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Memorandum

To	George Meservey, Director of Planning & Community Development Michael Domenica, PE, Program Manager
CC	Betsy Shreve, AICP, AECOM Project Director Paula Winchell, AECOM Reggie Donoghue, P.E., AECOM
Subject	**Town of Orleans, MA** **Water Quality and Wastewater Planning** **Task Number 10.1.C – 25% Preliminary Design Report** **Deliverable 10.1.C.3 – Cultural Resource Evaluation**
Project Number	60476644
From	Thomas Parece, P.E., AECOM Project Manager
Date	March 29, 2017

Approvals	Date	Signature / Initials
George Meservey, Orleans, MA Director of Planning & Community Development		
Michael Domenica, PE, Water Resources Associates, Program Manager		

1. Introduction

As part of the 25% Preliminary Design Report for the Downtown Orleans Wastewater Collection System, AECOM solicited cost proposals from independent licensed and insured professional firms with expertise in conducting Cultural Resource Evaluations. Based on the results of the solicitation, Public Archaeology Laboratory, Inc. (PAL) was engaged to perform a Cultural Resource Evaluation for the proposed new wastewater collection system in Orleans, Massachusetts

This Technical Memorandum outlines the Cultural Resource Evaluation prepared by PAL and their recommendations for archaeological monitoring during construction project work. Refer to the attachedment.

2. Goals and Objectives of the Cultural Resource Evaluation

The goal of this evaluation was to collect information about known and expected cultural resources within the project area:

- Produce a detailed archaeological sensitivity assessment of the project area;
- Prepare a technical proposal for archaeological investigations, if necessary;

The evaluation was designed to facilitate project review by the Massachusetts Historical Commission (MHC) and compliance with all applicable federal, state, and local regulations and review including M.G.L. Chapter 9, Sections 26-27c (950 CMR 70-71).

3. Cultural Resources Review

A. General

The cultural resources review included the collection of information about known cultural resources within the project's area of potential effect (APE), including historic and archaeological resources in the Commonwealth of Massachusetts Inventory, and an assessment of existing conditions within the project area. The purpose of the work was to assemble information about previously documented historical resources within and near the project area and provide recommendations about previously documented historical resources within and near the project area and provide recommendations about significant archaeological sites that may be affected by the project.

B. Results of the Background Research

The MHC site files list dozens of historic architectural properties and archaeological sites within the vicinity of the Orleans Downtown Area Wastewater Collection System (ODWCS) project area.

- The resources were identified through a search of the MHC's Inventory of the Historical and Archaeological Assets of the Commonwealth (MHC Inventory).
- For historic properties, the study area encompassed everything within the project area boundaries.
- For archaeological resources, the study area encompassed everything within one-quarter mile one either side of the project's outer boundaries.
- The evaluation found that there are three historic districts with 73 historic properties within the ODWCS area. Table 1 of the evaluation includes a list of architectural resources that were identified by the cultural resource review.
- Background research was conducted to assist with the archaeological sensitivity assessment and to develop predictive statements for the types of archaeological resources that may be present within the project area.
- Table 2 of the evaluation includes a list of archaeological resources that were identified by the culture resource review.

C. Results of the Field Assessment

A walkover/drive-over field assessment of the ODWCS project area was conducted by Dianna Doucette, PAL Senior Archaeologist, on February 8, 2017 to assess the integrity of the ground surface, to collect data about the current environmental setting of each area, and to look for any surface indications of archaeological sites.

- During the field assessment, all the roads that will be impacted by the proposed sewer line construction were accessed as well as the three proposed pump station locations.
- No evidence of archaeological sites was observed on the ground surface during the field assessment.

D. Results of the Sensitivity Assessment

Results of the background research and field assessment were used to develop a sensitivity ranking and predictive statements concerning the potential for the presence of Native American and EuroAmerican cultural resources.

- Overall, the archaeological sensitivity of the ODWCS project area is high to moderate for Native American sites dating to the Pre-Contact, Contact, and early Post-Contact periods. (ca. 8000 to 300 B.P.).
- The EuroAmerican post-contact archaeology sensitivity for land use is moderate to low.

- The post contact historic period sensitivity of the project area is moderate to low based on the historic nature of Orleans and the possibility of post-contact sites to be present und the current streets.

E. Recommendations

PAL recommends archaeological monitoring in areas assessed as high and moderate archaeological sensitivity, which includes all places where new sewer lines and pump stations will be impacting intact soils during construction (this may include areas between existing utilities).

- PAL also recommends coordinating with the Mashpee Wampanoag and Wampanoag Tribe of Gay Head/Aquinnah regarding the proposed project schedule so that a tribal cultural resource monitor can be present during construction of the project.
- The goal of the archaeological monitoring during construction will be to insure that if any significant archaeological resources, including remains and/or burials are exposed during the construction activities that they are treated appropriately in accordance with the Massachusetts Unmarked Burial Laws.
- The section of Route 28, from Academy Place to where it intersects with Route 6A, the short residential connectors that lie closest to Town Landing (Cottage Street and Cove Road), Cedar Pond (Locust Street and Jones Road), the Old Tote Road, and the three pump station sites have been assessed as having a preliminary high archaeological sensitivity due to the proximity of recorded archaeological sites and general lack of development.
- PAL also recommends a “Post-Review Discoveries” protocol, or, an Unanticipated Discoveries Plan be developed and implemented consistent with the Massachusetts Unmarked Burial Laws.

Public Archaeology Laboratory

Memorandum
Orleans Downtown Area Wastewater Collection System Project
Orleans, Massachusetts

Cultural Resource Evaluation

February 24, 2017

Submitted to:

AECOM
9 Jonathan Bourne Drive
Pocasset, MA 02559

In response to a request from AECOM, PAL conducted a cultural resources evaluation as part of a proposed new wastewater collection system in Orleans, Massachusetts (Figure 1). The project will include construction of sewer lines and three pump stations in the downtown area of Orleans (Figure 2).

The goal of the evaluation was to collect information about known and expected cultural resources within the project area, produce a detailed archaeological sensitivity assessment of the project area, and prepare a technical proposal for archaeological field investigations, if necessary. The evaluation was designed to facilitate project review by the Massachusetts Historical Commission (MHC) and compliance with all applicable federal, state and local regulations and review including M.G. L. Chapter 9, Sections 26-27c (950 CMR 70-71).

The cultural resources review included the collection of information about known cultural resources within the project's area of potential effect (APE), including historic and archaeological resources in the Commonwealth of Massachusetts Inventory, and an assessment of existing conditions with the project area. The purpose of the work was to assemble information about previously documented historical resources within and near the project area and provide recommendations about significant archaeological sites that may be affected by the project.

PAL compiled information about previously documented cultural resources and assessed the sensitivity of the project area for the potential to contain previously unrecorded archaeological sites. **For purposes of this proposal, PAL assumes that the project does not have the potential to affect historic structures or landscapes, and that the project tasks are limited to known and potential archaeological resources only.**

This memorandum summarizes the results of the cultural resources evaluation and recommendations for archaeological monitoring during project construction work. The sensitivity assessment included background research and a walkover/drive-over field assessment of the project area.

Results of the Background Research

The MHC site files list dozens of historic architectural properties and archaeological sites within the vicinity of the Orleans Downtown Area Wastewater Collection System (ODWCS) project area. The resources were identified through a search of the MHC's Inventory of the Historic and Archaeological Assets of the Commonwealth (MHC Inventory). The study areas established for the purposes of the identification effort were broadly defined to provide information about the types of resources located around the project area. For historic properties, the study area encompassed everything within the project area boundaries; and for archaeological resources, the study area encompassed everything within one-quarter mile on either side of the project's outer boundaries for a total width of one-half mile (Figure 3).

Architectural and Historic Resources

There are three historic districts with 73 historic properties listed within the ODWCS, one of which is listed in the National Register of Historic Places (see Figure 1; Table 1). Most the inventoried properties fall within the Orleans Town Center historic district (ORL.C). Two other historic districts abut downtown area: Rock Harbor historic district (ORL.A) and Main Street East (ORL.D). Three war memorials (ORL.908, ORL.910, and ORL.911) fall within Academy Place Park, one of the proposed pump station locations, which may also have been the location of the Rock Harbor Academy, built in 1827 and shown on an 1857 map of Orleans (Walling 1857). In 1877, the Academy building was replaced with the Snow Library (1877 - 1952) on Main Street and Chatham Road (MHC 1984).

The following is a list of architectural resources that were identified by this cultural resource review:

Table 1. Evaluated and Unevaluated Architectural Properties Recorded within the ODWCS Project Area.

MHC #	Historic/Common Name	Orleans Address	Date of Construction	Architectural Style
ORL.33	Hurd, Bangs House	11 Jones Rd	1830	Federal;
ORL.34	Unknown	6 Jones Rd	1789	Federal;
ORL.35	Swain, Eunice - Winchester, S. Coleman House	43 Canal Rd	1790	Federal;
ORL.36	Snow, Lt. Prence - Snow, Jonathan House	31 Canal Rd	1723	No style;
ORL.38	Swain, Sue House	64 Locust Rd	1750	Colonial;
ORL.39	Baker, Cal House	63 Locust Rd	1890	Victorian Eclectic;
ORL.40		58 Locust Rd	1850	No style;
ORL.41	Mayo, Josuah - Myrick, Capt. Josiah House/ Snow, Sarah - Greenhalge, Richard House	52 Locust Rd	1788	Federal;

MHC #	Historic/Common Name	Orleans Address	Date of Construction	Architectural Style
ORL.42	Peter House	39 Locust Rd	1827	No style;
ORL.43	Smith, E. House/ Cape Cable Television Associates	15 Locust Rd	1875	No style;
ORL.68	Knowles House/ Smith, Fannie - Young, Mehitable House	9 Locust Rd	1800	Greek Revival;
ORL.69	Knowles House/ Mayo, Arthur - Brooks House	5 Locust Rd	1875	Victorian Eclectic;
ORL.76	Gould, Nathaniel House	36 West Rd	1830	Federal; Greek Revival;
ORL.77	Orleans Jail/ Long, N. - Marquite, George House	24 West Rd	1770	No style;
ORL.78	Long, M. House	12 West Rd	1795	Federal;
ORL.85	Sparrow, Joel House	4 Main St	1850	No style;
ORL.86	Vanasse, Clarence Guest House/ Orleans Council on Aging Office	12 Main St	1875	Queen Anne;
ORL.87	Rogers, Prince Dry Goods Store/ Besse, Dr. Albion Drugstore	28 Main St	1875	Greek Revival;
ORL.88	U. S. Post Office - Orleans Branch/ The Clothes Works Store	31 Main St	1858	Altered beyond recognition; Greek Revival;
ORL.89	Davis and Chase Drugstore/ Cole Universalist Church Parish House	46 Main St	1890	Italianate;
ORL.90	Horton, E. R. - Belcher House	45 South Orleans Rd	1880	Colonial Revival;
ORL.91	French Cable Station	41 South Orleans Rd	1891	Victorian Eclectic;
ORL.92	Newcomb, Capt. Thomas Snow/ Peacock Alley Shops	35 South Orleans Rd	1850	Greek Revival;
ORL.93	Nickerson, Winsor House/ Pulitzer, Lily Dress Shop	21 South Orleans Rd	1840	Italianate;
ORL.94	Murray's Fabric Shop	11 South Orleans Rd	1880	No style;
ORL.95	Music Pad, The	7 South Orleans Rd	1890	No style;

MHC #	Historic/Common Name	Orleans Address	Date of Construction	Architectural Style
ORL.96	Higgins - Norgeot, Gaston House	5 South Orleans Rd	1874	Greek Revival;
ORL.97	Higgins, Benjamin House/ Deschamps, Ralph House	16 South Orleans Rd	1861	Greek Revival;
ORL.98	Swain, Capt. William House/ Arbor Restaurant - Wells Boarding House	20 South Orleans Rd	1900	No style;
ORL.99	Upham, Edgar H. House	42 South Orleans Rd	1911	Queen Anne;
ORL.100	Myrick, Richard House/ Smith, Alton House	19 Cove Rd	1894	Queen Anne;
ORL.101	Knowles, Clarence Two-Family House	14 Cove Rd	1890	Federal;
ORL.102	Unknown	17 Cove Rd	1900	Queen Anne;
ORL.103	Smith, Warren House/ Eagle Wing Restaurant	3 Doane Terr	1800	No style;
ORL.104	Orleans Methodist Chapel	12 Cove Rd	1840	Greek Revival;
ORL.105	Smith, T. A. - Ellis, Lloyd Market/ Orleans Fishermans Market	8 Cove Rd	1875	No style;
ORL.106	Knowles, Clarence Bakery/ Timbucktoo Travel Agency	6 Cove Rd	1890	Greek Revival;
ORL.107	Snow, Aaron House/ Aaron's Folly - Orleans Inn	3 Old County Rd	1881	Second Empire;
ORL.108	Fulcher, Alfred Double House	41 Cranberry Hwy	1820	Federal;
ORL.109	Young, David General Store/Marvel, Dr. Reuben - Eldredge, Judah Hous	8 Judah's Way	1858	Greek Revival;
ORL.111	Snow Double House/ Double Dragon Inn	57 Cranberry Hwy	1800	No style;
ORL.112	Snow, Joseph C. House/ Harbor View - Davis, Leander House	5 North Cottage St	1900	No style;
ORL.113	Young, David House/ Orleans Catholic Church Thrift Shop	54 Cranberry Hwy	1858	Second Empire;

MHC #	Historic/Common Name	Orleans Address	Date of Construction	Architectural Style
ORL.114	French Atlantic Cable Station Superintendent House/ Hall, George House	71 Canal Rd	1880	No style;
ORL.115	Young, Jonathan Jr. House/ Tree's Place Gift Shop	60 Cranberry Hwy	1875	Italianate;
ORL.116	Howard Johnson Restaurant/ Adam's Rib Restaurant	63 Cranberry Hwy	1935	No style;
ORL.117	Davis, Dr. S. T. House and Office/ Marvel, Dr. Reuben House and Office	80 Cranberry Hwy	1880	Victorian Eclectic;
ORL.118	Lake, Leander Houses/ Jolly Jack Antique Store	81 Cranberry Hwy	1900	Victorian Eclectic;
ORL.120	Nickerson, Eugene House	94 Cranberry Hwy	1900	Victorian Eclectic;
ORL.121	Howes, William House	85 Cranberry Hwy	1900	Queen Anne;
ORL.122	Shattuck, Abigail House	111 Cranberry Hwy	1874	Italianate;
ORL.123	Young, Jonathan Store/ Coles, George House - Barber, Ruth Barn	117 Cranberry Hwy	1858	Altered beyond recognition; Greek Revival;
ORL.124	Snow, Joe Jesse House	121 Cranberry Hwy	1900	Queen Anne;
ORL.125	Bassett, Albert House	116 Cranberry Hwy	1885	Victorian Eclectic;
ORL.126	Mayo, J. C. - Percival, Joseph W. House	120 Cranberry Hwy	1852	Greek Revival;
ORL.127		14 Brewster Cross Rd	1790	No style;
ORL.128	Hohn, F. Tailor Sho/ Higgins, Joshua House p	139 Cranberry Hwy	1800	Greek Revival;
ORL.129	Boland, James House/ Higgins, Simeon House - Shattuck, Abel Tavern	143 Cranberry Hwy	1750	Colonial;
ORL.130	Higgins, Simeon Tavern Wing/ Olde Tavern Motel	151 Cranberry Hwy	1829	Federal;
ORL.131	Village Lobster House	157 Cranberry Hwy	1880	Queen Anne;
ORL.132	Kingman, Seth House/ Eldredge, Charles J. House	164 Cranberry Hwy	1798	Federal;

MHC #	Historic/Common Name	Orleans Address	Date of Construction	Architectural Style
ORL.144	French Atlantic Cable Station Worker Housing/ Geers, George House	2 Academy Pl	1880	No style;
ORL.145	Knowles, Richard House/ Snow, Azariah House	8 Academy Pl	1752	No style;
ORL.396	Higgins, Benjamin Barn/ Red Balloon Toy and Gift Shop	16 South Orleans Rd		No style;
ORL.902	Jeremiah's Gutter Site Marker	Canal Rd	1976	
ORL.903	Orleans Oldest House Marker	Canal Rd	1976	
ORL.904	Doane, John House Site Marker	Main St	1976	
ORL.905	French Atlantic Cable Station Marker	41 South Orleans Rd	1976	
ORL.906	Young, Jonathan Windmill	33 Cranberry Hwy	1793	
ORL.907	Higgins Tavern Site Marker	154 Cranberry Hwy	1976	
ORL.908	Orleans World War I Monument	5 Academy Pl		
ORL.910	Orleans World War II Memorial	5 Academy Pl	1954	
ORL.911	Orleans Korean and Vietnam War Monument	5 Academy Pl	1981	

*Listed in the National Register of Historic Places

Archaeological Resources

Background research was conducted to assist with the archaeological sensitivity assessment and to develop predictive statements for the types of archaeological resources that may be present within the project area. Background research for the project was accessed through the Orleans Historical Society's online archives, a review of MHC's cultural resource database, literature review, and a review of PAL's collection of resources from conducting extensive work on Cape Cod. Several sources of information in PAL's database relative to environmental and pre- and post-contact historic contexts for Orleans and Cape Cod were reviewed for information on known and expected archaeological resources (PAL 2016; Banister and Herbster 2015; Gillis and Herbster 2013; Herbster and Heitert 2011; Waller and Leveillee 2011). Cultural resource inventory files maintained at the MHC were also reviewed for updated information on known historic and archaeological resources in proximity to the project area (MHC 1984, 1987; Decima 1995; Decima et al. 1992; Edens 1995;

Edens et al. 1995). Primary and secondary histories and historical maps and atlases were examined to assess changes in land use, to locate any documented structures, and to trace the development of transportation networks (an important variable in the location of post-contact archaeological sites). Town and regional histories, and historical maps and atlases were consulted to locate possible sites dating to the post-contact period within and close to the project area (Waller 1880, 1905, 1910; Walling 1857, 1858). Taken together, information from these various sources was used to arrive at a preliminary assessment of the archaeological sensitivity of the project area.

The archaeological sensitivity of the project area is defined by the presence of favorable environmental conditions and the presence of known archaeological sites in similar environmental settings. Well-drained soils near freshwater resources were preferred locations for Native American groups. Soil associations within the Orleans project area mostly consist of well-drained Carver-Hinesburg loamy coarse sands and Carver coarse sands of varying slopes that formed on glacial outwash plains (USDA 1993).

Archaeological resources include 14 Native American pre-contact archaeological sites within one half mile of the proposed project area (see Figure 1; Table 2). There are no post-contact (i.e., post European contact) archaeological sites recorded within one half mile of the proposed project area. Seven of the 14 previously recorded pre-contact sites (19-BR-208, -529, -532, -616, -625, -810, and -938) are recorded within the boundaries of the proposed ODWCS project area. These sites have yielded evidence of Native American activity spanning back to at least the Late Archaic Period (ca. 5000 to 3000 years before present [B.P.]), and consist of artifacts such as stone tools and pottery, and features such as fire hearths, indicative of campsites and lithic (stone tool) workshops. One site also contained human burials. The Franz Site (19-BN-810), was a burial site identified near Town Landing that consisted of shell middens with pottery sherds, diagnostic Late Woodland (ca. 1000 to 450 B.P.) Levanna projectile points, bifacial tool blades and bone or antler fragments (MHC site files).

The following is a list of archaeological resources that were identified by this cultural resource review:

Table 2. Unevaluated Pre-Contact Archaeological Sites Recorded within One-Half Mile of the ODWCS Project Area.

Site Name	MHC Site #	Towns	Temporal Period	Site Type
Peter Hunts Site	19-BN-208*	Orleans	Woodland	Campsite
Fisk Farm Site	19-BN-373	Orleans	Woodland	Unknown
Oak Ridge Site	19-BN-490	Orleans	Transitional Archaic	Campsite/workshop
Namskaket Site	19-BN-491	Orleans	Late Archaic	Campsite
Gove Site	19-BN-529*	Orleans	Unknown	Unknown
Ellis Site	19-BN-532*	Orleans	Archaic and Woodland	Campsite

Site Name	MHC Site #	Towns	Temporal Period	Site Type
Cemetery Site	19-BN-615	Orleans	Late Archaic	Campsite
Estlin Site	19-BN-616*	Orleans	Late Archaic	Lithic workshop
Orleans Elementary School	19-BN-625*	Orleans	Unknown	Habitation site
Unknown	19-BN-701	Brewster	Unknown	Lithic workshop
Ps1-3-1	19-BN-741	Brewster	Unknown	Flake scatter
Forren Site	19-BN-809	Brewster	Late Archaic/Early Woodland	Habitation site, lithic workshop
Franz Site	19-BN-810*	Orleans	Late Woodland/Contact	Burial, shell midden, habitation site.
Ellis Road	19-BN-938*	Eastham	Unknown	Flake scatter

*Sites recorded within the project area boundaries.

Results of the Field Assessment

A walkover/drive-over field assessment of the ODWCS project area was conducted by Dianna Doucette, PAL Senior Archaeologist, on February 8, 2017 to assess the integrity of the ground surface, to collect data about the current environmental setting of each area, and to look for any surface indications of archaeological sites. A combination of variables affecting archaeological sensitivity, such as evidence of prior ground disturbance or the presence of favorable environmental attributes, was noted throughout the project area. During the field assessment, all of the roads that will be impacted by the proposed sewer line construction were assessed as well as the three proposed pump station locations. Most of the project's impact areas are located within and below paved roads, except for a section of Old Tote Road and the three proposed pump stations parcels, which are grassy, open areas (Photographs 1 - 8).

Although the construction will occur primarily within and below the paved roads that have likely been previously disturbed by subsurface utilities, intact soils containing archaeological sites may exist below the pavement. The three pump station areas are in open, grassy areas that appear to have been previously disturbed. Pump Station #1, on the north side of Old Colony Way, and directly across the street from Old Tote Road, is a flat, open field with three visible ventilation pipes along the edges of the parcel that may be indicative of underground septic utilities or a leaching field (see Photograph 6). Soils in this area consist of well-drained Carver-Hinesburg loamy coarse sands that formed on glacial outwash plains. Pump Station #2, at the intersection of Chatham Road, Academy Place, and Main Street is an open, grassy park, also with well-drained Carver-Hinesburg loamy coarse sands (see Photograph 7). The small triangular park contains three war memorials, as mentioned above, and background research also indicated that the Rock Harbor Academy, and then the Snow Library, were previously in this area. Pump Station #3 is located at the edge of the T.J. Max shopping plaza parking lot, on a grassy strip that consists of excessively drained Carver coarse sands (see Photograph 8). This area contains an existing pump station and appears disturbed.

The field assessment focused on looking for any surface indications of archaeological sites, including but not limited to artifact scatters, stone foundations, dams, stone walls, and trash deposits. No evidence of archaeological sites was observed on the ground surface during the field assessment. Areas of disturbance, such as sand pits or quarries, or areas of recognizable grading, were not visible during the field assessment to suggest that the soils beneath the roads have been displaced, however, it is likely that utilities in the Orleans downtown area, and landscaping and utilities in the new residential areas, created some disturbance. Although the ODWCS project includes the installation of new sewer lines under roads that have likely been previously disturbed by subsurface utilities, there are several roads that have likely only been graded and paved, but not otherwise disturbed by utility installations.

Results of the Sensitivity Assessment

Results of the background research and field assessment were used to develop a sensitivity ranking and predictive statements concerning the potential for the presence of Native American and EuroAmerican cultural resources. Native American archaeological sensitivity was determined by assessing key environmental attributes, the presence of documented cultural resources in and adjacent to the project area, and the degree of disturbance. Key environmental attributes are proximity to fresh or salt water, well-drained soils, and level topography. EuroAmerican archaeological sensitivity is determined by assessing information collected during the background research and walkover. Numerous large-scale surveys have determined that historic EuroAmerican sites are not directly correlated with specific environmental variables and that documentary information is not always accurate. As a result, documentary research used in conjunction with an evaluation of the physical condition of a project area and the presence of visible sites is the most useful approach to determining the sensitivity of a project area

High archaeological sensitivity is assigned to locations that exhibit favorable environmental conditions, have sustained little or no ground disturbance, or are located in proximity to known archaeological sites. Areas of moderate archaeological sensitivity are those areas that have been impacted by construction or exhibited some adverse environmental characteristics such as moderate slope (10–15 percent grade) or rocky or poorly drained soils. Areas with low archaeological sensitivity include areas that are perennially wet, exhibit severe slope (greater than 15%), or have been severely impacted by development, construction, excavation, or erosion.

Overall, the archaeological sensitivity of the ODWCS project area is high to moderate for Native American sites dating to the Pre-Contact, Contact, and early Post-Contact periods (ca. 8000 to 300 B.P.) (Figures 4 and 5). The archaeological sensitivity is defined primarily by the project area's physical location within sandy, well-drained soils adjacent to the shoreline and freshwater wetlands and by the presence of previously recorded archaeological sites and documented post-contact period land use. Archaeological evidence of pre-contact period Native American activity could include subsistence-related features such as hearths, food storage/disposal pits, living areas including post molds, lithic workshops, and diagnostic chipped and ground stone tool assemblages. Expected pre-contact site types would include base camps, or logistic field camps and foraging locations in proximity to these brooks where seasonally available (waterfowl, fish) resources could be assured, and burial sites.

The ODWCS project traverses previously designated areas containing recorded Native American camp sites and burial site/s along Town Cove, and has the potential to contain other unmarked burial features and/or pre-contact Native American archaeological sites. Any unmarked Late Woodland Period (ca. 1000 to 450 B.P.) burial features in the project area are likely to resemble those already identified. The likelihood of Contact or early Post-Contact Period Native American sites along Town Cove is also high to moderate.

The EuroAmerican post-contact archaeological sensitivity for land use is moderate to low. The sewer lines run through some of the earliest established business areas and remnants of older buildings and businesses could be present under the present roadways. In addition, several historical markers suggest that eighteenth and possibly seventeenth century meeting places were located along Main Street, Route 6A, Chatham Road. However, much of Orleans consisted of pasture and agricultural land up until residential development began in the mid-twentieth century. Remnants of the Rock Harbor Academy meeting house may be present within the proposed pump station location in the village green at Academy Place Park.

The post-contact historic period sensitivity of the project area is moderate to low based on the historic nature of Orleans and the possibility of post-contact sites to be present under the current streets. Post-contact sites could include cellar holes and foundations related to early settlement patterns and subsistence related activities, and/or evidence of small-scale industrial activities.

Recommendations

The ODWCS project area is located adjacent to several archaeological sites that have yielded evidence of Native American activity spanning back to the Late Archaic Period. Because archaeological sites are located below the ground surface and could be below a paved surface, and, given the proximity of the ODWCS project area to known Native American archaeological sites, **PAL recommends archaeological monitoring in areas assessed as having high and moderate archaeological sensitivity, which includes all places where new sewer lines and pump stations will be impacting intact soils during construction (this may include areas between existing utilities).** The archaeological monitoring will be conducted under an archaeological permit issued by the State Archaeologist's office at the MHC and in compliance with M.G.L. c. 9, ss. 26-27 C (950 CMR 70). In addition, PAL recommends coordinating with the Mashpee Wampanoag and Wampanoag Tribe of Gay Head/Aquinnah (WTGH/A) Tribal Historic Preservation Officers (THPOs) regarding the proposed project schedule, so that a tribal cultural resource monitor can be present during the fieldwork portion of the project. The THPOs will also be consulted for information that may assist with the archaeological investigations. Informant interviews may also be conducted in order to gather more information about reported sites and/or cultural resources in the project vicinity.

The goal of the archaeological monitoring will be to ensure that if any significant archaeological resources, including human remains and/or burials, are exposed during the construction activities that they are treated appropriately in accordance with the Massachusetts Unmarked Burial Law (M.G.L. c. 7 s. 38A; c. 9, ss. 26A & 27C; c. 38, s. 6; and c. 114, s. 17, as amended by Chapter 659 of the Acts of 1983, Chapter 386 of the Acts of 1989, and Chapter 140 of the Acts 2003). The monitoring will involve the close visual examination of exposed subsoils to identify any potential archaeological deposits and/or human remains that may be located within construction impact areas. Having a representative from the Mashpee Wampanoag Tribe on-site, as well as an experienced archaeologist,

during the construction process to determine the significance of a soil anomaly or artifact/s immediately will enable the project proponent to move forward and avoid work stoppage situations.

Information on the previous belowground disturbance within the project area, including any available geotechnical data and soil boring logs, will be reviewed prior to the construction process to identify specific areas to be monitored. In most areas the proposed project impacts will occur under or at the edge of paved roadways, where previous road construction and improvements have occurred; the installation of mid-to-late twentieth century utilities make it unlikely that intact, undisturbed soils are present, which affects the likelihood that archaeological deposits may be present. In addition, the location of the sewer lines within clustered residential developments means it is less likely that large Native American or post-contact period sites or activity areas survived in the immediate areas surrounding the paved roadways.

The section of Route 28, from Academy Place to where it intersects with Route 6A, the short residential connectors that lie closest to Town Landing (Cottage Street and Cove Road), Cedar Pond (Locust Street and Jones Road), the Old Tote Road, and the three pump station parcels have been assessed as having a preliminary high archeological sensitivity due to the proximity of recorded archaeological sites and general lack of development. Moderate archaeological sensitivity has been assigned to remaining areas to be impacted due to their proximity to wetlands and/or previously recorded sites. However, based on the review of soil boring data and the acquisition of additional information on previous belowground disturbance, some of the areas assessed as having moderate archaeological sensitivity may be reassessed to low.

PAL also recommends a “Post-Review Discoveries” protocol, or, an Unanticipated Discoveries Plan (UDP), be developed and implemented consistent with the Massachusetts Unmarked Burial Law (MGL Chpt. 38, Sec. 6; Chpt 9, Sec. 26A and 27C; and Chpt 7, Sec. 38A; all as amended) to formalize procedures guiding the discovery of any significant cultural resources and/or evidence of human remains during construction in areas not recommended for archaeological monitoring.

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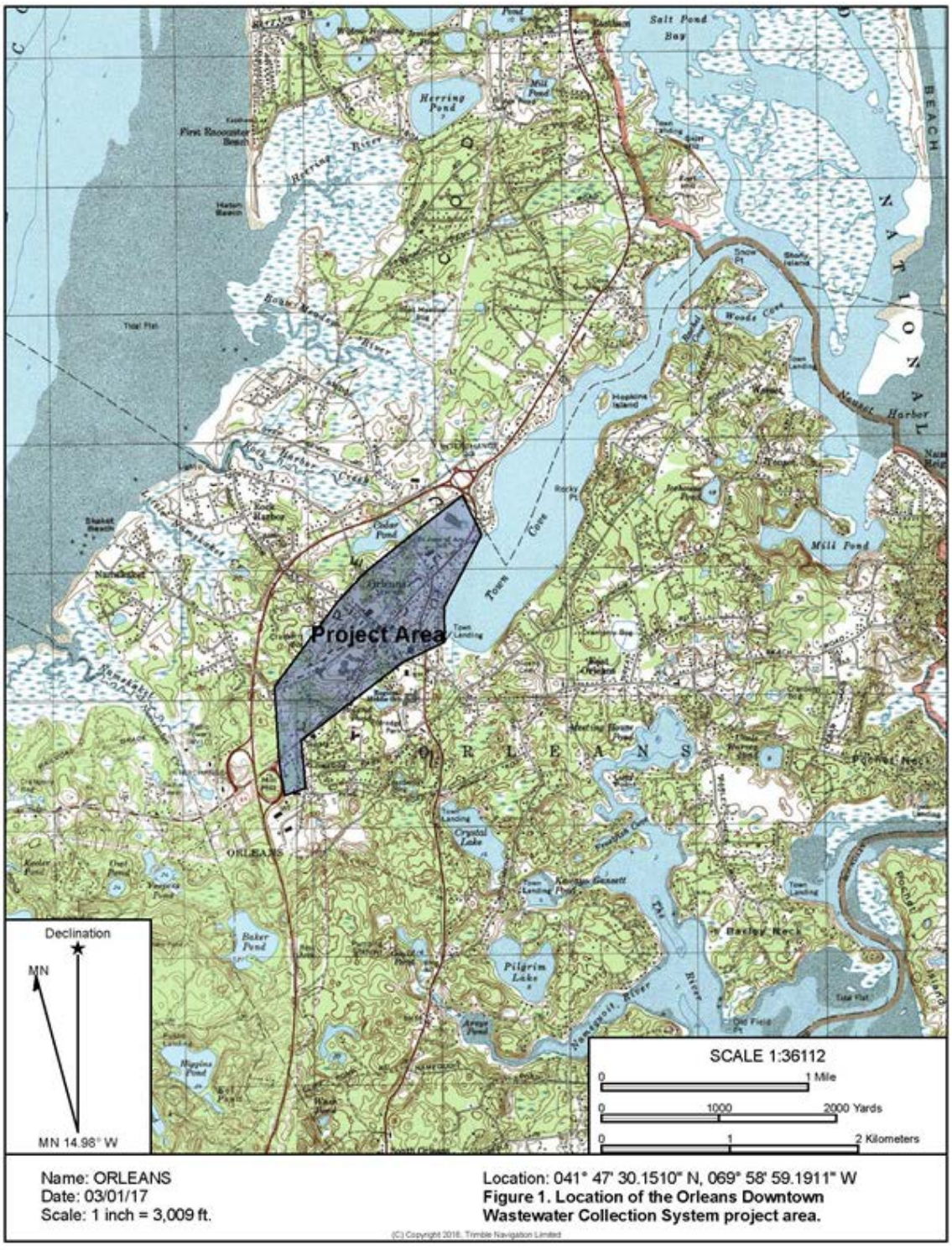
Project Area
Declination
MN
MN 14.98° W
SCALE 1:36112
0 1 Mile
0 1000 2000 Yards
0 1 2 Kilometers
Name: ORLEANS
Date: 03/01/17
Scale: 1 inch = 3,009 ft.
Location: 041° 47' 30.1510" N, 069° 58' 59.1911" W
Figure 1. Location of the Orleans Downtown Wastewater Collection System project area.
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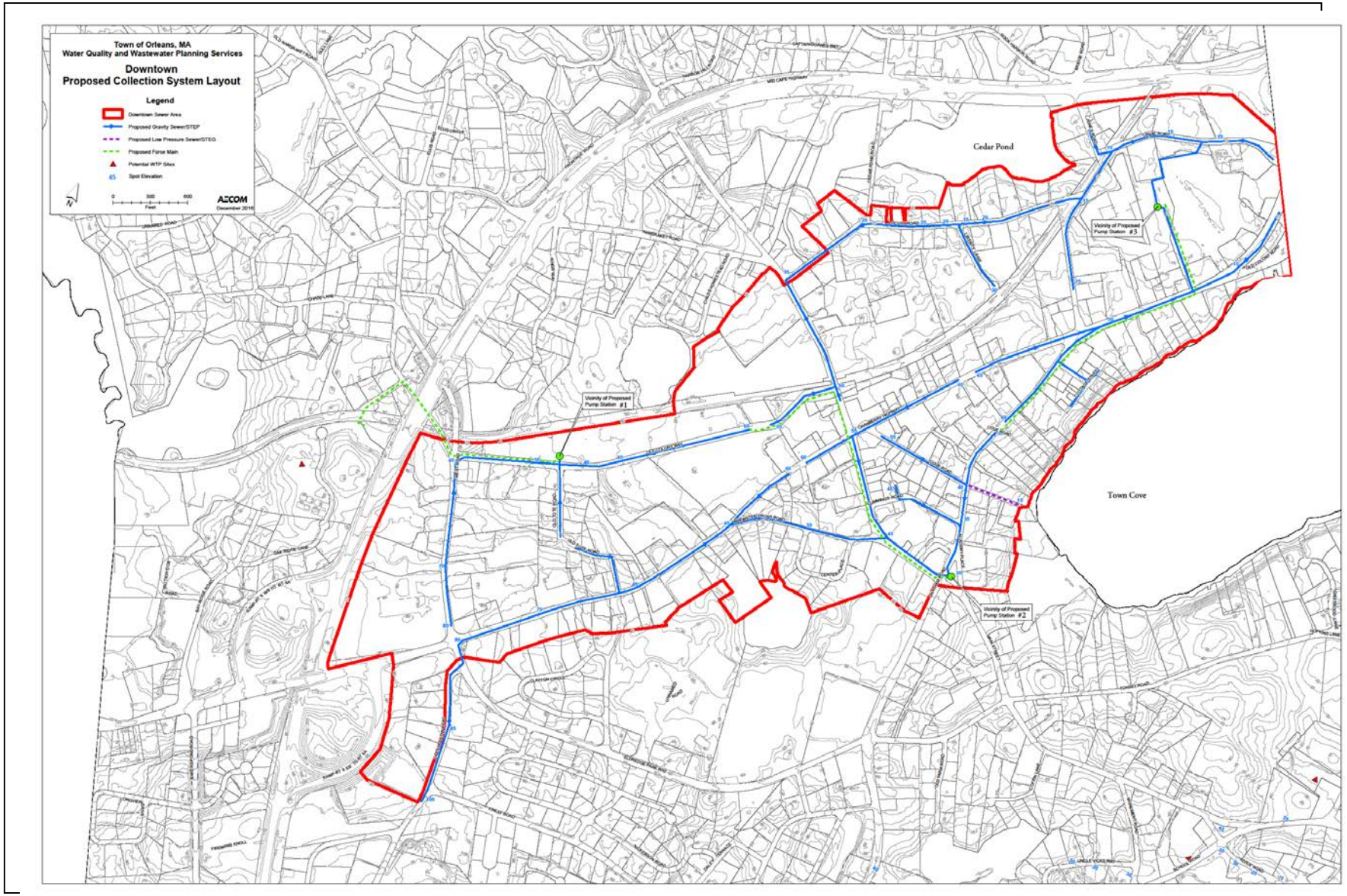

Figure 2. Proposed plan of the Orleans Downtown Wastewater Collection System, Orleans, MA.

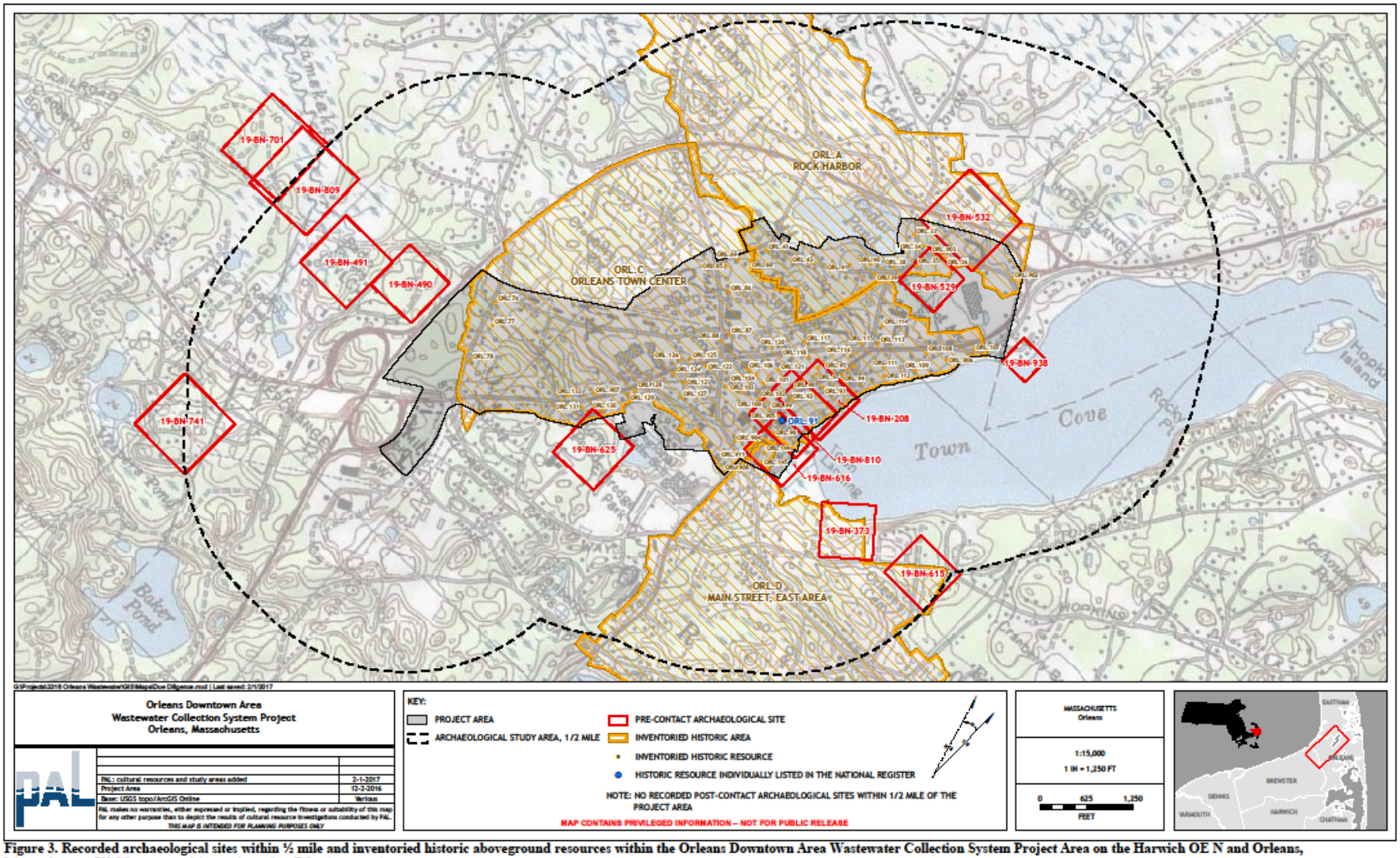

Figure 3. Recorded archaeological sites within ½ mile and inventoried historic aboveground resources within the Orleans Downtown Area Wastewater Collection System Project Area on the Harwich OE N and Orleans, Massachusetts USGS topographic quadrangles, 7.5 minute series.

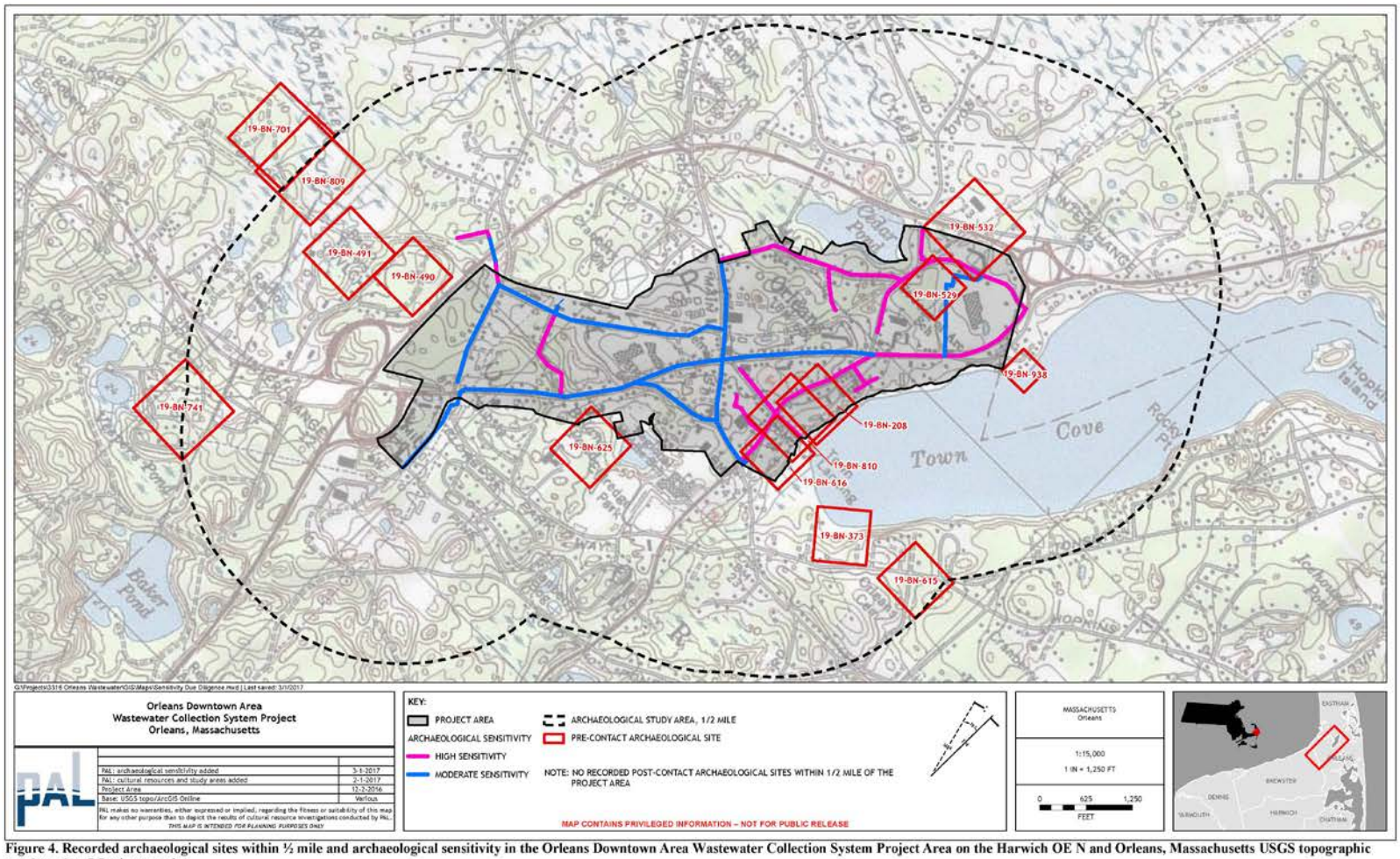

Figure 4. Recorded archaeological sites within ½ mile and archaeological sensitivity in the Orleans Downtown Area Wastewater Collection System Project Area on the Harwich OE N and Orleans, Massachusetts USGS topographic quadrangles, 7.5 minute series.

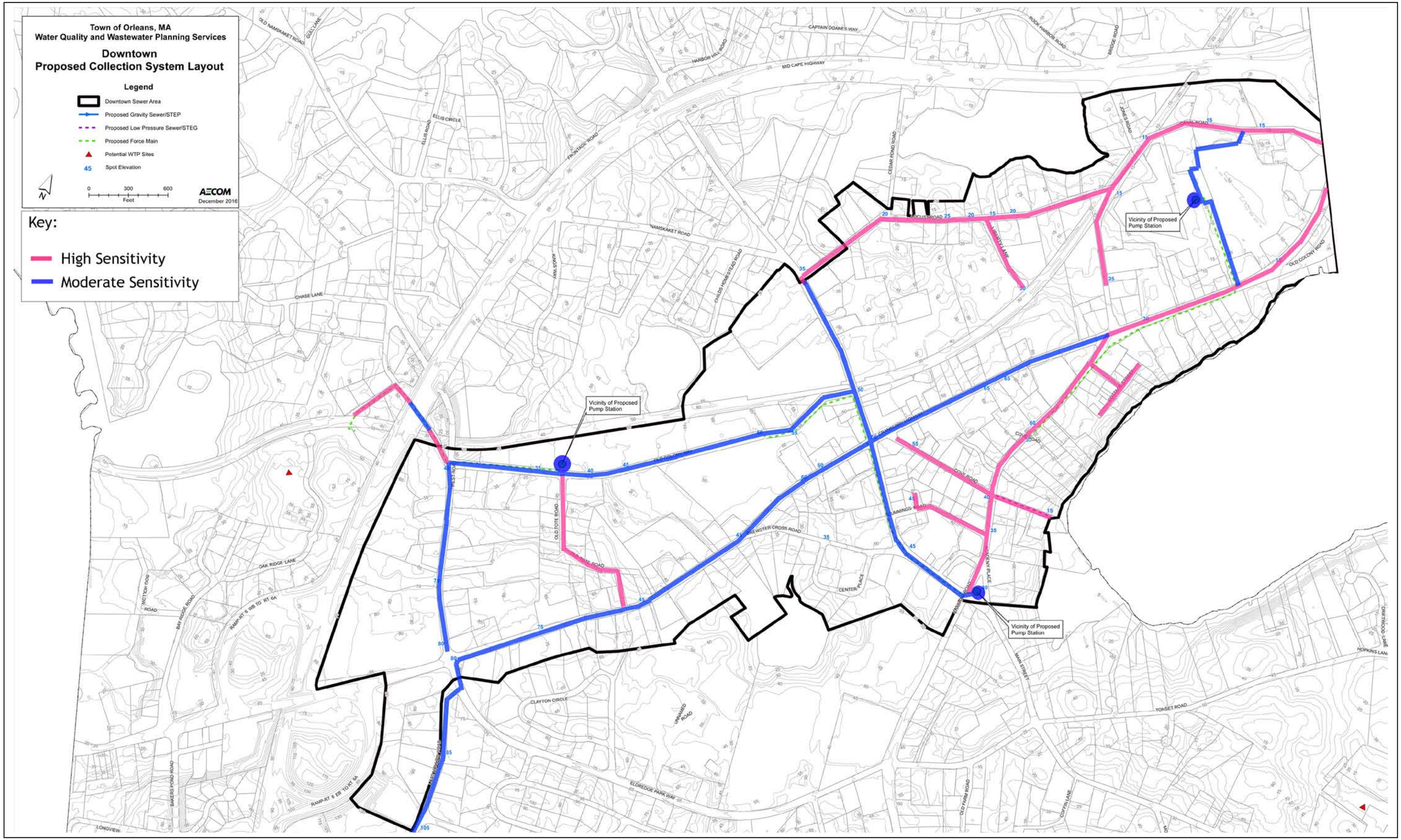

Figure 5. Plan of the Orleans Downtown Wastewater Collection System project area showing archaeological sensitivity.

Photograph 1. West Street, view north from the Jail House Tavern.

Photograph 2. Old Tote Road, view north towards Pump Station #1 Site.

Photograph 3. Old Tote Road, view south.

Photograph 4. Old Colony Way at the intersection with Main Street, view east.

Photograph 5. Cottage Street, view southeast toward Town Cove.

Photograph 6. Pump Station #1, Old Colony Way, view northwest.

Photograph 7. Pump Station #2, Academy Place, view north.

Photograph 8. Pump Station #3, view north.