



# Memorandum

Date: Tuesday, June 13, 2017

Project: WBS Nos. 37673.1.TA2, 35516.1.TA2, and 35517.1.TA1

To: Deanna Riffey – Environmental Analysis Unit

From: Vickie Miller – HDR Project Manager

Subject: Michaux's Sumac Survey for Complete 540 (TIPs R-2721, R-2828, and R-2829)

This memo serves to update the status of the federally protected Michaux's sumac (*Rhus michauxii*) for the Complete 540 project (TIPs R-2721, R-2828, and R-2829), which would extend the Triangle Expressway from the NC 55 Bypass in Apex to the US 64/US 264 Bypass in Knightdale in Wake and Johnson Counties (see attached figure). The last survey was completed in 2013.

A field survey for the presence of suitable Michaux's sumac habitat was conducted on May 18, 19, 22, 23, 25, and June 1, 2017 during the United States Fish and Wildlife Service optimal survey window. Prior to conducting the onsite assessment, a review of North Carolina Natural Heritage Program data, last updated in April 2017, indicated no known records of Michaux's sumac within one mile of the study area. Recent aerial photographs were evaluated to identify suitable habitat within the study area.

The field crews visited a known population to ensure the plants vegetative state prior to beginning the surveys. Flowering had not yet started for the species during the initial visit in May. Suitable habitat for the species was determined to be areas with open woods and where disturbance occurs. Because the species is intolerant to shade and grows best in areas of disturbance, maintained railroad, roadside, power line, and utility rights-of-way; areas where forest canopies were opened up; small wildlife food plots; areas adjacent to agricultural fields; along pastured areas; and areas in and along edges of other artificially maintained clearings undergoing natural succession were all reviewed during the survey.

**Survey Results:** The field teams spent six days reviewing the study area. Suitable habitat for the species occurs throughout the study area; however, no occurrences of Michaux's sumac were found. Based upon these findings, it was determined the project will have no effect on Michaux's sumac.

**Biological Conclusion:** No Effect

**Qualifications of Principal Investigators**

Investigator: Vickie Miller, AICP, PWS

Education: B.S. Environmental Sciences, University of North Carolina–Asheville  
M.S. Natural Resources, North Carolina State University

Experience: HDR Engineering, Senior Environmental Scientist/Planner, 2005–Present  
URS, Environmental Scientist, 2001–2005

Investigator: Sara Easterly

Education: B.S. Biology, Carson Newman College  
M.S. Environmental Health Science, East Tennessee State University

Experience: HDR Engineering, Senior Environmental Scientist, 2012–Present  
NCDOT, Senior Environmental Specialist, 2006–2012  
ARCADIS, Environmental, Health & Safety Compliance Specialist, 2000–2006

Investigator: Jessica Tisdale, CE

Education: B.S. Environmental Sciences, University of Maine  
M.S. Forestry, North Carolina State University

Experience: HDR Engineering, Environmental Scientist, 2008–present  
Goldstein and Associates, Ecological Monitor, 2006–2007  
Forest Service/NCSU, Research Technician, 2005–2008

If you have any questions please contact me at 919-232-6637 or [vickie.miller@hdrinc.com](mailto:vickie.miller@hdrinc.com) or Sara Easterly at 919-232-6664 or [sara.easterly@hdrinc.com](mailto:sara.easterly@hdrinc.com).



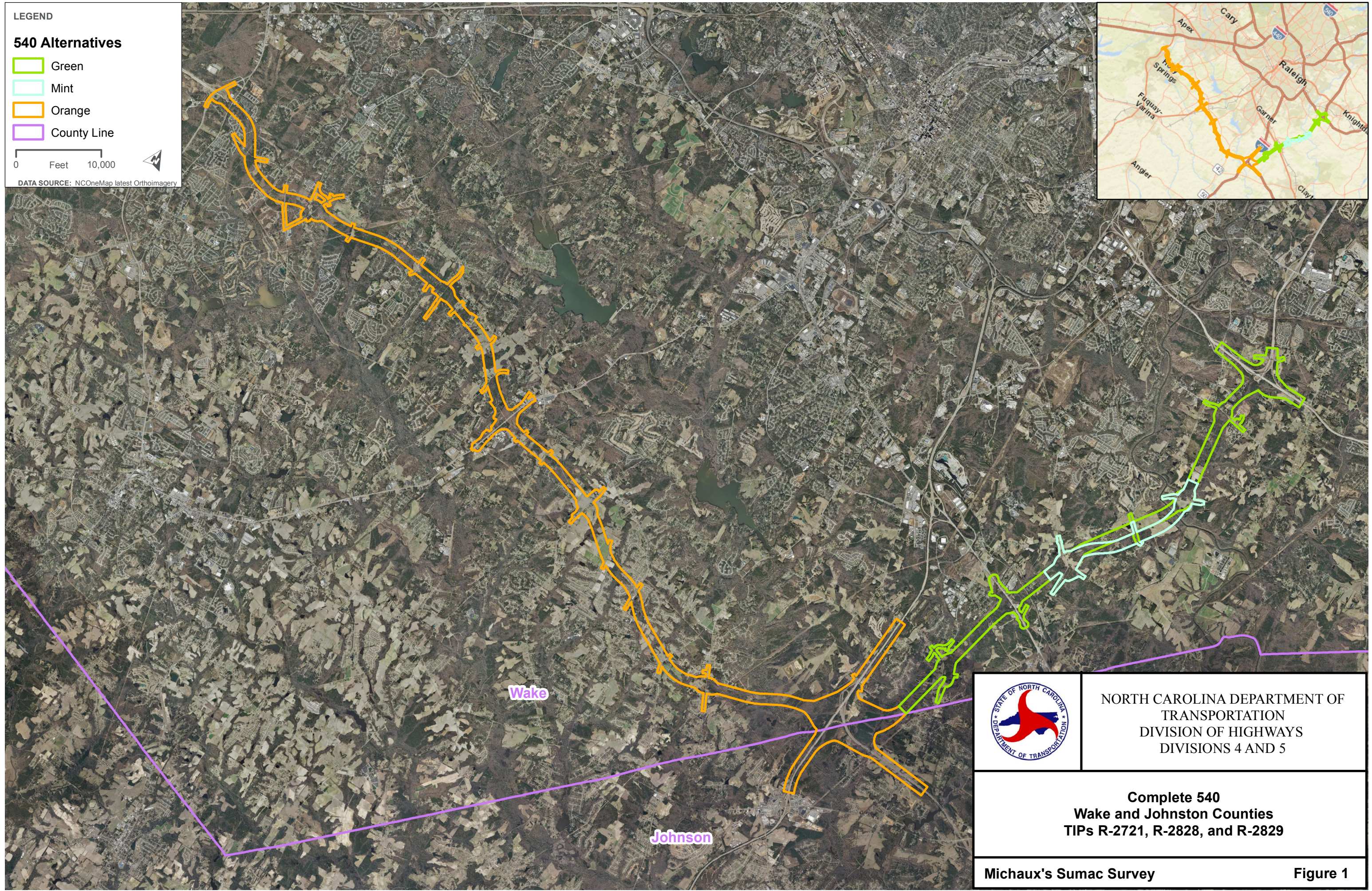
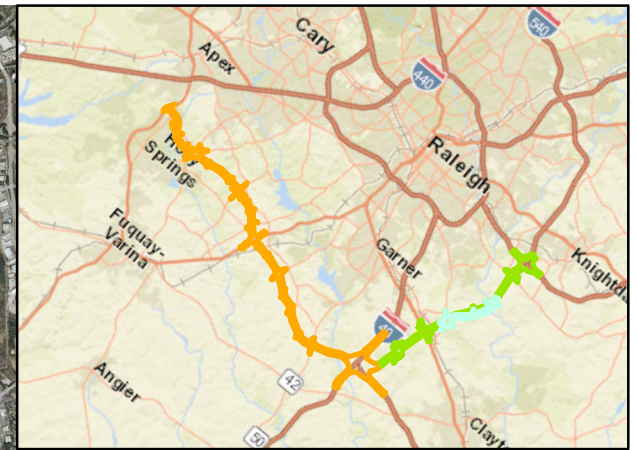
**LEGEND**

**540 Alternatives**

- Green
- Mint
- Orange
- County Line

0 Feet 10,000

DATA SOURCE: NCOneMap latest Orthoimagery



NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
DIVISIONS 4 AND 5

**Complete 540**  
**Wake and Johnston Counties**  
**TIPs R-2721, R-2828, and R-2829**

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