Summary Report

Tidewater Drive
Warwick, Rhode Island

Machine-Assisted Phase I(c)
Archaeological Survey

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Submitted to:
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Introduction

The Warwick Sewer Authority (WSA) is planning and coordinating the construction of sewer lines within the Warwick Neck - Bayside community of the City of Warwick, Rhode Island (Figure 1). The funding for the Warwick Sewers project includes federal monies. Accordingly, the undertakings are subject to Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and subject to review by the State Historic Preservation Officer (SHPO). The firm of Gordon R. Archibald, Inc, (GRA) contracted with PAL for a cultural resource management survey to consider potential historic properties within the undertaking's Area of Potential Effect (APE), pursuant to requirements under Section 106 of the National Environmental Policy Act (NEPA).

PAL completed Phase I(a) Archaeological Assessment survey within the Bayside I, Bayside II, Bayside III, and Longmeadow sewer segments between March 2006 and July 2008. Areas of high and moderate sensitivity to contain archaeological deposits in meaningful contexts were designated and recommended for further, Phase I(c) investigation. PAL recommended Phase I(c) archaeological survey to sample areas of assigned sensitivity, refine assigned sensitivity, and determine the presence/absence and range of features and site types that exist within the planned sewer easements.

PAL conducted the Phase I(c) surveys in 2007 and 2008. Because the sewer lines will be constructed beneath existing roadways, the survey methodology has relied primarily upon monitored excavations with a flat-bladed backhoe. The methodology employed for the Phase I(c) surveys of the Bayside I, Bayside II, Bayside III, and Longmeadow sewer segments included selection of representative areas previously assessed as archaeologically sensitive for machine trenching. Within those areas assessed as sensitive, streets were marked with paint to indicate where machine trenching was planned. Following coordination with Digsafe and the Warwick Water Department, the asphalt was saw cut and removed. A flat-bladed backhoe was utilized to remove the roadbed and any fill layers to a depth where original soils were observed.

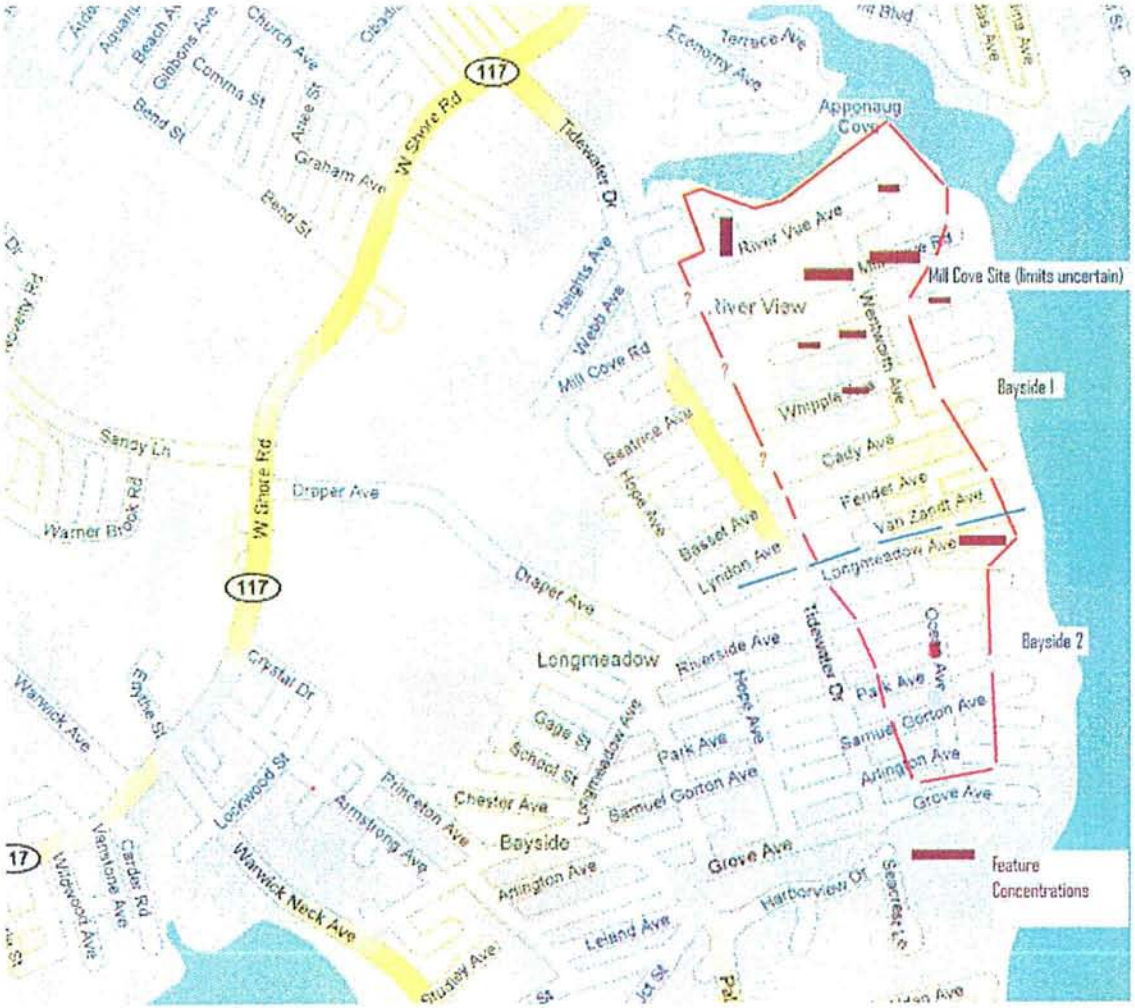

Figure 1. The Bayside Section of Warwick indicating the Location of the Mill Cove Site.

Any artifact concentrations or features resulting from cultural activity were documented (mapped and photographed) but no further excavations were completed, pending ongoing communication and consultation with the Narragansett Indian Tribe Historic Preservation Office (NITHPO), WSA, and Environmental Protection Agency (EPA). Once features and material concentrations were noted, they were covered with plastic, trenches were back-filled, and the asphalt street surface was restored. Summary reports detailing the methodology, results, and recommendations for further considerations have been completed for each segment (Bayside I, Bayside II, Bayside III, and Longmeadow).

Synthesis of the results of Phase I(c) survey to date indicates that a large and potentially significant concentration of Native American cultural materials and features exists in the northern section of Warwick Neck, south of Mill Cove and focused around the Mill Cove Brook. Designated the Mill Cove Site, it contains a wide range of feature and activity areas resulting from Native occupation and habitation between approximately 3,000 and 350 years ago.

Evaluation of features began in May 2008, but has been suspended pending ongoing consultation between the EPA, Narragansett Indian Tribe, and WSA. The suspended evaluation studies have resulted in the recognition that feature types within the Mill Cove Site include graves.

In reviewing the results of the surveys in the Bayside I, Bayside II, Bayside III, and Longmeadow segments and estimating the limits of the Mill Cove Archaeological Site, concerns arose in relation to Tidewater Drive. Tidewater Drive is critically important in design for servicing the multiple Warwick Neck segments. Accordingly, PAL recommended that Phase I(c) machine-assisted investigations take place along Tidewater Drive to determine whether or not the Mill Cove Site extends west into and beyond Tidewater Drive, and could be affected by construction of sewer lines. GRA and WSA authorized PAL to complete the recommended work along eight representative sections of Tidewater Drive. The investigations were conducted in November 2008. This summary report details the methodology, results, interpretations, and recommendations following the Phase I(c) survey along Tidewater Drive.

Native American Context

The first Europeans arrived in Warwick between 1638 and 1640. They encountered at least four major subdivisions of the larger Narragansett tribe: Shawmets, Potowomuts, Cowesetts, and Pawtuxets. Each group was led by a sachem. Pomham ruled the Shawomets, Taccoman ruled the Cowesetts and Potowomuts, and Saconoco presided over the Pawtuxets. Native American settlement at the time of European contact focused on near-coastal and coastal confluences of rivers and streams. Relatively large concentrations of dwellings were surrounded by a network of fields and collecting territories. The importance of waterways in Native landscape perspectives is reflected in their use as territorial and boundary markers as lands were transferred from Native to European possession.

The Native American settlement and subsistence patterns observed by arriving Europeans can be traced archaeologically to at least the Transitional Archaic Period (3800–2800 years before present [B.P.]), when pre-contact populations began to optimize marine resources and focus occupations and exploitative forays within the coastal margin of Narragansett Bay. Occupation as early as 8,000 years ago is evidenced by bifurcated projectile point finds in Apponaug, at the multicomponent Sweet Meadow Brook Site (Fowler 1956). Stark-like and Neville-like points, chronologically diagnostic of the Middle Archaic Period (7000–5500 B.P.), have also been found along western Narragansett Bay. Local Native American land use prior to the Transitional Archaic Period is characterized by relatively limited occupations and activities that focused on inland-based floral and faunal resources along river and stream drainages. Evidence of PaleoIndian (10,000–8500 B.P.) occupation is rare, but interpretation of the limited data indicates a focus on glacial lake shores that once existed in the present-day Wickford Cove area, long since inundated by rising sea levels following glacial retreat.

Excavations in Warwick along Potowomut, and at the Maskerchugg Site, Lambert Farm, Sweet Meadow Brook, Locust Spring, and Greenwich Cove sites indicate long-term semipermanent, perhaps seasonal, settlements along the near-interior and coast, with significant populations occupying them. Sites include evidence of domestic structures, processing and storage areas, individual and collective burial locations, and lithic processing workshops.

Surface finds at numerous locations along the coast (Goddard Park, Nausauket) and along near-interior bodies of water (Gorton Pond, Three Ponds) indicate the intensity of site densities along this section of the Bay. Fishing supplemented hunting, collecting, and planting with particular population concentrations at the falls (Pawtuxet) of rivers during spring fish runs. Inland and coastal ponds were fished in the winter while shellfish beds in sheltered coves could be exploited year-round. Archaeological evidence of campsites, habitations, and burials has been found throughout Warwick, and confirmed through survey within Warwick Neck/Bayside sewer segments.

State site files housed at the Rhode Island Historical Preservation & Heritage Commission (RIHPHC) record numerous Native American archaeological sites within or in immediate proximity to the Bayside sewer segments. These include rockshelter and shoreline sites within the former Rocky Point Amusement

Park, and RI 1584, on Old Mill Creek, to the north. Late Archaic and Woodland Period cultural materials including projectile points and several pottery fragments were collected from the site. Furthermore, a Middle Archaic radiocarbon date of 7170 ± 205 B.P. was produced from charcoal collected from the site. Native American cultural materials have also been collected from the Elkhound Site (RI 1718) located nearby, on Warwick Neck. Lithic debitage and Late Archaic Squibnocket triangle projectile points were recovered, and radiocarbon analyses on charcoal collected from the site produced Late Woodland dates of 600 ± 80 and 710 ± 130 radiocarbon years B.P. Similar Late Archaic Squibnocket Complex and Woodland Period occupations have been identified at the Wickes Site situated along the north side of West Shore Road between Oakland Beach Avenue and Warwick Avenue (Leveillee and Waller 2001). Native American chipping debris was collected south of the Conimicut West Sewer System project area from the Warner Homestead Site, located west of West Shore Road between Buckeye Brook and Sandy Lane (Waller and Leveillee 2002). Remnants of a seventeenth-century Narragansett Indian burial ground have been rediscovered in the Horse Neck section of the city (Leveillee 2001).

Historic Context

Historically, Warwick includes the original Shawomet Purchase lands, executed in January 1642 (1643?) between Samuel Gorton and 11 followers and the Narragansett Indian sachem Miantonomi, with the sub-sachem Pomham witnessing the deed. Shortly after the Shawomet Purchase, William Arnold and other Pawtuxet settlers attempted to drive Gorton and his followers from the area, and convinced Pomham to place his lands under the jurisdiction of the Massachusetts Colony. Massachusetts sent troops to seize the cattle of the Gortonists, arrested Gorton and six followers, and took them to Boston for trial on counts of heresy and sedition. After being put in irons and forced to work in various towns throughout the colony for a winter Gorton and his followers were set free, but were banished from all territory under the jurisdiction of the Massachusetts and Plymouth Colonies. Gorton lived briefly on Aquidneck Island, and in 1644–1645 sailed to England to petition Parliament to secure his Shawomet lands. In 1646 Massachusetts was ordered by Parliament to reinstate the Shawomet purchasers their lands and was barred from further attempts to exercise jurisdiction over them. In gratitude Gorton changed the name of the settlement to Warwick, commemorating the supportive Earl of Warwick.

During the time that Gorton was being held prisoner in Massachusetts, the Narragansett Sachem Miantonomi was murdered by rival Mohegans, possibly with the support of Massachusetts Colony political factions.

When the Narragansetts saw that Gorton was freed by Massachusetts they believed he had powerful allies in England and placed themselves under the "protection of the English," seeking relief against Massachusetts Colony. Pomham however, remained allied with Massachusetts and refused to leave his Shawomet territory, located at today's Warwick Neck. He asked Massachusetts for assistance against the Gortonists and protection from the Narragansett Indians. Massachusetts Colony sent 11 men to help Pomham erect a fort. Today's Paine Street and Fort Street intersection is the reputed site of the fortification, known historically as Pomham's Fort.

In 1665, after constant conflicts between the Shawomets and the Gortonists, the King's Commissioners ordered that Pomham and his people remove themselves. They remained however until more widespread hostilities broke out during the King Philip's War (1675–1676).

In July 1676, a force of approximately 80 Narragansetts who had joined King Philip's struggle against the English, were camped on Warwick Neck, awaiting coordination for an attack on Newport. A force of 300 Colonial soldiers and Indian auxiliaries marched under the leadership of John Talcott and killed or captured 67 of the Narragansetts. By August of 1676, Philip had been killed and the Native attempts to regain their former holdings had ceased. In the spring of 1677, Gorton and his followers returned to Warwick Neck.

Warwick grew quickly in the years following King Philip's War. Without the threat of Indian attack, settlers moved to the more remote parts of the town. In Buttonwoods, James Greene, Jr., of Potowomut, built a two-room farmhouse, between 1687 and 1710, with a brick-end chimney. The bricks are said to have been made on the premises from Warwick Cove clay and mortared with shells burnt to produce lime (D'Amato1992). The house still stands as one of the oldest in the city. By 1715, a schoolhouse stood at the southwest corner of West Shore Road and Sandy Lane. The Quakers built a meetinghouse on West Shore Road opposite Warwick Neck Avenue in 1716. Mills were built along the Pawtuxet River and in Apponaug, and inns and taverns were established along Post Road.

During the Revolutionary War, fortifications were set up at the head of Brush Neck Cove near Tuskatucket Brook on present-day West Shore Road (D'Amato 1992:76).

The nineteenth century was an era of industrial expansion throughout much of Warwick, particularly in the western sections, along the Pawtuxet (today's West Warwick). By the late nineteenth century, the Bayside area was sparsely populated with isolated farms (Beers 1870). In the last half of the nineteenth century, Rocky Point became Rhode Island's premiere summer resort and amusement park, following a national trend of beach and coastal leisure time activity. It operated through the nineteenth century and into the last decades of the twentieth, becoming regionally famous as an amusement park and shore dinner hall. The Rocky Point property changed hands several times with new owners adding attractions to the resort and park. By the end of the century, many of Rhode Island's mills would close for two weeks in the summer and provide transportation to Rocky Point to their employees, for what Warwick historian Don D'Amato describes as "the most enjoyable day of the year" (D'Amato 1992:76). In 1883, a fire destroyed the hotel, the shore dinner hall, boathouse, and much of the amusement park. The property changed owners in 1888, and Col. Randall A. Harrington rebuilt the park through the first two decades of the twentieth century. It continued to grow and prosper until September 1938, when the region was devastated by one of the most severe hurricanes of the century.

After the storm swept through the state, the *Providence Journal* reported that "Rocky Point, the Mecca of politicians and shore dinner consumers, fell like a house of cards before the southeast fury. The roller coaster was shattered; the great dining hall . . . was a soggy mass of lumber . . . and the oldest and most famous shore resort of the state was no more" (D'Amato 1992:140). The resort was rebuilt through the middle twentieth century, and was again reduced by Hurricane Carol in 1954. It remained a smaller-scale amusement park, dining hall, and local recreational center until its permanent close in the last decades of the twentieth century.

The building of electric trolley lines through Warwick, between 1892 and 1910, opened Warwick to residential development. The automobile then transformed what had been agricultural land and resort communities into suburbs of greater Providence.

Tidewater Drive is included within residential neighborhoods east of West Shore Road, south of Mill Cove, and north of Rocky Point. The neighborhoods are characterized as a twentieth-century residential community.

Phase I(c) Machine Trenching

Figure 2 illustrates the selected representative segments along Tidewater Drive that were targeted for machine-assisted removal of road surfaces, and excavation to below the roadbed/soil interface to search for archaeological materials and/or features. This method has been successfully employed in other sewer segments throughout the city (Warwick Vets, Conimicut West, Warwick Cove, Bayside I).

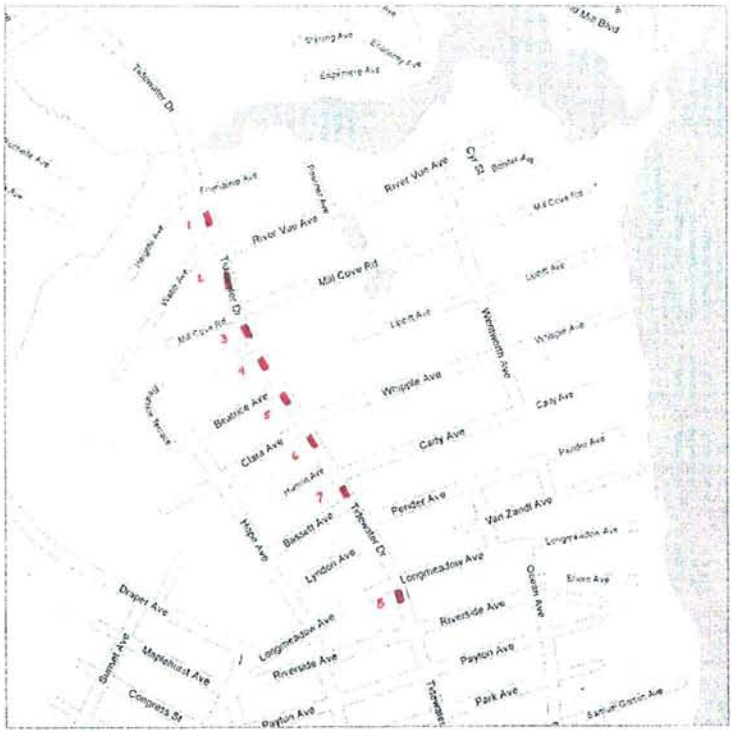

Figure 2. Machine Trench Locations along Tidewater Drive during the Phase I(c) Testing.

Eight machine trenches were dug along Tidewater Drive (see Figure 2). For the machine testing, a flat-bladed backhoe was used to remove the asphalt and topsoil strata in machine trenches of variable lengths in representative areas along the sewer easement, taking into account marked utilities, street intersections (due to traffic flow), and access for traffic in proximity to our work area. In each machine trench topsoil/subsoil interfaces were exposed to determine the presence/absence of features and anomalies. In cases where soils were disturbed, excavation continued to sterile subsoils. Any exposed features were documented in trench sketch plans and digital images. Each area of testing is discussed below. Cultural materials were not collected from units. Exposed anomalies were further investigated to determine if they represented natural processes or cultural activity. In cases where they were considered to be cultural, they were drawn and/or photographed, but not excavated further. Their locations were mapped; they were covered, and remain in situ following filling and resurfacing with gravel.

Machine Trench 1 was 100 feet long, south of the Friendship Avenue intersection, on the west side of Tidewater Drive in two 50-foot sections starting at house number 136 and ending at house number 146. The road slightly rises to the south and only the eastern edge of the trench had intact soils. The western 2/3 of the trench consisted of very rocky compact fills. Intact natural B_1 soils were present from 20 to 33 centimeters below surface (cmbs) covered by a fill layer with no A soils present. No pre-contact features or artifacts were present within Trench 1.

Machine Trench 2 was 100 feet long on Tidewater Drive, south of the River Vue Avenue intersection, on the west side of Tidewater Drive. The trench began in front of house number 178 and ended at house number 184. The trench contained intact buried natural soils under shallow fills to depths of 31 cmbs above a buried Apz from 31 to 53 cmbs. B_1 soils extended from 53 to 84 cm and B_2 soils were noted to 107 cm. Intact, pale yellow fine sandy C soils were present to 120 cmbs. No cultural features or artifacts were encountered in this trench.

Machine Trench 3 was excavated on Tidewater Drive in front of house number 210, south of the Mill Cove Road intersection and on the east side of Tidewater Drive. The trench extended south for 100 feet along the sewer line easement on Tidewater Drive. This trench contained fills ending at 18 cmbs, with intact soils to 35 cmbs. Excavation did not proceed farther vertically because of the presence of cultural features. Twelve features were identified in the south half of the trench ranging in size from 30 cm (diameter shell deposit features) to 70 cm (diameter circular features) with fire-cracked rocks (FCR) (Figures 3 and 4). Several post holes features, fragments of charcoal scatters, chipping debris, and a projectile point fragment were also noted.

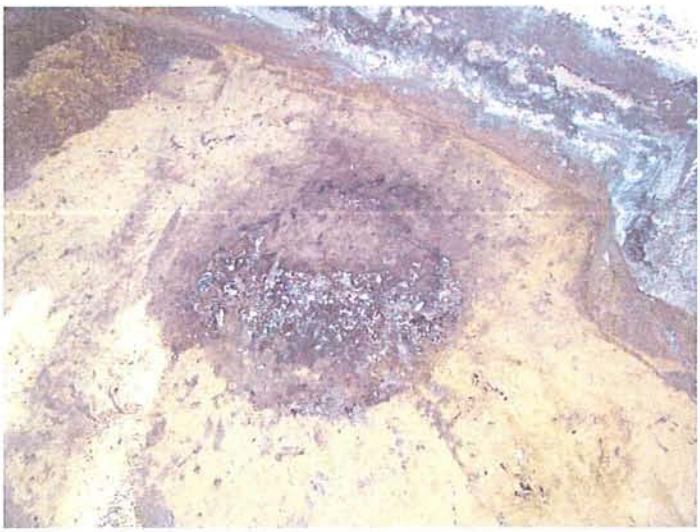

Figure 3. Shell and charcoal feature in Machine Trench 3.

Figure 4. Features in Machine Trench 3.

Machine Trench 4 was excavated along Tidewater Drive, north of the Beatrice Avenue intersection, on the east side of the road. Seven well-defined features were encountered in the subsoils at 50 cmbs in the first 15 feet of excavation (Figure 5).

Features ranged from several postholes to small shell deposits to a 110 cm oval feature with a darker outer ring. Further excavation of Trench 4 was suspended following the confirmation of multiple potentially significant features.

Figure 5. Features in Machine Trench 4.

Machine Trench 5 was located on Tidewater Drive, south of Beatrice Avenue on the west side of the road, on what appears to be the high point of Tidewater Drive in front of house number 250. This trench contained disturbed very rocky A/B soils with patches of intact rocky profiles. A gas smell persisted throughout the soil and excavation was stopped after 13 feet of trenching. No pre–contact features or artifacts were present within this trench.

Machine Trench 6 was located along Tidewater Drive, south of Clara Avenue in front of house number 284. It was approximately 12 meters long. Fill deposits were encountered to a depth of 20 cmbs on top of a disturbed A/B soil to 38 cmbs on top of intact C soils to 100 cmbs. No features were noted. A quartz biface fragment was recovered from the A/B topsoils.

Machine Trench 7 was located along Tidewater Drive in front of house numbers 314 and 322. The trench was dug along the planned sewer easement on the east side of the road with level adjoining yards. Several features were encountered in the subsoil at 30 cmbs (Figure 6). Two quartz bifaces, several pieces of chipping debris, FCR and scattered shell were also noted in the A/B soils. The B soil had several large natural rocks and boulders.

Figure 6. Feature in Machine Trench 7.

Machine Trench 8 was located north of Longmeadow Avenue on the west side of Tidewater Drive in front of house numbers 354 and 368. This trench contained disturbed very rocky deeper fill to 65 cmbs atop intact rocky plow zone and B_1 soils. Ten meters (30 ft) of the trench was excavated to reveal smaller possible features. Some shell fragments and FCR was observed in the plow zone but no cultural materials

were present. It is difficult at this time to definitively determine if the soil anomalies resulted from cultural or natural activity.

In summary, three of the eight trenches along Tidewater Drive contained cultural features (Trenches 3, 4, and 7); one trench (Trench 8) had possible features; and trenches 1, 2, 5, and 6 had no features present. The disturbed trenches (1, 5, and 6) seemed to be on the west side of the road near the gas line and the trenches with intact soils were on the east side of the road suggesting intact soils may be present at the disturbed trenches on the east side of the road. The entire area is fairly level and it is possible that more intact soils and site locations exist in adjoining yards and easement areas.

Interpretations and Recommendations for Further Archeological Survey of Tidewater Drive

Machine-assisted Phase I(c) survey along Tidewater Drive has resulted in the identification of archaeological deposits that reflect Native American occupation and activity within the project area. Specifically, features have been documented in Machine Trench 3, 4, and 7 (Figure 7).

These features confirm that elements of the Mill Cove Archeological Site extend into the planned sewer construction easement(s) along Tidewater Drive. These features will require additional consideration in planning the sewer installation.

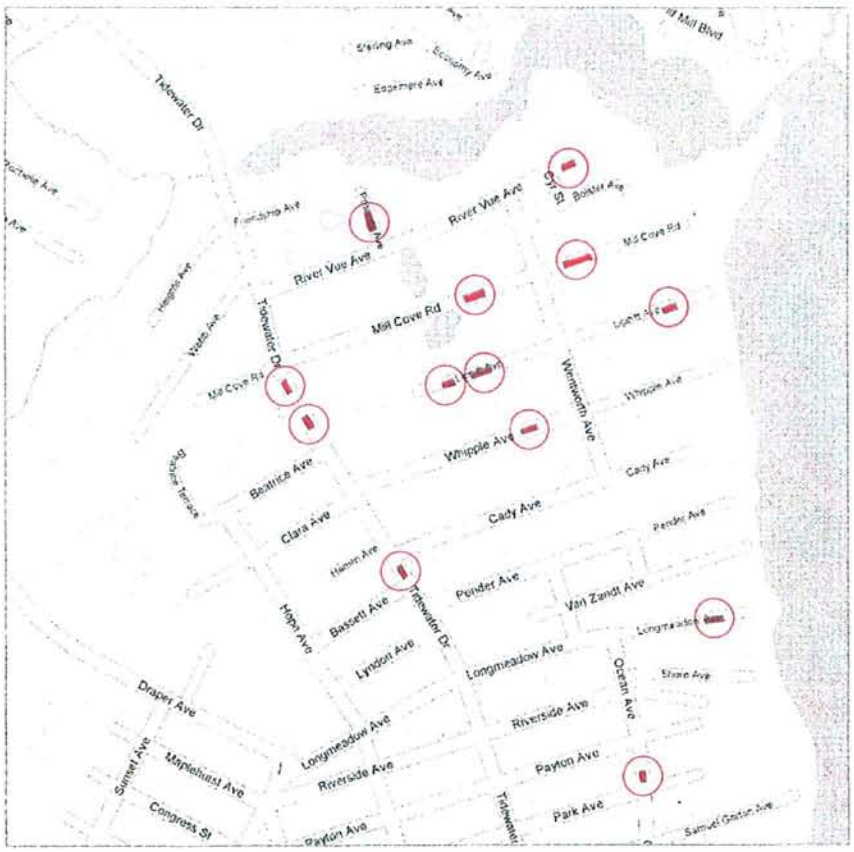

Figure 7. Machine Trenches within the Bayside Section of Warwick Neck that contain Native American Features to date.

Proposed Evaluation and Mitigation Methods

Consultation and Coordination with the NITHPO and RIHPHC

The role and relationship of the EPA relative to the Section 106 Process and consultation with the NITHPO and WSA during this project are subjects of ongoing discussion. PAL has communicated with the SHPO and NITHPO during the course of our assessment surveys and Phase I(c) surveys. To date features have been identified, but have not been excavated pending ongoing consultation between EPA, WSA, and NITHPO.

We have reached a point in the archaeological investigations where the course of excavation, evaluation, analyses and interpretation will depend upon pending agreements between EPA and NITHPO.

The remainder of this document is the recommended plan to further identify, document, evaluate, and recover significant data from features identified to date and as yet undiscovered features associated with the Native American occupation of the Mill Cove Site. These features could be affected by planned construction. It includes recommendations for further systematic machine trenching and exposure of subsoils to determine the extent to which the site exists and extends along the planned construction easement along Tidewater Drive. This document details the research design for excavation of exposed features to document their morphology, determine their function, sample and analyze their contents, and interpret the behavior that resulted in their origins.

Following saw cutting of asphalt and removal of the road and gravel bed, a flat-bladed backhoe will be used to open / reopen trenches extending from Machine Trench 3, 4, and 7.

In the expanded Tidewater Machine Trenches, the subsoils will be exposed to revisit already known features and extend the search for as yet undiscovered features where the planned sewer will be installed. Any exposed features or suspected features will be further investigated by hand to verify if they are cultural. Confirmed features will be documented in plans and digital photography. They will be inventoried by shape, color, size in plan, and content. In cases where multiple similar features are present, a representative sample of the feature type will be selected for further excavation. Excavated features will be sectioned to provide plans and profiles, and to collect chronological and/or culturally diagnostic data.

Excavations will be coordinated with RIHPHC and NITHPO. Any features that are considered potential ceremonial or burial-related deposits will be identified as such and in those cases, excavation will be suspended pending further consultation with RIHPHC and NITHPO.

Laboratory Processing and Analyses

All cultural materials and information recovered from the project area during the field investigations will be returned to the PAL facility for laboratory processing and analyses. These activities will include:

- cleaning, identification, and cataloging of any recovered cultural materials;
- analysis of spatial distributions of cultural materials;
- map and graphics production.

Appropriate conservation measures of artifacts will be taken when necessary. These conservation measures will be in accordance with the RIHPHC's *Standards for Storage and Custody of Archaeological Collections* (RIHPHC 1986).

Work Products

An analytical and technical report for the Bayside 1 and 2 segments will be prepared after laboratory processing and analyses are completed. The report will detail the results and interpretations of the evaluation/mitigation of specific features, as they relate to the significance of the Mill Cove Site, and will conclude with recommended protocols to be followed relative to unanticipated archaeological discoveries during construction.

Project Schedule

PAL will submit this scope of work to RIHPHC with a request to expand the duration and parameters of the existing archaeological permit. Upon receipt of the permit, fieldwork will be scheduled to begin within two weeks, dependant on weather conditions. The fieldwork will be completed within two weeks. A technical report will be submitted within 45 days after the completion of fieldwork.

Project Personnel

The archaeological investigations will be overseen by a principal investigator. The fieldwork will be supervised by a project archaeologist. All PAL project personnel meet the qualifications set by the National Park Service (36 CFR Part 66, Appendix C). Project archaeologists have at least two years of supervisory experience and two years of field experience in New England.

Cost

An effort and cost proposal will be generated following review and comment of this report.

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