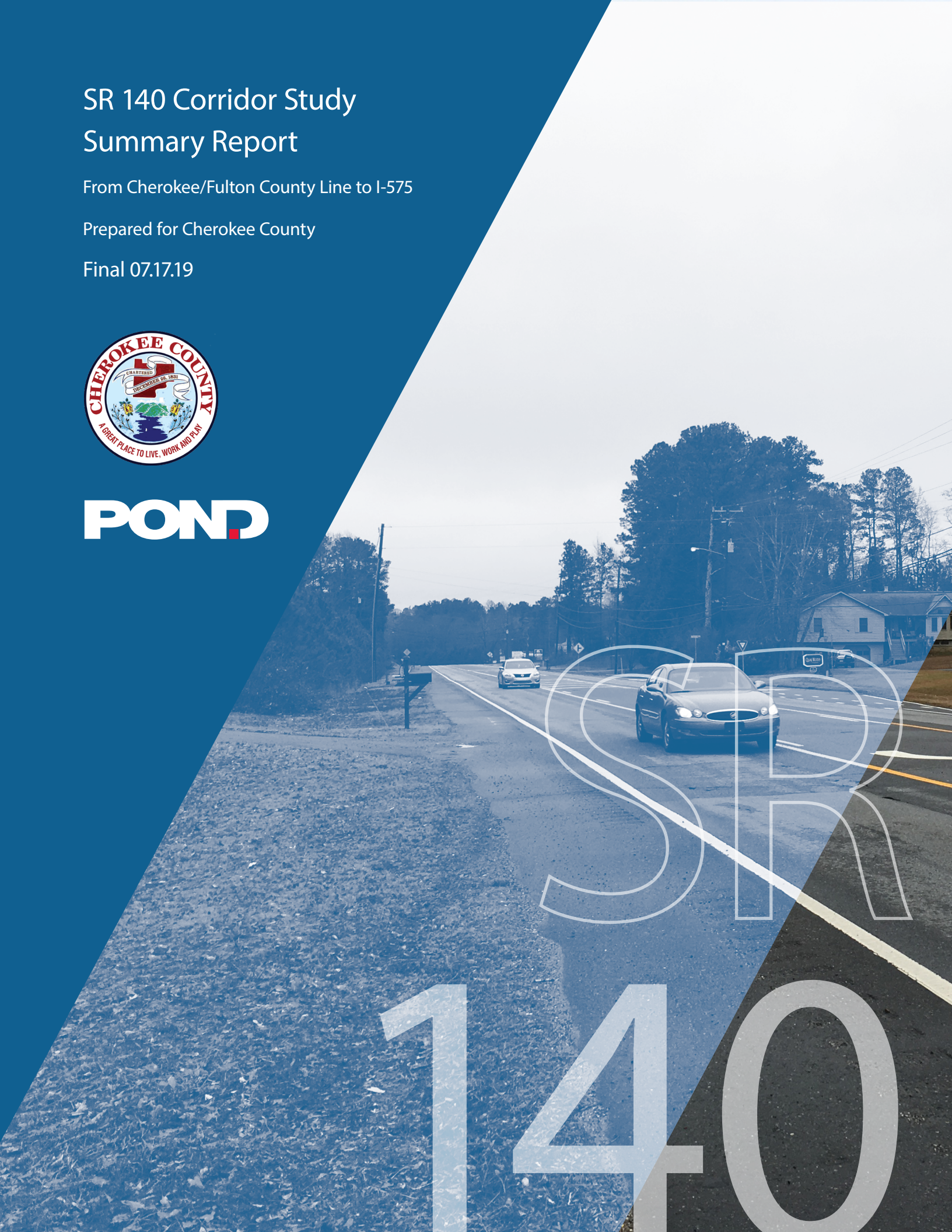
SR 140 Corridor Study
Summary Report

From Cherokee/Fulton County Line to I-575

Prepared for Cherokee County

Final 07.17.19

POND



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SR 140


1.41 ACRES
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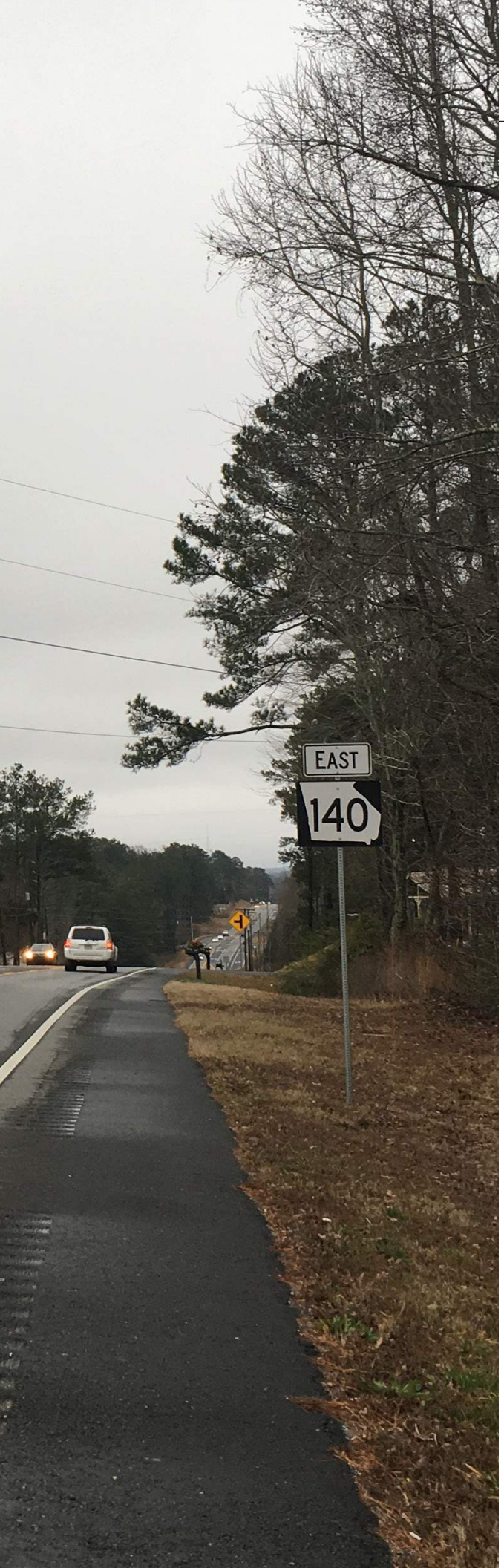


Introduction & Purpose

The SR 140 corridor serves as a vital north-south connection through the southeastern area of Cherokee County and serves as a major commuter corridor for Cherokee County residents to points south. The corridor continues to see strong residential and commercial growth, adding additional strain on the roadway.

It is important that this current two-lane roadway operate as efficiently and safely as possible until the long-range Georgia Department of Transportation (GDOT) four-lane widening project is implemented.

The corridor study was initiated to identify implementable short-term and mid-term projects that will provide relief for the travelers in this corridor. The County identified eighteen intersections to analyze. The study identified a series of projects along the corridor and at the intersections which can be implemented over time and are compatible with the future four-lane widening project.

The study also provided recommendations for prioritizing which segments of the SR 140 corridor to widen from a two-lane road to a four-lane road. Widening the entire length of the corridor will be expensive and take time. By breaking the corridor into prioritized segments, the County is able to identify and program improvements where they are most needed. The study identified five segments for which the County could pursue funding, programming, and construction in phases.


Hickory Flat Hwy
Mountain Rd
Earney Rd
STATE LAW
STOP
FOR PEDESTRIANS
IN CROSSWALK

The Results

The study identified early successes and produced a list of projects. The recommended projects are implementable, programmable, and competitive for state/federal funding. This is primarily due to the project development, analysis, and review process. The projects were vetted with Cherokee County Transportation staff during three meetings and GDOT District 6 staff during two meetings. The meetings with GDOT District 6 allowed for discussion and input in developing recommendations that are viewed favorably by GDOT.

The study identified a total of 19 projects along the corridor. Three projects were identified to the right, three projects are currently in the implementation phase, and 13 projects are ready to be programmed. The recommended projects are explained in the recommendations section. The projects can be presented to state and regional partners for programming and funding requests. Many projects are good candidates to receive funding to supplement the County TSPLOST funds.

The early successes of the study include GDOT District 6 pursing and/or programming 'quick-response' and 'maintenance' projects at three locations:

1. SR 140 at Hillcrest Drive: Install dedicated eastbound left-turn lane along SR 140
   - GDOT is developing a concept and cost estimate for project programming; this will improve intersection operations and safety
2. SR 140 at Univeter Road: Lengthen the westbound left-turn lane along SR 140
   - GDOT is preparing a concept for a 'quick-response' project; this will reduce the occurrence of left-turn vehicles blocking the through lane
3. SR 140 at Arnold Mill Road: Lengthen the northbound left-turn lane along SR 140
   - GDOT programmed a maintenance project to re-stripe the center lane to provide an additional +/- 500-feet; this project is possible due to the recently completely bridge replacement project which built a 12-foot center lane

The Process

The following sections expand on the study process and considerations. A separate technical report provides supporting analysis and documentation. The study consisted of three major phases: Existing Conditions Assessment, Traffic Analysis and Recommendations Development, and Finalize Recommendations.

The study was initiated in February 2019 with traffic data collection efforts. A thorough corridor inventory of existing geometric conditions and observations of traffic flow and congestion conditions during weekday peak periods was performed. A review of historical traffic volumes and historical crash data along the corridor was reviewed. This established a baseline for existing conditions and a needs analysis.

The Pond Team held a project kick-off meeting with Cherokee County Transportation staff to discuss current concerns, planned developments, and information to aid the analysis efforts. The information from the existing conditions assessment was utilized to prepare a traffic analysis of existing conditions for the typical weekday AM and PM peak periods.

Future traffic projections were calculated to provide traffic volumes for both ten-year and twenty-year periods. Technical analysis of intersection operations in both an open year (2029) and design year (2039) allowed the team to compare alternative improvement options. Many alternative intersection control options were considered during the analysis. This approach matched the intent of the GDOT ICE (Intersection Control Evaluation) policy. The goal of the GDOT ICE process is to consider many alternatives, analyze the options, and select the alternative that reflects the overall best value and balances the need to address operations, safety, project cost, and environmental impacts.

The team developed draft project recommendations to address the needs identified in traffic analysis. The draft recommendations were discussed at meetings with Cherokee County Transportation staff and Georgia DOT District 6 staff. The recommendations were refined and a high-level preliminary environmental screening was performed to identify any constraints.

To aid in understanding the project recommendations, the team prepared schematic drawings of the major intersection projects. The drawings illustrated the project limits and were utilized to develop preliminary cost estimates. The project cost estimates are intended to assist the County with programming and budgeting. The cost estimates will be refined during the design process and may vary due to a number of factors.

To complete the process, our team finalized the project recommendations and developed a list of prioritized projects.

Existing Conditions & Future Traffic Projections

At the beginning of the study, traffic data collection was performed in February 2019. Daily (24-hour) volumes were recorded at seven locations along the SR 140 corridor and 18 intersection turning movement counts were recorded during the AM and PM peak periods.

Additionally, the Pond Team made observations of traffic flow and congestion conditions during weekday peak periods. Figure 1 summarizes the existing traffic volumes at the seven daily count locations. The figure includes the daily volume and the peak hour directional and total volumes during the AM and PM peak hour. Based on the capacity analysis at the study intersections and field observations, key congestion areas were identified as illustrated in Figure 2.

Anticipated growth in population and traffic volumes was reviewed to develop traffic volumes for both 10-year and 20-year periods. To estimate traffic conditions in the future, historic data and the regional travel demand model were both consulted. For the corridor study, a compound annual growth rate of 3.0% was utilized from the existing year (2019) to the open year (2029). A compound annual growth rate of 1.5% was utilized from the open year (2029) to the design year (2039). These growth rates account for the forecasted population and employment growth along the corridor. The growth rate also includes some latent demand that widening the SR 140 corridor would attract.

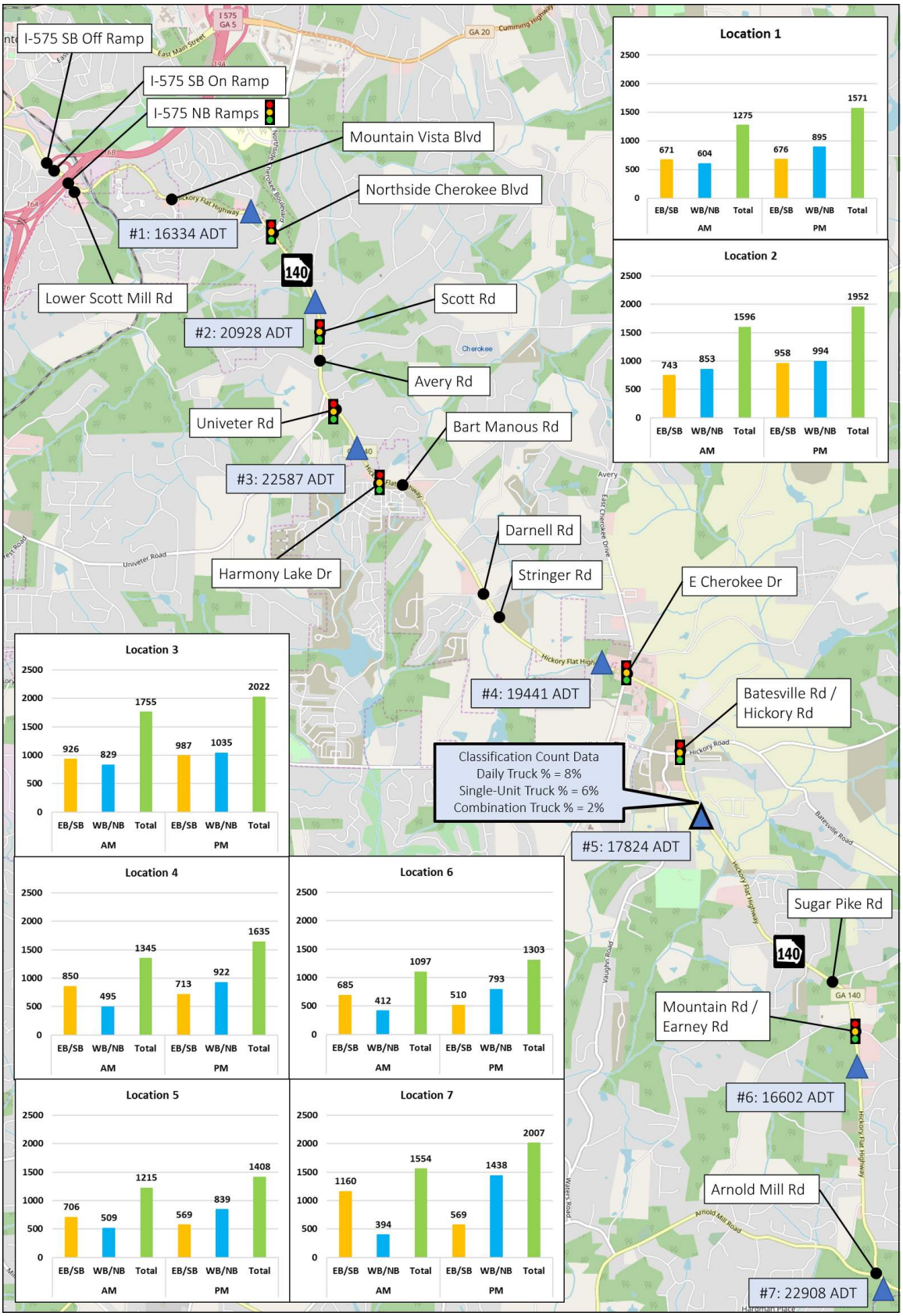


Figure 1 – Existing Traffic Volumes

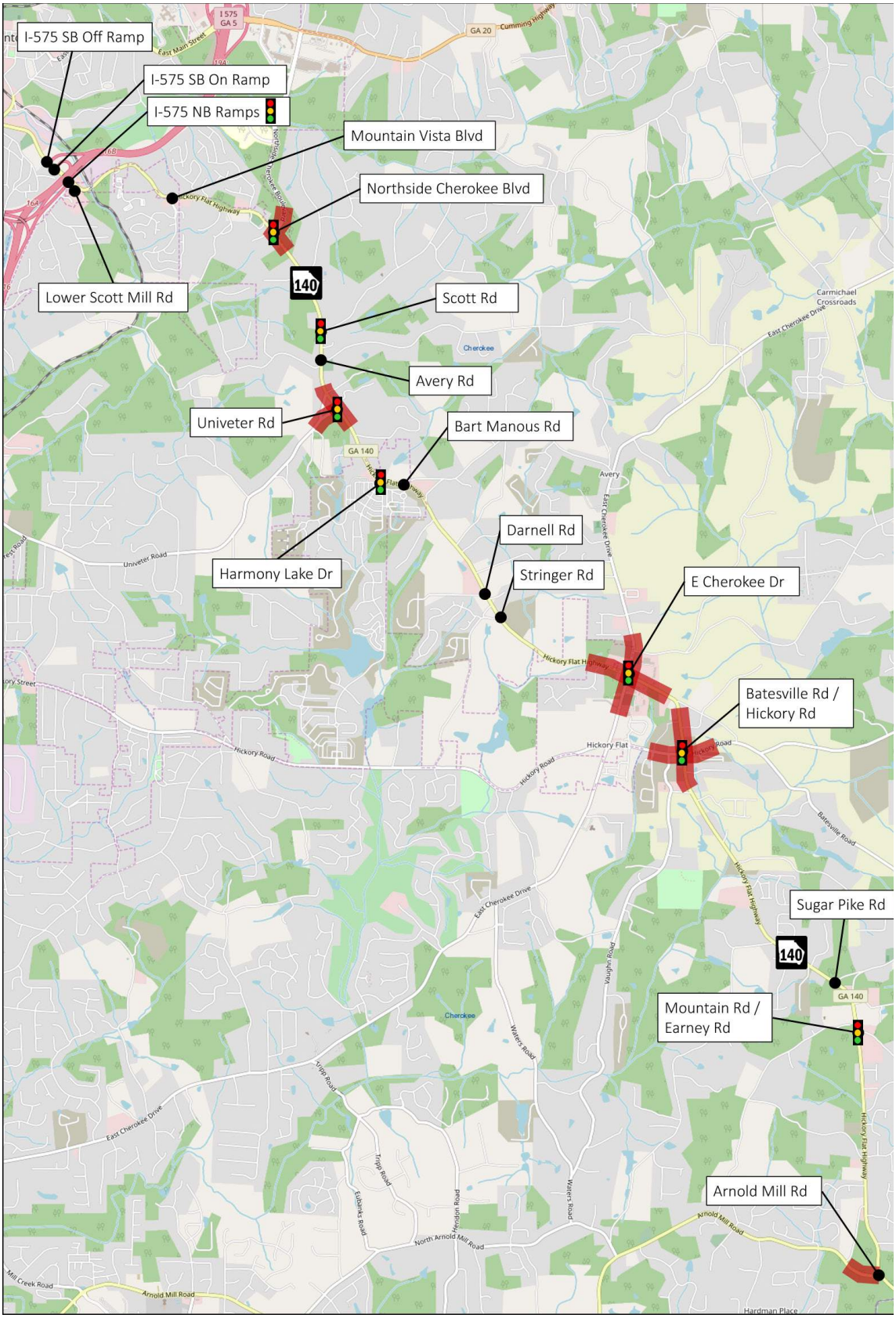


Figure 2 – Existing Key Congestion Areas

Corridor Recommendations

The study recommendations begin with a review of when SR 140 needs to be widened to four lanes. Daily volumes at seven locations were recorded in February of 2019. These volumes were projected for future years, as described previously.

Two-lane roads can carry high volumes depending on the conditions, if there are left and right turn lanes at intersections, and a major factor - the number of traffic signals along the corridor. Transportation professionals rely on guidance from the Highway Capacity Manual which defines traffic congestion based on levels of service (LOS). Typically, LOS D is considered acceptable in most urban and suburban situations. Theoretical capacity limits for a two-lane state road to operate at a LOS D* is 16,600 vehicle-per-day (vpd). In practice, two-lane and three-lane roads (with a center turn lane) can carry between 17,000 – 22,000 vpd. Above this volume the roadway experiences severe congestion and delay.

Similarly, theoretical capacity limits for a four-lane state road to operate at a LOS D* is 35,000 vehicle-per-day (vpd). In practice, four-lane and five-lane roads (with left-turn lanes) can carry between 35,000 – 40,000 vpd.

*State Two-Way Arterial, Class 1
(less than two signals per mile)

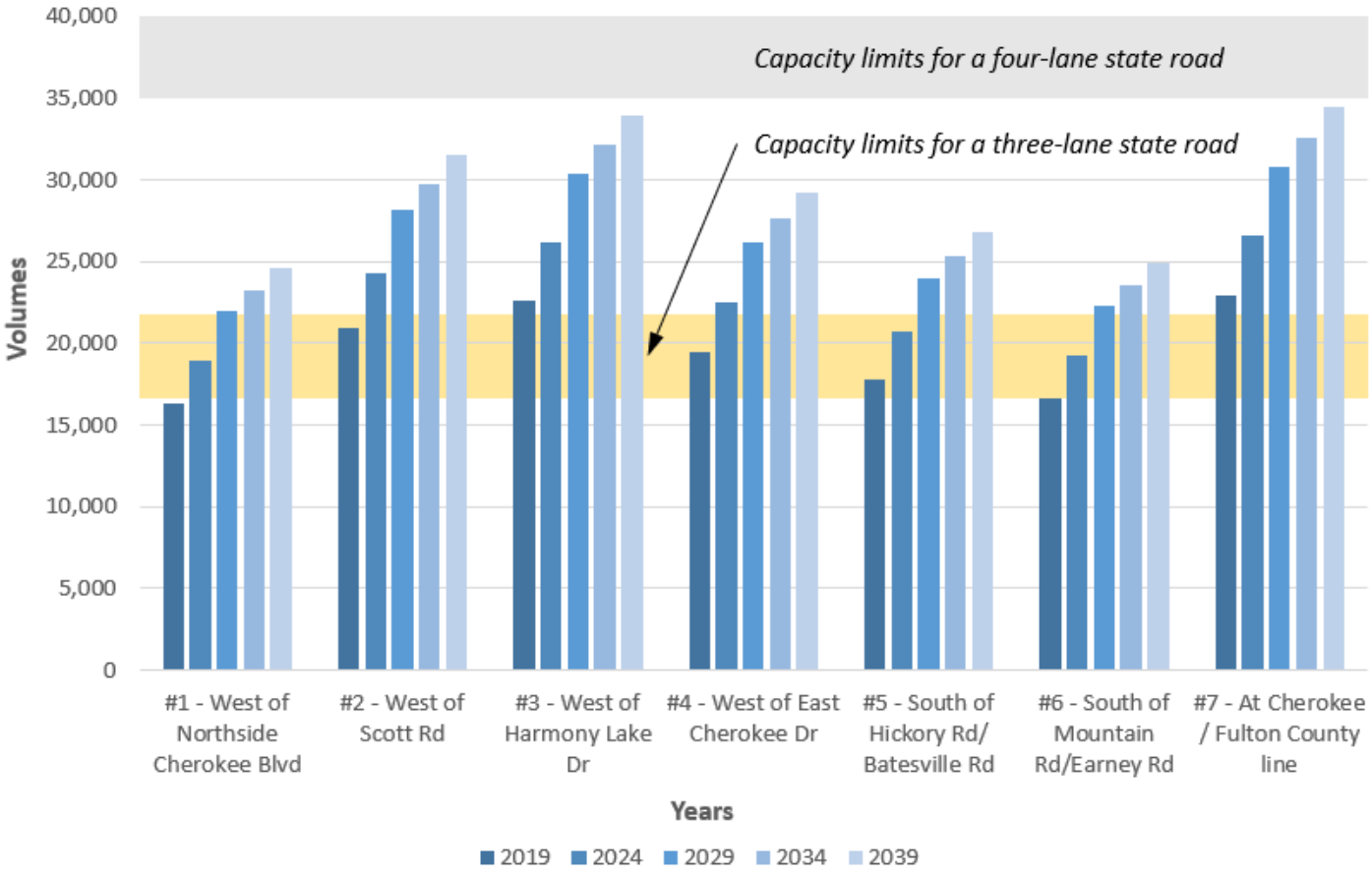
Table 1 and Chart 1 indicate the expected capacity conditions for the seven count locations along SR 140. Future daily volumes were projected for five-year increments out to year 2039. The capacity limits for a 3-lane road and five-lane road is indicated, as described above. This provides an understanding of which segments of the SR 140 corridor could be prioritized for widening from a two-lane road to a four-lane road.

Table 1
SR 140 Capacity Conditions

Location	Year				
	2019	2024	2029	2034	2039
#1 - West of Northside Cherokee Blvd	16,334	18,925	21,950	23,200	24,550
#2 - West of Scott Rd	20,928	24,250	28,125	29,750	31,500
#3 - West of Harmony Lake Dr	22,587	26,175	30,350	32,100	33,950
#4 - West of East Cherokee Dr	19,441	22,525	26,125	27,650	29,250
#5 - South of Hickory Rd/ Batesville Rd	17,824	20,675	23,950	25,350	26,800
#6 - South of Mountain Rd/Earney Rd	16,602	19,250	22,300	23,600	24,950
#7 - At Cherokee / Fulton County line	22,908	26,550	30,775	32,550	34,450

3-lane road provides capacity | 4-lane roadway needed

Chart 1
SR 140 Capacity Conditions



It is important to keep in mind this discussion focuses on the daily volume. Hourly volumes, and the efficient operation of the signalized intersections, will determine how well the corridor moves traffic. As the daily volumes increase, the demand increases during the AM and PM peak hour. When the road cannot accommodate the demand during the peak hour, the peak traffic periods grow to 2 or more hours. The study analyzed 18 intersections to identify potential improvements to accommodate the peak hour demands.

The following options were identified along the corridor in addition to the 18 study intersections.

Table 2 and Figure 3 indicate the options and locations.

Table 2
Corridor Options Considered

Option	Recommendation
A – Install dedicated eastbound left-turn lane at Hillcrest Drive	Short-term
B - Two-way Left-turn Lane (TWLTL): From Northside Cherokee Drive to Scott Rd	Prefer four-lane widening
C - TWLTL: From Bart Manous Rd to Darnell Rd	Prefer four-lane widening
D - TWLTL: From Stringer Rd to White Columns Dr	Prefer four-lane widening
E – Improve/reconstruct sharp horizontal curve north of Batesville Rd	Mid to long-term
F – TWLTL: From Hickory Rd to Mountain Rd	Prefer four-lane widening
G – Interconnect/cellular communications at traffic signals in Hickory Flats Triangle area	Short-term
H – Additional road network in the Hickory Flats area	Mid to long-term; coordination/partner with development

An additional recommendation for Cherokee County and the City of Holly Springs to consider is establishing development or zoning regulations with minimum setbacks requirements to preserve land to accommodate the future widening of SR 140.

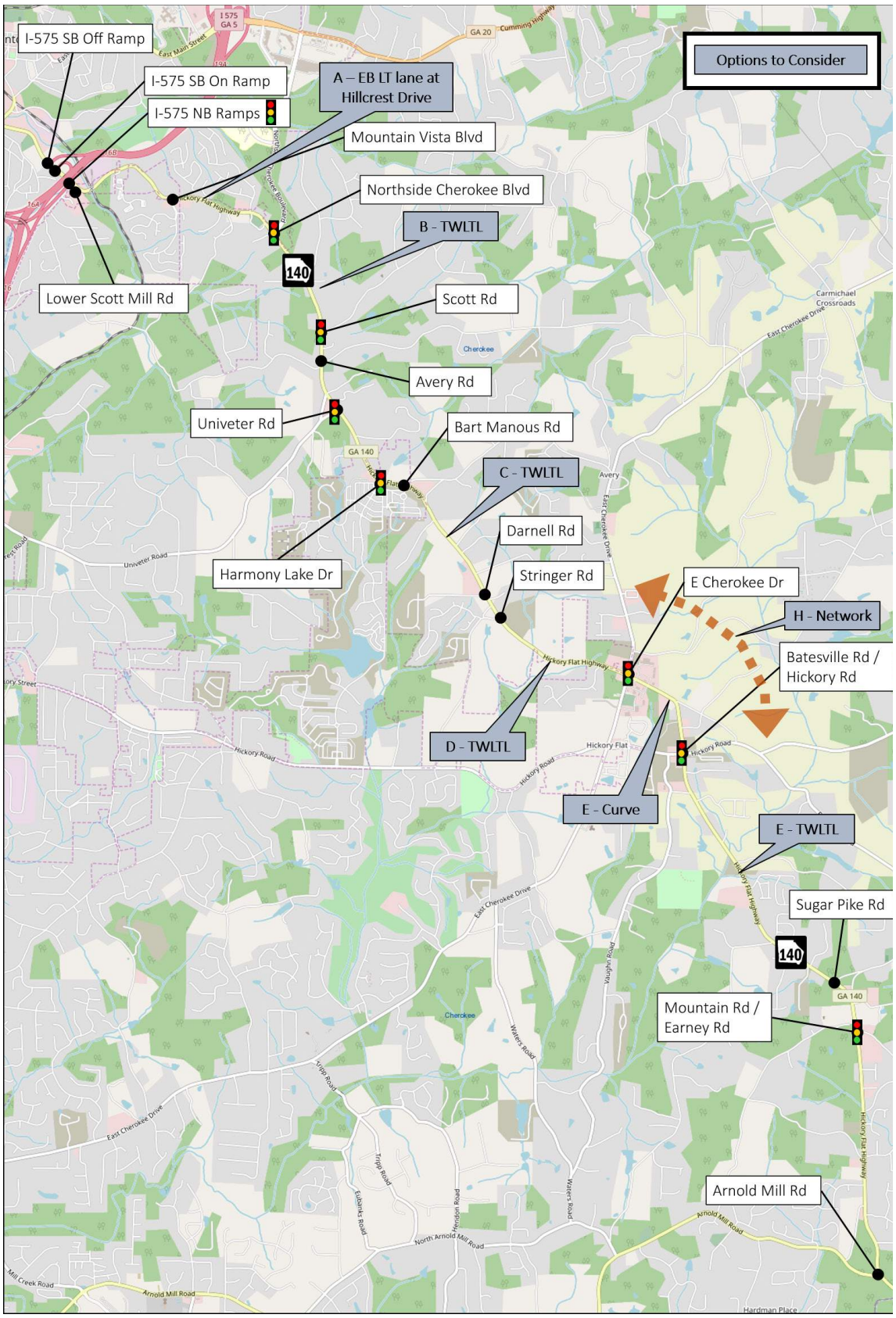


Figure 3 – Corridor Options

In addition to the options identified, prioritizing which segments of the SR 140 corridor to widen from two-lane to four-lane was analyzed. Based on the existing and projected traffic volumes, Table 3 and Figure 4 indicates priority levels – 1 through 5.

Table 3
Prioritizing Widening of SR 140 by Segments

Option	Priority
From I-575 to Northside Cherokee Blvd	Level 5
From Northside Cherokee Blvd to Harmony Lake Dr	Level 2
From Harmony Lake Dr to E Cherokee Dr	Level 3
From E Cherokee Dr to Batesville Rd / Hickory Rd	Level 1
From Batesville Rd / Hickory Rd to Arnold Mill Rd	Level 4
From Arnold Mill Rd to south (Fulton County) *	Level 1 *

Five segments are within Cherokee County limits. The section of SR 140 located to the south in Fulton County is a priority level 1; however, completing this will require coordination, cooperation, and funding partnerships with GDOT and cities in Fulton County.

It is recommended Cherokee County discuss the needs along the SR 140 corridor in Fulton County with the north Fulton cities and Georgia DOT District 7. A request can be made to Georgia DOT to lead a scoping study or operational study of the intersections between the county line and Rucker Road. The current congestion experienced at the SR 140/SR 372/Crabapple Road intersection creates a significant bottleneck along the corridor. A study could identify short-term or mid-term operations improvement projects similar to those identified in this study.

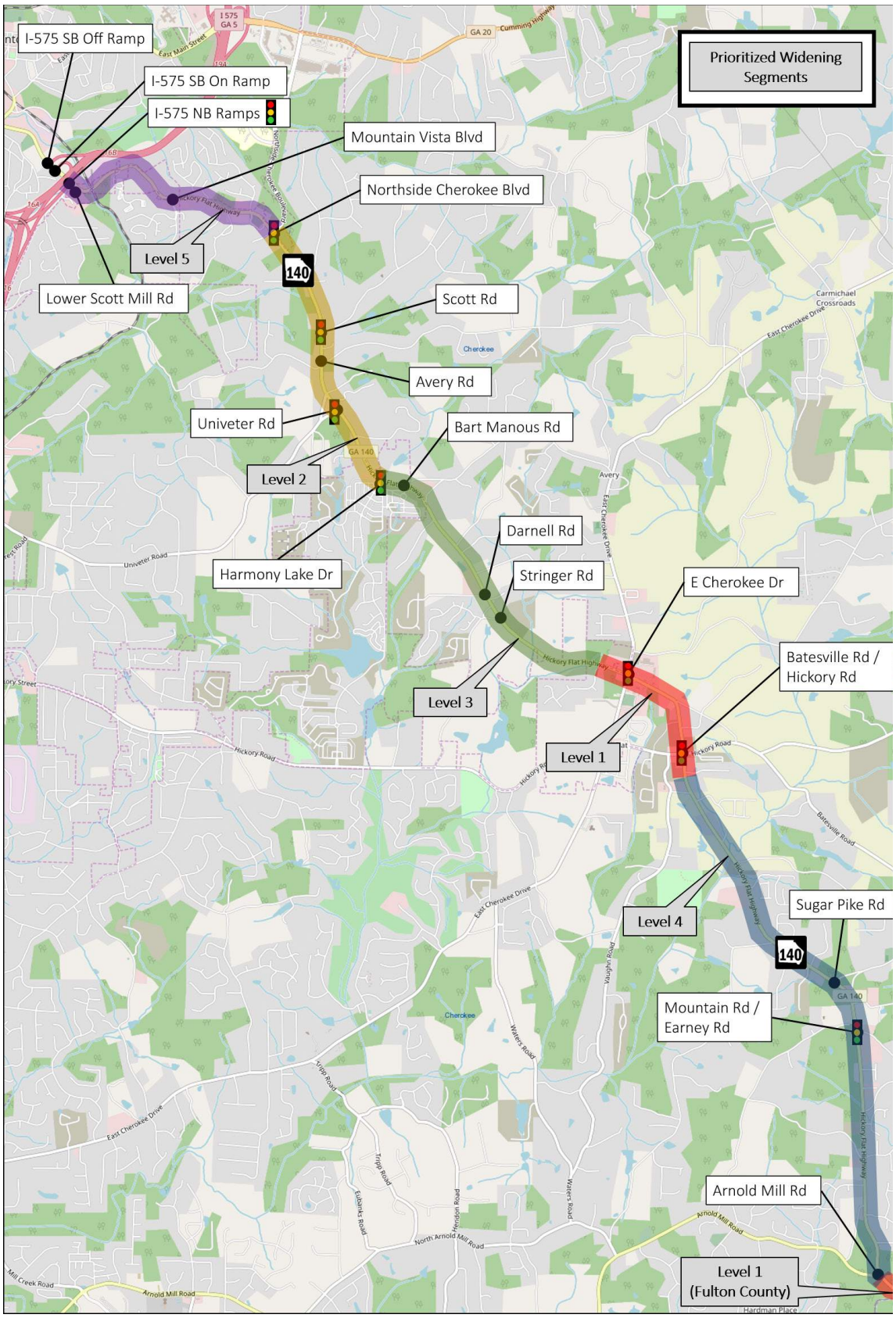


Figure 4 – Prioritizing Widening by Segments

Intersection Recommendations

The study analyzed 18 intersections to identify potential improvements.

The improvement recommendations can be implemented in the short-term, mid-term, or long-term. The recommended projects are intended to be compatible with the future widening of the SR 140 corridor.

Table 4 on the following page provides an overall summary of the recommendations.

The table includes the 18 study intersections, plus projects currently in the implementation stage, plus one project at the sharp horizontal curve north of Batesville Rd. The right column identifies the current 'action' or suggested 'action' to move the projects forward. Additional details and information is provided on an individual project sheet for a majority of the intersection projects.

In addition to the intersection projects, a curve improvement project was identified at the sharp curve on SR 140 between E Cherokee Drive and Batesville Rd. The project limits are between the two intersection projects – and would connect the four travel lanes proposed at the two intersections. The project would replace the sharp curve with a larger radius to meet current design standards for a 45 mph road. This project could be built at the same time as one of the intersections projects. One consideration is to construct this improvement at the same time as the suggested mid-term project at E. Cherokee Drive.


CARSON CREEK
Grand Oaks
READY
WHEN YOU ARE

Table 4
Intersection Recommendations

	Study Intersection/ Location	Short-term	Mid-term	Long-term	Fact Sheet	Total Cost Estimate	Action
1	I-575 SB Off Ramp	--	Potential Multilane Roundabout	--	Y	TBD	Request GDOT further study
2	I-575 SB On Ramp	--		--			
3	I-575 NB Ramps	1) GDOT Signal Upgrade	--	2) Additional turn lanes	Y		--
4	Lower Scott Mill Rd	--	--	Re-align and relocate intersection to east	Y		--
5	Mountain Vista Blvd	Side-street striping modification	--	--			Request to GDOT
*	Hillcrest Drive	Install dedicated EB left-turn lane	--	--			GDOT currently studying
6	Northside Cherokee Blvd	1) GDOT Signal Upgrade	2) Additional travel lanes (SR 140) and dual left-turn lanes (Northside Cherokee Blvd)	--	Y	$2.7M	--
7	Scott Rd	GDOT Signal Upgrade & add side-street right-turn lane	--	--	Y	$250K	County implement project
8	Avery Rd	--	1) PI # 0016105 - add center TWLTL along SR 140	--			Current GDOT programmed Safety project
			2) Add side-street right-turn lane		Y	$175K	County partner with GDOT current project through PFA
9	Univeter Rd	1) Lengthen WB left-turn lane (SR 140)	--	--			GDOT programming project
		2) GDOT Signal Upgrade	--				Request to GDOT
		--	3) Additional travel lanes (SR 140) and dual WB left-turn lanes (SR 140)		Y	$4.49M	--
10	Harmony Lake Dr	--	--	Additional travel lanes (SR 140)			--
11	Bart Manous Rd	--	--	Potential RCUT intersection			--
12	Darnell Rd to Stringer Rd	County project to add center TWLTL from Darnell Rd to Stringer Rd	--	--			County implement project
13	Stringer Rd	--	Install traffic signal when warranted	--			County monitor volumes each year
14	E Cherokee Dr	1) PI # 0013368 – Adds three right-turn lanes	--	--			Project currently in ROW Acquisition
		2) Convert NB right-turn lane to shared through/right-turn lane (E. Cherokee Dr)	--	--			County will implement during construction
			3) Convert right-turn lanes to shared through/ right-turn lanes along SR 140	--	Y	$5.77M	--
*	Sharp Curve	--	Additional travel lanes (SR 140) and rebuild horizontal curve	--	Y	$4.08	--
15	Batesville Rd / Hickory Rd	Additional travel lanes (SR 140) and additional EB travel lane (Batesville Rd)	--	--	Y	$4.5M	County Program Project
16	Sugar Pike Rd	Install traffic signal	--	--	Y	$301k	County implement project
17	Mountain Rd / Earney Rd	No changes (maintain existing conditions)	--	--			--
18	Arnold Mill Rd	Lengthen NB left-turn lane	--	--			GDOT programmed project
		--	--	As part of widening project, potential multilane roundabout			--


FOR SALE
AVAILABLE
MIKE BAILEY
STOP

Potential Implementation, Funding & Conclusion

The study identified a series of projects along the SR 140 corridor and at the intersections which can be implemented over time and are compatible with the future four-lane widening project.

The recommended projects can be implemented as GDOT-led, County initiated, or a partnership. As previously stated, some projects can be implemented as 'maintenance' or quick-response' projects by GDOT. GDOT can be requested to consider programming some projects as 'operational improvement' projects or program delivery projects.

In some cases, either for timeframe or permitting reasons, the County may choose to fully fund a project and implement. Due to the coordination with GDOT District 6 staff during the study, the recommended projects are likely to be viewed favorably by GDOT.

This study identified transportation projects which meet the County's Roadway/SPLOST Program Mission statement of:

- Improve and maintain the safety and integrity of the roadway system of Cherokee County.
- Minimize the inconvenience and protect the safety of motorists and the community during construction of roadway improvement projects.
- Minimize any detrimental environmental impacts as a result of roadway improvement projects.
- Coordinate roadway improvement projects with all State agencies, local governments and boards to cost effectively improve the roadway system of Cherokee County

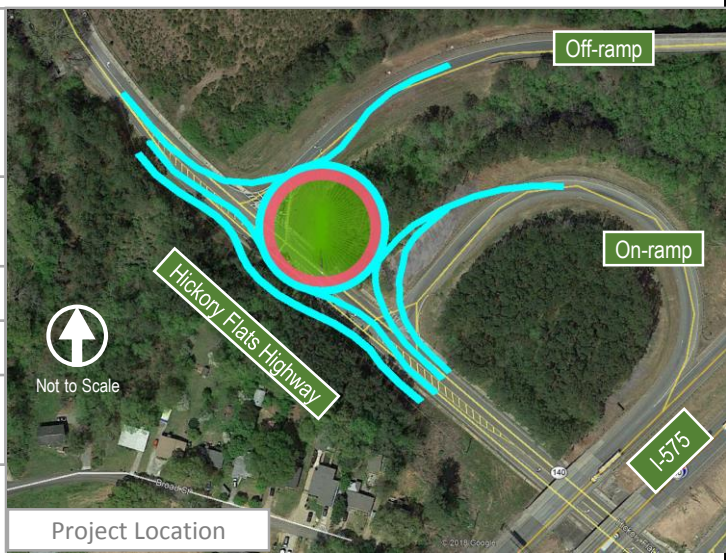
SR 140

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: I-575 SB ON AND OFF RAMPS

Project Description:	Potential multilane roundabout tying both I-575 entrance and exit ramps together
Project Addresses Need:	Reduces vehicle delay and improves safety
Cost Estimate:	TBD
Implementation Phase:	Mid-term
Action:	Request GDOT further study



Capacity Results:		
	AM	PM
Existing Year	C (16)	D (32)
2029 No-Build	D (27)	F (202)
2029 Build	A (9)	B (14)
2039 No-Build	F (55)	F (**)
2039 Build	B (12)	C (23)

Additional Project Details	
Detailed Project Description:	Convert existing unsignalized and separated on and off ramps into a multilane roundabout. The GDOT Roundabout Tool provided capacity results for the following geometry: EB approach as 2 lanes; WB approach as one lane with RT bypass (to on-ramp), and Off-ramp as one lane.
Existing Condition:	Separated on and off ramps, unsignalized
Options Considered:	• Unsignalized high-T intersection at off-ramp; • traffic signal at off-ramp; • modify SR 140 WB approach – modify the outside westbound (SR 140) through lane to be free-flow right-turn lane onto I-575 southbound entrance loop ramp
Implementation Considerations:	Review topography

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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Updated: 6/23/19

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: I-575 NB RAMPS

Project Description:	Additional turn lanes
Project Addresses Need:	Increases intersection capacity and reduces vehicle delay, particularly in the PM peak period
Cost Estimate:	TBD
Implementation Phase:	Long-term
Action:	TBD

Project Location

Capacity Results:		
	AM	PM
Existing Year	B (15)	B (18)
2029 No-Build	B (17)	C (29)
2029 Build	B (11)	B (12)
2039 No-Build	B (19)	E (55)
2039 Build	B (12)	B (14)

Additional Project Details	
Detailed Project Description:	• Maintain traffic signal and change I-575 NB exit ramp right lane to a free-flow right-turn • Shift one eastbound lane along SR 140 to south side of road – this creates center TWLTL for Lower Scott Mill Rd • Add westbound (SR 140) right-turn lane
Existing Condition:	Traffic signal
Options Considered:	• GDOT signal upgrade (FYA signals and backplates with reflective tape) • add WB right turn lane
Implementation Considerations:	Construct in tandem with Lower Scott Mill Rd re-alignment project

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: LOWER SCOTT MILL RD

Project Description:	Re-align and relocate intersection to the east
Project Addresses Need:	Increases spacing to I-575 NB ramp and improves safety
Cost Estimate:	TBD
Implementation Phase:	Long-term
Action:	TBD

Capacity Results:		
	AM	PM
Existing Year	C (21)	D (30)
2029 No-Build	E (40)	F (120)
2029 Build	C (16)	C (20)
2039 No-Build	F (80)	F (**)
2039 Build	C (19)	D (25)

Additional Project Details	
Detailed Project Description:	• Re-align and relocate intersection to east • Shift one eastbound lane along SR 140 to south side of road – this creates center TWLTL for Lower Scott Mill Rd • Add right-turn lane to Lower Scott Mill Rd
Existing Condition:	Stop control
Options Considered:	Unsignalized high-T intersection
Implementation Considerations:	Construct in tandem with I-575 NB Ramp project

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: NORTHSIDE CHEROKEE BLVD

Project Description:	Additional travel lanes (SR 140) and dual left-turn lanes (Northside Cherokee Blvd)
Project Addresses Need:	Increases intersection capacity and reduces vehicle delay – primarily in PM peak hour
Operations B/C Ratio:	3.02
Project reduces total hours of delay (year 2039):	AM = 17.8 PM = 79.5
Cost Estimate:	$2.7 Million
Implementation Phase:	Mid-term
Action:	TBD

Project Location

Preliminary Cost Estimate:	
Preliminary Eng.:	$241,000.00
ROW Cost:	$299,000.00
Construction Cost:	$1,833,000.00
Contingency:	$335,000.00
Total Project Cost:	$2,708,000.00

Capacity Results:		
	AM	PM
Existing Year	C (21)	C (35)
2029 No-Build	C (28)	E (77)
2029 Build	B (20)	C (30)
2039 No-Build	D (46)	F (119)
2039 Build	C (22)	C (35)

Additional Project Details	
Detailed Project Description:	• Add additional through lanes (SR 140), beginning before intersection and merging after. • Restripe existing through lane on Northside Cherokee Blvd to be shared left/through lane and modify signal to be side-street split phased. • Extend WB right-turn lane (SR 140). • Maintain rural shoulder design and add 4-foot paved shoulders.
Existing Condition:	Traffic Signal with turn lanes
Options Considered:	• GDOT signal upgrade • additional SB through lane and dual WB left turns
Implementation Considerations:	Currently adjacent property primarily vacant

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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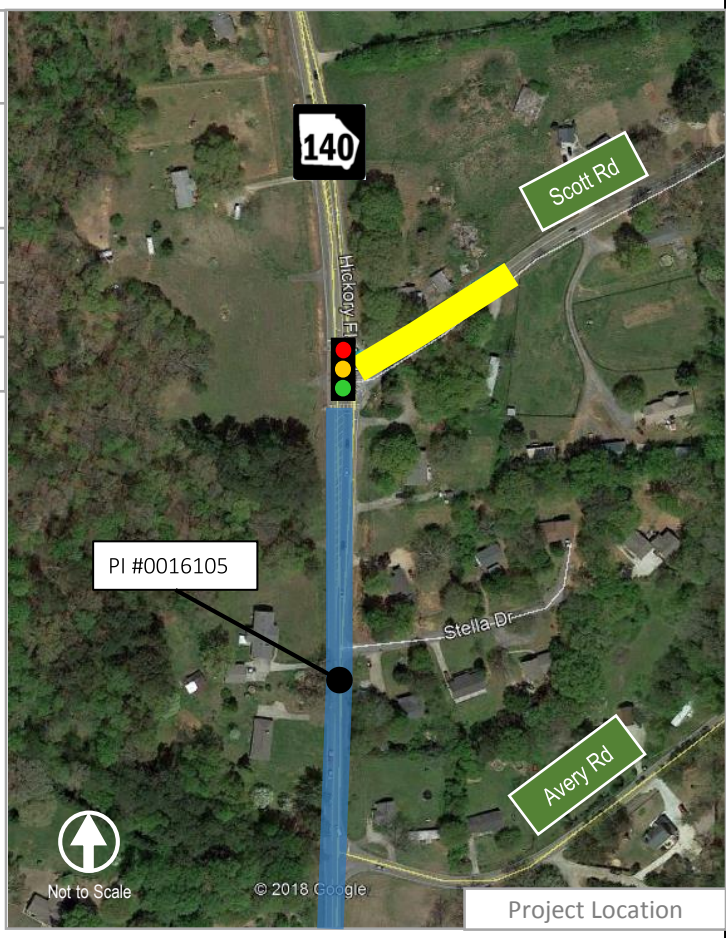
SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: SCOTT RD

Project Description:	Add WB right turn lane (Scott Rd)
Project Addresses Need:	Decreases side-street delay, increases intersection capacity
Cost Estimate:	$250,000
Implementation Phase:	Short-term
Action:	County Implement Project



Project Location

Preliminary Cost Estimate:	
Preliminary Eng.:	$32,000.00
ROW Cost:	$29,000.00
Construction Cost:	$160,000.00
Contingency:	$29,000.00
Total Project Cost:	$250,000.00

Capacity Results:		
	AM	PM
Existing Year	B (13)	B (13)
2029 No-Build	C (33)	D (42)
2029 Build	B (20)	C (31)
2039 No-Build	E (65)	F (86)
2039 Build	D (37)	E (66)

Additional Project Details	
Detailed Project Description:	• Add right turn lane to Scott Rd approach • GDOT signal upgrade (FYA signals and backplates with reflective tape)
Existing Condition:	Traffic Signal with turn lanes on SR 140
Options Considered:	• Multilane roundabout • add travel lanes to SR 140
Implementation Considerations:	• PI #0016105 will construct center TWLTL along SR 140; currently in preliminary engineering

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: AVERY RD

Project Description:	Add WB right turn lane (Avery Rd)
Project Addresses Need:	Decreases side-street delay, increases intersection capacity
Cost Estimate:	$175,000
Implementation Phase:	Mid-term
Action:	County partner with GDOT current project through PFA

Project Location

Preliminary Cost Estimate:	
Preliminary Eng.:	$25,000.00
ROW Cost:	$17,000.00
Construction Cost:	$104,000.00
Contingency:	$29,000.00
Total Project Cost:	$175,000.00

Capacity Results:		
	AM	PM
Existing Year	E (49)	F (197)
2029 No-Build	F (77)	F (**)
2029 Build	E (41)	F (107)
2039 No-Build	F (**)	F (**)
2039 Build	F (135)	F (**)

Additional Project Details	
Detailed Project Description:	Add right turn lane to Avery Rd
Existing Condition:	Stop control with no turn lanes
Options Considered:	• 'Flare' approach to allow right-turn vehicles to pass one queued LT vehicle • Re-align Brick Mill Rd with Avery Rd; this may be considered as part of the future SR 140 widening project
Implementation Considerations:	• PI #0016105 will construct center TWLTL along SR 140; currently in preliminary engineering

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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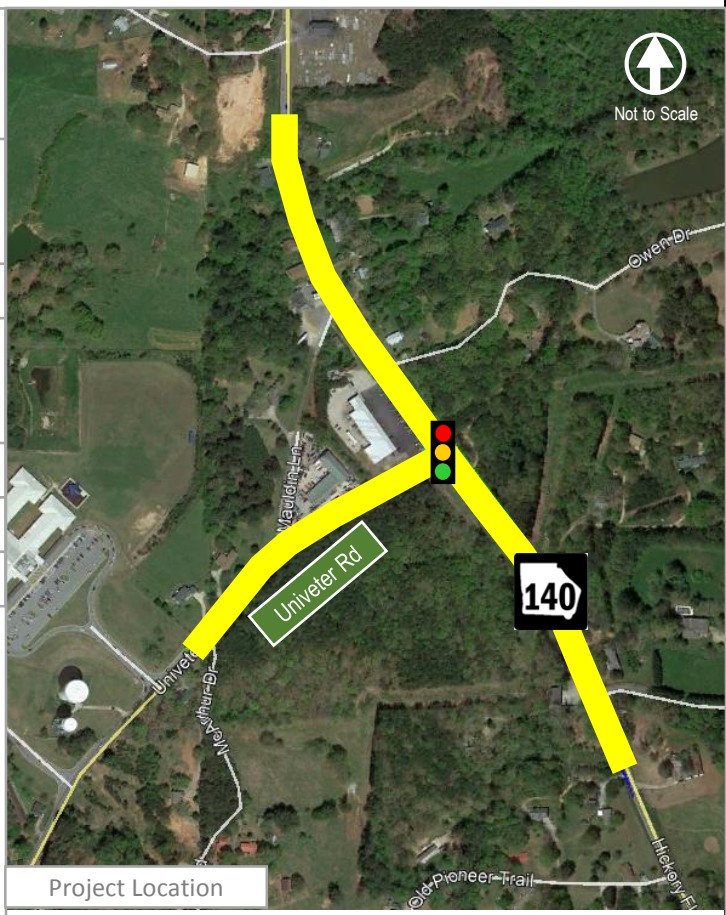
Updated: 6/23/19

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: UNIVETER RD

Project Description:	Additional travel lanes (SR 140) and dual left-turn lanes (SR 140 NB)
Project Addresses Need:	Increases intersection capacity and reduces vehicle delay
Operations B/C Ratio:	1.88
Project reduces total hours of delay (year 2039):	AM = 50.2 PM = 58.6
Cost Estimate:	$4.5 Million
Implementation Phase:	Mid-term
Action:	TBD



Preliminary Cost Estimate:	
Preliminary Eng.:	$320,000.00
ROW Cost:	$712,000.00
Construction Cost:	$2,922,000.00
Contingency:	$533,000.00
Total Project Cost:	$4,487,000.00

Capacity Results:

	AM	PM
Existing Year	C (22)	C (22)
2029 No-Build	D (50)	D (52)
2029 Build	C (23)	C (20)
2039 No-Build	F (94)	F (89)
2039 Build	D (37)	C (29)

Additional Project Details	
Detailed Project Description:	• Add additional through lanes along SR 140, beginning before intersection and merging after. • Add lane on NB SR 140 to create dual left-turn lanes. • Add receiving lane on Univeter to accommodate the dual left-turns and tie into school driveway. • Maintain rural shoulder design and add 4-foot paved shoulders,
Existing Condition:	Traffic Signal with turn lanes
Options Considered:	• GDOT signal upgrade • Multilane roundabout • additional NB and SB through lanes with single NB left-turn lane
Implementation Considerations:	Note: GDOT is programming project to extend the NB left-turn lane (SR 140)

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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Updated: 6/23/19

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: E CHEROKEE DR

Project Description:	Convert right turn lanes to shared through/right turn lanes along SR 140
Project Addresses Need:	Increases intersection capacity and reduces vehicle delay, particularly in the PM peak period
Operations B/C Ratio:	1.02
Project reduces total hours of delay (year 2039):	AM = 20.7 PM = 67.3
Cost Estimate:	$5.8 Million
Implementation Phase:	Mid-term
Action:	TBD

Preliminary Cost Estimate:	
Preliminary Eng.:	$403,000.00
ROW Cost:	$945,000.00
Construction Cost:	$3,998,000.00
Contingency:	$431,000.00
Total Project Cost:	$5,777,000.00

Capacity Results:		
	AM	PM
Existing Year	D (45)	D (49)
2029 No-Build	E (63)	F (99)
2029 Build	D (51)	E (57)
2039 No-Build	F (92)	F (144)
2039 Build	D (55)	E (79)

Additional Project Details	
Detailed Project Description:	• Convert right turn lanes along SR 140 into shared through/right turn lanes, beginning before intersection and merging after. • Note: Project includes converting the NB right-turn lane to a shared through-right on E Cherokee Dr (which Cherokee County plans to implement) • Project includes adding WB left-turn lane at White Columns Dr • Construct 'urban' shoulder design with curb and sidewalks.
Existing Condition:	Traffic Signal with turn lanes
Options Considered:	• add EB and WB travel lanes (SR 140) while maintaining (rebuilding) right-turn lanes at E Cherokee Dr
Implementation Considerations:	Note: PI #0013368 adds three right-turn lanes at intersection; currently in ROW acquisition

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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Updated: 6/23/19

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: SHARP CURVE

Project Description:	Additional travel lanes (SR 140) and rebuild horizontal curve
Project Addresses Need:	Increases capacity and safety
Cost Estimate:	$4.1 Million
Implementation Phase:	Mid-term
Action:	TBD

Preliminary Cost Estimate:	
Preliminary Eng.:	$310,000.00
ROW Cost:	$1,062,000.00
Construction Cost:	$2,372,000.00
Contingency:	$336,000.00
Total Project Cost:	$4,080,000.00

Additional Project Details	
Detailed Project Description:	Rebuild curve with four travel lanes plus two-way center turn lane (or raised median) to meet 45 mph design speed
Existing Condition:	Two lane road with horizontal curve not meeting 45 mph design speed
Options Considered:	--
Implementation Considerations:	• Construct project after two intersection projects complete • Combine project with one adjacent project (E Cherokee Dr) and construct at one time • Purchase ROW in advance (prior to development occurring)

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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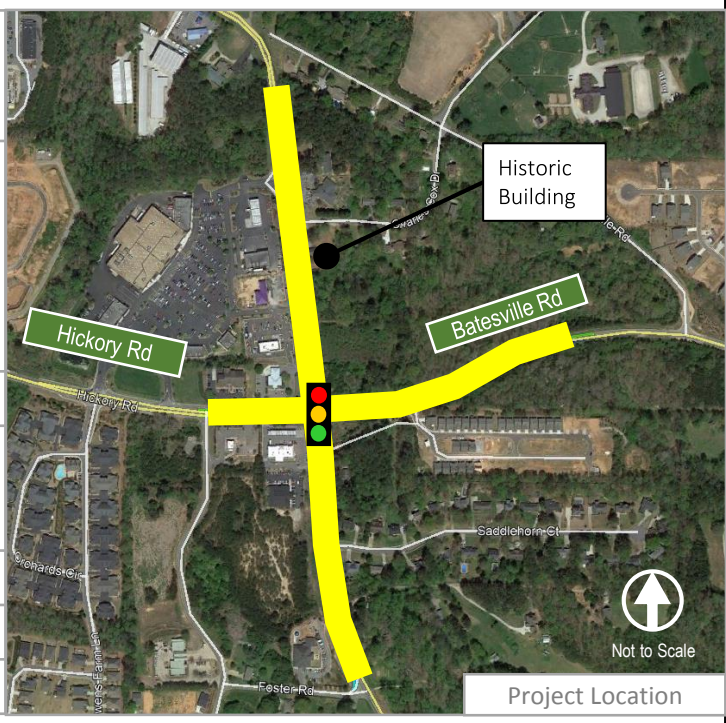
SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: BATESVILLE RD / HICKORY RD

Project Description:	Additional travel lanes (SR 140) and additional EB travel lane (Batesville Rd)
Project Addresses Need:	Increases intersection capacity and reduces vehicle delay, particularly in the AM peak period; this is the highest volume intersection in corridor
Operations B/C Ratio:	3.06
Project reduces total hours of delay (year 2039):	AM = 73.9 PM = 36.6
Cost Estimate:	$4.5 Million
Implementation Phase:	Short-term
Action:	County Program Project



Preliminary Cost Estimate:	
Preliminary Eng.:	$378,000.00
ROW Cost:	$777,000.00
Construction Cost:	$2,908,000.00
Contingency:	$435,000.00
Total Project Cost:	$4,498,000.00

Capacity Results:

	AM	PM
Existing Year	D (45)	D (49)
2029 No-Build	E (63)	F (99)
2029 Build	D (51)	E (57)
2039 No-Build	F (92)	F (144)
2039 Build	D (55)	E (79)

Additional Project Details	
Detailed Project Description:	• Add additional through lanes along SR 140, beginning before intersection and merging after. • Add additional through lane EB along Hickory Rd, beginning before intersection and merging after. • Construct 'urban' shoulder design with curb and sidewalks along SR 140.
Existing Condition:	Traffic Signal with turn lanes
Options Considered:	• Add additional through lanes along SR 140 • Add eastbound through lane along Hickory Rd • Multilane Roundabout
Implementation Considerations:	• One potentially eligible historic building is expected to be impacted by project; recommendation is to acquire property (remove buildings) and re-sell property • To reduce historical review process and project timeline (delivery) it is recommended to use either local funding or state funding only; a federally funded project will be difficult

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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Updated: 6/23/19

SR 140 CORRIDOR STUDY

PROJECT FACT SHEET

LOCATION: SUGAR PIKE RD

Project Description:	Install traffic signal
Project Addresses Need:	Reduces vehicle delay on Sugar Pike Rd
Cost Estimate:	$301,000
Implementation Phase:	Short-term
Action:	County Program Project

Preliminary Cost Estimate:	
Preliminary Eng.:	$21,000.00
ROW Cost:	$7,000.00
Construction Cost:	$249,000.00
Contingency:	$24,000.00
Total Project Cost:	$301,000.00

Capacity Results:

	AM	PM
Existing Year	F (154)	F (71)
2029 No-Build	F (**)	F (**)
2029 Build	B (17)	C (21)
2039 No-Build	F (**)	F (**)
2039 Build	C (22)	C (31)

Additional Project Details	
Detailed Project Description:	Install traffic signal Note: No additional turn lanes needed
Existing Condition:	Stop control with turn lanes
Options Considered:	• Unsignalized high-T intersection • Roundabout • Signalized green T-intersection
Implementation Considerations:	Intersection meets signal warrants (Warrant 1)

Note: Operations B/C Ratio: This is calculation of delay reduction benefit versus cost for a 10-year period.

Note: Preliminary Cost Estimate is based on schematic layout and County GIS parcel data; the cost should be validated with a concept layout and additional data

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