URS DIN 01569

Section 106 Preliminary Assessment of Effects for Historic Properties for Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina

Durham-Orange Light Rail Transit Project

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Executive Summary

The proposed Durham-Orange Light Rail Transit (D-O LRT) is a 17.1 mile double-track light rail transit LRT line with 17 proposed stations that will greatly expand transit service in Durham and Orange Counties. The D-O LRT Project extends from western terminus at the University of North Carolina at Chapel Hill (UNC) at the UNC Hospitals Station to the eastern terminus in Durham at the Alston Avenue Station.

The D-O LRT project must comply with Section 106 of the National Historic Preservation Act of 1966 (as amended), which requires federal agencies to consider the impacts of their undertakings on historic properties. The project meets the definition of a federal undertaking per 36 C.F.R. 800 and FTA is the federal lead agency.

Section 106 regulations require that the Federal Transit Administration (FTA) identify historic properties listed in or eligible for listing in the National Register of Historic Places (National Register or NR) within the project's Area of Potential Effects (APE); assess effects to historic properties; avoid, minimize, and/or mitigate any adverse effects; and consult with North Carolina's State Historic Preservation Officer and other consulting parties throughout the Section 106 process as appropriate.

The APE in the *Architectural Resources APE* Report was defined for the NEPA Preferred and Project Element Alternatives. However, for the purposes of assessing effects of the proposed D-O LRT Project for the Draft Environmental Impact Statement (DEIS), the FTA made its Preliminary Finding on the NEPA Preferred Alternative.

Twenty-five architectural historic properties listed in or determined eligible for the National Register have been identified within the D-O LRT project's APE for architectural historic properties. These historic properties include buildings, districts, and structures. The effects of the D-O LRT on all architectural historic properties were assessed and are documented in this report. Triangle Transit has designed the project to include landscape screening for all historic properties that are rural or residential in nature. The landscape screening would provide a blooming of at least two seasons of each year. Triangle Transit will consult with property owners, historic district representatives, and the SHPO on the appearance of the landscaping screening.

In this report, the FTA made a Preliminary "No Effect" finding on 13 of the 25 architectural historic properties and a Preliminary "No Adverse Effect" finding for the other 12 properties. The FTA made an overall Preliminary Determination that the D-O LRT project will **Not Have an Adverse Effect** on any architectural historic properties. FTA intends to make a final determination of effects finding before the Final EIS/ROD at the conclusion of consultation with the SHPO, the consulting parties, and any public comments received on the DEIS.

1. Introduction

Triangle Transit, in cooperation with the Federal Transit Administration (FTA), prepared a Draft Environmental Impact Statement (DEIS) to evaluate a potential high-capacity transit improvement in the Triangle region, within the Durham-Orange (D-O) Corridor, between Chapel Hill and Durham.

1.1 Description of the Study Corridor

The D-O Corridor is located within the Triangle region. It extends roughly 17 miles from southwest Chapel Hill to east Durham, and includes several educational, medical, and other key activity centers which generate a large number of trips each day. The land uses in the D-O Corridor are supported by a network of major highways including NC 54, I-40, US 15-501, Erwin Road, and NC 147.

1.2 Alternatives Considered in the DEIS

- No-Build Alternative
- Light Rail Alternatives

In addition to the Light Rail Alternatives, the DEIS considered a No-Build Alternative comprised of the existing and programmed transportation network improvements without the planned rail improvements and associated bus network modifications.

1.2.1 No-Build Alternative

The No-Build Alternative included the existing and planned transportation programs and projects scheduled to be built and implemented before forecast year 2040 and contained in the 2040 MTP, excluding only the proposed Light Rail Alternatives, rail transit improvements and related bus transit modifications that would be associated with the proposed D-O LRT Project. The No-Build Alternative serves as the basis of comparison for the Light Rail Alternatives

1.2.2 Light Rail Alternatives

Through the Alternatives Analysis and Scoping process, a majority of the proposed D-O LRT Project alignment was identified. However, there were a few areas where alternatives were retained for further evaluation. As a result, multiple alignments crossings of Little Creek and New Hope Creek were evaluated in the DEIS.

- Four potential crossings of Little Creek between Hamilton Road and the proposed Leigh Village Station (Alternatives C1, C1A, C2,and C2A)
- Three potential crossings of New Hope Creek and Sandy Creek between Patterson Place and South Square (Alternatives NHC LPA, NHC 1, and NHC 2)
- Station alternatives at Duke/VA Medical Centers (i.e., Duke Eye Center and Trent/Flowers Drive)
- Five proposed locations for the ROMF (i.e., Leigh Village ROMF, Farrington Road ROMF, Patterson Place ROMF, Cornwallis Road ROMF, and Alston Avenue ROMF)

The Light Rail Alternatives would generally follow North Carolina (NC) Highway 54 (NC 54), Interstate 40 (I-40), United States (US) 15-501, and the North Carolina Railroad (NCRR) Corridor in downtown Durham and east Durham. The alignment would begin in Chapel Hill at UNC Hospitals, parallel Fordham Boulevard, proceed eastward adjacent to NC 54, travel north along I-40, parallel US 15-501 before it would turn east toward Duke University and run within Erwin Road, and then follow the NCRR Corridor that parallels NC Highway 147 (NC 147) through downtown Durham, before reaching its eastern

terminus in Durham near Alston Avenue. The alignment would consist of at-grade alignment, fill and cut sections, and elevated structures. A total of 17 stations are planned, and up to 5,100 parking spaces would be provided along the Light Rail Alternatives. In addition, a Rail Operations and Maintenance Facility (ROMF) would be constructed to accommodate the D-O LRT fleet (initially 17 vehicles, with the ability to accommodate up to 26 vehicles without needing expansion).

Bus routes would be modified to feed into the D-O LRT stations, and headways would be adjusted to provide more frequent bus service and minimize transfer waiting times. These services would also connect light rail passengers with other area transportation hubs, including park-and-ride lots and transfer centers.

1.3 NEPA Preferred Alternative

The NEPA Preferred Alternative would generally follow NC 54, I-40, US 15-501, and the North Carolina Railroad (NCRR) Corridor in downtown Durham and east Durham. The alignment would begin at UNC Hospitals, parallel Fordham Boulevard, proceed east on NC 54, travel north on I-40, parallel US 15-501 before it turns east toward the Duke University campus along Erwin Road, and then follow the NCRR Corrridor parallel to NC 147 through downtown Durham, before reaching its eastern terminus near Alston Avenue.

In the two sections of the alignment where multiple light rail alignment alternatives were evaluated in the DEIS, the NEPA Preferred Alternative recommends C2A in the Little Creek section of the alignment, and NHC 2 in the New Hope Creek section of the alignment. At Duke/VA Medical Centers Station, the NEPA Preferred Alternative recommends the Trent/Flowers Drive Station Alternative. For the ROMF, the NEPA Preferred Alternative recommends the Farrington ROMF.

This Assessment of Effects Report focuses on the potential effects on historic architectural resources that would result from the planning, development and construction of the NEPA Preferred Alternative. The NEPA Preferred Alternative is referenced as the “proposed project,” herein.

1.4 Section 106 of the National Historic Preservation Act

The historic architectural survey effort for the proposed D-O LRT project complied with Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (36 CFR 800), Section 101(b)(4) of the National Environmental Policy Act of 1969, and Section 1(3) and 2(b) of Executive Order 11593. The Section 106 assessments included in the Historic Architectural Survey Report prepared following the survey considered only historic properties in the Area of Potential Effects (APE) for the proposed project. The APE was developed by the Federal Transit Administration (FTA) in consultation with the North Carolina State Historic Preservation Officer (SHPO) and her staff. It encompasses the geographic area within which the proposed project may directly or indirectly cause alterations in the character or use of historic properties (correspondence regarding the APE Report and Historic Architectural Survey Report is included in Appendix A).

The goals of the Section 106 assessments were to identify resources 45 years in age or older within the APE and evaluate their potential for listing in the National Register of Historic Places (National Register or NR) and provide an assessment of any effects to historic properties from the planned undertaking. In general, properties less than 50 years of age are presumed to be ineligible for the National Register, unless they possess exceptional importance. Because construction is expected to occur over a period of several years following completion of the environmental review process, and at the request of the SHPO, the eligibility assessment included all resources 45 years of age or older at the time the identification studies commenced in 2014.

1.4.1 Section 106 Consultation

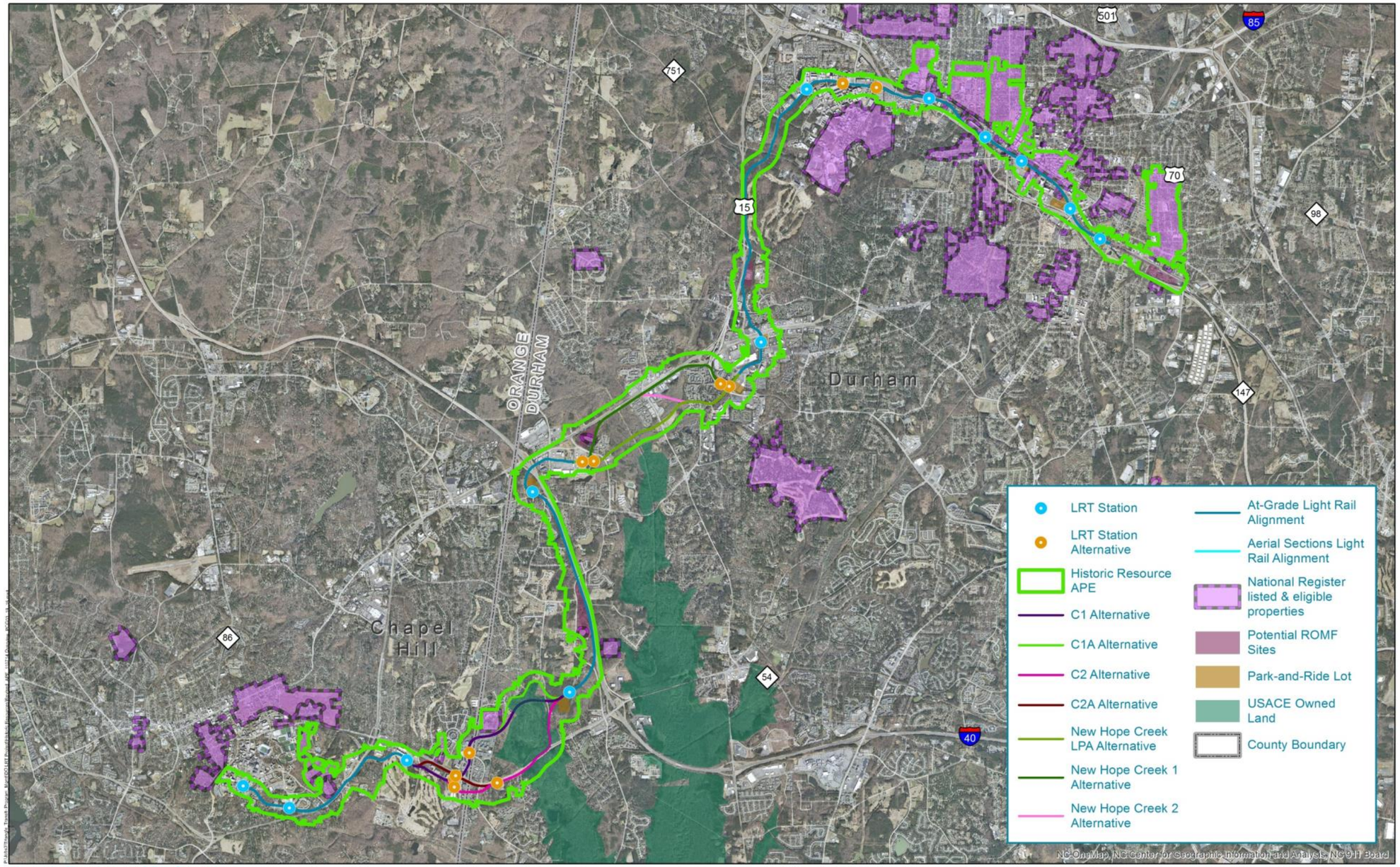
The FTA submitted the Historic Architectural Survey Report to the SHPO on March 19, 2015. It included recommendations of National Register eligibility for historic resources located within the APE. On April 16, 2015 the SHPO concurred with and commented on the report. On June 25, 2015 the FTA submitted to the SHPO a revised final report that addressed the SHPO's comments (see Appendix A).

In this report, the FTA made a Preliminary "No Effect" finding on 13 of the 25 architectural historic properties and a Preliminary "No Adverse Effect" finding for the other 12 properties. The FTA made an overall Preliminary Determination that the D-O LRT project will **Not Have an Adverse Effect** on any architectural historic properties. FTA intends to make a final determination of effects finding before the Final EIS/ROD at the conclusion of consultation with the SHPO, the consulting parties, and any public comments received on the DEIS.

1.5 Organization of this Section 106 Assessment of Effects Report

This report provides data on and discussion of the effect determinations for all architectural historic properties within the APE that are eligible for or are listed in the National Register. Each discussion is accompanied by a map or maps showing the National Register-listed or eligible boundaries of the historic property and the relationship of those boundaries to the proposed project. Each discussion also includes photographs depicting the historic property and its relationship to the proposed project, to present contextual data for the effect evaluation. Following a description of individual historic properties, an overall project effect is presented.

Figure 1: Area of Potential Effects Overview Map



2. Section 106 Legal and Regulatory Context

The proposed project is subject to compliance with the NHPA (16 USC 470 et seq.) and its implementing regulations (36 CFR 800). Specifically, Section 106 of the NHPA requires that the responsible Federal agency consider the effects of its actions on historic properties, which are properties listed in or determined eligible for listing in the National Register, and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

Per Section 106 requirements, the lead Federal agency develops the APE, in consultation with the SHPO, identifies historic properties (i.e., NR-listed and NR-eligible) in the APE, and makes determinations of the proposed project's effect on historic properties in the APE. Section 106 regulations require that the lead Federal agency consult with the SHPO, Federally recognized Native American Tribes, and other identified parties with an interest in historic properties during planning and development of the proposed project. The ACHP may participate in the consultation or may leave such involvement to the SHPO and other consulting parties. ACHP, if participating, and SHPO are provided an opportunity to comment on the effects on historic properties that would be impacted by the proposed project.

2.1 Area of Potential Effects (APE)

The APE is defined in the Section 106 regulations of the NHPA (36 CFR 800.16(d)) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

The following APE for historic architectural resources was delineated:

- From its terminus in Chapel Hill until it reaches dense urban development in downtown Durham at South Gregson Street, the APE generally follows property boundaries extending 500 feet to either side of the center line of the Undertaking's alignment and alternative alignments, so is generally 1000 feet wide. However, due to the presence of several large parcels the APE was not expanded to include the full parcel if the parcel size was 10 acres or larger. Instead the APE generally follows the 500-foot measure taking into account buildings and other barriers. The APE does, however, expand and contract outside of downtown Durham depending on the presence of I-40, proposed Rail Operations Maintenance Facilities (ROMFs), park-and-ride facilities, and the elevation of sections of the Undertaking. Additionally, the APE was expanded to include the entire boundary of any NRHP-listed or eligible properties/districts that are partially located within the area identified as the APE.

- The APE is drawn tighter where it encounters I-40 in Durham County. From just north of I-40's interchange with NC 54 to just south of its interchange with Durham-Chapel Hill Boulevard (US 15 - 501), the APE terminates at the right-of-way on the east side of the interstate, short of 500 feet from the centerline of the Locally Preferred Alternative (LPA).

- Within the urban core of the City of Durham, the APE is tighter than 500 feet from the centerline of the LPA and the proposed Alston Avenue ROMF. From Buchanan Boulevard east to Briggs Avenue, it includes the resources that directly overlook the corridor and the ROMF.

- At the eastern terminus of the Undertaking at the Alston Avenue ROMF, the APE terminates at the right-of-way on the south side of the Durham Freeway (NC 147), short of 500 feet from the centerline of the LPA and the southern edge of the ROMF.

- The APE extends farther than 500 feet from the centerline of the various corridors in the vicinity of the sites of four potential ROMFs in Durham County and at some sections where the Undertaking is elevated. At the Leigh Village and Farrington Road ROMF sites, the APE extends 500 feet west of the site. At the Paterson Place ROMF, the APE extends out 500 feet from the edges of the ROMF at all sides. It also extends 500 feet to the east of the Cornwallis Road ROMF.

- Where sections of the Undertaking are elevated, the APE may have been widened beyond a general 1000-foot width, depending on the nature of the elevation and the terrain.

Detailed rationales for these distances can be found in the *Architectural Resources – Area of Potential Effects (APE) Report* (November 2014) submitted by the FTA to the SHPO. The APE was determined by the FTA in consultation with the SHPO (see SHPO letter of January 6, 2015 included in Appendix A).

The APE was defined before the location of the proposed project was selected. Its description and maps therefore reference an LPA, alternative alignments, and station and ROMF locations that are not part of the proposed project. The APE is depicted below at Figure 13 through Figure 33.

2.2 Identification of Historic Properties

Historic properties are listed in or determined eligible for listing in the National Register by applying the National Register Criteria for Evaluation (36 CFR Part 63.. The Criteria state that the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. are associated with events that have made a significant contribution to the broad patterns of our history; or
B. are associated with the lives of persons significant in our past; or
C. embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
D. have yielded, or may be likely to yield, information important in prehistory or history.

Built resources are typically evaluated under Criteria A, B, and C; Criterion D applies primarily to archaeological resources.

If a property is determined to possess historic significance, its integrity is evaluated using the following seven aspects of integrity to determine if it conveys historic significance: location, design, setting, materials, workmanship, feeling, and association. If a property is determined to possess historic significance under one or more criteria and retains integrity to convey its significance, the property is determined to be eligible for listing in the NRHP.

2.3 Assessment of Effects

Effects assessments are based on the criteria of adverse effect as defined in 36 CFR 800.5 “Assessment of adverse effects.” According to this portion of the regulations, the criteria of adverse effect are defined as follows:

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

Examples of adverse effects are identified in 36 CFR 800.5 and include, but are not limited to, the following:

- Physical destruction of or damage to all or part of the property
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR 68) and applicable guidelines
- Removal of the property from its historic location
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

A *Noise and Vibration Technical Report* (May 2015) and an *Effects of Light Rail Transit Ground Vibrations on the Southern Railway Bridge* Report (July 2015) prepared for the project identify locations at which there are ground-borne vibrations or noise impacts on resources located within the project area. Section 5 below, as part of the Section 106 assessment of effects, addresses such impacts, where present, at historic properties within the APE.

National Register bulletins do not address assessments of effects, as the Keeper of the National Register only has authority to determine eligibility and does not participate in evaluating effects; effects evaluations are addressed as part of the Section 106 process. However, crucial information on integrity assessments (used for eligibility determinations) regarding what each aspect of integrity entails and how each aspect relates to the select National Register criteria for eligibility is included in National Register guidelines. As described above, retention of relevant aspects of integrity is critical to a property's significance under the National Register Criteria for Evaluation. The National Register Bulletin *How to Apply the National Register Criteria for Evaluation* (revised 1997, revised for internet 2002) identifies the aspects of integrity and describes their relevance to the National Register Criteria for Evaluation. The seven aspects of integrity are described in the bulletin as follows:

Location is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property,

complemented by its setting, is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved.

Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the *character* of the place in which the property played its historical role. It involves *how*, not just where, the property is situated and its relationship to surrounding features and open space.

The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as:

- Topographic features (a gorge or the crest of a hill);
- Vegetation;
- Simple manmade features (paths or fences); and
- Relationships between buildings and other features or open space.

These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its *surroundings*. This is particularly important for districts.

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century. A grouping of prehistoric petroglyphs, unmarred by graffiti and intrusions and located on its original isolated bluff, can evoke a sense of tribal spiritual life.

Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character. For example, a Revolutionary War

battlefield whose natural and manmade elements have remained intact since the 18th century will retain its quality of association with the battle.

Because feeling and association depend on individual perceptions, their retention *alone* is never sufficient to support eligibility of a property for the National Register.

According to guidance found in *How to Apply the National Register Criteria for Evaluation*, different aspects of integrity may be more or less relevant dependent on why a specific historic property was listed in or determined eligible for listing in the National Register. For example, a property that is significant for its historic association (Criteria A or B) is eligible if it retains the essential physical features that made up its character or appearance during the period of its association with the important event, historical pattern, or person(s). A property determined eligible under Criteria A or B ideally might retain some features of all aspects of integrity, although aspects such as design and workmanship might not be as important. For additional information on application of the Criteria for Evaluation please see http://www.nps.gov/NR/PUBLICATIONS/bulletins/nrb15/.

During the current assessment of effects, information available for each historic property was reviewed to determine if the setting within and/or outside of the historic boundary, as well as viewsheds to and from each property, was historically significant and contributed to the property's eligibility. Using the same information, a determination was made regarding which aspects of integrity were most critical to a historic property's NR eligibility. Of note, over the course of the evaluation, it was determined that many historic properties' integrity of setting has been diminished significantly because their historic surroundings have been altered over time.

To determine project effects, an architectural historian conducted site visits to each architectural historic property and reviewed project plans, proposed station designs, and additional documentation. Following guidelines set forth in 36 CFR 800 and supported by information on integrity set forth in the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*, the following findings were used to assess project effects to historic properties:

- **No Effect**: Per 36 CFR 800.4(d)(1), an undertaking may have no effect to historic properties present in the APE, and a finding of "No Historic Properties Affected" may be determined for an undertaking. This finding indicates that an undertaking would not alter any aspects of integrity for any historic properties. This provision has been used as the basis for making a finding of "No Effect" for individual historic properties within the APE for the proposed project.
- **No Adverse Effect**: Per 36 CFR 800.5(b), an undertaking may be determined to have "No Adverse Effect" to historic properties if the undertaking's effects do not meet the criteria of adverse effect as described below. If project implementation would alter a specific aspect of integrity for a historic property but the effect would not alter a characteristic that qualifies that historic property for inclusion in the NRHP in a manner that diminishes the significant aspect of integrity, then the finding for that aspect of integrity is "No Adverse Effect."
- **Adverse Effect**: An adverse effect is determined if the undertaking would alter a characteristic that qualifies that contributing resource for inclusion in the NRHP in a manner that diminishes the significant aspect(s) of integrity.

2.4 Avoidance Alternatives, Planning To Minimize Effects, and Mitigation Assessment of Effects

Per 36 CFR 800.6, a finding of adverse effect to historic properties requires that efforts to resolve such effects by developing and evaluating alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects must be undertaken.

Throughout the course of project planning, significant efforts have been made to avoid and/or minimize adverse effects to historic properties; to date, these efforts have included minimizing property requirements for right-of-way realignments; developing context-sensitive designs; retaining character-defining features of both the built environment and the landscape; and moving stations and ancillary features to avoid demolitions or substantial potential construction impacts to historic buildings; and other minimization and mitigation measures.

These efforts have minimized effects on architectural historic properties and have resulted in a determination that the D-O LRT project would not have an Adverse Effect on any of the 25 architectural historic properties located within the Architectural APE. However, Triangle Transit is committed to provide a landscape visual buffer for the following historic resources due to their residential or rural settings: the Rocky Ridge Farm Historic District (HD), the Highland Woods HD, the Walter Curtis Hudson Farm, and the Ruth-Sizemore Store. This visual buffer would provide a blooming of at least two seasons of each year. Triangle Transit will consult with property owners, historic district representatives, and the SHPO on the appearance of this buffer.

3. Proposed Project Description

3.1 Description

The proposed project generally follows North Carolina (NC) Highway 54 (NC 54), Interstate 40 (I-40), United States (US) 15-501, and Pettigrew Street in downtown Durham and east Durham. The proposed alignment begins in Chapel Hill at UNC Hospitals, parallels Fordham Boulevard, proceeds eastward adjacent to NC 54, travels north along I-40, parallels US 15-501 before it turns east towards Duke University and runs within Erwin Road, and then follows Pettigrew Street paralleling NC Highway 147 (NC 147) through downtown Durham, before reaching its eastern terminus in Durham near Alston Avenue. A total of 17 stations are planned, and approximately 5,000 parking spaces will be provided along the proposed project. In addition, a Rail Operations Maintenance Facility (ROMF) will be constructed to accommodate the D-O LRT fleet (17 vehicles, expandable to 26).

Bus routes will be modified to feed into the D-O LRT stations, and headways will be adjusted to provide more frequent service and minimize transfer waiting times. These services will also connect LRT passengers with other area transportation hubs, including park-and-ride lots and transfer centers. The components of the project are discussed separately below.

3.2 Light Rail

Light rail would operate in a dedicated guideway within new or existing right-of-way. It would operate in an exclusive corridor and on existing roadways alongside other traffic in a dedicated travel lane. For portions of the alignment light rail would also operate in shared lanes with buses. Light rail vehicles would be electrically powered by an overhead contact system using poles to support overhead wires. A light rail vehicle would have a passenger capacity of 40 to 60 seated and up to 125 with standees per vehicle (capacity varies depending on vehicle specifications), and can be linked together to operate as multiple-car trains to increase passenger capacity. Light rail would provide frequent, all-day service and passengers would board quickly with off-board fare payment, multiple doors, and level boarding platforms at designated station stops. Typical station spacing would be one-quarter mile to two miles.

Within the proposed project corridor, the light rail guideway would include two tracks throughout (double-tracked), providing separate tracks for westbound and eastbound trains. Where the track surface may be driven on by rubber-tired vehicles, such as in median-running alignments, the rails would be embedded in a concrete slab. Where the track surface is not required to be drivable, such as in between at-grade crossings on exclusive alignment, the light rail tracks would be on ballast (crushed stone used in typical railroad track beds) with concrete ties. Generally, the required width (cross-section) for an at-grade, double-track light rail alignment is 28 feet for embedded track and 30 feet for ballasted track. The amount of right-of-way needed would vary along the alignment due to the local topography. Right-of-way requirements would increase in station areas, where additional space is needed for station platforms (Figure 2 through Figure 6).

Figure 2: Conceptual image of alignment above-grade at Hibbard Drive near UNC Medical Center, Chapel Hill

Figure 3: Conceptual image of alignment at-grade at Finley Golf Course, Chapel Hill

Figure 4: Conceptual image of alignment above-grade at New Hope Creek, Durham

Figure 5: Conceptual image of alignment above-grade looking north along US 15-501 toward University Tower, Durham

Figure 6: Conceptual image of alignment at-grade looking west along West Pettigrew Street from intersection with South Mangum Street, Durham

3.3 Stations

A light rail station is a designated stop for boarding and exiting the light rail vehicles. Seventeen stations are proposed. Station design would comply with the Americans with Disabilities Act requirements, including level boarding of the light rail vehicles. The station platforms for loading and unloading passengers would be 270 feet long, which would accommodate a three-car train (three light rail vehicles connected to each other) (Figure 7 and Figure 8). Weather protection for patrons would be provided by canopies covering portions of the platform. Typical transit patron amenities at each station would include bench seating, leaning rails, windscreens, trash receptacles, and artwork integrated into the station amenities. Station elements would also include lighting, closed-circuit television cameras, emergency telephones, information kiosks, variable message signs, and public address systems. Transit patrons would purchase rides prior to boarding from Ticket Vending Machines (TVMs) located at each station. There are two basic types of station platforms: center platforms designed for passenger boarding and deboarding on both sides of the platform, and side platforms for boarding and deboarding from only one side of the platform.

Stations would be designed to accommodate safe and convenient bicycle access from surrounding street and trail networks. Bicycle parking would be located near primary access points to the station platform.

Parking is proposed at eight stations: Friday Center Drive, Leigh Village, Gateway, Martin Luther King Jr. Parkway, South Square, Durham, Dillard Street, and Alston Avenue. The Durham Station would utilize an existing parking deck. A new parking deck would be built for the Alston Avenue Station. Park-and-ride lots would be built at the other six stations. The number of parking spaces would vary depending on forecasted ridership and land availability (Figure 8). Stations with park-and-ride facilities would include bus bays for connecting feeder bus routes and “kiss-and-ride” spaces for passenger pick-up and drop-

off. Walk-up stations would be accessed primarily by pedestrians, bicyclists, and passengers transferring from bus service. In general, automobile parking would not be provided at walk-up stations.

Figure 7: Conceptual image of Durham Station

Figure 8: Conceptual image of Alston Avenue Station and parking deck, Durham

3.4 Rail Operations and Maintenance Facility (ROMF)

As part of the proposed project, the Farrington ROMF would be built between I-40 and Farrington Road in Durham County. The ROMF is an integral part of the proposed project and would include areas to store, service, and maintain up to 17 light rail vehicles with the capacity for up to 26 light rail vehicles without needing to expand the facility (Figure 9). The ROMF also holds equipment needed to maintain the stations and trackway. The facility would operate 24 hours per day, 7 days per week and would accommodate staff that report for work at the facility, such as train operators and mechanics.

The ROMF includes a complex of train washing and maintenance buildings, storage tracks, employee parking, and a storm water pond. The facility would be equipped to perform daily cleaning and repair activities on the light rail vehicles as they enter and leave revenue service. To ensure operational safety and reliability, scheduled service and maintenance inspections would be performed in this facility.

Figure 9: Example Rail Operations and Maintenance Facility, Charlotte, North Carolina

3.5 Traction Power Substations

The proposed project also requires a Traction Power Substation (TPSS) at approximately one-mile intervals to supply electrical power to the traction power networks. TPSSs do not generate electricity. They change the electrical current to an appropriate level to power light rail vehicles. TPSSs emit a low hum. Each TPSS would be about 42-feet long, 14-feet deep, and 12-feet high. A TPSS is generally a metal building, but can be treated differently as necessary. Each TPSS requires an approximately 0.03-acre site that would be fenced (Figure 10). They can be co-located at stations where feasible and one will be installed at the ROMF. The preliminary locations of the 17 TPSSs are depicted with black-cross symbols and the numbers 1 through 17 on the project's APE maps (Figure 14 through Figure 33). No TPSS is located within the National Register-listed or eligible boundaries of the historic properties within the APE.

TPSSs do not have to be located at precise intervals. They can be sited to avoid effects on historic properties. If a TPSS must be located close to a historic property, it will be designed and/or the area

around it will be landscaped to minimize any potential adverse effect upon that historic property. Each TPSS will include appropriate visual treatments based on setting and location. These may include adjustments to the location, appearance, and materials of the TPSS and the landscaping placed around it.

Figure 10: Traction Power Substation in Charlotte, North Carolina (source: charmeck.org/city/charlotte/cats/planning/ArtinTransit/inprogress/Pages/BLE-TPSS,SH,CCs.aspx)

3.6 Supporting Infrastructure Improvements

Implementation of a light rail system within the proposed project corridor would require changes to the built environment. Modifications needed to occur to existing transportation infrastructure as a direct result of the proposed project would include:

- Reconstruction of roadways and cross-streets where the light rail system is proposed to be median-running.
- Reconstruction of short segments of roadways crossed by the proposed project.
- Reconstruction of segments of Pettigrew Street

The proposed project also would include the addition of turn lanes at several intersections that would be reconstructed as part of the project and prohibition of certain vehicular turning movements across or adjacent to the tracks. Supporting infrastructure improvements were designed so that that would avoid taking any land from within the National Register-listed or eligible boundaries of historic properties, and to minimize any indirect visual effects that might have on these properties.

4. Historic Properties

4.1 Identification Efforts

During the weeks of February 3, 10, and 25, March 3 and 24, April 7, July 21, and September 2, 2014, URS senior architectural historian and principal investigator Marvin A. Brown conducted reconnaissance- and intensive-level fieldwork within the APE of the project. The APE was developed by the FTA in consultation with the staff of the SHPO. The entire APE is included on Figure 1 above.

Mr. Brown surveyed, inventoried, photographed, and preliminarily assessed all of the resources within the APE identified as 45 years old or older. As a part of this effort, he conducted research at the North Carolina State Library and Archives, the libraries at North Carolina State University, and the North Carolina HPO in Raleigh; the libraries at the University of North Carolina (UNC) and the Chapel Hill Public Library in Chapel Hill; and the Durham County Public Library and the libraries of Duke University in Durham. He also researched the tax, deed, plat, and map records of Durham and Orange counties via their online GIS sites and repositories. He conducted further online research at local, county, and state historic and genealogical websites, and local and state historic architectural and historic map websites. He then assessed the potential National Register-eligibility of the resources within the APE by applying the National Register Criteria for Evaluation and National Register Criteria Considerations.

Following his initial reconnaissance-level survey, which consisted of a windshield survey conducted by car and preliminary research and assessment, Mr. Brown put together a presentation that included maps, photographs, locations, estimated dates of construction, background information, and preliminary assessments of all resources inventoried at the reconnaissance level. In order to receive input on these and other potential historic resources within the APE, he presented this information to Wendy Hillis, Executive Director of Preservation Durham, on April 1, 2014; Peter Sandbeck, Cultural Resources Coordinator of the Orange County Department of Environment, Agriculture, Parks and Recreation, on April 17, 2014; and Cheri Szcondronski, Executive Director of Preservation Chapel Hill, on April 18, 2014.

Mr. Brown subsequently conducted additional fieldwork at and research into 11 resources and groups of resources, which he assessed at the intensive level. These resources merited intensive-level assessment due to their appearance, history, associations, significance, and integrity. This intensive-level effort, which extended beyond the initial reconnaissance-level survey, included detailed resource assessment, historical research, photography, mapping, and analysis. Mr. Brown further revisited and re-assessed the National Register significance, integrity, and boundaries of 17 historic resources that had previously been listed or determined eligible for listing in the National Register.

The results of the identification efforts are recorded in the *Architectural Historic Survey Report for the Durham-Orange Light Rail Project* and the freestanding Appendix to that report.

4.2 Summary of Historic Properties

Seventeen architectural historic resources within the APE were previously listed in the National Register or determined eligible for National Register listing through a Determination of Eligibility (DOE). As a result of the historic architectural survey, the FTA determined that eight additional architectural historic resources were eligible for National Register listing. There are a total of 25 architectural historic properties within the APE that are listed in the NR, previously determined NR-eligible through a DOE, or newly determined NR-eligible as a result of the proposed project. However, two of these resources—the Dubose Tenant Farm Complex (OR-1250) and the Powe House (DH-1224)—have lost their integrity and

the FTA has determined and the SHPO has concurred that they no longer merit NR eligibility. A third resource, Meadowmont (DH-1708), has lost contributing buildings and grounds and the FTA has determined with SHPO concurrence that it remains eligible, but within more limited NRHP-eligible boundaries. All 25 resources are identified and their status summarized at Figure 11. They are described and evaluated for project effects in the following section.

Figure 11: NR-listed and Eligible Historic Properties in APE

Name (NC Historic Preservation Office (HPO) Survey Number)	NR Listing or Determination of Eligibility (DOE) and Date	NR Criteria and Significance	Figure # (APE Map #)
Dr. Robert Jack Shankle House (OR-2771)	DOE 2015	Determined eligible under Criterion C for its Mid-Century Modernist architecture.	Figure 14 (APE Map 1)
H.G. Baity House (OR-2772)	DOE 2015	Determined eligible under Criterion B for its association with sanitation engineer H.G. Baity and Criterion C for its Chateauesque-style architecture.	Figure 14 (APE Map 1)
Bowers-Nelson House (OR-1465)	DOE 2015	Determined eligible under Criterion C for its Mid-Century Modernist architecture.	Figure 14 (APE Map 1)
Rocky Ridge Farm Historic District (OR-303 and OR-1748)	NR listed 1989; boundaries expanded 2008	Significant under Criteria A and C in areas of community planning/development, landscape architecture, and architecture.	Figure 15 (APE Map 2)
Highland Woods Historic District (OR-1460)	DOE 2015	Determined eligible under Criterion A within area of significance of community planning and development and Criterion C for Mid-Century Modernist architecture.	Figure 15 (APE Map 2)
Dubose Tenant Farm Complex (OR-335 to OR-339 and OR-1250)	Determined NR-eligible (DOE) 1994	Due to demolition and construction of Meadowmont developments across site, has lost integrity and is no longer NR-eligible.	Figure 16 (APE Map 3)
Meadowmont (DH-1708)	NR listed 1985	Significant under Criteria A, B, and C for association with philanthropy of John Sprunt Hill family; association with owners D. St. Pierre and Valinda (Hill) DuBose and architects Herbert G. Crisp and James R. Edmunds, Jr.; and for architecture and landscape architecture. Following listing almost all contributing resources other than house supplanted by Rizzo Conference Center development. Were boundaries redrawn to reflect current conditions, would contract to much smaller area confined to house and immediate grounds.	Figure 17 (APE Map 4)
Walter Curtis Hudson Farm (DH-2373)	DOE 2015	Determined eligible under Criterion C as representative of a small Durham County farmstead of early twentieth century.	Figure 20 (APE Map 7)
Ruth-Sizemore Store (DH-2561)	DOE 2015	Store (not house or pool hall) determined eligible under Criterion A in the area of significance of commerce as representative of a rural Durham County store.	Figure 22 (APE Map 9)
West Durham Historic District (DH-1134 and DH-1178)	NR listed 1986	Historic district (DH-1134) significant under Criterion C for architecture. Erwin Cotton Mills Co. Mill No. 1 and Headquarters Building (DH-1178) within district individually significant under Criteria A, B, and C for economic role in Durham; association with Benjamin N.	Figure 30 (APE Map 17)

Name (NC Historic Preservation Office (HPO) Survey Number)	NR Listing or Determination of Eligibility (DOE) and Date	NR Criteria and Significance	Figure # (APE Map #)
		Duke, George W. Watts, and William A. Erwin; and for architecture. Since listing much of southern portion has been altered by modern development. Were boundaries redrawn to reflect current conditions, they would contract at the south.	
Powe House (DH-1224 and DH-1225)	NR listed 1985	Powe House (DH-1224) determined significant in 1985 under Criteria A, B, and C for symbolic status as home of textile industry executive; association with Edward Knox Powe; and for architecture. In 1986 Sunnyside house (DH-1225) and Erwin Cottage moved within Powe House boundaries and HPO recommended delisting entire property. Federal Transportation Administration (FTA) concurs that Powe House is no longer NR-eligible, but property remains NR listed.	Figure 30 (APE Map 17)
Trinity College East Campus Historic District (DH-1821)	DOE 2000 and 2009	Historic district determined eligible in 2000 and 2009. Campus Drive Underpass and Grade Separation within district determined individually NR eligible under Criteria A and C for history and architecture in 2005.	Figure 31 (APE Map 18)
Smith Warehouse (DH-89)	NR listed 1985	Significant under Criteria A, B, and C for connection with American Tobacco Company trust and economic role in Durham; association with James B. Duke and other American Tobacco Company executives; and for architecture.	Figure 31 (APE Map 18)
Trinity Historic District (DH-927)	NR listed 1986; boundaries expanded 2004	Significant under Criteria A, B, and C for representing efforts of leaders who had created Durham's prospering economy to provide public services and cultural amenities necessary for community's continued development as a progressive city; for reflecting business acumen of Julian S. Carr, Richard H. Wright, Brodie L. Duke, and others; and for architecture.	Figure 31 (APE Map 18)
Watts and Yuille Tobacco Warehouses (DH-87)	NR listed 1984	Significant under Criteria A, B, and C as notable symbol of American Tobacco Company trust, for association with James B. Duke and family, George W. Watts, and Thomas B. Yuille; and for architecture.	Figure 31 (APE Map 18)
Duke Memorial United Methodist Church (DH-1253)	NR listed 1985	Significant under Criteria A, B, and C for association with rapid growth of western Durham and many tobacco workers in congregation; association with Washington Duke and sons; and for architecture.	Figure 31 (APE Map 18)
North Carolina Mutual Building (DH-2477)	DOE 2015	Determined eligible under Criterion A in the area of African-American ethnic history for association with North Carolina Mutual Insurance Company.	Figure 31 (APE Map 18)
Bright Leaf Historic District (DH-71)	NR listed 1999	Significant under Criterion A in the area of industry and under Criterion C for architecture.	Figure 31 (APE Map 18)
Downtown Durham Historic District (DH-1692)	NR listed 1977; 2012 additional documentation	Significant in areas of architecture, commerce, politics/government, religion, and theater.	Figure 31 (APE Map 18)
American Tobacco Company	NR listed 2000	American Tobacco Company Manufacturing Plant (DH-1872) significant under Criterion A in the area of	Figure 32 (APE Map 19)

Name (NC Historic Preservation Office (HPO) Survey Number)	NR Listing or Determination of Eligibility (DOE) and Date	NR Criteria and Significance	Figure # (APE Map #)
Manufacturing Plant (DH-1872 and DH-10)		industry and Criterion C in the area of architecture. W.T. Blackwell and Co (Bull Durham) Tobacco Factory (DH-10) at north end of property declared a National Historic Landmark in 1974.	
Southern Railway Bridge (Seaboard Coastline Railroad Overpass) (DH-2504 and DH-1067)	DOE 1999	Determined eligible under Criterion A in area of significance of transportation and Criterion C for design.	Figure 32 (APE Map 19)
Venable Tobacco Company Warehouse (DH-97)	NR listed 1985	Significant under Criterion A in the area of industry and Criterion C in the area of architecture.	Figure 32 (APE Map 19)
Venable Tobacco Company Prizery and Receiving Room (DH-2560)	NR listed 1985	Significant under Criterion A in the area of industry.	Figure 32 (APE Map 19)
Durham Water Tower and Valve House (DH-3508)	DOE 2015	Determined eligible under Criterion A for association with activities of Federal Emergency Administration of Public Works in Durham and Criterion C for water tower design.	Figure 33 (APE Map 20)
East Durham Historic District (DH-2418)	NR listed 2004	Significant under Criterion A in the area of community planning and development and Criterion C in the area of architecture.	Figure 33 (APE Map 20)

5. Assessment of Effects

Twenty-five historic resources that are listed in or have been determined eligible for listing in the National Register through a DOE are located within the APE. In accordance with 36 CFR 800.5(a), the criteria of adverse effect were applied to these properties. The regulations implementing Section 106 of the NHPA define an effect as an "alteration to the characteristics of a historic property qualifying it for inclusion in or eligible for the National Register" (36CFR800.16(i)). The effect is adverse when the alteration of a qualifying characteristic occurs in a "manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" (36 CFR800.5(a)). The effects of the proposed project on architectural historic properties within the APE are summarized at Figure 12. The properties are listed by name, from west to east, on detailed maps of the APE and its corridor at Figure 13 through Figure 33 and assessed in detail in the subsections that follow.

Figure 12: Summary of Effects of Proposed Project on Historic Properties

Name (NC HPO Survey Number)	NR Eligibility/Criteria	Effect
Dr. Robert Jack Shankle House (OR-2771)	DOE/B and C	No Effect
H.G. Baity House (OR-2772)	DOE/B and C	No Effect
Bowers-Nelson House (OR-1465)	DOE/C	No Effect
Rocky Ridge Farm HD (OR-1303 and OR-1748)	NR Listed/A and C	No Adverse Effect
Highland Woods HD (OR-1460)	DOE/A and C	No Adverse Effect
Dubose Tenant Farm Complex (OR-1250)	DOE/Not specified	No Effect
Meadowmont (DH-1708)	NR Listed/A, B and C	No Effect
Walter Curtis Hudson Farm (DH-2373)	DOE/C	No Adverse Effect
Ruth-Sizemore Store (DH-2561)	DOE/A	No Adverse Effect
West Durham HD (DH-1134)	NR Listed/C	No Effect
Powe House (DH-1224)	NR Listed/A, B and C	No Effect
Trinity College East Campus HD (DH-1821)	DOE/Not specified	No Adverse Effect
Smith Warehouse (DH-89)	NR Listed/A, B and C	No Adverse Effect
Trinity HD (DH-927)	NR Listed/A, B and C	No Effect
Watts and Yuille Tobacco Warehouses (DH-87)	NR Listed/A, B and C	No Effect
Duke Memorial United Methodist Church (DH-1253)	NR Listed/A, B and C	No Adverse Effect
North Carolina Mutual Building (DH-2477)	DOE/A and C	No Adverse Effect
Bright Leaf HD (DH-71)	NR Listed/A and C	No Effect
Downtown Durham HD (DH-1692)	NR Listed/A and C	No Effect
American Tobacco Company Manufacturing Plant (DH-1872 and DH-10)	NR Listed/A and C	No Adverse Effect
Southern Railway Bridge (Seaboard Coastline Railroad Overpass) (DH-2504 and DH-1867)	DOE/Not specified	No Adverse Effect
Venable Tobacco Company Warehouse (DH-97)	NR Listed/A and C	No Adverse Effect
Venable Tobacco Company Prizery and Receiving Room (DH-2560)	NR Listed/A	No Adverse Effect
Durham Water Tower and Valve House (DH-3508)	DOE/A and C	No Effect
East Durham Historic District (DH-2184)	NR Listed/A and C	No Effect

Figure 13: Area of Potential Effects Overview and Project Locator Map

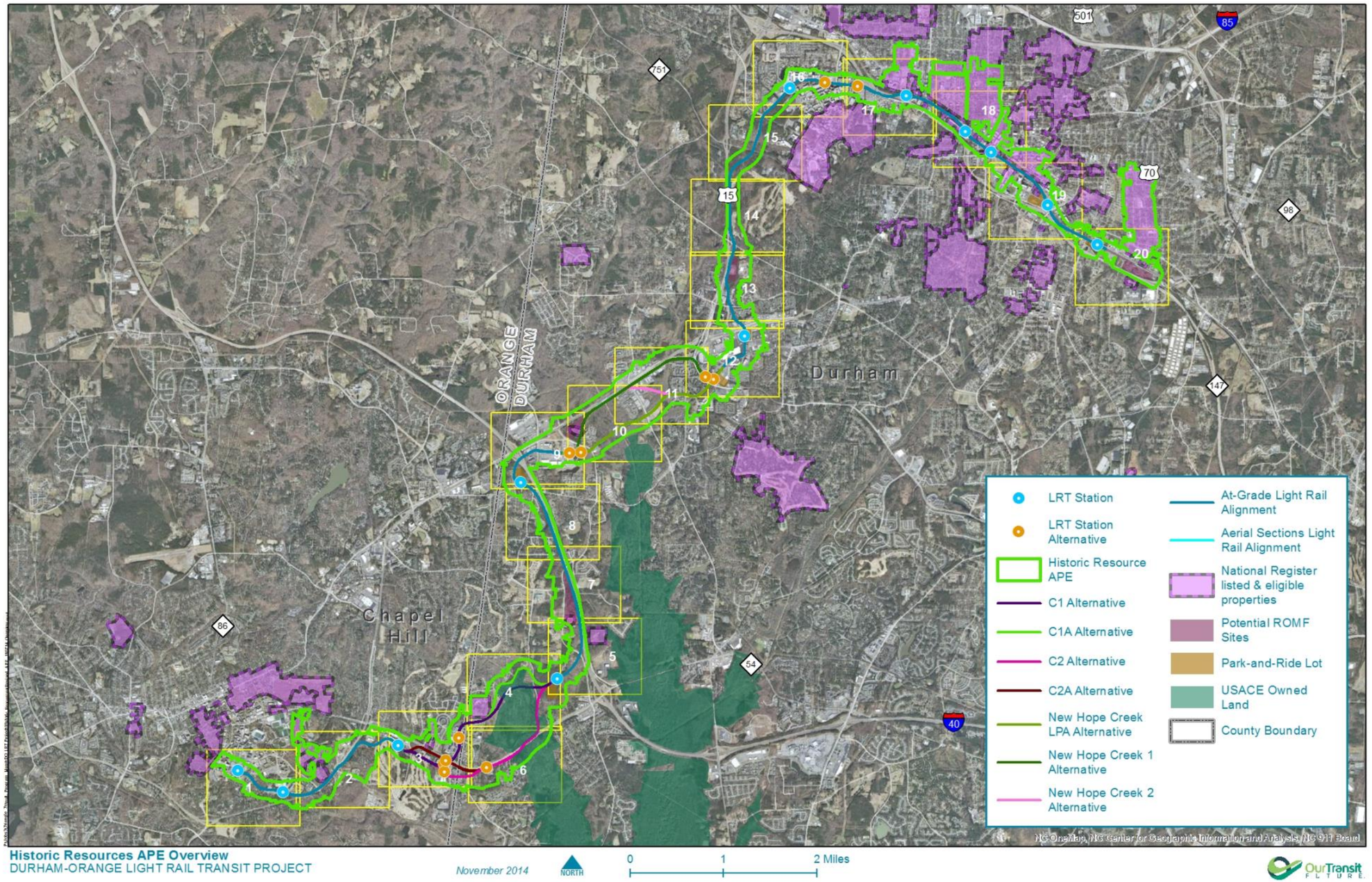


Figure 14: Area of Potential Effects Map 1

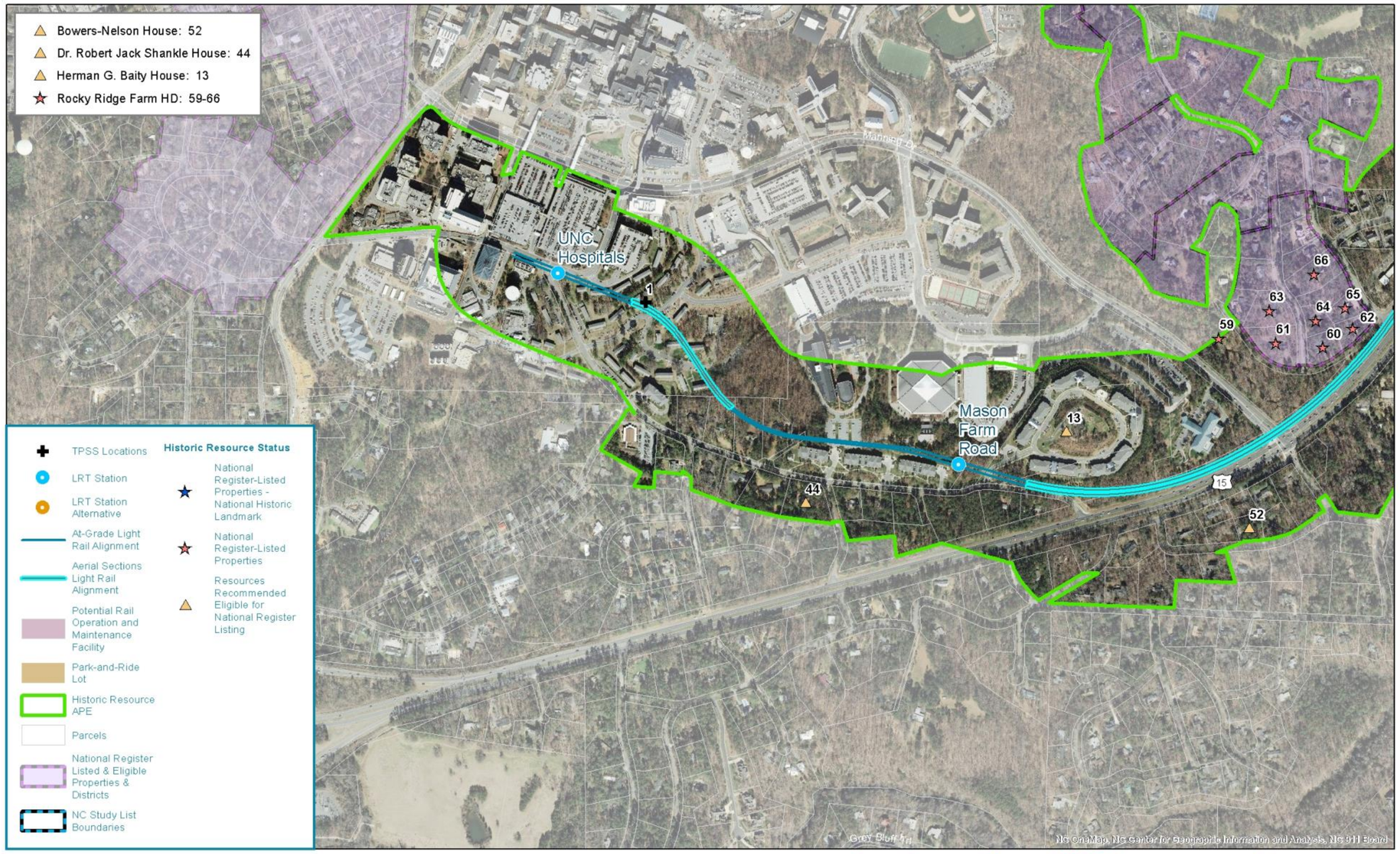


Figure 15: Area of Potential Effects Map 2

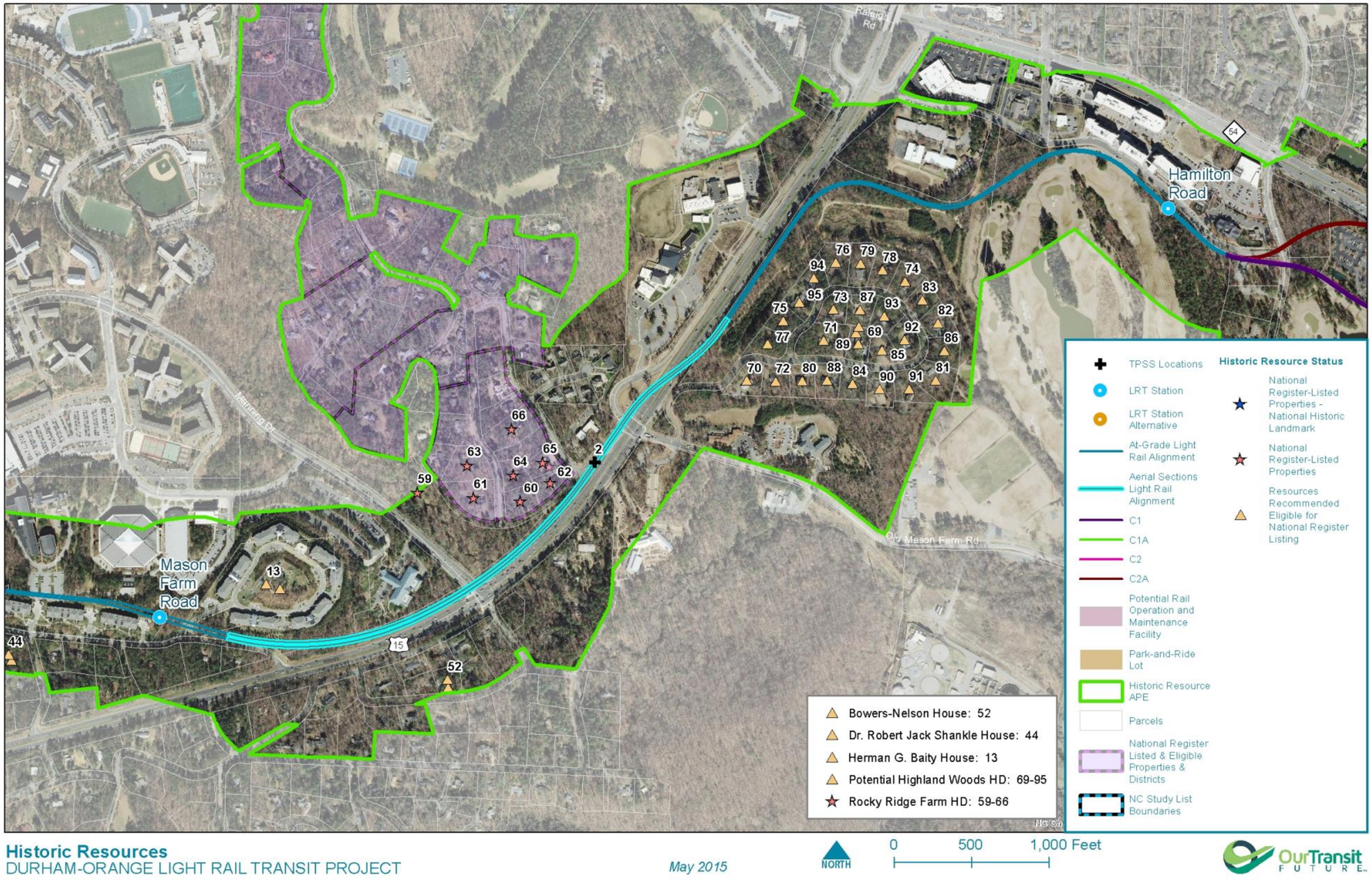


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Figure 16: Area of Potential Effects Map 3

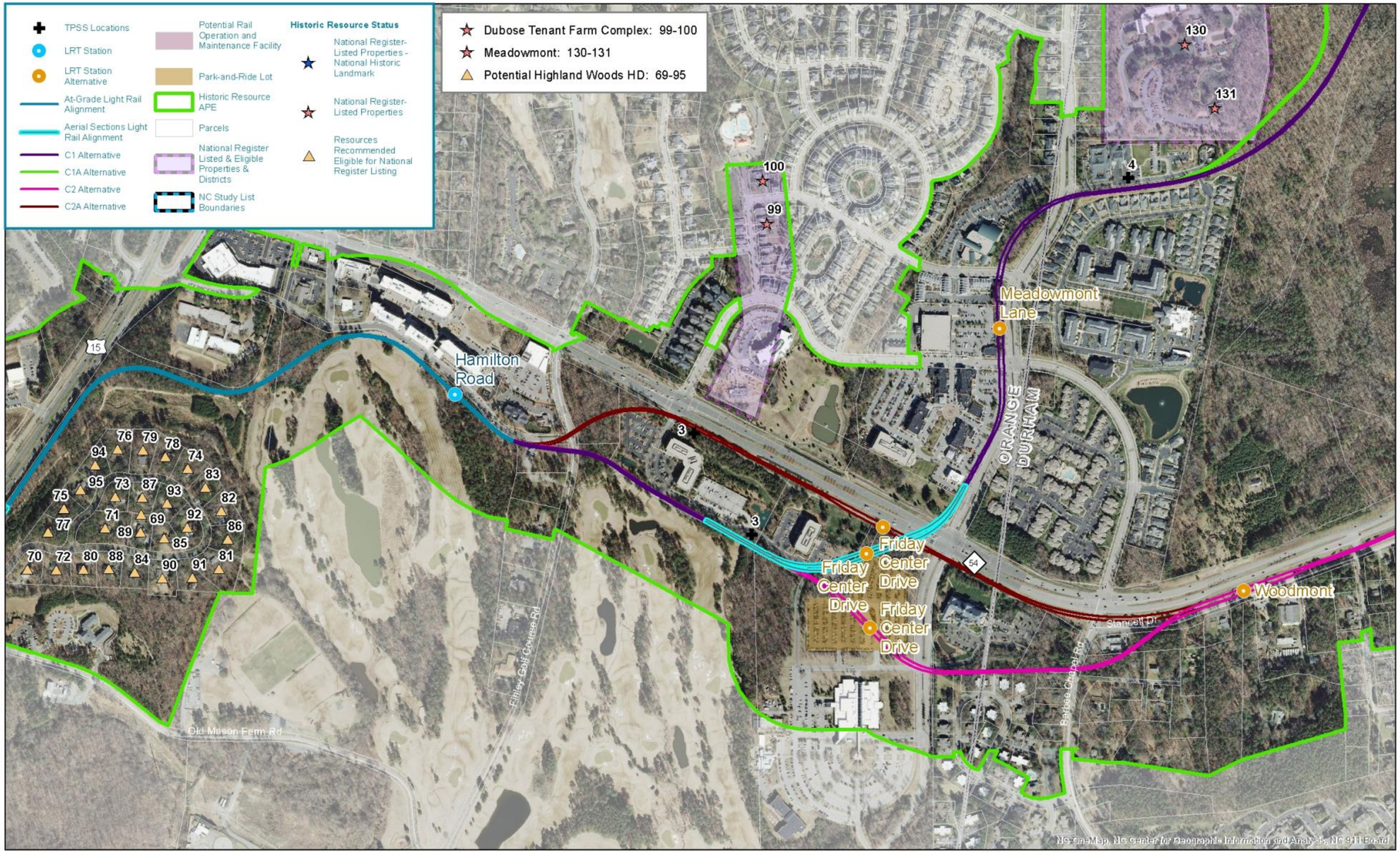

Figure 17: Area of Potential Effects Map 4

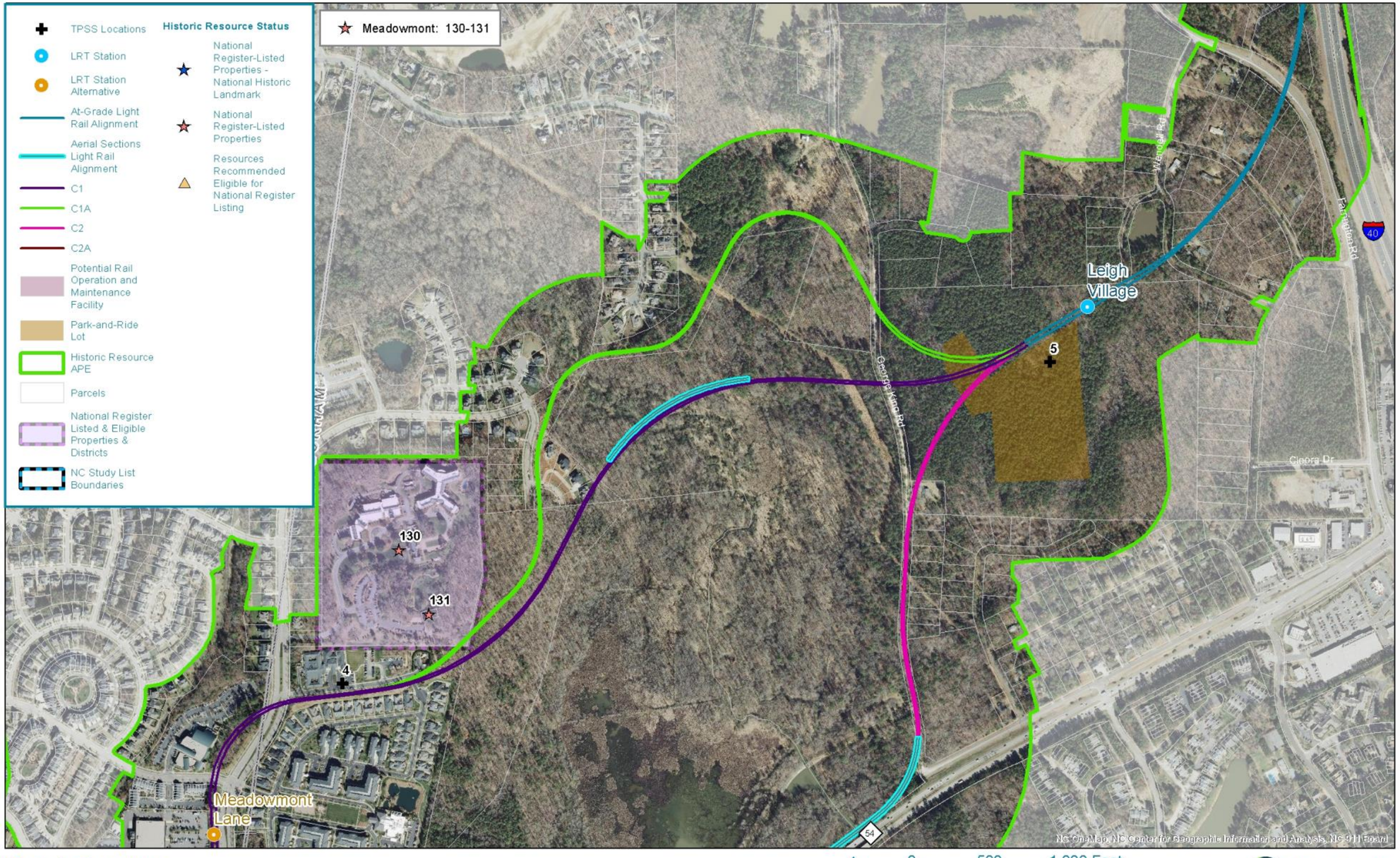

Figure 18: Area of Potential Effects Map 5

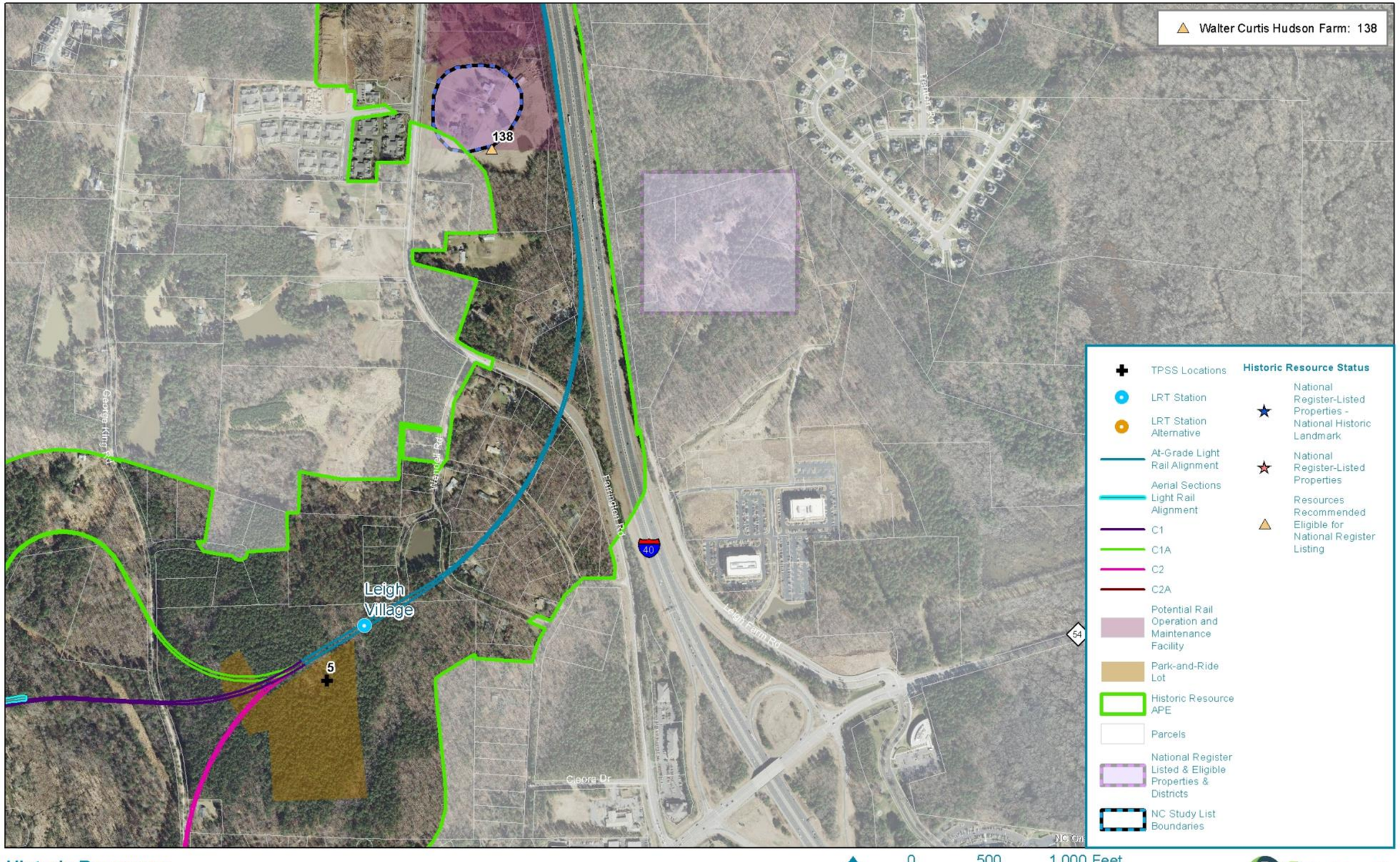

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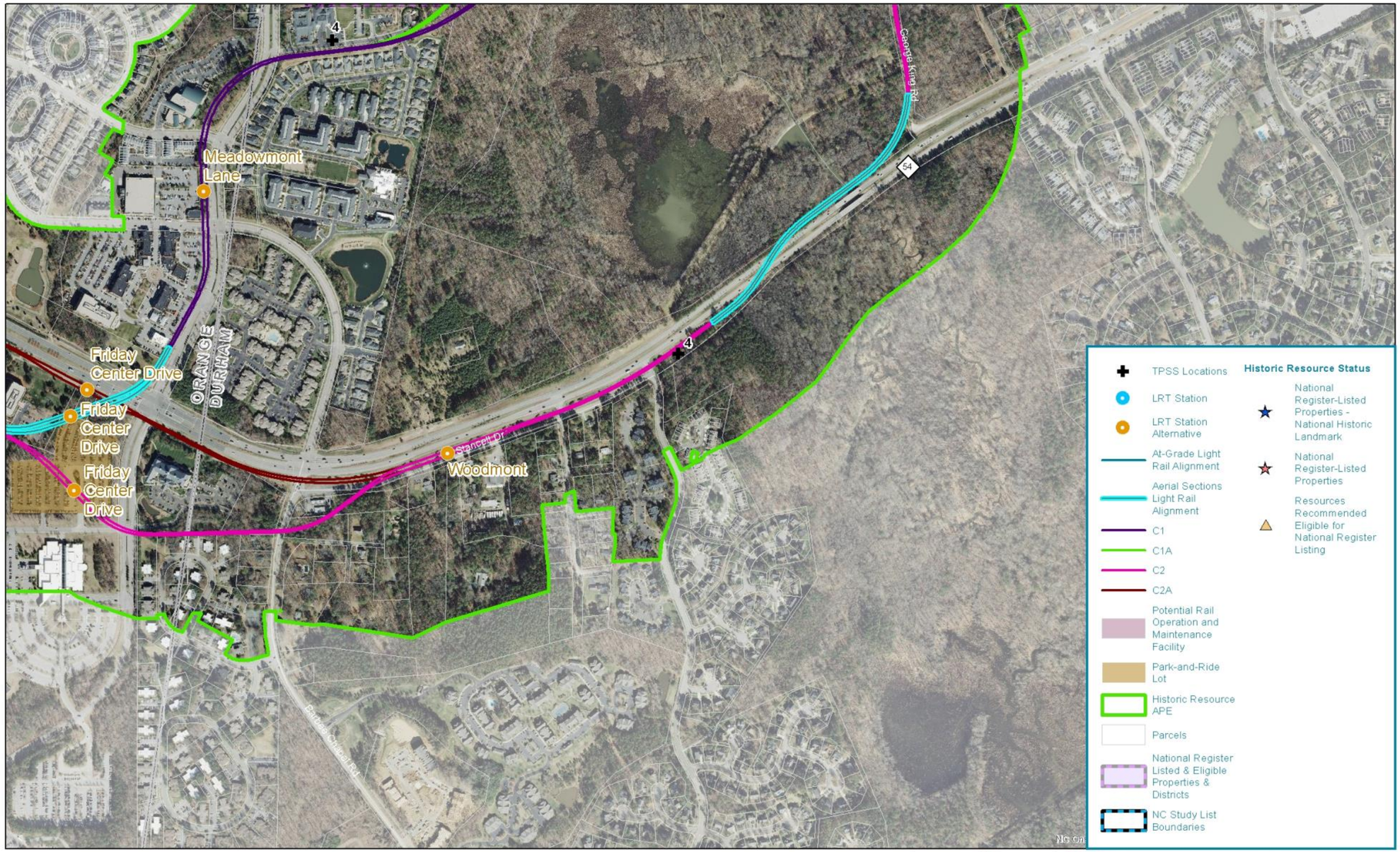
Figure 19: Area of Potential Effects Map 6



Historic Resources
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

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NORTH

0 500 1,000 Feet

Figure 20: Area of Potential Effects Map 7

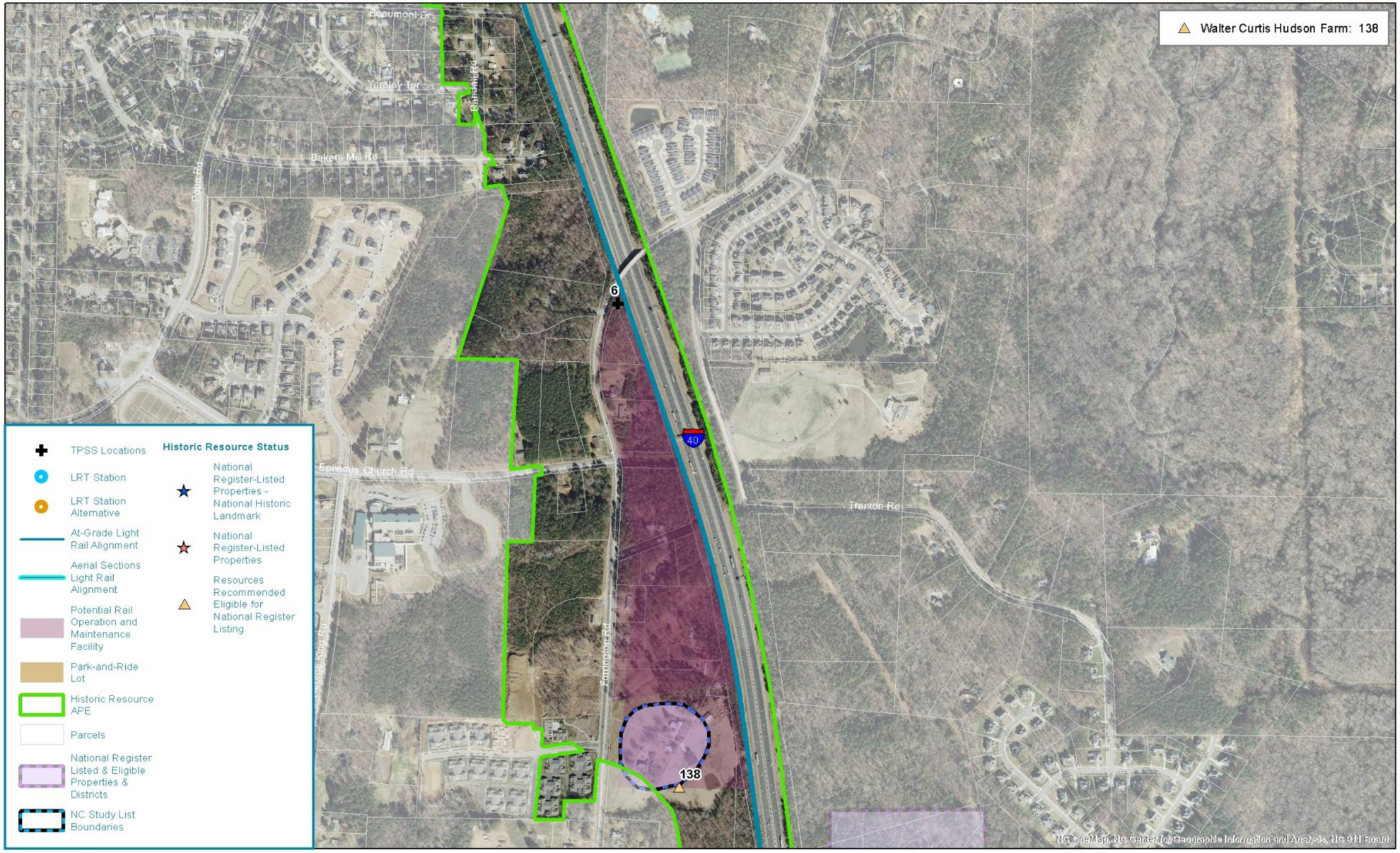

Figure 21: Area of Potential Effects Map 8

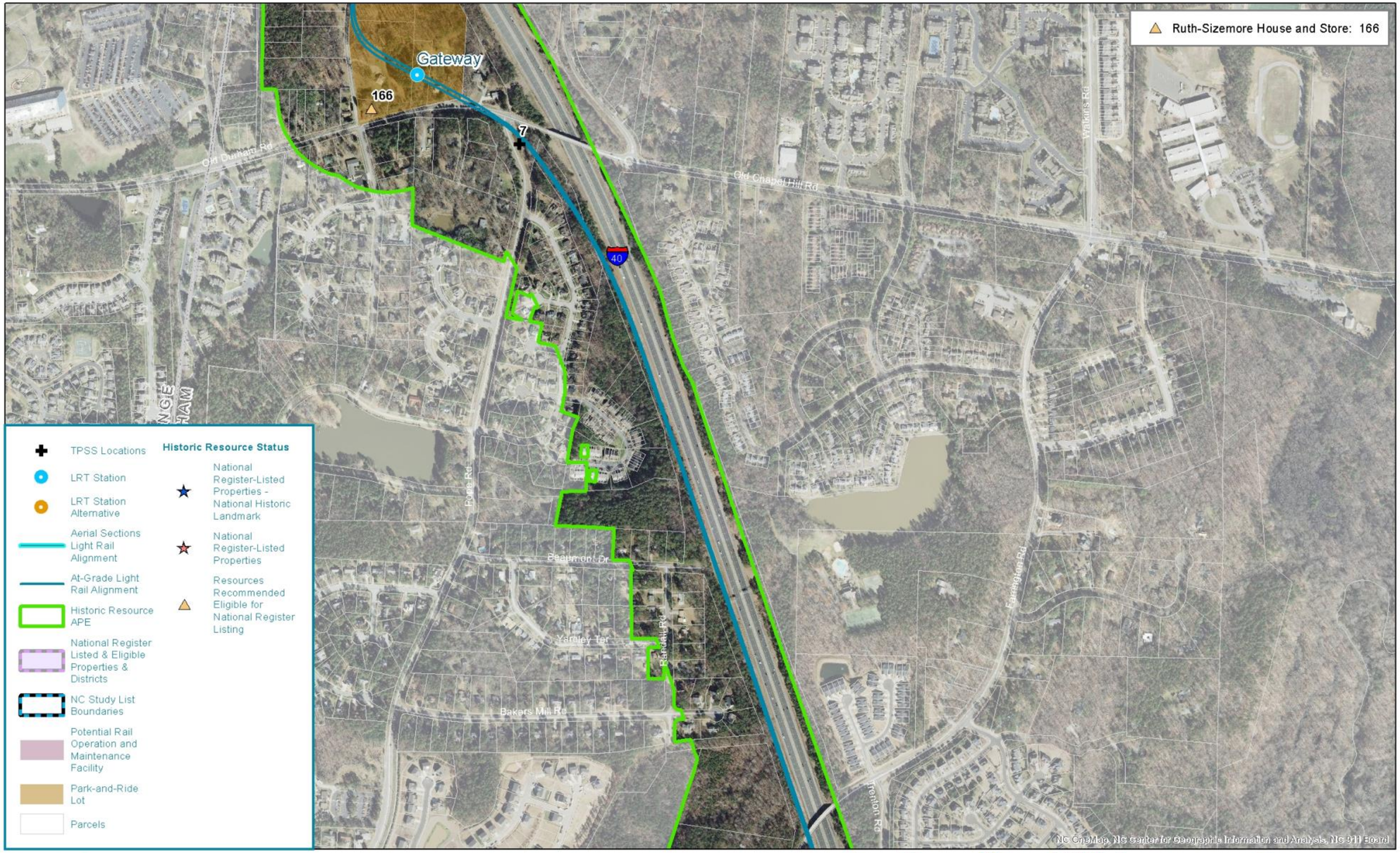

Figure 22: Area of Potential Effects Map 9

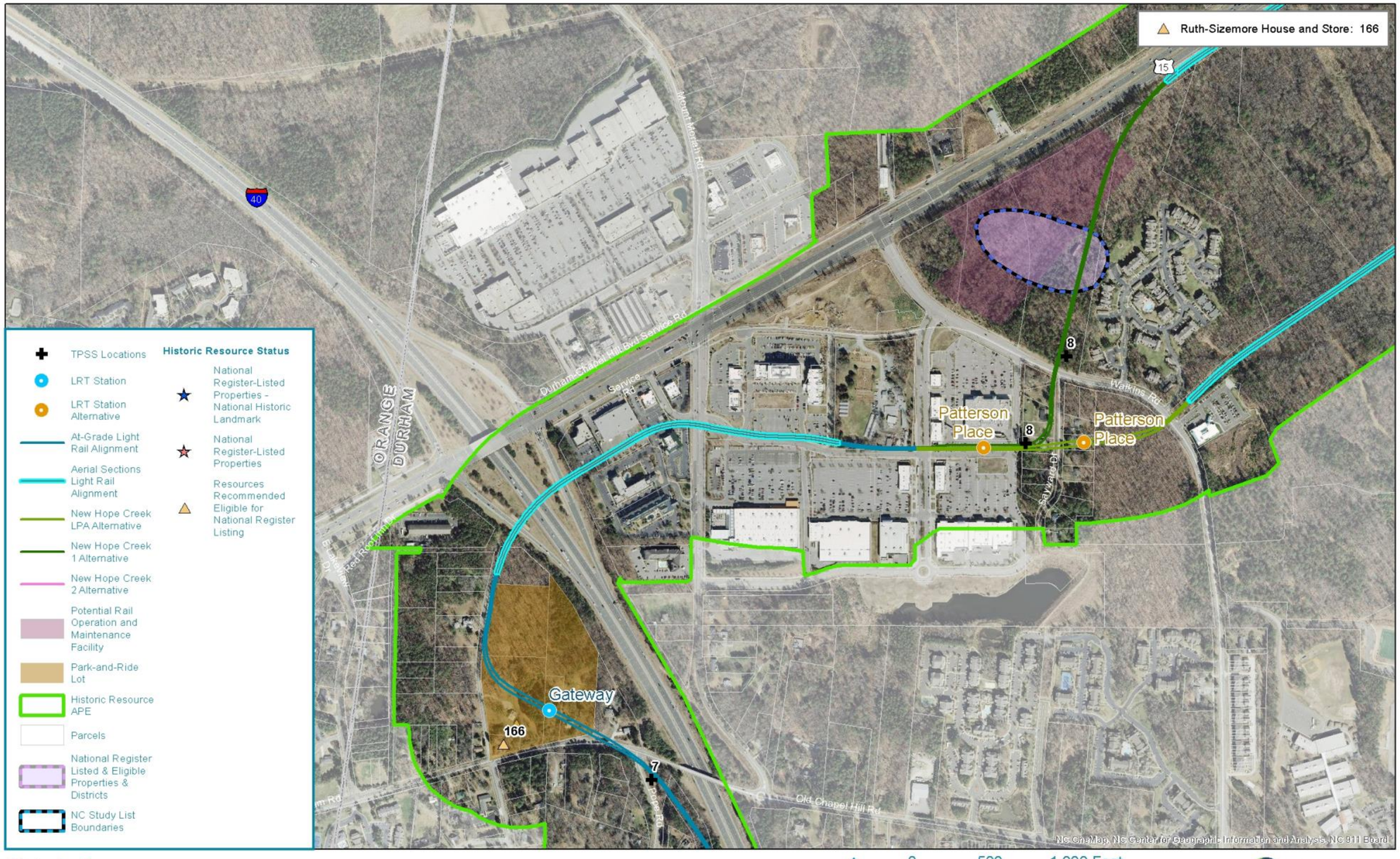

Figure 23: Area of Potential Effects Map 10

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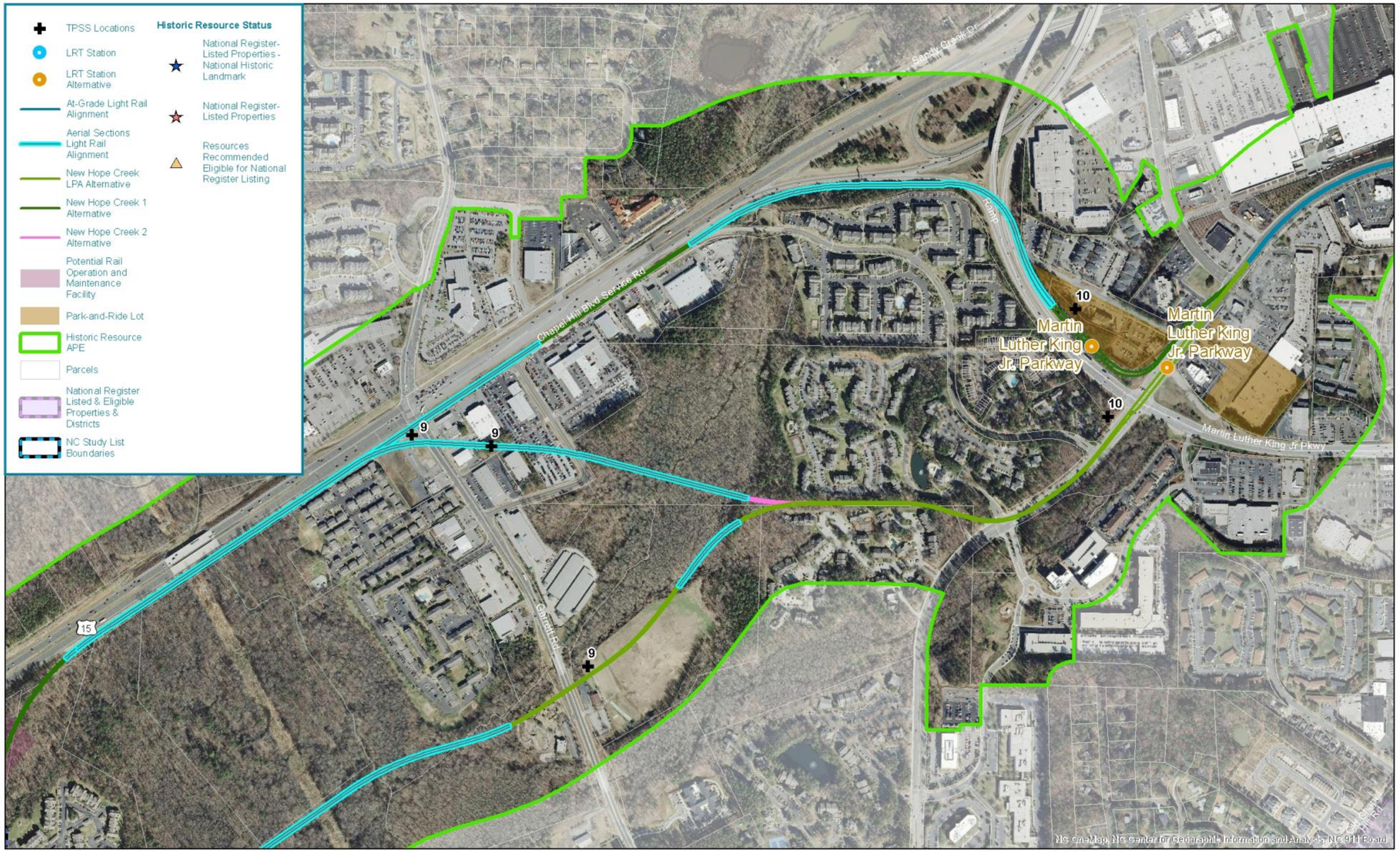
Figure 24: Area of Potential Effects Map 11



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NORTH

0 500 1,000 Feet

Figure 25: Area of Potential Effects Map 12

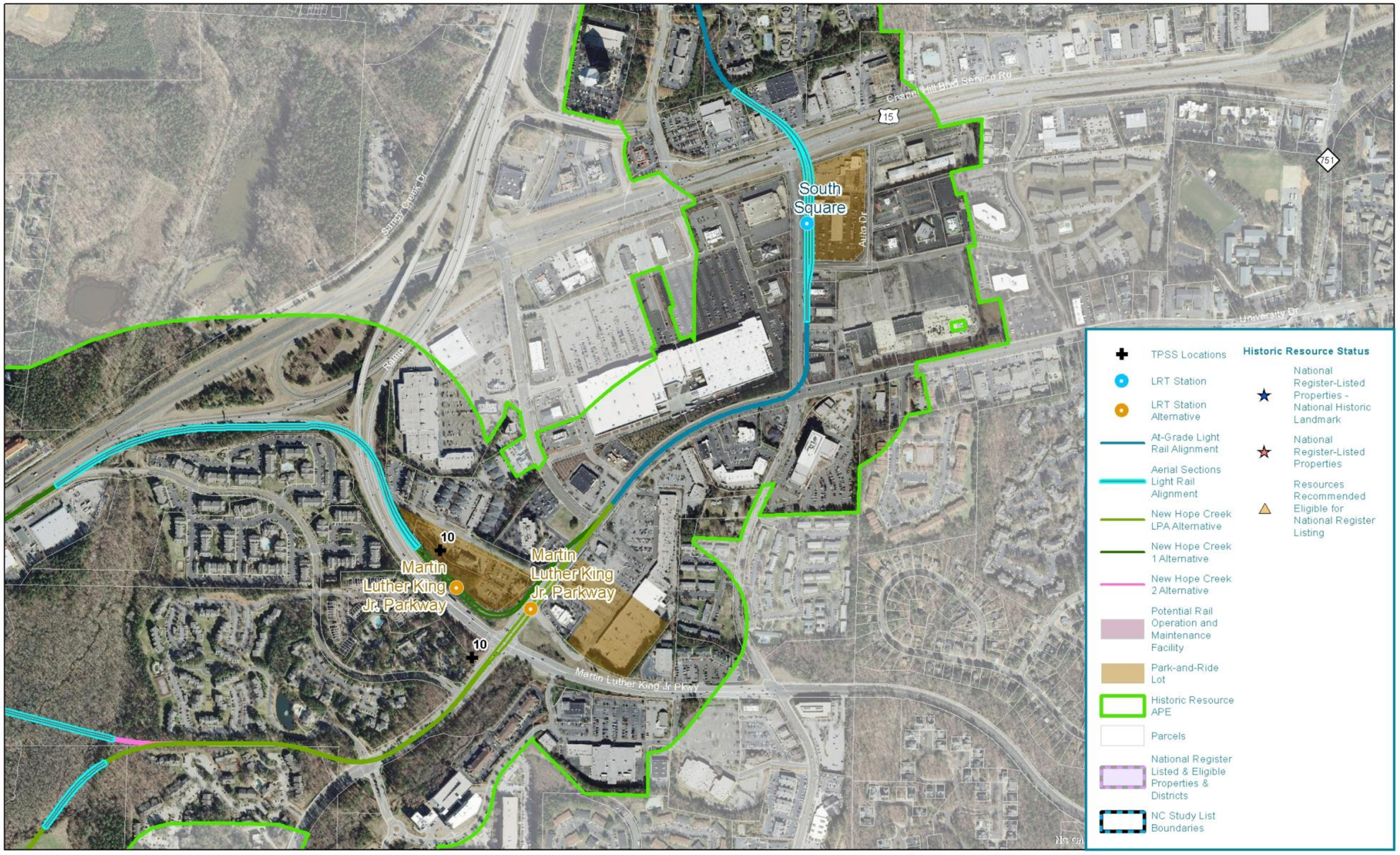

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Figure 26: Area of Potential Effects Map 13

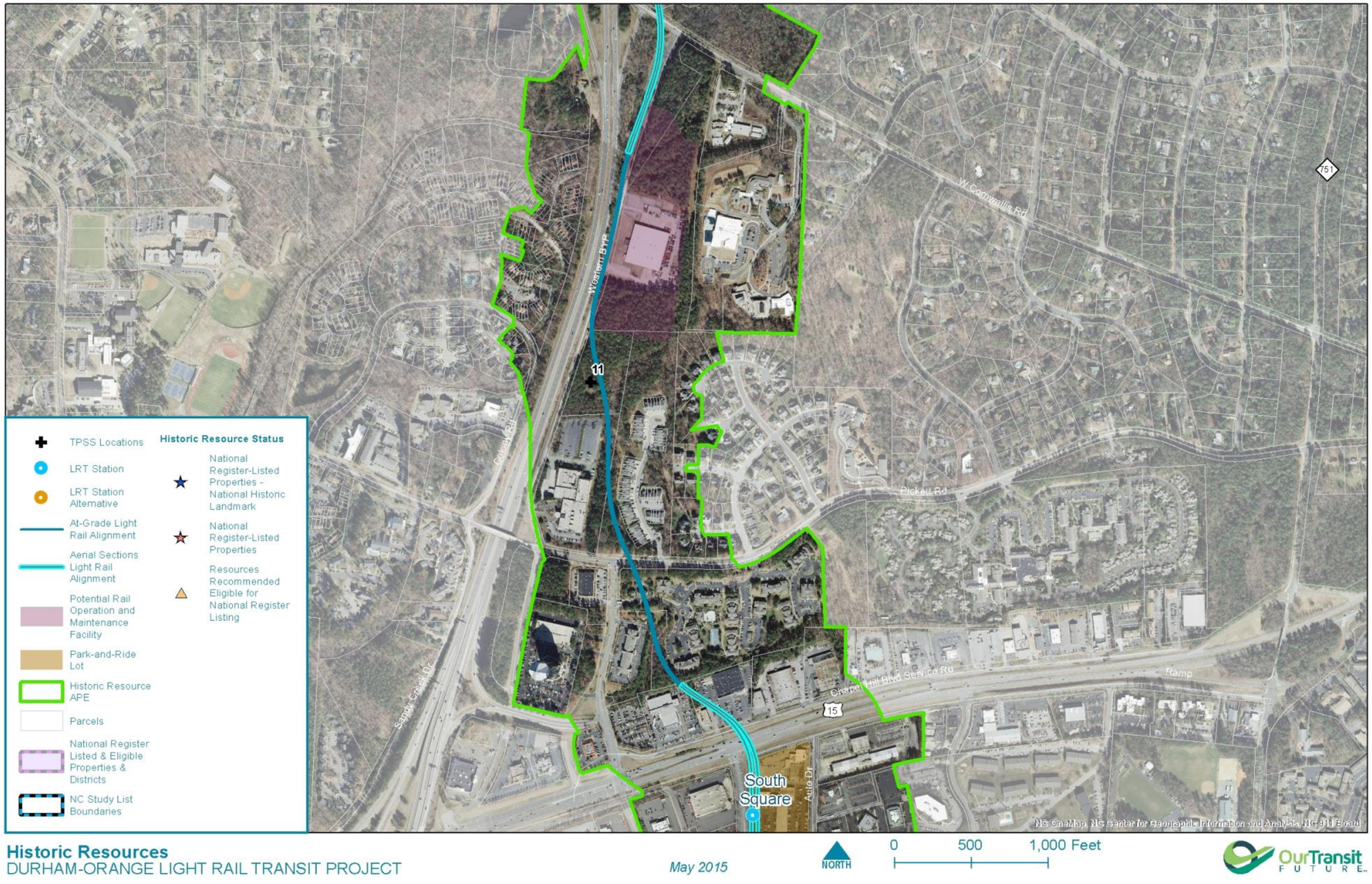

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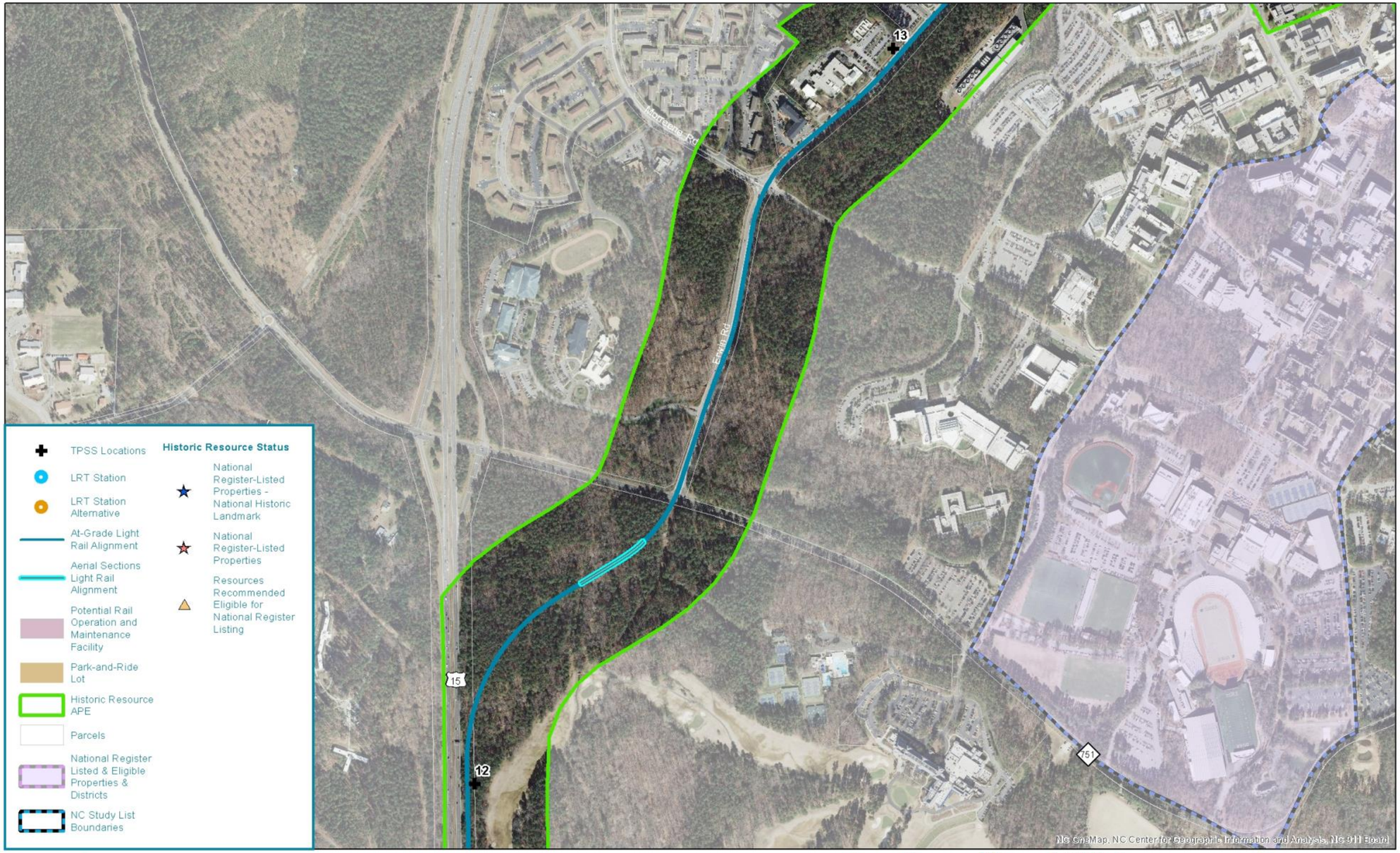
Figure 27: Area of Potential Effects Map 14

Figure 28: Area of Potential Effects Map 15



Historic Resources
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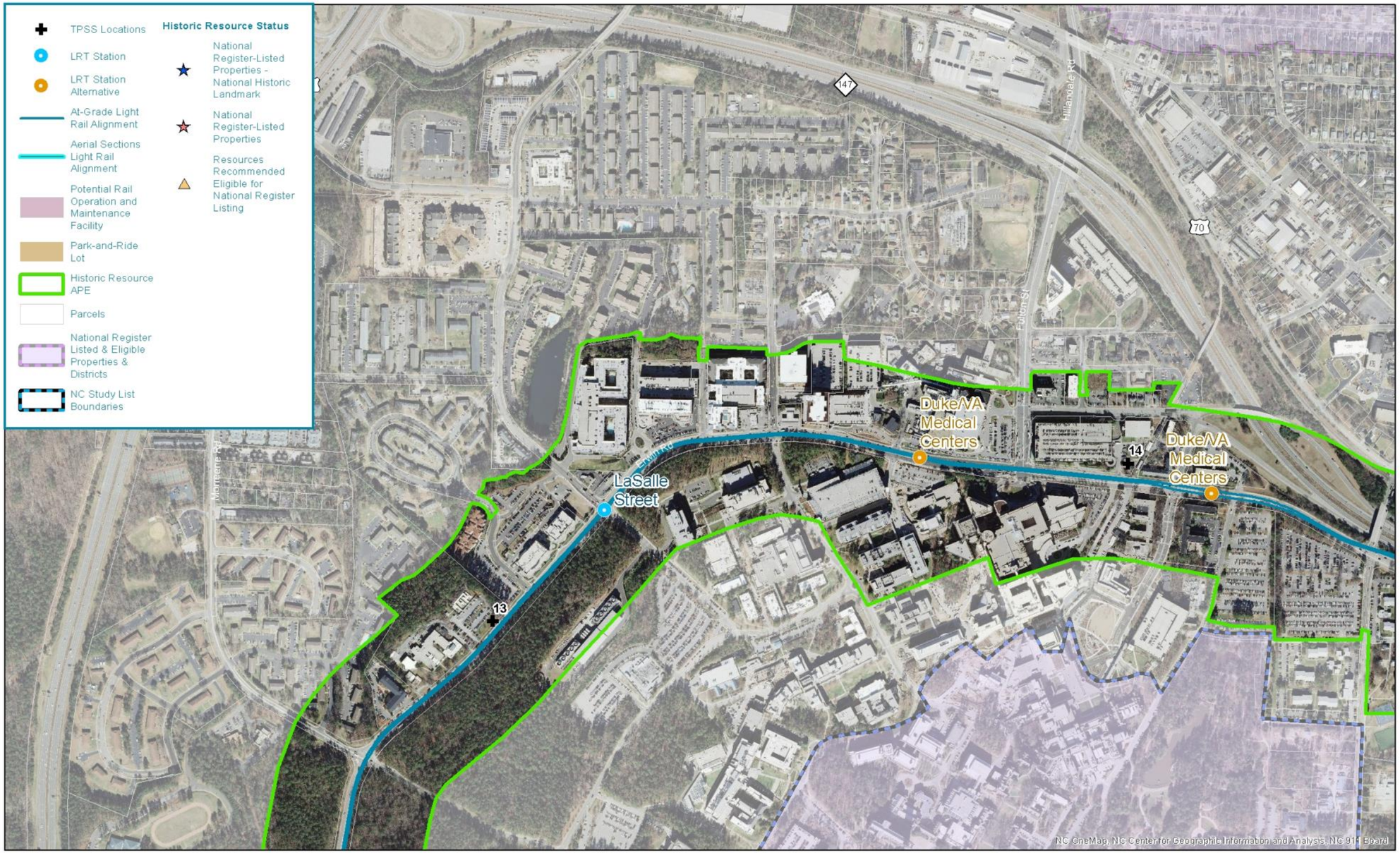
NORTH 0 500 1,000 Feet

Figure 29: Area of Potential Effects Map 16

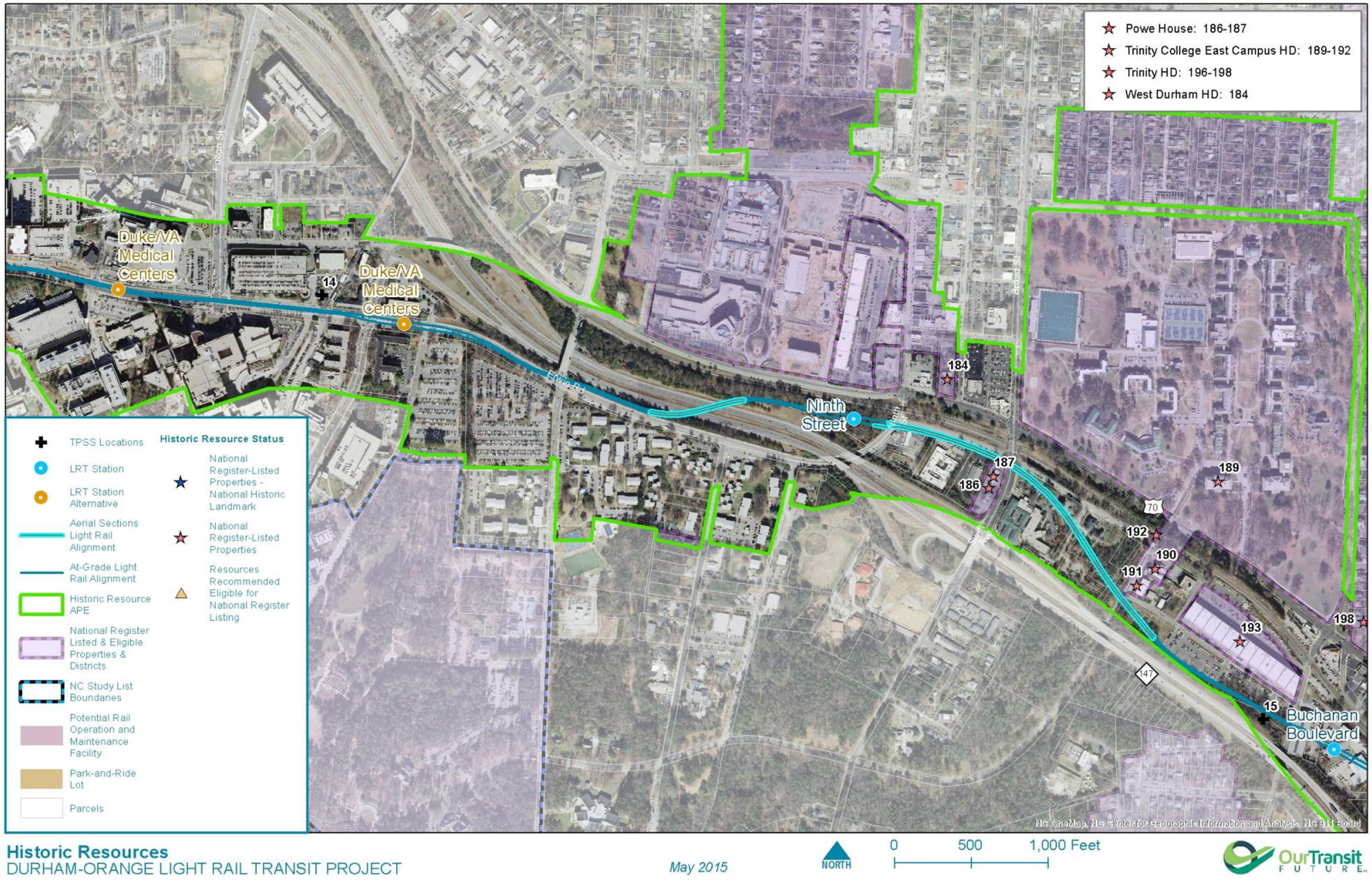


Historic Resources
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

May 2015

NORTH 0 500 1,000 Feet

Figure 30: Area of Potential Effects Map 17



Historic Resources
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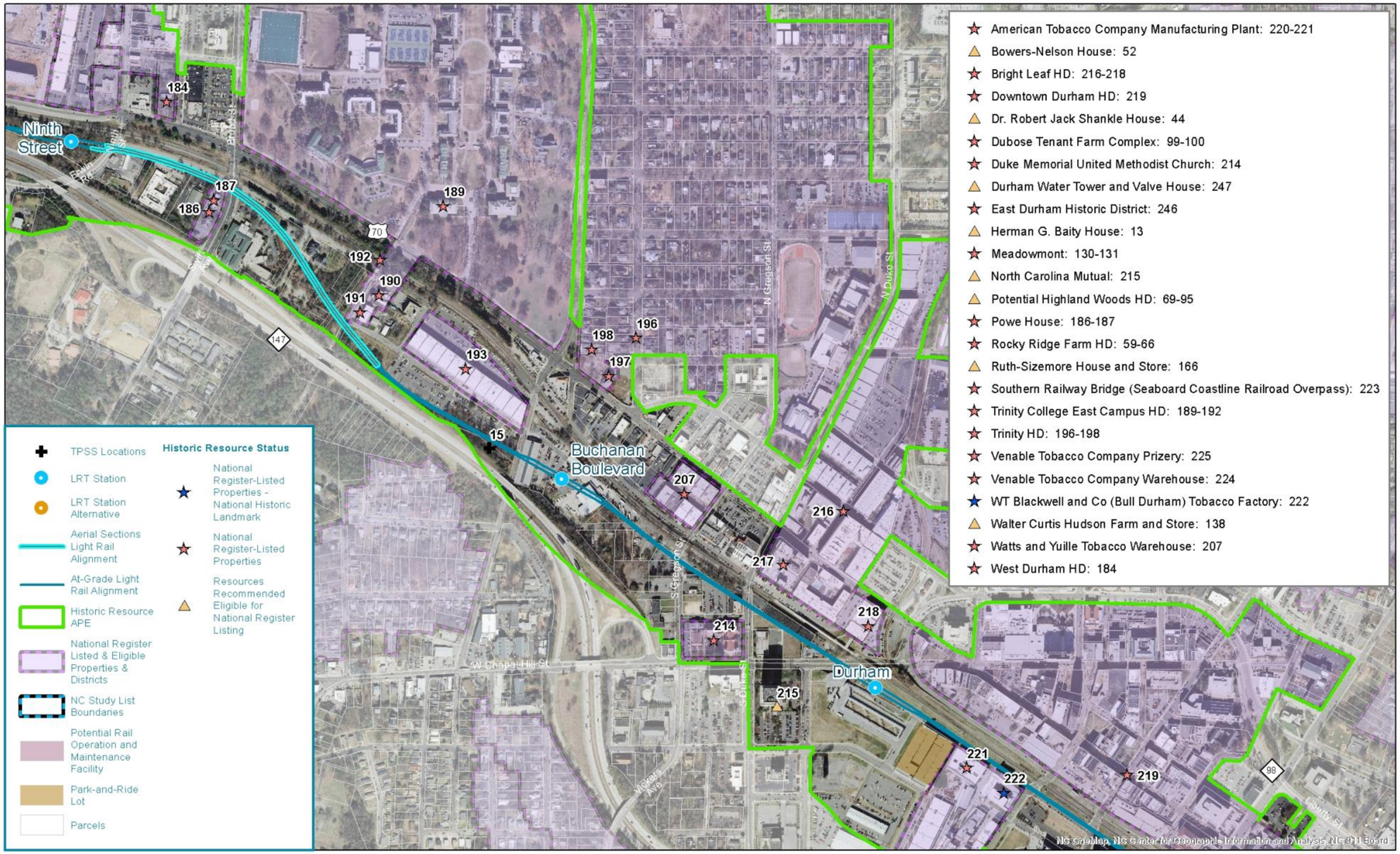
Figure 31: Area of Potential Effects Map 18



Historic Resources
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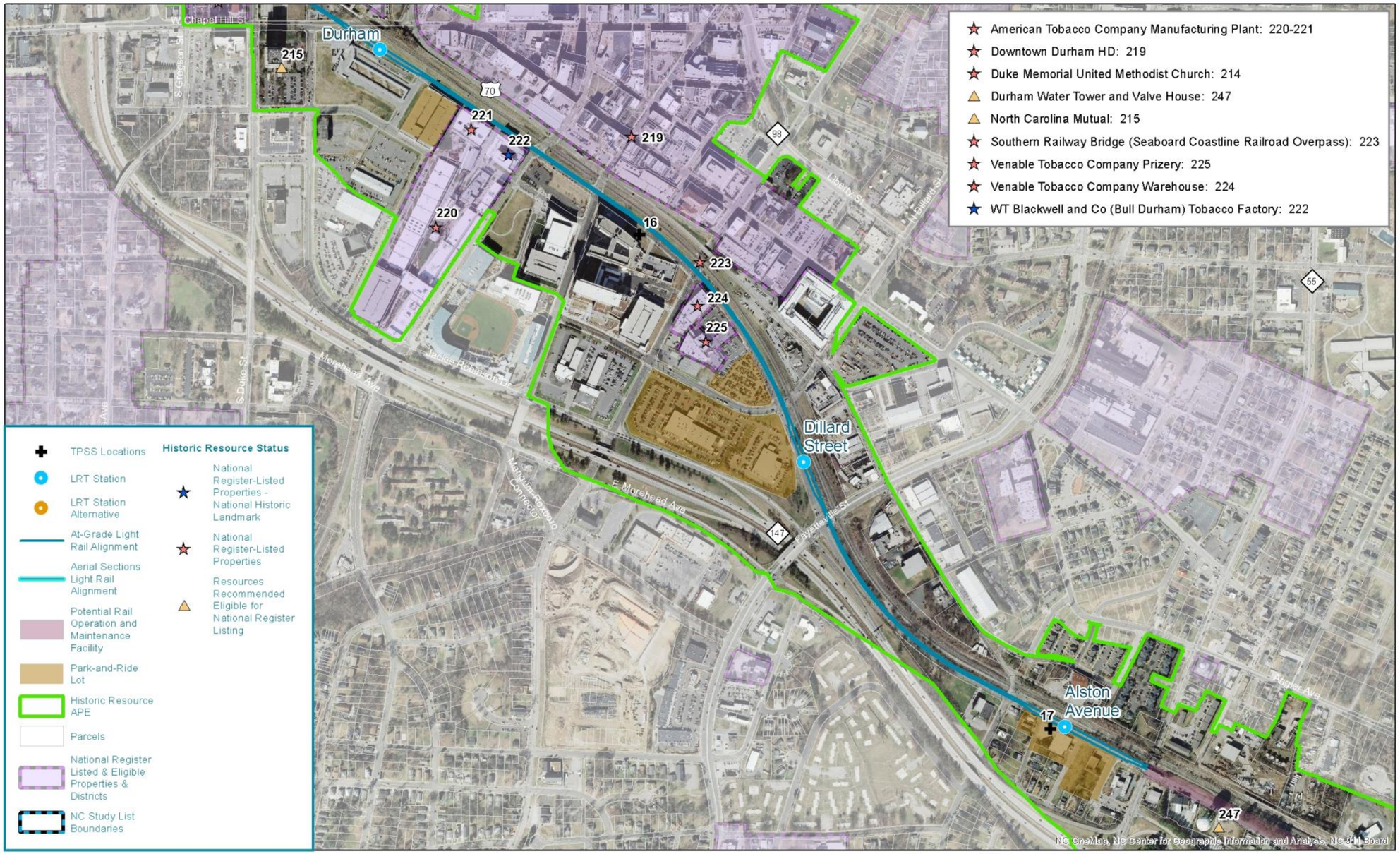
Figure 32: Area of Potential Effects Map 19



Historic Resources
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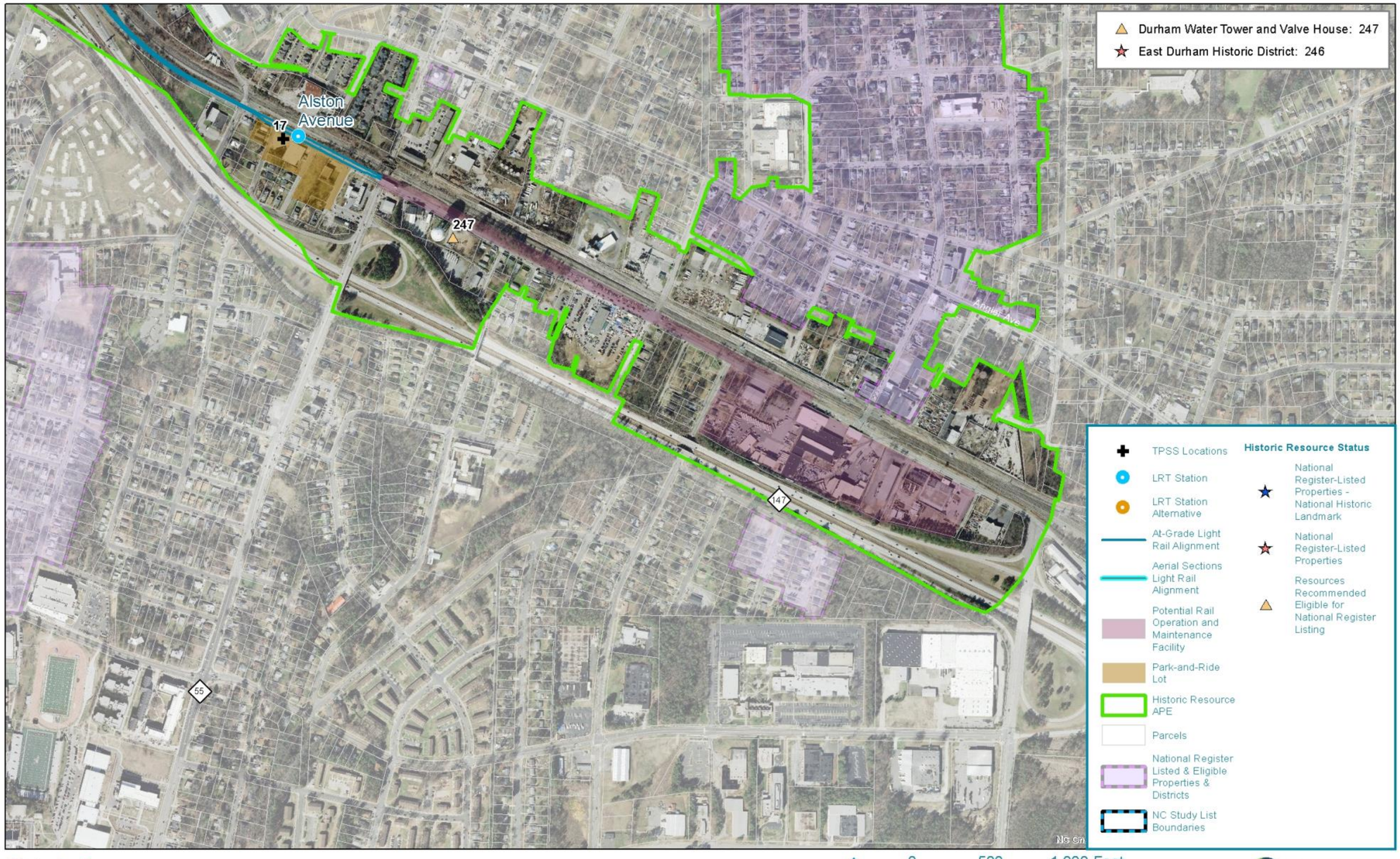
NORTH

0 500 1,000 Feet

Figure 33: Area of Potential Effects Map 20



Historic Resources
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

May 2015

5.1 Dr. Robert Jack Shankle House (OR-2771) (survey #44)

The Dr. Robert Jack Shankle House is located at 1306 Mason Farm Road in Chapel Hill. The FTA determined as a result of the proposed project that the house is eligible for listing in the National Register under Criterion C for its architecture. Built for Dr. Shankle in 1957, the house is a significant example of Mid-Century Modernist architecture with Japanesque details in the Chapel Hill/Raleigh/Durham area. Its wide sweeping roof, projecting beams, wall of windows turned toward the privacy of a tree-screened rear yard, and Japanese-influenced elements—the treatment of the beams and the ridges of the roofs; the shoji-inspired screens at the carport—combine to make the residence a significant example of the style (Figure 34 and Figure 35). The house is little altered and retains its architectural integrity. The house is not known to be associated with any important historic event or person and is unlikely to yield any important historical information not readily available from other sources. The FTA therefore determined it was not National Register eligible under Criteria A, B, or D.

Figure 34: Shankle House: north front and west side elevation

Figure 35: Shankle House: screened drive terminating at carport

The Shankle House stands within a largely wooded, approximately 1.5-acre lot that comprises its National Register-eligible boundaries (Figure 14 at center and Figure 36). Its front entrance faces north toward Mason Farm Road, but there is no walkway or path leading from the road to the north elevation. Rather the house is hidden from the road by trees and accessed by a tree-lined driveway that terminates at the carport at its west side elevation. Its principal orientation is to the south rear. Floor-to-ceiling windows at the rear elevation look out over a wide deck and a small open backyard. Mason Farm Road passes in front of the north side of the lot. Three long, modern, three-story apartment buildings that house UNC graduate students stand on the north side of the road. The project is to be built at grade to the north of (behind) the apartment buildings, about 325 feet from the house at its closest point. The at-grade Mason Farm Road station would be located about 925 feet northeast of the house at its closest point. The station would not be visible from the Shankle House due to the house's distance from the facility, its wooded lot, and the width and height of the three apartment buildings. Due to the its wooded lot and the size and placement of the apartment buildings, the line and its catenary system would also not be visible from the house (Figure 37 and Figure 38). Given the nature of the surrounding landscape, the project would not alter or diminish the Shankle House's integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore the proposed project would have **No Effect** on this historic property.

Figure 36: National Register-eligible boundary of the Shankle House in proximity to proposed project, with location of house amidst trees identified by red circle

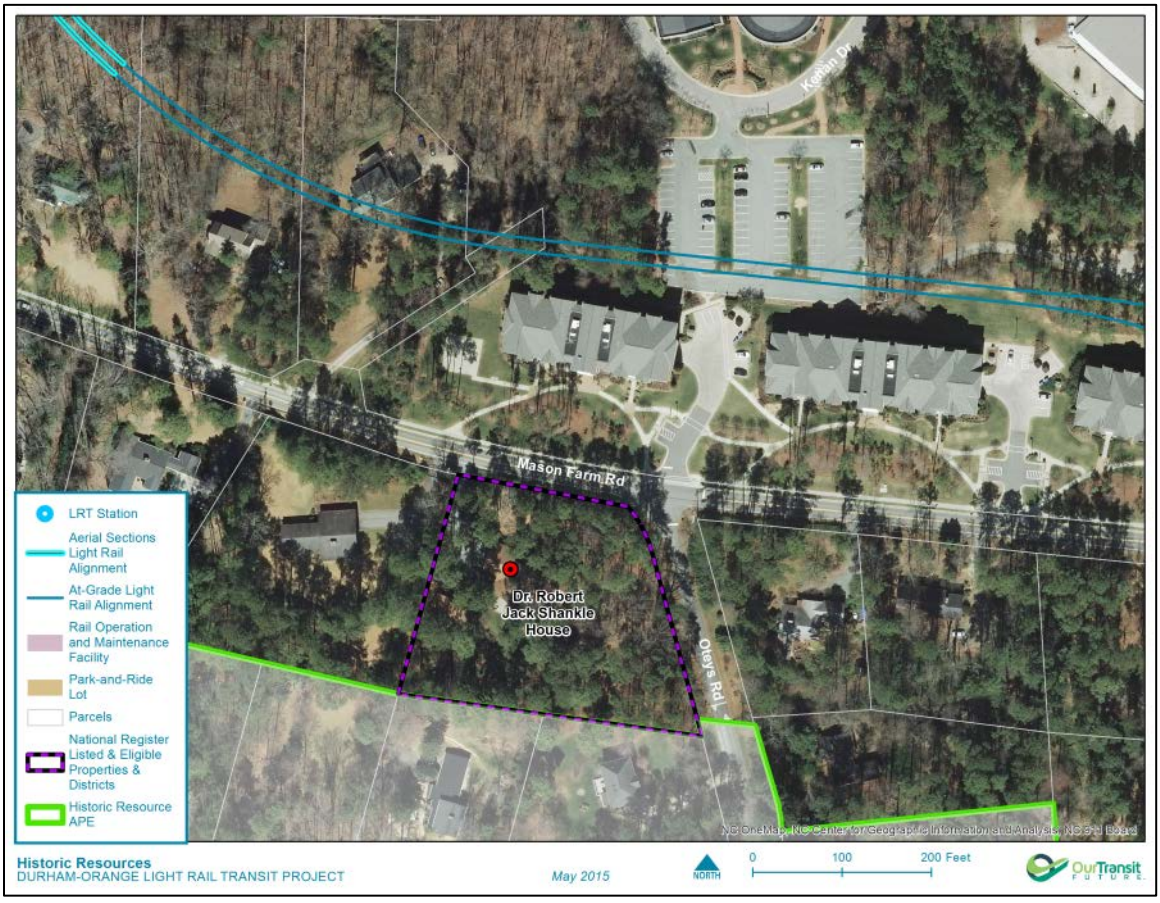


Figure 37: Shankle House: view looking southwest between apartment buildings from proposed project toward house, hidden by trees

Figure 38: Shankle House: view looking northeast from driveway at Mason Farm Road toward apartment buildings and proposed project beyond, screened by buildings and trees

5.2 H.G. Baity House (OR-2772) (survey #13)

The H.G. Baity House is located at 1503 Baity Hill Drive in Chapel Hill on the campus of the University of North Carolina. The FTA determined as a result of the proposed project that the house is eligible for listing in the National Register under Criterion B for its association with Dr. Herman Glenn "H.G." Baity (1895-1975) (Figure 39). Baity was the most important figure in the early/mid-twentieth-century history of sanitary engineering in North Carolina. He was also internationally known for his work in South America in the 1940s and throughout the world during his ten years (1952-1962) as the director of environmental sanitation at the World Health Organization. He is intimately associated with the house, which he built with the assistance of workmen in 1940 and in which he lived, when he was not working abroad, until his death in 1975. There are no other buildings known to be so closely associated with Baity and his productive years. The FTA also determined that the H.G. Baity House is National Register eligible under Criterion C for its architecture. Neatly finished inside and out, the house is an excellent example of mid-20th-century Chateauesque-style architecture. Its surviving original associated features—a dovecote, an openwork brick wall, and well-groomed and still bucolic grounds—support the architectural significance of the house. The most notable alteration to the house, the replacement of its sash, is outbalanced by its many other intact original features and it therefore has sufficient integrity to support its eligibility under Criterion C. The house is not known to be associated with any important historic event and is unlikely to yield any important historical information not readily available from other sources. The FTA therefore determined that it was not NR eligible under Criteria A or D.

Figure 39: H.G. Baity House: west front and south side elevations

The National Register-eligible boundaries for the Baity House encompass the grassy hill that the house and its dovecote, driveway, and grounds occupy within the rough circle of Baity Hill Drive. This property is the only undeveloped and still recognizably historic portion of the 54-acre parcel originally associated

with the house. It encompasses approximately four acres of the nine-acre parcel (PIN 9788717979) that the University purchased, along with the Baity House, in 1991. The other five acres of the parcel and adjacent parcels now hold five modern apartment buildings and are accordingly excluded from the proposed Register-eligible boundaries. The other 45 acres of property initially associated with the house, which contain various modern university resources including the Dean Smith Center, are excluded as well.

The setting of the H.G. Baity House is no longer intact beyond its National Register-eligible boundaries, for it is dominated by the five multi-story apartment buildings that ring the house and its grounds (Figure 40 and Figure 41). The proposed project would be constructed above grade to the south of these modern buildings on the north side of Mason Farm Road and NC 54/US 15-501, about 400 feet to the house's south at the closest point (Figure 14 at center right and Figure 42). The at-grade Mason Farm Road station would be located about 875 feet southwest of the house at its closest point. The apartment buildings would screen the line, its catenary system, and the station from the house, but for a section of these project elements that would be visible down the house's driveway and Baity Farm Road between the buildings (Figure 43 and Figure 44). The apartment buildings and the trees on the house lot and those that stand to the rear of the apartments would screen the elevated portion of the proposed project from the Baity House (Figure 45). Given the compromised state of the house's setting beyond its boundaries, the project would not alter or diminish the Baity House's integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore the proposed project would have **No Effect**, on this historic property.

Figure 40: Baity Hill development with Baity House at center; south at top

Figure 41: Baity House: view of west-facing façade with modern apartment buildings sweeping around foot of hill

Figure 42: National Register-eligible boundaries of the Baity House in proximity to proposed project

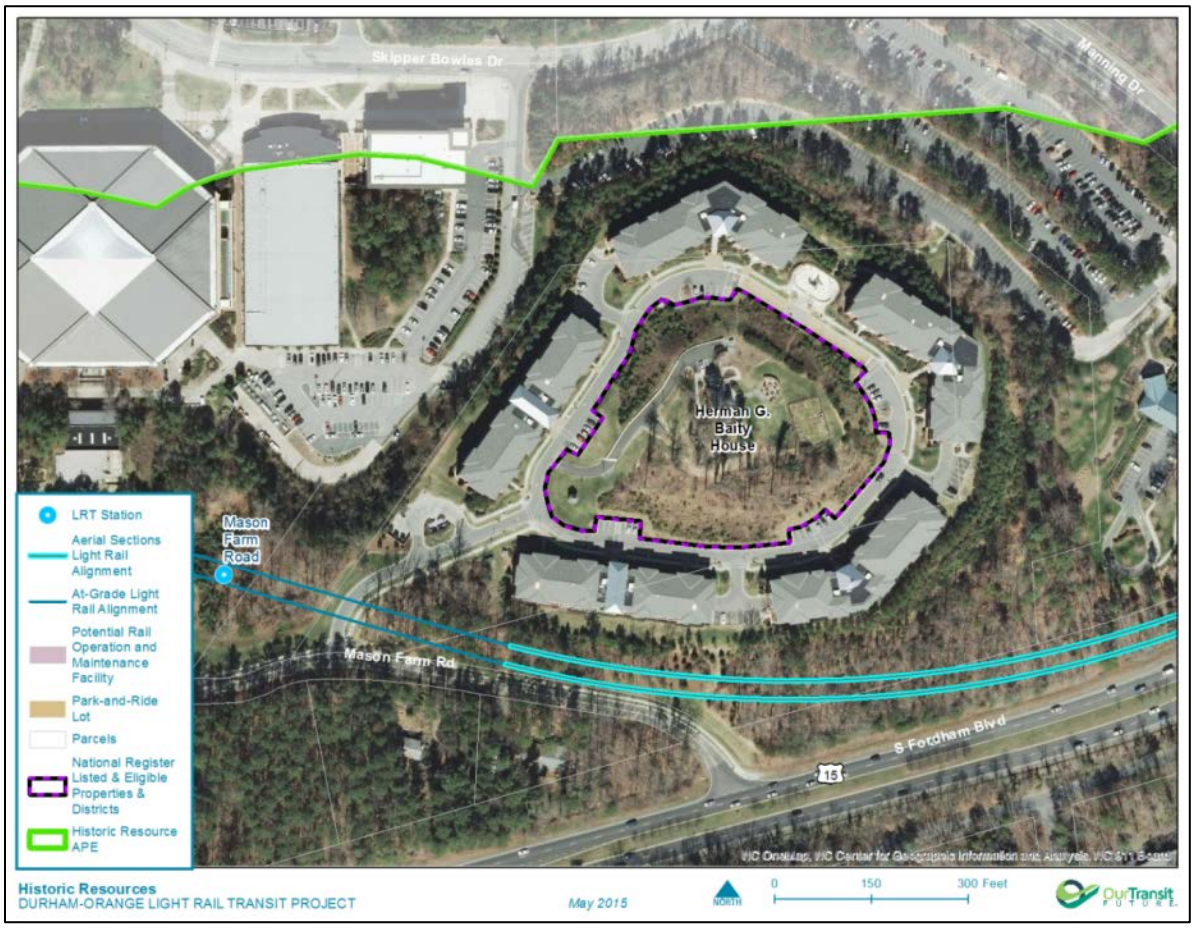


Figure 43: Baity House: view looking southwest from corner of house down drive toward Mason Farm Road; proposed project would be visible between apartment buildings at center distance

Figure 44: Baity House: view looking northeast from proposed station site near Mason Farm Road; dovecote stands at center right and house is visible in shadows up hill beyond cote

Figure 45: Baity House: view looking north from location of elevated portion of proposed project closest to house; house hidden by apartment buildings and trees

5.3 Bowers-Nelson House (OR-1465) (survey #52)

The Bowers-Nelson House is located at 903 Coker Drive in Chapel Hill. The FTA determined as a result of the proposed project that the house, which was built in 1960, is eligible for National Register listing under Criterion C as a significant example of Japanese-influenced Mid-Century Modernist architecture in the Chapel Hill/Raleigh/Durham area (Figure 46 and Figure 47). Its many Japanese features—exposed post-and-beam construction, pebbled floating entry stairs and pebbled foyer floor, wall of shoji screens, pronounced eaves, sliding windows and glass doors that open it to a peaceful wooded lot—combine deftly with its compact modernist form. Further, the house is little altered and retains its architectural integrity. The house is not known to be associated with any important historic event or person and is unlikely to yield any important historical information not readily available from other sources. The FTA therefore determined that it was not National Register eligible under Criteria A, B, or D.

Figure 46: Bowers-Nelson House: south front elevation

Figure 47: Bowers-Nelson House: north rear elevation

The Bowers-Nelson House stands within a largely wooded, 0.65-acre lot that comprises its National Register-eligible boundaries (Figure 14 at far right and Figure 48). Its front entrance faces south toward Coker Road, away from the proposed project. Its rear elevation looks out toward its wooded lot, the houses and wooded lots to its north and, beyond, NC 54. The project is to be built above grade on the north side of the divided NC 54, about 400 feet from the rear of the house at its closest point. Its line and catenary system would not be visible through the wooded lots and over NC 54/US 15-501/South Fordham Boulevard from the Bowers-Nelson House (Figure 49). Given the nature of the surrounding landscape, the project would not alter or diminish the Bower-Nelson House's integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore the proposed project would have **No Effect**, on this historic property.

Figure 48: National Register-eligible boundaries of the Bowers-Nelson House in proximity to proposed project

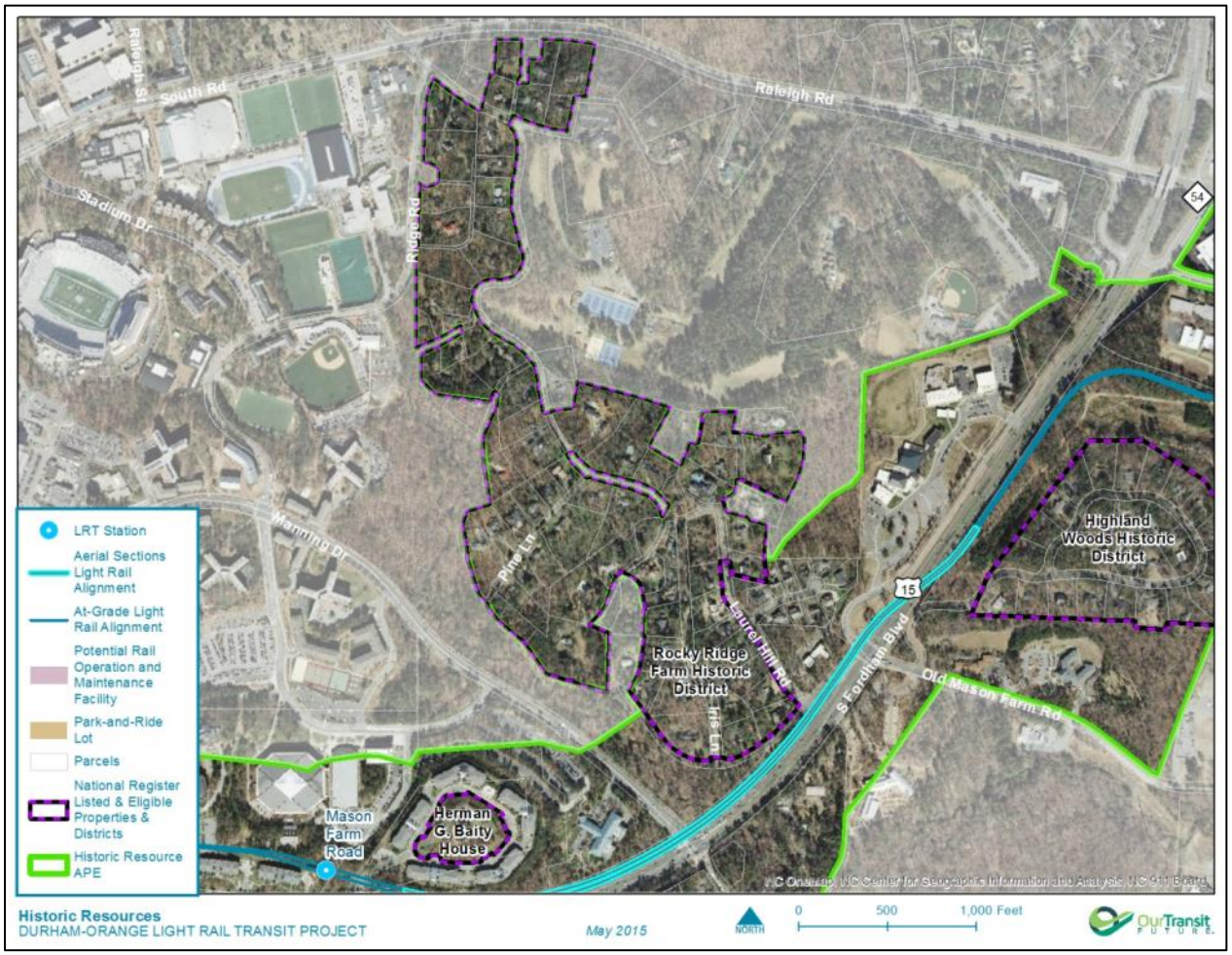
Figure 49: Bowers-Nelson House: view looking southwest from location of proposed project at junction of Manning Drive and NC 54/US 15-501/South Fordham Boulevard; house site hidden to right by trees on NC 54 and trees beyond at houses on Woodbine Drive and at rear of Bowers-Nelson House

5.4 Rocky Ridge Farm Historic District (OR-303 and OR-1748) (survey #59)

The Rocky Ridge Farm Historic District was listed in the National Register in 1989 and its boundaries were expanded in 2008. The district was determined significant under Criteria A and C in the areas of community planning/development, landscape architecture, and architecture. It was not found to be National Register-eligible under Criteria B or D.

As expanded in 2008, the district includes 81 resources, 60 of which are single-family dwellings built almost exclusively during the middle third of the twentieth century. (The other 21 resources are associated with the houses and landscape.) The houses stand on wooded lots of about one-acre each along streets curved to conform to the landscape. The district encompasses approximately 75 acres in Chapel Hill roughly bounded by Ridge Road and the Coker Pinetum on the west, Raleigh Road and Country Club Road on the north, Laurel Hill Road and Laurel Hill Circle on the east, and Fern Lane on the south (Figure 15 at center left and Figure 50). As part of proposed project, the district was revisited and the FTA determined that its landscaping, plan, and houses have changed little since the boundary expansion.

Figure 50: National Register-eligible boundaries of the Rocky Ridge Farm Historic District in proximity to proposed project



The district is long and relatively narrow, extending almost a mile from a rounded three-lot-wide point on the south to its northern end on Raleigh Road. Almost all of its resources are well-screened from the project by distance and intervening houses and wooded lots. Toward the south, Aldersgate Methodist Church at the northeast corner of Laurel Hill Road Lane, along with a modern subdivision above it on St. James Place, shield the district from the proposed project. However, the project—which is above grade near the district—would be partially visible from the district's three southeasternmost resources, particularly when the leaves are off the trees of their wooded lots (Figure 51). The three are pictured at through Figure 54. Views from them toward the project area, and from the project area toward them, follow at Figure 55 through Figure 59.

Figure 51: Resources in Rocky Ridge Farm Historic District overlooking project

Survey number	Address	Name	Date	HD Status	Approximate distance from project
60	106 Fern Lane	James A. Taylor House	1955	Contributing	250 ft.
62	100 Fern Lane	Rowe-Green House	1954	Contributing	200 ft.
65	612 Laurel Hill Road	Henry Ferguson House	1957	Contributing	300 ft.

Figure 52: Rocky Ridge Farm Historic District: south front and west side elevations of 106 Fern Lane/James A. Taylor House (survey #60)

Figure 53: Rocky Ridge Farm Historic District: south front and west side elevations of 100 Fern Lane/Rowe-Green House (survey #62)

Figure 54: Rocky Ridge Farm Historic District: east façade of 612 Laurel Hill Road/Henry Ferguson House (survey #65)

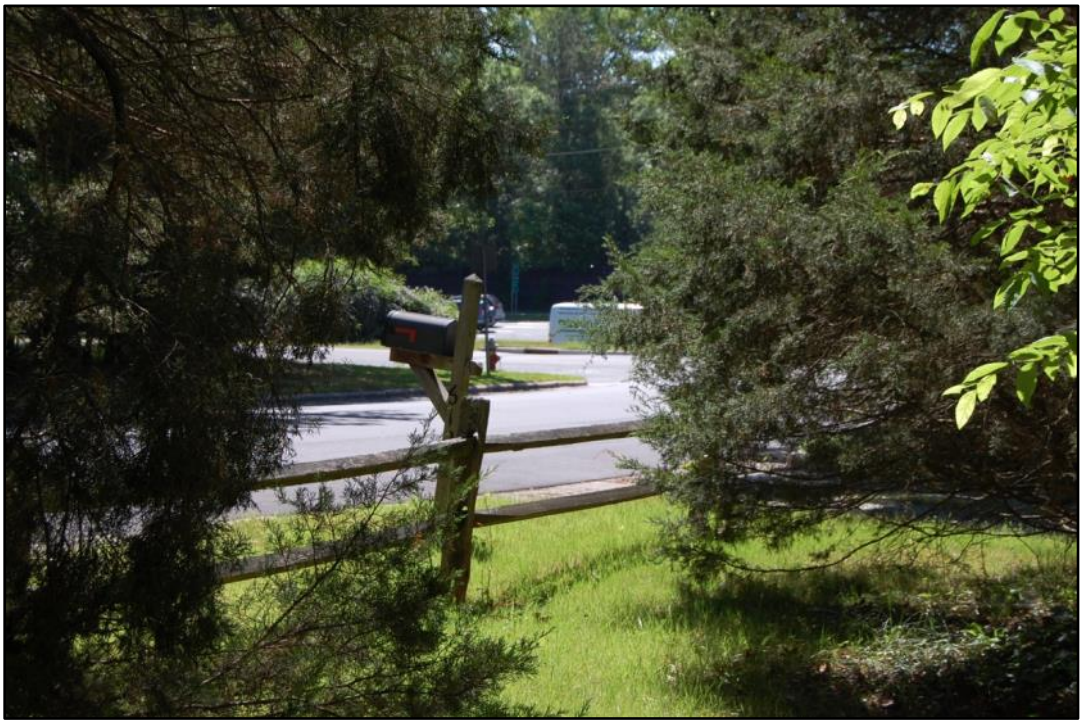
Figure 55: Rocky Ridge Farm Historic District: view looking south from front yard of 106 Fern Lane; proposed project would be located in clearing at center distance, at edge of NC 54/US 15-501/South Fordham Boulevard

Figure 56: Rocky Ridge Farm Historic District: view looking north from proposed project at edge of NC 54/US 15-501/South Fordham Boulevard, through clearing toward 106 Fern Lane at center distance

Figure 57: Rocky Ridge Farm Historic District: view looking southeast from front yard of 100 Fern Lane; proposed project would be located near green highway sign in center distance adjacent to NC 54/US 15-501/South Fordham Boulevard

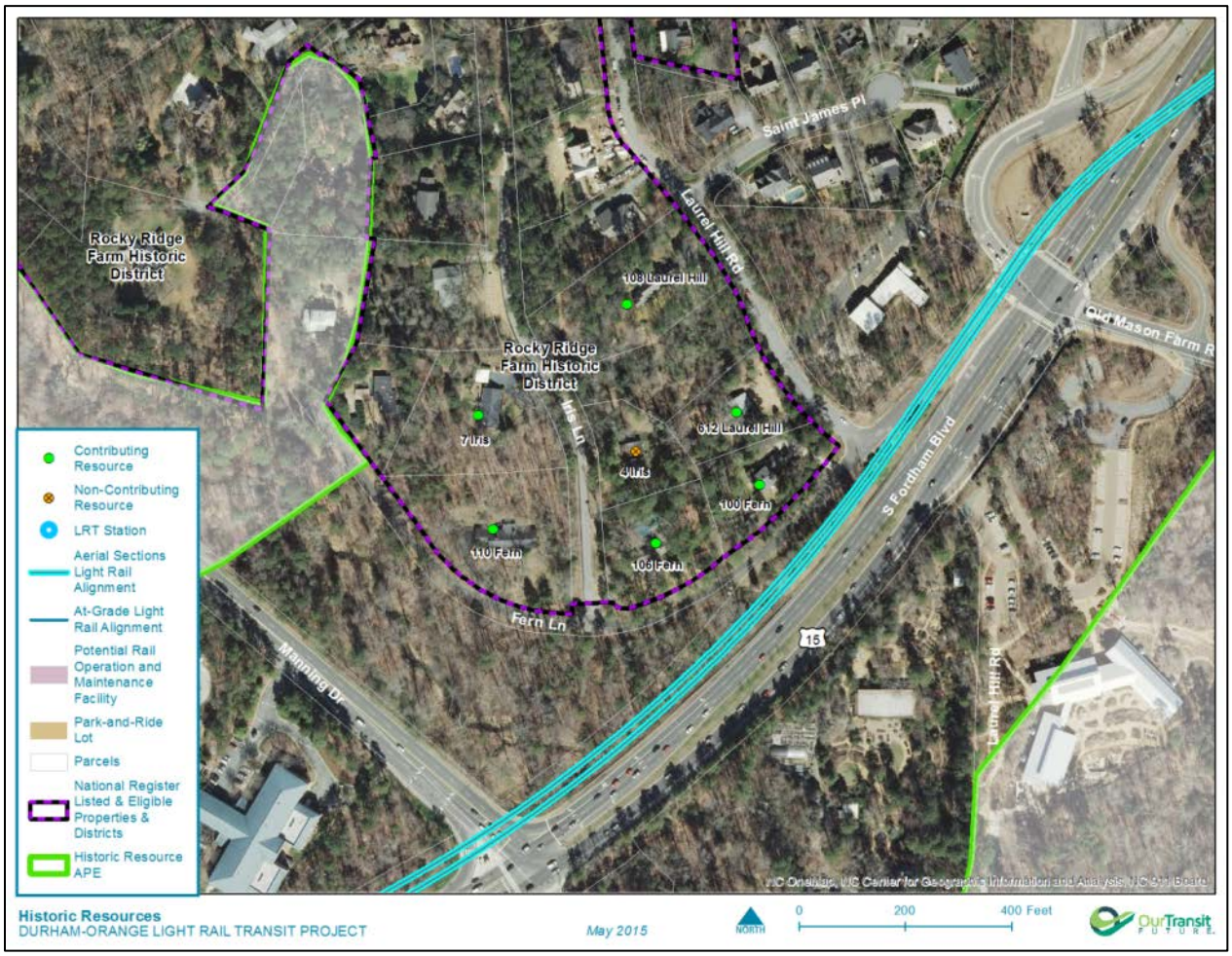
Figure 58: Rocky Ridge Farm Historic District: view looking north from proposed project at edge of NC 54/US 15-501/South Fordham Boulevard, at 100 Fern Lane at center distance

Figure 59: Rocky Ridge Farm Historic District: view looking southeast from front yard of 612 Laurel Hill Road; proposed project would be located across Laurel Hill Road and Fern Lane at center, in front of bus at center distance



The proposed project would introduce new visual elements to the property's setting at the southernmost end of its viewshed. It would have little effect, however, on the characteristics that rendered the district eligible for National Register expansion in 2008. This is due to the almost mile-long extant of the district and the historic presence of a wide busy thoroughfare along its southern edge. The 2008 district boundary extension pushed the district's period of significance out to 1963. By that date, according to State Highway Commission Orange County maps, NC 54/US 15-501/South Fordham Boulevard was a two-lane, hard-surfaced, undivided road that had been designated as a bypass. By the time the district was expanded in 2008 to include its southern section near the proposed project, the route had grown to a four-lane divided highway with a grassy median. This highway was out of character with the historic setting of the neighborhood within the boundary expansion. Therefore, the project, which would add a transportation feature, would not diminish the characteristics that rendered the district eligible for National Register expansion in 2008, including its location, design, setting, materials, workmanship, feeling, and association (Figure 60). Given the historic presence of the highway, the proposed project would have **No Adverse Effect**, on this historic property.

Figure 60: National Register-eligible boundaries of the southern portion of the Rocky Ridge Farm Historic District in proximity to proposed project

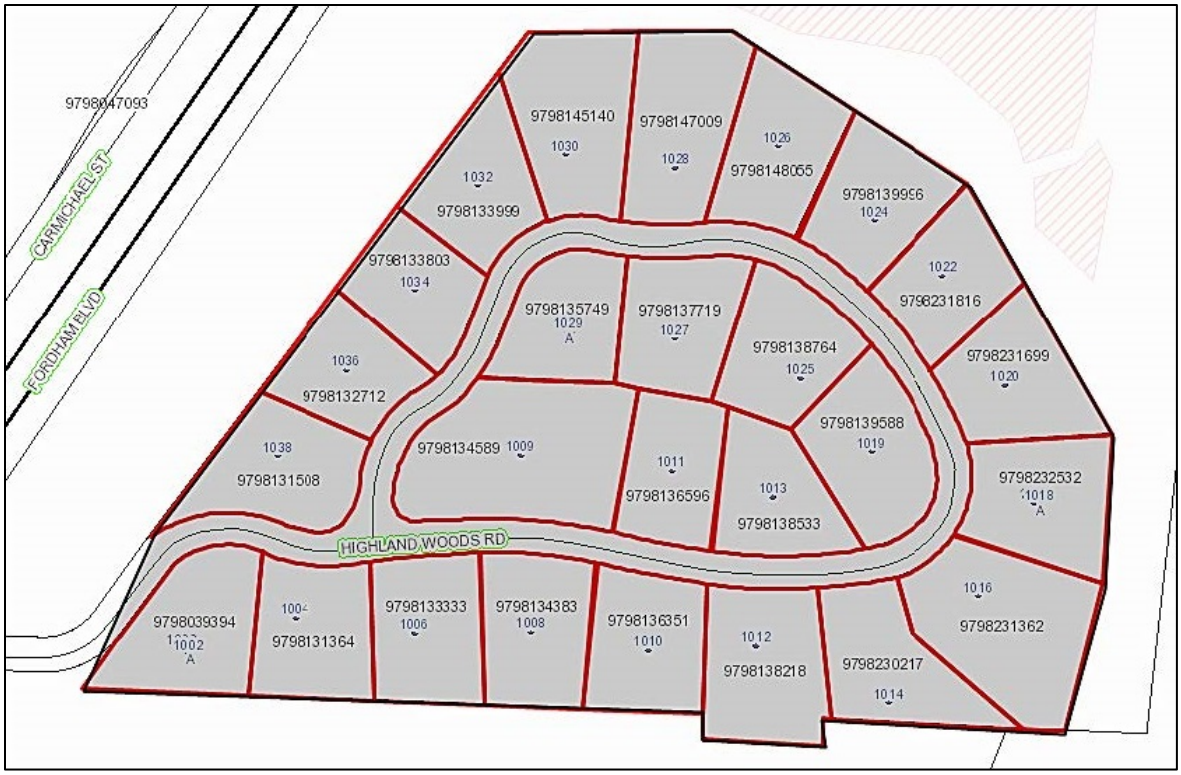


5.5 Highland Woods Historic District (OR-1460) (survey #69)

The FTA determined as a result of the proposed project that the 1950s-era Highland Woods Historic District is eligible for listing in the National Register under Criterion A within the area of community planning and development, which the Register defines as the "practical art of designing and changing the physical structure of communities to enhance the quality of life." Its combination of cooperative housing, which was intended to create reasonably priced homeownership and a close sense of community, with modernist architecture, which was intended to project the progressive ideals of the cooperative members who chose to be neighbors and friends, is an excellent representative of this area of significance. The FTA also determined that Highland Woods is eligible for National Register listing under Criterion C, as a historic district, for its intact and often architect-designed Mid-Century Modernist architecture. However, the FTA determined that none of Highland Woods' houses are individually eligible for National Register listing under Criterion C for, within the context of the many intact modernist houses in Chapel Hill, none are sufficiently architecturally significant to merit such listing. The historic district's period of significance extends from 1956, when the land was purchased by the cooperative and the plat map was drawn, until 1965, when the final of its original 25 houses was erected. The FTA determined the historic district is not eligible under Criteria B or D.

The National Register-eligible boundaries for the Highland Woods Historic District are those of the 26 parcels—the 25 house parcels and the community lot parcel—that are included within the subdivision, all of which front on Highland Woods Road. They also include that portion of Highland Woods Road that runs in front of these resources. This is all of the property that has been historically associated with the neighborhood since its creation and encompasses approximately 25.5 acres (Figure 61**Error! Reference source not found.**).

Figure 61: National Register-eligible boundaries of the Highland Woods Historic District shaded in gray with individual parcels outlined in red and address and parcel numbers (source: Orange County GIS maps)


9798047093
CARMICHAEL ST
FORDHAM BLVD
HIGHLAND WOODS RD
9798145140
1030
9798147009
1028
1026
9798148055
9798139956
1024
1022
9798231816
9798231699
1020
1032
9798133999
9798133803
1034
9798135749
1029
A
9798137719
1027
9798138764
1025
1036
9798132712
1038
9798131508
9798134589
1009
1011
9798136596
1013
9798138533
9798139588
1019
9798232532
1018
A
1016
9798231362
9798039394
1002
A
9798131364
1006
9798133333
1008
9798134383
1010
9798136351
1012
9798138218
9798230217
1014

The project runs in part above grade but largely at-grade to the west of the historic district, along the eastern edge of NC54/US 15-501/South Fordham Boulevard. It continues to run at-grade where it turns almost 90 degrees east to the north of the district (see Figure 15 at center right and Figure 77). The resources at the south, east, and center of the historic district are well-screened from the project by distance and intervening houses and wooded lots. Those on the north are between about 475 and 700 feet from the project. They are well-screened from the project by their wooded rear lots and an approximately 400-foot-deep, undeveloped, wooded parcel that further separates them from and blocks the view of the at-grade portion of the project.

Six houses and a community lot with tennis courts on the western end of the district—1002, 1038, 1036, 1034, 1032, 1030, and 1028 Highland Woods Road—are located, with no intervening houses and lots, between about 300 to 550 feet from the proposed project (Figure 62 through Figure 65). These resources, with two exceptions, are screened from the project area by their wooded yards and the approximately 200-foot-deep, undeveloped, wooded parcel that separates their lots from the project. The project would be partially visible from 1002 Highland Woods Road and the tennis/basketball court at 1032 Highland Woods Road. Figure 67 through Figure 76 depict the visibility or lack of visibility of the proposed project from the resources within the district that are closest to it.

Figure 62: Resources in Western Portion of Highland Woods Historic District

Address	Name	Date	HD Status	Approximate distance from project	Visibility of proposed project
1002 Highland Woods Rd	Herbert House	1960	Contributing	300 ft.	Visible
1038 Highland Woods Rd	Hayman House	1957	Contributing	300 ft.	Not visible
1036 Highland Woods Rd	Smith House	1959	Contributing	300 ft.	Not visible
1034 Highland Woods Rd	Dobson House	2011	Non-contributing	300 ft.	Not visible
1032 Highland Woods Rd	Tennis court	1957	Contributing	300 ft.	Visible
1030 Highland Woods Rd	Schwab House	1957	Contributing	550 ft.	Not visible
1028 Highland Woods Rd	Scott House	1957	Contributing	550 ft.	Not visible

Figure 63: Highland Woods Historic District: west façade of 1002 Highland Woods Road/Herbert House, at left, and east façade of 1038 Highland Woods Road/Hayman House, at right

Figure 64: Highland Woods Historic District: east façades of 1036 Highland Woods Road/Smith House, at left, and 1034 Highland Woods Road/Dobson House, at right

Figure 65: Highland Woods Historic District: south façades of 1030 Highland Woods Road/Schwab House, at left, and 1028 Highland Woods Road/Scott House, at right

Figure 66: Highland Woods Historic District: view looking west from 1002 Highland Woods Road; proposed project would be located at NC 54/US 15-501/South Fordham Boulevard at right distance; note expanded Ronald McDonald House at left

Figure 67: Highland Woods Historic District: view looking southeast from proposed project at edge of NC 54/US 15-501/South Fordham Boulevard toward 1002 Highland Woods Road; portion of gray house roof visible at center distance

Figure 68: Highland Woods Historic District: view looking west from 1038 Highland Woods Road toward proposed project, hidden by trees

Figure 69: Highland Woods Historic District: view looking east from proposed project toward 1038 Highland Woods Road, hidden by trees

Figure 70: Highland Woods Historic District: view looking west from 1036 Highland Woods Road toward proposed project, hidden by trees

Figure 71: Highland Woods Historic District: view looking west from 1034 Highland Woods Road toward proposed project, hidden by trees

Figure 72: Highland Woods Historic District: view looking northwest from tennis/basketball court at 1032 Highland Woods Road; proposed project would be located at end of utility line clearing at edge of NC 54/US 15-501/South Fordham Boulevard at center distance

Figure 73: Highland Woods Historic District: view looking southeast up utility line clearing from proposed project at edge of NC 54/US 15-501/South Fordham Boulevard; tennis/basketball court screened by trees at center distance

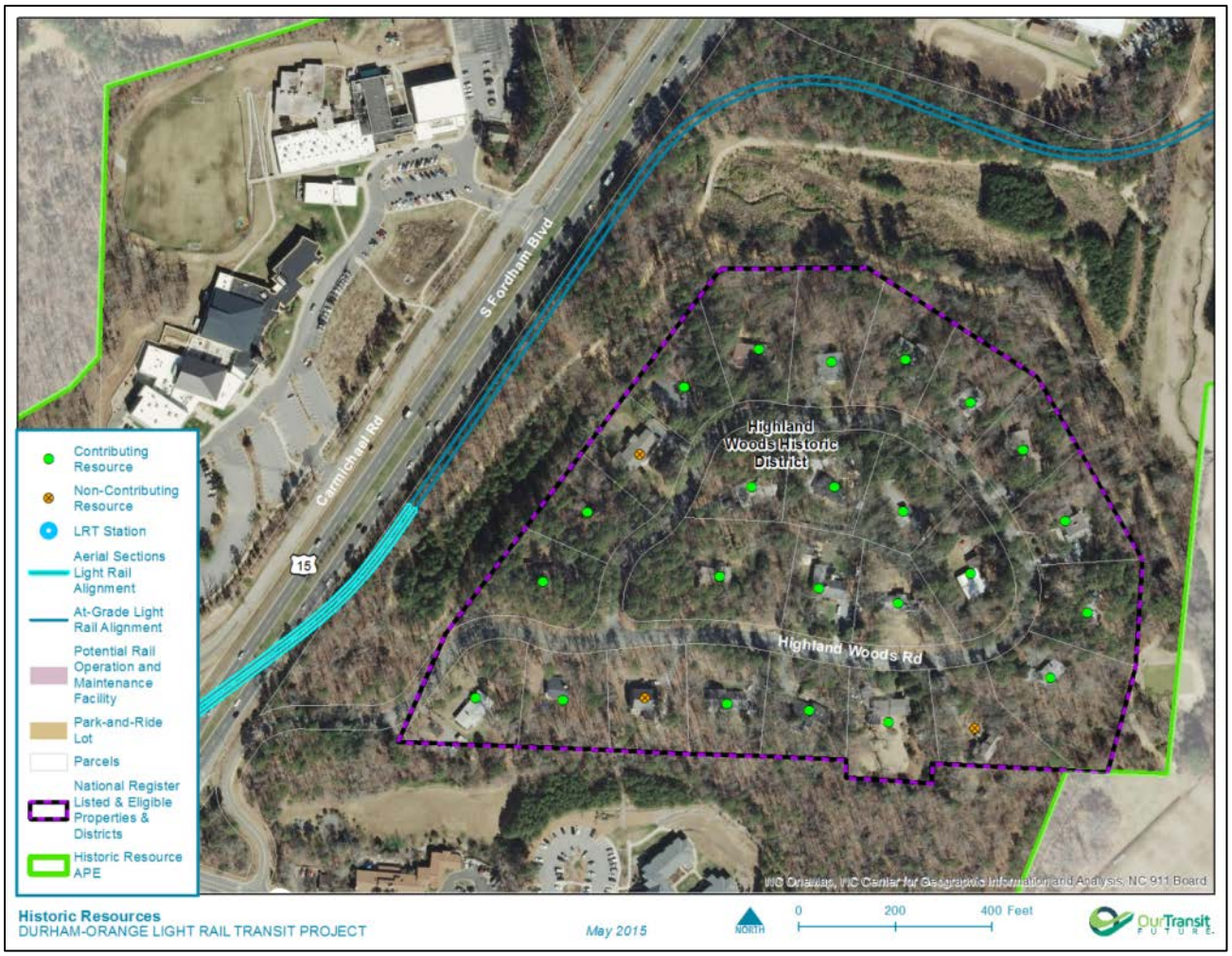
Figure 74: Highland Woods Historic District: view looking north from 1030 Highland Woods Road toward proposed project, hidden by trees

Figure 75: Highland Woods Historic District: view looking north from 1028 Highland Woods Road proposed project toward, hidden by trees

Figure 76: Highland Woods Historic District: view looking southeast from proposed project, north of district, toward 1030 and 1028 Highland Woods Road, hidden by trees

The visibility of the proposed project from two of the historic district's parcels would alter the setting of the district's western edge, but it would have little effect on the characteristics that rendered the district eligible for National Register listing. This is due to the historic presence of a wide busy thoroughfare along the district's western edge when it was determined National Register eligible. By 1963, according to State Highway Commission Orange County maps, NC 54/US 15-501/South Fordham Boulevard was a two-lane, hard-surfaced, undivided road that had been designated as a bypass. Well before the district was determined to be National Register eligible, the route had grown to a four-lane divided highway with a grassy median, which was out of character with the historic setting of the neighborhood within its boundaries. Therefore, the project, which would add a transportation feature, would not diminish the characteristics that rendered the district eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association (Figure 77). Given the historic presence of the highway, the proposed project would have **No Adverse Effect**, on this historic property.

Figure 77: National Register-eligible boundaries of the Highland Woods Historic District in proximity to proposed project



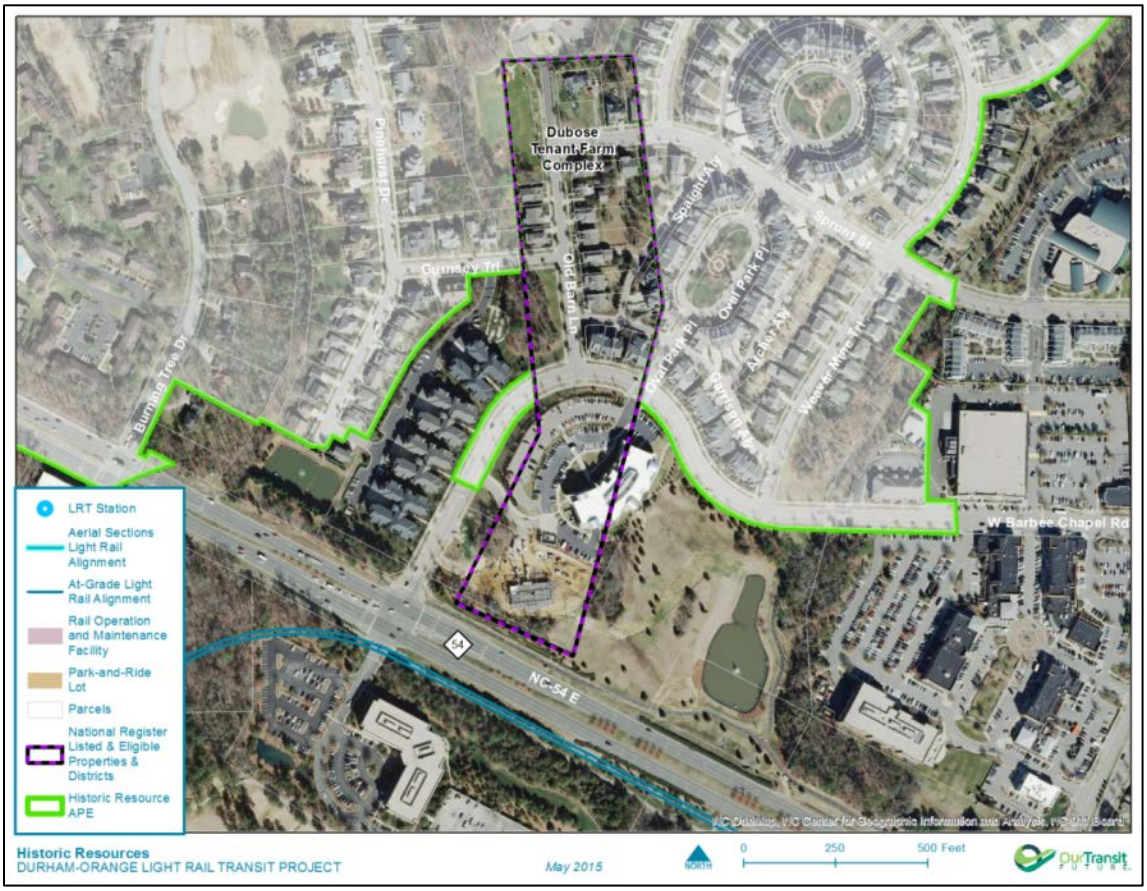
5.6 Dubose Tenant Farm Complex (OR-335 - OR-339 and OR-1250) (survey ##99-100)

The Dubose Tenant Farm Complex was determined eligible for National Register listing in 1994 through an official Determination of Eligibility. At that time it occupied open fields and woodlots and the only proper road that bounded it was NC 54 at its southern edge. Its boundaries, superimposed on the modern landscape, would be roughly delineated by the north side of Sprunt Street on the north, the east side of Old Barn Lane on the east, the north side of NC 54 on the south, and West Barbee Chapel Road and the west side of Old Barn Lane on the west. Since 1994 the property has been covered by the modern development of Meadowmont Village. Therefore the FTA has determined that the Dubose Tenant Farm Complex is no longer National Register eligible and the proposed project would have **No Effect**, direct or indirect, on this former historic property (Figure 16 at center and Figure 78 through Figure 80**Error! Reference source not found.**).

Figure 78: Dubose Tenant Farm Complex National Register-eligible boundaries; note expansive modern development atop and around it and locations of former tenant houses (source: http://gis.ncdcr.gov/hpoweb/)

Figure 79: View looking northeast from proposed project at crosswalk, at junction of Barbee Chapel Road and NC 54, toward modern Meadowmont development on site of former DuBose Tenant Farm Complex

Figure 80: National Register-eligible boundaries of the DuBose Tenant Farm Complex in proximity to proposed project



5.7 Meadowmont (DH-1708) (survey ##130-131)

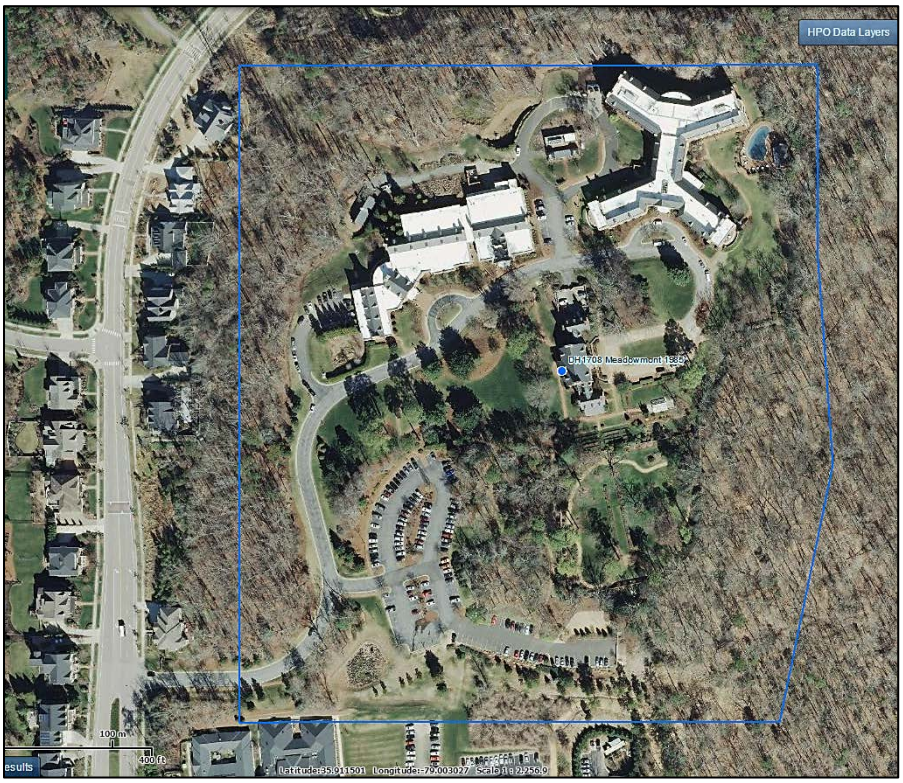
Meadowmont was listed in the National Register in 1985. Its current address is 150 DuBose Home Lane, which is a modern road. It was determined significant in the areas of architecture and landscape architecture under: Criterion A for its association with the philanthropy of the John Sprunt Hill family; Criterion B for its association with its owners, philanthropists D. St. Pierre and Valinda (Hill) DuBose, and its architects, Herbert G. Crisp and James R. Edmunds, Jr.; and Criterion C for the refined Georgian Revival-style architecture of Meadowmont House (Figure 81 and Figure 82).The nomination included the main house, play house, pool house and pool, vegetable garden with former smokehouse, garage, well house, two poultry houses, an unidentified building, two storage buildings, brooder house, greenhouse, and a walled garden. Of these resources only the house and its front and rear lawns survive. The property also includes the almost entirely unmarked nineteenth-century Barbee Cemetery—unmentioned in the nomination and not preliminarily recorded and assessed until 1996—which contains approximately 120 graves. Only those of William Barbee (1777-1857) and his wife, Gaskey (1780-1856), include text and are datable; all others are identified by fieldstones or unmarked. The cemetery appears to remain intact amidst undeveloped woodland to the east of the landscaped lawns behind Meadowmont House. A second, much smaller cemetery was established on the grounds, after Meadowmont was National Register listed, to hold the remains of David St. Pierre DuBose, Sr. (1898-1994) and his wife, Valinda Hill (1905-1989). This cemetery was assigned survey #131 and occupies a small distinct parcel.

No boundary description or justification is included in the nomination, but the body of the text states: "The property included in this nomination is a tract of 27.752 acres, which includes the house and its outbuildings and the immediate house grounds and gardens. This tract is bounded on the south, west, and north sides by the DuBose lands and on the east by another property owner. Woodlands enclose the entire twenty-seven-plus acre tract." The HPO delineated boundary is shown at Figure 83**Error! Reference source not found.**, with the house at the center and modern conference center buildings, landscaping, and parking lots surrounding it.

Figure 81: Meadowmont house: west elevation

Figure 82: Meadowmont house: east elevation

Figure 83: Meadowmont National Register boundaries, marked in dark blue (source: http://gis.ncdcr.gov/hpoweb/)



Almost all of the resources included in the nomination were demolished during the 1997 development of the Rizzo Conference Center, which now occupies the Meadowmont house and its property. They have been replaced by extensive new landscaping; large modern buildings that stand to the house's north and northwest; and parking lots that stretch to the house's south and southwest (Figure 83). FTA determined, therefore, that the current boundaries of Meadowmont have lost their integrity of design, setting, materials, workmanship, feeling, and association. The mansion and its immediate grounds remain intact, though, and FTA determined that the house retains its National Register significance and integrity, but within smaller boundaries. Were the boundaries redrawn to reflect current conditions, they would contract to a much smaller area confined to the house and the open landscaped grounds to its east and west. The proposed project would be located more than 3,000 feet south of the current National Register boundaries of Meadowmont and would not be visible from the historic property. It would not alter or diminish Meadowmont's integrity of location, design, setting, materials, workmanship, feeling, or association (Figure 17 at left and Figure 84). Therefore the proposed project would have **No Effect**, , on this historic property.

Figure 84: National Register boundaries of Meadowmont in proximity to proposed project

5.8 Walter Curtis Hudson Farm (DH-2373) (survey #138)

The Walter Curtis Hudson Farm is located at 5117 Farrington Road in Durham County. The FTA determined as a result of the D-O LRT project that the farm is National Register eligible under Criterion C as an excellent and intact example of a small Durham County farmstead of the early twentieth century. In addition to its c1918 house [A on Figure 85], it includes a c1918 milkhouse/washhouse [B] and garage [C], which retain original gutters and charcoal filtration systems that feed into an underground cistern; an early woodshed [D] and brooder house [E]; a c1935 log playhouse [F] complete with a goldfish pond and decorative plantings; and a c1946 shop [G] and 1960 barn [H] (Figure 86 through Figure 91). This large collection of buildings is quite intact within a surprisingly bucolic setting, particularly in a section of eastern Durham and western Orange counties that has undergone rapid development in the past 20 years. The resource has no known connection with historic events or significant persons, and is unlikely to yield important information not readily available from other sources. It was therefore not found to be National Register-eligible under Criteria A, B, or D. The farm's period of significance extends between 1918 and 1960, the dates of construction of its individual contributing resources.

The Walter Curtis Hudson Farm includes the house Hudson built and the outbuildings to its north and east, most of which he also built. They stand on an approximately 15-acre parcel of land that is open yard and pasture, but for some trees along the entry drive and to the house's immediate rear. Farrington Road passes to the west of the tract, and a wooded parcel and I-40 extend to the east.

Figure 85: Walter Curtis Hudson Farm and Store tracts, resource locator map

Figure 86: Walter Curtis Hudson House [A]: north and west elevations (c1918 – contributing)

Figure 87: Milkhouse/Washhouse [B]: south gable and east side elevation (c1918 – contributing)

Figure 88: Garage [C]: east gable and south side elevation (c1918 – contributing)

Figure 89: Brooder house [E]: south front and east side elevations (mid-1920s – contributing)

Figure 90: Playhouse [F]: east rear and south side elevations (c1935 – contributing)

Figure 91: Barn [H]: west front elevation (1960 – contributing)

The National Register-eligible boundaries include all but the upper northeastern portion of Parcel 141555. This parcel, upon which the Walter Curtis Hudson House and associated outbuildings stand, encompasses approximately 15.2 acres and the excluded northeastern corner about 1.2 acres. Therefore, the total land within the boundaries encompasses approximately 14 acres. The boundary excludes a store and five other resources to its north associated with the store property (Figure 92 through Figure 95).

Figure 92: Pole barn (1972-1973), at left; wood storage shed (early 1970s) at right

Figure 93: Patterson's Mill Country Store (1972-1973), at left; corn crib (late nineteenth/early twentieth century, moved and altered), at right

Figure 94: Log buildings (mid-/late nineteenth century; moved, joined, and altered)

Figure 95: National Register-eligible boundaries of Walter Curtis Hudson Farm in proximity to proposed project; note southern portion of Farrington Road ROMF, which is part of the proposed project, in purple at top

Figure 96: View looking west across field behind farmhouse toward farm pond; proposed project hidden by woods in background that shield farm from I-40

The rail portion of the proposed project is to be built at grade approximately 100 feet to the east of the Walter Curtis Hudson Farm's National Register boundaries, within the right-of-way on the west side of I-40. Its line and catenary system would not be visible through the mature trees that currently separate and buffer the farm from the interstate highway (Figure 20 at center, Figure 95, and Figure 96). As it would be located alongside a major transportation corridor, this portion of the proposed project would not introduce any new visual, atmospheric, or audible elements to the property's setting. It would not alter any of the characteristics of the property that qualify it for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Therefore, this rail portion of the proposed project would have No Effect, direct or indirect, upon the historic property.

The Farrington Road ROMF, which is part of the proposed project, would be located approximately 200 feet to the north of the historic property's National Register boundaries, at its closest point (Figure 95 and Figure 97). It would introduce new visual and atmospheric elements to the project's setting, but would not diminish the characteristics that rendered the farm eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association, Due to the presence of woodland between the northern National Register boundary and the ROMF, the ROMF would be largely screened from view from the Walter Curtis Hudson Farm (Figure 98 through Figure 103). Given the presence of the woodland, the proposed project would have **No Adverse Effect** on this historic property.

Figure 97: Farrington Road ROMF located north of National Register-eligible boundaries of Walter Curtis Hudson Farm, which is located to the left (south) of the facility (west at top); boundaries outlined in red

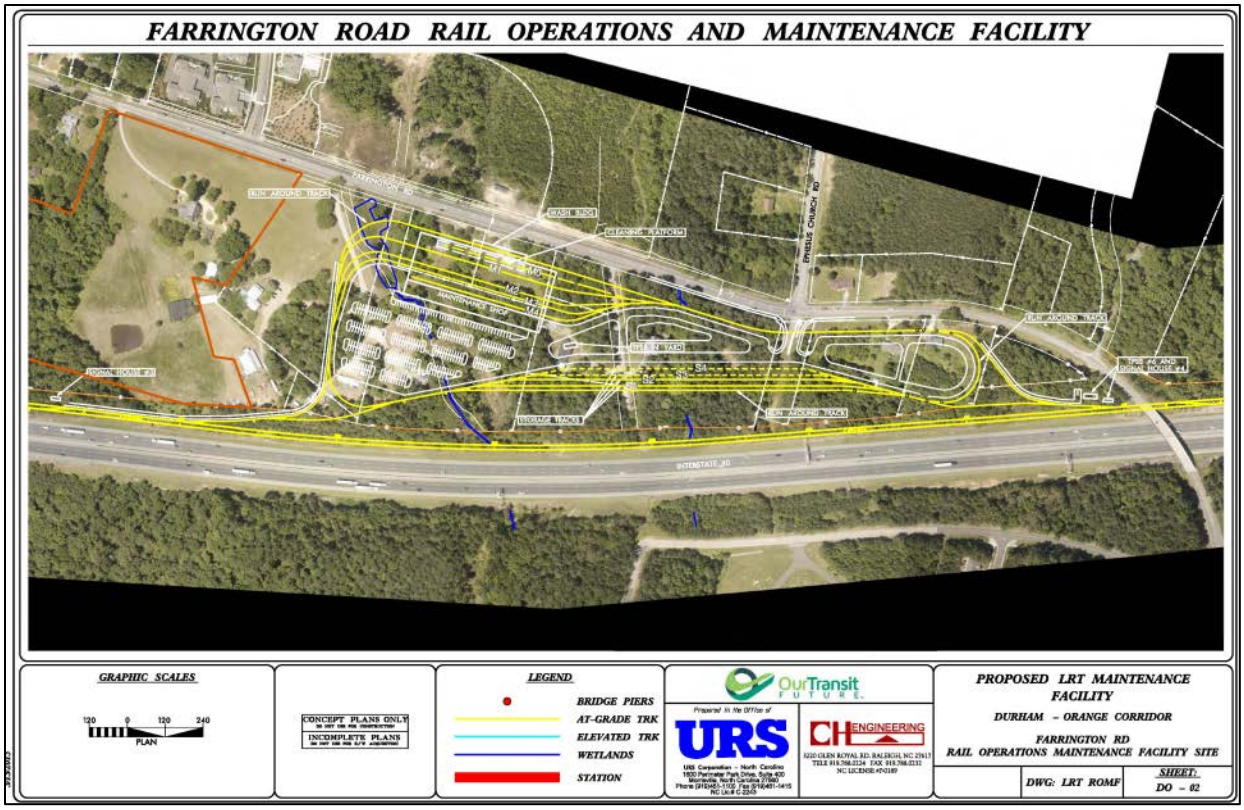


Figure 98: View looking north from northern edge of National Register-eligible boundaries toward store outside of boundaries; Farrington Road ROMF would be located within the trees in the background behind the store

Figure 99: View looking south from within location of Farrington Road ROMF; store is located at end of clearing at left center; National Register-eligible historic property is hidden beyond trees

Figure 100: View looking north from within National Register-eligible boundaries; Farrington Road ROMF would be located within the trees at the right half of the image and extend in front of the trees at the image's left half

Figure 101: View looking north from within National Register-eligible boundaries; Farrington Road ROMF would extend in front of the trees; note Farrington Road at far left and cellular antenna tower within trees on ROMF site

Figure 102: View looking south from location of Farrington Road ROMF toward store ,at left, and outbuildings within National Register-eligible boundaries of historic property, at right; edge of ROMF would be located just beyond store entry drive at center of image

Figure 103: View looking south from southern edge of location of Farrington Road ROMF toward farmhouse, at upper left; modern housing development at right located on west side of Farrington Road

5.9 Ruth-Sizemore Store (DH-2561) (survey #166)

The Ruth-Sizemore Store, which was built in the mid-1920s, is located at 5520 Old Chapel Hill Road in Durham County. The FTA determined as a result of the proposed project that the store is National Register eligible under Criterion A in the area of significance of commerce as a rare surviving representative of a rural Durham County store (Figure 104 and Figure 105). The store has no known connection with significant persons, is not architecturally notable, and is unlikely to yield important information not readily available from other sources. It is therefore not National Register eligible under Criteria B, C, or D.

Figure 104: Ruth-Sizemore Store: south front and east side elevations

Figure 105: Ruth-Sizemore Store: west side and north rear elevations

The store stands on a 4.31-acre parcel at the northeast corner of the intersection of Old Chapel Hill Road (Old Durham Road) and North White Oak. Adjacent to its east on the parcel is a former pool hall, erected in the late 1920s or 1930s. A small house, built about 1910, stands to its north on the parcel. Both of

these resources have lost their integrity (Figure 106 and Figure 107). Therefore, they are not individually National Register eligible and do not contribute to the store as part of a potential historic district. The recommended National Register boundaries for the Ruth-Sizemore Store encompass a parallelogram of a less-than 0.1-acre portion of the parcel (Figure 22 at center and Figure 108). This boundary extends to the crossroads intersection that was an important element of the store's success, and excludes the house and former pool hall.

Figure 106: Ruth-Sizemore Store: south front and east side elevations

Figure 107: Ruth-Sizemore Store: west side and north rear elevations

Figure 108: National Register-eligible boundaries of Ruth-Sizemore Store in proximity to proposed project; former pool hall stands immediately east of store and house just to north; note location of park-and-ride lot, shaded in brown, and station and rail alignment in blue

The proposed project at the Ruth-Sizemore Store encompasses the at-grade rail line and associated catenary system, the Gateway Station, and a park-and-ride lot north and east of the store and intersection at which it stands (Figure 108 and Figure 109). It would remove the pool hall and house near the store, and clear the mixed open and wooded, residential landscape to the store's north and east (Figure 110 through Figure 112). The project would therefore introduce new visual and atmospheric elements to the historic property's setting and have an indirect effect upon it. To avoid having a direct and adverse effect on the historic property, the project altered the design of the park-and-ride lot. The project initially changed the design and reduced the number of parking spaces, in order to retain the store and the land within its National Register-eligible boundaries. It changed the design a second time to add a larger buffer around the store that would be landscaped to visually separate the store from the proposed project. This change required removing additional planned parking spaces and also removed the planned installation of a sidewalk along North White Oak that would have been located within the National Register-eligible boundaries. The project would introduce new visual and atmospheric elements to the project's setting, but would not diminish the characteristics that rendered the store eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. The proposed project would have **No Adverse Effect** on this historic property.

Figure 109: Illustrative plan of proposed project Gateway Station; note store at lower left hand corner in red, green buffer around it, and park-and-ride and station above

Figure 110: Wintertime view looking southwest from outside of National Register-eligible boundaries with house at right, rear of Ruth-Sizemore Store at center, and former pool hall at left; proposed project would remove house, pool hall, and reduce number of trees

Figure 111: View looking northwest from Old Chapel Hill Road with house hidden in trees at right, former pool hall at center, and Ruth-Sizemore Store at left; proposed project would remove house, pool hall, and reduce number of trees

Figure 112: View looking northeast from Old Chapel Hill Road with Ruth-Sizemore Store at left and former pool hall at center; proposed project would remove pool hall and reduce number of trees; it would not add sidewalk to west (left) of store within National Register-eligible boundaries

5.10 West Durham Historic District (DH-1134) (survey #184)

The West Durham Historic District was listed in the National Register in 1986. It was determined eligible for listing on the National Register under Criterion C for its architecture (Figure 113 and Figure 114). The Erwin Cotton Mills Co. Mill No. 1 and Headquarters Building (DH-1178) within the district was individually listed in 1984 under Criteria A, B, and C for its economic role in Durham; its association with Benjamin N. Duke, George W. Watts, and William A. Erwin; and its architecture. The district encompasses approximately 90 acres of industrial buildings, company-built housing, and a commercial district along Ninth Street dating from the early twentieth century. It is roughly bounded by West Knox Street on the north, Ninth and Iredell streets on the east, West Main Street on the south, and Rutherford Street and Carolina Avenue on the west in Durham.

Since 1986 parts of the southern portion of the district have been heavily altered by modern development. However, in 1999, as part of a review of Mattson, Alexander & Associates' "Phase 2 Historic Architectural Resources Survey: Regional Rail System from Duke Medical Center in Durham to Durant Road in Raleigh, ER 99-9028," the SHPO did not concur with recommendations that its boundaries be reduced. The FTA determined that the district continues to retain sufficient integrity for National Register listing. However, were its boundaries redrawn to reflect current conditions, they would contract to a smaller area at its south, for since 1999 additional multi-story apartment blocks, commercial buildings, a Harris Teeter supermarket, and a Hilton hotel have been erected along West Main Street and Ninth Street (Figure 114).

Figure 113: West Durham Historic District: St. Joseph's Episcopal Church on north side of West Main Street east of Ninth Street

Figure 114: West Durham Historic District: Erwin Cotton Mills Co. Headquarters Building, Erwin Cotton Mill No. 1, and modern Hilton Hotel and Erwin Square (right to left) on north side of West Main Street west of Ninth Street

The proposed project, including the Ninth Street Station, would be located about 200 feet south of the southern edge of the historic district and Erwin mill (Figure 30 at center, Figure 115, and Figure 116). It would take no property located within the district's current bounds. It would be built partially above-grade, but separated from the historic district and mill by the tracks of the North Carolina Railroad (NCRR). The NCRR was built through Durham in 1854 and a rail line has remained active, operating under different names, through the present. The historic district and Erwin mills are within an urban setting historically served by that rail line. Due to the historic presence of the active NCRR rail line and the placement of the proposed project on the side of that line away from the district and mill boundaries, the proposed rail project would not have impacts on the district and the mill. Given the historic and current setting of the historic district and Erwin mills, the historic presence of the railroad, and the many alterations to the southern section of the district around the mills, the proposed project would not alter the characteristics that made the district and mill National Register-eligible. It would not diminish the mill or district's integrity of location, design, setting, materials, workmanship, feeling, or association (Figure 118 through Figure 121). Therefore, the proposed project would have **No Effect**on the West Durham Historic District or the Erwin Cotton Mills Co. Mill No. 1 and Headquarters Building.

Figure 115: National Register boundaries of West Durham Historic District in proximity to proposed project

Figure 116: Southern portion of National Register boundaries of West Durham Historic District in proximity to proposed project

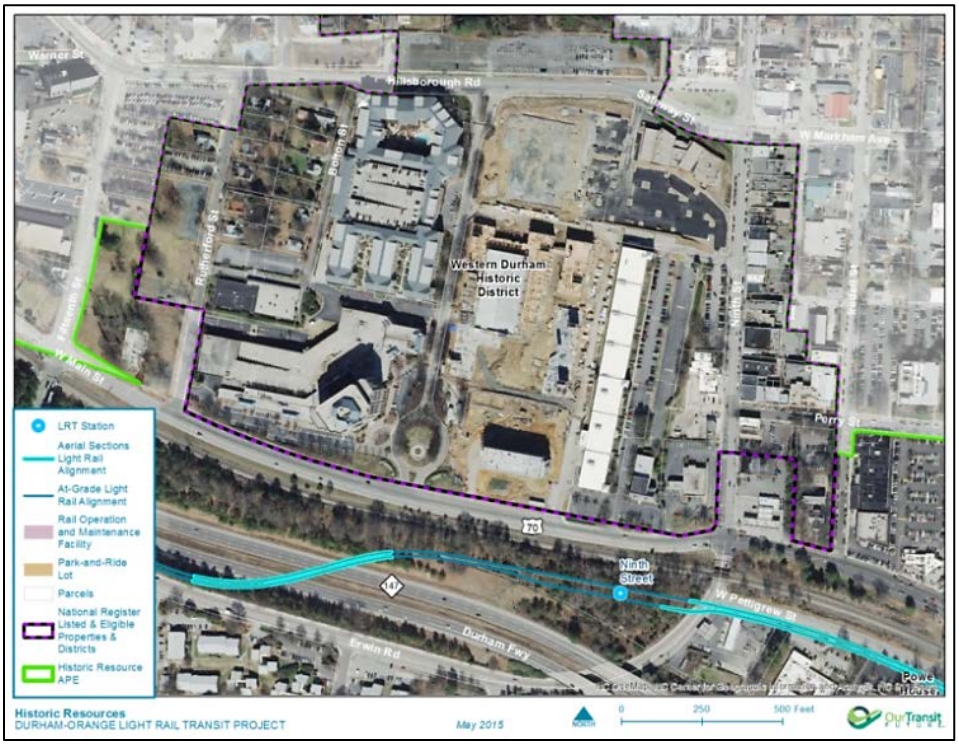


Figure 117: Southern portion of National Register boundaries of West Durham Historic District with modern buildings identified with red dots and Erwin Mill and Headquarters by name (source of base map: http://gis.ncdcr.gov/hpoweb/)

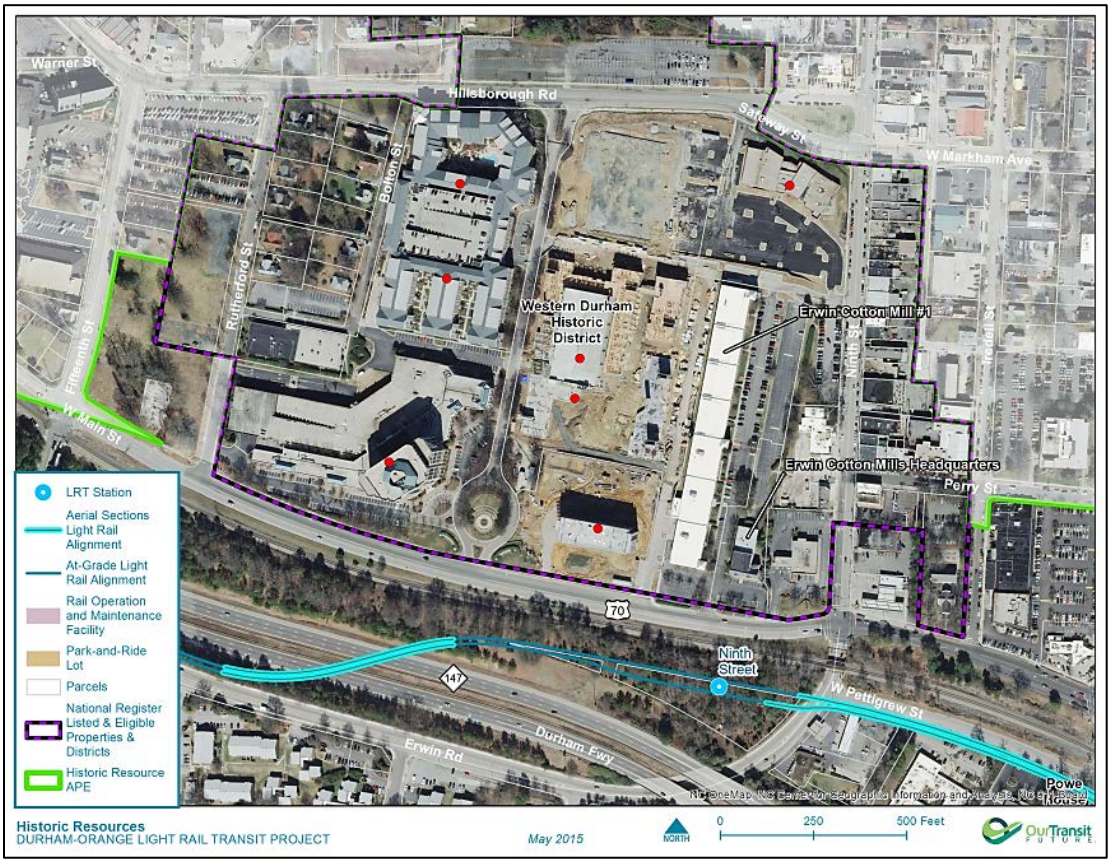


Figure 118: View northwest from proposed project area toward NCRR alignment and Erwin Road underpass; modern bank building on Ninth Street within historic district boundaries visible at center

Figure 119: View northwest from proposed project area on West Pettigrew Street toward NCRR alignment and historic district; St. Joseph's Episcopal Church hidden behind trees

Figure 120: View southeast from southwest corner of Erwin Mill #1 within historic district toward NCRR alignment; proposed project area would be located behind NCRR alignment

Figure 121: View northwest from southwest corner of Erwin Mill #1 within historic district toward modern apartment buildings and hotel erected in historic district in 2010s; buildings representative of numerous modern changes to southern end of historic district

5.11 Powe House (DH-1224) (survey ##187-188)

Powe House, which is located at 1503 West Pettigrew Street in Durham, was listed in the National Register in 1985. It was determined eligible for listing under Criteria A, B, and C for its symbolic status as the home of a textile industry executive; its association with Edward Knox Powe; and its architecture. Standing within the National Register boundaries (parcel 113541), in addition to the Powe house, are Erwin cottage at the south end of the lot and Sunnyside, which is included on the North Carolina Study List, at the north end (Figure 122). The Powe House stands between these two former residences. In 1986—after the National Register listing of the Powe House property—Sunnyside was moved to its current location from its original site on the other side of Swift Avenue to the east. As part of the move, it was rotated to face south toward the Powe House. At the same time, the Erwin cottage was moved across Swift Avenue to its current site. In 1999, as part of a review of Mattson, Alexander & Associates' "Phase 2 Historic Architectural Resources Survey: Regional Rail System from Duke Medical Center in Durham to Durant Road in Raleigh, ER 99-9028," the SHPO did not concur with recommendations that the Powe House's National Register-listed boundaries be reduced. Rather, the SHPO recommended "delisting the entire property." The appearance of the three resources and the parcel that constitutes the Powe House's National Register boundaries appear to be little changed since 1999. Therefore, the FTA concurs with the SHPO recommendation that the Powe House is no longer National Register-eligible. The property, which includes all three houses, continues to be NR listed, though, and Sunnyside remains on the North Carolina Study List.

Figure 122: Powe house, at center, and Erwin cottage, at right background, from south porch of Sunnyside

The project would be built above-grade and located at the northern edge of the Powe House's National Register-listed boundaries (Figure 30 at right center and Figure 123). One pier for the elevated alignment would be located within the northeastern edge of the boundaries, just inside the southeastern corner of the junction of West Pettigrew Street and Swift Avenue (Figure 124). The 1854 NCRR alignment is located about 75 feet north of the Powe House's NR-listed boundaries. Sprawling modern buildings stand to the east and west of the NR-listed boundaries and NC 147 and an interchange are located immediately to the south of the boundaries.

The FTA has determined that the Powe House has lost its integrity and should be removed from the National Register, as the SHPO previously recommended. The Powe House is therefore no longer National Register eligible and the project would have **No Effect**

on this former historic property.

Figure 123: National Register boundaries of Powe House in proximity to proposed project

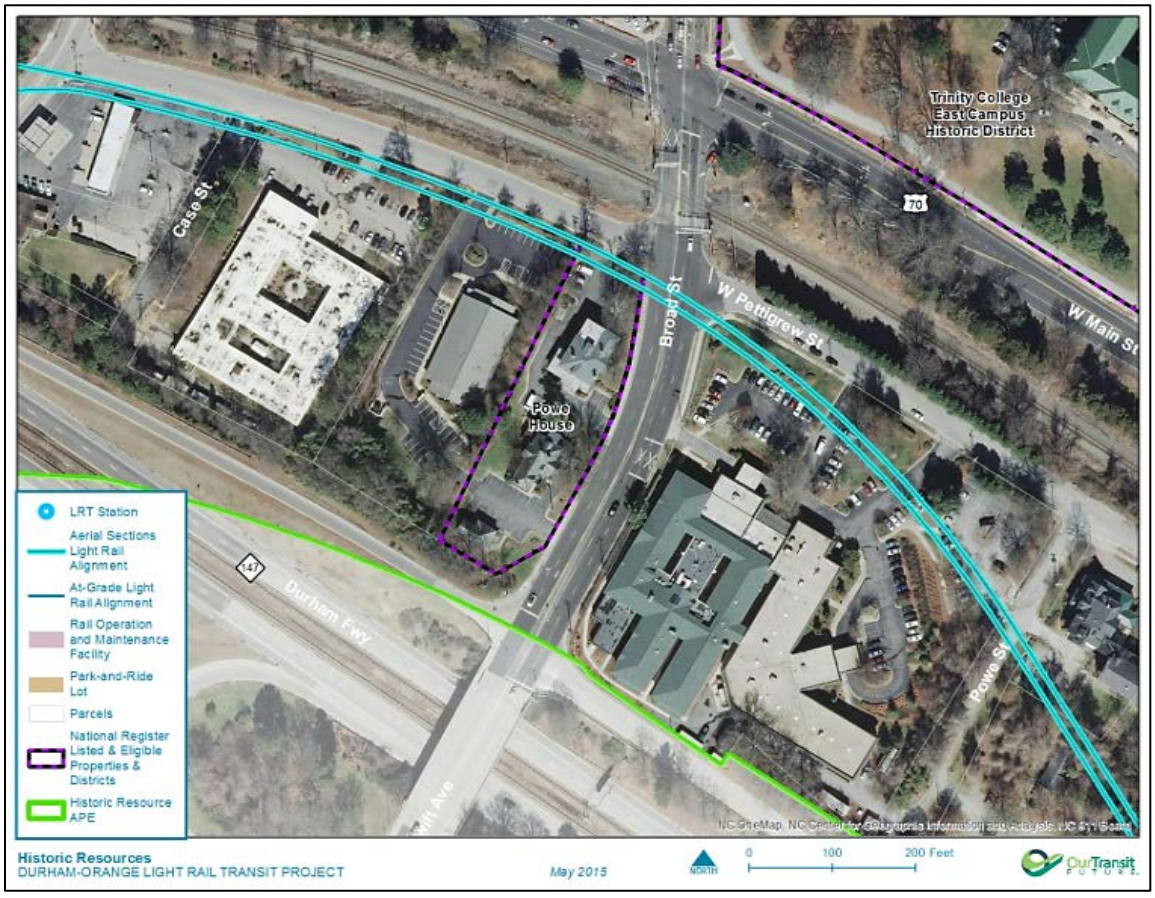


Figure 124: View south of Sunnyside house and Swift Avenue/Broad Street from intersection of West Pettigrew Street; proposed project would be located within Powe House property on far side of Swift Avenue at bottom of image

5.12 Trinity College East Campus Historic District (DH-1821) (survey ##189-192)

The Trinity College East Campus Historic District was determined eligible for National Register listing through a DOE in 2000 and 2009. It is roughly bounded on the north by West Markham Avenue, on the east by North Buchanan Boulevard, on the south by West Main Street and Maxwell Avenue, and on the west by Campus Drive and Broad Street in Durham (Figure 127). Two resources within the district's boundaries that are located to the south of the campus are included as contributing resources to the district, the Campus Drive Underpass and Grade Separation (DOE, 2005) (survey #192) and the Duke University Central Heating Plant (DH-693) (survey #190) and its associated Carpenters Shop (DOE, 2000) (survey #191) (Figure 125 and Figure 126). The underpass and grade separation was additionally determined individually eligible for NR listing under Criteria A and C for its history and architecture as part of a statewide survey of bridges in 2005. The FTA determined that the historic district retains its integrity.

Figure 125: Trinity College East Campus Historic District: Duke University West Duke Building on north side of West Main Street, left; Campus Drive underpass and grade separation on south side of West Main Street, right

Figure 126: Trinity College East Campus Historic District: Central heating plant, left; carpenters shop, right; both on Campus Drive south of grade separation

Figure 127: Trinity College East Campus Historic District National Register boundaries shaded in yellow (source: http://gis.ncdcr.gov/hpoweb/)

The Trinity College East Campus Historic District encompasses approximately 106.5 acres. Approximately 105 of these acres are located north of the railroad alignment and take in the former Trinity College, now the east campus of Duke University. This large campus tract is located about 575 feet north of the project and fully screened and separated from it by the NCRR alignment, intervening lots, and trees. The proposed project would have no effect on this portion of the district. The remaining approximately 1.5-acre portion of the district is located south of the tracks and includes the underpass/grade separation, the central heating plant, the carpenters shop, and a portion of Campus Drive, all of which were historically noise-producing transportation and industrial-resources. The project would be built above-grade and located about 75 feet south of the southern edge of the historic district (Figure 31 at center, Figure 128, and Figure 129). It would be located about 175 feet north of NC 147 and 425 feet south of the 1854 NCRR alignment. The project near the historic district is within an urban setting historically supported by the rail line and now additionally served by NC 147, a major modern highway (Figure 130 through Figure 133). However, the proposed project would introduce new visual elements to the historic property's setting and could have an indirect effect upon it.

To avoid having a direct and adverse effect on the historic property, the design of the project was altered. The project as originally designed would have been located immediately south of the NCRR alignment and north of the heating plant. This design would have taken land from within the boundaries of the historic district. The proposed project was therefore shifted to the south, so that it would take no

property located within the district's National Register-eligible boundaries. The proposed project would not diminish the characteristics that rendered the district eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. Given the historic presence of the railroad, the past and current urban setting, and the current presence of the NC 147 overpass, the proposed project would have **No Adverse Effect** on this historic property.

Figure 128: National Register boundaries of Trinity College East Campus Historic in proximity to proposed project

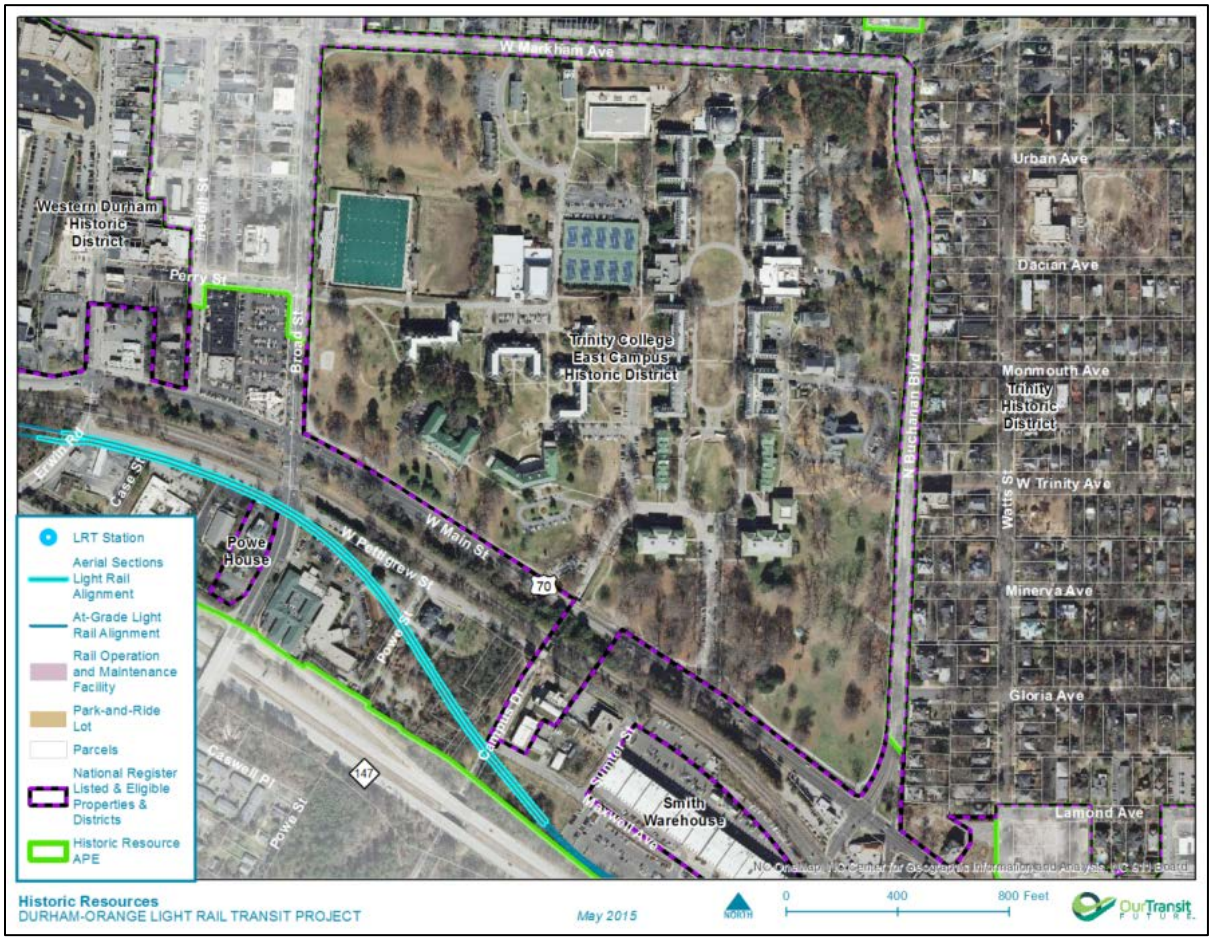


Figure 129: Southern portion of National Register boundaries of Trinity College East Campus Historic District in proximity to proposed project, with photo angles of figures in gold

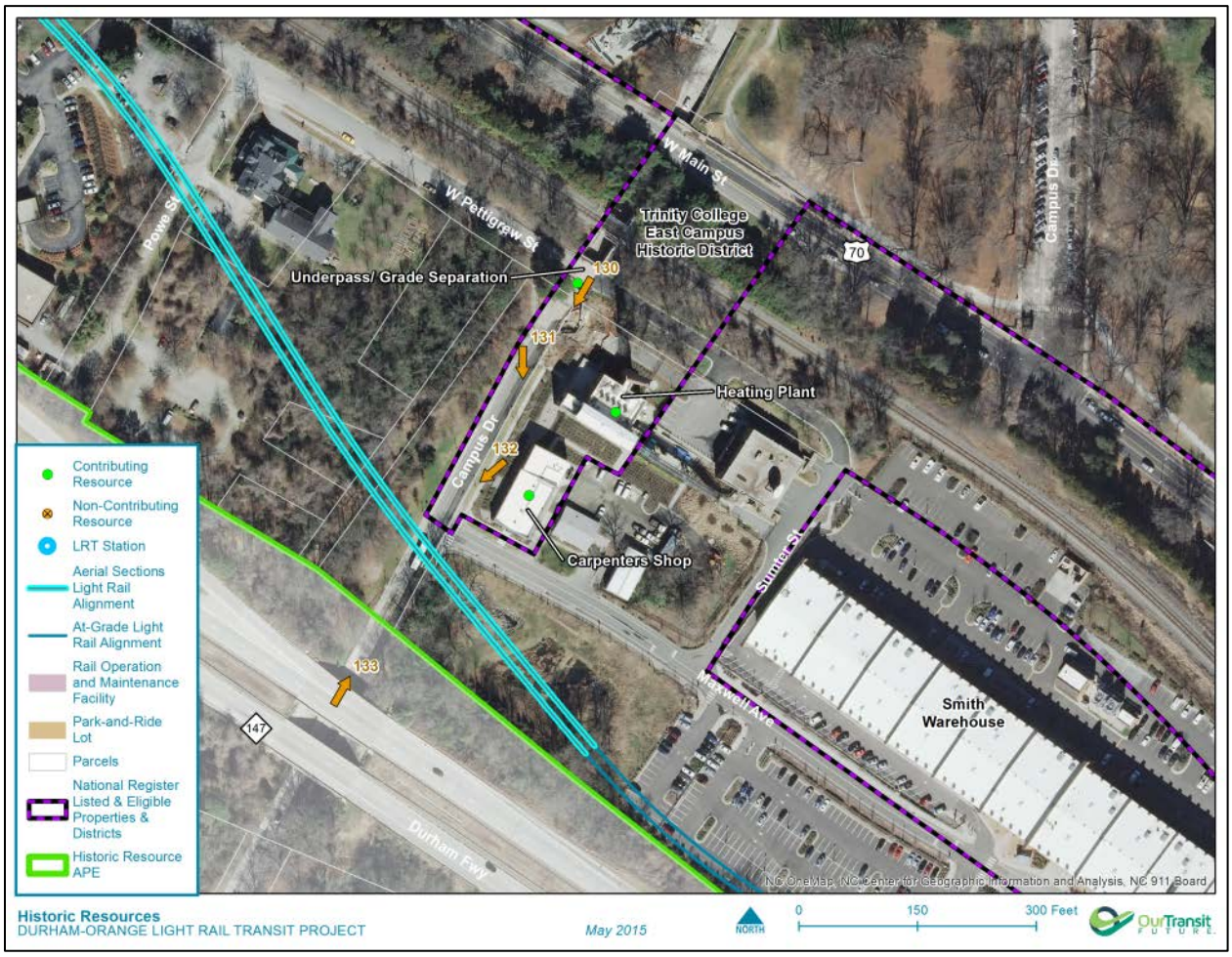


Figure 130: View southwest from railroad underpass down Campus Drive, with central heating plant at left and carpenters shop beyond; proposed project would cross Campus Drive between south end of carpenter shop and NC-147 bridge at center distance

Figure 131: View south down Campus Drive with central heating plant at far left and carpenters shop beyond; proposed project would cross Campus Drive between south end of carpenter shop and NC-147 bridge at right distance

Figure 132: View south down Campus Drive from junction with Maxwell Avenue, at southern end of historic district; proposed project would cross Campus Drive between Maxwell Drive and NC-147 bridge at center

Figure 133: View north up Campus Drive from NC 147 with carpenters shop and central heating plant at right and railroad bridge at center distance; proposed project would cross Campus Drive on south side of Maxwell Avenue, at location of yellow pedestrian sign at center of image

5.13 Smith Warehouse (DH-89) (survey #193)

The Smith Warehouse, which stands at 114 South Buchanan Boulevard in Durham, was listed in the National Register in 1985. It was determined eligible for listing on the National Register under Criteria A, B, and C for its connection with the American Tobacco Company trust; its economic role in Durham; its association with James B. Duke and other American Tobacco Company executives; and its architecture (Figure 134). The FTA determined that the warehouse retains its integrity.

Figure 134: Smith Warehouse: east and south elevations

The National Register boundaries of the Smith Warehouse encompass approximately 5 acres. The historic resource includes the large former tobacco warehouse and the remainder of its parcel, which is paved parking lots north and south of the building. To the north of the boundaries are additional parking lots and the 1854 NCRR alignment. To the south are more parking lots and NC 147. The project would be built at-grade about 175 feet south of the National Register boundaries (Figure 31 at center and Figure 135). It would be located about 100 feet north of NC 147 and 550 feet south of the NCRR alignment. The project near the warehouse is within an urban setting historically supported by the rail line and now additionally served by NC 147, a major modern highway (Figure 136 through Figure 138). However, the proposed project would introduce a new visual element to the historic property's setting and have an indirect effect upon it.

To avoid having a direct and adverse effect on the historic property, which is now owned and used by Duke University as office space, the design of the project was altered. The project as originally designed would have been located immediately north of the Smith Warehouse and would have taken land from within its National Register boundaries. The proposed project was therefore shifted to the south, so that it would take no property located within the boundaries. The project would not diminish the characteristics that rendered the warehouse eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. Given the historic presence of the railroad, the past and current urban setting, and the current presence of NC 147, the proposed project would have **No Adverse Effect** on this historic property.

Figure 135: National Register boundaries of the Smith Warehouse in proximity to proposed project

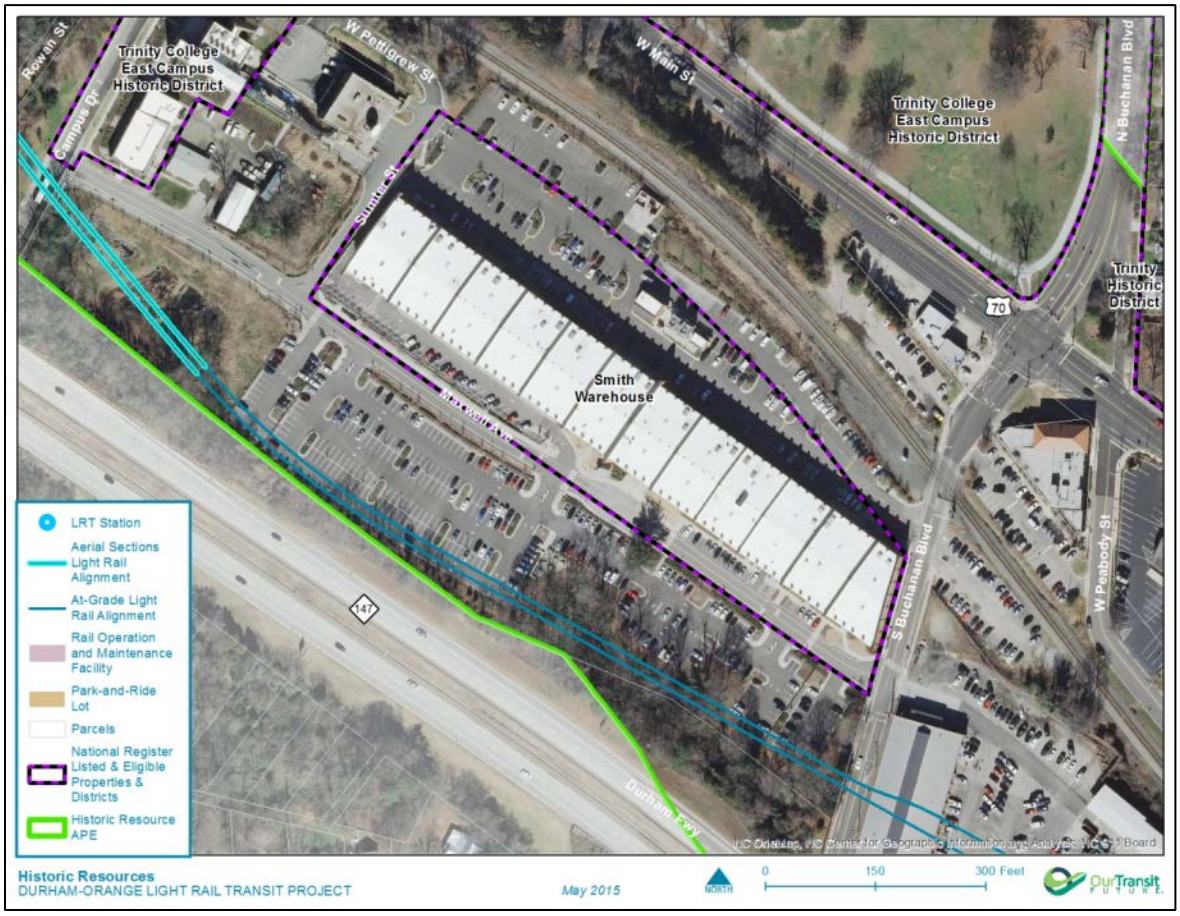


Figure 136: View south from southwest corner of Smith Warehouse at left; proposed project would be located at edge of trees at center distance

Figure 137: View south down South Buchanan Boulevard, with southeast corner of Smith Warehouse at right and NC 147 bridge at left distance; proposed project would be built at far edge of parking lot at right and would cross Buchanan Boulevard in front of NC-147 bridge

Figure 138: View north from location of proposed project at edge of parking lot toward Smith Warehouse

5.14 Trinity Historic District (DH-927) (survey ##196-198)

The Trinity Historic District was listed on the National Register in 1986 and the district's boundaries were increased in 2004 and 2008. According to the original 1986 nomination, the district is significant under Criterion A for representing "the efforts of the leaders who had created Durham's prospering economy to provide the public services and cultural amenities necessary for the community's continued development as a progressive city"; under Criterion B for reflecting the business acumen of Julian S. Carr, Richard H. Wright, Brodie L. Duke, and many other smaller investors; and under Criterion C for its concentration of popular residential design from the 1890s up to World War II (Figure 139 through Figure 141). Its first boundary extension brought its period of significance up to the mid-1950s; its second added one resource. The FTA determined that the historic district retains its integrity.

Figure 139: North Buchanan Boulevard houses just north of West Main Street

Figure 140: Former McPherson Hospital Main Building on West Main Street east of North Buchanan Boulevard in March 2014, prior to construction of Marriott hotel

Figure 141: Former McPherson Hospital Main Building in September 2014 during construction of Marriott hotel

The Trinity Historic District, including its boundary increases, is roughly bounded by West Club Boulevard and Green Street on the north, North Duke Street on the east, West Main Street on the south, and North Buchanan Boulevard and Broad Street on the west in Durham. It contains more than 930 resources, the large majority of which are single-family dwellings, on approximately 281 acres. The southernmost edges of the district's boundaries touch West Main Street at two points. From West Main Street the district extends more than a mile north to West Club Boulevard and Northgate Mall. At its greatest breadth on West Markham Street it is three-quarters-of-a-mile wide and crosses the top of Duke's West Campus.

The project, including the Buchanan Boulevard Station, would be built at-grade about 700 feet south of the closest point of the historic district's southwestern edge-within an urban setting (Figure 31 at center, Figure 142, and Figure 143). The former McPherson Hospital occupied this edge of the district until 2014, when all but the shell of its main building was removed and replaced by a city-block-wide, four-story Marriott hotel. The project would be separated from the district by one to two or more blocks of built-up streets and located to the south of the tracks of the NCRR (Figure 144 through Figure 146). Given the project's distance from the district, the intervening blocks of buildings, the length and height of the new hotel, the district's size, and its historic and current setting, the proposed project would not alter the characteristics that made the district National Register eligible. It would not diminish the historic district's integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore, the project would have **No Effect** on the Trinity Historic District.

Figure 142: National Register boundaries of the Trinity Historic District in proximity to proposed project

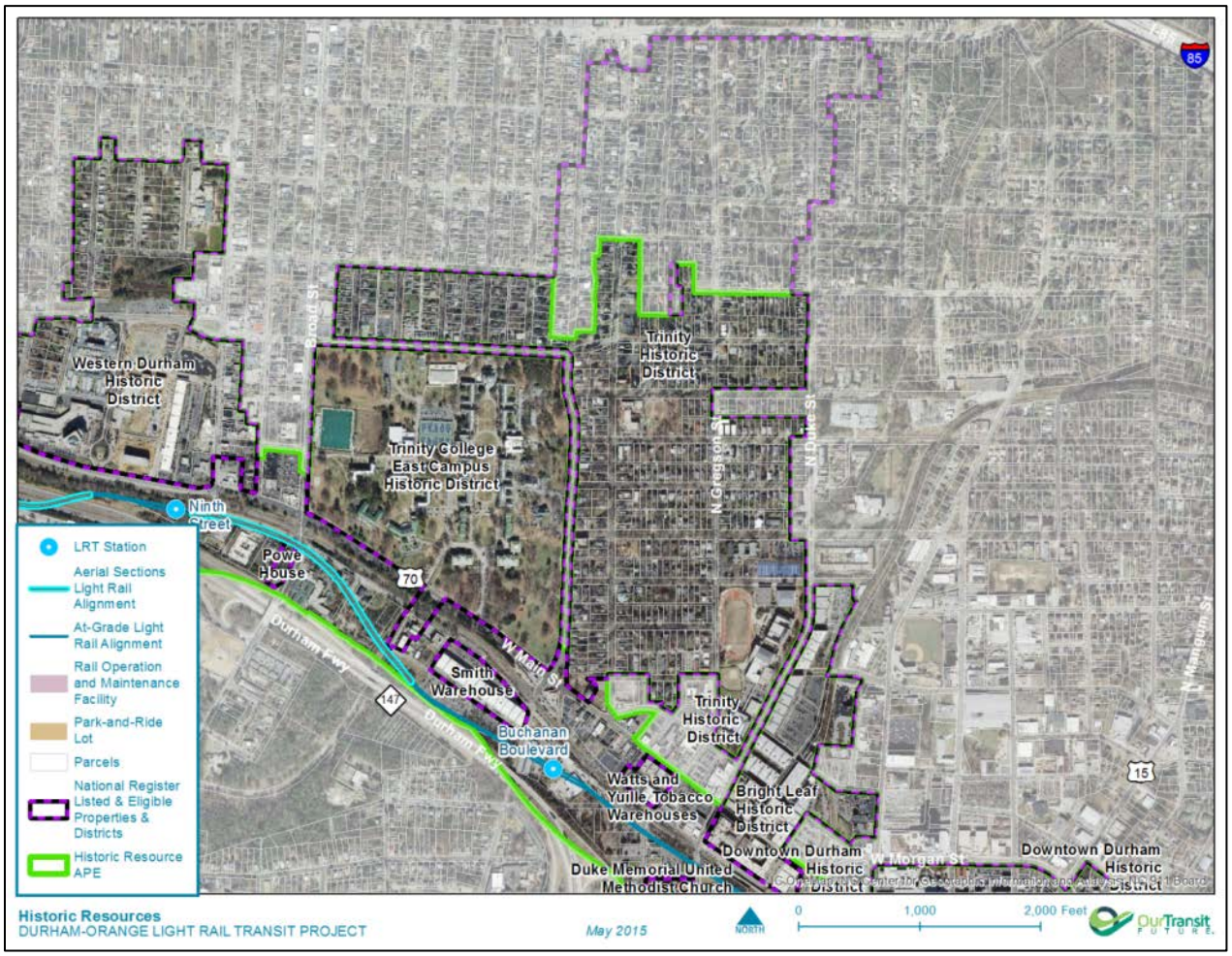


Figure 143: Southern portion of National Register boundaries of the Trinity Historic District in proximity to proposed project

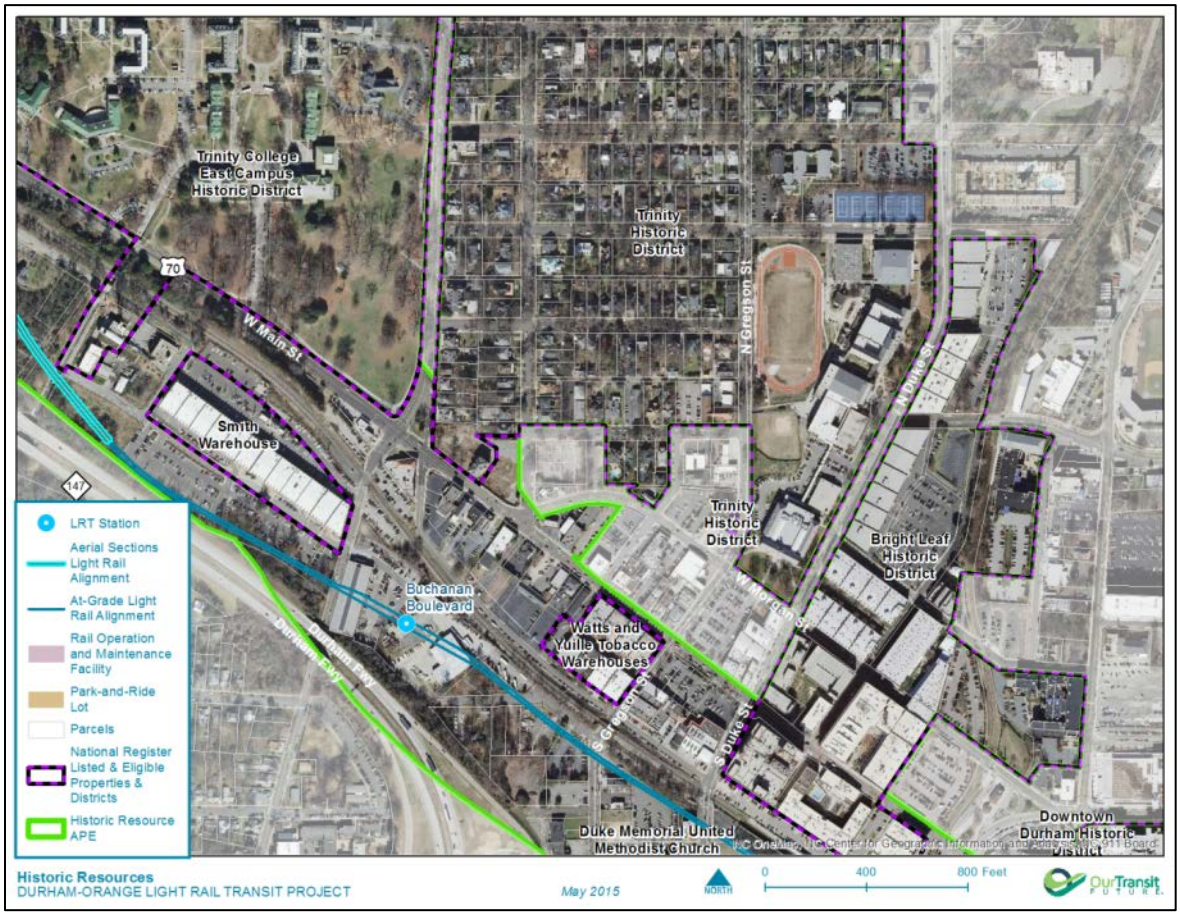


Figure 144: View looking south from western elevation of new Marriott hotel and southwest corner of historic district, down Buchanan Boulevard across West Main Street; proposed project would be located beyond buildings and trees in distance

Figure 145: View looking north across railroad tracks from location of proposed project; behind funeral home building at right, new Marriott on north side of West Main Street stands within historic district

Figure 146: View looking north across railroad tracks from location of proposed project; altered surviving portion of former McPherson Hospital visible between buildings in foreground with new Marriott extending to either side across image

5.15 Watts and Yuille Tobacco Warehouses (DH-87) (survey #207)

Watts and Yuille Tobacco Warehouses (Brightleaf Square), which is located at 114 South Buchanan Boulevard in Durham, was listed in the National Register in 1984. It was determined eligible for listing under Criterion A as a notable symbol of the American Tobacco Company trust, a corporate combination that reduced competition; under Criterion B for its association with James B. Duke and his family, George W. Watts, and Thomas B. Yuille; and under Criterion C for its architecture (Figure 147). The FTA determined that the historic property retains its integrity.

Figure 147: Watts and Yuille Tobacco Warehouse: west side and interior elevations

The National Register boundaries of the Watts and Yuille Tobacco Warehouses encompass approximately 2.5 acres. The resource is located in a heavily built-up setting of commercial, office, industrial, and transportation-related buildings and facilities. West Main Street flanks it to the north and West Peabody Street to the south. Just south of Peabody is the 1854 NCRR alignment (see Figure 31 at center and Figure 148). The project would be located at-grade about 200 feet south of the resource's southern boundary on the opposite side of the tracks. The project near the historic property is within an urban setting historically supported by the rail line, which once served the warehouses (Figure 149 through Figure 151). It would have minimal visual impacts on this historically industrial property. Given the historic and current setting of the historic property and its industrial character, the proposed project would not alter or diminish its integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore, the project would have **No Effect** on the Watts and Yuille Tobacco Warehouses.

Figure 148: National Register boundaries of Watts and Yuille Tobacco Warehouses in proximity to proposed project

Figure 149: View from location of proposed project looking northwest from West Pettigrew Street east of South Gregson street; NCRR alignment in foreground, warehouses on other side of tracks

Figure 150: View from location of proposed project looking northwest under NCRR bridge from intersection of West Pettigrew and South Gregson streets; West Peabody Street and warehouses on other side of tracks

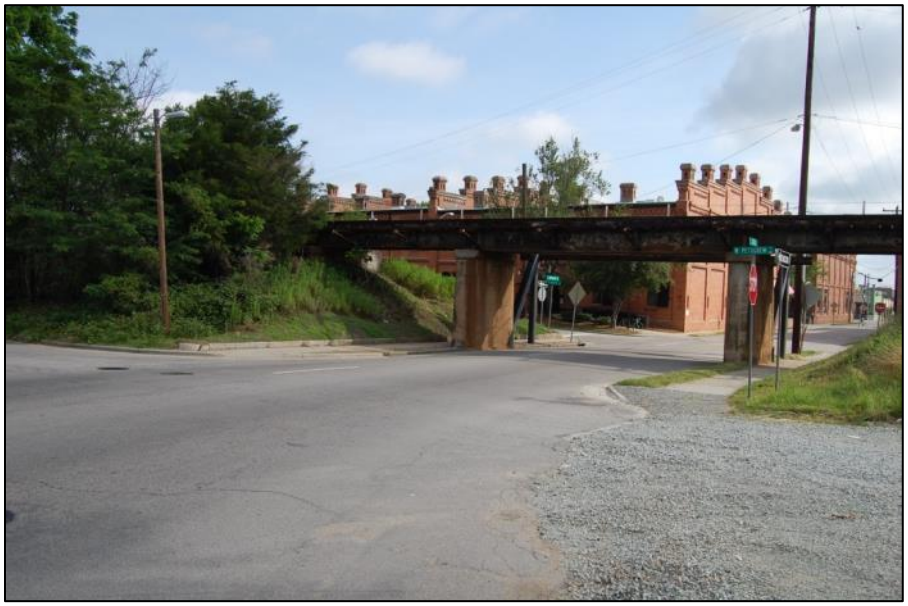


Figure 151: View looking southwest down South Gregson Street with east elevation of warehouses at right; proposed project would be located on other side of NCRR alignment and bridge at center distance

5.16 Duke Memorial United Methodist Church (DH-1253) (survey #214)

Duke Memorial United Methodist Church, which is located at 504 West Chapel Hill Street in Durham, was listed in the National Register in 1985. According to its National Register nomination, it was determined eligible for listing under Criterion A for its association with the rapid growth of western Durham and the many tobacco workers in its congregation; under Criterion B for its association with Washington Duke and his sons; and under Criterion C for its Gothic and Romanesque Revival-style architecture per the National Register nomination for this property (Figure 152) The FTA determined that the church retains its integrity.

Figure 152: Duke Memorial Chapel United Methodist Church: south facade

The National Register boundaries of the Duke Memorial United Methodist Church encompass approximately three acres. The church is located in a heavily built-up setting of commercial, governmental, office, industrial, and transportation-related buildings and facilities. The 1854 NCRR alignment is separated from it to the north by parking lots, a modern office building, and two buildings erected in the 1950s. North of the NCRR alignment is downtown Durham. To the west of the church and its boundaries are buildings erected in the middle half of the twentieth century and entrance ramps to NC 147. On its south are a large multi-story apartment complex erected in 2014 and the 1950s multi-story Durham police headquarters building. A modern office building, the National Register-eligible mid-1960s North Carolina Mutual tower, and a c.1995 concrete-block warehouse stand to its east. Just beyond them is Durham's modern multi-modal transit center, erected c.2008. The proposed project would be located at-grade about 175 feet north of the church (see Figure 31 at center and Figure 153). The project near the church is within an urban setting historically supported by the rail line to the north and now additionally served by NC 147 to the west. The new rail line will be added adjacent to the existing line, but would alter the setting of the historic property's northern viewshed (Figure 154 through Figure 157).

The proposed project would not diminish the characteristics that rendered the church eligible for National Register listing including its location, design, setting, materials, workmanship, feeling, and association. The project will not have a noise impact on the church (see *Noise and Vibration Technical Report* (May 2015)). Given the historic presence of the railroad and the church's heavily built-up urban setting, the proposed project would have **No Adverse Effect** on this historic property.

Figure 153: National Register boundaries of Duke United Memorial Methodist Church in proximity to proposed project, with photo angles of figures in gold

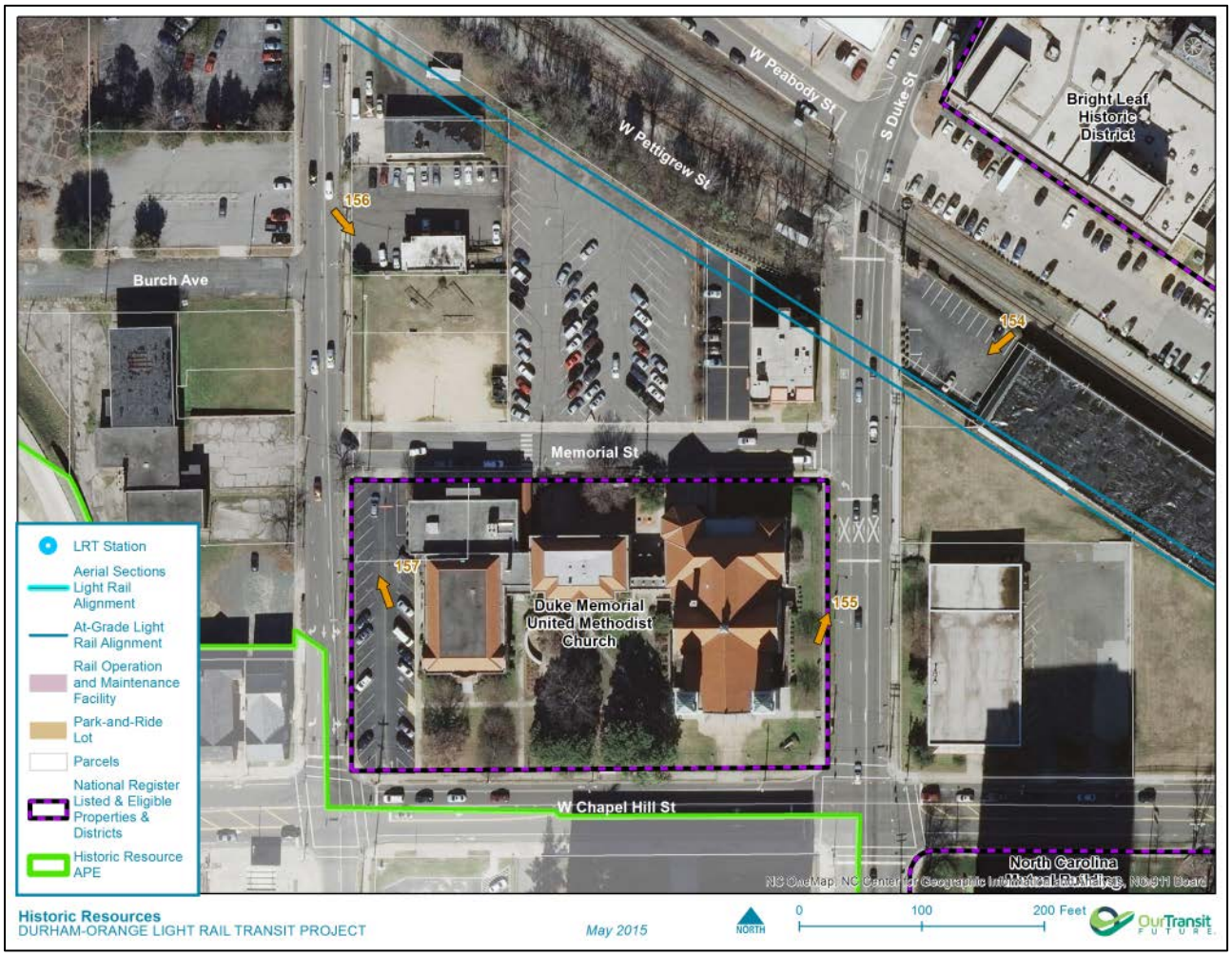


Figure 154: View southwest toward church from near intersection of South Duke and West Pettigrew streets, just west of Amtrak platform; proposed project would be located at site of white wall at center of image

Figure 155: View northeast from east side elevation of church up South Duke Street toward downtown Durham; proposed project would be located in front of railroad crossing at center distance

Figure 156: View looking southeast from proposed project location at South Gregson Street north of Burch Avenue; church tower and wing visible at center and right distance

Figure 157: View looking northwest up South Gregson Street from west side elevation of church toward downtown Durham; proposed project would be located in front of railroad bridge and brick tobacco warehouse at center distance

5.17 North Carolina Mutual Building (DH-2477) (survey #215)

The North Carolina Mutual Building is located at 411 West Chapel Hill Street in Durham (Figure 158 and Figure 159). The FTA determined that the building is National Register eligible under Criterion A for its history. It is nationally significant under this criterion in the area of African-American ethnic history as a landmark of African-American enterprise in the late twentieth century. The FTA determined that North Carolina Mutual was not eligible under Criteria B; C, and D due to its lack of significance in these areas. The North Carolina Mutual Building's period of significance is 1964-1966, when it was designed, constructed, and opened.

Figure 158: North Carolina Mutual: south rear and west side elevations

Figure 159: North Carolina Mutual: north front and west side lobby walls

The National Register-eligible boundaries of the North Carolina Mutual Building are those of Durham County parcel 103343 with which it has been associated since its construction. They encompass approximately 3.3 acres and include the building, the decorative pools and sign on the south front lawn, and the contemporary parking deck that occupies much of the southeastern portion of the property. North Carolina Mutual is located in a heavily built-up setting of commercial, governmental, office, industrial, and transportation-related buildings and facilities. The 1854 NCRR alignment is separated from the property to the north by modern office buildings and a concrete-block warehouse. North of the tracks is downtown Durham. To the building's west are the Duke Memorial United Methodist Church and the mid-1950s high-rise Durham police headquarters building. Beyond these are a modern, multi-story apartment block and the entrance ramps to NC 147. To the south are multi-story office buildings erected in the last quarter of the twentieth century and, to the east, Durham's modern multi-modal transit center. The proposed project would be located at-grade about 175 feet northeast of the building. The Durham Station would be located about 475 feet east of the building. The station would be visibly and physically separated from the building by the multi-modal transit center (see Figure 31 at center and Figure 160). The proposed project near the building is within an urban setting historically supported by the rail line to the north and now additionally served by the transit center. The new rail line will be added adjacent to the existing line, but would be visible from the building and would alter the setting of a portion of the historic property's wide-ranging northern viewshed (Figure 161 though Figure 164).

The proposed project would not diminish the characteristics that rendered the North Carolina Mutual Building eligible for National Register listing including its location, design, setting, materials, workmanship, feeling, and association. Given the historic presence of the railroad and the building's heavily built-up urban setting, the proposed project would have **No Adverse Effect** on this historic property.

Figure 160: National Register boundaries of North Carolina Mutual Building in proximity to proposed project

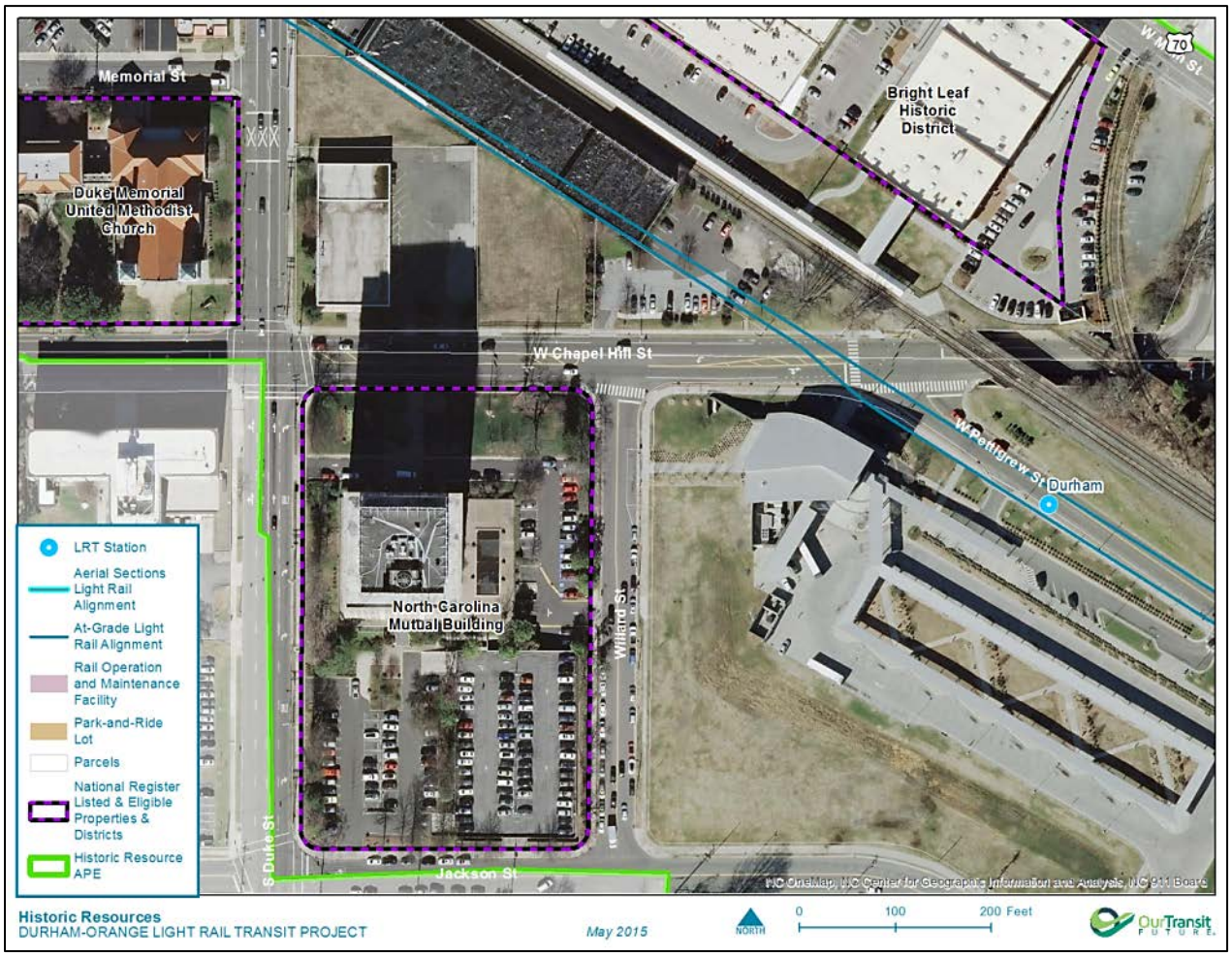


Figure 161: View north from front drive of North Carolina Mutual Building toward Liggett & Myers office building and Bright Leaf Historic District; proposed project would be located in front of one-story warehouse at center of image

Figure 162: View south from location of proposed project, which would run from corner of one-story warehouse at right to car at left foreground; North Carolina Mutual Building at left

Figure 163: View looking east from northeast corner of National Register boundaries toward transit center at right and downtown Durham beyond; proposed project would run in front of NCRR bridge at left; Durham Station would be located behind transit center

Figure 164: View looking west from location of Durham Station and proposed project; Durham multi-modal transit center in foreground and North Carolina Mutual Building at rear

5.18 Bright Leaf Historic District (DH-71) (survey ##216-218)

The Bright Leaf Historic District, listed in the National Register in 1999, is roughly bounded by Minerva Avenue on the north, railroad tracks and Liggett and Morris streets on the east, railroad tracks and West Main Street on the south, and North Duke Street on the west, in the early industrial heart of Durham (Figure 165). The district was listed in the National Register eligible under Criterion A in the area of industry for its association with the history of tobacco manufacturing in Durham and under Criterion C in the area of architecture for its notable industrial design. The FTA determined that the historic district retains its integrity. The historic district contains 29 predominantly industrial and commercial buildings and structures within its approximately 34-acre National Register boundary.

Figure 165: Bright Leaf Historic District: Walker Warehouse, at center left, with Chesterfield Building (Liggett & Myers Tobacco Company) rising to rear

The historic district's southern boundary fronts on the 1854 NCRR alignment. The proposed project, including the Durham Station, is located at-grade about 150 feet south of this boundary, on the opposite side of the tracks that once serviced the district's buildings (Figure 31 at center, Figure 166, and Figure 167). The district and the project near it are located in a dense urban setting of industrial, commercial, office, governmental, and transportation-related buildings and facilities. The buildings within the district now hold offices, restaurants, and other non-industrial uses.

The NCRR was built through Durham in 1854 and a rail line has remained active, operating under different names, through the present. The historic district is within an urban setting historically served by that rail line. Due to the urban and industrial nature of the historic district and its setting, the historic presence of the NCRR rail line, and the placement of the proposed project on the side of that line away from the district, the project would have minimal visual impacts on the district. It would not alter the characteristics that made the district National Register-eligible and would not diminish the district's integrity of location, design, setting, materials, workmanship, feeling, or association (Figure 168 through Figure 172). Therefore, the proposed project would have **No Effect**, on the Bright Leaf Historic District.

Figure 166: National Register boundaries of the Bright Leaf Historic District in proximity to proposed project

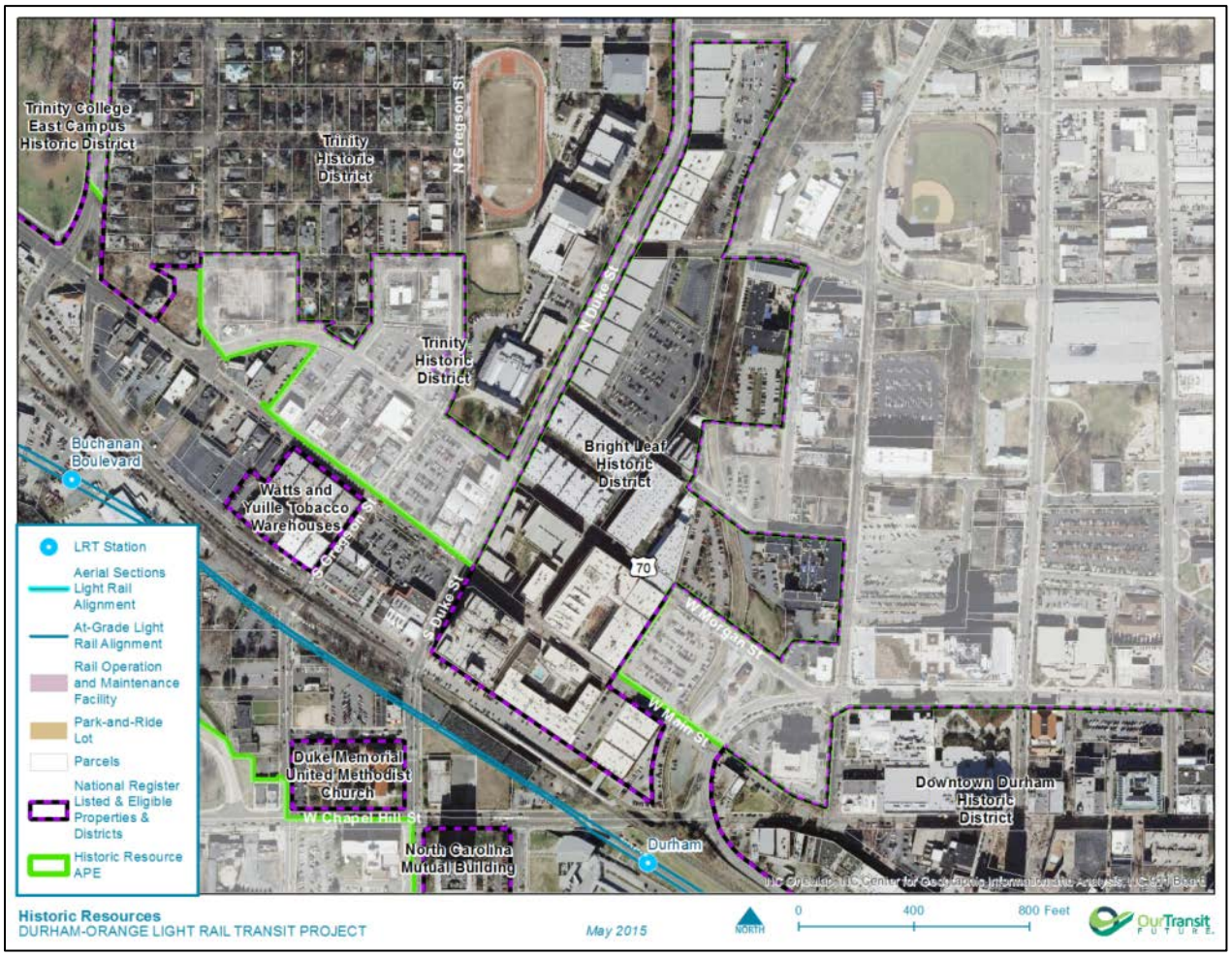


Figure 167: Southern portion of National Register boundaries of the Bright Leaf Historic District in proximity to proposed project

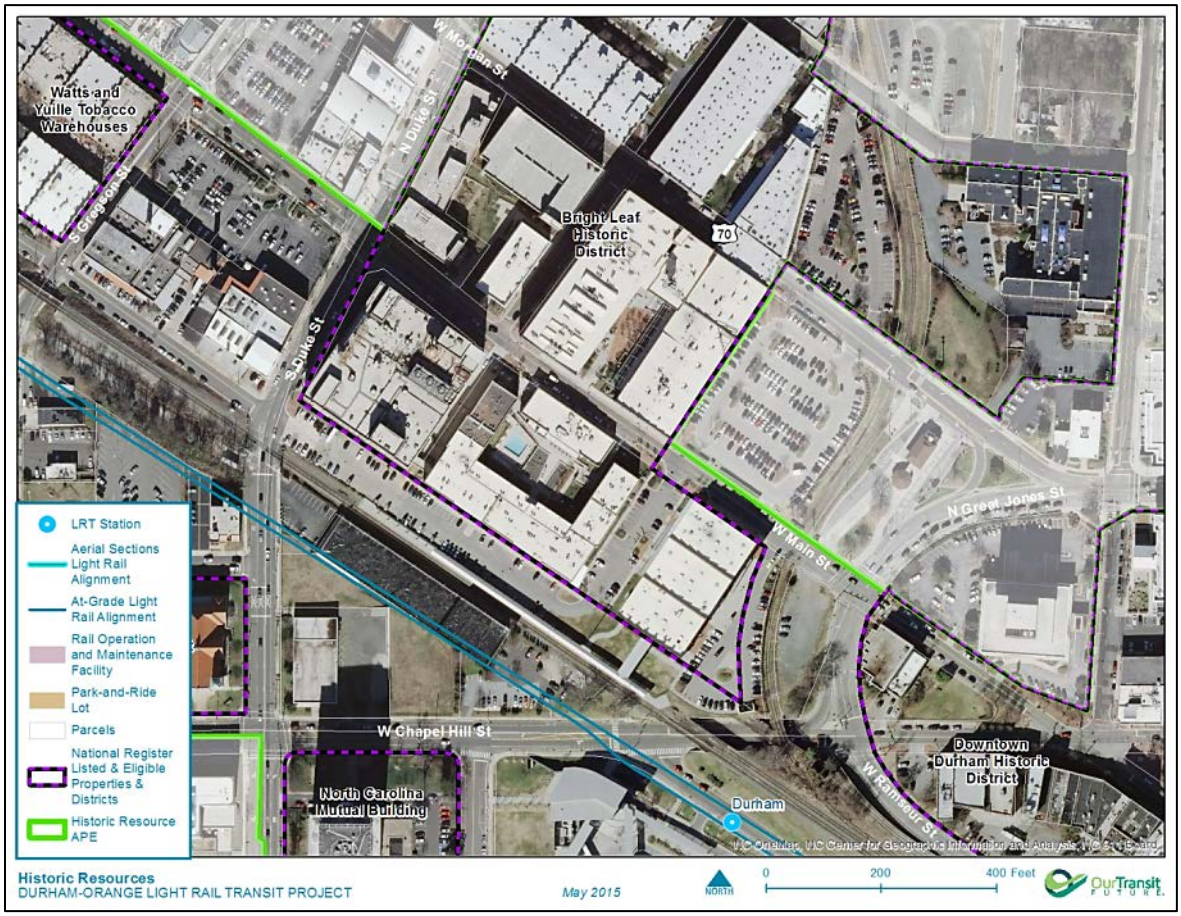


Figure 168: View looking south down South Duke Street with Liggett & Myers office building and southwestern corner of historic district at left; proposed project would be located on the opposite side of the railroad tracks

Figure 169: View looking south from warehouses at southeast end of historic district toward NCRR tracks and Amtrak platform and canopy; proposed project would be located beyond the Amtrak canopy

Figure 170: View looking north from location of proposed project across NCRR tracks and Amtrak platform and canopy; on opposite side of tracks are warehouses at southeastern end of historic district

Figure 171: View looking south from southeastern edge of historic district at current Amtrak station at right and rail platform at center; Durham Station would be located on opposite side of tracks in front of glass-walled Durham multi-modal transit center

Figure 172: View looking north across West Chapel Hill Street from proposed location of Durham Station; brick warehouses of historic district are at center right, Amtrak platform and canopy are at center left, and Liggett & Myers office building is at left

5.19 Downtown Durham Historic District (DH-1692) (survey #219)

The Downtown Durham Historic District was listed in the National Register in 1977. Its areas of significance were identified as architecture, commerce, politics/government, religion, and theater. The FTA determined that the historic district retains its integrity. The district is the core of historic downtown Durham and largely contained by the roadway loop that rings this core. It is roughly bounded by West Morgan, East Seminary, and East Parrish streets on the north, North Roxboro and North Queen streets on the east, Ramseur Street on the south, and Great Jones and West Morris streets on the west. Contained within its approximately 65 acres are more than 175 resources, almost all of which are commercial, governmental, religious, and other nonresidential multi-story buildings (Figure 173).

Figure 173: Downtown Durham Historic District: south side of West Main Street east of South Corcoran Street from the NCRR alignment

The historic district's southern boundary fronts on the 1854 NCRR alignment. The project, including the Durham Station, is located at-grade about 225 feet south of this boundary, on the opposite side of the tracks that once served the district's buildings. (Figure 31 at right and Figure 174). The district and the project near it are located in a dense urban setting of industrial, commercial, office, governmental, and transportation-related buildings and facilities. Due to the urban nature of the historic district and its setting, the historic presence of the NCRR rail line, and the placement of the proposed project on the side of that line away from the district, the proposed project would have minimal visual impacts on the district. It would not alter the characteristics that made the district National Register-eligible and would not diminish the district's integrity of location, design, setting, materials, workmanship, feeling, or association (Figure 175 through Figure 178). Therefore, the proposed project would have **No Effect**, on the Downtown Durham Historic District.

Figure 174: National Register boundaries of the Downtown Durham Historic District in proximity to proposed project

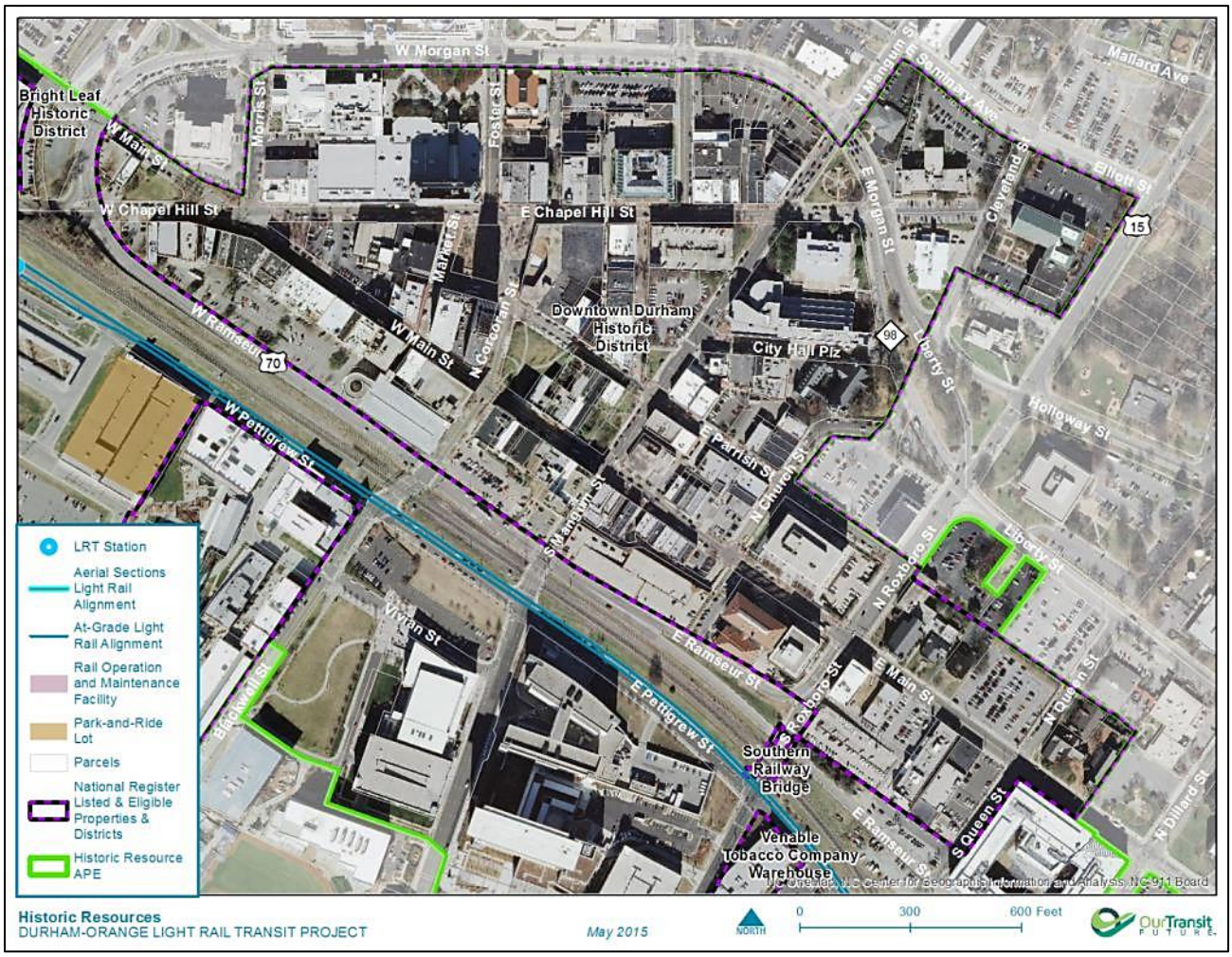


Figure 175: View looking west along West Pettigrew Street from proposed location of Durham Station toward elevated NCRR alignment and southwestern portion of Downtown Durham Historic District; rail alignment of proposed project would run in far lane of Pettigrew Street

Figure 176: View looking north from West Pettigrew Street up North Corcoran Street across NCRR alignment into south central portion of historic district; proposed project would run along Pettigrew Street

Figure 177: View looking north across West Pettigrew Street toward elevated NCRR alignment and southeastern portion of Downtown Durham Historic District; rail alignment of proposed project would run in far lane of Pettigrew Street

Figure 178: View looking south down South Mangum Street from south central end of historic district; project would be located in West Pettigrew Street in front of glass-walled Durham Performing Arts Center at center distance

5.20 American Tobacco Company Manufacturing Plant (DH-1872) (survey ##220-222)

The American Tobacco Company Manufacturing Plant was listed on the National Register in 2000. It was determined eligible under Criterion A in the area of industry, as symbolizing the history of the tobacco industry in Durham and under Criterion C in the area of architecture for its notable industrial design. Included within the National Register boundaries of American Tobacco is the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory (DH-10 and survey #222), which was identified as a National Historic Landmark (NHL) in 1974 for its significance as the first successful tobacco manufacturing company in North Carolina (Figure 179). The FTA determined that the American Tobacco Plant and the W.T. Blackwell Factory retain their integrity. The approximately 17-acre factory complex occupies the Durham block bounded by West Pettigrew Street on the north, Blackwell Street on the east, Willard Street on the south, and Julian Carr Street on the west.

Figure 179: American Tobacco Company Manufacturing Plant: Hill Warehouse at right, W.T. Blackwell and Co. (Bull Durham) Tobacco Factory at center, NCRR alignment in foreground

The northern boundaries of the American Tobacco Company Manufacturing Plant and the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory front on West Pettigrew Street and, just beyond, the 1854 NCRR alignment and the historic core of downtown Durham. On American Tobacco's southern boundary are Willard Street and NC 147. To the west are warehouses, a parking deck, and parking lots. The modern Durham Bulls Athletic Park and Durham Performing Arts Center stand to the east. Beyond them rises a tall modern prison complex. The area is densely urban with industrial, commercial, office, governmental, and transportation-related buildings and facilities.

The proposed project would be located at-grade to the north of the boundaries of the two historic properties, on the south side of the current railroad alignment, within the current northern lane of West Pettigrew Street. West Pettigrew would be reduced from three lanes to one lane of traffic in front of the

historic properties. The project would also replace the sidewalk and curb currently located in front (to the north) of the former American Tobacco complex and the Bull Durham Tobacco Factory. The distance from the nearest southern edge of the proposed light rail track to the north façade of the American Tobacco complex and the Bull Durham Tobacco Factory would be approximately 27.1 feet. The distance from the southern edge of a car running along the nearest proposed light rail track to the north façade of the complex and the Bull Durham Tobacco Factory would be approximately 24.5 feet (Figure 32 at center, Figure 180 through Figure 182). The distance of the western edge of the Bull Durham Tobacco Factory to the proposed Durham Station, which is the station closest to the tobacco factory, is approximately 750 feet. The distance of the western edge of the former Hill Warehouse—the westernmost portion of the American Tobacco Company Manufacturing Plant complex—to the proposed Durham Station is approximately 500 feet.

To avoid having a direct adverse effect on the manufacturing plant and the tobacco factory, the design of the project was altered. As originally designed it would have taken land from the northern edge of the National Register boundaries. The proposed project was therefore shifted to the north so that it would take no property located within the boundaries.

Figure 180: National Register boundaries of the American Tobacco Company Manufacturing Plant in proximity to proposed project

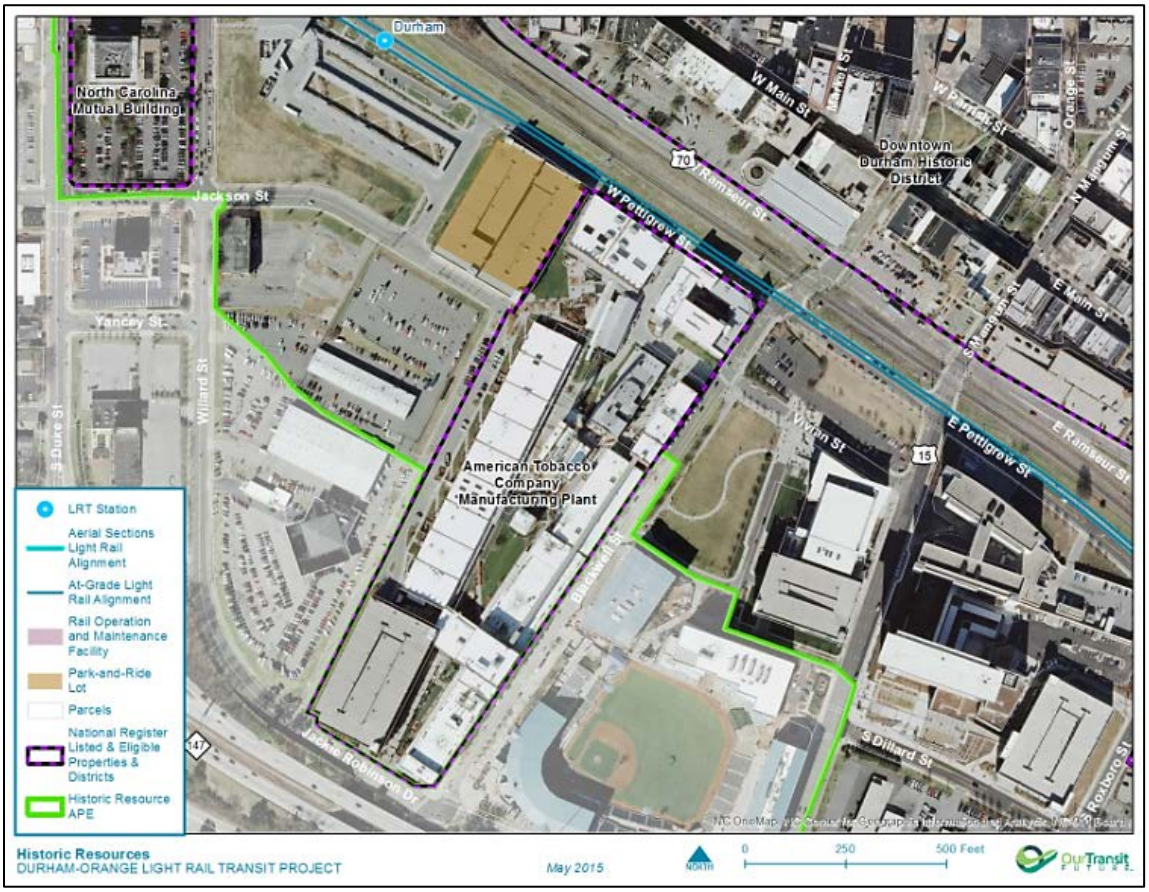


Figure 181: Northern portion of the National Register boundaries of the American Tobacco Company Manufacturing Plant in proximity to proposed project

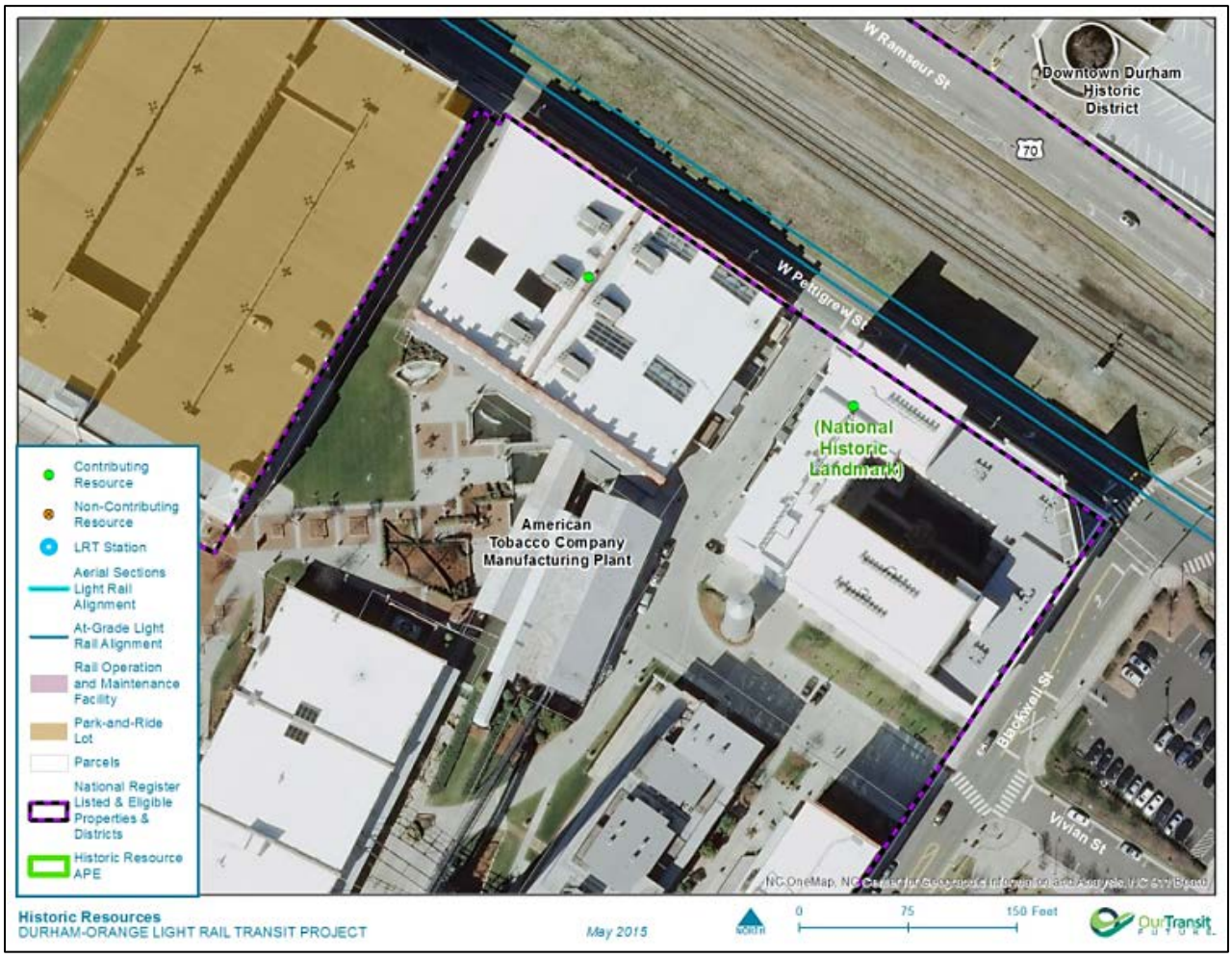
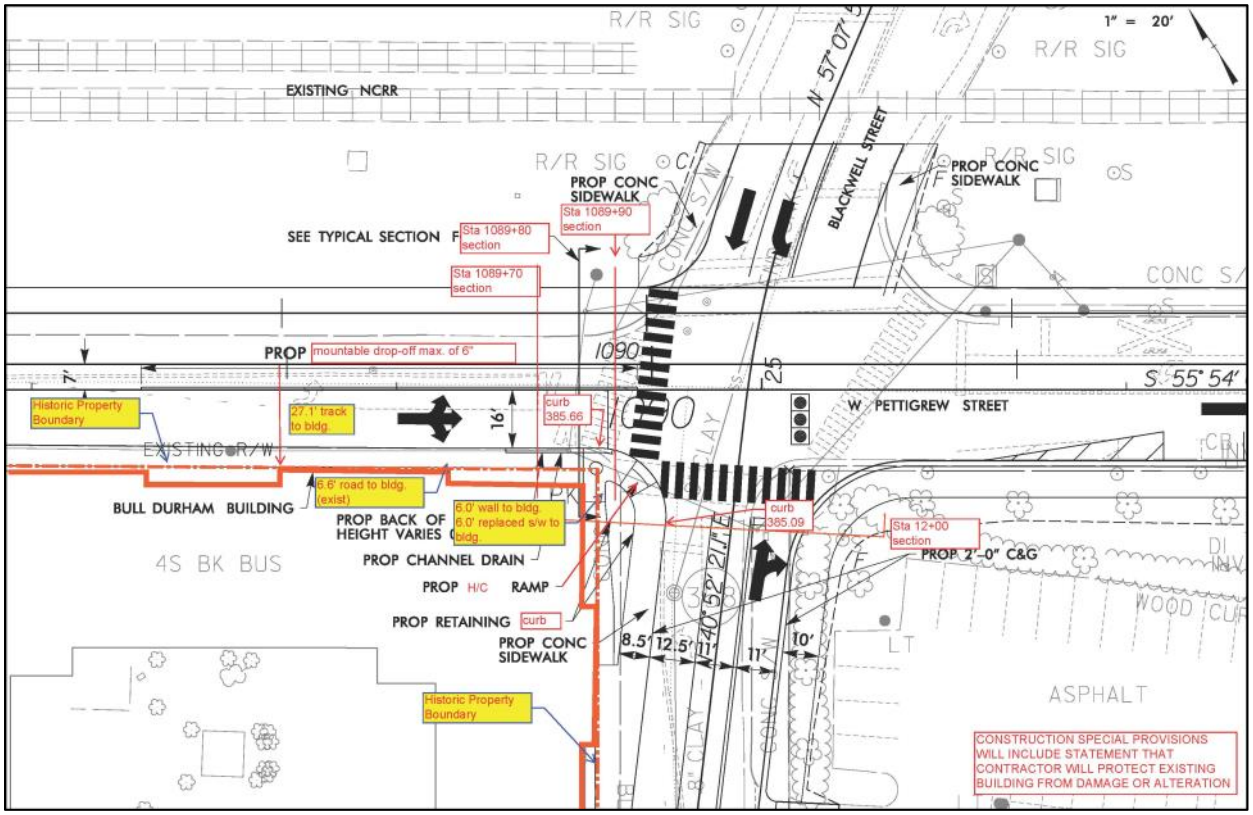


Figure 182: Design for proposed project at intersection of West Pettigrew and Blackwell streets; former Bull Durham tobacco factory located at lower left; proposed project extends across center of design from left to right



The project near the manufacturing plant and tobacco factory is within a dense urban setting currently and historically supported by rail lines (Figure 183 through Figure 187). It would therefore not introduce a notable new visual element to the setting. Sanborn maps of Durham, including those of 1893 and 1913, depict the close proximity of the manufacturing plant and the tobacco factory to various sets of tracks (Figure 188 through Figure 190). On the 1913 Sanborn maps the distance—from the northern facades of the American Tobacco complex's Hill Warehouse and the Bull Durham tobacco factory to the southern edge of the track sidings—is approximately 45 feet. The distance from the northeast corner of the Bull Durham factory to the southwestern edge of tracks is approximately 30 feet. And the distance from the southeast corner of the Bull Durham factory to the spur line is approximately 5 feet. Historic photographs show the same relationship (Figure 191 through Figure 193).

The proposed project will not take any property from within the National Register boundaries of the American Tobacco Company Manufacturing Plant and the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory. It would therefore not have a direct effect on the historic properties. The project would not diminish the characteristics that rendered the historic properties eligible for National Register listing, including their location, design, setting, materials, workmanship, feeling, and association. Noise and vibration impacts on the Bull Durham factory, based upon its current use as an apartment building, will be moderate (see *Noise and Vibration Technical Report* (May 2015)). Given the extensive historic presence of railroad lines and the historic and current, heavily built-up urban setting, the proposed project would have **No Adverse Effect**, on the American Tobacco Company Manufacturing Plant and the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory.

Figure 183: View looking west from junction of Blackwell and West Pettigrew streets across NCRR alignment at American Tobacco plant and Bull Durham factory; proposed project would be located in north lane of Pettigrew Street, where bus is at right distance

Figure 184: View looking west from junction of Blackwell and West Pettigrew streets at American Tobacco plant and Bull Durham factory; proposed project would be located at-grade in north lane of Pettigrew Street, closest to grassy NCRR right-of-way

Figure 185: View looking northeast up Blackwell Street from eastern corner of Bull Durham factory and historic district, across West Pettigrew Street and NCRR track; proposed project would be located at-grade in far lane of Pettigrew Street

Figure 186: View looking southeast from western corner of Hill Warehouse along West Pettigrew Street toward raised NCRR alignment and Downtown Durham Historic District; proposed project would run at-grade in far lane of Pettigrew Street

Figure 187: View looking south along West Pettigrew Street at northeastern end of historic district from raised NCRR alignment; proposed project would run at-grade in near lane of Pettigrew Street

Figure 188: Sanborn map of 1893 with "Blackwell's Durham Co-op Tobacco Co" at bottom; note tracks running north and east of Bull Durham factory, location of which is marked by an added star (north at top)

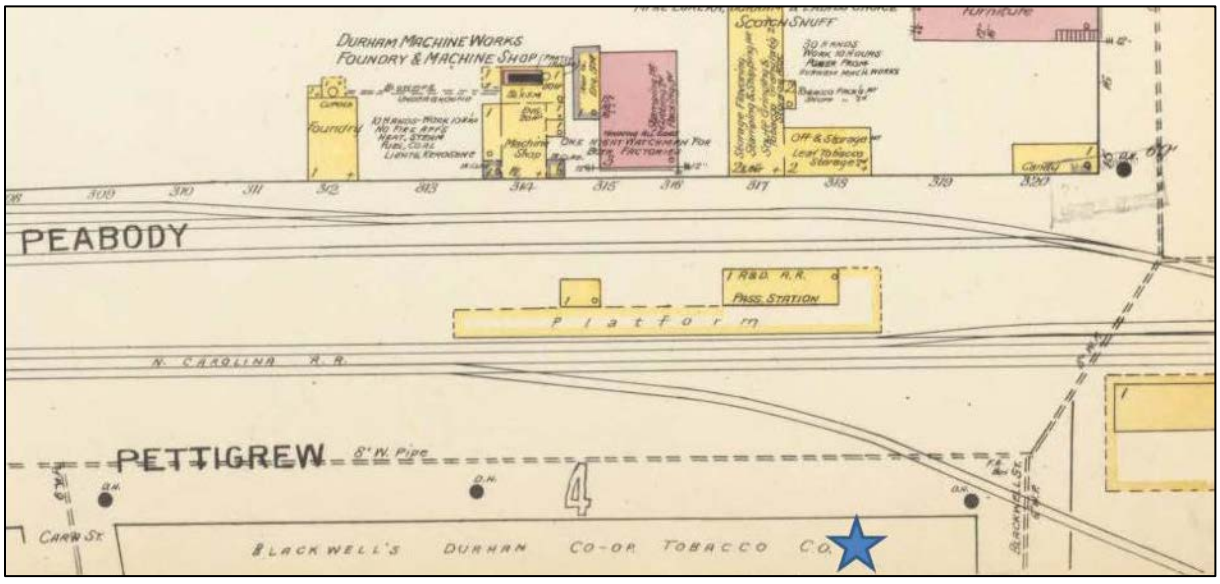


Figure 189: 1913 Sanborn map of "congested district" depicting American Tobacco complex at center with Bull Durham factory marked with star: note tracks of three different railroads to right (north) of factory and spur line entering off of Blackwell Street at rear of factory

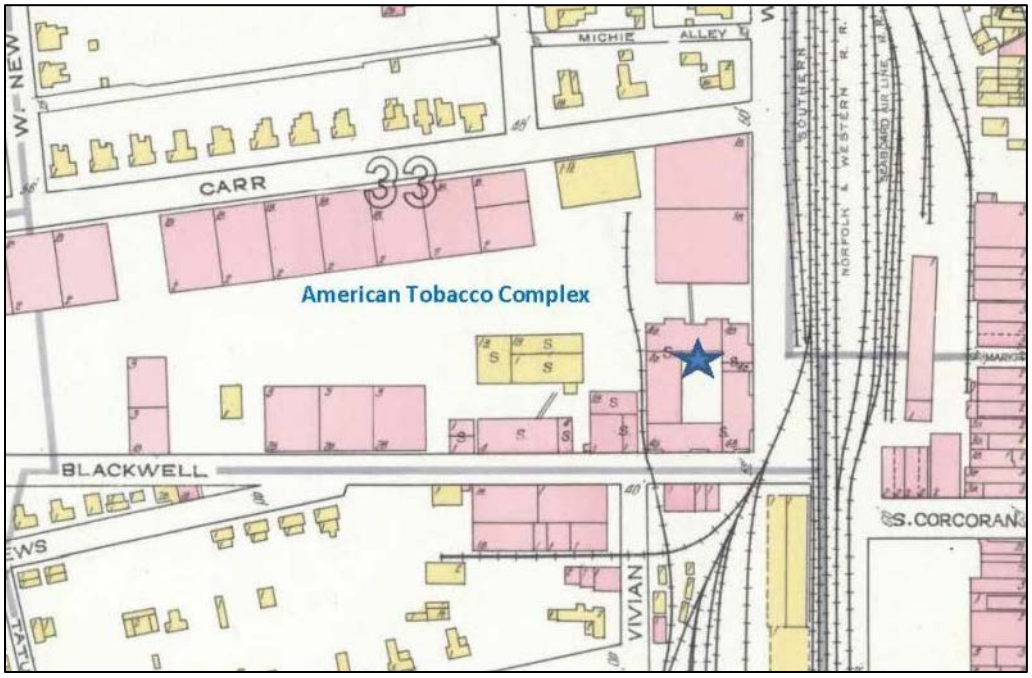


Figure 190: 1913 Sanborn map depicting northern portion of American Tobacco complex and flanking railroad tracks with Bull Durham factory marked by star (north at top)

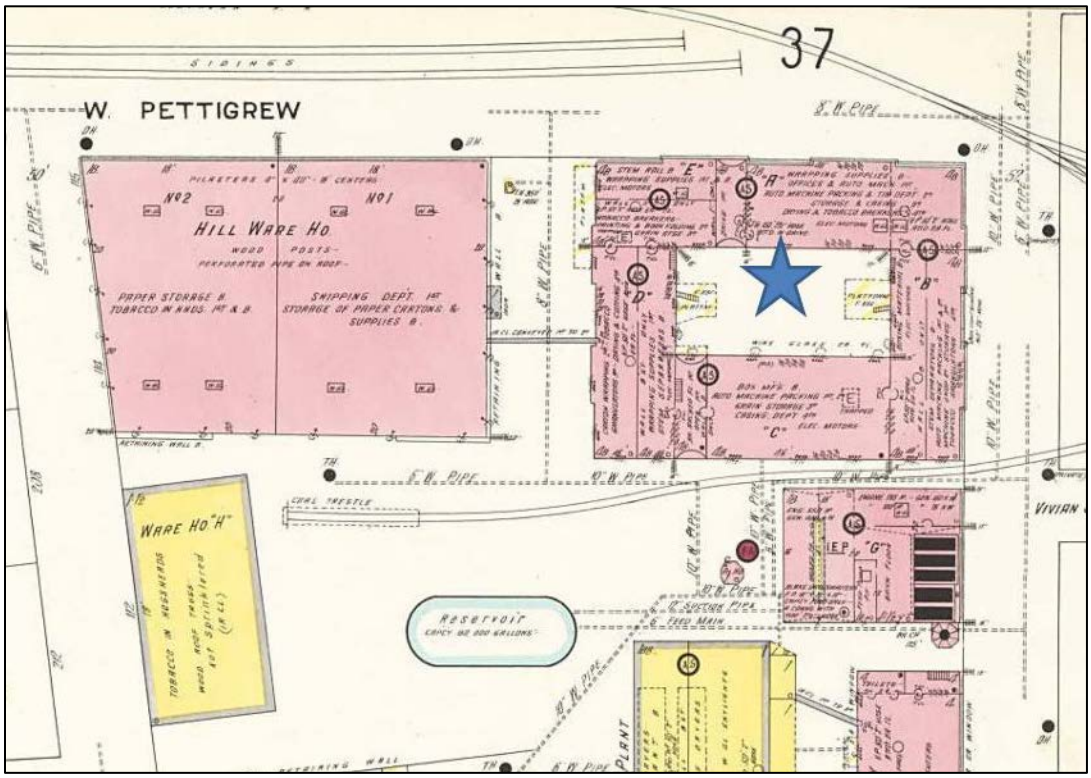


Figure 191: Looking southwest at multiple sets of tracks along Pettigrew Street and north façade of Bull Durham factory, at center and right, and Blackwell Street elevation, at left, ca.1925 (source: http://digitaldurham.duke.edu)

Figure 192: Looking east across American Tobacco complex; note spur line running off of Blackwell Street to rear of Bull Durham factory, 1926 (source: http://digitaldurham.duke.edu)

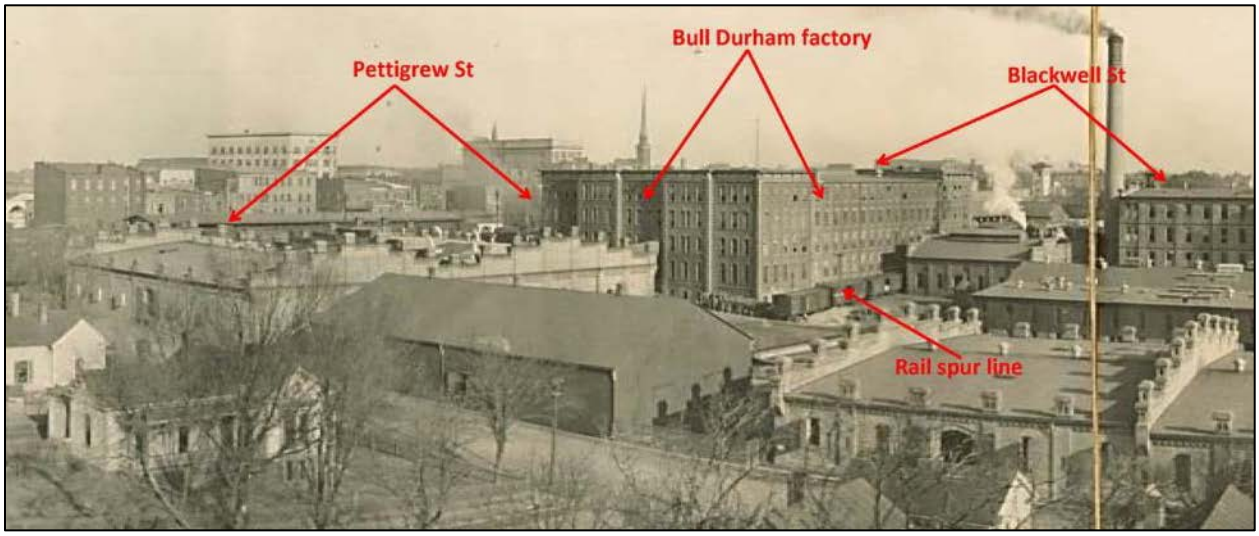
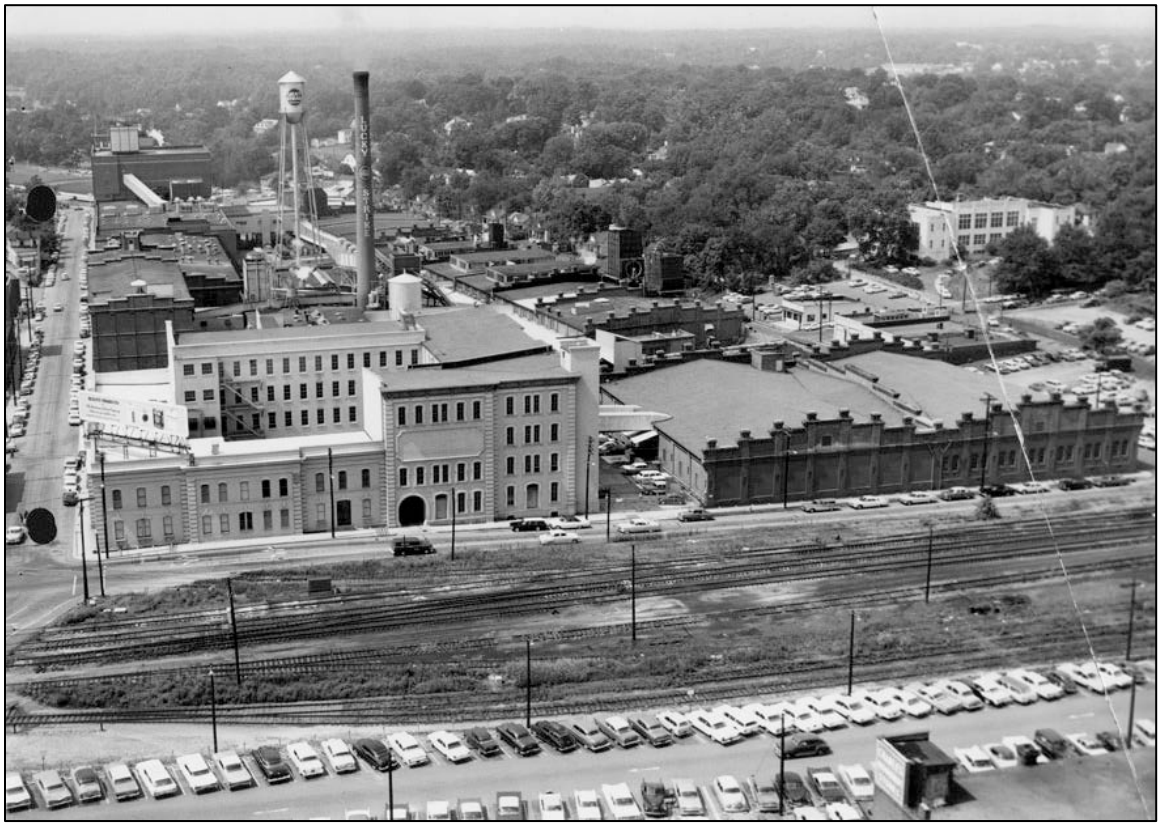


Figure 193: Looking south at Bull Durham factory at left and Hill Warehouse at right with tracks in foreground, 1965 (source: http://www.opendurham.org/buildings/old-bull-building-blackwells-bull-durham-american-tobacco-company and Durham County Public Library)



5.21 Southern Railway Bridge (Seaboard Coastline Railroad Overpass) (DH-2504/1867) (survey #223)

The Southern Railway Bridge (Seaboard Coastline Railroad Overpass) carries railroad tracks over South Roxboro Street at East Pettigrew Street in Durham (Figure 194). It was determined eligible for National Register listing in 1999 under Criterion A in the area of transportation and under Criterion C for its design. The bridge is part of the 1854 NCRR alignment, although it was built as part of a grade-separation program in the 1929. The FTA determined that it retains its integrity.

Figure 194: Southern Railway Bridge looking north from East Pettigrew Street

The Southern Railway Bridge does not have any precisely delineated boundaries. The land it stands on has no parcel number and is flanked to the east and west by, but separate from, parcel 215183, which is owned by the NCRR. The bridge's boundaries likely encompass its footprint, including its wingwalls (Figure 195 and Figure 196). The bridge is located in a dense urban setting that includes industrial, commercial, office, governmental, and transportation-related buildings and facilities.

Figure 195: Southern Railway Bridge footprint, at left, and location with no detailed boundary, at right (sources: Circa, Inc., March 2004 "Southern Railway Bridge" survey form, at left, and http://gis.ncdcr.gov/hpoweb/, at right)

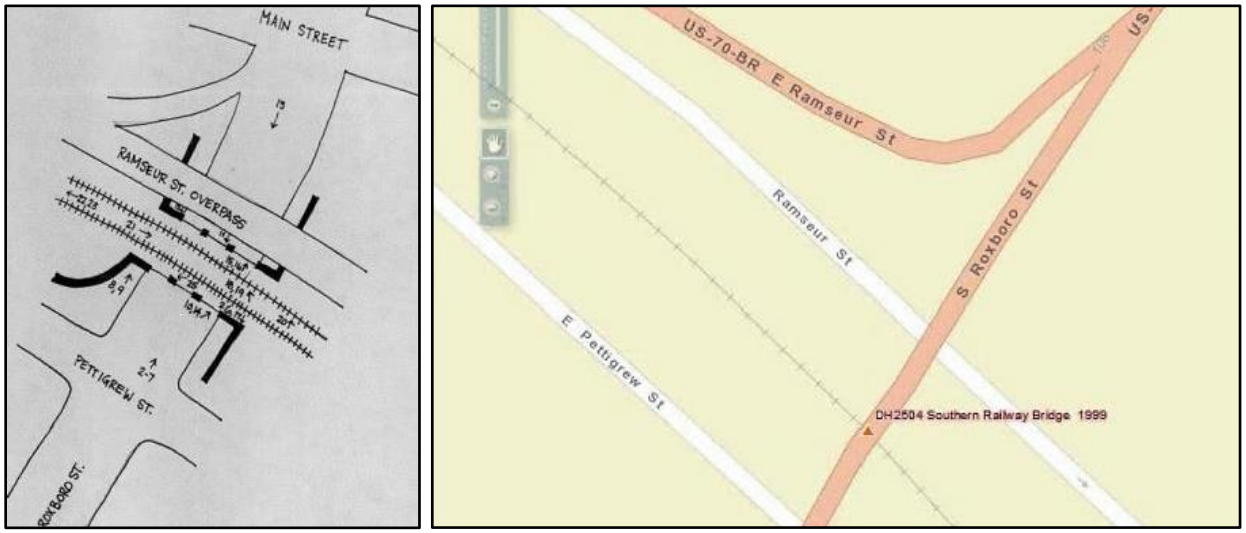
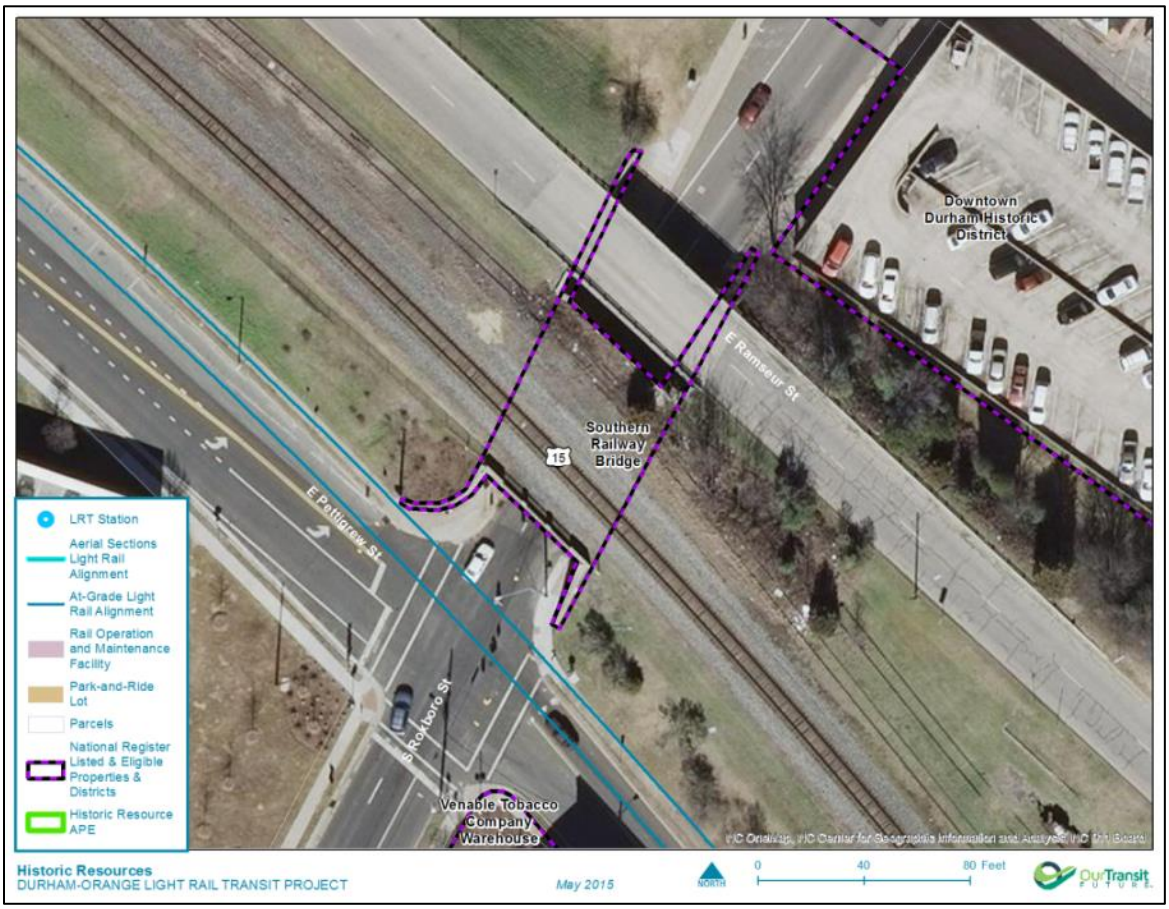


Figure 196: National Register boundaries of Southern Railway Bridge (Seaboard Coastline Railroad Overpass) in proximity to proposed project



To avoid having a direct adverse effect on the bridge, the design of the project was altered. As originally designed it would have taken a portion of the bridge's southwestern wing wall. The proposed project was therefore shifted to the south so that it would take no property located within the bridge's National Register boundaries. The distance that the project could be shifted to the south was limited, however, by the presence of the National Register-listed Venable Tobacco Company Warehouse, which is located immediately south of the bridge on the opposite side of East Pettigrew Street.

The proposed project would be located to the south of the bridge and its National Register-eligible boundaries, within the current northern lane of East Pettigrew Street (Figure 32 at center and **Error! Reference source not found.**). East Pettigrew would be reduced from three lanes to two, west of Roxboro Street, and from three lanes to one east of Roxboro.

The project near the bridge is within an urban setting historically supported by the rail line of which the bridge is an integral part (Figure 197 through Figure 201). It would therefore not introduce a notable new visual element to the setting. Due to the resource's nature as a heavy-duty, functioning highway underpass and railroad bridge, it would also not be affected by noise or vibration (see *Noise and Vibration Technical Report* (May 2015) and *Effects of Light Rail Transit Ground Vibrations on the Southern Railway Bridge* Report (July 2015)).

The historic and current distance from the bridge to the existing railroad tracks is 0 feet, as the bridge carries the tracks over Roxboro Street. The distance from the southern edge of the bridge's curved wingwall to the nearest northern edge of the proposed light rail track is approximately 3.7 feet. The distance from the southern edge of the bridge's curved wingwall to the northern edge of a car running along the nearest proposed light rail track is approximately 1.2 feet. And the distance from the western end of the bridge's curved wingwall to the eastern edge of a proposed new retaining wall is approximately 0.1 feet. An expansive/contractive neoprene material will be positioned between the curved wingwall and the proposed new wall; it will be attached to the new wall, not the curved wingwall. The distance of the eastern edge of the Southern Railway Bridge to the proposed Dillard Street Station, which is the station closest to the bridge, is approximately 1,300 feet.

The proposed project will not take any property from within the National Register boundaries of the Southern Railway Bridge. It would therefore not have a direct effect on the historic property. The project would not diminish the characteristics that rendered the bridge eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. There will be no noise and vibration impacts on the bridge (see *Effects of Light Rail Transit Ground Vibrations on the Southern Railway Bridge* Report (July 2015)). Given the extensive historic presence of railroad lines, the bridge's historic and current carrying of railroad tracks, and the bridge's heavily built-up urban setting, the proposed project would have **No Adverse Effect**, on the Southern Railway Bridge.

Figure 197: Design for proposed project at intersection of East Pettigrew and South Roxboro streets; Southern Railway Bridge at upper left

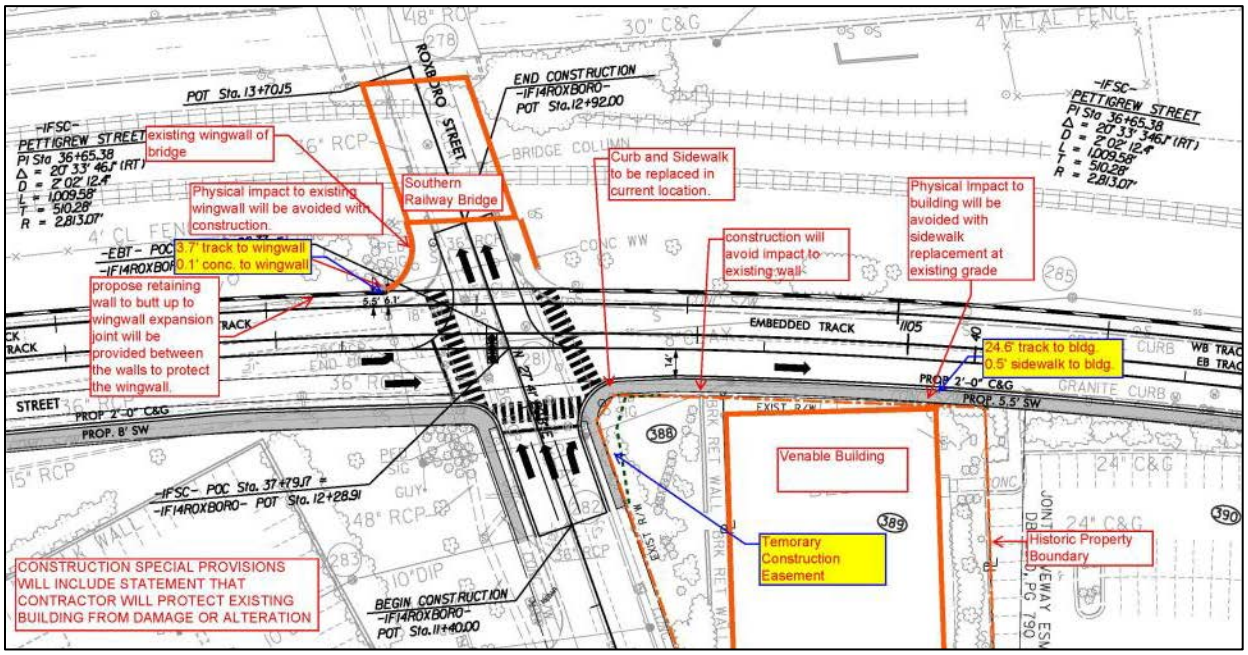
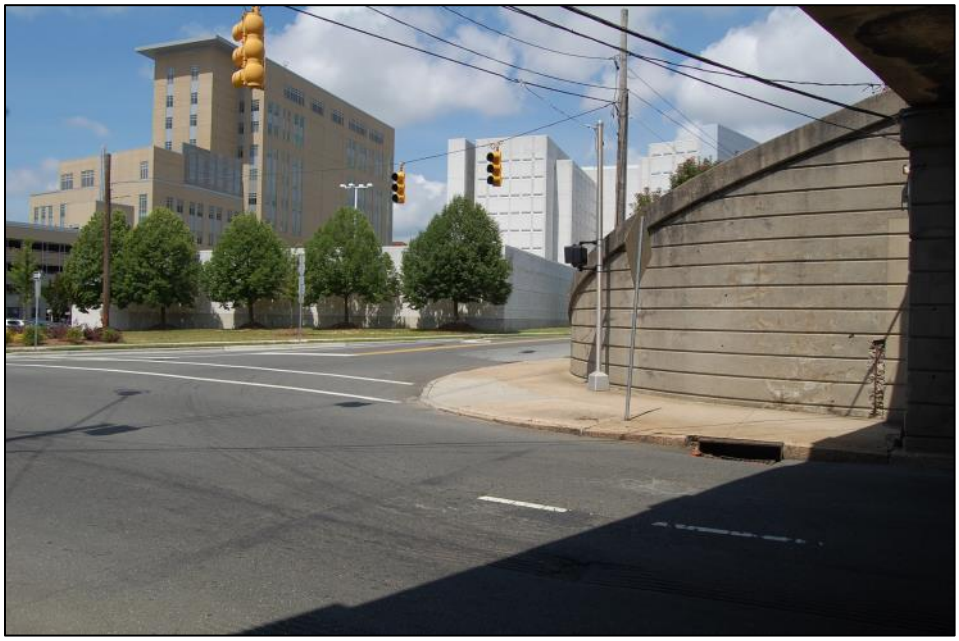


Figure 198: View looking northwest along East Pettigrew Street toward South Roxboro Street, with bridge at center and Downtown Durham Historic District in distance; proposed project would run in north lane of Pettigrew Street at far right

Figure 199: View looking north from intersection of East Pettigrew Street and South Roxboro Street toward bridge and Downtown Durham Historic District; proposed project would run in far lane of Pettigrew Street

Figure 200: View looking northeast along East Pettigrew Street toward South Roxboro Street, with bridge and curved wingwall at left; proposed project would run in north lane of Pettigrew Street at left

Figure 201: View looking south west from bridge at intersection of East Pettigrew Street and South Roxboro Street toward Durham County courts building at left and jail at center; proposed project would run in near lane of Pettigrew Street



5.22 Venable Tobacco Company Warehouse (DH-97) (survey #224)

The Venable Tobacco Company Warehouse was listed in the National Register in 1985. It was determined eligible for listing in the National Register under Criterion A in the area of industry for its association with Durham's tobacco industry and Criterion C in the area of architecture for its handsome slow-burn design (**Error! Reference source not found.**). The former warehouse is located at 302-304 East Pettigrew Street in Durham. Its National Register boundaries encompass just under one acre. The FTA determined that the warehouse retains its integrity.

Figure 202: Venable Tobacco Company Warehouse: north and west elevations from elevated railroad alignment

The warehouse is built almost up to a sidewalk and East Pettigrew Street at its north. Immediately north of Pettigrew Street is the 1854 NCRR alignment and the historic core of downtown Durham. To the warehouse's east are the Venable Tobacco Company Prizery and parking lots. Parking lots and car dealerships are located south of the warehouse. NC 147 runs to their south. To the west is a parking deck and a modern multi-story courts building and jail. The proposed project would be located to the north of the warehouse and its National Register-eligible boundaries, within the current northern lane of East Pettigrew Street. Pettigrew would be reduced from three lanes to one in front of the warehouse. The project would also replace the sidewalk and curb currently located to the north and west of the complex, along Pettigrew Street and Roxboro Street. The project would be within an urban setting that includes industrial, commercial, office, governmental, and transportation-related buildings and facilities (Figure 32 at center, Figure 203, and Figure 204).

Figure 203: National Register boundaries of the Venable Tobacco Company in proximity to proposed project

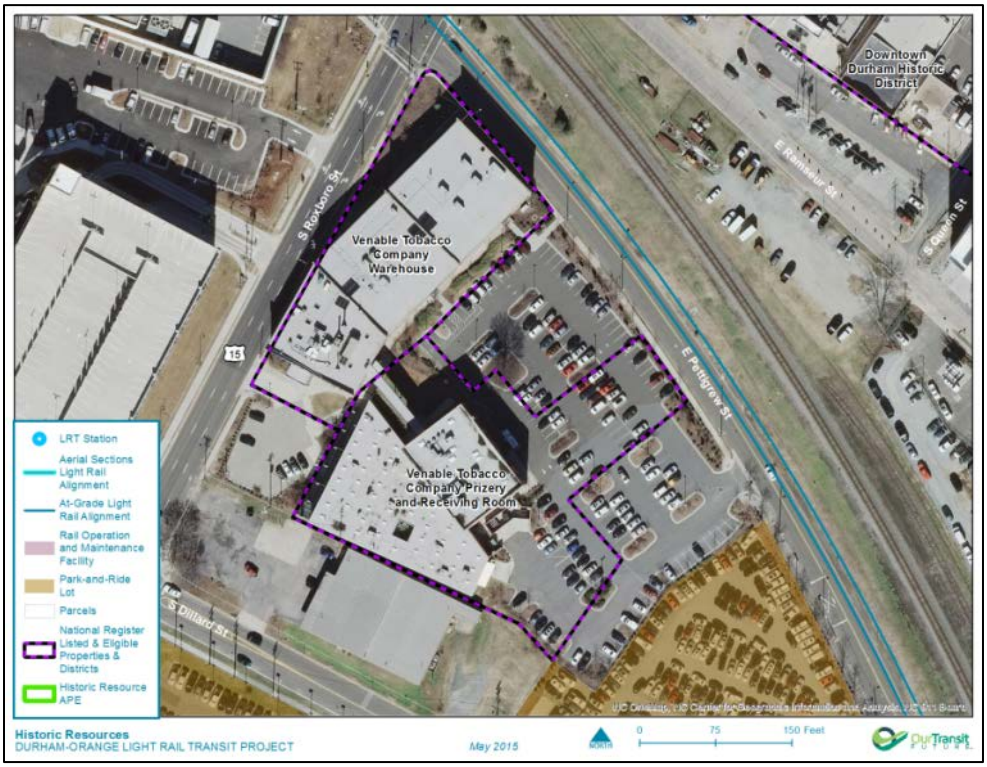
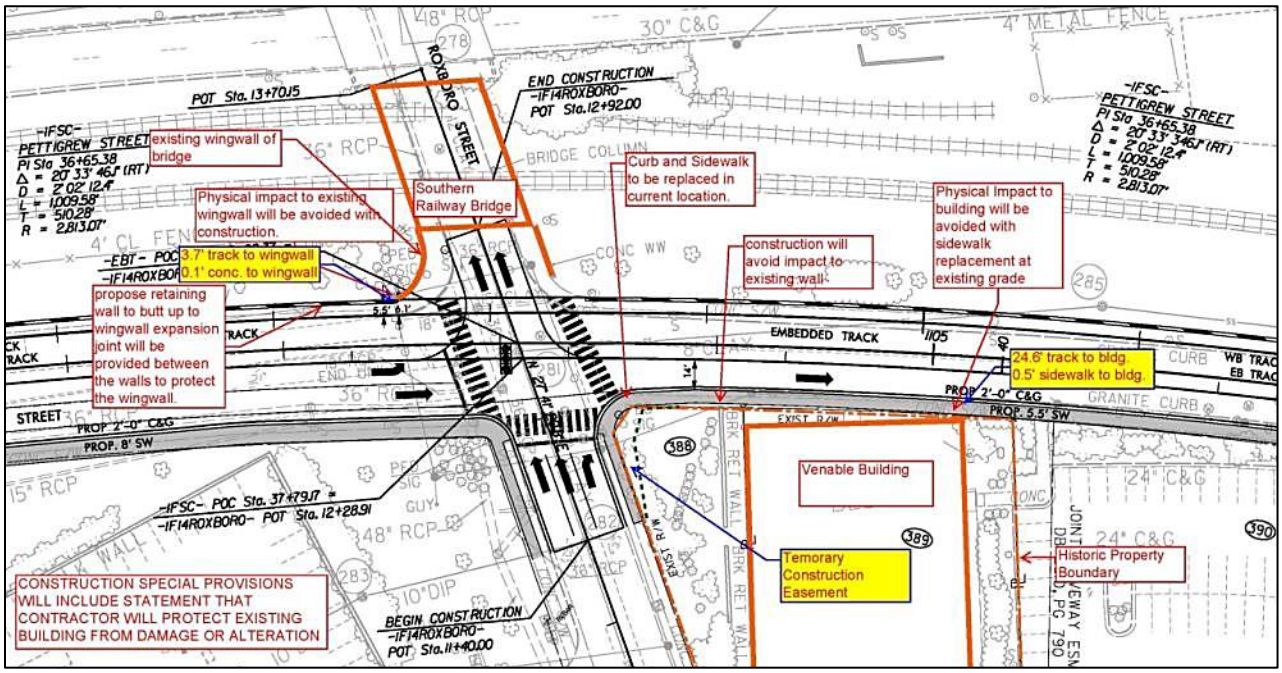


Figure 204: Design for proposed project at intersection of East Pettigrew and South Roxboro streets; Venable Tobacco Company Warehouse at lower right



The distance from the northern edge of the Venable warehouse to the nearest southern edge of the proposed light rail track is approximately 24.6 feet. The distance from the northern edge of the warehouse to the southern edge of a car running along the nearest proposed light rail track is approximately 22.1 feet. The distance from the northern edge of the warehouse to the southern edge of the proposed replacement sidewalk is approximately 0.5 feet; the sidewalk is located outside of the warehouse's National Register boundaries. And the distance of the eastern edge of the warehouse to the proposed Dillard Street Station, which is the station closest to the warehouse, is approximately 1,100 feet. The existing retaining wall to the west of the Venable warehouse was built ca.2008. The grassy area to the west of the wall will be raised less than one foot and sloped down toward the sidewalk during construction, which will require a construction easement. This area is within the National Register boundaries but, as noted below, it is on the site of a former filling station and its land was never historically associated with the warehouse.

The project near the warehouse is within a dense urban setting currently and historically supported by rail lines (Figure 205 through Figure 207). It would therefore not introduce a notable new visual element to the setting.

Sanborn maps of Durham of 1907 and 1913 depict the historically close proximity of the Venable warehouse to railroad tracks (Figure 208 and Figure 209). On the two maps, the distance from the north façade of the warehouse to a railroad siding is approximately 10 feet. Historic photographs also depict the close proximity of the warehouse to tracks. Further, the maps and photographs show that the northwestern corner of the warehouse's National Register boundaries were never historically associated with the warehouse (Figure 210 through Figure 213). The parcel at that corner was created when Pine Street was removed and Roxboro Street was extended south of the tracks. When it was created, it first held a filling station. The parcel has been vacant for more than 25 years and is still under ownership separate from the warehouse

The proposed project will not take any property from within the National Register boundaries of the Venable warehouse. The construction easement would be temporary. It would therefore not have a direct effect on the historic property. The project would not diminish the characteristics that rendered the historic property eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. There will be no noise and vibration impacts on the warehouse (see *Noise and Vibration Technical Report* (May 2015)). Given the historic presence of railroad lines and the historic and current, heavily built-up urban setting, the proposed project would have **No Adverse Effect**, on the Venable Tobacco Company Warehouse.

Figure 205: View looking southwest from NCRR alignment across East Pettigrew Street at warehouse with courts building and jail in distance

Figure 206: View looking west along East Pettigrew Street toward South Roxboro Street with warehouse at left and Southern Railway Bridge and Downtown Durham Historic District in distance; proposed project would run in lane of Pettigrew Street at right

Figure 207: View looking at northwest corner of East Pettigrew and South Roxboro streets with warehouse beyond; proposed project would take temporary easement at corner within open parcel never historically associated with warehouse, but within National Register boundaries

Figure 208. 1907 Sanborn map depicting Venable Tobacco Company Warehouse (labeled Durham Tobacco Storage); note warehouse built up against Pine Street prior to change in road alignment, railroad siding at immediate right (north) side of building, and rail lines beyond (west at top)

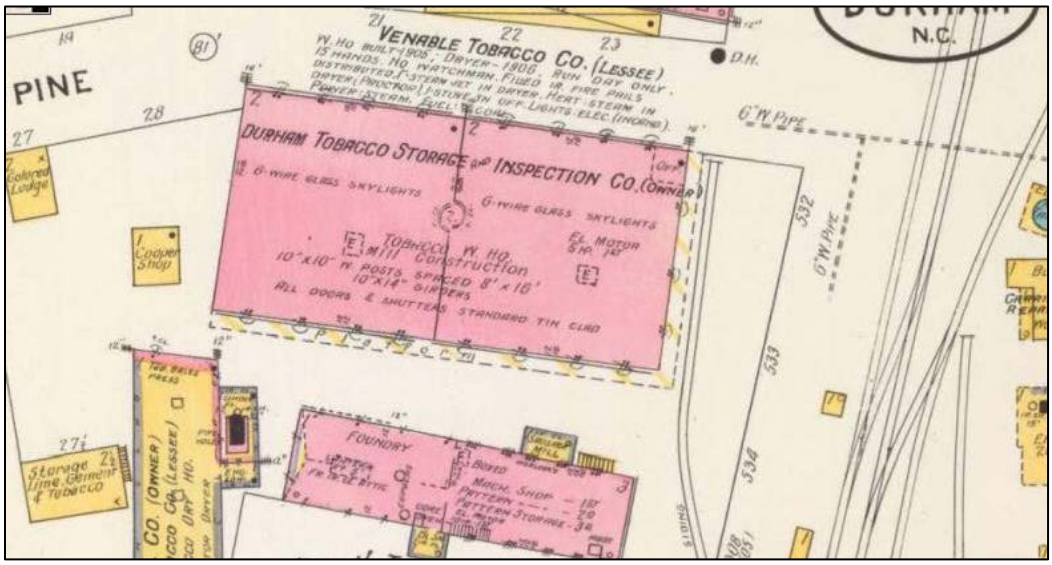


Figure 209: Venable Tobacco Company Warehouse (labeled Durham Tobacco Storage) at left with Pine Street and railroad siding in place and rail lines to north at top

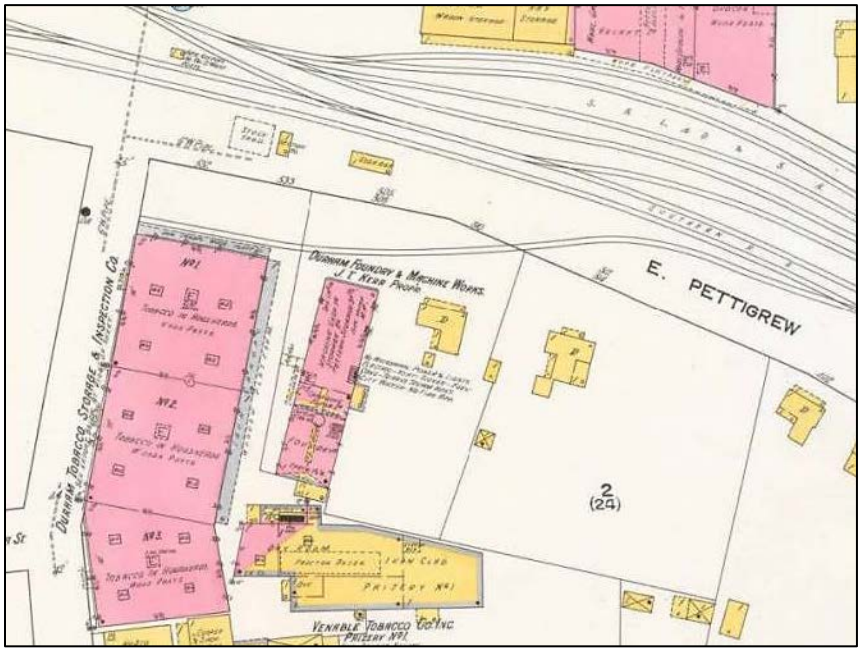


Figure 210: Looking east at warehouse partially obscured by former Lyon Tobacco Company factory; note Pettigrew Street and numerous rail lines to left (north), 1920s (source: http://www.opendurham.org/buildings/southern-railway-freight-depot with arrows added)

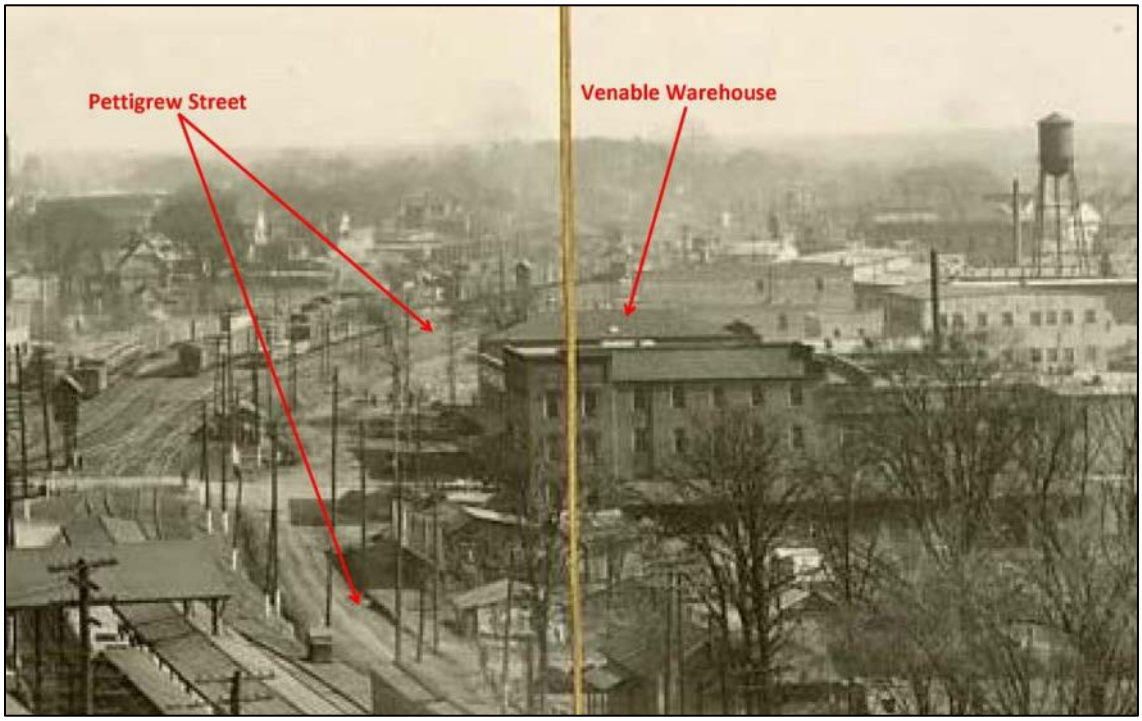


Figure 211: 1937 Sanborn map showing realignment of Pine/Roxboro Street, creating new triangular parcel at left occupied by filling station (north at top)

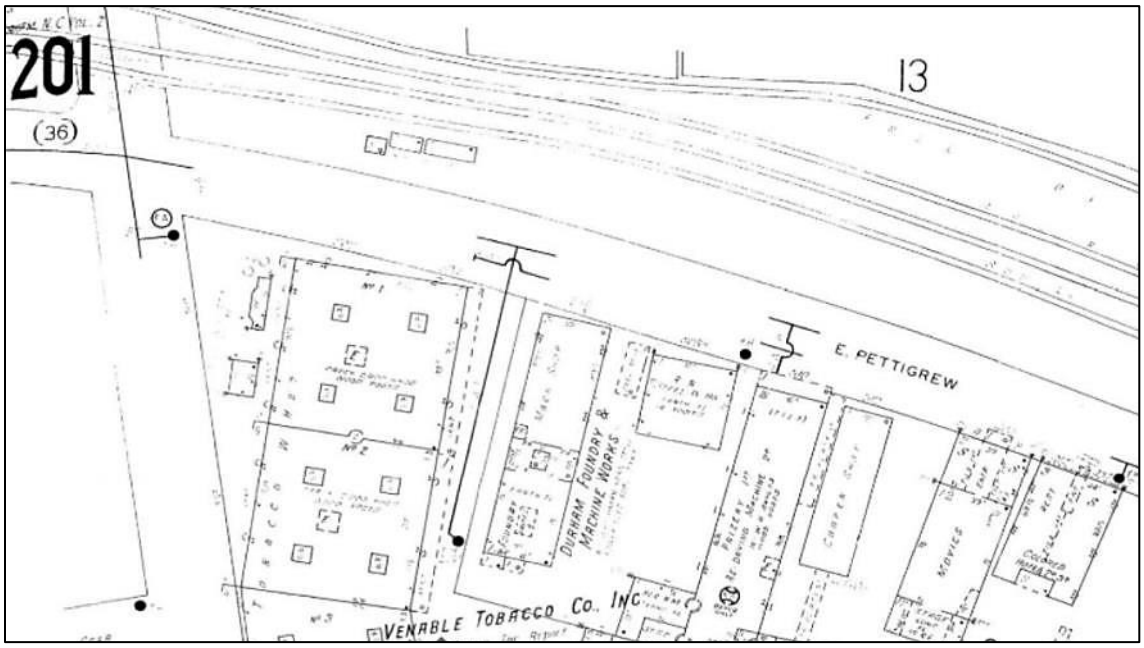


Figure 212: Looking southeast at warehouse at center with one-story filling station to right and no-longer-extant Southern Railway freight depot at far right, 1962 (source: http://www.opendurham.org/buildings/venable-tobacco-company and Durham *Herald Sun*)

Figure 213: Looking southeast from tracks at warehouse across Pettigrew Street; note that separate triangular lot that held filling station is vacant, 1989 (source: http://www.opendurham.org/buildings/venable-tobacco-company and Durham *Herald Sun*)

5.23 Venable Tobacco Company Prizery and Receiving Room (DH-2560) (survey #225)

The Venable Tobacco Company Prizery and Receiving Room was listed in the National Register in 2003. It was determined significant under Criterion A in the area of industry for its association with Durham's tobacco industry (Figure 214). The former prizery is located at 302-304 East Pettigrew Street in Durham, adjacent to the Venable Tobacco Company Warehouse, which shares its address. Its National Register boundaries encompass approximately 1.5 acres. The FTA determined that the historic property retains its integrity.

Figure 214: Venable Tobacco Company Prizery and Receiving Room: north elevation

The former prizery is separated from East Pettigrew Street at its north by a parking lot. A portion of the lot from the prizery up to the street is included within its National Register boundaries. Immediately north of Pettigrew Street is the 1854 NCRR alignment and the historic core of downtown Durham. The railroad tracks and downtown Durham are also located to the prizery's east. West of the prizery are the adjacent Venable Tobacco Company Warehouse and, beyond, a parking deck and a modern multi-story courts building and jail. Parking lots and car dealerships are located south of the warehouse and north of NC 147. The project would be located at-grade about 25 feet north of the prizery's northern boundary, adjacent to the current railroad tracks. It is within an urban setting that includes industrial, commercial, office, governmental, and transportation-related buildings and facilities. It will reduce East Pettigrew Street in front of the parking lot and prizery from three lanes to one (Figure 32 at center and Figure 215 through Figure 218**Error! Reference source not found.**).

The proposed project will not take any property from within the National Register boundaries of the Venable prizery. The project would not diminish the characteristics that rendered the historic property eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. Given the historic presence of railroad lines and the historic and current, heavily built-up urban setting, the proposed project would have **No Adverse Effect**, on the Venable Tobacco Company Prizery and Receiving Room.

Figure 215: National Register boundaries of the Venable Tobacco Company Prizery and Receiving Room in proximity to proposed project

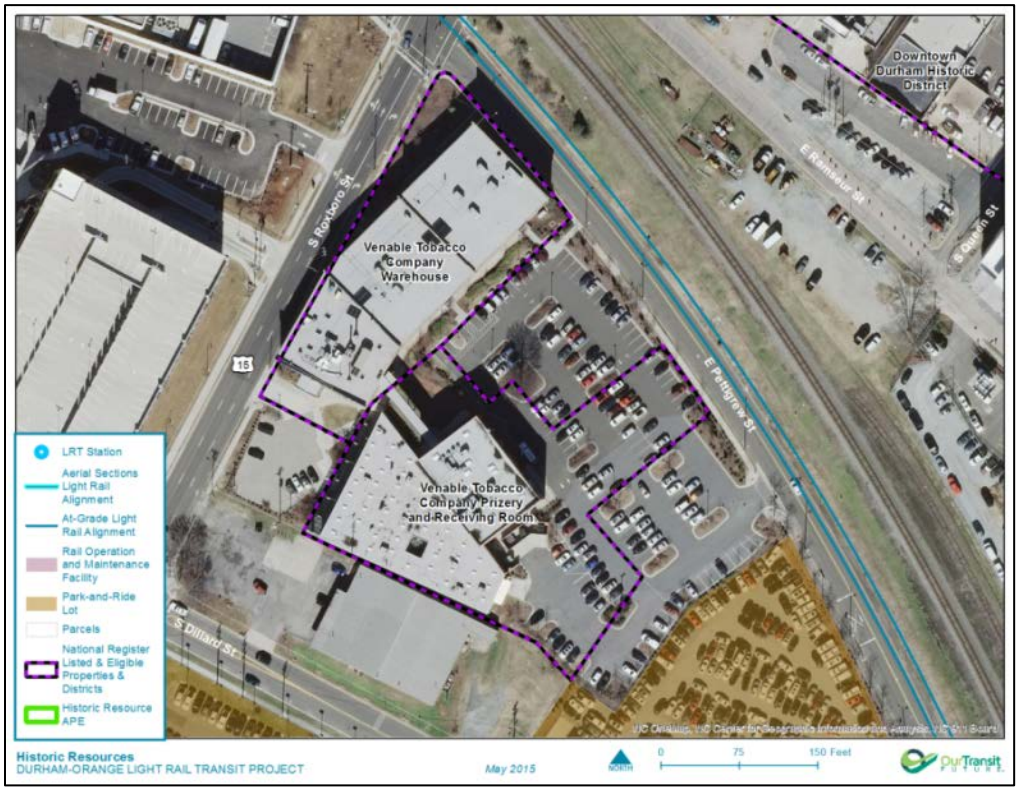


Figure 216: View looking southeast along East Pettigrew Street with Venable warehouse at right and Venable prizery in parking lot at center; proposed project would run in near lane of Pettigrew Street

Figure 217: View looking south from NCRR alignment across East Pettigrew Street at Venable prizery; proposed project would run in near lane of Pettigrew Street

Figure 218: View looking north from Venable prizery, at right, across parking lot toward East Pettigrew Street and modern Durham County Department of Public Health building beyond

5.24 Durham Water Tower and Valve House (DH-3508) (survey #247)

The Durham Water Tower and Valve House is located at 1318 East Pettigrew Street in Durham (Figure 219). The FTA determined that the resource is eligible for National Register listing under Criterion A for its association with the local activities of the Federal Emergency Administration of Public Works (FEAPW) and Criterion C as an excellent and unusually large example of a 1930s-era water tower. The FTA further determined that the tower is not National Register eligible under Criteria B or D. The history property's period of significance is 1939, the year the FEAPW built both the water tower and valve house.

Figure 219: Durham Water Tower and Valve House: looking south

The National Register-eligible boundaries of the Durham Water Tower and Valve House are the western third of parcel 119085. These boundaries, within which the tower and house stand, encompass approximately 0.4 acre of the 1.2-acre parcel. The boundaries are drawn to include acreage historically associated with the resource, which is fenced off and maintained within the larger parcel and retains its integrity. They exclude the eastern two-thirds of the parcel, which has been heavily disturbed and is used by Durham to store gravel and other materials. The northern edge of the resource's boundaries front on East Pettigrew Street and, just opposite, the 1854 NCRR alignment. NC 147 and an interchange pass to the south. On the west is a bus maintenance facility; on the east are vacant lots and scattered housing.

The eastern terminus of the proposed project, including a proposed parking deck, would be located at the junction of East Pettigrew Street with Chatham Place and East Alston Avenue, about 400 feet west of the tower's National Register-eligible boundaries (Figure 33 at left center and **Error! Reference source not found.**). The tower and the project near it are within an urban setting characterized by industrial and transportation-related buildings and small single-family residences. The buildings and trees separating the historic property from the alignment, along with the distance of the property from the project, would screen and separate it from the project (Figure 221 and Figure 222). Given the historic and current setting of the historic property and the tower and valve house's industrial character, the proposed project would not alter or diminish the historic property's integrity of location, design, setting, materials, workmanship, feeling, or association. Therefore, the proposed project would have **No Effect** on the Durham Water Tower and Valve House.

Figure 220: National Register boundaries of Durham Water Tower and Valve House in proximity to proposed project

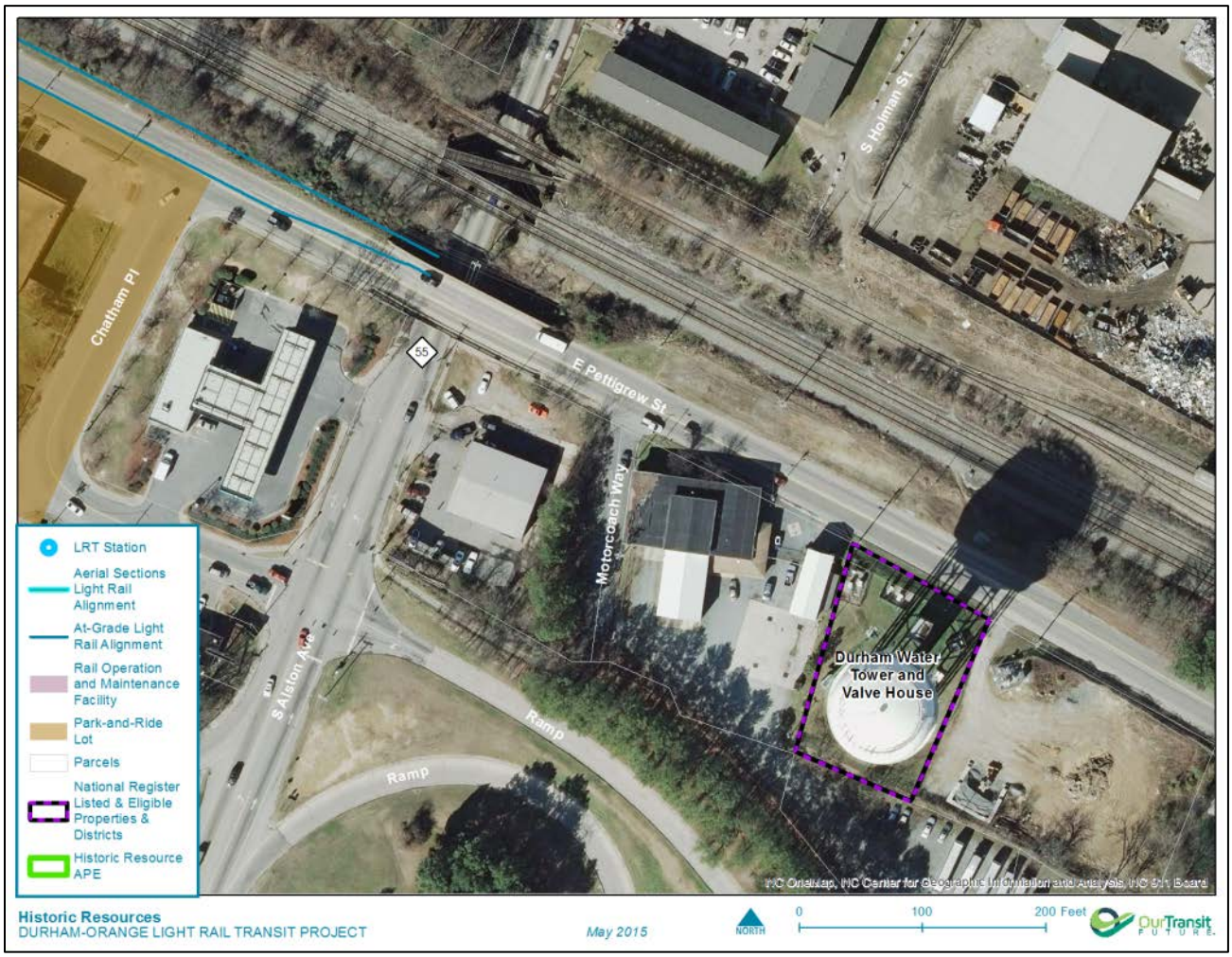


Figure 221: View looking northwest along East Pettigrew Street with tower and valve house at left; proposed project would end at Pettigrew Street at top right distance of image

Figure 222: View looking southeast from East Pettigrew Street between Chatham Place and South Alston Avenue toward water tower in distance; proposed project would terminate in Pettigrew Street just past building at far right

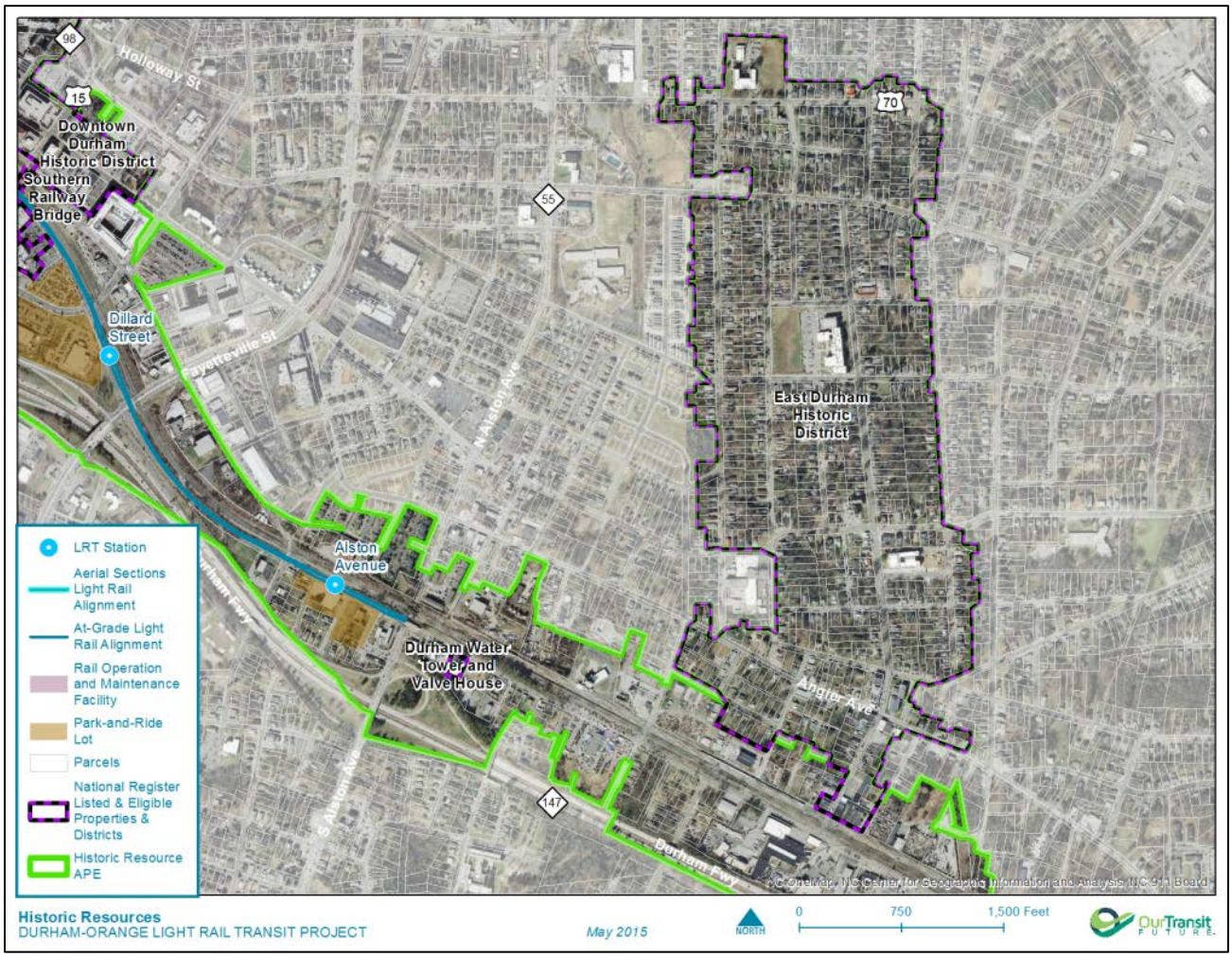
5.25 East Durham Historic District (DH-2184) (survey #246)

The East Durham Historic District was listed in the National Register in 2004. It was listed under Criterion A in the area of community development and planning: it is the largest and most densely populated historic neighborhood in Durham. It was also listed under Criterion C in the area of architecture for its extensive, intact collection of representative, early twentieth-century housing in Durham. The FTA determined that the historic district retains its integrity. The district is roughly bounded by the NCRR right-of-way on the south, North Guthrie Avenue on the east, Holloway Street on the north, and Hyde Park Avenue, South Plum Street, and Vale Street on the west, in Durham. The district contains 965 resources, most of which are single-family residences, within its approximately 226 acres (Figure 223). The southernmost edges of the district's boundaries touch East Pettigrew Street just north of the 1854 NCRR alignment. From East Pettigrew Street the district extends more than a mile north to the north side of Holloway Street.

Figure 223: East Durham Historic District: south facades of 1703 and 1705 Angier Avenue, left to right

The proposed project, including the Alston Avenue Station and parking deck, would be built at-grade about 2,100 feet west of the closest point of the historic district's western edge and would not be visible from the district (Figure 33 at top center and Figure 224). It would not alter or diminish the district's integrity of location, design, setting, materials, workmanship, feeling, or association). Therefore the proposed project would have **No Effect**, on the East Durham Historic District.

Figure 224: National Register boundaries of East Durham Historic District in proximity to proposed project



Appendix A – Section 106 Correspondence and Supporting Documentation

CIN 120217

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

October 10, 2013

Juanita Swink
Triangle Transit
PO Box 13787
Research Triangle Park, NC 27709

Re: Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738

Dear Ms. Swink:

Thank you for your email of September 19, 2013, transmitting the minutes resulting from the meeting and webinar of August 27, 2013, concerning the above project.

As noted during the meeting, staff of the Office of State Archaeology have reviewed the Environmental Methodology Report and concur that it is appropriate for the project. We look forward to working with your consultants, URS Corporation, on this project and sharing information with them. As also noted during the meeting, archaeological site location information is sensitive and is protected pursuant to NC General Statute 70-18. Archaeological site locations are not to be made available to the public nor included in documents available to the public due to the risk of harm to the resources.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or renee.gledhill-earley@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

Please note, the correct mailing address for environmental review projects is:

Renee Gledhill-Earley
State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699-4617

FedEx: Renee Gledhill-Earley
State Historic Preservation Office
109 East Jones Street, 2nd Floor
Raleigh, NC 27601

Or you may submit by email to: environmental.review@ncdcr.gov

Using this address will help ensure our timely receipt. Otherwise, your submittal may be lost or delayed in reaching us.

01387

U.S. Department
of Transportation
Federal Transit
Administration

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Alabama, Florida, Georgia,
Kentucky, Mississippi,
North Carolina, Puerto
Rico, South Carolina,
Tennessee, Virgin Islands

230 Peachtree St.,
N.W., Suite 800
Atlanta, GA 30303
404-865-5600

October 8, 2014

Ms. Renee Gledhill-Earley
State Historic Preservation Office
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

RE: Authorization to Initiate Section 106 Consultation with SHPO/THPO and Others

Dear Ms. Gledhill-Earley:

This letter is notify you that the Federal Transit Administration (FTA) in cooperation with Research Triangle Regional Public Transportation Authority (dba "Triangle Transit") is currently in the preliminary design phase for a proposed major transit investment in Durham and Orange Counties that will be a Federal undertaking should FTA provide financial assistance. As such, the proposed project is subject to Section 106 of the National Historic Preservation Act of 1966, as amended, and associated implementing regulations 36 CFR 800.

The proposed project would consist of the planning, development, and construction of a Light Rail Transit (LRT) system on double track alignment approximately 17.1 miles between east Durham (Alston Avenue/NCCU Station) and UNC Chapel Hill (UNC Hospitals Station). The proposed LRT alignment connects a range of activity centers including North Carolina Central University, east and downtown Durham, Duke University, Duke University Medical Center, Durham Veterans Administration Medical Center, the Friday Center, UNC Hospitals, and several park-and-ride lots. Convenient connections also will be made to Amtrak and local, regional, and intercity bus service in downtown Durham.

The exact locations of each element of the LRT are still to be determined however the LRT alignment generally follows the North Carolina Railroad Corridor, Erwin Road, US 15-501, I-40 and NC 54. A total of 17 stations are planned.

Per Subpart A, Section 800.2(a)(3) and 800.2(c)(4) of 36 CFR 800, FTA is authorizing TTA as an applicant for federal assistance, to prepare information, analyses, and recommendations regarding the Section 106 consultation process for the proposed project. The delegated authority to initiate consultation **does not extend** legal responsibility for any and all findings and determinations, **as this shall remain with FTA.** FTA will also remain responsible for all government-to-government relationships with all federally recognized tribes for the proposed project.

Thank you in advance for your assistance with the proposed project. Representatives from TTA and/or their consultants will be contacting your office as the project proceeds. Please contact Mr. Stan Mitchell of my staff at (404) 865-5643 or at stanley.a.mitchell@dot.gov should you have any questions.

Sincerely,

Yvette G. Taylor, Ph.D.
Regional Administrator

CC: Meghan Makoid, Triangle Transit Authority, P.O. Box 13787,
Research Triangle Park, NC 27709

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November 6, 2014

Renee Gledhill-Earley, Environmental Review Coordinator
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699-4617

RE: Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0378

Dear Ms. Gledhill-Earley:

Thank you for consulting with the Federal Transit Administration (FTA) and Triangle Transit (TTA) and for meeting with us on August 25, 2014. As you may recall, we reviewed the preliminary historic Area of Potential Effects (APE) that TTA submitted to the North Carolina State Historic Preservation Office (SHPO) for the proposed Durham-Orange Light Rail Transit (D-O LRT) project (an Undertaking pursuant to 36 CFR 800.4(a)(1) and 800.16(d)).

During this meeting SHPO agreed that the proposed APE encompassed the geographic area within which the D-O LRT project might directly affect historic properties. However, SHPO expressed concern regarding the width of the proposed APE around stations due to the potential for indirect effects upon historic properties through future induced development.

SHPO requested that FTA consider expanding the APE to ½ mile around five station areas:

- Patterson Place Station
- Ninth Street Station
- Buchanan Station
- Durham Station
- Dillard Station

As a result of this consultation, FTA and TTA considered suggestion to expand the APE for these stations to determine the most appropriate approach for addressing SHPO's concerns. FTA also reviewed TTA's *Durham-Orange Light Rail Transit Corridor Transit Oriented Development (TOD) Assessment* Report (July 2011). This document was prepared to provide an initial evaluation of the potential future TOD within and near the station areas. FTA believes that these projections identify the potential for induced growth within and around the station areas.

FTA and TTA concluded that the best approach for addressing the potential effects of induced growth on historic resources is through the Indirect and Cumulative impact analysis, which will be completed as part of the National Environmental Policy Act (NEPA) process and included in the Draft Environmental Impact Statement. The Indirect and Cumulative impact analysis in the NEPA document will use information as appropriate from the TOD report and will

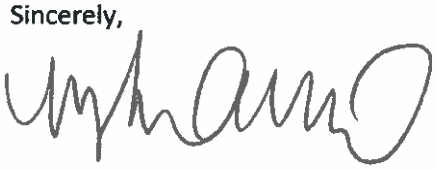
include an expanded discussion around the station areas where growth is anticipated directly, indirectly and cumulatively from the project. This analysis will consider the effects of potential growth from TOD on historic properties ½ mile around the stations. FTA and TTA will continue to consult with SHPO to address its concerns related to impacts on historic properties as part of the NEPA process.

In response to SHPO's concerns about the APE, FTA and TTA have revised the APE boundaries for historic properties along the entire D-O LRT project corridor. While the revised APE does not extend to ½ mile around the five stations, it follows property boundaries, includes the full boundaries of the National Register-listed or eligible properties/districts located partially or fully within the originally proposed APE, and considers physical barriers such as NC 147 to the south. These revisions are reflected in the updated APE maps and described in the enclosed revised Historic Resources – *Durham-Orange Light Rail Transit Historic Resources Area of Potential Effects Report*.

At the request of FTA, TTA submits this letter and the enclosed documents for your files. The enclosed APE for historic resources defines the APE for the Undertaking and will be used to evaluate and determine the effects. Please call Stan Mitchell with FTA Region IV at (404) 865-5643 or email stanley.a.mitchell@dot.gov if you have any questions about the enclosed APE.

Should you need any additional D-O LRT project information, please contact me at (919) 485-7554 or email me at mmakoid@triangletransit.org. We look forward to continued consultation with your office as the D-O LRT project progresses.

Sincerely,



Meghan Makoid, AICP
Environmental Planner

cc: David King, General Manager, Triangle Transit
Stan Mitchell, Environmental Protection Specialist, FTA Region 4

Enclosures:

- *October 2014 - Durham-Orange Light Rail Transit Historic Resources Area of Potential Effects*
- *July 2011 - Durham-Orange Light Rail Transit Corridor Transit Oriented Development (TOD) Assessment*

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Dolores A. Hall, Deputy State Archaeologist
North Carolina Office of State Archaeology, Department of Cultural Resources
4619 Mail Service Center
Raleigh, NC 27699-4619

November 7, 2014

RE: Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738.

Dear Ms. Hall:

Thank you for consulting with the Federal Transit Administration (FTA) and Triangle Transit (TTA) on August 25, 2014 and for meeting with us on August 25, 2014. As you may recall, we reviewed the preliminary archaeology Area of Potential Effects (APE) that TTA submitted to the North Carolina Historic Preservation Office for the proposed Durham-Orange Light Rail Transit (D-O LRT) project. SHPO agreed that the proposed APE encompassed the geographic area within which the D-O LRT project may affect archaeological resources. As such, FTA and TTA will use this APE to evaluate and determine the effects.

Also during the meeting on August 25, 2014, SHPO requested to meet with TTA's archaeological consultant, Matthew Jorgenson of URS Corporation (URS) to discuss the future archaeological fieldwork needs. The meeting between SHPO and Mr. Jorgenson occurred on September 14, 2014. During the meeting, SHPO identified the need for Phase I archaeological survey work along five sections of the D-O LRT project:

1. north of Mason Farm Road between UNC and US 15/501,
2. between George King Road and Interstate 40 (I-40),
3. the Leigh Village, Farrington Road, or Patterson Place Rail Operations and Maintenance Facility (ROMF) (if any of those options are chosen as the one ROMF planned for the entire project area),
4. the Gateway Park-and-Ride lot west of I-40 at the US 15/501 interchange, and
5. between US 15/501 and Erwin Road.

Further, it was agreed by SHPO that Phase II testing of site 31DH655**, which was previously recommended as potentially eligible for the National Register of Historic Places (NRHP) (Webb and Millis 1999:31), might be needed; however, re-locating and re-assessing the current state of the site would be the recommended first step to determining if this testing, recommended 15 years ago, is still warranted. Similarly, additional work in the form of mechanical removal of historic overburden/fill at potential site (PS) 1 (based on historic map evidence depicting a planning mill, office building, and a Durham Granite Company facility in the area) (Webb and Millis 1999:30), located immediately east of Buchanan Street and south of the North Carolina Rail Road (NCRR) right-of-way, may also be needed, depending on the relation of the chosen alignment of the D-O LRT and PS-1. Finally, similar mechanically-assisted overburden removal at PS-3 (based on historic map evidence depicting the Durham Bottling Works in that location) (Webb and Millis 1999:37), located west of Blackwell Street and south of the NCRR right-of-way, may be needed. PS-3 was initially assessed as not being adversely affected by the Wake-Durham Regional Rail project based on the plan to build the system on the existing gravel berm; however, as recommended by Webb and Millis (1999:37), the mechanical exposure

work may be needed if project plans include the removal or alteration of the berm, or if other ground disturbing activities are required.

As discussed in the meeting, the archaeological fieldwork tasks listed above would be performed at an undetermined future date during the final design phase of the project. TTA also understands that the archaeologist(s) involved in the fieldwork portion of the project would be required to obtain a permit from the state for any archaeological work performed on state-owned lands. Finally, TTA acknowledges that should significant changes to the D-O LRT alignment be made during the life cycle of the project, the above information would be amended as appropriate and further consultation with your office would be performed to address archaeological needs for any areas added to the project's APE.

At the request of FTA, TTA submits this letter and the enclosed document for your files. The enclosed document, *Archaeological Background Information: Durham-Orange Light Rail Transit Project*, summarizes known archaeological resources and past archaeological projects in relation to the archaeological APE for the proposed project. The document also makes recommendations regarding future fieldwork needs for the project as currently planned.

Please call Stan Mitchell with FTA Region IV at (404) 865-5643 or email stanley.a.mitchell@dot.gov if you have any questions about the APE for archaeological resources. Should you have any questions about the enclosed document or need any additional D-O LRT project information, please contact me at (919) 485-7554 or email me at mmakoid@triangletransit.org.

Again, thank you for meeting with our archaeological consultant on this matter. We look forward to continued consultation with your office as the D-O LRT project progresses.

Sincerely,

Meghan Makoid, AICP
Environmental Planner

Cc: David King, General Manager, Triangle Transit
Stan Mitchell, Environmental Protection Specialist, FTA Region 4

Enclosure:
- *November 2014 - Archaeological Background Information: Durham-Orange Light Rail Transit Project*

References Cited:

Webb, Paul A., and Heather Millis
1999 *Archaeological Survey for Phase I of the proposed Triangle Transit Authority Regional Rail Project, Durham and Wake Counties, North Carolina*. Prepared by TRC Garrow Associates, Inc., Chapel Hill, North Carolina for Parsons Brinckerhoff Quade & Douglas, Inc., Morrisville, North Carolina. Manuscript on file, North Carolina Office of State Archaeology, Raleigh.

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

January 6, 2015

Meghan Makoid
Triangle Transit
PO Box 13787
Research Triangle Park, NC 27709
mmakoid@triangletransit.org

Re: Architectural and Archaeological Area of Potential Effect Document and Archaeological Background Information Document, Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738

Dear Ms. Makoid:

Thank you for your letters of November 6 and 7, 2014, transmitting the documents cited above for our review concerning the above project.

We appreciate your consideration of our concerns about the appropriate Area of Potential Effects (APE's).

We agree with your determination of APE for architectural resources.

The Archaeological Resources APE document accurately outlines the APE as developed and agreed upon during the August 25, 2014 meeting with the Federal Transit Administration, your agency and our office. On September 14, 2014, staff of the Office of State Archaeology met with Matthew Jorgenson of URS Corporation, your consultant, and reviewed previous archaeological investigations in the vicinity and delineated which areas of the proposed light rail transit project will require additional consideration of archaeological resources. The Archaeological Background Information document accurately reflects the results of that consultation.

We look forward to continued consultation and collaboration with you, your consultants and the Federal Transit Administration on this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

U.S. Department
of Transportation
**Federal Transit
Administration**

REGION IV
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Renee Gledhill-Earley
Environmental Review Coordinator
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4617 Mail Service Center
Raleigh, NC 27699-4617

Re: Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0378
Submission of Architectural History Survey for the Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina: Durham – Orange Light Rail Transit Project

Dear Ms. Gledhill-Earley:

This letter continues the Section 106 process for the proposed Durham-Orange Light Rail Transit (D-O LRT) project (an "Undertaking," pursuant to 36 CFR 800.4(a)(1) and 800.16(d)).

The attached documentation is the result of the *Architectural History Survey for the Durham-Orange Light Rail Project* that was undertaken in compliance with Section 106 of the National Historic Preservation Act of 1966. This survey was undertaken to identify historic resources listed in or eligible for listing in the National Register for Historic Places that may be affected by the proposed D-O LRT Project. The survey includes all resources within the defined Area of Potential Effects (APE) transmitted to you on November 6, 2014. This survey report and appendices were prepared by Marvin Brown of URS Corporation/AECOM, Triangle Transit's project consultant.

Triangle Transit and the FTA are in the process of preparing a Draft Environmental Impact Statement (DEIS). FTA is requesting your concurrence with our eligibility determinations for properties within the APE within 30 days.

Please call Stan Mitchell with FTA Region IV at (404) 865-5643 or via email at stanley.a.mitchell@dot.gov or Carrie Walker at FTA Region IV at (404) 865-5645 or via email at julia.walker@dot.gov, of my staff if you have any questions about the attached documents.

Re: Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0378
Submission of Architectural History Survey for the Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina: Durham – Orange Light Rail Transit Project

FTA and Triangle Transit look forward to continued consultation with SHPO to address its concerns related to impacts on historic properties as part of the NEPA process.

Sincerely,

For Yvette G. Taylor, Ph.D.
Regional Administrator

Enclosures:

- *March 2015 – Architectural History Survey for the Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina: Durham – Orange Light Rail Transit Project*
- *March 2015 – Appendix A - Architectural History Survey for the Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina: Durham – Orange Light Rail Transit Project*
- *March 2015 – Appendix B – Resume of Principal Investigator for Architectural History Survey for the Durham-Orange Light Rail Project, Durham and Orange Counties, North Carolina: Durham – Orange Light Rail Transit Project*

cc: David King, General Manager, Triangle Transit
Stan Mitchell, Environmental Protection Specialist, FTA Region 4
Carrie Walker, Environmental Protection Specialist, FTA Region 4

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

April 16, 2015

Yvette G. Taylor, Ph. D.
Region IV Administrator
Federal Transit Administration
230 Peachtree Street NW, Suite 1400
Atlanta, GA 30303

Attention: Stan Mitchell — Stanley.a.mitchell@dot.gov
Carrie Walker — Julia.walker@dot.gov

RE: Architectural History Survey for Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738

Dear Dr. Taylor:

Thank you for your recent letter, which we received on March 19, 2015 and which transmitted the above-referenced historic survey report for the Durham-Orange Light Rail Transit Project. We have reviewed the report and offer the following comments.

We concur with the report's determinations of eligibility with the following notes and/or exceptions.

p. xii: The paragraph in the middle of the page is confusing as it seemed to be missing something. We believe the missing element is the beginning of the fourth paragraph on p. 2-1 – that as a result of the post-reconnaissance presentation and input from the various parties, Marvin Brown conducted additional fieldwork at and research into 11 resources and groups of resources.

pp. xii and 3-16: The entries on the Downtown Durham Historic District should note the Additional Documentation nomination listed in 2012 that updated the inventory list.

p. 3-45: The National Register assessment of the Shankle House, 2nd paragraph: Association with significant people is Criterion B, not C; and association with an architect, unless the property was his personal residence, is always Criterion C, not B. The last five sentences of this paragraph are thus irrelevant as far as Criterion B is concerned and should be deleted or moved to the end of the first paragraph and rephrased (i.e., not under C as the work of a master).

p. 3-49: The reference to the survey more than ten years ago of modernist buildings in Chapel Hill, here and elsewhere in the report, should be amended to note that it was conducted by Diane Lea and Claudia Brown. Ruth Little did selective follow-up interviews, including one with the owner of the Bowers-Nelson House, but Lea and Brown did the survey work. The foreword of Little's book alludes to "a recently updated survey of the town's modern architecture" but does not identify the surveyors, and consequently Mr. Brown naturally assumed that the work was Little's minus a closer examination of the SHPO survey files.

p. 3-55, 2nd paragraph: Again (see comments on p. 3-45 above), the suggestion that the house could be eligible under Criterion B for its association with the architect is erroneous.

p. 3-75: The Highland Woods HD should be found eligible under Criteria A and C, not just A, as the modernist designs of the majority of the houses is an intrinsic aspect of the overall design of the neighborhood and the number of houses that are so altered that they are noncontributing is not great enough to preclude significance under Criterion C.

p. 3-104 (a minor point): Sentences 5 and 6 in the first paragraph about the Robersons' purchase of property in Forest Hills is confusing (sentence 6 is not an obvious conclusion) without the insertion of the streets on which the three lots purchased in 1923 and the Tudor Revival-style house are located (Hermitage Court and Briar Cliff Road, respectively).

p. 3-115: The conclusion of ineligibility under Criterion A cannot be supported without comparing and contrasting the Ruth-Sizemore Store to the county's four other one-story frame stores similar in date and form, particularly in terms of integrity. Simply stating that it must have a high degree of integrity because there are four other similar stores is not sufficient, especially considering that the alterations to the store do not seem to be extensive.

p. 3-151: The extensive interior alterations preclude eligibility under Criterion C and possibly under Criterion A as well. Is any interior integrity retained? More information is needed to support eligibility under Criterion A.

pp. 3-179 to 3-181: The NC Mutual Building is eligible under Criterion A but the case has not been made for eligibility under Criterion C. (Note, regarding first full paragraph on p. 3-180: significance for engineering is Criterion C, not A.) The building's engineering and architecture are inextricable, as noted in the second paragraph on p. 3-180. The fact that the engineering failed to the point that structural retrofitting was required in the late 1980s is noted but played down. The impact of the retrofitting on the appearance of the building is barely noted, even though the retrofitting eliminated the appearance of the cantilevering that was essential to the building's engineering and architectural significance. Retaining strong horizontal and vertical lines is not an adequate argument for retention of sufficient integrity for eligibility under Criterion C.

We would very much appreciate the above revisions be made to the report so that we can fully agree to the determinations of eligibility and the criteria on which the determinations are based. Errata pages that we can insert into our hard copy of the report as well as a corrected copy of the report on a CD would be acceptable. For ease of future reference, we would also appreciate a complete listing of all National Register-listed and eligible properties within the project's Area of Potential Effects. The list should include the name of each property, its survey site number, National Register status and the criterion or criteria for its eligibility. The model for this list is found on pp. xi-xii, with the addition of the survey site number and criteria. We have found that such a list proves very helpful when assessing the project's effect on the historic properties.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona M. Bartos

cc: David King, TTA, dking@triangletransit.org
Marvin Brown, URS, marvin.brown@urs.com

GO Triangle

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June 25, 2015

Renee Gledhill-Earley
Environmental Review Coordinator
North Carolina State Historic Preservation Office
4617 Mail Service Center
Raleigh, NC 27699

RE: Revised Architectural History Survey and Section 106 Assessment of Effects for Historic Properties for Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738

Dear Ms. Gledhill-Earley,

Thank you for your letter dated April 16, 2015, written in response to the submittal of the Architectural History Survey for the Durham-Orange Light Rail Transit Project. GoTriangle (formerly Triangle Transit) delivered this report to the North Carolina State Historic Preservation Office (NC SHPO) on behalf of the Federal Transit Administration (FTA) on March 19, 2015.

The FTA acknowledges that in your letter you note the SHPO's concurrence with the determinations of eligibility with notes and/or exceptions. As requested, the FTA is resubmitting the revised Architectural Historic Survey for the Durham-Orange Light Rail Transit Project to address your comments.

The table below notes the location of the SHPO comment in the report, the nature of the SHPO comment, and the response to address the comment. Due to the nature of the edits, a corrected hard copy of the report is being submitted along with the revised report on a CD.

Page #/Comment	Response
Page xii – comment on unclear language	Language revised to clarify that Marvin Brown conducted fieldwork and research at 11 resources and groups of resources.
Pages xii and 3-16 – request to add 2012 reference	Reference to 2012 Additional Documentation for Downtown Durham Historic District added at both pages.
Page 3-45 – request for correction of NR Criterion cited	Reference to potential significance of architect Sumner Winn corrected from Criterion B to Criterion C and text concerning potential significance of Winn shifted to end of first paragraph.
Page 3-49 – additional citation request	Chapel Hill modernist survey completed by Claudia Brown and Diana Lea credited to them at this page; work also credited at page 2-1 and reference to it added to bibliography.
Page 3-55 -- request for correction of NR Criterion cited	Discussion of potential significance of architect Don Stewart corrected to refer to Criterion C rather than B.
Page 3-75 – comment on potential eligibility of resource	Architecture of resources reconsidered and eligibility assessment paragraphs revised to state that Highland Woods Historic District is National Register-eligible under Criteria A and C. Other reference to eligibility at Executive Summary table revised.
Page 3-104 – comment on unclear language	First paragraph revised to clarify that the Robersons owned two separate parcels/groups of parcels in Forest Hills.

(Continued on Page 2...)

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Page #/Comment	Response
Former page 3-115/revised-report page 3-114 – comment on potential eligibility of resource	Integrity of other country stores in Durham County reconsidered and eligibility assessment revised to state that Ruth-Sizemore Store is National Register-eligible under Criterion A. Map and narrative description of National Register-eligible boundaries of store added to revised-report at page 3-115. Other references to eligibility of store at Executive Summary table and at APE maps/Figures 9 and 10 revised.
Page 3-151 -- comment on potential eligibility of resource	Extensive nature of interior alterations reconsidered and eligibility assessment of Durham Coca-Cola Bottling Plant revised to state that the resource is not National Register-eligible under any Criteria due to loss of integrity. Map and narrative description of proposed National Register-eligible boundaries of plant removed. Other references to eligibility of plant at Executive Summary table and APE maps/Figures 18 and 19 revised.
Pages 3-179 to 3-181 -- comment on potential eligibility of resource	Extensive nature of exterior alterations/retrofitting of corner columns reconsidered and eligibility assessment of North Carolina Mutual Building revised to state that it is not National Register-eligible under Criterion C due to loss of integrity. Other reference to eligibility at Executive Summary table revised.
Page 3-180 -- request for correction of NR Criterion cited	Reference to potential engineering significance of North Carolina Mutual Building corrected from Criterion A to Criterion C. Language assessing potential engineering significance of building shifted to paragraph assessing Criterion C.
General comment regarding corrections to report	All comments have been addressed in a revised report that includes final National Register assessments.
General comment regarding addition of complete list of resources	A table of National Register-Listed and Eligible Resources within Area of Potential Effect added as Appendix D. It includes resource name, survey site number, National Register status, and eligibility Criteria.

Other Changes/Location	Nature of Change
Addition of sources at Bibliography	References added for Cynthia deMiranda's Additional Documentation for Downtown Durham Historic District and for personal communication with Dennis Hoyle regarding retrofitting of North Carolina Mutual Building.
Addition of correspondence at new Appendix C	Appendix C added, which includes SHPO/FTA correspondence up to and including SHPO comment letter of April 16, 2015.
Updated series of APE maps/Figures 2 to 21 added to replace earlier maps	Updated maps bring report up to date regarding the alignment; changes do not affect eligibility or assessment of any of the resources included in the report.

Meghan A. Makoid, AICP
Environmental Planner
mmakoid@gotriangle.org

Enclosures: Revised Architectural History Survey [One (1) hard copy and one (1) CD]
Cc w/o enclosures: Stanley A. Mitchell, Environmental Protection Specialist, FTA Region IV

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

July 17, 2015

Meghan A. Makoid
Environmental Planner
Go Triangle

mmakoid@gotriangle.org

RE: Revised Architectural Historic Survey and Section 106 Assessment of Effect for Historic Properties, Durham-Orange Light Rail Transit Project, Durham and Orange Counties, ER 12-0738

Dear Ms. Makoid:

Thank you for your letter of June 25, 2015 documenting the submission of the above-referenced report for the Durham-Orange Light Transit Project. We have reviewed the revised report and find that all of the recommended changes have been made. The addition of Appendix D with the table of the National Register-listed and Eligible Resources within the APE is especially appreciated and serves to document the changes in criteria that we suggested for the eligible properties.

We note that the subject line for your letter reads "Revised Architectural Historic Survey and Section 106 Assessment of Effect for Historic Properties." However, having talked with you on July 9, 2015, we determined that the Assessment of Effects was not included as it is still under review by the Federal Transit Administration. Once it is available, we will promptly review it and comment.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

Ramona M. Bartos

for

cc: Marvin Brown, URS

Appendix B - Resumes of the Principal Investigator and Other Contributors

Marvin A. Brown

Senior Architectural Historian

Areas of Expertise

Historic and Architectural Studies/Section 106 (36 CFR Part 61) Assessment
NEPA/SEPA Cultural Resources/Environmental Documentation
Memoranda of Agreement and Programmatic Agreements
HABS/HAER-Level Recordation
FEMA Emergency and Long-term Response

Years of Experience

With URS: 22 Years
With Other Firms: 10 Years

Education

1980/JD/Stanford Law School
1977/MA/American Civilization/University of Pennsylvania *magna cum laude*
1977/BA/American Civilization/University of Pennsylvania *magna cum laude*

Overview

Mr. Brown has over 32 years of experience in historic and architectural studies, environmental compliance procedures, and project management. This experience includes performing historic architectural surveys in support of state and federal projects in compliance with Section 106 and other statutes and regulations; determination of effects and development of mitigation measures, including Memoranda of Agreement, Programmatic Agreements, Historic Preservation Plans, HABS/HAER-level recordation, and Section 4(f) documentation; environmental documentation including Environmental Impact Statements, Environmental Assessments, and Categorical Exclusions for airport, highway, and other projects; recordation of historic bridges; emergency and long-term response for FEMA projects; and drafting Multiple Property Documentation forms and National Register nominations for individual properties and historic districts. The Vernacular Architecture Forum recently presented Mr. Brown with the Paul E. Buchanan Award for Excellence in Field Work and Interpretation for his Rosenwald Schools project for NCDOT. The award committee was unanimous in its praise of the document as an excellent example of a Section 106 cultural resources study, supported by thorough, well-presented research and careful field investigation, focusing on an endangered building type, and with potential application to similar studies in other regions.

Representative project experience includes:

Project Specific Experience

North Carolina

Project Manager/Architectural Historian, Rosenwald School Study in Edgecombe, Halifax, Johnston, Nash, Wayne, and Wilson Counties, North Carolina Department of Transportation. To assist NCDOT and the North Carolina State Historic Preservation Office in evaluating the National Register eligibility of Rosenwald Schools in the state, URS inventoried the Rosenwald Schools of the six-county study area, established comprehensive historic and architectural contexts for the schools in North Carolina, and recommended National Register registration requirements for assessing the inventoried resources and other schools throughout the state.

Project Manager/Architectural Historian and Historian, Phase I and II Historic Architectural Surveys and Mitigation Documentation, Statewide, North Carolina, North Carolina Department of Transportation, 1992-Present: Architectural Historian and Historian for various highway and bridge projects under four multi-year, open-end, historic services contracts with the NCDOT, including the following:

- Ashe County, NC 21 from NC 16 to Alleghany County Line
- Buncombe and Henderson Counties, US 25 from SR 1361 to US 25A and NC 280
- Catawba County, Hickory, Lenoir Rhyne Boulevard from Tate Boulevard to 7th Avenue
- Chatham and Randolph Counties, US 64 at Smith Farm
- Columbus County, NC 130 from Brunswick County Line to US 701
- Craven County, US 17 from NC 43 to Bridgeton
- Duplin and Lenoir Counties, NC 11 from NC 24 to Pink Hill
- Durham County, Guess from SR 1407 to SR 1409
- Gaston County, NC 274 from NC 275 to US 29-74
- Henderson County, US 64 from US 25 to SR 1180
- Henderson County, NC 191 from NC 280 to SR 1411
- Henderson County, SR 1503 from NC 191 to I-26
- Henderson County, US 25 from SR 1538 to SR 1361
- Hyde County, US 264 over Rose Bay Canal
- Johnston County, Replacement of Bridge No. 52 over Little Swamp
- McDowell, Burke, and Avery Counties, US 221 from NC 226 to Blue Ridge Parkway
- Martin County, NC 125 Bypass of Williamston
- Mitchell and Avery Counties, US 19E from Spruce Pine east to SR 1106
- Mitchell and Yancey Counties, US 19E from Spruce Pine west to SR 1186
- Person County, US 501 from NC 49 to Virginia State Line
- Randolph County, US 220 Business from SR 2261 to US 220 at US 311

Historian, Archaeological and Historical Contexts Study Associated with Proposed Relocation of NC 16, Lincoln, Catawba, Gaston, Union, Mecklenburg, and Iredell Counties, North Carolina Department of Transportation. Drafted comprehensive historic context, to support future studies of archaeological resources in the Catawba River Valley, in a six-county study area flanking the banks of the river.

Architectural Historian, Supplemental Draft Environmental Impact Statement, Phase II Historic Architectural Survey Report, Herbert C. Bonner Bridge Replacement through Rodanthe, Dare County, North Carolina Department of Transportation. Reevaluated the National Register eligibility and boundaries of a proposed historic district in Rodanthe, including the Chicamacomico Lifesaving Station, on Hatteras Island in the Outer Banks.

Architectural Historian and Historian, Cape Fear Skyway EIS and Design Studies, Brunswick and New Hanover Counties, North Carolina Turnpike Authority: Preparation of historic architectural and historic components, including historic contexts and National Register evaluations, for environmental studies associated with a proposed multi-lane, freeway facility connecting US 17, west of the City of Wilmington near the terminus of the proposed Wilmington

Bypass (I-140) in Brunswick County, extending eastward approximately nine miles to the port area of the City.

Architectural Historian, Falls of Neuse Road Realignment and Widening, Raleigh, North Carolina, City of Raleigh. Preparation of historic architectural components for environmental studies associated with improvements to Falls of Neuse Road located northeast of the City of Raleigh in Wake County.

Architectural Survey, Rowan and Davidson Counties, North Carolina Department of Transportation. Architectural Historian and Historian for assessment of National Register eligibility of five potential historic districts along the Yadkin River near Salisbury, North Carolina. The potential historic districts were recommended as not eligible for National Register listing in two separate reports. The Keeper of the National Register concurred with these recommendations. The five potential districts were:

- Trading Path and Trading Fords, including Cape Fear Road
- Yadkin Ford and Ferry
- Greene's Crossing at the Trading Ford
- Battle at Camp Yadkin
- Yadkin River Crossings Historic District

Architectural Historian, Environmental and Engineering Studies, Walker Street Extension, Town of Cary. Conducted reconnaissance-level inventory and prepared components of environmental documentation for project within downtown Cary adjacent to the National Register-listed Page-Walker Hotel and Cary Historic District.

Architectural Historian and Historian, Phase II Historic Architectural Surveys and EIS Documentation, Wilmington, North Carolina, North Carolina Department of Transportation: Architectural Historian and Historian for project involving the identification and evaluation of historic properties to be affected by construction of new highway and the preparation of an Environmental Impact Statement.

Historian, Environmental Justice Mitigation, Wilmington Bypass, New Hanover County, North Carolina Department of Transportation: As part of mitigation of environmental justice concerns, researched, wrote, and designed monograph recording the life of Reverend Luke Grady. Also wrote text for historic marker honoring Reverend Grady and delivered talk at unveiling.

Project Manager/Architectural Historian, Phase I Historic Architectural Survey of US 311, Randolph County, North Carolina, Ko & Associates: Architectural Historian for project involving identification and evaluation of historic properties to be affected by roadway widening.

Architectural Historian and Historian, Intensive-Level Architectural Survey of NC 12, Dare County, North Carolina Department of Transportation: Architectural Historian and Historian for project involving the identification and evaluation of historic properties on the length of Hatteras Island in the Outer Banks of North Carolina. Included documentation of two large historic districts in Avon and Buxton, two historic Coast Guard and lifesaving stations, and numerous individual resources.

Architectural Historian and Historian, Piedmont Triad International Airport EIS, Guilford County, North Carolina, Piedmont Triad Airport Authority and the Federal Aviation Administration: Architectural Historian and Historian for historical components of EIS for PTIA/FedEx airport improvement project. Efforts included historic architectural survey, NEPA documentation, and drafting of Memorandum of Agreement.

Architectural Historian and Historian, Historic Architectural Survey and Mitigation Documentation, Ellis Street Bridge Replacement, Salisbury, Rowan County, North Carolina, City of Salisbury: Architectural Historian and Historian for historic architectural survey of 12-square-block study area for bridge replacement project for the City of Salisbury. Prepared Effects Documentation and Programmatic Agreement for the project.

Historian, Community History, Town of Speed, Edgecombe County, North Carolina, Federal Emergency Management Agency: Historian for project requiring drafting of community history of Town of Speed as mitigation under Memorandum of Agreement.

Historian, Archaeological Investigations in Support of Integrated Resources Management Plan, Camp Butner, Granville, Person, and Durham Counties, North Carolina, Barrett Kays and Associates,: Historian for archaeological investigations in support of preservation plan at National Guard facility.

Historian, Programmatic Agreement, Global TransPark, Lenoir County, North Carolina, Federal Aviation Administration: Drafted Programmatic Agreement to cover various levels of activity by the FAA and the US Army Corps of Engineers within 15,000+-acre Area of Potential Effect, off-site wetlands mitigation area, and 7-county induced-impact area.

Project Manager/Architectural Historian and Historian, Phase II Historic Architectural Survey Town of Stedman, Cumberland County, North Carolina, Parsons Transportation Group: Architectural Historian and Historian for National Register evaluation of Town of Stedman a part of NC 24 widening and bypass project.
Architectural Historian for Historic Architectural Survey for Proposed Landing Field (OLF) Sites, Multiple Counties, North Carolina, R. Christopher Godwin & Associates and the US Navy: Architectural Historian for inventory of proposed OLF sites in the following counties:

- Bertie County, OLF Site B
- Craven and Beaufort Counties, OLF Site E
- Hyde and Dare Counties, OLF Site D

- Perquimans and Pasquotank Counties, OLF Site A
- Washington and Beaufort Counties, OLF Site C

Historian, Memorandum of Agreement and Advisory Council on Historic Preservation Consultation, Former Marshall Elementary School, Madison County, North Carolina, Federal Emergency Management Agency: Prepared Memorandum of Agreement and ACHP consultation for acquisition and demolition project.

Project Historian/Architectural Historian, Intensive-Level Inventory of National Guard Armories, Second Phase, Statewide North Carolina, North Carolina National Guard: Architectural Historian for project assessing National Register eligibility of National Guard armories throughout North Carolina.

Architectural Historian, National Register Evaluation, Memorandum of Agreement, and Mitigation, Sandhill Power Company Dam and Powerhouse on the Deep River, Lee and Chatham Counties, North Carolina, Restoration Systems, Inc.: Evaluated the National Register eligibility of dam and powerhouse for project to remove dam and restore Deep River; drafted Memorandum of Agreement to address adverse effect of project upon historic resources; addressed stipulations of MOA.

Architectural Historical Consultant, National Register Project, Greensboro, North Carolina, Greensboro Preservation Society, City of Greensboro, and State Historic Preservation Office, 1990 to 1992: Directed National Register project, including the drafting of a Multiple Property Documentation Form covering the history and architecture of Greensboro; National Register historic district nominations for a 670-property suburb; a 384-property, 376-property neighborhood, and 269-property neighborhood; a college campus, and a mill village; and National Register nominations for three schools, two residences, a hospital, and a row of townhouses. Wrote and photographed an architectural history and inventory of Greensboro, which was published in 1995.

Architectural Historical Consultant, Historic Sites Inventory, Granville County, North Carolina, Granville County and State Historic Preservation Office, 1984 to 1987: Directed Granville County Historic Sites Inventory, which included the following: surveyed, photographed, and researched more than 500 eighteenth, nineteenth, and twentieth-century buildings and farm complexes. Drafted countywide Multiple Property Documentation Form and 37 National Register nominations for individual properties/districts. Wrote and photographed book on architecture and history of county, which was published in 1988.

Architectural Historical Consultant, Historic Sites Inventory, Lincoln County, North Carolina, Lincoln County and State Historic Preservation Office, 1984 to 1987: Directed Lincoln County Sites Inventory, which included the following: surveyed, photographed, and researched more than 5000 eighteenth, nineteenth, and twentieth-century buildings and farm complexes. Drafted historical and architectural descriptions of each inventoried property. Also wrote and photographed book on architecture and history of county, which was published in 1986.

New Jersey

Architectural Historian and Historian, Historic Architectural Survey, Route 206 and Myrtle Avenue, Hammonton, Atlantic County, New Jersey, Crown Castle Atlantic: Architectural Historian and Historian for study of proposed cell tower location.

Architectural Historian and Historian, Historic Architectural Survey, Routes 47 and 40, Millville, Cumberland County, New Jersey, Crown Castle Atlantic: Architectural Historian and Historian for study of proposed cell tower location.

Historian and Architectural Historian, HAER Recordation and Determination of Effects Report, Bergen Tunnels, Jersey City, New Jersey: Historian and Architectural Historian for effects documentation and Historic American Engineering Recordation of South Bergen and North Bergen railroad tunnels.

Historian, Documentation of Former Inmont Facility, Belvidere, Warren County, New Jersey, BASF Corporation: Documented World War II history of former gunpowder and proximity fuze facility. Involved intensive research at the National Archives in College Park, Maryland.

Architectural Historian and Historian, Level of Action Assessments (LOAAs), Categorical Exclusions, and Historic Architectural Surveys, Statewide New Jersey, New Jersey Department of Transportation: Architectural Historian and Historian for various highway and bridge projects under multi-year, open-end, historic services contracts with the NJDOT, including the following:

- Bergen County, US Route 9W Intersections in Alpine Borough LOAAs (6)
- Burlington County, Route 206 Intersections LOAAs (3)
- Cape May County, Route 47 Intersections LOAA
- Cape May County, Routes 49 and 50 Intersections LOAAs
- Hunterdon County, Routes 31 and 579 Intersection LOAA
- Hunterdon and Mercer Counties, I-95/Route 31 Interchange Project:
- Intensive-Level Survey for Categorical Exclusion
- HABS Recordation of Hendrickson Family Farmstead
- Mercer County, Route 31, Climbing Lanes LOAA
- Middlesex and Monmouth Counties, Route 35 Intersections LOAA
- Monmouth County, Freehold Township Intersections LOAAs (4)
- Monmouth County, Route 537 in Colt Neck Intensive-Level Survey
- Monmouth County, Route 71 at Shadow Lawn Estate (NHL) Intensive-Level Survey
- Passaic County, Route 20 in Paterson LOAA
- Passaic County, Route 21 Extension Project:
- HABS Documentation of School Street-Monroe Street Neighborhood
- HABS Documentation of Dundee Canal Industrial Historic District
- HAER Addendum, Dundee Canal

- Statewide Historic Architectural Survey of Motor Vehicle Inspection Stations
- Union County, Route 28 Intersections in Westfield LOAA

Architectural Historian and Historian, Phase I Cultural Resource Management Plan and Survey, Hackensack Meadowlands, Hudson and Bergen Counties, New Jersey, Hackensack Meadowlands Development Commission, 1988 to 1990: Architectural Historian and Historian for survey of sites in 14 municipalities to help guide the planning of land use and preservation policies.

Architectural Historian and Historian, Phase IA and IB Survey of Monmouth-Ocean Transmission Line, Monmouth and Ocean Counties, New Jersey, New Jersey Natural Gas Company, 1988 to 1990: Architectural Historian and Historian for cultural resource survey of 35-mile-long pipeline project through six municipalities.

Architectural Historian and Historian, Phase IA Survey of South Toms River-Lacey Township Gas Main, Ocean County, New Jersey, New Jersey Natural Gas Company, 1988 to 1990: Architectural Historian and Historian for cultural resource survey of 35-mile-long pipeline project along a historic railroad alignment through seven municipalities.

Architectural Historian and Historian, Phase 1A Survey of CD-1 Adjustment Program, Morris County, New Jersey, Texas Eastern Gas Pipeline Company, 1988 to 1990: Architectural Historian and Historian for cultural resource survey for project in association with pipeline construction and improvements in five municipalities.

Architectural Historian and Historian, Historic Architectural Survey of Route 27, Middlesex and Somerset Counties, New Jersey, New Jersey Department of Transportation, 1988 to 1990: Architectural Historian and Historian for historic architectural survey of a section of the route of the historic King's Highway between New Brunswick and Princeton.

Historian and Architectural Historian, Historic Sites Inventory, Somerset County, New Jersey, Freeholders of Somerset County and the State Office of Historic Preservation, 1988 to 1990: Directed the two-year Somerset County Historic Sites Inventory, which included recording and photographing all of the county's historic structures, and writing histories and architectural histories of the county and each of its 21 municipalities.

Architectural Historian and Historian, National Register Nominations, Statewide New Jersey, Various Public and Private Entities, 1988 to 1990: Individual, district, and multiple property National Register nominations and listings of residential properties, bridges, synagogues, and churches throughout New Jersey.

Architectural Historian and Historian, Historic Architectural Review, GSA Raritan Depot, Edison, New Jersey, US Environmental Protection Agency and Enviresponse, Inc., 1988 to 1990: Archaeological and architectural assessment of a portion of the GSA Raritan Depot.

Architectural Historian and Historian, Historic Architectural Review, East Jersey State Prison TDWR Tower Site, Woodbridge, New Jersey, Federal Aviation Administration, 1988 to 1990: Historic architectural review and impact assessment of TDWR tower site.

Maryland

Architectural Historian and Historian, Phase I and II Historic Architectural Surveys, Historic Investigation, and Bridge Inventory Statewide Maryland, Maryland State Highway Administration, Years: Architectural Historian and Historian for various highway and bridge projects under multi-year, open-end historic services contracts including the following:

- Allegany County, Westernport, emergency National Register Evaluation following flood
- Calvert County, Maryland Route 2/4 Interconnector Survey
- Carolina and Talbot Counties, Maryland Route 331/Dover Bridge Investigations
- Carroll County, Maryland Route 30/Manchester Bypass
- Montgomery County, I-95/Ritchie-Marlboro Road Interchange
- Statewide, Comprehensive Historic Bridge Inventory of Concrete, Metal Girder, Metal Truss, and Metal Arch Bridges

Historian and Architectural Historian, Historic Preservation Plan, Baltimore/Washington International Airport, Maryland, Maryland and Federal Aviation Administrations: Prepared historical and technical components of Historic Preservation Plan for the Baltimore/Washington International Airport.

Historian, Runway Improvement Archaeological Investigation, Baltimore/Washington International Airport, Maryland, Maryland and Federal Aviation Administrations: Historian for Phase II archaeological investigation of proposed runway improvement project.

Historian, Mid-Field Cargo Facility Archaeological Investigation, Baltimore/Washington International Airport, Maryland, Maryland and Federal Aviation Administrations: Historian for Phase II archaeological investigation of proposed Mid-Field Cargo Facility project.

Historian, Parking Lot-Hiker/Biker Trail Archaeological Investigation, Baltimore/Washington International Airport, Maryland, Maryland and Federal Aviation Administrations: Historian for Phase I archaeological investigation of parking lot-hiker/biker trail.

Historian/Architectural Historian, Memorandum of Agreement and HAER Recordation, Allender Road Bridge, Baltimore County, Maryland, Baltimore County Department of Public Works: Drafted Memorandum of Agreement and prepared Historic American Engineering Record recordation of historic bridge.

Historian/Architectural Historian, Memorandum of Agreement and Recordation, Stoneybrook Drive Bridge, Montgomery County, Maryland, Montgomery County

Department of Public Works: Drafted Memorandum of Agreement and recorded historic bridge.

Historian, Historic and Archaeological Surveys and Evaluations of Antietam National Battlefield, Washington County, Maryland, National Capital Region of the National Park Service: Historian for multi-year, multi-component inventory and evaluation of all archaeological resources at Antietam Battlefield.

Historian, Recordation of Thomas Jefferson School, Baltimore, Maryland, Baltimore Department of Education: Under terms of Memorandum of Agreement, recorded historic school to National Register standards.

Historian, Recordation of Hamilton Elementary-Middle School, Baltimore, Maryland, Baltimore Department of Education: Under terms of Memorandum of Agreement, recorded historic school to National Register standards.

Historian, Tony Tank Bridge Recordation and Replacement, Wicomico County, Maryland, Wicomico County Department of Public Works: Recorded and evaluated National Register-eligible early twentieth-century timber beam bridge.

Historian, Chick Farm Site Investigations, Frederick County, Maryland, National Capital Region of the National Park Service: Historian for archaeological investigations of eighteenth- through early twentieth-century prehistoric, agricultural, and Civil War site along the Chesapeake and Ohio Canal.

Architectural Historian, Recordation of Brumbaugh-Kendle-Grove Farmstead, Hagerstown, Washington County, Maryland, Maryland Hagerstown Regional Airport Authority: Historic architectural evaluation of farmstead in association with improvements to Hagerstown Regional Airport.

Pennsylvania

Architectural Historian and Historian, Phase I and II Historic Architectural Surveys and Effects Evaluations, Statewide Pennsylvania, Pennsylvania Department of Transportation: Architectural Historian and Historian for various highway and bridge projects under environmental services contracts with various regions of PADOT, including the following:

- Berks County, Spring and South Heidelberg Township, Cacoosing Bridge Replacement
- Bucks County, Biles Island Wetlands Mitigation Site Archaeological Investigation
- Delaware County, Wallingford Park and Ride Historic Structures Survey
- Lycoming County, Lycoming County Airport Historic Structures Survey
- Lycoming County, Larry's Creek Archaeological Survey
- Montgomery County, East Main Street, Lansdale, Historic Structures Survey
- Montgomery County, Sumneytown Pike, Towamencin Township, Historic Structures Survey
- Northumberland County, Mt. Carmel Viaduct Replacement Historic Structures Survey and Effects Documentation

- Philadelphia, Wissahickon Avenue Historic Architectural Inventory
- Venango County, Drake Well Memorial Park, HABS Recordation of Pratt Truss Bridge

Architectural Historian and Historian, Environmental Assessment and Historic Architectural Survey, Erie County, Pennsylvania, Erie International Airport and Federal Aviation Administration: Architectural Historian and Historian for surveys and environmental documentation of location sites for new ASR-11 radar facility.

Architectural Historian and Historian, Historic Structures Survey of Cogeneration Facility Site, Northampton County, Pennsylvania, Conectiv Mid-Merit, Inc.: Architectural Historian and Historian for archaeological and intensive-level historic architectural survey in association with locating new cogeneration facility near Bethlehem.

Architectural Historian and Historian, Historic Structures Survey of Cogeneration Facility Site, Lancaster County, Pennsylvania, Conectiv Mid-Merit, Inc.: Architectural Historian and Historian for archaeological and intensive-level historic architectural survey in association with new cogeneration facility near Marietta.

Architectural Historian and Historian, Historic Structures Survey of Cogeneration Facility Site, York County, Pennsylvania, Conectiv Mid-Merit, Inc.: Architectural Historian and Historian for archaeological and intensive-level historic architectural survey in association with locating new cogeneration facility near Delta.

Architectural Historian and Historian, Historic Structures Survey of Cell Tower Site, Lancaster County, Pennsylvania, Nextel Partners: Architectural Historian and Historian for intensive-level historic architectural survey in association with locating new cell tower in crossroads community of Truce.

Architectural Historian and Historian, Historic Architectural Survey for Proposed Saltsburg to Clarksburg Railroad Line, Indiana County, Pennsylvania, Norfolk Southern Railway Company, Years: Architectural Historian and Historian for intensive-level historic architectural survey associated with construction of proposed rail line.

South Carolina

Architectural Historian and Historian, Daniel Island Terminal Expansion EIS, Charleston, South Carolina, South Carolina Ports Authority: Architectural Historian and Historian for cultural resource components of Environmental Impact Statement for container port expansion in Charleston Harbor.

Historian, Sandy Island Investigations, Georgetown County, South Carolina, South Carolina Department of Transportation: Historian for archaeological investigations of former rice plantations.

Architectural Historian and Historian, HABS Photographic Recordation of Building, Greenville, South Carolina, South Carolina Department of Transportation: Supervised Historic American Buildings Survey-level photographic recordation of turn-of-the-century commercial building in the City of Greenville.

Guam

Architectural Historian and Historian, National Register Nomination, Government House, Hagatna, Guam, Federal Emergency Management Agency: Drafted National Register nomination of Guam's governor's residence – a resource of territory-wide significance designed by Richard Neutra.

Ohio

Architectural Historian and Historian, Effects Assessment and Mitigation, Cleveland, Ohio, Port of Cleveland: As Architectural Historian and Historian conducted background research in connection with mitigating the effect of removing historic Hulett ore unloaders from Lake Erie waterfront.

Missouri

Architectural Historian and Historian, Lambert-St. Louis International Airport EIS, Saint Louis County, Missouri, Federal Aviation Administration: Prepared historic architectural components of Lambert-St. Louis International Airport Environmental Impact Statement relating to noise contours.

Florida

Naval Air Station Jacksonville, Naval Facilities and Engineering Command Southeast, Jacksonville, Florida: NRHP eligibility determination of Atlantic Fleet Photographic Laboratory, significant Cold War-era resource.

Key West International Airport EIS, Key West, Florida: Prepared historic architectural components of airport terminal study, for the Federal Aviation Administration.

Key West International Airport Runway Safety Zone Study, Key West, Florida: Prepared historic architectural components of runway safety zone study, for the Federal Aviation Administration.

Architectural Historian and Historian, Federal Courthouse Annex Site Survey, Tallahassee, Florida: Conducted historic architectural survey for Phase I study of Proposed Federal Courthouse Annex site, for General Services Administration.

Preliminary Cultural Resources Survey, CR 540A from US 98 to CR 37B, Polk County, Florida. Architectural Historian and Historian for preliminary study of road widening project.

St. Petersburg-Clearwater International Airport EIS, St. Petersburg, Florida. Prepared historic architectural components of Palm Beach International Airport Environmental Impact Statement relating to noise contours, for the Federal Aviation Administration.

Architectural Historian and Historian, Determination of National Register Eligibility of Atlantic Fleet Photographic Laboratory, Naval Air Station Jacksonville, Jacksonville, Florida: Recommended determination of eligibility for significant Cold War-era building, for Crystal Clear Maintenance, Inc.

Architectural Historian and Historian, Palm Beach International Airport EIS, West Palm Beach, Florida: Prepared historic architectural components of Palm Beach International Airport Environmental Impact Statement relating to noise contours, for the Federal Aviation Administration. Included intensive assessment of National Register eligibility of a neighborhood platted in 1920s, but largely built from late 1940s through late 1950s, and submittal of information to the Keeper of the National Register.

Kentucky

Architectural Historian and Historian, Blue Grass Airport National Register Documentation, Section 4(f) Document, Memorandum of Agreement, and EIS, Lexington, Kentucky, Lexington-Fayette Urban County Board and Federal Aviation Administration: Drafted revised National Register nomination, Section 4(f) document, Memorandum of Agreement, and historic architectural components of Environmental Impact Statement.

Illinois

Architectural Historian and Historian, Proposed South Suburban Airport EIS, Will and Kankakee Counties, Illinois: Prepared historic architectural components of draft Environmental Impact Statement.

Michigan

Architectural Historian and Historian, Intensive-Level Historic Architectural Survey, 44th Street from Clyde Park Avenue to Eastern Avenue, Wyoming and Kentwood, Kent County, Michigan, Ken County Road Commission and City of Wyoming: Architectural Historian and Historian for road widening project.

Virginia

Architectural Historian and Historian, Norfolk International Airport EIS, Norfolk, Virginia, Federal Aviation Administration: Prepared historic architectural components of Environmental Impact Statement relating to noise contours.

Historian, Pump Station Site Preliminary Engineering Report, Fort Eustis, Virginia, Hampton Roads Sanitation District: Historian for location study of proposed pump station on grounds of Fort Eustis near Matthew Jones House.

Arkansas

Historian, Archaeological Investigations of Proposed Power Plant Site near Fulton, Hempstead County, American Electric Power Company. Prepared historic contexts in support of Phase I and II archaeological investigations at Fulton site in southwest Arkansas near the Red and Little Rivers, which included Civil War fortifications and a historic ferry crossing.

Historian, Archaeological Investigations of Proposed Power Plant Site near Tontitown, Washington County, American Electric Power Company. Prepared historic context in support of Phase I archaeological investigations at Tontitown site in northwest Arkansas.

Tennessee

Architectural Historian and Historian, Intensive-Level Architectural Survey and Effects Evaluation, State Route 34/US Highway 11E from Morristown to I-81, Hamblen, Hawkins, and Greene Counties, Tennessee, Tennessee Department of Transportation: Architectural Historian and Historian for project involving identification and evaluation of historic resources to be affected by roadway widening and construction on new alignment.

Architectural Historian, Historic Property Investigations at Chickamauga Lock, Hamilton County, US Army Corps of Engineers. National Register Eligibility Evaluation of the Norfolk Southern Railroad Bridge over the Tennessee River north of Chattanooga.

Historian, Phase I Archaeological Assessment of State Route 32 from State Route 73 to Wilton Springs Road, Cocke County, Tennessee, Tennessee Department of Transportation: Historian for archaeological investigations of roadway widening project.

Historian, Phase I Archaeological Survey of Jones Franklin Road, Morristown, Hamblen County, Tennessee, Tennessee Department of Transportation: Historian for archaeological investigations of roadway widening project.

Mississippi

Architectural Historian and Historian, Natchez Trace Parkway Multi-Use Trail Project, Adams County and City of Natchez, Mississippi, National Park Service: Architectural Historian and Historian for preliminary historic survey adjacent to site of Natchez Trace Parkway extension.

Alabama

Architectural Historian and Historian, Birmingham International Airport Environmental Documentation, Birmingham, Alabama, Federal Aviation Administration: Prepared architectural historic components of environmental document for BHM.

Louisiana

Federal Emergency Management Agency/Louisiana Transitional Recovery Office, New Orleans, Louisiana. For FEMA, as part of a nine-month assignment, reviewed National Register eligibility of thousands of resources on demolition lists; prepared materials for and conducted workshops on National Register-listed historic districts to be re-surveyed as part of mitigation plan; drafted determinations of eligibility for the following individual resources and potential historic districts:

- Homedale Historic District
- Hymel House

- Lakeview School
- H. Jordan Mackenzie House
- Park Place Historic District
- South Lakeview Historic District Extension
- Seventh Ward

West Virginia

Historian, Historic Context Study, Pre-1955 Highway Bridges of West Virginia, Statewide, West Virginia State Historic Preservation Office: Assisted historians and architectural historians in drafting historic bridge contexts.

Connecticut

Architectural Historian, House Elevation Projects, East Haven, Milford, Stratford, and Westport, Connecticut, Federal Emergency Management Agency: Architectural Historian for proposed house elevation projects in four coastal communities.

Massachusetts

Historian, Peabody Square Flood Mitigation Project, Peabody, Federal Emergency Management Agency: Responsible for preparation of historic context for archaeological investigations in historic center of Peabody, which dates to ca.1626.

New York

Architectural Historian, Old Albany Post Road Mitigation Project Philipstown, Putnam County, Federal Emergency Management Agency. For Region II drafted and helped negotiate Memorandum of Agreement for National Register-listed Old Albany Post Road, a 6.6-mile-long, 17th- through 20th-century resource of statewide significance. Recorded all resources on road, including numerous stone walls, as part of mitigation to satisfy requirements of MOA.

Historian, Cultural and Archaeological Resources Assessment for the Hudson River PCBs Superfund Site, Fort Edward, Washington and Saratoga Counties, General Electric Corporation. Prepared general and site specific contexts, in support of archaeological investigations, for resources dating from the French and Indian War into the twentieth century along the Upper Hudson River within and near the town of Fort Edward.

Multi-State

Architectural Historian, Cultural Resources Inventory, Delaware Water Gap National Recreation Area, Pennsylvania and New Jersey, National Park Service: Assessed the National Register eligibility of 49 historic resources dating from the eighteenth through the twentieth centuries in the DWGNRA located within Pike, Monroe, and Northampton Counties in Pennsylvania and Sussex and Warren Counties in New Jersey.

Historian and Architectural Historian, Transmission Line Study, West Virginia, Virginia, and North Carolina: Historian and Architectural Historian for research associated with environmental documents for proposed construction of transmission lines in three states.

Architectural Historian, Historic Architectural Survey for Proposed Outlying Land Field (OLF) Site F, Burke and Screven Counties, Georgia, and Allendale and Barnwell Counties, South Carolina, R. Christopher Goodwin & Associates and the US Navy, Years: Architectural Historian for inventory of proposed OLF site.

California

Independent Architectural Historical Consultant, National Register Nominations, Southern California, Various Public and Private Entities, 1982 to 1984: Wrote National Register nominations and Historic Preservation Certification applications for properties in Southern California.

Independent Architectural Historical Consultant, Historic-Cultural Monument Nominations, Los Angeles, California, Los Angeles Conservancy, 1982 to 1984: Wrote Los Angeles Historic-Cultural Monument nominations.

Professional Societies/Affiliates

- Vernacular Architecture Forum:
- Editor, Vernacular Architecture Newsletter, 2004-Present
- Board Member, May 2001-present
- Chair of Papers Committee, Saint-Pierre et Miquelon, Territorial Collectivity, France, Annual Meeting, 2003
- Organizer and Presenter, Preservation Roundtable, Columbus, Georgia, Annual Meeting, 1999
- Preservation North Carolina
- Historic Architecture Roundtable (HART), North Carolina
- National Trust for Historic Preservation
- International Association for the Study of Traditional Environments

Publications

"Luke Grady of New Hanover County, North Carolina: 'Quite Acceptable to His People'." Monograph on African-American legislator prepared as part of environmental justice mitigation for Wilmington Bypass Project, for the NC Department of Transportation, 2000.

Greensboro: An Architectural Record. (447 pp., ISBN 0-9647647-0-9). Preservation Greensboro: Greensboro, NC, 1995.

Heritage and Homesteads: The History and Architecture of Granville County, North Carolina. (480 pp.). Delmar: Charlotte, NC, 1988.

Our Enduring Past: A Survey of 235 Years of Life and Architecture in Lincoln County, North Carolina. (295 pp.). Delmar: Charlotte, NC, 1986.

Awards/Honors
2008/The Vernacular Architecture Forum Paul E. Buchanan Award for Excellence in Field Work and Interpretation for *Rosenwald Schools Project for NCDOT*.

1991/*Historic and Architectural Resources of Granville County, North Carolina* Multiple Property Documentation Form included in part in *National Register Bulletin 16B, How to Complete the National Register Multiple Property Documentation Form*.

1990/*Historic and Architectural Resources of Granville County, North Carolina* Multiple Property Documentation Form reproduced in *National Register Bulletin 35, National Register Casebook: Examples of Documentation* as example of how to research, draft, and complete MPD forms.

1989/North Carolina Society of Historians, 1989 Architectural History Book Award for *Heritage and Homesteads*.

Chronology
07/92-Present: URS Corporation, Morrisville, North Carolina
07/90-06/92: Architectural Historical Consultant, Greensboro, North Carolina.
06/88-06/90: Director of Architectural History and Historic Preservation, Cultural Resource Consulting Group, Highland Park, New Jersey.
09/84-05/87: Architectural Historical Consultant, Lincolnton and Durham, North Carolina.
06/82-08/84: Architectural Historical Consultant, Santa Monica, California.
06/80-05/82:Attorney, Parker, Milliken, Clark & O'Hara, Los Angeles, California, and Rosenberg, Nagler & Weisman, Beverly Hills, California.

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Paul Himberger

Environmental Planner

Areas of Expertise

Community Planning
National Environmental Policy Act (NEPA) Documentation
Transportation Planning
GIS Spatial Analysis

Years of Experience

With AECOM: 5.5 Years
With Other Firms: 1.5 Years

Education

MES/Environmental Studies/2008/Macquarie University - Sydney, Australia
BS/Environmental Science: Biology Concentration/2006/University of North Carolina – Wilmington

Certification

HAZWOPER 40-hr Certified
CSX/NS Rail Safety Certified

Overview

Mr. Himberger is an Environmental Planner for the AECOM North Carolina Morrisville Office specializing in NEPA compliance for bicycle/pedestrian, roadway, and high-capacity transit projects. His experience includes technical report writing, data collection, GIS analysis, public outreach, and technology support for a variety of planning projects.

Representative project experience includes:

ENVIRONMENTAL PLANNING

North Carolina Maritime Strategy, North Carolina, Governor's Logistics Task Force: Served as an Environmental Planner in preparing a Feasibility Study to assess North Carolina's role in the maritime industry and potential new port locations in anticipation of the Panama Canal expansion in 2014. Responsibilities included GIS-based environmental analysis of proposed sites and technical report writing. Data evaluated included wetlands, marshland, Primary Nursery Areas, SAV, hard bottom areas, dredge sites, and land suitability mapping.

NC 12 Feasibility Study, Outer Banks, NC: Provided assistance for a feasibility study of a highway running the length of the barrier islands of North Carolina. The feasibility study documents both interim solutions in a five-year time frame and long-term solutions in a 50-year time frame to address coastal erosion and storm hazards. Responsibilities included the preparation of a Community Context Report, demographic analysis, and technical review of the alternatives defined and presented in the study.

I-26 Asheville Connector Environmental Impacts Statement, Asheville, North Carolina: Provided assistance in preparing the Supplemental Draft EIS and Section 4(f) documentation and well as preparation of GIS maps. The proposed action includes reconstruction of two freeway-to-freeway interchanges, roadway widening, and construction of a freeway segment on new. Additional elements of the project worked on include effects to historic resources, compliance with State and Federal legislation, community impacts, environmental justice issues, secondary and cumulative effects, and extensive public involvement.

A-0010: I-26 Upgrade Environmental Impacts Statement, Asheville, North Carolina: Provided assistance in preparing the Community Impact Assessment, Indirect and Cumulative Effects Assessment, and the Natural Resources Technical Report in support of the Environmental Impact Statement, as well as the preparation of GIS maps. The proposed action includes the widening of approximately 12 miles of highway to interstate standards.

Cape Fear Crossing, Brunswick and New Hanover Counties, NC: Served as an Environmental Planner for a proposed 9-mile, multi-lane, freeway facility connecting two major highways. The project involves the preparation of an Environmental Impact Statement and a public and agency involvement program. Responsibilities include environmental and social impact assessments as well as GIS analysis and mapping.

US 64/Corridor K, Polk County, Tennessee, Tennessee Department of Transportation: Served as an Environmental Planner for an Environmental Impact Statement studying roadway alternatives through the Ocoee Gorge. Project responsibilities include; preparing materials for and assisting with two public workshop series, assisting in preparing various sections such as a Phase I Environmental Screening Report, Section 4(f) Determination Report, Sustainability Report, among others, for the Draft Environmental Impact Statement.

Kinston Bypass Environmental Impact Statement (EIS), Kinston, NC: Provided assistance for NEPA studies associated with the EIS for a proposed twelve mile, four-lane freeway. The project is a GIS pilot project for the NCDOT, which involves the extensive use of GIS data in the selection and analysis of corridors for environmental study process. Responsibilities included preparing the Purpose and Need Report, Community Characteristics Report, Screening Indirect and Cumulative Effects Report, Community Impact Assessment, and the Alternative Analysis Report, as well as GIS data collection, verification, and analysis. Current tasks include the preparation of a Draft Environmental Impact Statement.

Carey Road Extension (U-3618), Lenoir County, North Carolina: Provided assistance for a roadway extension of existing Carey Road for approximately 2 miles on new location. Responsibilities include analysis of socioeconomic data, map creation, and the writing of the Screening Indirect and Cumulative Effects Study in anticipation of an Environmental Assessment.

Wilmington Bypass Environmental Impact Statement, Brunswick County, North Carolina: Environmental Planner providing support for the preparation of the Final Environmental Impact Statement for a 14-mile, controlled access roadway from US 17 to US 421 west of Wilmington. Responsibilities include assisting with the preparation of the indirect and cumulative effects assessment, natural systems and environmental justice assessment technical memoranda, wetland and stream delineation, as well as GIS data collection.

TRANSIT PLANNING

Durham-Orange Light Rail Transit (LRT) Project: Transportation Planner supporting the preparation of an Environmental Impact Statement (EIS) for a proposed 17 mile LRT system. Current responsibilities include technical report writing and data collection for a number of sections of the EIS including Airports, Hazardous Materials, Natural Resources, Noise and Vibration, Purpose and Need, and Alternatives Considered. Additional responsibilities include GIS/mapping assistance and a robust public involvement campaign.

Chapel Hill Transit Alternatives Analysis, Chapel Hill, North Carolina: Transportation Planner supporting the preparation of an Alternatives Analysis for a proposed high-capacity transit system along an approximately 8 mile corridor. Responsibilities include GIS/mapping assistance, public involvement and outreach, demographic calculations, and technical report documentation associated with the Purpose and Need, Fatal Flaw Analysis, and human and natural conditions reports.

East-West Bus Rapid Transit (BRT) Connector, Nashville, Tennessee: Transit Planner supporting the preparation of an Environmental Assessment for a proposed BRT system in Nashville. Responsibilities included GIS assistance and technical report documentation associated with alignment and station areas, Purpose and Need, socio-economic resources, traffic and parking.

Hoke Area Transit Service Transit Feasibility Study, Hoke County, North Carolina: Served as technical lead in the preparation of a Categorical Exclusion for a transit feasibility study. The study involves convening a Steering Committee, screening and selecting a site based on stakeholder input, drafting a facility site plan, and preparing environmental documentation for compliance with state and federal law.

Triangle Regional Transit Program Management, Durham, Orange, and Wake Counties: Transit Planner for program management services for Triangle Transit's three-county region to implement rail and bus service improvements along approximately 80 miles of corridors. Responsibilities included assisting in conducting Alternatives Analysis studies for three priority corridors to evaluate and screen alternative alignments, modes and station locations within each corridor. Analysis included a bicycle/pedestrian inventory, land-use and zoning evaluation, and the identification of environmental constraints.

City of Burlington Public Transit Implementation Plan: Provided assistance in the preparation of a Public Transit Implementation Plan for the City of Burlington. The City currently does not operate a fixed route service and the Plan made recommendations for potential routes. Specific responsibilities included the analysis for trip generators, population density, transit dependent populations, and street networks, as well as technical report writing to make a recommendation for five routes.

City of Grand Fork, ND, Transit Development Plan: Provided assistance for a transit analysis of the University of North Dakota campus shuttle service and a review of the scheduling and connectivity needed to coordinate better with the local public transit system in Grand Forks, ND. Responsibilities included GIS mapping, compiling data, and evaluation of route alternatives based on existing connectivity, future development, and existing bicycle and pedestrian infrastructure.

Fayetteville Area System of Transit (FAST) Title VI Analysis: Prepared the necessary paperwork and conducted demographic analysis on proposed routes extensions (length and time) for the Federal Transit Administration Title VI compliance.

Fayetteville Area System of Transit (FAST) Multimodal Center: Assisted in the preparation of the Environmental Assessment for a new multimodal transit center. Specific responsibilities included providing demographic analysis on proposed sites, an environmental constraints analysis, and the preparation of maps and figures.

C-TRAN Administration/Operations Facility Needs Assessment Study, Cary, North Carolina: Provided assistance in the preparation of a transit system needs assessment. Responsibilities included identifying facility site requirements, conducting staff interviews, and data collection. Provided additional services for a Phase II document including; the identification and environmental review of potential transit facility sites.

Master Parking Plan, Seymour Johnson Air Force Base:
Provided assistance the development a parking master plan for a U.S. Air Force Base. The master plan addressed both existing parking demand and future parking demands in relationship with foreseeable facility staff changes and the planned consolidation of approved projects. The study also looked at outcomes that promoted sustainable design and construction. Specific duties include the creation and editing of interim reports, compiling data, and field collection of parking inventory.

Metra Transit Upgrade, Chicago, Illinois: Transportation Planner supporting the activities associated with the preparation of an Environmental Assessment including technical reports on social, physical and natural resource impacts associated with station areas, and traffic and parking.

Patrick Henry Mall Bus Transfer Facility, Newport News, Virginia: Provided assistance in the preparation of a Categorical Exclusion as per the requirements of the National Environmental Policy Act

(NEPA) and FTA for a proposed new bus transfer facility. Specific responsibilities included local agency coordination, socio-economic analysis, and map creation.

COMMUNITY PLANNING

Community Reconstruction Plan, Multiple Cities, New York, New York Rising Community Reconstruction Program: Served as a Community Planner in support of rebuilding and revitalization efforts for communities after Superstorm Sandy. Responsibilities included identifying the community's vulnerabilities to future natural disasters, needs for economic development, and to determine strategies and projects that will increase resiliency. Additional responsibilities included the identification of risk assessment areas, analysis of needs and opportunities of the community, and technical writing for the Conceptual Plan and Final Community Reconstruction Plan.

Comprehensive Pedestrian Plan, Trent Woods, North Carolina:
Served as a Transportation Planner for the creation of a Pedestrian Plan for the Town of Trent Woods. As a coastal community, special consideration was given to infrastructure and coastal flooding. Specific responsibilities included analyzing state pedestrian policies, preparing materials for and attending public meetings, and aiding in the writing of a pedestrian plan. The plan consisted of recommendation of infrastructure improvements, design standards, and an implementation strategy.

Regional Cumulative Effects Study, Madison, Buncombe, and Henderson Counties, NC: Technical lead for a contract to evaluate the cumulative effects of roadway, multi-modal, and infrastructure projects on a three-county area. The project was a first of the Department of Transportation and it's results will filter into several major EISs. Responsibilities included demographic and socio-economic data collection, field investigation, technical report writing, land use & zoning analysis, and evaluation of local infrastructure, development, and transportation projects.

Indefinite Delivery Contract for Studying Community Characteristic Reports (CCR) and Indirect and Cumulative Effects (ICE), Statewide North Carolina: Community Planner for a contract to define the community characteristics and evaluate the indirect and cumulative effects of transportation projects on an on-call basis. Specific responsibilities include analyses of existing socioeconomic, land use and environmental conditions, projecting land development and population growth trends, and assessing future conditions that are anticipated as a result of transportation improvements in a given area. Specific projects include:

- Conducted a CCR and ICE assessment of a widening of NC 105, a controlled access facility between the Towns of Boone and Linville.
- Conducted an ICE assessment of the widening of a 5 mile, 2-lane facility.
- Conducted a CIA and ICE for the replacement of the Rowan Street Bridge over Hillsboro Street including a proposed intersection realignment.

Community Planner, Bridge Replacement Projects Community Impact Assessments, Statewide North Carolina, North Carolina Department of Transportation: Served as Technical Lead on Community Impact Assessments (CIAs) for 18 Bridges statewide that are scheduled to be replaced in the NCDOT Transportation Improvement Program. Responsibilities included information gathering and field visits for socioeconomic data, adjacent land uses, major destinations/traffic generators, and agricultural uses.

Safe Routes to School On-Call Contract, Statewide North Carolina: Community Planner for this contract to provide professional services for Safe Routes to School (SRTS) planning. Under this agreement, URS has developed brief action plans to serve as a framework for local SRTS programs for five communities throughout North Carolina. The action plans identify solutions to barriers preventing students from walking or bicycling to school and identify

engineering, educational, encouragement, and enforcement strategies that promote active travel and/or make it a safer school travel option. Responsibilities included data collection and mapping services.

ADDITIONAL PROJECT WORK

Facilitator, Public Comment Capture, Durham and Orange Counties, NC: Provided guidance, oversight, and facilitation of the U-Pointer annotation software during public involvement meetings for the Triangle Regional Transit Program. Responsibilities included software demonstration, capturing and recording public comments, and using the interactive display to discuss project-specific materials in an engaging and meaningful way. Meetings ranged from elected officials briefings, public workshops, and regulatory agency meetings.

GIS Developer, ESRI Online Comment Capture, Triangle Regional Transit Program: Developed an interactive, visual comment response web application that geo-references regulatory agency comments along a project study area based on comment category. Responsibilities included data entry, quality control/quality assurance, mapping services and site development.

GIS Planner, ESRI Online Webmap, URS - Morrisville: Assisted in developing an interactive web-map that details URS's Global Manufacturing projects. The interactive features display project information such as key contact information, a description of the project, link to project websites, and images; all while geo-referencing the project's location.

Environmental Scientist, Piedmont Natural Gas (PNG), Greenville, North Carolina: Environmental Scientist supporting the delineation and verification of wetland and stream resources for a proposed natural gas pipeline. Responsibilities include GIS assistance, natural/water resource identification, and technical report documentation.

Historic Architecture Consultant, Historic Sites Inventory: Assisted a State Historic Preservation Office with an electronic cataloguing pilot program of a Historic Sites Inventory for all of Lenoir County. Responsibilities included converting original written and photographic records into electronic documents, creation of an Access database to view records, and conduct a research as to the updated status of historic resources.

Graduate Research, Coastal Environmental Planning, Jervis Bay, NSW, Australia. Conducted a four-month project providing an integrated view of environmental issues (water quality; geomorphology; aquatic ecology) and social parameters (social attitudes, integrative management) for the community of Jervis Bay. Responsibilities included field work, analysis of data and report writing. A comprehensive report was written on the results and submitted to the local Council for consideration in their coastal plan and policy update.

Undergraduate Researcher, UNCW Toxicology Lab: Provided assistance for a graduate thesis project analyzing anthropogenic, non-point, source runoff on local tidal creeks in Wilmington, NC. Responsibilities included field and lab water quality testing and report writing.

PRESENTATIONS

NC Metropolitan Planning Organization Annual Conference, Winston-Salem, NC: Co-presented on a Conference Session bringing together project partners to discuss the challenges and successes of multi-jurisdictional planning and the technologies that helped support that effort at the annual North Carolina Metropolitan Planning Organization (MPO) Conference.

A systemlevel study was conducted for approximately 1.2 million people across three counties and a wide range of Federal, State, and local resource Agencies. This study analyzed and prioritized fixed-guideway

transit corridors to be studied in greater detail through Alternative Analyses. In order to concurrently undertake three Alternatives Analyses across three counties, a streamlined, open and readily accessible process with regional planning and coordination and easy access to information was of paramount importance for the project's success.

In the three years of the Program's existence, three Alternatives Analyses have been undertaken; two County transit tax referenda have passed, one MPO has adopted a Locally-Preferred Alternative, one successful New Starts Submittal, and FTA is reviewing a draft Environmental Impact Statement.

Technologies included SharePoint, ArcGIS Online, Google Earth, and interactive touch technology.

Co-Presenter, NC Bike/Walk Summit, Raleigh, NC: Co-presented on a Breakout session entitled "GIS Opportunities in the Enhancement of Bicycle Facilities". This session intends to explain how the utilization of technology can improve bicycle facilities and the planning process. Technology covered includes; ESRI Online, Route Optimization Tools, Interactive Videos and Smartphone/Tablet Applications.

Co-Presenter, NC Public Transportation Alliance, Wilmington, NC:
Co-presented on a session entitled "Using interactive technologies to streamline processes, share resources and visually engage in collaboration with transit agencies" at the annual North Carolina Public Transportation Association conference. This session provided examples of how urban transit systems can apply new and innovative techniques and technologies to assist in providing quality service and increase efficiency. New technology includes layering GIS data sets to visually understand how they interact, identify non-coverage areas, assist with compliance, and help identify priority corridors for future investment. Emerging social media has also provided an avenue to capture public comments, while real-time reporting and time-capture data can identify issues not recognized by traditional methods.

URS Integrating Technology into Planning Symposium:
Co-presented a URS Technology Symposium in which clients were brought in to learn about and subsequently explore a number of interactive technologies that can help planners innovate, share resources, and increase efficiency. Representatives from local, state, and resource agencies attended, as well as several cross-departmental URS staff. Technology shared included ESRI Online, Google Earth, Sketch-Up, SharePoint, and tablet/mobile phone based applications.

Chronology

2014-Present: AECOM, Morrisville, North Carolina
2009 - 2014: URS Corporation, Morrisville, North Carolina
2006-2007: UNCW Toxicology Lab, Wilmington, North Carolina
2005-2006: UNCW Benthic Ecology Lab, Wilmington, North Carolina

Paul Gerlach

Environmental Scientist

Areas of Expertise

Wetland Delineation
Stream Assessment and Delineation
Threatened and Endangered Species
Natural Community Classification
Environmental Permit Application
Technical Report Writing
ArcGIS
Trimble GPS

Years of Experience

With URS: <1 Year
With Other Firms: 2 Years

Education

MS/Environmental Management/2013/Duke University Nicholas School of the Environment
BS/Biological Sciences/2011/Guilford College

Mr. Gerlach joined the Environmental Planning Group of the AECOM North Carolina Morrisville office in 2014. Prior to joining URS, he completed his Master of Environmental Management degree at Duke University's Nicholas School of the Environment. He currently performs fieldwork conducting wetland and stream delineation, habitat assessment and natural community classification, and threatened and endangered species surveys. He is experienced in conducting stream assessments using both the NCDWR Stream Classification method and the USACE Stream Quality Assessment method. He also has expertise in GIS analysis and remote sensing work, especially with the ArcGIS software suite. He has used this software to solve a number of complex spatial problems and provides mapping support for many URS projects. He is skilled at technical report writing and the preparation of environmental permits, including Section 404 USACE permits and Section 401 State Water Quality Certifications.

Project Specific Experience

Line 34 Replacement, Moore, Hoke and Robeson Counties, North Carolina, Piedmont Natural Gas, 2014: Responsible for conducting wetland and stream delineations and habitat assessment along a 100-foot wide, 28-mile long study corridor for a natural gas pipeline replacement project. Responsible for preparing a joint PCN application to obtain a USACE Section 404 Nationwide Permit and an NCDWR Section 401 Water Quality Certification. Conducted habitat assessments and USFWS consultations for several federally listed species, including the red-cockaded woodpecker.

Newfound Creek Stream Restoration Monitoring, Buncombe County, North Carolina, NCEEP, 2014: Responsible for monitoring a restored stream system in the third monitoring year, conducting pebble counts and surveying 14 vegetation plots according to the Version 4.2 CVS-EEP Protocol for Recording Vegetation.

Clark's Creek Greenway - Hampton Connection, Mecklenburg County, North Carolina, Mecklenburg County, 2014: Responsible for conducting wetland and stream delineations and habitat assessment along Clark's Creek for a county-funded greenway project. Responsible for preparing a joint PCN application to obtain a USACE Section 404 Nationwide Permit, an NCDWR Section 401 Water Quality Certification, and local SWIM riparian buffer approval for the construction of a pedestrian greenway bridge over Clark's Creek.

Albemarle Landfill, Stanly County, North Carolina, NCDENR, 2014: Responsible for preparing a joint PCN application to obtain a USACE Section 404 Nationwide Permit, an NCDWR Section 401 Water Quality Certification for the clean-up of an abandoned landfill within a 100-acre parcel.

Rogers Road Sewer Expansion, Orange County, North Carolina, OWASA, 2015: Responsible for conducting a natural resources review for a proposed sewer expansion project, including a desktop and field evaluation of wetland and stream presence, natural community classification, and a review of threatened and endangered species.

I-26 Upgrade, Buncombe County, North Carolina, NCDOT, 2015: Responsible for preparing the USACE Approved Jurisdictional Determination Forms "Rapanos Forms" for the Section 404 permit submission for a highway improvement project in Buncombe County, North Carolina.

Specialized Training

2008/Ornithology, Guilford College
2009/General Ecology, Guilford College
2011/Field Botany, Guilford College
2011/Watershed Hydrology, Duke University
2011/Fundamentals of GIS and Geospatial Analysis, Duke University
2012/Geospatial Analysis for Conservation Management, Duke University
2012/Terrestrial Wildlife Surveys, Duke University
2012/Wetland Field Skills, Duke University
2012/GIS Field Skills, Duke University
2012/Conservation Biology, Duke University
2012/Satellite Remote Sensing, Duke University
2015/Wetland Delineation and Regional Supplement Training, Swamp School, LLC.
2015/Surface Water Identification Training, NC Division of Water Resources