



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary Susi H. Hamilton

Office of Archives and History
Deputy Secretary Kevin Cherry

August 22, 2019

MEMORANDUM

TO: Mary Pope Furr
Office of Human Environment
NCDOT Division of Highways

FROM: Renee Gledhill-Earley *Renee Gledhill-Earley*
Environmental Review Coordinator

SUBJECT: Historic Structures Survey Report, BR-0091, Replace Bridge 32 on US 70 over the Eno River,
PA 18-09-0064, Orange County, ER 19-2358

Thank you for your July 27, 2019, letter transmitting the above-referenced report. We have reviewed the report and concur that the following resources are not eligible for the National Register of Historic Places for the reasons cited in the report.

- Forrest Farm (OR 3171)
- Orange-Alamance Water System (OR 3172)

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 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Received: 07/30/2019
State Historic Preservation Office



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 27, 2019

ER 19-2358

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

Due -- 8/21/19

H- *08/22/19*

Dear Renee:

RE: Replace Bridge 32 on US 70 over the Eno River, Orange County, TIP# BR-0091,
WBS# 67091.1.1.1, PA# 18-09-0064

The North Carolina Department of Transportation (NCDOT) is conducting planning studies for the above-referenced project. Please find attached two copies of the Historic Architectural Resources Survey Report, which meets the guidelines for survey procedures for NCDOT and the National Park Service. This report concludes that there are no properties within the Area of Potential Effects (APE) that are listed on or eligible for the National Register:

Please review the survey report and provide us with your comments. If you have any questions concerning the accompanying information, please contact Ms. Mary Pope Furr, Historic Architecture Team, (919) 707-6068.

Sincerely,

A handwritten signature in cursive script that reads "Mary Pope Furr".

Mary Pope Furr
Historic Architecture Team

Attachments

Cc: Tierre Peterson, NCDOT Structures Management Unit

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Historic Architectural Resources Survey Report

Replacement of Bridge No. 32 on U.S. Highway 70 over the Eno River

Orange County, North Carolina

TIP No. BR-0091

WBS No. 67091.11

PA No. 18-09-0064

Report prepared for

**North Carolina Department
of Transportation**

Report prepared by

**Mead
& Hunt**

www.meadhunt.com

July 2019

HISTORIC ARCHITECTURAL RESOURCES SURVEY REPORT

Replacement of Bridge 32 on US 70 over the Eno River

**Orange County
North Carolina Department of Transportation**

**TIP No. BR-0091
WBS No. 67091.11
PA No. 18-09-0064**

Report prepared for:
North Carolina Department of Transportation, Human Environment Section
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Report prepared by:
Mead & Hunt, Inc.
2440 Deming Way
Middleton, WI 53562

July 2019



Emily Pettis, Principal Investigator
Mead & Hunt, Inc.

July 17, 2019

Date

Mary Pope Furr, Historic Architecture Supervisor
North Carolina Department of Transportation

Date

Management Summary

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 32 on U.S. Highway 70 over the Eno River in Orange County. The project area is located west of Hillsborough and east of Efland, which is in the east-central portion of the county. The Area of Potential Effects (APE)/Study Area for the proposed project includes those properties adjacent to the subject bridge.

In April 2019 the NCDOT requested Mead & Hunt, Inc. (Mead & Hunt) complete an intensive historical architectural resources evaluation of two resources in the APE/Study Area. The scope of work included preparation of a written report with photographs of the component buildings, structures, and landscapes, architectural and historic context of the project area, and National Register of Historic Places (National Register) evaluations. The project was undertaken to comply with requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, other state and federal regulations, and NCDOT's current *Historic Architecture Group Procedures and Work Products* (October 2015) and the North Carolina Historic Preservation Office's (NCHPO's) *Report Standards for Historic Structure Survey Reports/Determinations of Eligibility/Section 106/110 Compliance Reports in North Carolina*.

Information was provided by the NCHPO regarding previously surveyed resources near the APE/Study Area, which included commercial buildings and residences. A Microsoft Access shell database was provided by the NCHPO with database entries of previously recorded resources, which was updated and added to by Mead & Hunt. Geospatial data of properties within the APE/Study Area was also prepared as part of the project.

As a result of the intensive evaluation, Mead & Hunt recommends that none of the identified properties are eligible for the National Register (see the table below).

Property name and site number	Address	PIN	NRHP eligibility recommendation
Forrest Farm (OR 3173)	1901 US 70	9854992413	Not Eligible
Orange-Alamance Water System (OR3172)	2101 US 70	9855704483	Not Eligible

The project was undertaken to comply with requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR 800 (Section 106); the NCDOT's *Historic Architecture Group Procedures and Work Products* (October 2015); and the NCHPO's standards for historic structure survey reports and eligibility determinations.

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1. Introduction

This report was prepared to assist the North Carolina Department of Transportation (NCDOT) to provide environmental clearances, including Section 106 of the National Historic Preservation Act of 1966 (Section 106) consultation, for the proposed replacement of Bridge No. 32 on U.S. Highway (US) 70 over the Eno River in Orange County. The project area is located in east-central Orange County, just east of the unincorporated community of Efland (see Figure 1). Bridge No. 32 is located on US 70 approximately 0.5 miles west of its intersection with West Hill Avenue North. The general project area is characterized as rural.

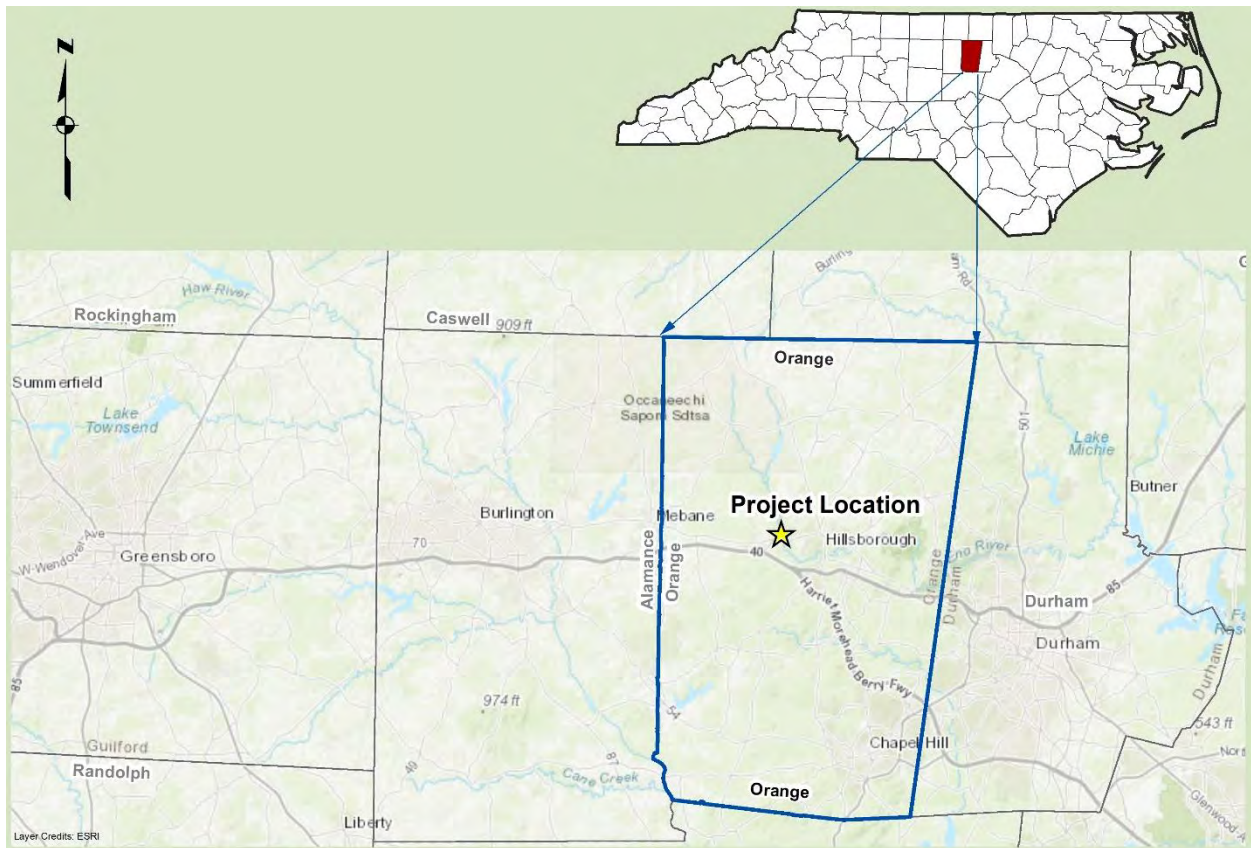
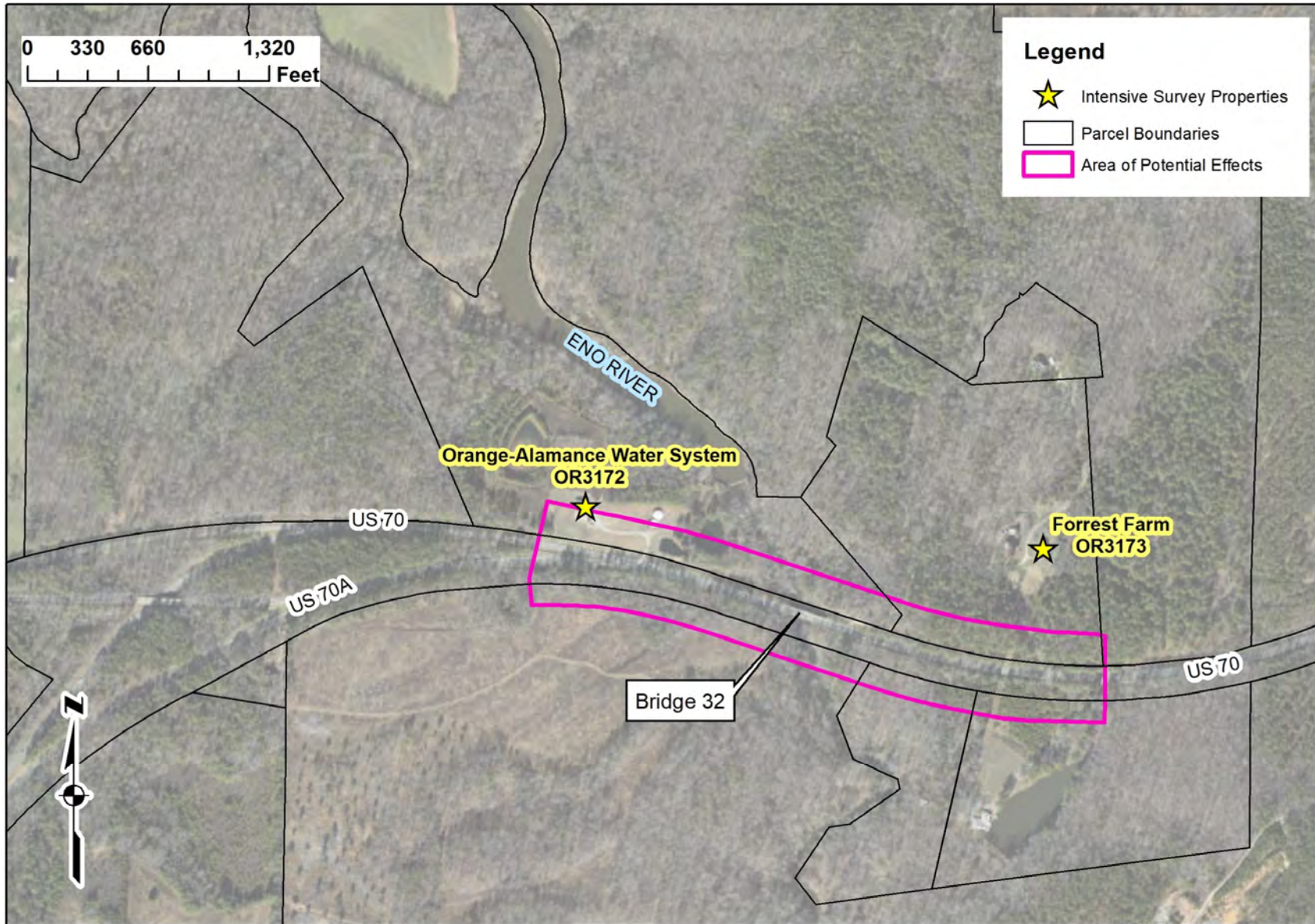


Figure 1. Project location map

2. Area of Potential Effects

This project is subject to review under the Section 106 Programmatic Agreement for Minor Transportation Projects (NCDOT/NCSHPO/FHWA/USFS 2015). An NCDOT Architectural Historian defined an Area of Potential Effects (APE) and conducted a site visit to identify and assess all resources of approximately fifty years of age or more within the APE. The NCDOT architectural historian concluded that two resources warranted an intensive National Register eligibility evaluation and they are the subject of this report (see Section 5 for information on these resources). NCDOT Architectural Historians determined that all other properties and districts are not worthy of further study and evaluation due to lack of historical significance and/or integrity. The APE/Study Area is depicted in Figure 2.



Layer Credits: ESRI

Figure 2. Project APE/Study Area map.

3. Project Description and Methodology

A search of the North Carolina State Historic Preservation Office (NCHPO) mapping system did not reveal any previously recorded resources in the APE/Study Area. Two resources over 50 years of age were identified and evaluated for National Register of Historic Places (National Register) eligibility. Summaries of the individual evaluations and recommendations are included in Section 5 of this report.

Preliminary work prior to field survey included consultation of the Orange County GIS. Prior to the field survey, parcel data and year-built dates from the county GIS were examined and these properties were reviewed in the field. Mead & Hunt historians exceeding the Secretary of the Interior's Professional Qualification Standards for history and/or architectural history as outlined in 36 CFR Part 61 conducted fieldwork from April 15-17, 2019. Historians identified, photographed, and recorded the two properties with resources that were more than 50 years in age located within the APE/Study Area (see Section 5). One business owner and one property owner were interviewed during fieldwork. Mead & Hunt requested an NCHPO shell database to record the two surveyed properties.

Based on the properties identified in the APE/Study Area, project research focused on the history of the project area and the development patterns in the unincorporated community of Efland and the town of Hillsborough. Archival research was conducted at the following libraries and special collections: the Orange County Public Library, the Orange County Historical Society, and online through the Orange County Deeds Office website. Comparable historic properties were researched in the Hillsborough area; nearby communities of Efland, Hillsborough, and Charlotte; and statewide through the NCHPO website and GIS viewer.

Primary and secondary resources include:

- Previous historic surveys and site forms for properties in the APE/Study Area
- Historic plat maps and aerial images
- Newspapers
- Online materials
- Special collections and manuscripts at local archives
- Secondary sources and historic contexts on the history of Orange County and North Carolina architecture

4. Historic Context

The APE/Study Area is located 1.3 miles west of Hillsborough, the Orange County seat, and one mile east of the town of Efland. Hillsborough emerged as a social, commercial, and political center before the Revolutionary War; however, it remained relatively small until the expansion of rail transportation in the mid-nineteenth century. Early primitive roads radiated out from Hillsborough, including the Hillsborough-to-Burlington Road, which passed nearby the project area.

The Orange County road system greatly improved in the first decades of the twentieth century. In 1911 the state legislature enacted the Central Highway Project to connect the westernmost portions of North Carolina with the eastern coast. By the late 1910s, the route of the Central Highway (also known as NC 10) had been surveyed.¹ By 1926 the road was almost completely paved across the state.² With the designation of the U.S. Highway System the same year, NC 10 through Alamance and Orange Counties became US 70 and US 19 (see Figure 3). These highways provided connections to Greensboro and Burlington in the west; through Mebane, Efland, and the project area; and on to Hillsborough and Durham to the east.



Figure 3. Detail from 1936 North Carolina State Highway map with approximate location of project area shown in yellow.³

Passage of the Federal-Aid Highway act of 1956 ushered in an era of Interstate Highway construction that eventually spanned the nation. In 1966 Interstate Highway (I-) 85 connecting Charlotte and Durham (via Greensboro and Hillsborough) was completed approximately 1.15 miles south of US 70. By the 1970s a US 70 bypass—US 70A connecting to I-85—was completed one-quarter mile west of the project area (see Figure 4).

¹ “The Central Highway and Early State Highway 10 (NC 10) through Orange County,” *Freepages.Rootsweb*, 2010, <http://freepages.rootsweb.com/~orangecountync/history/places/roads/NC10/nc10.html>.

² Bishir and Southern, *A Guide to the Historic Architecture of Piedmont North Carolina*, 70–72.

³ “North Carolina County Road Survey, Lincoln County Sixth District, 1936” (Lincoln County, N.C.: Prepared under the Direction of the State Highway Commission, State Tax Commission, Bureau of Public Roads, 1936).

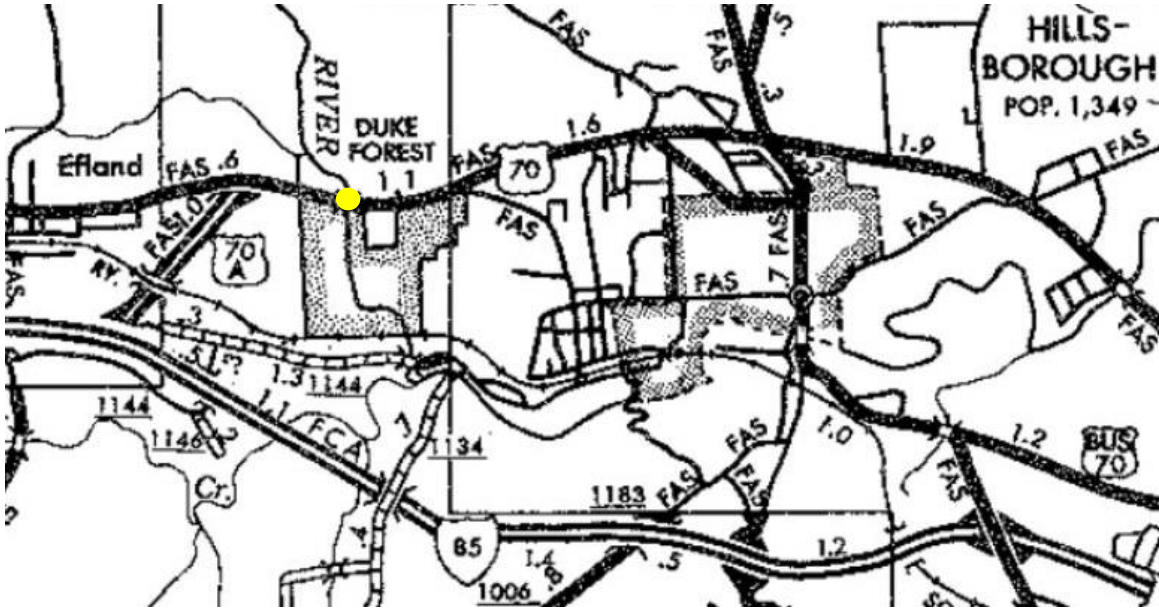


Figure 4. 1968 Orange County map showing US 70, US 70A, and I-85, with approximate location of project area shown in yellow.⁴

⁴ North Carolina State Highway Commission, "Orange County" (Orange County: North Carolina State Highway Commission, 1968).

5. Results and Recommendations

A. Forrest Farm – 1907 US 70 West

Resource Name	Forrest Farm
NCHPO Survey Site Number	OR 3173
Street Address	1907 US 70 W, Hillsborough, NC 27278
PIN	9854992413
Construction Date(s)	c.1925, c.1935, c.1940, c.1955, c.1990, c.2000
National Register Recommendation	Not Eligible



Figure 5. c.1925 Log house showing south-facing facade and side (west) elevation, view facing northeast.

Description

The Forrest Farm (OR 3173) is located on the north side of US 70 approximately one-half mile west of its intersection with W. Hill Avenue North on a wooded 32-acre parcel that extends up the hill to the north. Set approximately 0.2 miles from the highway, the farmstead consists of eight buildings arranged on either side of a winding gravel drive (see Figure 6 for a site plan). East of the drive is a log house that overlooks a grassy yard and a domestic outbuilding. Agricultural outbuildings west of the drive include a dairy barn, small barn, open equipment shed, and three sheds.



Layer Credits: ESRI

Figure 6. OR3173, Forrest Farm site plan.

The one-story, rectangular-plan, log house was constructed c.1925 and is oriented south (see Figure 5). The front- gable roof with projecting side gables is covered with asphalt shingles and features wide eaves. A large stone chimney is on the side (south) elevation (see Figure 7). Walls are of round logs stripped of bark with mortar chinking, and decorative diagonal logs are in the gable ends. Doors are wood panel and windows are wood, six-over-six, double-hung sash with simple wood surrounds, aluminum storms, and non-historic-age shutters. The foundation is stone and a log addition on the rear (north) elevation has a poured-concrete foundation.

The symmetrical facade faces south and features a central main entrance—a wood panel door—flanked by paired windows. A full-width porch with decorative horizontal and angled logs in the gable end has newer square wood posts, a simple wood railing, and concrete steps. A non-historic-age wood deck extends west from the porch and around to the side (west) elevation; the deck stops short of the projecting gable and provides access to the side yard (see Figure 8). Three windows on the west elevation include two to the north and one on the projecting gable, which also features decorative horizontal and angled logs in the gable end. Windows flank the stone fireplace centered on the projecting gable on the opposing (east) side, which also has decorative angled logs in the gable end. Three additional windows to the north are in single and paired configurations. No fenestration is visible on the

Section 5 Results and Recommendations

side (east or west) elevations of the rear addition. The rear (north) elevation is dominated by a gable addition, which has a secondary entrance flanked by two windows accessed by a non-historic-age gable porch with square wood posts and simple railing. Access to the interior of the house was not available because the owner was not home.

Several domestic and agricultural outbuildings located on the property date from c.1935 to c.2000. One shed located in the yard north of the house is oriented south. The c.1935, one-story, frame shed has a corrugated metal front-gable roof and a large gable porch with square wood posts. Walls are clad in horizontal wood siding and one wood, one-over-one, double-hung window is visible on the rear (north) elevation. The entry on the facade (south) does not have a door. A small shed-roof chicken coop was constructed onto the side (east) elevation (see Figure 9).

A large frame barn located west of the drive is oriented south (see Figure 10). The c.1935 frame livestock/dairy barn with a hayloft has a gambrel roof with a hay hood. Walls are vertical board on all but the facade (south) and three square window openings are on the side (east and west) elevations. Large sliding wood doors are located on the rear (north) elevation. The facade has been heavily altered, including wood panel siding and removal of original doors. The foundation is generally stone covered with cement, and the concrete-block foundation for an uncompleted addition extends south of the facade. A concrete silo was added to the east elevation c.1940.

A secondary frame barn located west of the drive is oriented south (see Figure 11). The c.1955 rectangular-plan barn has a gambrel roof and extended hay hood. It has vertical and horizontal wood plank walls and entrances include wood-plank entry and hayloft doors. The foundation is pier-and-beam. A shed-roof open storage area on the west elevation has square wood posts.

An equipment shed located west of the drive is oriented south (see Figure 12). The c.1940, rectangular-plan, frame shed has a side-gable corrugated metal roof and vertical wood plank walls. The eastern portion is open on the facade (south), and the western portion features two pairs of wood plank doors.

Three small modern prefabricated sheds are located near the secondary barn. A c.2000 side-gable shed is southeast of the barn, and a c.1990 gambrel-roof shed and c.1990 gable shed are to the southwest (see Figure 13).



Figure 7. c.1925 log house, side (east) elevation, view facing west.



Figure 8. c.1925 log house, side (west) and rear (north) elevations, view facing southeast.



Figure 9. c.1935 shed and chicken coop, view facing north.



Figure 10. c.1935 livestock/dairy barn and c.1940 concrete silo, facade (south) and side (east) elevation, view facing northwest.



Figure 11. c.1955 secondary barn and c.1990 prefab shed, side (east) elevations, view facing west.



Figure 12. c.1940 equipment shed, facade (south) and side (east) elevation, view facing northwest.



Figure 13. c.1990 gambrel and gable prefab sheds, view facing west.

Historical Background

The area near the Eno River and north of present-day US 70 was settled in the mid-to-late 1700s. While a mill complex was located west of the river, research did not reveal a specific early use or ownership of land on the east bank. Located north of the Hillsborough-to-Burlington road (later the Central Highway and NC 10), the rural property was likely in agricultural use through the early twentieth century.

By 1920 dry goods merchant S. Carl Forrest and his wife Carrie owned a brick home in nearby Efland (3211 US 70, OR 1409). In the early 1920s the Forrests purchased a 150-acre parcel north of NC 10 in the project area (Forrest Farm, OR 3173). The Forrests' large family, including children Alice, Nell, Steve Carl (S.C.), Turner, and Irene used the subject property as a retreat and an earlier house (now nonextant) may also have served as a rental.⁵ As young adults S.C. and Turner worked as salesmen in the family business and Alice became a grade schoolteacher.⁶

The Forrest property reflected typical architectural forms of the day, including residential log construction and vernacular frame outbuildings. In the 1920s the Forrests built a log house as a secondary residence and for recreational use that displays the rustic aesthetic popularized in the 1920s and 1930s by the National Park Service and later New Deal construction in national park construction.⁷ The c.1925 house features natural log and stone, prominent gables with decorative angled logs in the gable ends, a wide front porch, and windows in single or paired configurations. By the 1930s some agricultural activity was evident on the Forrest property due to the construction of a livestock dairy barn and secondary barn.⁸

The Forrests and four of their adult children continued to live in the same household in Efland through 1940. None worked in agriculture, although the barns on their rural property were let to house livestock, including cows.⁹ A rear addition to the log house was constructed c.1945, and the earlier house on the property was removed at an unknown date. With the passing of Carl and Carrie, their holdings were divided among the children, and S.C. and his wife Ida inherited the parcel with the subject log house and agricultural outbuildings. With S.C.'s passing, Ida began to split up the property amongst their children.¹⁰ In 1985 Ida granted the Forrest Farm property to their son, Richard, and his wife Betsy; they continue to

⁵ United States of America, Bureau of the Census, *Fourteenth Census of the United States, 1920* (Washington D.C: National Archives and Records Administration, 1920), Roll: T625_1314; Page: 5A; Enumeration District: 181; Betsy Forrest, interview with Mead & Hunt, Inc., April 16, 2019.

⁶ United States of America, Bureau of the Census, *Fifteenth Census of the United States, 1930*, Page: 11A; Enumeration District: 0010; FHL microfilm: 2341445.

⁷ William Tweed, Laura Soulliere, and Henry Law, "Rustic Architecture, 1916-1942," *National Park Service*, 1977, https://www.nps.gov/parkhistory/online_books/rusticarch/part3.htm.

⁸ Forrest, Interview with Mead & Hunt, Inc.; Betsy Forrest confirmed cows were kept at the farm, but research did not reveal evidence that any crops were cultivated.

⁹ United States of America, Bureau of Census., *Sixteenth Census of the United States, 1940* (Washington D.C: National Archives and Records Administration, 1940), Roll: m-t0627-02954; Page: 5B; Enumeration District: 68-14; Forrest, interview with Mead & Hunt, Inc.; Forrest, interview with Mead & Hunt, Inc.; A search of Federal Census Non-Population (Agricultural) Schedules from 1850-1880 for Orange County did not reveal further information about the property.

¹⁰ Forrest, interview with Mead & Hunt, Inc.

own the property. During this period the log house was renovated, including the reconstruction of the front porch. In the 2010s the owners constructed a new primary residence 0.2 miles further north up the drive from the house and barns; the log house is currently a rental.¹¹

Comparable Properties

Searches on the NCHPO GIS Viewer did not find any individually eligible or listed log houses of the same style or era in Hillsborough or Orange County. Early-twentieth-century log houses were often modified and expanded to accommodate modern lifestyles and it can be difficult to find intact examples. However, comparable log homes of the same era with better integrity than the subject property were found using Google Earth Street View. The log house at 618 NC 86 in Hillsborough (OR 2887, see Figure 14) is one such example. Built in 1937, the house exhibits rustic log cladding on the lower story, a front-gable roof with wide eaves and brackets, and a hip-roof porch with triple square wood posts. Although a metal roof, storm windows, and doors have been added, the house continues to look like an early-twentieth-century rustic log house.



Figure 14. Rustic log house at 618 NC 86 in Hillsborough. Google Street View image.

Another comparison property with better integrity than the subject property is a 1931 Rustic style house at 506 Revere Road in Hillsborough (OR 3004, see Figure 15). This contributing building within the National Register-listed Hillsborough Historic District exhibits log and stone materials, a side-gable roof with wide eaves and exposed rafter tails, and a gable porch with tapered posts on stone piers. Although the construction method is different (log veneer), the house reflects the same rustic aesthetic of the subject log home.

¹¹ Forrest, interview with Mead & Hunt, Inc.



Figure 15. Rustic style house at 506 Revere Road in Hillsborough.¹²

Searches on the NCHPO GIS Viewer found no eligible or listed farms from the same era in Orange County. The surveyed farm closest to the project area is the Lloyd Dairy Farm at 200 SR 1327 (OR 1139, see Figure 16). While the farmhouse of this c.1912 dairy farm is much larger and of a different style, the farm includes a full range of domestic and agricultural outbuildings to better represent an early-twentieth-century farm.



Figure 16. 1912 Lloyd Dairy Farm showing farmhouse at right and cohesive grouping of outbuildings.
Google Street View image.

Another nearby farm with better integrity than the Forrest Farm is the Sidney W. Crabtree Farm located at 1301 Smith Lee Road in Chapel Hill (OR 0366, see Figure 17). This c.1910 farm had a determination of

¹² Slane, *Hillsborough Architectural Survey*, 26.

eligibility in 2000, but its eligibility status was not noted in HPOWEB. The farm consists of an intact farmhouse and a cohesive collection of six domestic and agricultural outbuildings and it better represents a small farmstead.



Figure 17. c.1910 Crabtree Farm showing cohesive grouping of outbuildings. Google Street View image.

National Register Evaluation

The subject property at 1907 US 70 was evaluated for eligibility as a farmstead, and the log house was evaluated for individual eligibility, under National Register *Criteria A, B, C, and D.*

Under *Criterion A: History*, the property must be associated with events or trends that have made a significant contribution to local, state, or national history. While this rural property likely served to house livestock, research did not indicate that the farmstead was an active ranch or dairy farm and neither the log house or larger farmstead played an important role in the agricultural development of the Efland vicinity, Orange County, or North Carolina. As such, neither the Forrest Farm nor the log house possess significance under *Criterion A.*

Under *Criterion B: Significant Person*, a property must to be associated with the lives of individuals who have made a significant contribution to local, state, or national history. Carl Forrest was an area merchant; however, this role was common in small communities around North Carolina and it does not stand out as singularly influential or historically significant. Further, this property was a recreational and rental property and the family did not reside in it. Other properties have a stronger association with Carl, Carrie, and S.C. Forrest such as the S.C. Forrest House at 3211 US 70 in Efland (OR 1021). In addition, research did not reveal that the owners or tenants made important contributions to the agricultural industry in the vicinity, or larger Orange County. Therefore, neither the Forrest Farm nor the log house possess significance under *Criterion B.*

To be eligible under *Criterion C: Architecture*, a property must represent the work of a master, possess high artistic value, and/or embody the distinctive characteristics of type, period, or method of construction. While this property does contain a log house and a number of outbuildings, it lacks the associated field patterns, as well as the full range of domestic and agricultural outbuildings, to be representative of an intact farmstead. Further, the outbuildings have varied construction dates including three non-historic-age sheds that results in an incohesive grouping, and they also exhibit poor overall integrity (evaluated below). As such, the Forrest Farmstead does not possess significance under *Criterion C.*

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Results and Recommendations

The log house is a residential example of early-twentieth-century rustic residential architecture developed in the 1910s and 1920s by the National Park Service. This house exhibits elements of the style including the use of natural materials, such as log, as seen in the walls and use of decorative angled logs in the gable ends, and stone, as seen in the large stone fireplace and foundation. Stylistically, the subject house compares favorably to other examples in Orange County and may have significance as an example of an early-twentieth-century rustic log house under *Criterion C*.

The property is unlikely to yield information about the past not otherwise accessible from other resources and written records, making it ineligible for the National Register under *Criterion D*.

Integrity

As a farmstead, the property exhibits poor integrity. Heavy alterations to the main barn including replaced siding and altered fenestration result in diminished integrity of materials, workmanship, design, feeling, and association. The farmstead retains integrity of location and setting; however, it lacks significance and has lost all other aspects of integrity as a farmstead.

The log house retains integrity of location and setting; however, the reconstruction of the front porch, including replacing posts, floor, steps, and foundation, and the addition of the extensive deck greatly alters and obscures details on the most important and visible portions of the house. These alterations result in a loss of integrity of design, materials, workmanship, and feeling, and diminished integrity of association.

Recommendation

Due to lack of significance (farmstead) and integrity (log house), this property is recommended not eligible for listing in the National Register under *Criteria A, B, C, or D*.

B. Orange-Alamance Water System – 2101 US 70

Resource Name	Orange-Alamance Water System
NCHPO Survey Site Number	OR3172
Street Address	2101 US 70, Hillsborough, NC 27278
PIN	9855704483
Construction Date(s)	1968-1969
National Register Recommendation	Not Eligible



Figure 18. South-facing facade of the 1968 Orange-Alamance Water System building, view looking north.

Description

The Orange-Alamance Water System (water treatment complex) is located at 2101 US 70, which is on the north side of US 70 approximately 1.5 miles east of Efland. The irregular-shaped parcel follows the Orange-Alamance Reservoir on the east side of the property and then forks of the Eno River reaching north from the highway and McGowan Creek reaching west. The property consists of the water filtration plant, clear well, pumping station, and spillway along the Eno River, creating the manmade Orange-Alamance Reservoir (see Figure 19 for a site plan). There are also three ponds on the property; two are located on the eastern corner of the parcel and one is northwest of the water filtration plant. The area is largely wooded except for a clearing adjacent to US 70, which is where the buildings are located. The buildings are set far back from the highway, behind a wide ditch and chain-link fence with a gate and callbox. A gravel driveway leads onto the property and then forks west for access to the water filtration plant or east to reach the clear well, pumping station, and spillway. The water filtration plant is located at the top of a gradual hill, which slopes down to the well and pump house to the east.

The water treatment plant was constructed in 1968 by engineers and architects Alley, Williams, Carmen & King, Inc. of Burlington, North Carolina. Contractors included Brown Construction Company of Concord, North Carolina, for the dam, lake, and treatment plant; Brown Steel Contractors, Inc. of Newnan, Georgia, for the elevated tanks; Propst Construction Company of Concord for the water lines; and Modern Electric

Company of Statesville, North Carolina, for the property's electrical. Each portion of the property is described in more detail below.¹³



Layer Credits: ESRI

Figure 19. OR3172, Orange-Alamance Water System site plan.

Water Filtration Plant

The water filtration plant is a one-story; rectangular-plan; steel I-beam, brick, and concrete structure clad in brick and resting on a concrete foundation. The flat, stepped roof is clad in an aggregate material and has metal flashing around the edge; a wider steel cornice originally wrapped around the building but portions have been removed. Fenestration consists of original, fixed, horizontally divided steel windows with brick header sills. Generally, the plant consists of the main, southernmost portion of the building that houses the office and lab as well as filtration tanks, which is constructed of brick, and the settling basin to the north, which is constructed of poured concrete with a steel pipe catwalk.

The exterior of the building displays minimal decorative detail. Its facade (south) consists of a central, steel, glazed entry door with a flat steel canopy with metal flashing (see Figures 18 and 20). A sign mounted to the west of the door reads "1968 Water Improvements Orange-Alamance Water System, Inc." It lists officers and directors at the time of construction and indicates that the Farmers Home

¹³ H. Creed, "Water Improvements: Orange-Alamance Water System, Inc." (Burlington, N.C.: Alley, Williams, Carmen, & King, Inc., July 1, 1967), Orange-Alamance Water System, Inc.

Section 5 Results and Recommendations

Administration and U.S. Department of Agriculture (USDA) financed the building project. Window groupings on either side of the door consist of three-panel openings with horizontally divided, fixed, steel frame windows on either side of a central bricked-in panel. Original plans called for the central panels to be cement asbestos; it is not known whether they have been replaced or were originally filled with brick. A wall-mounted air conditioning unit is located within the central window panel on the west side of the facade, with another mounted above the central window panel on the east side of the facade. It is not known when the units were added but they represent alterations to the building's original design.

The side (east and west) elevations of the building are very simple in design. The west elevation has one window toward the front of the building and a stepped roofline at the northwest corner of the main portion of the structure. The east elevation has a c.1995 brick alcove addition toward the front of the building that holds a water tank, two steel doors that serve as secondary entrances, a metal caustic tank standing on a concrete pad, and a small front-gable shed structure just south of the rear door (see Figure 21). The rear portion of the building is dominated by the concrete settling basin.

The interior of the water filtration plant consists of more traditional office spaces in the front of the building with linoleum floors and drop tile ceilings, and the tanks and settling basin in the rear with concrete floors and open steel I-beam framing. The building has an entry hallway and vestibule; the laboratory and office, including the original control panel, are located to the east of the entry (see Figures 22 and 23) and a bathroom, workshop, and storage area to the west. A chlorine room and compressor are also located toward the front of the building. On the rear (north) elevation are two water filters on concrete platforms on the west side of the building and an alum tank on the east side (alum is a chemical compound used for water treatment, see Figure 24). The northeast corner of this main building portion has chemical storage. A metal grate stairway with steel pipe railing provides access to the top of the tanks as well as the settling basin, which is accessed via an exterior door that leads to a catwalk at the top of the basin with steel pipe railing (see Figure 25).



Figure 20. Facade (south) and side (west) elevation, view looking northeast.



Figure 21. Side (east) elevation, view looking west.



Figure 22. Office and laboratory.



Figure 23. Control panel.



Figure 24. Water tanks (left and center) and alum tank (right).



Figure 25. Settling basin and catwalk.

Clear Well and Pumping Station

The clear well and pumping station are located east of the water filtration plant and down a hill (see Figures 26 and 27). The clear well is cylindrical and clad in metal with a rounded top. The pumping station has a rectangular plan and flat roof with a metal parapet. It is clad in brick with steel doors and fixed, steel, horizontally divided windows with brick header sills on the facade (south) and side (east) elevation. An entry vestibule with asphalt shingle-clad roof is located on the opposing side (west) elevation. A large, full-height, steel double-door with protruding steel I-beam is mounted in the center of the east elevation. Supplementary equipment in the vicinity of these structures includes a fixed metal Caterpillar-brand machine and electrical substation.



Figure 26. Clear well (left) and pumping station (right), view looking east from water filtration plant catwalk.



Figure 27. Pumping station, view looking northwest.

Spillway and Water Features

A spillway is located along the Eno River at the east end of the property (see Figures 28 and 29). It has concrete retaining walls with steel pipe railing and a mechanical station on a concrete pad that is surrounded by chain-link fencing. In addition to the Orange-Alamance Reservoir, which the spillway contains along the Eno River, the property also has three retaining ponds including one just north of US 70 on the southeast corner of the parcel (see Figure 30).



Figure 28. Spillway across Eno River, view looking northeast.



Figure 29. Spillway equipment, view looking northeast.



Figure 30. Retaining pond along US 70, view looking southeast.

Historical Background

During the early history of Orange County, as was common in rural areas across North Carolina, people settled along the Eno River to have access to fresh running water. Two hundred years prior to the construction of the water treatment complex this site along the river was home to the Hart's Mill grist mill, which was constructed by the mid-eighteenth century and harnessed the river's flow to provide power for grain processing. A skirmish broke out at the mill site during the Revolutionary War and, today, the structure is no longer extant.¹⁴ By the nineteenth century many residents in the vicinity would have relied on wells for their water supply, and by the early twentieth century running water in bathrooms and kitchens was increasingly widespread.¹⁵ After World War II the area continued to modernize and develop. Several industries scouted the area around Mebane and Efland for new manufacturing facilities but ultimately decided against building there because water and sewer lines were not in place.¹⁶ After this happened several community members, including June Crumpler of Mebane and Wiley Perry of Hillsborough, began to promote the idea of a connected water system in Alamance and Orange Counties.¹⁷

¹⁴ Information from "Hart's Mill" historic marker along US 70; Plant Manager Dale Hanby indicated during field survey that the mill is completely gone with no traces remaining on the property. Dale Hanby, interview with Mead & Hunt, Inc., April 16, 2019.

¹⁵ Catherine W. Bishir, *North Carolina Architecture* (Chapel Hill, N.C.: University of North Carolina Press, 2005), 449.

¹⁶ "Water System Funds Okayed," *Burlington Daily Times-News*, July 1, 1966.

¹⁷ David Kinney, "Water System Is Highly Successful," *Burlington Daily Times-News*, September 8, 1969.

The Orange-Alamance Water System, Inc. (Water System) is a nonprofit organization that was founded in 1965 to provide water service to rural citizens and new industrial ventures in Orange and Alamance Counties. As of July 1966 the group had received \$1.2 million through the Farmers Home Administration (FHA).¹⁸ This was a combination of grant funding and a loan that the FHA insured but which came from private individuals. The Water System needed at least 700 rural residents to subscribe to the service at a cost of just \$5 per person for the project to move forward, a number they ultimately exceeded. As with traditional municipal water service, subscribers would then pay a monthly fee for water service. This subscriber model made the organization a water cooperative (co-op). By 1967 the Water System had enough funding to begin planning for construction, letting construction bids in December of that year. The group planned to build a water filtration plant and reservoir, which became the subject property. The system, once finished, would have a capacity to deliver 1 million gallons of water across the counties every day.¹⁹ In addition to supplying rural properties with water, it would supplement municipalities like Mebane, Graham, and Hillsborough when their water supplies ran low. Construction of several storage tanks in these areas was included in the project.²⁰

The Water System selected contractors for construction in 1968, at which time the organization also took out an additional loan of nearly \$1 million from the FHA to extend water lines. The new lines would reach to Swepsonville in Alamance County, approximately 20 miles to the southwest, as well as additional areas around Efland and Mebane beyond the original plans.²¹ Construction of the water treatment complex and water lines was a boon for the area, providing nearly 10,000 workdays for 65 people.²²

The completed system of water lines included approximately 25 miles of mostly 12-inch pipeline that reached almost 1,000 subscribers.²³ The pipeline was completed in December 1970, and the subject water treatment complex—though it had begun service in August 1969—had an official ribbon cutting ceremony that same month (see Figure 31). James T. Johnson, the North Carolina director of the FHA, spoke at the opening, saying that “the growth of the water system...must continue if rural life is to prosper.” At the time the water treatment complex opened it served mostly private, residential customers; however, a handful of businesses were customers as well.²⁴ Though the water treatment complex does not appear to have directly encouraged widespread or dramatic industrial growth in Orange or Alamance Counties, it did have some modest effects on local industrial and residential development. Several 1970s-era residential developments in the area cited the water treatment complex as an

¹⁸ “Water System Dedication Set,” *Burlington Daily Times-News*, December 15, 1970.

¹⁹ “Water System Funds Okayed”; “Water Unit Makes Progress,” *Burlington Daily Times-News*, November 14, 1967.

²⁰ Kinney, “Water System Is Highly Successful.”

²¹ “Water System Dedication Set.”

²² “Water System Funds Okayed.”

²³ “Water System Dedication Set.”

²⁴ Mike Mills, “Water Plant Is Officially Opened; Visitors Tour Facility at Efland,” *Burlington Daily Times-News*, December 18, 1970.

important amenity.²⁵ In the early 1980s Honda Power Equipment built a \$10 million manufacturing plant in Swepsonville that the water treatment complex served for many years; now the plant has its own water source.²⁶



In the photo at left, the ribbon is cut in official... Mabona...
Water Plant Is Officially Opened; Visitors Tour Facility At Efland

Figure 31. Official ribbon cutting ceremony for the water treatment complex in 1970.²⁷

The model of the water co-op does not appear to have been unique nationally or in North Carolina. Utility cooperatives are widespread with electric cooperatives being especially common across the country and in North Carolina.²⁸ The FHA financed loans for water programs around the U.S. during the post-World War II era. A handful of water co-ops are mentioned in newspapers across North Carolina in the 1960s through the 1980s.²⁹ As of 2009 there were almost 3,300 water cooperatives across the U.S., including 14 in North Carolina.³⁰ Additionally, this facility did not display unique engineering and technology at the

²⁵ "Large Housing Project Set," *Burlington Daily Times-News*, June 9, 1971; "Mebane Area: C.E. Brown - Builder," *Burlington Daily Times-News*, January 13, 1971.

²⁶ "New Industry," *Asheville Citizen-Times*, August 4, 1983; Harris, interview with Mead & Hunt.

²⁷ Mills, "Water Plant Is Officially Opened; Visitors Tour Facility at Efland."

²⁸ "Who We Are," *NC Electric Cooperatives*, 2019, <https://www.ncelectriccooperatives.com/who-we-are/>.

²⁹ "Council to Seek Funds for Water," *High Point Enterprise*, March 9, 1973; "Town Studies Water Problem," *Asheville Citizen-Times*, May 15, 1980; Don Wrenn, "Police Force to Cost City \$75,674," *High Point Enterprise*, February 28, 1973; "Commissioners Study Industrial Park Plans," *Statesville Record And Landmark*, March 15, 1966; "Water Co-Op Is Proposed by KM Mayor," *Gastonia Gazette*, September 16, 1971.

³⁰ Steven Deller et al., "Research on the Economic Impact of Cooperatives" (University of Wisconsin Center for Cooperatives, 2009), <http://reic.uwcc.wisc.edu/water/>.

time it was built. The process of filtering particles in the settling basin uses an age-old design, and water is treated using a chemical chlorine-based system that has been widespread since the nineteenth century.³¹

The water treatment complex continues to serve rural customers in Orange and Alamance Counties, including providing backup water supply for municipalities such as Efland, Mebane, and Saxapahaw. Unlike other 24-hour water treatment systems in Orange County, including Orange Water/Sewer in Carrboro and Hillsborough Water, this facility shuts down each afternoon after filling the clear well with enough treated water to last overnight.³²

Comparable Properties

Searches on the NCHPO GIS Viewer found one comparable National Register-eligible water utility building: Franklin Water Works (MK 2158) at 5200 Brookshire Boulevard in Charlotte (see Figures 32 and 33). Built in the late 1950s, this three-story Modernist building has a flat roof and features glass, concrete, and steel cladding. It was added to the Study List in 2001. The Franklin Water Works, which serves Charlotte, is much larger in scale than the subject water treatment complex. Like the subject property, it was built in the post-World War II era. Whereas the subject facility has plain, utilitarian design, this facility embraces a Modernist aesthetic with its expanse of steel and glass across the facade. Due to its large scale and architectural detail, it compares favorably to the Orange-Alamance Water System complex.



Figure 32. Franklin Water Works in Charlotte. Google Street View image.

³¹ Harris, interview with Mead & Hunt.

³² Harris, interview with Mead & Hunt.



Figure 33. Franklin Water Works in Charlotte. Google Street View image.

Two historic water treatment facilities in Orange County also serve as good local comparisons that operated on a scale more similar to that of the subject property. They are the Town of Hillsborough Water Treatment Plant at 711 Dimmocks Mill Road in Hillsborough, and the Orange Water and Sewer Authority at 400 Jones Ferry Road in Carrboro.

The Town of Hillsborough Water Treatment Plant has a c.1930 main brick portion that may have been constructed as part of a Depression-era work relief program (see Figure 34). It displays character-defining features of the Art Deco style including a tapered roof projection and has decorative concrete panels mounted above each of its original multi-pane windows and entry door. Architecturally, it compares favorably to the utilitarian subject property in its limited stylistic details, modest scale, and utilitarian use.



Figure 34. Town of Hillsborough Water Treatment Plant. Google Street View image.

The Orange Water and Sewer Authority is located in a c.1980 building with a mix of brick and concrete cladding, ribbon windows, and a central entry vestibule with a skylight (see Figures 35 and 36). It is larger in scale than the subject property and displays greater architectural detail in the drawbridge-style entry sidewalk, which is suspended above a lower level, as well as in window and cladding details. Though it has not yet reached the 50-year cutoff for National Register significance, it represents a modern water system with few architectural details and utilitarian use, similar to the subject property.



Figure 35. Orange Water and Sewer Authority in Carrboro. Google Street View image.



Figure 36. Orange Water and Sewer Authority in Carrboro. Google Street View image.

National Register Evaluation

The Orange-Alamance Water System complex at 2101 US 70 was evaluated under National Register *Criteria A, B, C, and D.*

Under *Criterion A: History*, the property must be associated with events or trends that have made a significant contribution to local, state, or national history. The water treatment complex was one of many water treatment facilities constructed around the state throughout the twentieth century. Its cooperative model of funding and operation is not unique; this is one of 14 such systems in North Carolina. Its construction does not appear to have had a significant, direct, and/or immediate impact on industrial growth, as promoters had hoped; though research revealed some evidence that it influenced modest

residential growth, that does not set this water system apart from other similar examples across the county and state. As such, it does not possess significance under *Criterion A*.

Under *Criterion B: Significant Person*, a property must be directly associated with the lives of individuals significant in local, state, or national history. While some well-known members of nearby communities including Mebane, Efland, and Hillsborough were involved in starting the Water System and building the water treatment complex, research did not indicate that these individuals were important in local, state, or national history, or that this facility would best represent any contributions they may have made. Therefore, the property does not possess significance under *Criterion B*.

To be eligible under *Criterion C: Architecture*, a property must represent the work of a master, possess high artistic value, and/or embody the distinctive characteristics of type, period, or method of construction. The engineering and design of this complex are based on water treatment concepts that have been well-known since the nineteenth century; therefore, it does not display distinctive engineering. Additionally, its design is utilitarian and plain with very little decorative detail. Therefore, the property does not possess significance under *Criterion C*.

The property is unlikely to yield information about the past not otherwise accessible from other resources and written records, making it not eligible for the National Register under *Criterion D*. As this evaluation focuses on the water treatment complex, it did not consider the Hart's Mill site; however, as indicated above, evidence suggests that the mill is nonextant with no traces left on the property.

Integrity

The Orange-Alamance Water System complex occupies its original location on the north side of US 70 east of Efland and retains integrity of location. The property retains fair integrity of materials, design, and workmanship as it has its original cladding, doors, and windows. It does have a small, in-kind addition on the east elevation, air conditioning units that have been added, metal cornice that has been removed around the roofline, and possible replacement of the central panels in the front window groupings. The historic setting, feeling, and association remain strong with no modern infill; the property retains its connection to US 70 and the Eno River and few of the surroundings have changed since its 1968 construction.

Recommendation

Due to lack of significance, the Orange-Alamance Water System complex is recommended not eligible for listing in the National Register under *Criteria A, B, C, or D*.

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