

DIN: 01238 REV1

# Historic Resources – Area of Potential Effects (APE)

## Durham-Orange Light Rail Transit Project



**November 2014**

The NEPA Preferred Alternative for the D-O LRT Project 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 Corridor parallel to NC 147 through downtown Durham, before reaching its eastern terminus near Alston Avenue. The alignment would consist of at-grade alignment, fill and cut sections, and elevated structures. In two sections of the alignment, Little Creek and New Hope Creek, multiple Light Rail Alternatives are evaluated in the DEIS.

This technical report contains information for all alternatives analyzed in the DEIS. However, pursuant to MAP 21, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act (P.L. 112-141), a NEPA Preferred Alternative has been developed, which recommends C2A in the Little Creek section of the alignment, NHC 2 in the New Hope Creek section of the alignment, the Trent/Flowers Drive station, and the Farrington Road Rail Operations and Maintenance Facility.

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### 1. Introduction

Through the Alternatives Analysis (AA) process, which included extensive public outreach, a Locally Preferred Alternative (LPA) was selected to address the purpose and need of the Durham-Orange (D-O) Corridor. The proposed project 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 Durham-Orange Light Rail Transit (D-O LRT) project extends from western terminus at the University of North Carolina at Chapel Hill (UNC-CH) at the UNC Hospitals Station to the eastern terminus in Durham at the Alston Avenue/North Carolina Central University (NCCU) Station. The proposed D-O LRT alignment connects a range of educational, medical, employment, and other important activity centers, including: UNC; UNC Hospitals; the William and Ida Friday Center for Continuing Education; Duke University; Durham Veterans Affairs (VA) Medical Center and Duke University Medical Center (DUMC); downtown and east Durham; NCCU; and Durham Technical Community College (DTCC).

#### 1.1 Description of the Proposed D-O LRT

The proposed D-O LRT alignment generally follows 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 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 the NCRR Corridor that parallels 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 up to 3,900 parking spaces along the D-O LRT alignment will be provided. In addition, a rail operations maintenance facility (ROMF) will be constructed to accommodate the D-O LRT fleet (12 cars, including spares). The construction of the ROMF facility will require additional non-revenue track to move cars between the track and facility.

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.

#### 1.2 Proposed Project Alternatives

Consistent with the September 2012 Scoping Report, and as described herein, the Draft Environmental Impact Statement (DEIS) will examine the potential environmental impacts of the LRT alternative as well as a small number of alignment, station, and ROMF siting alternatives, including the following:

- Crossing of Little Creek between the Friday Center and the proposed Leigh Village Development (i.e., Alternatives C1, C1A, C2, C2A and associated station locations)
- Crossing of New Hope Creek (NHC) and Sandy Creek between Patterson Place and South Square (i.e., NHC LPA, 1, and 2 and associated station locations)
- Station alternatives at Duke and Durham VA Medical Centers
- Five proposed locations for the ROMF

In addition to the LRT, the DEIS will consider both a Transportation System Management (TSM) alternative and a No-Build alternative, as follows:





## Historic Resources – Area of Potential Effects

- TSM – an enhanced bus service to the same stops as the proposed D-O LRT with roughly equivalent levels of transit service
- No-Build Alternative – the existing and programmed transportation network improvements

## 2. Area of Potential Effect Description

The Federal Transit Administration (FTA) has preliminarily determined and documented an Area of Potential Effects (APE) for the Durham-Orange Light Rail Transit Corridor project (Undertaking) pursuant to 36 CFR 800.4(a)(1) and 800.16(d). The APE for historical resources was determined by the scale and nature of the Undertaking, the topography and urban density of the area through which the Undertaking passes, research, and field study. As part of the research and field study effort, the GIS maps of historic resources maintained by the North Carolina State Historic Preservation Office (HPO), HPO survey files, previous studies in the vicinity of the Undertaking, Orange and Durham County tax maps, and current and historical aerial photography of the area around the Undertaking were reviewed. Various narrative and pictorial resources were consulted, including M. Ruth Little's *The Town and Gown Architecture of Chapel Hill, North Carolina, 1795-1975* (Preservation Society of Chapel Hill, 2006) and the websites/archives of North Carolina Modernist Houses ([ncmodernist.org/](http://ncmodernist.org/)), Open Durham ([opendurham.org/](http://opendurham.org/)), Chapel Hill Memories ([chapelhillmemories.com/](http://chapelhillmemories.com/)), Endangered Durham ([endangereddurham.wordpress.com/](http://endangereddurham.wordpress.com/)), and the Durham Public Library ([durhamcountylibrary.org/exhibits/postcards/](http://durhamcountylibrary.org/exhibits/postcards/)). Additionally, the area around the Undertaking was driven and/or walked. An architectural historian who meets the Secretary of the Interior's standards for architectural history conducted this effort to assist the FTA in its preliminarily determination of the APE.

The entire APE is depicted on Figure 1. It is shown at a smaller scale on 20 detailed maps (Figure 2-20) that extend from the Undertaking's southwestern terminus in the Town of Chapel Hill in Orange County to its northeastern terminus in the City of Durham in Durham County. In addition, the smaller scale maps show the existing National Register (NR), Study Listed (SL), and Determined Eligible (DOE) sites as provided by the HPO.

From its terminus in Chapel Hill (Figure 2) until it reaches dense urban development in downtown Durham at South Gregson Street (Figure 19), the APE generally follows property boundaries extending 500 ft. to either side of the center line of the Undertaking's alignment and alternative alignments, so is generally 1000 ft. wide. However, due to the presence of several large parcels (e.g. UNC, Duke University, US Army Corps of Engineers land, and Durham County property) the APE was not expanded to include full parcel if the parcel size was 10 acres or larger, instead the APE generally follows the 500 ft. taking into account buildings and other barriers. This extent was based upon the scale and nature of the Undertaking and the gently rolling nature of the terrain. The APE does, however, expand and contract outside of downtown Durham depending on the presence of I-40, proposed Rail Operations and 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 National Register-listed or –eligible properties/districts that are partially located within the area identified APE. The resulting Historic Resources APE is presented in Figures 1-21.

The APE is drawn tighter where it encounters I-40 in Durham County. The interstate and its rights-of-way here are about 200 ft. wide, which constitutes a significant modern visual intrusion and barrier. 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 ft. from the centerline of the proposed Light Rail Transit alignment (Figures 5, 6, 8, 9, and 10).

Within the urban core of the City of Durham, the APE is tighter than 500 ft. from the centerline of the LPA and the proposed ROMF at the Undertaking’s eastern terminus on East Pettigrew Street. From Buchanan Boulevard (Figure 19) east to Briggs Avenue (Figure 21), it includes the resources that directly overlook the corridor and the ROMF. It does not include the resources beyond, because their view is obscured by the resources fronting on the Undertaking. Further, the Undertaking in this heavily built-up area parallels a nineteenth-century rail line, which notably limits the Undertaking’s ability to cause alterations to the character or use of any historic properties located near it.

At the eastern terminus of the Undertaking at the ROMF on East Pettigrew Street, the APE terminates at the right-of-way on the south side of the Durham Freeway (NC 147), short of 500 ft. from the centerline of the LPA and the southern edge of the ROMF (Map 20). It is tightened here for the same reason it was tightened alongside I-40. The freeway and its rights-of-way here are about 200 ft. wide, which constitutes a significant modern visual intrusion and barrier.

Conversely, the APE extends farther than 500 ft. from the centerline of the various corridors in the vicinity of the sites of five potential ROMFs in Durham County and at some sections where the Undertaking is elevated. At the two ROMF sites located between I-40 and Farrington Road, the APE extends 500 ft. west of the site (Maps 7 and 8). At the site near the junction of Durham-Chapel Boulevard (US 15 / 501) and Watkins Road, the APE extends out 500 ft. from the edges of the ROMF at all sides (Map 10). It also extends 500 ft. to the east of the ROMF located near the junction of US 15 / 501 and West Cornwallis Road (Map 13).

Where sections of the Undertaking are elevated, the APE may have been widened beyond a general 1000-ft. width, depending on the nature of the elevation and the terrain. Elevated sections are marked in light blue on the 21 attached maps. Table 1 explains why and where the APE was or was not widened at the elevated sections:

**Table 1: Reason for widening of APE beyond general 1,000 ft. width**

Map #	Location	Description of section elevation/terrain	Justification for widening/not widening APE
1	East of UNC Hospital Station	Elevated to maintain grade where ground falls off	Due to tree coverage and building heights, elevated section not visible beyond general 1000-ft. width, so APE not widened
1 & 2	East of Mason Farm Rd Station, south of Rocky Ridge Farm HD	Elevated to maintain grade over declivity; ground falls off to south	APE not widened to south due to tree coverage and slope; widened 200 ft. to north due to increased visibility from elevated terrain
3	Friday Center Drive Station	Elevated to maintain grade	APE already wider than general 1000-ft. width due to presence of other alignment alternatives
4	East of Meadowmont and west of Leigh Village	Minimal elevation over floodplain	Elevated section not visible beyond general 1000-ft. width, so APE not

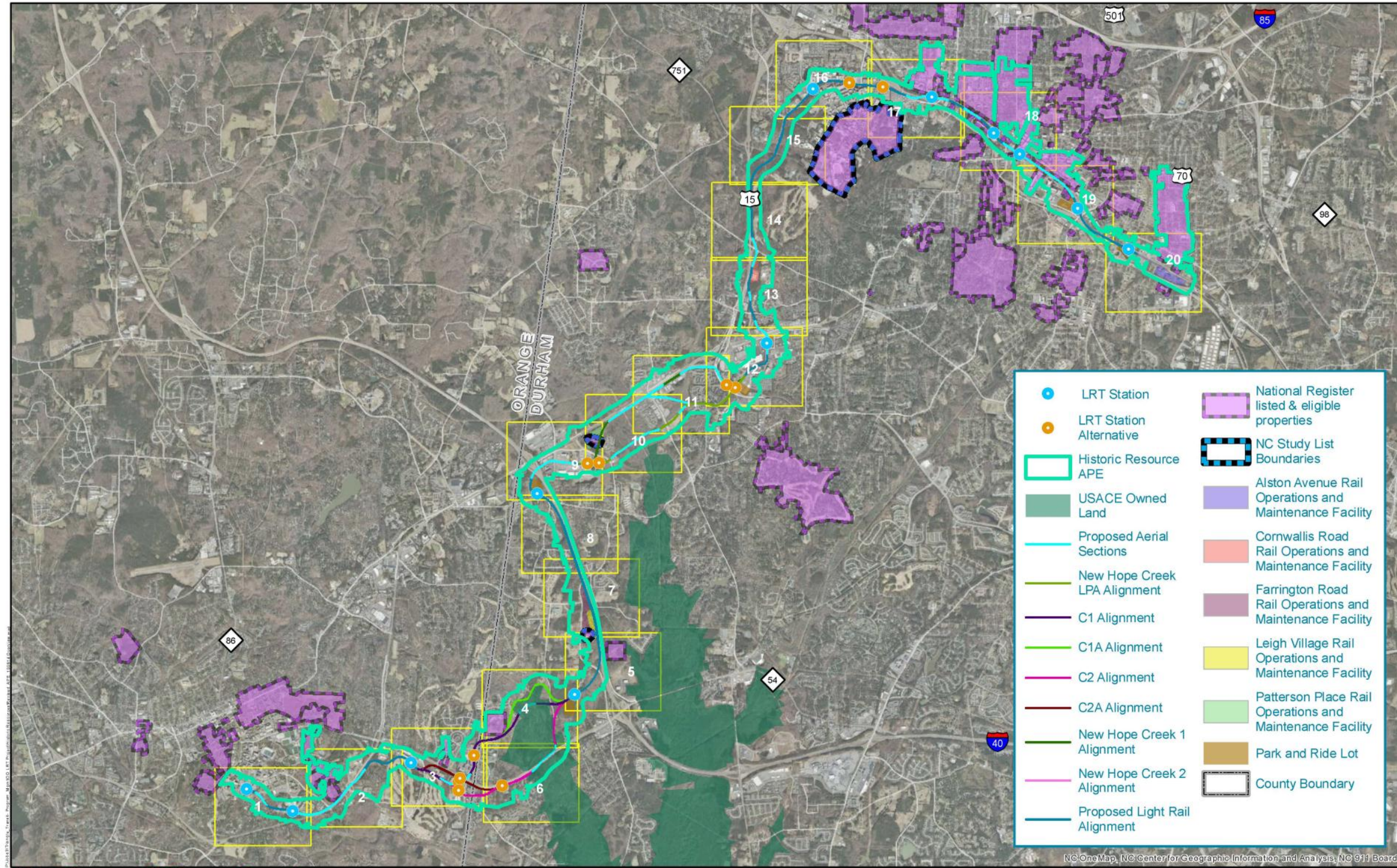
Map #	Location	Description of section elevation/terrain	Justification for widening/not widening APE
	Station		widened
6	East of Woodmont Station	Elevated at crossing of NC 54; minimal elevation over floodplain to east of 54	Widened approximately 200 ft. at and near NC 54 crossing; to east of NC 54 elevated section not visible beyond general 1000-ft. width, so APE not widened
9	East of Gateway Station and west of Patterson Place Station	Elevated over I-40 and Mount Moriah Rd	APE widened approximately 200 ft. to south; not widened to north due to visual barrier of US 15-501
10 (at south)	East of Patterson Place Station A	Minimal elevation over floodplain	Elevated section not visible beyond general 1000-ft. width, so APE not widened
10 (at north)	East of William N. Patterson House property	Minimal elevation over floodplain	Elevated section not visible beyond general 1000-ft. width, so APE not widened
11 (at west)	Garrett Rd on south side of US 15-501	Elevated over Garrett Rd and, to east of road, minimal elevation over floodplain	APE widened approximately 200 ft. to south near Garrett Rd crossing, but not to north due to visual barrier of buildings along US 15-501; at floodplain, elevated section not visible beyond general 1000-ft. width, so APE not widened
12	West of Martin Luther King Jr. Parkway Station B	Elevated over Martin Luther King Jr. Pkwy	APE widened approximately 200 ft. near Martin Luther King Jr. Pkwy crossing
12	South Square Station	Elevated over Durham-Chapel Hill Blvd and to maintain grade	APE widened approximately 200 ft.
13	North of Pickett Rd and south of ROMF	Elevated to maintain grade over creek	Elevated section not visible beyond general 1000-ft. width, so APE not widened
14	W Cornwallis Rd east of US 15-501	Elevated over US 15-501	APE widened approximately 200 ft. to east, but not to west due to visual barrier of US 15-501 interchange
15	East of US 15-501 and south of Cameron Blvd	Elevated to maintain grade over creek	Elevated section not visible beyond general 1000-ft. width, so APE not widened
17	West of Ninth Street Station	Elevated over NC 147 (Durham Freeway) to maintain grade	NC 147 below grade and within dense urban development, so APE not widened
18 (at west)	West of Buchanan Boulevard Station	Elevated to maintain grade	NC 147 below grade and within dense urban development, so APE not widened
18 (at east)	West of Durham Station	Elevated to maintain grade	NC 147 below grade and within dense urban development, so APE not widened

The FTA is submitting this APE to the North Carolina State Historic Preservation Officer for review and consultation, pursuant to 36 CFR 800.4(a).



Figure 1: Historic Resources APE - Overview

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



Historic Resources APE Proposed Expansion  
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NORTH

0 10000 Feet

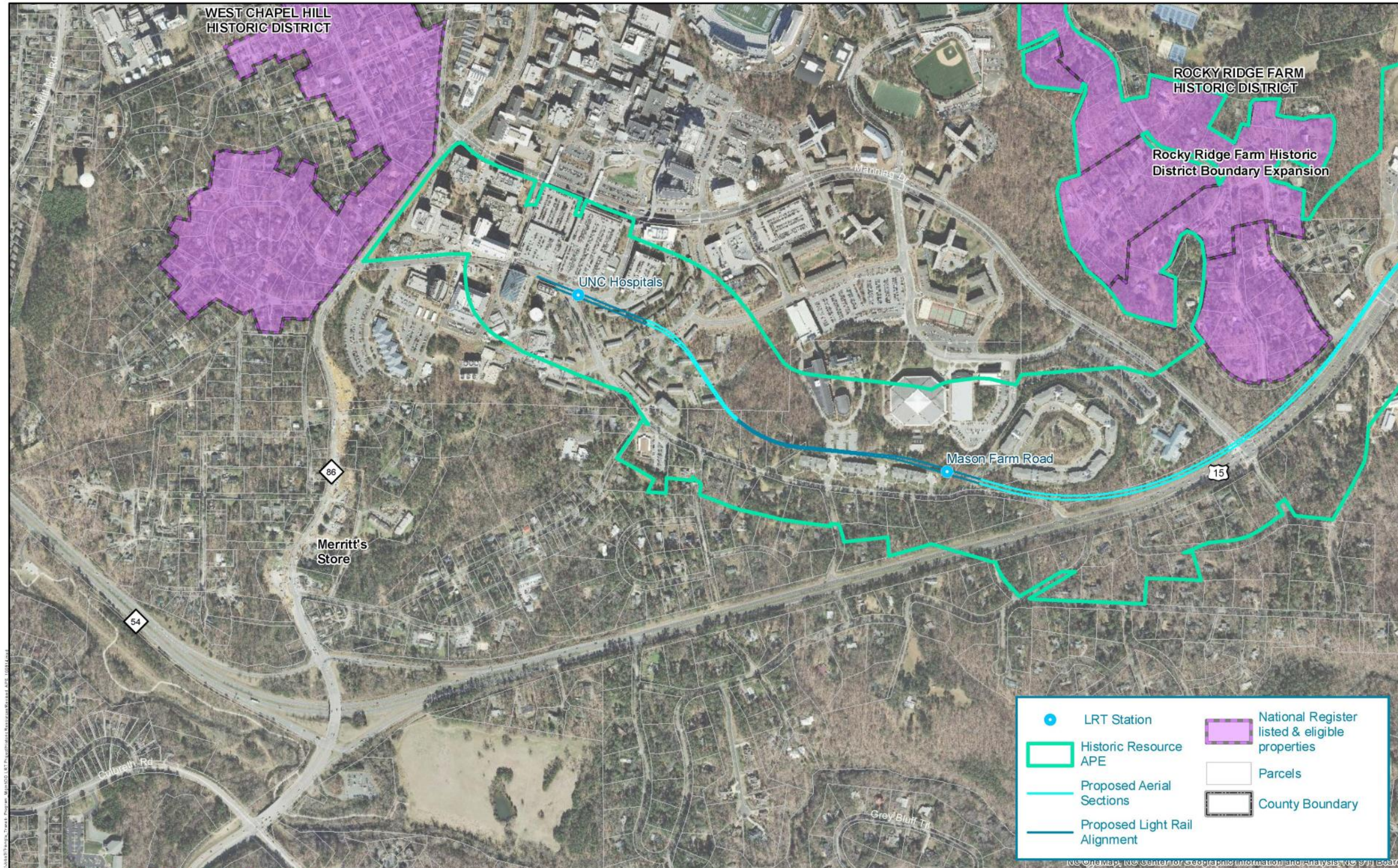
NC One Map, NC Center for Geographic Information and Analysis, NC 911 Board





Figure 2: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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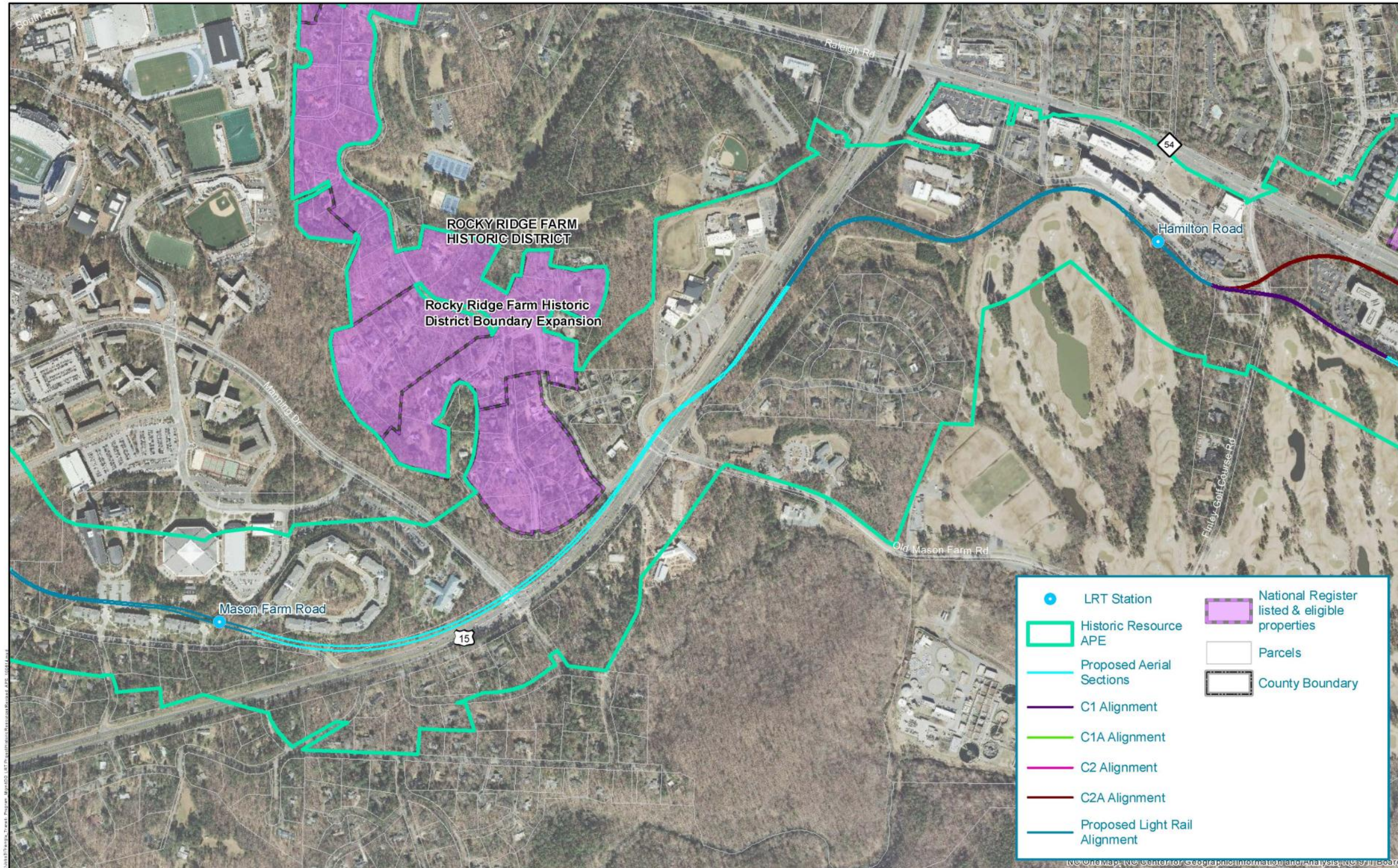
0 500 1,000 Feet





Figure 3: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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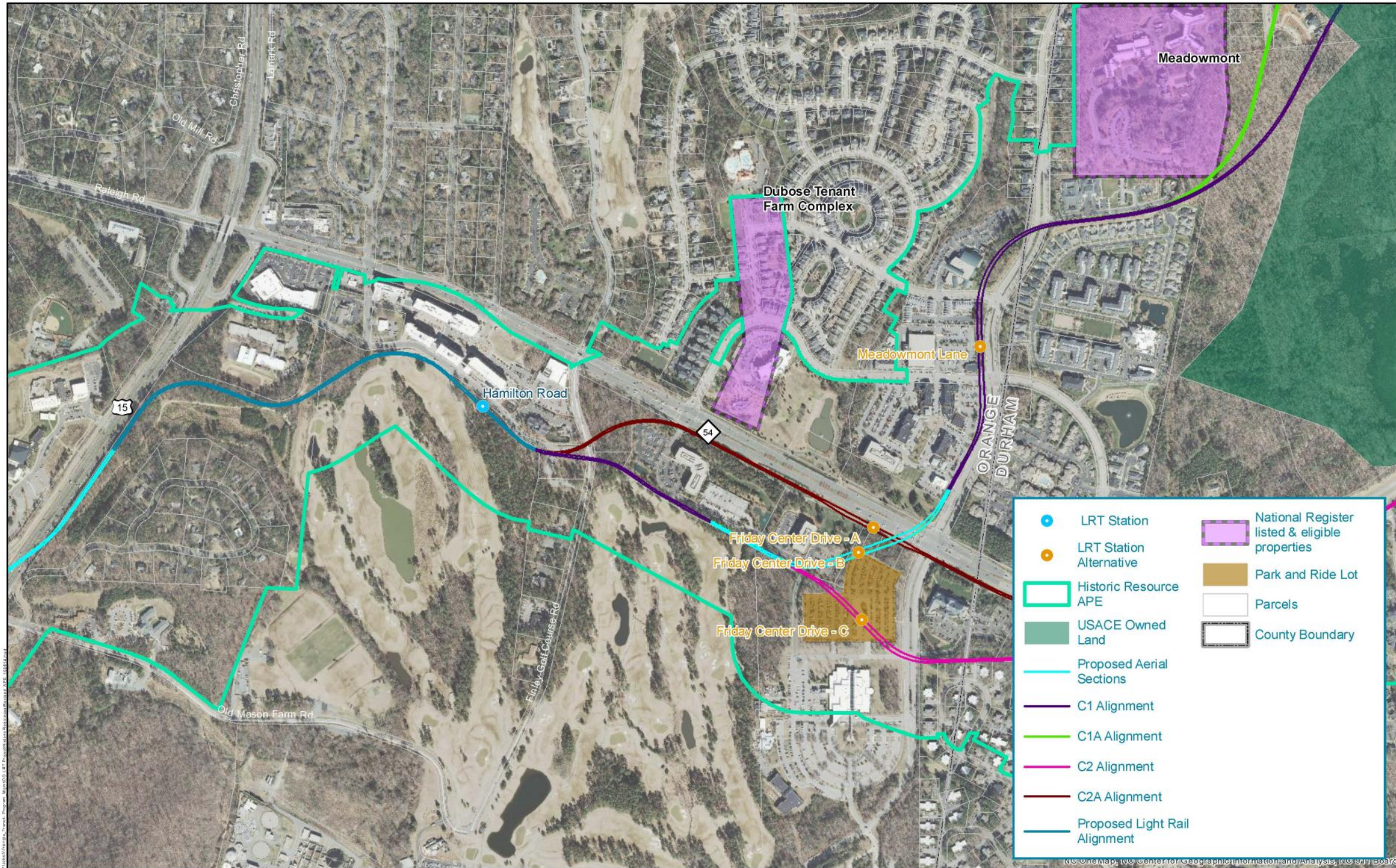
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Figure 4: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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0 500 1,000 Feet





Figure 5: Historic Resources

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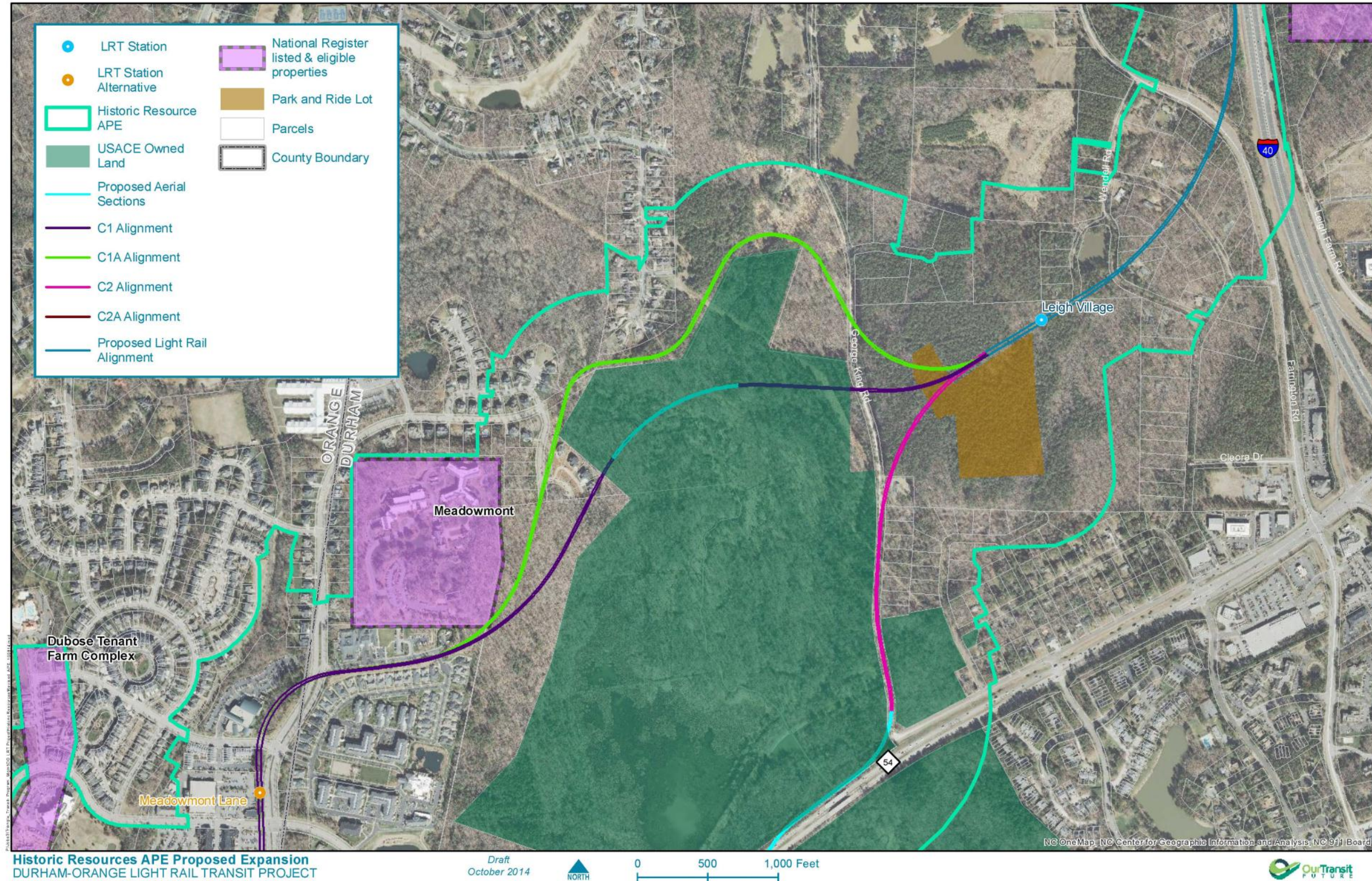




Figure 6: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”

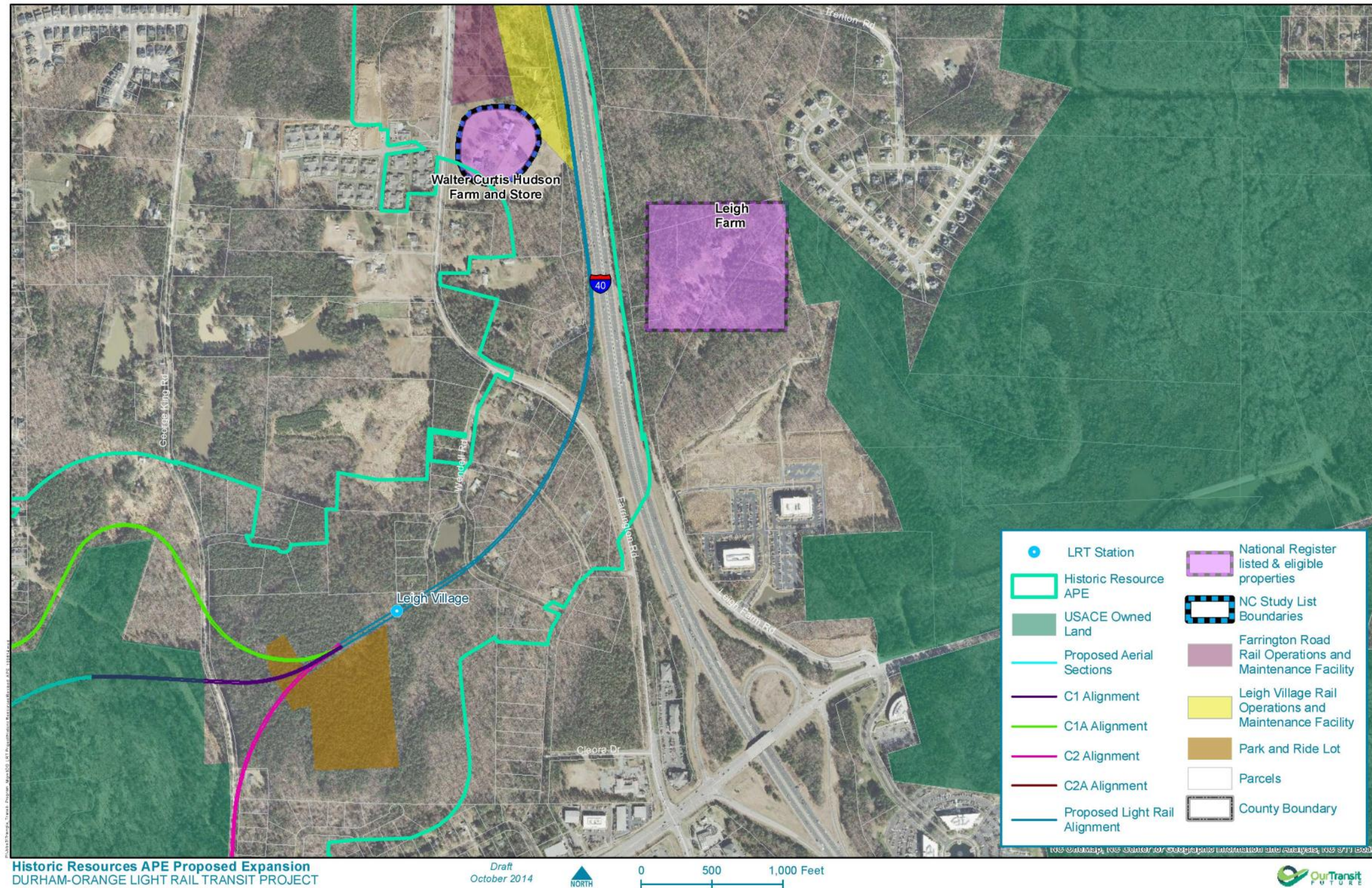
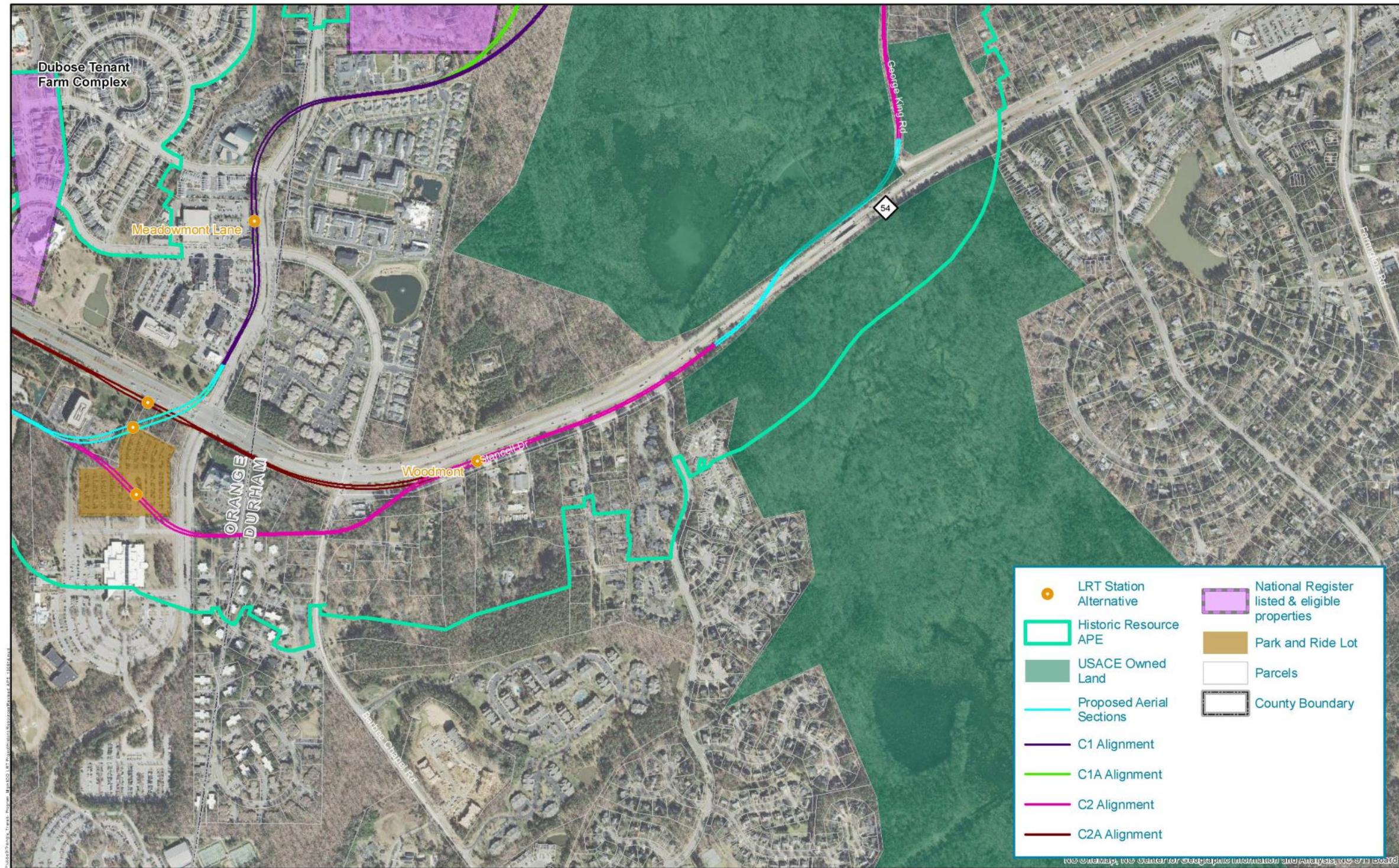




Figure 7: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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0 500 1,000 Feet





Figure 8: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”

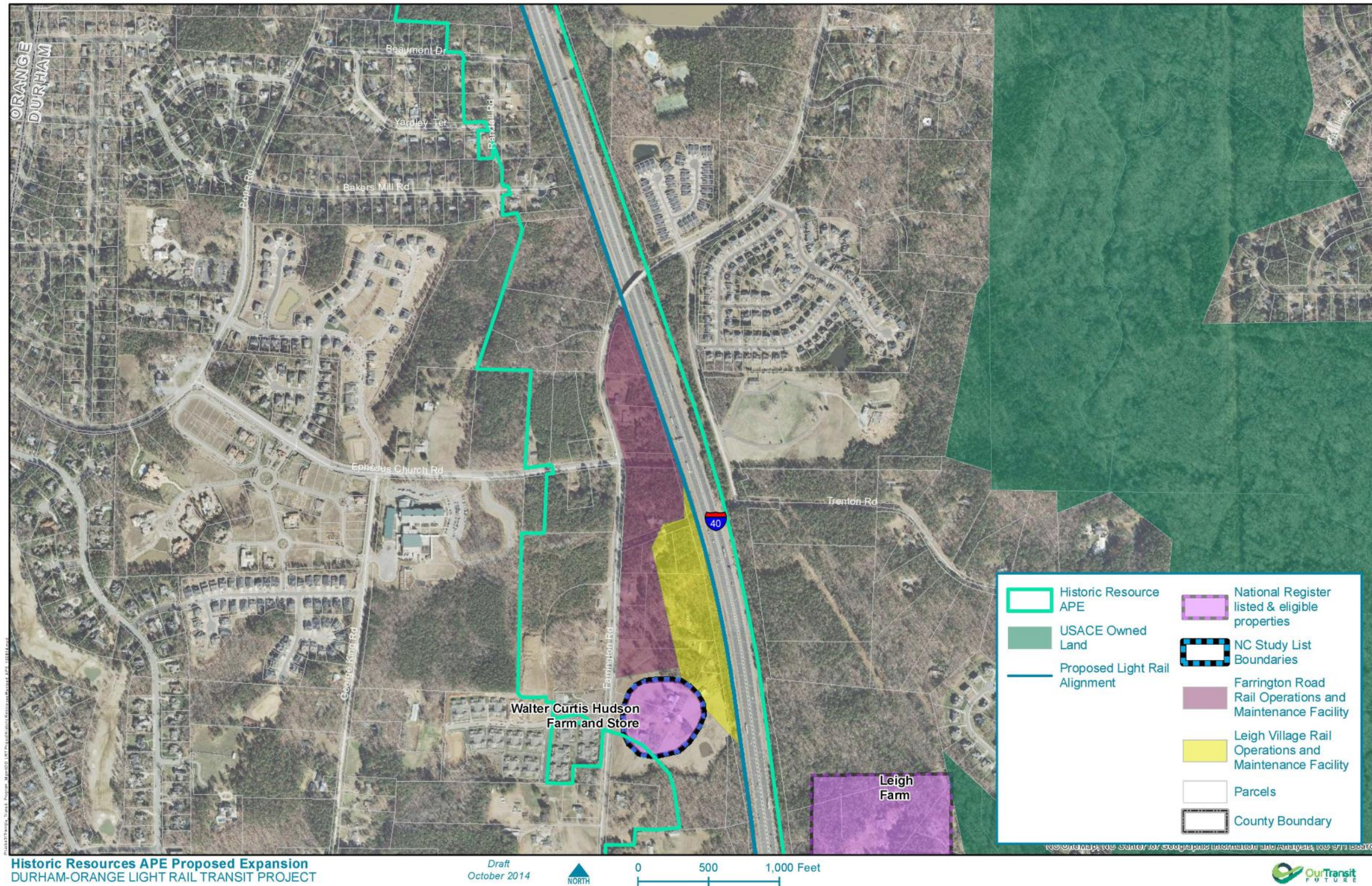
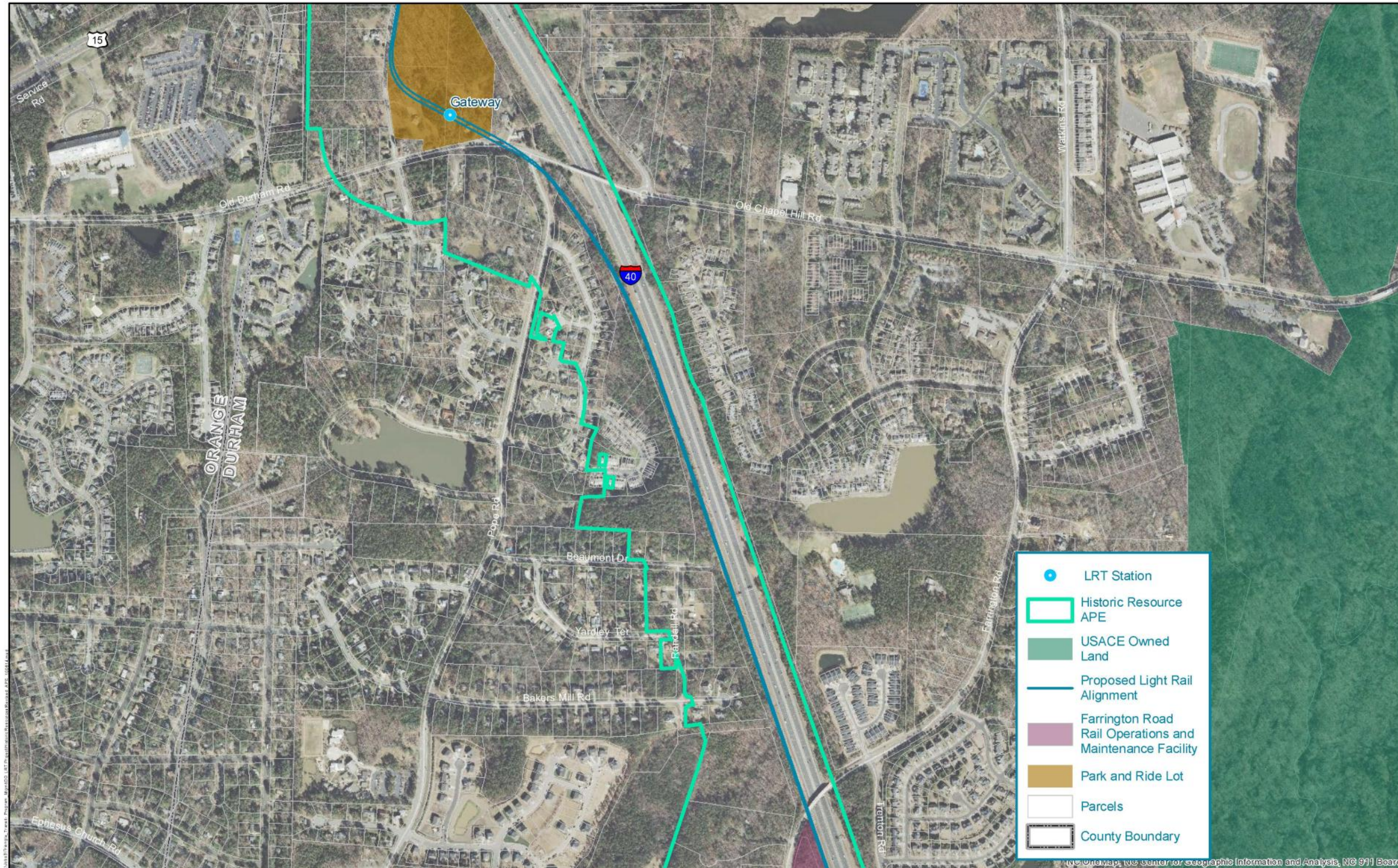




Figure 9: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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0 500 1,000 Feet





Figure 10: Historic Resources

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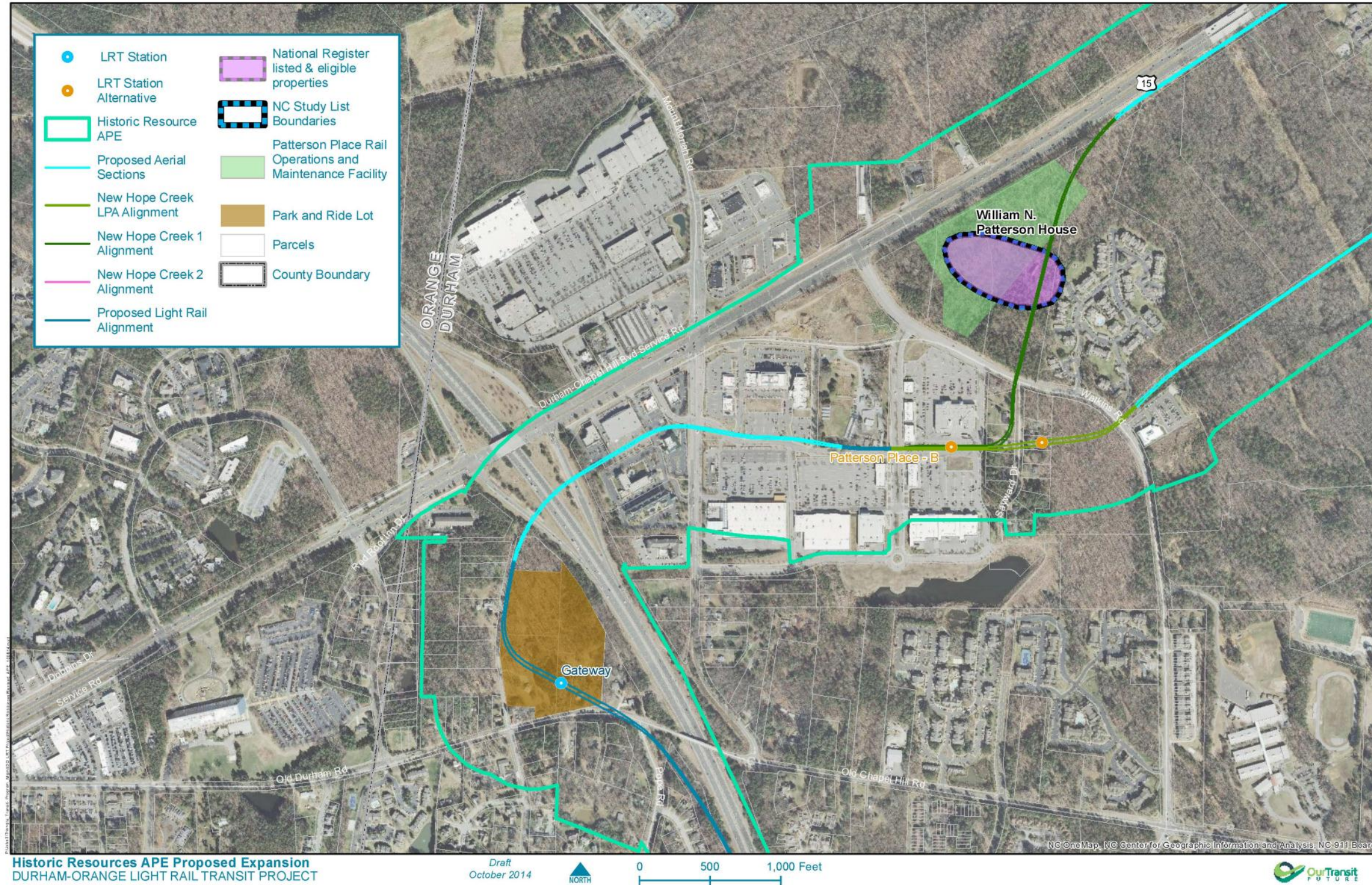
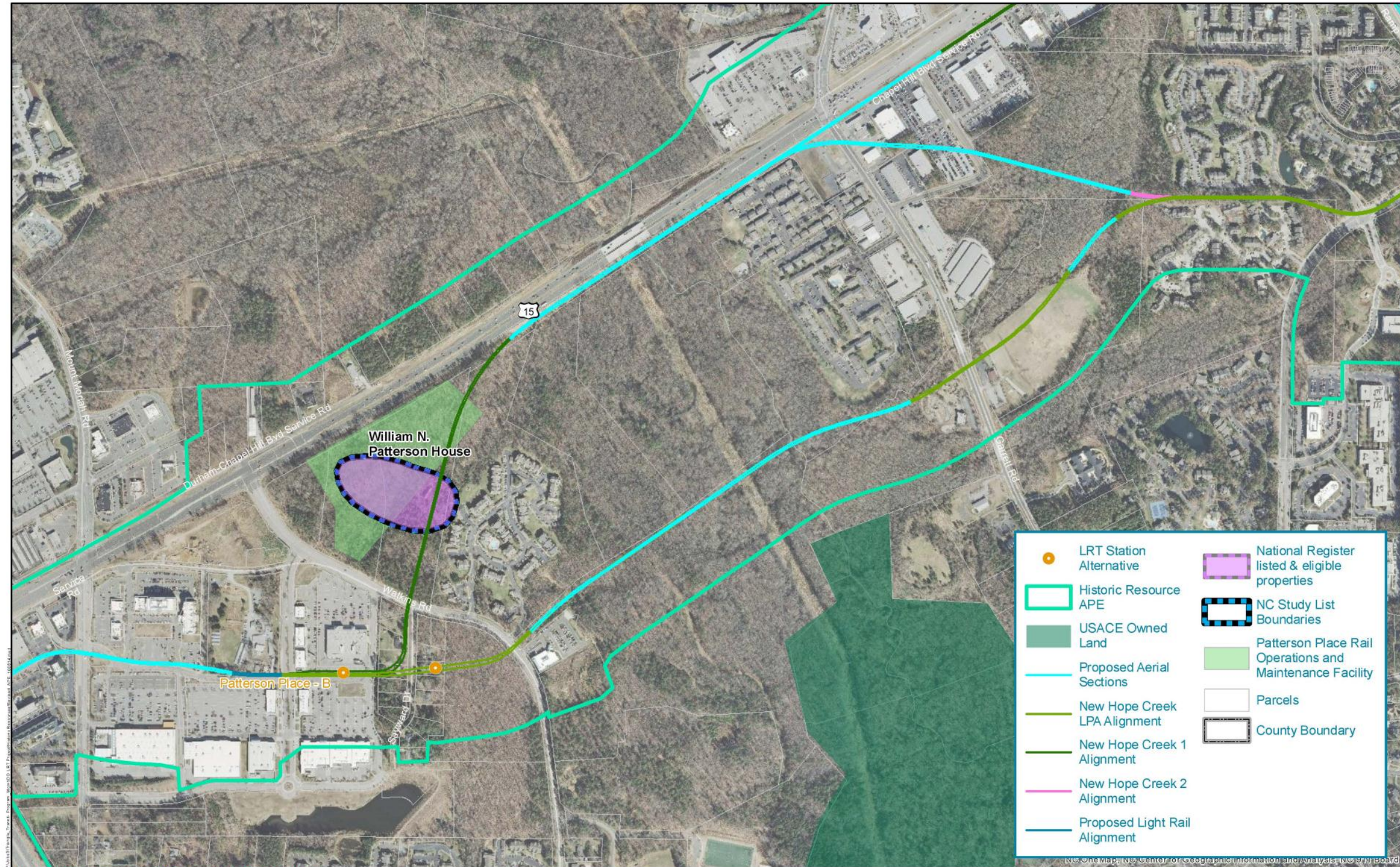




Figure 11: Historic Resources

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0 500 1,000 Feet





Figure 12: Historic Resources

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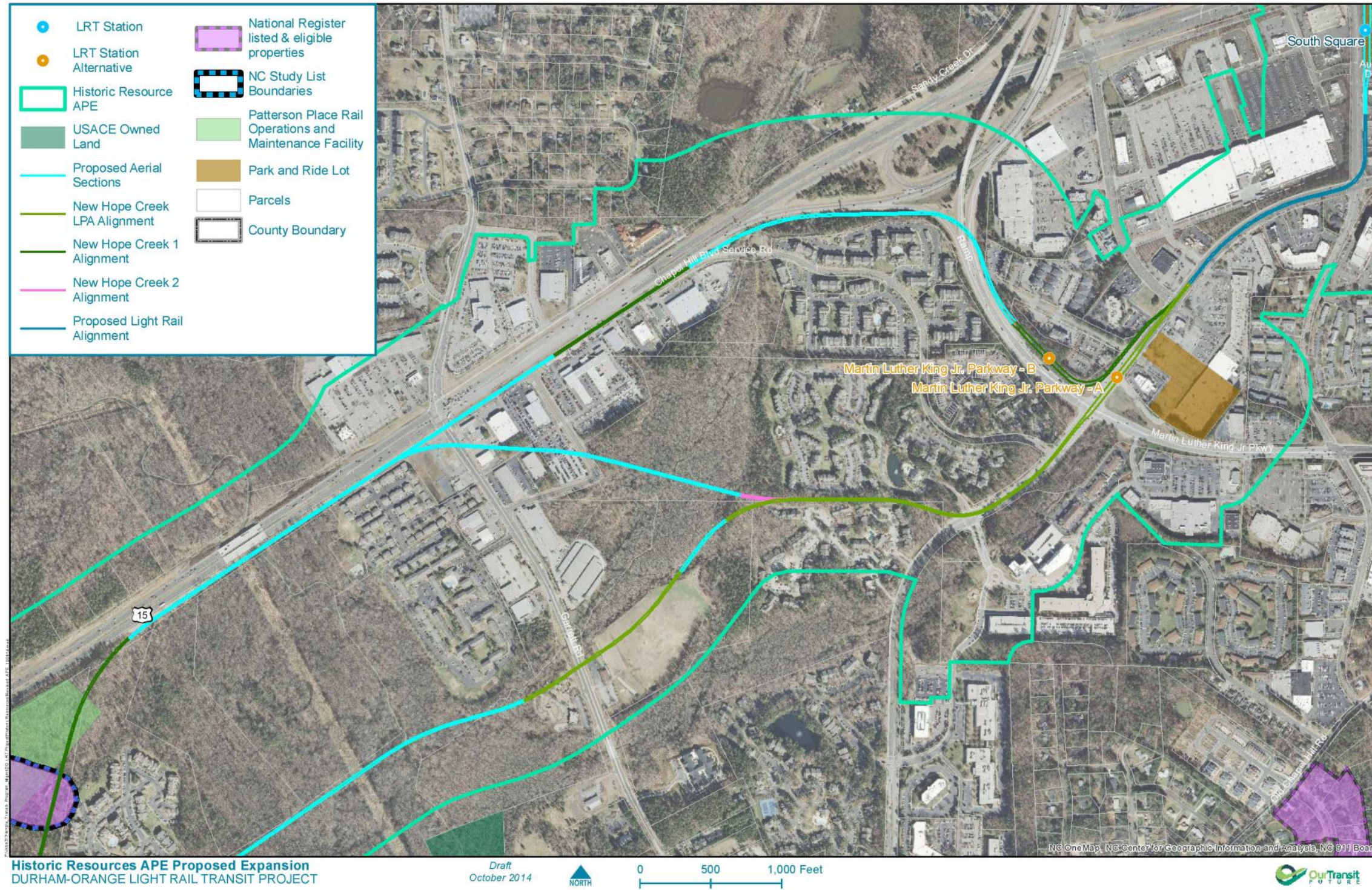
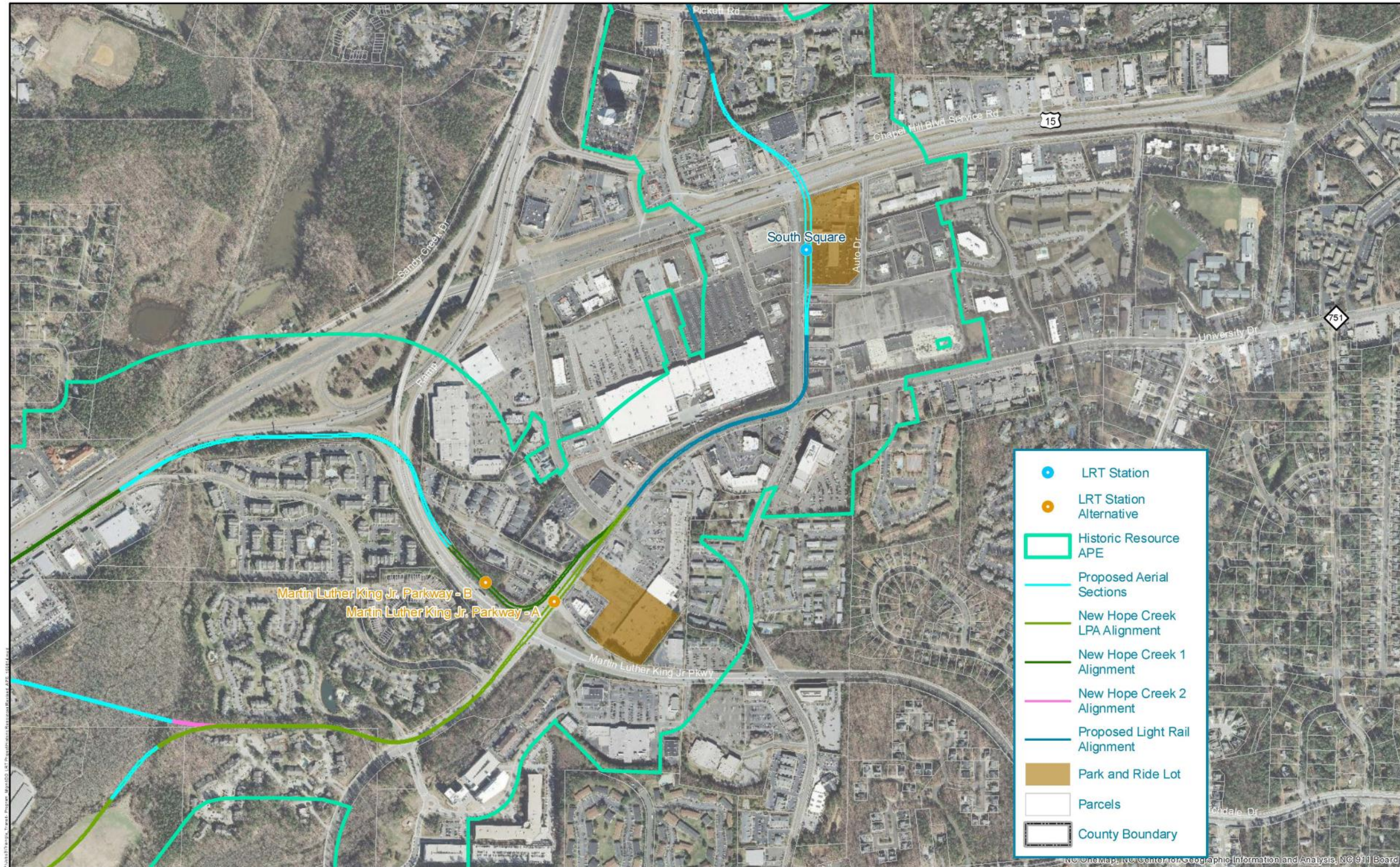




Figure 13: Historic Resources

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0 500 1,000 Feet





Figure 14: Historic Resources

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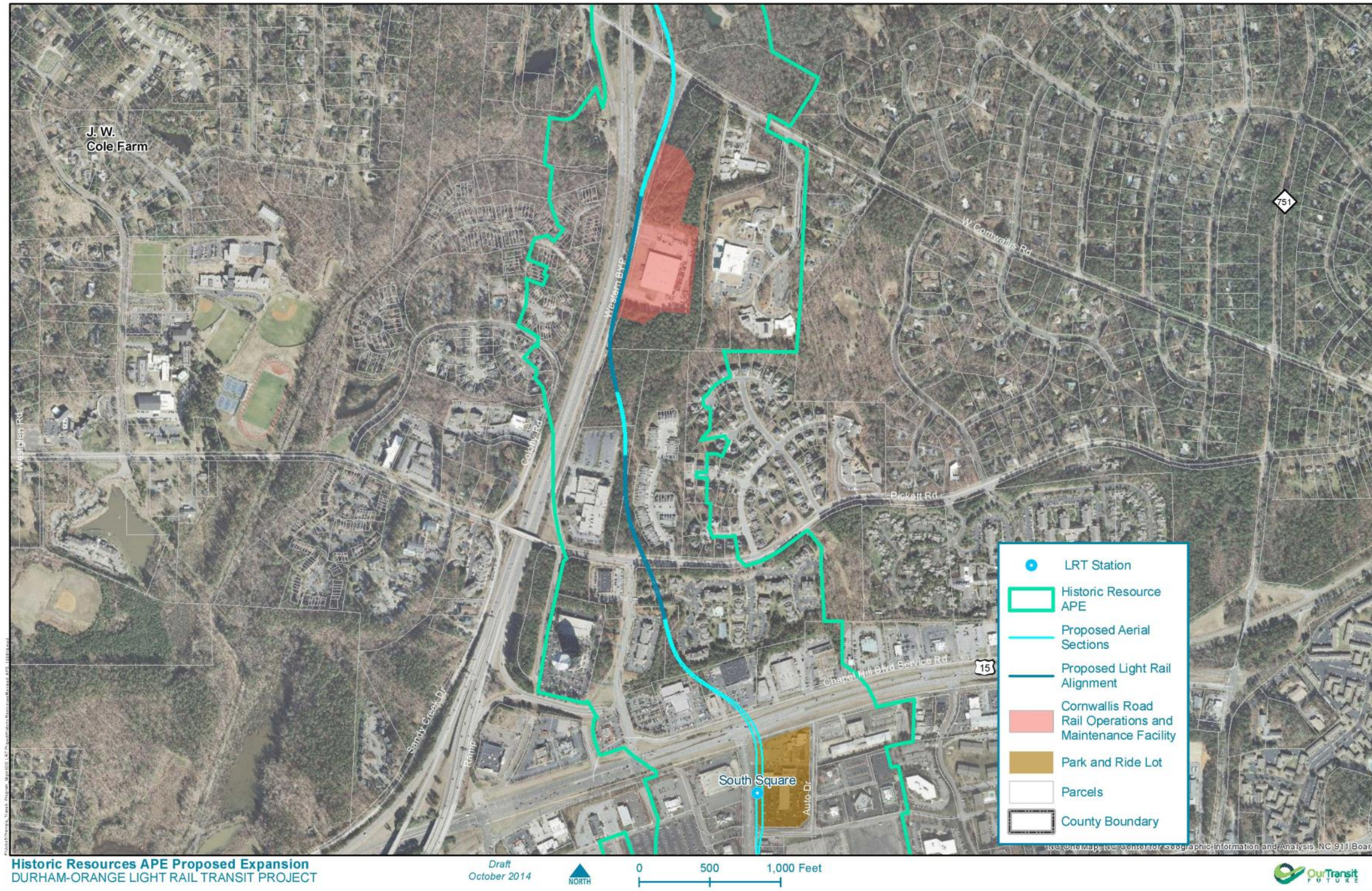




Figure 15: Historic Resources

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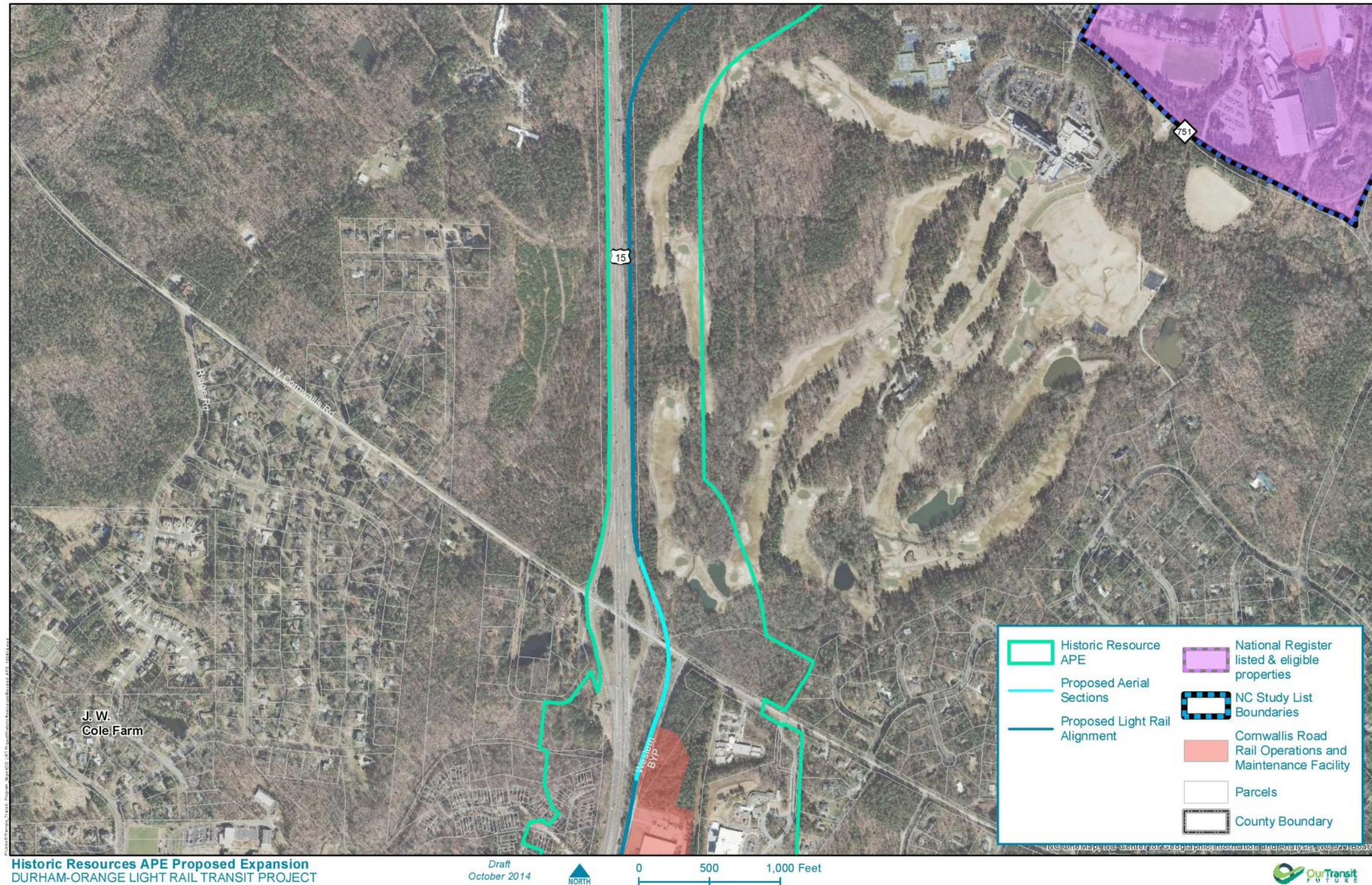




Figure 16: Historic Resources

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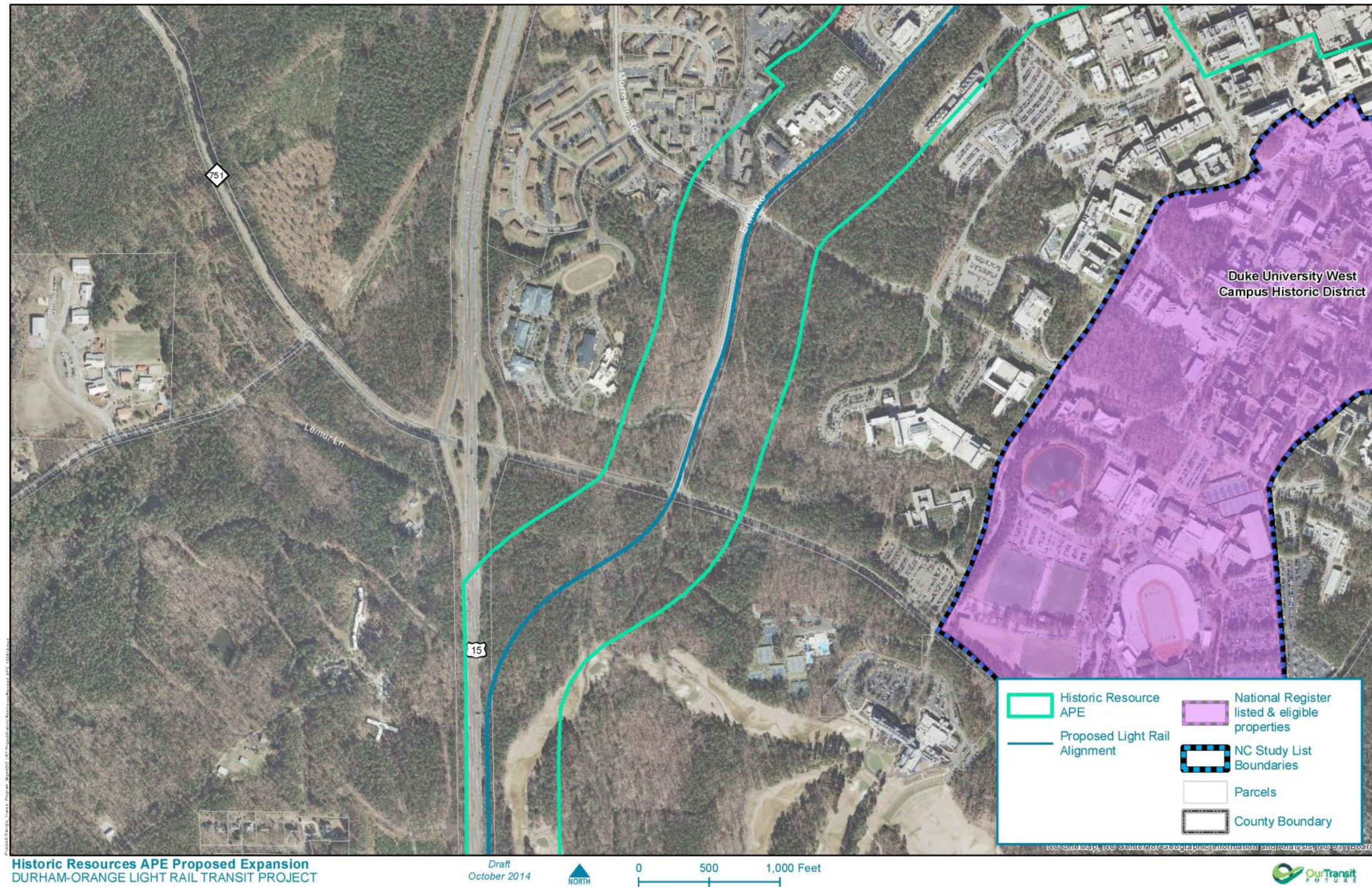
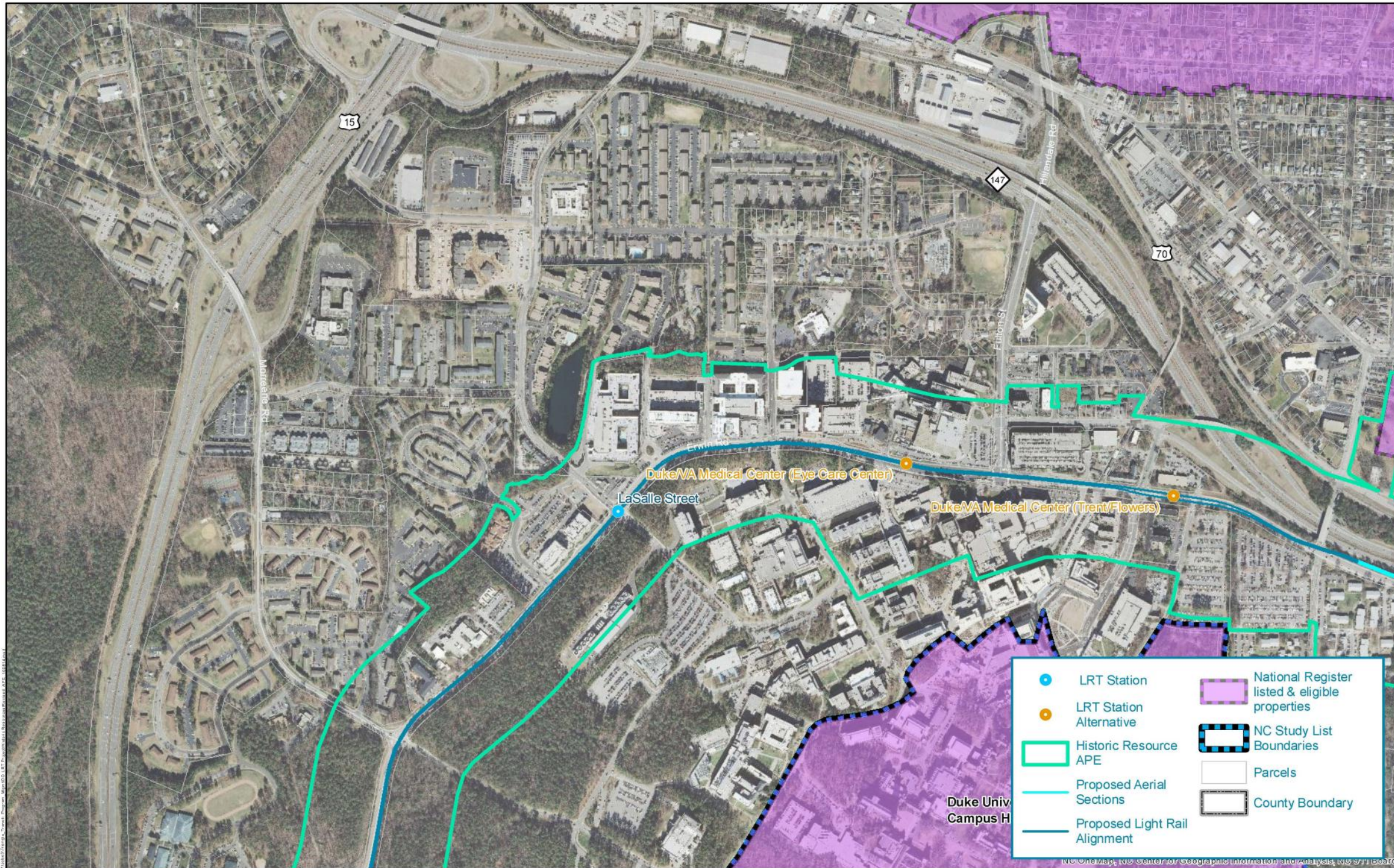




Figure 17: Historic Resources

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0 500 1,000 Feet





Figure 18: Historic Resources

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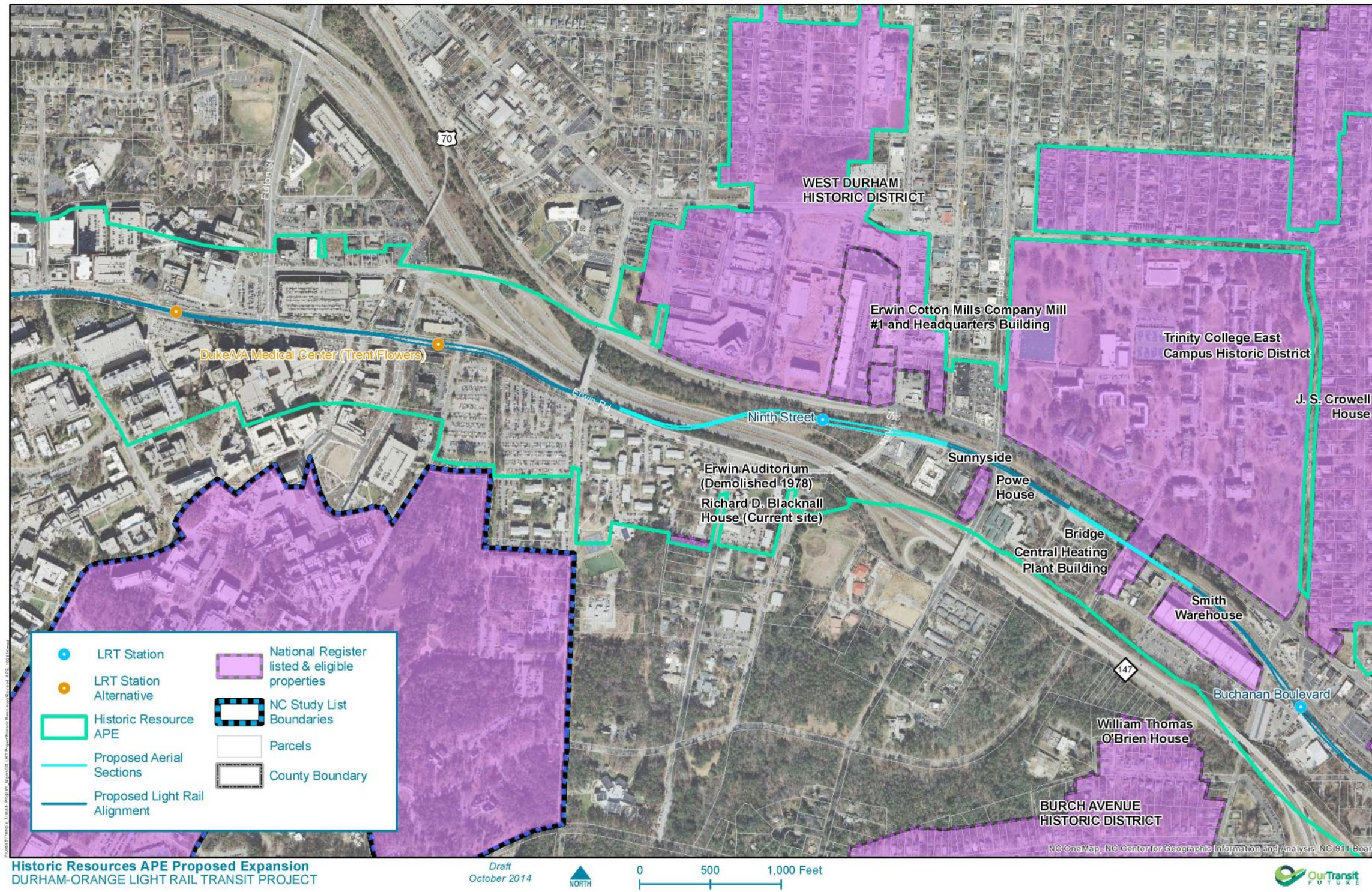




Figure 19: Historic Resources

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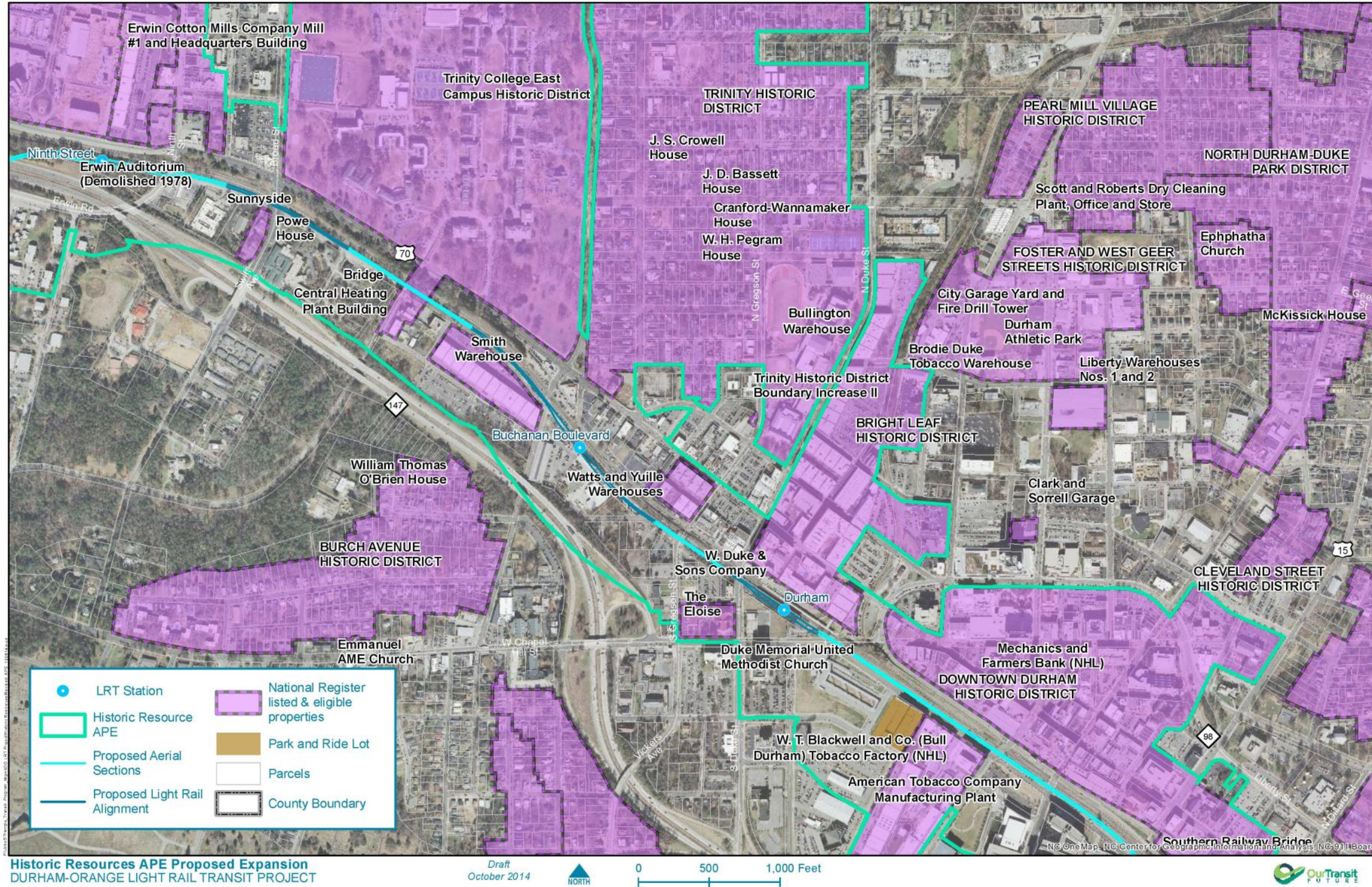




Figure 20: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”

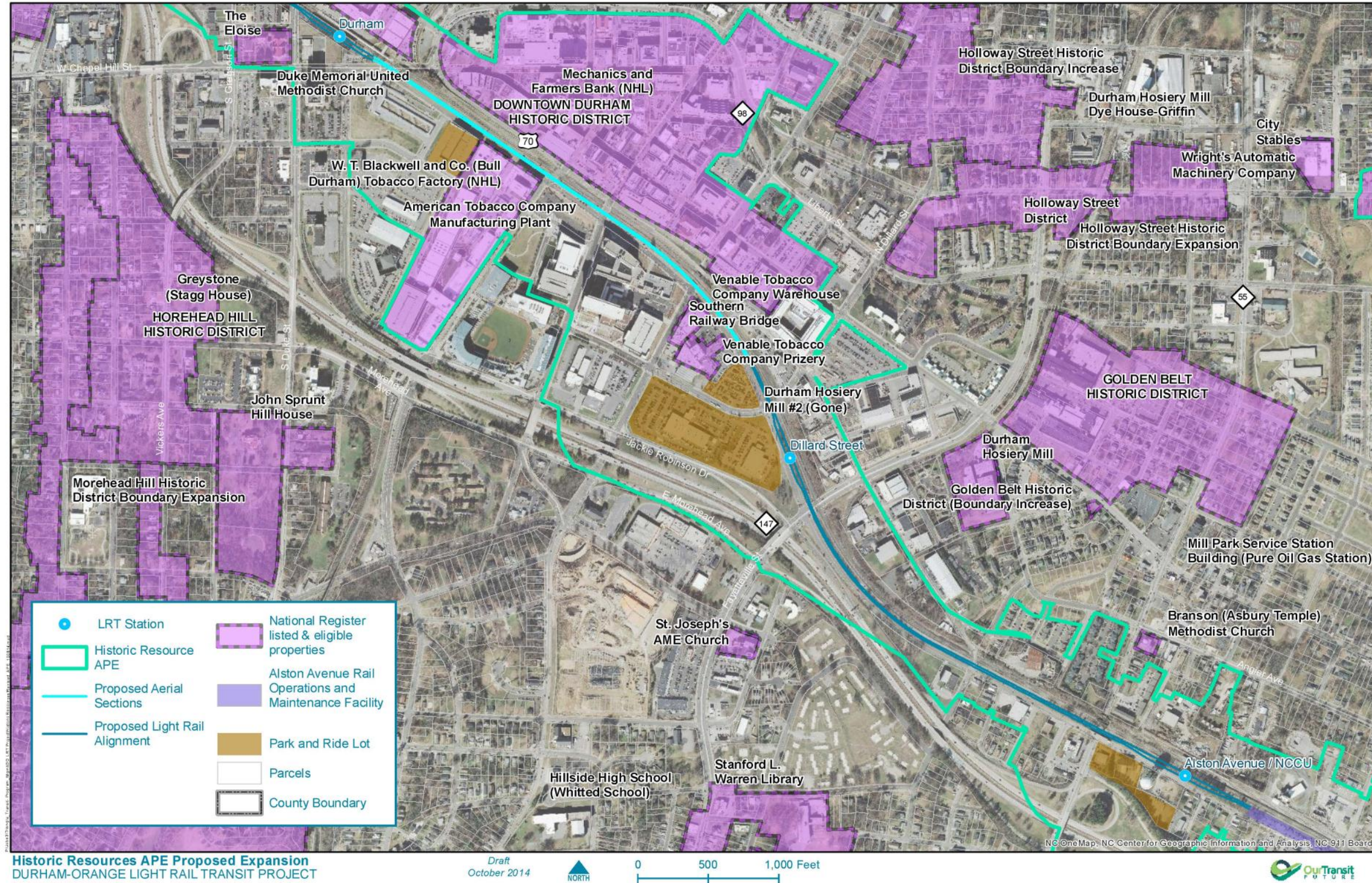
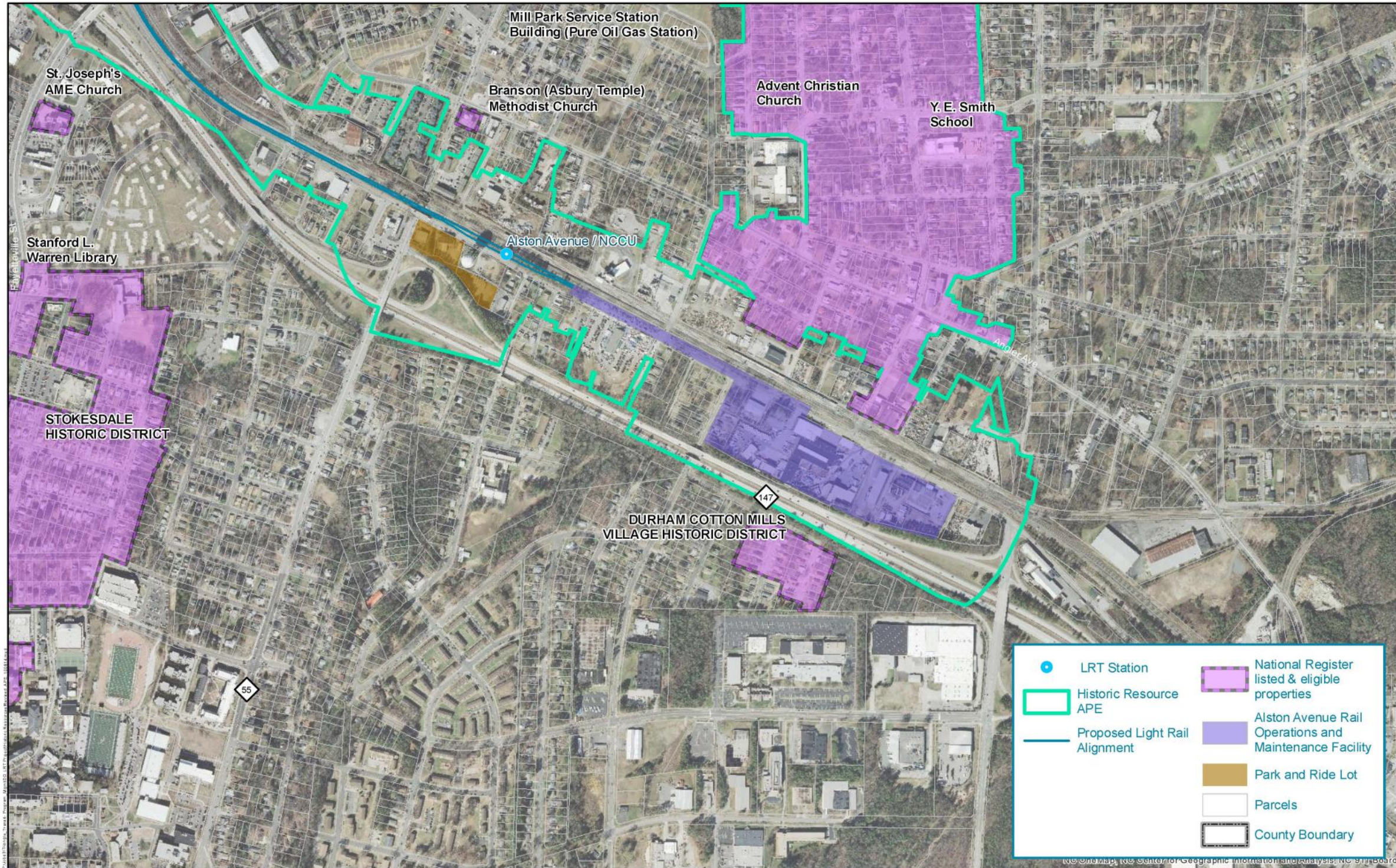




Figure 21: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



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0 500 1,000 Feet

