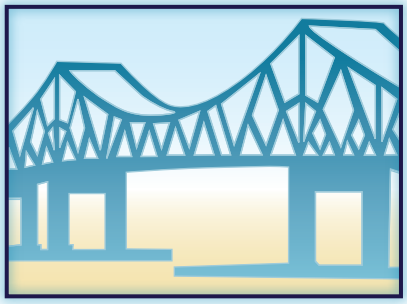
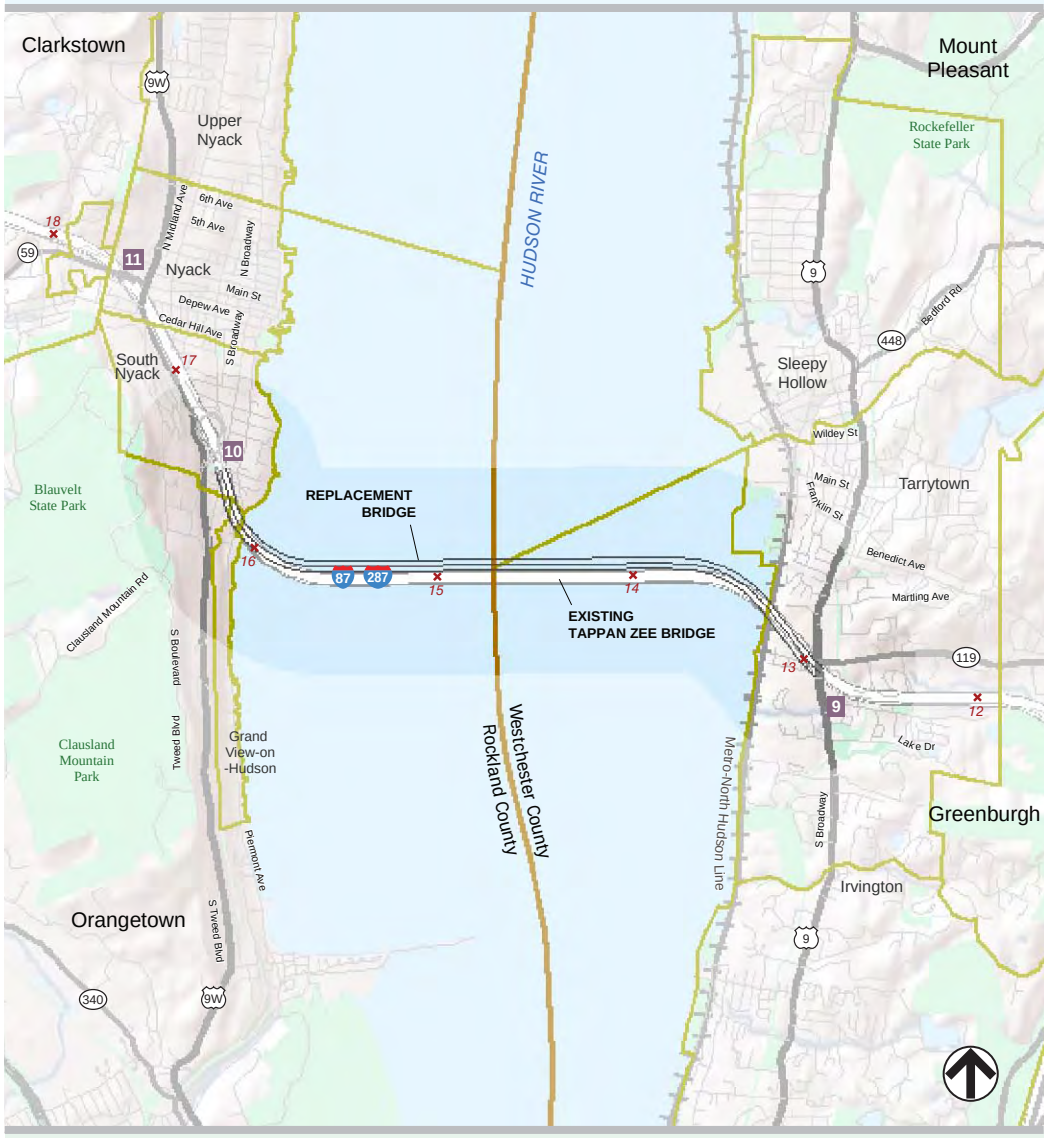
TAPPAN ZEE HUDSON RIVER CROSSING PROJECT

Scoping Summary Report



Rockland and Westchester Counties, New York



Federal Lead Agency: Federal Highway Administration

Joint Lead Agencies: New York State Department of Transportation and New York State Thruway Authority

January 2012

Section 1: Purpose and Need

1-1 INTRODUCTION

This *Scoping Summary Report incorporates information provided in the Scoping Information Packet for the Tappan Zee Hudson River Crossing Project, lists public and agency comments on the Scoping Information Packet, responds to the comments received, and includes updated information as necessary to address the public comments. Updated or revised text is shown in italics throughout this document.* This document describes the purpose and need for the project (Section 1); the alternatives under consideration (Section 2); the framework for the project's environmental analysis (Section 3); the public involvement program for the project (Section 4), *and agency and public comments and responses (Section 5)*.

The purpose of the project is to maintain a vital link in the regional and national transportation network by providing *a* Hudson River crossing between Rockland and Westchester Counties, New York *that addresses the limitations and shortcomings of the existing Governor Malcolm Wilson Tappan Zee Bridge ("Tappan Zee Bridge").* The project would address the structural, operational, safety, security *and mobility* needs of the Tappan Zee Hudson River Crossing.

1-2 PROJECT HISTORY

The Tappan Zee Bridge opened to traffic in 1955 as part of the New York State Thruway extension between Suffern, New York and Yonkers, New York. Over the years, the bridge and its highway connections have been the subject of numerous studies and transportation improvements. Despite these improvements, congestion has grown steadily and the aging bridge structure has reached the point where major reconstruction is needed to sustain this vital link in the transportation system.

In April 2000, a Long Term Needs Assessment and Alternatives Analysis was completed by the New York State Governor's I-287 Task Force. The report concluded that while there was no single preferred solution for addressing the transportation needs in the Tappan Zee Bridge/I-287 Corridor, both a short-term Transportation Demand Management (TDM) program and longer-term capital improvements were needed. All of the long-term alternatives evaluated by the Task Force called for replacement of the existing Tappan Zee Bridge because it was concluded that rehabilitation of the existing bridge would be highly disruptive, as costly, and not as beneficial as a replacement bridge.

On November 28, 2000, the New York State Thruway Authority (NYSTA) and the Metropolitan Transportation Authority Metro-North Commuter Railroad (MNR) announced that an Environmental Impact Statement (EIS) would be undertaken to identify and evaluate alternatives to address the mobility needs of the I-287 Corridor, as

well as the structural and safety needs of the Tappan Zee Bridge. The alternatives contained in the I-287 Task Force report, as well as those suggested by elected officials, transportation and environmental groups, community groups, and the public, were considered and an approach to evaluating and advancing alternatives was established. On December 23, 2002, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) published a Notice of Intent (NOI) to prepare an Alternatives Analysis (AA) and EIS for the Tappan Zee Bridge/I-287 Corridor Project in the Federal Register.

Over the next few years, project development continued with increasing involvement by the New York State Department of Transportation (NYSDOT). Alternatives for transit modes along the corridor were identified, as were a set of highway and bridge improvements. Also, in 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) was enacted, which incorporated changes in the metropolitan planning and environmental review processes for transportation projects. FHWA and FTA determined that a revised NOI should be published to update the public and interested agencies on the alternatives development, to identify NYSDOT as the Project Director, and to incorporate the provisions of SAFETEA-LU. The revised NOI was published on February 14, 2008.

Throughout project development, FHWA, FTA, NYSDOT, NYSTA, and MNR have engaged in a robust public outreach effort. Public involvement has taken multiple forums and formats, including one-on-one *meetings* and large group settings. Two community offices, one in Nyack and one in Tarrytown, were established to provide information to those interested in the project. A website and newsletters provided written updates to the interested public, and there *was* a robust media campaign. The project sponsors solicited input from stakeholders through five Stakeholders' Advisory Working Groups that met regularly to guide project development efforts, meetings with elected officials and community groups, and individual meetings as requested. Large public forums such as meetings and workshops were held a number of times at various locations to continue to inform the public. In total, there have been hundreds of public and stakeholder meetings. The project sponsors have compiled a mailing list of more than 5,000 interested individuals and organizations.

In 2011, while advancing financial analysis, it was determined that funding for the *$16 billion (in 2012 dollars)* corridor project (bridge replacement, highway improvements, and new transit service) was not *financially feasible* at this time. The financing of the crossing alone, however, was considered affordable. Therefore, it was determined that the scope of the project should be limited, and efforts to replace the Hudson River crossing independent of the transit and highway elements should be advanced. On October 12, 2011, FHWA and FTA published a NOI to rescind the Tappan Zee Bridge/I-287 Corridor Project, thereby concluding the environmental review process for the combined study of bridge, highway, and transit elements. ***Appendix A*** *provides further information regarding the current decision to advance a replacement bridge project.*

On that same date, FHWA published *a* NOI for the Tappan Zee Hudson River Crossing Project to examine alternatives for an improved Hudson River crossing between Rockland and Westchester Counties. As described in the NOI, FHWA, as the federal lead agency, and NYSDOT and NYSTA, *as joint lead* agencies, are preparing an EIS to

identify alternatives for an improved Hudson River crossing and to document the potential environmental consequences of these alternatives. Although the Tappan Zee Hudson River Crossing Project *is undertaking* an independent environmental review, *the EIS will rely* on previous relevant documents prepared for the Tappan Zee Bridge/I-287 Corridor Project.

The Tappan Zee Hudson River Crossing EIS will serve as the basis for FHWA's Record of Decision under the National Environmental Policy Act of 1969 (NEPA; 42 USC §4321 et seq.). This EIS will also satisfy environmental review requirements of the New York State Environmental Quality Review Act (SEQRA; 6 NYCRR Part 617 *and 17 NYCRR Part 15).*

1-3 BACKGROUND AND PLANNING CONTEXT

The Tappan Zee Bridge is located in the State of New York, crossing the Hudson River between the Village of South Nyack in Rockland County on the west and the Village of Tarrytown in Westchester County on the east (see **Figures 1-1** and **1-2**). The Tappan Zee Bridge carries Interstate 87 (New York State Thruway) and Interstate 287.

1-3-1 TRANSPORTATION CONTEXT

Interstate 87 is the main route through the Hudson Valley, connecting New York City and Canada. It begins at Interstate 278/Robert F. Kennedy Memorial Bridge (formerly Triborough Bridge) in the Bronx, New York, and extends 333 miles northward to the Canadian border at Champlain, New York.

Interstate 287 is a 99-mile, circumferential route through the New York and New Jersey metropolitan area. It begins at the New Jersey Turnpike/Interstate 95 in Edison Township, New Jersey and circles the western and northern portions of the metropolitan area, terminating in Rye, New York, at Interstate 95. It serves suburb-to-suburb trips in addition to long-distance trips (i.e., between New Jersey and points west and Connecticut and points north and east) that wish to bypass the routes directly through New York City.

The Tappan Zee Bridge provides the only interstate highway crossing of the Hudson River for the 48-mile stretch between the George Washington Bridge (Interstate 95) and the Newburgh-Beacon Bridge (Interstate 84). It is a vital link between the population and employment centers of Rockland and Westchester Counties and is a major route for freight movement, *as well as a critical evacuation route*.

During the past 20 years (1990 to 2010), traffic volumes have grown *from about 112,000 to about 134,000 vehicles per day (almost 20 percent)* on the Tappan Zee Bridge (see **Figure 1-3**). The bridge now carries approximately *134,000* vehicles per day *with peak traffic having reached 170,000 vehicles per day*. Volumes are highest during the morning eastbound commute and the evening westbound commute, but the bridge is prone to *incidents resulting in traffic delays* during non-commuter periods as well, *largely due to non-standard lane widths and lack of shoulders or emergency access accommodations.* As shown in **Figure 1-3**, the Tappan Zee Bridge carries *between* 5,000 *and 8,000* vehicles per hour during *14* hours (*5* AM to *7* PM) of a typical weekday.

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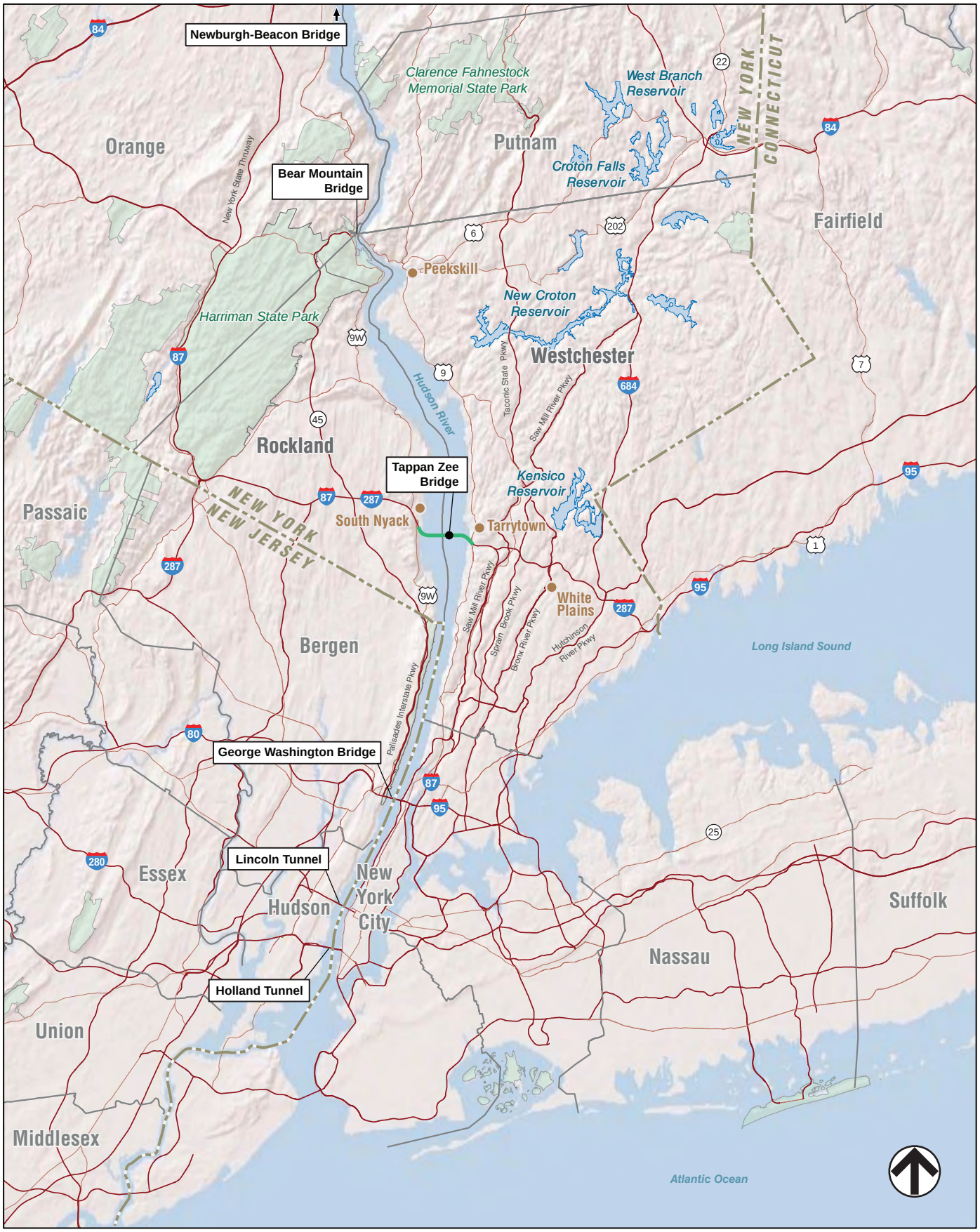

0 10 MILES

SCALE

Figure 1-1

Project Location and Regional Roadway Network

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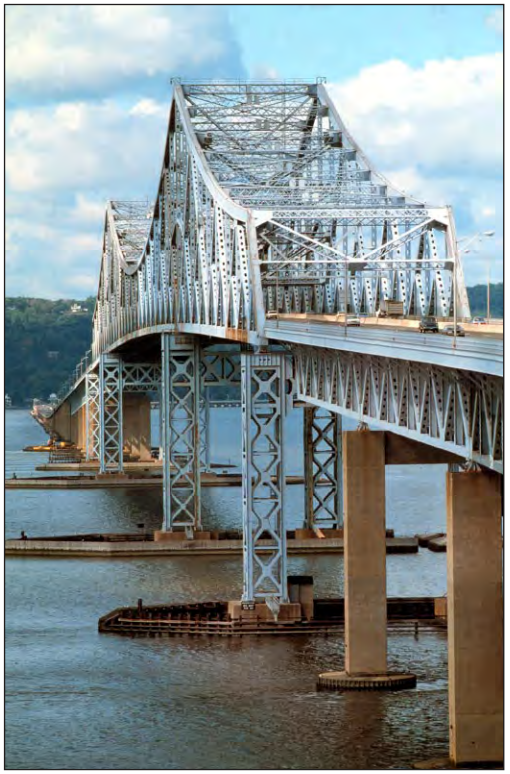
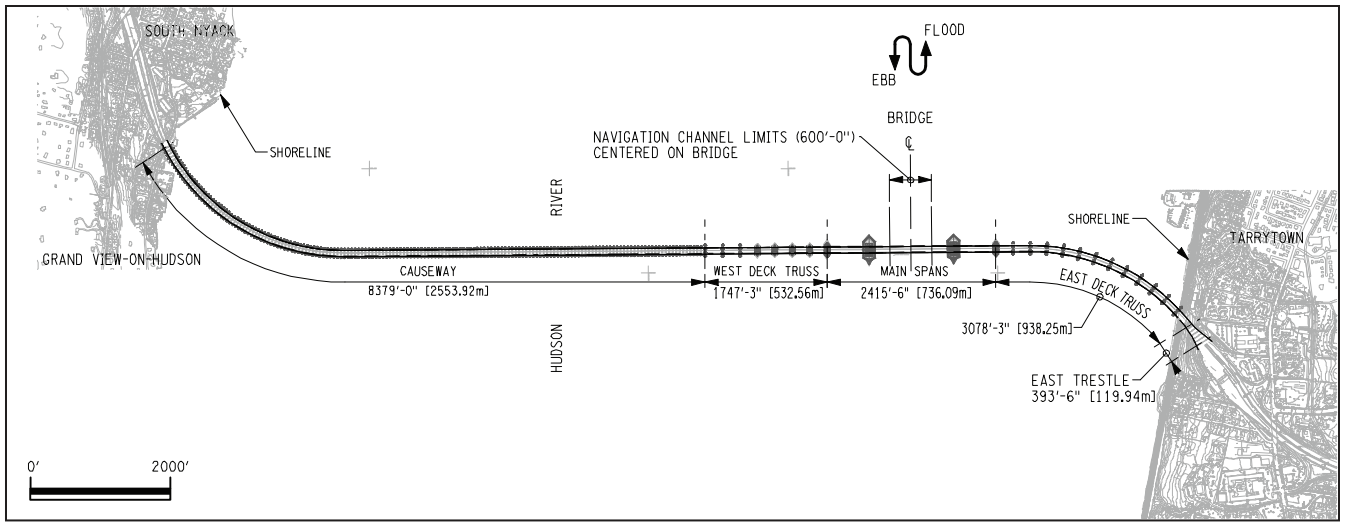
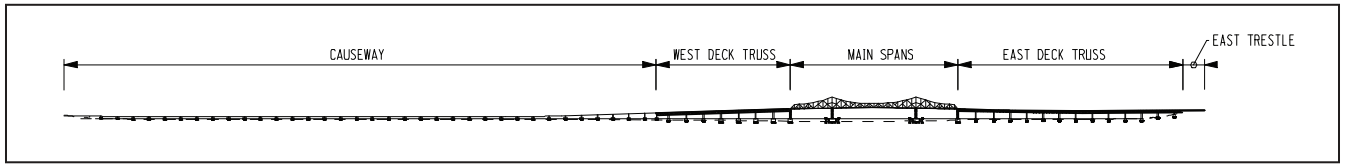
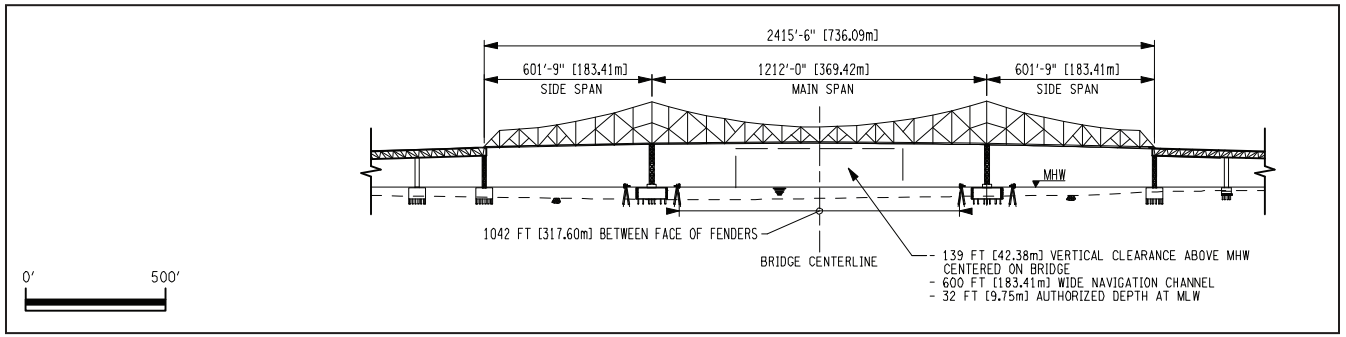




PLAN



PROFILE



MAIN SPANS

Figure 1-2

Existing Bridge Plan, Profile, and Photographs

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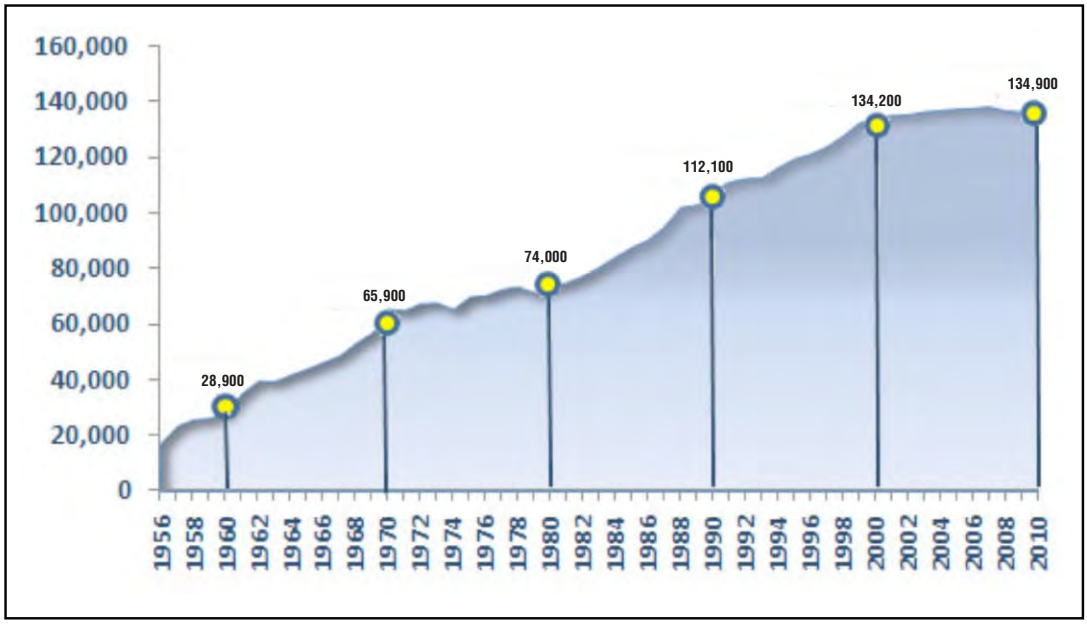

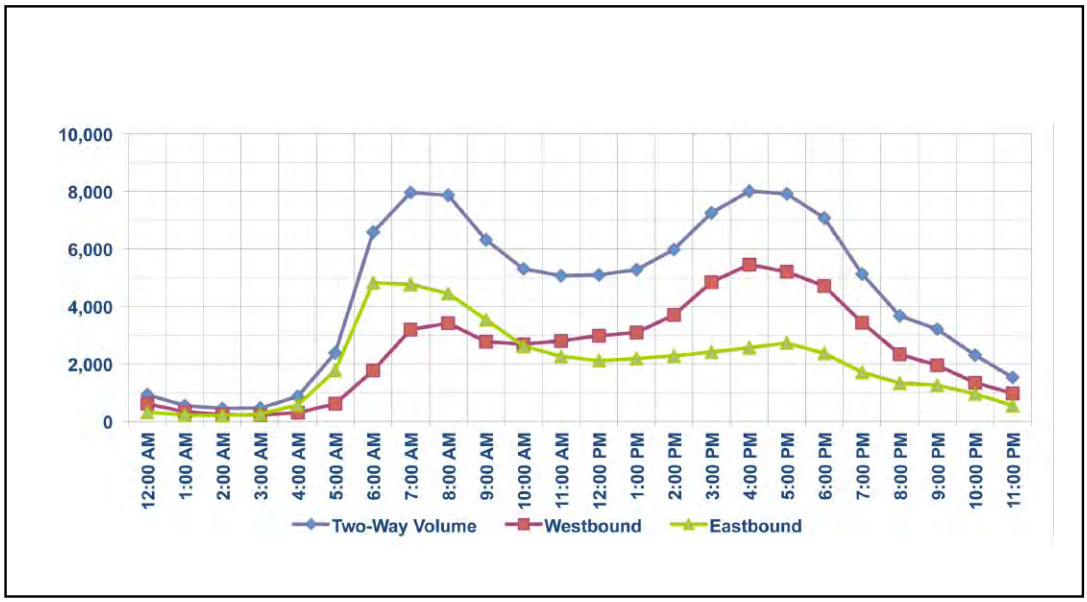

Figure 1-3
Traffic Volumes

The bridge serves as a major freight route between points east and west of the Hudson River. It is a primary over-land gateway to New England for goods delivered to the Port of New York and New Jersey. The bridge is also a bypass route around New York City for trucks traveling between New England and points south and west of New York City.

1-3-2 REGIONAL CONTEXT

Rockland and Westchester Counties have experienced considerable growth in both population and employment over the last 60 years, resulting in substantial increases in traffic volumes across the Tappan Zee Bridge. The population in Rockland County has more than tripled from about 89,000 in 1950 to 299,000 in 2010 (+235 percent). Westchester County's population increased from about 626,000 in 1950 to 962,000 in 2010 (+53 percent). During the same period, Westchester County experienced a major increase in commercial development. The completion of interstate highways through Westchester County (i.e., I-95, I-87, I-287, and I-684) led to a surge in corporate headquarter relocations to the area, particularly in White Plains.

Consistent with FHWA and NYSDOT guidance, this EIS will assess conditions well into the future to determine the long-term impacts of the project on the surrounding built and natural environment. For this analysis, the horizon year is 2047, which would be approximately 30 years after completion of the Tappan Zee Hudson River Crossing Project. The New York Metropolitan Transportation Council (NYMTC) projects that both population and employment growth will continue *in Rockland and Westchester Counties* (see **Figure 1-4**). Between 2010 and 2047, the populations of Rockland and Westchester Counties are expected to increase by 50,000 and 134,000 residents, respectively. Employment is projected to increase by 47,000 jobs in Rockland County and by 160,000 jobs in Westchester County during this timeframe. This growth in population and employment will increase daily volumes across the Tappan Zee Bridge for the next several years.

1-4 PURPOSE

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. The existing bridge was built in 1955 and now serves more than *134,000* vehicles per day. While safe to the traveling public, the bridge does not meet current standards for its design or traffic operations. The project would correct structural, operational, mobility, safety, and security *limitations and deficiencies* of the existing Tappan Zee Bridge.

1-5 NEED

1-5-1 STRUCTURAL DEFICIENCIES

An extensive and costly maintenance and capital program has been required to keep the *Tappan Zee Bridge's* structural elements in a state of good repair. *However, despite these efforts, the existing Tappan Zee Bridge falls short of current engineering standards.*

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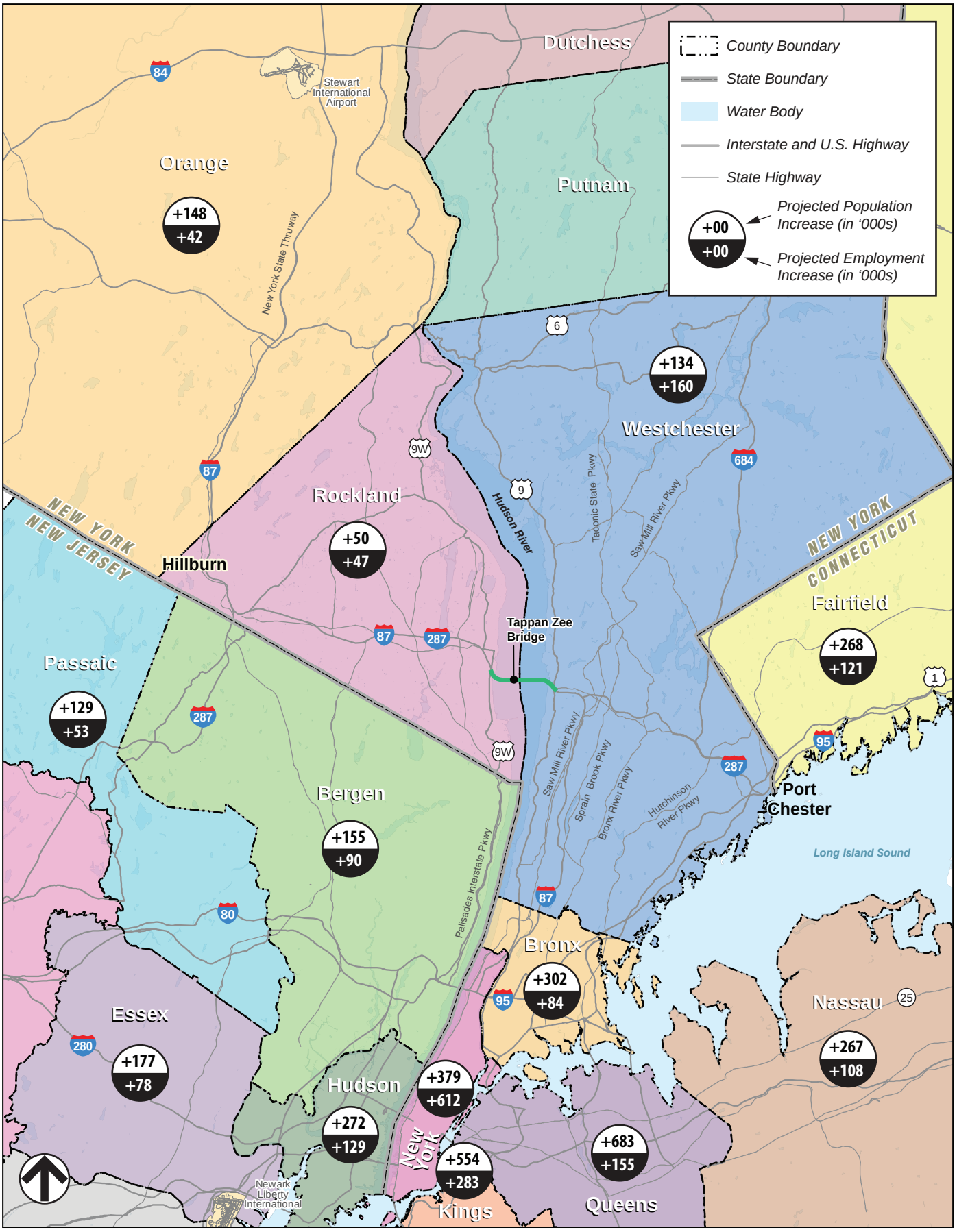

Figure 1-4

Population and Employment Growth: 2010 to 2047

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Based on criteria provided in the NYSDOT Load and Resistance Factor Design (LRFD) Bridge Design Specifications, the Tappan Zee Bridge is classified as a "critical bridge". A critical bridge *is required to be open to all traffic once inspected after a major event and it must be useable by emergency vehicles and for security, defense, economic or secondary life safety purposes immediately after the major event. The structure* lacks *the* structural and service redundancy necessary to sustain extreme natural events such as hurricanes and earthquakes, *or* man-made events such as fires or vessel *allisions or security related events. Structural redundancy is defined as the ability of a structure to sustain an extreme event, and service redundancy is defined as the ability of a structure to remain in service or have available alternative traffic accommodations.* Lacking these redundancies, the bridge is vulnerable to damage from such events, and as a consequence, traffic disruption or full closure could result while repairs are undertaken.

In the mid-1980s, notable deterioration of the Tappan Zee Bridge was recorded, prompting the beginning of an extensive repair program by NYSTA. Subsequently, targeted repairs were made to all segments and components of the Tappan Zee Bridge, including the concrete deck, steelwork, bearings, columns, and piles. Through the mid-1990s, these continuous repairs by NYSTA were sufficient to improve the overall condition of the Tappan Zee Bridge. However, major rehabilitation of the deck bearings, barriers, steelwork, and concrete was initiated in September 2007 due to the high rate of deterioration. The overall condition of the Tappan Zee Bridge continues to decline, with extensive, iterative repairs required to keep the bridge safe for the near-term. Between 2000 and 2010, NYSTA spent over $500 million to maintain the bridge, and NYSTA estimates that an additional $1.3 billion *would need to* be spent over the next decade. *Major work activities would 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.*

1-5-2 OPERATIONAL AND SAFETY DEFICIENCIES

The Tappan Zee Bridge does not meet current NYSDOT bridge and highway standards with respect to such essential characteristics as lane and shoulder widths. It currently operates with seven lanes, ranging in width from 11 feet, 2 inches to 12 feet. Thus, some of its lanes are narrower than the standard 12-foot lane. The bridge has no shoulders *or* emergency *access accommodations, and emergency* vehicles must use *general traffic* lanes to attend to accidents or other incidents on the bridge. The bridge has a median consisting of a movable barrier with one foot of clearance on either side. This falls short of NYSDOT's minimum standard for bridges, which consists of a 4-foot left shoulder and a 10-foot right shoulder.

From 2001 to 2009, more than 2,700 accidents occurred between Interchange 9 (Route 9) in Tarrytown and Interchange 10 (Route 9W) in Nyack, the segment that includes the Tappan Zee Bridge, its approaches, and its toll plaza. Accident rates are a function of the number of accidents over a period of time, length of highway, and the traffic volume at that location. From 2001 to 2009, the accident rate on this 3.89-mile roadway segment was *2.15 accidents per million miles of vehicle travel (acc/MVM). This is* more than twice NYSTA's statewide average (see **Figure 1-5**). *The rate is also considerably*

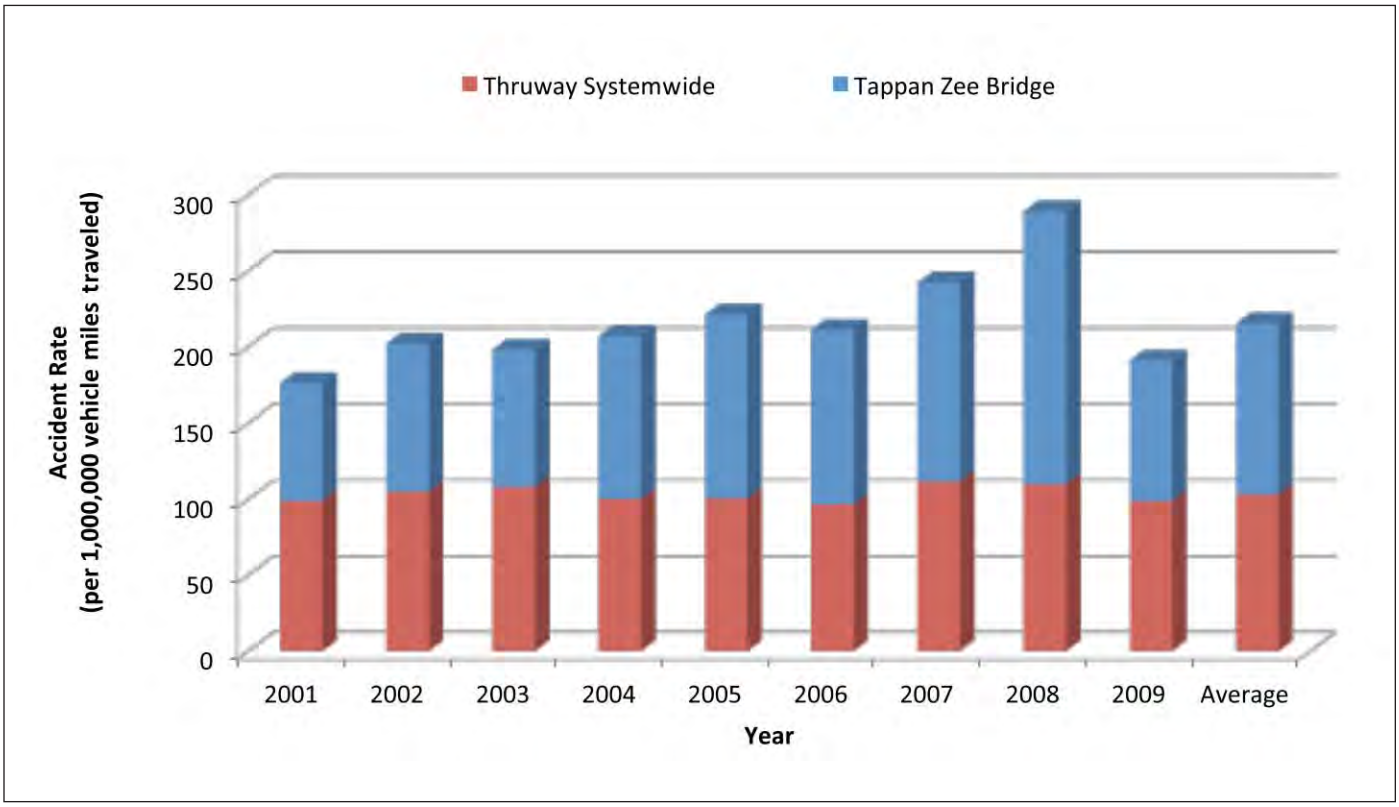

Figure 1-5
Accident Rates

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Aerial View of Toll Plaza

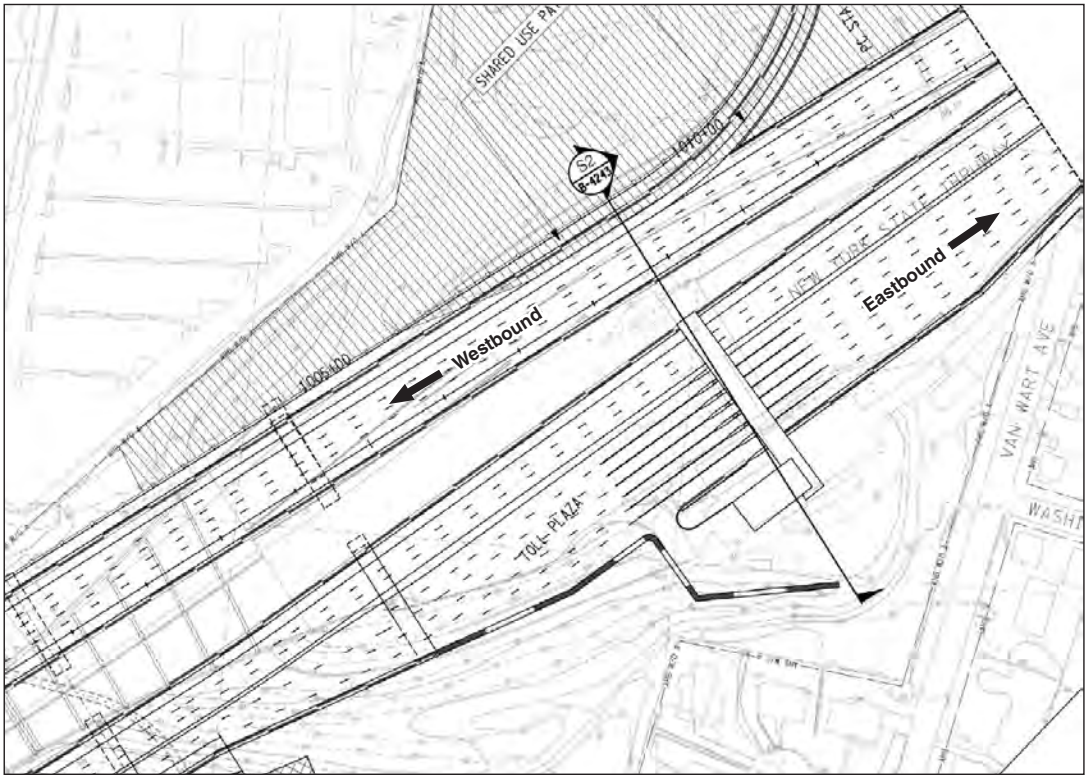

Figure 1-6
Existing Toll Plaza Operations

higher than the statewide mean for a 7-lane, limited-access highway, which ranged between 1.12 and 1.28 acc/MVM from 2008 to 2010.[1]

Responding to accidents on the bridge is also difficult. Since damaged or disabled vehicles cannot be moved to a shoulder, they block the general traffic lanes until they can be removed from the bridge, resulting in lengthy traffic delays *and, in some cases, the full closure of the bridge in one or both directions (see* ***Figure 1-5****). High traffic volumes* on the bridge and *the* lack of emergency *access* and shoulders also adversely *affect* emergency calls and response times between Rockland and Westchester Counties.

1-5-3 SECURITY DEFICIENCIES

The Tappan Zee Bridge is a critical infrastructure element within the corridor and region. *In view* of the region's limited river crossings, the Tappan Zee Bridge *is* a vital link to communities east and west, as well as north and south, of the bridge. In addition, substantial truck traffic crosses the Tappan Zee Bridge. If the Tappan Zee Bridge were to become inoperable, the consequences would be severe to the regional and national transportation networks and economies.

The existing bridge lacks structural *and service* redundancy that can avert extreme events and lacks safety measures to aid in *the* response to such events. These deficiencies, in combination with the prominence of this crossing as a critical roadway link, *highlight* the need to incorporate *redundancy and* modern security infrastructure at this Hudson River crossing.

1-5-4 MOBILITY DEFICIENCIES

Traffic patterns during a typical weekday peak period (6 AM to 10 AM and 4 PM to 8 PM) demonstrate the predominant nature of travel in the corridor. The volumes are higher eastbound during the morning commute period toward the larger employment centers in Westchester County and New York City. Westbound traffic volumes are higher in the evening commute period as workers return home. In response to the corridor's peak travel pattern and to better handle growing volumes, NYSTA added a seventh (median) lane to the previously six-lane bridge in 1992. NYSTA uses a movable barrier system to assign this median lane to the peak traffic direction, providing four eastbound lanes in the morning peak and four westbound lanes in the evening. Despite the addition of a travel lane in the peak direction, the bridge remains *susceptible to incidents and high levels of congestion* with frequent travel delays and a poor level of service *due to non-standard lane widths and lack of shoulders,* particularly during the evening commuter period.

The Tappan Zee Bridge collects tolls in one (eastbound) direction. The existing bridge toll plaza in Tarrytown provides 10 toll-collection lanes within the toll plaza itself. The toll plaza generally operates with four E-ZPass lanes and six cash or cash/E-ZPass lanes. There are also two dedicated, higher speed (35 mph) E-ZPass lanes between the toll plaza and the inside median of the highway. Under peak travel demand periods in the

[1] New York State Department of Transportation, *Highway Design Manual* (May 2011).

morning weekday peak hour, the toll plaza generally handles the flow of traffic with minimum delay, given that almost 90 percent of the drivers have E-ZPass. The greater challenge is on weekends, when the traffic volumes are lower, but E-ZPass usage is less than 60 percent. As such, queues of cash-paying drivers eventually block access to the E-ZPass lanes, spilling back onto the bridge and creating traffic delays that reach well into Rockland County.

The existing Tappan Zee Bridge does not allow for multi-modal travel. While buses do operate across the bridge, they use general traffic lanes *and are subject to the same difficulties as private vehicles and trucks*. Despite the presence of well-connected trailway systems on either side of the Tappan Zee Bridge, cyclists and pedestrians are prohibited from *crossing* the bridge itself. The nearest Hudson River crossings for cyclists and pedestrians are the George Washington Bridge, 15 miles to the south, and the Bear Mountain Bridge, 18 miles to the north.

1-6 GOALS AND OBJECTIVES

Project development is being guided by three goals with objectives that address the deficiencies of the existing bridge described above. The goals and their supporting objectives are as follows:

- Ensure the long-term vitality of this Hudson River crossing by:
  - Providing for sufficient strength and stability compliant with current standards to carry transport loading;
  - Providing for a robust and redundant structure to survive extreme natural events, including earthquakes and hurricanes;
  - Providing for a robust and redundant structure to survive extreme manmade events, including fires, vessel *allisions*, vehicular overloads, and vehicular accidents;
  - Ensuring compliance with NYSTA operational requirements; and
  - Providing for a serviceable structure with a life span in excess of 100 years before major maintenance is required.
- Improve transportation operations and safety on the crossing by:
  - Ensuring compliance of horizontal and vertical geometry with current engineering design standards, as practicable;
  - Providing for horizontal geometry that maximizes sight distances;
  - Providing for vertical geometry that minimizes grade changes;
  - Providing for standard, 12-foot traffic lanes;
  - Providing for adequate separation of eastbound and westbound traffic;
  - Providing for shoulders that meet current engineering design standards;
  - Eliminating reversible traffic lanes;
  - *Providing service redundancy to maintain traffic during emergencies;*
  - Providing for security infrastructure to monitor bridge operations; and
  - Providing for improved emergency response.

- Maximize the public investment in a new Hudson River crossing by:
  - Providing a cost-effective crossing that maximizes value over the lifespan of the structure;
  - Minimizing effects on existing highways;
  - Maximizing the use of existing right-of-way;
  - Sequencing construction to minimize effects on vehicular traffic operations;
  - Reducing maintenance requirements and operating costs;
  - Providing for trans-Hudson access for cyclists and pedestrians; and
  - Providing a crossing that does not preclude future trans-Hudson transit services.

Project planning efforts *have and* will *continue to* consider potential effects on social, economic, and environmental conditions, and the EIS will document these effects*, including measures to avoid, minimize, or mitigate adverse impacts to the extent practicable and feasible*.