

1-1 INTRODUCTION

The Tappan Zee Hudson River Crossing (the “project”) is being undertaken by the Project Sponsors—New York State Department of Transportation (NYSDOT) and New York State Thruway Authority (NYSTA)—with the Federal Highway Administration (FHWA) serving as the federal lead agency under the National Environmental Policy Act (NEPA). The purpose of the project is to maintain a vital link in the regional and national transportation network by providing an improved Hudson River crossing between Rockland and Westchester Counties, New York. The project would address the structural, operational, mobility, safety, and security needs of the Tappan Zee Hudson River Crossing.

FHWA has determined that the project constitutes an undertaking under Section 106 of the National Historic Preservation Act (NHPA) of 1966, established by the Advisory Council on Historic Preservation (ACHP). FHWA is responsible for compliance with Section 106 for this project, and the Project Sponsors, in cooperation with FHWA, will prepare all required analyses.

Implementing regulations for Section 106 require that lead federal agencies take into account the direct, indirect, and cumulative effects of their actions on any historic properties, constituting National Historic Landmarks, National Register-listed, and/or National Register-eligible resources within the area of potential effect (APE) defined for an undertaking.

In accordance with Section 106, Project Sponsors and FHWA will coordinate with the New York State Office of Parks, Recreation and Historic Preservation (NYSHPO) to identify National Historic Landmarks, National Register-listed, and National Register-eligible properties within the APE. In addition, the agencies will coordinate with NYSHPO to determine whether potential cultural resources identified within the APE as part of this project are eligible for listing in the National Register.

If FHWA determines that National Historic Landmarks, National Register-listed, and/or National Register-eligible historic resources would be adversely affected as a result of the undertaking and these effects cannot be avoided, the Project Sponsors and FHWA would collaborate with consulting parties to develop and implement measures to minimize and/or mitigate such effects. Consulting parties generally include NYSHPO, Native American tribes, local governments, individuals and organizations with a demonstrated interest in the undertaking, and the general public.

The agencies identified as participants in the Section 106 process for this project include:

- Project Sponsors (NYSDOT and NYSTA).

- Lead Agency (FHWA).
- Review Agency/Consulting Party (NYSHPO).

The ACHP, which provides guidance and advice concerning the operation of the Section 106 process, may choose to participate in the Section 106 process under the following circumstances:

- An undertaking has substantial impacts on important historic properties.
- An undertaking presents important questions of policy or interpretation.
- An undertaking has the potential for presenting procedural problems, including, but not limited to, disputes among or about consulting parties which ACHP's involvement could help resolve.
- An undertaking presents issues of concern to Native American tribes (36 CFR Part 800, Appendix A).

1-2 DEFINITION OF AREA OF POTENTIAL EFFECT

Section 106 of NHPA requires Federal agencies to take into account the potential effects of their actions on historic properties. A required step in the Section 106 process is determining the Area of Potential Effect (APE) which is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist” (36 CFR §800.16[d]). The APE is influenced by the scale and nature of an undertaking.

The APE has been developed based on proposed work activities and their potential to affect historic properties, including potential direct and indirect effects.

In general, potential effects on historic properties can include both direct physical effects—demolition, alteration, or damage from construction—and indirect effects, such as the isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric (e.g., pollutants) elements that are out of character with a property or that alter its historic setting and context (e.g., contextual effects). Development of the APE for Indirect Effects included field visits to determine locations where prominent views of the existing Tappan Zee Bridge and Hudson River exist and could be obstructed or altered by a replacement bridge.

Adverse effects can occur if a project would cause a change in the quality of a property that qualifies it for inclusion in the National Register of Historic Places.

The APEs for Direct Effects and for Indirect Effects are described in “**Tappan Zee Hudson River Crossing Project, Proposed Area of Potential Effect (APE)**,” a Memorandum dated October 14, 2011 and appended as Exhibit A to this document.

1-3 IDENTIFICATION OF HISTORIC PROPERTIES

Identification of historic properties will be undertaken in accordance with Section 106 of the NHPA and NYSDOT/NYSHPO procedures for implementing Section 106. In addition, surveys will be conducted pursuant to the standards of the NYS Education Department (SED) *Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on NYSDOT Projects* (March 2004).

The SED specifications are designed to assist NYSDOT in meeting its cultural resources compliance needs under Section 106 of the NHPA of 1966 (as amended) for federally sponsored projects and Section 14.09 of Parks, Recreation and Historic Preservation Law of 1980 for state sponsored projects. The March 2004 revised work scope specifications are a result of negotiations between SED, NYSDOT, and the NYSHPO, including those revisions made in January 2001. In January 2001, new Section 106 procedures were established between NYSDOT, NYSHPO, and FHWA based on revised regulations that went into effect in January 2001. As a result, NYSDOT assumed the responsibility for making National Register eligibility recommendations through the SED Cultural Resources Survey Program. The eligibility determinations were previously made by NYSHPO. The new procedures specify review and concurrence by NYSHPO and FHWA with the recommendations presented in the survey reports. The FHWA retains legal responsibility for all Section 106 findings and determinations.

1-3-1 HISTORIC RESOURCES

Historic resources are defined as buildings, structures, sites, objects, and districts that are over 50 years old, possess integrity, and meet the criteria of eligibility for listing in the NR as defined by the National Park Service (NPS).

Project Sponsors, in cooperation with FHWA, have prepared a historic resources survey to identify historic properties and conduct screening according to the standards of Section 106 and the NYS Education Department *Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on NYSDOT Projects* (March 2004). Research has been conducted at NYSHPO and repositories in Rockland and Westchester Counties to obtain information on previously identified historic resources within the historic resources APE. Field surveys have also been undertaken within the APE to identify potentially National Register-eligible resources.

Four categories of resources have been identified within the historic resources APE. These include:

- National Historic Landmarks (NHLs).
- State and National Register-listed resources (S/NRHP- Listed).
- State and National Register-eligible (S/NRHP-Eligible) resources, including the Tappan Zee Bridge.
- Recommended S/NRHPs - historic resources identified during ongoing field survey and screening that appear to meet the criteria for listing in the NR will be documented on NYSHPO Historic Structure Inventory Forms, submitted to NYSHPO for NR eligibility determinations, and provided to the Consulting Parties.

1-3-1-1 BACKGROUND RESEARCH CONDUCTED TO IDENTIFY HISTORIC RESOURCES

Background research has been conducted at government agencies and public repositories. State and local government agencies were contacted to determine the extent of historic resources in the historic APE. Table 1 provides a list of the types of data gathered from these agencies.

Table 1

Historic Architectural Resources Data on File at State and Local Agencies

Type of Resource	Description
National Historic Landmarks	Buildings, structures, sites, objects, or districts that possess national significance as designated by the National Park Service (NPS). All NHLs are also S/NRHP-listed resources.
S/NRHP-Listed Resources	Buildings, structures, sites, objects, or districts that possess national, state, or local significance and are listed in the S/NRHP, maintained by NYSHPO and NPS.
S/NRHP-Eligible Resources	Same as above, with the exception that NYSHPO has determined resources to be eligible for S/NRHP listing but the resource has not yet been listed.
Locally Designated Landmarks and Historic Districts	Buildings, structures, sites, objects, or districts protected by municipal historic preservation regulations, but not evaluated for designation and/or S/NRHP eligibility by NYSHPO.
Locally Surveyed Historic Architectural Resources	Buildings, structures, sites objects, or districts surveyed by municipalities or preservation organizations, but not evaluated for designation and/or S/NRHP eligibility by local preservation agencies or NYSHPO.

NYSHPO maintains a repository of historic architectural resources information and documentation. Data gathering was conducted at NYSHPO for the following categories of resources:

- NHLs.
- S/NRHP-listed resources.
- S/NRHP-eligible resources.

NHL and S/NRHP nomination forms were obtained for resources in the proposed Indirect APE. For S/NRHP-eligible resources in the proposed APE, the online NYSHPO State Historic Preservation Information Network (SPHINX) database, which is organized by minor civil division (MCD), was consulted for the municipalities in the proposed APE in Rockland and Westchester Counties.

The municipal governments within the proposed historic architectural APE were consulted to determine the extent of their municipal historic preservation regulations, if any. Where applicable, data was obtained on protected historic architectural resources in the proposed APE. Local historical societies, local libraries, municipal historians, and historic preservation organizations were also consulted to gather data on historic architectural resources in the proposed APE.

Research was conducted at several repositories to compile a historic context that focuses on broad themes such as settlement patterns, economic development, development of regional transportation systems, and major events of historic importance. The context enables architectural historians to understand the historic built environment of the Lower Hudson River Valley and the proposed APE as it has changed over time, and provides baseline information to guide survey field work. To compile this context, secondary source research was conducted at a number of repositories, including, but not limited to, Historical Society, Inc. Serving Sleepy Hollow

& Tarrytown, Tarrytown, NY; New York Public Library, New York, NY; Nyack Library, Nyack, NY; State University of New York, Purchase, NY; Warner Library, Tarrytown, NY; Westchester County Archives, Elmsford, NY; and the West Nyack Free Library, West Nyack, NY.

1-3-1-2 HISTORIC RESOURCES SURVEY

A historic architectural resources survey was conducted within the Direct and Indirect APEs in accordance with relevant federal guidelines described above. It was undertaken by architectural historians who meet NPS Professional Qualification Standards for Architectural History, codified under 36 CFR Part 61. The purpose of the survey was to identify significant historic architectural resources over 50 years old within the APEs, and to recommend resources as S/NRHP eligible if they meet the NPS Criteria for Historic Significance and retain integrity.

The survey process consisted of both field work and research. Site visits were made to all historic architectural resources within the APEs, including buildings, structures, sites, objects and districts. Resources were photographed, field notes were prepared, and interviews were conducted with individuals knowledgeable about historic architectural resources within the proposed APE.

Locally designated landmarks and historic districts were identified. Each locally designated landmark within the APE was visited by an architectural historian and evaluated for potential S/NRHP eligibility. Unevaluated historic architectural resources over 50 years old were also identified in the proposed APE. Each resource was evaluated to determine whether it met the criteria for listing in the S/NRHP.

Each potential historic resource within the APE was analyzed according to the themes or patterns of development identified in the historic context. If the potential resource possessed physical or associative characteristics that significantly related it to the historic context and also possessed sufficient integrity to be an intact representative of its property type, it may be considered architecturally significant according to the National Register criteria.

Following the identification of historic architectural resources that appeared to qualify for listing in the S/NRHP within the proposed APE, research was conducted at multiple repositories in Albany, New York City, and Rockland and Westchester Counties as noted above. Information gathered at the repositories has been analyzed and incorporated into both NYSHPO Historic Resource Inventory Forms and Historic and Natural Districts Inventory Forms. A map showing the locations of all historic resources, including S/NRHP recommended historic resources, as well as the Historic Resource Inventory Forms prepared for these properties, will be submitted to NYSHPO and the Consulting Parties.

Properties in the proposed APE that do not appear to qualify for listing in the S/NRHP were also documented during the survey. These included resources over 50 years old that have been altered and generally lack integrity, or are common examples of their type. Information on these properties would be available to NYSHPO if so requested.

1-3-2 ARCHAEOLOGICAL RESOURCES

Archaeological resources are included in the National Park Service's definition of historic resources as buildings, objects, structures, sites, and districts that are over 50

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years old, possess integrity, and meet the criteria of eligibility for listing in the National Register. Archaeological resources may date to the prehistoric or historic period and may be located in terrestrial or submerged environments.

Identification of archaeological resources will be undertaken in accordance with Section 106 of the NHPA and NYSDOT/NYSHPO procedures for implementing Section 106. In addition, archaeological assessments and surveys will be conducted pursuant to the standards of the NYS Education Department (SED) *Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on NYSDOT Projects* (March 2004). The identification of potential shipwrecks within the Hudson River will be undertaken in accordance with the Abandoned Shipwreck Act of 1987 and the corresponding Abandoned Shipwreck Act Guidelines, National Park Service, Federal Register, Vol. 55, no. 3, December 4, 1990.

Archaeological resources are potentially affected by direct impacts from construction activity resulting in disturbance to the ground surface (including submerged ground surfaces) such as excavation, grading, pile-driving, cutting and filling, dredging, as well as staging.

Archaeological investigations typically proceed in a multi-phase process generally consisting of Phase I - determining the presence of archaeological resources, Phase II - determining their integrity, significance, and State or National Register eligibility, and Phase III - mitigating unavoidable impacts through performance of a data recovery or other form of mitigation. The need for the next phase is dependent upon the results of the preceding phase.

Research on previously identified archaeological sites on file at the New York State Museum (NYSM) and NYSHPO located at least one mile to the north and south of the APE for Direct Effects has been completed. Previously identified sites within one-half mile north and south of the APE for Direct Effects have been plotted onto project maps, as these sites share the most relevant geographic and topographic conditions with the corridor. Within the terrestrial portions of the APE, extensive subsurface ground disturbance has been documented through cartographic research and by means of targeted reconnaissance walkover surveys that have been conducted to evaluate historic and modern land use factors that may affect potential archaeological resource preservation. Archival research and historic and modern cartographic research have contributed to the evaluation of the potential for encountering intact archaeological resources within the APE at locations that appear to be undisturbed by historic or modern activities.

Phase I investigations are conducted when a review process has determined that a proposed project will not affect any known or previously identified sites, but is located in an area where insufficient survey has been conducted, and where there is a moderate to high probability that previously unrecorded sites may occur. The goals of the Phase I work need to be flexible to reflect the size of the proposed project and stage of project planning, and can be undertaken in two sub-phases, Phase IA and Phase IB, when appropriate (NYAC 1994). In such cases, the Phase IA survey consists of background documentary and cartographic research, a site disturbance characterization, and a sensitivity assessment, and the Phase IB survey consists of field investigation.

Phase IB testing has already been completed in the only area of the terrestrial portion of the APE determined to possess archaeological potential. No significant resources were identified and no further work will be required in that area. There are two potential archaeological issues within the Hudson River itself:

1. Approximately 1,500 feet of the APE, extending from the Rockland County coastline along the path of the proposed replacement bridge to the east is considered sensitive for the presence of a submerged paleo landform dating to the early prehistoric period. The landform is associated with a peat deposit identified by the geotechnical staff of Mueser Rutledge Consulting Engineers (2007) at a depth of approximately 45 to 50 feet below mean sea level. The sensitivity of the landform has been confirmed by an initial geoarchaeological survey conducted by GRA, Inc. in 2010.
2. Preliminary analysis of multi-beam sonar and other remote sensing data collected several years ago has identified a potential shipwreck on the Hudson River bottom. In addition, based on the identification of this and other potential shipwrecks in the general vicinity, the alignment is considered sensitive for additional ship remains.

An investigation will be completed in the coming months to determine the presence or absence of archaeological resources within the Hudson River portion of the APE. The investigation of the Hudson River will consist of two components.

1-3-2-1 GEOARCHAEOLOGICAL INVESTIGATION

1. A geoarchaeologist will monitor the performance of geotechnical borings in the location sensitive for the submerged paleo landform. The portion of each boring of concern will extend from approximately 40 to 60 feet below sea level.
2. The borings will be visually examined and documented through standard nomenclature and photography by the geoarchaeologist. The geoarchaeologist will also collect any observed anthropogenic deposits and soil samples.
3. The soil samples will be subjected to appropriate laboratory analyses. Findings will be summarized and any artifacts, fauna or flora specimens will be recorded, cataloged, photographed, and analyzed.
4. The significance and potential S/NRHP eligibility of any identified resources will be evaluated in consultation with NYSHPO. No additional testing or mitigation will be proposed given the inaccessibility of the potential resource.

1-3-2-2 POTENTIAL SHIPWRECK/HISTORIC RESOURCE EVALUATION

1. Information about known shipwreck sites and historic resources in the project vicinity has already been obtained by researchers and additional materials will be collected from archival and on-line sources. These may include the site inventories of the NYSHPO, the NYSM, local city and regional public libraries, shipwreck databases (including, but not limited to, the Northern Shipwrecks database, the automated wreck and obstruction information system, and the U.S. Navy's computer based shipwreck database) and other repositories of archaeological and historical site data. The effort will include a thorough review of the archaeological literature and reports, appropriate town records, early USGS topographic quadrangles and other appropriate historic maps.

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2. A qualified maritime archaeologist will review all previously collected remote sensing data covering the project corridor. This data consists of multi and single-beam sonar data, sub-bottom profiling, side-scan sonar, and various soil sampling and is currently housed at a number of locations including the New York State Department of Environmental Conservation, Lamont Doherty Earth Observatory, and consultants to the above. This analysis will be completed in consultation with the appropriate involved agencies and NYSHPO.

3. If deemed necessary, a visual inspection of any targets identified through remote sensing data analysis that may be shipwrecks or other submerged, historic resources will be ground truthed by divers. One target has already been identified as a potential shipwreck and requires verification.

4. The significance and potential S/NRHP eligibility of any identified resources will be evaluated in consultation with the appropriate involved agencies and NYSHPO. Recommendations will be made for any additional survey if required.

1-4 EVALUATION OF EFFECTS

Section 106 requires that Project Sponsors, in cooperation with FHWA, assess the direct and indirect effects of feasible alternatives on historic resources. The Criteria of Adverse Effects in Table 2 will be applied by Project Sponsors, in cooperation with FHWA, to determine whether historic resources would be adversely affected by the proposed project alternatives. For those historic resources that would be adversely affected by the preferred alternative, avoidance of adverse effects will be explored by Project Sponsors and FHWA.

Table 2
Criteria of Adverse Effects

Criteria of an Adverse Effect	
<p>"An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of an historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative."</p> <p>Source: (36 CFR 800.5[a][1]).</p>	
Examples of Adverse Effects	
<p>Adverse effects on historic properties include, but are not limited to:</p> <ol style="list-style-type: none">1. Physical destruction of or damage to all or part of the property;2. Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> (36 CFR Part 68) and applicable guidelines;3. Removal of the property from its historic location;4. Change of the character of the property's use or physical features within the property's setting that contribute to its historic significance;5. Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;6. Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization;7. Transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance." <p>Source: (36 CFR 800.5[a][2]).</p>	

1-5 MITIGATION

Project Sponsors, in cooperation with FHWA, will consult with NYSHPO, the Consulting Parties, and ACHP as appropriate to develop mitigation measures for adverse effects. Mitigation measures will be set forth in a Section 106 Agreement to be executed among the Project Sponsors, FHWA, NYSHPO, ACHP as appropriate, and any involved Consulting Parties.

Exhibit A

Tappan Zee Hudson River Crossing Project
Proposed Area of Potential Effect (APE)
October 14, 2011

I General Project Description

The Tappan Zee Hudson River Crossing (“Project”) is being undertaken by the Project Sponsors – New York State Department of Transportation (NYSDOT) and New York State Thruway Authority (NYSTA) –with the Federal Highway Administration (FHWA), serving as the federal lead agency under the National Environmental Policy Act (NEPA). The purpose of the project is to maintain a vital link in the regional and national transportation network by providing an improved Hudson River crossing between Rockland and Westchester Counties, New York. The project would address the structural, operational, mobility, safety, and security needs of the Tappan Zee Hudson River Crossing.

The Environmental Impact Statement (EIS) will consider a Replacement Bridge Alternative. The existing and proposed replacement bridge are 3.1 miles in length, and the tie-in work in Rockland and Westchester Counties will be limited to the minimum work necessary to match existing highway geometry at the landings. The project limits would be approximately 4 miles in total, from the South Broadway Bridge in South Nyack (Rockland County) to the Broadway Bridge in Tarrytown (Westchester County). The Project will not require alteration of existing interchanges or other highway features beyond the project limits.

An EIS will be prepared in accordance with NEPA. The analyses anticipate an Estimated Time of Completion between 2017 and 2019. Two alternatives will be evaluated in the EIS, the No Build Alternative and the Replacement Bridge Alternative. To provide flexibility in the future design of the replacement bridge, two options will be considered. Each alternative is briefly discussed below:

- No Build Alternative – The No Build Alternative would retain the existing Tappan Zee Bridge in its current configuration with ongoing maintenance, as practicable, to ensure its continued safe use by the traveling public. However, given the age of the bridge and its vulnerabilities in extreme events, it is possible that the crossing could be closed altogether at some point in the future. Although the No Build Alternative does not meet the project’s purpose and need, NEPA requires it be evaluated in the EIS. The No Build Alternative also serves as the baseline condition against which the potential benefits and impacts of the Replacement Bridge Alternative are evaluated.
- Replacement Bridge Alternative – There are two options for the Replacement Bridge Alternative that would meet the structural and operational requirements of a new crossing. These options differ in two basic ways: 1) the distance between their piers (short vs. long); and 2) the potential number of levels of bridge operations (single vs. dual). These options—Short Span and Long Span—are described below.
 - The Replacement Bridge Alternative—Short Span Option would be two single-level structures separated by a 42-foot gap at their main spans. Under typical operation, each structure would have four traffic lanes and wide shoulders to facilitate emergency vehicle access. The north bridge structure would serve westbound traffic, and the south bridge structure would serve eastbound traffic. A bicycle/pedestrian path would be

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provided on the north bridge structure. The north bridge structure would be 96 feet wide and the south bridge structure would be 82 feet wide.

The Short Span option would not preclude future transit service across the Tappan Zee Hudson River crossing.

- The Replacement Bridge Alternative—Long Span Option would be two new truss bridges with two levels each. The dual structures would be separated by a minimum gap of approximately 42 feet at the main span. The northernmost structure would be 96 feet wide. Under normal operations, it would support four westbound lanes and a shared-use (bicycle and pedestrian) path on the upper level. The southernmost structure would be 82 feet wide, and under normal operations, it would support four eastbound lanes. Both structures would include wide shoulders to facilitate emergency access.

The Long Span option would not preclude future transit service across the Tappan Zee Hudson River crossing.

Both Replacement Bridge Alternative options would result in removal of the existing Tappan Zee Bridge upon completion of the new river crossings.

II Development of the Area of Potential Effect

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to take into account the potential effects of their actions on historic properties. A required step in the Section 106 process is determining the Area of Potential Effect (APE) which is defined as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist” (36 CFR § 800.16[d]). The APE is influenced by the scale and nature of an undertaking.

The APE has been developed based on proposed work activities and their potential to affect historic properties, including potential direct and indirect effects, based on information available at this time.

In general, potential effects on historic properties can include both direct physical effects—demolition, alteration, or damage from construction—and indirect effects, such as the isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric (e.g., pollutants) elements that are out of character with a property or that alter its historic setting and context (e.g., contextual effects). Adverse effects can occur if a project would cause a change in the quality of a property that qualifies it for inclusion in the National Register of Historic Places.

The proposed direct and indirect APEs are discussed in greater detail below and are depicted in Figure 1.

III APE for Direct Effects

As discussed above, direct effects may include physical damage or destruction of a resource or to its setting. The proposed APE for Direct Effects includes all locations that could potentially be subject to direct ground disturbing activities. Project activities are anticipated to include demolition, excavation, pile-driving, geological borings, cutting and filling, as well as staging. Figure 1 presents the proposed APE for Direct Effects.

The proposed APE for Direct Effects has been designed to encompass areas directly affected by the construction and operation of the roadway, as follows:

- Rockland County – includes the existing right-of-way (ROW) of the Thruway between the Tappan Zee Bridge and the South Nyack Bridge in South Nyack.
- Hudson River – includes the Tappan Zee Bridge and its existing ROW, the footprint of the proposed replacement bridge, and the staging/dredging areas at both the Westchester and Rockland landings.
- Westchester County – includes the existing ROW of the Thruway between the Tappan Zee Bridge to the Broadway Bridge in Tarrytown.

The proposed APE for Direct Effects consists of horizontal and vertical components. The horizontal extent of the APE is defined as the footprint of construction activity that would result in ground disturbance or other physical impacts to properties. The vertical extent of the APE varies along the 4 mile project area, depending on the type of construction activity, for both above-ground and below-ground components.

IV APE for Indirect Effects

As discussed above, indirect effects may include isolation of a property from its surrounding environment, or the introduction of visual, audible, or atmospheric (e.g., pollutants) elements that are out of character with a property or that alter its historic setting and context. The APE for Indirect Effects was developed to encompass any potential indirect effects resulting from proposed Project construction activities, such as noise, vibration, and changes in visual qualities and setting. Figure 1 presents the proposed APE for Indirect Effects.

For work to the Thruway, the proposed APE for Indirect Effects extends 500 feet from the either side of the existing centerline of the Thruway. The proposed APE for Indirect Effects is more expansive in the area that is within visual range of the Tappan Zee Bridge to encompass potential visual and audible impacts associated with construction of the replacement bridge. The APE takes into consideration topography and the surrounding built environment. The following points explain the expansion of the APE in the area surrounding the river:

The proposed expanded APE for Indirect Effects associated with the replacement of the Tappan Zee Bridge incorporates areas from which the existing Tappan Zee Bridge and Hudson River are clearly or partially visible, and where the replacement bridge, proposed north of the existing bridge, has the potential to cause indirect alterations in the character or setting of historic properties in these areas. It is anticipated that the replacement bridge would be constructed slightly north of the existing bridge, and would tie into the existing Thruway alignment in Rockland and Westchester Counties. The APE also provides sufficient coverage to the north, south, east, and west to account for areas from which the replacement structure may be visible.

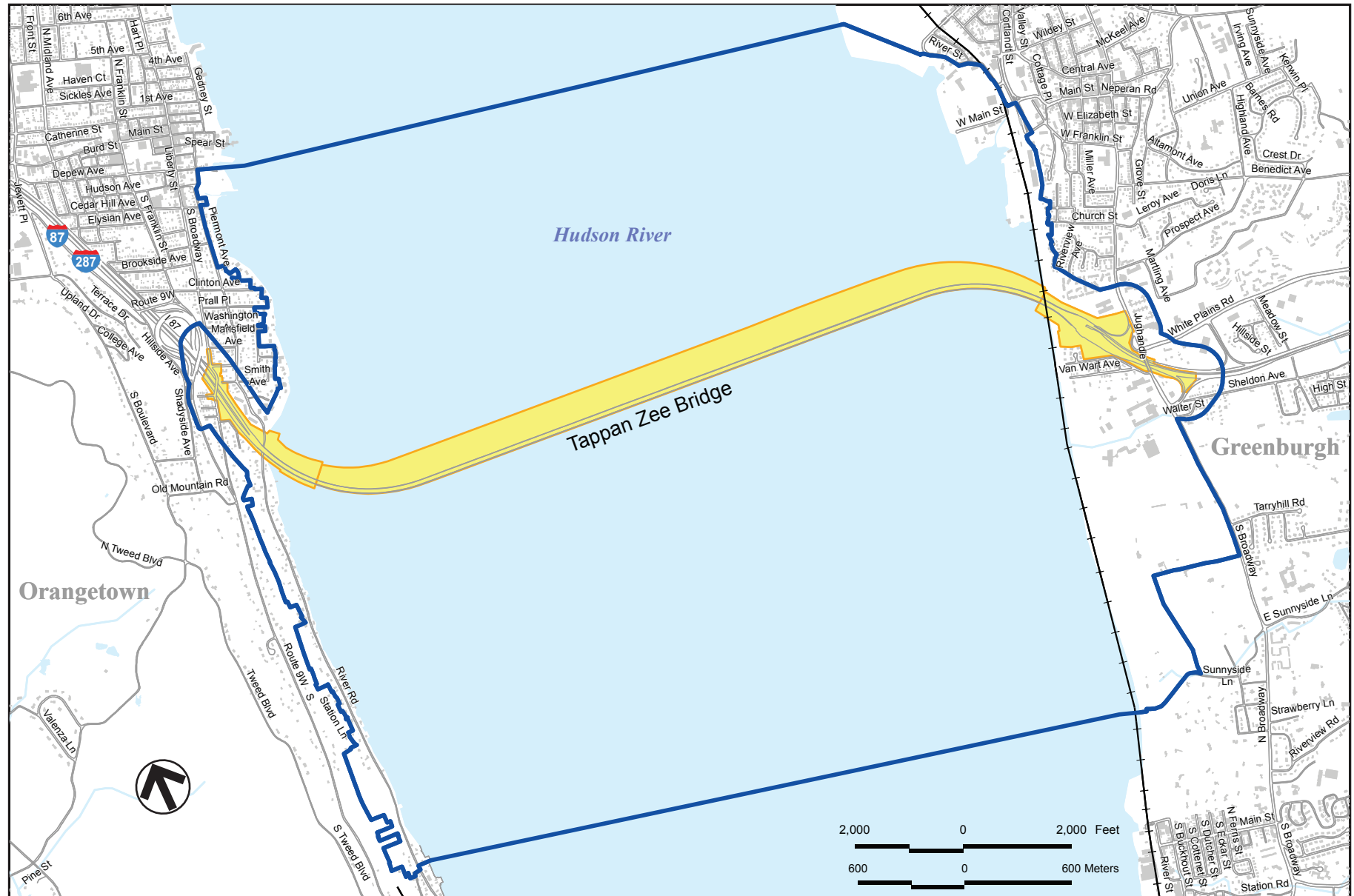
V Project Design Changes and the APE

Any changes in project design or scope that may occur as the Project moves forward may require that the APEs be updated and/or revised accordingly. For example, as construction

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staging areas (in addition to those already anticipated adjacent to the landings of the Tappan Zee Bridge on the east and west shores of the Hudson River) are identified in the future, the APEs would be modified as appropriate in consultation with NYSHPO to incorporate these locations.



- Direct Effect Area of Potential Effect (APE)
- Indirect Effect Area of Potential Effect (APE)