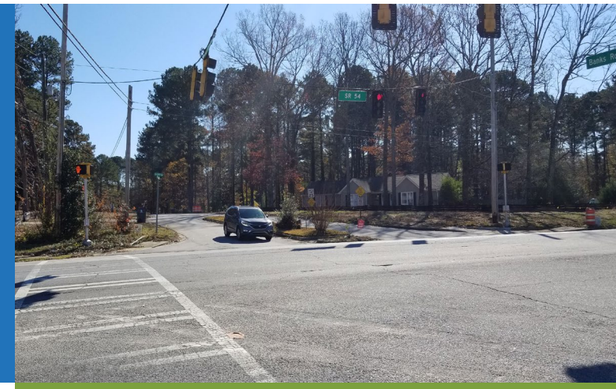

FAYETTE County
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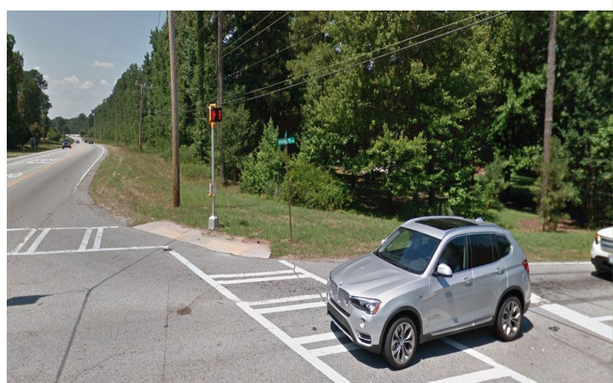
Banks Road Corridor Study
Recommendations & Implementation Report

Fayette County Public Works

2017 SPLOST No. 17 TAE



CROY

Mission Statement:

The Banks Road 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 Banks Road 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 9
This segment discusses the proposed list of quick response improvements for Banks Road.

5.4 Implementation Plan - Page 10
The implementation plan for Banks Road 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 11
This section lists the recommended projects for Banks Road.

5.1 Introduction

The section details the recommendations for the Banks Road 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 Banks Road meet those needs while adhering to the goals of Fayette County outline in the 2010 Comprehensive Transportation Plan summarized in Graphic 1.

Graphic 1- 2010 Comprehensive Transportation Plan Goals

5.2 Final Recommendations

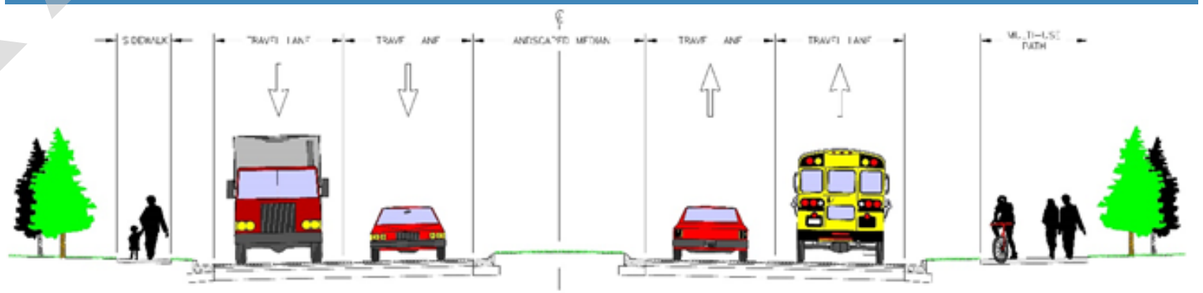
The recommendations for Banks Road are divided into recommendations for the corridor's typical section, specific intersection improvements, bicycle and pedestrian improvements and quick-response improvements. A corridor transportation system comprised of multiple elements including safety enhancements, 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 Banks Road is to widen the road to 4-lanes with a center median from SR 54 to SR 85, install a shared-use path on one side of the south side of the road, and install a sidewalk on the north side of the road. From SR 314 to the City of Fayetteville limits, access management treatments are recommended within the commercial node to reduce the present high crash rate.

The roadway recommendations for Banks Road 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 section is shown in the figure below.

Graphic 2 - Banks Road Proposed Improvements Typical Section



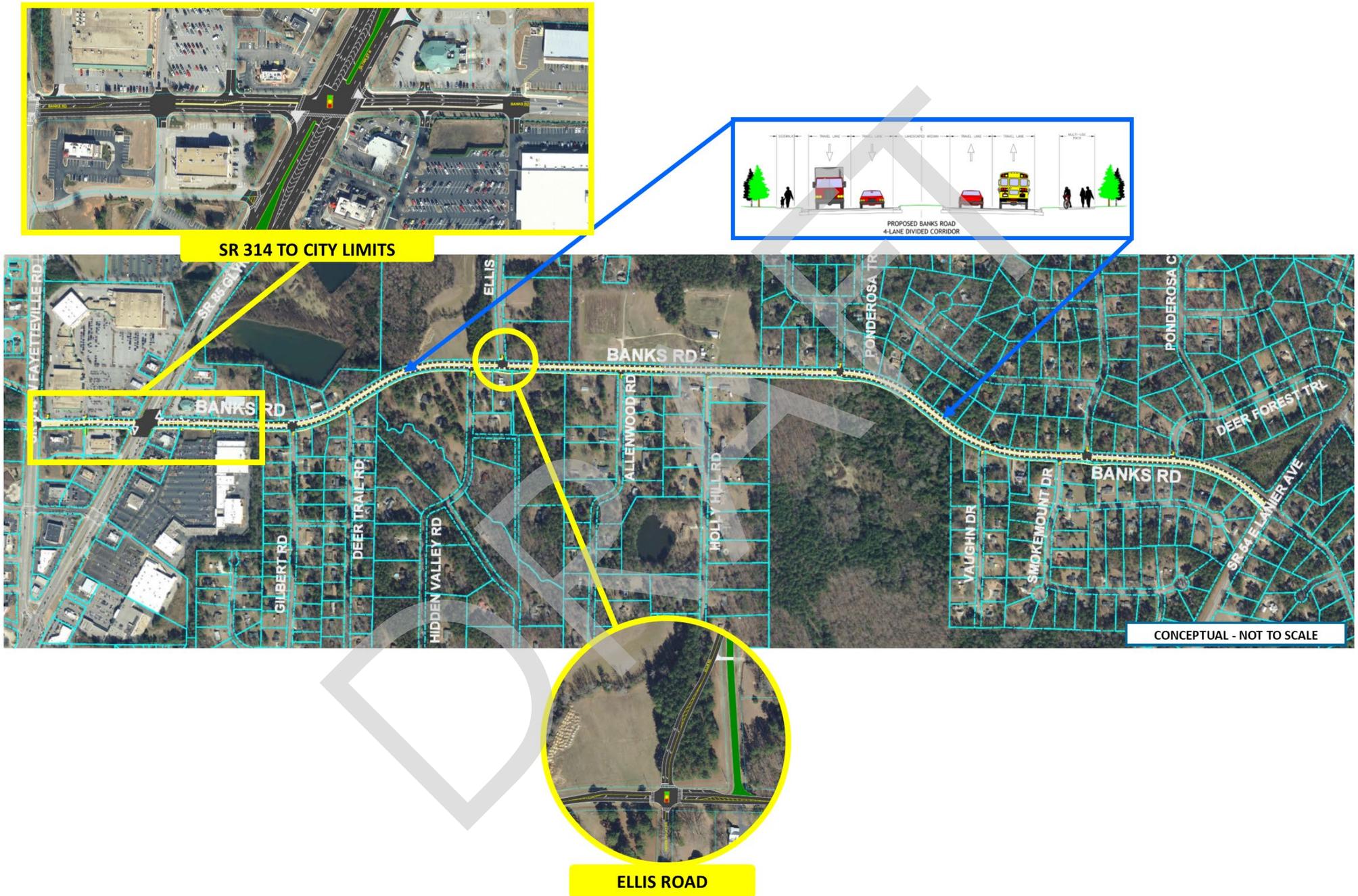
PROPOSED BANKS ROAD
4-LANE DIVIDED CORRIDOR

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

- Intersection Improvement at Highway 85
- Intersection Improvement at Ellis Road

Graphic 3 depicts the recommended roadway and intersection improvements.

Graphic 3 - Banks Road Corridor Recommendations



- **Roadway Recommendations**

Banks Road is a vital east-west arterial in Fayette County, which provides access to abutting neighborhoods and connects three state routes, SR 54, SR 85, and SR 314. As a minor arterial, Banks Road 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.

Widening the corridor to 4-lanes with a raised median provides additional capacity along the corridor as well as improves safety. The corridor segment 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 would operate at a LOS of E. The added travel lane in each direction will improve traffic flow and capacity along Banks Road. The 2040 No Build versus Build road capacity along Banks Road is shown in the table below.

Intersection	2040 No Build		2040 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
Banks Road from SR 85 to SR 54	D (v/c – 0.17)	E (v/c – 0.51)	A (v/c – 0.09)	A (v/c – 0.09)
v/c - volume to capacity ratio				

In terms of safety, an analysis of the crash data showed from the city limits to SR 54, Banks Road's crash rates for fatal accidents is higher than the statewide average for minor arterials. In 2018, there was an off-road crash east of Ponderosa Trace resulting in 2 fatalities. Moreover, during the 5-year analysis period, there was one crash involving a pedestrian along Banks Road near Ellis Road.

The addition of a raised median along the corridor reduces conflicts at intersections 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 yields a 46 percent reduction in pedestrian crashes and a 36 percent reduction at unmarked crosswalk locations.

Correcting horizontal and vertical curvature along Banks Road is a safety measure that can address the corridor's frequency of off-road crashes, particularly in the section east of Ponderosa Trace. 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 Banks Road 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

Additional low cost treatments that can improve road safety and reduce speeding along Banks Road 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 Banks Road 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 Banks Road, it is recommended that the median width be designed to accommodate turning and crossing maneuvers by larger vehicles near major intersections.

For median openings along the roadway, spacing often is selected to provide openings at all public roads and at major traffic generators such as shopping centers. 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.

- **Intersection Improvement Recommendations**

Recommendation for key intersections are discussed in detailed below. All such improvements are associated with the recommended overall corridor improvements, including the proposed shoulder widening, although some may be implemented in advance of the ultimate corridor wide road improvement project.

1. SR 314 to City Limits

From SR 314 to the city limits, Banks Road has one of the highest crash rates in the county per the findings of Fayette County's CTP Assessment of Current & Future Needs Report. Installing a raised median along Banks Road in the commercial area and converting some of the intersections to right-in/right-out provides an access management treatment to address the high rate of crashes in the area.

Graphic 5 - Proposed Improvements from SR 314 to City Limits

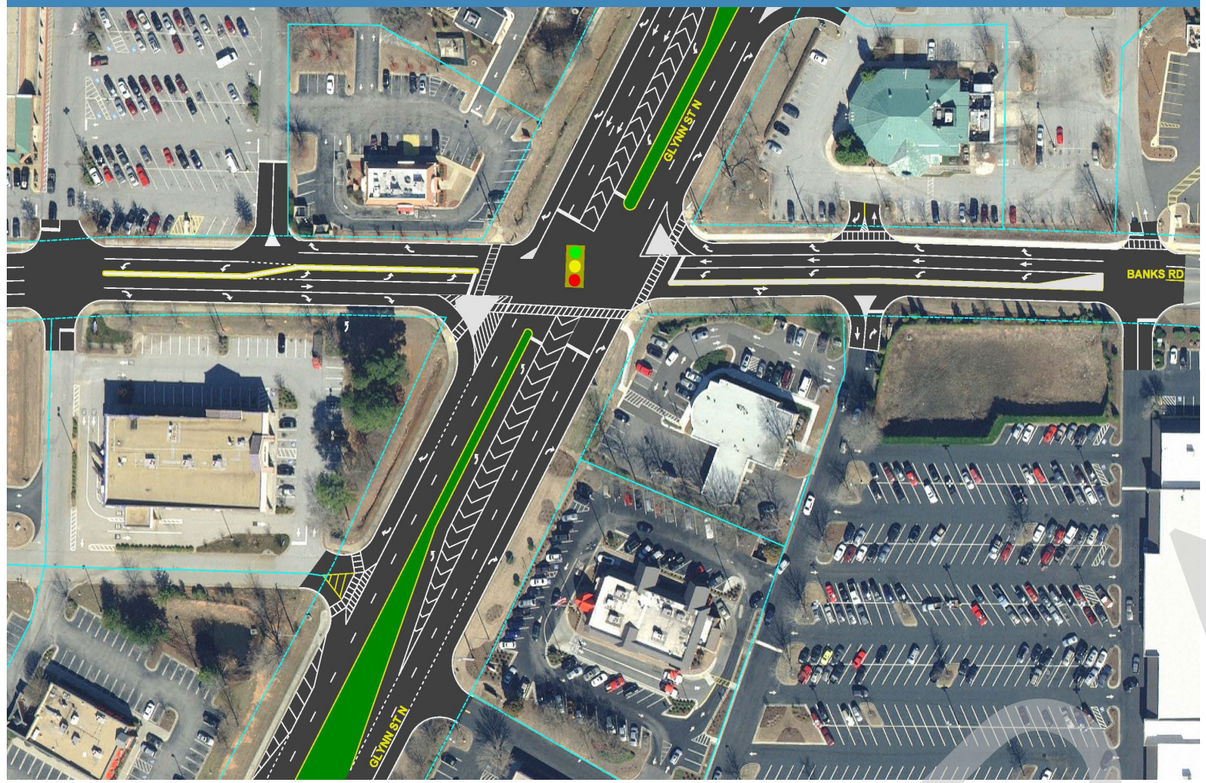
2. Highway 85

At the intersection of Highway 85 and Banks Road, installing concrete islands and improving turn lanes geometry is recommended to improve safety and traffic flow at the intersection. An optional recommendation at Highway 85 is to remove one of the northbound left turn lanes and converting the northbound protect left turn phase to protected-permissive.

This conversion would remove the weaving that occurs west of Highway 85 for the dual left entry into two lanes when the outer lane immediately drops off into the Kroger shopping plaza. Routine signal timing improvements are recommended to maximize efficiency of the traffic signal throughout its life cycle.

The figure below shows the proposed concept for the intersection improvement at Banks Road and Highway 85 and the table shows the 2040 traffic operations for the No Build for Build conditions.

Graphic 6 - Proposed Glynn Steet Improvements



Intersection	2040 No Build		2040 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
Banks Road at Highway 85	C (27.5 s)	D (49.6 s)	C (25.6 s)	D (50.5 s)

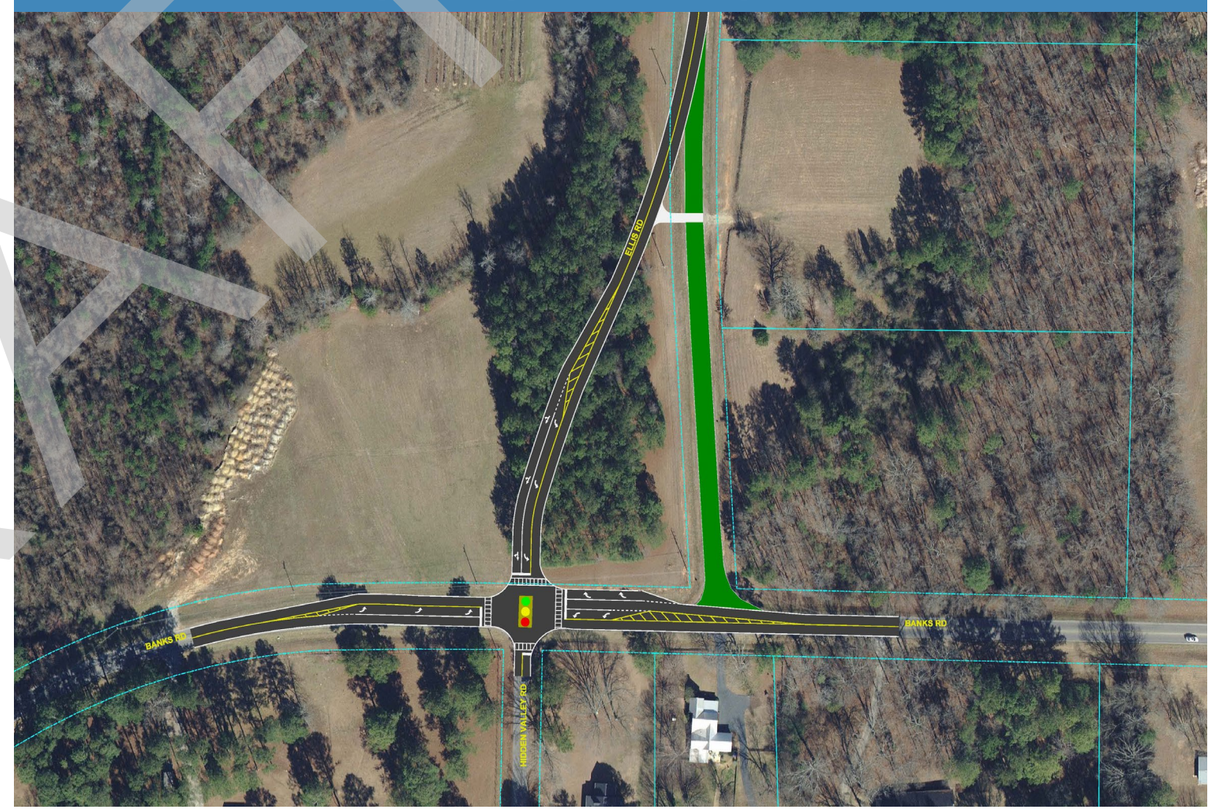
3. Ellis Road

At the intersection of Ellis Road and Banks Road, traffic operations under the existing conditions are at LOS E for the afternoon peak hour. By 2040, the traffic operations at Ellis Road are at a failing LOS. As described in the Concept Report, two concepts were developed for this location - a traffic signal and a roundabout. After consideration of all factors, a signal with realignment of Ellis Road to Hidden Valley Road is the preferred alternative.

The realignment of Ellis Road to Hidden Valley Road is recommended to provide more efficiency of a traffic signal installation and justify signal warrants. Given the current traffic operations at Ellis Road, temporary signalization of the intersection could be an interim solution prior to the completion of the widening project.

Upon widening of Banks Road east of Highway 85, a four - lane configuration is recommended for this intersection. The figure below shows the concept for the Banks Road and Ellis Road realignment and traffic signal installation. The table shows the 2040 traffic operations for the No Build for Build conditions.

Graphic 7 - Proposed Ellis Road Improvements



Intersection	2040 No Build		2040 Build	
	AM Peak	PM Peak	AM Peak	PM Peak
Banks Road at Ellis Road	C (20.4 s)	F (394.5 s)	A (7.1 s)	B (12.3 s)

- **Pedestrian and Bicycle Facilities**

There is a pedestrian presence along Banks Road, and providing bike and pedestrian accommodations for residents to travel to and from the commercial node at the western end of Banks Road 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.

Image 1 - Banks Road Pedestrian and Bicycle Facilities

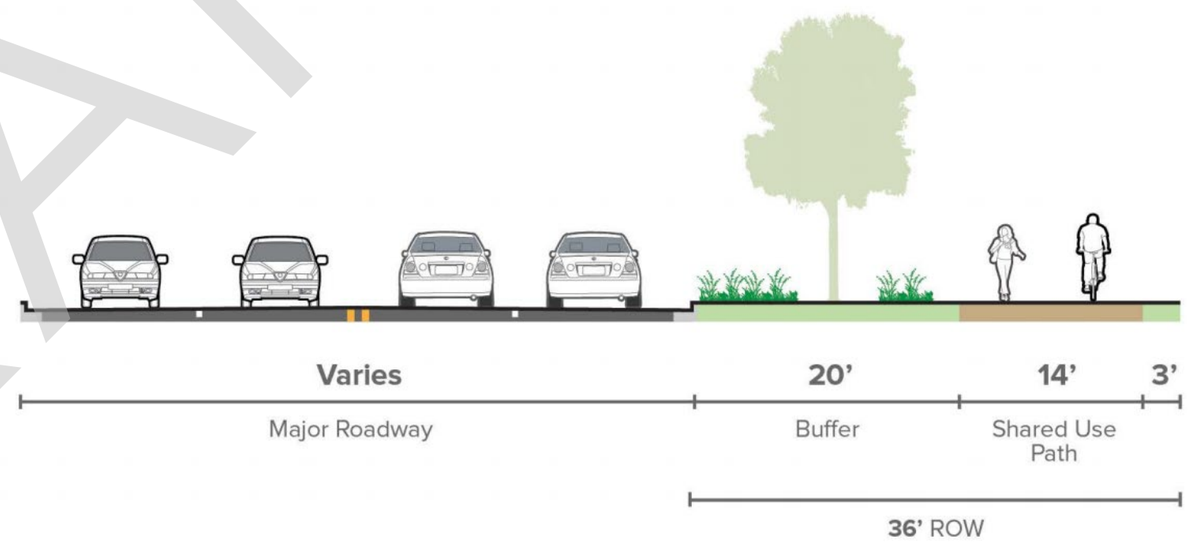
The Master Path Plan specifically recommends the addition of a sidepath along the extent of Banks Road from Highway 85 to McElroy Road. Sidepaths, similar to multi-use paths, are trails that can accommodate pedestrians, bicyclists, and golf carts adjacent and parallel to the alignment of an existing roadway. Fayette County's Path System Design Guidelines should be reference when determining the geometrics of the sidepath for Banks Road.

In line with recommendations outlined in Fayette County's CTP, a multi-use path is recommended along Banks Road within the study limits from Highway 85 to SR 54 along the south side of the road. In addition to the path, sidewalk along north side of the road is recommended 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 Banks Road. Future development and information obtained from more detailed design should ultimately influence the final decision for the alignment.

The image below shows the preferred conditions for a sidepath along a minor roadway as outlined in Fayette County's Path Design Guidelines. A smaller buffer may be appropriate along Banks Road due to the proximity of existing homes along the road.

Graphic 8 - Side Path Recommendations (CTP Appendix D: Path Design Guidelines)



5.3 Quick Response Recommendations

The proposed list of short-term improvements for Banks Road 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 Banks Road included the following:

1. Clear overgrown vegetation along Banks Road

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. Access Management within Commercial Node

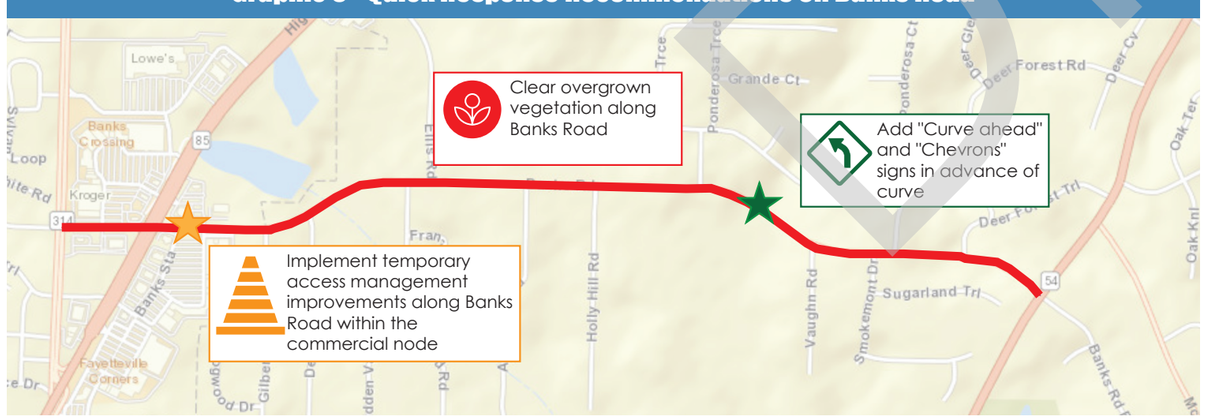
Given that Banks Road between SR 314 to the city limits has one of the highest crash rates in the county, immediate treatments are recommended to alleviate crash frequency. Potential improvements include converting driveways to right-in/right-out and median treatments between SR 314 and Highway 85.

3. Horizontal Alignment and Advisory Speed Signs near Ponderosa Trace

There were several public comments regarding the horizontal curve near Ponderosa being unsafe, especially for speeding vehicles. A fatal accident occurred within the past 5-years east of Ponderosa Trace. To alert drivers of upcoming curve a combination Turn/Advisory Speed (W1-1a) sign or a combination Curve/Advisory Speed (W1-2a) sign is recommended as drivers approach the intersection. The additional of

Graphic 9 shows the locations of the proposed quick response projects along Banks Road.

Graphic 9 - Quick Response Recommendations On Banks Road



5.4 Implementation Plan

The implementation plan for Banks Road 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 Banks Road, 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
BK-1	ROUTINE MAINTENANCE ALONG BANKS ROAD	CLEAR OVERGROWN VEGETATION ALONG BANKS ROAD	SAFETY	TBD	SHORT - TERM
BK-2	CURVE WARNING SIGNAGE NEAR PONDEROSA TRACE	ADD STRIPING, "CURVE AHEAD" AND "CHEVRONS" SIGNS IN ADVANCE OF CURVE EAST OF PONDEROSA TRACE.	SAFETY, OPERATIONS	TBD	SHORT - TERM
BK-3	ACCESS MANAGEMENT FROM SR 314 TO CITY LIMITS	PROJECT INCLUDES IMPROVING BANKS ROAD FROM SR 314 TO THE CITY LIMITS BY INSTALLING RAISED MEDIANS IN THE COMMERCIAL AREA TO ADDRESS THE HIGH RATE OF CRASHES IN THE AREA AND ACCESS MANAGEMENT CHALLENGES. THIS PROJECT WOULD IMPROVE SAFETY AND TRAFFIC OPERATIONS ALONG THIS SEGMENT OF BANKS ROAD.	SAFETY, ACCESS MANAGEMENT	$350,000	INTERMEDIATE - TERM
BK-4	INTERSECTION IMPROVEMENT AT ELLIS ROAD	INSTALL A TRAFFIC SIGNAL AT THE INTERSECTION AND REALIGN ELLIS ROAD TO TIE-IN WITH HIDDEN VALLEY ROAD TO THE SOUTH. THIS PROJECT WOULD IMPROVE SAFETY AND TRAFFIC OPERATIONS AT THE INTERSECTION.	SAFETY, OPERATIONS	$1,350,000	INTERMEDIATE - TERM
BK-5	INTERSECTION IMPROVEMENTS AT HIGHWAY 85	PROJECT INCLUDES INTERSECTION IMPROVEMENTS AT HIGHWAY 85, INCLUDING INSTALLING CONCRETE ISLANDS AND IMPROVING TURN LANES. THIS PROJECT WOULD IMPROVE SAFETY AND TRAFFIC OPERATIONS AT BANKS ROAD AND HIGHWAY 85, ONE OF THE BUSIEST INTERSECTIONS ALONG THE CORRIDOR.	SAFETY, OPERATIONS	$250,000	INTERMEDIATE - TERM
BK-6	WIDEN CORRIDOR TO 4-LANES	GDOT ROUTINE MAINTENANCE AT BANKS ROAD AND SR 74; ADD "KEEP MOVING" SIGN FOR WB RIGHT; ADD PAVEMENT TO ACCOMMODATE TRUCKS.	SAFETY, OPERATIONS, CAPACITY, BIKE-PEDESTRIAN IMPROVEMENTS	$9,640,000 *	LONG - TERM

* COST ESTIMATES INCLUDES RIGHT-OF-WAY AND UTILITIES. COSTS ARE IN 2019 DOLLARS AND NEED TO BE ADJUSTED FOR INFLATION FOR PROJECTS IN THE FUTURE.