

Archaeological 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 21st 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.



Archaeological Resources – Area of Potential Effects

Table of Contents

- 1. Introduction..... 1-1**
 - 1.1 *Description of the Proposed D-O LRT 1-1*
 - 1.2 *Proposed Project Alternatives 1-1*
- 2. Area of Potential Effects Description 3**

List of Figures

- Figure 1: Archaeological Resources APE Overview 4
- Figure 2: Archaeological Resources APE..... 6
- Figure 3: Archaeological Resources APE..... 6
- Figure 4: Archaeological Resources APE..... 7
- Figure 5: Archaeological Resources APE 9
- Figure 6: Archaeological Resources APE..... 9
- Figure 7: Archaeological Resources APE10
- Figure 8: Archaeological Resources APE.....11
- Figure 9: Archaeological Resources APE12
- Figure 10: Archaeological Resources APE13
- Figure 11: Archaeological Resources APE15
- Figure 12: Archaeological Resources APE.....15
- Figure 13: Archaeological Resources APE.....16
- Figure 14: Archaeological Resources APE.....17
- Figure 15: Archaeological Resources APE.....18
- Figure 16: Archaeological Resources APE19
- Figure 17: Archaeological Resources APE20
- Figure 18: Archaeological Resources APE.....21
- Figure 19: Archaeological Resources APE.....22
- Figure 20: Archaeological Resources APE.....23
- Figure 21: Archaeological Resources APE24



Archaeological Resources – Area of Potential Effects

List of Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AA	Alternatives Analysis
APE	Area of potential effects
D-O	Durham-Orange Counties
DEIS	Environmental Impact Statement
DUMC	Duke University Medical Center
DTCC	Durham Technical Community College
FTA	Federal Transit Administration
LPA	Locally preferred alternative
LRT	Light rail transit
NC	North Carolina
NCCU	North Carolina Central University
NCHPO	NC State Historic Preservation Office
NC OSA	NC Office of State Archaeology
NCRR	North Carolina Railroad
NHC	New Hope Creek
PS	Potential sites
ROMF	Rail Operations Maintenance Facility
RPA	Register of Professional Archaeologists
TSM	Transportation System Management
UNC	University of North Carolina
US or U.S.	United States
VA	Veteran Affairs



Archaeological Resources – Area of Potential Effects

1. Introduction

Through the Alternatives Analysis (AA), 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 would greatly expand transit service in Durham and Orange Counties. The proposed Durham-Orange Light Rail Transit (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/North Carolina Central University (NCCU) Station. The proposed D-O LRT alignment would connect 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 (NCR) 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 NCR 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 5,500 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 (16 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 would be modified to feed into the proposed D-O LRT stations, and headways would be adjusted to provide more frequent service and minimize transfer waiting times. These services would 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 proposed LRT alternative as well as a small number of alignment, station, and ROMF siting options, 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 Options 1 and 2 and associated station locations)
- Station options at Duke and Durham VA Medical Centers
- Five proposed locations for the ROMF

In addition to the LRT alternative, the DEIS will consider a No-Build alternative, as follows:



Archaeological 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 Effects 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 Part 800. The draft APE for archaeological 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.

This information was provided along with a draft archaeological APE for consultation with the North Carolina State Historic Preservation Office (NC HPO) and other agencies as needed. The information presented in this document will be used to conduct a review of files maintained by the North Carolina Office of State Archaeology (OSA) performed by URS archaeologist Matt Jorgenson, RPA.

For the purposes of this background research, a draft APE of 100 feet on either side of the existing proposed D-O LRT centerline (as of May 29, 2014), the alignment alternatives contained within the two expanded study areas at the Little Creek and New Hope Creek crossings, potential park-and-ride facility locations, and potential rail operation and maintenance facility sites were utilized. Future field studies would be limited to the “footprint” of the project, including permanent and any temporary work spaces; however, the broader APE is used here for two primary reasons. First, archaeological resources recorded at the OSA may have unknown boundaries. In these cases, the exact location, size, and extent of the resource is not known; therefore, resources mapped in very close proximity to the project area may in reality extend into the alignment or associated facilities. Second, researching a broader area allows for minor alterations to the alignment and/or other ancillary facilities (e.g., stations, temporary work space) without the need for additional study and reporting.

The entire draft APE is depicted on Figure 1. It is shown at a smaller scale on 20 detailed maps (Figures 2-21) 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.

From its terminus in Chapel Hill (Figure 2) until it reaches east Durham at Alston Avenue (Figure 21), the APE generally extends 100 feet to either side of the center line of the Undertaking’s various corridors, so is generally 200 feet wide. The draft APE expands and contracts depending on the location of proposed park-and-ride facilities and proposed ROMFs.

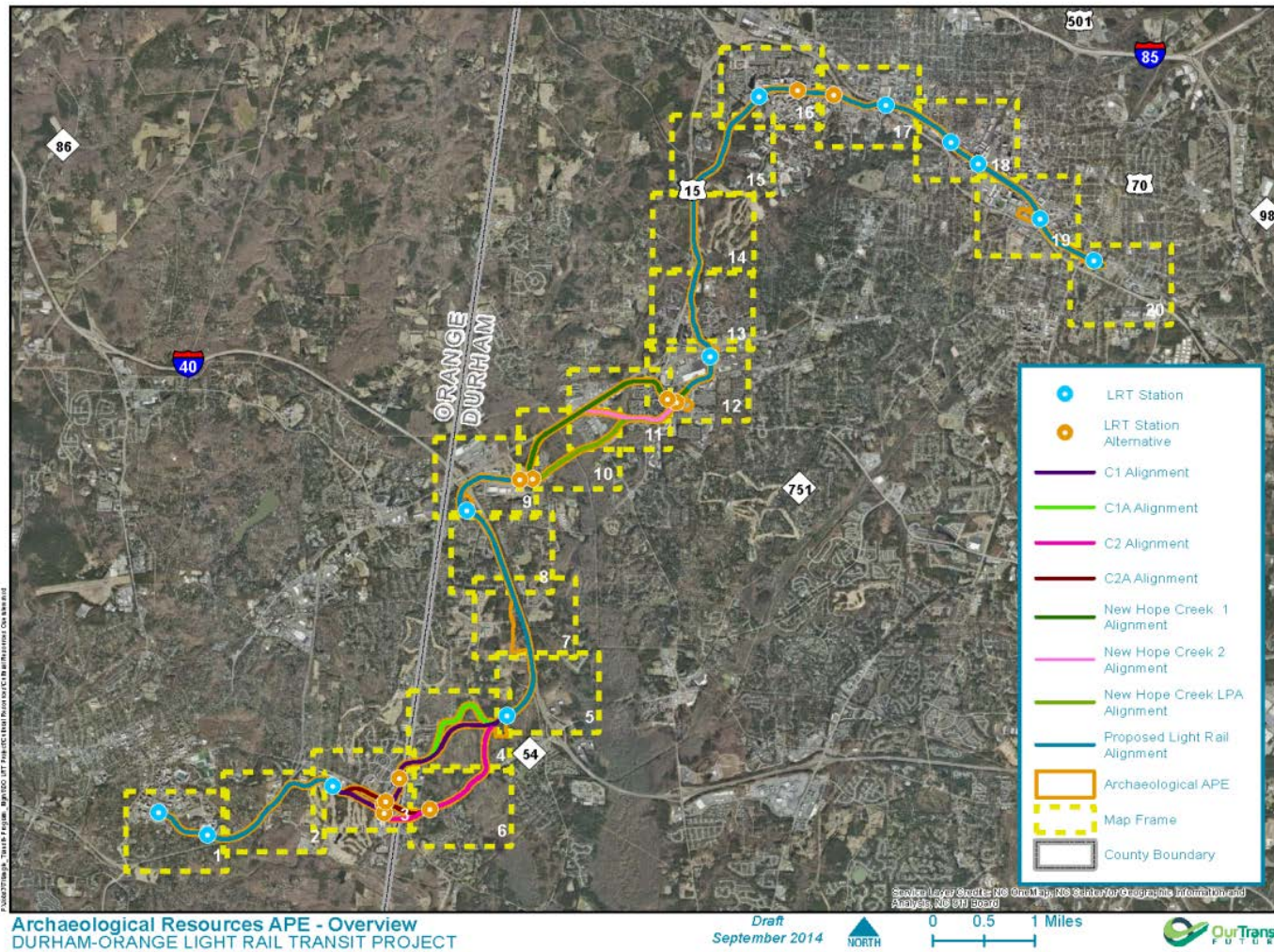
The APE extends farther than 100 feet from the centerline of the various corridors in the vicinity of the sites of five potential ROMFs in Durham County and at some sections where there are proposed park-and-ride sites associated with several stations. At the two ROMF sites located between I-40 and Farrington Road, the APE extends 100 feet west of the site (Figure 8). At the site near the junction of Durham-Chapel Hill Boulevard (US 15 / 501) and Watkins Road, the APE extends out 100 feet from the edges of the ROMF at all sides (Figures 10 and 11). It also extends 100 ft. to the east of the ROMF located near the junction of US 15 / 501 and West Cornwallis Road (Figure 14).

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 100 feet from the southern edge of the ROMF (Figure 21). The APE extends an additional 100 feet outside of the footprints of proposed park-and-ride locations. These facilities are located at the Friday Center (Figure 4), Leigh Village (Figure 5), Gateway (Figure 10), South Square (Figure 13), Dillard Street (Figure 20), and Alston Avenue (Figure 21) stations.

The FTA is submitting this APE to the NC HPO for review and consultation, pursuant to 36 CFR 800.

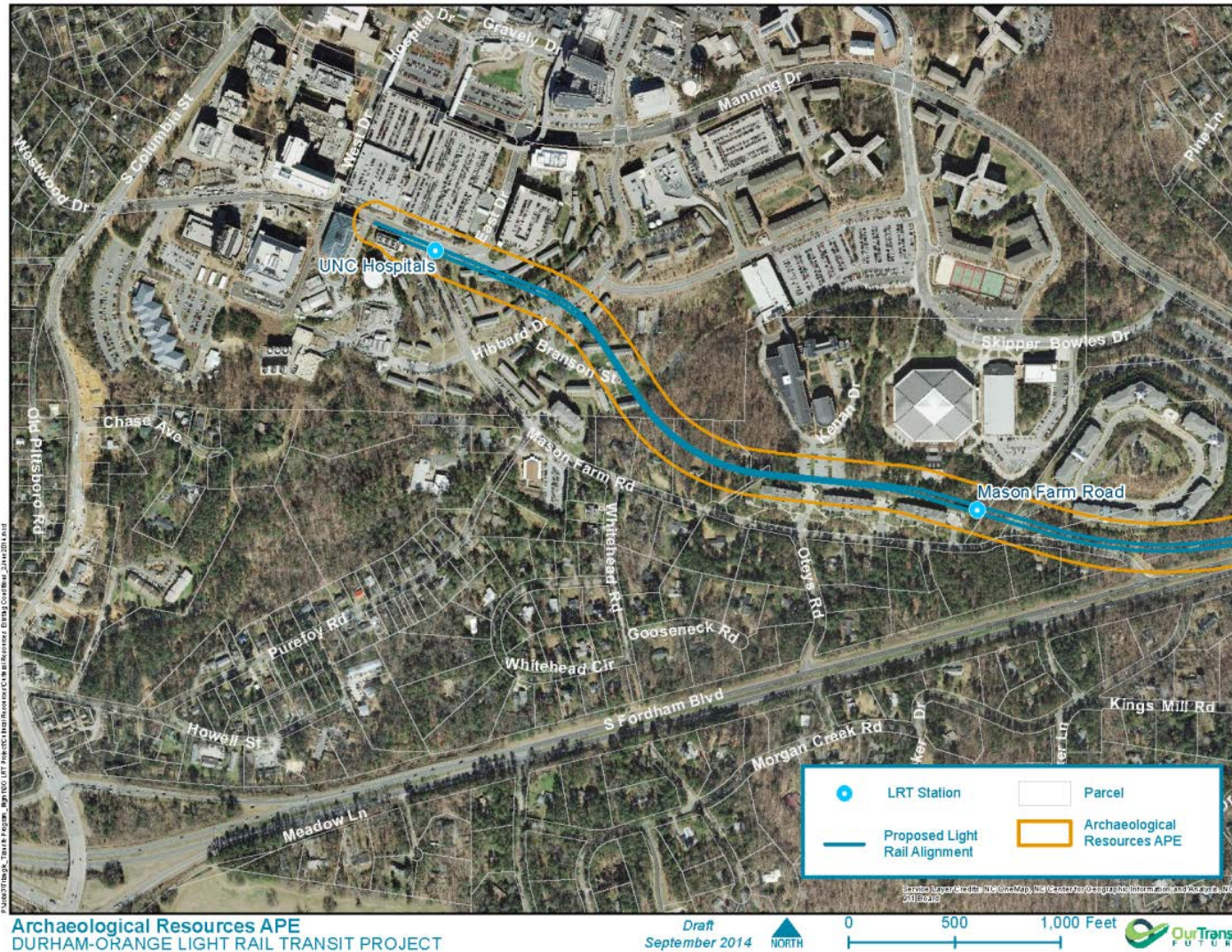
Archaeological Resources – Area of Potential Effects

Figure 1: Archaeological Resources APE – Overview



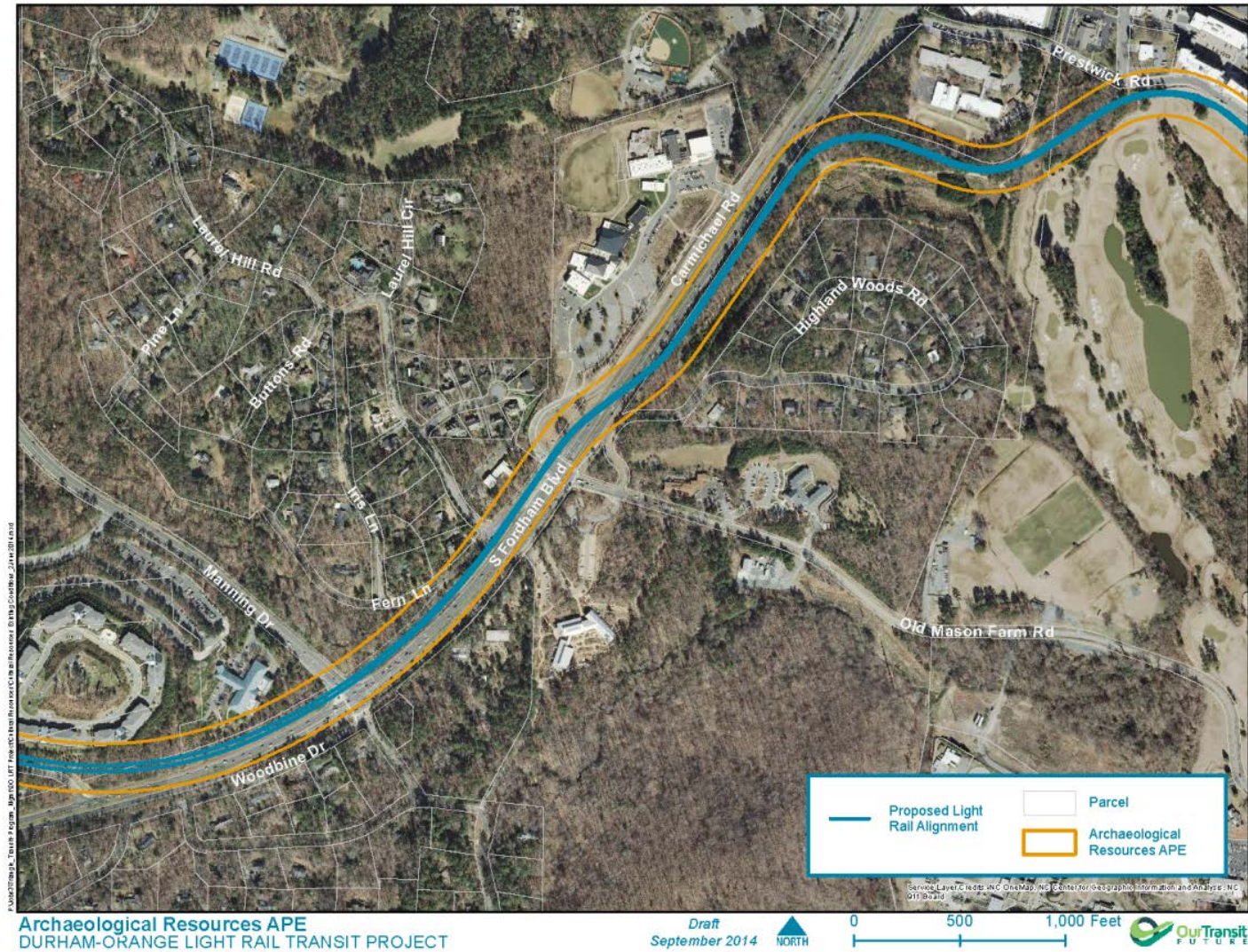
Archaeological Resources – Area of Potential Effects

Figure 2: Archaeological Resources APE



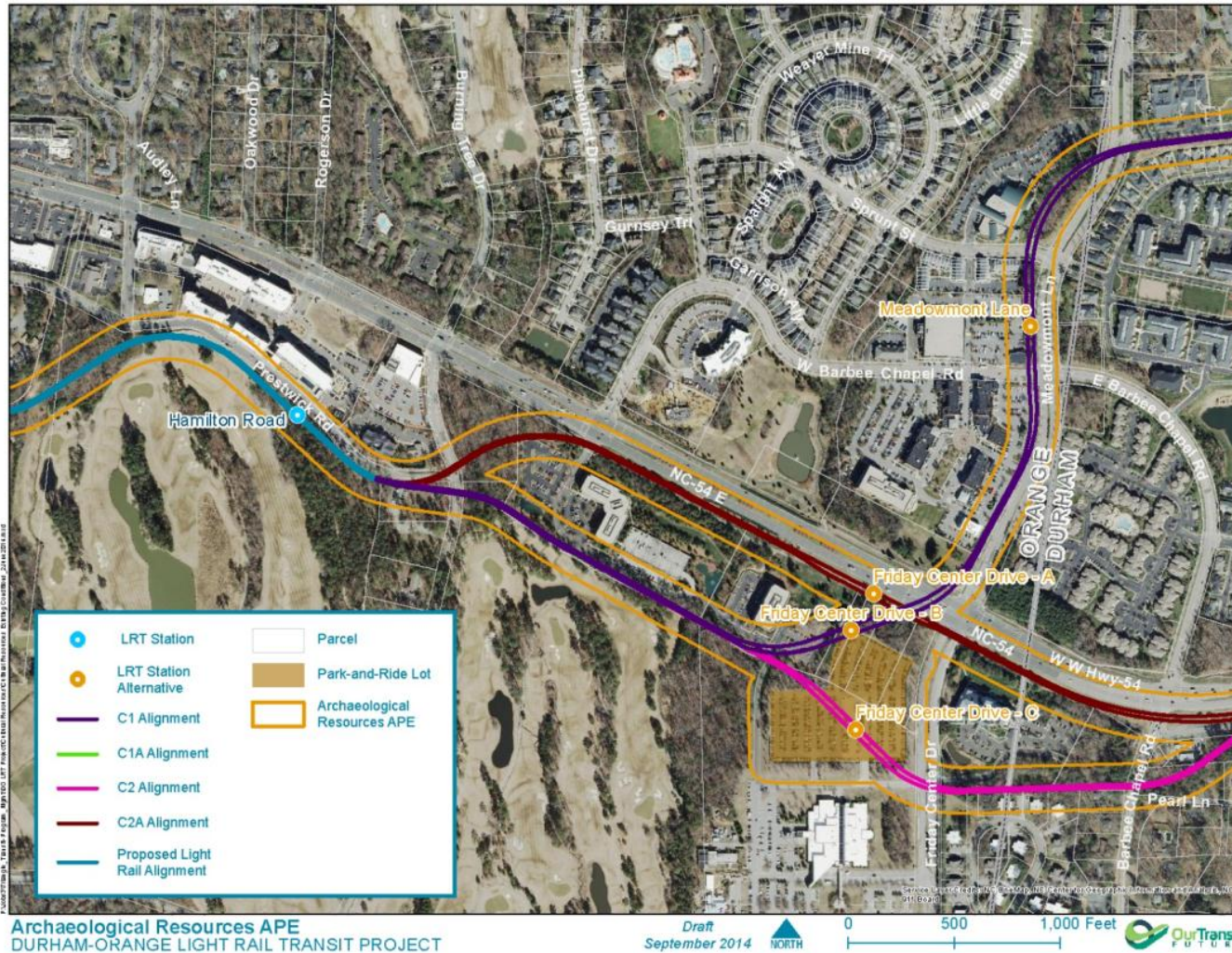
Archaeological Resources – Area of Potential Effects

Figure 3: Archaeological Resources APE



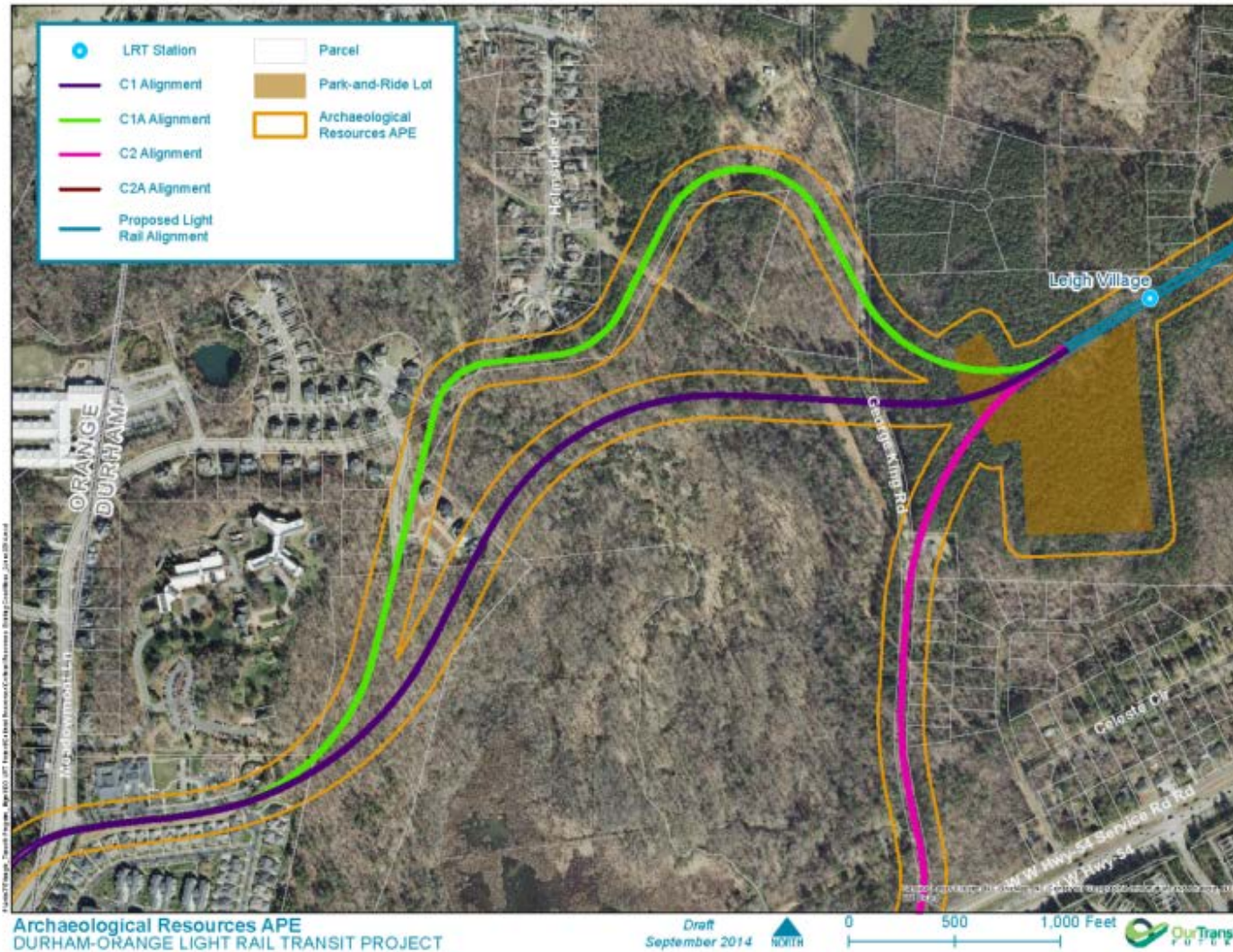
Archaeological Resources – Area of Potential Effects

Figure 4: Archaeological Resources APE



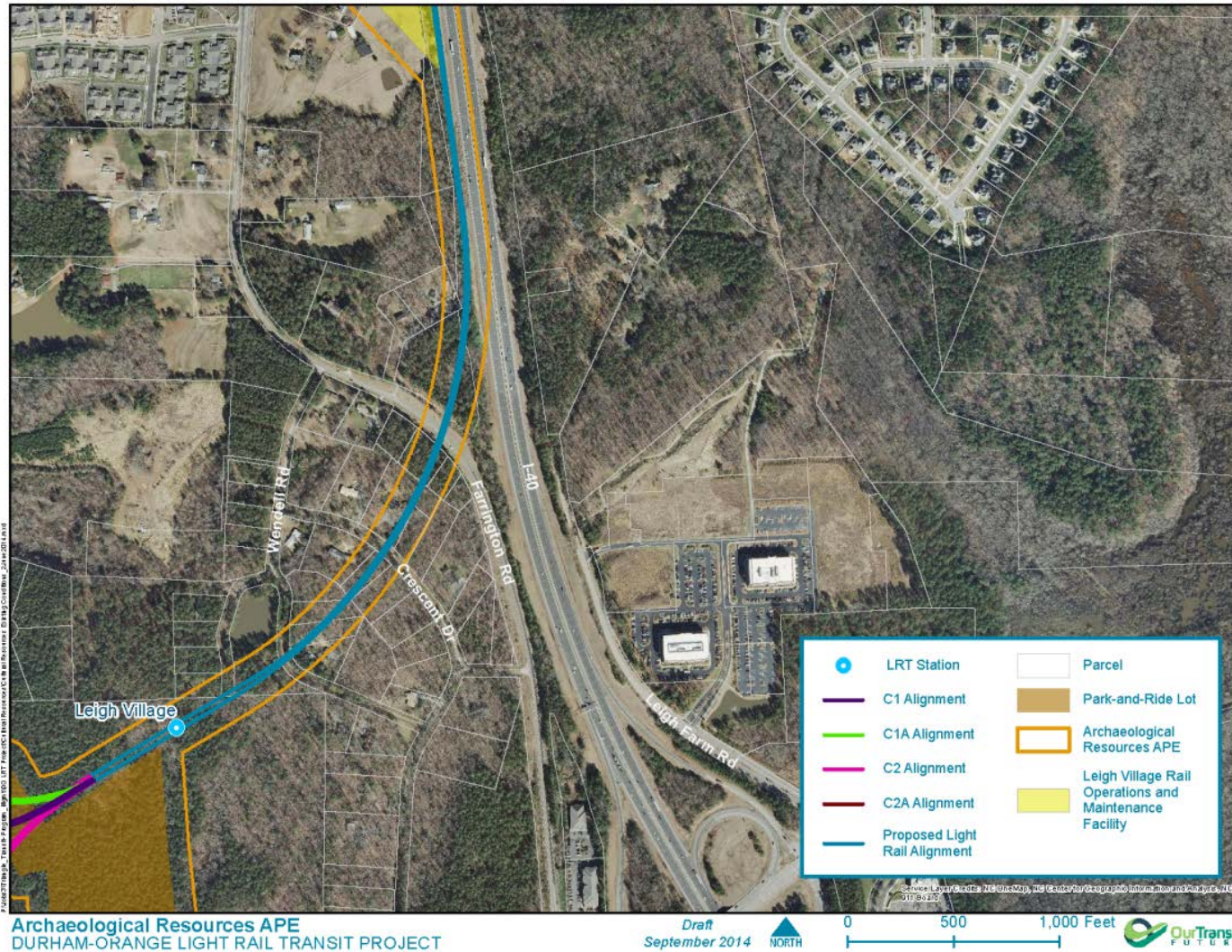
Archaeological Resources – Area of Potential Effects

Figure 5: Archaeological Resources APE



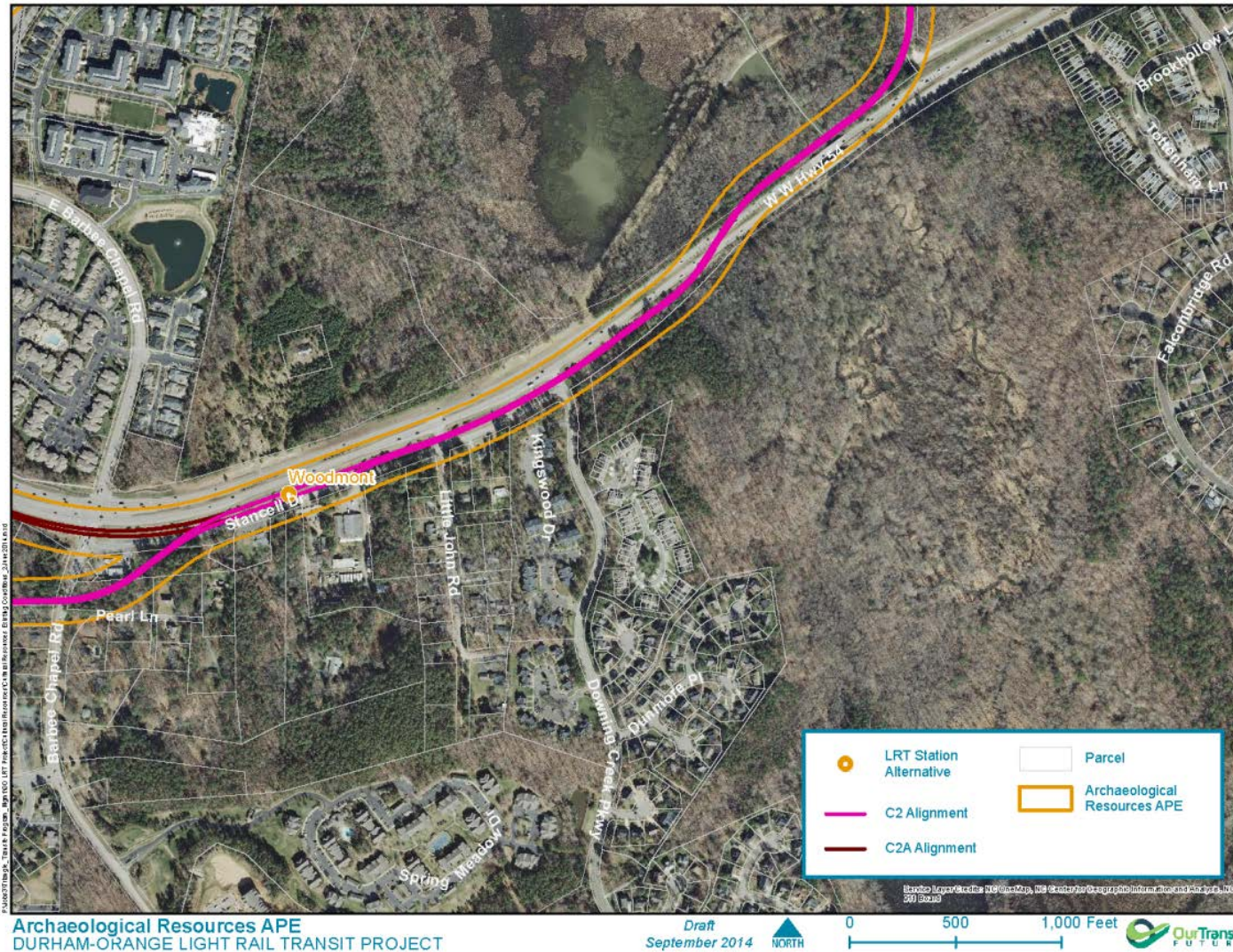
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Figure 6: Archaeological Resources APE



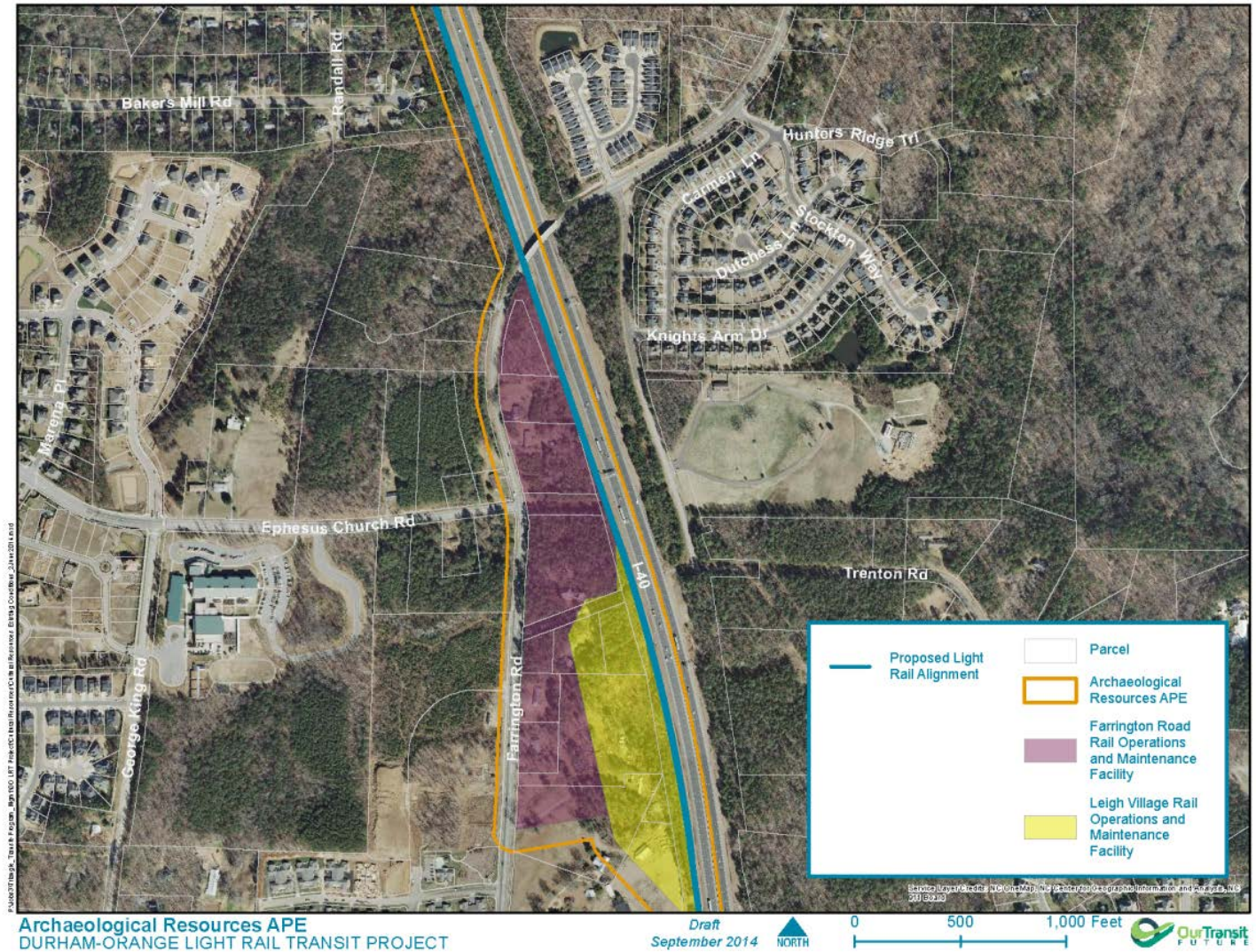
Archaeological Resources – Area of Potential Effects

Figure 7: Archaeological Resources APE



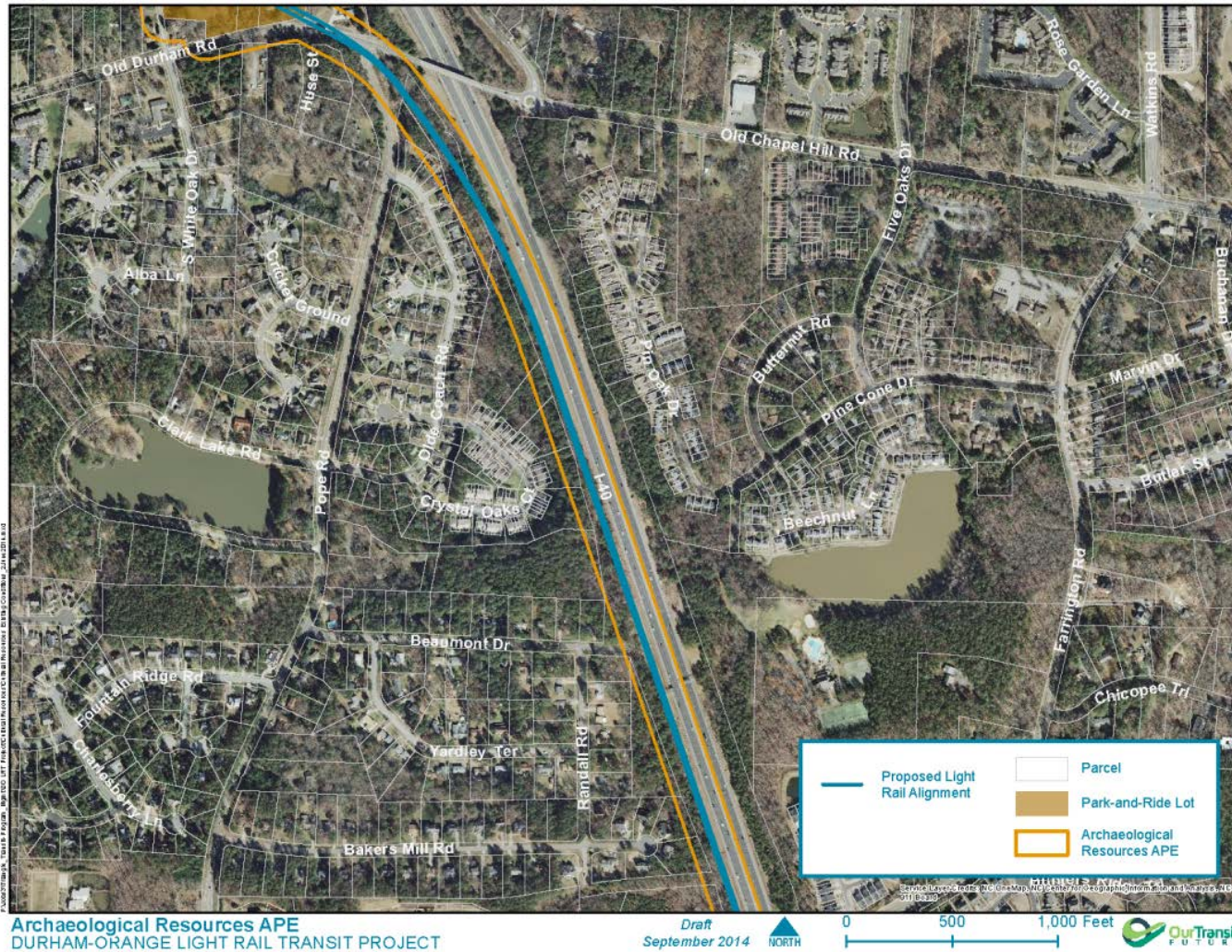
Archaeological Resources – Area of Potential Effects

Figure 8: Archaeological Resources APE



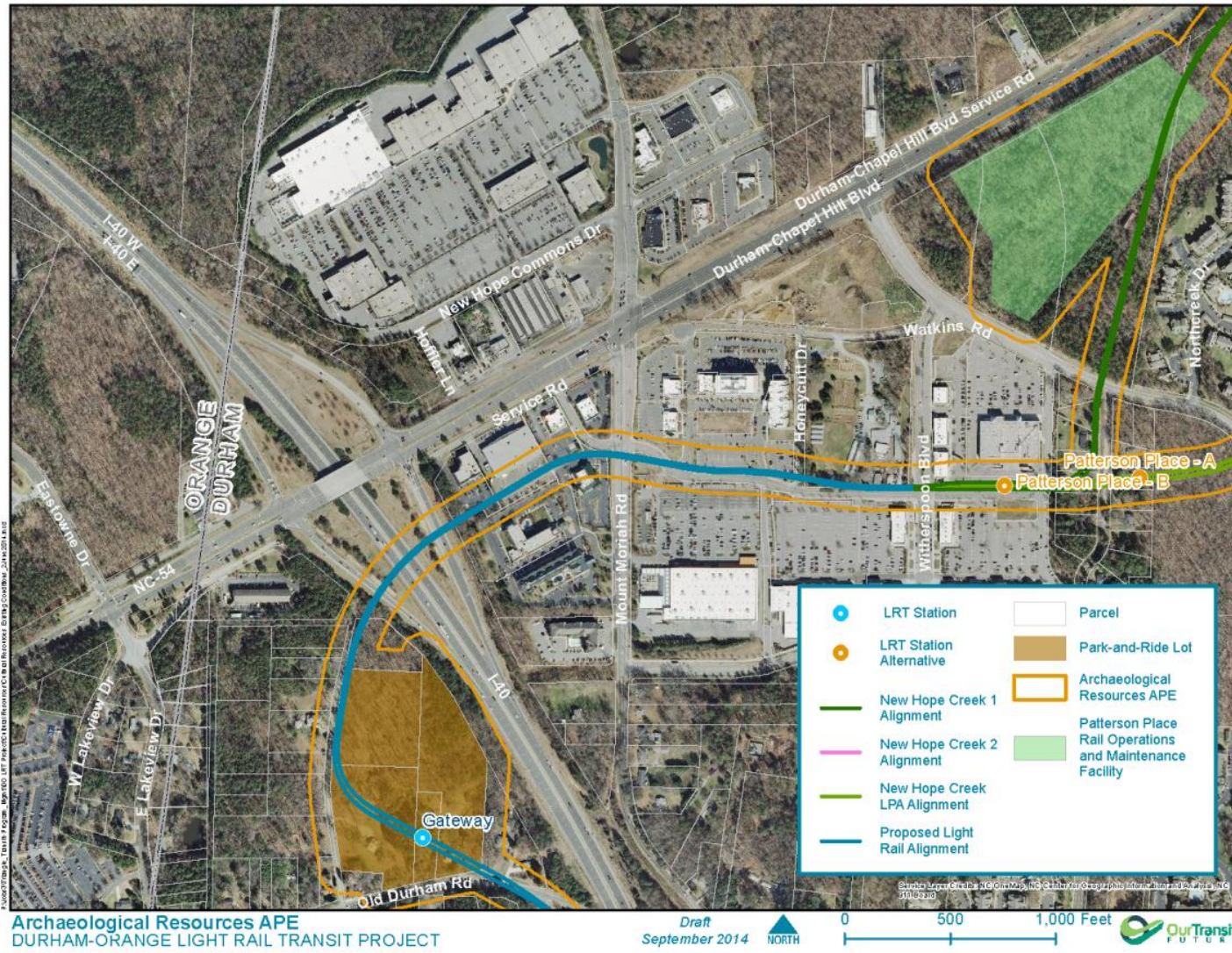
Archaeological Resources – Area of Potential Effects

Figure 9: Archaeological Resources APE



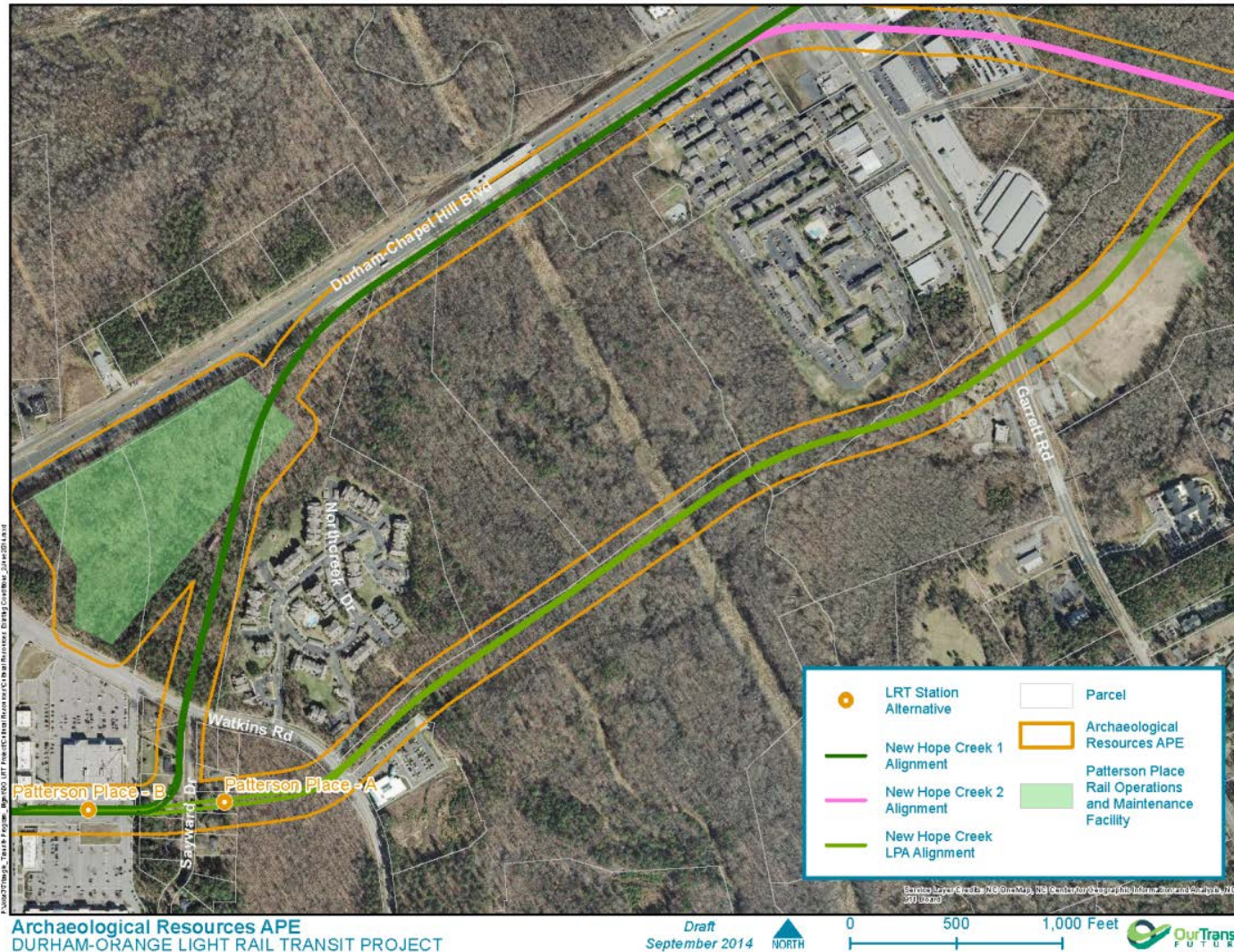
Archaeological Resources – Area of Potential Effects

Figure 10: Archaeological Resources APE



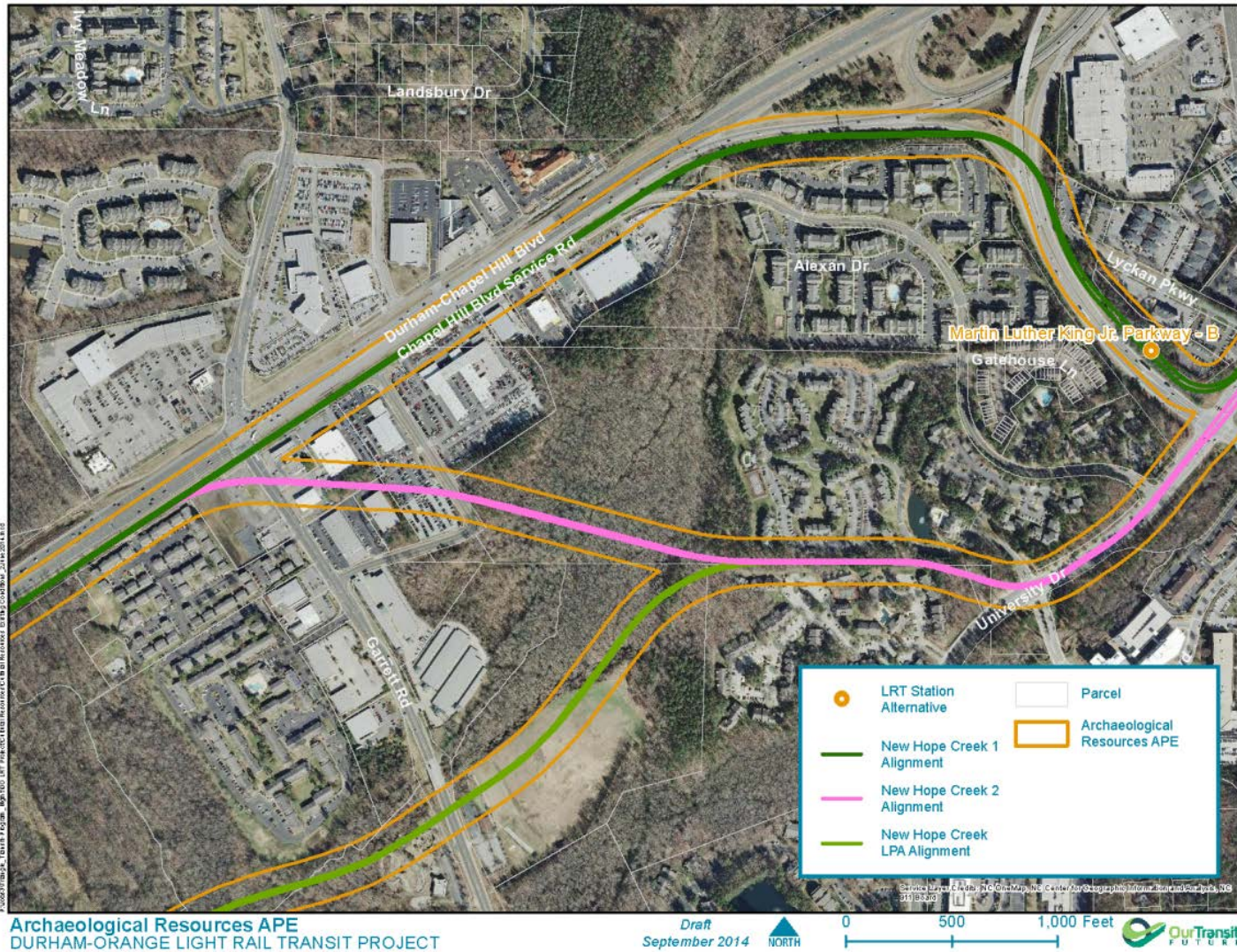
Archaeological Resources – Area of Potential Effects

Figure 11: Archaeological Resources APE



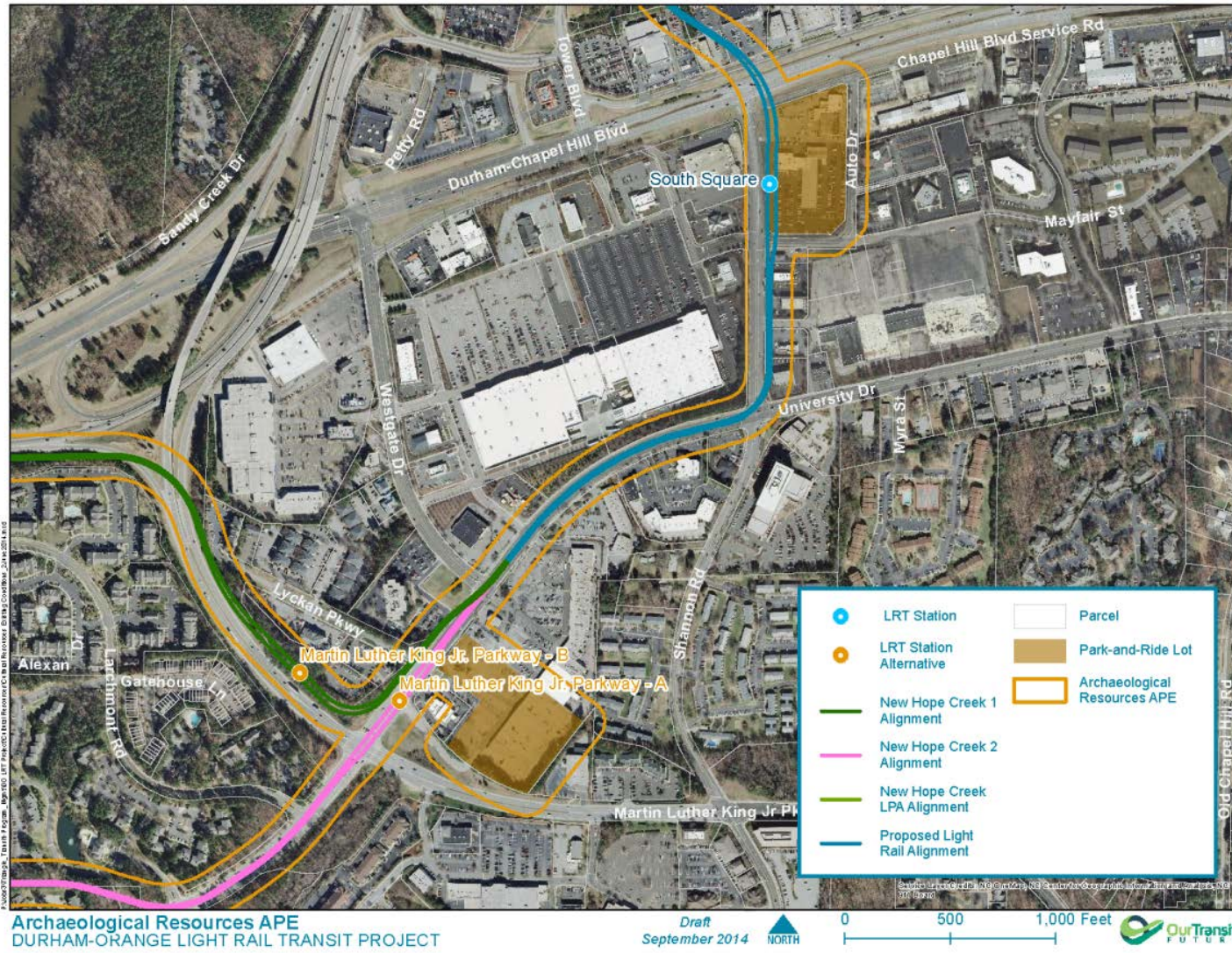
Archaeological Resources – Area of Potential Effects

Figure 12: Archaeological Resources APE



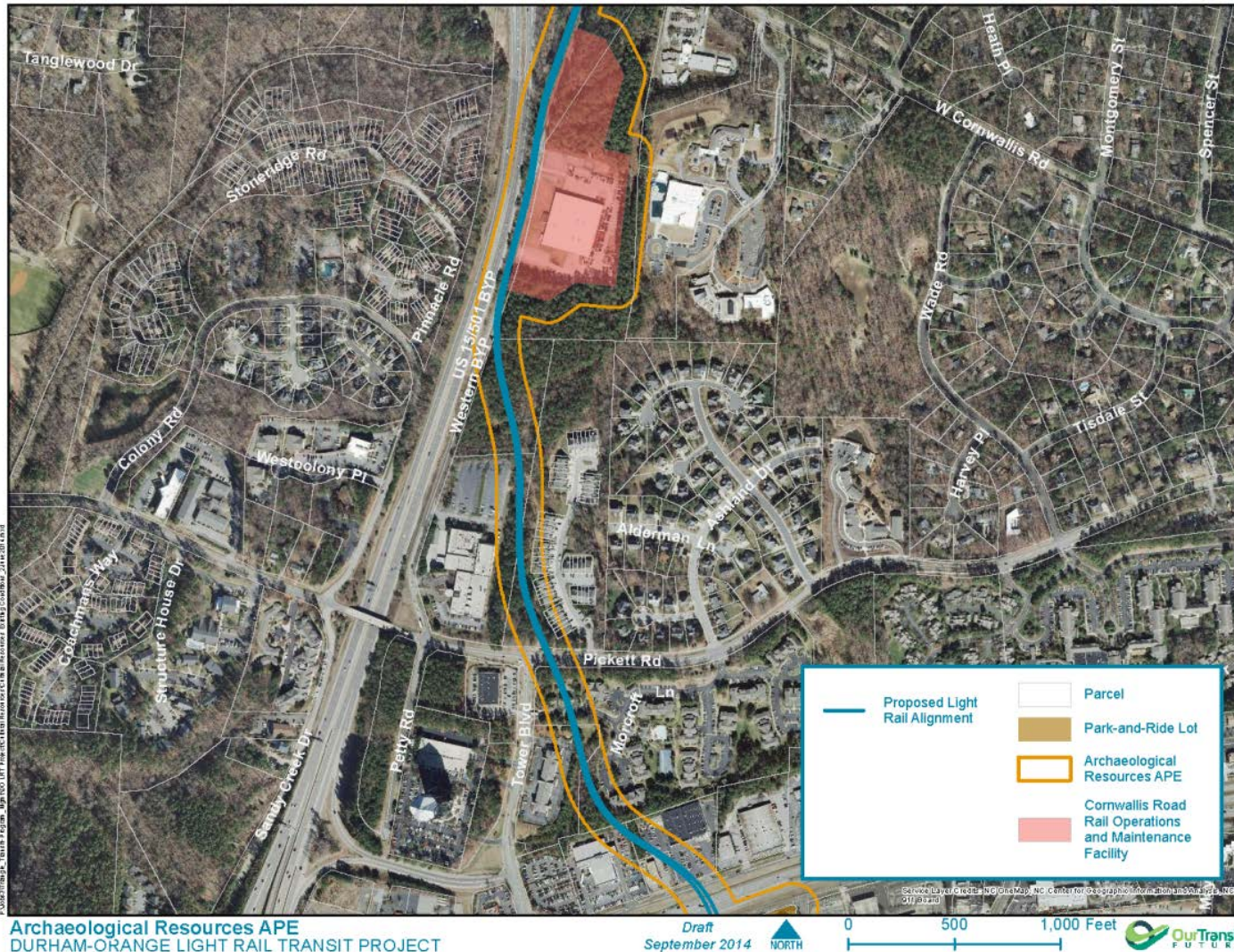
Archaeological Resources – Area of Potential Effects

Figure 13: Archaeological Resources APE



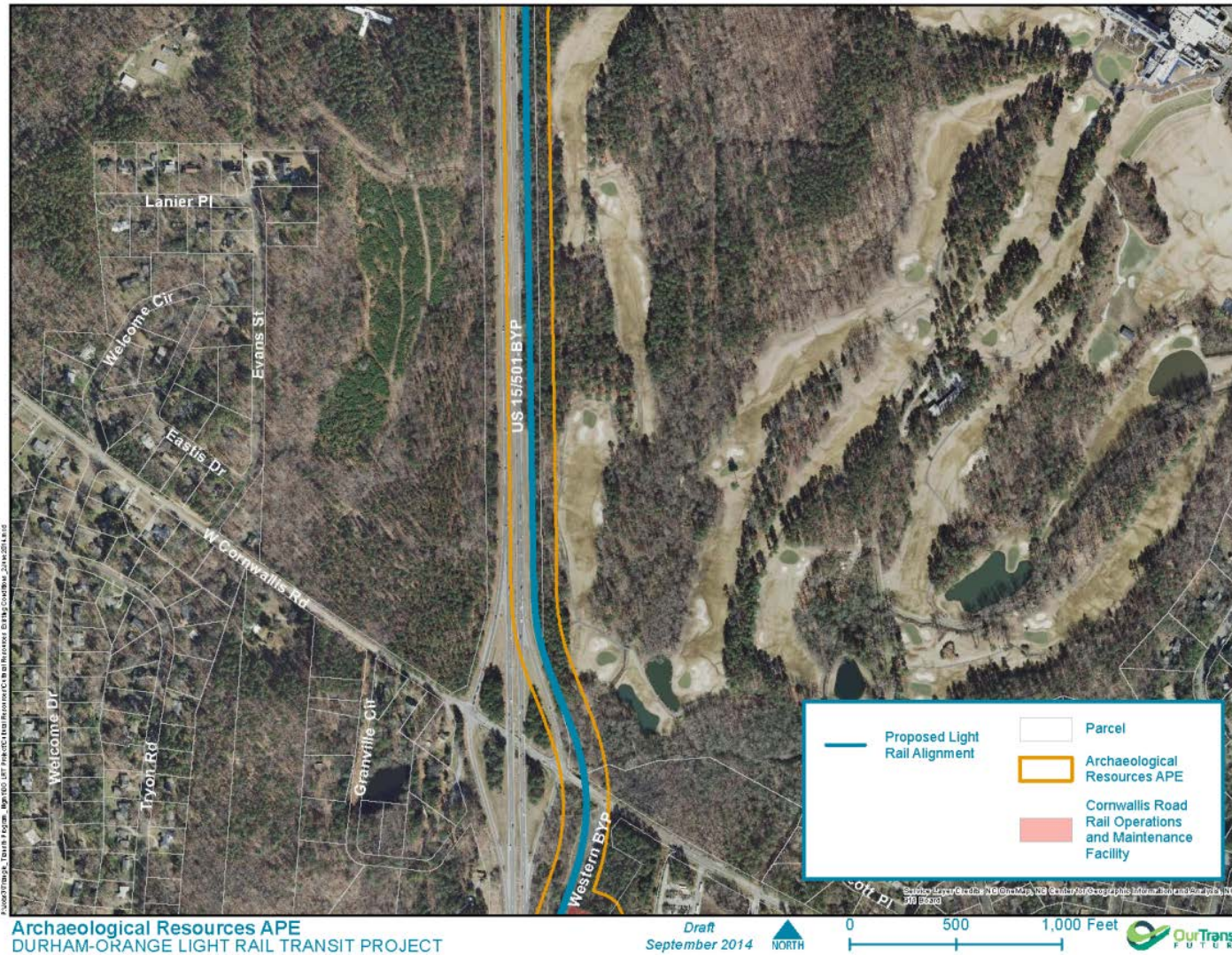
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Figure 14: Archaeological Resources APE



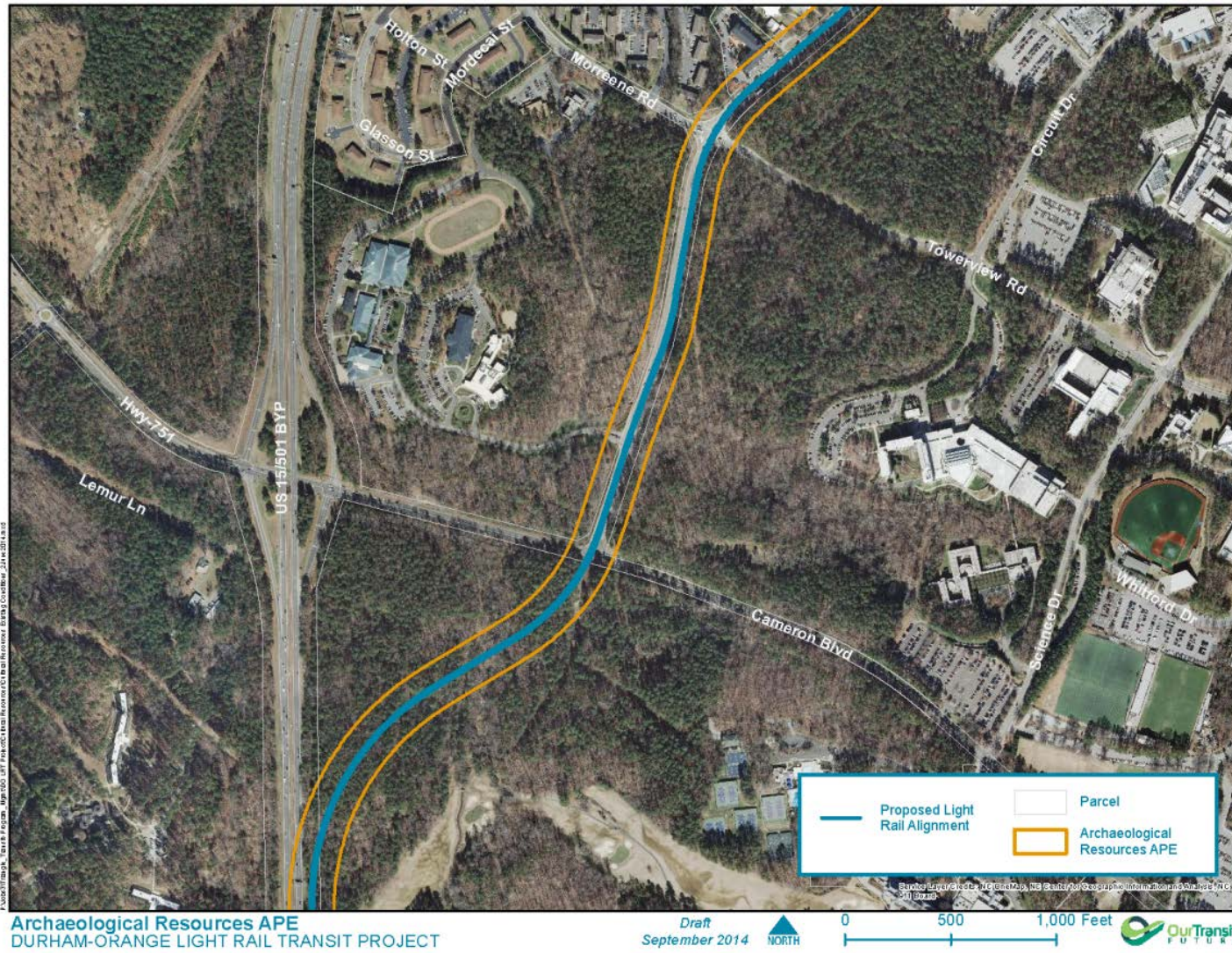
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Figure 15: Archaeological Resources APE



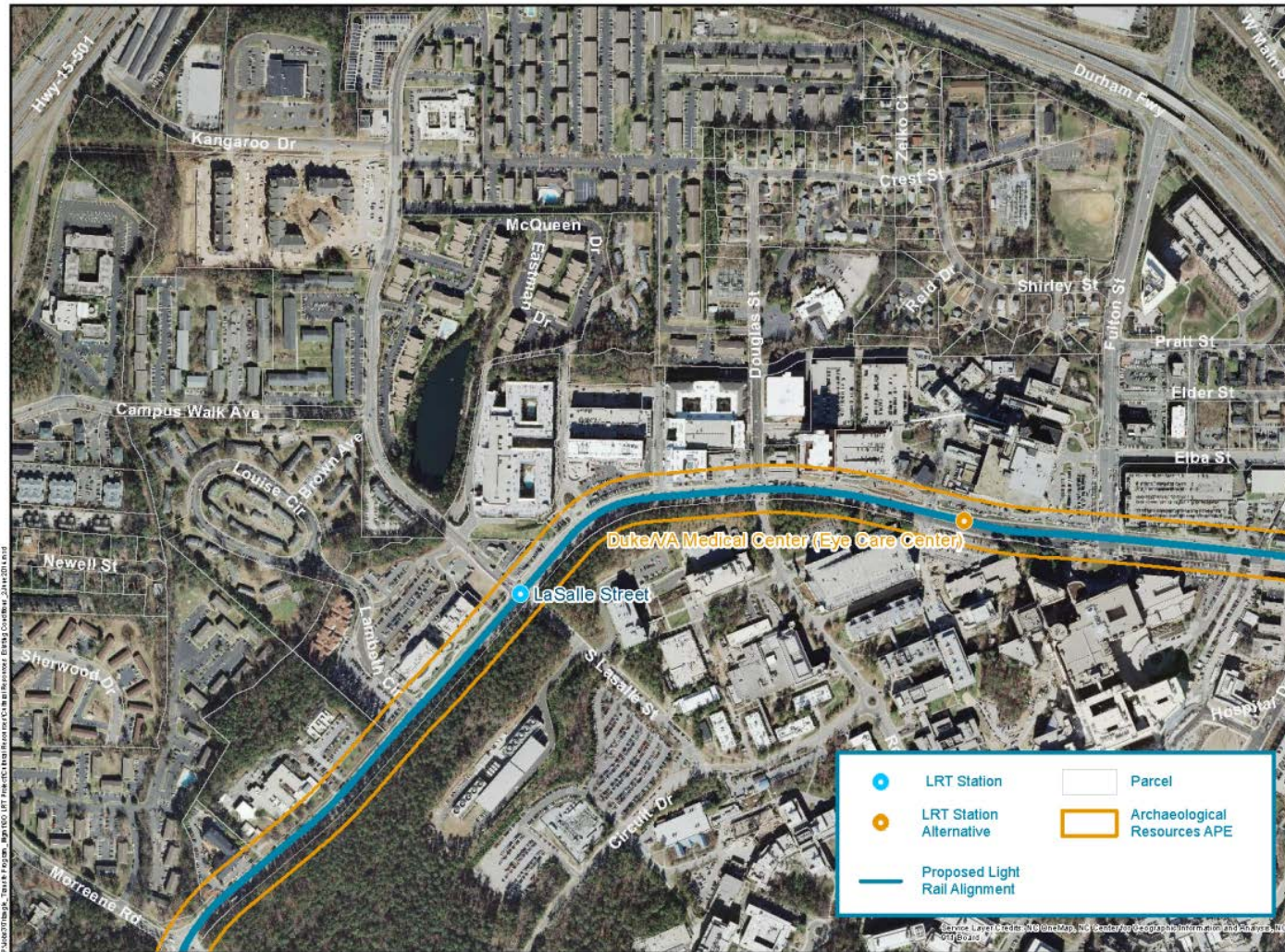
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Figure 16: Archaeological Resources APE



Archaeological Resources – Area of Potential Effects



Figure 17: Archaeological Resources APE



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DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

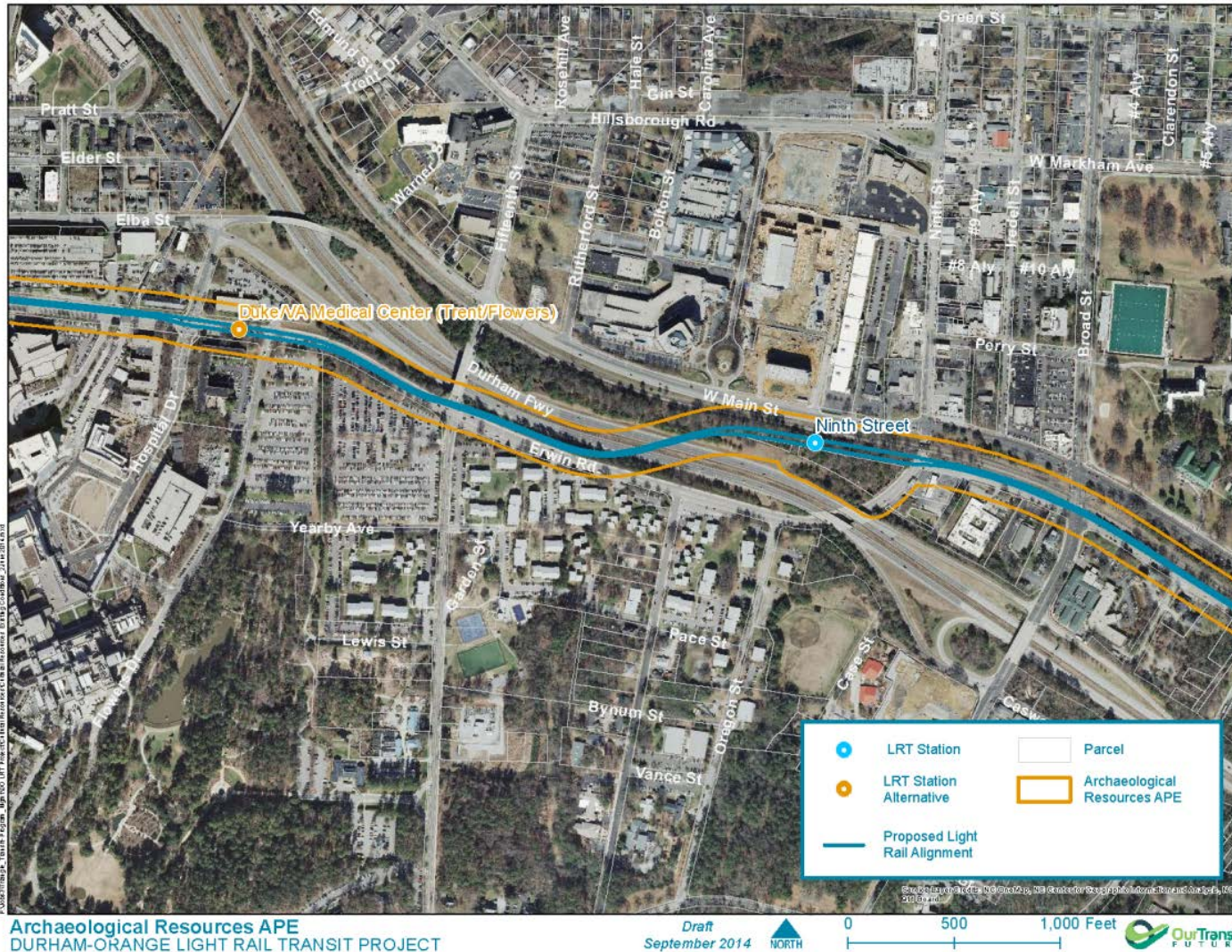
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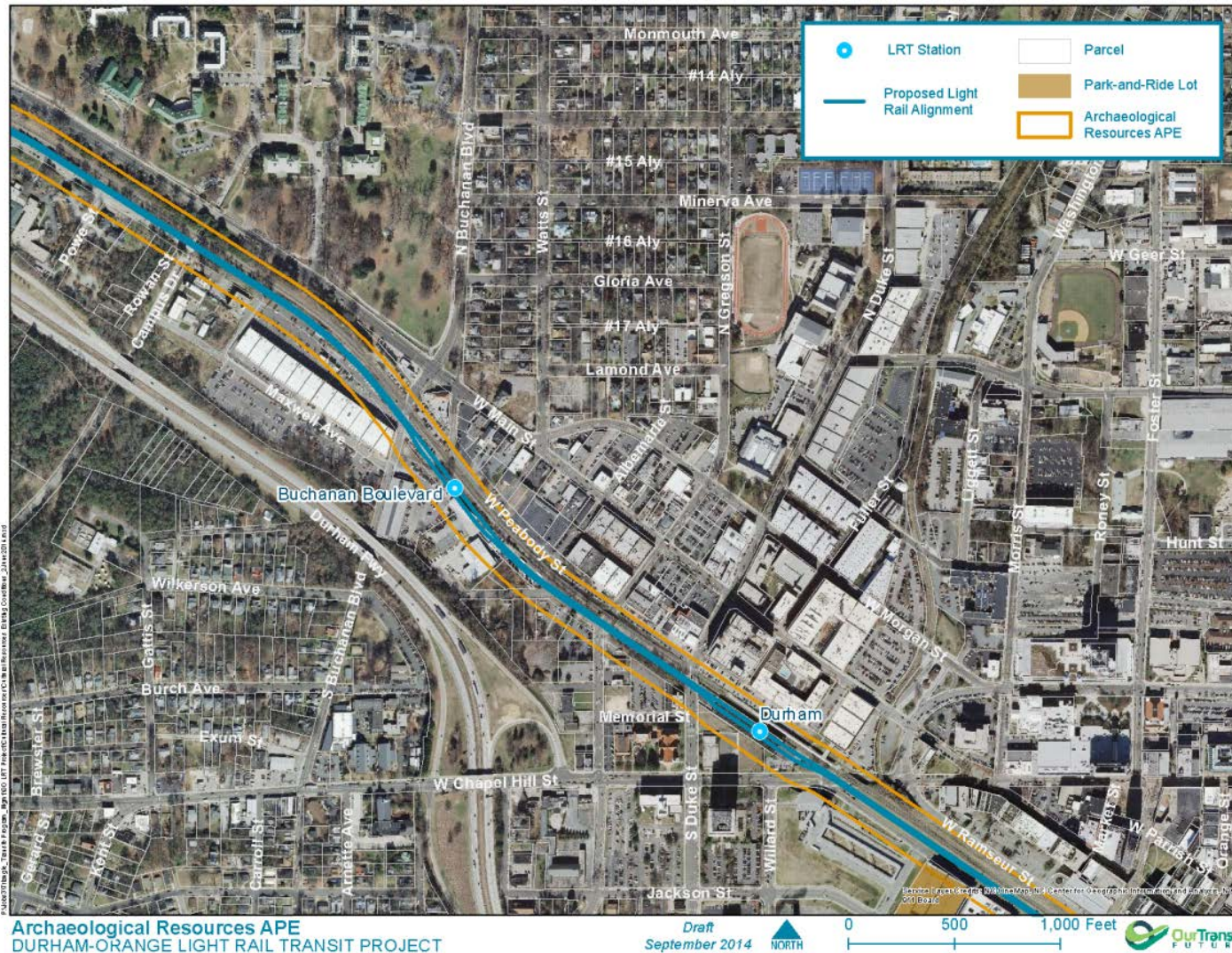
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Figure 18: Archaeological Resources APE



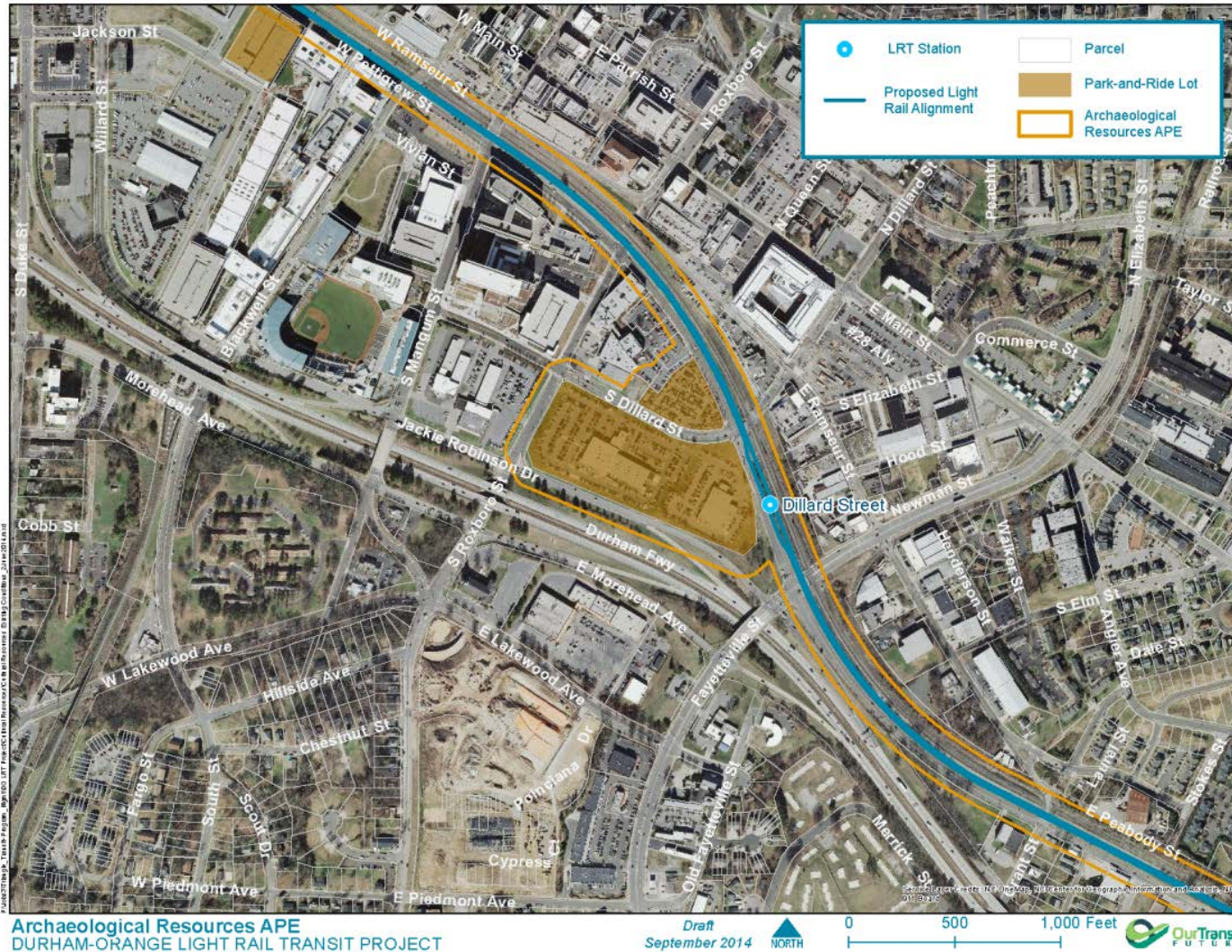
Archaeological Resources – Area of Potential Effects

Figure 19: Archaeological Resources APE



Archaeological Resources – Area of Potential Effects

Figure 20: Archaeological Resources APE



Archaeological Resources – Area of Potential Effects

Figure 21: Archaeological Resources APE

