CHAPTER 1
Introduction
CHAPTER 1. Introduction

The New York State Department of Transportation (NYSDOT), in cooperation with the Federal Highway Administration (FHWA), has prepared this Final Design Report/Final Environmental Impact Statement (FDR/FEIS) for the Van Wyck Expressway (VWE) Capacity and Access Improvements to John F. Kennedy (JFK) Airport Project (Project) in accordance with the requirements of the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), as defined in Title 40 of the Code of Federal Regulations (CFR) Parts 1500-1508, the FHWA Environmental Impact and Related Procedures, Final Rule (23 CFR Part 771), and the NYSDOT Procedures for Implementation of the State Environmental Quality Review Act, as defined in Title 17 of the New York Codes, Rules and Regulations Part 15 (17 NYCRR Part 15).

1.1 PROJECT CLASSIFICATION

The Project is federally and state funded, and is classified as a NEPA Class I action under 23 CFR 771, which requires the preparation of a federal Environmental Impact Statement (EIS) to determine the likely impacts of the Project on the environment. The NYSDOT and FHWA, as joint lead agencies, have advanced the Project through the NEPA EIS process in consideration of public and agency comments received about the Project.

The Project is classified as a State Environmental Quality Review Act (SEQRA) non-Type II action, indicating that it has the potential for significant environmental impacts or substantial controversy on environmental grounds. Under 17 NYCRR Part 15, given that a federal EIS has been prepared, the NYSDOT and other State of New York agencies undertaking a discretionary action for the Project have no obligation to prepare an additional EIS under SEQRA. The NYSDOT has given full consideration to the federal Final EIS (FEIS) and prepared a joint Record of Decision (ROD) with the FHWA. The FHWA has issued a single FEIS and ROD document pursuant to 23 CFR 771.124.

Table 1-1 lists the environmental classifications for the Project.

<table>
<thead>
<tr>
<th>NEPA Classification:</th>
<th>Class I EIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>By:</td>
<td>FHWA</td>
</tr>
<tr>
<td>SEQRA Type:</td>
<td>Non-Type II (EIS)</td>
</tr>
<tr>
<td>By:</td>
<td>NYSDOT</td>
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</table>
1.2 PROJECT LOCATION

The Project is located in Queens, New York, along a 4.3-mile segment of the VWE, also known as Interstate 678 (I-678), including the northbound and southbound service roads (Figure 1-1). The northern project limit is Hoover Avenue and the southern project limit is the southern end of Federal Circle at the entrance to JFK Airport. The Notice of Intent to prepare an EIS for the Project, published in the Federal Register on June 1, 2017, identified the Kew Gardens Interchange (KGI) as the northern limit of the Project. However, the northern limit was subsequently refined to Hoover Avenue, based on traffic modeling and preliminary design during the development of the Draft Design Report/Draft Environmental Impact Statement (DDR/DEIS) for the Project.

A general Study Area extending one-half mile from the project corridor was established for the Project (Figure 1-2). The Study Area is approximately 4.8 square miles and includes a variety of residential, commercial, educational and transportation uses. Jamaica Station, which is a major transportation hub connecting to the Long Island Rail Road (LIRR) Main Line, Atlantic Branch, and Montauk Branch, three New York City subway lines, 17 New York City bus routes, and the Nassau Inter-County Express, and is near the northern end of the project corridor. Four LIRR bridges (carrying 13 LIRR tracks) cross over the project corridor at Jamaica Station. The AirTrain JFK, an elevated railway, operates between Jamaica Station and JFK Airport within the project corridor.

JFK Airport, operated by the Port Authority of New York and New Jersey, covers 4,930 acres and has more than 30 miles of roadway. The airport served 59.4 million passengers in 2017 and approximately 37,000 people are employed at JFK Airport. It is one of the world’s leading international cargo centers.

Several neighborhoods are adjacent to the project corridor, including the Kew Gardens, Briarwood, Jamaica, Richmond Hill, and South Ozone Park neighborhoods. Both the Kew Gardens and Jamaica neighborhoods have active urban centers near the northern part of the corridor. The Jamaica Business District is a busy urban center along Atlantic Avenue (east of the project corridor) that contains numerous retail establishments, performing arts venues, and a transportation hub, as well as City University of New York (CUNY) York College. The neighborhoods adjacent to the central and southern parts of the corridor are primarily residential with some commercial and retail development.

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Figure 1-1. Project Location

Source: New York City Department of City Planning, 2018
Figure 1-2. General Study Area

Source: New York City Department of City Planning, 2017
Below is specific information related to the Project’s identification and location:

- **Route number:** I-678
- **Route name:** Van Wyck Expressway
- **SH (state highway) number and official highway description:** I-678 (48-3, 50-1, 50-2, 50-3, 51-1)
- **BIN (bridge identification number) with feature carried and feature crossed:**
  - BIN 1076449 – I-678 over southbound Main Street
  - BIN 1055720 – 86th Avenue pedestrian bridge over I-678
  - BIN 1055710 – Hillside Avenue over I-678
  - BIN 1055700 – Jamaica Avenue over I-678
  - BIN 7066687 – Long Island Rail Road over I-678
  - BIN 7066688 – Long Island Rail Road over I-678
  - BIN 7076800 – Long Island Rail Road over I-678
  - BIN 7076810 – Long Island Rail Road over I-678
  - BIN 1055699 – 94th Avenue and Atlantic Avenue over I-678
  - BIN 1055680 – 101st Avenue over I-678
  - BIN 1055670 – Liberty Avenue over I-678
  - BIN 1055660 – 109th Avenue over I-678
  - BIN 1055650 – Linden Boulevard over I-678
  - BIN 1055640 – Foch Boulevard over I-678
  - BIN 1055630 – Rockaway Boulevard over I-678
  - BIN 1055620 – 133rd Avenue over I-678
  - BIN 1076499 – I-678 over North Conduit Avenue
  - BIN 1055619 – I-678 over Belt Parkway
  - BIN 1076489 – I-678 over South Conduit Avenue
  - BIN 1075630 – Nassau Expressway over I-678
  - BIN 1075710 – Northbound I-678 over southbound I-678 ramp to Nassau Expressway
  - BIN 5522079 – I-678 over North Federal Circle
- **City/Village/Township:** Queens, New York
- **County:** Queens
- **Length:** 4.3 miles
- **Reference Markers (RM):** Northbound I-678 from RM 678I X5M1 1000 to RM 678I X5M1 1042 and Southbound I-678 from RM 678I X5M1 2042 to RM 678I X5M1 2000. Highway reference markers are small green signs located approximately every 0.1 mile along state highways to serve as location references. They are used to track crash data and may also be used to track or identify work locations along the highway.
1.3 PROJECT PURPOSE, OBJECTIVES, AND NEED

1.3.1 Project Purpose and Objectives

The purpose of the Project is to provide increased capacity on the VWE between the KGI and JFK Airport to improve vehicular access to and from JFK Airport. In addition, the Project will address operational, geometric, and structural deficiencies on the VWE between the KGI and JFK Airport.

The following objectives have been established to further refine the Project purpose:

- Provide an additional vehicular travel lane on the VWE in each direction between JFK Airport and the KGI.
- Address geometric and operational deficiencies of the VWE exit/entrance ramps within the identified project limits.
- Address structural deficiencies on the bridges on or crossing over the VWE within the project limits.

1.3.2 Project Need

The VWE is the major transportation corridor providing access to and from JFK Airport, which is a major international gateway to the United States, with 70 carriers serving 100 international nonstop destinations. Overall, the airport handled 59.4 million passengers in 2017 with over 400,000 aircraft operations annually and is one of the world’s leading international air cargo centers. According to the January 2017 A Vision Plan for John F. Kennedy International Airport: Recommendations for a 21st Century Airport for the State of New York,2 the number of passengers at JFK Airport is expected to grow by nearly one-third to over 75 million passengers by 2030. The VWE also serves as the major route for commercial truck traffic to get to and from the airport, with trucks accounting for 8 percent of morning peak volume and 5 percent of evening peak volume on I-678.

The needs for the Project are described below.

- **Reduce travel time on the VWE between the KGI and JFK Airport** – Nearly 170,000 vehicles per day travel on the VWE from the KGI to JFK Airport, which has a six-lane capacity and is congested for extended hours every day. The expected overall airport growth is anticipated to result in additional traffic volumes on the VWE, and thus, worsen the roadway congestion.

  Traffic studies conducted in spring 2017 during weekdays in the project corridor show that vehicle queues on the northbound VWE mainline start between the exit to Main Street and the Hillside Avenue overpass. The queue extends south to the 133rd Avenue overpass in the AM peak period and to the Rockaway Boulevard overpass in the PM peak period. Similarly, on the southbound VWE mainline, the start of the queue occurs near the 101st Avenue overpass and stretches into the KGI in the afternoon peak period.

  As shown in Table 1-2, in the morning peak period, average travel times between the KGI and JFK Federal Circle (approximately 4.3 miles) are nearly 20 minutes and 9 minutes in the northbound and southbound directions, respectively. In the afternoon peak period, average travel

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times between the KGI and JFK Federal Circle are nearly 15 minutes and 13 minutes in the northbound and southbound directions, respectively. In comparison, the travel time under free-flow conditions on this segment of the VWE is approximately 5 minutes in each direction.

The average morning delay per vehicle is estimated to be over 15 minutes northbound and 4 minutes southbound. In the afternoon, congestion results in average delays of approximately 10 minutes northbound and 8 minutes southbound. Northbound congestion begins around 6:00 a.m. and remains throughout the day, typically not dissipating until late in the evening. Congestion along the VWE affects the average speed of drivers in both directions and increases queuing, defined as cars traveling under 30 miles per hour (mph), along the corridor. Average peak period travel speeds are 12 to 17 mph (northbound) and 19 to 29 mph (southbound).

Table 1-2. Existing Queue Length, Speed, Travel Time, and Delay Along the Van Wyck Expressway between the Kew Gardens Interchange and JFK Airport during the Peak Periods, 2017

<table>
<thead>
<tr>
<th></th>
<th>AM Northbound</th>
<th>AM Southbound</th>
<th>PM Northbound</th>
<th>PM Southbound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average Queue (miles)</td>
<td>Average Speed (mph)</td>
<td>Average Travel Time (minutes)</td>
<td>Average Delay (minutes)</td>
</tr>
<tr>
<td>AM</td>
<td>2.5</td>
<td>12.4</td>
<td>19.8</td>
<td>15.2</td>
</tr>
<tr>
<td>Northbound</td>
<td>0.0[1]</td>
<td>28.6</td>
<td>8.6</td>
<td>4.0</td>
</tr>
<tr>
<td>Southbound</td>
<td>2.2</td>
<td>16.7</td>
<td>14.7</td>
<td>10.1</td>
</tr>
<tr>
<td>PM</td>
<td>2.3</td>
<td>19.2</td>
<td>12.8</td>
<td>8.2</td>
</tr>
</tbody>
</table>

[1] As part of the traffic studies, an aerial survey of traffic conditions was conducted to determine the location and length of any vehicular queuing on the mainline. These aerial surveys did not identify any measurable traffic queues that occurred for any measurable length of time. The mainline speeds and densities, however, showed that some sporadic queuing occurred between the Grand Central Parkway connector entrance and the Liberty Avenue exit ramp in the vicinity of heavy merges and weaving areas.

The Highway Capacity Manual and American Association of State Highway and Transportation Officials Geometric Design of Highways and Streets (Green Book) use letters A through F as standards for level of service (LOS) on highways, with A being the best and F being the worst. Under ideal conditions (i.e., free-flow traffic), vehicle density per lane per mile should be less than 35. Due to the severity of congestion, vehicle density along the VWE corridor is typically 100 vehicles per mile per lane in the northbound direction during the AM peak period and typically over 75 in the southbound PM peak period. This creates a poor LOS and adversely affects travel conditions along the VWE.

Traveling northbound, the corridor operates at LOS E (unstable flow, operating at capacity) or F (forced or breakdown flow) as measured by vehicles per mile per lane between Nassau Expressway and the exit ramp to Queens Boulevard during both the morning and afternoon peak hours. Southbound conditions are slightly better, with the corridor operating at a LOS E or F for shorter durations and shorter sections from Hillside Avenue to North Conduit Avenue during both peak periods.

Thus, there is a need to reduce travel time on the VWE between the KGI and JFK Airport.

- **Address operations and geometry of ramps** – The location and overall geometry of exit/entrance ramps contribute to the existing congestion on the VWE mainline. Non-conforming geometric design features include shorter than recommended ramp spacing and short acceleration/deceleration ramp lengths (see Appendix C of this FDR/FEIS). Additionally, several exit ramps are along the northbound and southbound service roads near intersections with local
streets and, thus, have short storage capacity that creates backups onto the ramps and occasionally into the mainline and along both service roads. The absence of acceleration lanes along the northbound and southbound service roads forces the traffic exiting the mainline to accelerate from a stopped condition to enter the traffic on the service roads. The location and close proximity of exit ramps to intersections and the absence of acceleration lanes along the northbound and southbound service roads contribute to crashes along both service roads.

The nonstandard shoulder widths on the ramps also contribute to backups on the mainline. Passing a vehicle that is stopped on a narrow shoulder leads to a slowdown and backup of cars exiting and entering the VWE. Additionally, the nonstandard vertical stopping sight distance and horizontal curvature on some of the existing ramps negatively affects operations by limiting the ability to see vehicles ahead and unnecessarily slowing down traffic to navigate the nonstandard ramp geometry. These deficiencies increase the likelihood of crashes. Table 1-3 shows the VWE mainline segments that have a crash rate greater than or equal to the New York state average crash rate for similar highway facilities of 1.1 crashes per million vehicle miles. Appendix B provides the crash data report.

<table>
<thead>
<tr>
<th>Segment</th>
<th>Segment Length (mile)</th>
<th>Total No. of Crashes</th>
<th>Crashes (per million vehicle miles)</th>
<th>NY State Average (per million vehicle miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Southbound Linden/Rockaway Boulevards</td>
<td>0.2</td>
<td>17</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>2 – Southbound North Conduit Avenue/Belt Parkway</td>
<td>0.3</td>
<td>31</td>
<td>1.8</td>
<td>1.1</td>
</tr>
<tr>
<td>2 – Northbound JFK Airport to North Conduit Avenue</td>
<td>0.4</td>
<td>39</td>
<td>2.1</td>
<td>1.1</td>
</tr>
<tr>
<td>3 – Northbound Atlantic Avenue/Hillside Avenue</td>
<td>0.4</td>
<td>32</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>4 – Grand Central Parkway Exit</td>
<td>0.4</td>
<td>104</td>
<td>3.3</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Source: New York City Department of Transportation

- **Address structural deficiencies** – Most of the bridges within the project limits are over 60 years old and require repairs, major rehabilitation, or replacement. The Rockaway Boulevard and Atlantic Avenue bridge decks are in a deteriorated condition and need replacement. The VWE bridges over South Conduit Avenue and North Conduit Avenue have various superstructure deficiencies. The LIRR bridges over the VWE are also in fair to poor condition with many low-rated structural elements. Several other bridges within the project limits exhibit deteriorated elements, such as bearings, joints, piers, abutments, pedestals, and bridge seats.

Chapters 2 and 3 of this FDR/FEIS provide a description of each bridge.

The Project purpose and objectives, as stated in Section 1.3.1, were developed based on these identified needs within the project corridor.

**1.4 FDR/FEIS CONTENTS**

This FDR/FEIS describes the history and context of the Study Area, including existing conditions, deficiencies, and needs for the Project (Chapter 2); discusses the alternatives being studied for the Project (Chapter 3); assesses social, economic, and environmental effects (Chapter 4); and discusses public involvement and opportunities for public participation in the Project (Chapter 5).
1.5 PROJECT SCHEDULE

Construction is expected to begin in 2020 and continue for approximately five years. Table 1-4 provides the project schedule.

Table 1-4. Project Schedule

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date Occurred/Tentative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release of Scoping Report</td>
<td>April 2018</td>
</tr>
<tr>
<td>DDR/DEIS Public Comment Period</td>
<td>Winter 2019</td>
</tr>
<tr>
<td>Public Hearings</td>
<td>Winter 2019</td>
</tr>
<tr>
<td>Release of Final Design Report/Final Environmental Impact Statement and Record of Decision</td>
<td>2019</td>
</tr>
<tr>
<td>Design Approval</td>
<td>2019</td>
</tr>
<tr>
<td>Right-of-Way Acquisition</td>
<td>2019</td>
</tr>
<tr>
<td>Construction Start</td>
<td>2020</td>
</tr>
<tr>
<td>Construction Complete</td>
<td>2025</td>
</tr>
</tbody>
</table>

1.6 CONTACT INFORMATION

For further information about the Project, please visit the project website (www.dot.ny.gov/vwe) or contact:

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