DIN 01393

ARCHAEOLOGICAL BACKGROUND INFORMATION

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.

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List of Acronyms and Abbreviations

Acronym/Abbreviation	Definition
APE	area of potential effects
CFR	Code of Federal Regulations
D-O	Durham-Orange Counties
EIS	Environmental Impact Statement
FTA	Federal Transit Administration
GIS	geographic information system
LPA	locally preferred alternative
LRT	light rail transit
NC	North Carolina
NCGS	NC General Statutes
NC HPO	NC State Historic Preservation Office
NC OSA	NC Office of State Archaeology
NCRR	North Carolina Railroad
NEPA	National Environmental Policy Act
NHC	New Hope Creek
NRHP	National Register of Historic Places
PS	potential sites
RPA	Register of Professional Archaeologists
UNC	University of North Carolina
US or U.S.	United States
USC	US Code

Executive Summary

This is an internal document that summarizes information collected on previously recorded archaeological sites and previous cultural resources management studies performed along/near the Triangle Transit's proposed Durham-Orange (D-O) Light Rail Transit (LRT) project. An assessment of areas along the proposed D-O LRT alignment that may require additional archaeological field studies is also provided. These topics can be summarized as follows:

- Previously recorded archaeological sites
  - 18 previously recorded sites exist within the proposed D-O LRT area of potential effects (APE)
    - 5 sites are in Orange County
    - 13 sites are in Durham County
  - No sites in Orange County have been recommended for Phase II studies
  - Two sites in Durham County have been recommended for Phase II studies
    - Archaeological site 31DH655**
    - Archaeological site 31DH669**
- Previously completed archaeological resources studies that intersect the proposed D-O LRT project area
  - Finley Golf Course
  - Meadowmont development
  - Interstate-40 (I-40)
  - United States 15/501 (US 15/501) and Martin Luther King Jr. Parkway interchange
  - Wake-Durham Regional Rail
- Archaeological Sensitivity
  - Phase I archaeological surveys are recommended for the following locations of the proposed D-O LRT:
    - North of Mason Farm Road between the University of North Carolina (UNC) and Fordham Boulevard
    - Between George King Road and Interstate-40 (I-40)
    - The Leigh Village, Farrington Road, or Patterson Place Rail Operations and Maintenance Facility (should one of these facility alternatives be chosen)
    - West of I-40 at the US 15/501 Interchange (Exit 270) (Gateway Station and Park and Ride area)
    - Between US 15/501 and the NC 751-Erwin Road intersection

** Note: site numbers with double-asterisks denote a historic site; prehistoric sites do not have asterisks.

- Additional Phase II archaeological testing projects may be required at the following locations (dependent on nature and extent of potential ground disturbing activities)
  - Archaeological site 31DH655**
  - Potential site (PS)-1
  - PS-3

1. Introduction

This document provides information on previously recorded archaeological sites, previously completed archaeological studies study area, and an assessment of possible future archaeological studies that may be required in relation to the proposed Durham-Orange (D-O) Light Rail Transit (LRT) project. This information is intended to provide initial archaeological data that can be utilized for consultation with the North Carolina State Historic Preservation Office (NCHPO) and other agencies as needed. The information presented in this document is based on a review of files maintained by the North Carolina Office of State Archaeology (OSA) performed by URS archaeologist Matt Jorgenson, RPA, on May 16, 2013.

1.1 Project Description

The proposed D-O LRT project is located within the Town of Chapel Hill and the City of Durham spanning both Orange and Durham counties within North Carolina (Figure 1). The proposed project would cover a distance of approximately 17 miles providing service to 17 transit stations, including ten walk-up stations and seven park-and-ride facilities. The LRT would operate at 10-minute frequencies during peak hours and 20-minute frequencies during off-peak hours. The proposed alignment, which would be double-tracked throughout, would operate primarily at-grade in a dedicated right-of-way parallel to existing roadways, with elevated sections throughout to avoid or mitigate potential traffic impacts or impacts to environmental features. The specific location of the proposed D-O LRT alignment and associated stations is under study in the following two areas where alignments are being evaluated:

1. Crossing of Little Creek between the Friday Center/Meadowmont area and the proposed Leigh Village development.
2. Crossing of New Hope Creek and Sandy Creek between Patterson Place and South Square.

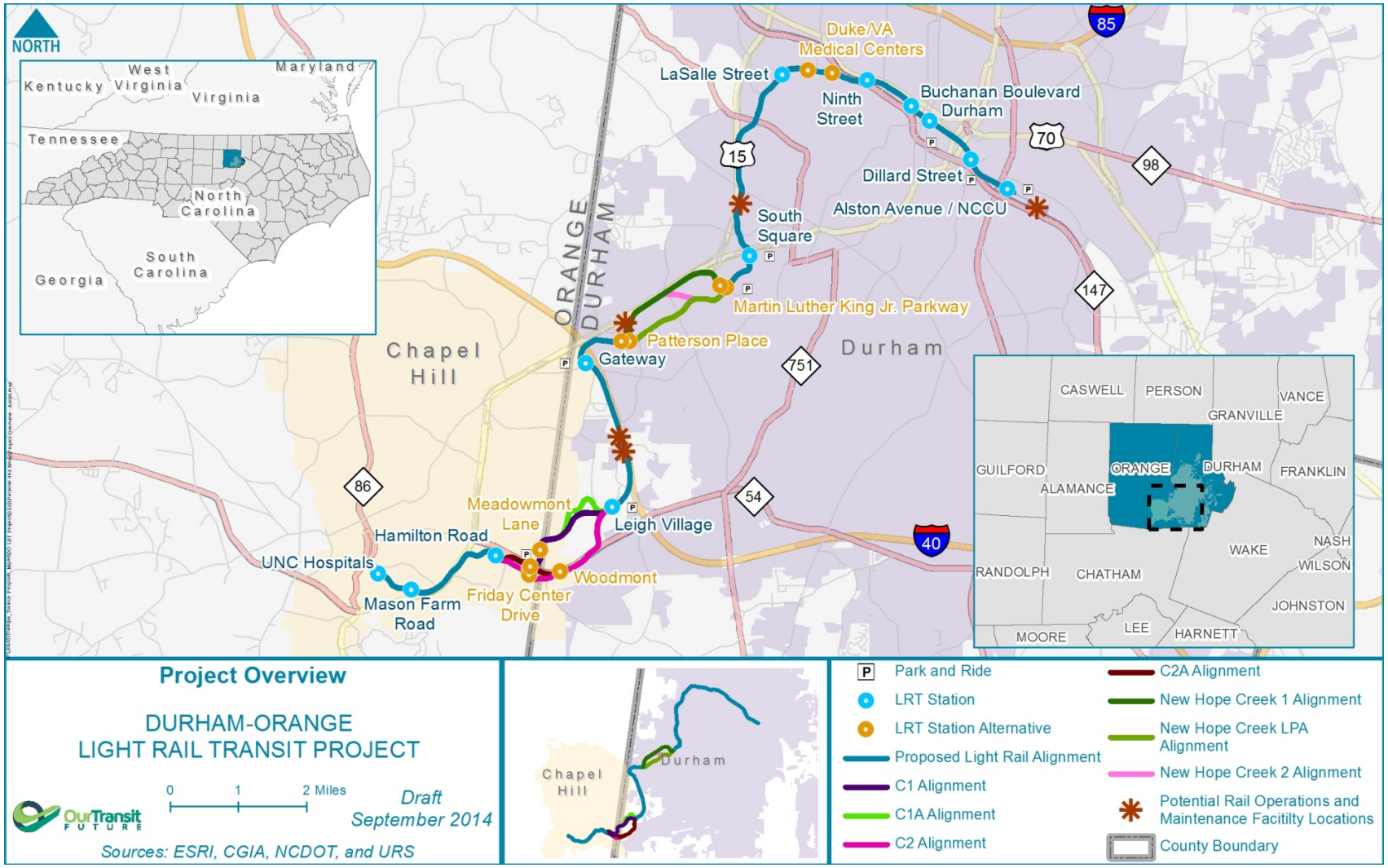
In addition to the alignment alternatives, there are two station location alternatives for the Duke/VA Medical Centers station and five potential rail operations and maintenance facilities being evaluated in the Draft Environmental Impact Statement (EIS). A Draft EIS is currently being prepared in accordance with the National Environmental Policy Act (NEPA). Conceptual engineering design plans sufficient for the assessment of project costs, ridership, and environmental benefits or consequences have been developed. A draft and final EIS will be prepared in accordance with NEPA and in accordance with the Federal Transit Administration's (FTA) Section 5309 New Starts requirements. The Draft EIS will be prepared using conceptual engineering plans at a conceptual level of design.

1.2 Methods

For the purposes of this background research, the draft area of potential effect (APE) is defined as 100 feet on either side of the draft D-O LRT centerline (as of June 2014). Further, station, park-and-ride, and possible rail maintenance yard locations expand upon the basic linear corridor and also include a 100 foot buffer around the proposed facility. The APE is depicted in a series of maps presented in appendix A of this report. Future field studies would be limited to the "footprint" or limits of disturbance of the project, including permanent and any temporary work spaces. The broader APE is used here for two primary reasons. First, many of the archaeological resources recorded at the OSA 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. 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 FTA will make final effects determination(s) regarding archaeological resources.

Figure 1: Proposed D-O LRT Project in Orange and Durham Counties, North Carolina.



1.3 Regulations and Guidance

Federal and state/local regulations and agency guidelines considered during evaluation include the following:

- Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC§470)
- Protection of Historic and Cultural Properties, Title 36, Code of Federal Regulations (CFR), Part 800
- National Register of Historic Places, Title 36, CFR, Part 60
- Archaeological and Historic Preservation Act of 1974,Title 16 United States Code (USC) §469a)
- Archaeological Resources Protection Act North Carolina General Statutes (NCGS), Chapter 70, Article 2
- NCHPO
- NC OSA

1.4 Electronic Resources

A check of the archaeological site location information from the May 16, 2013 has been electronically digitized into the D-O LRT geographic information system (GIS) data as three files—one for polygons of sites with relatively accurate spatial dimension information, one point file for sites with unknown spatial dimensions, and a polygon file depicting potential sites (see discussion of potential sites in section 3.6).

Please note: archaeological site location information is confidential information under NC General Statute 70-18 and not intended for public display or public viewing. The GIS data is for use by Triangle Transit personnel and their consultants for planning purposes. The GIS data should not be used in any format that may be accessible by the public (e.g., public documents, brochures, town meetings, presentations).

2. Previously Recorded Archaeological Resources

2.1 Introduction

A total of 18 previously recorded archaeological sites are located within the draft D-O LRT APE. Of the 18 sites, five are located in Orange County and 13 are located in Durham County (Table 1).

Table 1: Previously Recorded Archaeological Sites within Draft APE of D-O LRT Project

Site Number	Site Type	NRHP Eligibility	Comments
Orange County			
31OR033	Unknown	Unevaluated	Recorded in 1979; no details provided on site form
31OR275	Prehistoric	Not eligible	Previously destroyed by golf course construction
31OR306**	Historic	Not eligible	Phase II Testing determined site not eligible; destroyed by Meadowmont development
31OR474/474**	Prehistoric & historic	Not eligible	Previously destroyed by golf course construction
31OR477	Prehistoric	Not eligible	Previously destroyed by golf course construction
Durham County			
31DH029	Prehistoric	Not eligible	Largely destroyed by cultivation
31DH209/209**	Prehistoric & historic	Not eligible	Largely destroyed by cultivation and erosion
31DH210	Prehistoric	Not eligible	Largely destroyed by cultivation and erosion
31DH214	Prehistoric	Not eligible	Largely destroyed by cultivation
31DH215**	Historic	Potentially eligible	Historic location of Barbee family's first homestead (1785-1810); later a school and church (19th century)
31DH615**	Historic	Not eligible	Previously destroyed by Meadowmont development
31DH654**	Historic	Not eligible	Identified during Wake-Durham Regional Rail project
31DH655**	Historic	Potentially eligible	Identified during Wake-Durham Regional Rail project; Phase II testing recommended
31DH656**	Historic	Potentially eligible	Identified during Wake-Durham Regional Rail project; Phase II testing recommended
31DH657**	Historic	Not eligible	Identified during Wake-Durham Regional Rail project
31DH658**	Historic	Not eligible	Identified during Wake-Durham Regional Rail project
31DH659**	Historic	Not eligible	Identified during Wake-Durham Regional Rail project
31DH669**	Historic	Potentially eligible	Identified during Wake-Durham Regional Rail project

Note: site numbers with double-asterisks denote a historic site; prehistoric sites do not have asterisks.

2.2 Orange County

Of the five sites in Orange County, four have been evaluated as not eligible for inclusion in the National Register of Historic Places (NRHP), and the fifth has not been evaluated for NRHP eligibility. Site 31OR033 had no details listed on its site form and is not discussed in any report at the OSA. Sites 31OR275, 31OR474/474**, and 31OR477 are all located within Finley Golf Course. OSA forms from the 1990s indicate all of these sites were destroyed by golf course construction and maintenance. Site

31OR306** was identified and subjected to Phase II testing during planning of the Meadowmont development. The Phase II testing determined that the site is not eligible for the NRHP. It is assumed the site was destroyed by construction of the Meadowmont development.

2.3 Durham County

Of the 13 sites in Durham County, 10 are not eligible for the NRHP (31DH029, 31DH209/209**, 31DH210, 31DH214, 31DH615**, 31DH654**, 31DH656**, 31DH657**, 31DH658**, 31DH659**). Three sites (31DH215**, 31DH655**, 31DH669**) have been recommended for additional testing to determine NRHP eligibility (31DH215 site form; Webb and Millis 1999:i).

Site 31DH215** was first identified during archaeological studies in advance of the construction of Interstate 40 (I-40). The site is described on its OSA site form as the historic location of the Barbee family's first homestead (1785-1810) and later, the location of a school and church (19th century). The Barbee family members were important early settlers of the region, and are more famously associated with the Meadowmont Plantation in Orange County (NRHP-listed house identified as architectural resource DH-1708; Barbee family cemetery and associated archaeological deposits identified as archaeological site 31DH628**).

Sites 31DH655, 31DH656**, and 31DH669**** are historic resources identified in the late-1990s in conjunction with the previously proposed Triangle Transit's Wake-Durham portion of the Regional Rail Project; all three were recommended at that time as potentially eligible for the NRHP (Webb and Millis 1999:i). At 31DH655**, the presence of a concrete/cement foundation that may be a railroad-related structure was identified (Webb and Millis 1999:31). Site 31DH656** is the former location of a store that faced West Chapel Hill Street between about the 1890s and 1930s (Webb and Millis 1999:35). Later studies determined no additional work was needed at 31DH656** due to disturbances (Olson and Webb 2006:ii). At 31DH669**, a segment of brick wall roughly 125 feet long was identified adjacent to Vivian Street (Webb and Millis 1999:38-39). These sites were recommended for Phase II testing due to the presence of potentially intact building foundations and their relation to early railroad, commercial, and/or industrial pursuits of the region. Testing of 31DH656** was later determined unnecessary (Olson and Webb 2006:ii); testing of 31DH655** and 31DH669** was never performed.

3. Previous Archaeological Studies

3.1 Introduction

Several segments along the proposed D-O LRT alignment have previously been subjected to systematic cultural resources management studies. These include the area of the Finley Golf Course in Orange County, the Meadowmont development on the Orange-Durham County border, the I-40 corridor in Durham County, realignment of United States 15/501 (US 15/501) in Durham, and the northeastern terminus of the proposed D-O LRT project in downtown Durham where it runs along the existing railroad right-of-way.

3.2 Finley Golf Course

Numerous previously recorded archaeological sites exist within the Finley Golf Course. Some were identified during initial course development, while others were identified during subsequent refurbishment projects. Details were provided on many of the sites' forms at the OSA detail construction monitoring during the late-1990s. During this monitoring effort, sites were determined to have been destroyed. In relation to the proposed D-O LRT project area, sites 31OR275, 31OR474/474**, and 31OR477 are within the proposed D-O LRT project draft APE..

3.3 Meadowmont Development

In the mid-1990s, extensive archaeological survey and testing was performed in advance of construction of the Meadowmont development (Gunn and Dyer 1994). Five sites were identified during the project, and two—31OR304 and 31OR306**—were recommended for further testing. Based on the testing studies, both sites were determined not eligible for the NRHP, it is very likely subsequent development of Meadowmont has destroyed all five sites. Of these sites, 31OR306** is located where C1 and C2 alignment alternatives diverge, and in close proximity to all three of the proposed Friday Center Drive station facilities; the other four sites identified during the Meadowmont archaeological studies are not located within the proposed D-O LRT draft APE.

3.4 I-40

Archaeological studies in advance of construction of I-40 in the late-1970s identified several sites. Most were considered ineligible for the NRHP due to the effects of erosion and/or agricultural activities (e.g., 31DH209/209**), a site was identified and recommended for further testing (31DH215**). Sites 31DH209/209**, 31DH210, 31DH214, and 31DH215** are located within an expanded portion of the draft APE where potential ROMFs are being considered (Leigh Village and Farrington Road). Of these, only 31DH215** was recommended for further work; however, the constructed I-40 alignment did not impact the site and no additional work was ever performed on the site.

3.5 US 15/501 and Martin Luther King, Jr. Parkway Interchange

In 1989, an archaeological survey was performed for planned changes to the US 15/501 and Martin Luther King, Jr. Parkway interchange in Durham (Hargrove 1989). The vast majority of the project area was previously disturbed/destroyed by urban residential/commercial development; however, a small area was subjected to a field survey. No archaeological sites were identified during the fieldwork, but a cemetery depicted on county soil maps was located and defined as site 31DH486**. Site 31DH486** was considered ineligible for the NRHP; however, as a cemetery, it is still governed by applicable cemetery laws (cf. NC GS 14, 65, and 70). Subsequent changes to the roadways in this area avoided the

site. However, its mapped location is within a more recent housing development along Gatehouse Lane. Regardless, the site is not within the draft APE for the proposed D-O LRT project.

3.6 Wake-Durham Regional Rail Project

In the late-1990s and early-2000s archaeologists performed extensive survey and testing in Wake and Durham Counties in conjunction with project planning associated with the previous projects for Phase I of the Triangle Transit Regional Rail Project (cf. Olson and Webb 2006, Webb 2000, Webb and Millis 1999). In relation to the proposed D-O LRT project, the western terminus of the original 1990s studies overlaps with the eastern terminus of the current project. Seven sites identified during the Wake-Durham studies fall within the draft APE of the proposed D-O LRT project. These sites—31DH654**, 31DH655**, 31DH656**, 31DH657**, 31DH658**, 31DH659**, 31DH669**—are all historic sites. As discussed in section 2.3 above, three of these sites (31DH655**, 31DH656**, and 31DH669**) were initially recommended as potentially eligible for the NRHP and recommended for testing. However, subsequent research revised the recommendation of 31DH656** as not needing testing (Olson and Webb 2006:ii). The other two sites that were recommended as potentially eligible for the NRHP and recommended for Phase II testing studies (31DH655** and 31DH669**) were never subjected to such studies. Site 31DH655** is within the proposed D-O LRT draft APE; it is likely additional archaeological studies on this site will be needed in conjunction with the D-O LRT project. Conversely, 31DH669** is approximately 100 feet away from the proposed D-O LRT alignment just on the edge of, and primarily extending outside of, the D-O LRT APE. It is unlikely the proposed D-O LRT project will adversely impact site31DH669**, so further studies of it are not likely.

In addition to formal archaeological sites identified during the Wake-Durham Regional Rail studies, several potential sites (PS) were recommended for further study (Webb and Millis 1999). These were locations where historic mapping or other data indicated a possibility for preserved resources, but which could not be investigated in the field by traditional hand excavations due to impenetrable ground surfaces (e.g., parking lots/pavement, gravel). Three PSs were reported that intersect the alignment of the proposed D-O LRT project. PS-1 is located along the existing North Carolina Railroad (NCRR) right-of-way immediately east of Buchanan Blvd. This PS was recommended for mechanically assisted field evaluation based on early-20th century historic map data depicting numerous structures in that area that are no longer extant (e.g., houses, school, commercial facilities) (Webb and Millis 1999:30). PS-2 is located within the NCRR right-of-way between Duke Street (to the northwest) and Chapel Hill Street (to the southeast). PS-2 was recommended for additional studies due to early-20th century historic map resources (Webb and Millis 1999:35); however, subsequent studies in the general vicinity ultimately determined there was no need for further studies at PS-2 (Olson and Webb 2006:ii). PS-3 is located within the NCRR right-of-way, immediately across Pettigrew Street from the American Tobacco Campus, west of Blackwell Street. This PS was identified based on both 19th century and early-20th century historic maps depicting the Durham Bottling Works (bottlers of lager beer) (Webb and Millis 1999:37). However, no immediate further work was recommended for PS-3 because it was determined that no adverse impacts would be caused if the railway was built on the existing berm, as was the plan. Further, it was recommended that if the project was to have any ground-disturbing activities below the existing railroad berm, additional studies would be needed to adequately determine the presence/absence of archaeological deposits (likely associated with the Durham Bottling Works) in that area.

4. Archaeological Resources Sensitivity Assessment

4.1 Introduction

Based on the previously presented data and analysis of environmental features and areas of disturbance, the following are recommendations regarding the need for archaeological field studies along the proposed D-O LRT alignment.

4.2 Western Terminus to Durham-Orange County Line

The extreme western terminus of the proposed D-O LRT alignment crosses heavily-developed urbanized area on University of North Carolina (UNC) property. Development and redevelopment along this portion of the proposed alignment has likely destroyed any archaeological resources that may exist there. No archaeological studies are recommended west of the housing development along Branson Street to the western terminus of the proposed D-O LRT alignment.

East of the Branson Street housing development, the alignment traverses a wooded area to the north of Mason Farm Road, specifically running to the north of a series of houses and apartment buildings on the north side of Mason Farm Road. This area has not been as heavily urbanized as has the western terminus. Further, no systematic archaeological survey work has been performed in this area. We recommend a Phase I archaeological survey be performed between Branson Street and US 15/501-Fordham Boulevard.

At US 15/501-Fordham Boulevard, the proposed D-O LRT alignment proceeds northward within the US 15/501 right-of-way. It is likely that the construction of the highway destroyed any archaeological resources within the US 15/501 right-of-way. Therefore, an archaeological survey along the US 15/501 right-of-way is not recommended.

After crossing Chapel Creek in the US 15/501 right-of-way, the proposed D-O LRT alignment turns eastward, running to the south of the Glenwood School, across the northwestern corner of the Finley Golf Course, and then along the Prestwick Road right-of-way to Finley Golf Course Road. Given the disturbed condition of the sites previously identified within the golf course property, coupled with the proposed D-O LRT alignment traversing existing rights-of-way, development along this portion of the alignment has likely destroyed archaeological resources that may have existed in the area. Proposed archaeological surveys between US 15/501 and Finley Golf Course Road are not recommended.

4.3 Multiple Alternatives for Little Creek Crossing—Finley Golf Course Road to I-40

East of Finley Golf Course Road, the proposed D-O LRT alignment separates into four potential alignment alternative—C1 and C1A (northerly alternatives); C2 and C2A (southerly alternatives).

Just west of the Durham-Orange County line, a northerly alignment option, termed alignment C1, proceeds northward from the NC 54 right-of-way along Meadowmont Drive, then turns eastward along Green Cedar Lane. This portion of alignment C1 has been subjected to systematic archaeological survey for the Meadowmont development. In addition, the area was heavily disturbed by construction associated with the development of Meadowmont. Therefore, no additional archaeological studies are recommended for alignments C1 or C1A within the Meadowmont development.

East of Green Cedar Lane, Alternative C1 diverges into two different alignment alternatives, C1 and C1A, that both proceed generally northward then turn eastward across Little Creek to George King Road. Soil data for C1 and C1A indicate they descend a slope greater than 10 percent, cross through Chewacla and

Wehadkee soils, 0-2 percent slopes, which are frequently flooded, and then ascend a steep slope to George King Road. The Chewacla and Wehadkee soil type is found on floodplains and is formed from loamy alluvium derived from igneous and metamorphic rock. Drainage is somewhat poorly drained to poorly drained and flooding is frequent. Further, depth to the water table is shallow, typically between six and 24 inches (15-61 centimeters) in Chewacla soils and between zero and 12 inches (0-30 centimeters) in Wehadkee soils. This low and wet landscape is not considered a sensitive area for significant archaeological resources. Therefore, archaeological surveys are not recommended for the areas of C1 or C1A alignment alternatives which cross Little Creek.

A more southerly alignment, which is alignment alternative C2, traverses a very narrow wooded area between Finley Golf Course (to the south) and commercial development (to the north), then crosses an existing parking lot in order to enter the NC 54 right-of-way just west of the Durham County Line. Alignment C2A turns north at the Finley Golf Course Rd. and Prestwick Rd. intersection, and enters the NC 54 right-of-way just east of W. Barbee Chapel Rd. In this area systematic archaeological survey for the Meadowmont development has been performed; therefore, no additional archaeological studies are recommended between Finley Golf Course Road and the Durham-Orange County line. The proposed D-O LRT C2A alignment then continues within the NC 54 right-of-way across Little Creek. Given the presence of the alignment within an existing right-of-way, no archaeological studies are recommended for this portion of the proposed D-O LRT alignment. After crossing Little Creek, the alignments C2 and C2A turn northward, running along the George King Road right-of-way. Again, being located within an existing right-of-way, no additional archaeological studies are recommended for this portion of the alignments.

Just east of George King Road, all the Little Creek crossing alternatives converge, turning northeastward and crossing Wendell Road, Crescent Drive, and Farrington Road to I-40. This upland stretch of the proposed D-O LRT alignment is largely undeveloped with only light residential structures along Wendell Road and Crescent Drive. Therefore archaeological surveys are recommended to be performed on the final chosen alternative between George King Road and Farrington Road/I-40.

4.4 I-40 between Farrington Road and Old Chapel Hill/Old Durham Road

After crossing Farrington Road, the proposed D-O LRT alignment enters and follows the I-40 right-of-way. It continues within the I-40 right-of-way to about where Old Chapel Hill Road/Old Durham Road crosses over I-40 (it is Old Chapel Hill Road to the east of I-40 and Old Durham Road west of I-40). Since the proposed alignment is located within the right-of-way along this portion, no archaeological studies are recommended, with one exception, potentially eligible archaeological site 31DH215** (see Section 3.4) is located within an expanded area where a possible rail maintenance facility (the Leigh Village Rail Operations and Maintenance Facility) is being considered. It should be noted that several rail maintenance facilities are being considered along the proposed D-O LRT project corridor, however, only one site will ultimately be selected for construction. Should the Leigh Village maintenance facility be chosen, it is recommended that the entire footprint of the facility be subjected to systematic shovel testing to further define the boundaries of site 31DH215** (and likely relocate site 31DH209/209** in the process). If necessary, it is recommended that the rail maintenance yard area be subjected to initial shovel testing at 20 meter intervals to relocate the site(s), and then have the site boundaries further refined through the use of close-interval (10 meter) shovel testing. In the case of 31DH215**, if intact deposits and/or cultural features are identified during the shovel testing stage, a Phase II testing project consisting of additional close-interval shovel testing, test unit excavation, and/or mechanical topsoil stripping may be needed to make a determination of NRHP-eligibility for the site, and to identify if the project will have an adverse effect on any significant archaeological deposits.

4.5 Expanded Study Area for New Hope Creek Crossing

Just north of Old Durham Road, the proposed D-O LRT alignment curves westward then back eastward to cross I-40 through the US 15/501 interchange (i.e., Exit 270); this segment also contains an expanded area for a park and ride facility at the Gateway station. This marks the western end of an expanded study area for the New Hope Creek (NHC) crossing where three alternate routes are under consideration—NHC Locally Preferred Alternative (LPA) alignment, NHC 1, and NHC 2. Topographically, the portion west of I-40 where the park and ride lot and Gateway station are located crosses two drainage heads and a knoll in the fork between the two. In terms of land use, this short stretch west of I-40 is wooded with light residential development, although the proposed D-O LRT alignment alternatives do not encroach on the houses themselves. Archaeological surveys are recommended to be performed along the alignment west of I-40 within the expanded study area.

After turning northeastward and crossing I-40, the proposed D-O LRT alignment passes through an extensive commercial/retail development, specifically along McFarland Drive. This entire area has been thoroughly destroyed by the construction of large retail "big box stores" and associated extensive parking lots. No archaeological surveys are recommended in this area due to the commercial/retail development. East of the commercial/retail development, the proposed alignment diverges into the three alternatives for the NHC crossing.

The NHC LPA alignment continues its east-northeast alignment past Watkins Road, across NHC, past Garrett Road, then to the south of Sandy Creek to enter the University Drive right-of-way. This alternative generally traverses heavily developed uplands or low and wet bottomlands. Much like the Little Creek crossing discussed above, the NHC LPA descends out of the developed upland along steep slope, crosses through the NHC and Sandy Creek floodplain (which is mapped as Chewacla and Wehadkee soils, 0-2 percent slope, frequently flooded—see above for description of this soil type), then ascends steep slope back into heavily developed residential neighborhoods on the uplands adjacent to Martin Luther King Jr. Parkway and University Drive. The potential for intact significant archaeological resources along the NHC LPA crossing is minimal due to extensive development of the uplands and the low and wet nature of the lowlands. As such, no archaeological survey is recommended for the NHC LPA alignment.

The NHC 1 turns northward to enter and follow the US 15/501 right-of-way. The NHC 1 crosses NHC, passes adjacent to a sprawling commercial/retail development, then turns eastward along the interchange right-of-way (crossing Sandy Creek) into the Martin Luther King Jr. Parkway right-of-way, and eventually the University Drive right-of-way. This entire stretch of the NHC 1, including the NHC and Sandy Creek crossings, is located within the existing right-of-way with no potential for intact archaeological resources. As a result, no archaeological survey work is recommended to be performed along the NHC 1 alignment due to right-of-way disturbances. Conversely, the Patterson Place Rail Operations and Maintenance Facility along the NHC 1 occupies a relatively undeveloped upland overlooking NHC, and a Phase I archaeological survey is recommended for that facility should it be the one selected for the project.

NHC 2 follows NHC 1 along US 15/501 to about the intersection of US 15/501 and Garrett Road, then turns easterly to join the NHC LPA along University Drive. The portion of NHC 2 that is not part of either the NHC LPA alignment or the NHC 1 alternative crosses a heavily developed residential and commercial area; similarly, the portions within the NHC LPA alignment or the NHC 1 are also developed, as discussed above. Given the disturbances involved in development across the area, no further archaeological survey work is recommended to be performed along the NHC 2 alignment.

4.6 University Drive to US 15/501

After the multiple NHC crossing alternatives converge into a single alignment, it proceeds northeastward within the University Drive right-of-way (to the south of Southgate Shopping Center) then turns northward within the Shannon Road right-of-way. It then crosses Durham-Chapel Hill Boulevard (Business 15/501) and passes through residential neighborhoods to enter the US 15/501 (bypass) right-of-way. This section of the proposed D-O LRT alignment traverses existing rights-of-way and/or heavily developed uplands. It is unlikely that intact significant archaeological deposits are present due to the effects associated with construction. Therefore, archaeological surveys between the University Drive and Martin Luther King Jr. Parkway intersection and where the alignment enters the US 15/501 (bypass) right-of-way are not recommended.

4.7 US 15/501 to Erwin Drive

The proposed D-O LRT alignment enters the US 15/501 (bypass) right-of-way just south of the interchange with West Cornwallis Road, and proceeds northward within the US 15/501 right-of-way to just south of the NC 751 interchange. Previous construction of US 15/501 (bypass) has likely destroyed any archaeological sites that may have existed. Since the proposed alignment is located within the US 15/501 rights-of-way, archaeological surveys for this section of the proposed D-O LRT alignment. In addition, archaeological surveys are not recommended if the Cornwallis Road Rail Operations and Maintenance Facility is selected. This potential facility is largely an existing industrial complex, which has likely impacted any potential for intact archaeological deposits.

Just south of the NC 751 (Cameron Blvd.) interchange, the proposed D-O LRT alignment diverges out of the US 15/501 right-of-way, crosses Sandy Creek, then enters the Erwin Road right-of-way on the north side of NC 751. This stretch is largely undeveloped forest upland dissected by the narrow Sandy Creek valley. Several pedestrian pathways cross through this area (e.g., Duke Cross Country Trail, Al Buehler Trail), but it is otherwise undeveloped. Archaeological surveys are recommended to be performed along the proposed D-O LRT alignment between US 15/501 and the NC 751 and Erwin Road intersection.

4.8 Erwin Road

North of NC 751, the proposed D-O LRT alignment proceeds northward then eastward within the Erwin Road right-of-way. It is unlikely that any intact archaeological deposits have survived within the right-of-way. No archaeological surveys are recommended for the portion of the proposed D-O LRT alignment located within the Erwin Road right-of-way.

4.9 Existing NCRR Right-of-Way

Just west of the intersection of Erwin Road and Alexander Avenue, the proposed D-O LRT alignment crosses the Durham Freeway (NC 147) right-of-way and then enters into the existing NCRR right-of-way. At this point, the alignment runs along and within the NCRR right-of-way on its south side, between the existing railroad tracks and Pettigrew Street. This section of the proposed D-O LRT alignment has several archaeological recommendations. Previous archaeological survey studies for the Wake-Durham Regional Rail project adequately covered the proposed D-O LRT alignment. As such, no additional archaeological survey is warranted. This recommendation also applies to the Alston Avenue Rail Operations and Maintenance Facility at the eastern terminus of the project; this area has previously been subjected to archaeological investigations. However, the previous Wake-Durham studies also identified two archaeological sites (31DH655**, 31DH669**) and two potential sites (PS-1, PS-3) that may require

additional field studies. These studies would be dependent on the nature and extent of any ground disturbing activities associated with construction of the proposed D-O LRT facilities.

Archaeological sites 31DH655** and 31DH669** were recommended for additional archaeological testing studies to determine the sites' NRHP eligibilities. Site 31DH655** would be intersected by the proposed D-O LRT alignment, therefore, it will likely require additional studies (at the very least, relocating the site and reassessing its current condition; potentially a Phase II testing project) to make an informed NRHP eligibility assessment. Site 31DH669** is located approximately 100 feet outside the existing proposed alignment, so it is not anticipated that adverse impacts to the site will occur, and therefore, the site will not require additional archaeological studies in conjunction with the proposed D-O LRT alignment. That said, should the alignment change, or should ancillary facilities be planned in the location of 31DH669**, Phase II testing studies may need to be performed on the site prior to any ground disturbing activities.

As discussed above, three potential sites were identified within the proposed D-O LRT project area. PS-1 was recommended for mechanically assisted testing, PS-2 was later determined to not require additional studies, and PS-3 was evaluated as not being adversely impacted by the Wake-Durham project provided the railway was maintained on the elevated gravel berm that already exists in that section (while additional testing would be needed at PS-3 if the railway was not on the existing berm or if the existing berm was to be removed or otherwise impact the deposits underlying the berm). Therefore, depending on the exact nature of the types of subsurface impacts, taken in concert with the horizontal extent of potential impacts, additional field studies may be needed at PS-1 and/or PS-3.

5. Summary

The above document has summarized information collected on previously recorded archaeological sites and previous cultural resources management studies performed along/near the Triangle Transit's proposed D-O LRT project. An assessment of areas along the proposed D-O LRT alignment that may require additional archaeological field studies was also provided. These topics can be summarized as follows:

- Previously recorded archaeological sites
  - 18 previously recorded sites exist within the proposed D-O LRT draft APE
    - 5 sites are in Orange County
    - 13 sites are in Durham County
  - No sites in Orange County have been recommended for Phase II studies
  - Two sites in Durham County have been recommended for Phase II studies
    - 31DH655**
    - 31DH669**
- Previously completed archaeological resources studies that intersect proposed D-O LRT project area
  - Finley Golf Course
  - Meadowmont development
  - Interstate-40 (I-40)
  - United States 15/501 (US 15/501) and Martin Luther King Jr. Parkway interchange
  - Wake-Durham Regional Rail
- Archaeological Sensitivity
  - Phase I archaeological surveys are recommended for the following locations of the proposed D-O LRT
    - North of Mason Farm Road between the UNC and Fordham Boulevard
    - Between George King Road and Interstate-40 (I-40)
    - The Leigh Village, Farrington Road, or Patterson Place Rail Operations and Maintenance Facility (should one of these facility alternatives be chosen)
    - West of I-40 at the US 15/501 Interchange (Exit 270) (Gateway Station and Park and Ride area)
    - Between US 15/501 and the NC 751-Erwin Road intersection
  - Additional Phase II archaeological testing projects may be required at the following locations (dependent on nature and extent of potential ground disturbing activities)
    - Archaeological site 31DH655**
    - PS-1

- PS-3

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