

Street bridge over I-440 would attract more traffic passing through the neighborhood, particularly on Method Road and Woods Place.

To explore these concerns, NCDOT prepared a small area traffic forecast for the Ligon Street/Method Road area (May 2015) to see how traffic volumes would change on these local streets if a two-lane bridge were constructed. The forecast also assumed that in the build condition, Ligon Street would be extended westward to connect directly with Blue Ridge Road, as planned for in the future by the City of Raleigh.

The traffic forecast was prepared for existing and future year 2035 for both the build condition (build the two-lane Ligon Street bridge and widen I-440) and the no-build condition (keep existing one-lane culvert only) to evaluate the potential traffic effects.

The new Ligon Street bridge and connection to Blue Ridge Road would change traffic patterns primarily along the boundaries of the Method Neighborhood rather than through the neighborhood, which is good news in relation to the neighborhood's concerns.

Along the southern neighborhood boundary, Ligon Street would experience increased traffic along its length from Blue Ridge Road to Gorman Street. From I-440 to Method Road, Ligon Street would carry about 1,700 vehicles per day without the project and 5,100 vehicles per day with the two-lane bridge. From Method Road to Gorman Street, Ligon Street would carry about 5,200 vehicles per day without the project and 8,100 vehicles per day with the two-lane bridge. All of these volumes are within the carrying capacity of a two-lane local road. As a comparison, Athens Drive over I-440 currently carries about 7,200 vehicles per day.

Traffic on Method Road through the neighborhood would be about the same with or without the project (about 9,300 to 9,500 vehicles per day in 2035) as any additional traffic that may be attracted to use Method Road as a cut-through is offset by traffic that would now stay on Ligon Street to/from Gorman Street as a more convenient route.

There are other transportation projects currently being planned in the area by the City of Raleigh and other agencies that were not accounted for in the traffic forecasts described above because they have not been fully funded or programmed. However, these improvements could provide additional reductions in traffic volumes through the Method Neighborhood when implemented.

The Raleigh-Cary Rail Crossing Study (March 2016) recommends closing the Beryl Road railroad crossing near Hillsborough Street, extending Beryl Road to Royal Street, and signalizing the Royal Road/Hillsborough Street intersection. The crossing study determined that these modifications to the street system "reduces travel time savings for cut-through traffic, therefore reducing traffic volumes through the neighborhood". As a related project, the City of Raleigh is recommending an extension of Royal Street one block south to Ligon Street, which would further draw traffic away from the heart of the neighborhood.

The City of Raleigh met with the Method Men's Group on February 17, 2016 at the Method Community Center to discuss the numerous transportation improvements planned in the Method Road area described above. The approximately 30 attendees expressed overall support for the planned transportation changes in their area.



Ligon Street one-lane tunnel under I-440

NC Museum of Art

The NC Museum of Art (NCMA) is located in the northwest quadrant of the I-440/Wade Avenue interchange. The Museum Park portion of NCMA abuts the I-440 and Wade Avenue rights of way. The Reedy Creek greenway goes through the Museum Park and over I-440 on a signature pedestrian bridge. The Museum Park trails run through Museum Park and connect to the Reedy Creek greenway.

The NCMA staff stated they had general concerns about drainage, erosion, and sedimentation from any construction activities along I-440 and Wade Avenue next to their site. They were also concerned about vegetation removal for the new right of way along westbound I-440.

NCMA staff noted that there are erosion problems and degraded streams within the Museum Park area, particularly House Creek, which runs under Wade Avenue just west of I-440 and would require the additional permanent drainage easement under the Two Flyovers Alternative. NCMA is conducting a study of streams on their property and are using funds from a grant from Duke Energy. NCMA is looking for other partners for this effort.

NC State University (NCSU)

NCSU School of Veterinary Medicine is located along the westbound side of I-440 between Hillsborough Street and Wade Avenue. Other NCSU property along the westbound side of I-440 includes buildings, research facilities, and the JC Raulston Arboretum south of Beryl Road. Research buildings are also located west of I-440 on the south side of Ligon Street.

NCSU property is owned by the State of North Carolina. Right of way acquisition and relocation will be complex due to the land ownership and the uses in the NCSU facilities. NCDOT understands this complexity and will continue to work with the University Club, NCSU, and the NC Department of Administration throughout the project planning and implementation processes.

Regarding alternatives, NCSU staff supports a two-lane bridge for the Ligon Street grade separation to enhance pedestrian, bicycle, and transit connectivity between their campus facilities. Of the Detailed Study Alternatives for the Hillsborough Street and Wade Avenue interchange area, NCSU staff least preferred the Slight Detour option.

NCSU staff also expressed concerns about other issues, including:

- Lighting near the horticultural research facilities. Lighting design will be addressed during the final design phase.
- Access to the JC Raulston Arboretum needs to be maintained during construction. Access is anticipated to be maintained to the arboretum.
- Traffic noise impacts. A traffic noise assessment was prepared as part of this EA, as summarized in **Section 3.6**.
- Pedestrian/bicycle accommodation should be provided along Western Boulevard. The preliminary design of the Western Boulevard interchange provides accommodation.

NC State University Club

The NC State University Club is a separate entity from NCSU. The University Club is located on NCSU property near the westbound I-440 right of way boundary between Hillsborough Street and Wade Avenue. They have a clubhouse, golfing, tennis, and a pool. The NCSU Foundation operates the club and leases the land where the club is located from NCSU. In addition, NCSU Athletics Department subleases land from the University Club for a golf practice facility located near the southwest quadrant of the I-440/Wade Avenue interchange.

All of the Detailed Study Alternatives would unavoidably encroach upon and impact the University Club land and facilities (see **Section 3.1.2**). NCDOT understands that the right of way acquisition process is complex and will continue to work with the University Club, NCSU, and the NC Department of Administration throughout the project planning and implementation process.

Surtronics

Surtronics, located at 4001 Beryl Road in Raleigh, is an electroplating and anodizing business that has been at their location since approximately 1966. The eastbound I-440 right of way line is along a deliveries driveway. The company was concerned about having to be relocated for the project since they have a unique service line that could be challenging for finding a new site. The Surtronics property is not anticipated to require relocation for the project.

West Citizens Advisory Council (CAC)

The West CAC is a City of Raleigh sponsored group representing the neighborhoods on both side of I-440 in the vicinity of the I-440/Melbourne Road interchange. Raleigh has nineteen CACs representing different areas of the City that serve as non-partisan advisory boards to the City Council.

There were approximately 55 attendees at the 2012 meeting, 50 attendees at the 2015 meeting, and 25 attendees at the 2017 meeting. Primary areas of concern expressed during the meetings included:

- Retain or close the Melbourne Road interchange. Input from these meetings and the public meetings indicated majority (approximately 67%) support for retaining the Melbourne Road interchange. This interchange is included in the project.
- Deboy Street connection to the Melbourne Road interchange off ramp. There were some residents who wanted this connection to remain. However, this connection does not conform to current interchange design standards and is not included in the proposed project.
- Traffic noise impacts. A traffic noise assessment was prepared as part of this EA, as summarized in **Section 3.6**.
- Improvements to neighborhood streets. Some attendees wanted traffic calming measures, stop signs, and other improvements made to neighborhood streets. These would be separate City of Raleigh projects.
- Bicycle and pedestrian accommodations desired on the Athens Drive bridge and the Melbourne Road bridge over I-440. These accommodations will be provided, in coordination with the City of Raleigh.
- Impacts to property and relocations. Right of way and relocation issues are discussed in **Section 3.1.2**.
- Impacts to Lake Johnson Park. There will be a minor easement encroachment on Lake Johnson Park at the Jones Franklin Road interchange area to accommodate upgraded drainage structures. See **Section 3.10.3**.

4.5 SECTION

Stakeholder Advisory Committee

The Stakeholder Advisory Committee, formed at the beginning of the planning study, is comprised of study-area groups. Members offer advice and local knowledge valuable in developing and evaluating project alternatives.

Committee members include representatives from:

- Cary, Town of (Engineering)
- Dilweg Companies (business park owner)
- Hillsborough Street Community Service Corporation
- NC Museum of Art
- NC State University (NCSU)
- NC State University Club
- NC Railroad
- Meredith College
- Raleigh, City of (Parks and Recreation, Stormwater, Transportation, Urban Design Center)
- Raleigh Historic Development Commission
- NC State Fairgrounds
- West Citizens Advisory Committee
- Capital Area Metropolitan Planning Organization (CAMPO) (added after second meeting)
- Oak City Baptist Church (added after second meeting)

Invited but chose to coordinate separately:

- Method Civic League
- JC Raulston Arboretum

Stakeholder Advisory Committee Meeting #1 - Start of Study and Purpose and Need

The committee agreed that improvements were needed along I-440 in the project area. Topics discussed at the meeting included:

- Landscaping should be included in the project and noise barrier appearance should be enhanced since this area is a gateway to Raleigh.
- Bicycle and pedestrian access across I-440 is important.
- Potential impacts to Lake Johnson Park and Walnut Creek are of concern.
- Maintaining traffic along I-440 during construction is essential and will be challenging.
- Oak Grove Cemetery is very important to the Method Neighborhood.
- There is a high level of interest regarding widening Ligon Street to two lanes across I-440.

Stakeholder Advisory Committee Meeting #2 - Alternatives Recommended for Detailed Study

The committee discussed the project alternatives and evaluation results and agreed with the alternatives recommended to be studied in detail in the environmental assessment.

Committee members stated that noise walls, lighting, and planters in the I-440 median should be evaluated.

For the Athens Drive grade separation, attendees recommended revising the proposed temporary detour route to use Powell Drive since it has a traffic signal at Western Boulevard. This recommendation was incorporated into the alternative.

4.6

SECTION

Agency Coordination

Many federal, state, and local agencies have jurisdiction in the project area due to their geographic boundaries and/or regulatory responsibilities. Regular coordination and information sharing with these agencies in an agency coordination team helps with impact evaluation and applying for and receiving permits.

Coordination began at the start of the planning process by sending a letter to local, state, and federal agencies (called a scoping letter) asking for input on project concerns and for information on resources present in the project area. Responses assisted with defining the project and the scope of the environmental issues to be addressed.

Issues raised during this scoping process included potential impacts to: surrounding neighborhoods, streams with impaired water quality (Walnut Creek, Lake Johnson) and other streams, floodplains and floodways, structures of historical or architectural importance, greenways, and White Oak Lake dam. Agencies also noted there were issues such as archaeological resources, wildlife, and endangered species that were of less concern in this urbanized area. Consideration of the following was also requested: bicycle and pedestrian facilities on cross-streets, landscape planters in the I-440 median, noise walls, lighting, and interchange improvements.

The agency coordination team met on August 22, 2012 and concurred on the project's purpose and need. On March 12, 2015, the team met and concurred on the alternatives recommended for detailed study. The concurrence forms are included in **Appendix D1**. The team will meet several more times to discuss the EA, the selection of the preferred alternative, and permitting issues.

The agency coordination team includes members from the following agencies:

- Federal Highway Administration (FHWA)
Lead federal agency for the project and responsible for the Environmental Assessment. Has jurisdiction over interstate facilities and is providing funding for the project
- US Army Corps of Engineers (USACE)
Issues permits for impacts to wetlands, streams, and other water resources in accordance with the Clean Water Act
- US Environmental Protection Agency (EPA)
Has jurisdiction under the National Environmental Policy Act (NEPA), the Clean Air Act, and other laws
- US Fish and Wildlife Service
Has jurisdiction if there are any plant or animal species present that are listed as Endangered or Threatened under the Endangered Species Act or subject to the Migratory Bird Treaty Act
- NC Division of Water Resources
Issues permits for impacts to wetlands, streams, and other water resources in accordance with the Clean Water Act and several state laws
- NC Wildlife Resources Commission
Charged by the State with conserving and sustaining the state's fish and wildlife resources and responsible for regulating wildlife-associated recreation
- NC Historic Preservation Office (NCHPO)
Has jurisdiction over resources on or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act
- Capital Area Metropolitan Planning Organization (CAMPO)
Sets transportation project and funding priorities for the region

FOR MORE DETAILS ON THE INFORMATION IN THIS CHAPTER:

The following documents as well as summaries from the small group meetings listed in **Section 4.4** are available upon request by contacting Beverly Robinson at NCDOT at brobinson@ncdot.gov.

Public Meetings

- **Summary - Citizens Informational Workshop #1** held December 3, 2012 for I-440 Improvement Project (U-2719)
(February 13, 2013, Atkins)
- **Summary - Public Meeting #2** held November 12, 2014 for I-440 Improvement Project (U-2719)
(December 12, 2014, Atkins)

Stakeholder Advisory Committee Meetings

- **Minutes - Stakeholder Advisory Committee Meeting #1**
held November 14, 2012
- **Minutes - Stakeholder Advisory Committee Meeting #2**
held October 30, 2014

Coordination with Environmental Resource and Regulatory Agencies

(Note: Concurrence forms are included in Appendix D1)

- **Summary of Comments Received During the Project Scoping Process**
(Atkins, October 5, 2012)
- **Minutes - Agency Coordination Meeting #1 - Scoping and Purpose and Need (Concurrence Point 1)**
held August 22, 2012
- **Minutes - Agency Coordination Meeting #2 - Detailed Study Alternatives (Concurrence Point 2)**
held March 12, 2015

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APPENDICES

Appendix A: Notable Features Map A-1

Appendix B: Preliminary Designs of the Detailed Study Alternatives..... B-1

B.1. Design Criteria and Typical Sections

B.2. Design Mapbook

Appendix C: Impact Summary Matrix C-1

Appendix D: Agency Correspondence D-1

D.1. Merger Team Concurrence Forms

D.2. Historic Resources Eligibility and Effects Determinations

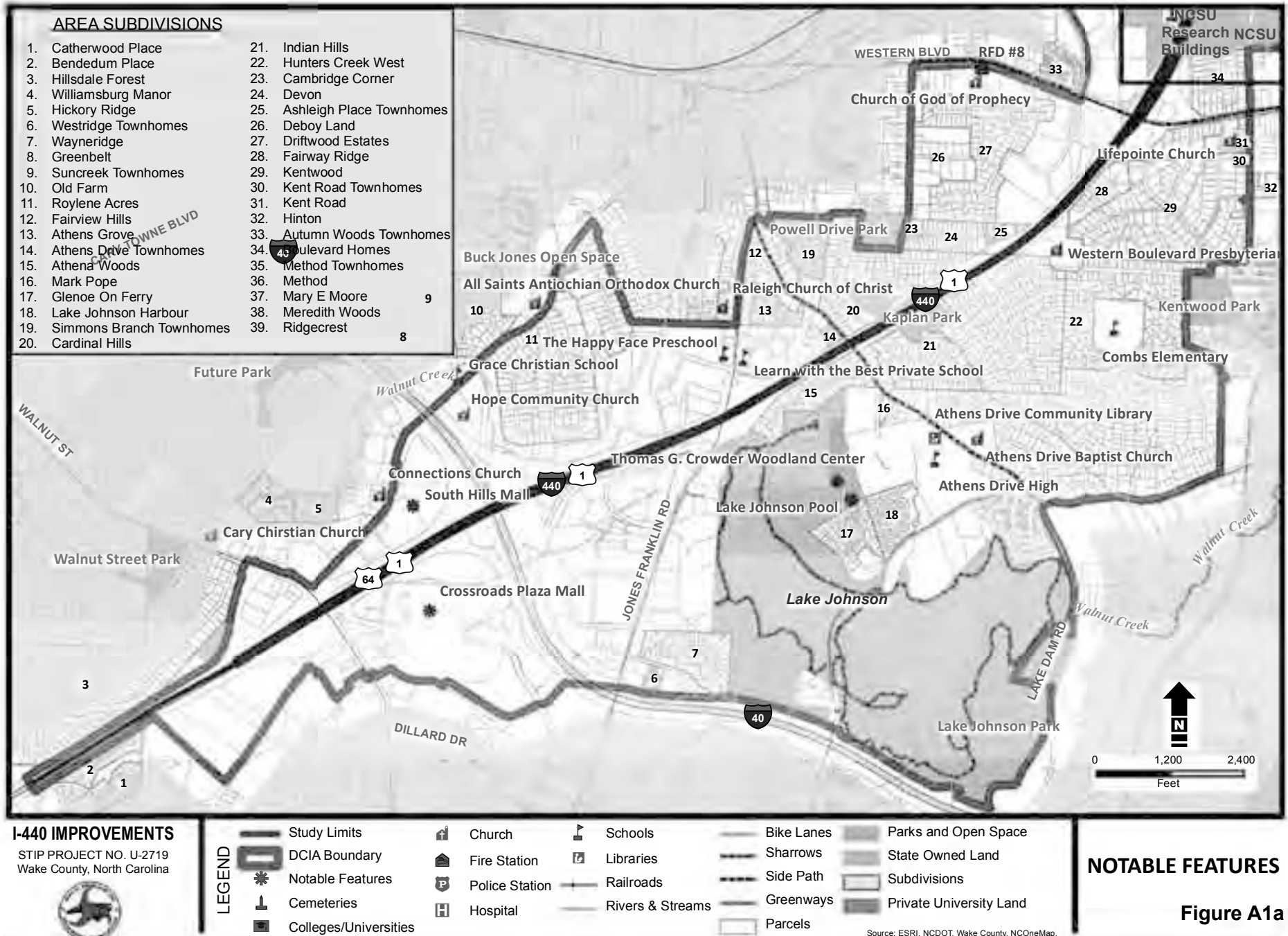
Appendix E: NCDOT Relocation Reports E-1

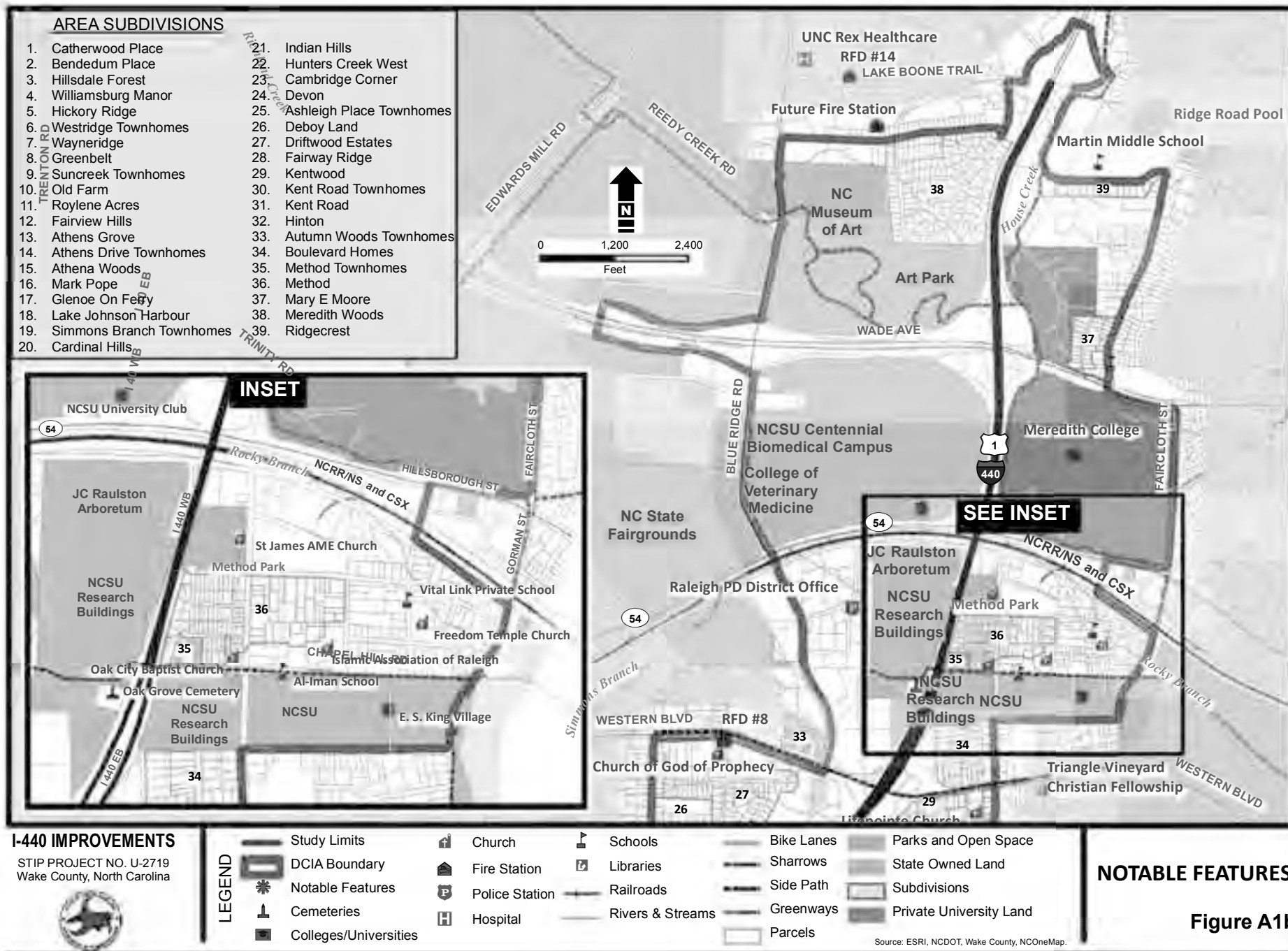
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A

APPENDIX

NOTABLE FEATURES MAP





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B

APPENDIX

PRELIMINARY DESIGNS OF THE DETAILED STUDY ALTERNATIVES

B.1. Design Criteria and Typical Sections

Table B1: Basic Design Criteria¹ for I-440 and Cross Streets

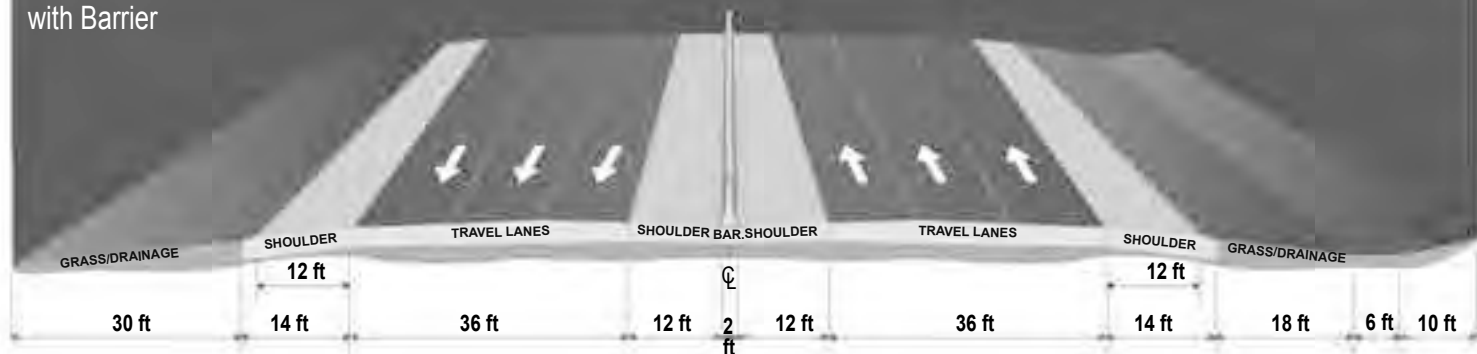
Roadway	I-440	Jones Franklin Rd	Ft Sumter Rd	Denise Dr Extension	Athens Dr	Melbourne Rd
Classification	Interstate	Major Collector	Local	Local	Major Collector	Local
Design Speed (mph)	70	50	40	40	40	40
Max Posted Speed (mph)²	65	45	35	35	35	35
Proposed Right of Way Width (ft)	Varies	95	70	70	70	70
Control of Access	Full control	Partial control ³	None	None	None	None ³
Rumble Strips (Y/N)	Yes	No	No	No	No	No
Typical Section Type	6-lane divided	4-lane curb & gutter	2-lane curb & gutter	2-lane curb & gutter	2-lane curb & gutter	2-lane curb & gutter
Lane Widths (ft)	12	12	12	12	11	11
Median Width (ft)	26	23	N/A	N/A	N/A	N/A
Sidewalks or Multi-Use Paths	No	Yes	Yes	Yes	Yes	Yes
Bicycle Lanes (Y/N)	No	Yes	No	No	Yes	Yes

Roadway	Western Blvd	Ligon St	Hillsborough St	Wade Ave ⁴	Lake Boone Trl
Classification	Major Arterial	Local	Minor Arterial	Major Arterial	Major Collector
Design Speed (mph)	50	40	50	50	50
Posted Speed (mph)	45	35	45	45	45
Proposed Right of Way Width (ft)	Varies	Varies	Varies	Varies	Varies
Control of Access	None ³	None ³	None ³	Full control	None ³
Rumble Strips (Y/N)	No	No	No	Yes	No
Typical Section Type	6-lane curb & gutter	2-lane curb & gutter	4-lane curb & gutter	4-lanes with shoulder	4-lane curb & gutter
Lane Widths (ft)	12	12	12	12	12
Median Width (ft)	Varies	N/A	12-ft raised	Varies	N/A
Sidewalks or Multi-Use Paths	Yes	Yes	Yes	No	Yes
Bicycle Lanes (Y/N)	No	No	No	No	No

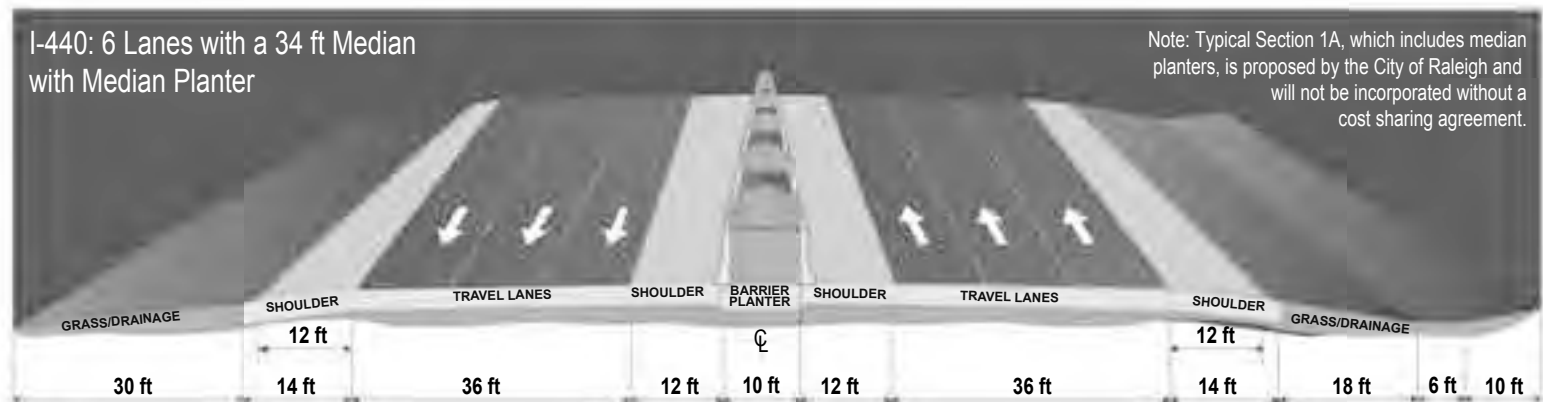
Notes:

1. Design values were obtained from "The 2011 AASHTO A Policy on Geometric Design of Highways and Streets" (GB), the 2012 NCDOT Roadway Design Manual (RDM), and 2012 NCDOT Standard Drawings (STD).
2. Posted speed listed is the maximum posted speed. Actual posted speed limits may be set lower based upon coordination between NCDOT and the local municipality.
3. In all interchange areas, there will be control of access through the interchange.
4. This is the section of Wade Avenue from Ridge Road, under I-440, to the first set of Blue Ridge Road ramps.

I-440: 6 Lanes with a 26 ft Median with Barrier



I-440: 6 Lanes with a 34 ft Median with Median Planter

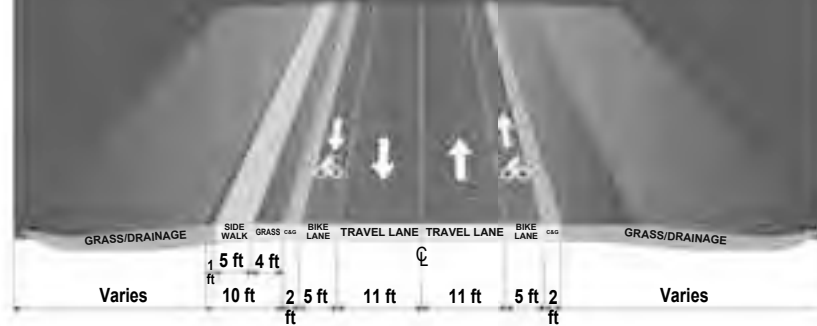


Note: Typical Section 1A, which includes median planters, is proposed by the City of Raleigh and will not be incorporated without a cost sharing agreement.

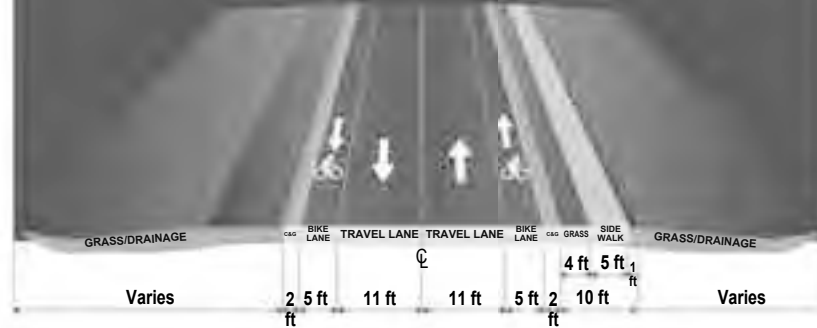
Jones Franklin Rd
Y-10



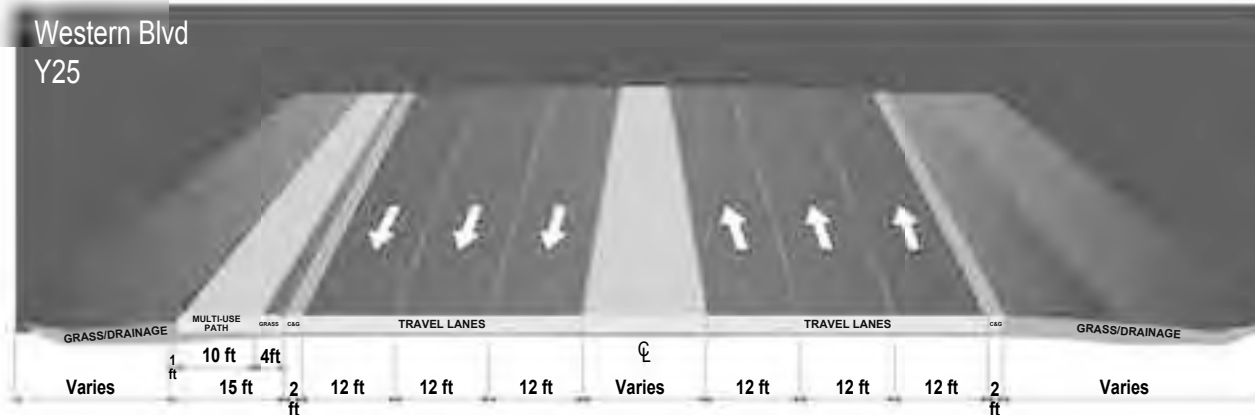
Athens Drive
Y15

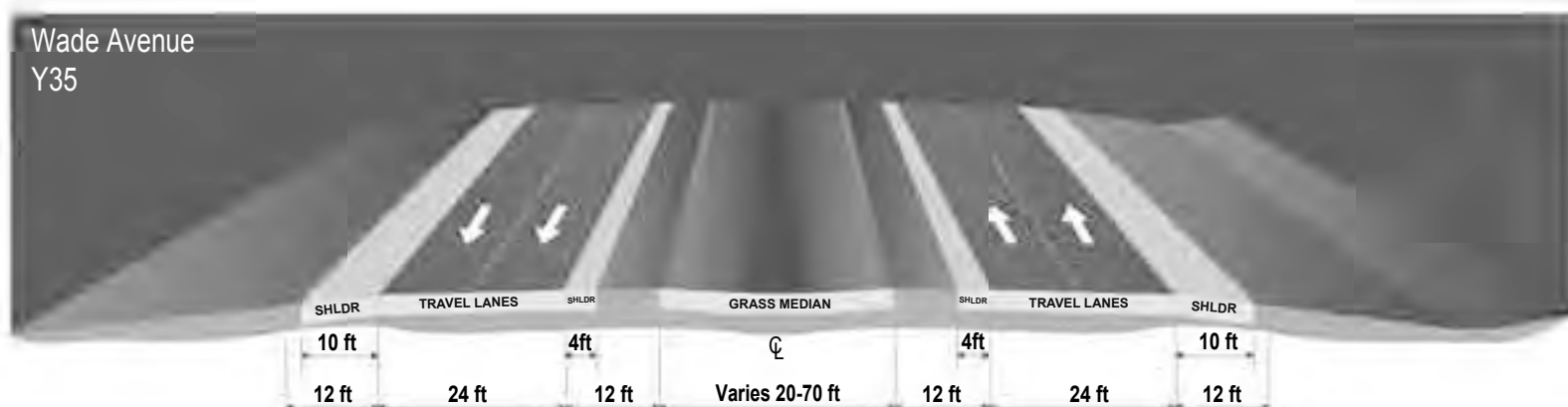
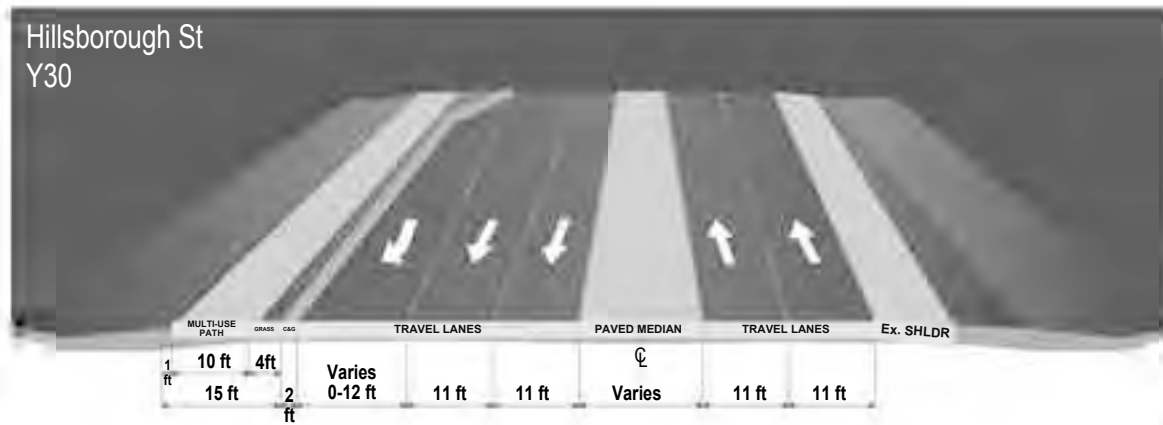
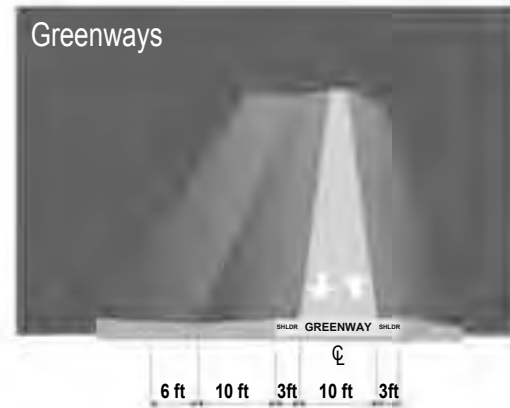
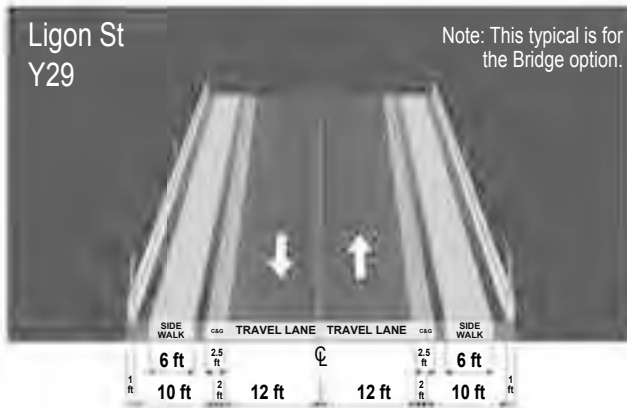


Melbourne Rd
Y20



Western Blvd
Y25





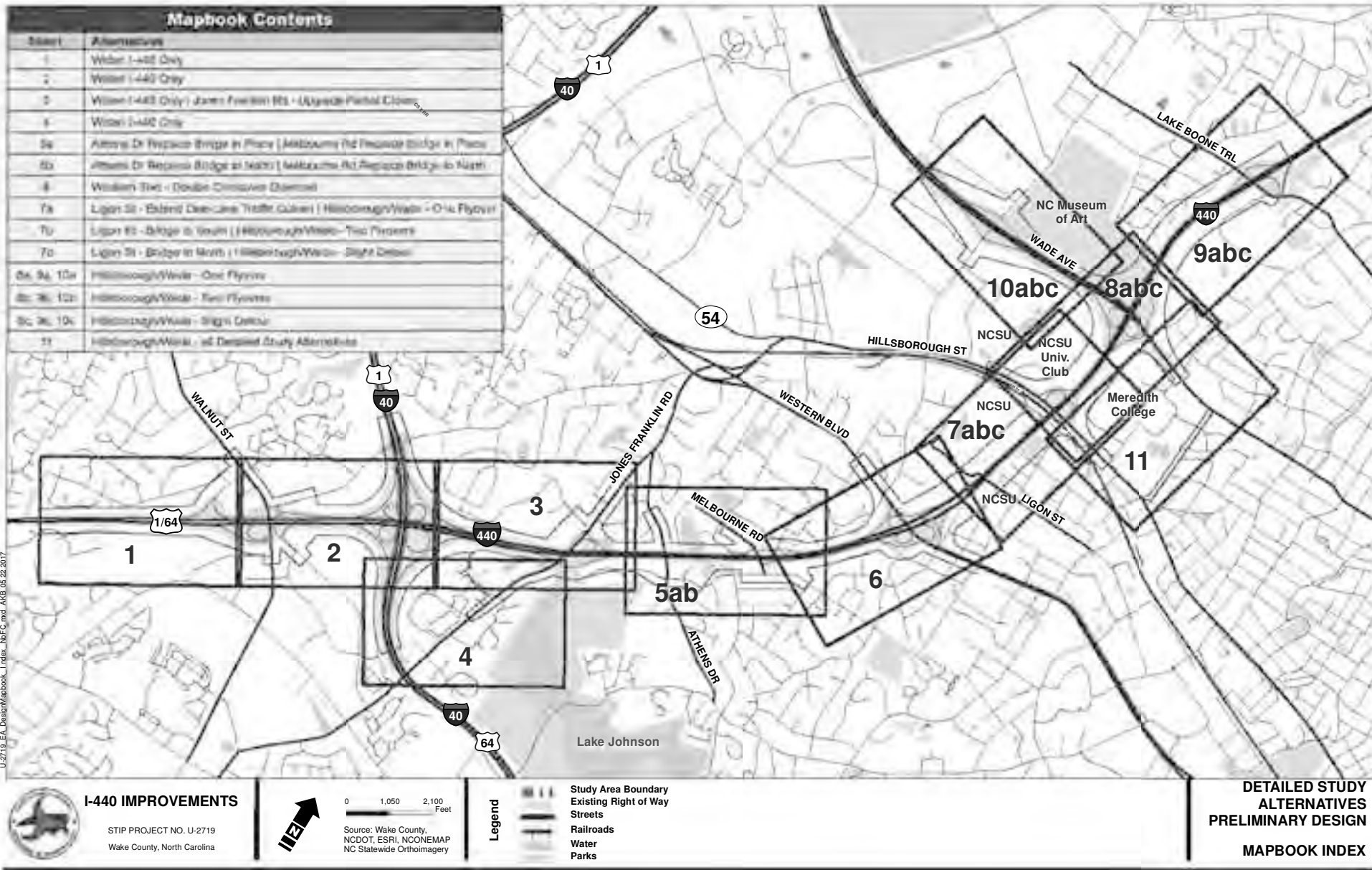
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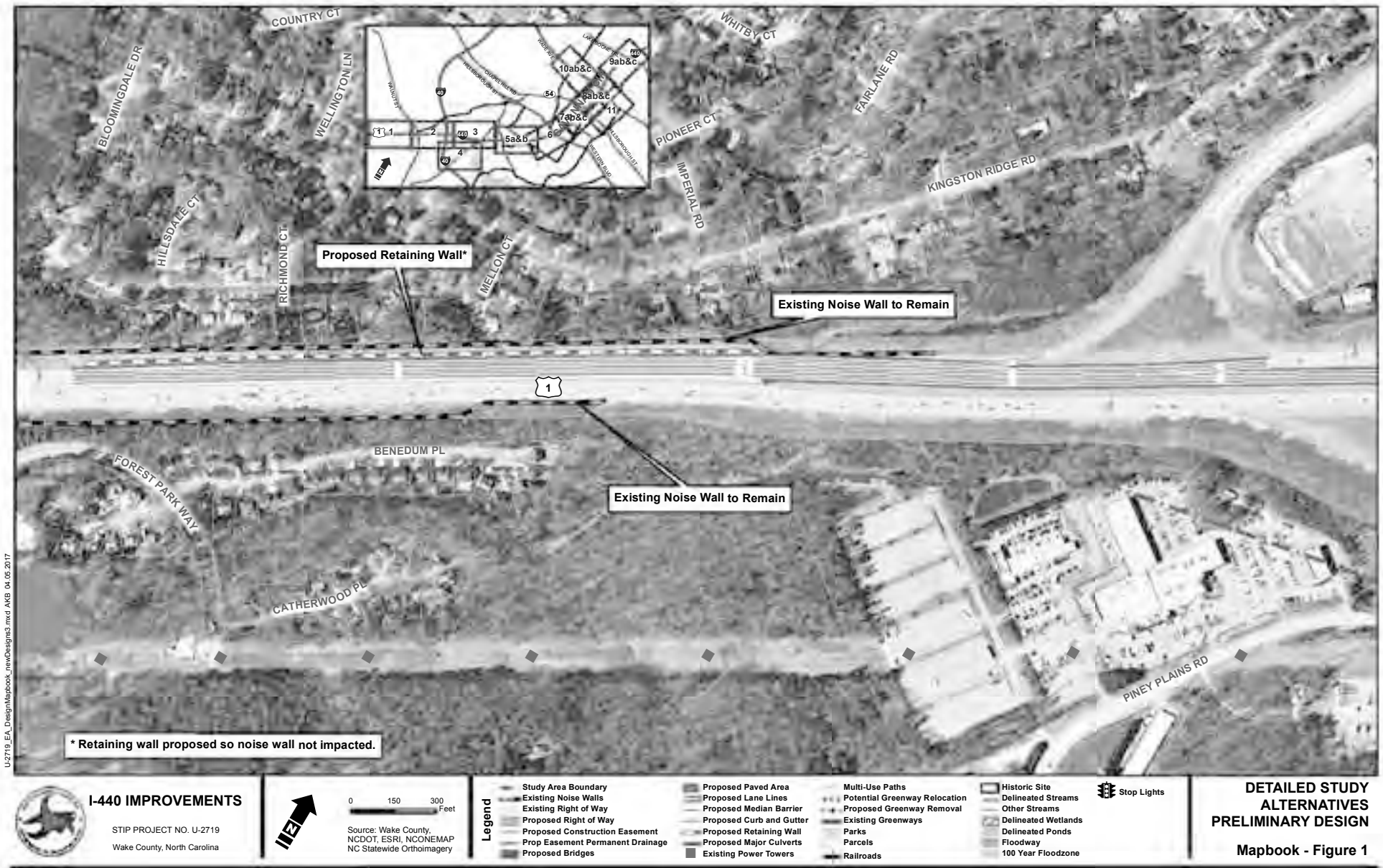
B

APPENDIX

PRELIMINARY DESIGNS OF THE DETAILED STUDY ALTERNATIVES

B.2. Design Mapbook







U-2719_EA_DesignMapbook_newDesigns3.mxd AKB 04.05.2017



I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina



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Source: Wake County, NCDOT, ESRI, NCNEMAP
NC Statewide Orthoimagery

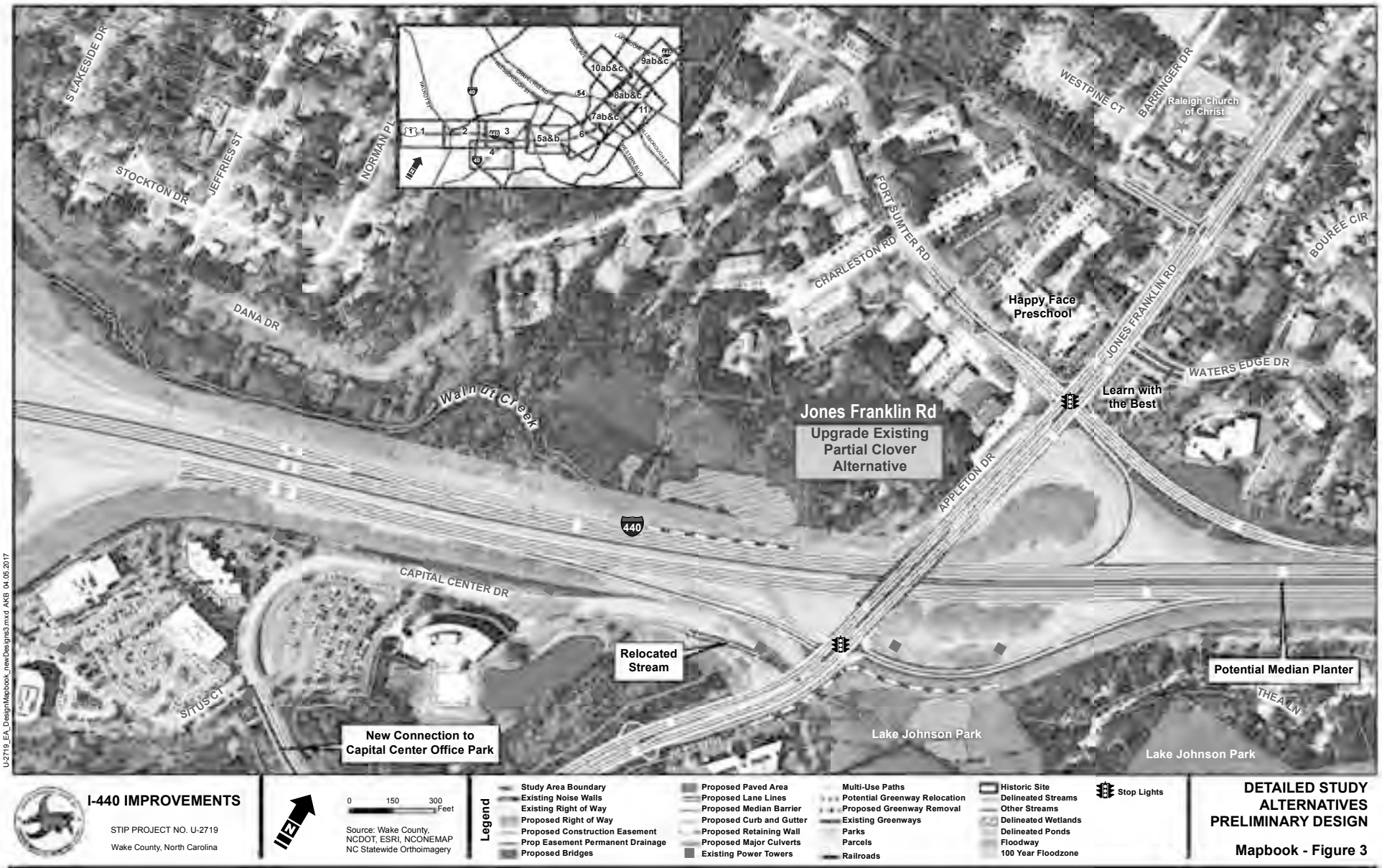
Legend

- | | | | |
|----------------------------------|--------------------------|-------------------------------|---------------------|
| Study Area Boundary | Proposed Paved Area | Multi-Use Paths | Historic Site |
| Existing Noise Walls | Proposed Lane Lines | Potential Greenway Relocation | Delineated Streams |
| Existing Right of Way | Proposed Median Barrier | Proposed Greenway Removal | Other Streams |
| Proposed Right of Way | Proposed Curb and Gutter | Existing Greenways | Delineated Wetlands |
| Proposed Construction Easement | Proposed Retaining Wall | Parks | Delineated Ponds |
| Prop Easement Permanent Drainage | Proposed Major Culverts | Parcels | Floodway |
| Proposed Bridges | Existing Power Towers | Railroads | 100 Year Floodzone |



DETAILED STUDY ALTERNATIVES PRELIMINARY DESIGN

Mapbook - Figure 2





I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina



0 150 300 Feet

Source: Wake County,
NCDOT, ESRI, NCONEMAP
NC Statewide Orthomimagery

Legend

- Study Area Boundary
- Existing Noise Walls
- Existing Right of Way
- Proposed Right of Way
- Proposed Construction Easement
- Prop Easement Permanent Drainage
- Proposed Bridges

- Proposed Paved Area
- Proposed Lane Lines
- Proposed Median Barrier
- Proposed Curb and Gutter
- Proposed Retaining Wall
- Proposed Major Culverts
- Existing Power Towers

- Multi-Use Paths
- Potential Greenway Relocation
- Proposed Greenway Removal
- Existing Greenways
- Parks
- Parcels
- Railroads

- Historic Site
- Delineated Streams
- Other Streams
- Delineated Wetlands
- Delineated Ponds
- Floodway
- 100 Year Floodzone


- Stop Lights

DETAILED STUDY ALTERNATIVES PRELIMINARY DESIGN

Mapbook - Figure 4








I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina




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Source: Wake County, NCDOT, ESRI, NCONEMAP
NC Statewide Orthoimagery

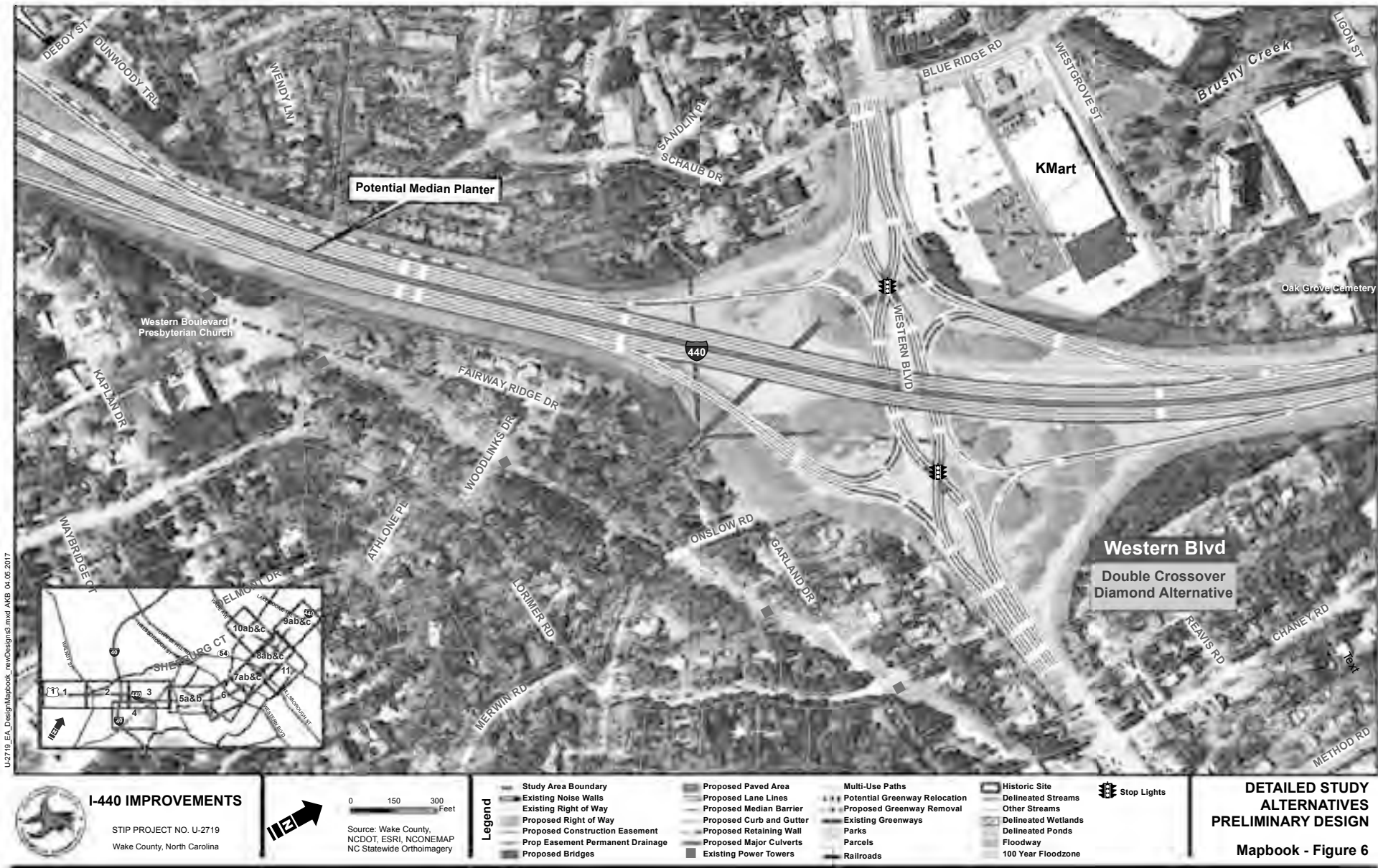
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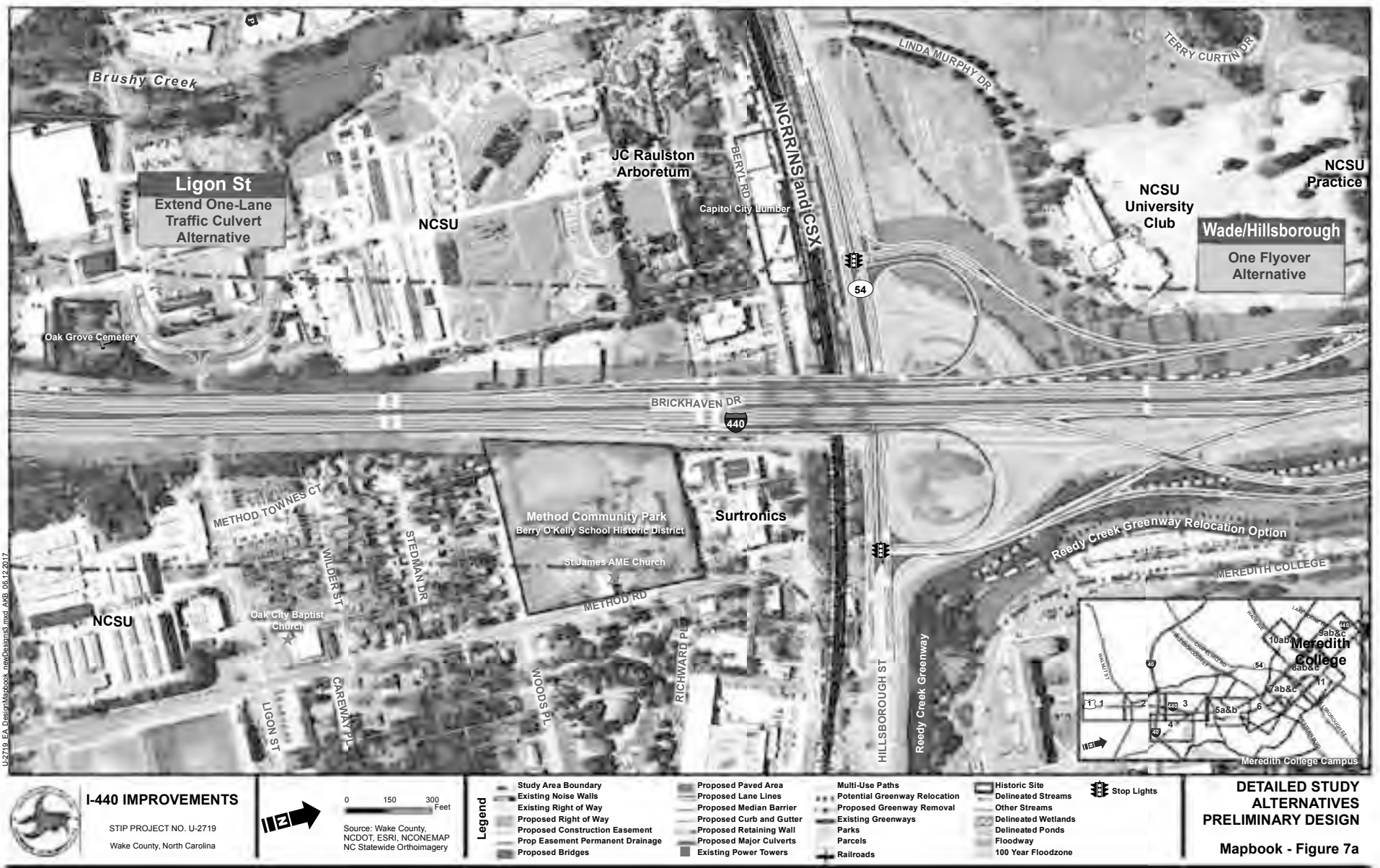
Study Area Boundary	Proposed Paved Area	Multi-Use Paths	Historic Site
Existing Noise Walls	Proposed Lane Lines	Potential Greenway Relocation	Delineated Streams
Existing Right of Way	Proposed Median Barrier	Proposed Greenway Removal	Other Streams
Proposed Right of Way	Proposed Curb and Gutter	Existing Greenways	Delineated Wetlands
Proposed Construction Easement	Proposed Retaining Wall	Parks	Delineated Ponds
Prop Easement Permanent Drainage	Proposed Major Culverts	Parcels	Floodway
Proposed Bridges	Existing Power Towers	Railroads	100 Year Floodzone

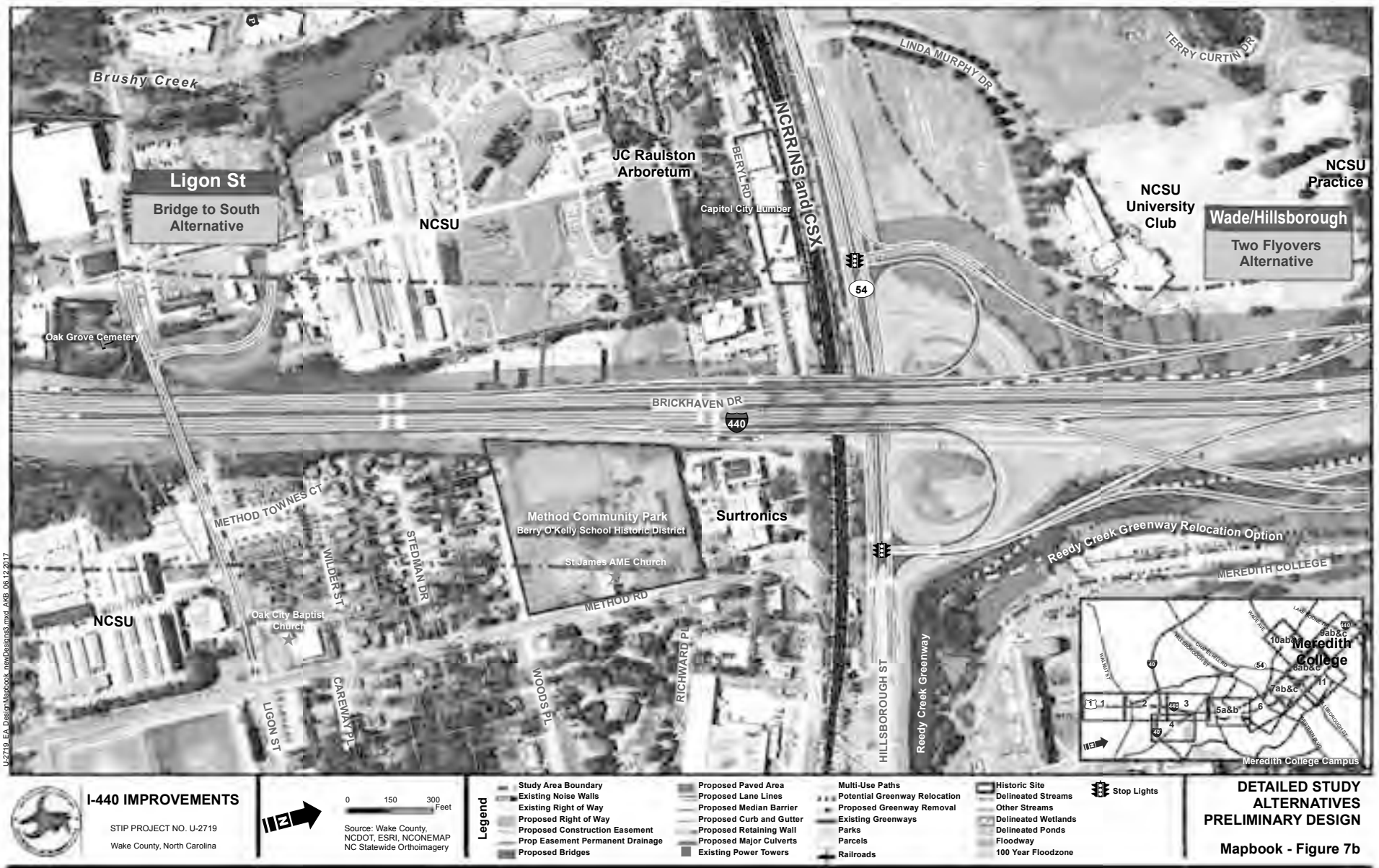
 Stop Lights

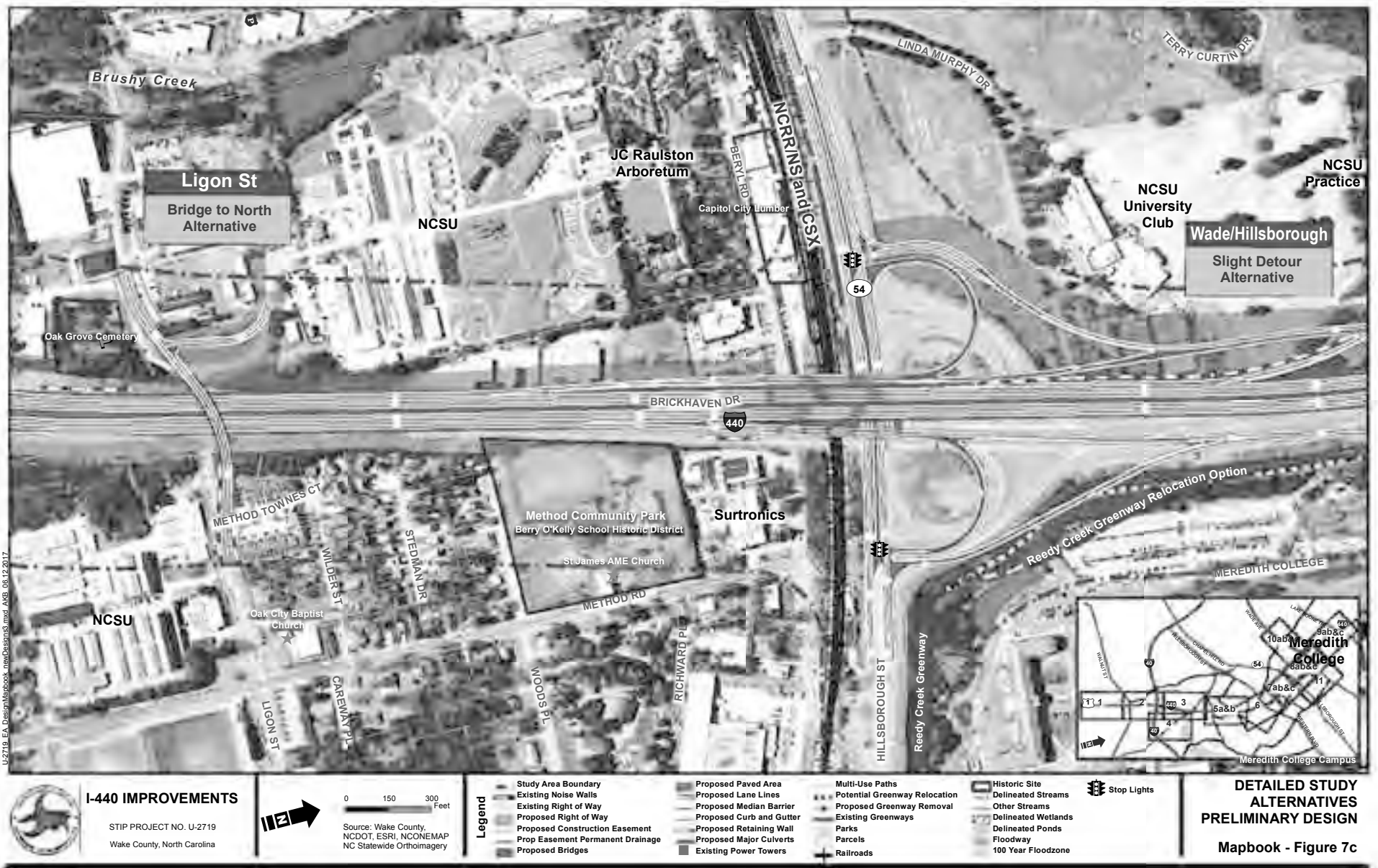
**DETAILED STUDY
ALTERNATIVES
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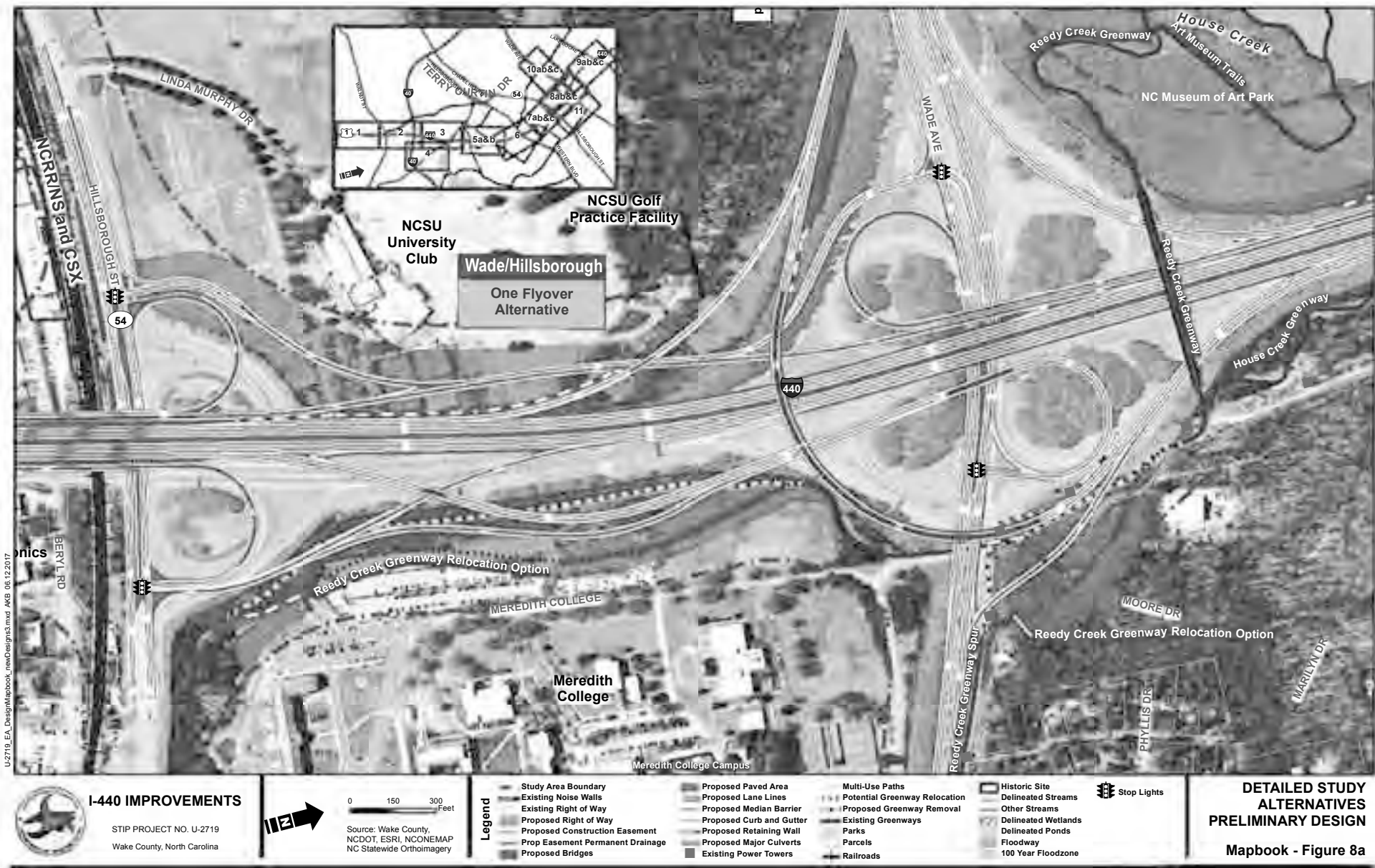
Mapbook - Figure 5b

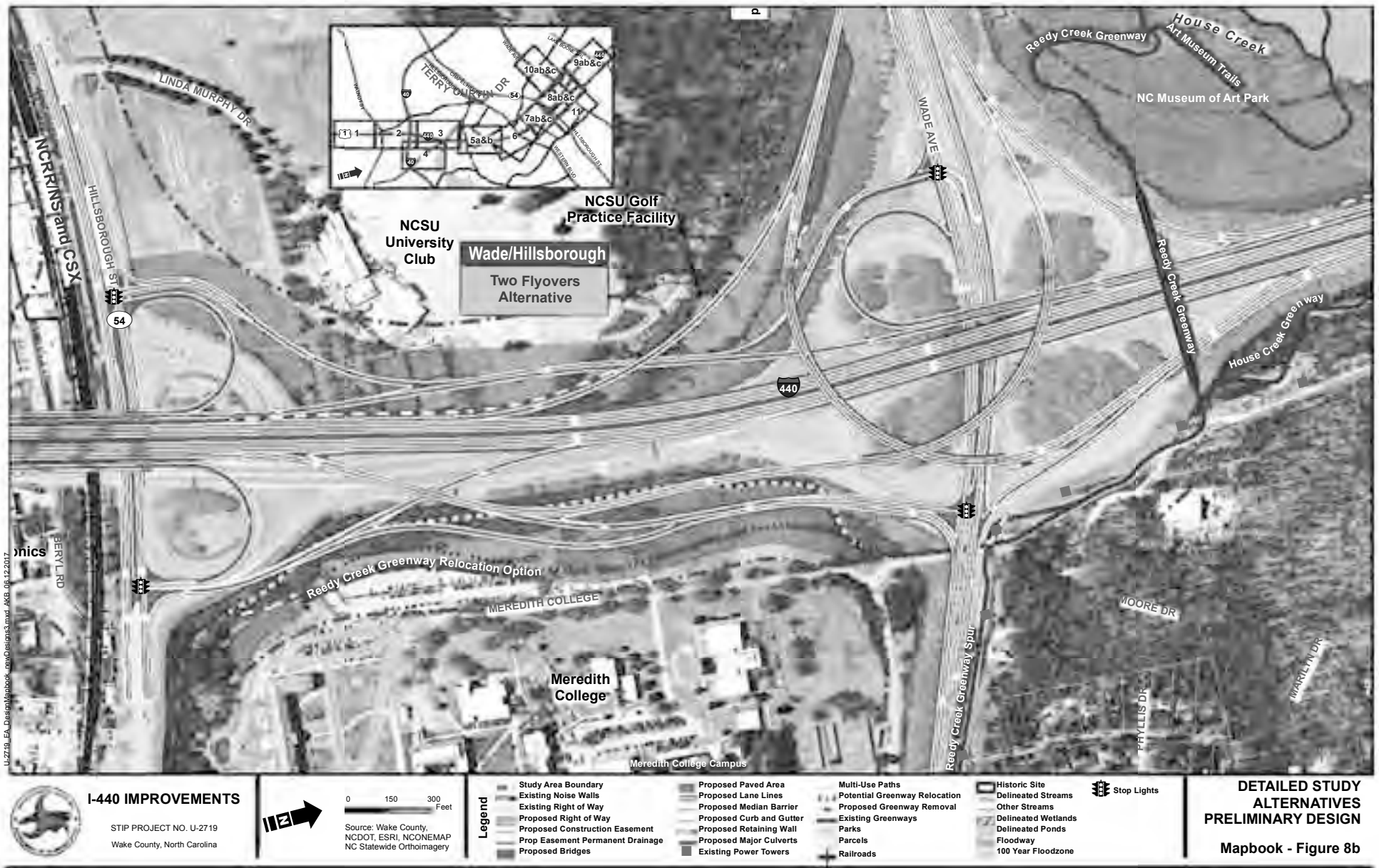


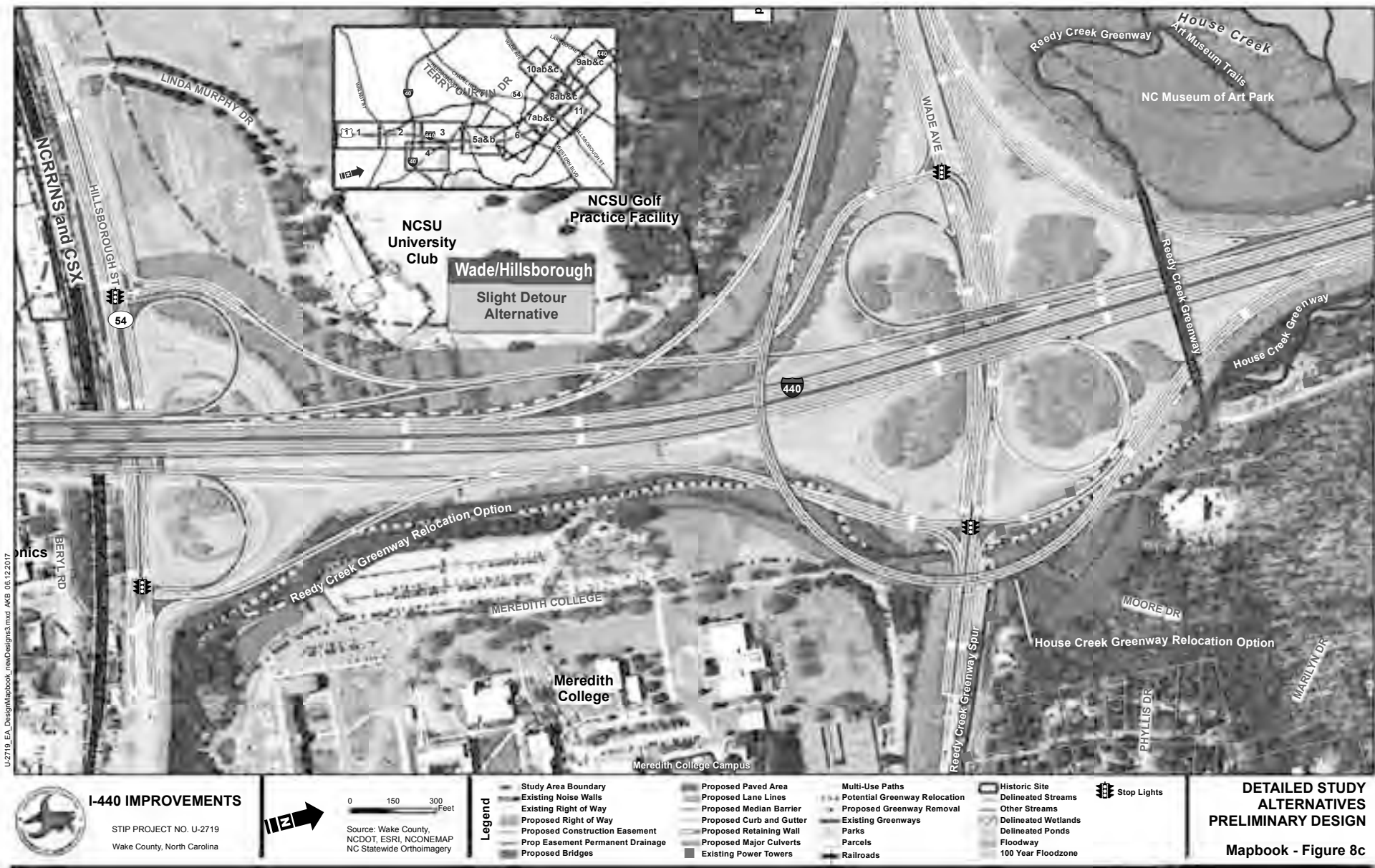


















I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina



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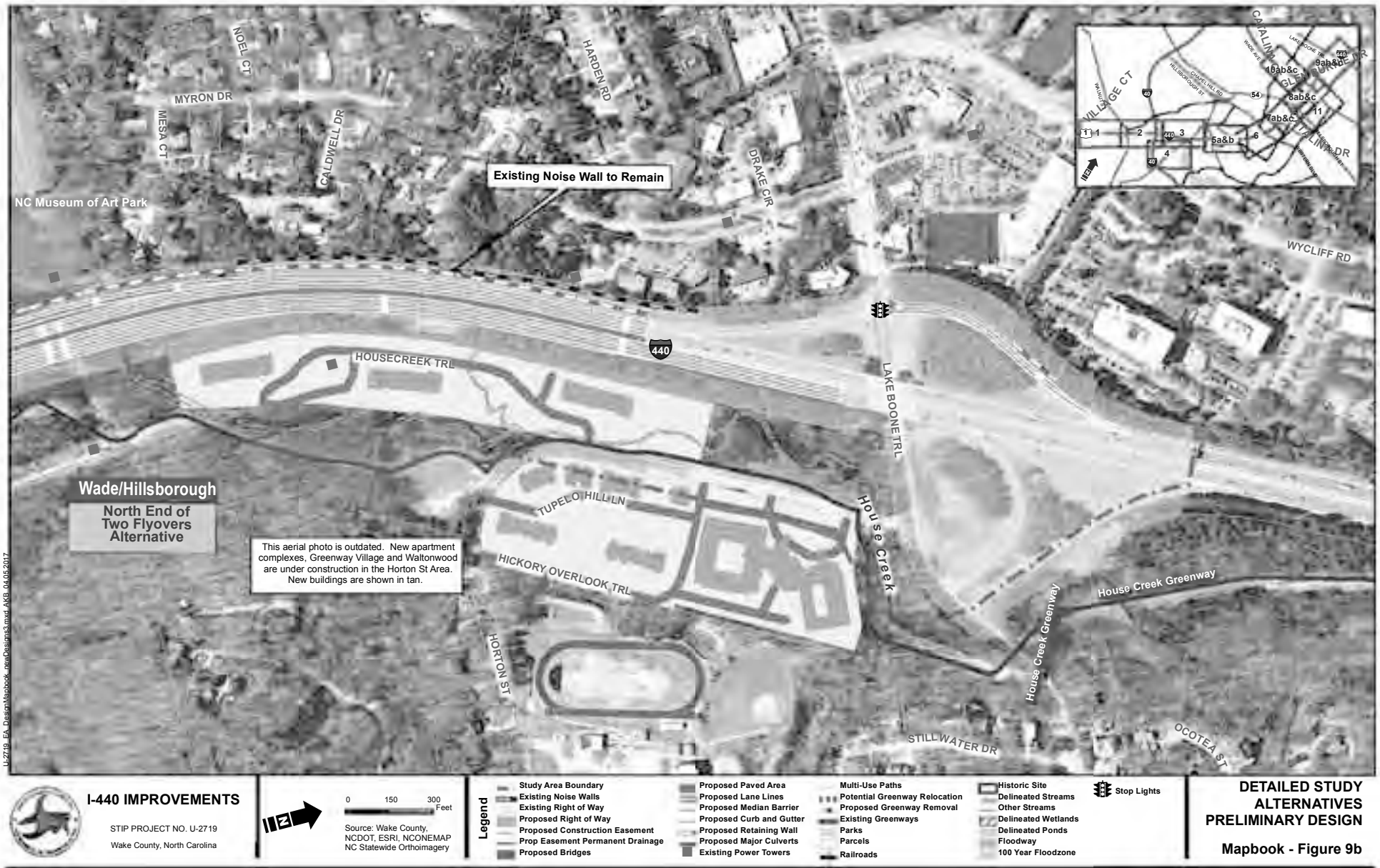
Source: Wake County, NCDOT, ESRI, NCONEMAP
NC Statewide Orthoimagery

Legend


- Study Area Boundary
- Existing Noise Walls
- Existing Right of Way
- Proposed Right of Way
- Proposed Construction Easement
- Prop Easement Permanent Drainage
- Proposed Bridges
- Proposed Paved Area
- Proposed Lane Lines
- Proposed Median Barrier
- Proposed Curb and Gutter
- Proposed Retaining Wall
- Proposed Major Culverts
- Existing Power Towers
- Multi-Use Paths
- Potential Greenway Relocation
- Proposed Greenway Removal
- Existing Greenways
- Parks
- Parcels
- Railroads
- Historic Site
- Delineated Streams
- Other Streams
- Delineated Wetlands
- Delineated Ponds
- Floodway
- 100 Year Floodzone
- Stop Lights

**DETAILED STUDY
ALTERNATIVES
PRELIMINARY DESIGN**

Mapbook - Figure 9a








I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina



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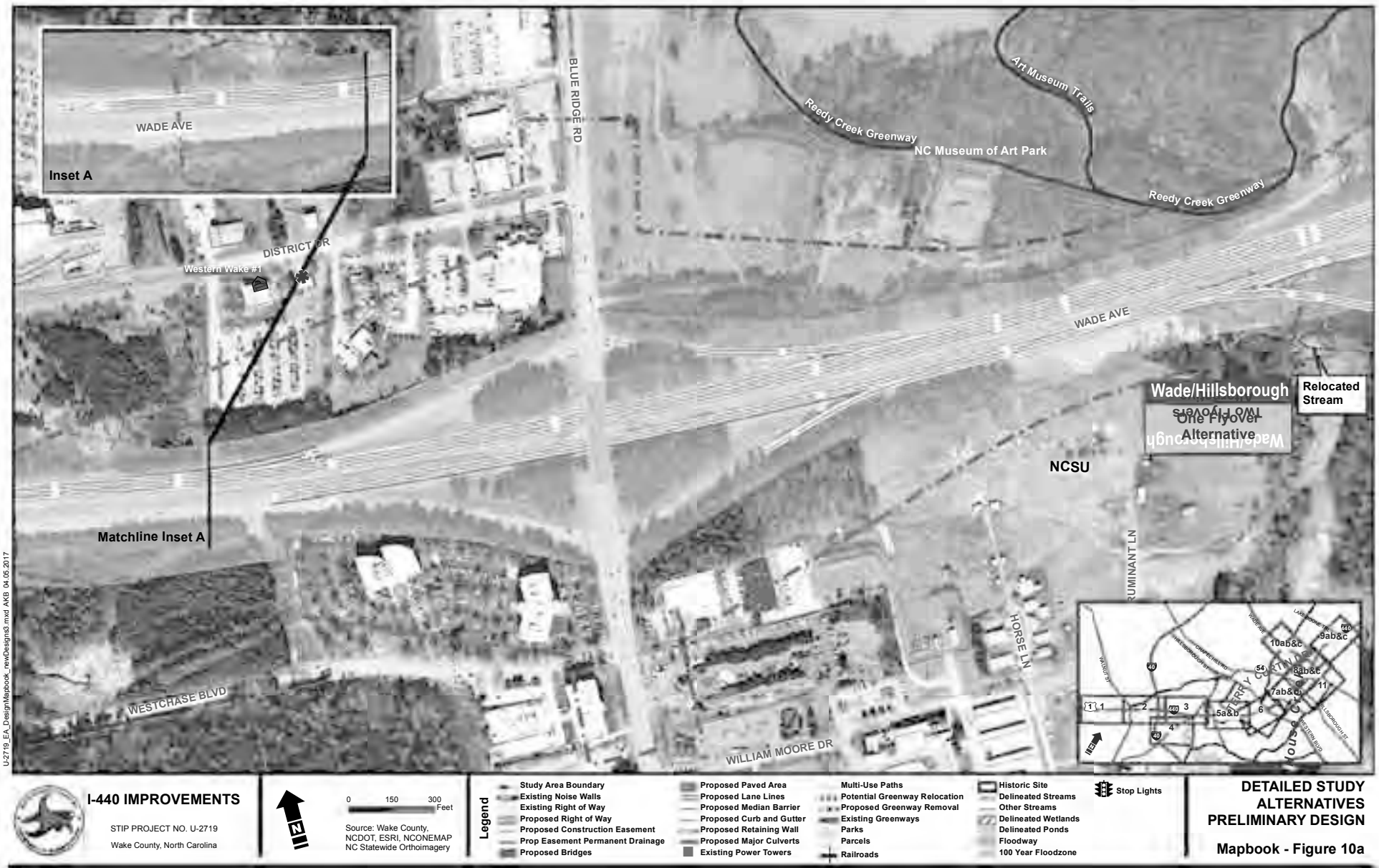
Source: Wake County, NCDOT, ESRI, NCONEMAP
NC Statewide Orthoimagery

Legend


- Study Area Boundary
- Existing Noise Walls
- Existing Right of Way
- Proposed Right of Way
- Proposed Construction Easement
- Prop Easement Permanent Drainage
- Proposed Bridges
- Proposed Paved Area
- Proposed Lane Lines
- Proposed Median Barrier
- Proposed Curb and Gutter
- Proposed Retaining Wall
- Proposed Major Culverts
- Existing Power Towers
- Multi-Use Paths
- Potential Greenway Relocation
- Proposed Greenway Removal
- Existing Greenways
- Parks
- Parcels
- Railroads
- Historic Site
- Delineated Streams
- Other Streams
- Delineated Wetlands
- Delineated Ponds
- Floodway
- 100 Year Floodzone
- Stop Lights

**DETAILED STUDY
ALTERNATIVES
PRELIMINARY DESIGN**

Mapbook - Figure 9c








I-440 IMPROVEMENTS

STIP PROJECT NO. U-2719
Wake County, North Carolina



0 150 300 Feet

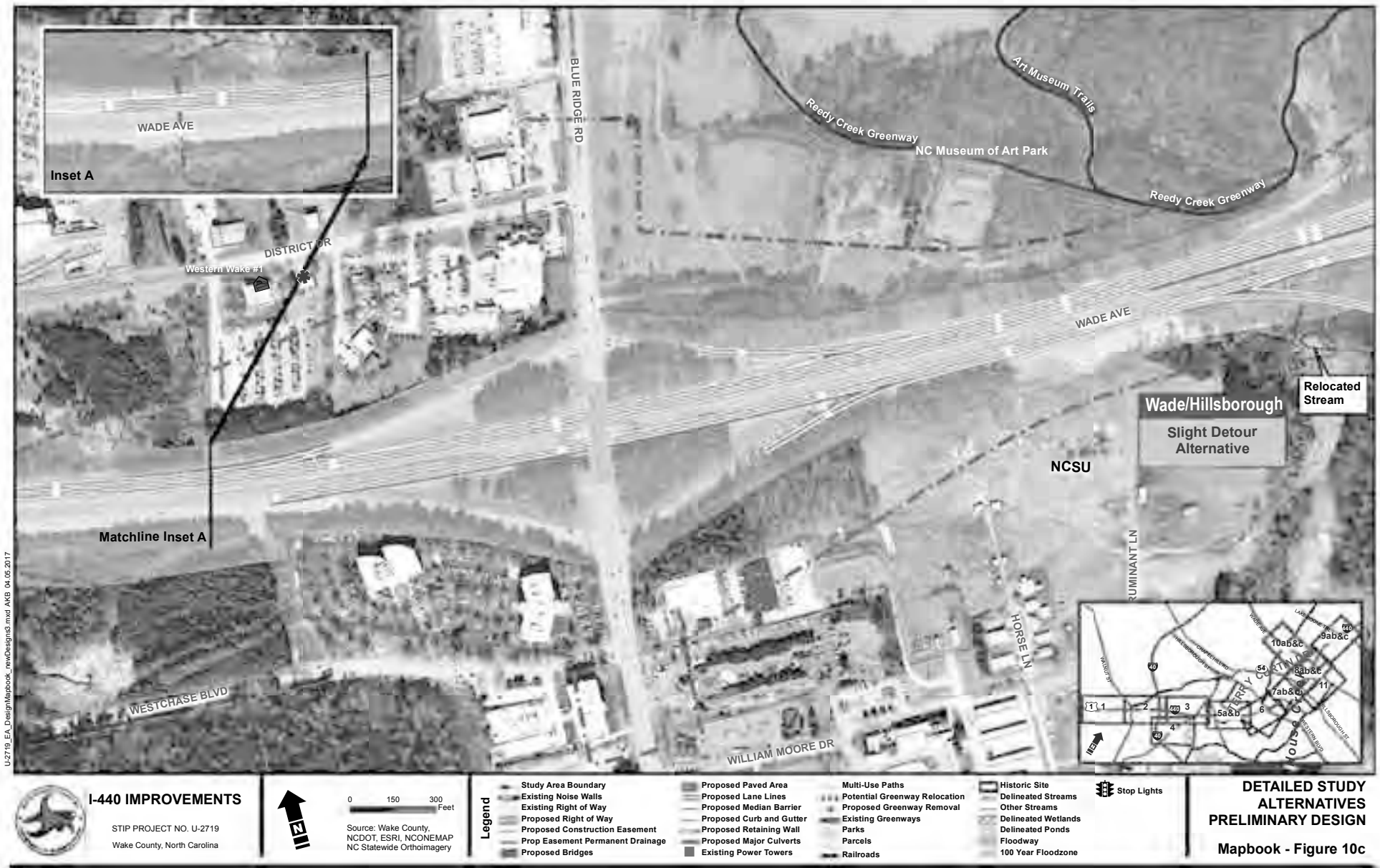
Source: Wake County, NCDOT, ESRI, NCONEMAP
NC Statewide Orthomimagery

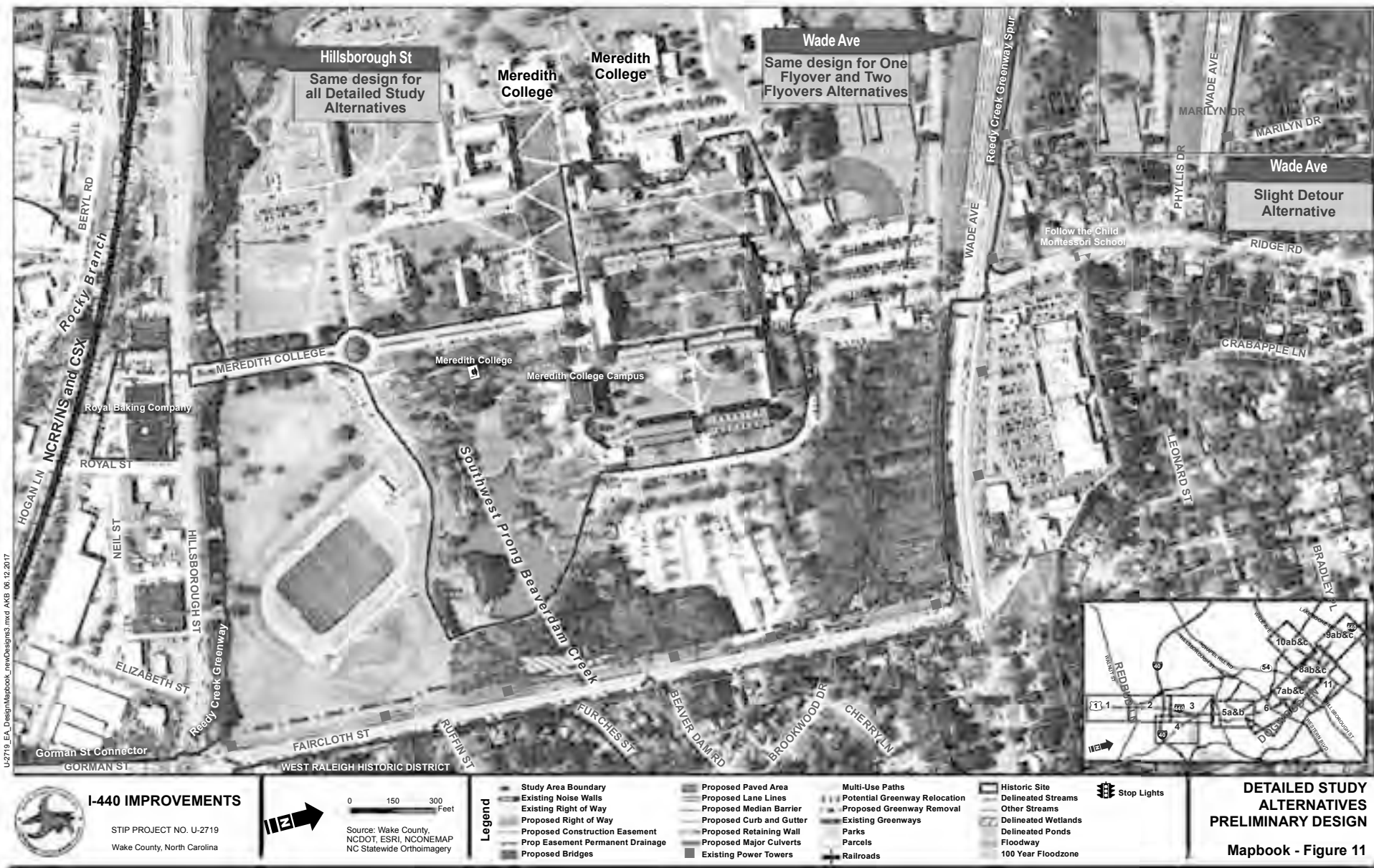
Legend

- Study Area Boundary
- Existing Noise Walls
- Existing Right of Way
- Proposed Right of Way
- Proposed Construction Easement
- Prop Easement Permanent Drainage
- Proposed Bridges
- Proposed Paved Area
- Proposed Lane Lines
- Proposed Median Barrier
- Proposed Curb and Gutter
- Proposed Retaining Wall
- Proposed Major Culverts
- Existing Power Towers
- Multi-Use Paths
- Potential Greenway Relocation
- Proposed Greenway Removal
- Existing Greenways
- Parks
- Parcels
- Railroads
- Historic Site
- Delineated Streams
- Other Streams
- Delineated Wetlands
- Delineated Ponds
- Floodway
- 100 Year Floodzone
- Stop Lights

DETAILED STUDY ALTERNATIVES PRELIMINARY DESIGN

Mapbook - Figure 10b







IMPACT SUMMARY MATRIX