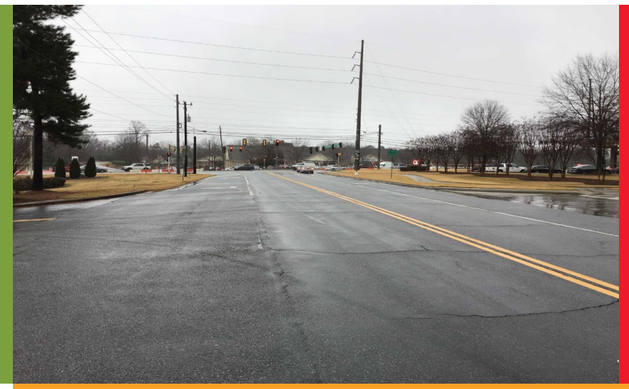

FAYETTE County
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State Route 279 Corridor Study
Recommendations & Implementation Report

Fayette County Public Works
2017 SPLOST No. 17 TAT

CROY

Mission Statement:

The State Route 279 corridor study recognizes the regional and local importance of the corridor. The primary goal of the study is to address, in cooperation with our state, regional and local stakeholders, issues and concerns related to safety, connectivity and capacity; and formulate multi-modal mobility concepts, proposals, recommendations and projects. Additionally, the study will develop proposals and recommendations to protect the human and natural environment as Fayette County and its cities continue to grow. The projects will formulate a complementary infrastructure improvement plan that will improve the corridor aesthetics and enhance the quality of life of the adjoining neighborhoods.

Chapter 5:
Recommendations & Implementation Report

5.1 Introduction - Page 4
This section of the report introduces details the recommendations for the SR 279 corridor and the implementation plan for the preferred alternative.

5.2 Final Recommendations - Page 4
The section details the final recommendations which are divided into recommendations for the corridor's typical section, specific intersection improvements and bicycle and pedestrian improvements.

5.3 Quick Response Recommendations - Page 10
This segment discusses the proposed list of quick response improvements for SR 279.

5.4 Implementation Plan - Page 11
The implementation plan for SR 279 corridor identifies the projects in terms of project costs, project scheduling, responsible parties for project completion, and funding opportunities.

5.5 Phased Recommended Projects - Page 12
This section lists the recommended projects for SR 279.

5.1 Introduction

The report details the recommendations for the SR 279 corridor and the implementation plan for the preferred alternative. As detailed in previous sections, these recommendations were developed through several analyses, including:

- Review of existing conditions
- Need Assessment analysis for corridor
- Input from citizens, stakeholders, and agencies
- A comprehensive evaluation of potential impacts including safety, traffic operations, environmental, and right-of-way
- Consideration of land use policies and development goals in Fayette County

The needs of the corridor were outlined in the Needs Assessment. The final recommendations for SR 279 meet those needs while adhering to the goals of Fayette County outline in the 2010 Comprehensive Transportation Plan summarized in

Graphic 1- 2010 Comprehensive Transportation Plan Goals

5.2 Final Recommendations : Preferred Alternative

The recommendations for SR 279 are divided into recommendations for the corridor's typical section, specific intersection improvements, bicycle and pedestrian improvements and quick-response improvements. A corridor transportation system comprised of multiple elements including safety enhancements, roadway capacity, and streetscapes, was developed as part of the final recommendations.

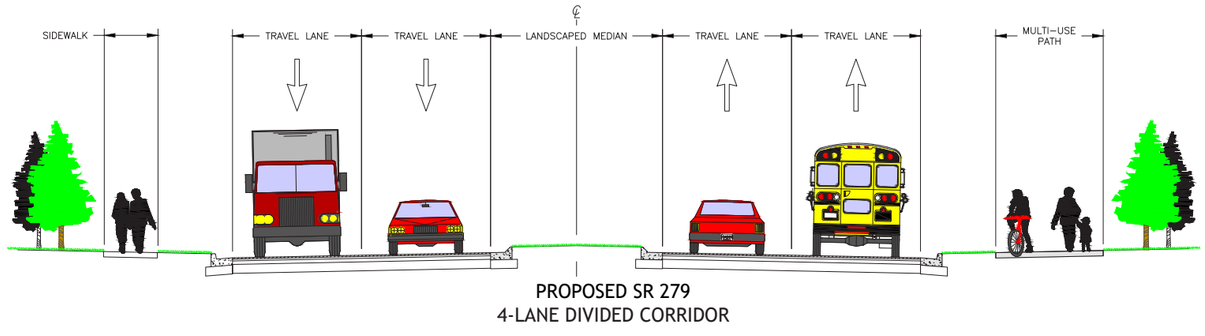
These improvements were developed in tandem with Fayette County and local municipalities Future Land Use plans to maximize the effectiveness of the final recommendations with regard to both land use and transportation.

Summary of Corridor Recommendations

The recommended typical section for SR 279 is divided into two segments. From SR 138 to SR 314, the recommended typical section is to widen the road to 4-lanes with a center median, install a shared-use path on one side of the north side of the road, and install a sidewalk on the south side of the road. From SR 314 to SR 85, the recommended typical section is to maintain the two general purpose travel lanes and add a shared-use path on the north side of the road.

In addition to the roadway improvements recommended for SR 279, the SR 279 and Corinth Road realignment is recommended for implementation as well. The roadway recommendations for SR 279 include correcting horizontal and vertical curves where needed based on an evaluation of sight distance availability along the corridor and upgrading and adding warning signage to guide drivers along the corridor. The proposed typical sections are shown in the figures below.

Graphic 2 - SR 279 Proposed Improvements Typical Section

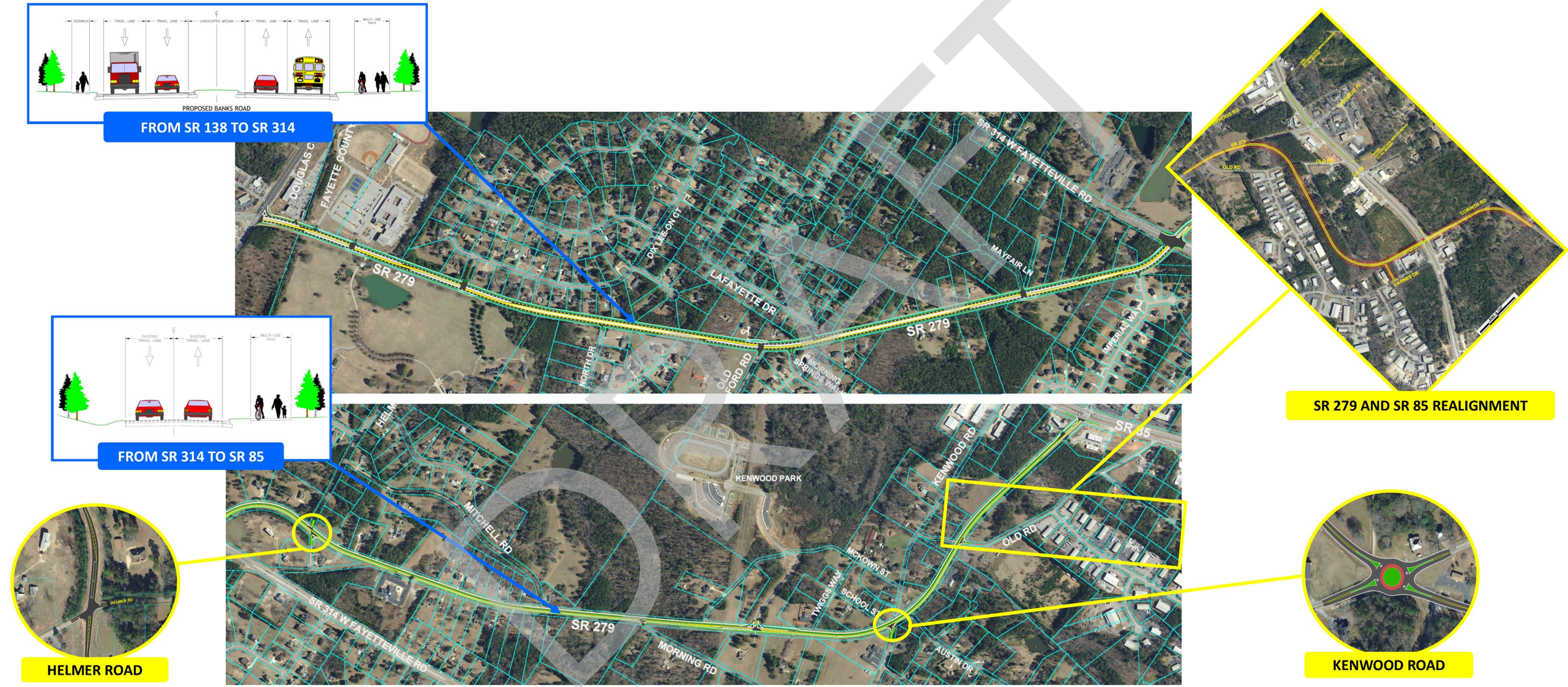


In addition to the proposed typical section and correcting horizontal/ vertical curves, the following intersection improvements are recommended along SR 279 as well:

- Install Roundabout at Kenwood Road
- Southbound Left Turn Lane at Helmer Road (2010 CTP Project)

A graphic depicting the recommended roadway and intersection improvements is below.

Graphic 3 - SR 279 Corridor Recommendations



- **Roadway Recommendations**

SR 279 is a vital arterial in Fayette County, which provides access to abutting neighborhoods, connects multiple state routes, and serves as a direct route between Fayette County and Fulton County to the northwest. As a minor arterial, SR 279 serves an important mobility function for longer trips between destinations in Fayette County and beyond, and it also plays an essential role in accessing adjacent land uses. Meeting the, sometimes conflicting, needs of these two uses must be at the center of roadway design decisions in this corridor to reach an equilibrium between mobility and access.

SR 279's road capacity was also analyzed using the Atlanta Regional Commission's (ARC) Travel Demand Model (Year 2040) to project future traffic conditions. An analysis of traffic projections indicates that by 2040, the road capacity observed for the PM peak hour between SR 138 to SR 314 would operate at a LOS of F, with the volume to capacity (v/c) ratio being substantially over 1.0.

From SR 314 to SR 85, the road capacity analysis indicated that road capacity would continue to operate at acceptable Level of Service (LOS) through the 2040 design year. With that, widening SR 279 is only recommended from SR 314 to SR 85. The added travel lane in each direction will improve traffic flow and capacity along SR 279. The 2040 No Build versus Build road capacity along SR 279 between SR 138 and SR 314 is showed in the table below with corridor LOS values.

Intersection	2040 No Build		2040 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
SR 279 from SR 138 to SR 314	D (v/c - 0.40)	F (v/c - 1.33)	B (v/c - 0.28)	B (v/c - 0.30)

Widening the corridor to 4-lanes with a raised median provides additional capacity along the corridor and improves safety. An analysis of crash data over the past 5-years along SR 279 shows that the overall frequency of crashes between SR 138 and SR 314 is substantial, particularly rear ends and angle crashes. Moreover, there were two bike-pedestrian crashes along the same segment, which indicates the need for bike/ped accommodations.

The addition of a raised median along the corridor reduces conflicts at intersection while preserving reasonable convenience with median opening and U-turn locations. A raised median also provides pedestrian refuge for crossing pedestrians and bicyclists. According to FHWA analyses, over 75% of fatalities occur at non-intersection locations. Studies have shown that installing raised medians or pedestrian refuge areas at marked crosswalks has demonstrated a 46 percent reduction in pedestrian crashes and a 36 percent reduction at unmarked crosswalk locations.

Correcting horizontal and vertical curvature along SR 279 is a safety measure that can address the corridor's frequency of off-road crashes. For horizontal curves, providing superelevation at the curve helps keep vehicles on the road and reduces off-road crashes. According to the Federal Highway Administration's (FHWA) Highway Safety Manual, crash prediction models indicate that inadequate superelevation increase crashes inside horizontal curves. It should be noted, however, that the increase in driver comfort associated with increasing superelevation may increase driver speeds.

A comprehensive analysis of the road's profile to identify locations along SR 279 where the horizontal or vertical curvatures of the road creates inadequate sight distance is recommended.

When restoring superelevation, a sufficient grade must be maintained along the superelevation transition to provide proper drainage as the cross slope levels. Ensuring reverse curves have appropriate transition distance must be taken into consideration as well.

Additional low cost treatments that can improve road safety and reduce speeding along SR 279 include adding advance warning signs, such as intersection warning or chevron alignment signs, and enhancing signing countermeasures via use of highly retroreflective and fluorescent sheeting.

Curve warning signage can also be enhance using supplemental beacons and/or messages that activate when a motorist approaches the curve at a high speed. Dynamic curve warning systems typically involve a combination of a speed monitoring device and a variable message sign. The advantage of dynamic curve warning systems is that they have a much greater effect on high-speed vehicles than a static curve warning sign. Given that these systems are costlier that status signs, their implementation should be limited to locations with high crash rates.

For the purposes of this scoping study, the widening of SR 279 is proposed to occur symmetrically from the existing roadway centerline. Detailed survey and design work during the preliminary engineering phase of the project will determine whether that is the preferred solution or if the new centerline will shift to one side or the other. Adjustments to the proposed alignment of the widening could shift based on conditions at specific locations, such as environmental hazards or sensitive areas; minimizing ROW impacts, construction costs; or improving roadway alignment to enhance visibility and safety.

The width of the raised median is the distance between the inside edges of the travel lanes. Given the suburban context along the majority of SR 279, it is recommended that the median width not to exceed 60 feet except where necessary to accommodate turning and crossing maneuvers by larger vehicles. For median openings along SR 279 between SR 138 and SR 314, spacing often is selected to provide openings at all public roads and at major traffic generators.

Additional openings should be provided so as not to reduce safety benefits of the access management provided by a median. Left-turn lanes should be provided at all median openings and right-turn lanes should be provided at intersections with highways or other major public roads.

- **SR 279 and Corinth Road Realignment**

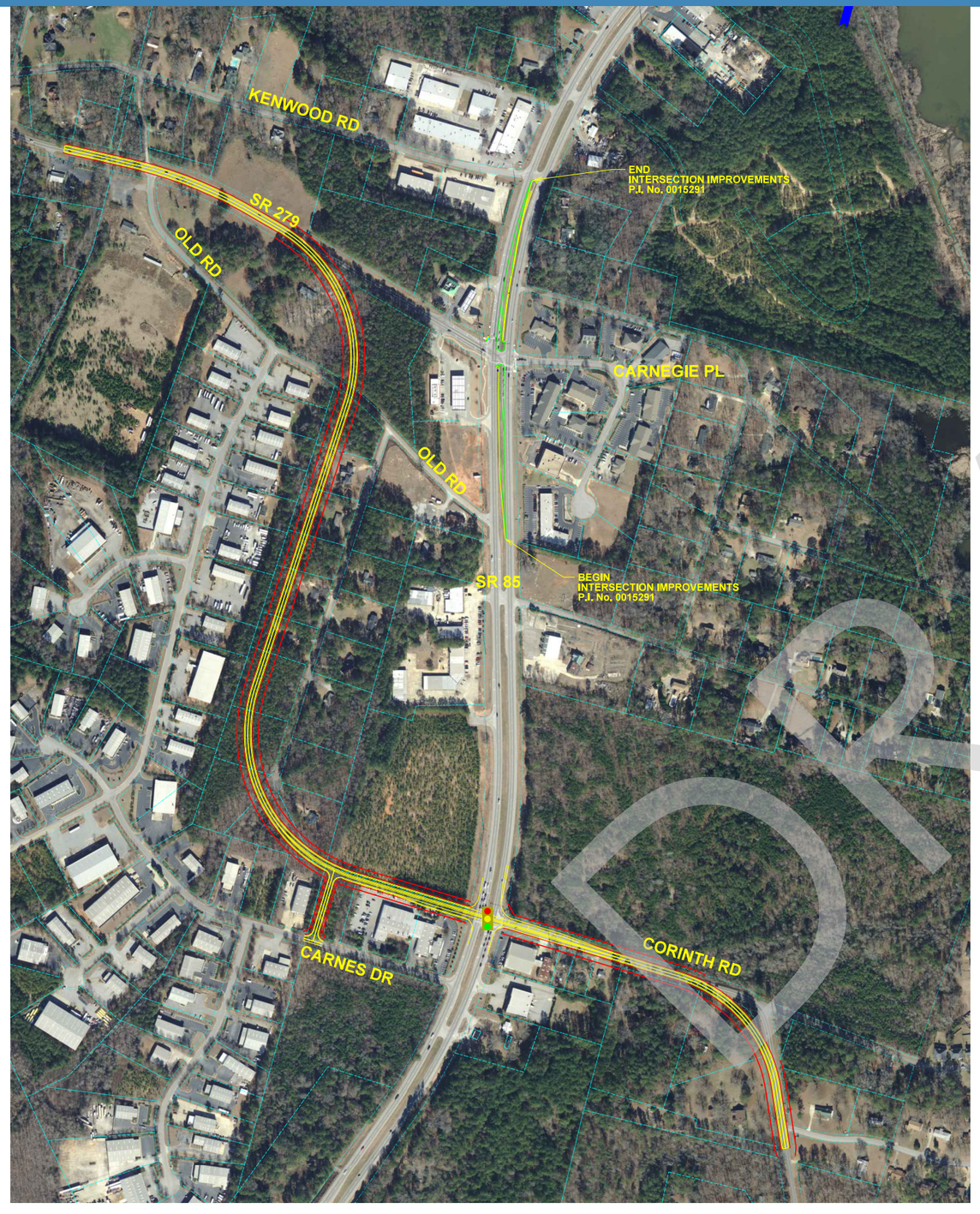
The SR 279 Realignment project from the Carter Road/Corinth Road intersection to the SR 279/Kenwood Road intersection was recommended in the Fayette County's Comprehensive Transportation Plan Update. SR 279 and SR 85 intersect approximately one-half mile north of the SR 85 and Corinth Road intersection. Both intersections are controlled with traffic signals, and experience queuing traffic for vehicles trying to make left turns from SR 85 onto SR 279 in the morning and from SR 85 to Corinth Road in the afternoon. The recommended realignment of SR 279 and Corinth Road entails connecting the two roadways via a new roadway parallel to Butler Road east of SR 85. The new alignment at Corinth Road eliminates the traffic signal at SR 85 and converts it to a RCUT. The project will also correct some geometric deficiencies along the corridors.

Fayette County's SPLOST Project R-8, the East Fayetteville Bypass, is a programmed transportation improvement that will have a substantial impact on capacity and traffic conditions in the area. The East Fayetteville Bypass is a proposed thoroughfare designed to reduce traffic congestion within the City of Fayetteville by providing an alternative north/south route across the east side of the County. The addition of the bypass to Fayette County's road network will undoubtedly have an impact on the amount of traffic on Corinth Road headed north on SR 85 and northwest of State Route 279, which is already a major maneuver in the area.

The 2040 intersection analysis shows significant delays at the SR 279 and SR 85 intersection for the PM peak period, deficiencies begin to emerge at the SR 279 and Corinth Road intersection for both the peak hour periods. The 5-year crash data analysis also showed that the SR 85 roadway segment from Corinth Road to SR 279 has a crash rate significantly higher than the statewide crash rate for similar corridors.

Aimed at eliminating excessive left turns, the SR 279 and Corinth Road Realignment will improve safety and operational efficiency in this area of Fayette County. The project will require Federal-aid and support from the Georgia Department of Transportation (GDOT) since it involves two state routes. The recommended alignment for the project is shown in graphic 4.

Graphic 4 - SR 279 & Corinth Road Realignment Version 1



- **Intersection Improvement Recommendations**

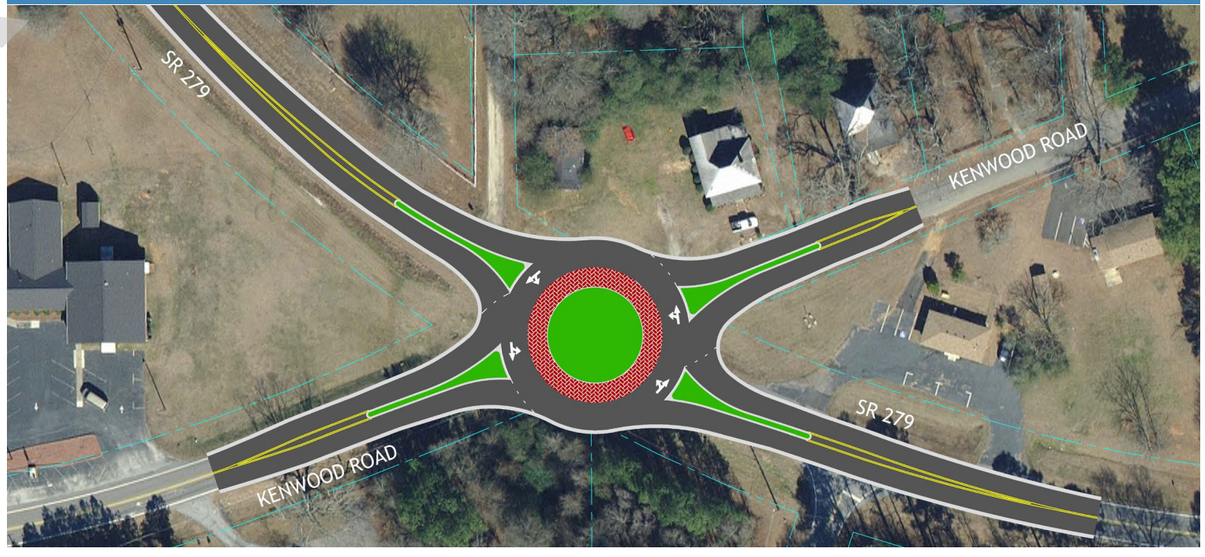
Recommended intersection improvements along SR 279 are discussed in detailed below. All such improvements are associated with the recommended overall corridor improvements, although some may be implemented in advance of the proposed widening project.

1. Kenwood Road

Safety concerns at SR 279 and Kenwood Road were enumerated by several public comments at the first public open house. Citizens expressed concerns of speeding along this stretch of SR 279 and dangerous turning movements at Kenwood Road. The combination of horizontal and vertical curvature at the intersection present sight distance challenges at the intersection. By 2040, the traffic operations at the intersection approach LOS F during the afternoon peak hour.

Several alternate intersection designs were evaluated with respect to managing traffic delay and queue lengths, minimizing cost and ROW impacts, and promoting safe and accessible pedestrian and bicycle accommodations. The final recommendation for the intersection of Kenwood Road and SR 279 is a single-lane roundabout. This intersection improvement is suitable to accommodate the traffic volumes forecasted for the intersection through the 2040 design year. The figure below shows the proposed concept for the roundabout at SR 279 and Kenwood Road and the table shows the 2040 traffic operations for the No Build for Build conditions.

Graphic 4 - SR 279 & Kenwood Road Roundabout



Intersection	2040 No Build		2040 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
SR 279 and Kenwood Road	C (24.8 s) C (16.7 s)	F (85.0 s) F (51.4 s)	A (8.8 s)	B (10.5 s)

2. Helmer Road

An intersection improvement at SR 279 and Helmer Road was recommended as a project in Fayette County's 2010 Comprehensive Transportation Plan. Safety concerns at SR 279 and Helmer Road were expressed by the public at the first public information open house as well. In line with the previous CTP, an intersection improvement is recommended at Helmer Road. The recommended project is the addition of a south(east) bound left turn lane on SR 279 and correct vertical curvature to Helmer Road to reduce the number of rear end crash at the intersection. Additionally, it includes correction of the vertical curvature approaching Helmer Road to improve sight distance challenges.

Graphic 5 - SR 279 & Helmer Road Improvement

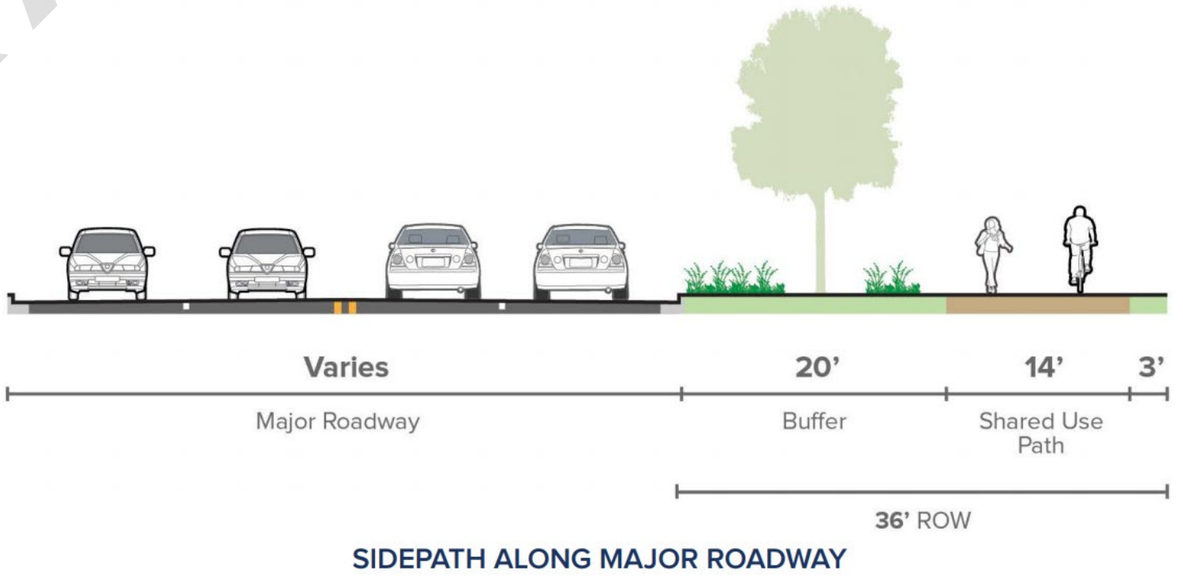
- **Pedestrian and Bicycle Accommodations**

There is a pedestrian presence along SR 279, and providing bike and pedestrian accommodations for residents to travel along SR 279 and to Kenwood Park can be of great value.

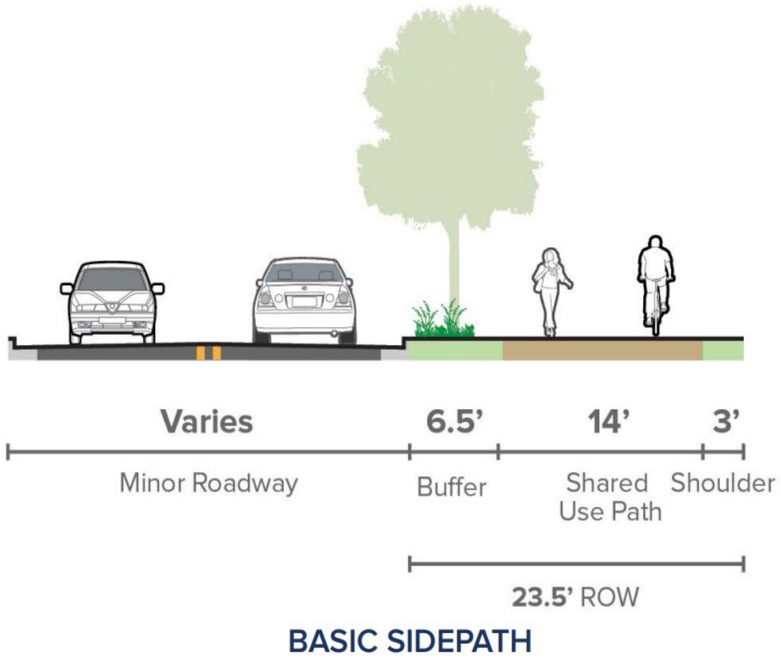
As part of Fayette County's recent Comprehensive Transportation Plan Update, a Master Path Plan for the county was developed, including a set of Path System Design Guidelines. The guidelines took into account local and national best practices for pedestrian and bicycle facilities and were tailored to the specific shared use needs of Fayette County, i.e. pedestrians, bicyclists and golf carts. Fayette County's Master Path Plan identified recommendations divided into sidewalk, sidepaths, and greenway projects. The Master Path Plan specifically recommends the addition of a sidepath along the extent of SR 279 from SR 138 to SR 85. Sidepaths, similar to multi-use paths, are trails that can accommodate pedestrians, bicyclists, and golf carts adjacent and parallel to the alignment of an existing roadway. Fayette County's Path System Design Guidelines should be reference when determine the geometrics of the sidepath for SR 279.

In line with recommendations outlined in Fayette County's CTP, a multi-use path is recommended along SR 279 within the study limits from SR 138 to SR 85 along the north side of the road. In addition to the path, sidewalk along south side of the road is recommended from SR 138 to SR 314 as well. An initial determination of the preferred side of the path was made based on adjacent land uses, terrain, and desirable opportunities for crossing SR 279. Future development and information obtained from more detailed design should ultimately influence the final decision for the alignment. Graphic 6 and 7 shows the preferred conditions for a sidepath along a major and minor roadway respectively as outlined in Fayette County's Path Design Guidelines.

Graphic 6 - Side Path Recommendations (CTP Appendix D: Path Design Guidelines)



Graphic 7 - Side Path Recommendations (CTP Appendix D: Path Design Guidelines)



5.3 Quick Response Recommendations

The proposed list of short-term improvements for SR 279 was developed via significant input received through coordination with Fayette County, stakeholders, and public input. The specific recommendations contained in this list are based on the results of the Needs Assessment, baseline travel data, deficiencies identified along the corridor during the Road Safety Audit, and opportunities to implement cost-effective improvement projects over a short period of time. Short-term recommendations along SR 279:

1. Clear overgrown vegetation along SR 279

An immediate measure for improving sight distance along a corridor is cutting back foliage reducing the line of sight for drivers, especially in horizontal curves. Overgrown vegetation also obstructs various traffic signs, reducing guidance for drivers along the corridor.

2. Speed Limit Reduction Consideration

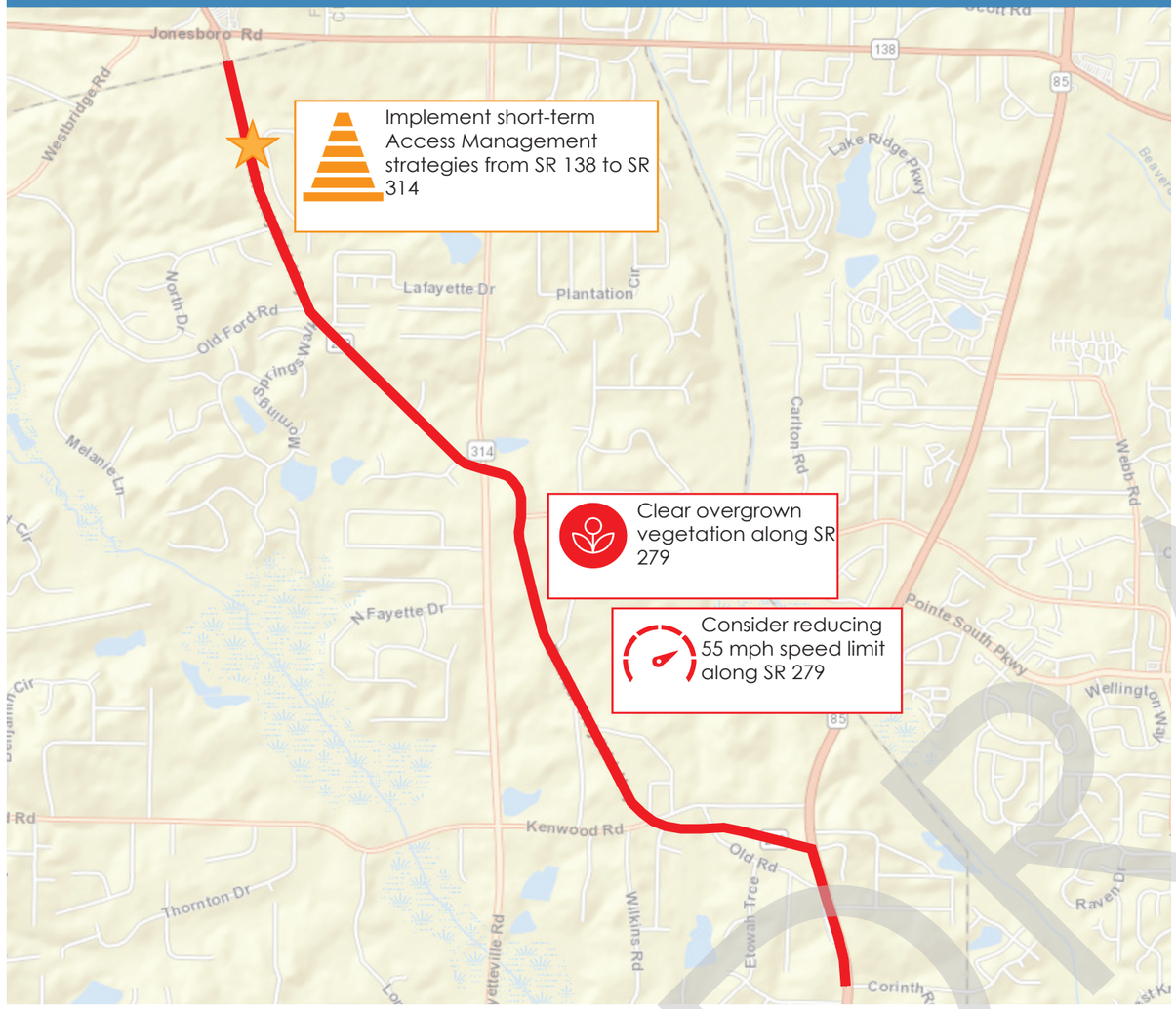
Public feedback from drivers along SR 279 indicate that speeds along SR 279 create dangerous driving conditions for all users. The posted speed limit along SR 279 is currently 55 miles per hour. Coordination with GDOT is recommended to determine if reducing the speed limit along the corridor is feasible to alleviate speeding concerns and reduce crashes.

3. Access Management within Commercial Node

Given the crash frequency along SR 279 between SR 138 and SR 314, immediate treatments for access management are recommended. Potential improvements include converting driveways to right-in/right-out and installing median treatments. Another countermeasure for access management includes paving the shoulders near driveways to provide additional entry and exit width to help minimize speed differentials between through vehicles and vehicles turning onto or off of the roadway in the intersection. Per FHWA studies, effective access management have been found to reduce crashes by 5% to 23% on two-lane highways.

Graphic 8 shows the locations of the proposed quick response projects along SR 279.

Graphic 8 - Quick Response Recommendations On SR 279



5.4 Implementation Plan

The implementation plan for SR 279 corridor identifies the projects in terms of project costs, project scheduling, responsible parties for project completion, and funding opportunities. The development of the implementation plan considered the functionality of each project to make sure that projects had logical termini. Dependencies between projects were also a point of consideration in the development of the implementation plan. Overall, for the plan to succeed, several agencies must coordinate their efforts, such as Fayette County, City of Fayetteville, ARC, and GDOT.

- **Construction Cost Estimates**

For recommended roadway improvements, construction cost estimates were generated by estimating the quantities of materials and/or equipment required for each improvement. Aerial photography and field surveys of existing conditions along the corridor were used to develop quantities to complete the construction of each project. The quantities were put into a cost estimate tool and then multiplied by a typical unit cost for to determine the construction cost.

The detailed cost estimate sheets for roadway projects are included as Appendix C of this document. Aside from projects identified as qualifying projects for the Atlanta Regional Commission's Transportation Improvement Program (ARC TIP), the construction cost estimates do not include the cost of right-of-way or utilities.

- **Project Scheduling**

The proposed scheduling for the recommended projects was based on three generalized timeframes within a 20-year planning horizon. These timeframes are as follows:

- Short-Term, 2020-2022;
- Intermediate-Term, 2022-2027; and
- Long-Term, 2027-2040

The proposed short-term projects are lower cost improvements for the corridor that would provide immediate benefits. Potential funding opportunities for these projects existing through Fayette County's maintenance and SPLOST programs. For the intermediate and long-term projects listed in the implementation plan, higher costs and additional analyses are required to fully develop the project scopes for implementation.

The planning-level cost estimates are appropriate for corridor-wide planning, but more detailed analyses are needed to set the projects' scope. The securing of local funding for the intermediate and long-term projects will be an important step in project development.

5.5 Phased Recommended Projects

The following table lists the recommended projects for SR 279, including the projects' description, benefits, construction cost estimate, and time frame. The implementation of projects may take place across multiple segments of the corridor or efforts may focus in one segment as resources allow. Implementation is prioritized by safety, traffic operations benefits, and potential to serve as a catalyst for continued corridor improvement.

Table 1 - Phased Recommended Projects

PROJECT ID	PROJECT NAME	PROJECT DESCRIPTION	BENEFITS	CONSTRUCTION COST ESTIMATE	TIME FRAME
SR-1	ROUTINE MAINTENANCE ALONG SR 279	CLEAR OVERGROWN VEGETATION ALONG SR 279	SAFETY	TBD	SHORT - TERM
SR-2	SPEED STUDY ON SR 279	CONSIDER REDUCING 55 MPH SPEED LIMIT ALONG SR 279	SAFETY	TBD	SHORT - TERM
SR-3	ACCESS MANAGEMENT FROM SR 138 TO SR 314	IMPLEMENT SHORT-TERM ACCESS MANAGEMENT STRATEGIES FROM SR 138 TO SR 314	SAFETY, ACCESS MANAGEMENT	TBD	SHORT - TERM
SR-4	INTERSECTION IMPROVEMENT AT KENWOOD ROAD	INTERSECTION IMPROVEMENT AT KENWOOD ROAD TO INCLUDE THE INSTALLATION OF A SINGLE-LANE ROUNDABOUT. THIS PROJECT WOULD IMPROVE SAFETY AND TRAFFIC OPERATIONS AT THE INTERSECTION.	SAFETY, OPERATIONS	$1,650,000	INTERMEDIATE - TERM
SR-5	INTERSECTION IMPROVEMENT AT HELMER ROAD	INTERSECTION IMPROVEMENT AT HELMER ROAD TO INCLUDE A SOUTH(EAST)BOUND LEFT TURN LANE ON SR 279. THIS PROJECT WOULD IMPROVE SAFETY AND TRAFFIC OPERATIONS AT THE INTERSECTION.	SAFETY, OPERATIONS	$250,000	INTERMEDIATE - TERM
SR-6	MULTI-USE PATH FROM SR 314 TO SR 85	MULTI-USE PATH ON NORTH SIDE OF SR 279 FROM SR 314 TO SR 85	BIKE-PEDESTRIAN IMPROVEMENTS, SAFETY	$260,000 PER LINEAR MILE	INTERMEDIATE - TERM
SR-7	WIDEN SR 279 TO 4-LANES FROM SR 138 TO SR 314	GDOT ROUTINE MAINTENANCE AT SR 279 AND SR 74; ADD "KEEP MOVING" SIGN FOR WB RIGHT; ADD PAVEMENT TO ACCOMMODATE TRUCKS.	SAFETY, OPERATIONS, CAPACITY	$4,600,000	LONG - TERM
SR-8	SR 279 AND CORINTH ROAD REALIGNMENT	THIS PROJECT ENTAILS ALIGNING CORINTH ROAD AND SR 279, THEREBY ELIMINATING A TRAFFIC SIGNAL AND THE ASSOCIATED TURNING MOVEMENTS. THE PROJECT WILL ALSO CORRECT SOME GEOMETRIC DEFICIENCIES ALONG THE CORRIDORS.	CAPACITY, OPERATIONS	$7,535,000*	LONG - TERM

* COST ESTIMATE INCLUDE DESIGN AND RIGHT-OF-WAY COSTS.