



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

October 4, 2021

Memorandum To: HL-0006 Scoping Meeting Attendees

From: Division 5 Project Manager –
Zahid Baloch,
NCDOT Division 5 Office

Subject: Scoping Meeting for Intersection Improvements of US 401 at SR 1393 (Hilltop Needmore Rd)/SR 2752 (Airpark Rd), at SR 1375 (Lake Wheeler Rd), and at SR 2573 (Dwight Rowland Rd) Wake County, NC
WBS No. 49365.1.1 STIP No. HL-0006

NCDOT Division 5 is starting the project development, environmental, and engineering studies for the intersection improvements of US 401 at SR 1393 Hilltop Needmore Road)/SR 2752 (Airpark Road), at SR 1375 (Lake Wheeler Road), and at SR 2573 (Dwight Rowland Road) as project HL-0006. In addition to the intersection safety improvements along this portion of US 401, a realignment of SR 2571 (Hilltop Road) to intersect opposite SR 1375 (Lake Wheeler Road) is also proposed. The project is included in the current 2020-2029 STIP, dated September 2021, as STIP No. HL-0006 and is currently scheduled for right-of-way in Fiscal Year (FY) 2024 and construction let in FY 2025. A virtual Scoping Meeting is scheduled for October 20, 2021 from 1:00 pm – 3:00 pm.

The general purpose of this meeting is to begin early coordination with our agency partners by discussing the known information about the project and project area. There are Project Data Sheets, mapping, and other materials for this meeting attached and available in the project file located on the NCDOT Connect site. Please review this material and be prepared to discuss any additional known information regarding your resource and/or area of expertise as it may concern the project. We would especially appreciate any information you might have that would be helpful in identifying and evaluating important issues or topics that should be considered.

Thank you for your assistance in the project development process. If you have any questions concerning the project or the Project Data Sheets, please contact Zahid Baloch at (919) 707-6012 or by email at zbaloch@ncdot.gov. Please include the STIP Project Number (HL-0006) in all correspondence and comments.

Attachments: HL-0006 Project Data Sheets

NCDOT Project Data Sheet

Date: 10/04/21

Rev:

Essential Project Information

STIP Project Name	US 401 Improvements			
STIP Number	HL-0006			
County	WAKE			
NCDOT Division	5			
ROW Date	July 2024			
LET Date	July 2025			
Schedule Considerations	N/A			
Cost Estimates		Construction	Right-of-Way & Utilities	Total
	TIP Estimate*	\$13,400,000	\$7,900,000	\$21,300,000
	Current Estimate (20XX)	TBD	TBD	TBD
* NCDOT 2020-2029 Current STIP, September 2021				
Funding Type	Federal – CAMPO's 2020 Bonus Allocation, Mobility & Safety			

Proposed Project Details

Project Description	State Transportation Improvement Project (STIP) HL-0006 proposes to reconfigure multiple intersections along US 401 (N Main Street) into a reduced conflict intersection (RCI) design. The project also plans to realign SR 2571 (Hilltop Road) away from the existing intersection with SR 1393 (Hilltop Needmore Road) and align the roadway across from SR 1375 (Lake Wheeler Road) at US 401 (N Main Street).
Project Limits	US 401 from SR 1393 (Hilltop Needmore Road) to SR 2573 (Dwight Rowland Road)
Typical Section	Four-lane divided
Access Control	Partial
Design Speed	60 mph
Right-of-Way Width	Varies
Physical or Engineering Constraints	Existing grades for NB and SB lanes are significantly different in some locations on the mainline.
Other Considerations	TBD
Survey Request Date	5/19/21
Design Plan	TBD
Construction Recommendation	TBD—More info will be provided once WZTC phasing has been developed.
Consultant Involvement	NTP for preliminary design through 30% plans has been executed.

Project History	
Planning Studies	<p><i>Connect 2045</i> (2019), a joint Metropolitan Transportation Plan between CAMPO and DCHC-MPO for the Triangle Region through 2045, includes a proposed US 401 Superstreet from Lake Wheeler Road to Hilltop-Needmore Road identified as project A664a (included in the interactive map, but not in the document).</p> <p>The <i>Southwest Area Study Update</i> (2019), a collaborative effort between CAMPO and NCDOT focusing on southwestern Wake County, recommended various roadway projects. One specific project, A619b, proposes the widening of US 401 from Lake Wheeler Road/Hilltop Road realignment to NC 55. Additionally, the study discusses the importance of Hilltop Road realigning with Lake Wheeler Road at US 401 and how this north/south connectivity would benefit the region in a positive manner.</p> <p>The Town of Fuquay Varina's <i>2035 Community Vision Land Use Plan</i> (2017) identifies US 401 as a key transportation corridor for local and commuter traffic. The popularity of travel along US 401 will only increase with the future access to NC 540. Significant amounts of development have occurred along this corridor in recent years and the corridor continues to interest from both residential and non-residential investors.</p> <p>The Town of Fuquay Varina's <i>2035 Community Transportation Plan</i> identifies US 401 as Go Triangle's Fuquay-Varina to Raleigh Express (FRX) route, this route includes a stop at the Hilltop Crossings Shopping Center Park & Ride off Hilltop Needmore Road. As part of the recommended projects, a Roadway Facility Improvements map proposes identifies new lanes on US 401 and new location for Hilltop Road to align with existing Lake Wheeler. Additionally, recommendations for future bicycle and pedestrian facilities are proposed on US 401, Hilltop Needmore Road, Hilltop Road, and Lake Wheeler Road in the Bicycle and Pedestrian Recommendations Map.</p> <p>CAMPO'S <i>US 401 Interim Improvements Analysis</i> (2013) is a hot spot study that identified US 401 at Hilltop-Needmore Road as an intersection that experiences "significant delay and operational deficiencies." Additionally, the continual growth in this area was discussed and with that anticipated increased traffic. The study's recommendations included upgrading to a superstreet design and relocating Hilltop Road.</p>
SPOT Description	The SPOT description is the following: "Convert existing signalized intersection to superstreet with crossover, Hilltop Rd new location to align with Lake Wheeler and superstreet intersection. See CAMPO US 401 Hot Spot Study from 2014 (Davenport Consultants). CAMPO has synchro files from this study.
Feasibility Studies	Scoping Report https://connect.ncdot.gov/site/scoping/Div05/H171609/H171609_ProjectInitiationForm.pdf
Problem Statement	The CAMPO hot spot study states "These intersections [referring to the intersection of US 401 and Hilltop-Needmore Road] currently experience significant delay and operational deficiencies. Traffic is anticipated to increase at these intersections as the surrounding area continues to experience growth. Ultimately, the roadway will be widened by the North Carolina Department of Transportation (NCDOT) in the future to six lanes with a superstreet configuration. However, improvements are needed in the interim to improve the safety and operation of the intersections."

Alternatives Previously Dismissed and Why	Two similar alternatives proposed, varying minimum proposed right of way for the realignment of Hilltop Road. The alternative chosen proposes a minimum right of way of 110' with right of way 25' from the cut/fill line on the north side. This greater right of way width will allow more flexibility for a new alignment of Hilltop Road.
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Purpose & Need	
Purpose	The purpose of the HL-0006 project is to reduce congestion and improve mobility.
Need(s)	The HL-0006 project is needed because the facilities are currently operating with significant delays and operational deficiencies.
Supporting Data	Traffic Forecast was completed in December 2020, draft Capacity Analysis Report is under review by NCDOT

Alternatives Currently Under Consideration	
Alternative 1	4 Lane Median Divided w/ Shoulders at 60 mph Design Speed
Alternative 2	4 Lane Raised Median w/ Curb and Gutter at 50 mph Design Speed includes Pedestrian accommodations.

Public and Agency Coordination	
Anticipated Permits	Possibly USACE 404 permit, SHPO concurrence, USFWS
Federal Agency Involvement	FHWA – Lead Agency
Public Involvement Strategy	Standard public involvement with project website, public meeting. Coordinating with 401 corridor study as much as possible.
Merger Screening Date	TBD
Potential Merger Triggers	N/A

Existing Conditions																																																																											
Functional Classification	Principal Arterial																																																																										
Strategic Highway Corridor	No																																																																										
AADT	<p style="text-align: center;">Table 2 Forecasted AADT Data</p> <table border="1"> <thead> <tr> <th rowspan="2">Roadway</th> <th rowspan="2">Location</th> <th rowspan="2">Base Year (2020) No-Build</th> <th colspan="2">Design Year (2045) No-Build</th> <th colspan="2">Design Year (2045) Build</th> </tr> <tr> <th>Without Bypass</th> <th>With Bypass</th> <th>Without Bypass</th> <th>With Bypass</th> </tr> </thead> <tbody> <tr> <td>US 401 (N Main St)</td> <td>N of SR 1393</td> <td>27,900</td> <td>46,600</td> <td>37,800</td> <td>46,900</td> <td>37,900</td> </tr> <tr> <td>US 401 (N Main St)</td> <td>N of SR 1375</td> <td>22,800</td> <td>42,100</td> <td>34,800</td> <td>46,300</td> <td>35,600</td> </tr> <tr> <td>US 401 (N Main St)</td> <td>S of SR 1375</td> <td>27,900</td> <td>53,100</td> <td>45,500</td> <td>53,100</td> <td>45,400</td> </tr> <tr> <td>SR 1393 (Hilltop Needmore Rd)</td> <td>W of US 401</td> <td>9,600</td> <td>12,900</td> <td>12,600</td> <td>10,400</td> <td>10,300</td> </tr> <tr> <td>SR 1393 (Hilltop Needmore Rd)</td> <td>W of SR 1375</td> <td>11,200</td> <td>17,900</td> <td>18,000</td> <td>17,900</td> <td>18,100</td> </tr> <tr> <td>SR 1375 (Lake Wheeler Rd)</td> <td>N of SR 1393</td> <td>4,500</td> <td>8,600</td> <td>8,100</td> <td>8,700</td> <td>8,200</td> </tr> <tr> <td>SR 1375 (Lake Wheeler Rd)</td> <td>S of SR 1393</td> <td>5,500</td> <td>11,800</td> <td>11,500</td> <td>14,600</td> <td>14,800</td> </tr> <tr> <td>SR 2751 (Hilltop Rd)</td> <td>E of US 401</td> <td>5,100</td> <td>7,400</td> <td>6,000</td> <td>9,000</td> <td>7,000</td> </tr> <tr> <td>SR 2752 (Air Park Rd)</td> <td>E of US 401</td> <td>2,600</td> <td>4,400</td> <td>4,400</td> <td>4,400</td> <td>4,400</td> </tr> </tbody> </table>	Roadway	Location	Base Year (2020) No-Build	Design Year (2045) No-Build		Design Year (2045) Build		Without Bypass	With Bypass	Without Bypass	With Bypass	US 401 (N Main St)	N of SR 1393	27,900	46,600	37,800	46,900	37,900	US 401 (N Main St)	N of SR 1375	22,800	42,100	34,800	46,300	35,600	US 401 (N Main St)	S of SR 1375	27,900	53,100	45,500	53,100	45,400	SR 1393 (Hilltop Needmore Rd)	W of US 401	9,600	12,900	12,600	10,400	10,300	SR 1393 (Hilltop Needmore Rd)	W of SR 1375	11,200	17,900	18,000	17,900	18,100	SR 1375 (Lake Wheeler Rd)	N of SR 1393	4,500	8,600	8,100	8,700	8,200	SR 1375 (Lake Wheeler Rd)	S of SR 1393	5,500	11,800	11,500	14,600	14,800	SR 2751 (Hilltop Rd)	E of US 401	5,100	7,400	6,000	9,000	7,000	SR 2752 (Air Park Rd)	E of US 401	2,600	4,400	4,400	4,400	4,400
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Access Control	Partial
Typical Section	Four Lane Divided
Right-of-Way Width	Varies
Posted Speed	55
Structures (bridges, RCBC, etc.)	Bridge 0285 - Hilltop Road at Terrible Creek Culvert 0561 – US 401 at Terrible Creek
Railroad Involvement	Rail line is just east of two legs, Air Park Road and Hilltop Road, of the project limits.
Other Adjacent STIP Projects	<ul style="list-style-type: none"> - HL-0008G: Improve intersection at SR 1393 (Hilltop-Needmore Rd) and SR 1375 (Lake Wheeler Rd) - HL-0028: US 401 at SR 1404 (Mill Creek Drive/Ideal Lane) intersection improvements. - U-5751: US 401 at NC 55/NC 42 intersection improvements. - R-5828: Future NC 540. - U-5746: US 401 from WTCC to SR 1010 (Ten-Ten Road). Add lanes. - U-6112: Proposed interchange US 401 at SR 1010. - R-2609: US 401 Corridor Study

Preliminary Resource Inventory Table	
Utilities	TBD
Hazardous Materials	Haddock Auto Body Inc within 1000 feet of project limits (Geoenvironmental under review)
Known Potentially-Eligible National Register of Historic Places Sites/Districts	WA4772 House: 1950 Colonial Revival House at 10301 US-401 WA1229 House (gone): Hilltop Needmore Road at US 401 Eligibility evaluation will be completed.
Other Cultural Resources	TBD
Wetlands	Wetlands and streams are detailed in Figure 7 attached
Streams	Terrible Creek
FEMA Floodplain Detailed Study Area	Yes, Terrible Creek.
Water Supply Watersheds	No
Riparian Buffer Rules	Neuse Buffer Area Buffer Rules: 15A NCAC 02B .0233; Buffer Delegation Rules: 15A NCAC 02B .0241
Active Agriculture	None within direct project limits. Several VAD's in close proximity outside of limits.
Parks, Greenways, Game Lands, Section 4(f) & Section 6(f) Properties	None.
Environmental Justice Populations	Potentially low income and minority populations within the project limits.

Other Resources (i.e., Wild and Scenic Rivers, TVA, Scenic Byways, etc.)	N/A
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Project Management Approval	
The need for the proposed change is sufficient to justify the impacts to the scope, schedule, and budget.	
Project Manager	
Name	
Signature	
Date	
Supervisor	
Name	
Signature	
Date	

Figure 1: Environmental Features Map with Study Area – as Recommended by NCDOT



HL-0006
NCDOT Division 5
 ESRI Aerial Basemap

Figure 3: Cultural Resources Map

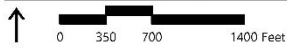
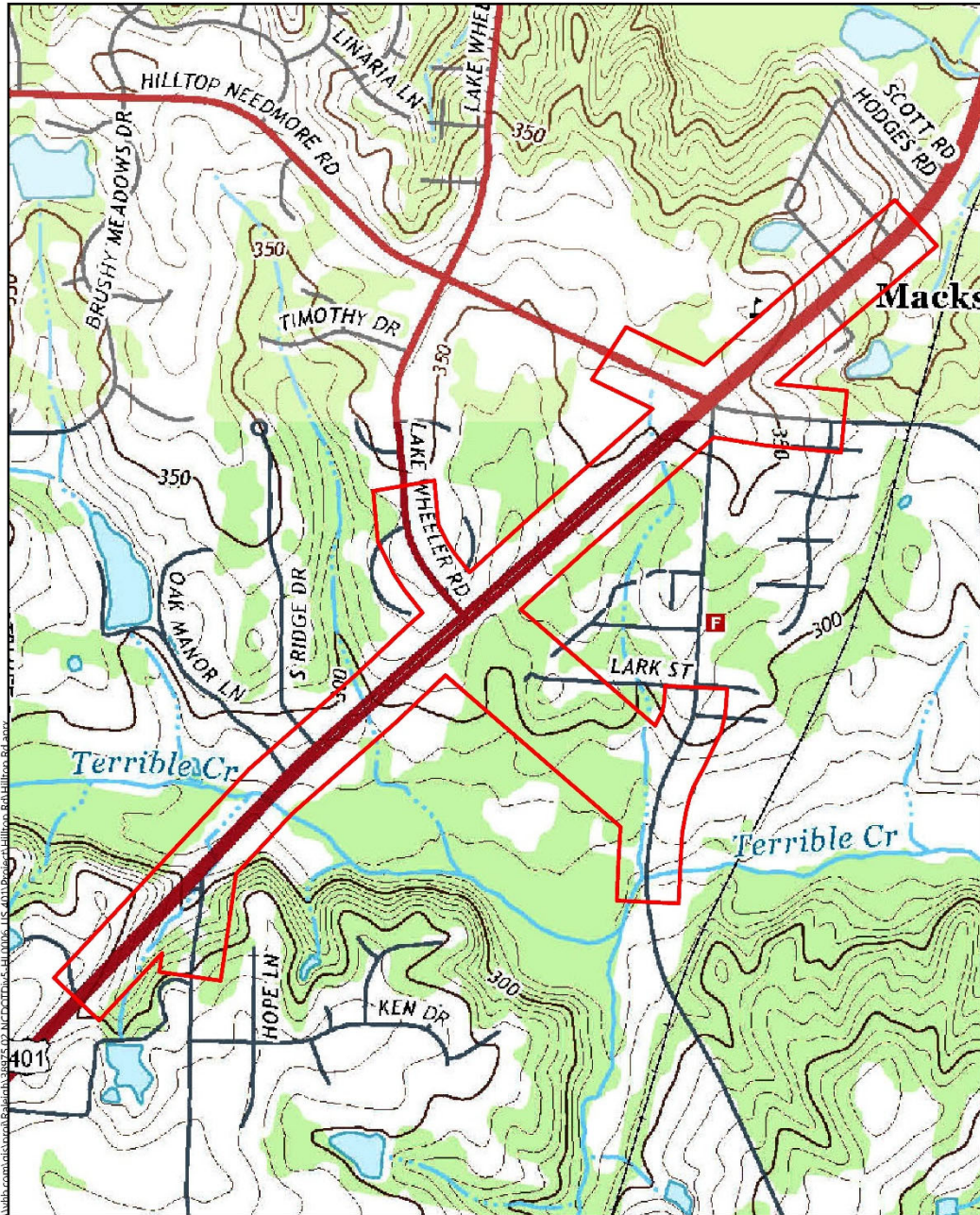


Cultural Resources | Wake County, NC



HL-0006
 NCDOT Division 5
 ESRI Aerial Basemap

Figure 4: Topographic Map

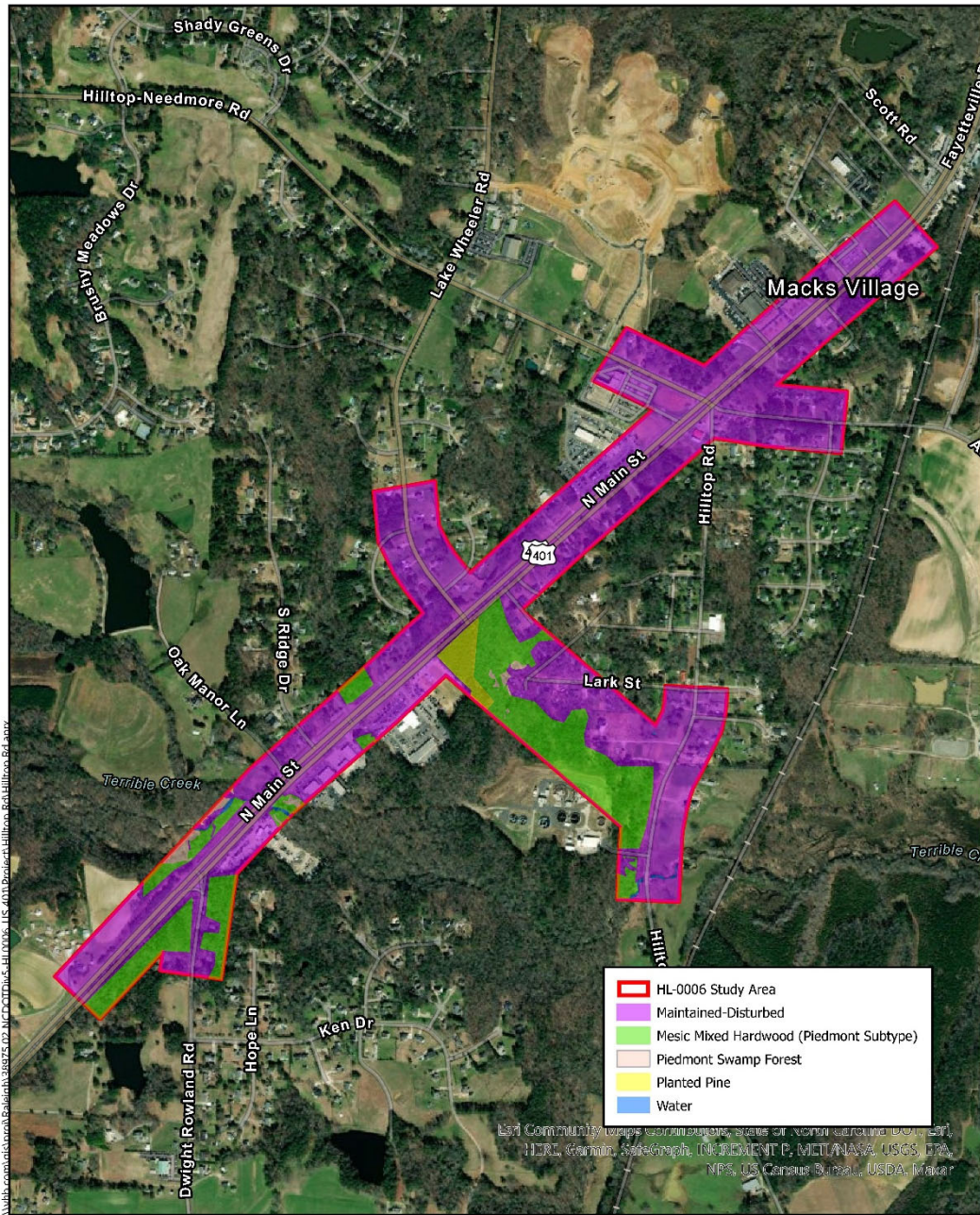


 HL-0006 Study Area



Topographic Map
 2013 USGS Topo Quadrangles
 Lake Wheeler & Angier

Figure 5: Terrestrial Community Map



0 350 700 1400 Feet

HL-0006 Hilltop Road

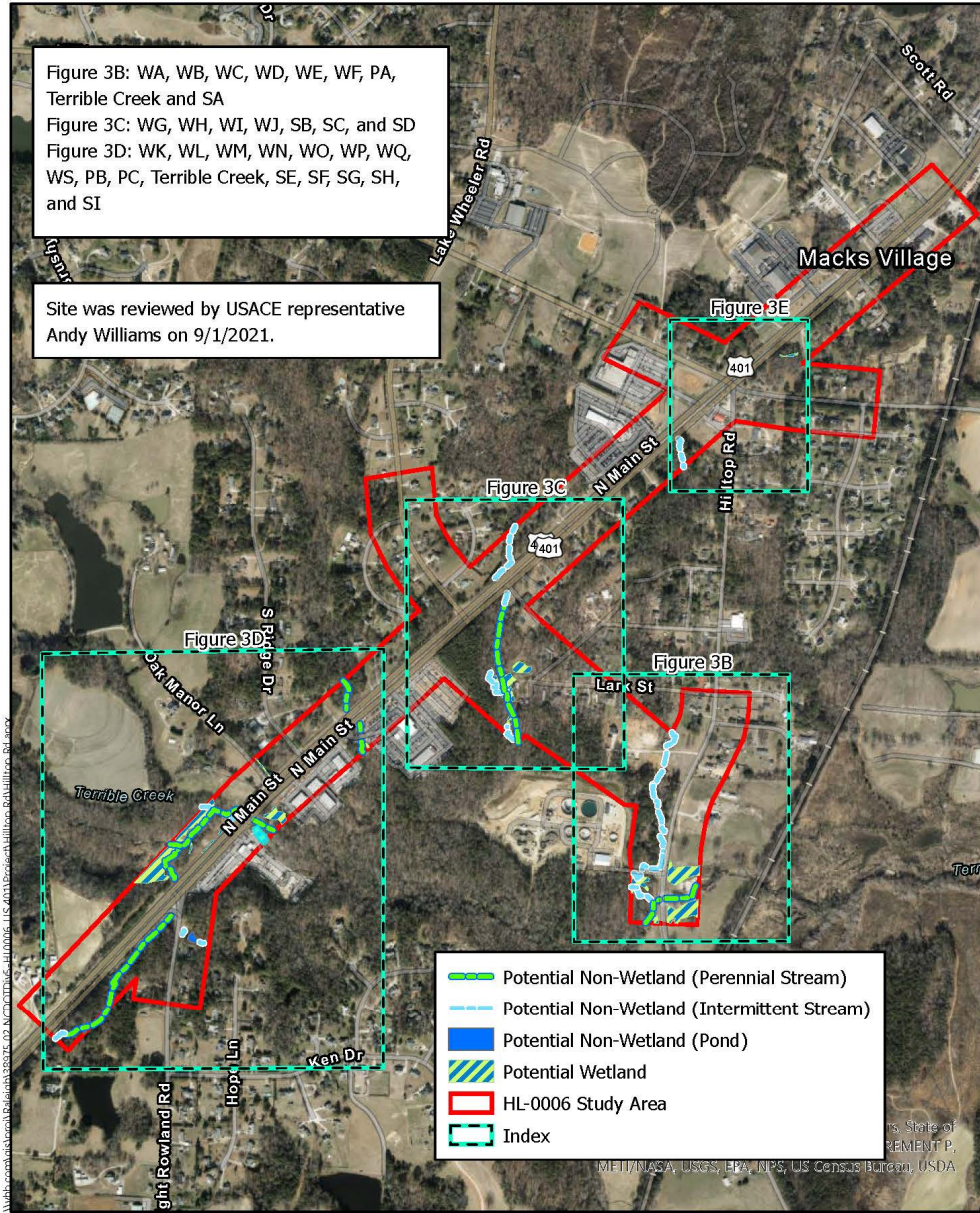
Fuquay-Varina, Wake County, NC



Terrestrial Communities

ESRI Basemap

Figure 6A: Potential Jurisdictional Resources Overview



Potential Jurisdictional Resources Overview
 ESRI Basemap
 Surveyed Wetland Data
 Trimble GPS Stream Data

Figure 6B: Potential Jurisdictional Resources



Potential Jurisdictional Resources

ESRI Aerial Basemap
 Survey Data (Wetland)
 Trimble GPS Data (Stream)

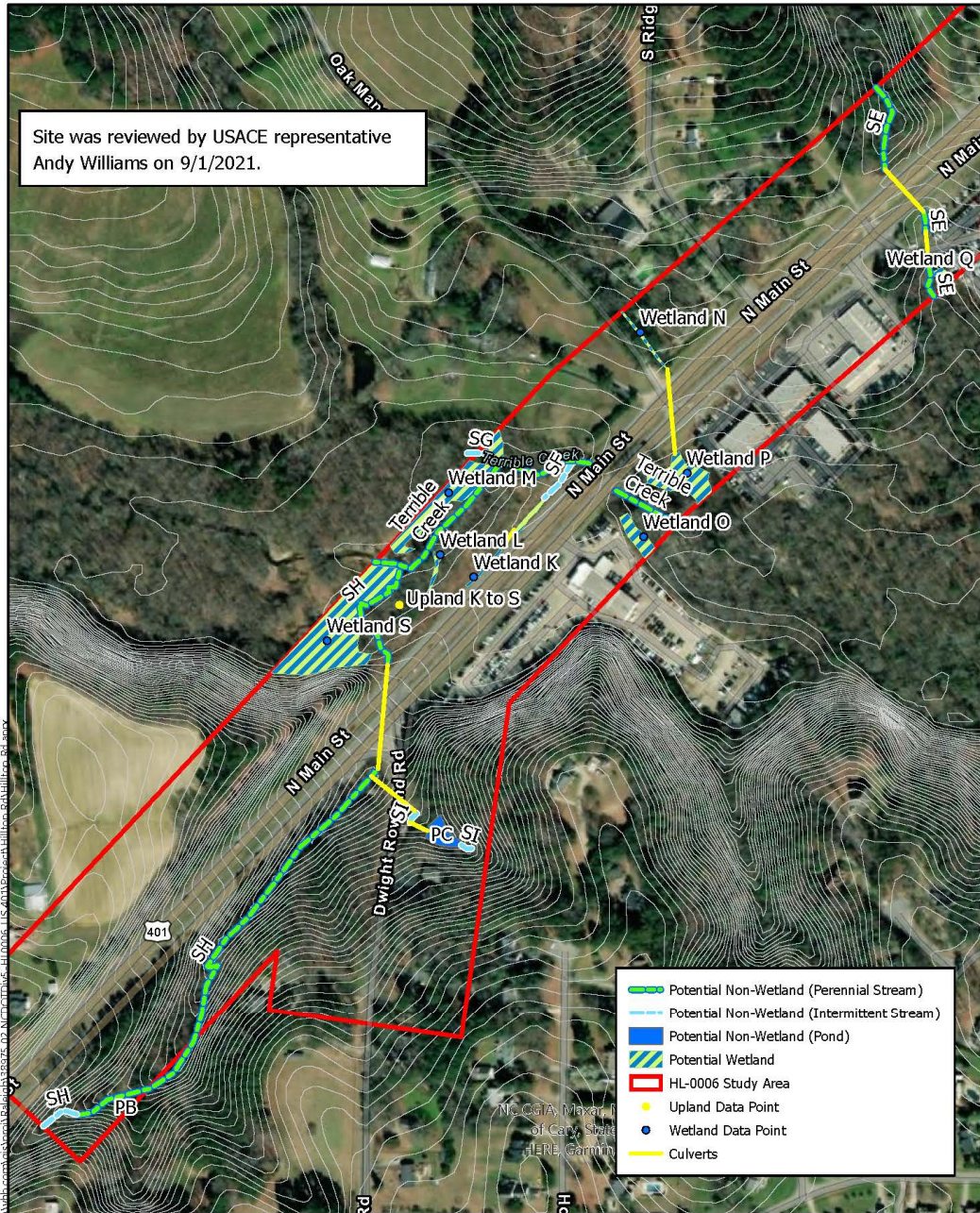
Figure 6C: Potential Jurisdictional Resources



Potential Jurisdictional Resources
 ESRI Aerial Basemap
 Survey Data (Wetland)
 Trimble GPS Data (Stream)

Figure 6D: Potential Jurisdictional Resources

vhb September, 2021 | FIGURE # 4D



0 125 250 500 Feet

HL-0006 Hilltop Road

Fuquay-Varina, Wake County, NC



Potential Jurisdictional Resources

ESRI Aerial Basemap
Survey Data (Wetland)
Trimble GPS Data (Stream)

Figure 6E: Potential Jurisdictional Resources

vhb September, 2021 | FIGURE # 4E



HL-0006 Hilltop Road

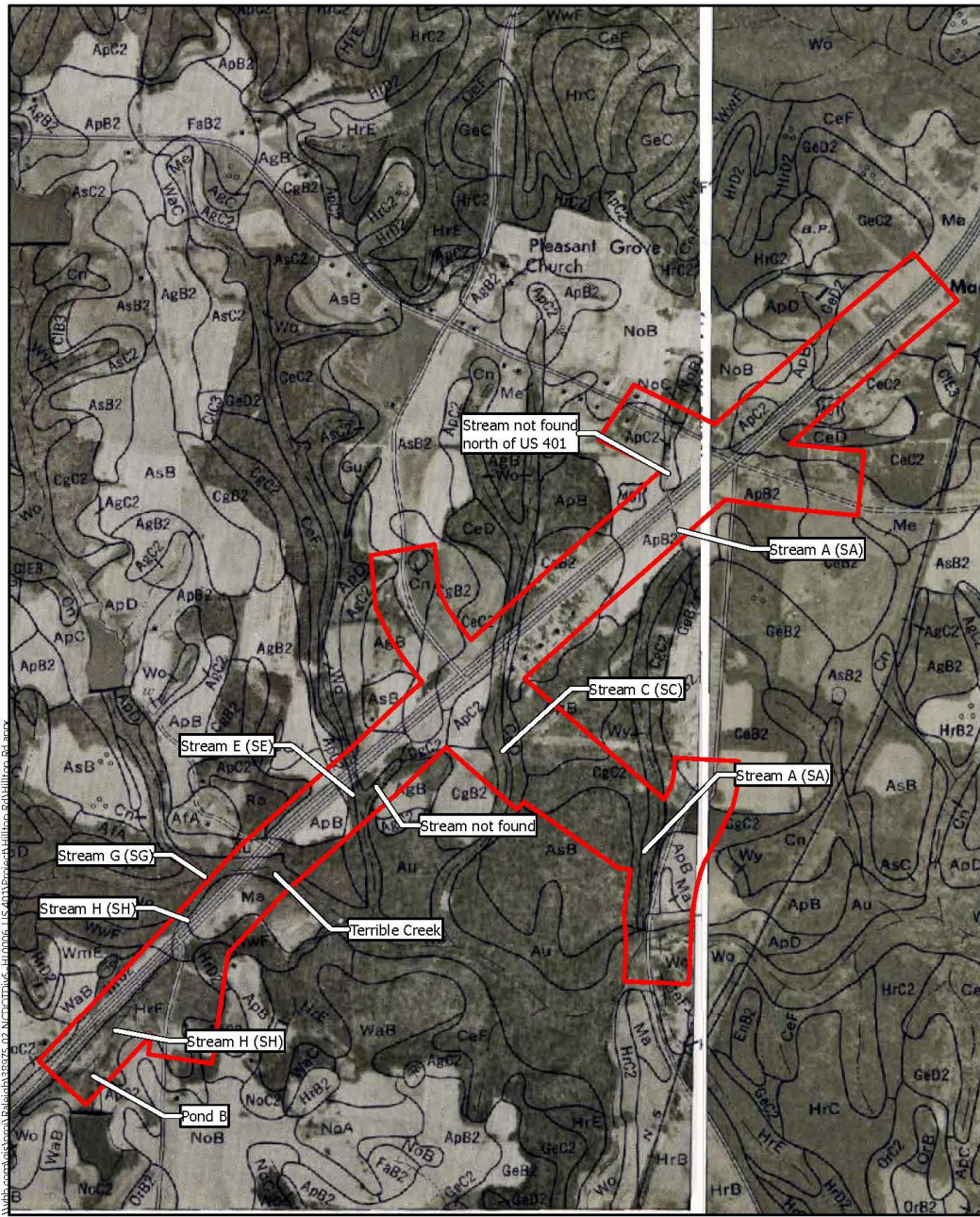
Fuquay-Varina, Wake County, NC



Potential Jurisdictional Resources

ESRI Aerial Basemap
Survey Data (Wetland)
Trimble GPS Data (Stream)

Figure 7: NRCS Soil Survey



HL-0006 Hilltop Road

Fuquay-Varina, Wake County, NC

HL-0006 Study Area



NRCS Soil Survey

Printed NRCS Wake County Soil Survey
Map Sheets 91 & 92

Figure 8: Total Crashes by Type and Location

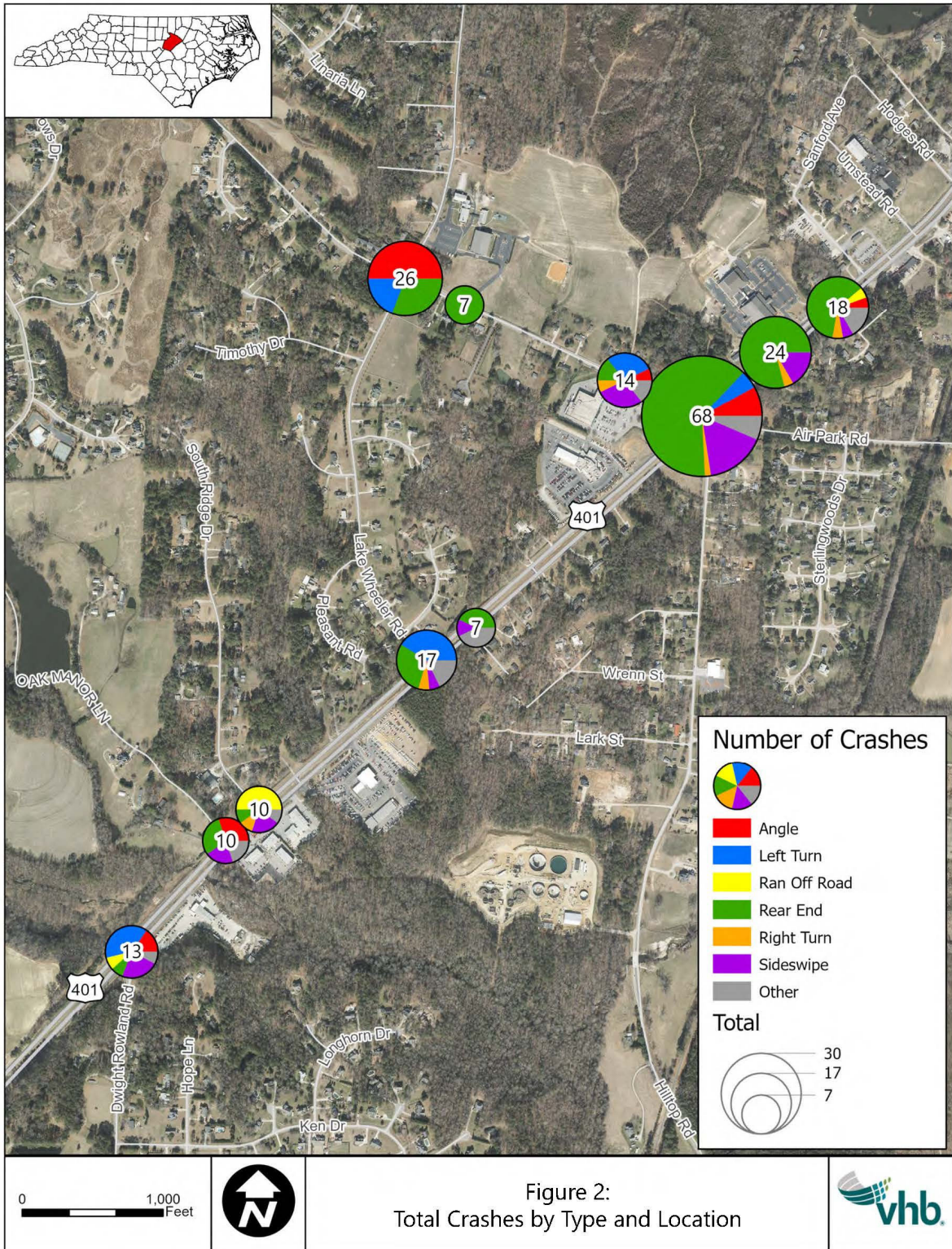


Figure 2:
Total Crashes by Type and Location

