

Chapter 22: Other NEPA and SEQRA Considerations

22-1 INTRODUCTION

Consistent with NEPA and SEQRA guidance, this chapter evaluates the following subject areas:

- **Irreversible and Irretrievable Commitment of Resources:** This section discusses natural and man-made resources expended during construction or operation of the project that would become unavailable for future use.
- **Relationship between Short-term Uses of the Environment and Long-term Productivity:** This section summarizes those instances where short-term impacts to the environment are necessary in order to maintain and enhance the long-term effectiveness of the transportation system in the corridor.
- **Unavoidable Impacts:** This section discusses adverse impacts of the project that cannot be avoided. Unavoidable impacts may occur if there are no reasonably practicable mitigation measures to eliminate the impacts; and if there are no reasonable alternatives to the project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar adverse impacts.
- **New York State Smart Growth Public Infrastructure Policy Act:** This section evaluates the project's consistency with the New York State Smart Growth Public Infrastructure Policy Act, which was established to promote the principles of smart growth in public infrastructure projects.

22-2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversibly and irretrievably committed resources for a project primarily include land, energy, construction materials, and human effort (i.e., time and labor). Some of these resources are typically irreversible during the life of the project, such as land and building materials. Others are irretrievable beyond the project lifespan, such as energy and human effort.

22-2-1 NO BUILD ALTERNATIVE

Under the No Build Alternative, the Tappan Zee Bridge would continue to operate under existing conditions. While this alternative would not require land typical of a construction project, it would require an irretrievable and irreversible commitment of human effort, materials, energy, and financial resources. The New York State Thruway Authority (NYSTA) estimates that it would spend \$1.3 billion to maintain and repair the bridge over the next decade. Major work activities will include seismic upgrades to portions of the bridge, navigational safety improvements, steel and concrete repairs and other

miscellaneous work to continue to keep the bridge safe for the traveling public. However, the No Build Alternative does not offer increased potential for safety and reliability in case of extreme event.

22-2-2 REPLACEMENT BRIDGE ALTERNATIVE

The Replacement Bridge Alternative would result in the irreversible and irretrievable commitment of a number of resources. Land and money are the most basic resources that would be irretrievably committed. The alignment of the Replacement Bridge Alternative would follow the existing highway alignment on land to the extent practicable, but would require some development of currently undeveloped land. The allocation of \$4.64 billion (in 2012 dollars) for construction of a replacement bridge would ensure the long term vitality of the Tappan Zee Hudson River crossing.

Building materials (e.g., concrete, steel, etc.) and energy resources (e.g., fuel and electricity) used or consumed during construction and operation of the project would be irretrievably and irreversibly committed to the project. Labor expended to construct the Replacement Bridge Alternative would also be irretrievable.

None of the resources described above are expected to be in short supply. In addition, the improved mobility of and emergency access on the Tappan Zee Hudson River crossing would reduce wasteful energy consumption associated with traffic congestion. For these reasons the project is not expected to have any adverse impacts related to irreversible and irretrievable commitment of resources.

22-3 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Short-term impacts are often a necessary component of construction projects in order to achieve the long-term goals and productivity of the project. Typically, the most notable areas of short-term impacts are related to traffic, noise, and air quality, but may also relate to natural resources and other environmental and social considerations.

22-3-1 NO BUILD ALTERNATIVE

Under the No Build Alternative, operation of the Tappan Zee Bridge would continue similar to existing conditions. This alternative would not result in any short-term impacts, but it would also forego the substantial benefits of the Replacement Bridge Alternative. The No Build Alternative would continue to require substantial financial commitments to maintain the existing structure, and the existing bridge would continue to operate under nonstandard seismic and highway design conditions.

22-3-2 REPLACEMENT BRIDGE ALTERNATIVE

All areas of potential short-term impacts related to construction of the Replacement Bridge Alternative are detailed in Chapter 18, "Construction Impacts." Best management practices and other mitigation measures would be implemented to minimize adverse effects.

Potential short-term impacts of the Replacement Bridge Alternative would include increased traffic from construction vehicles and potential congestion associated with temporary modification of circulation patterns; effects on community character, visual quality, and cultural resources in the study area due to ground disturbance, increased

noise, and other temporary alterations of the existing setting; potential air quality impacts related to fugitive dust and exhaust from construction vehicles and equipment; and impacts to aquatic biota and vegetation through habitat disturbance, sediments from dredging, and hydroacoustic impacts from pile driving. Measures to avoid short-term construction impacts would be conducted to the extent possible, but where avoidance is not prudent or feasible, measures to minimize impacts would be implemented. Such measures would include limiting the duration of construction activities to the extent feasible and employing modern methods of construction that would minimize adverse effects on ecological resources and the surrounding community.

Short-term impacts are necessary to realize the long-term local and regional benefits of the Replacement Bridge Alternative. The Replacement Bridge Alternative would enhance safety, emergency response, travel time, energy efficiency, and reduce emissions; it would address existing nonstandard structural and seismic designs; and it would provide a shared-use bike and pedestrian path, linking trailways in Westchester and Rockland Counties and providing greater opportunities for non-motorized transport. The proposed facility would foster future economic development, which in turn would serve to create jobs and generate increases in property tax revenues. The beneficial long-term effects of implementing the project would offset the localized short-term impacts associated with construction.

22-4 UNAVOIDABLE IMPACTS

22-4-1 NO BUILD ALTERNATIVE

Under the No Build Alternative, the existing Tappan Zee Bridge would continue to operate similar to existing conditions. While this alternative would not directly result in any unavoidable impacts, it would sustain many of the existing deficiencies of the bridge. The No Build Alternative would remain vulnerable to high accident rates and would be susceptible to severe traffic congestion as a result of accidents and vehicular breakdowns. In addition, with narrow lane widths and without shoulders, emergency response on the bridge would continue to be hindered. Further, maintenance of the existing Tappan Zee Bridge would require large expenditures without providing the long-term benefits of the Replacement Bridge Alternative.

22-4-2 REPLACEMENT BRIDGE ALTERNATIVE

Because the Replacement Bridge Alternative would replace an existing use in a similar location, long-term adverse impacts from operation of the project would be minimized. However, this alternative would result in several unavoidable adverse impacts, described below. The majority of adverse impacts would be associated with construction, as discussed in Chapter 18, "Construction Impacts." Where feasible, mitigation measures would be implemented to minimize or avoid adverse impacts. However, where measures cannot fully mitigate adverse effects, unavoidable impacts would result.

Construction of the Replacement Bridge Alternative would result in short-term impacts that cannot be avoided. Traffic flow would be temporarily affected by the reconstructed connections to the new bridge structures. Construction activities would also result in temporary noise and air quality impacts on nearby sensitive land uses. Air quality

Tappan Zee Hudson River Crossing Project Environmental Impact Statement

impacts would primarily be related to fugitive dust and exhaust from diesel engines. Noise from pile driving during construction would affect both ecological and human resources. In addition, construction would result in direct disturbance to aquatic habitats and the creation of suspended sediments as a result of underwater earthwork. Sensitive habitats would be avoided to the extent possible and construction methods to minimize impacts on surrounding communities and natural resources would be employed to the extent feasible.

The Replacement Bridge Alternative would result in several long-term unavoidable adverse impacts. Potential adverse impacts would be avoided or minimized to the extent possible, but in some instances, adverse impacts cannot be avoided. These impacts would include the following:

- **Land Acquisition:** As discussed in Chapter 6, “Land Acquisition, Displacement, and Relocation,” the project would require a small partial acquisition and permanent easement on two multi-family residential properties (one in Rockland County and one in Westchester County) but would not displace existing property owners or residents.
- **Visual Resources:** While the project would not have an effect on the overall visual character or scenic resources in the study area, there would be localized adverse impacts on views from several residences along River Road in Rockland County. These properties overlook the Tappan Zee Bridge causeway. Under the Replacement Bridge Alternative, views of the Hudson River and Westchester County from these properties would be obstructed by the higher elevation of the western approach structure, resulting in unavoidable visual impacts. Should noise barriers be installed along the south side of the Interstate 87/287 right-of-way in Rockland County (pending the outcome of public input during the design process), views would be obstructed from several additional residences along Bight Lane (on River Road) and potentially from residential viewers at lower elevations on Ferris Lane. While the design of the noise barriers and landscaping could be provided to partially mitigate these impacts, the loss of these sight-lines would be adverse visual impacts.
- **Historic and Cultural Resources:** As described in Chapter 10, “Historic and Cultural Resources,” one historic resource listed or eligible for listing on the State and National Register of Historic Places (S/NR) would be adversely affected by the project. The existing Tappan Zee Bridge is a historic resource that would be removed. Mitigation measures (as described in the executed Memorandum of Agreement in Appendix C) would be implemented to minimize adverse effects, but loss of this resource would be unavoidable.

Analyses are being conducted to confirm whether there are any submerged archaeological resources within the area of potential effect (APE) to determine whether any such resources would be adversely affected by the Replacement Bridge Alternative. Geoarchaeological survey work to collect data is included in the Memorandum of Agreement. If S/NR eligible resources are identified, FHWA, NYSDOT, and NYSTA will consult with the New York State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation (ACHP), Tribal Historic Preservation Officers (THPOs), and other consulting parties as appropriate to consider measures to avoid, minimize, or mitigate adverse effects.

- **Noise and Vibration:** As discussed in Chapter 12, “Noise and Vibration,” the project would result in noise levels at several receptors that exceed FHWA/NYS DOT Noise Abatement Criteria (NACs). However, where feasible and reasonable, measures such as noise barriers, would be implemented to mitigate these impacts to the extent feasible and practicable. See Chapter 12, “Noise and Vibration,” for a discussion of recommended noise barrier locations.
- **Ecology:** As discussed above, the Replacement Bridge Alternative would result in potentially unavoidable temporary adverse impacts to aquatic biota and habitats during construction. Temporary conditions during construction (such as hydroacoustic effects and suspended sediments) may result in permanent loss of individuals and habitats, but would not be expected to substantially affect populations. Unavoidable adverse impacts to soft bottom habitat would occur as a result of dredging and armoring, but this impact is considered temporary, as deposition processes would cause the bottom habitat to return to its natural state over time once construction is completed. Oyster habitat in the project vicinity would be lost as an unavoidable impact during construction activities. However, these impacts would be mitigated as described in Chapter 16, “Ecology,” and Chapter 18, “Construction Impacts.” Where the existing Tappan Zee Bridge would be removed, there would be an opportunity for habitats to redevelop. Affected aquatic biota and vegetative species would be expected to recover post-construction.

22-5 NEW YORK STATE SMART GROWTH PUBLIC INFRASTRUCTURE POLICY ACT

Under the New York State Smart Growth Public Infrastructure Policy Act, no state infrastructure agency shall approve, undertake, support, or finance a public infrastructure project, unless, to the extent practicable, the public infrastructure project is consistent with its ten smart growth infrastructure criteria, as applicable. The New York State Department of Transportation (NYSDOT) and the New York State Thruway Authority (NYSTA) have developed policies to ensure compliance with this act, including the establishment of Smart Growth Advisory Committees (SGAC) (see Appendix I). At NYSDOT, the SGAC sets policy and direction for implementing the Act, whereas the SGAC at NYSTA reviews Smart Growth Impact Statements (SGIS) for projects in its contracts program. While each agency has its own similar materials for completing the smart growth review process, a joint attestation form has been prepared and approved by NYSDOT and NYSTA for the Tappan Zee Hudson River Crossing Project (see Appendix I).

22-5-1 NO BUILD ALTERNATIVE

Under the No Build Alternative, no state infrastructure development initiative related to the Tappan Zee Hudson River crossing, other than routine maintenance and repairs would occur. Therefore, the No Build Alternative would be consistent with Criterion 1 of the New York State Smart Growth Public Infrastructure Policy Act.

22-5-2 REPLACEMENT BRIDGE ALTERNATIVE

The ten New York State Smart Growth Public Infrastructure Policy Act criteria and the Replacement Bridge Alternative’s consistency with these criteria are presented in **Table**

**Tappan Zee Hudson River Crossing Project
Environmental Impact Statement**

22-1. The Replacement Bridge Alternative would be consistent with all applicable criteria in accordance with NYSDOT and NYSTA smart growth policies, which are based on these criteria.

Table 22-1
**Replacement Bridge Alternative’s Consistency with
New York State Smart Growth Public Infrastructure Policy Act**

<p><i>Criterion 1: To advance projects for the use, maintenance or improvement of existing infrastructure.</i></p> <p>Consistent. The Replacement Bridge Alternative would replace and improve existing transportation infrastructure so that it can better meet existing and future travel needs in the Interstate 87/287 corridor.</p>
<p><i>Criterion 2: To advance projects located in municipal centers.</i></p> <p>Not Applicable. The Replacement Bridge Alternative would be a transportation infrastructure initiative that would maintain a vital Hudson River crossing in a major transportation network.</p>
<p><i>Criterion 3: To advance projects in developed areas or areas designated for concentrated infill development in a municipally-approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan.</i></p> <p>Consistent. The Replacement Bridge Alternative <u>would maintain a vital Hudson River crossing, critical to the Regional transportation network</u> and would be constructed within the existing New York State Thruway right-of-way to the extent practicable and would realign with existing upland portions of Interstate 87/287 in order to minimize disturbance of currently undisturbed land. <u>In addition, the Nyack (Village) Local Waterfront Revitalization Plan includes a reference to the Tappan Zee Bridge and the option of constructing a second bridge.</u></p>
<p><i>Criterion 4: To protect, preserve and enhance the state’s resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archeological resources.</i></p> <p>Consistent. The Replacement Bridge Alternative would be constructed within existing New York State Thruway right-of-way to the extent possible and the alignment of the Replacement Bridge Alternative would follow the existing highway alignment on land to the extent practicable, thereby minimizing disturbance to preserved habitats and environmental resources. By reducing the frequency of accident and incident delays on the bridge, traffic flow would be improved and air quality emissions reduced. While the Replacement Bridge Alternative would require an unavoidable adverse effect on an historic resource (<u>i.e., the existing Tappan Zee Bridge</u>), the project <u>would implement mitigation measures as per the Memorandum of Agreement provided in Appendix C.</u> In addition, the project would enhance the lower Hudson Valley region’s recreational resources by providing a shared-use bike and pedestrian pathway, thereby providing a link to trailways on either side of the Hudson River. The project would also provide stormwater treatment facilities at the bridge landings. This would provide a substantial benefit to water quality, as stormwater runoff is currently untreated.</p>
<p><i>Criterion 5: To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups.</i></p> <p>Not Applicable. The Replacement Bridge Alternative would be a transportation infrastructure improvement project. The project would maintain the region’s quality of life by preserving an important transportation link, but would not directly affect community development.</p>

Table 22-1 (Continued)
Replacement Bridge Alternative's Consistency with
New York State Smart Growth Public Infrastructure Policy Act

<p><i>Criterion 6: To provide mobility through transportation choices including improved public transportation and reduced automobile dependency.</i></p>
<p>Consistent. The Replacement Bridge Alternative would improve mobility and efficiency along <u>the Tappan Zee Hudson River crossing</u>. This improved mobility would benefit existing transit services such as the <u>Tappan Zee Express and Orange-Westchester Link (OWL) buses</u>. The replacement bridge would also provide opportunities for non-motorized transportation through inclusion of a <u>shared-use bike/pedestrian path</u>. The Replacement Bridge Alternative configuration could support the ability for express bus services to use the extra width on the bridge during peak hours. This use would have to be <u>appropriately assessed and considered before being implemented</u>. In addition, the bridge would be designed not to preclude transit and have the capability to accommodate future transit services should they become <u>foreseeable</u>.</p>
<p><i>Criterion 7: To coordinate between state and local government and inter-municipal and regional planning.</i></p>
<p>Consistent. While the project does not require any discretionary approvals by local municipalities, the project sponsors recognize the potential effects of the project on these communities. As such, coordination with local and regional agencies will continue as the project develops. In addition, the project considers and incorporates features consistent with local planning initiatives where appropriate, such as providing a shared-use bike and pedestrian pathway. <u>Further, as part of the federally mandated transportation planning process, the project is being coordinated with the New York Metropolitan Transportation Council (NYMTC), the region's metropolitan planning organization (MPO), as advancement of the project requires amendment to its fiscally constrained Regional Transportation Plan and Transportation Improvement Plan (TIP).</u></p>
<p><i>Criterion 8: To participate in community-based planning and collaboration.</i></p>
<p><u>Consistent</u>. This project is a large-scale regional transportation initiative being coordinated with the New York State Department of Transportation (NYSDOT), the New York State Thruway Authority (NYSTA), and the Federal Highway Administration (FHWA). <u>To understand and address concerns of local officials and the general public, the project sponsors have coordinated and held multiple meetings with local communities and residents and have held two public scoping meetings, two public Draft EIS hearings, and a greater than 60-day Draft EIS written comment period. A public review meeting was also held by NYMTC as part of its amendment process to include the Tappan Zee Hudson River Crossing Project in the Regional Transportation Plan and TIP.</u></p>
<p><i>Criterion 9: To ensure predictability in building and land use codes.</i></p>
<p>Not Applicable.</p>
<p><i>Criterion 10: To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation.</i></p>
<p><u>Consistent</u>. The Replacement Bridge Alternative would support sustainability by <u>meeting an existing transportation need without compromising needs and opportunities of future generations</u>. In addition, by improving roadway safety features and improving emergency access on the bridge, the project would foster a reduction in accidents and congestion, thereby reducing greenhouse gas emissions. The project would further reduce emissions by eliminating the need to move the median barrier twice daily, currently accomplished using a diesel-powered engine.</p>