

LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE (LEDPA) AND AVOIDANCE AND MINIMIZATION

US 39 from north of Lanesville to US 45

STIP Project W-1234

North Carolina Department of Transportation

Division 13



MERGER CONCURRENCE POINT NUMBERS 3 AND 4A

May 2021

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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 Least Environmentally Damaging Practical Alternative (LEDPA) for CP 3 and to concur on all avoidance and minimization measures to date for CP 4A.

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 Project History 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	

1.3 Past Merger Meeting Summary

Visit the ATLAS Workbench website to view the signed CP1-CP2A Merger Team Meeting Agreement forms.

- CP 1: Merger Meeting held on June 17, 2020 - concurrence reached.
- CP2: Merger Meeting held on January 19, 2021 - concurrence reached.
- CP 2A: Merger Meeting held on April 8, 2021- concurrence reached.

2 Purpose and Need of the Project

The Need for this project is to improve existing and projected roadway capacity deficiencies and improve deteriorating pavement structure and substructure. The purpose of the project is to reduce congestion and rectify the deteriorating pavement and substructure of the existing roadway.

3 Summary of Detailed Study Alternatives Carried Forward

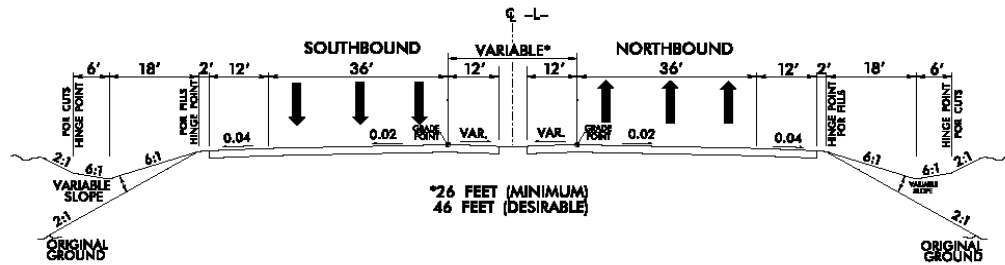
3.1 No- Build Alternative

For the No-Build Alternative, regular maintenance would be performed as needed, improvements would not be made, and the highway and right-of-way would remain in its existing configuration. The No-Build Alternative will be carried forward to serve as a basis for comparison with the Build Alternatives.

3.2 Upgrade-Existing Alternative

For the Upgrade-Existing Alternative, the following design option was carried forward for detailed study in this proposed action:

Typical Section for Design Option 1B – North of I-280 to Exist 23
(6-Lane Section with variable median width)



4 Detailed Study Alternative Impacts

Table 3 presents project impacts of the Build Alternative. Jurisdictional features are shown on Figure 2 and alternative impacts are shown on Figure 3. The impacts from streams and wetlands are defined as the slope stake limits plus a 40-foot buffer.

Table 3. Alternative Impacts Comparison Table

Resource	Alternative Impact
Length of Project (miles)	2
Railroad Crossing(s)	0
Major Hydraulic Structure(s)	1
Culvert(s) (number and length(s))	0- 0 ft
Bridge(s) (number and length)	2-380 ft
Stream(s) (linear feet)	0
Wetland(s) (acres)	0
Surface Water(s) (acres)	0
Water Supply Watersheds (acres)	0
FEMA	
Floodway (acres)	10
100-year floodplain (acres)	3
500-year floodplain (acres)	0
Threatened & Endangered Species (list impacted species and Biological Conclusion)	2 – Unresolved Northern long-eared bat (T) Gray bat (E)
River Basin Buffer(s) (acres)	Not subject
Trout Water(s) (number and feet)	none
Historic Property(ies) (number and effect)	0
Archaeological Site(s) (number)	0

Section 4(f) Resource(s) (number and determination)	1 - De minimus
Section 6(f) Resource(s) (number and acres)	0
Noise Receptors (number and number impacted)	25/ 2
Hazardous Material Sites (moderate or high risk)	1-moderate
School(s)	0
Church(es)	0
Park(s)/Recreation Area(s)	1 – Wirth Park
Greenway(s)/Trails	0
Environmental Justice / Title VI populations	0
Daycare(s)	0
Tribal Lands	0
Relocations	
Residential (number)	0
Business (number)	3
Non-Profit (number)	0
Parcel(s) (number and acres)	102/60.25
Cost Estimate	
Construction Cost	9,000,000
Utility Cost	\$600,000
Right of Way Cost	\$900,000
Mitigation Cost	\$225,000
Total Cost*	\$11,935,000

*includes \$1,210,000 in prior year costs.

5 Preferred Alternative/LEDPA

The recommended Preferred Alternative/LEDPA is the Best-Fit Widening to 6 Lanes (variable median width).

6 Concurrent Point 4A – Avoidance and Minimization

Avoidance and minimization measures (AMMs) have been undertaken throughout development of the W-1234 project. All avoidance and minimization measures for all resources are documented using the Avoidance and Minimization Measures Tracker on the W-1234 project's Connect SharePoint site. The following avoidance and minimization measures have been incorporated and/or agreed upon to date:

6.1 Planning Phase and Merger Screening and Concurrence Point 1

- The study area does not extend into Mill River as NCDOT has determined that the roadway alignment will be shifted away from the river where necessary to improve horizontal and vertical alignment.
- The study area has been minimized to avoid impacts to the Mill River where it is adjacent to the roadway. The study area is sized to accommodate an improvement of Riverside Drive on

existing alignment where possible and realignment where necessary to bring the horizontal and vertical alignment up to current design standards.

- The 2016 Feasibility Study evaluated a new location concept and found it to have substantial additional impacts to the human and natural environment when compared to the proposed upgrade of the existing alignment.
- The Feasibility Study analyzed three concepts:
 - Concept 1 – Minor upgrades and improvements using 3R guidelines
 - Determined this does not meet purpose and need
 - Concept 2 – Upgrade the road to Major Collector design standards
 - Meets purpose and need and had fewer impacts and was less costly than Concept 3
 - Concept 3 – Upgrade the road to Principal Arterial design standards
 - Required the road to be realigned on new location, resulting in higher residential relocations and a higher cost.

Therefore, NCDOT recommended Concept 2 be carried forward, which includes adjustments to the horizontal and vertical alignment while retaining current alignment to the extent feasible.

6.2 Concurrence Point 2

All Build Alternative avoid impacts to the Mill River.

6.3 Concurrence Point 2A

Slopes in jurisdictional areas will be no less than 2:1

6.4 Concurrence Point 3

No new Avoidance and Minimization Measures were agreed to at this point.

6.5 Concurrence Point 4A

A local ditch section will be used on Early Trail to reduce impacts, instead of the standard, hinged arterial ditch for a roadway of this volume and classification. Using a 6:1 ditch frontslope results in a narrower clear zone which allows for use of a 2:1 backslope.

7 Merger Plan Review/Next Steps

Based on the proposed Merger Plan for the project, NCDOT proposes the next Merger Meeting will be CP4B after the signing of the final environmental document.

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 3 Least Environmentally Damaging Practical Alternative (LEDPA)

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

The Merger Team has concurred on this date of May 19, 2021, that a best widening alternative to six lanes is the LEDPA for STIP Project W-1234.

USACE _____

FHWA _____

USEPA _____

NCDOT _____

USFWS _____

CMPO _____

NCDWR _____

SHPO _____

NCWRC _____

EBCI _____

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 4A Avoidance and Minimization

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

The Merger Team has concurred on this date of May 19, 2021, on the on the following avoidance and minimization efforts to date for STIP Project W-1234.

Planning Phase and Merger Screening and Concurrence Point 1

- The study area does not extend into Mill River as NCDOT has determined that the roadway alignment will be shifted away from the river where necessary to improve horizontal and vertical alignment.
- The study area has been minimized to avoid impacts to the Mill River where it is adjacent to the roadway. The study area is sized to accommodate an improvement of Riverside Drive on existing alignment where possible and realignment where necessary to bring the horizontal and vertical alignment up to current design standards.
- The 2016 Feasibility Study evaluated a new location concept and found it to have substantial additional impacts to the human and natural environment when compared to the proposed upgrade of the existing alignment.
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Therefore, NCDOT recommended Concept 2 be carried forward, which includes adjustments to the horizontal and vertical alignment while retaining current alignment to the extent feasible.

Concurrence Point 2

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Concurrence Point 2A

- Slopes in jurisdictional areas will be no less than 2:1

Concurrence Point 3

No new Avoidance and Minimization Measures were agreed to at this point.

Concurrence Point 4A

- A local ditch section will be used on Early Trail to reduce impacts, instead of the standard, hinged arterial ditch for a roadway of this volume and classification. Using a 6:1 ditch frontslope results in a narrower clear zone which allows for use of a 2:1 backslope.

USACE _____

FHWA _____

USEPA _____

NCDOT _____

USFWS _____

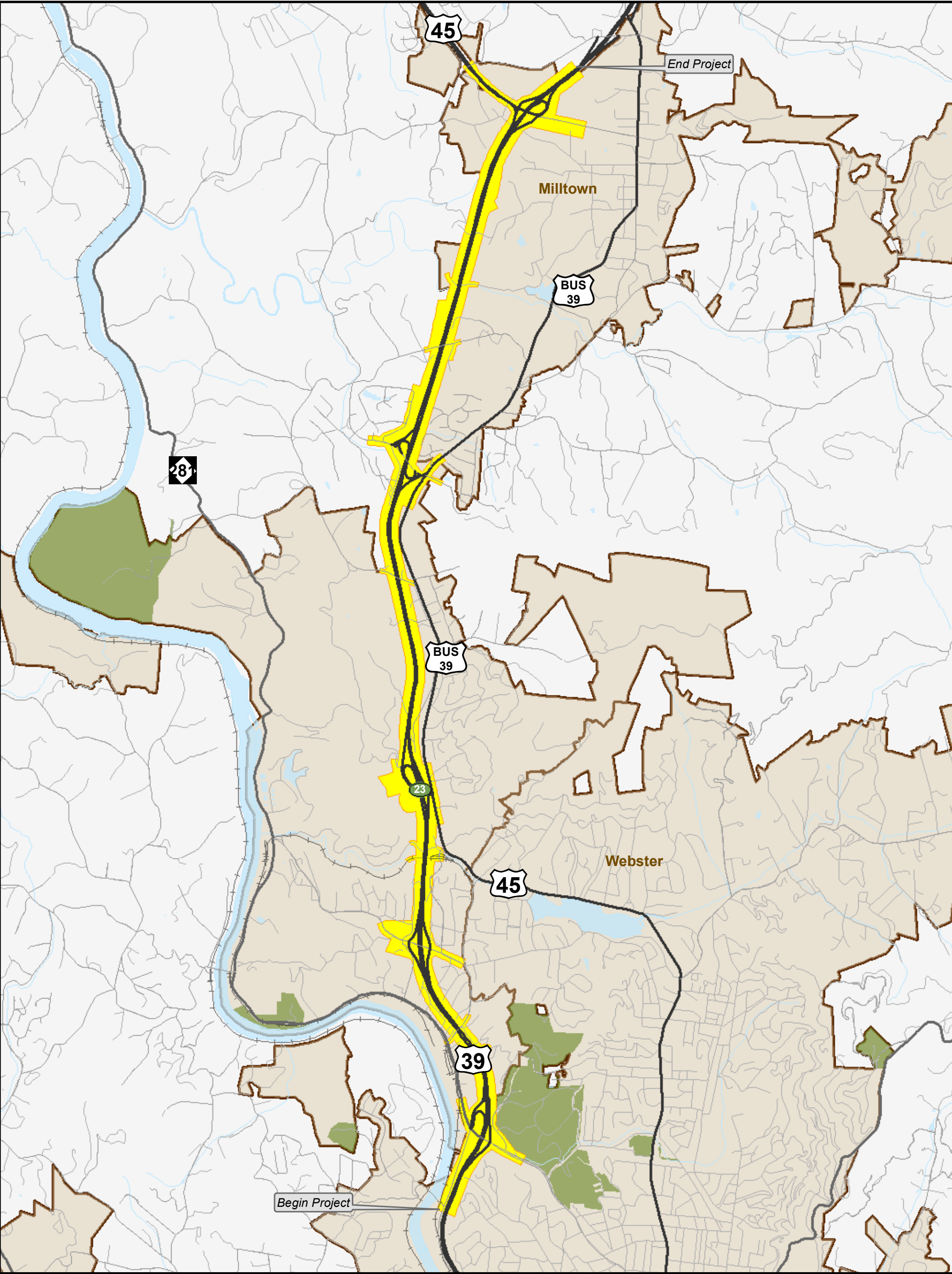
CMPO _____

NCDWR _____

SHPO _____

NCWRC _____

EBCI _____



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

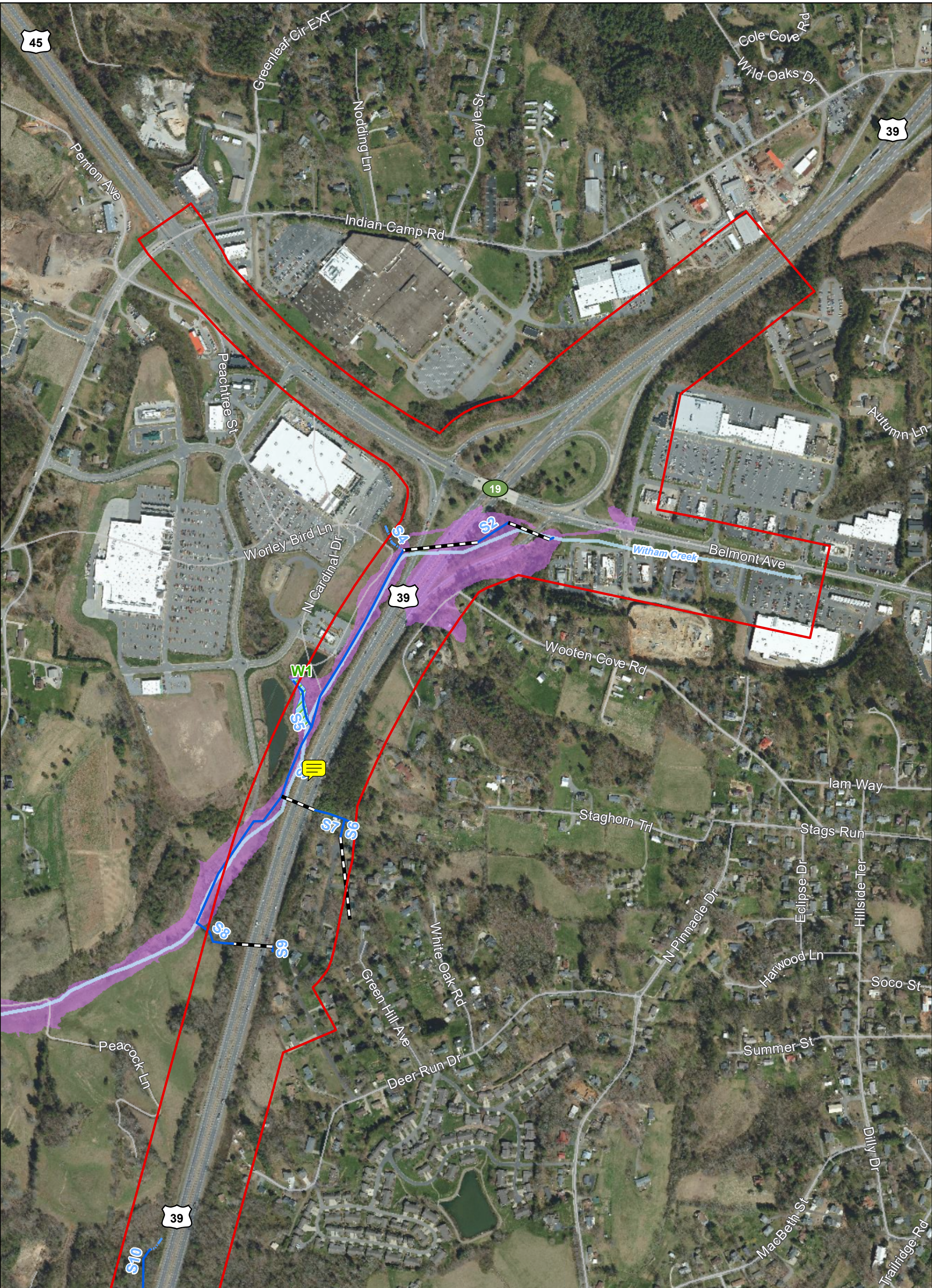
**Figure 1
Project Vicinity Map**
December 2022


Legend

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

0 1
Miles
















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

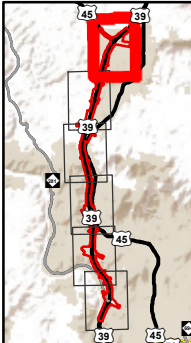
**Figure 2-A
Jurisdictional Features**

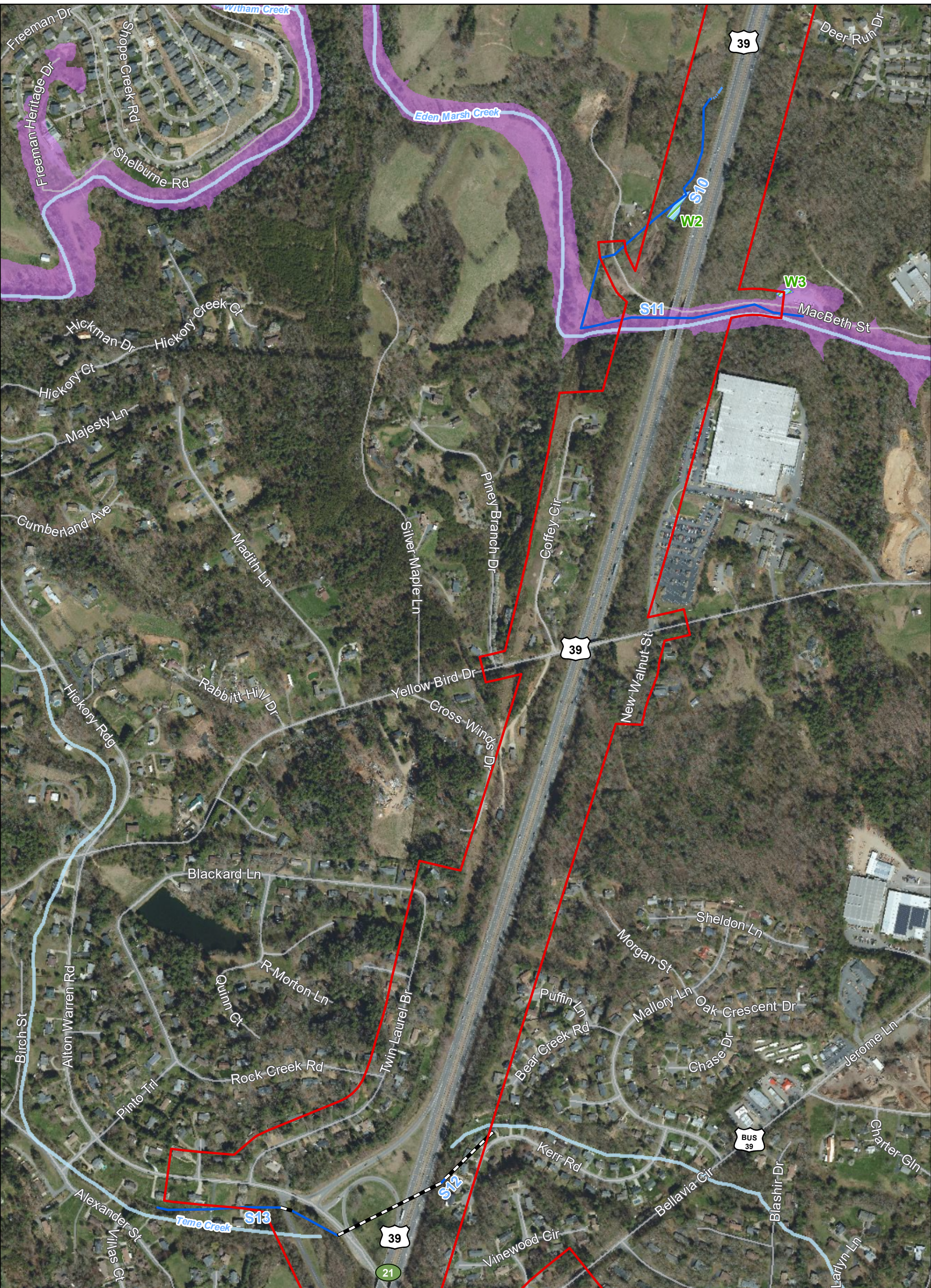
0 250 500 Feet




Legend

	Exit		Delineated Perennial Stream
	Study Area		Delineated Wetland
	Culvert		NHD Stream
	Delineated Intermittent Stream		FEMA Floodway
















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

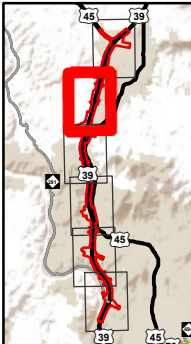
**Figure 2-B
Jurisdictional Features**

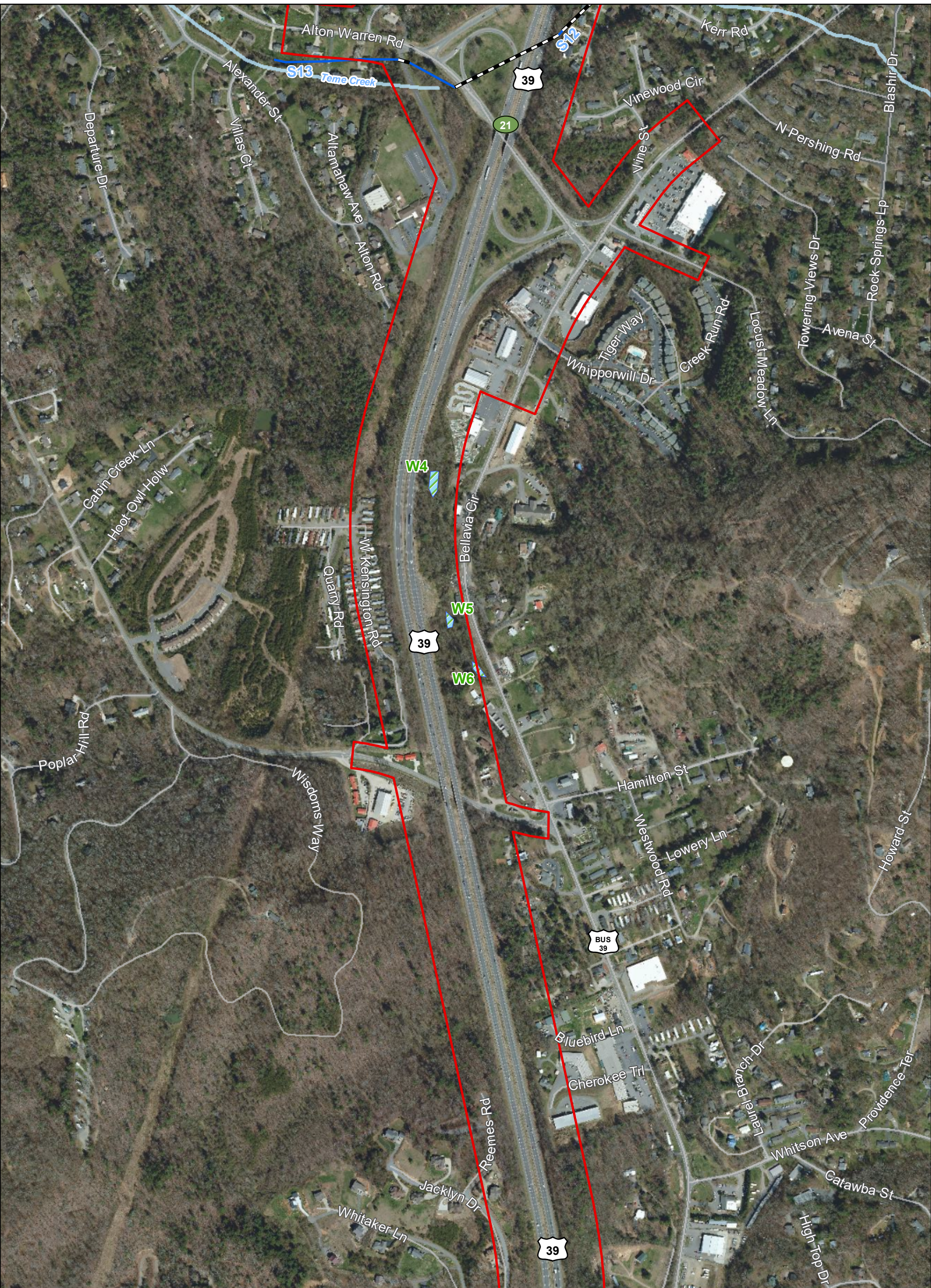
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Legend

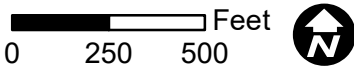
	Exit		Delineated Perennial Stream
	Study Area		Delineated Wetland
	Culvert		NHD Stream
	Delineated Intermittent Stream		FEMA Floodway





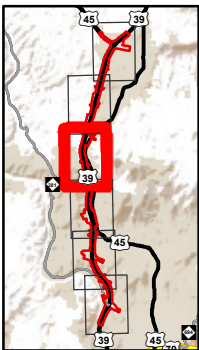
**US 39
Improvements
STIP No.W-1234**

**Figure 2-C
Jurisdictional Features**




Legend

- | | | | |
|--|-----------------------------|--|--------------------|
| | Exit | | Delineated Wetland |
| | Study Area | | NHD Stream |
| | Culvert | | |
| | Delineated Perennial Stream | | |







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STIP No.W-1234**


**Figure 2-D
Jurisdictional Features**

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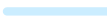




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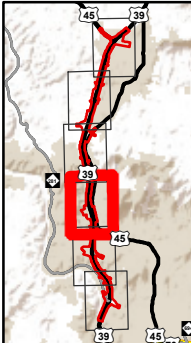
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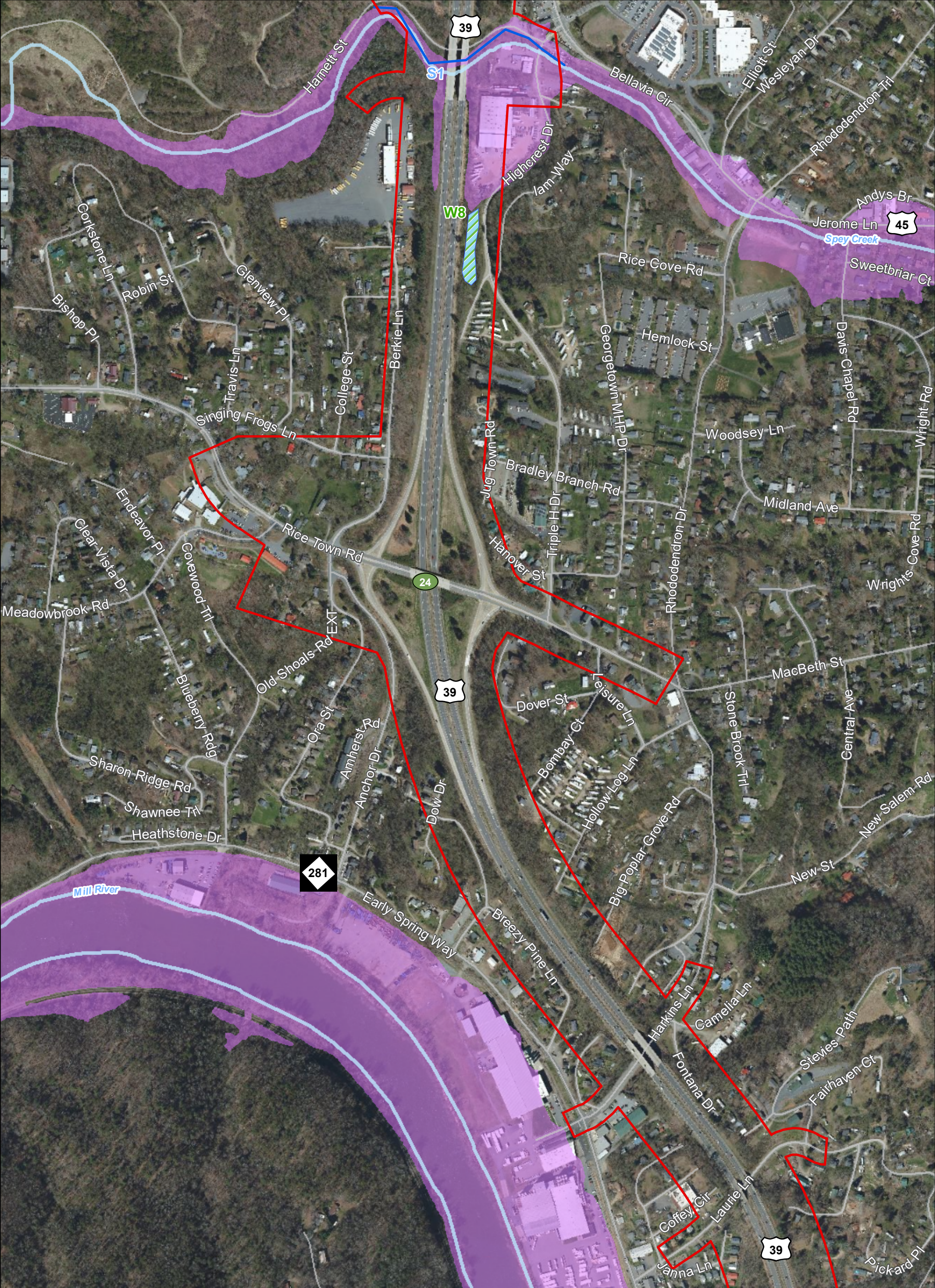
Feet




Legend

	Exit		NHD Stream
	Study Area		FEMA Floodway
	Delineated Perennial Stream		
	Delineated Wetland		








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STIP No.W-1234**

**Figure 2-E
Jurisdictional Features**


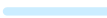




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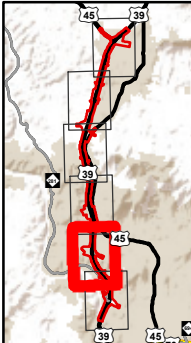
250

500




Legend

	Exit		NHD Stream
	Study Area		FEMA Floodway
	Delineated Perennial Stream		
	Delineated Wetland		







US 39
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STIP No.W-1234


Figure 2-F
Jurisdictional Features

0





250

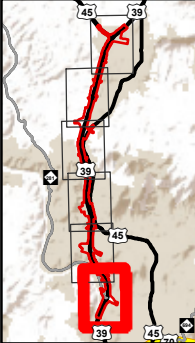
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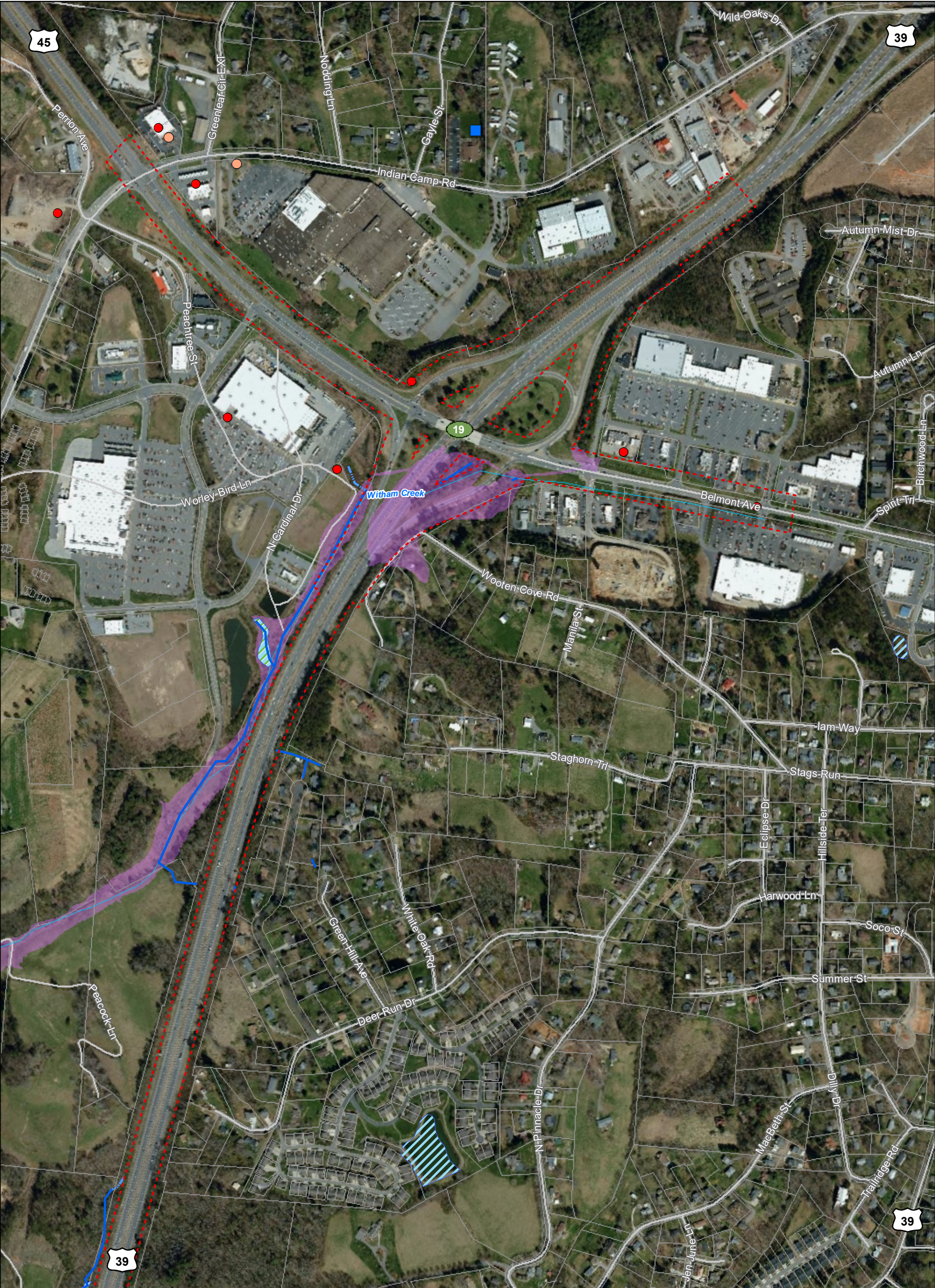
Feet




Legend

-  Exit
-  Study Area
-  NHD Stream
-  FEMA Floodway








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


























**Figure 3-1
Preferred Alternative**

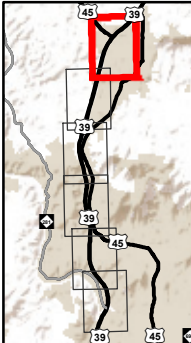
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Feet




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
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**Figure 3-4
Preferred Alternative**

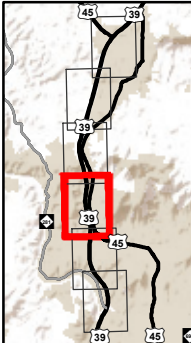
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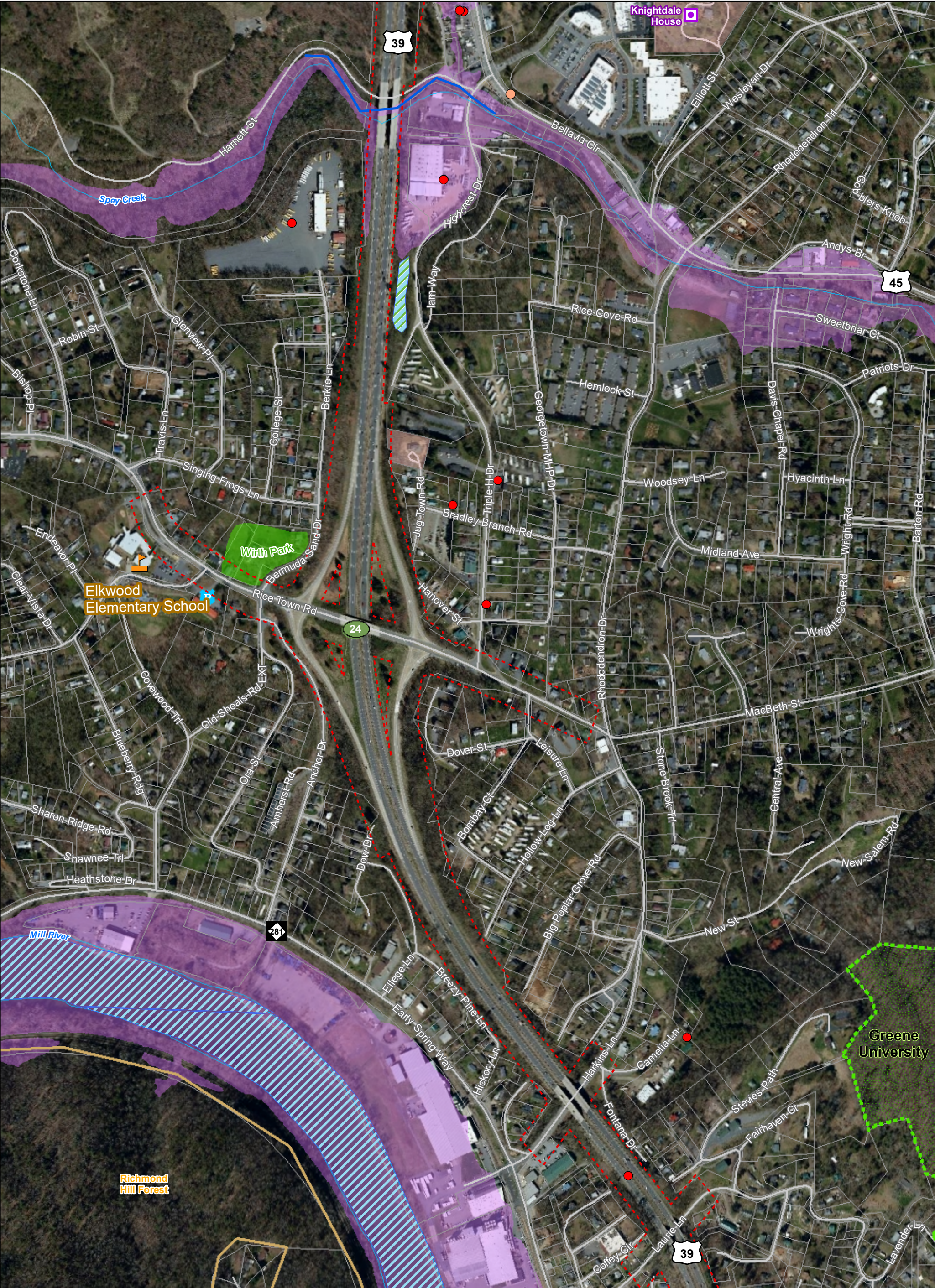
Feet




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	 School
 Delineated Wetland	 NRHP Historic District	 Public Water Sources	 Place of Worship	 Fire Station
 NHD Stream	 Pond	 NHP Natural Areas	 Police Station	
	 NWI Wetland			








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STIP No.W-1234**


























**Figure 3-5
Preferred Alternative**

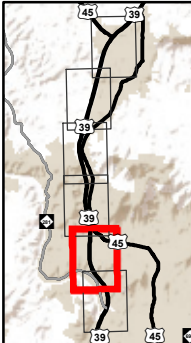
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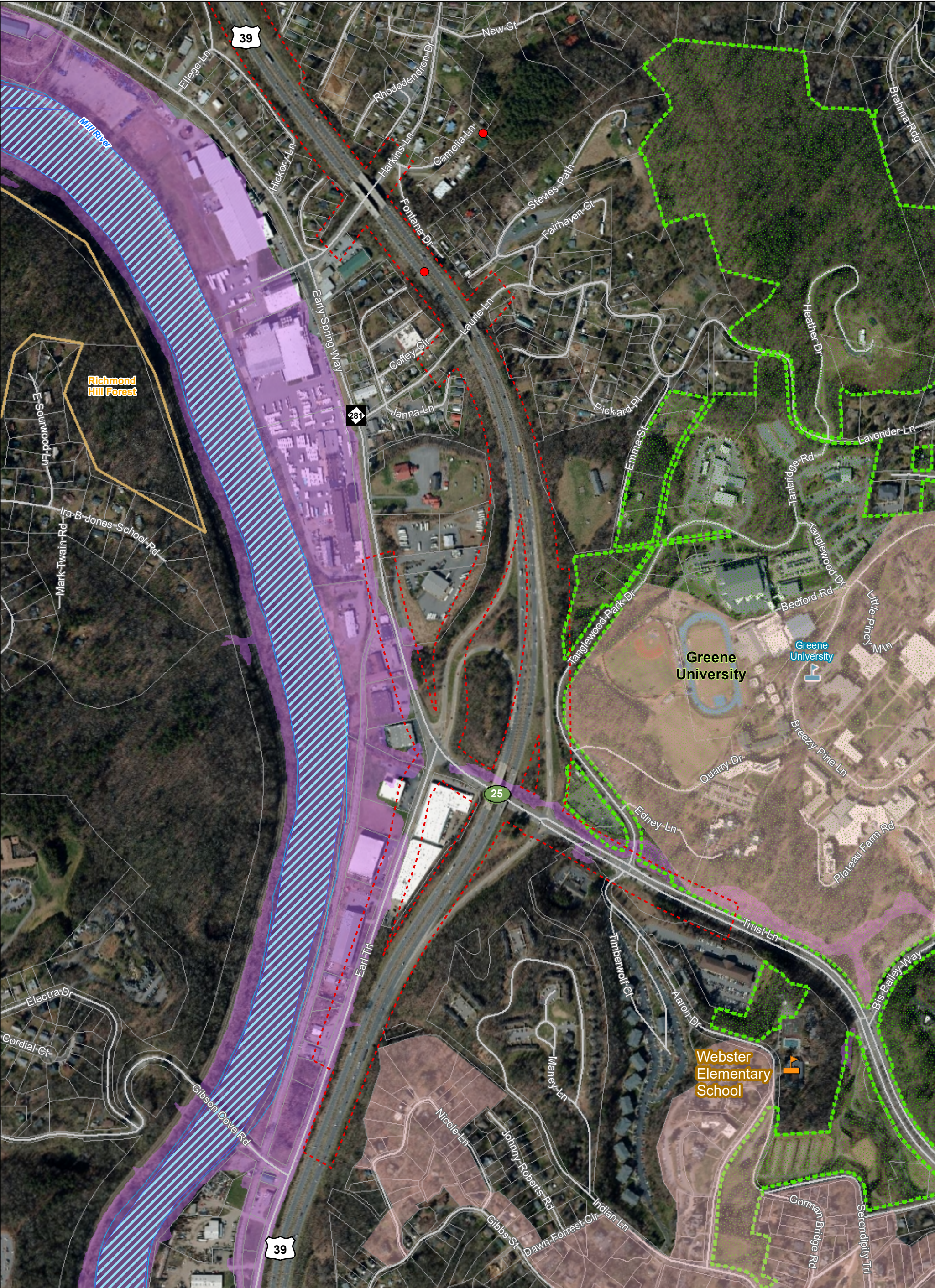
Feet




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
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STIP No.W-1234**

**Figure 3-6
Preferred Alternative**

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	

