

PROJECT SCOPING REPORT - SUMMARY

SPOT ID: H140788 STIP#: I-5870		FACILITY: INTERCHANGE, ROADWAY REALIGNMENTS AND ECHELON INTERSECTION	DIVISION: 5	FIRM: HNTB CORPORTATION
	EXISTING FACILITY CHARACTERISTICS:		PROPOSED FACILITY CHARACTERISTICS:	
	Existing No. of Lanes: Varies Existing Median: No Existing control of access: ☒ No Control ☐ Partial Control ☐ Limited Control ☒ Full Control ADT (2016): Glenwood Ave: 83000 vpd Blue Ridge Rd: 19000 vpd Lead Mine Rd: 30000 vpd I440: 148000 vpd Structures: ☐ Culvert(s) ☒ Bridge(s) NCDOT #910252 Ridge Rd over I-440-32'Wx360'L, NCDOT #910260 I-440 over Glenwood Ave-150'Wx275'L, NCDOT #910494 Blue Ridge Rd over Crabtree Creek-100'Wx260'L, NCDOT #910091 Glenwood WBL over Crabtree Creek-90'Wx210'L, NCDOT #910084 Glenwood EBL over Crabtree Creek-55'Wx210'L		Proposed No. of Lanes: Varies Addition of Median(s): No Proposed control of access: ☒ No Control ☐ Partial Control ☐ Limited Control ☒ Full Control ADT: TBD Structures: ☐ Culvert(s) ☒ Bridge(s) NCDOT #910260 I-440 over Glenwood Ave 182'Wx275'L, New Structure Y1 Ramp C & Y1 Loop C over Ridge Rd-62'Wx50'L, New Structure Pedestrian Bridge (Greenway) over I-440 50'Wx175'L, New Structure Y1 Loop C & Y1 Ramp C over I-440-62'Wx240'L, New Structure Y1 Ramp A over Y2 Ramp B-30'Wx65'L, New Structure Y4 Loop Bridge 36'Wx500'L, New Structure Crabtree Valley Ave over Blue Ridge Rd. 55'Wx560'L, NCDOT #910494 Blue Ridge Rd. over Crabtree Valley Creek-165'Wx260'L	
PROJECT DESCRIPTION: (Include project scope and location, including Municipality and County. Refer to the attached project location map and photos.) Project I-5780 is located in Raleigh, NC (Wake County). This project includes improvements that are presented in three conceptual designs. A3-B: The design includes the construction of a new interchange at Crabtree Valley Road & I-440 and the realignment of the ramps and loops at the Glenwood Avenue interchange at I-440. The intersection of Crabtree Valley Road and Blue Ridge Road will be grade separated, Ridge Road will be realigned south of I-440, Blue Ridge Road will be widened and a collector-distributor will be constructed between the two afore mentioned interchanges. B4: Crabtree Valley Road will be aligned from Homewood Banks Drive to Edwards Mill Road. Improvements will also be made to Homewood Banks Drive, The Pinnacle Road and Edwards Mill Road.				

Echelon: Includes construction of an Echelon Intersection at Glenwood Avenue (US 70) at Blue Ridge Road & Lead Mine Road, the realignment of Hillock Drive, modifications to the Crabtree Valley Mall Entrance on Blue Ridge Road and converting Crabtree View Place to a one-way traffic roadway.

Reference the conceptual design roll plots for further detail.

PRELIMINARY PURPOSE AND NEED:

Is there preliminary information on the purpose and need for the project included in a CTP, LRTP, or other study? If yes, summarize.

Need: This project is included in NCDOT's 2018-2027 STIP plan.

The Wake County Transportation Plan highlights Glenwood Avenue (US 70) as a major thoroughfare in Wake county that experiences significant congestion during peak hours.

The Glenwood Avenue, Blue Ridge Road and Lead Mine Road intersection was analyzed in the study completed by Stantec and NCDOT, "Innovative Integration of Intersections and Interchange Design Solutions for Urban Areas." This study reviews the major issues with the existing intersections and evaluates viable solutions.

Purpose: Per the NCDOT STIP, The Wake County Transportation Plan and the "Innovative Integration of Intersections and Interchange Design Solutions for Urban Areas" study. The purpose of this project is to alleviate congestion by improving design, capacity and functionality within the project limits in this highly traveled area of Wake County.

COST ESTIMATES:

A3-B

Right of Way: \$70,400,000

Utilities: \$500,000

Construction: \$56,100,000

B4

Right of Way: \$12,700,000

Utilities: \$200,000

Construction: \$6,200,000

ECHELON

Right of Way: \$31,900,000

Utilities: \$500,000

Construction: \$44,200,000

FINDINGS AND RECOMMENDATIONS:

Note recommended document type and summarize findings from Screening Checklist.

Based on the preliminary environmental screening there may be endangered and threatened species along within the project limits which requires a formal consultation with U.S Fish and Wildlife Service (USFWS). This project is located in the vicinity of multiple underground storage tanks, pedestrian and bike routes, and historic sites. Crabtree Creek, which is listed as a 303(d)-listed stream, runs through the project. The project is located well within 100 year and 500 year flood plains and the area has a history of flooding that should be taken into consideration.

Alternative A3-B has the potential to impact 35 parcels, alternative B4 has the potential to impact 19 parcels, and the echelon intersection has the potential to impact 25 parcels. The right of way impacts vary in severity from small property takes to total displacements.

The Crabtree Valley area has been subject to extensive flooding in the past. A thorough drainage and hydrology analysis will be necessary to improve conditions and mitigate flooding risks where possible.

ATTACHMENTS:

Project Scoping Report – Technical Report

Project Scoping Report - Screening Checklist

Conceptual Design(s)

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Introduction

This report reviews the likely impacts and potential costs of the I-5870 improvements in the Crabtree Valley area of Raleigh, North Carolina.

Figure 1 depicts the project location, proposed project limits, proposed property lines and potential right of way impacts.

Figure 1: Project Limits for Express Feasibility Study



General Description

Project I-5870 includes constructing a new interchange at Crabtree Valley Road & I-440, the realignment of the ramps and loops at the Glenwood Avenue interchange at I-440, grade separating the intersection of Crabtree Valley Road and Blue Ridge Road, realigning Ridge Road south of I-440, widening Blue Ridge Road, constructing a collector-distributor between the two previously mentioned interchanges, realigning Crabtree Valley Road from Homewood Banks Drive to Edwards Mill Road, improving Homewood Banks Drive, The Pinnacle Road and Edwards Mill Road, constructing an Echelon Intersection at Glenwood Avenue (US 70) at Blue Ridge Road & Lead Mine Road, realigning Hillock Drive, modifying the Crabtree Valley Mall Entrance on Blue Ridge Road and converting Crabtree View Place to a one-way traffic roadway.

Background

I-5870 is located in the north, northwest portion of Raleigh, NC. This area is densely populated with urban developments including Crabtree Valley Mall as well as a multitude of other commercial and residential developments. Glenwood Avenue (US 70) is also a major thoroughfare that services Wake County. The Crabtree Valley area experiences a significant amount of vehicle, bicycle and pedestrian traffic and congestion has become an issue, especially during peak hours.

Purpose and Need

Need: This project is needed as part NCDOT's State Transportation Improvement Program (STIP). The "Innovative Integration of Intersections and Interchange Design Solutions for Urban Areas" study also highlights significant issues with the Glenwood Avenue and Blue Ridge Road/Lead Mine Road that are in need of improvements.

Purpose: The primary purpose of this project is to alleviate congestion in this rapidly growing urban area of Raleigh, especially during peak hours.

Disclaimer: Note that this Project Scoping Report is a preliminary document and is the initial step in the planning and design process for a candidate project. The findings included in this report were pulled from readily GIS information and not a product of a full scale environmental or design investigation. The intent of this Project Scoping Report is to describe the proposed project, estimated cost, and identify potential issues and impacts that will require consideration during planning and design phases.

Existing Conditions

Throughout the Wake County Transportation Plan, Glenwood Avenue (US 70) is highlighted as a major thoroughfare for Wake County that experiences significant congestion during peak hours. Glenwood Avenue provides regional access throughout Wake County and as a result services longer distance vehicle trips as well as shorter distances. Congestion

reaches levels at which the prevailing travel speed is less than the progression speed of the signal systems throughout the corridor, causing significant delay for drivers.

The I-5870 project limits have very narrow existing right of way due to the dense urban development as also as high pedestrian and bicycle traffic. There are also significant restraints regarding the addition of impervious area due to flooding and water quality issues.

Existing Land Use

The existing land uses within the I-5870 project limits are mostly commercial. The area is densely populated with commercial businesses and most notably Crabtree Valley Mall. There are also apartment complexes and some residential homes within the limits.

Previous Studies

The proposed echelon intersection location was included as part of the study presented in April of 2016 entitled, "Innovative Integration of Intersection and Interchange Design Solutions for Urban Areas." The study was funded by NCDOT, Stantec Research & Development and Grubb Ventures and highlighted the major issues surrounding this intersection and proposes an echelon intersection as a possible solution.

Adjacent Projects

The NCDOT 2018-2027 STIP map does not show any projects adjacent to project I-5870.

Crash Data

Table 1 shows the 5-year crash history at pertinent locations within the project limits.

Table 1: Crash Summary: Totals and Severity (2/1/2013 to 1/31/2018)

Location Description	Total Crashes	Crash Severity*					
		Fatal	Class A	Class B	Class C	PDO	Severity Index
Crashes associated with I-440 & Glenwood Avenue (US 70) interchange	376	0	0	9	61	306	2.38
Crashes associated with intersection of Creedmoor Road at Crabtree Valley Avenue	92	0	1	3	20	68	3.67
Crashes associated with intersection of Crabtree Valley Avenue at Blue Ridge Road	25	0	0	1	7	17	3.37
Crashes associated with intersection of Glenwood Avenue (US 70) & Blue Ridge Road/Lead Mine Road	341	0	0	6	39	296	1.98

*Crash severity is rated fatal, Class A to C (highest to lowest), or PDO (property damage only)

These crash rates should only be used for comparative purposes and are not the result of an in-depth traffic crash analysis. Note that crashes tend to be inflated when examining short roadway segments, especially near interchanges.

Source: NCDOT TEAAS

Alternatives

Three build alternatives have been developed for this project. Alternative A3-B, B4 and the Echelon intersection.

Build Alternatives

A3-B: The design includes the construction of a new interchange at Crabtree Valley Road & I-440 and the realignment of the ramps and loops at the Glenwood Avenue interchange at I-440. The intersection of Crabtree Valley Road and Blue Ridge Road will be grade separated, Ridge Road will be realigned south of I-440, Blue Ridge Road will be widened and a collector-distributor will be constructed between the two afore mentioned interchanges.

B4: Crabtree Valley Road will be aligned from Homewood Banks Drive to Edwards Mill Road. Improvements will also be made to Homewood Banks Drive, The Pinnacle Road and Edwards Mill Road.

Echelon: Includes construction of an Echelon Intersection at Glenwood Avenue (US 70) at Blue Ridge Road & Lead Mine Road, the realignment of Hillock Drive, modifications to the Crabtree Valley Mall Entrance on Blue Ridge Road and converting Crabtree View Place to a one-way traffic roadway.

Traffic Volumes

2016 historical AADT traffic volumes on nearby roadways were obtained from NCDOT Traffic Survey Group, and summarized in Table 1 below.

Table 2: 2016 Historical AADT

Location	Volumes (vpd)
Glenwood Avenue (US 70)	83,000
Blue Ridge Road	19,000
Lead Mine Road	30,000
I-440	148,000
Homewood Banks Drive	1,400
Edwards Mill Road	23,000

Build Alternative Impacts and Cost Estimates

Impacts

Alternative A3-B has the potential to impact 35 parcels, alternative B4 has the potential to impact 19 parcels, and the echelon intersection has the potential to impact 25 parcels.

The right of way impacts vary in severity from small property takes to total displacements.

Reference the conceptual roll plots for further details on the right of way impacts.

Cost Estimates

Preliminary cost estimates were developed for the alternative based on conceptual level roadway designs.

The total cost for A3-B construction is estimated to be:

Right of Way -	\$70,400,000
Utility Relocation -	\$500,000
Construction -	\$56,100,000
Total -	\$127,000,000

The total cost for B4 construction is estimated to be:

Right of Way -	\$12,400,000
Utility Relocation -	\$200,000
Construction -	\$6,200,000
Total -	\$19,100,000

The total cost for the Echelon construction is estimated to be:

Right of Way -	\$31,900,000
Utility Relocation -	\$500,000
Construction -	\$44,200,000
Total -	\$76,000,000

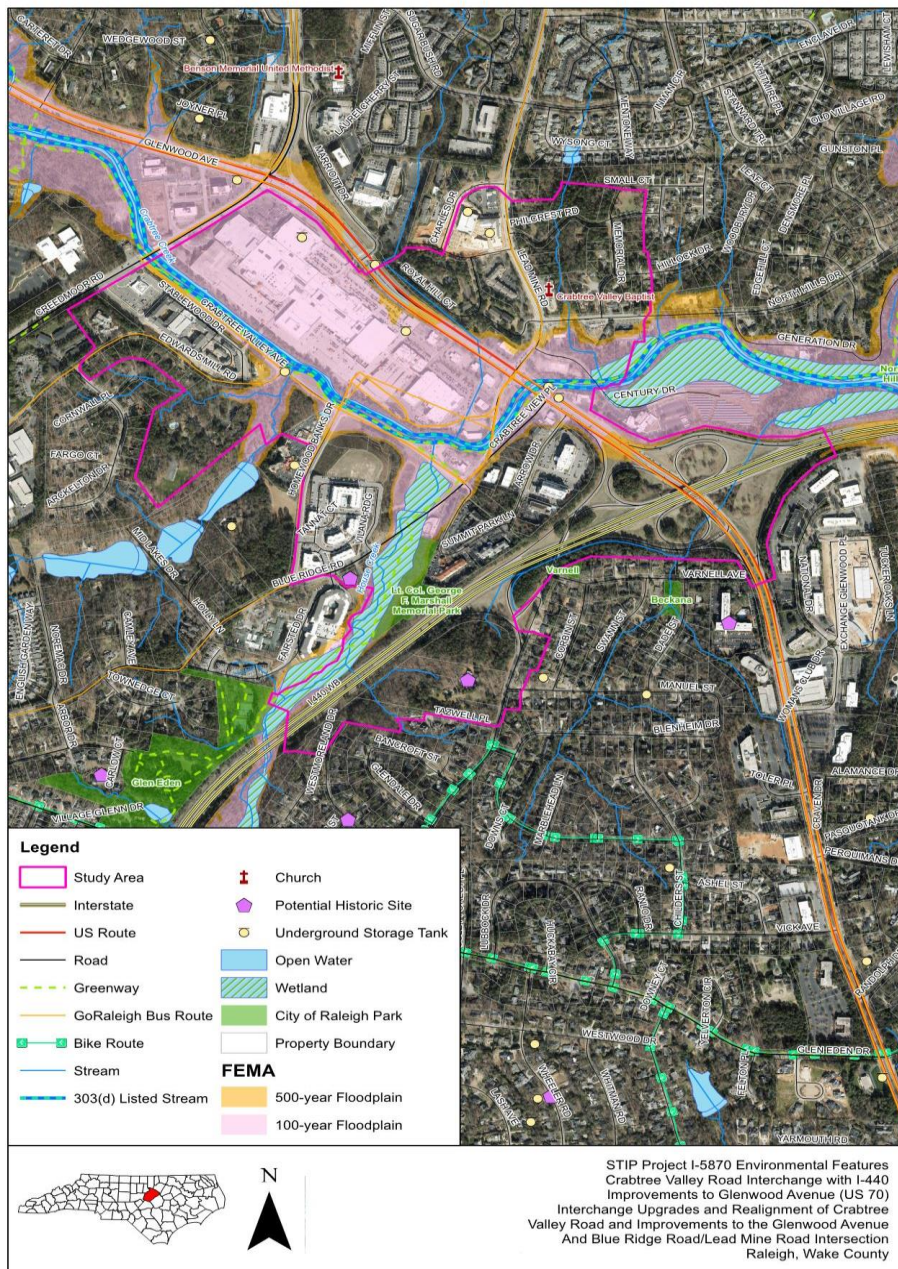
The total cost for the project construction is estimated to be:

Right of Way -	\$115,000,000
Utility Relocation -	\$1,200,000
Construction -	\$106,500,000
Total -	\$222,700,000

Environmental & Community Features

A detailed environmental and community feature study was not conducted for this Project Scoping Report. GIS level research and a preliminary site review were completed. Figure 2 shows the locations of documented community and environmental features near and within the project limits.

Figure 2: Community Resources



Community Facilities

Community Church – yellow star

- Celebration Baptist Church on Boone Trail
- Union United Methodist Church on Curtis Bridge Road
- Cricket Baptist Church on Cricket Baptist Church Road (off Boone Trail)

School – red star

- North Wilkesboro Elementary School on Flint Hill Road (off NC 268/Elkin Hwy)

Emergency Management Services

None is identified in the vicinity of the project corridor.

Natural Environment

A detailed environmental study was not conducted for this Project Scoping Report. GIS level research and a preliminary site review were completed.

Jurisdictional Features

Crabtree Creek is a 303(d) listed stream that runs directly through the project.

Floodways, Floodplains & Wetlands

The proposed project has multiple areas that include wetlands, areas within the 100 year flood plain and areas within the 500 year flood plains.

Protected Species

The protected species for Wake County are listed in Table 3 below, based on information from the US Fish and Wildlife Service.

Table 3: Threatened and Endangered Species Listed for Wake County

Common Name	Scientific name	Federal Status	Record Status
Vertebrate:			
American Eel	<i>Anguilla rostrata</i>	FSC	Current
Bachman's Sparrow	<i>Aimophila aestivalis</i>	FSC	Historic
Bald Eagle	<i>Haliaeetus leucocephalus</i>	BGPA	Current
Carolina Darter	<i>Etheostoma collis lepidinon</i>	FSC	Probable/Potential
Carolina Madtom	<i>Noturus furiosus</i>	FSC	Current
Neuse River water dog	<i>Necturus lewisi</i>	ARS	Current
Pinewoods Shiner	<i>Lythrurus matutinus</i>	FSC	Current
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	Current
Roanoke bass	<i>Ambloplites cavifrons</i>	FSC	Current
Southeastern myotis	<i>Myotis austroriparius</i>	FSC	Historic
Southern Hognose Snake	<i>Heterodon simus</i>	FSC	Obscure
Invertebrate:			
Atlantic Pigtoe	<i>Fusconaia masoni</i>	FSC	Current
Diana fritillary (butterfly)	<i>Speyeria diana</i>	FSC	Current
Dwarf Wedgemussel	<i>Alasmodonta heterodon</i>	E	Current
Green Floater	<i>Lasmigona subviridis</i>	FSC	Current
Tar River Spiny mussel	<i>Parvaspina steinstansana</i>	E	Current
Yellow Lance	<i>Elliptio lanceolata</i>	P	Current
Vascular Plant:			
Bog Spicebush	<i>Lindera subcoriacea</i>	FSC	Historic
Grassleaf Arrowhead	<i>Sagittaria weatherbiana</i>	FSC	Current
Michaux's Sumac	<i>Rhus michauxii</i>	E	Historic
Sweet Pinesap	<i>Monotropsis odorata</i>	FSC	
Virginia least trillium	<i>Trillium pusillum</i> var. <i>virginianum</i>	FSC	

FSC = Federal Species of Concern
T = Threatened
T(S/A) = threatened due to similarity of appearance.
ARS=At Risk Species
BGPA=Bald Eagle Protection Act

Existing NCDOT Mitigation Sites

There are no existing NCDOT mitigation sites within the project limits.

FEMA Hazard Mitigation Grant Program Properties

There are no FEMA Hazard Mitigation Grant Program Properties in the project area.

NCDEQ, Division of Energy, Mineral, and Land Resources (DEMLR)

Crabtree Creek, located within the project area is classified C, NSW.

These waters are protected for uses such as secondary recreating, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity and agriculture.

The NSW classification is a supplemental classification because Crabtree Creek needs additional nutrient management due to being subject to excessive growth of microscopic or macroscopic vegetation.

Recommendations

Due to the high density of urban development in the project area traffic control and maintenance will be critical during development of this project. The Crabtree Valley area sees a lot of pedestrian and bicycle traffic and already experiences significant congestion during peak hours. Commercial businesses, restaurants, residents and the general public will surely feel the effect of this project, especially during construction. Extensive community outreach and communication is necessary for the success of this project.

The intersection location of the proposed echelon has experienced significant flooding in the past. This will need to be analyzed extensively

References

Wake County Transportation Plan

<http://www.wakegov.com/planning/transport/Documents/Wake%20County%20Transportation%20Plan.pdf>

NCDOT 2018-2027 STIP

<https://www.ncdot.gov/strategictransportationinvestments/2018-2027.html>

The North Carolina State Historic Preservation Office GIS Web Service

<http://gis.ncdcr.gov/hpweb/>

Flood Risk Information System - Wilkes County Flood Plain Map

<http://FRISfris.nc.gov/fris/Index.aspx?FIPS=193&ST=NC&user=General Public>

US Fish and Wildlife Service, Endangered Species Wilkes County

<https://www.fws.gov/raleigh/species/cntylist/wilkes.html>

US Fish and Wildlife Service, National Wetland Inventory

<https://www.fws.gov/wetlands/data/mapper.html>

North Carolina Natural Heritage Program

<http://ncnhde.natureserve.org/content/map>

NCDOT Mitigation Site Map

<http://www.arcgis.com/home/item.html?id=d560dfef1ea443b299ca7fc68b2506b4>

North Carolina Highway Safety Improvement Program

<https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

PROJECT SCOPING REPORT

SCREENING CHECKLIST

SPOT ID: I-5870	FACILITY: INTERCHANGE UPGRADES, ECHELON INTERSECTION AND ASSOCIATED IMPROVEMENTS	DIVISION: 5	FIRM: HNTB CORPORATION
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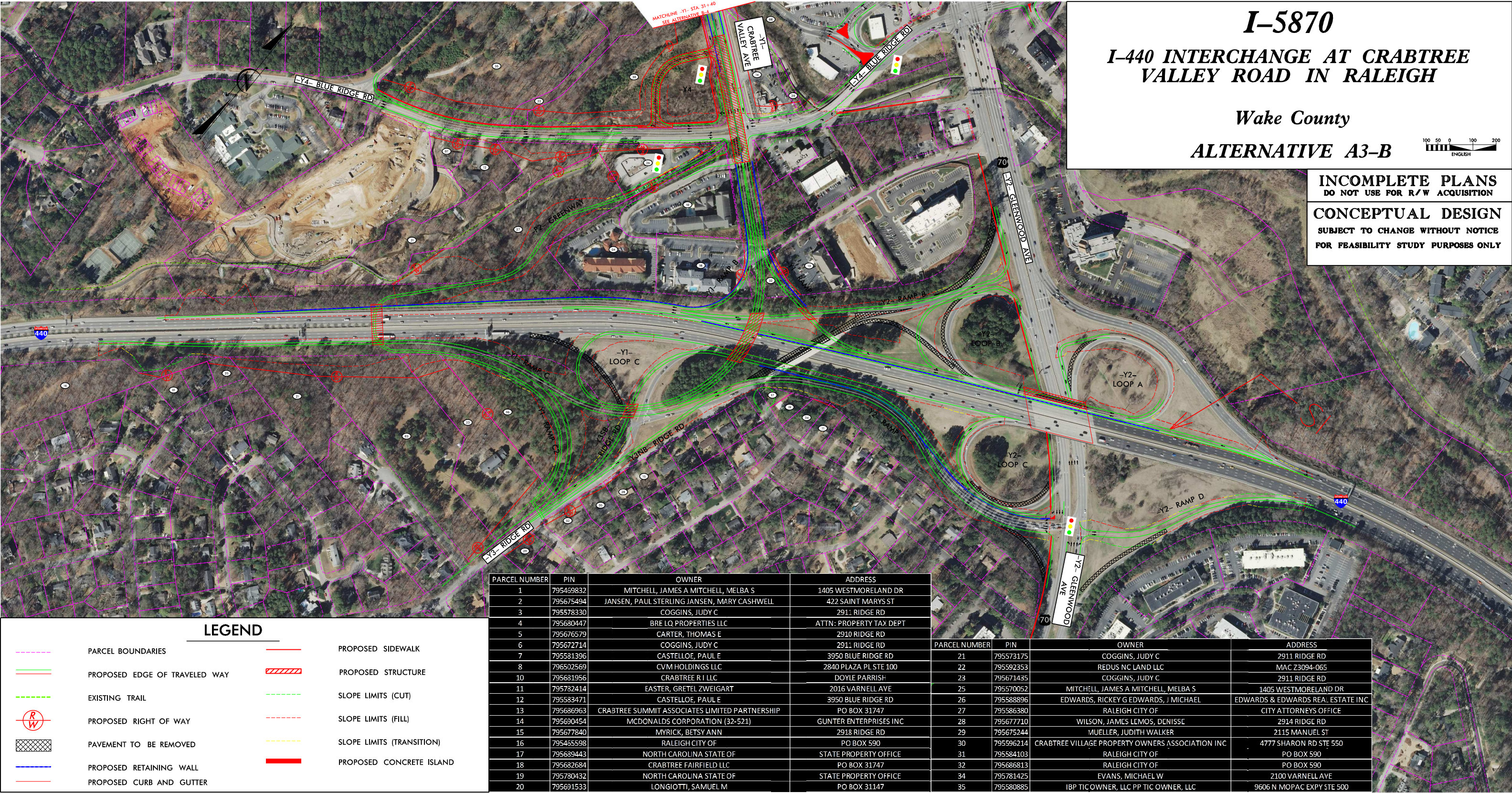
<i>INSTRUCTIONS: The following questions are based on the CE Checklists for TYPE I and II projects. Answer each question in the space provided based on available data. Include qualitative discussion as appropriate.</i>	
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)? <i>A Natural Resources Technical Report (NRTR) must be prepared during project development before this question can be fully answered. Review the current USFWS Endangered and Threatened Species and Species of Concern by County for North Carolina and note species or designated critical habitat listed in the county(s).</i> This project may require formal consultation. The species listed on the USFWS endangered and threatened species and species of concern in Wake County North Carolina are as follow: (Vertebrate) American Eel, Bachman's Sparrow, Bald Eagle, Carolina Darter, Carolina Madtom, Neuse River Waterdog, Pinewoods Shiner, Red Cockaded Woodpecker, Roanoke Bass, Southeastern Myotis, Southern Hognose Snake (Invertebrate) Atlantic pigtoe, Diana Fritillary Butterfly, Dwarf Wedgemussel, Green Floater, Tar River Spiny mussel, Yellow Lance (Vascular Plant) Bog Spicebush, Grassleaf Arrowhead, Michaux's Sumac, Sweet Pinesap, Virginia least trillium.
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGPA)? <i>A NRTR must be prepared during project development before this question can be fully answered. Review the current USFWS Endangered and Threatened Species and Species of Concern by County for North Carolina and note if BGPA species are listed in the county(s).</i> No
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement? <i>Review the appropriate CTP for documentation of public involvement in the CTP development and any comments related to the project.</i> Not currently.
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations? <i>This question will require additional evaluation during project development. Using the NCDOT Demographic Tool, note the total population, as well as minority and low-income populations for the county and each Census Block Group in which the project is located. Also note any observations based on review of aerial photography.</i> T.B.D
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition? <i>Provide a count of potential residential and commercial displacements.</i> Alternative A3-B has the potential to impact 35 parcels, alternative B4 has the potential to impact 19 parcels, and the echelon intersection has the potential to impact 25 parcels. The right of way impacts vary in severity from small property takes to total displacements.
6	Does the project require an Individual Section 4(f) approval? <i>This question will require additional evaluation during project development. At this time, note the presence of properties that may be subject to Section 4(f), including historic resources, parks, and wildlife/waterfowl refuges. Note those within the proposed right of way, as well as within 1,000' of the project.</i>

	The preliminary environmental screening identified several historic sites. Further investigation will be needed.
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)? <i>This question will require additional evaluation during project development. Review NC State Historic Preservation Office GIS data and note the presence of historic properties within the proposed right of way, as well as within 1,000' of the project. Note: this site does not include archaeological resources.</i> See #6 above.
8	Does the project result in a finding of “may affect not likely to adversely affect” for listed species, or designated critical habitat under Section 7 of the Endangered Species Act (ESA)? <i>A NRTR must be prepared during project development before this question can be fully answered. Refer to Question #1 above.</i> See #1 above.
9	Is the project located in anadromous fish spawning waters? <i>Review the anadromous fish spawning areas maps to determine if the project is within 1,000' of these areas.</i> No.
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)? <i>Determine the NCDEQ Surface Water Classification of any waters within 1,000' of the project, and note if any have a “WS” (Water Supply) classification or supplemental classification of ORW or HQW. Check the current 303(d) list for 303(d) listed waters within 1,000 feet of the project. Review the Division Resource Map to determine if the project is within a watershed subject to buffer rules.</i> This project impacts Crabtree Creek-which is listed as 303(d) stream.
11	Does the project impact waters of the United States in any of the designated mountain trout streams? <i>Trout counties are identified on the PDEA Agency Merger Contact Map, and trout waters are identified by “Tr” classification in their NCDEQ Surface Water Classification (see Question #10 above). Determine if project is within 1000' of a trout stream.</i> This project includes a stream crossing at Tucker Hole Creek which is classified as Trout Waters.
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit? <i>This question will require additional evaluation during project development. Using express conceptual design right of way limits and National Wetland Inventory (NWI) mapping, calculate potential impacts to waters of the U.S. Note impacts to wetlands to the nearest 0.1 acre and to streams to the nearest 10 feet.</i> The project impact on streams include: Crabtree Creek.
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility? <i>Review the Division Resource Map to determine if the project is within 1,000' of a FERC licensed facility.</i> This project is not located within 1000' of a FERC licensed facility.
14	Does the project include a Section 106 of the NHPA effects determination other than a no effect, including archaeological remains? <i>This question will require additional evaluation during project development. Refer to Question #7 above.</i> See #6 above.
15	Does the project involve hazardous materials and/or landfills? <i>Note any potential hazardous properties based on review of aerial photography or from NC OneMap data.</i> Underground storage tanks are located within the project limits-reference included environmental features map.
16	Does the project require work encroaching and adversely affecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?

	Review NC Floodmaps data to determine whether the project may encroach on any base (100-year) floodplain and/or regulatory floodway.
	This project will impact the Crabtree Creek Floodplain.
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)? <i>A NRTR must be prepared during project development before this question can be fully answered. Review the Division Resource Map to determine if the project is within a CAMA county.</i>
	This project is not located in a CAMA county.
18	Does the project require a U.S. Coast Guard (USCG) permit? <i>Review NCDOT's USCG Stream Coordination Map to determine if the project impacts a navigable waterway that may require coordination and permitting with the USCG.</i>
	No
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area? <i>Review the Division Resource Map to determine if the project is within 1,000' of a Wild and Scenic River.</i>
	No wild and scenic rivers are identified near the proposed Bypass.
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources? <i>Review the Division Resource Map to determine if the project is within a CBRA area.</i>
	No, this project does not involve CBRA resource.
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands? <i>Review the Division Resource Map to determine if the project is within federal lands.</i>
	No federal lands are identified along the proposed Bypass, but the project is located in the Native America Tribal Territory.
22	Does the project involve any changes in access control? <i>Note if the project is proposing a change in control of access.</i>
	No.
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness? <i>This question will require additional evaluation during project development. At this time, note changes in traffic patterns and any reduction in access to community resources.</i>
	No
24	Will maintenance of traffic cause substantial disruption? <i>Note if an offsite detour is recommended.</i>
	Yes, the Crabtree Valley area experiences high vehicle, pedestrian and bicycle traffic. Glenwood Avenue is a major thoroughfare for Wake County and the area is densely populated with commercial development causing available right of way to be very narrow. Detours should be analyzed and put in place if feasible.
25	Is the project inconsistent with the STIP or the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP) (where applicable)? <i>This question will be evaluated during project development.</i>
	This project is included in the NCDOT STIP.
26	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, Tennessee Valley Authority (TVA), or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property? <i>A list of resources using funds provide through Section 6(f) of the Land and Water Conservation Fund (LWCF) is available at http://waso-lwcf.ncrc.nps.gov/public/index.cfm. Review the Division Resource Map to determine if the project crosses a TVA area. If parcel data is available, use best available information to determine if any of these situations exist.</i>
	This project is not located in a TVA area.

27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)? <i>This question will require additional evaluation during project development. Refer to Question #16 above, and if the project is within a flood zone, review property data for locally-owned property (county or municipality) within the flood zone and note. If parcel data is available, determine if any property in the flood zone is government owned.</i>
	The parcel data suggests that some of the properties located in the flood zone that will be impacted by this project are privately owned.
28	Does the project include a de minimis or programmatic Section 4(f)? <i>This question will require additional evaluation during project development. Refer to Question #6 above.</i>
	See #6 above
29	Is the project considered a Type I under the NCDOT's Noise Policy? <i>Review NCDOT's Traffic Noise Policy (pages 2-3) to determine the level of noise analysis that may be required. Provide responses for each funding scenario noting the level of environmental documentation.</i>
	IF THE PROJECT IS FEDERALLY FUNDED <i>Is the project a Type I project?</i> Yes IF THE PROJECT IS STATE FUNDED <i>Is the project on an interstate or full control of access US route and does it involve adding additional through lanes? Will the project require a state EA or EIS?</i> T.B.D
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)? <i>This question will be evaluated during project development.</i>
	N/A
31	Are there other issues that may affect project decisions? <i>Note any other issues that should be considered during project development.</i>
	The mountainous terrain along the current conceptual alignment requires extensive earthworks and structures. Alternative alignments in the valley areas should be considered for future study efforts.

INSTRUCTIONS: The following questions are based on the CE Checklist for TYPE III projects. Answer each question in the space provided based on available data. Include qualitative discussion as appropriate.	
7	Is a project-level analysis for direct, indirect, or cumulative effects required based on the NCDOT community studies screening tool? <i>This question will be evaluated during project development.</i>
	T.B. D.
8	Is a project level air quality Mobile Source Air Toxics (MSAT) analysis required? <i>Note if existing or projected traffic volumes on the project are greater than 140,000 vpd.</i>
	Traffic forecast data was not available at the time of express design.



I-5870
I-440 INTERCHANGE AT CRABTREE
VALLEY ROAD IN RALEIGH

Wake County
ALTERNATIVE A3-B

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
CONCEPTUAL DESIGN
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LEGEND

- PARCEL BOUNDARIES
- PROPOSED EDGE OF TRAVELED WAY
- EXISTING TRAIL
- PROPOSED RIGHT OF WAY
- PAVEMENT TO BE REMOVED
- PROPOSED RETAINING WALL
- PROPOSED CURB AND GUTTER

PROPOSED SIDEWALKPROPOSED STRUCTURESLOPE LIMITS (CUT)SLOPE LIMITS (FILL)SLOPE LIMITS (TRANSITION)PROPOSED CONCRETE ISLAND

PARCEL NUMBER	PIN	OWNER	ADDRESS
1	795469832	MITCHELL, JAMES A MITCHELL, MELBA S	1405 WESTMORELAND DR
2	795675494	JANSEN, PAUL STERLING JANSEN, MARY CASHWELL	422 SAINT MARYS ST
3	795578330	COGGINS, JUDY C	2911 RIDGE RD
4	795680447	BRE LO PROPERTIES LLC	ATTN: PROPERTY TAX DEPT
5	795676579	CARTER, THOMAS E	2910 RIDGE RD
6	795672714	COGGINS, JUDY C	2911 RIDGE RD
7	795581396	CASTELLOE, PAUL E	3950 BLUE RIDGE RD
8	796502569	CVM HOLDINGS LLC	2840 PLAZA PL STE 100
10	795681956	CRABTREE R I LLC	DOYLE PARRISH
11	795782414	EASTER, GRETEL ZWEIGART	2016 VARNELL AVE
12	795583471	CASTELLOE, PAUL E	3950 BLUE RIDGE RD
13	795686963	CRABTREE SUMMIT ASSOCIATES LIMITED PARTNERSHIP	PO BOX 31747
14	795690454	MCDONALDS CORPORATION (32-521)	GUNTER ENTERPRISES INC
15	795677840	MYRICK, BETSY ANN	2918 RIDGE RD
16	795465598	RALEIGH CITY OF	PO BOX 590
17	795689443	NORTH CAROLINA STATE OF	STATE PROPERTY OFFICE
18	795682684	CRABTREE FAIRFIELD LLC	PO BOX 31747
19	795780432	NORTH CAROLINA STATE OF	STATE PROPERTY OFFICE
20	795691533	LONGIOTTI, SAMUEL M	PO BOX 31147

PARCEL NUMBER	PIN	OWNER	ADDRESS
21	795573175	COGGINS, JUDY C	2911 RIDGE RD
22	795582353	REDUS NC LAND LLC	MAC Z3094-065
23	795671435	COGGINS, JUDY C	2911 RIDGE RD
25	795570052	MITCHELL, JAMES A MITCHELL, MELBA S	1405 WESTMORELAND DR
26	795588896	EDWARDS, RICKY G EDWARDS, J MICHAEL	EDWARDS & EDWARDS REAL ESTATE INC
27	795586380	RALEIGH CITY OF	CITY ATTORNEYS OFFICE
28	795677710	WILSON, JAMES LEMOS, DENISSE	2914 RIDGE RD
29	795675244	MUELLER, JUDITH WALKER	2115 MANUEL ST
30	795596214	CRABTREE VILLAGE PROPERTY OWNERS ASSOCIATION INC	4777 SHARON RD STE 550
31	795584103	RALEIGH CITY OF	PO BOX 590
32	795686813	RALEIGH CITY OF	PO BOX 590
34	795781425	EVANS, MICHAEL W	2100 VARNELL AVE
35	795580885	IBP TICOWNER, LLC PP TIC OWNER, LLC	9606 N MOPAC EXPY STE 500



END ALTERNATIVE A3-B
BEGIN ALTERNATIVE B-4

I-5870
I-440 INTERCHANGE AT CRABTREE
VALLEY ROAD IN RALEIGH
Wake County
ALTERNATIVE B-4
REVISED



INCOMPLETE PLANS
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LEGEND

- | | | | |
|--|-------------------------------|--|---------------------------|
| | PARCEL BOUNDARIES | | PROPOSED SIDEWALK |
| | PROPOSED EDGE OF TRAVELED WAY | | PROPOSED STRUCTURE |
| | EXISTING TRAIL | | SLOPE LIMITS (CUT) |
| | PROPOSED RIGHT OF WAY | | SLOPE LIMITS (FILL) |
| | PAVEMENT TO BE REMOVED | | SLOPE LIMITS (TRANSITION) |
| | PROPOSED RETAINING WALL | | PROPOSED CONCRETE ISLAND |
| | PROPOSED CURB AND GUTTER | | PROPOSED RETAINING WALL |

PARCEL NUMBER	PIN	OWNER	ADDRESS
8	796502569	CVM HOLDINGS LLC	4325 GLENWOOD AVE
9	795499713	ZH 75	5300 HOMEWARD BANKS DR
24	795497805	CVM ASSOCIATES	5100 EDWARDS MILL RD
33	795592600	REDUS NC LAND LLC	5201 HOMEWARD BANKS DR
36	796308224	LEWIS, MICHAEL W JEANETTE S	5000 EDWARDS MILL RD
37	796404276	CVM HOLDINGS LLC	4601 CRABTREE VALLEY AVE
38	796303474	GRANTHAM, CHARLES E	4814 EDWARDS MILL RD
39	796307332	GRANTHAM, CHARLES EDWARD	4912 EDWARDS MILL RD
40	796306359	GRANTHAM, CHARLES E	4908 EDWARDS MILL RD
41	795399646	PINNACLE APARTMENTS LLC	5060 EDWARDS MILL RD
42	796302389	GRANTHAM, CHARLES E	4808 EDWARDS MILL RD
43	796309117	DIDEK, ATTILA	5004 EDWARDS MILL RD
44	795497805	CVM ASSOCIATES	5100 EDWARDS MILL RD
45	796408142	N C DEPARTMENT OF TRANSPORTATION	5200 EDWARDS MILL RD
46	796309595	CRABTREE APARTMENTS LLC	4700 RIVERWOOD CIR
47	796308907	WEINGARTEN INVESTMENTS INC	4436 CREEDMOOR RD
48	796305476	GRANTHAM, CHARLES EDWARD GRANTHAM, SHERRI POWELL	4904 EDWARDS MILL RD
49	796301789	CNL RETIREMENT SUN1 LP	4801 EDWARDS MILL RD
50	796304447	GRANTHAM, CHARLES E	4900 EDWARDS MILL RD

LEGEND

PARCEL BOUNDARIES

PROPOSED EDGE OF TRAVELED WAY

EXISTING TRAIL

PROPOSED RIGHT OF WAY

PAVEMENT TO BE REMOVED

PROPOSED RETAINING WALL

PROPOSED CURB AND GUTTER

PROPOSED SIDEWALK

PROPOSED STRUCTURE

SLOPE LIMITS (CUT)

SLOPE LIMITS (FILL)

SLOPE LIMITS (TRANSITION)

PROPOSED CONCRETE ISLAND

PARCEL NUMBER	PIN	OWNER	ADDRESS
8	796502569	CVM HOLDINGS LLC	4325 GLENWOOD AVE
14	795690454	MCDONALDS CORPORATION (32-521)	4121 BLUE RIDGE RD
20	795691533	LONGIOTTI, SAMUEL M	0 BLUE RIDGE RD
51	796603157	JAGUAR LLC	4313 GLENWOOD AVE
52	796602226	PLAZA PARTNERS OF RALEIGH LLC	4325 GLENWOOD AVE
53	796604474	PNC BANK, NA	4300 GLENWOOD AVE
54	796600994	MILLS, JOANNA SMITH DOMBALIS, MELISSA SMITH	4413 MARRIOTT DR
55	796609524	CRABTREE VALLEY LLC	2245 NORTH HILLS DR
56	796608419	JT HOBBY & SON INC	4312 LEAD MINE RD
57	796608257	SOLFERINO NORTH PROPERTIES LLC	2209 CENTURY DR
58	796608089	CITY OF RALEIGH	4200 GLENWOOD AVE
59	796700071	SAMPSON BLADEN OIL CO INC	4120 GLENWOOD AVE
60	795696816	CITY OF RALEIGH	4225 GLENWOOD AVE
61	795694970	CITY OF RALEIGH	4281 GLENWOOD AVE
62	795695218	OMNEESH HOTELS LLC	3921 ARROW DR
63	795692274	EDWARDS, GARRY STEVEN EDWARDS, JEANNE G	4112 BLUE RIDGE RD
64	795797800	CAROLINA HOTEL INVESTORS - CRABTREE LLC	2101 CENTURY DRIVE
65	795698823	MRAC-III LLC	4123 GLENWOOD AVE
66	796600994	GENERATION SUITES OF RALEIGH CRABTREE LLC	4433 LEAD MINE RD
67	796617313	SCHIAK F.H. SIRINI	44741 FAJ MIN RD
68	796616579	CORBIN, FRANCES TODD	4508 LEAD MINE RD
69	796710307	POLLOCK, KENNETH H LOSSMAN, GRACE J	2009 PHILCREST RD
70	796712219	LARSON, ERIC M. LARSON, MARIAN J.	4121 MEMORIAL DR
71	796711172	ARSENIU, GEORGE W ARSENIU, CAROLYN	2204 HILLOCK DR
72	796712149	WARE, BRIAN WARE, CHRISTEN C	4401 MEMORIAL DR

I-5870

INTERSECTION AT GLENWOOD AVENUE
& BLUE RIDGE RD/LEAD MINE RD
IN RALEIGH

Wake County

Echelon Intersection

0 10 20 30 40

Feet

INCOMPLETE PLANS

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