



STIP Project U-5307
US 1 Improvements, Wake County
External Scoping Information Sheet

TIP No.:	U-5307	Sent Date:	August 3, 2016
WBS No.:	47027.1.1	Revision Date:	
Federal Aid No.:	NHS-000S(138)	Meeting Date:	August 17, 2016
NCDOT Division:	5	County:	Wake

Project Description

STIP Project U-5307 proposes to convert US 1 to a freeway from I-540 in Raleigh to the NC 98 Bypass (Dr. Calvin Jones Highway) in Wake Forest. (Possible extension to the north to SR 1909 (Purnell Road)/SR 1931 (Harris Road))

General Project Need

The general project need* is categorized by several factors:

- Traffic congestion – Traffic routinely slows to < 30 mph during the peak hours in both directions.
- Trip time unreliability – Several segments of the corridor experience peak hour delays of three and four times the normal trip time at free-flow speeds.
- Safety concerns – Within the past five years, 1,870 crashes have occurred within the project limits including seven fatal crashes. The highest number of crashes happened between 5:00 PM and 6:00 PM.

* Official Purpose and Need Statement is pending meeting with the Merger Team for Concurrence Point 1.

Metropolitan / Rural Planning Organization Area: Capital Area Metropolitan Planning Organization (CAMPO)

NEPA / 404 Merger Candidate: Yes No Not Sure

Feasibility Study Completed: Yes No Other – (2006, 2014 studies)

(CAMPO *US 1 Corridor Study* (September 2006), *US 1 Corridor Study – Executive Summary and Mapping Updates* (June 2014), *US 1/US 1A/Falls of Neuse Road Intersection Analysis* (July 2014))

Type of Environmental Documents to be Prepared / Project Schedule:

Environmental Document:	Dates:	Type of Document:
	2018	EA
	2019	FONSI
Right of Way:	FY 2021	(Design-Build)
Let:	FY 2021	

Air Quality Status: Non-attainment Maintenance Attainment



Design Criteria

Length of Project:	7.45 miles (I-540 to NC 98 Bypass)
Type of Access Control: (Existing / Proposed)	Existing: Partial control on US 1 Proposed: Full control on US 1; access via interchanges and service roads
Structure Inventory:	Bridge #911004 carrying I-540 flyover over US 1 Bridge #911000 carrying I-540 inner loop over US 1 Bridge #910999 carrying I-540 outer loop over US 1 Bridge #911003 carrying I-540 on-loop over US 1 Bridge #910305 carrying US 1N over Neuse River Bridge #910306 carrying US 1S over Neuse River Bridge #910312 carrying US 1N over CSX RR Bridge #910560 carrying US 1S over CSX RR Bridge #911083 carrying NC 98 over US 1
Functional Classification:	US 1: Principal Arterial I-540: Interstate SR 2006 (Durant Road)/Perry Creek Road, SR 2045 (Burlington Mills Road), and US 1A (Main Street): Major Collectors NC 98 Bypass (Dr. Calvin Jones Highway): Principal Arterial
Strategic Highway Corridor Information:	US 1 is categorized as a Strategic Transportation Corridor because of its importance as a major north-south connection in moving goods and people throughout the state, linking to other critical highways, and providing access to major economic centers. (No other roads within the project limits are listed as STCs on the North Carolina Transportation Network.)
CTP/Thoroughfare Plan Designation: (Facility Type)	US 1: Freeway I-540: Freeway SR 2006 (Durant Road)/Perry Creek Road, SR 2045 (Burlington Mills Road), and US 1A (Main Street): Major Thoroughfare NC 98 Bypass (Dr. Calvin Jones Highway): Major Thoroughfare
Roadway Typical Section: (Existing / Proposed)	Existing: US 1: 4-lane, median-divided with paved shoulders (from Durant Road/Perry Creek Road to NC 98 Bypass); 6-lane, median-divided with paved shoulders (from I-540 to Durant Road/Perry Creek Road) I-540: 6-lane, median-divided, fully controlled interstate SR 2006 (Durant Road)/Perry Creek Road: 2-lane and 5-lane roadway with sidewalks on both sides SR 2045 (Burlington Mills Road): 2-lane roadway with partial curb and gutter



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SR 2000 (Falls of Neuse): 4-lane, median-divided with curb and gutter and sidewalks
 US 1A (Main Street): 5-lane roadway with center turn-lane and curb and gutter and some sidewalk on both sides.
 NC 98 Bypass (Dr. Calvin Jones Highway): 4-lane, median divided with paved shoulders.

Proposed:

To be determined based on traffic analysis and local plans and goals. Currently studying several typical sections in the Build Traffic Forecast scenarios.

Typical Section in Compliance with Conformity Determination:

Yes** No

** (If other conditions arise, AQ modeling will be checked/revised for conformity in coordination with CAMPO).

Right of Way:
(Existing / Proposed)

Existing: Varies 210/230-300 feet
 Proposed: 300-350 feet

Existing Posted Speed:

US 1: 45 mph (I-540 to Durant Road/Perry Creek Road); 55 mph (Durant Road/Perry Creek Road to NC 98 Bypass)
 I-540: 70 mph
 SR 2006 (Durant Road)/Perry Creek Road: 45 mph
 SR 2045 (Burlington Mills Road): 45 mph
 US 1A (Main Street): 35 mph
 NC 98 Bypass (Durham Road): 45 mph west of US 1; 55 mph east of US 1

Proposed Design Speed:

US 1: 65 mph (could be posted 55, 60, or 65)
 (Question/Concern: Not sure if existing grades would meet 70 mph design speed requirements)
 Service Roads: 40 mph (posted 35 mph). Some sections of potential service roads have been constructed by private developers and may be able to be used for this project. Need to clarify design speeds or whether a design exception would be allowed if they do not meet current standards.



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Traffic Data (AADT)

Current Year:	2015	US 1: varies from 41,300 vpd (near NC 98 Bypass) to 65,400 vpd (near I-540)	% TTST: % Dual: % DHV: Directional Split:	2 % 3 % 8 % 55/45
Design Year (No Build):	2040	US 1: varies from 51,600 vpd (near NC 98 Bypass) to 75,400 vpd (north of I-540)	% TTST: % Dual: % DHV: Directional Split:	2 % 3 % 8 % 55/45

Source: U-5307 Traffic Forecast, Volume I (November 2015)

Design Standards Applicable: AASHTO 3R

Railroad Involvement

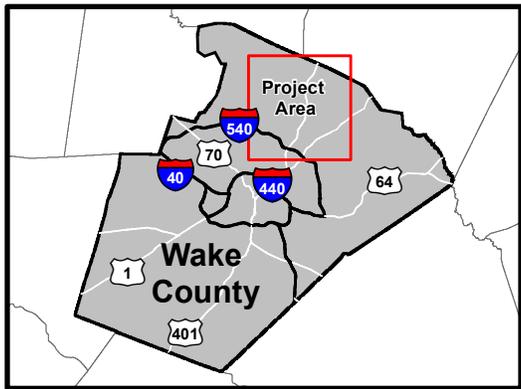
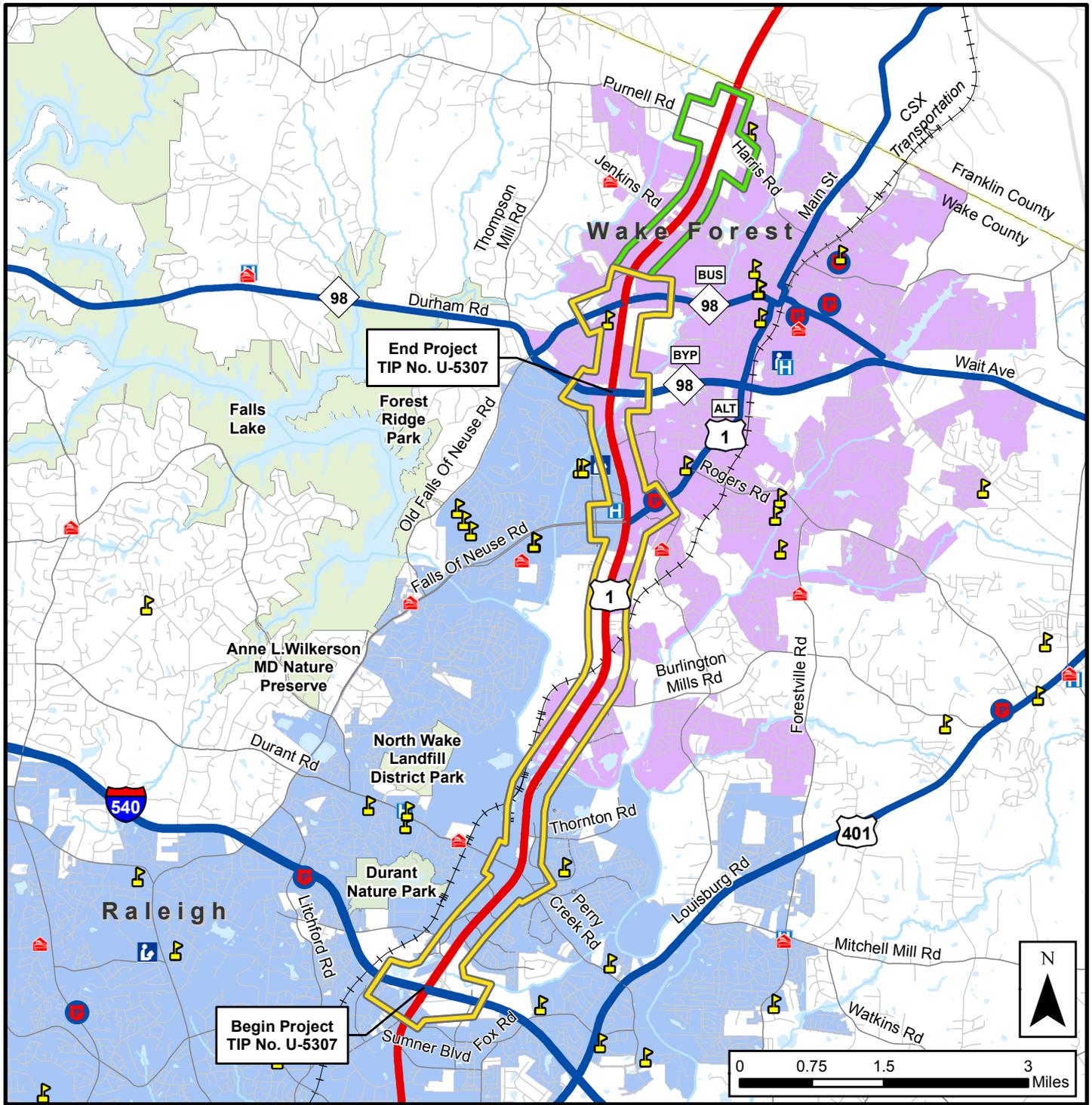
CSX Railroad passes under US 1 in one location. This is the future Southeast High Speed Rail Corridor.

Cost Estimate	Right of Way	Construction	Total Cost
STIP Estimate:			
I-540 to North of SR 2006 (Durant Rd)	\$20,600,000	\$61,600,000	\$82,200,000
North of SR 2006 (Durant Rd) to North of SR 2045 (Burlington Mills Rd)	\$3,500,000	\$57,100,000	\$60,600,000
North of SR 2045 (Burlington Mills Rd) to South of NC 98	\$16,600,000	\$46,100,000	\$62,700,000
South of NC 98 Bypass to SR 1909 (Purnell Rd) / SR 1931 (Harris Rd)**	\$30,100,000	\$60,012,000	\$90,112,000
	\$70,800,000	\$224,812,000	\$295,612,000*

*\$1,000,000 in previous years' expenses

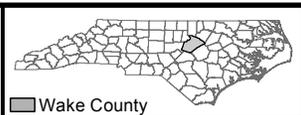
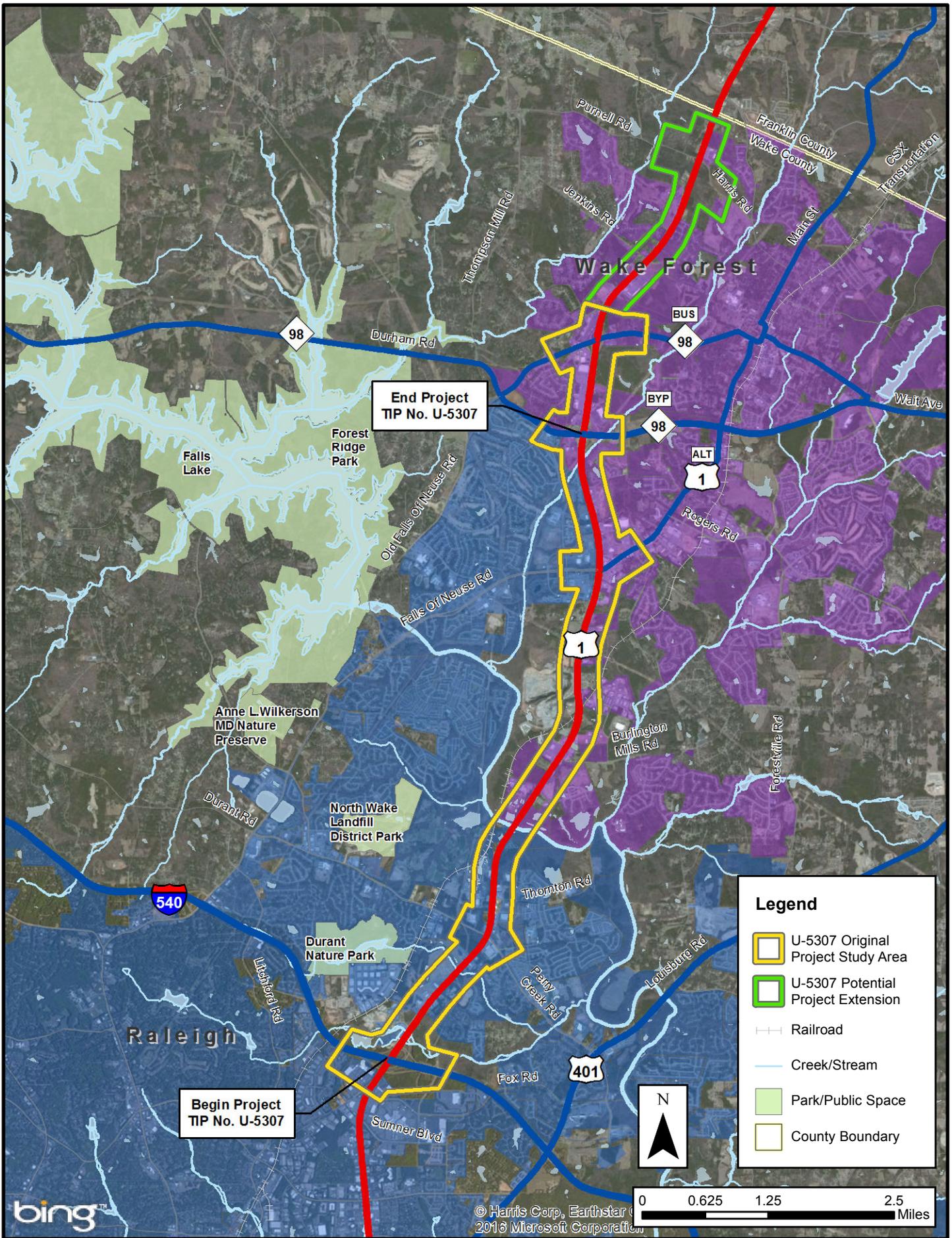
**Approval Pending Board of Transportation Meeting 8/4/16

Attachments – Figures 1-4



Legend

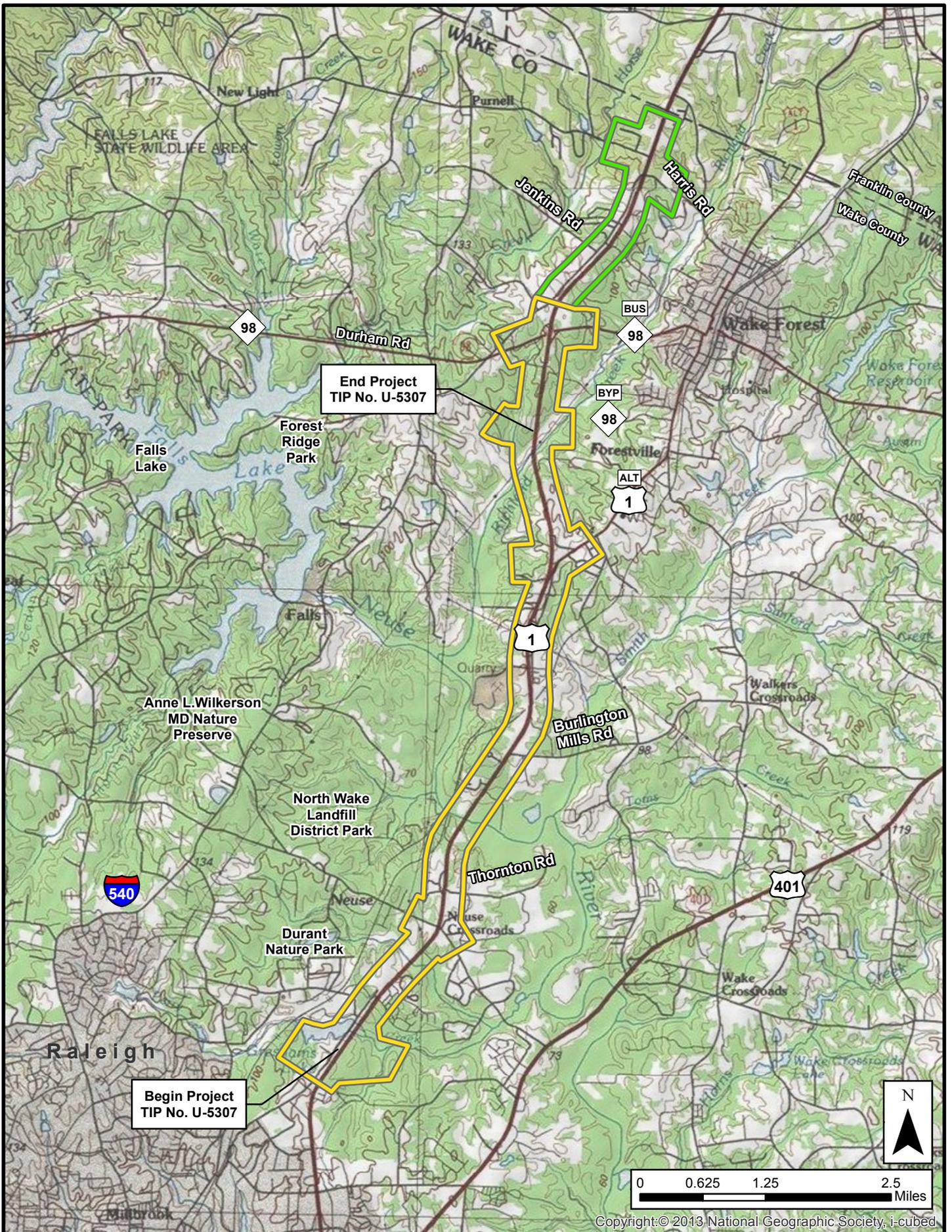
U-5307 Original Project Study Area	Police Station	Raleigh
U-5307 Potential Project Extension	Library	Wake Forest
Schools	Park/Public Space	County Boundary
Fire Station	Railroad	
EMS Station	Creek/Stream	



US 1 Roadway Improvements
 From I-540 to South of NC 98 Bypass

TIP No. U-5307
 Division: 5

Figure: 2
Aerial Map



US 1 Roadway Improvements
From I-540 to South of NC 98 Bypass

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Figure: 3
Topo Map



Perry Creek Rd approaching US 1 (Capital Blvd)



US 1 (Capital Blvd) south of I-540



US 1 (Capital Blvd) approaching Perry Creek Rd



US 1 (Capital Blvd) at Perry Creek Rd



US 1 (Capital Blvd) at Gresham Lake Rd



US 1 (Capital Blvd) at Gresham Lake Rd



US 1 Roadway Improvements
I-540 to South of NC 98 Bypass

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Figure: 4
Project
Area Photos