

INFORMATIONAL MATERIALS ON CHOSEN DESIGN OPTIONS FOR BUILD ALTERNATIVE



I-85 Widening Improvements from US 321 in Gastonia to
NC 273 in Mount Holly
and
NC 7 Minor Improvements from I-85 to US 29/74 74 (Wilkinson Boulevard)
and
Improvements to NC 7 (S. Main Street) and US 29/74 (Wilkinson Boulevard)
Intersection

Gaston County

STIP Project Nos. I-5719/U-3608/U-5800

North Carolina Department of Transportation



SEPTEMBER 2021

TABLE OF CONTENTS

1. Meeting/Packet Purpose	1
2. Project Description	1
3. Project History	1
3.1 Concurrence Point 1 – Purpose and Need and Study Area Defined.....	1
3.2 Concurrence Point 2 – Detailed Study Alternatives Carried Forward	2
3.3 Public Meeting.....	2
4. Project Cost and Schedule	3
4.1 Cost Estimate	3
4.2 Schedule	3
5. Design Options.....	3

Figures

Project Location

Potential Impacts Mapping for the Mainline and each structure location, U-3608, and U-5800

1. Meeting/Packet Purpose

The purpose of this packet/meeting is to inform the Merger Team of the events and considerations that have occurred since Concurrence Point (CP) 2 was signed in January 2019. This packet provides a project overview including background information and a brief history of the project through CP 2, as well as information on the design options under consideration that NCDOT has chosen to move forward into design for the Build Alternative previously agreed upon. This is for informational purposes and to solicit general opinions on the chosen design options. NO concurrence is being requested at this time.

2. Project Description

North Carolina Department of Transportation (NCDOT) is proposing to widen I-85 from US 321 (Exit 17) in Gastonia to NC 273 (Exit 27) in Mount Holly, a distance of approximately 9.8 miles. This project is programmed in the 2020- 2029 State Transportation Improvement Program (STIP) as project number I-5719. To complete the widening and improve traffic operations and safety, the majority of the structures over I-85 will need to be replaced as part of this project.

In addition, STIP Projects U-3608 and U-5800 will also be studied and included in the environmental documentation of I-5719. STIP Project U-3608 proposes improvements to South Main Street from I-85 to US 29/74 (Wilkinson Boulevard) in Belmont, approximately 0.25 mile. STIP Project U-5800 proposes improvements to the intersection of NC 7 (South Main Street) and US 29/74 (Wilkinson Boulevard) in Belmont. Figure 1 shows the locations of each project.

The project study area is in central Gaston County and includes the municipalities of Gastonia, Lowell, McAdenville, Belmont, and Mt. Holly. The project study area boundary is approximately 1,000 feet wide, 500 feet to each side of the I-85 centerline. Expanded study areas were outlined around interchanges and incorporated into the I-85 project study area. U-3608 and U-5800 study areas are approximately 500 feet wide, 250 feet to each side of the centerline.

Federal Highway Administration (FHWA) is the lead federal agency for this proposed project and the class of action determination is a Categorical Exclusion, Type III.

3. Project History

3.1 Concurrence Point 1 – Purpose and Need and Study Area Defined

Concurrence Point 1 was agreed to in May 2018 and defined the need and purpose of the project as:

PROJECT NEEDS

- **Existing and Projected Capacity Deficiencies and Mobility (Primary)** – Heavy traffic conditions occur daily along I-85 within the project study area, resulting in frequent congestion and delays that hinder east-west mobility within central/eastern Gaston County. Motorists on I-85 in the project study area frequently experience congestion, which is projected to worsen through 2040. Traffic volumes within the project study area are projected to increase by 15 to 24 percent between 2016 and 2040. By 2040, all segments in both directions are projected to be LOS F during one or both peak periods. An update to the traffic forecast was completed in 2019 and the 2045 traffic model further confirms the increase in volumes and poor LOS.

- **Roadway Deficiencies (Secondary)** – The freeway mainline segments and interchanges in the project study area have physical or geometric condition issues and substandard design elements. Congestion experienced along I-85 in the project study area is not only a function of capacity deficiencies, but also roadway deficiencies. The freeway and interchanges in this section of I-85 have substandard design elements such as poor sight distances, narrow median shoulders, and poor entrance/exit ramp designs. Several bridges are classified as functionally obsolete, and nearly all the bridges that cross over I-85 within the project study area do not have the horizontal or vertical clearance required to accommodate widening improvements.
- **Inability to Serve High-Speed Regional Travel Consistent with the Designations and Goals of State and Local Transportation Plans (Secondary)** – Congestion and frequent incidents on I-85 inhibit regional travel and diminish the ability of I-85 to function as a Strategic Highway Corridor and Intrastate Corridor. Due to its statewide and regional importance, I-85 has been designated as a Strategic Highway Corridor (SHC) by NCDOT and is part of the North Carolina Intrastate System. Both designations call for this corridor to serve high-speed regional travel. The existing study area corridor of I-85 is designated as part of the National Highway System’s (NHS) Strategic Highway Network (STRAHNET). Existing and projected poor LOS along the I-85 project study corridor diminish the roadway’s ability to function as part of the STRAHNET. GCLMPO, as documented in their *2040 Metropolitan Transportation Plan (MTP)*, has identified improvements to I-85 as a top priority project.
- **Increased Crash Incidents (Secondary)** – Traffic congestion occurs daily, with I-85 travelers experiencing a high number of incidents that cause delays and augment congested conditions. This portion of I-85 exceeds the NCDOT 2012-2014 statewide urban interstates critical crash rates for non-fatal injury crashes. The total number of crashes increased by 62 percent between 2012 (432) and 2015 (700).

PROJECT PURPOSE

The purpose of the proposed improvements to I-85 is to reduce congestion and improve mobility in this growing area of Gaston County.

3.2 Concurrence Point 2 – Detailed Study Alternatives Carried Forward

Concurrence Point 2 was agreed upon in January 2019 and included a **No-Build** and **Build Alternative**. The No-Build Alternative would not construct any improvements to I-85 as part of I-5719/U-3608/U-5800. The No-Build assumes that other separate projects in the STIP would be implemented, as they are independent of the proposed project. The No-Build option is not consistent with the purpose and need for the project nor local plans. The No-Build is being retained through the project development process as a baseline comparative alternative in accordance with the NEPA (40 CFR 1502.14(d)) and FHWA guidance (FHWA Technical Advisory T 6640.8A; p. 16). The Build Alternative proposes widening I-85 from six to eight lanes using a best-fit alignment, in addition to replacing/improving the structures over I-85.

3.3 Public Meeting

Following concurrence on the Detailed Study Alternatives, NCDOT presented the project to the public and local officials May 21-22, 2019. Thirty-three public comments were received following the meetings and the majority expressed support for the project as a whole and had location-specific concerns. The [Post-Meeting Summary](#), which includes responses to comments, can be found on the I-5719 SharePoint site.

4. Project Cost and Schedule

4.1 Cost Estimate

NCDOT conducted cost verifications on all projects in the STIP in spring 2021. The cost for each project is shown in Table 1.

TABLE 1. COST ESTIMATION

	I-5719	U-3608	U-5800
Right of Way	\$201,900,00	\$13,300,000	\$1,000,000
Utilities	\$17,800,000	\$7,200,000	\$3,600,000
Construction	\$571,500,000	\$10,200,000	\$8,400,000
Total	\$791,200,000	\$30,700,000	\$13,000,000

4.2 Schedule

Activity on STIP Projects I-5719/U-3608/U-5800 was suspended in September 2019. Activity was restarted in January 2020 and then suspended again in May 2020. Project activity was then restarted in January 2021.

During the 2020 period, a Phase II traffic analysis was completed, which allowed NCDOT to evaluate the measures of effectiveness (MOEs) for traffic operations of each interchange option, in addition to potential environmental impacts associated with the different interchange types. NCDOT chose design options in April 2020 for 13 of the crossing structures and further analysis was needed for the remaining five interchanges. In May 2021, NCDOT chose design options for the five interchanges based on the additional analysis and potential impacts. The chosen design options are presented in Section 5.

TABLE 2. SCHEDULE

Milestone	Date*
Informational Meeting	September 15, 2021
Concurrence Point 2A	Spring 2022
Public Information Meeting	Summer 2022
Concurrence Point 3	Fall 2022
Categorical Exclusion, Type III	December 2022
Right of Way	December 2023
Let	December 2023

*subject to change

5. Design Options

STIP Project I-5719 Build Alternative includes a best-fit alignment of the I-85 mainline as well as the replacement of 18 structures that cross over I-85. The proposed Build Alternative for U-3608 realigns S. Main Street to the proposed design of the Belmont-Mount Holly Road interchange. STIP Project U-5800 proposes improving the intersection of the realigned NC 7 (S. Main Street) and US 29/74 (Wilkinson Boulevard) to either a reduced conflict intersection (RCI) or a signalized intersection. The following includes reasoning for the chosen design alternatives for the structures, U-3608, and U-5800. A table of potential impacts to the natural and human environment is provided. Where appropriate, the cells are “ranked” using green (lowest), yellow, orange or red (highest) to facilitate easy understanding of which

option has the fewest impacts. Each interchange also includes a table of MOEs. Figure 2 shows the potential impacts of the projects.

Impacts to resources were measured using slope stake limits plus an additional 40 feet.

I-85 Mainline

The I-85 mainline will be widened to eight lanes using a best-fit alignment.

Section 4(f) resources within the mainline slope stake limits plus 40 feet include:

- Four park resources:
 - Sims Legion Park (0.1 acre of potential impacts, to minimize or avoid potential impacts to this resource, MSE walls will be used),
 - Highland Rail Trail (crossing only),
 - South Fork Trail (crossing only), and
 - South Fork River Blueway (crossing only).
- Three historic resources:
 - Piedmont and Northern Railway Linear Historic District (2 railroad bridges),
 - Faith United Methodist Church (0.1 acre), and
 - McAdenville Historic District (2 acres).

Eleven potential relocations, including five businesses, five residences, and one church. The St. Benedict (St. Leo) Cemetery may also be impacted by the widening.

There are two major utility crossings on I-85 toward the eastern end of the project and one underground storage tank may be impacted by the widening.

Design Option	Potentially Impacted Resources													
	Natural Resources						Cultural Resources			Community Resources				
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Greenway/Bike Route	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Best-Fit Widening	5,378	0.1	0	14.8	3.3	61	7	3	N/A	3	1 / 1	N/A	N/A	11

US 321 (N. Chester St) Interchange (Y1) (Exit 17)

- Improve Existing – **Chosen**
 - NCDOT STIP Project No. I-5000 was completed in 2020. Traffic analysis shows a need to extend the two lanes from the fly-under ramp onto I-85 to increase capacity and improve merge safety.
 - Improvements for this interchange area will be designed to stay within the I-5000 project right-of-way for total avoidance of the Sims Legion Park.
 - Improvements for this area will be designed to avoid the John Harmon Cemetery.
 - I-5719 begins at US 321, the bridge over US 321 will **not** be replaced as part of the I-5719 project.
 - The Highland Rail Trail, a Section 4(f) resource, will be avoided and is not expected to be impacted by this project.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Improve Existing	586	0.2	0	2	0.3	0	1	N/A	N/A	0	N/A	1	N/A

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing	50.2	50.1	74	75	20	21	37.4	34.2	43.7	43.5

SR 2278 (Dr. MLK Jr. Way/Marietta Street) Overpass (Y9)

- Replace to East – **Chosen**
 - Sims Legion Park, a Section 4(f) resource, may have 0.5 acre of impacts, less than the Replace in Place option.

- Requires more right-of-way to build bridge on new location.
- May require a slightly longer bridge due to angle with I-85.
- Allows for existing bridge to be used during new bridge construction.
- Intersection with Boxwood Lane may be realigned.
- **Replace in Place – Eliminated**
 - Sims Legion Park, a Section 4(f) resource, may have 0.7 acre of impacts, more than the Replace to East option.
 - Would temporarily preclude access to Sims Legions Park from north of I-85 unless a temporary detour bridge is constructed.
 - Higher potential for impacts to Sims Legion Park are due to higher grade and proximity to park.
 - While US 321 is available as an offsite detour route, it would increase commute times through the area.
 - MLK, Jr. Way is classified as a minor arterial, so maintaining the overpass over I-85 preserves the integrity of the state road network.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace to East	0	0	0	0	0	0	1	N/A	N/A	N/A	N/A	N/A	N/A
Replace in Place	0	0	0	0	0	0	1	N/A	N/A	N/A	N/A	N/A	N/A

SR 2009 (Modena Street) Overpass (Y10)

- **Replace in Place – Chosen**
 - Four potential relocations, all residential
 - The new bridge would be designed without a curve improving constructability and increasing safety.
 - Requires building a temporary detour bridge next to the existing bridge that may impact additional homes.
- **Replace to West – Eliminated**
 - Four potential relocations, all residential

- Allows existing bridge to be used while building the new bridge.
- The new bridge would be closer to the homes on the west side.
- The new bridge would be designed with a curve, increasing cost, limiting sight distance and therefore decreasing safety.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	4
Replace to West	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	4

Railroad Bridge 350129 (NCDOT – Owned, Piedmont & Northern Railway – Operated)

- **Replace in Place – Chosen**
 - Higher stream impacts than Replace to East option. However, stream impacts are within the 40-foot buffer and expected to be minimized or avoided in final design.
 - One impacted historic resource: Piedmont and Northern Railway Linear Historic District (275 ft)
 - This option would replace the railroad bridge in place, requiring a temporary bridge detour.
 - Construction time for this area may be reduced compared to the Replace to East option.
 - Detour track alignment can be constructed with the NC 7 (East Ozark Avenue) interchange ramps as they exist.
 - Railroad grade will increase for proposed bridge. Some temporary outage of rail service may be required to complete the track raise.
- **Replace to East – Eliminated**
 - This option would only work with the Single Quadrant design option for E. Ozark Avenue (Exit #19) interchange (**not chosen**) due to removing the existing ramps on I-85 South. If chosen, the Single Quadrant would have to be built first to eliminate the ramps before the new track alignment and railroad bridge could be built. This would also make all parcels along Piedmont Street

inaccessible. After the Single Quadrant and railroad bridge are built, I-85 could be widened, which may delay widening I-85 in this area by up to 3 years.

- Lower potential stream impacts than Replace in Place option.
- One impacted historic resource: Piedmont and Northern Railway Linear Historic District (275 ft)
- Avoids use and expense of temporary detour bridge, but more track work involved.
- May require up to two months of rail service outage to accommodate the necessary track raise.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	361	0	0	0	0	0	1	1	N/A	N/A	N/A	N/A	0
Replace to East	188	0	0	0	0	0	1	1	N/A	N/A	N/A	N/A	0

NC 7 (East Ozark Avenue) Interchange (Y2) (Exit 19)

- Improve Existing – **Chosen**
 - Has the least amount of stream and floodplain impacts.
 - Two potentially impacted historic resources: Faith United Methodist Church (0.5 acre (does not include 0.1 acre of mainline impact)) and Piedmont and Northern Railway Linear Historic District (0.7 acre)
 - Has fewer (3) potential relocations compared to the Single Quadrant option, all businesses
- Single Quadrant – Eliminated
 - Higher stream and floodplain impacts than the Improve Existing option.
 - Two potentially impacted historic resources: Faith United Methodist Church (0.6 acre (does not include 0.1 acre of mainline impact)) and Piedmont and Northern Railway Linear Historic District (1.1 acres)
 - Has more (13) potential relocations than the Improve Existing option, 6 businesses, 4 residences, and 3 church properties: Cedar Grove Baptist Church, Faith United Methodist Church (historic) and Promised Land Baptist Church.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Improve Existing	15	0	0	0	0	0	2	2	N/A	1	N/A	N/A	3
Single Quadrant	1,355	0	0	0.4	<0.1	0	2	2	N/A	3	N/A	N/A	13

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing	54.7	55.2	59	56	16	15	34	35.8	33.3	33.2
Single Quadrant	53.2	53.7	71	66	20	18	34.4	35.5	31.6	32.7

Railroad Bridge 350132 (Norfolk Southern)

- Replace in Place – **Chosen**
 - Potential impacts to one historic resource: Faith United Methodist Church (<0.1 acre (does not include 0.1 acre of mainline or 0.5 ac E. Ozark Avenue impacts))
 - Phased construction of this bridge is required and would require temporary closure of three of the five tracks along the Norfolk Southern Railroad during construction. Two mainline tracks would be retained at all times during construction.
 - All required work should occur within the existing railroad right-of-way. Property impacts are not anticipated.
 - May require closing the inner two lanes of I-85 and leaving the outer lanes open during construction.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0	0	1	1	N/A	1	N/A	N/A	0

NC 279 (N. New Hope Road) Interchange (Y3) (Exit 20)

- **Diverging Diamond Interchange (DDI) – Chosen**
 - Has least amount of potential stream and floodplain impacts of all design options.
 - No relocations are associated with this design option.
 - Duhart Avenue will be converted to a cul-de-sac and traffic rerouted to other access points (i.e. signal at Pearl Street).
 - Operates with less overall delay per vehicle than the other two options evaluated.
 - A full-movement signalized intersection at Remount Road will be included in design.
 - Retained for constructability, operations, and lower cost as well as fewer impacts.
- **Improve Existing – Eliminated**
 - Has greatest amount of potential stream and floodplain impacts.
 - Has the most potential relocations of all options, two businesses.
 - May impact a hazardous waste site.
- **Compressed Diamond – Eliminated**
 - Has fewer potential impacts to streams and 100-year floodplain than Improve Existing option, but more than DDI option.
 - Has more relocations than the DDI option, and fewer than the Improve Existing option, one business.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (f)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Improve Existing	421	0	0	1.3	0.2	0	N/A	N/A	N/A	N/A	N/A	N/A	2
Compressed Diamond	365	0	0	1.2	0.2	0	N/A	N/A	N/A	N/A	N/A	N/A	1
Diverging Diamond Interchange	26	0	0	0.3	<0.1	0	N/A	N/A	N/A	N/A	N/A	N/A	0

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing	50.9	49.3	104	119	26	29	30.4	32.5	35.0	34.8
Compressed Diamond	49.9	49.3	115	120	28	29	26.5	25.3	25.3	27.9
Diverging Diamond Interchange	52.2	48.9	61	79	15	19	28.6	25.1	29.1	23.3

Aberdeen Boulevard Overpass (Y11)

- **Replace to East – Chosen**
 - No stream or floodplain impacts with this option.
 - Existing bridge is on a curve, so this option is easier to construct and is lower in cost than Replace in Place option.

- Replace in Place – Eliminated
 - Higher potential stream and floodplain impacts associated with this option.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace to East	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0
Replace in Place	211	0	0	0.3	0.1	0	N/A	N/A	N/A	N/A	N/A	N/A	0

SR 2200 (Cox Road) Interchange (Y4) (Exit 21)

- Improve Existing Interchange– **Chosen**
 - Has more impacts to streams than the DDI option and fewer than the Offset Interchange option.
 - Has least amount of potential floodplain impacts.
 - No relocations are associated with this option.
 - May impact one UST.
 - Offers better bicycle/pedestrian accommodation options.
- Diverging Diamond Interchange –Eliminated
 - Has least amount of potential stream impacts.
 - Has greatest amount of potential floodplain impacts.
 - No relocations are associated with this option.
 - The DDI alternative operates with less overall delay per vehicle than the other two options evaluated.
 - Wider bridge needed due to increased number of lanes on Cox Road.
 - Small interchange design footprint results in minimal right-of-way needs.
 - May be more cost-effective compared to other two options.

- Offset Interchange –Eliminated
 - Has greatest amount of potential stream impacts.
 - Has more impacts to the 100-year floodplain than the Improve Existing option, and less than the DDI option. The amount of 500-year floodplain impacts is the same as the Improve Existing and lower than the DDI option.
 - Has highest number of potential relocations, including two businesses and one residential (apartment building)
 - May impact one UST.
 - Would pull footprint away from Cox Road and surrounding properties south of existing interchange, resulting in better operations along Cox Road due to increased spacing between signalized intersections.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/ Cemetery (#)	Educational Facility (#)	Greenway/ Bike Route	Relocation (#)
Improve Existing Interchange	66	<0.1	0	1.2	0.2	0	N/A	N/A	N/A	N/A	N/A	N/A	0
Offset Interchange	391	<0.1	0	2.1	0.2	0	N/A	N/A	N/A	N/A	N/A	N/A	3
Diverging Diamond Interchange	19	<0.1	0	2.9	0.6	0	N/A	N/A	N/A	N/A	N/A	N/A	0

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing Interchange	49.1	47.5	111	128	27	30	27.4	21.7	22.9	26.0

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Offset Interchange	49.6	48.4	103	119	26	29	24.8	25.6	23.5	23.3
Diverging Diamond Interchange	49.2	47.5	75	92	18	21	22.5	20.1	24.7	24.7

SR 2339 (S. Church Street) Overpass (Y12)

- Replace in Place – **Chosen**
 - Additional impacts likely due to required temporary detour bridge.
 - Potential residential relocations due to temporary detour bridge.
 - Additional design options were not considered as they would require right-of-way impacts on the south side of the bridge. In addition, a bridge located to either side of the current bridge would need to be longer to accommodate the ramps at the S. Main Street interchange.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	0

SR 2339 (S. Main Street) Interchange (Y5) (Exit 22)

- Improve Existing with Roundabouts – **Chosen**
 - Amount of potential stream impacts higher than DDI and same as ParClo B and ParClo A design options.

- Potentially impacts Joe Hudson Park (<0.1 acre), a Section 4(f) resource.
- No potential relocations associated with this design option.
- Evaluated with and without roundabouts at ramp terminals:
 - Roundabouts offer slightly better MOEs, including LOS B/B in peak hour. Existing bridge can be used and will not need to be widened for bicycle/pedestrian accommodation.
 - Crausby Avenue will be right in right out.
- Partial Cloverleaf B Interchange –Eliminated
 - Amount of potential stream impacts higher than DDI and same as Improve Existing and ParClo A design options.
 - Potentially impacts Joe Hudson Park (<0.1 acre), a Section 4(f) resource.
 - More relocations than Improve Existing, fewer than the DDI or ParClo A design options: four businesses and one residence.
 - Would impact new EchoPark and Sonic Automotive call center in northwest quadrant.
- Diverging Diamond Interchange –Eliminated
 - Least amount of potential stream impacts.
 - Potentially impacts Joe Hudson Park (<0.1 acre), a Section 4(f) resource.
 - More potential relocations than Improve Existing and ParClo B, fewer than ParClo A design options: three businesses and 25 residences.
 - Would impact new EchoPark and Sonic Automotive call center in northwest quadrant.
- Partial Cloverleaf A Interchange – Eliminated
 - Amount of potential stream impacts higher than DDI and same as Improve Existing and ParClo B design options.
 - Potentially impacts Joe Hudson Park (<0.1 acre), a Section 4(f) resource.
 - Highest number of potential relocations: four businesses and 28 residences.
 - This option is no longer under consideration because it does not improve traffic operations more than the other three options and has higher impacts in the southwest quadrant than all other options.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (ff)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Improve Existing	228	0	0	0	0	0	1	N/A	N/A	0	N/A	N/A	0
Partial Cloverleaf B Interchange	228	0	0	0	0	0	1	N/A	N/A	0	N/A	N/A	5
Diverging Diamond Interchange	122	0	0	0	0	0	1	N/A	N/A	0	N/A	N/A	28
Partial Cloverleaf A Interchange	228	0	0	0	0	0	1	N/A	N/A	0	N/A	N/A	32

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing	53.9	53.9	66	67	16	17	27.5	26.9	26.4	27.1
Partial Cloverleaf B Interchange	53.8	54.4	69	64	18	53.8	54.4	69	64	18
Diverging Diamond Interchange	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Partial Cloverleaf A Interchange	54.9	55	45	44	12	54.9	55	45	44	12

Railroad Bridge 350142 (Norfolk Southern)

- **Replace to East – Chosen**
 - Avoids the historic Dora R. Humphrey Elementary School.
 - Groves Street must be closed during railroad bridge construction.
- **Replace in Place – Eliminated**
 - Avoids the historic Dora R. Humphrey Elementary School.
 - Would replace the bridge in the current location of the bridge but raised substantially to allow for longer bridge span lengths and modern bridge construction. Norfolk Southern Railroad will not allow a grade this high.
 - Requires a temporary bridge to the east of the existing railroad bridge that would be approximately 20 feet from the track centerline to the existing/proposed edge of Groves Street, but the temporary rail bridge could be in service while the Groves Street Bridge is being reconstructed.
 - The temporary alignment will allow the elevation of the track to be raised without impacting existing rail traffic.
 - With the final alignment of the bridge back on the current alignment a similar offset to Groves Street will be maintained as what is currently in place today.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace to East	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	1

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	1

SR 2213 (Grove Street) Overpass (Y13)

- **Replace in Place – Chosen**
 - Proximity of the Norfolk Southern Railway Railroad Bridge creates a challenge for the Grove Street bridge and approaches.
 - The proposed bridge is anticipated to be replaced in the same location, however due to the grade change it is anticipated that the approaches to the bridge will create additional impacts including 15 potential relocations (14 residences and 1 pre-k school).

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0	0	N/A	N/A	N/A	N/A	1	N/A	14

NC 7 (McAdenville Road/N. Main Street) Interchange (Y6) (Exit 23)

- **Improve Existing – Chosen**
 - Has greater stream impacts than the DDI option.
 - This design option was improved with a partial tight diamond on the I-85 south ramp to accommodate Power Drive.

- Provides a dedicated left turn lane from Power Drive onto NC 7 (N Main Street)
- Slip ramp to Power Drive eliminated.
- Detour bridge would result in additional impacts to streams and McAdenville Historic District.
- **Diverging Diamond Interchange –Eliminated**
 - Fewer stream impacts compared to the Improve Existing option.
 - Would remove slip lane from southbound exit ramp to Power Drive.
 - Would require closure or realignment of Power Drive. This would impact Pharr Yarns, leaving them with no viable road for ingress/egress of tractor trailers.
 - Higher potential for residential and commercial relocations due to DDI bulbs (not included in impacts table).
 - Additional impacts along McAdenville Road due to length needed for DDI bulbs (not included in impacts table).

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Improve Existing Interchange	170	0	0	0	0	0	1	1	N/A	N/A	N/A	0	4
Diverging Diamond Interchange	160	0	0	0	0	0	1	1	N/A	N/A	N/A	0	4

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Improve Existing Interchange	53.5	52.0	67	79	17	19	23.6	28.4	29.1	27.1

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Diverging Diamond Interchange	53.9	53.4	46	50	12	13	27.5	26.1	27.2	27.7

SR 2000 (Hickory Grove Road) Overpass (Y14)

- Replace to East – Retained
 - No stream impacts.
 - Fewer potential relocations, 2 businesses, 5 residences, and 1 place of worship (Wat Luangphor PhaNgao Buddharam Buddhist Temple).
 - The bridge over the NCDOT-owned railroad, Piedmont & Northern Railway Linear Historic District, will be replaced
- Replace to West – Retained
 - Higher stream impacts compared to the Replace to East option.
 - More potential relocations compared to the Replace to East option, 3 businesses and 6 residences
 - Bridges would no longer be in a curve, which would reduce cost as well as increase sight distance.
 - The bridge over the NCDOT-owned railroad, Piedmont & Northern Railway Linear Historic District, will be replaced

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Place of Worship/Cemetery (#)	Educational Facility (#)	Greenway/ Bike Route	Relocation (#)
Replace to East	0	0	0	0	0	0	1	1	N/A	1	N/A	N/A	8
Replace to West	338	0	0	0	0	0	1	1	N/A	N/A	N/A	N/A	9

SR 2093 (Belmont-Mount Holly Road) Interchange (Y7) (Exit 26)

- Montcross option for NB I-85 and Tight Diamond on SB I-85— **Chosen**
 - Montcross design option (NB I-85) provided by Belmont Abbey College.
 - Avoids impacts to St. Benedict (St. Leo) Cemetery (historic).
 - Tight Diamond design option (SB I-85) chosen to avoid stream impacts from a previous partial cloverleaf design.
 - Potential impacts to two Section 4(f) and Section 106 resources: Belmont Abbey Historic District and NCDOT Railroad (Piedmont & Northern Linear Railroad Historic District).
 - Signalized intersections at both ramp terminals will be incorporated into design, roundabouts at relocated Belmont Abbey College entrance and Woodlawn Avenue will be included in the design.
 - Incorporates U-3608 and U-5800 projects.
 - Accommodates critical elements such as future rail plans and College master planning recommendations.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (f)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Montcross and Tight Diamond	1,644	<0.1	0	0	0	0	2	2	N/A	0	N/A	N/A	8

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Montcross Option with Roundabouts	52.9	50.9	74	92	17	21	33.5	33.8	33.4	33.4

U-3608 – Improve NC 7 (S Main Street) from I-85 to US 29/74 (Wilkinson Boulevard)

- The design realigns NC 7 (S. Main Street) from the proposed Montcross design option to the intersection of US 29/74 (Wilkinson Boulevard). Existing NC 7 (S. Main Street) will be narrowed to two lanes away from O’Connor’s Grove AME Zion Church.
- No stream or wetland impacts are associated with the improvements.
- Nine potential relocations including 6 businesses (Collegetown Shopping Center) and 3 residences.
- May impact hazardous waste sites (gas station, auto mechanic).
- Effects meeting held August 19, 2021, SHPO determined that this option would have No Adverse Effect on the Piedmont and Northern Railway Linear Historic District.
- Impacts to the Belmont Fabric South Fork Manufacturing Mill Village historic resource are avoided.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Place of Worship/ Cemetery (#)	Educational Facility (#)	Greenway/ Bike Route	Relocation (#)
Realignment	0	0	0	0	0	0	2	2	N/A	1 / 2	N/A	N/A	9

US 29/74 (Wilkinson Boulevard) and NC 7 (N. Main Street) Intersection (Y7A) [U-5800]

- **Reduced Conflict Intersection (RCI) - Chosen**
 - Effects meeting held August 19, 2021, SHPO determined that this option would have No Adverse Effect on the Belmont Historic District or Piedmont and Northern Railway Linear Historic District.
 - Has fewer relocations, five businesses.
 - May impact one hazardous waste site (gas station).
- **All-Movement Signalized - Eliminated**
 - Effects meeting held August 19, 2021, SHPO determined that this option would have an Adverse Effect on the Belmont Historic District and No Adverse Effect to the Piedmont and Northern Railway Linear Historic District

- Has higher potential relocations than the RCI option, 9 businesses, 6 residences (includes one apartment building).
- May impact one hazardous waste site (gas station).
- Requires pedestrians to cross more lanes of traffic.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Place of Worship/ Cemetery (#)	Educational Facility (#)	Greenway/ Bike Route	Relocation (#)
RCI	0	0	0	0	0	0	1	1	N/A	1	N/A	N/A	5
All-Movement Signalized	0	0	0	0	<0.1	0	2	2	N/A	1	N/A	N/A	15

Railroad Bridge 350150 (NCDOT – Owned, Piedmont & Northern Railway – Operated) 245 ft

- **Replace in Place – Chosen**
 - Impacts Piedmont and Northern Railway Linear Historic District.
 - No temporary detour bridge required for this location. Railway line will remain out of service for the duration of construction.
 - Bridge is part of a spur line that is out of service but will accommodate a planned trail/trolley by the time the project is built. The replacement bridge will need to have a single track with width for a trail.

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/ Cemetery (#)	Educational Facility (#)	Greenway/ Bike Route	Relocation (#)
Replace in Place	0	0	0	0	0		1	1	N/A	N/A	N/A	N/A	0

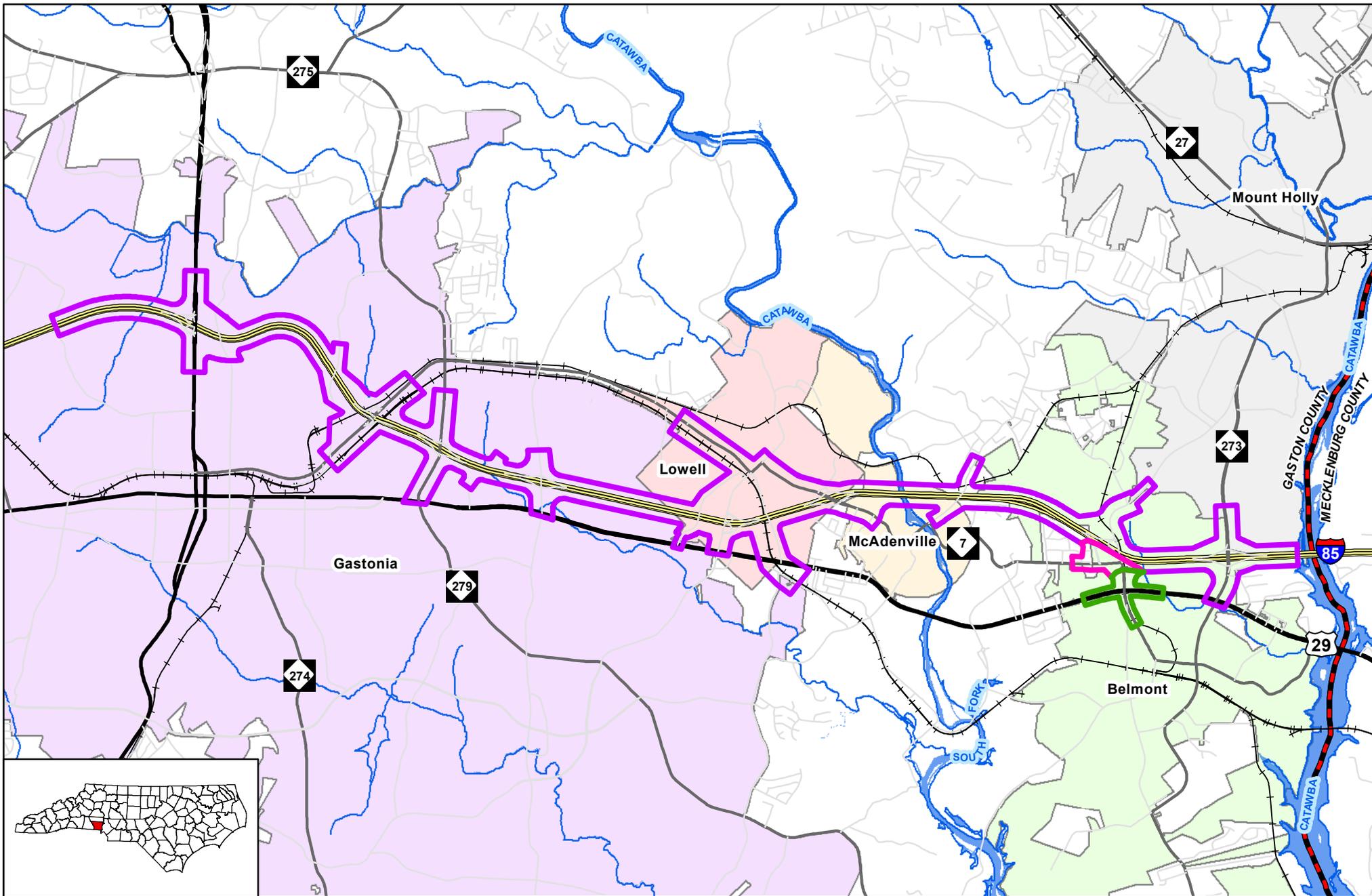
Exit 27 - NC 273 (Beatty Drive) Interchange (Y8)

- **Diverging Diamond Interchange – Chosen**
 - Has more potential water supply watershed impacts than the Improve Existing option, but fewer than the Partial Cloverleaf B option.
 - Operates substantially better than the Improve Existing option.
 - Accommodates the Caromont Hospital development near the northwest quadrant of the interchange.
 - Signalized intersections operate with acceptable delay.
 - Wider bridge needed for DDI design.
 - May impact an underground storage tank.
- **Improve Existing Interchange –Eliminated**
 - This option has spillover on the NB I-85 ramp.
 - Signalized intersections operate with acceptable delay.
- **Partial Cloverleaf B Interchange –Eliminated**
 - Would require more right of way compared to the DDI or Improve Existing interchange option.
 - This option would result in good overall traffic operations.
 - Signalized intersections operate with acceptable delay.
- **Single – Point Urban Interchange – Eliminated**
 - Eliminated due to relatively higher cost and constructability issues.

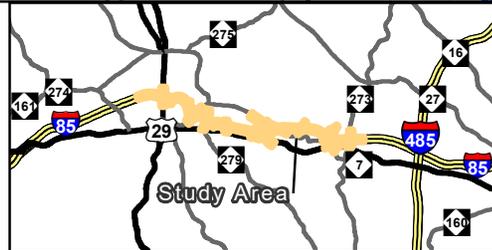
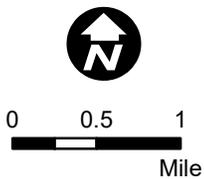
Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Diverging Diamond Interchange	0	0	0	0	0	26.7	N/A	N/A	N/A	N/A	N/A	N/A	0

Design Option	Potentially Impacted Resources												
	Natural Resources						Cultural Resources			Community Resources			
	Streams (lf)	Wetlands (ac)	Ponds (ac)	100-year Floodplain (ac)	500-year Floodplain (ac)	Water Supply Watershed (ac)	Section 4(f) Resource	Section 106 Resource	Section 6(f) Resource	Church/Cemetery (#)	Educational Facility (#)	Greenway/Bike Route	Relocation (#)
Partial Cloverleaf B Interchange	0	0	0	0	0	35.9	N/A	N/A	N/A	N/A	N/A	N/A	0
Improve Existing Interchange	0	0	0	0	0	25.41	N/A	N/A	N/A	N/A	N/A	N/A	0

Design Option	Measures of Effectiveness									
	Network Speed (mph)		Network Delay (Hours)		Delay Per Vehicle (Seconds)		Northbound Speed (miles/hour)		Southbound Speed (miles/hour)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Diverging Diamond Interchange	50.3	48.7	54	59	13	14	26.4	27.4	28	24.2
Partial Cloverleaf B Interchange	50.6	49.2	104	118	24	27	36.4	33.4	37.3	32.7
Improve Existing Interchange	49.3	51.1	116	99	27	23	38.4	34.3	35.9	33.1



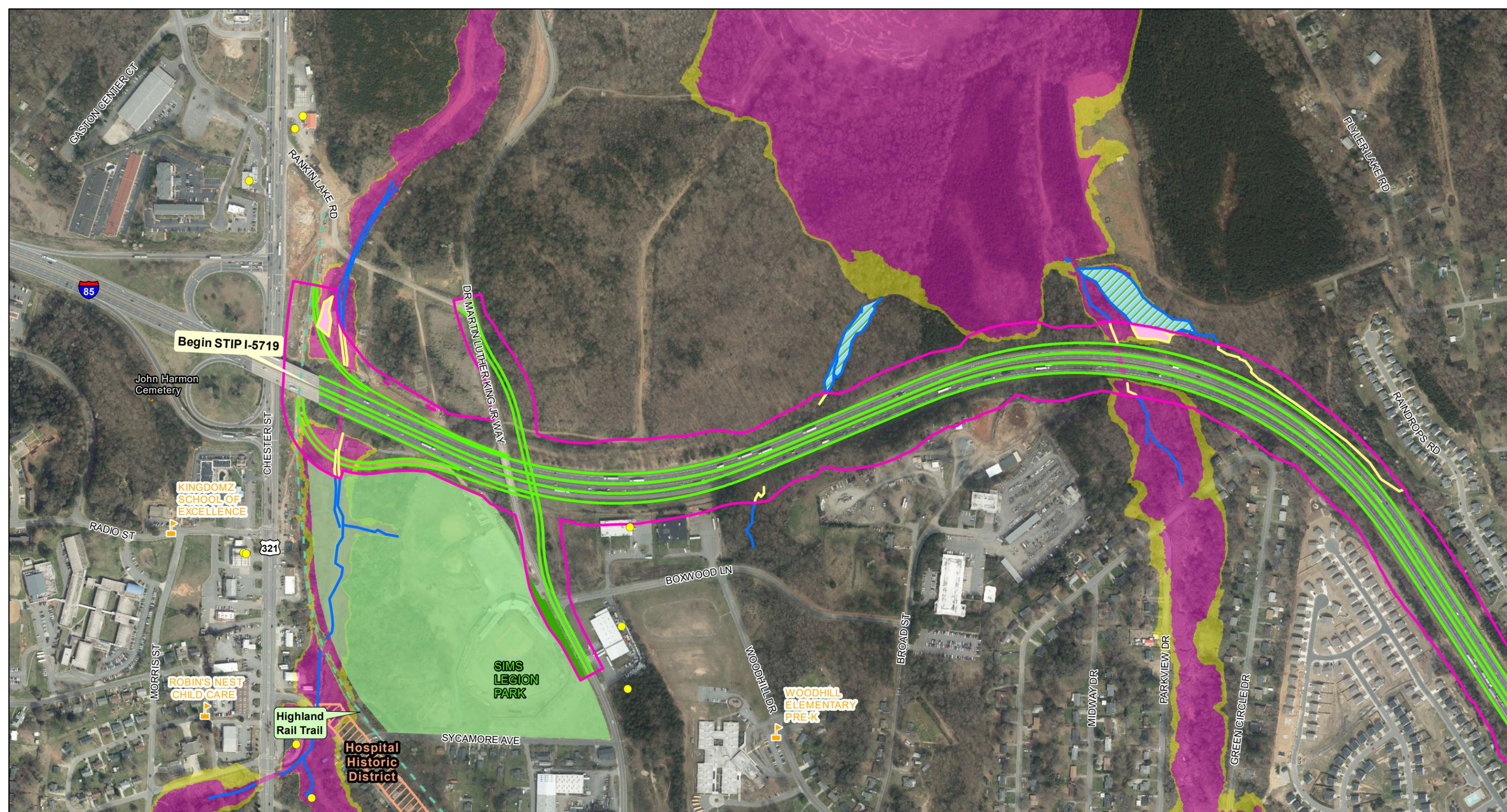
- Legend**
- I-5719 Study Area
 - U-3608 Study Area
 - U-5800 Study Area
 - City of Belmont
 - City of Gastonia
 - City of Lowell
 - Town of McAdenville
 - City of Mount Holly
 - County Boundary
 - River
 - Stream
 - Interstate
 - US Highway
 - NC Highway
 - Local Road
 - Railroad



Project Location Map

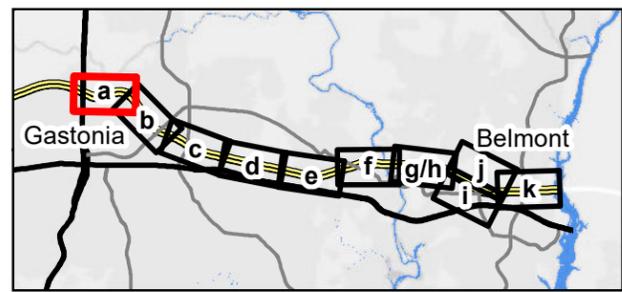
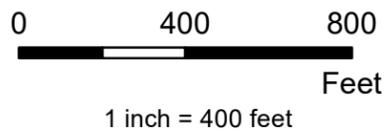
I-85 Widening
 STIP I-5719, U-5800, and U-3608
 Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



Legend

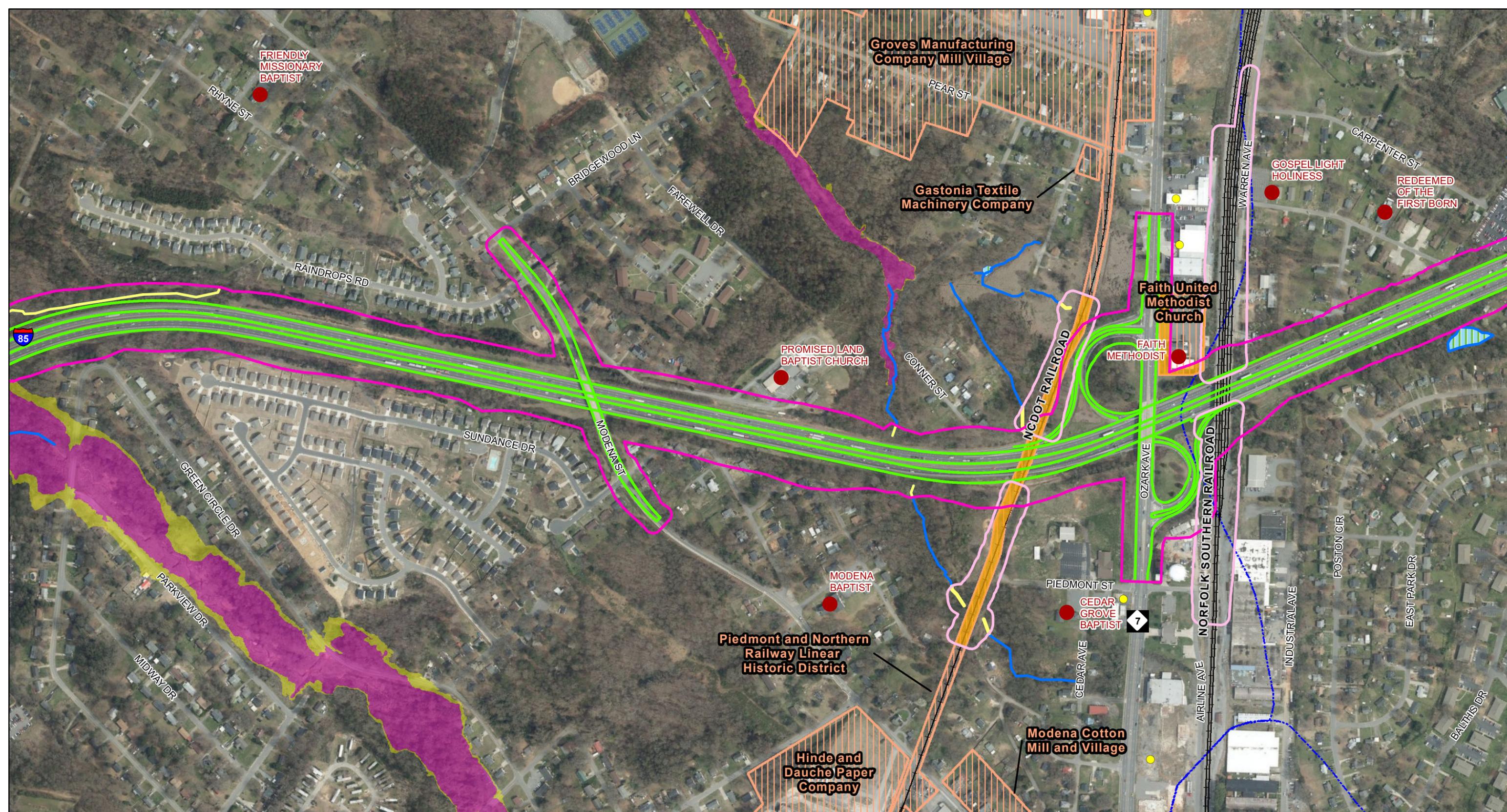
- | | | | |
|---|---------------------------------|-------------------------|------------------------------------|
| I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Preliminary Prop Edge of Travel | NCHPO Historic Boundary | Water Supply Watershed - Critical |
| U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Potential Stream Impacts | Park | Water Supply Watershed - Protected |
| U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet | Potential Wetland Impacts | Hazardous Waste Sites | Targeted Watershed |
| Railroad Slope Stake Limits plus 40 feet | Potential Historic Impacts | Places of Worship | Greenway/Blueway |
| | Potential Park Impacts | Cemetery | Railroad |
| | Delineated Streams | 500-Year Floodplain | River |
| | Delineated Wetlands | 100-Year Floodplain | |



Potential Impacts Map
Figure 2a

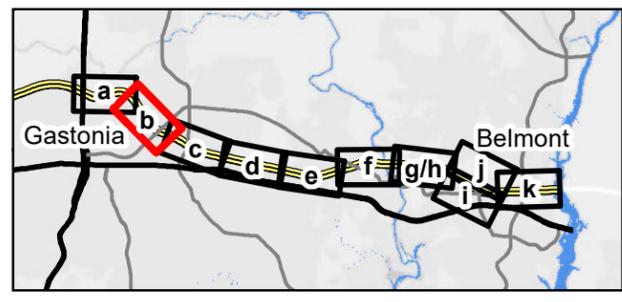
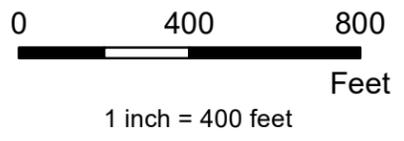
I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



Legend

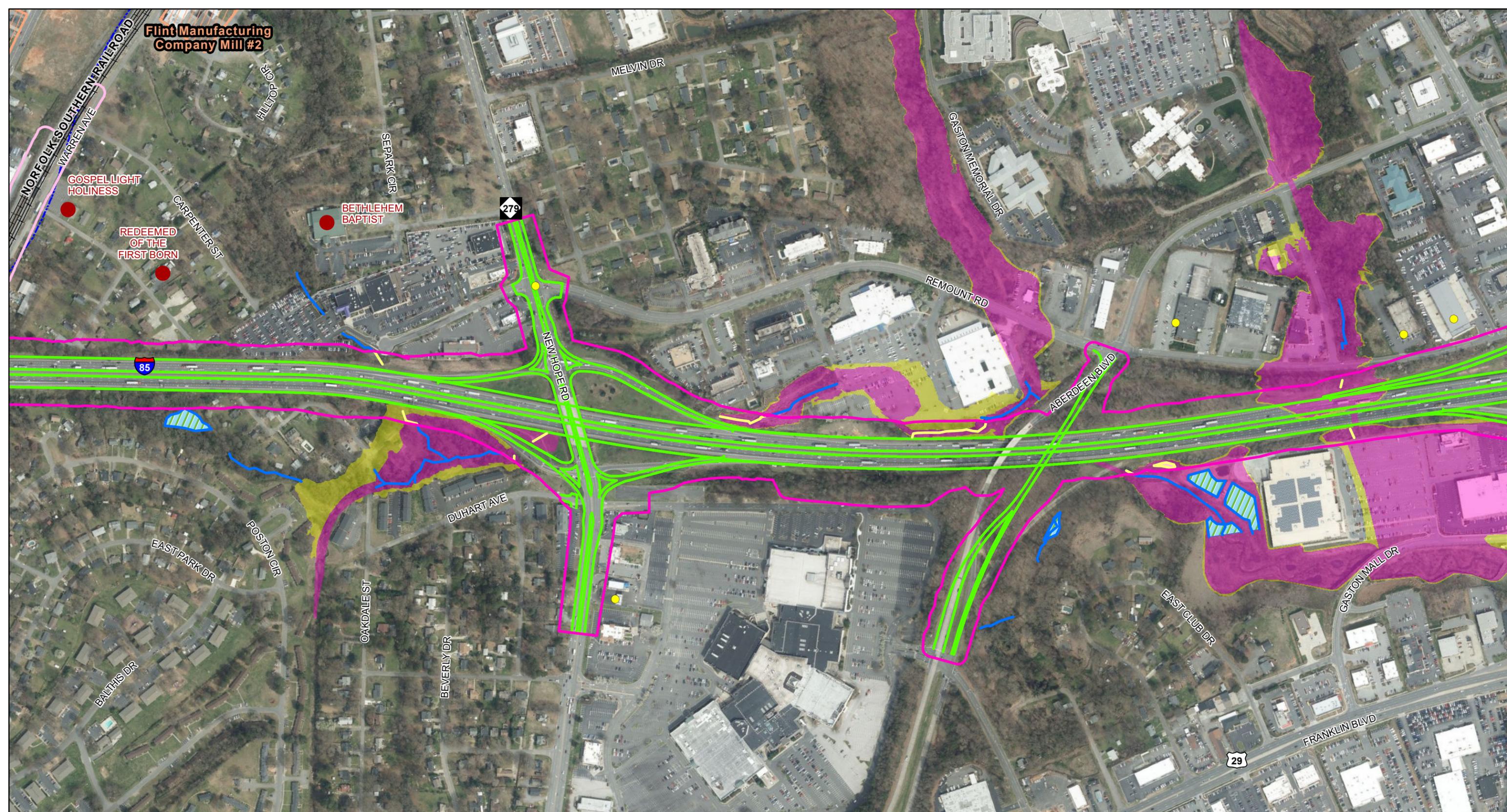
- | | | | |
|---|---------------------------------|-------------------------|------------------------------------|
| I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Preliminary Prop Edge of Travel | NCHPO Historic Boundary | Water Supply Watershed - Critical |
| U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Potential Stream Impacts | Park | Water Supply Watershed - Protected |
| U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet | Potential Wetland Impacts | Hazardous Waste Sites | Targeted Watershed |
| Railroad Slope Stake Limits plus 40 feet | Potential Historic Impacts | Places of Worship | Greenway/Blueway |
| | Potential Park Impacts | Cemetery | Railroad |
| | Delineated Streams | 500-Year Floodplain | River |
| | Delineated Wetlands | 100-Year Floodplain | |



Potential Impacts Map
Figure 2b

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gastonia County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)

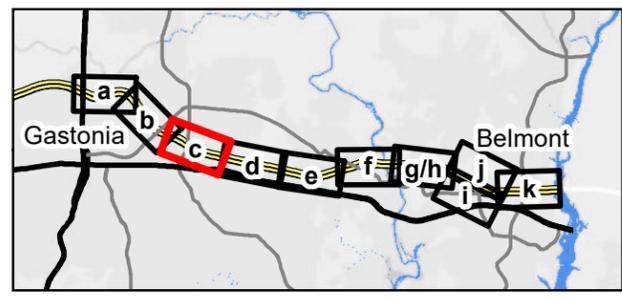
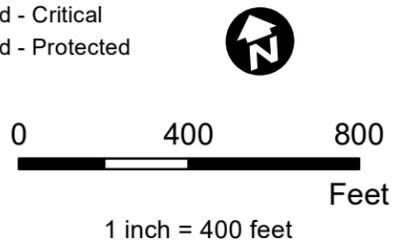


- Legend**
- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
 - Railroad Slope Stake Limits plus 40 feet

- Preliminary Prop Edge of Travel
- Potential Stream Impacts
- Potential Wetland Impacts
- Potential Historic Impacts
- Potential Park Impacts
- Delineated Streams
- Delineated Wetlands

- NCHPO Historic Boundary
- Park
- Hazardous Waste Sites
- Places of Worship
- Cemetery
- 500-Year Floodplain
- 100-Year Floodplain

- Water Supply Watershed - Critical
- Water Supply Watershed - Protected
- Targeted Watershed
- Greenway/Blueway
- Railroad
- River



Potential Impacts Map
Figure 2c

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

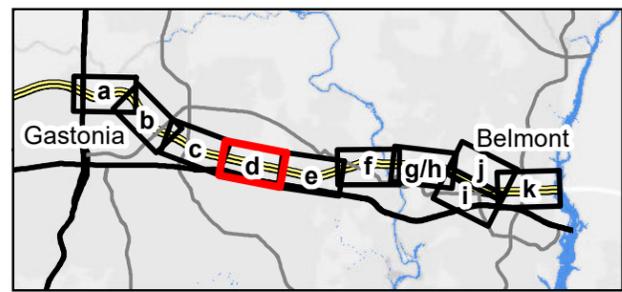
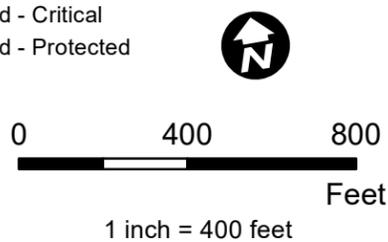
Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



**Caleb John
Lineberger House**

Legend

- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
- U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
- U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
- Railroad Slope Stake Limits plus 40 feet
- Preliminary Prop Edge of Travel
- Potential Stream Impacts
- Potential Wetland Impacts
- Potential Historic Impacts
- Potential Park Impacts
- Delineated Streams
- Delineated Wetlands
- NCHPO Historic Boundary
- Park
- Hazardous Waste Sites
- Places of Worship
- Cemetery
- 500-Year Floodplain
- 100-Year Floodplain
- Water Supply Watershed - Critical
- Water Supply Watershed - Protected
- Targeted Watershed
- Greenway/Blueway
- Railroad
- River



**Potential Impacts Map
Figure 2d**

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



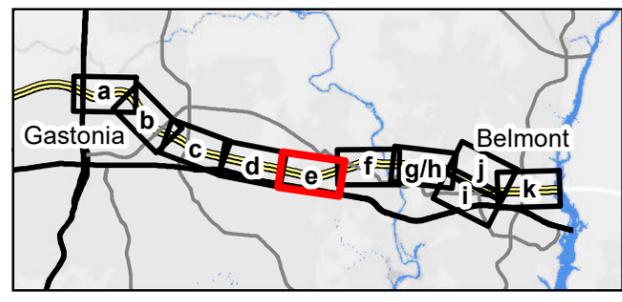
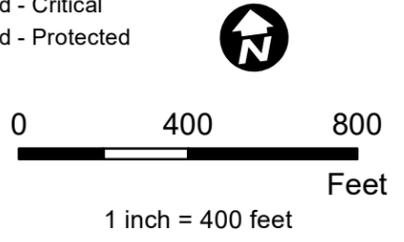
7

- Legend**
- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
 - Railroad Slope Stake Limits plus 40 feet

- Preliminary Prop Edge of Travel
- Potential Stream Impacts
- Potential Wetland Impacts
- Potential Historic Impacts
- Potential Park Impacts
- Delineated Streams
- Delineated Wetlands

- NCHPO Historic Boundary
- Park
- Hazardous Waste Sites
- Places of Worship
- Cemetery
- 500-Year Floodplain
- 100-Year Floodplain

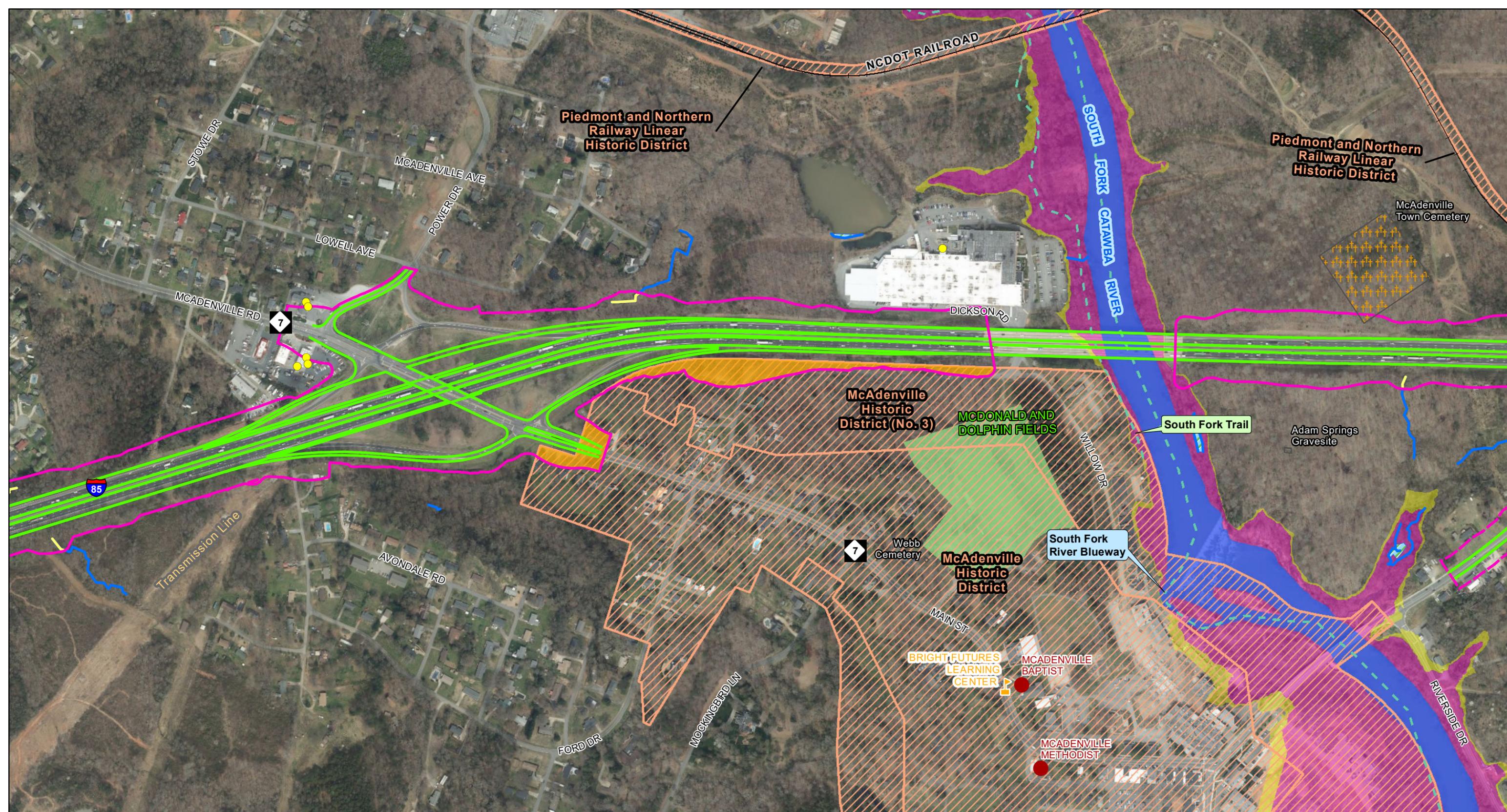
- Water Supply Watershed - Critical
- Water Supply Watershed - Protected
- Targeted Watershed
- Greenway/Blueway
- Railroad
- River



Potential Impacts Map
Figure 2e

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

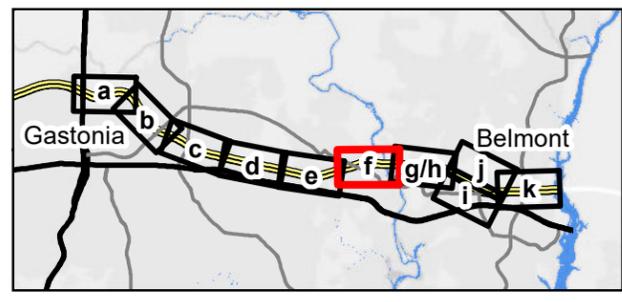
Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



- Legend**
- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
 - Railroad Slope Stake Limits plus 40 feet
 - Preliminary Prop Edge of Travel
 - Potential Stream Impacts
 - Potential Wetland Impacts
 - Potential Historic Impacts
 - Potential Park Impacts
 - Delineated Streams
 - Delineated Wetlands
 - NCHPO Historic Boundary
 - Park
 - Hazardous Waste Sites
 - Places of Worship
 - Cemetery
 - 500-Year Floodplain
 - 100-Year Floodplain
 - Water Supply Watershed - Critical
 - Water Supply Watershed - Protected
 - Targeted Watershed
 - Greenway/Blueway
 - Railroad
 - River

Scale: 0 400 800 Feet
1 inch = 400 feet

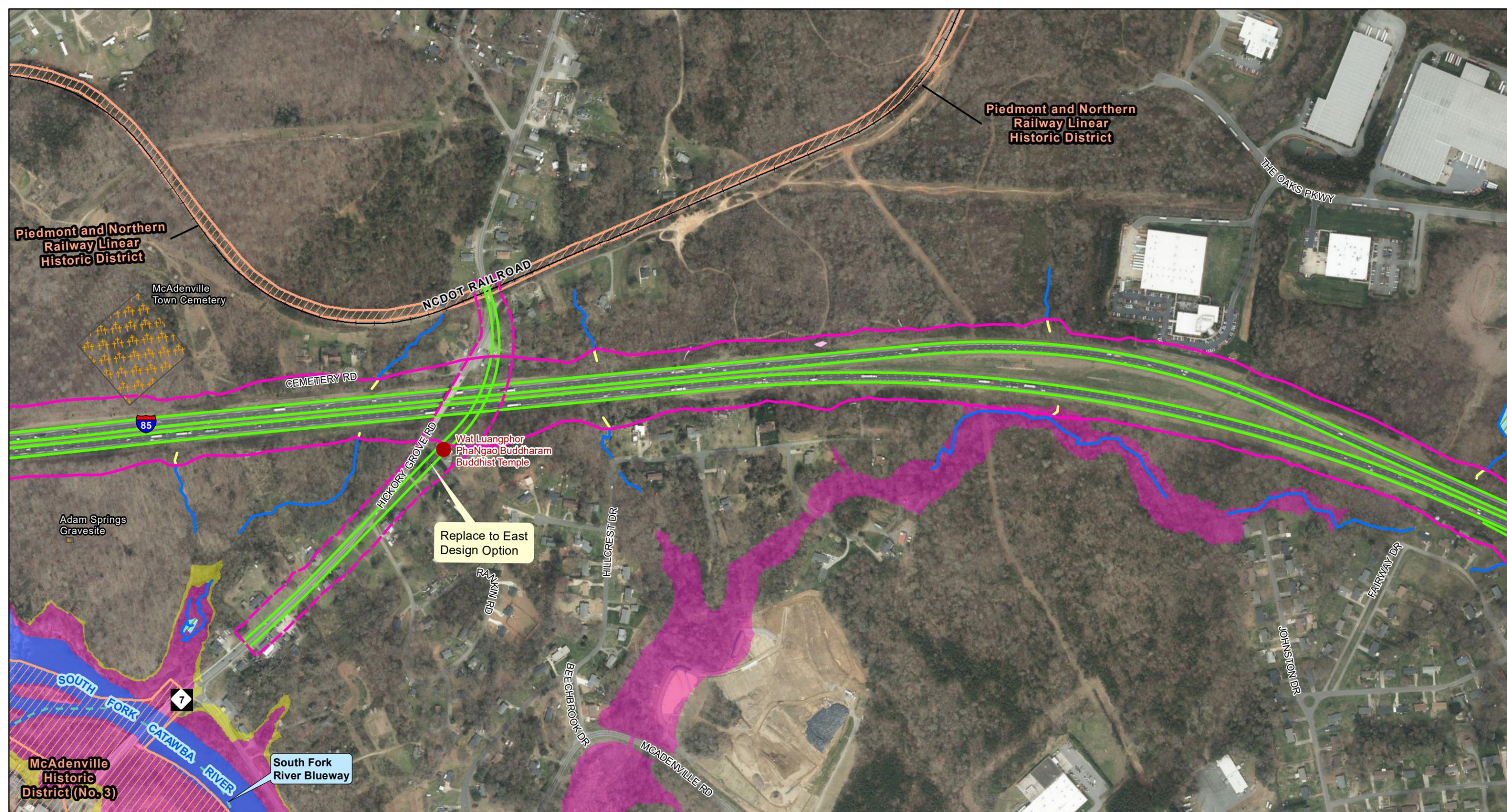
North Arrow



Potential Impacts Map
Figure 2f

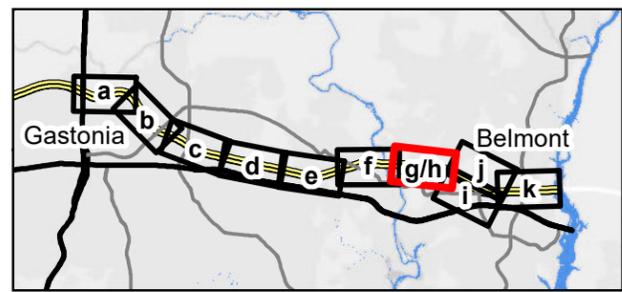
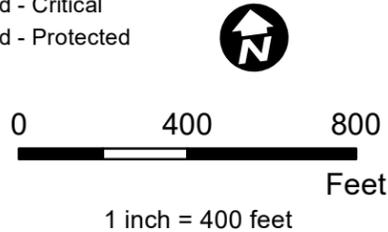
I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



Legend

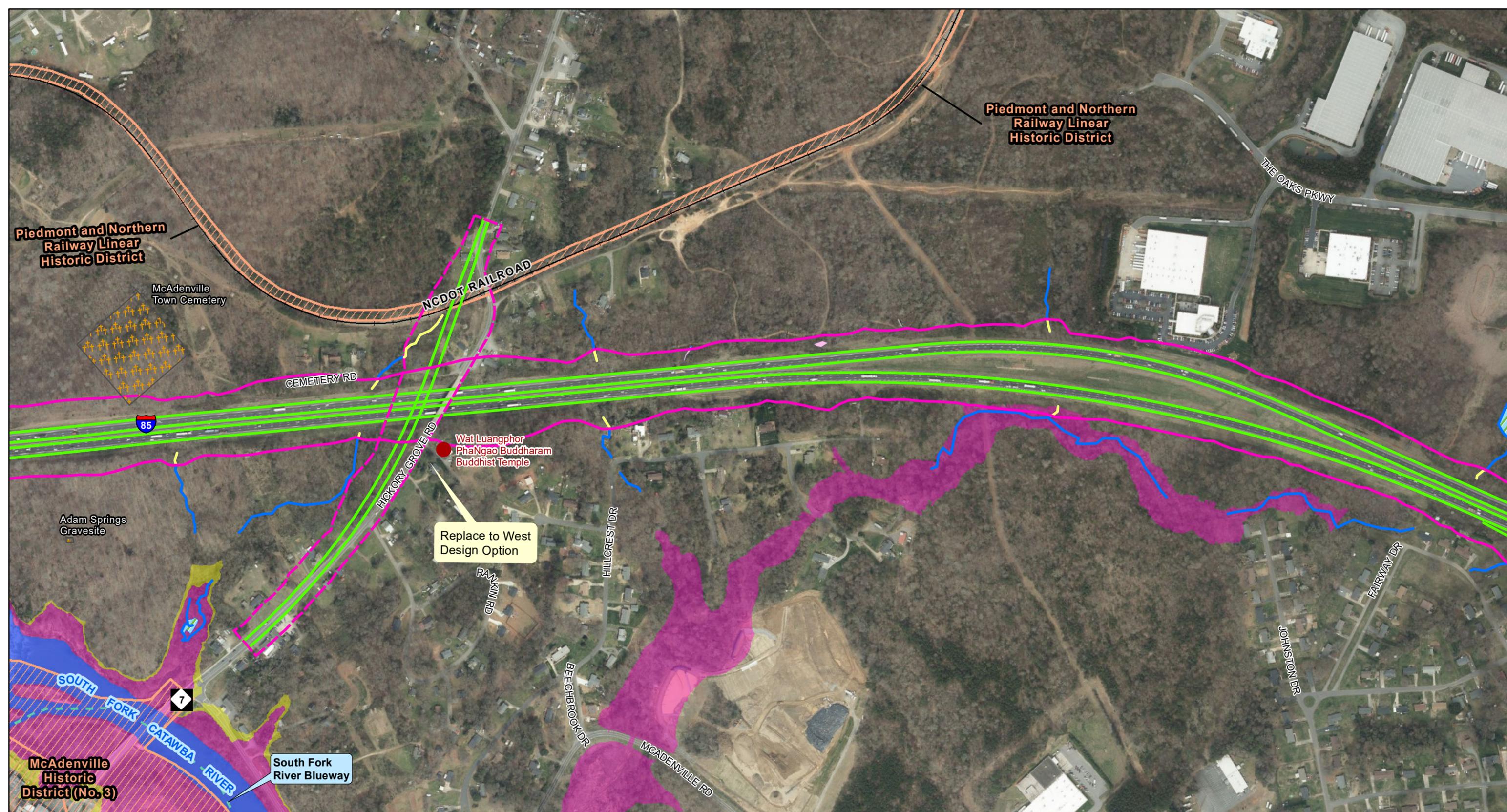
- | | | | |
|---|---------------------------------|-------------------------|------------------------------------|
| I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Preliminary Prop Edge of Travel | NCHPO Historic Boundary | Water Supply Watershed - Critical |
| U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Potential Stream Impacts | Park | Water Supply Watershed - Protected |
| U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet | Potential Wetland Impacts | Hazardous Waste Sites | Targeted Watershed |
| Railroad Slope Stake Limits plus 40 feet | Potential Historic Impacts | Places of Worship | Greenway/Blueway |
| | Potential Park Impacts | Cemetery | Railroad |
| | Delineated Streams | 500-Year Floodplain | River |
| | Delineated Wetlands | 100-Year Floodplain | |



**Potential Impacts Map
Figure 2g**

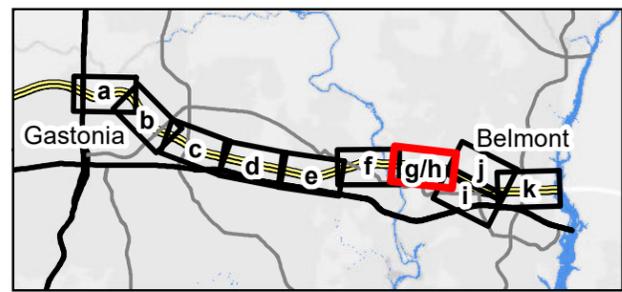
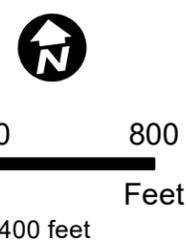
I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



Legend

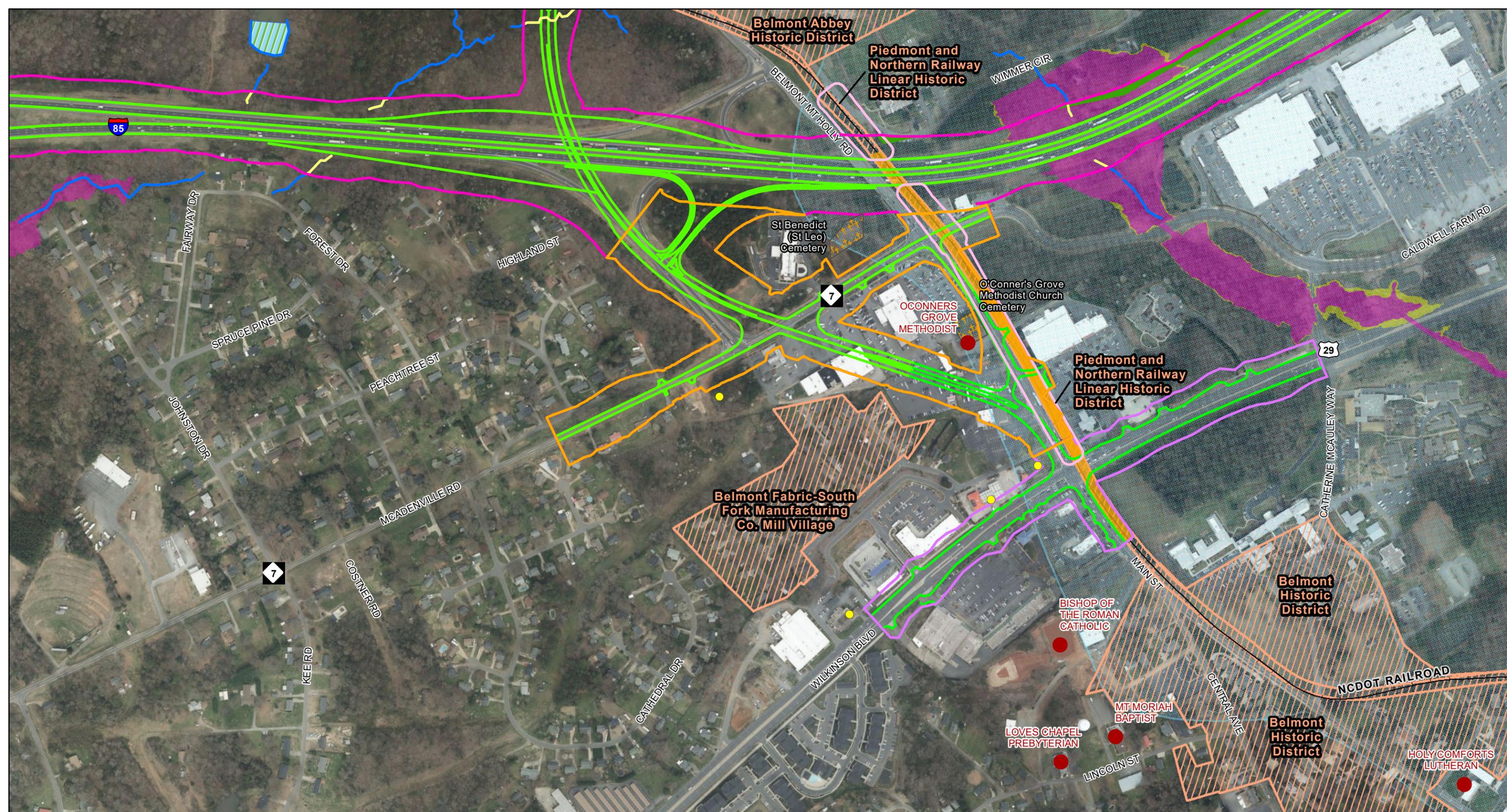
- | | | | |
|---|---------------------------------|-------------------------|------------------------------------|
| I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Preliminary Prop Edge of Travel | NCHPO Historic Boundary | Water Supply Watershed - Critical |
| U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet | Potential Stream Impacts | Park | Water Supply Watershed - Protected |
| U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet | Potential Wetland Impacts | Hazardous Waste Sites | Targeted Watershed |
| Railroad Slope Stake Limits plus 40 feet | Potential Historic Impacts | Places of Worship | Greenway/Blueway |
| | Potential Park Impacts | Cemetery | Railroad |
| | Delineated Streams | 500-Year Floodplain | River |
| | Delineated Wetlands | 100-Year Floodplain | |



Potential Impacts Map
Figure 2h

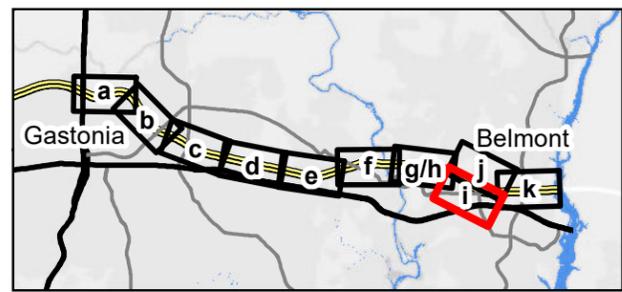
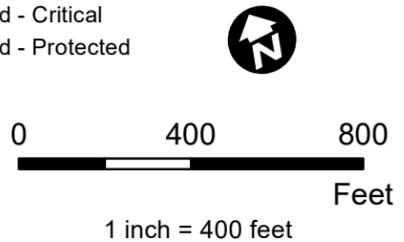
I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



Legend

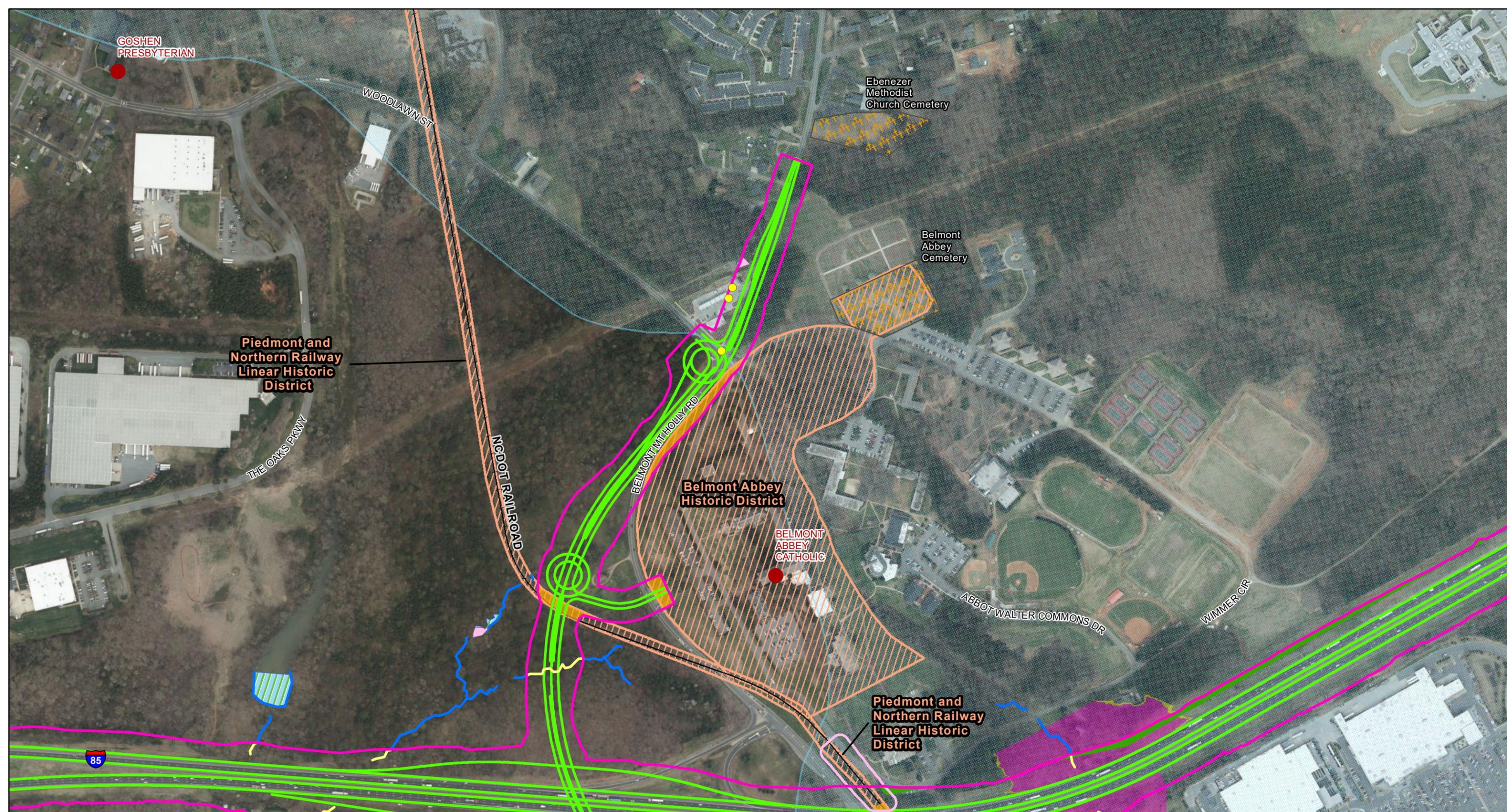
- | | | | |
|--|--|--|--|
| <ul style="list-style-type: none"> I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet Railroad Slope Stake Limits plus 40 feet | <ul style="list-style-type: none"> Preliminary Prop Edge of Travel Potential Stream Impacts Potential Wetland Impacts Potential Historic Impacts Potential Park Impacts Delineated Streams Delineated Wetlands | <ul style="list-style-type: none"> NCHPO Historic Boundary Park Hazardous Waste Sites Places of Worship Cemetery 500-Year Floodplain 100-Year Floodplain | <ul style="list-style-type: none"> Water Supply Watershed - Critical Water Supply Watershed - Protected Targeted Watershed Greenway/Blueway Railroad River |
|--|--|--|--|



Potential Impacts Map
Figure 2i

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)

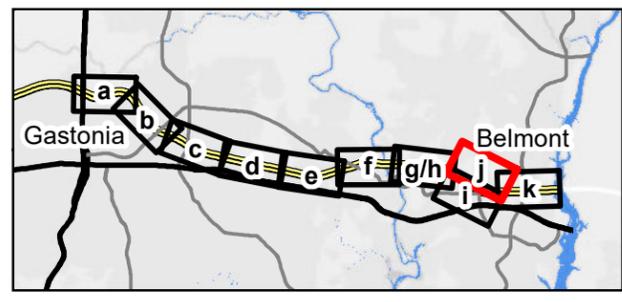
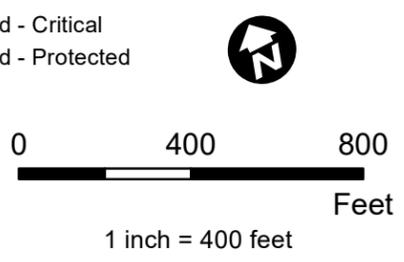


- Legend**
- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
 - Railroad Slope Stake Limits plus 40 feet

- Preliminary Prop Edge of Travel
- Potential Stream Impacts
- Potential Wetland Impacts
- Potential Historic Impacts
- Potential Park Impacts
- Delineated Streams
- Delineated Wetlands

- NCHPO Historic Boundary
- Park
- Hazardous Waste Sites
- Places of Worship
- Cemetery
- 500-Year Floodplain
- 100-Year Floodplain

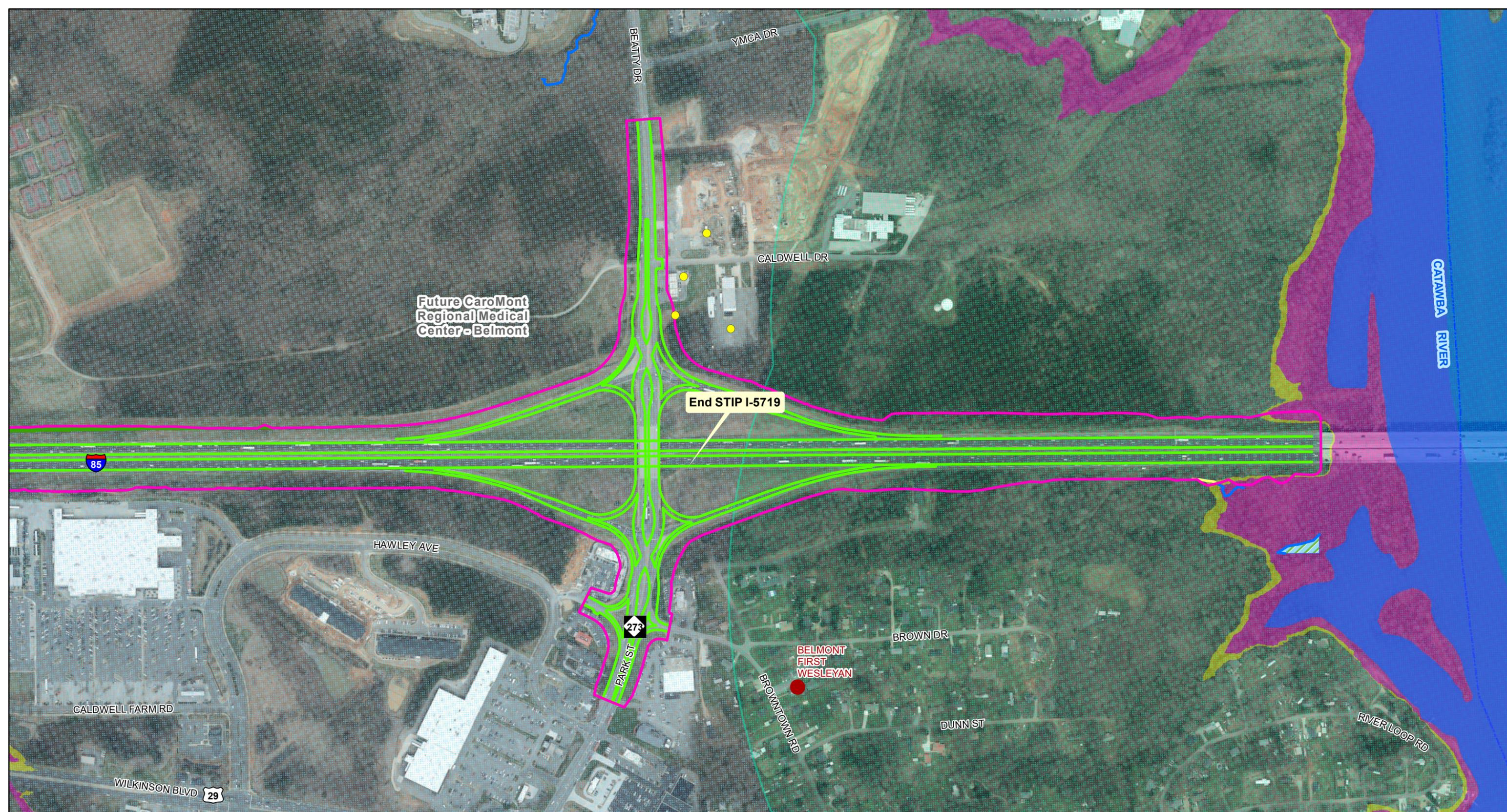
- Water Supply Watershed - Critical
- Water Supply Watershed - Protected
- Targeted Watershed
- Greenway/Blueway
- Railroad
- River



Potential Impacts Map
Figure 2j

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)



CATAWBA RIVER

Future CaroMont
Regional Medical
Center - Belmont

End STIP I-5719

BELMONT
FIRST
WESLEYAN

Potential Impacts Map
Figure 2k

I-85 Widening
STIP Projects I-5719, U-3608, U-5800
Gaston County

Source: NCDOT, NC OneMap, ATLAS, HNTB (2021)

- Legend**
- I-5719 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-3608 Chosen Preliminary Design Slope Stake Limits plus 40 feet
 - U-5800 Preliminary Design Options Slope Stake Limits plus 40 feet
 - Railroad Slope Stake Limits plus 40 feet

- Preliminary Prop Edge of Travel
- Potential Stream Impacts
- Potential Wetland Impacts
- Potential Historic Impacts
- Potential Park Impacts
- Delineated Streams
- Delineated Wetlands

- NCHPO Historic Boundary
- Park
- Hazardous Waste Sites
- Places of Worship
- Cemetery
- 500-Year Floodplain
- 100-Year Floodplain

- Water Supply Watershed - Critical
- Water Supply Watershed - Protected
- Targeted Watershed
- Greenway/Blueway
- Railroad
- River

