

DETAILED STUDY ALTERNATIVES CARRIED FORWARD

US 39 from north of Lanesville to US 45

STIP Project W-1234

North Carolina Department of Transportation
Division 13



MERGER CONCURRENCE POINT NUMBER 2

January 2021

TABLE OF CONTENTS

1	Introduction	2
1.1.	Project Description.....	2
1.2.	Cost Estimate and Merger Plan	2
2	Summary of CP 1 Purpose and Need	3
1.3.	Identified Needs.....	3
1.4.	Proposed Purpose	3
3	Project Study Area.....	3
4	Summary of Alternatives Considered	3
1.5.	No-Build Alternative.....	3
1.6.	Upgrade-Existing Alternative.....	4
5	Alternatives Eliminated	4
1.7.	Analysis of Build Alternative.....	5
6	Summary of Public Involvement.....	6
7	Merger Plan Review/Next Steps.....	6

List of Tables

Table 1. 2018-2017 STIP W-1234 Cost Estimate	Error! Bookmark not defined.
Table 2. Resource Presence within 500-foot Concept Alternative Corridor..	Error! Bookmark not defined.
Table 3. STIP Project W-1234 Schedule	Error! Bookmark not defined.

List of Figures (attached to the end of report)

- Figure 1. Project Location and Study Area Limits
Figure 2. Environmental Features Map

1 Introduction

Lead federal agency: Federal Highway Administration

Primary points of contact for the subject project are:

Agency	Name
Federal Highway Administration (FHWA)	Jane Porter
U.S. Army Corps of Engineers (USACE)	Finley Cooper
North Carolina Department of Water Resources (NCDWR)	Bruce Williams
North Carolina Department of Transportation	Carlos Young
Finley Engineering	Diana Carpenter

The purpose of this Merger Team meeting is to gain concurrence on the alternatives to carry forward for detailed study (Concurrence Point 2).

1.1. Project Description

The North Carolina Department of Transportation (NCDOT), in cooperation with the Federal Highway Administration (FHWA) is proposing to improve approximately 6 miles of US 39 from north of Lanesville to US 45 in Carter County, North Carolina, as presented in Figure 1.

The existing roadway is a four-lane, median-divided freeway with full control of access. The project is included in the 2020-2029 NCDOT State Transportation Improvement Program (STIP) as Project Number W-1234. This project includes adding lanes, reconfiguring interchanges, and other roadway design improvements.

1.2. Cost Estimate and Merger Plan

The proposed action is included in the NCDOT 2020-2029 State Transportation Improvement Program (STIP), the Mill River Metropolitan Planning Organization (MRMPO) Comprehensive Transportation Plan (September 23, 2015) and the MRMPO Long-Range Transportation Plan (2015).

The 2020-2029 STIP presents a total estimated cost of \$10,900,000 as shown in Table 1. The proposed project schedule is included in Table 2 and is based on the [Merger Plan](#). The schedule and cost estimates are draft and subject to change.

Table 1. 2020-2029 STIP W-1234 Cost Estimate

Phase	Estimated Costs
Right of Way	\$600,000
Utilities	\$300,000
Construction Total	\$10,000,000
Total	\$10,900,000

Table 2. STIP W-1234 Draft Project Schedule

Milestone	Schedule*
Concurrence Point 2	Winter 2021
Concurrence Point 2A	Spring 2021
Concurrence Point 3/4A	Spring 2021
Final Environmental Document+	Summer 2022
Begin ROW Acquisition	FY 2024
Begin Construction	FY 2026
*tentative, subject to change; +anticipate Federal EA/FONSI	

2 Summary of CP 1 Purpose and Need

1.3. Identified Needs

As concurred upon in the CP 1 Merger Meeting, the Need for this project is to improve existing and projected roadway capacity deficiencies and improve deteriorating pavement structure and substructure.

1.4. Proposed Purpose

The primary purposes of the proposed action include:

- Reduce congestion to achieve Level of Service D for all freeway segments and intersections that impact the mainline in the design year.
- Rectify the deteriorating pavement structure and substructure.
- Based on the proposed Merger Plan (enclosed), NCDOT proposes the following schedule for future Merger Meetings. The proposed project schedule is included in Table 2. The draft schedule is subject to change.

3 Project Study Area

The Project Study Area is shown in Figure 2 and there have been no changes to the study area since CP 1.

4 Summary of Alternatives Considered

A number of preliminary alternatives were developed and evaluated, including the No-Build Alternative, transportation system management alternatives, transportation demand management alternatives, mass transit alternatives, and the build alternatives. The build alternatives for the proposed project begin south of Rhudy Avenue to the intersection of US 39 and US 45.

A description of each of the alternative considered, including their ability to meet the purpose and need of the project are described below.

1.5. No-Build Alternative

The No-Build Alternative only includes minor restoration activities to ensure the safety, maintenance, and continued operation of the existing highway. It does not require additional right of way or any improvements to the highway that would generate impacts to human or natural resources. Although it

will not reduce traffic congestion or address the pavement and structure deficiencies required to meet the purpose and need of the project, the No-Build Alternative will be carried forward to provide a basis for comparison with other alternatives carried forward for detailed study for this proposed action.

1.6. Upgrade-Existing Alternative

The Upgrade-Existing Alternative included two widening options that were analyzed in the Traffic Technical Memorandum. The Traffic Technical Memorandum for 2018 and 2045 No-Build Alternatives (ABC firm, November 5, 2018) was prepared for analysis of the roadways in the Project Study Area for the base year, 2018, and the future year, 2045, using volumes presented in the Traffic Forecast (Amended) for W-1234, Carter County – Widen Future I-36 (NCDOT, August 13, 2018). Alternatives were analyzed as best-fit widening with either 8 lanes or 6 lanes.

Design Option 1A: Best-Fit Widening to 8 Lanes (variable median width)

Design Option 1A is being proposed to widen and upgrade US 39 from north of Lanesville to the intersection with US 45 as an 8-lane facility. Additional lanes are needed to address the existing and projected traffic congestion in this portion of the project. Best-fit widening will be utilized to avoid or minimize impacts to existing land uses and environmental features. While the 8-lane design option did meet the purpose and need of the proposed action, due to additional right of way acquisition and consideration of additional impacts to the human and natural environment, this design option of the upgrade existing alternative will not be carried forward as a detailed study alternative for this proposed action.

Design Option 1B: Best-Fit Widening to 6 Lanes (variable median width)

Design Option 1A is being proposed to widen and upgrade US 39 from north of Lanesville to the intersection with US 45 as an 6-lane facility. Additional lanes are needed to address the existing and projected traffic congestion in this portion of the project. Best-fit widening will be utilized to avoid or minimize impacts to existing land uses and environmental features.

5 Alternatives Eliminated

In summary, the following alternatives were eliminated from consideration and will not be carried forward for detailed study because they do not reduce existing or future traffic congestion enough to achieve Level of Service D in the design year, and/or do not address the geometric deficiencies, and/or do not address the physical condition deficiencies included in the Purpose and Need Statement for this project.

- Transportation Demand Management (TDM) Alternative
 - The TDM Alternative is not eliminating the existing traffic congestion or addressing the pavement and structure deficiencies required to meet the purpose and need of the project. Therefore, the TDM Alternative will not be carried forward as a detailed study alternative for this proposed action.
- Transportation Systems Management (TSM) Alternative
 - The TSM Alternatives do not address the pavement and structure deficiencies included in the Purpose and Need Statement for this project. Therefore, the TSM Alternative will not be carried forward as a detailed study alternative for this proposed action.
- Mass Transit Alternative

- The Mass Transit Alternative is not eliminating the existing traffic congestion or addressing the pavement and structure deficiencies to meet the purpose and need of the project. Therefore, the Mass Transit Alternative will not be carried forward as a detailed study alternative for this proposed action.
- New Location Alternatives
 - New Location Alternatives would require additional right of way to be acquired and additional impacts to human and natural resources associated with a new location project. The range of alternatives would be limited by the mountainous topography and existing land uses that occupy the region. Although New Location Alternatives would divert traffic off existing US 39, they would not address the pavement and structure deficiencies included in the Purpose and Need Statement for this project. Therefore, the New Location Alternatives will not be carried forward as a detailed study alternative for this proposed action.
- Upgrade-Parallel-Facilities Alternative
 - The ability to upgrade roads parallel to US 39 is generally limited by the existing roadway configurations, topography, access, and land use, and this alternative does not address the pavement and structure deficiencies included in the Purpose and Need Statement for this project. Therefore, the Upgrade-Parallel-Facilities Alternative will not be carried forward as a detailed study alternative for this proposed action.
- Upgrade-Existing Alternative – Best-Fit Widening to 8 lanes
 - While the 8-lane design option did meet the purpose and need of the proposed action, due to additional right of way acquisition and consideration of additional impacts to the human and natural environment, this design option of the upgrade existing alternative will not be carried forward as a detailed study alternative for this proposed action.

1.7. Analysis of Build Alternative

The centerline of the conceptual roadway alignments for the two Build Alternatives were buffered by 500 feet (i.e., 250 feet on either side) resulting in Build Alternative Corridors. All Build Alternative Corridors are contained within the preliminary study area. As design development continues, avoidance and minimization measures will be applied to the Build Alternatives within their respective corridor.

Environmental features within these corridors were quantified in GIS and tabulated by Build Alternative Corridor in Table 2. Streams and wetlands represent field delineated resources and anticipated to be verified by the USACE prior to CP 2A. The Build Alternative Corridors and the location of resources are shown on the Environmental Features Map, Figure 3.

		Alternative 1B
Length (mile)		6.5
Wetlands (acre)		1.17
Streams (feet)		287
Floodway		7
Floodplain (acre)	100-Year	8
	500-Year	0.85

	Alternative 1B
Parcels	120

6 Summary of Public Involvement

NCDOT hosted public meeting from 4:00 to 7:30 P.M. on September 10, 2020, at the Webster Elementary School in Lanesville. Ninety-six individuals recorded their attendance at the workshop. The purpose of the workshop was to introduce the project to the public, present the purpose and need and preliminary design options, and to request input about existing traffic conditions, locations of accidents, and any other information that the public would like to discuss with NCDOT. Participants viewed a slide presentation about project details, examined the project maps, talked with municipal officials and staff from NCDOT and AECOM and were provided with a Project Map and a Comment Form to record their comments, questions, and requests for more information.

Comments were received during the workshop and for a 30-day period following the workshop. The following is a summary of the number of comments received, the medium in which the comments were prepared and submitted, and a general location of where the respondents live or work.

Comment Forms received at or within 30 days of the workshop:	10
Telephone Calls to the NCDOT Hotline:	1
E-mails to NCDOT or Consultant:	2
Total number of public inquiries or comment forms received:	13

This project is generally supported by the public based primarily upon a desire to improve traffic congestion on US 39 in the study area. A majority of the respondents said that they drive US 39 on a daily basis. Some of the respondents are concerned about the existing noise levels and anticipated increases in noise volumes if the highway is widened. The comments were classified by "categories of interest." The categories of greatest interest are congestion and noise. The following is a breakdown of the number of comments received in each category.

- Acquisitions and Displacements (1)
- Traffic Congestion (8)
- Noise Impacts (4)

7 Merger Plan Review/Next Steps

Based on the proposed Merger Plan for the project, NCDOT proposes the next Merger Meeting will be CP 2A (Bridging Decisions and Alignment Review). Prior to the next Merger Meeting, NCDOT will complete the Hydraulic Planning Report (HPR). It is anticipated that the CP 2A meeting will be held in three months; Merger Team members will be notified of any changes that require a revision of this timetable.

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 2 Detailed Study Alternatives Carried Forward

US 39 from north of Lanesville to US 45. STIP Project: W-1234

The following alternatives will be carried forward for detailed study in this proposed action:

- No-Build Alternative
- Upgrade-Existing Alternative

The Merger Team has concurred on this date of January 19, 2021, on the above identified detailed study alternatives to be carried forward for STIP Project W-1234.

USACE _____

FHWA _____

USEPA _____

NCDOT _____

USFWS _____

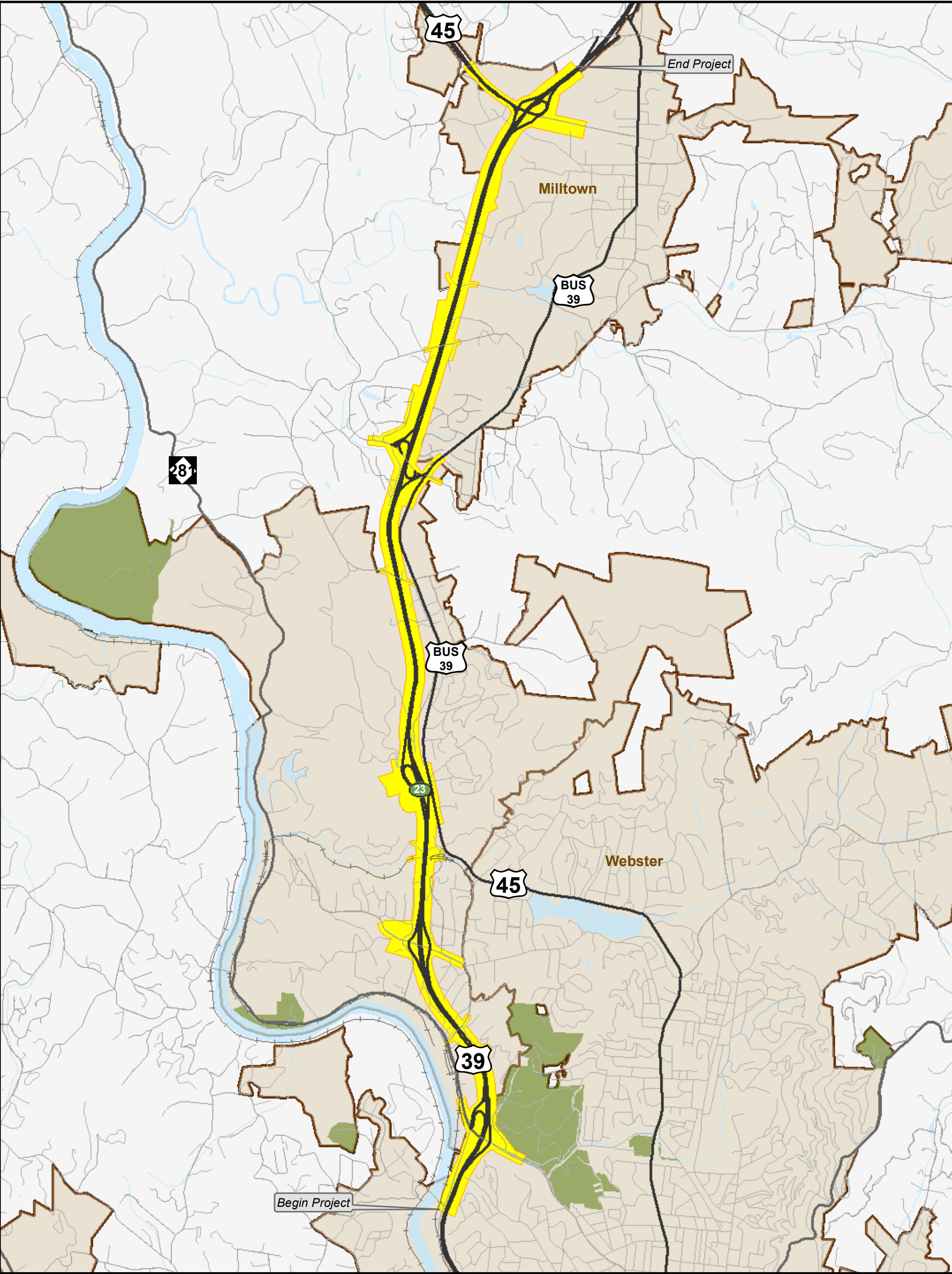
CMPO _____

NCDWR _____

SHPO _____

NCWRC _____

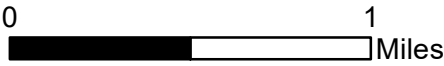
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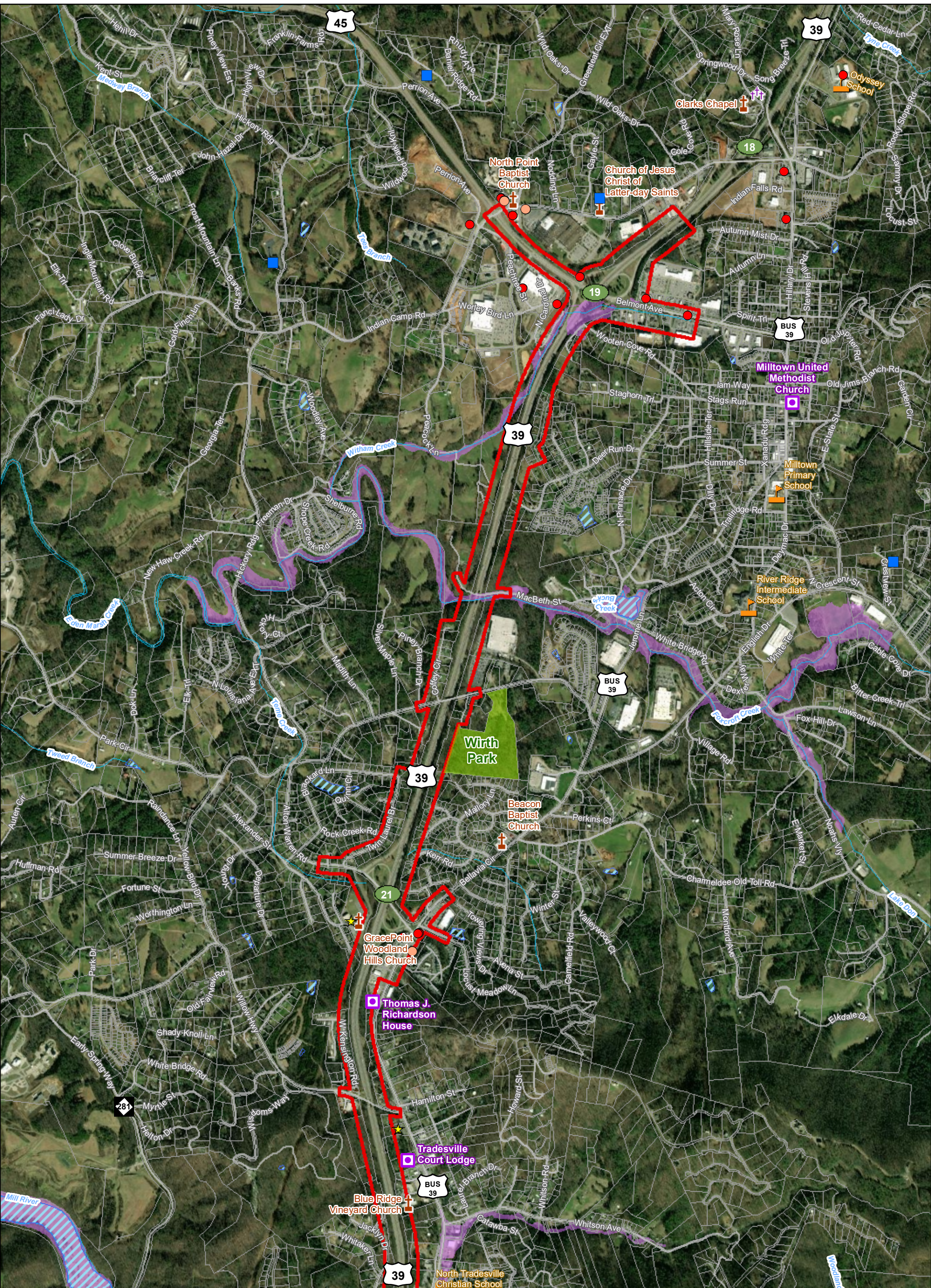



US 39 Improvements
STIP No.W-1234
Figure 1
Project Vicinity Map
December 2022

Legend

- | | |
|---|------------------|
| Study | State Owned Land |
| County | Municipal |
| Waterbody | Railroad |
| Tribal Lands - Eastern Band of Cherokee Indians | Streams/Rivers |
| Federal Land Ownership | |
























**US 39
Improvements
STIP No.W-1234**

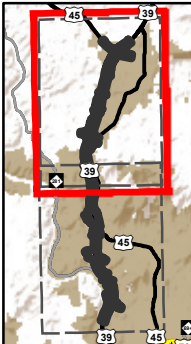
**Figure 2-A
Environmental Features**

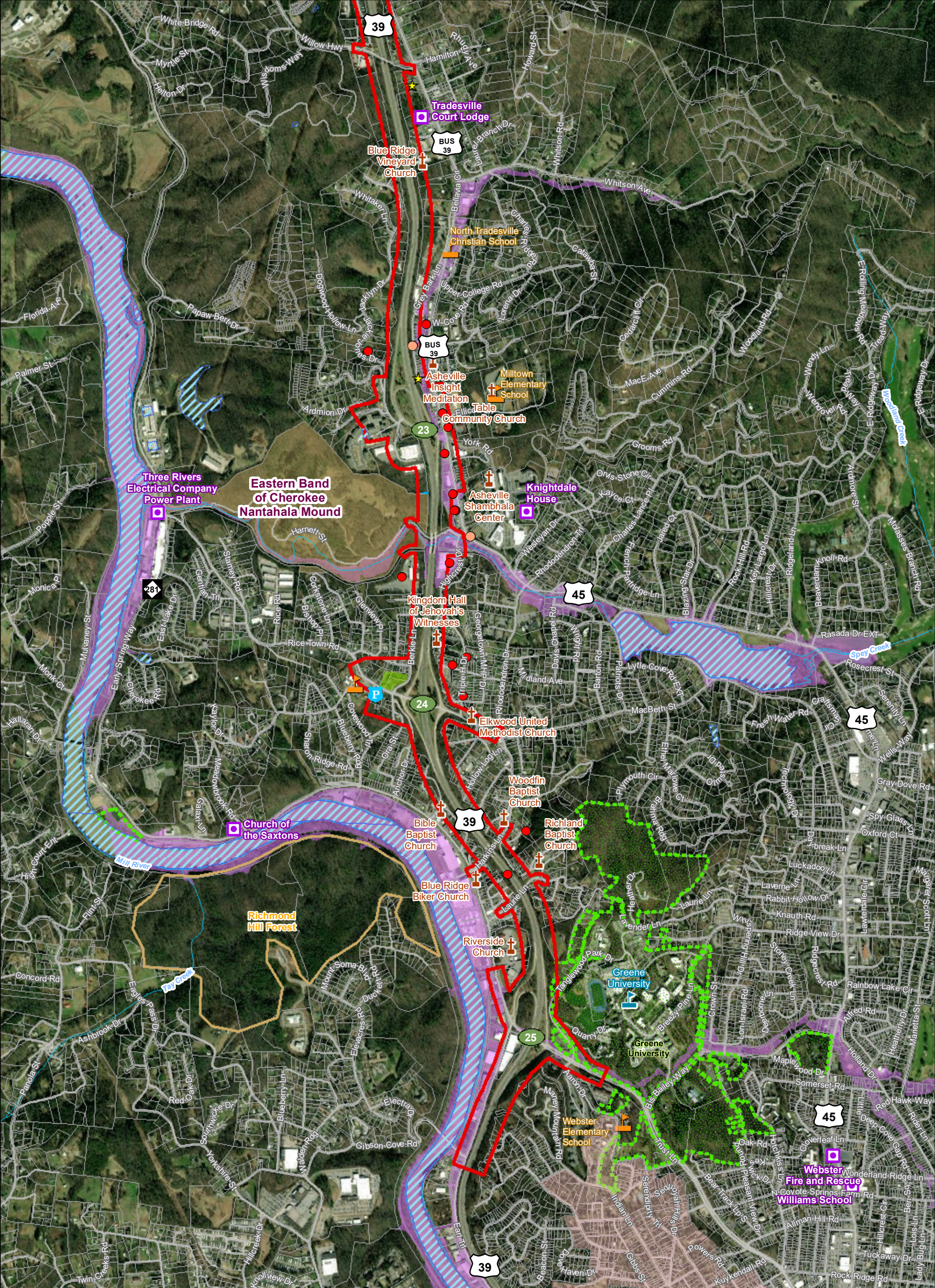
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Legend

 Study area	 Park	 Daycare
 Underground Storage Tank	 NWI Wetland	 School
 Hazardous Waste Sites	 Parcel	 Place of Worship
 Historic Site	 FEMA Floodway	 Fire Station
 Stream	 Public Water Sources	 Exit
	 Cemetery	







**US 39
Improvements
STIP No.W-1234**

**Figure 2-B
Environmental Features**

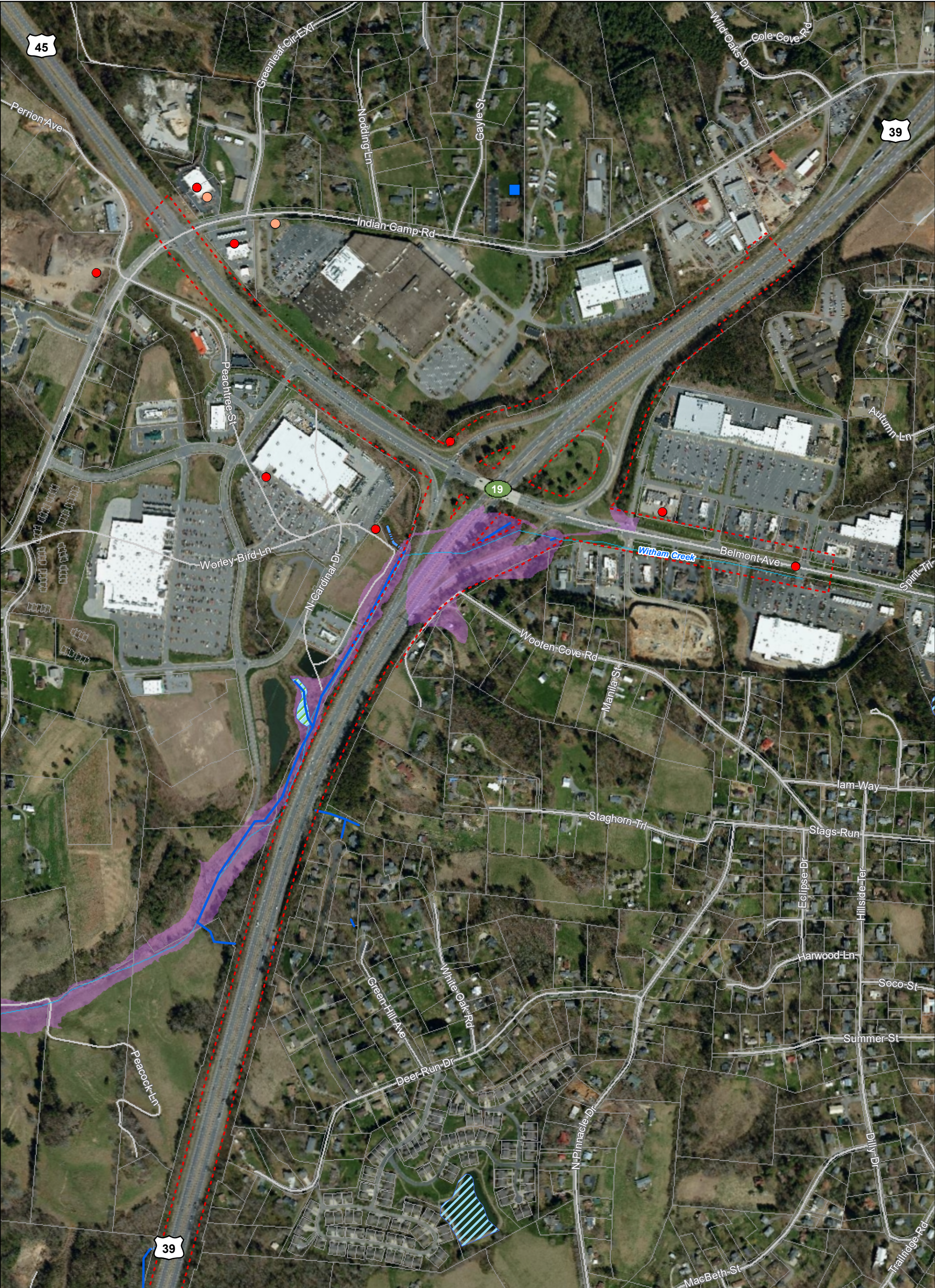
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Legend

Study area	Park	Publicly Managed	School
Underground Storage Tank	NRHP Historic District	Parcel	Place of Worship
Hazardous Waste Sites	Pond	FEMA Floodway	Fire Station
Historic Site	NWI Wetland	NHP Natural Areas	Police Station
Stream	Tribal Lands - Eastern Band of Cherokee Indians	College/Univer...	Exit
		Daycare	







**US 39
Improvements
STIP No.W-1234**


**Figure 3-A
Alternative Impacts**

0

250

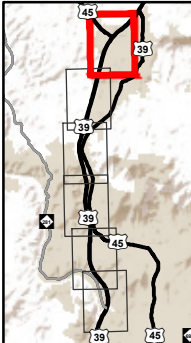
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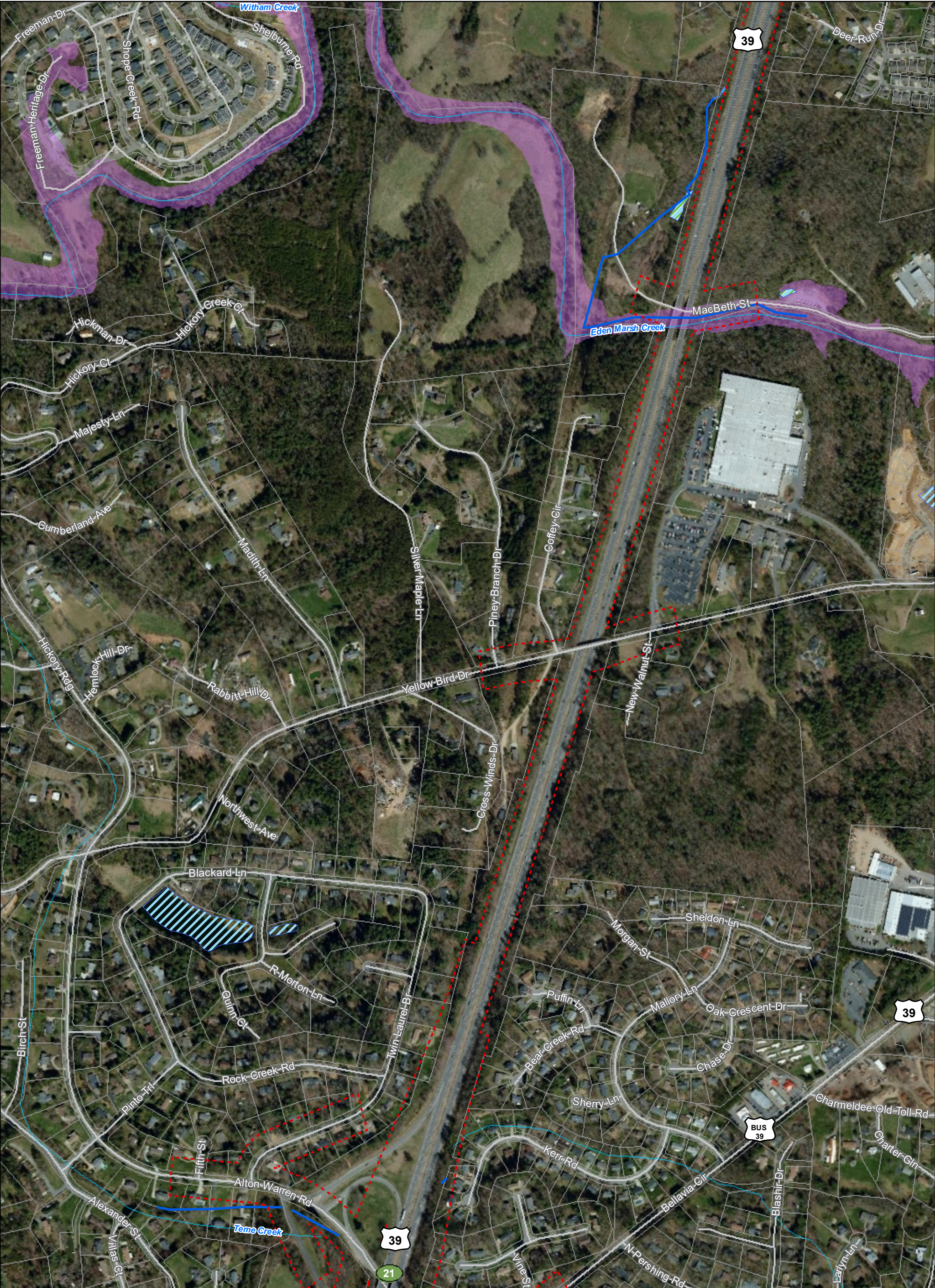
Feet




Legend

Design Option 1B	Hazardous Waste Sites	Tribal Lands - Eastern Band of Cherokee Indians	College/Univ.	Park
Delineated Intermittent Stream	Underground Storage Tank	Publicly Managed	Cemetery	Exit
Delineated Perennial Stream	Historic Site	FEMA Floodway	Daycare	
Delineated Wetland	NRHP Historic District	Public Water Sources	School	
NHD Stream	Pond	NHP Natural Areas	Place of Worship	
	NWI Wetland		Fire Station	
			Police Station	







**US 39
Improvements
STIP No.W-1234**

**Figure 3-B
Alternative Impacts**

0

250

500

Feet

Legend

Design Option 1B

Delineated Intermittent Stream

Delineated Perennial Stream

Delineated Wetland

NHD Stream

Hazardous Waste Sites

Underground Storage Tank

Historic Site

NRHP Historic District

Pond

NWI Wetland

Tribal Lands - Eastern Band of Cherokee Indians

Publicly Managed

FEMA Floodway

Public Water Sources

NHP Natural Areas

College/Univ.

Cemetery

Daycare

School

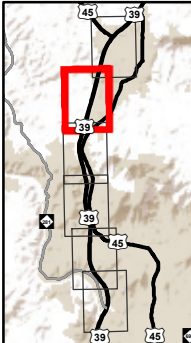
Place of Worship

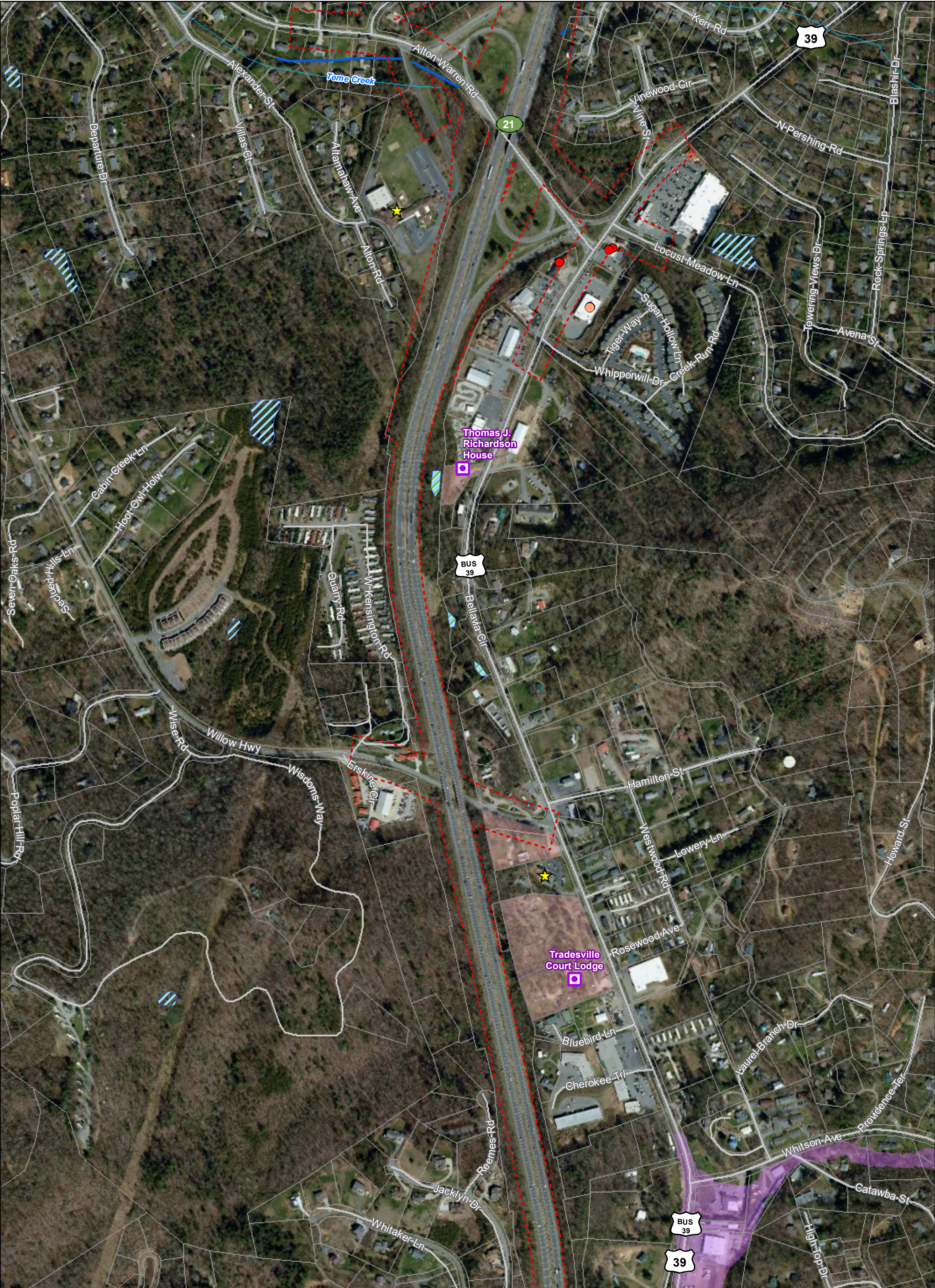
Fire Station


Police Station

Park

Exit








**US 39
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STIP No.W-1234**

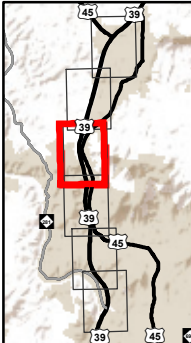
**Figure 3-C
Alternative Impacts**

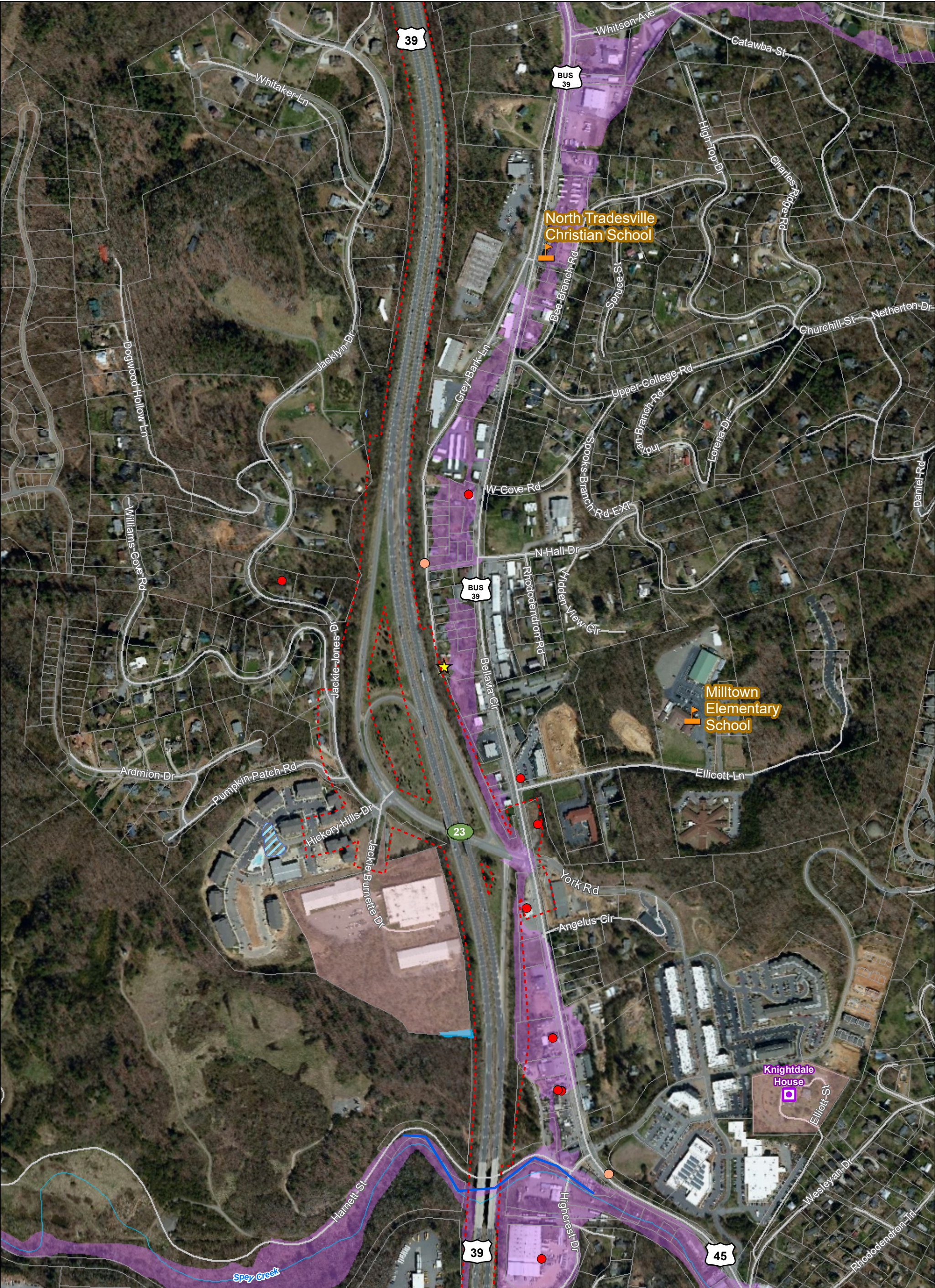
0 250 500 Feet




Legend

Design Option 1B	Hazardous Waste Sites	Tribal Lands - Eastern Band of Cherokee Indians	College/Univ.	Park
Delineated Intermittent Stream	Underground Storage Tank	Publicly Managed	Cemetery	Exit
Delineated Perennial Stream	Historic Site	FEMA Floodway	Daycare	
Delineated Wetland	NRHP Historic District	Public Water Sources	School	
NHD Stream	Pond	NHP Natural Areas	Place of Worship	
	NWI Wetland		Fire Station	
			Police Station	







**US 39
Improvements
STIP No.W-1234**


**Figure 3-D
Alternative Impacts**

0


























250

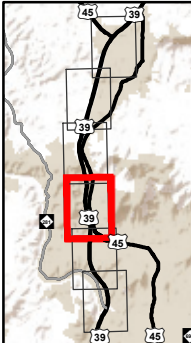
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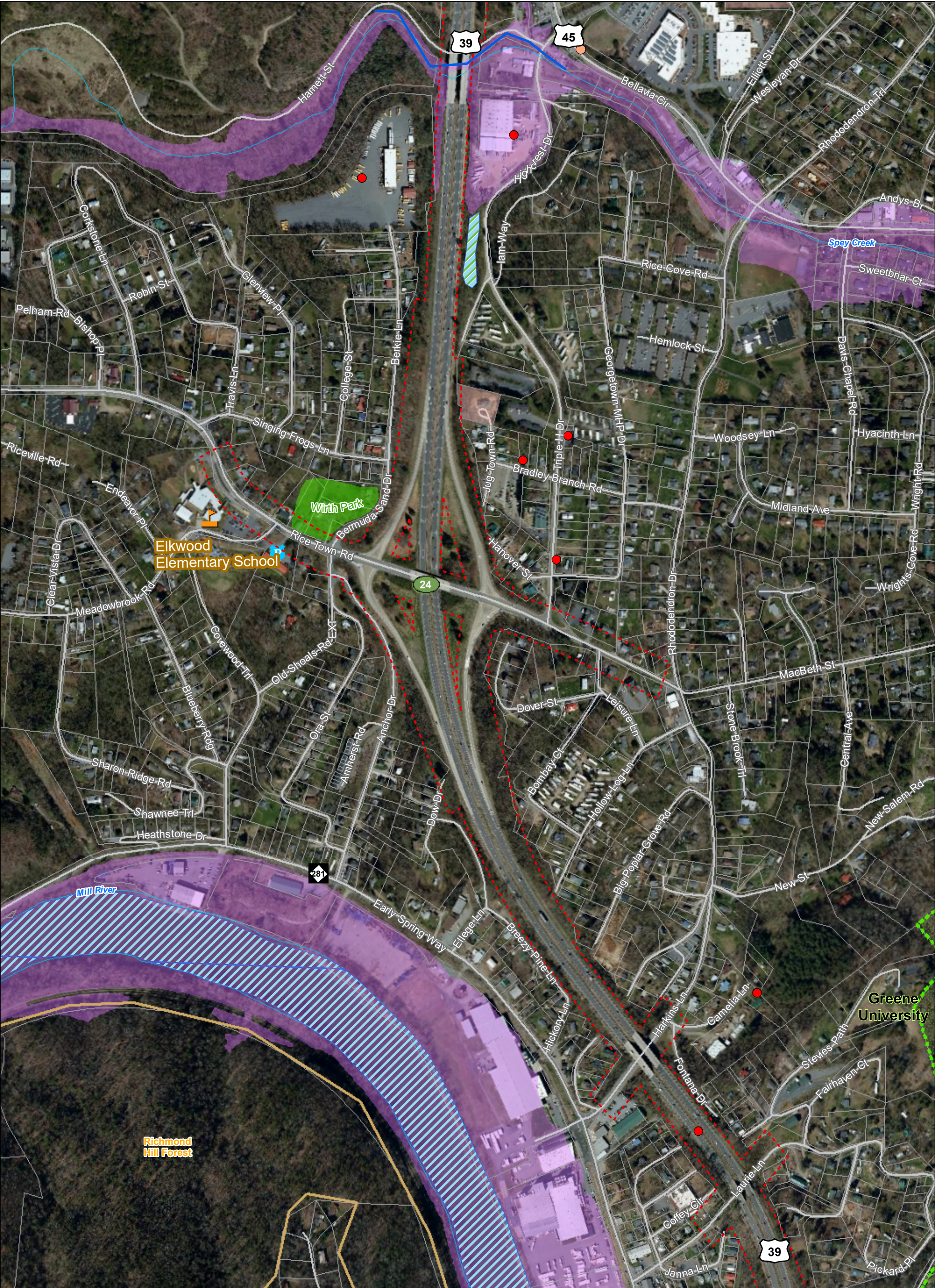
Feet




Legend

 Design Option 1B	 Hazardous Waste Sites	 Tribal Lands - Eastern Band of Cherokee Indians	 College/Univ.	 Park
 Delineated Intermittent Stream	 Underground Storage Tank	 Publicly Managed	 Cemetery	 Exit
 Delineated Perennial Stream	 Historic Site	 FEMA Floodway	 Daycare	
 Delineated Wetland	 NRHP Historic District	 Public Water Sources	 School	
 NHD Stream	 Pond	 NHP Natural Areas	 Place of Worship	
	 NWI Wetland		 Fire Station	
			 Police Station	








**US 39
Improvements
STIP No.W-1234**

**Figure 3-E
Alternative Impacts**

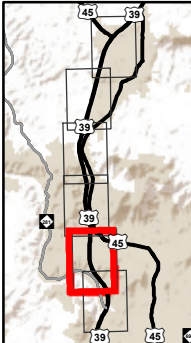
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Feet




Legend

Design Option 1B	Hazardous Waste Sites	Tribal Lands - Eastern Band of Cherokee Indians	College/Univ.	Park
Delineated Intermittent Stream	Underground Storage Tank	Publicly Managed	Cemetery	Exit
Delineated Perennial Stream	Historic Site	FEMA Floodway	Daycare	
Delineated Wetland	NRHP Historic District	Public Water Sources	School	
NHD Stream	Pond	NHP Natural Areas	Place of Worship	
	NWI Wetland		Fire Station	
			Police Station	








**US 39
Improvements
STIP No.W-1234**

**Figure 3-F
Alternative Impacts**

0 250 500 Feet



Legend

Design Option 1B	Hazardous Waste Sites	Tribal Lands - Eastern Band of Cherokee Indians	College/Univ.	Park
Delineated Intermittent Stream	Underground Storage Tank	Publicly Managed	Cemetery	Exit
Delineated Perennial Stream	Historic Site	FEMA Floodway	Daycare	
Delineated Wetland	NRHP Historic District	Public Water Sources	School	
NHD Stream	Pond	NHP Natural Areas	Place of Worship	
	NWI Wetland		Fire Station	
			Police Station	

