Introduction

The United States Army Corps of Engineers (USACE) is seeking Federal Consistency concurrence for proposed shoreline stabilization measures for the entirety of Snow's Cut, Wilmington, North Carolina. The construction of the Cut was originally authorized as a part of the Navigation Act of 1927 and includes the Atlantic Intracoastal Waterway (AIWW) Federal navigation channels Section 5 Tangent 3, Section 5 Tangent 4, and Section 5 Tangent 4a. The USACE owns the land surrounding Snow's Cut, approximately 197 acres, which is in part leased to various State and local government entities. The Federal navigation channels and Snow's Cut are shown on Figure 1.

The authorized dimensions of the navigation channels at Section 5 Tangents 3 and 4 are 90 feet wide and 12 feet deep, with an additional two feet of overdepth, as measured at mean lower low water (MLLW). Section 5 Tangent 4a, the turning corridor at the eastern end of Snow's Cut, is 12 feet deep plus two of overdepth, and is a shortened section that widens from 90 feet to 260 feet, then back to 90 feet. To the west of the Cut's navigation channels is the Cape Fear River Federal navigation project; to the east is the AIWW. Both navigational channel areas run north to south, while Snow's Cut channels run east to west, connecting the river channels to the AIWW channels in a 1.6-mile stretch.

Snow's Cut is located in New Hanover County, North Carolina, and splits the peninsular county into a north and south portion. The AIWW and Cape Fear River have different tidal and salinity ranges, as well as water levels. Snow's Cut serves as the nexus between these two waterbodies and receives input from both.

The proposed action would stabilize four shoreline areas identified as requiring immediate stabilization (Figure 2). Reaches 1, 2, and 3 will be graded with riprap, backfill, and native vegetation placement to stabilize the shoreline. Reach 4 would include wave attenuator placement on top of gabions. Sediment, primarily sand, taken from USACEs existing upland confined placement facility (DA-274) to the northeast of Snow's Cut bridge could be utilized to regrade the shoreline before rock placement. Each shoreline stabilization reach is between 1,000 and 3,000 linear feet.

The proposed measures would provide shoreline protection for property owned by USACE. Currently, severe erosion at the identified project reaches has the potential to endanger existing infrastructure should the proposed shoreline protection measures not be implemented. Existing, similar erosion protection measures along Snow's Cut are proving successful in managing shoreline loss due to erosion. It is expected that the proposed measures would prevent future erosion at the project areas.

This Federal consistency determination addresses the proposed stabilization of the entirety of Snow's Cut, part of which has been stabilized in the past via riprap placement. The Federal navigation channel would remain as authorized with no changes to depth, width, or alignment.

Project Purpose

The Navigation mission of USACE is to provide safe, reliable, efficient, effective, and environmentally sustainable waterborne transportation systems (i.e., channels, harbors, and waterways). As part of the navigation mission, USACE is responsible for maintenance of the federally authorized AIWW channel, part of which runs through Snow's Cut, connecting the waterway to the Cape Fear River. The USACE also owns the land surrounding Snow's Cut, which is threated by erosion from vessel wakes, tides, and wind energy. It is in the Federal interest to both keep the navigation channels maintained and to stabilize the land owned by USACE in the most environmentally practicable way.

Snow's Cut provides access between the Cape Fear River, AIWW, and Atlantic Ocean via Carolina Beach Inlet. The crucial waterway saves mariners time traveling between the water bodies, as the next nexus between the river and AIWW/Atlantic Ocean is over 15 miles south of the land cut.

The purpose of the Snow's Cut Stabilization Project is to initially stabilize four reaches of severely eroding shoreline. This would decrease sedimentation from erosion, protect the land and properties adjacent to the waterway, and protect terrestrial resources.

Project History and Existing Conditions

Snow's Cut was authorized under the Navigation Act of 1927, through House Document (HD) 450/69/1, as part of the AIWW from Beaufort, North Carolina, to the Cape Fear River, North Carolina. This provided the authority for the construction of the waterway segment between the Cape Fear River and the AIWW in Myrtle Grove Sound [P.L. 69-560; 44 Stat. 1010, Ch. 47 (January 11, 1927)] subject to the condition that, among other things, local interests furnish, without cost to the United States, a 1,000-foot-wide right-of-way (ROW).

The State of North Carolina, by legislative act, assumed the duty of fulfilling this condition and authorized its agencies to acquire and furnish the 1,000-foot-wide ROW required to the Federal government. Major William A. Snow was the USACE District Engineer from 1926 to 1930, and it was during this period that the land cut portion of the AIWW was dredged. It became commonly known as Snow's Cut at that time.

The initial construction of the project began in 1929. The channel and a swing-truss bridge, necessitated by the cutting of U.S. Highway 421, were completed in 1931. The North Carolina State Highway Commission assumed the responsibility for operation and maintenance of the bridge in perpetuity at that time. In August 1950, the North Carolina State Highway Commission constructed State Road (SR) 1100, known as River Road, across a portion of Government land. In 1961, the North Carolina State Highway Commission completed a fixed bridge, and the swing-truss bridge was removed. During its history, Snow's Cut has served as a convenient safe inland navigation channel for both commercial and pleasure craft moving north and south along the coast of North Carolina.

In the late 1960s, Carolina Beach State Park was established on the southwestern bank of Snow's Cut. The state park contains a marina, hiking trails, campgrounds, and "beaches" along the Cape Fear River and Snow's Cut.

Because of the destabilization and loss of the shoreline, Snow's Cut Park, which is located on the northwest side of the bridge, closed indefinitely to the public in 2021. However, some members of the public still utilize the old park area, which is severely compromised by steep embankments and sinkholes due to severe erosion.

Snow's Cut includes a federally authorized navigation channel, 90 feet wide and 12 feet deep, approximately 9,000 feet (1.6 miles) in length. The channel centers on a 1,000-foot, fee-owned ROW along its entire length, including approximately 300 feet of upland on either side of the shoreline. Approximately 20 years after construction, in 1953, the width of the waterway was an average of 300 feet. Erosion of the adjacent banks has since increased this width to approximately 500 feet (Figure 3). It is expected that bank erosion and loss of land will continue in the project area if the proposed bank stabilization and erosion protection measures are not implemented.

Proposed Action

Dynamic tides and currents, vessel wakes, and other coastal phenomenon contribute to significant erosion throughout Snow's Cut. The USACE proposes bank stabilization measures within four reaches that are experiencing the greatest degrees of erosion (Figure 2). Under the proposed action, USACE would evaluate and deploy the most appropriate designs to protect and stabilize Snow's Cut's banks. The USACE would identify areas at most risk of continued erosion and utilize bank stabilization measures tailored to the areas' topographies, vegetation, bathymetries, and other physical and environmental considerations, as it has done for past stabilization efforts.

Construction of additional stabilization measures at other eroding areas within Snow's Cut may be considered in the future depending on funding and available technologies. The impacts of proposed stabilization measures would be assessed for all bank areas of Snow's Cut, and where bank stabilization measures have not already been constructed. Construction of proposed bank stabilization measures would avoid wetlands and intertidal marsh areas unless future conditions require reassessment, in accordance with all applicable NEPA regulations.

Stabilization at reaches 1, 2, and 3 would consist of constructing riprap revetments with backfill and native vegetation plantings. Placement of riprap would be done via land access and would require approximately 3 acres of tree clearing adjacent to the reaches. In addition to plantings and rock placement, sediment from DA-274 would be taken to the site and placed upland of the shoreline to achieve proper slopes behind the revetments Reaches 1, 2, and 3.

At Reach 4, stabilization would consist of wave attenuators atop of gabions designed to encourage wildlife recruitment and trap sediment in the lee of the structure. Access to the reach, which is adjacent to Carolina Beach State Park, would likely be via barge.

The proposed borrow source for sediment is DA-274, which is located on the north side of Snow's Cut, east of Snow's Cut Bridge (Figure 2). The DA contains material from previous dredging of Snow's Cut and is similar in sediment composition to the existing shoreline (primarily sands (90% or more)).

Alternatives Analysis

The two alternatives, including the No Action and the Proposed Action, were considered, and are described below.

No Action: The No Action alternative refers to USACE not considering any shoreline stabilization within Snow's Cut. The man-made cut would not be stabilized and would be subject to continued erosion. Approximately 2,800 feet of shoreline has previously been stabilized in the past via riprap placement by USACE.

The current state of Snow's Cut's banks illustrates heavy erosion indicators, including half-moon scouring along the shoreline, severe loss of upland vegetation, sinkholes, and sudden elevation changes (10 feet or more of cliffing within a few feet of horizontal change). The No Action alternative describes the current state of Snow's Cut's banks as partially stabilized, primarily to the east of Snow's Cut Bridge (Figure 4).

Proposed Alternative: The proposed stabilization of four reaches of Snow's Cut shoreline: The USACE proposes bank stabilization measures within four reaches that are experiencing the greatest degrees of erosion (Figure 2). The USACE would identify areas at most risk of continued erosion and utilize bank stabilization measures tailored to the areas' topographies, vegetation, bathymetries, and other physical and environmental considerations, as it has done for the initial stabilization effort.

Construction of additional stabilization measures at other eroding areas within Snow's Cut may be considered in the future depending on funding and available technologies. The impacts of proposed stabilization measures would be assessed for all shoreline areas of Snow's Cut that are not considered wetlands or intertidal marsh, and where bank stabilization measures have not already been constructed. Construction of proposed bank stabilization measures would avoid wetlands and intertidal marsh areas unless future conditions require reassessment, in accordance with all applicable NEPA regulations.

At Reaches 1, 2, and 3, measures would consist of constructing toe revetments with natural banks by means of placing riprap. Additional stabilization measures like native vegetation planting and sediment placement would also be utilized. Placement and planting would be done via land access and would require approximately 3 acres of tree to be cleared adjacent to the three reaches.

At Reach 4, stabilization would consist of wave attenuators designed to encourage wildlife recruitment. Access to the reach, which is adjacent to Carolina Beach State Park, would likely be via barge.

Minimization Measures

The USACE proposes to avoid and minimize impacts to the maximum extent practicable. Turbidity curtains would be utilized during placement activities, although all sediment being placed adjacent to the waterway is comprised of 90% or more sand particles and will settle out quickly without affecting the total suspended solids (TSS) within the water column.

It would also be noted in the contract specifications that the contractor must abide by all measures to protect federally listed threatened and endangered species. The USACE has determined that the following species are within the project area: Atlantic sturgeon, shortnose sturgeon, West Indian manatee, northern long-eared bat, and tricolored bat.

All tree clearing would be done outside of bat timeframes for summer occupancy, winter torpor, and pupping season per the U.S. Fish and Wildlife Service (USFWS). Tree clearing would be performed February 16 to March 31 and/or July 16 to December 14. The minimal amount of tree clearing practicable would be performed for staging and access.

The contractor would be required to adhere to the USFWS Guidelines for Avoiding Impacts to the West Indian Manatee (2017). These conservation measures would remain in place until all work is complete, all vessels have left the area, and all equipment has been removed from construction areas.

Analysis of the Project in Relation to North Carolina's Coastal Management Program

The project area is within areas of environmental concern (AEC) as defined by Section 113A-113 of the North Carolina Coastal Area Management Act (CAMA), and as discussed below. Specifically, the proposed action would be occurring in the Estuarine and Ocean System, Public Trust, and other AECs as discussed below.

Areas of Environmental Concern (AEC)

15A NCAC 07H.0205 Coastal Wetlands: Coastal wetlands are defined as any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides, that reach the marshland areas through natural or artificial watercourses, provided this does not include hurricane or tropical storm tides. Alteration of coastal wetlands includes mowing or cutting of coastal wetlands vegetation whether by mechanized equipment or manual means. Coastal wetland alteration not meeting the exemption criteria shall require a CAMA permit.

Coastal wetlands in the project vicinity include estuarine and saltwater emergent wetlands located along the shorelines, particularly on the northwest and northeast sides of the land cut (Figure 5). There are no proposed impacts to coastal wetlands and minimization measures, like turbidity curtains, would be put in place to decrease sediment plumes during construction. The backfill material being placed and graded to achieve proper slopes is primarily sand and will likely settle out quickly. Use of turbidity

curtains during placement of riprap stone, gabions, and wave attenuator devices in the sandy bottom of Snow's Cut would keep turbidity from expanding outside of the work area and impacting coastal wetlands.

Rock placement adjacent to bluffs east or west of the existing tidal wetlands would be done in a way as to avoid a wrap-around effect from wave energy, as initial stabilization efforts would not include placement in front of wetlands. The primary driver for erosion in Snow's Cut is from waves generated by wind or vessels, with minimal additional effects from currents. Rock revetments are designed to absorb wave energy and wave reflection is negligible about such structures. When placed offshore, rock structures can increase localized erosion due to diffraction, but the proposed design for Reach 2, which is closest to the coastal wetlands in the northwest, is not oriented in a manner that would allow diffracted waves to propagate behind the structure. The presence of a revetment would not increase current velocities and may even decrease velocities by diffusing flow paths. Therefore, erosion experienced by unprotected shorelines would be considered natural in that the erosion rates would be approximately the same with or without the presence of a revetment.

In the presence of extreme erosion at adjacent unprotected land, flank protection would be considered to prevent erosion from continuing around the structure. However, revetments that are tied in with existing ground and operate in shallow water typically do not require flank protection. At Reach 2, for flank erosion to occur, the unprotected shoreline would need to recede severely enough for the revetment to operate as a diffracting breakwater, allowing waves to pass behind the structure. The current design ties the revetment into existing ground.

15A NCAC 07H.0206 Estuarine Waters: Estuarine Waters are defined in G.S. 113A-113(b)(2) to include all the waters of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto, seaward of the dividing line between coastal fishing waters and inland fishing waters. The rule establishes management objectives for estuarine waters to conserve and manage the important features of estuarine waters in a manner that safeguards and perpetuates their ecological and economical values and to coordinate and establish a management system capable of conserving and using estuarine waters that maximize their benefits to humans and the estuarine and marine systems. Suitable land and water uses shall be those consistent with the management objectives. Highest priority of use shall be allocated to the conservation of estuarine waters and their vital components, while second priority of estuarine waters use shall be given to those types of development activities that require water access and use that cannot function elsewhere, such as simple access channels, structures to prevent erosion, navigation channels, boat docks, marinas, piers, wharfs, and mooring pilings.

The proposed action is the stabilization of the shoreline along channels of Snow's Cut, which is considered a water dependent activity. The project would not have long-term adverse effects on the estuarine system, including wetlands, shellfish areas, or nursery areas. The project's design, location, and use have been considered regarding effects to coastal wetlands, estuarine waters, and public trust areas.

15A NCAC 07H.0207 Public Trust Areas: Public trust areas are all waters of the Atlantic Ocean and lands thereunder from the mean high-water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to tidal influence and lands thereunder to the normal high water or normal water level; all navigable natural bodies of water and lands thereunder to the normal high water or normal water level; all water in artificially created bodies of water containing public fishing resources or other public resources that are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. The rule establishes management objectives to protect public rights for navigation and recreation and to conserve and manage the public trust areas to safeguard and perpetuate their biological, economic, and aesthetic value.

The proposed action would not result in the loss of coastal uses nor impact coastal resources or prohibit access to coastal resources by the public. The proposed shoreline stabilization project would provide increased access to the AIWW for multiple parties, including the general public and governmental entities. The activities that comprise the proposed action are not intended to adversely impact public rights for navigation and recreation and are consistent with conservation of the biological, physical, and aesthetic values of public trust areas.

15A NCAC 07H.0208 Use Standards: Uses that are not water dependent, shall not be permitted in coastal wetlands, estuarine waters, and public trust areas. Water dependent uses include, but are not limited to, docks, wharves, boat ramps, dredging, bridges and bridge approaches, revetments, and bulkheads. Use standards require that a project be sited and designed to avoid significant adverse impacts to various resources, such as coastal wetlands, shellfish beds, primary nursery areas, and submerged aquatic vegetation, unless the project has public benefits that outweigh the long-range adverse effects of the project, there is no reasonable alternate available, and all adverse impacts of the project have been mitigated, including avoidance and minimization measures.

The project has been designed to avoid and minimize adverse impacts to sensitive resources, such as wetlands, shellfish and SAV beds, and nursery areas, to the maximum extent practicable. The USACE has addressed the applicable General Use Standards at 15A NCAC 07H.208(a), individually below.

15A NCAC 07H.0208(a)(4) Primary Nursery Areas: Primary nursery areas are defined as those areas in the estuarine and ocean system where initial post larval development of finfish and crustaceans takes place. They are usually located in the uppermost sections of a system where populations are uniformly early juvenile stages.

The project area is not classified as Primary Nursery Areas (PNA). The closest PNA is to the northeast of Snow's Cut and would not be affected by stabilization efforts.

15A NCAC 07H.0208(a)(5) Outstanding Resource Waters: Outstanding Resource Waters (ORW) are defined as those estuarine waters and public trust areas classified by the North Carolina Environmental Management Commission (NCEMC). In those estuarine waters and public trust areas classified as ORW, no permit required by CAMA

shall be approved for any project that would be inconsistent with applicable use standards for estuarine waters, public trust areas, or coastal wetlands.

The Clean Water Act (CWA) of 1972, requires the surface waters of each state be classified according to designated uses. North Carolina's tidal salt waters are classified with the following categories:

- Class SC: Secondary Recreation (i.e., fishing, boating) and Aquatic Life Propagation.
- Class SB: Primary Recreation (swimming) plus SC uses.
- Class SA: Commercial Shellfish Harvesting plus SC/SB uses.
- HQW: High Quality Waters (all SA waters; excellent quality).
- OWR: Outstanding Resource Waters (all HQWs; outstanding fish habitat/fisheries).
- Class Sw: Swamp Waters (a supplemental classification intended to recognize those waters which have low velocities and other natural characteristics which are different from adjacent streams).

The North Carolina Department of Water Resources classifies the entirety of Snow's Cut (Index No. 18-87-31.5) as SC. In addition, Telfair's Creek, which enters Snow's Cut from the north, is classified SC/Sw. Class SC waters are all tidal salt waters protected for secondary recreation, such as fishing, boating, and other activities involving minimal skin contact, fish and noncommercial shellfish consumption, aquatic life propagation and survival, and wildlife. The waters on either side of Snow's Cut are classified as SA, HQW, except for the Carolina Beach Yacht Basin at the eastern end of Snow's Cut, which is classified as SB. Class SA waters are all tidal salt waters that are used for commercial shellfishing or commercial purposes and are also protected for all Class SC and Class SB uses. High quality waters are a supplemental classification intended to protect waters which are rated excellent based on biological and physical/chemical characteristics through monitoring or special studies, as primary nursery areas (PNA) designated by the North Carolina Division of Marine Fisheries (NCDMF), Marine Fisheries Commission (MFC), and other functional nursery areas designated by the MFC. For example, SA waters at the east end of Snow's Cut are PNA.

15A NCAC 07H.0208(a)(6) Submerged Aquatic Vegetation: Submerged aquatic vegetation (SAV) is defined as those habitats in public trust and estuarine waters vegetated with one or more species of submergent vegetation. These vegetation beds occur in both subtidal and intertidal zones and may occur in isolated patches or cover extensive areas.

There is no known SAV in or around the project area.

15A NCAC 07H.0208(b)(1) Specific Use Standards: Only those criteria under 15A NCAC 07H.0208(b)(1) specific to the proposed action are addressed below.

15A NCAC 07H.0208(b)(7): Where possible, sloping riprap, gabions, or vegetation shall be used rather than bulkheads.

The proposed project would not include the use of bulkheads for stabilization efforts. Riprap, native vegetation, sediment to achieve proper slopes, breakwaters, gabions, and/or wave attenuators would be utilized, and would be designed in a way to work naturally with the shoreline.

15A NCAC 07H.0209 Coastal Shorelines: The Coastal Shorelines category includes estuarine shorelines and public trust shorelines. Estuarine shorelines AEC are those non-ocean shorelines extending from the normal high-water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public trust areas for a distance of 75 feet landward. Public trust shorelines AEC are those non-ocean shorelines immediately contiguous to public trust areas located inland of the dividing line between coastal fishing waters and inland fishing waters as set forth in that agreement and extending 30 feet landward of the normal high-water level or normal water level. Acceptable uses shall be those consistent with the management objectives in this rule. These uses shall be limited to those types of development activities that will not be detrimental to the public trust rights and the biological and physical functions of the estuarine and ocean system. Every effort shall be made to avoid or minimize adverse impacts of development to estuarine and coastal systems through the planning and design of the development project.

The proposed action to stabilize the shoreline of Snow's Cut is a water dependent activity that would also benefit the public. The proposed project would include permanent rock and wave attenuator structures placed above and below the mean high water (MHW) line with the goal of preventing further shoreline erosion into the adjacent channel. Placement of rock, vegetation, and other stabilization efforts would have beneficial use to the public, public areas, wildlife areas, and the estuarine system by decreasing sedimentation from erosion into the adjacent waterbody. Impacts to wetlands, SAV, shellfish beds, or PNAs are not expected.

15A NCAC 07H.0505 Coastal Areas that Sustain Remnant Species: Coastal areas that sustain remnant species are those areas that support native plants or animals determined to be rare or endangered (synonymous with threatened and endangered), within the coastal area. This addresses the need to protect unique habitat conditions that are necessary to the continued survival of threatened and endangered native plants and animals and to minimize land use impacts that might jeopardize these conditions. Permits for development in designated fragile coastal natural or cultural resource areas will be approved upon finding that the project will not cause major or irreversible damage to the resource, no reasonable alternative exists, reasonable mitigative measures are incorporated into the project, and the project will have a public benefit that outweighs the loss.

The USACE has determined that the proposed project may affect but is not likely to adversely affect (MANLAA), the following federally listed species or their critical habitat: northern long-earned bat, tri-color bat, West Indian manatee, and the Atlantic and shortnose sturgeon.

Adverse effects to federally listed species would be avoided and/or minimized to the maximum extent practicable by implementation of USFWS's *Guidelines for Avoiding Impacts to the West Indian Manatee* (2017). These conservation measures would remain in place until all work is complete and all equipment has been removed from placement areas.

15A NCAC 07H.0507 Unique Coastal Geologic Formations: Unique coastal geologic formations are defined as sites that contain geologic formations that are unique or otherwise significant components of coastal systems, or that are especially notable examples of geologic formations or processes in the coastal area. Such areas will be evaluated by the Commission after identification by the State Geologist.

Coquina rock is found in all four initially proposed stabilization areas, creating naturally hardened shorelines throughout the project area. This unique rock formation is a collection of shell fragments, cemented together with calcium carbonate. These coquina areas in Snow's Cut can be seen from the ground and the waterway, as it is the part of the shoreline that has not eroded over time. The proposed stabilization of the shoreline would not impact the coquina areas as the natural structures protect the shoreline and have not significantly eroded, unlike the sandy shorelines adjacent to the formation.

15A NCAC 07H.0509 Significant Coastal Archaeological Resources: Significant coastal archaeological resources are defined as areas that contain archaeological remains (objects, features, and/or sites) that have more than local significance to history or prehistory. The objective is to conserve coastal archaeological resources of more than local significance to history or prehistory that constitute important scientific sites, or are valuable educational, associative, or aesthetic resources.

15A NCAC 07H.0510 Significant Coastal Historic Architectural Resources: Significant coastal historic architectural resources are defined as districts, structures, buildings, sites, or objects that have more than local significance to history or architecture. The objective is to conserve coastal historic architectural resources of more than local significance which are valuable educational, scientific, associative, or aesthetic resources.

Several reconnaissance and Phase I cultural resource assessment surveys have been conducted on Federal lands within Snow's Cut over the past approximately 45 years. An intensive Archaeological Reconnaissance of Areas Bordering Snow's Cut, New Hanover County, North Carolina was conducted in 1981 by Archaeological Research Consultants, Inc. The principal investigator was Michael Baker. The report summarizing survey findings concluded that no archaeological sites were found to occur within the 200- to 250-foot-wide right-of-way bordering Snow's Cut; however, the report acknowledged that sites may exist in the vicinity, or perhaps at one time existed within the project area, as suggested by the identification of seven isolated artifact occurrences. All isolated finds but one consisted of a single prehistoric pottery sherd. The exception was one area where two sherds were recovered. No further additional archaeological study was recommended.

Additional archaeological reconnaissance surveys within Snow's Cut were conducted by USACE in March 2004 and August 2007. The registered USACE archaeologist for both surveys was Richard Kimmel. In 2004, Mr. Kimmel located two prehistoric sites, one historic site, one extensive area of historic material, and one area of modern debris in fill. There were believed to be extensive areas of historic use outside of survey area, especially within the boundaries of Carolina Beach State Park Boundaries which may include probable Civil War embankments; however, this was not explored. Mr. Kimmel's 2007 survey, and associated summary report, contained similar findings. In both cases, Mr. Kimmel acknowledged that Snow's Cut channel has the potential to affect prehistoric and historic sites contained within Federal lands bordering Snow's Cut and that eroding banks would eventually affect vulnerable sites. The USACE also recommended annual surveys of the shoreline and eroding banks be conducted and recovery be implemented, if necessary, to mitigate damage to, or loss of, resources. The North Carolina State Historic Preservation Office (SHPO) concurred with this recommendation in their letter dated 3 September 2013, under Environmental Review (ER) number 13-1609. At least one such survey was informally conducted in 2013 by unidentified USACE personnel. No prehistoric or historic material was identified during the 2013 survey.

An Archaeological Reconnaissance Survey of the Proposed Stabilization and Erosion Protection Project Associated with Snow's Cut, New Hanover County, North Carolina was conducted in July 2017, by USACE. The principal investigator was USACE archaeologist Daniel Hughes, Ph.D. Surveys were limited to specific areas east of the Highway 421 bridge ahead of proposed construction of bank stabilization measures, like those of the current proposed action. The survey report and its findings were coordinated with SHPO under Environmental Review (ER) number 17-1460 and did not identify any archaeological resources. SHPO concurred that bank stabilization efforts proposed (and later constructed) within 2017 survey areas would have no effect on archaeological resources eligible for inclusion in the National Register of Historic Places (NRHP).

Under contract to USACE, Diné Development Corporation, and their subcontractor, Oneida LG2 Environmental Solutions, conducted a Phase I cultural resource assessment survey, on Federal lands bordering Snow's Cut in December 2024 and January 2025. The survey encompassed approximately 100 acres and was designed to cover all areas at which the USACE would potentially construct future Snow's Cut bank stabilization and erosion protection measures. The resulting report titled Phase I Cultural Resources Assessment Survey of Snow's Cut, New Hanover County, North Carolina, dated April 2025, revisited two previously recorded sites and identified 11 new sites. All sites are considered ineligible for inclusion in the NRHP (Table 1, Figure 6) with the exception of site 31NH79. Site 31NH79 is a prehistoric ceramic and lithic scatter dating from the Early to Middle Woodland Period and has an unknown NRHP status due to being an untestable deeply located deposit. Site 31NH79 is situated on the north bank of Snow's Cut, approximately 800 feet west of Telfairs Creek near the waterline. As the site was covered with at least ten meters of overburden from spoil

deposits, no shovel tests were able to be excavated of the original soils. The site was identified in 2024-2025 during a visual inspection of the bank. Several pottery sherds were found eroding out of the bank, with some sherds laying on the surface. Draft and final versions of the 2025 survey report were reviewed by SHPO under ER number 17-1460. The SHPO concurred with findings presented in the final report in a letter dated September 22, 2025. The final survey report was also provided to the Catawba Indian Nation by request.

Table 1. Cultural resources identified within Snow's Cut federal lands.

Site Number	Site Name	Cultural Affiliation	National Register of Historic Places Status
31NH79	Drudge/Birthday	Prehistoric	Unknown
31NH496	Snow's Cut	Prehistoric and Historic	Not Eligible
31NH982	Strew Sherd	Prehistoric	Not Eligible
31NH983	Iron Brew	Historic	Not Eligible
31NH984	Lead Astray	Historic	Not Eligible
31NH985	Baby Metal	Historic	Not Eligible
31NH986	Orange Park	Historic	Not Eligible
31NH987	Brick for Brick	Prehistoric and Historic	Not Eligible
31NH988	Holly Berry Hall	Prehistoric and Historic	Not Eligible
31NH989	Trippin' Briars	Prehistoric	Not Eligible
31NH990	Hot to Pot	Prehistoric	Not Eligible
31NH991	Green Briar	Historic	Not Eligible
31NH992	Pot Smack	Prehistoric	Not Eligible

The USACE intends to conduct informal annual surveys of the Snow's Cut shoreline and eroding banks as recommended by USACE in 2004 and 2007 and as supported by the SHPO in 2013 to the extent practicable, pending funding and resource availability. Informal annual surveys would occur only in shoreline areas that are not currently stabilized and may be subject to erosion.

Historic properties and archaeological sites would not be adversely affected by the proposed action. The entire area of potential effect has been surveyed for cultural resources. Survey results have been coordinated with SHPO and provided to federally recognized tribes with an identified interest in the proposed action. Cultural resources may benefit from a stabilized shoreline. Reducing future material loss along shorelines associated with erosive processes may be expected to also reduce adverse effects to identified archaeological sites.

The proposed action would not adversely affect cultural resources; however, in the event cultural resources, including, but not limited to, cultural artifacts, relics, remains, or objects of antiquity are discovered in the project area, the resource(s) in question would be protected from further disturbance until instructed otherwise based on

coordination with SHPO.

15A NCAC 07H.0602 Pollution of Waters: No development shall be allowed in any AEC which would have a substantial likelihood of causing pollution of the waters of the state in which shellfishing is an existing use to the extent that such waters would be officially closed to the taking of shellfish.

The potential water quality impacts of rock and sediment placement include minor and short-term suspended sediment plumes and the release of soluble trace constituents from the sediment. Suspended sediments also affect turbidity that affects light penetration into the water column. Sediment that is ≥90% sand is not likely to produce significant turbidity or other water quality impacts, since material is expected to dissipate from the water column relatively rapidly. All sediment placement and grading would be done with material from the existing DA-274, which is primarily sand, and will likely settle out quickly. There are no NCDMF-listed artificial reefs or oyster sanctuaries within the project area; therefore, USACE has determined that the proposed project would not adversely affect the quality of surrounding waters.

Other Required Approvals

The USACE has prepared a Draft EA for the proposed project, which is currently being circulated for public and agency comment. All comments received will be addressed and all agency coordination will be satisfactorily concluded prior to the beginning of work associated with this project.

All necessary State authorizations (Section 401 Clean Water Act permits) would be obtained prior to work commencing and all conditions would be met.

Consistency Determination

Pursuant to North Carolina CZMA regulations for the proposed project, and based on the summary of impacts described above, the proposed action is not expected to have significant adverse effects on water quality, shellfish, SAV, or PNAs.

In accordance with Section 307(c)(1) of the Federal Coastal Zone Management Act of 1972, as amended, USACE has determined that the proposed action is consistent, to the maximum extent practicable, with North Carolina's Coastal Management Program. This determination is based on the review of the proposed project against the enforceable policies of the State's coastal management program, which are principally found in Chapter 7 of Title 15A of North Carolina's Administrative Code. We request that the NCDCM concur with this consistency determination.

Conclusion

Based on the findings described in this consistency determination, it is in the Federal interest to stabilize Snow's Cut for purposes of maintaining the land for the public and various government entities, recreational and commercial access to the waterway, and to protect the sediment and vegetation found on the shores of Snow's Cut.

Actions associated with placement and grading of rock, sediment, and vegetation would result in minor and short-term impacts to water quality, noise, benthic organisms, fisheries resources, and protected species. The overall benefit of the proposed action is to provide a stabilized shoreline surround a federal navigation channel for various users. Having the ability to stabilize all parts of the Cut would allow USACE to proactively manage the wave energy that has caused extreme erosion and pushback of the shoreline.

The proposed action conforms to the management objectives of all enforceable policies of the North Carolina Coastal Management Program, since it would result in maintenance of important navigation features while minimizing adverse impacts as described herein.

Figures

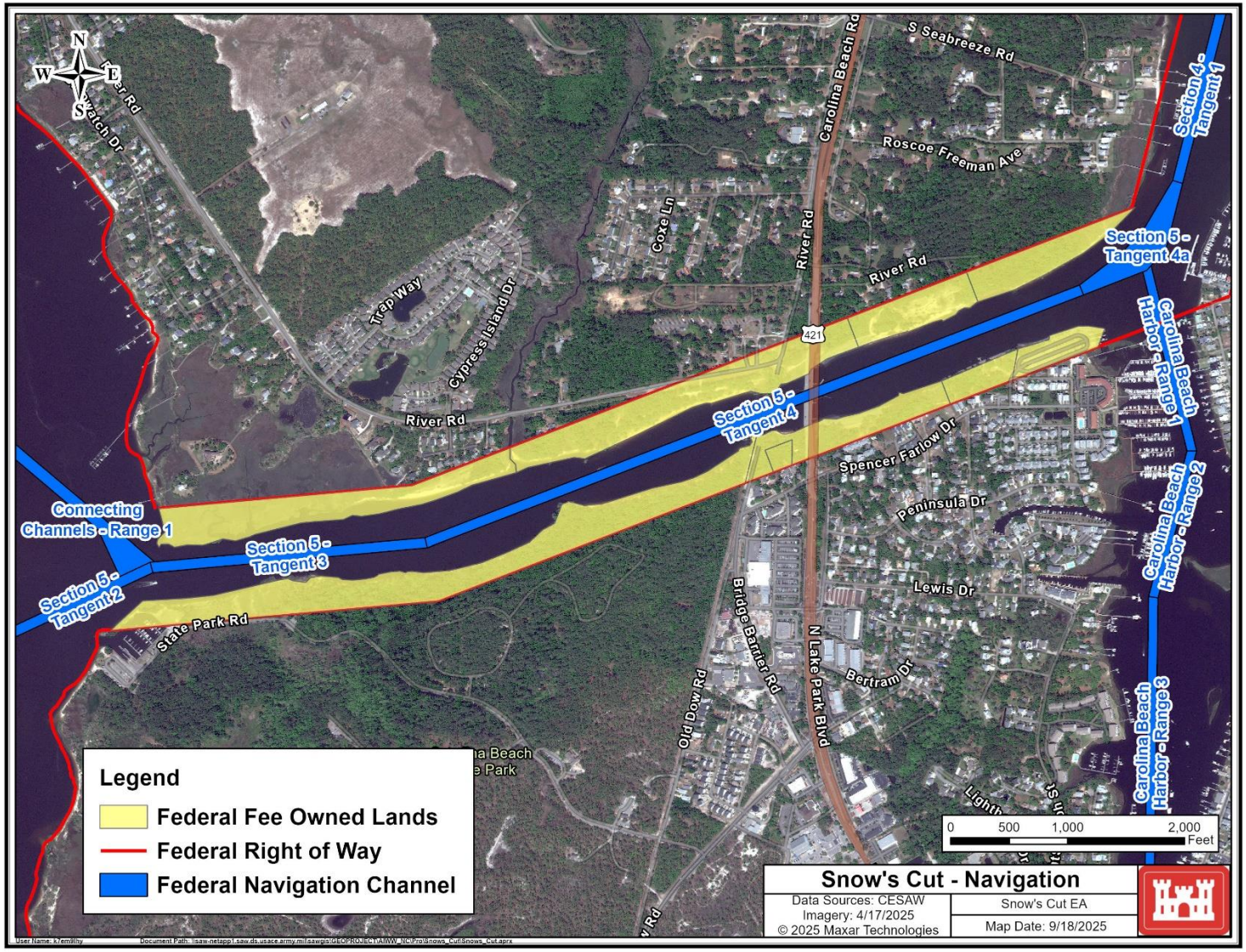

Figure 1. Existing Federal navigation channel and federally owned land in Snow's Cut.

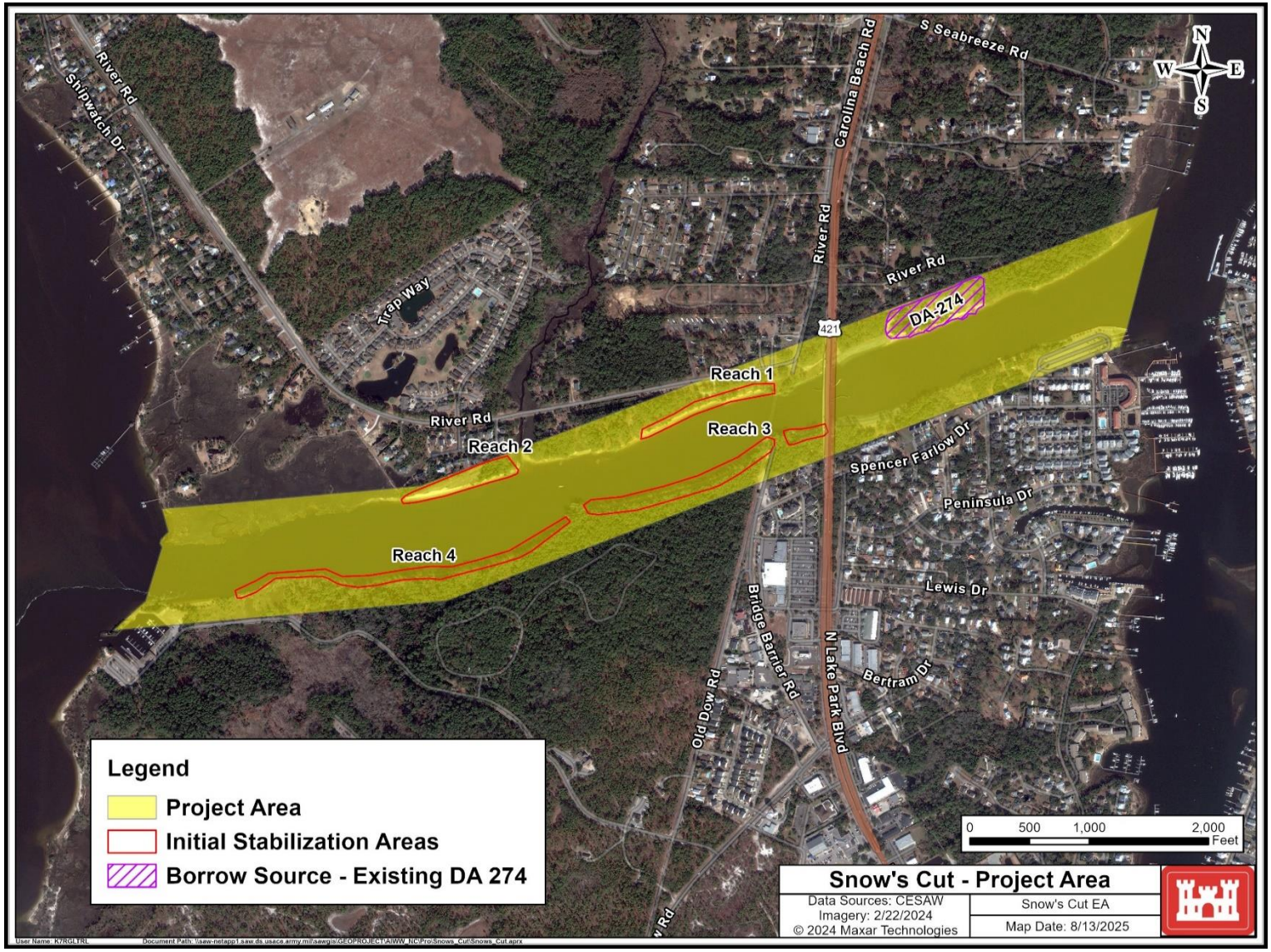

Figure 2. Proposed project area, initial stabilization reaches, and DA-274 (proposed borrow source for sediment placement).

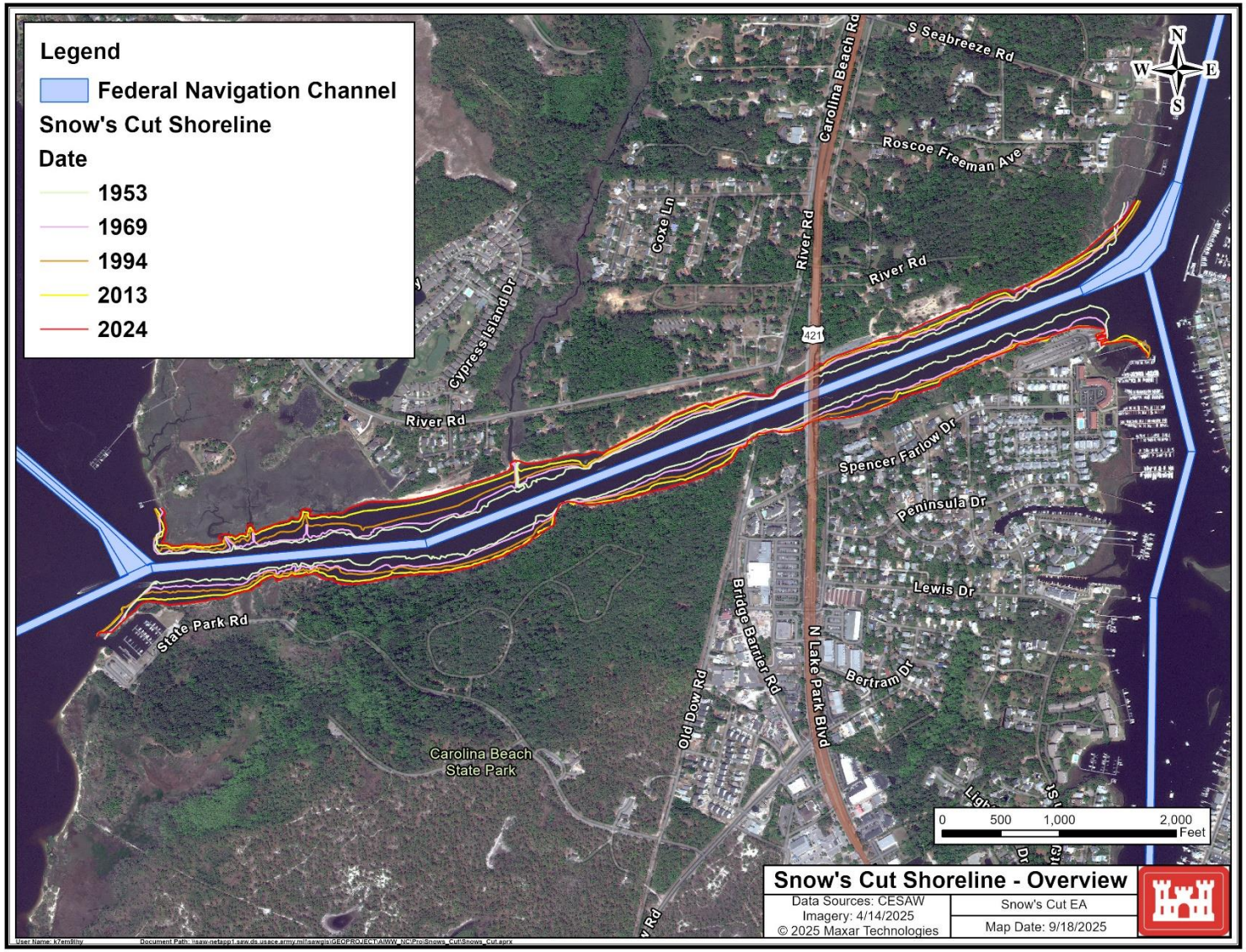

Figure 3. Erosion of Snow's Cut shoreline between 1953 and 2024.

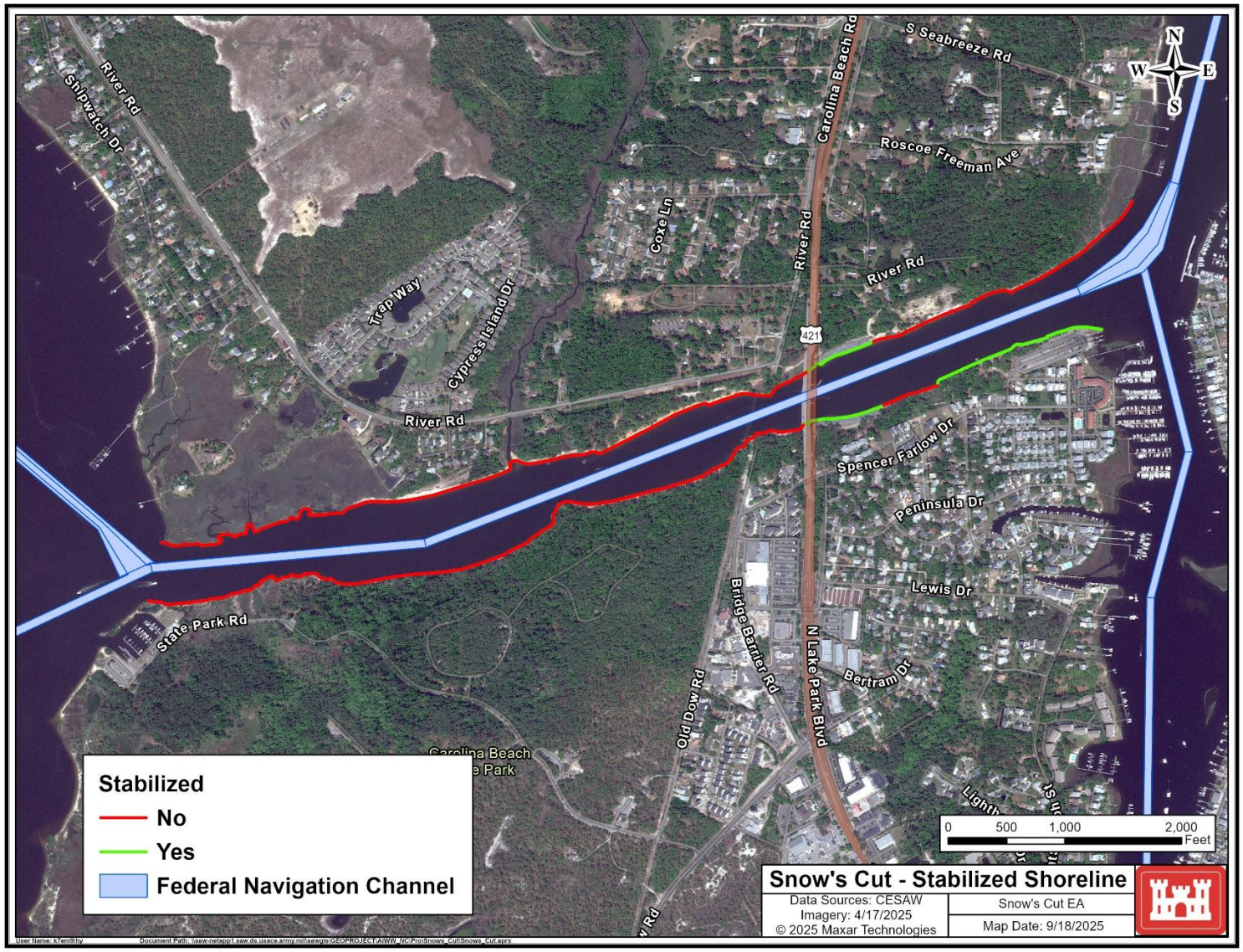

Figure 4. Previously stabilized areas within Snow's Cut.

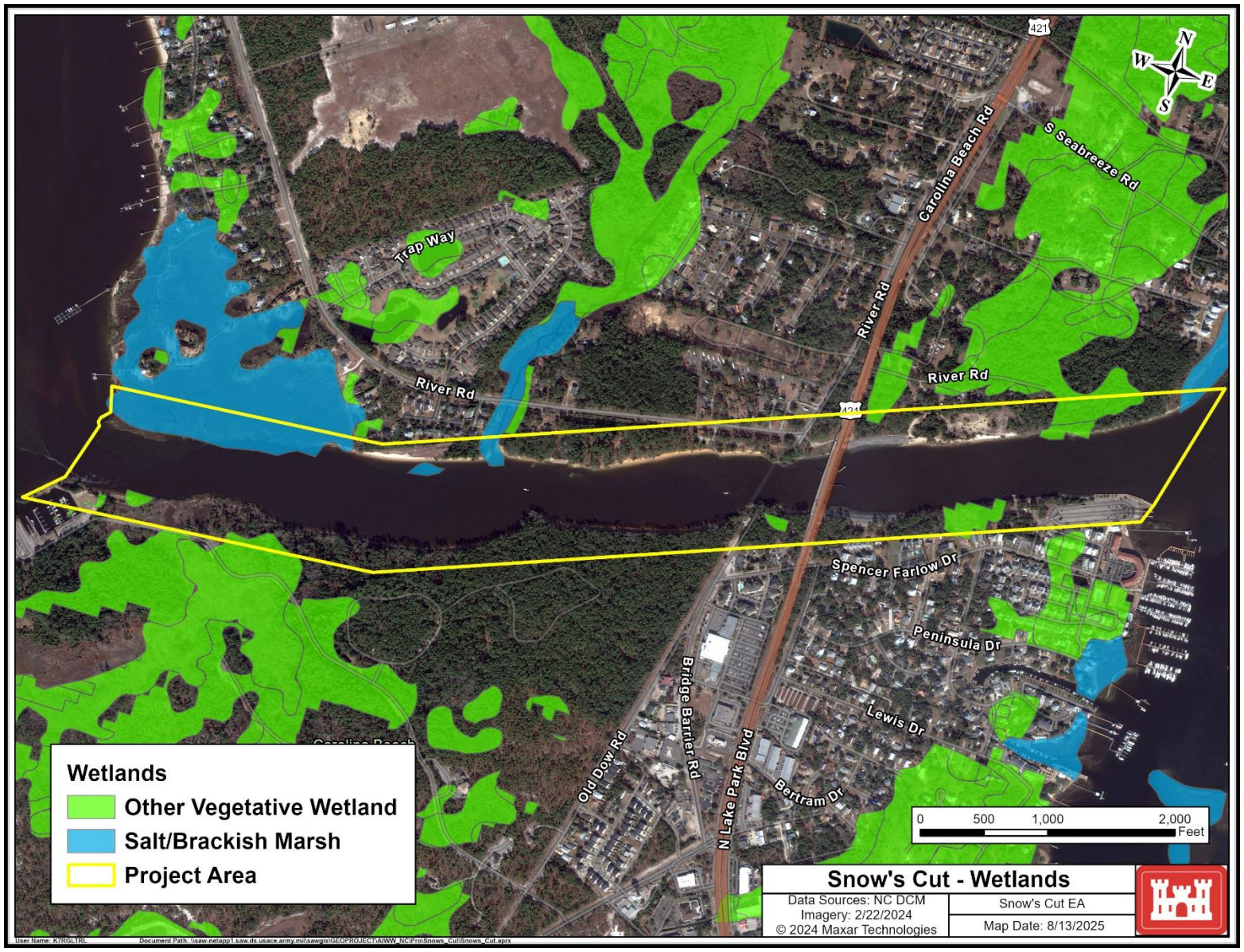

Figure 5. Wetlands in and around proposed project area.

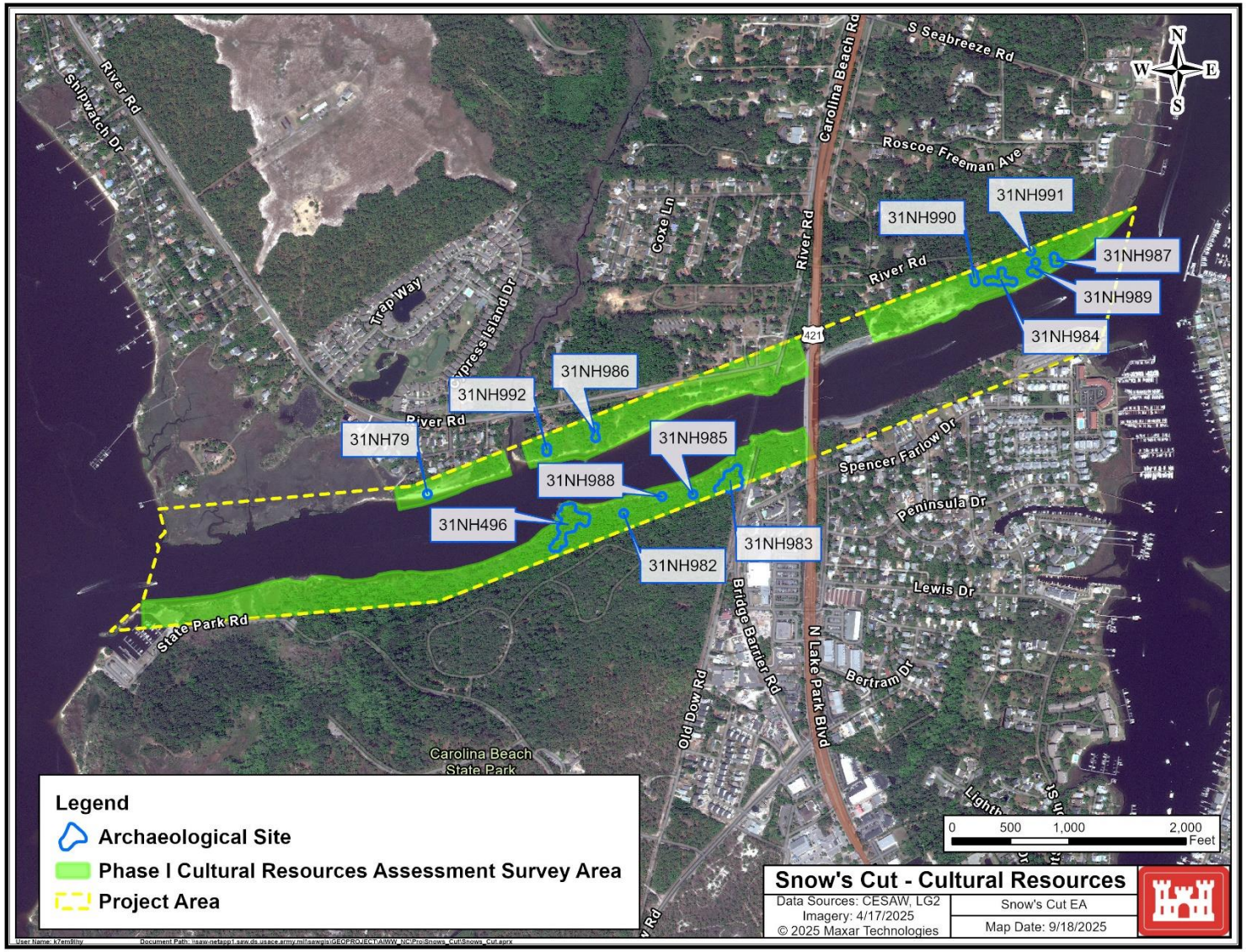

Figure 6. Cultural resource sites identified in project area.