Gwinnett County. For traffic and safety reasons, it is recommended that traffic to and from Oak Valley Road be rerouted to Harbins Road via an access road parallel to SR 316.

Project Benefits

- Maintains SR 316 travel speeds
- Removes left turn conflict points

PE: \$720,000

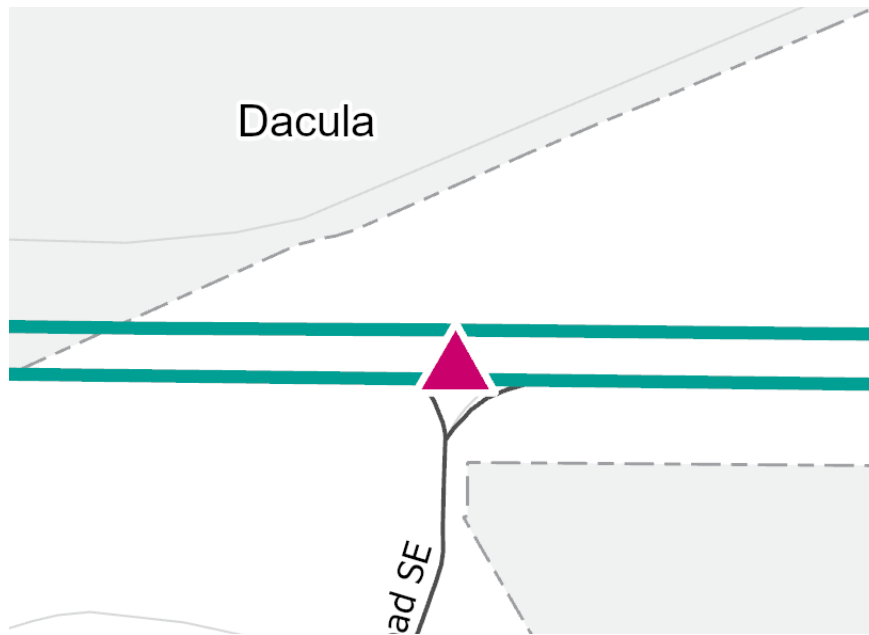
ROW: \$0

Utility: \$560,000

Construction: \$5,870,000

Total:

\$7,150,000



Williams Farm Drive (PI: 0013900)

Existing Condition: At-Grade Crossing Location: Gwinnett County

PROPOSED IMPROVEMENT: Interchange



Phase 1

Project Description

Williams Farm Drive is an existing at-grade crossing in Gwinnett County. An interchange will facilitate access to and from future Rowen development to provide the capacity needed to accommodate future traffic.

Project Benefits

- Increase capacity for traffic exiting and entering SR 316
- Separates left turn conflict points
- Support economic development

Interchange:

PE: \$6,560,000

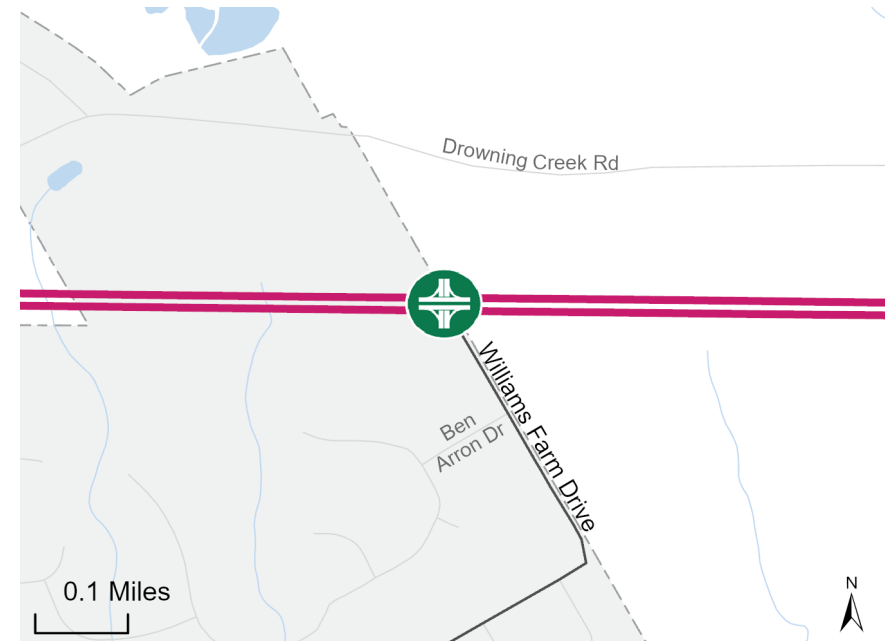
ROW: \$29,770,000

Utility: \$5,090,000

Construction: \$53,570,000

Total:

\$94,990,000

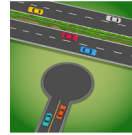


SR 316 Planning Study

Harry McCarty Road (PI: 0013904)

Existing Condition: At-Grade Crossing Location: Barrow County

PROPOSED IMPROVEMENT: Traffic Reroute



Phase 1

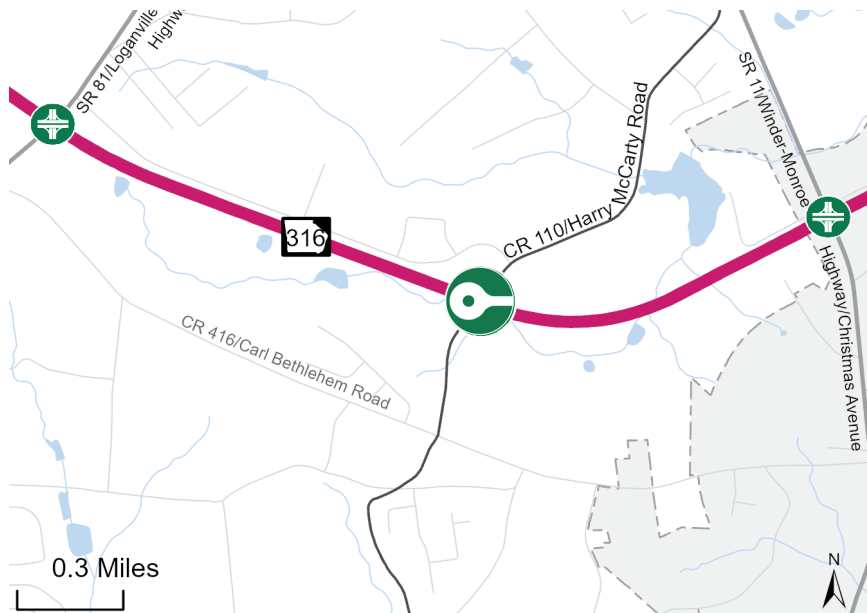
Project Description

Harry McCarty Road is an existing at-grade intersection in Barrow County. The crossing will be converted to a traffic reroute to SR 11 and SR 81. This configuration removes conflict points along SR 316, which is one of the highest historic crash locations.

Project Benefits

- Removes left turn conflict points

PE: \$40,000
ROW: \$0
Utility: \$30,000
Construction: \$360,000
Total:
\$430,000



Julian Drive (PI: 0013766)

Existing Condition: At-Grade Crossing Location: Gwinnett County

PROPOSED IMPROVEMENT: Grade Separation



Phase 1

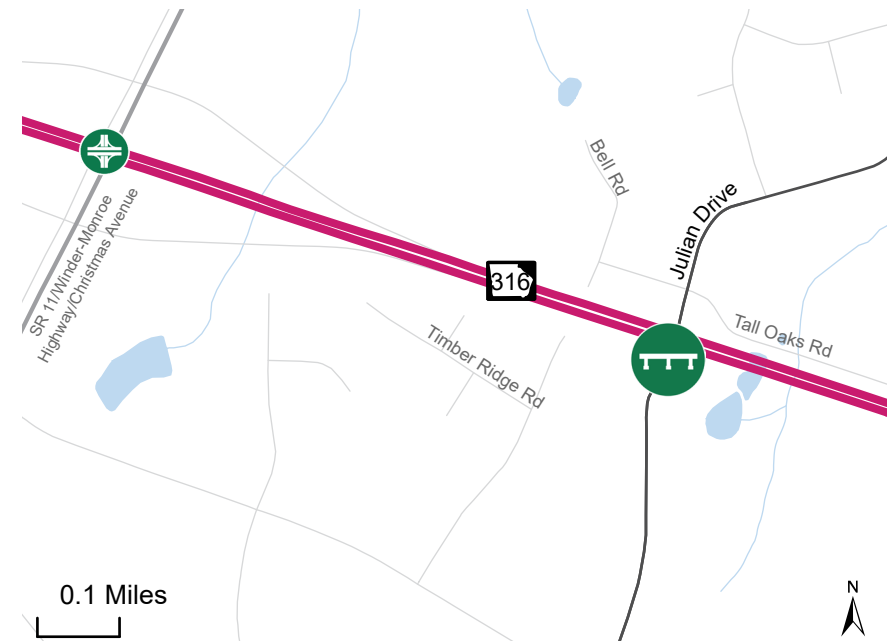
Project Description

Julian Drive is an existing at-grade crossing less than a mile east of the SR 10/Monroe Highway interchange in Oconee County. The crossing will be converted to a grade separation with a bridge connecting Julian Drive over SR 316.

Project Benefits

- Provides uninterrupted movements crossing SR 316
- Removes left turn conflict points

PE: \$1,180,000
ROW: \$2,790,000
Utility: \$910,000
Construction: \$9,620,000
Total:
\$14,510,000



SR 316 Planning Study

McNutt Creek Road (PI: 0013764)

Existing Condition: At-Grade Crossing Location: Oconee County

PROPOSED IMPROVEMENT: Right-In, Right-Out



Phase 2

Project Description

McNutt Creek Road is an at-grade stop controlled crossing. The project will convert both sides of SR 316 to a Right-In, Right-Out to allow continued access to SR 316 to support potential development in the area.

Project Benefits

- Removes crossing traffic while maintaining efficient access to SR 316
- Removes left turn conflicts

PE: \$1,470,000

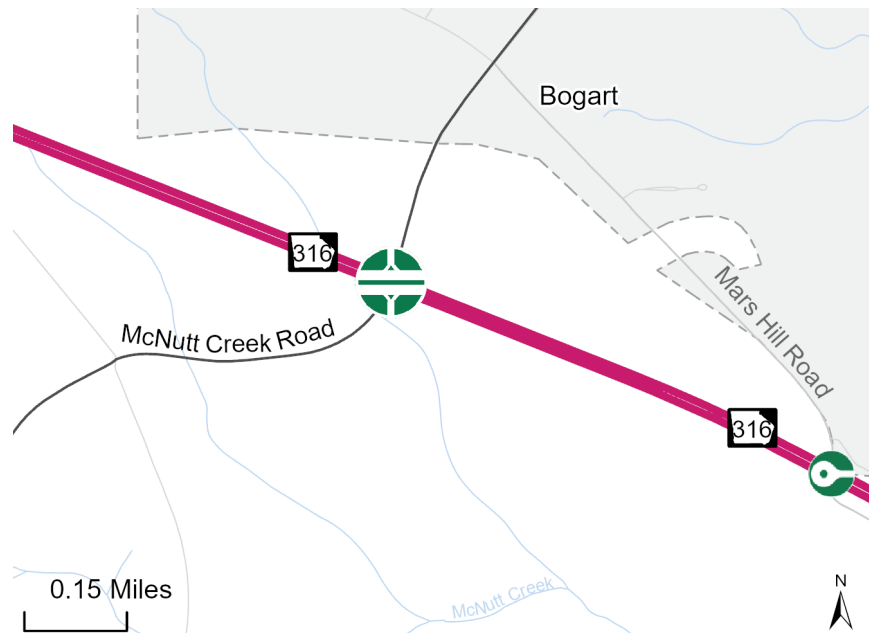
ROW: \$750,000

Utilities: \$1,140,000

Construction: \$11,980,000

Total:

\$15,330,000



Mars Hill Road (PI: 0013765)

Existing Condition: Right-In, Right-Out Location: Oconee County

PROPOSED IMPROVEMENT: Traffic Reroute

Phase 2

Project Description

Mars Hill Road is a right-in, right-out crossing in Oconee County. This project will reroute traffic to nearby crossings (McNutt Creek Road and SR 10/ Monroe Highway) to increase safety and improve mobility.

Project Benefits

- Maintains SR 316 travel speeds
- Removes left turn conflict points

PE: \$30,000

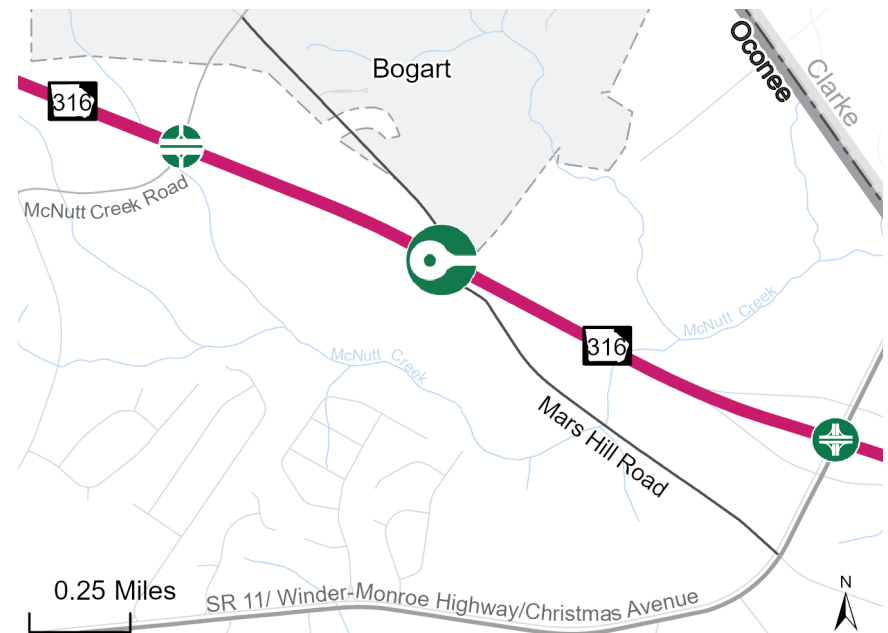
ROW: \$0

Utility: \$30,000

Construction: \$270,000

Total:

\$330,000



SR 316 Planning Study

Wall Road (PI: 0013908)

Existing Condition: At-Grade Crossing Location: Barrow County

PROPOSED IMPROVEMENT: Right-In, Right-Out



Phase 2

Project Description

Wall Road is an at-grade stop controlled crossing. The project will convert both sides of SR 316 to a Right-In, Right-Out to allow continued access to SR 316 to support potential development in the area.

Project Benefits

- Removes crossing traffic while maintaining efficient access to SR 316
- Removes left turn conflict points
- Supports economic development

PE: \$1,430,000

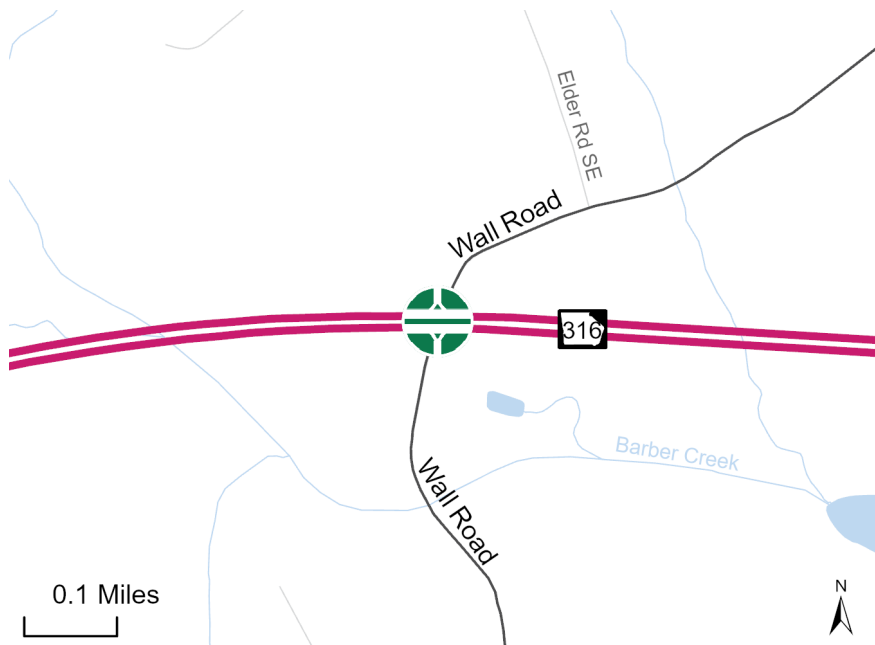
ROW: \$750,000

Utility: \$1,110,000

Construction: \$11,660,000

Total:

\$14,940,000



SR 10 Loop/Athens Perimeter (PI: 0013700)

Existing Condition: Partial Interchange

PROPOSED IMPROVEMENT: Interchange Upgrade



Phase 3

Project Description

SR 10 Loop/Athens Perimeter is grade separated with a partial interchange. This project will improve the traffic flow along SR 316 and Epps Bridge Parkway by adding safety and capacity improvements.

Project Benefits

- Increase capacity for traffic traveling between SR 10 Loop/Athens Perimeter and SR 316
- Improve flow along Epps Bridge Parkway
- Removes left turn conflicts

PE: \$21,930,000

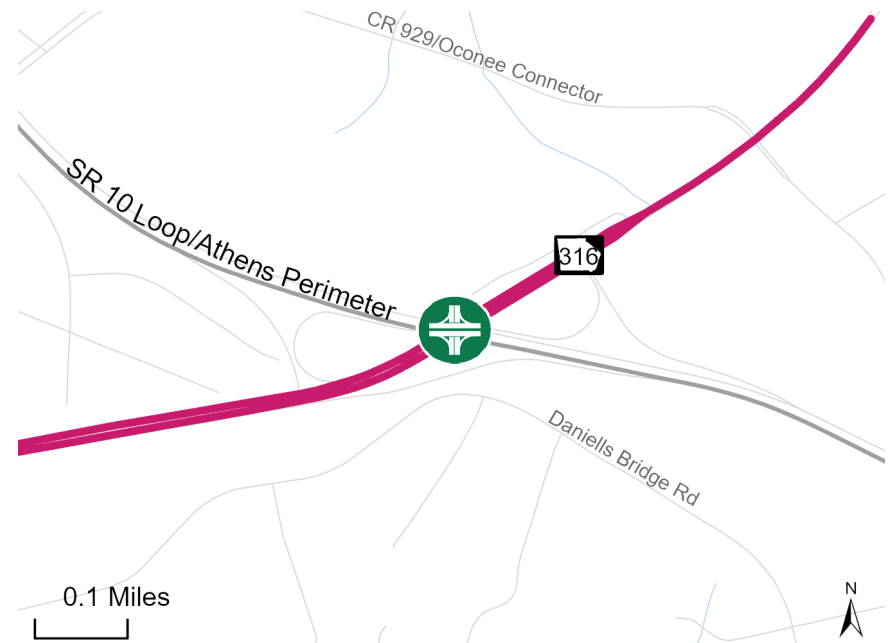
ROW: \$3,080,000

Utilities: \$17,020,000

Construction: \$179,050,000

Total:

\$221,080,000



SR 316 Planning Study

Drowning Creek Road (PI: 0013901)

Existing Condition: At-Grade Crossing Location: Gwinnett County

PROPOSED IMPROVEMENT: Grade Separation



Phase 3

Project Description

Drowning Creek Road is an existing at-grade separation located in Gwinnett County. The crossing will be converted to a grade separation with a bridge connecting Drowning Creek Road over SR 316 and will be located between two planned interchanges for the Rowen development. The grade separation will provide circulation for the Rowen development.

Project Benefits

- Provides uninterrupted movements crossing SR 316
- Removes left turn conflict points
- Supports economic development

PE: \$930,000

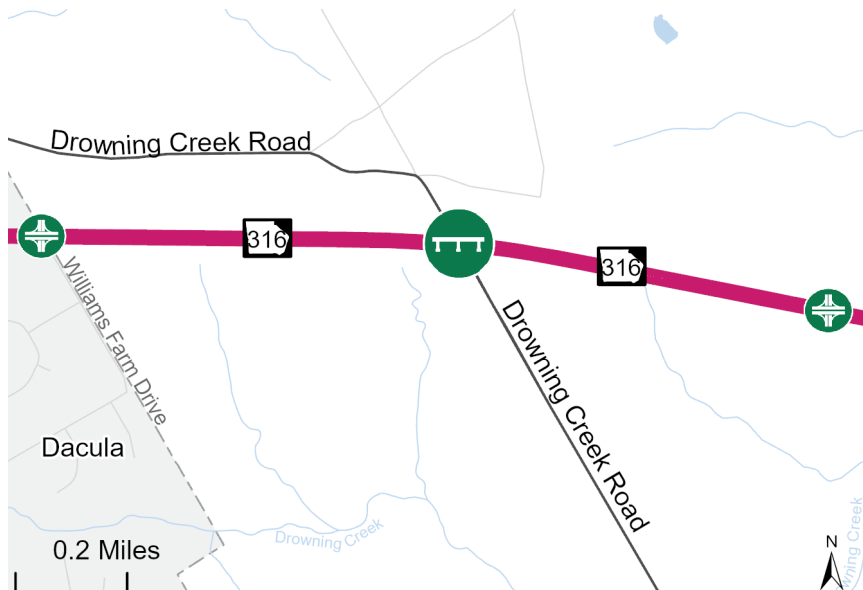
ROW: \$1,550,000

Utility: \$720,000

Construction: \$7,590,000

Total:

\$10,800,000



Harrison Mill Road (PI: 0013905)

Existing Condition: At-Grade Crossing Location: Barrow County

PROPOSED IMPROVEMENT: Right-In, Right-Out



Phase 3

Project Description

Harrison Mill Road is an at-grade stop controlled crossing. The project will convert both sides of SR 316 to a Right-In, Right-Out to allow continued access to SR 316. Harrison Mill Road will be connected to CR 138/Smith Cemetery Road and CR 139/Jackson Trail Road by a frontage road.

Project Benefits

- Provides reliable connection between side roads
- Maintains access to SR 316
- Removes left turn conflicts

PE: \$2,290,000

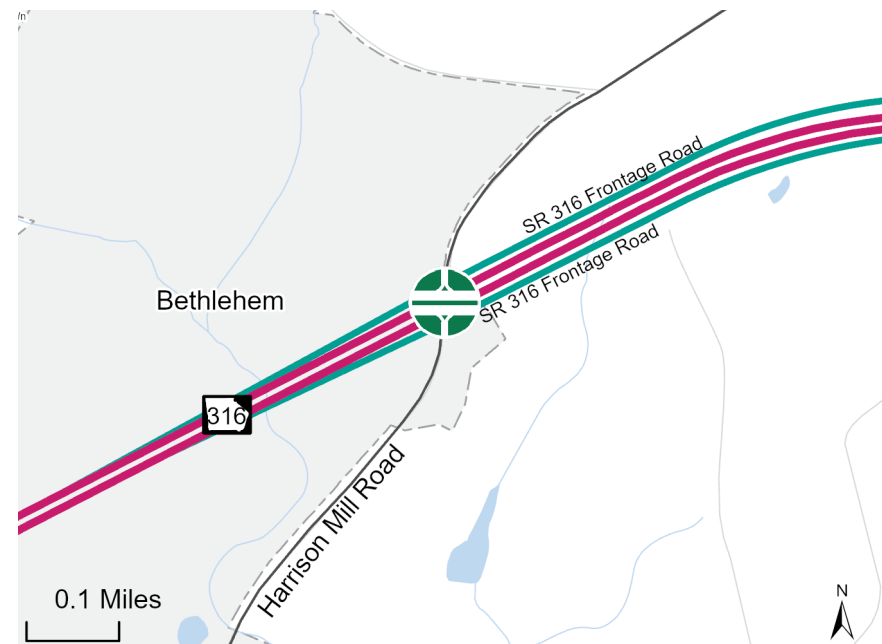
ROW: \$300,000

Utilities: \$1,710,000

Construction: \$17,930,000

Total:

\$22,230,000



SR 316 Planning Study

CR 138/Smith Cemetery (PI: 0013906)

Existing Condition: At-Grade Crossing Location: Barrow County

PROPOSED IMPROVEMENT: Right-In, Right-Out



Phase 3

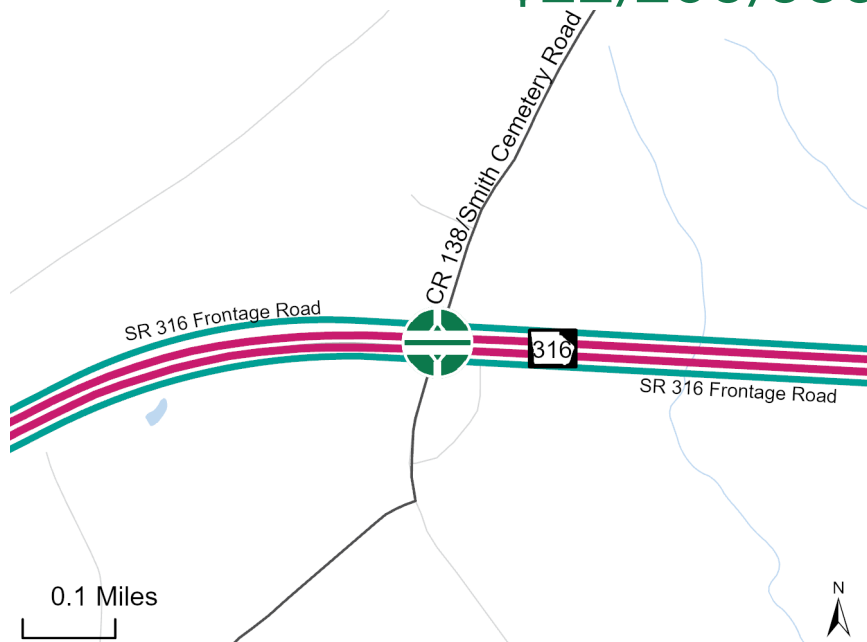
Project Description

CR 138/Smith Cemetery Road is an at-grade stop controlled crossing. The project will convert both sides of SR 316 to a Right-In, Right-Out to allow continued access to SR 316. CR 138/Smith Cemetery Road will be connected to Harrison Mill Road and CR 139/Jackson Trail Road by a frontage road.

Project Benefits

- Provides reliable connection between side roads
- Maintains access to SR 316
- Removes left turn conflicts

PE: \$2,290,000
ROW: \$300,000
Utilities: \$1,710,000
Construction: \$17,930,000
Total:
\$22,230,000



CR 138/Jackson Trail Road (PI: 0013907)

Existing Condition: At-Grade Intersection Location: Barrow County

PROPOSED IMPROVEMENT: Right-In, Right-Out



Phase 3

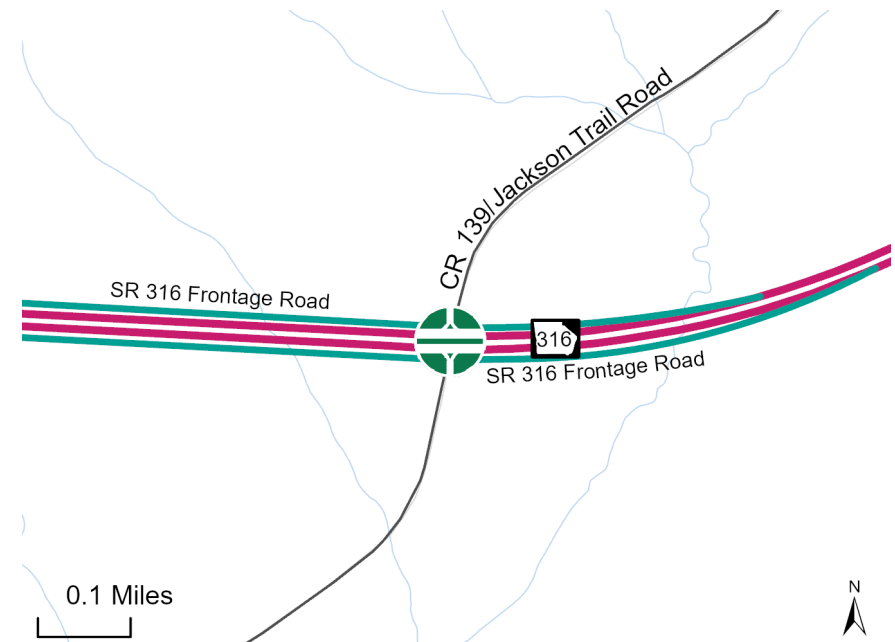
Project Description

CR 139/Jackson Trail Road is an at-grade stop controlled crossing. The project will convert both sides of SR 316 to a Right-In, Right-Out to allow continued access to SR 316. CR 139/Jackson Trail Road will be connected to Harrison Mill Road and CR 138/Smith Cemetery Road by a frontage road.

Project Benefits

- Provides reliable connection between side roads
- Maintains access to SR 316
- Removes left turn conflicts

PE: \$2,290,000
ROW: \$300,000
Utilities: \$1,710,000
Construction: \$17,930,000
Total:
\$22,230,000



SR 316 Planning Study

Harbins Road Improvement (New project)

Existing Condition: One lane in each direction Location: Barrow County

PROPOSED IMPROVEMENT: Widening

Project Description

Harbins Road is one lane in each direction. This project widens 1.2 miles of Harbins Road to two through lanes in each direction between Dacula Ridge Drive and West Drowning Creek Road.

Project Benefits

- Increases capacity for traffic traveling on Harbins Road

PE: \$4,190,000

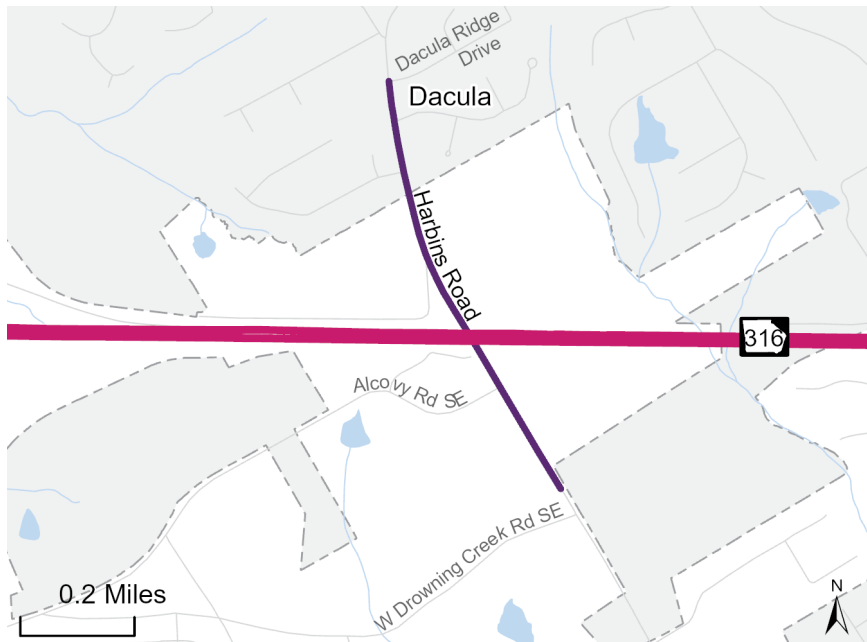
ROW: \$0

Utility: \$3,250,000

Construction: \$34,180,000

Total:

\$41,620,000



CR 416/Carl-Bethlehem Road Widening (New Project)

Existing Condition: One lane in each direction Location: Barrow County

PROPOSED IMPROVEMENT: Widening

Project Description

CR416/Carl-Bethlehem Road is one lane in each direction. This project widens 1.8 miles of CR 416/Carl-Bethlehem Road to two through lanes in each direction between Tucker Road and 0.25 miles east of SR 81. The project adds a roundabout at the intersection with Haymon Morris Road and Hoyt King Road.

Project Benefits

- Increases capacity for traffic traveling on CR 416/Carl-Bethlehem Road
- Increases safety at Haymon Morris Road and Hoyt King Road

PE: \$4,460,000

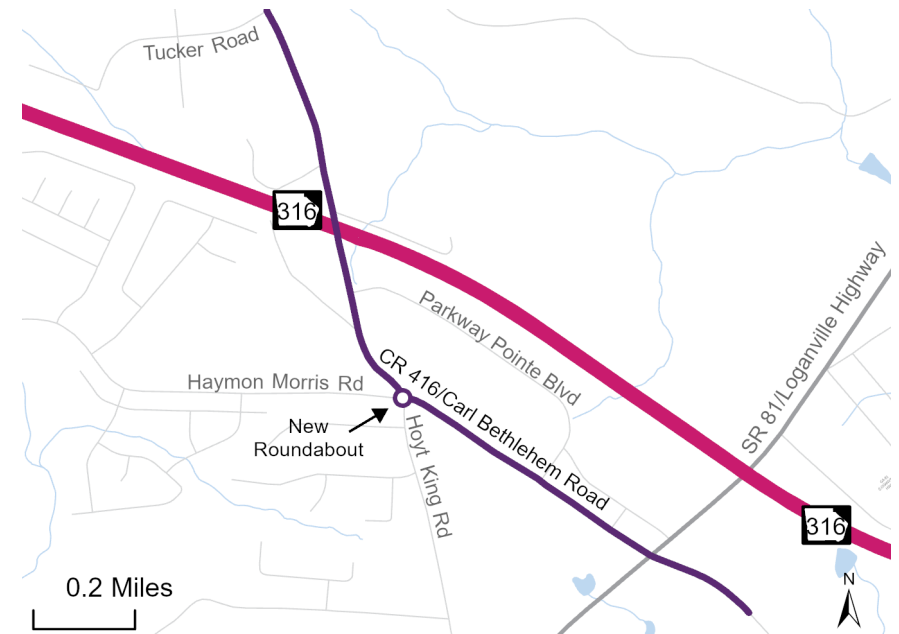
ROW: \$15,570,000

Utility: \$3,460,000

Construction: \$36,440,000

Total:

\$59,930,000



SR 316 Planning Study

Sugarloaf Parkway (New Project)

Existing Condition: Two lanes in each direction Location: Gwinnett County

PROPOSED IMPROVEMENT: Widening

Project Description

Sugarloaf Parkway is two lanes in each direction with turning lanes on the bridge over SR 316. This project will widen 0.5 miles of Sugarloaf Parkway including the bridge over SR 316 from two to three through lanes in each direction from just north of Cisco Drive to Lakes Parkway. The project will also widen the SR 316 eastbound off-ramp from three to four lanes.

Project Benefits

- Increases capacity for traffic traveling on Sugarloaf Parkway
- Reduce back up on off-ramp and SR 316

PE: \$1,550,000

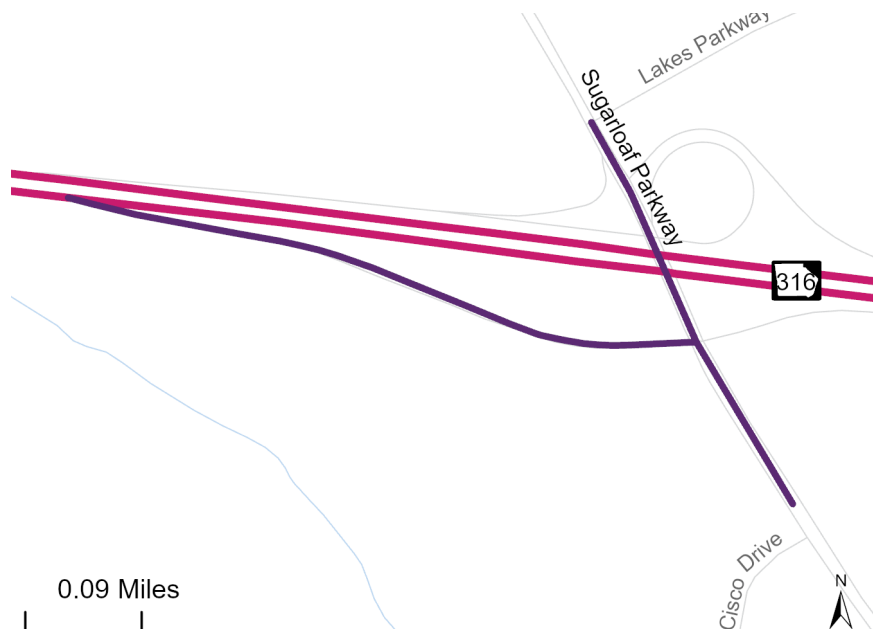
ROW: \$0

Utilities: \$1,200,000

Construction: \$12,640,000

Total:

\$15,390,000



SR 81/Loganville Highway Widening and Interchange Improvements (New Project)

Existing Condition: One lane in each direction Location: Barrow County

PROPOSED IMPROVEMENT: Widening

Project Description

SR 81 is one lane in each direction. This project widens 1.6 miles of SR 81 to two through lanes in each direction between Bethel Bower Road and Carter Hill Drive. The project will also widen the eastbound off ramp from SR 316 to SR 81.

Project Benefits

- Increases capacity for traffic traveling on SR 81
- Reduce back up on off-ramp and SR 316

PE: \$3,220,000

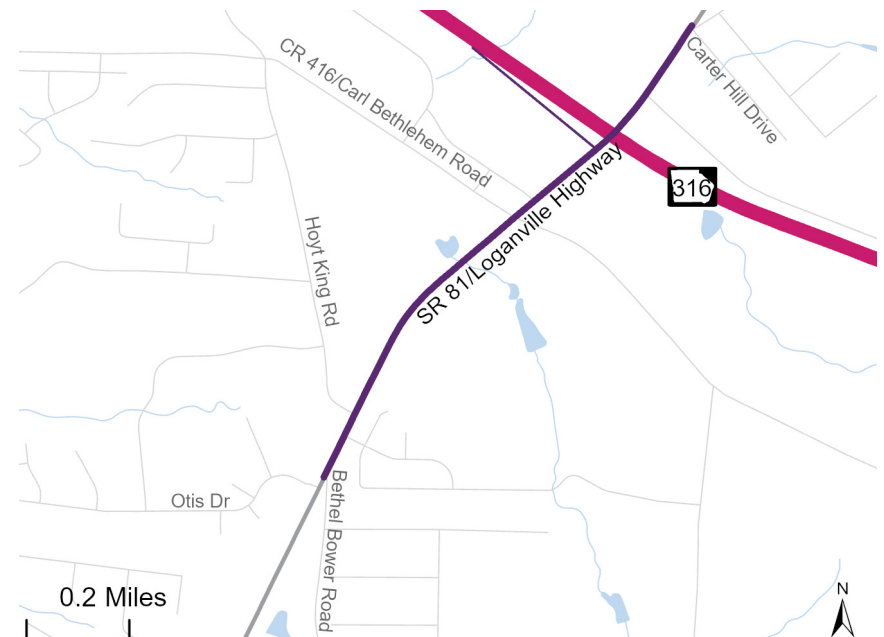
ROW: \$2,400,000

Utility: \$2,500,000

Construction: \$26,280,000

Total:

\$34,400,000



SR 316 Planning Study

Additional Interchange at Rowen (New Project)

Existing Condition: N/A Location: Gwinnett County

PROPOSED IMPROVEMENT: Interchange



Project Description

This project would add a new diamond interchange for Rowen development access. It will add 4.5 miles of auxiliary lanes on SR 316 in each direction on either side of the interchange.

Project Benefits

- Provides additional access to Rowan development, supporting economic development.
- Increases capacity for traffic existing and entering SR 316
- Maintains SR 316 travel speeds

PE: \$8,390,000

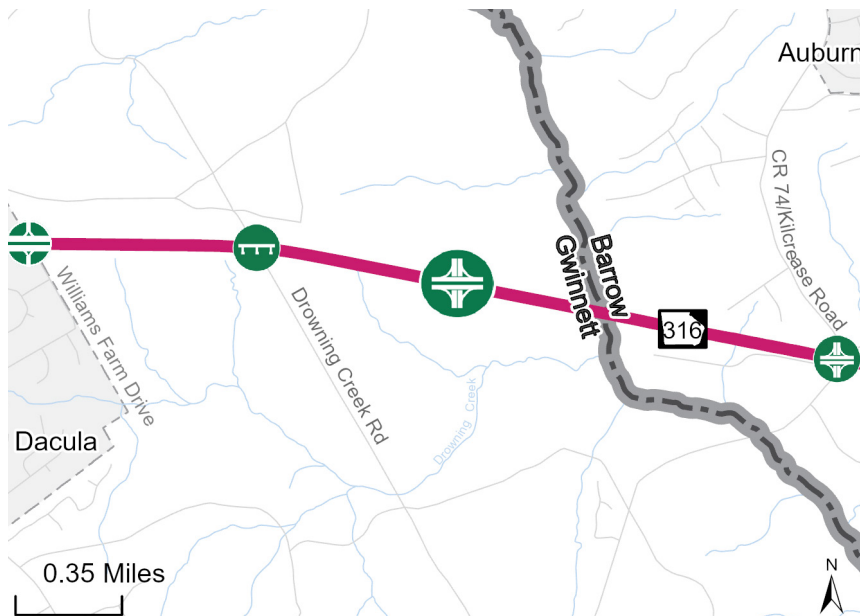
ROW: \$24,630,000

Utilities: \$6,510,000

Construction: \$68,520,000

Total:

\$108,050,000



SR 11/Winder-Monroe Highway/Christmas Avenue Widening (New Project)

Existing Condition: One lane in each direction Location: Barrow County

PROPOSED IMPROVEMENT: Widening

Project Description

SR 11/Winder-Monroe Highway/Christmas Avenue is a two lane road. This project will widen 1.3 miles between Exchange Boulevard and Star Street, adding two through lanes in each direction. The project will also widen the westbound off-ramp from SR 316 to SR 11.

Project Benefits

- Increases capacity for traffic traveling on SR 11/Winder-Monroe Highway/Christmas Avenue
- Reduce back up on off-ramp and SR 316

PE: \$2,220,000

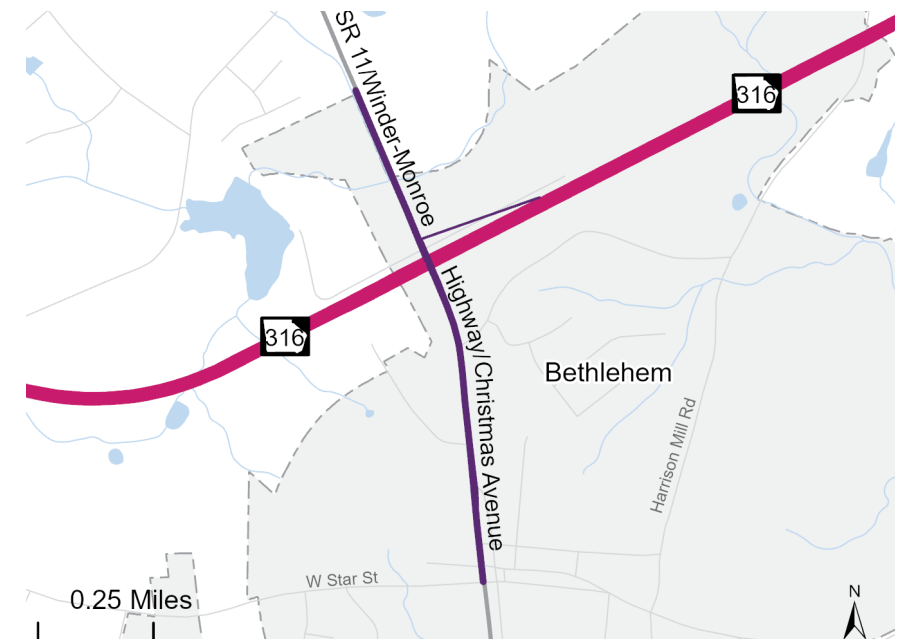
ROW: \$9,260,000

Utilities: \$1,730,000

Construction: \$18,170,000

Total:

\$31,380,000



SR 316 Planning Study

SR 53/Hog Mountain Road Widening (New Project)

Existing Condition: One lane in each direction Location: Barrow County

PROPOSED IMPROVEMENT: Widening

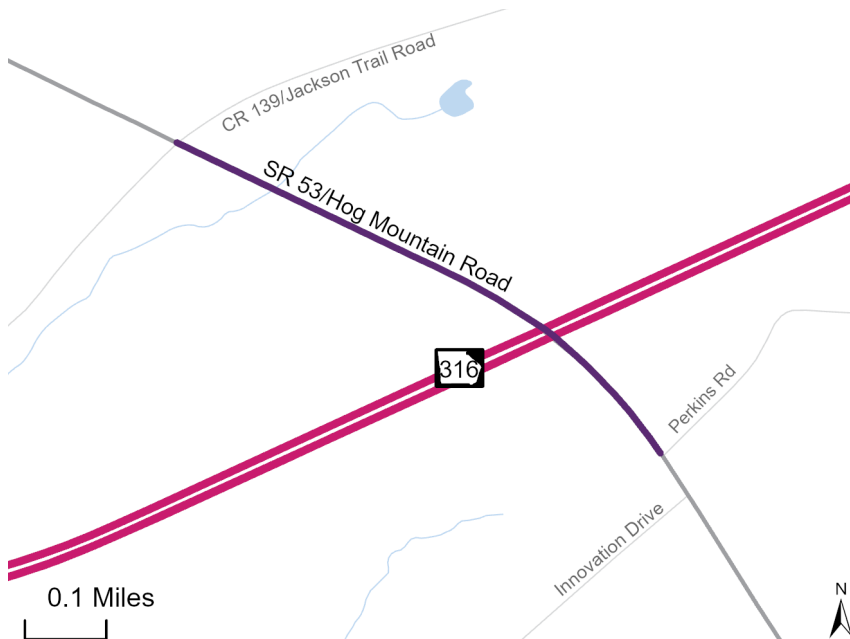
Project Description

SR 53/Hog Mountain Road is a two lane road. This project will widen 0.8 miles of SR 53/Hog Mountain Road to two through lanes in each direction between CR 139/Jackson Trail Road and Innovation Drive.

Project Benefits

- Increases capacity for traffic traveling on SR 53/Hog Mountain Road

PE: \$1,510,000
ROW: \$2,570,000
Utilities: \$1,170,000
Construction: \$12,290,000
Total:
\$17,540,000



US 78/SR 10/Monroe Highway Widening (New Project)

Existing Condition: Two lanes in each direction Location: Oconee County

PROPOSED IMPROVEMENT: Widening

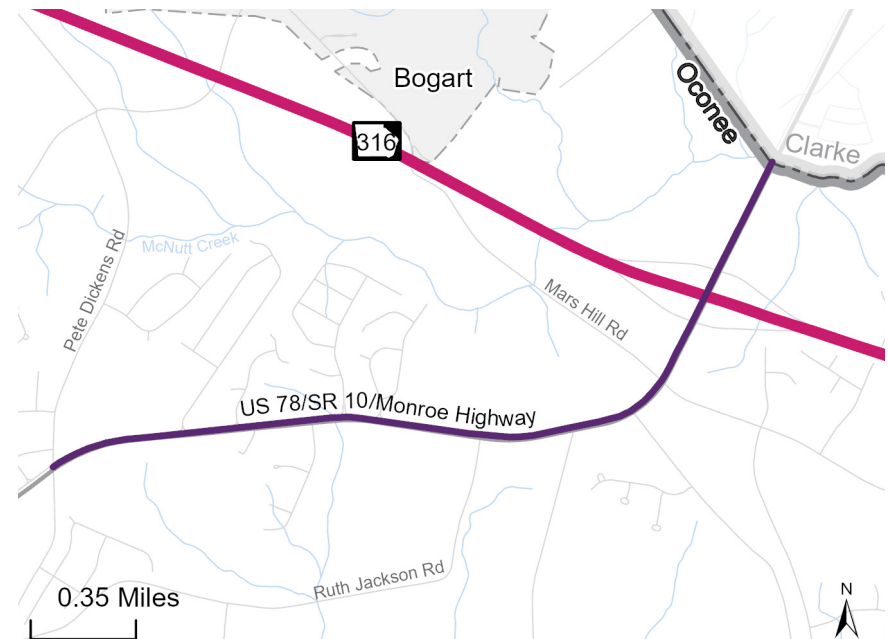
Project Description

US 78/SR 10/Monroe Highway is a four lane road with turning lanes. This project will widen 2.8 miles of US 78/SR 10/Monroe Highway to three through lanes in each direction between Pete Dickens Road and 0.25 miles north of the SR 316 interchange.

Project Benefits

- Increases capacity for traffic traveling on US 78/SR 10/Monroe Highway

PE: \$3,920,000
ROW: \$0
Utilities: \$3,040,000
Construction: \$31,980,000
Total:
\$38,940,000



SR 316 Planning Study

CR 929/Oconee Connector Widening (New Project)

Existing Condition: Two lanes in each direction Location: Oconee County

PROPOSED IMPROVEMENT: Widening

Project Description

CR 929/Oconee Connector is a four lane road with turning lanes. This project will widen 0.6 miles of CR 929/Oconee Connector to three through lanes in each direction between Mars Hill Road and Virgil Langford Road.

Project Benefits

- Increases capacity for traffic traveling on CR 929/Oconee Connector

PE: \$1,310,000

ROW: \$0

Utilities: \$1,010,000

Construction: \$10,670,000

Total:

\$12,990,000

