

**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

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.

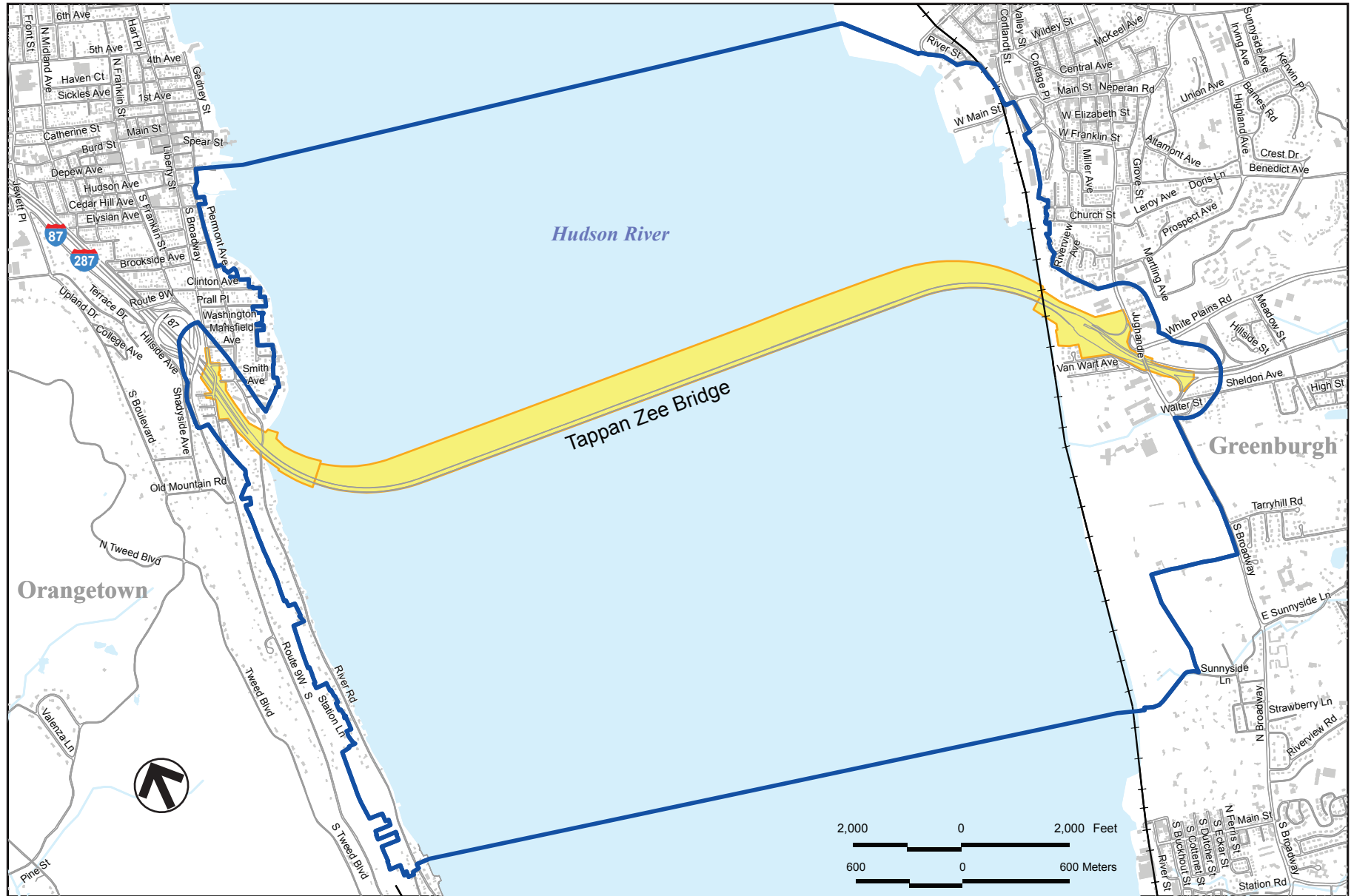
#### **V Project Design Changes and the APE**



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

Proposed Area of Potential Effect

Tappan Zee Hudson River Crossing

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)