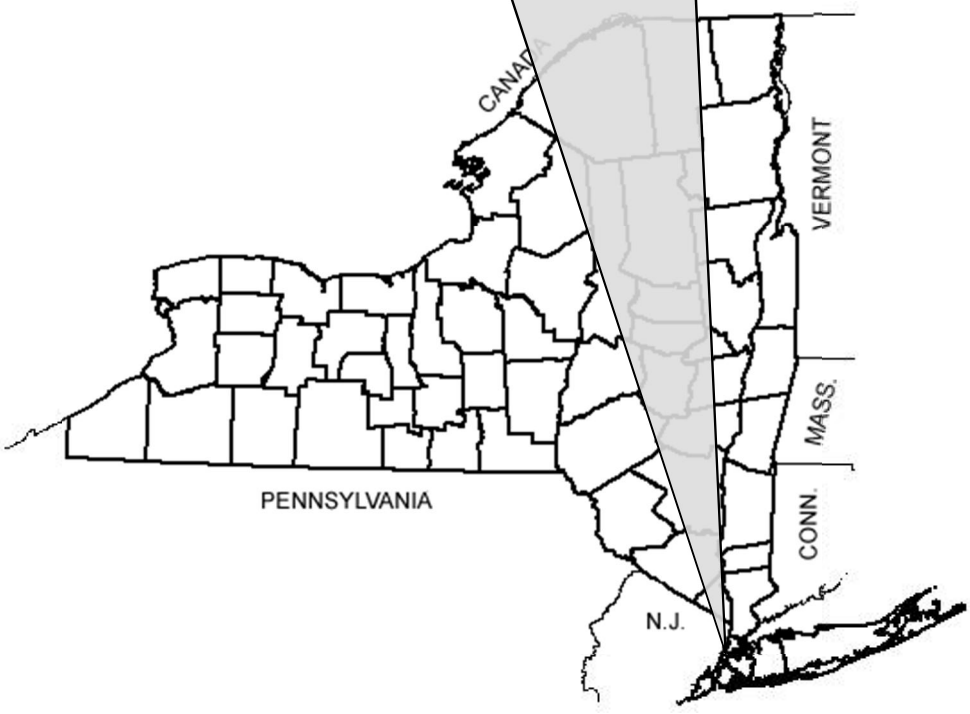
TRANSPORTATION PROJECT REPORT

FINAL DESIGN REPORT/ ENVIRONMENTAL ASSESSMENT (DR/EA)

January 2016

East Midtown Waterfront Esplanade and Greenway
P.I.N. X776.00 and X770.14
East 41st Street to East 60th Street on East River,
New York City



U.S. Department of Transportation Federal Highway Administration

New York State Department of Transportation

Project Sponsors:

NYC Economic Development Corporation

NYC Department of Transportation

NYC Department of Parks & Recreation

PIN X776.00 & PIN X770.14
EAST MIDTOWN WATERFRONT ESPLANADE AND GREENWAY
EAST 41ST STREET TO EAST 60TH STREET ON EAST RIVER
NEW YORK, NEW YORK

DESIGN REPORT/ENVIRONMENTAL ASSESSMENT

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

Submitted pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303. This assessment was prepared in consultation with FHWA and has been reviewed for scope and is released for comments.

8/19/15
DATE

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CHAPTER 1 - EXECUTIVE SUMMARY

1.1 Introduction

This report was prepared in accordance with the NYSDOT Project Development Manual, 17 NYCRR (New York Codes, Rules and Regulations) Part 15, and 23 CFR (Code of Federal Regulations) 771. The Project needs have been identified (Section 1.2.2); objectives established (Section 1.2.3) to address the needs; and cost-effective alternatives developed (Section 1.3). The design of this project is federally funded and will follow the Procedures for Locally Administered Federal Aid Projects (PLAFAP).

1.2 Purpose and Need

1.2.1 Project Location

The East Midtown Waterfront Esplanade and Greenway, hereafter referred to as the Proposed Project, is a proposed approximately 0.96 mile long esplanade located along the Manhattan side of the East River in New York, New York. The Proposed Project, as shown in the Project Location Map included as Figure 1.2, is offset approximately 30 feet from the eastern side of the Franklin D. Roosevelt East River (FDR) Drive (Route 907L), from East 41st Street to East 60th Street, which together define the project limits.

The Proposed Project includes:

- The United Nations Esplanade ("UN Esplanade") located along the waterfront adjacent to the United Nations Headquarters and other high-rise developments from East 41st to 53rd Streets.
- The Outboard Detour Roadway Esplanade ("ODR Esplanade") located along the waterfront from East 53rd to 60th Streets, where the portions of the proposed esplanade would be placed over existing ODR caissons.
- Two new upland pedestrian bridge connections ("Upland Bridge Connections") are also proposed to connect the landside west of the FDR Drive to the esplanades at East 48th Street and at East 54th Street.

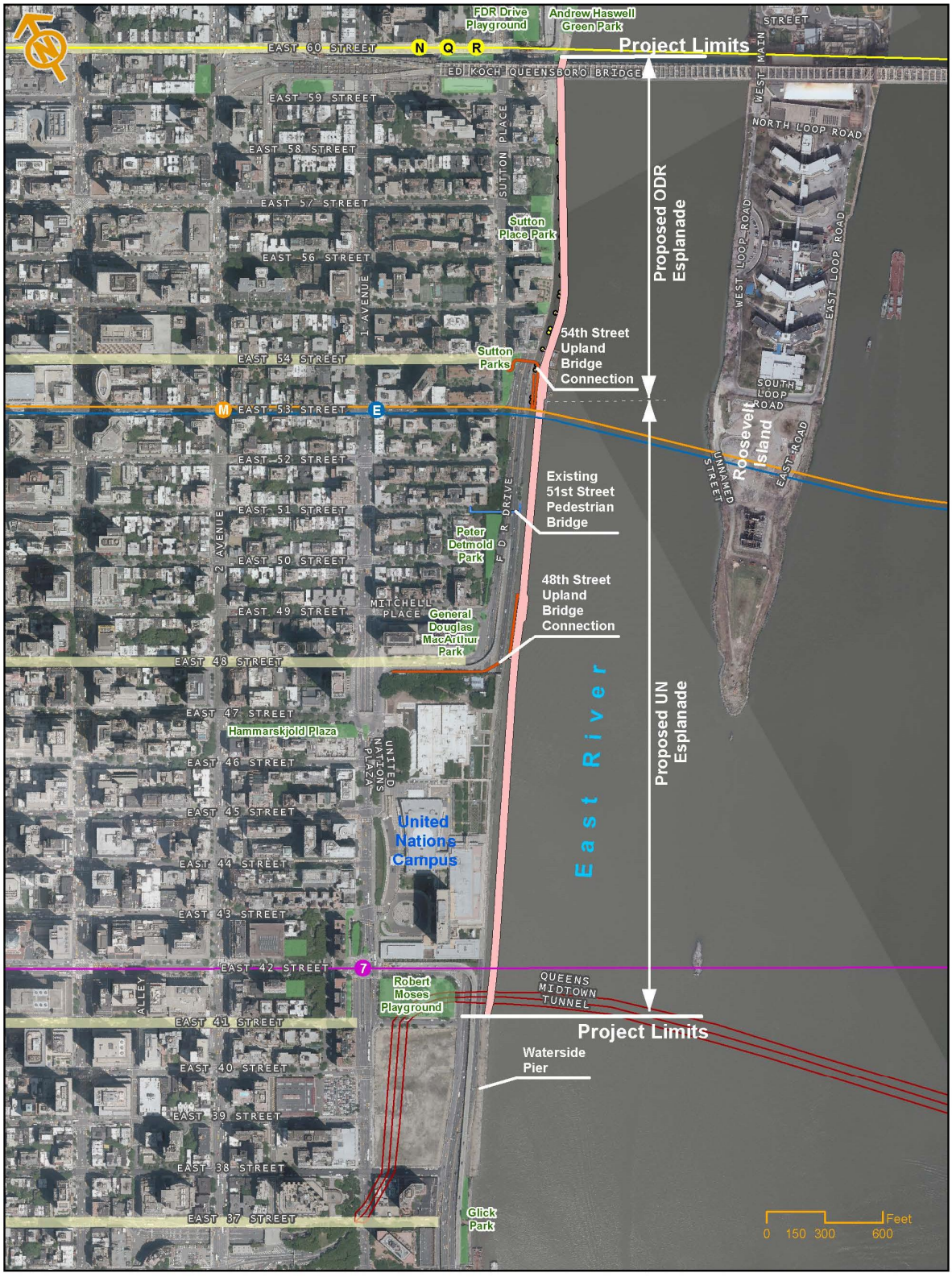
1.2.2 Project Need

The City of New York has established several waterfront-related policy goals within its *Vision 2020: NYC Comprehensive Waterfront Plan (2011)* and the *Manhattan Waterfront Greenway Master Plan (2004*). The proposed project is consistent with two common goals addressed in these documents including:

Goal 1: Expand waterfront public access – improving connectivity and continuity by targeting gaps in otherwise continuous stretches of public access.

Goal 2: Enliven the waterfront – provide a range of attractive uses integrated with adjacent upland communities and encourage the integration of water-dependent and water-enhancing uses within the waterfront.

Figure 1.2-1 – Project Location Map



1.2.3 Project Objectives/Purpose

In order to achieve these goals, the objectives and purpose of the Proposed Project are to:

(1) Close the existing gap in the Manhattan Waterfront Greenway between East 41st Street and East 60th Street along the East River, providing continuity and a transportation link between existing public esplanades to the north and south.
(2) Provide public access to the waterfront and new public open space for the densely populated communities of East Midtown where virtually no waterfront access and limited public open space currently exists.
(3) Provide a safe waterfront area for a wide range of users, including children, the disabled and elderly.
(4) Provide opportunities for water-dependent and water-related uses.
(5) Promote New Yorkers' understanding of and relationship to the East River/Hudson River Estuary as a natural feature and historical landscape.

1.3 Alternatives Considered

The following alternatives have been identified and assessed.

No-Action Alternative: Under the No-Action Alternative, no additional esplanade facility would be constructed along the East River waterfront between East 41st and East 60th Streets. The waterfront area adjacent to the United Nations Headquarters between East 42nd and East 48th Streets would remain unchanged, and the existing ODR caissons within the East River between East 54th and East 60th Streets would likely require removal. No connection to the Manhattan Waterfront Greenway at 38th or 60th Streets would be achieved There would be no new waterfront access or new open space created. Therefore, this is not considered a feasible alternative.

Alternative 1 – Single Shared-Use Path: Alternative 1 would involve construction of a 40-foot wide shared-use esplanade from East 41st to 60th Streets that would accommodate bicyclists and pedestrians (walkers, joggers, skaters) within a shared pathway. Alternative 1 would reuse 20 of the existing ODR caissons. Upland pedestrian bridge connections ("Upland Bridge Connections") at East 48th and East 54th Streets would be provided as well as areas wider than 40 feet (referred to as "nodes" throughout the report) that would extend the proposed esplanade an additional 10 feet (for a total 50 feet) into the East River at each Upland Bridge Connection landing to provide safe circulation space and to incorporate water dependent uses. The esplanade would be divided into two sections: UN Esplanade from East 41st Street to East 53rd Street and ODR Esplanade from East 53rd Street to East 60th Street, would be offset approximately 30 feet eastward from the bulkhead along the shoreline, and would incorporate water dependent uses. As a result of conflicts between bicyclists and pedestrians and other users on the path, the shared facility would operate at a poor level of service under peak conditions and below the level required under NYSDOT guidelines.

Alternative 2 – Separated Bicycle and Pedestrian Paths: Alternative 2 would similarly involve construction of a 40-foot wide esplanade from East 41st to 60th Streets. Upland Bridge Connections at East 48th and East 54th Streets would be provided as well as areas wider than 40 feet (referred to as "nodes" throughout the report) that would extend the proposed esplanade an additional 10 feet (for a total 50 feet) into the East River at each Upland Bridge Connection landing to provide safe circulation space and to incorporate water dependent uses. Alternative 2 would also reuse 20 of the existing ODR caissons. As with Alternative 1, the esplanade in Alternative 2 would be divided into two sections (UN and ODR Esplanades) offset approximately 30 feet eastward from the bulkhead, and would incorporate water dependent uses. However, Alternative 2 would include a two-way bicycle-only path ("bike path") that would provide Class I operations and a separate pedestrian path (see Appendix A for Concept Design Plans).

A review of these two alternatives confirmed that both would meet many of the same project goals, including filling the existing gap in the East River waterfront, and increasing the adjacent community's waterfront access and recreational opportunities. Both would involve roughly the same amount of landside and waterside construction activities and associated potential impacts that would need to be addressed. However, the shared-use path operations under Alternative 1, with bike riders and pedestrians competing for space in the same pathway, would result in unsatisfactory level of service (LOS) conditions (LOS "E" and "F" for bicyclists and pedestrians, respectively). This would be below the LOS "C" or better required under NYSDOT *Highway Design Manual* guidelines for such facilities, and would not efficiently meet projected demand, especially for bicycle traffic. In contrast, acceptable level of service conditions (LOS "C" for the bicycle-only path and LOS "B" for the pedestrian-only path) would be achieved with Alternative 2, which has separate bicycle and pedestrian paths.

Therefore, the Preferred Alternative is Alternative 2 - Bicycle-Only Path and Separate Pedestrian Path. Further details regarding these alternatives and the basis for selecting Alternative 2 as the Preferred Alternative are provided in Chapter 3 – Alternatives.

1.4 Environmental Effect of Alternatives

Alternatives 1 and 2 are both compatible with surrounding land uses and zoning and positively contribute to neighborhood cohesion through the addition of open space and expanded waterfront access. View corridors to the East River would not be significantly altered by the proposed esplanade and the development would be consistent with the adjacent urban landscape. Both would involve construction within a coastal zone management area, tidal wetlands and 100-year floodplain; however, either alternative's proposed esplanade would be consistent with State and local coastal zone policies and minimal encroachment on floodplains would occur. Several Federally-listed marine species may occur in the vicinity of the project limits within the East River. Individual species may be adversely affected during the esplanade construction but this is not likely to be an impact to the corresponding populations (see Chapter 4 for further details).

Based on the Cultural Resources Survey of the project area and subsequent Findings Documentation (see Appendix B), the New York State Historic Preservation Office (SHPO) has confirmed that no archeological resources or eligible architectural resources would be impacted by either alternative (see correspondence in Appendix J). The impacts to Peter Detmold Park and Sutton Parks (a NYCDPR Section 4(f) resource) were found to be *de minimis* (see Appendix F). The Proposed Project would not adversely affect the activities, features, and attributes that qualify Sutton Parks for protection under Section 4(f). FHWA concurred with both the SHPO opinion and Section 4(f) determination (see Appendices J and F, respectively). There would be minor, temporary construction-related impacts to air, traffic, noise, hazardous materials and natural resources, which would be mitigated with measures incorporated into the project design. Overall, neither Alternative 1 nor 2 would result in a significant impact in any category. However, as noted above, the esplanade design capacity under Alternative 1 would not be sufficient to provide an acceptable level of service and could not adequately handle projected future demand, especially for bicycle trips.

Under the No-Action Alternative there would be no potential impacts to natural resources (such as marine species, wetlands, floodplains), cultural resources or parks. The habitat within the East River would be protected and there would be no construction-related impacts to air, water, or noise. Land uses and zoning actions around the project area would still occur with the development of parcels along the corridor but without the neighborhood amenity of a pedestrian/bicycle path. The No-Action Alternative would not be compatible with relevant New York City comprehensive plans such as PlaNYC 2030 (2007, 2011), Waterfront Vision and Enhancement Strategy (WAVES, 2011) and Manhattan CB 6 *197-A Plan for the Eastern Portion of CB6* (2007).

The Proposed Project is categorized as a Type II Action under the New York State Environmental Review Act (SEQRA) procedures as determined under SEQRA regulations (6 NYCRR 617). Under National Environmental Protection Act (NEPA) regulations (23 CFR 771.115), the Proposed Project is categorized as a Class III action, those for which the significance of potential environmental impact cannot be initially

established, and which require preparation of an Environmental Assessment (EA) to determine the required environmental documentation necessary.

Exhibit 1.4-1 lists the projected Federal, New York State and local environmental permits and approvals that would be required for the Proposed Project. There has been extensive consultation with the key permitting agencies regarding the planning, design and construction of the Proposed Project to ensure the full consideration of potential impacts in this EA and that potential impacts of the project's construction and operation are avoided, minimize and mitigated to the maximum extent practicable.

Exhibit 1.4-1
Anticipated Federal, State, and Local Environmental Approvals

AGENCY	PERMIT/APPROVAL	CITATION
Federal		
U.S. Coast Guard (USCG)	Construction of Bridges over Navigable Waters	Section 9 of the Rivers and Harbors Appropriation Act of 1899; 33 USC § 403 General Bridge Act of August 2, 1946; 33 U.S.C. 525, 528, 530, 533
	Navigation and Navigable Waters Permit – Private Aids-to-Navigation to a Fixed Structure	33 CFR Chapter 1, Part 66
Federal Highway Administration (FHWA)	National Environmental Policy Act (NEPA) 11990 Wetlands Finding	The National Environmental Policy Act of 1969, as amended Executive Order 11990 Protection of Wetlands
U.S. Army Corps of Engineers (USACE)	Nationwide Permit #15	Section 404 of the Clean Water Act; 33 USC § 1251 et. seq.
U.S. Fish and Wildlife Service (USFWS)	USFWS Consultation under Endangered Species Act, Section 7	Endangered Species Act; 16 USC § 1531-1543
	USFWS Consultation under Migratory Bird Treaty Act of 1918	16 USC § 703-712
Advisory Council on Historic Preservation (ACHP)	Consultation regarding National Historic Preservation Act, Section 106	16 USC § 470f
	Abandoned Shipwreck Act of 1987 Federal Guidelines Authority transferred to State Historic Preservation Officer (SHPO)	43 USC § 2101-2106
National Marine Fisheries Service (NMFS)	NMFS Consultation under Endangered Species Act, Section 7	Endangered Species Act; 16 USC § 1531-1543
	NMFS Consultation under Magnuson-Stevens Fishery Conservation and Management Act	16 USC § 1801

Exhibit 1.4-1 Anticipated Federal, State, and Local Environmental Approvals		
AGENCY	**PERMIT/APPROVAL**	**CITATION**
New York State		
Department of Environmental Conservation (NYSDEC)	Water Quality Certificate	Section 401 of the Clean Water Act (33 USC 1341)
	Incidental Take of Endangered/ Threatened Species	6 NYCRR §182
	Tidal Wetlands Act (ECL Article 25)	6 NYCRR §661
	Protection of Waters (ECL Article 15)	6 NYCRR §608
	Stormwater Management	State Pollutant Discharge Elimination System (SPDES)
Office of General Services (NYSOGS)	Grant or Easement of Lands Underwater authorizing the construction of a structure on NYS owned underwater land	9NYCRR Sub G., Part 271
Department of State (NYSDOS)	Coastal Zone Management Act (CZMA) – delegated from US Dept. of Commerce NYS Exec Law § 911	Determination of consistency with the designated uses of the coastal zone
Department of Transportation (NYSDOT)	State Environmental Quality Review Act	6 NYCRR Part 617
New York City		
Department of City Planning (NYCDCP)	Coastal Zone Management Act (CZMA) – delegated from US Dept. of Commerce NYS Exec Law § 911	New York City Local Waterfront Revitalization Plan (LWRP)
Department of Environmental Protection (NYCDEP)	Requirements set forth in Subchapter 4 of Chapter 2 of Title 24, “Construction Noise Management” and Chapter 28, Title 15, “Citywide Construction Noise Mitigation” in the City Administration Code.	A copy of noise mitigation plan should be developed and a copy of such plan should be kept at each construction site and made available for inspection upon the request of persons authorized to enforce the provisions of the city noise code such as inspectors from the Department of Police and DEP.
	Requirements set forth in Chapter 12 of Title 15, “Rules Pertaining to the Prevention of the Emission of Dust from Construction Related Activities” in the City Administration Code.	Best management programs to control dust as defined in the rule should be considered in building and road construction activities.

1.4.1 Additional Project Coordination

The project sponsors have worked closely with the following agencies to obtain technical input regarding the project’s design and operation, and to better understand and avoid potential adverse impacts while

maximizing the project's substantial benefits. These agencies, elected officials and other interested parties will continue to play an important role in the future development of the Proposed Project. Refer to Appendix G Public Involvement (PI) Plan for additional information.

Agency Coordination

New York City Agencies:

- New York City Police Department (Counter-Terrorism, Harbor Unit)
- Fire Department City of New York
- Department of Parks & Recreation
- Department of City Planning
- Department of Transportation
- Department of Environmental Protection
- Mayor's Office of Emergency Management

New York State Agencies:

- Department of Environmental Conservation
- Department of State
- Department of Transportation
- Metropolitan Transportation Authority

Federal Agencies:

- U.S. Coast Guard
- U.S. Fish and Wildlife Service
- Army Corps of Engineers
- NOAA National Marine Fisheries Service
- Federal Highway Administration

Other

- Harbor Operations Steering Committee
- Area Maritime Security Committee
- United Nations

Community Stakeholder Coordination

- Metropolitan Waterfront Alliance
- Municipal Art Society
- New Yorkers for Parks
- Partnerships for Parks
- Transportation Alternatives
- Kips Bay Neighborhood Alliance
- Murray Hill Neighborhood Association
- Solar One
- Stuyvesant Cove Park Association
- Stuyvesant Town-Peter Cooper Village Tenants Association
- Sutton Area Community
- Manhattan Community Board 6
- Manhattan Community Board 8
- East Midtown Coalition for Sensible Development
- East Sixties Neighborhood Association
- Tudor City Association
- Turtle Bay Association
- Waterside Tenants Association
- Manhattan East Community Association
- Beekman Place Association

- East Midtown Partnership
- Friends of Dag Hammarskjold Plaza
- Bike NY

Governmental Officials Coordination

Mayoral appointees

- Alicia Glen, Deputy Mayor for Housing and Economic Development
- Dominic Williams, Chief of Staff to First Deputy Mayor Anthony Shorris
- Mitchell Silver, Commissioner, Department of Parks & Recreation
- Dean Fuleihan, Director, Office of Management and Budget
- Polly Trottenberg, Commissioner, Department of Transportation
- Penny Abeywardena, Commissioner, Mayor's Office for International Affairs

Elected officials

- Assembly member Brian Kavanagh
- State Senator Liz Krueger
- Council Member Daniel R. Garodnick
- US Representative Carolyn Maloney
- Manhattan Borough President Gale Brewer

1.5 Costs & Schedule

Design Approval is anticipated for February of 2016. Based on available funding, it is anticipated that project construction would take place in two phases:

- Construction of the ODR Esplanade is scheduled to last 30 months beginning in 2017
- Construction of the UN Esplanade is scheduled to last 60 months beginning in 2021.

Schedule and cost information for the Preferred Alternative as shown in Exhibits 1.5-1 and 1.5-2, respectively is approximate and subject to change based on availability of funding.

Exhibit 1.5-1
Proposed Project Schedule

Activity	Date Occurred/Tentative
Scoping Approval	January 2013
Design Approval	February 2016
ROW Acquisition	None
Construction Start	2017 (ODR Esplanade) and 2021 (UN Esplanade and Upland Bridge Connections)
Construction Complete	2019 (ODR Esplanade) and 2025 (UN Esplanade and Upland Bridge Connections)

Exhibit 1.5-2 Estimated Cost of the Project Alternatives (in $ Million)		
Activities	**Alternative 1**	**Alternative 2**
Construction Cost	$180.3	$180.3
Mitigation Costs (7%)	$12.6	$12.6
Subtotal ($)	$192.9	$192.9
Contingency (15% at Design Approval)	$27.1	$27.1
Subtotal ($)	$220.0	$220.0
ROW Cost ($)	$0.0	$0.0
Total Project Costs*	$220.0	$220.0

*2010 dollars: subject to 3% escalation per year

1.6 Preferred Alternative

The Preferred Alternative is Alternative 2 as defined in Section 1.3 and described further in Chapter 3.

1.7 Opportunities for Involvement

Refer to Appendix G, Public Involvement (PI) Plan, for input from Stakeholders including the public and public involvement milestones.

The U.S. Coast Guard had a Public Comment period on the permit application for the esplanade from June 17 to July 17, 2015, Please see Appendix O, USCG Comments on the DR/EA, for more information.

FHWA commenced its Public Review period for the Draft DR/EA from October 12 to November 11, 2015, during which time interested parties were invited to send written questions or comments. No comments were received at that time.

The remainder of this report is a detailed technical evaluation of the existing conditions, the proposed alternatives, the impacts of the alternatives, copies of technical reports and plans and other supporting information.

CHAPTER 2 - PROJECT CONTEXT: HISTORY, TRANSPORTATION PLANS, CONDITIONS AND NEEDS

This chapter addresses the history, context, existing conditions, deficiencies, and need for the East Midtown Waterfront Esplanade and Greenway project.

2.1 Project History

The Manhattan Waterfront Greenway is a 32-mile route that circumnavigates the island of Manhattan. The greenway is intended to transform underutilized waterfront into public space for both recreational and commuting use. Despite much important progress in recent years on new waterfront public space in New York City, a major gap exists in the Manhattan Waterfront Greenway between East 41st Street and East 60th Street on the East River. The communities of East Midtown have few connections to the waterfront and are disconnected from the water by the FDR Drive and the United Nations campus.

In recent years, a number of planning efforts have examined how to address the gap in the Manhattan Waterfront Greenway while simultaneously providing new recreation areas and other amenities for the East Midtown community. Agency coordination has included efforts by Manhattan Community Board 6 through its 197(A) plan, the Department of City Planning, as well as related efforts by the United Nations and the United Nations Development Corporation.

A Memorandum of Understanding (MOU -- see Appendix F) was signed in October 2011 in response to State Legislation passed in July 2011, enabling this project to move forward by providing a framework for the United Nations to expand its East Midtown campus and establishing a funding mechanism for the completion of the East Midtown Waterfront Project.

2.2 Transportation Plans and Land Use

This section describes the existing local transportation plans for the project area. It also discusses the potential impacts, if any, that these plans will have on the community.

2.2.1 Local Plans for the Project Area

The following sections describe plans proposed by New York City, the local community, and by private interests that could affect the project area.

2.2.1.1 Local Comprehensive Plans (“Master Plan”)

New York City has established several policy goals as defined in *Vision 2020: NYC Comprehensive Waterfront Plan (2011)*. The first goal of the *Comprehensive Waterfront Plan* is to expand waterfront public access by improving connectivity and continuity. The plan seeks to improve the continuity of public waterfront access and to support diverse uses by targeting gaps in otherwise continuous stretches of waterfront access. The second goal is to enliven the waterfront with a range of attractive uses integrated with adjacent upland communities and that encourage the inclusion of water-dependent and water-enhancing uses within the waterfront. These goals directly apply to the Proposed Project.

2.2.1.2 Local Private Development Plans

Major developments are planned for the East Midtown area adjacent to the Proposed Project. Land Use and No-Action projects are further discussed under Chapter 4. See Figure 2.2-1, “Proposed No-Action Projects Map” for location of the potential developments.

Figure 2.2-1 – Proposed No-Action Projects Map

2.2.2 Transportation Corridor

This section describes the existing conditions of the bicycle and pedestrian transportation corridor within the project area, its significance, alternate routes around the corridor, existing and future needs and future plans for the corridor.

2.2.2.1 Importance of the Project Route Segment

The Proposed Project would fill in an existing gap in the Manhattan Waterfront Greenway along the East River. The Proposed Project would connect the pedestrian-bicycle routes north and south of the project limits in accordance with the New York City Bicycle Network.

2.2.2.2 Alternate Routes

The bicycle networks that could provide an alternative route to the existing Manhattan Waterfront Greenway along the east side of Manhattan include northbound bicycle lanes on First Avenue and southbound bicycle lanes on Second Avenue, with east/west connections as designated by the New York City Bicycle Network. However, the vehicular traffic congestion in the First Avenue lanes between East 49th and East 60th Streets and the Second Avenue lanes between East 34th and 60th Streets does not allow for adequate bicycle connectivity and continuity.

2.2.2.3 Corridor Deficiencies and Needs

Bicycle mobility along the Manhattan Waterfront Greenway is currently affected by a gap along the East River between East 38th Street and East 60th Street. No Transportation System Management (TSM) or Transportation Demand Management (TDM) improvements have been implemented in this corridor. There are no known improvements being planned and implemented on nearby areas or bicycle routes that would mitigate these existing deficiencies of the East River Esplanade system.

2.2.2.4 Transportation Plans

The New York City Bicycle Master Plan, issued in May 1997, is the final report of the first phase of the Bicycle Network Development (BND) Project, a joint effort by NYCDCP and the New York City Department of Transportation (NYCDOT). The goal of the BND Project is to increase bicycle ridership in New York City, and the purpose of the Master Plan is to articulate the City's action plan for doing so. The Bicycle Master Plan includes a description of existing and planned greenways, including the East River Bikeway and Esplanade.

This project is on the approved Transportation Improvement Program (TIP) as project No. X776.00 and X770.14.

2.2.2.5 Abutting Segments and Future Plans for Abutting Segments

The existing Manhattan Waterfront Greenway abuts the Proposed Project site on its north end at Andrew Haswell Green Park in the vicinity of East 60th Street and on its south end at the Waterside Pier in the vicinity of East 41st Street.

The Ed Koch Queensboro Bridge, which carries a pedestrian path and a bicycle path on the outer roadway and spans to the Manhattan Waterfront Greenway is located at the northern limit of the project.

2.3 Transportation Conditions, Deficiencies and Engineering Considerations

2.3.1 Operations (Traffic and Safety) & Maintenance

The project site is not an existing facility that would require evaluation of traffic and safety operations, and maintenance.

2.3.1.1 Functional Classification and National Highway System (NHS)

The existing Manhattan Waterfront Greenway located north and south of the project limits does not carry vehicular traffic; therefore functional classification typically associated with vehicular roadways does not apply.

2.3.1.2 Control of Access

There are no existing facilities within the project site limits that require access control.

2.3.1.3 Traffic Control Devices

Traffic control devices at potential Upland Bridge Connections:

- Intersection of East 48th Street and 1st Avenue – signal control
- Intersection of East 54th Street and Sutton Place – signal control

2.3.1.4 Intelligent Transportation Systems (ITS)

There are no ITS systems in operation or planned for the project area.

2.3.1.5 Speeds and Delay

The project site is not an existing pedestrian-bicycle facility. Collection of existing speed and delay data is not applicable.

2.3.1.6 Traffic Volumes

The project site is not an existing pedestrian-bicycle facility. Collection of existing volume data is not applicable.

2.3.1.6.(1) Existing traffic volumes – There are no existing bicycles or pedestrian volumes at the project site.

2.3.1.6.(2) Future no-build design year traffic volume forecasts – There are no future no-build design year bicycle and pedestrian volumes as there are is not an existing facility at the project site. The Estimated Time of Completion (ETC) of the project (full Build Out) was estimated to be 2025. The Estimated Time of Completion (ETC)+10 design year (2035) was selected related to the design of pedestrian and bicycle facilities.

2.3.1.7 Level of Service and Mobility

No level of service (LOS) analysis or mobility assessment was performed as there are no existing transportation facilities on the project site.

2.3.1.7.(1) Existing level of service and capacity analysis – LOS analysis does not apply.

2.3.1.7.(2) Future no-build design year level of service – LOS analysis does not apply.

2.3.1.8 Safety Considerations, Accident History and Analysis

This analysis is not applicable.

2.3.1.9 Existing Police, Fire Protection and Ambulance Access

There is no existing police, fire protection or ambulance access within the project limits.

2.3.1.10 Parking Regulations and Parking Related Conditions

There are no parking facilities within project limits.

2.3.1.11 Lighting

No impacts are anticipated to the existing street lighting within the project limits.

2.3.1.12 Ownership and Maintenance Jurisdiction

New York City is the owner of the project site. NYCDPR maintains the existing parks within the project area. NYSDOT owns and maintains the FDR Drive within the Project Limits.

2.3.2 Multimodal

2.3.2.1 Pedestrians

There are no known provisions for pedestrians within the project limits. Pedestrian facilities in the area include sidewalks along all city streets, except for the FDR Drive southbound service road where few or no sidewalks exist. Sidewalks are present along First Avenue. All the intersections of First Avenue with side streets have crosswalks and pedestrian signals.

There are no recent counts of pedestrians along the existing sections within the project limits known to be available. A count of pedestrians in all four crosswalks at East 42nd Street and First Avenue, provided by the NYCDOT and which appears to have been conducted in 2009, showed over 1,600 pedestrians during the 5:30 p.m. to 6:30 p.m. hour. During the same time period at East 57th Street and First Avenue, almost 2,300 pedestrians were counted within all four crosswalks.

2.3.2.2 Bicyclists

There are no provisions for bicyclists within the project limits.

Usage of bicycle facilities has been steadily increasing. The NYCDOT conducts annual counts of cyclists at the intersection of 50th Street with every avenue in Manhattan, as well as all bridge crossings where cycling is permitted (see Appendix C). The total 18-hour “screenline” counts show the number of bicyclists at First Avenue and 50th Street increased from 577 in September 2007 to 1,621 in September 2011. The number of bicyclists at the Ed Koch Queensboro Bridge increased from 1,880 in September 2007 to 4,342 in September 2011.

2.3.2.3 Transit

There are no transit providers operating within the project limits.

Public transit (bus service) is provided to areas immediately adjacent to the project area on First Avenue and Second Avenue by the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT). The M15 bus line is routed northward along First Avenue from East 41st to 60th Streets. The M27 and M50 bus lines are also routed along First Avenue, from East 42nd Street north to East 49th Street, at which

point buses then turn west into Midtown Manhattan. The M42 and M104 bus lines are routed along East 42nd Street, beginning and terminating service at First Avenue. The M57 bus line is routed near the northern section of the project area along East 60th Street, York Avenue, and then East 55th Street. Additionally, the M31 bus line is routed along East 57th Street and York Avenue. The nearest subway service is located approximately one-quarter mile west of the project area along Lexington Avenue.

2.3.2.4 Airports, Railroad Stations, and Ports

There are no airports, railroad stations or port entrances within or in the vicinity of the project limits. No conflicts exist with the flight paths of aircraft.

2.3.2.5 Access to Recreation Areas (Parks, Trails, Waterways, State Lands)

Sutton Parks is accessed via East 53rd and 54th Streets and Sutton Place and Andrew Haswell Green Park is accessed via East 60th Street, within the project limits.

2.3.3 Infrastructure

2.3.3.1 Existing Pedestrian-Bicycle Facility Section

There are no pedestrian-bicycle facility sections within the project limits. On-street bicycle routes are located on the following streets in the project area:

- Northbound access along First Avenue, as described above, which include protected bike paths, lanes, or shared lanes from East 37th Street to East 57th Street.
- Signed bike route along East 38th and 37th Streets and along the FDR Drive southbound service road to provide access to the East River Park at East 37th Street.
- Eastbound on East 54th Street between First Avenue and Sutton Place.
- Westbound on East 55th Street from Sutton Place to Second Avenue.

Historic screenline bicycle counts performed by NYCDOT through 2012 on all avenues at 50th Street are shown in Appendix C.

2.3.3.2 Geometric Design Elements Not Meeting Standards

2.3.3.2.(1) Critical Design Elements – There are no existing facilities with nonstandard features within the project limits.

2.3.3.3 Pavement and Shoulder

There are no existing facilities with pavement conditions within the project limits.

2.3.3.4 Drainage Systems

The existing record documents and the topographic survey, indicate that there are eleven storm sewer outfalls located at the East River bulkhead line within the project limits, which are under the jurisdiction of the New York City Department of Environmental Protection (NYCDEP). In addition, there are combined sewer outfall (CSO) chambers in Sutton Parks within the limits of the project site.

2.3.3.5 Geotechnical

There are no special geotechnical concerns with the soils and rock strata per a Subsurface Exploration Geotechnical Report including Geologic History, Subsurface Conditions, and Geotechnical Assessment was prepared in June 2012. Refer to Appendix D – Geotechnical Information.

Within the UN Esplanade limits the subsurface condition consists of three (3) layers of soil above rock.

Within the ODR Esplanade the subsurface condition consists of mainly a thin layer of sediment over rock with the thickness generally less than 10 feet except for the northern most end near East 59th and 60th Streets where the rock drops off sharply and the thickness of soil increases to more than 50 feet above the rock.

2.3.3.6 Structure

2.3.3.6.(1) Existing Outboard Detour Roadway (ODR) Caissons – There are, within the ODR Esplanade section of the project site, caissons that were installed in the East River in 2002 to support a temporary roadway during the reconstruction of a portion of the FDR Drive.

2.3.3.6.(2) Existing Bridge Structures – There is an existing pedestrian bridge which provides access to the waterfront walkway located along the East River between East 50th and 54th Streets and opposite to Peter Detmold Park.

East 51st Street Pedestrian Bridge:

(a) BIN - 2232100
(b) Feature carried and crossed – Pedestrian traffic from East 51st Street to waterfront walkway crossing the FDR Drive
(c) Type of bridge, number and length of spans, etc. – Seven span steel girder bridge with concrete encased deck. Five 50-foot spans, one 26-foot span, one 17-foot span (approximate). The two short spans are stair structures.
(d) Width of travel lanes, parking lanes, and shoulders – None, pedestrian traffic only.
(e) Sidewalks – Inside to inside width of 6-foot, out to out width of 7-foot 9-inches
(f) Utilities carried – Electrical conduits in deck for bridge lighting, drain pipes from scuppers to grade.

2.3.3.6.(3) Clearances (Horizontal/Vertical) – No existing vertical clearance information required.

2.3.3.6.(4) History & Deficiencies – History and deficiency information is not known.

2.3.3.6.(5) Inspection – Inspection documentation for the Waterside Pier, waterfront area of the Peter Detmold Park, and Andrew Haswell Green Park are provided in Appendix E.

2.3.3.6.(6) Restrictions – ADA access is not accommodated by this pedestrian bridge.

2.3.3.6.(7) Future Conditions – There are no anticipated structural changes that would be required as part of the Proposed Project.

2.3.3.6.(8) Waterway – The project site is located on the western edge of the East River. The East River is a 16-mile long tidal strait that separates Manhattan from the boroughs of Queens and Brooklyn and connects the Upper New York Harbor, the Harlem River, and the western portion of the Long Island Sound. Roosevelt Island (3-mile long, 0.15-mile wide) within the East River lies between Manhattan and Queens, running from East 46th Street and East 85th Street. In the project area, the river is approximately 0.5-mile wide.

2.3.3.7 Hydraulics of Bridges and Culverts

There are no existing bridges and culverts within the project limits.

2.3.3.8 Guide Railing, Median Barriers and Impact Attenuators

A concrete median barrier and aluminum chain link fence exist on the southern edge of the East 48th Street sidewalk area. Metal railing exists along the retaining wall at Sutton Parks from approximately East 53rd Street to East 54th Street. No impact attenuators are present within the project limits.

2.3.3.9 Utilities

A topographic and utility survey was conducted for the project area, including field reconnaissance and record research. Refer to the Existing Survey in Appendix A for the location of known existing utilities.

2.3.3.9.(1) – City Utilities and Tunnels

(1) NYCDEP – Water: New York City Department of Environmental Protection, Bureau of Water Supply provides service for the City of New York adjacent to and west of the project area.

(2) NYCDEP – Sewers: New York City Department of Environmental Protection, Bureau of Sewer Operations operates separate storm and sanitary sewer service adjacent to and west of the project area.

(3) NYCDOT – Traffic Signals: The NYCDOT Division of Traffic Signals performs regular maintenance and periodic upgrades to the traffic signals adjacent to and west of the project area.

(4) NYCDOT – Street Lighting: The NYCDOT Division of Street Lighting performs regular maintenance and periodic upgrades to the lighting system adjacent to and west of the project area. Consolidated Edison Co., Ltd. (Con Edison) owns and maintains the power grid that provides electricity to the street lighting system.

(5) New York City Transit (NYCT): NYCT operates subway and bus service adjacent to and west of the project area. There are multiple tunnels crossing the proposed site under the East River; including several subway tunnels and the Queens Midtown Tunnel tubes.

2.3.3.9.(2) – Private Utilities

(1) Con Edison: Consolidated Edison Company operates underground electric, gas, and steam facilities within the City streets adjacent to and west of the project area, including electrical service for the street lighting system within the FDR Drive.

2.3.3.10 Railroad Facilities

There are no at-grade railroads within the project limits and no at-grade crossings within 0.6 mile that could impact traffic conditions. However, there are multiple tunnels crossing the project site under the East River including several subway tunnels and the Queens Midtown Tunnel tubes.

2.3.4 Potential Enhancement Opportunities

This section focuses on identifying existing areas for potential enhancement opportunities related to the project and to help avoid and minimize impacts. Refer to Chapter 4, which further discusses the project related improvements.

2.3.4.1 Landscape

2.3.4.1.(1) Terrain – The East River bed at the project site is located approximately 65 to 85 feet below the water surface. The project site and the adjacent city streets are generally flat.

2.3.4.1.(2) Unusual Weather Conditions – There are no unusual weather conditions within the project The project site is subject to fog and tidal fluctuations and is within the 100-year floodplain of the East River.

2.3.4.1.(3) Visual Resources – Within the project limits and adjacent to the location of the proposed project, there are unobstructed views both northward and southward of the East River. Views north, south and west in the study area include a variety of tall buildings that contribute to the overall urban character of the area.

Views to the east from the project area consist of parkland, including Four Freedoms Park, and the former Coler-Goldwater Specialty Hospital and Nursing Facility building on Roosevelt Island, industrial and warehousing uses on the Queens shoreline, and other elements including a large, prominently visible Pepsi Cola sign, taller round cement plant structures, a large brick power plant, and various tall residential and commercial buildings located in Long Island City, Queens.

Views from the east toward the Proposed Project would be of the proposed esplanade structure, its programmed uses (bicyclists and pedestrians), and the many trees and plantings anticipated to line the proposed esplanade. The tall buildings that contribute to the character of the area would continue to be visible as a backdrop.

On the cross streets in the project area, easterly views to the East River and the Queens shoreline are somewhat obstructed due to the presence of the elevated FDR Drive and its exit ramp. These views further diminish as one travels to the west. From First Avenue, the FDR Drive East 42nd Street off-ramp is a prominent feature in the foreground of the river. View corridors of the East River can also be found along certain east-west side streets that are not blocked by buildings or the FDR Drive, such as along East 52nd, 54th, 56th, and 57th Streets, as well as from the easterly terminus of Sutton Place. Views across the river are wide and expansive and include the Queens and Brooklyn waterfronts, as well as the Ed Koch Queensboro Bridge.

2.3.4.2 Opportunities for Environmental Enhancements

Practical opportunities for environmental enhancements within the project limits include but are not limited to fishing access and parkland development. Refer to Chapter 4, which further discusses the project related improvements.

2.3.5 Miscellaneous

Practical opportunities for reusing the existing 24 caissons installed in the East River in 2002 to support a temporary roadway during the reconstruction of a portion of the FDR Drive are being considered. The proposed designs would intend to repurpose the existing caissons as support structures for the new ODR Esplanade structure between approximately East 53rd and 60th Streets.

CHAPTER 3 – ALTERNATIVES

This chapter discusses the alternatives considered and examines the engineering aspects for all feasible alternatives to address established project objectives in Chapter 1 of this report, and identifies the Preferred Alternative.

3.1 Alternatives Considered and Eliminated from Further Study

As discussed in Chapter 1, the goals of the Proposed Project are to (1) close an existing gap in the Manhattan Waterfront Greenway, providing a continuous public bicycle and pedestrian esplanade along Manhattan's East River waterfront, and (2) add new and safe public open space and recreation area for a wide range of users within the densely populated East Midtown area. The Proposed Project also provides opportunities for water-dependent and water-related uses.

Extensive reviews were performed of the project area, including the physical landside and waterside design constraints and the design and functionality of the existing esplanades north and south of the project area. Also taken into consideration were minimum capacity and safety requirements for both bicycle and pedestrian access and operation along the esplanade. In addition, various additional requirements that any feasible alternative would have to meet include the following:

- New York City and State design requirements for these types of facilities and their connections to the local street network,
- Projected design and operational elements to meet State and Federal marine safety, and
- Protection of the East River's aquatic ecology and resources

Early design elements or concepts that were eliminated during the alternatives development process included those that would:

1. Involve extensive property takings or high construction or operating/maintenance costs,
2. Have likely extensive impacts on aquatic ecology or waterborne traffic in the East River,
3. Provide less seamless connections to the existing/proposed waterfront esplanades to the north and south,
4. Not provide a reasonable increase in waterfront open space areas or adequate connections to the adjacent community and its local street and sidewalk networks, or
5. Not adequately meet applicable ADA requirements or other important design and engineering criteria.

The eventual location and design of potential upland connections between the City street grid and the proposed esplanade were based on a variety of planning, engineering and environmental related issues, including:

- the provision of relatively evenly spaced and convenient connections to the roadway network and its pedestrian and bicycle elements while avoiding any adverse impacts to landside traffic operations;
- the significant presence of the United Nations (UN) campus, which is a major attraction on Manhattan's East side but also presents a physical barrier and security constraints in terms of public connections through any portion of the UN Campus from East 42nd to East 48th Streets,
- the existing waterfront connections created by the FDR Drive ramp systems, which provide potential openings for bike/pedestrian linkages but with constraints posed by the presence of the ramp structures themselves;
- the section of the FDR Drive under existing buildings from East 54th to East 58th Street, which effectively precludes any east-west ramp connections in that area; and

- the existing designs for the planned esplanade and park areas at the Proposed Project's northern and southern ends, including the nearest east-west connections to those planned sections of the overall Manhattan Waterfront Greenway.

While a number of connection options were considered during the early concept design process, the two proposed landside connections described in the Section 3.2 below were the only ones that could feasibly provide the required reasonable bicycle/pedestrian access within these very challenging design constraints.

As these various design elements and operating trade-offs were considered, two potentially feasible alternatives were developed, both of which are described in the following section, which warranted further consideration.

3.2 Feasible Build Alternatives

3.2.1 Description of Feasible Alternatives

Figure 3.2.1a shows the location of two feasible alternatives (Alternatives 1 and 2) within the East Midtown section of Manhattan and the main project components. As shown and described further in this section, both feasible alternatives would involve construction of a 40-foot wide esplanade from East 41st Street to East 60th Street with Upland Bridge Connections at East 48th and 54th Streets as well as areas wider than 40 feet (nodes) that would extend the proposed esplanade an additional 10 feet (for a total of 50 feet) into the East River to provide for safe circulation and to incorporate water dependent uses. The Alternatives would be implemented in two sections:

- The United Nations Esplanade ("UN Esplanade") located along the waterfront adjacent to the United Nations Headquarters and other high-rise developments from East 41st to 53rd Streets.

- The Outboard Detour Roadway Esplanade ("ODR Esplanade") located along the waterfront from East 53rd to 60th Streets, where the proposed esplanade would be placed over a portion of existing ODR caissons located up to and underneath the Ed Koch Queensboro Bridge.

Both sections would be offset approximately 30 feet eastward from the bulkhead along the East River shoreline. The following discussion provides more details regarding the two feasible alternatives.

Alternative 1 – Single Shared-Use Path: Alternative 1 would involve the construction of a 40-foot wide esplanade from East 41st to 60th Streets that would accommodate bicyclists and pedestrians (walkers, joggers, skaters) within the same shared pathway. As noted above, this alternative would include Upland Bridge Connections at East 48th Street and East 54th Street and expanded landing areas, and would be developed in two sections – an ODR Esplanade and a UN Esplanade – both of which would be offset approximately 30 feet eastward from the bulkhead along the shoreline to allow for continued maintenance of the bulkhead and the FDR Drive. Alternative 1 would result in conflicts between bicyclists and the pedestrians and other users of the path, resulting in poor level of service (LOS) conditions (LOS "E" and "F" for bicyclists and pedestrians, respectively), which would be below the LOS "C" or better required under NYSDOT *Highway Design Manual* guidelines for this type of facility.

Alternative 2 – Separated Bicycle and Pedestrian Paths: Alternative 2 would also involve construction of a 40-foot wide esplanade from East 41st to 60th Streets, Upland Bridge Connections at East 48th Street and East 54th Street and expanded landing areas, and would also be developed in two sections -- an ODR Esplanade and a UN Esplanade – both of which would be offset approximately 30 feet eastward from the bulkhead along the shoreline. Alternative 2 would include a two-way bicycle-only path ("bike path") that would provide Class I operations and a separate pedestrian path, as well as water dependent uses (see Appendix A for Conceptual Design Plans). With the separation of these two pathways, overall LOS conditions under Alternative 2 would be "LOS C" for bicycles in the bicycle-only path and "LOS B" for pedestrians in the pedestrian-only path under Saturday peak hour conditions, meeting NYSDOT operational guidelines. For this reason, Alternative 2 is selected as the Preferred Alternative.

Alternative 2, the Proposed Project, would include two areas wider than 40 feet that would extend the proposed esplanade an additional 10 feet (for a total 50 feet) into the East River to provide for safe circulation at the Upland Bridge Connection landings, and to incorporate water dependent uses. These areas, referred to as "nodes" throughout this report, are proposed at approximately East 48th Street and East 54th Street. Figure 3.2.1b shows a rendering of the proposed esplanade under the Proposed Project, while Figure 3.2.1c shows a typical cross section, and Figure 3.2.1d presents the key programming elements of the Proposed Project. As shown in Figure 3.2.1c the typical cross section would include:

- an 18-foot bi-directional Class I Bicycle path (15-foot clear width bike path with 2-foot and 1-foot striped shoulders on the eastern and western sides, respectively),
- an 8-foot planted median that physically separates the bike path from the pedestrian path, and
- a 10-foot pedestrian path with parallel layered seating areas that provide a minimum 6-foot unobstructed pedestrian walkway.
- a 2-foot edge on each side of the proposed esplanade for safety barriers.

The nodes are planned as follows (see Appendix A for Conceptual Design Plans):

- **48th Street Node:** This node would increase the width of the typical proposed esplanade section from 40 to 50 feet by extending it approximately 10 feet further into the East River, creating a 50-feet section that would extend for approximately 150 feet in the vicinity of this connection to 48th Street.

- **54th Street Node:** This node would similarly widen the typical esplanade section from 40 to 50 feet and extend for approximately 150 feet. The design of this node facilitates the proposed esplanade's connection to an existing waterfront walkway along the FDR Drive between East 50th and 54th Streets.

The design would also include two pedestrian bridge structures to connect the proposed esplanade to the City street system. The Upland Bridge Connections would land at the two proposed 150-foot long esplanade nodes as described above (see Appendix A). The Upland Bridge Connections would be located at East 48th Street and East 54th Street.

- **48th Street Upland Bridge Connection**: This connection would run east-west along East 48th Street. The clear width of the connection would be 12 feet to allow for bi-directional pedestrian traffic and cyclists to comfortably walk their bicycles across to the proposed esplanade. Minor intersection improvements would be required at the East 48th Street and First Avenue intersection to allow pedestrians and cyclists to safely enter/exit the proposed Upland Bridge Connection. Portions of the existing sidewalk along East 48th Street would be utilized to transition into the new bridge structure to be placed adjacent to the existing FDR Drive Entrance Ramp and UN Campus gardens. This structure would be supported on piles placed in the medians across the FDR Drive.

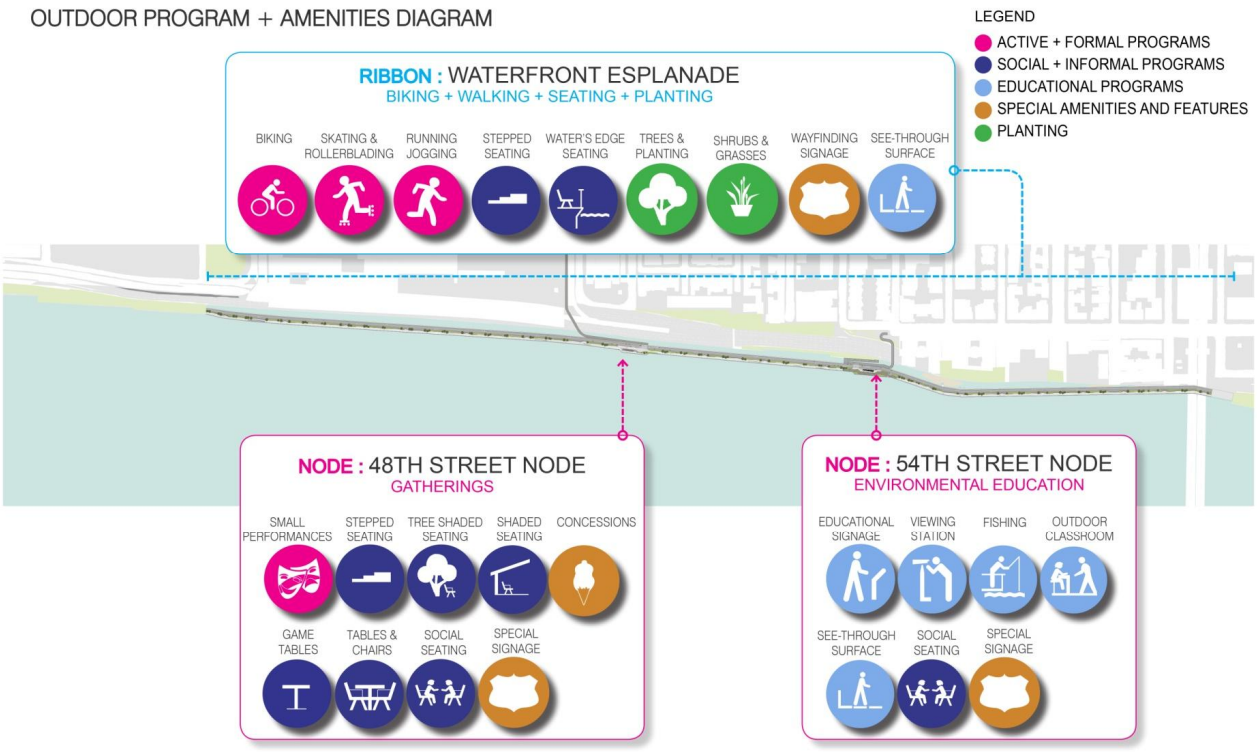
- **54th Street Upland Bridge Connection**: This connection would run east-west along East 54th Street at the Sutton Place terminus. The clear width of the connection would be 12 feet to allow for bi-directional pedestrian traffic and cyclists to comfortably walk their bicycles across to the proposed esplanade. Modifications to limited areas of Sutton Parks would be required to construct the Upland Bridge Connection. This structure would be supported on a retaining wall to be placed in the Sutton Parks, which would then transition to a bridge structure to get across the FDR Drive.

Figure 3.2.1a – Project Location Map

NYSDOT Draft Design Report and Environmental Assessment
East Midtown Waterfront Esplanade and Greenway
NYC Economic Development Corporation

Figure 3.2.1b
Alternative 2
Proposed Esplanade

Figure 3.2.1d – Proposed Esplanade Programming



A summary of the key elements of the proposed bicycle-pedestrian esplanade under the Preferred Alternative (Alternative 2) are as follows:

Geometry

- Esplanade would include construction of approximately 40-foot wide bridge-type structure from East 41st Street to East 60th Street. The structure is anticipated to be supported on approximately 176 new piles and 20 existing piles. The esplanade is anticipated to be a steel box beam structure with concrete deck. The deck is anticipated to be built up with geofoam, planting soil, pavers, concrete and asphalt, as required by the design.
- Upland Bridge Connections are proposed to be steel bridge structures with a concrete deck supported in piles or retaining walls, as required by the design.

Operational

- Provides a bike path and pedestrian path for public use, improving bicycle access, mobility, safety and operations.
- The proposed esplanade would not have a significant impact on vehicular traffic operations or safety and both its bicycle and pedestrian paths would operate at acceptable levels of service under peak conditions.
- Minimal curb and intersection reconstruction, signage and pavement marking improvements would be made at Upland Bridge Connection points to transition to the City street system.

Control of Access

- Esplanade access would be limited to pedestrians, bicycles, wheelchair users (both non-motorized and motorized), skaters, skateboarders and emergency and maintenance vehicles.

- Cross-connections to the bicycle-only and pedestrian-only paths at the two Upland Bridge Connection points (East 48th Street and East 54th Street)

Right of Way

- The esplanade would be constructed over the East River on property under the jurisdiction of the New York State Office of General Services. The upland bridge connections would be built over and on land owned by the City of New York and maintained by either the NYSDOT (FDR Drive) or NYCDOT (local roadways). The proposed improvements do not anticipate that construction easements will be necessary to access private properties. If construction easements are needed based on later design development refinements, ROW impacts will be identified and addressed at that time.

Environmental

- The Esplanade would provide enhanced pedestrian experience along the waterfront and increased views along the East River, enhancing the public realm.
- Design would include native trees and planting along the esplanade, as well as bioswales along the median planters.
- Shading and fill removal measures may be a condition of the environmental permits. Consultation with NYSDEC and USACE is underway to identify potential sites in the East River and greater New York Harbor area to serve as project related improvements. These potential project-related improvements include:
    - Removal of Pier at East 74th Street in Manhattan – Located 1 mile from the Proposed Project site, the pier is owned by the City of New York and is a former ConEdison platform.
    - Removal of the coal dock at North Brother Island in the Bronx – Located 4.2 miles from the Proposed Project site, the site is owned by the City of New York.
    - Partial removal of the Bush Terminal Pier 5 and Pier 7 in Brooklyn – Located 6.4 miles from the Proposed Project site, the site is owned by the City of New York.
    - Removal of a collapsed building over the water at the Cromwell Center on Staten Island – Located 9.3 miles from the Proposed Project site, this area is owned by the City of New York.
- Light within the project site has been observed to attenuate between 10 and 12 feet below the river's surface and the portion of the water column where light penetrated had the more dense populations of sessile organisms. The installation of new piles would provide additional lateral surface for attachment of encrusting organisms.
    - ODR Esplanade – 84 new piles would provide 18,102 sf (0.4 acres) of lateral surface.
    - UN Esplanade – 92 new piles would provide 61,905 sf (1.45 acres) of lateral surface.
- Best management practices during construction, including silt management techniques and soil erosion practices, would limit indirect effects on species from re-suspended sediments.
- Noise attenuating devices – If impact hammering would result in sound exposure levels that would exceed the impact criteria, noise attenuating measures could be used to mitigate these impacts. These could include isolation casing or other types of equipment to reduce sound levels.
- East 54th Street Upland Bridge Connection could possibly impact Sutton Parks but would not adversely affect the activities, features, and attributes that quality the park for protection under Section 4(f) and the esplanade structure would partially obstruct views from Peter Detmold Park but would not result in a constructive use under Section 4(f).

Cost — The total estimated construction costs would be $180.3 M as follows:

- ODR Esplanade – $57.3 M.
- UN Esplanade and Upland Bridge Connections – $123.0 M.

Project Goals — This Alternative would meet the overall goals and objectives to expand waterfront public access, improve connectivity and continuity, and address the gap in the Manhattan Waterfront Greenway.

Exhibit 3.2-1 presents a summary of the Proposed Project costs under the two feasible alternatives.

Exhibit 3.2-1
Summary of Alternative Costs (in $ Million)

Activities		**Alternative 1**	**Alternative 2**
Construction	ODR Esplanade	$57.3	$57.3
	UN Esplanade and Upland Bridge Connections	$123.0	$123.0
Mitigation (7%)		$12.6	$12.6
Contingency (15% at Design Approval)		$27.1	$27.1
ROW Costs		$0	$0
Total Cost*		$220.0	$220.0

*2010 dollars: subject to 3% escalation per year

3.2.2 Preferred Alternative

The Preferred Alternative, also referred to as "the Proposed Project," is Alternative 2 as defined under the Feasible Alternatives in Section 3.2.1. Of the two feasible alternatives, Alternative 2 was determined to provide the best opportunity to meet the specified goals of the project, as its design and operation would meet the design peak hour LOS requirements (LOS "C" for the bicycle-only path and LOS "B" for the pedestrian-only path) under NYSDOT Highway Design Manual guidelines for this type of facility.

3.2.3 Design Criteria for Feasible Alternative

3.2.3.1 Design Standards

The Design Standards for this Project were based on NYCDOT standard specifications, AASHTO Guide for the Development of Bicycle Facilities (2012), ADA Standards for Accessible Design (2010), NYSDOT Bridge Manual, NYSDOT Highway Design Manual.

3.2.3.2 Critical Design Elements

The critical design elements considered for the Proposed Project are shown on Exhibit 3.2-2.

Exhibit 3.2-2
Critical Design Elements

PIN:	X776.00 & X770.14	NHS (Y/N):	N
Route No. & Name:	East Midtown Esplanade & Greenway	Functional Classification:	N/A
Project Type:	New Construction	Design Classification:	Bicycle & Pedestrian Facility
% Trucks:	N/A	Terrain:	Level
ADT:	N/A	Truck Access /Qualifying Hwy	N/A

	Element	Standard	Existing Condition	Proposed Condition
1	Bicycle Design Speed	20 MPH (non-ramp) for grades less than 2 percent AASHTO Section 5.2.4	N/A	20 MPH
2	Esplanade Shared Path Usable Width	10 to 14 feet minimum AASHTO 5.2.1	N/A	15 feet
3	Shoulder Width	2 feet minimum AASHTO 5.2.1	N/A	1 foot on the Left 2 feet on the Right
4	Offset from FDR Drive Bulkhead to Esplanade	N/A	N/A	30 feet
5	Minimum Horizontal Clearance from Lateral Obstructions	2 feet minimum AASHTO 5.2.1	N/A	1 foot on the Left 2 feet on the Right
6	Vertical Clearance (Esplanade to Obstruction)	10 feet minimum AASHTO Section 5.2.1	N/A	10 feet
7	Bike Path Superelevation	None AASHTO 5.2.6	N/A	None
8	Grades	0.5% minimum, 5.0% maximum (non-ramp) 8.3% maximum (ramps) ADA, AASHTO Section 5.2.7	N/A	Bike Path: 0.5% to 3.6% Upland Bridge Connection ramps: 0.5% to 7.4%
9	Maximum Cross Slope	2.0%	N/A	1.0% to 2.0%
10	Horizontal Curvature (Bike Path)	74 feet AASHTO Section 5.2.4	N/A	200 feet minimum
11	Minimum Stopping Sight Distance (Bike Path)	160 feet	N/A	170 feet
12	Structural Capacity (Pedestrian Bridges)	New and Replacement Bridges NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle	N/A	100 PSF Live Load, Superimposed Dead Load + Live Load 250 PSF
13	Signage	NYC Street: 2009 NMUTCD Esplanade: Greenway Specs	AASHTO	NYC Street: AASHTO Esplanade: NYC Greenway Specs

Exhibit 3.2-2 Critical Design Elements				
14	Minimum Pedestrian Path Width	Based on computed LOS B and NYSDOT Highway Design Manual	N/A	10 feet minimum ADA Compliant
AASHTO Guide for the Development of Bicycle Facilities, 2012 2010 ADA Standards for Accessible Design NYSDOT Bridge Manual NYSDOT Highway Design Manual				

3.2.3.3 Other Design Parameters

Additional design parameters to be considered for the Proposed Project are shown on Exhibit 3.2-3.

Exhibit 3.2-3 Other Design Parameters			
Element		**Standard**	**Proposed Condition**
1	Level of Service (for non – interstate projects)	C AASHTO Guide for the Development of Bicycle Facilities	C
2	Drainage Design Storm	10-yr storm NYSDOT HDM	10-yr storm
3	Proposed esplanade Superimposed Dead Load + Live Load	N/A	250 PSF NYC Building Code
4	Proposed esplanade Live Load	NYC Building Code	100 PSF NYC Building Code
5	Proposed esplanade Emergency Load	NYFD Pumper Truck	NYFD Pumper Truck
6	Proposed esplanade Life Expectancy	N/A	75 Years
7	Proposed esplanade Egress	Waterborne and Landside access NYPD and FDNY	Waterborne and Landside access NYPD and FDNY
8	Proposed esplanade lateral load	N/A	50-ft vessel size for emergency use only

3.3 Engineering Considerations

The Proposed Project would involve the construction of a new bike path and pedestrian path over the East River where none presently exists. Any potential impacts to vehicular traffic operations would be limited to portions of City streets adjacent to the proposed Upland Bridge Connections. Therefore, the information presented in Section 3.3 includes descriptions of projected bicycle and pedestrian operations, volumes, and level of service in lieu of vehicular traffic analysis.

3.3.1 Operations (Traffic and Safety) & Maintenance

3.3.1.1 Functional Classification and National Highway System

This project would not create a new highway route; therefore, functional classification is not applicable.

3.3.1.2 Control of Access

Access to the proposed esplanade would be provided north and south of the project limits via the existing access points at the Andrew Haswell Green Park and the Waterside Pier, respectively. Access to the proposed esplanade would also be provided from the existing East 51st Street pedestrian bridge at Peter Detmold Park. Additionally, access to the proposed esplanade is planned at two new locations within the project limits as follows:

(1) East 48th Street: ADA-compliant access from 1st Avenue via a bridge structure to be built adjacent to and south of the East 48th Street entrance ramp to the FDR Drive and crossing over the FDR Drive at East 48th Street.

(2) East 54th Street: ADA-compliant access from Sutton Parks at Sutton Place via a bridge structure with entrance at East 54th Street and crossing over the FDR Drive at East 54th Street.

It is expected that users would walk, jog, ride bicycles, skate, skateboard, or use wheelchairs to travel to and from the proposed esplanade, and vehicular access would be limited to emergency and maintenance vehicles (see Appendix A for Conceptual Design Plans).

3.3.1.3 Traffic Control Devices

3.3.1.3.(1) Traffic Signals – New bicycle traffic signals or modification to existing signals may be required at Upland Bridge Connection intersections at East 48th and East 54th streets.

3.3.1.3.(2) Signs – Bicycle and pedestrian guide signs for way-finding and safety purposes on the proposed esplanade are designed in accordance with NYC Greenway Specifications. All warning and regulatory signs are designed in accordance with MUTCD Part 9, as adopted by NYCDOT.

3.3.1.4 Intelligent Transportation Systems (ITS) – No ITS signage or equipment is proposed.

3.3.1.5 Speeds and Delay

3.3.1.5.(1) Proposed Speed Limit: Posting of bicycle speed limits is not proposed along the bike path, based on AASHTO guidance that "speed limit signs on paths may not be effective, as most bicyclists do not use speedometers" (AASHTO Section 5.2.4).

3.3.1.5.(2) Travel Time Estimates –Travel time estimates are not applicable for the proposed esplanade.

3.3.1.6 Traffic Volumes

3.3.1.6.(1) Vehicular Traffic Volumes – There are no vehicular traffic volumes on the proposed esplanade. Vehicular access would be limited to maintenance and emergency vehicles.

3.3.1.6.(2) Bicycle and Pedestrian Volumes – Volumes were projected by the estimate time of completion (ETC) year and the project design year (ETC+10). These design year volumes were based on a conservative projection of future bicycle and pedestrian volumes on the proposed esplanade based on modeling the components of existing demand, anticipated growth rates and latent demand for cycling, using the following data sources and methodology:

- 2011 NYCDOT 50th Street screenline counts of bicycle traffic along north-south avenues across Manhattan in Spring, Summer and Fall;
- A projected divergence to the proposed esplanade of a proportion of the surveyed volumes from the First Avenue to Lexington Avenue corridors;
- A surge in opening year volumes due to previously unmet/latent bicycle/pedestrian demand (based on experience on the Hudson River Greenway); and
- Annual demand increases in subsequent years based on recent citywide cycling growth trends.

An estimated bicycle/pedestrian mode split of 65 percent cyclists, 18 percent walkers, 14 percent joggers, and 3 percent skaters was applied to total future user demand levels.[1] Exhibits 3.3-1 and 3.3-2 summarize the projected users in each mode for ETC and ETC+10, respectively. The detailed user demand calculations at ETC and ETC+10 are provided in Appendix C.

Exhibit 3.3-1
Estimated Saturday Peak Design Hour Proposed Esplanade User Demand at ETC

Type of User	Total Esplanade Users	Bicycle Path Users	Pedestrian Path Users
Cyclists	992	992	0
Walkers	275	46	229
Joggers	214	31	183
Skaters	46	15	31
Total	***1,527***	***1,084***	***443***

Exhibit 3.3-2
Estimated Saturday Peak Design Hour Proposed Esplanade User Demand at ETC+10

Type of User	Total Esplanade Users	Bicycle Path Users	Pedestrian Path Users
Cyclists	1,207	1,207	0
Walkers	334	56	278
Joggers	260	37	223
Skaters	56	19	37
Total	***1,857***	***1,319***	***538***

3.3.1.7 Level of Service and Mobility

3.3.1.7.(1) Bicycle Path and Pedestrian Path Level of Service – Level of service (LOS) analysis of the bicycle path was conducted using the *2006 AASHTO Shared-Use Path* and the *2006 FHWA Shared-Use Path (SUPLOS) Calculator* for a clear width of 15 feet for the bike path and the facility's projected users' demand at ETC and ETC+10. LOS analysis of the pedestrian path was performed using procedures in the 2010 *Highway Capacity Manual (HCM)* using the projected pedestrian demand for ETC and ETC+10 conditions and the pedestrian path's effective width of 6 feet.

LOS conditions of "B" and "C" are projected for the shared-use bicycle path for ETC and ETC+10, respectively, and an LOS condition of "B" is projected for the pedestrian lane for both ETC and ETC+10. Refer to Appendix C, Transportation Information, for complete analysis.

[1] The mode split was calculated by VHB from counts taken on April 21, 2013 from the Hudson River Greenway at 79th Street north of the Boat Basin.

3.3.1.7.(2) Work Zone Safety & Mobility

A. Work Zone Traffic Control Plan – Construction of the proposed esplanade is anticipated to be performed mainly from the waterside from work barges, which would provide a staging area for equipment and material used. Dive stations will typically be set up on float stages. Additionally, the contractor may deploy small work boats to move the floats and barges along the construction site. For the concrete placement, barge mounted concrete batch plants would be on site to provide delivery of concrete. For the Upland Bridge Connection construction work would be performed from the landside where applicable. Lane closures may be required to perform construction at the intersections, as needed. Traffic Control Plans will be developed during later stages of the design for work being performed from the water and land sides, as required by the permitting agencies. All traffic control plan schemes will need to be designed with provisions found in the Federal Manual on Uniform Traffic Control Devices (MUTCD) and NYSDOT MUTCD Supplement.

B. Special Provisions – Nighttime construction may be required for the esplanade and especially for the Upland Bridge Connections.

C. Significant Projects (per 23 CFR 630.1010) - A Transportation Management Plan (TMP) will not be required. It is not anticipated that the Proposed Project will cause sustained work zone delays greater than what is considered tolerable based on State policy.

3.3.1.8 Safety Considerations, Accident History and Analysis

The Proposed Project would include bicycle and pedestrian facilities on a site that presently has no vehicular, bicycle or pedestrian accident history.

3.3.1.9 Impacts on Police, Fire Protection and Ambulance Access

Vehicular police, fire protection and ambulance access to the proposed esplanade could be provided via existing access points immediately south of the project limits at East 34th Street and north of the project limits at the existing East 60th Street entrance to Andrew Haswell Green Park. Non-vehicular emergency access may be provided via the existing 37th Street connection to Glick Park or via the proposed Upland Bridge Connections at East 48th Street and East 54th Street. Emergency access could also be provided on the water side at designated esplanade locations where a fender system would be installed for emergency vessel tie-up.

3.3.1.10 Parking Regulations and Parking Related Issues

There are no parking facilities within the project limits. Therefore, parking regulations are not being impacted by the construction of the esplanade.

3.3.1.11 Lighting

The proposed facility would be illuminated. Lighting for the Proposed Project would be designed according to New York City Department of Transportation Division of Street Lighting (NYCDOT) illumination levels. Although the intent is to minimize impact of the project to existing street lighting, any impacts to the street lighting on connecting streets would be coordinated with NYCDOT – Division of Street Lighting during Final Design.

3.3.1.12 Ownership and Maintenance Jurisdiction

The City of New York is the owner of the Proposed Project. The facility is being designed to NYCDPR maintenance requirements. Further details regarding the ownership and maintenance jurisdiction of the Proposed Project would be developed during the Final Design phase.

Maintenance access to existing waterfront structures such as the FDR Drive bulkhead will continue to be available by passing underneath the proposed esplanade during low tide and from within the 30 foot offset along the shoreline to the proposed esplanade. In addition, maintenance access via the land side entry points to the proposed esplanade will continue to be available.

3.3.1.13 Constructability Review

Project constructability will be reviewed by the NYSDOT Region 11 Construction Group.

3.3.2 Multimodal

3.3.2.1 Pedestrians and Bicycles

The Proposed Project involves the construction of a new esplanade with a Class I Bicycle Path and Separate Pedestrian Path. The proposed facility would accommodate cyclists, skateboarders, joggers, and inline skaters, with ADA compliant access at the northern and southern end connections and at the two proposed Upland Bridge Connection. Adequate clear width along the Proposed Project would be provided to meet the anticipated pedestrian demand.

The general recommendation is for all users – pedestrians, joggers, skaters and cyclists – to have a comfortable experience along the esplanade, with separate spaces available for those who wish to move more directly and quickly and for those who wish to linger and move slowly. The Proposed Project would provide a two-way bike path accommodating cyclists at a clear width of 15 feet. Adjacent to the bike path is a separate space for pedestrians with a 6-foot minimum clear width.

Refer to Appendix L – Pedestrian Generator Checklist for additional information.

Refer to Sections 3.2.3.2, 3.3.1.6 and 3.3.1.7 for bicycle design criteria and operational analysis.

Refer to Section 3.3.1.6 and Exhibits 3.3-1 and 3.3-2 for bicycle and pedestrian trip generation at ETC and ETC+10. User demand projections for the ETC and ETC+10 analyses are provided in Appendix C. Level of service of the bicycle path was calculated using *FHWA Shared-Use Path Level of Service (SUPLOS) Calculator*.

3.3.2.3 Transit

No changes in transit service are proposed and no impacts on existing operations are projected.

3.3.2.4 Airports, Railroad Stations, and Ports

No changes are proposed and no conflicts are expected.

3.3.2.5 Access to Recreation Areas (Parks, Trails, Waterways, and State Lands)

In addition to the existing access described in Section 2.3.1.2, the Proposed Project includes two new Upland Bridge Connections at East 48th and 54th Streets.

3.3.3 Infrastructure

3.3.3.1 Proposed Facility Section

The proposed esplanade section would include a Class I Bicycle Path along the western side of the esplanade with buffers on both sides, and a pedestrian-only path would be provided along the eastern side of the esplanade. The two paths would be separated by a median with stormwater drainage provisions and tree planters. Seating and space for water dependent uses would be provided at the

nodes and along the median. The bike path would be built up with a 2-foot 6-inch thick layer of geofoam, to provide enough vertical depth for the stormwater planters to receive and treat runoff from the bike path (see discussion in Section 4.4.8 Stormwater Management). Refer to Appendix A for Conceptual Design Plans.

3.3.3.1.(1) Right of Way (ROW) – The esplanade would be constructed over the East River on property under the jurisdiction of the New York State Office of General Services. The upland bridge connections would be built over and on land owned by the City of New York and maintained by either the NYSDOT (FDR Drive) or NYCDOT (local roadways). It is not anticipated that construction easements will be necessary to access private properties under the Preferred Alternative. If construction easements are needed based on later design development refinements, ROW impacts will be identified and addressed at that time.

3.3.3.1.(2) Curb – All City streets within the project limits have curbs on either side. NYCDOT standard steel-faced curb would be provided at the Upland Bridge Connection intersections with NYC streets as required due to potential sidewalk intersection reconfiguration. All areas of proposed work would meet existing curbs within the project limits. For the proposed esplanade, a 6" high concrete curb would be provided on both sides of the proposed esplanade.

3.3.3.1.(3) Grades – The Proposed Project does not affect the existing street grades. The Proposed Project would affect localized areas of the sidewalks at East 48th Street and East 54th Street to accommodate the construction of the proposed Upland Bridge Connections. The general proposed grades are as follows:

- Proposed esplanade: 0.5% - 3.6%
- Upland Bridge Connections: 0.5% - 7.1% (in areas of where grades are steeper than 4.0%, landings would be provided)

3.3.3.1.(4) Intersection Geometry and Conditions – The Proposed Project geometrical design would be in accordance with NYCDOT Standards. Modifications to existing NYC street Intersections would also follow NYCDOT Standards. Refer to Appendix A for Conceptual Design Plans.

3.3.3.1.(5) Roadside Elements – The following applies to the Upland Bridge Connections at East 48th Street and East 54th Street.

(a) Snow Storage, Sidewalks, Utility Strips, Bikeways, Bus Stops – All existing elements would be maintained.
(b) Driveways – All driveways would be maintained.
(c) Clear Zone – Not applicable

3.3.3.2 Special Geometric Design Elements

The proposed features will be designed to meet current geometric standards for bicycle and pedestrian facilities.

3.3.3.3 Pavement and Shoulder

The surface treatment for the bike path lanes and shoulders would be asphalt pavement. The pedestrian path would include various surface treatments such as pavers, steel grates, etc. The Upland Bridge Connection surface treatment will be concrete. Refer to Appendix A Conceptual Design Plans.

3.3.3.4 Drainage Systems

3.3.3.4.(1) Proposed Upland Bridge Connections – The bridges' typical section would have curbed or parapet edges with inlets, such as trench drains or scuppers, connected to a downspout system which either (1) connects to the FDR Drive drainage system, or (2) discharges to paved surfaces flowing to nearby catch basins at East 48th and East 54th Streets. Downspouts would likely be required because

discharges cannot drop from bridge level onto passing traffic below. Existing catch basins on East 48th and East 54th Streets connect to the combined sewer overflow (CSO) systems discharging to the East River, according to the NYCDEP Infiltration/Inflow (I&I) Maps of the Project Area. It is assumed that NYCDEP would require downspouts discharge to paved areas draining to NYCDEP catch basins.

3.3.3.4.(2) Proposed Esplanade – Minimum grades and cross-slopes would facilitate surface drainage and avoid ponding conditions. The bike path along the western portion of the esplanade (left side looking north) and pedestrian path along the eastern edge (right side looking north) would each have a minimum 0.5 percent grade and cross-slopes between 1.0 to 2.0 percent maximum to drain runoff. An esplanade profile including tangents, crest and sag vertical curves is provided in Appendix A, Conceptual Design Plans.

The bike path would be built up with a 2-foot 6-inch geofoam layer and cross-sloped towards the median shoulder to collect runoff and divert it to median flow-through stormwater planters (see discussion in Section 4.4.8 Stormwater Management). A planter would be constructed and centered over each pile bent, typically spaced at 90 feet on center. At several locations including passageways between the bike path and pedestrian path, there is no physical barrier in the median between the bike path and pedestrian path. Trench drains would be placed along the median at these locations as needed to capture and direct the bike path runoff to the flow-through stormwater planters described above. It is anticipated that the trench drains would be fitted with durable metal grates for capturing trash and debris. The grates would be saltwater resistant, accessible for cleaning and ADA compliant. Low points at sag vertical curves would be drained using either the trench drain or the stormwater planter, depending on the low point location.

The pedestrian path would be cross-sloped to the outside (easterly) edge of the esplanade. Sheet flows would be discharged off the path surface and flush parapet edge to the river below. Alternatively, the parapet edge would be raised as a curb and sheet flows would be collected as gutter flow along the parapet. Drainage slots through the parapet would discharge the gutter flows to the river below. Installation of screens across the slot openings to capture trash and debris are an option to provide a minimum level of treatment of the pedestrian path runoff. The screens would be designed to facilitate regular maintenance intervals. Discharges to the river would avoid erosion and disturbance of the river mudline or silt bottom.

Existing drainage structures within the project limits would be cleaned as part of all alternatives.

3.3.3.5 Geotechnical

3.3.3.5.(1) UN Esplanade – A soil profile of subsurface conditions was developed in the UN Esplanade area. The actual soil conditions may vary from those presented in the soil profiles due to the variability in both the north-south and east-west directions. This area is characterized by a layer of sediment that varies in thickness significantly along this section of the project site. Driven piles may have trouble achieving lateral capacity in areas where bedrock is high and rock sockets may be required. Analysis would be performed to determine lateral capacity and determine which areas would require rock sockets. Where rock sockets are required, it would be more advantageous to utilize a drilled shaft foundation rather than driven piles.

3.3.3.5.(2) ODR Esplanade – A soil profile of subsurface conditions was developed in the ODR Esplanade area. The actual soil conditions may vary from those presented in the soil profiles due to the variability in both the north south and east west directions. This area is characterized by a thin layer of sediment. Therefore this area is not well suited for driven piles and instead it is likely a drilled pile with a rock socket is better suited to support a pier structure in this area of the site.

Refer to Appendix D – Geotechnical Information for additional subsurface exploration data.

3.3.3.6 Structures

A total of two new Upland Bridge Connections within the project limits are proposed over the FDR Drive to provide access between the landside, west of the FDR Drive, to the proposed esplanade. Refer to the Conceptual Design Plans in Appendix A and the information below.

3.3.3.6.(1) East 48th Street Upland Bridge Connection: BIN TBD

(a) South of East 48th Street FDR Drive Entrance Ramp to proposed esplanade crossing the FDR Drive
(b) Six span steel superstructure with concrete deck. Two main spans @ 120-ft each, one main span @ 140-ft, three ramp spans @ 90-foot each (approximate).
(c) Bridge clear width – 12-ft
(d) Utilities carried – Electric for Bridge Lighting only
(e) Clearances – 14.5-ft vertical clearance*
(f) Live Load – 100 psf
(g) Associated Work – Repurposing of portion of UN access drive
(h) Waterway – Coast Guard permit required as part of overall esplanade project

3.3.3.6.(2) East 54th Street Upland Bridge Connection: BIN TBD

(a) Sutton Parks at East 54th Street to proposed esplanade crossing the FDR Drive
(b) Seven span steel superstructure with concrete deck. One main span at 120 feet, one span at 105 feet, two spans at 70-foot, two spans at 60 feet and one span at 40 feet.
(c) Bridge clear width – 12-ft
(d) Utilities carried – Electric for Bridge Lighting Only
(e) Clearances – 10.5' vertical clearance*
(f) Live Load – 100 psf
(g) Associated Work – Reconstruct a portion of Sutton Parks to accommodate Upland Bridge Connection
(h) Waterway – Coast Guard permit required as part of overall esplanade project

*In accordance with NYSDOT Highway Design Manual Section 2.4.1, vertical clearance for proposed pedestrian bridges over the FDR Drive shall be 14.5 feet unless lower clearances to fixed overhead structures exist between the proposed bridge and entry ramp in both directions.

3.3.3.7 Hydraulics of Bridges and Culverts

The proposed esplanade would be divided into two sections: the UN Esplanade from East 41st to East 53rd Streets, and the Outboard Detour Roadway (ODR) Esplanade from East 53rd to East 60th Streets.

For the UN Esplanade approximately 92 piles would be required. These piles would be 48-inch diameter steel piles whose length on average is approximately 64 feet with a 5/8-inch thick wall.

For the ODR Esplanade, approximately 84 piles would be required. It is expected that approximately 37 of these piles would be 54-inch diameter steel piles with a 5/8-inch thick wall approximately 30 feet in length. Approximately 47 piles would be 24-inch diameter steel piles with a 5/8-inch thick wall approximately 30 feet in length.

Individual pile lengths would vary depending on rock elevations, which are discussed in Section 3.3.3.5 Geotechnical. Of the 176 piles, it is anticipated that approximately 142 would require rock sockets and would be drilled into the bedrock while approximately 34 piles would be vibrated into the sediment to the top of rock. There would be a two-foot minimum clearance between the pile caps and the Mean Higher High Water (MHHW) elevation. The west side of the esplanade would be offset 30 feet eastward from the bulkhead.

The construction of the Proposed Project would require minimal occupation of water column habitat through the installation of the above mentioned new piles. The piles would be generally placed every 100

feet in a row of two to three over the length of the proposed esplanade. Within the West Channel the river is subject to strong flows. In order to determine the percent of water volume that the Proposed Project would occupy within the length of the West Channel, the following was calculated: The approximate length of the proposed esplanade (parallel to the shoreline), of approximately 5,000 feet, multiplied by the average width of the West Channel in the Project Area (approximately 950 feet), multiplied by the average depth across the West Channel near the Project Area (assumed 40 feet). This volume of water measures approximately 190,000,000 cubic feet of water. Divided by the amount of water column to be removed (approximately 79,000 cubic feet), the piles of the proposed esplanade would occupy only 0.040 percent of the 0.96 mile length of the West Channel.

Therefore, it is not anticipated that the placement of these piles would alter the river flow and/or affect the local currents as the piles would occupy an imperceptible quantity of water column.

No new culverts are planned as part of the construction of the esplanade.

3.3.3.8 Guide Railing, Median Barriers and Impact Attenuators

The Proposed Project's railings and barriers would be designed for conformance to applicable design standards.

3.3.3.9 Utilities

Existing utilities within and contiguous to the project area are summarized in Section 2.3.3.9. Potential for impacts to existing utilities, including possible relocations, support, maintenance, and mitigation requirements would be determined and coordinated during Final Design.

3.3.3.10 Railroad Facilities

There are multiple tunnels crossing the proposed site under the East River; including several subway tunnels and the Midtown Tunnel tubes. Extreme caution would be used when installing foundations. All tunnel locations should be surveyed prior to construction and MTA should be consulted during construction. Contractor should follow all monitoring requirements of MTA during construction period. A Force Account with MTA/NYCT may be required and would be coordinated as necessary during Final Design.

3.3.4 Landscape and Environmental Enhancements

3.3.4.1 Landscape Development and Other Aesthetics Improvements

The Proposed Project is intended to enhance the pedestrian experience along the waterfront and provide for increased views along the East River thereby enhancing the public realm for the primary user groups (pedestrians and cyclists). The constructed esplanade would minimally affect the block forms of the surrounding area or alter any street patterns, hierarchies or streetscape elements. The Proposed Project is expected to have significant, positive effects to the existing visual corridor. New elements and fixtures introduced to the area would be selected to reflect and enhance the context and architecture of the existing structures within the surrounding area. Refer to Chapter 4 for a more detailed discussion.

3.3.4.2 Environmental Enhancements

The Proposed Project is intended to enhance the pedestrian experience along the waterfront and provide for increased views along the East River thereby enhancing the public realm for the primary user groups (pedestrians and cyclists). In addition to developing a bike path as discussed in Section 2.3.22, there are several opportunities for environmental enhancements within the project limits. Opportunities being investigated for the Proposed Project include the following:

(1) Fishing access
(2) Installation of rain basins/planters for stormwater management on the proposed esplanade
(3) Trees and plantings including native waterfront plants and plants that will attract wildlife
(4) Educational/environmental signage

The project will include fill below the Spring High Water Line and coverage of open water habitat. These fill volumes and coverage areas have been calculated as debits for the project. Project related improvements at several off-site locations within the New York Harbor have been identified as credits to offset the project debits. These include:

- Removal of the pier at East 74th Street in Manhattan – Located 1 mile from the Proposed Project site, the pier is owned by the City of New York and is a former ConEdison platform.
- Removal of the coal dock at North Brother Island in the Bronx – Located 4.2 miles from the Proposed Project site, the site is owned by the City of New York.
- Partial removal of the Bush Terminal Pier 5 and Pier 7 in Brooklyn – Located 6.4 miles from the Proposed Project site, the site is owned by the City of New York.
- Removal of a collapsed building over water at the Cromwell Center on Staten Island – Located 9.3 miles from the Proposed Project site, this area is owned by the City of New York.

These improvements generally involve in-kind pier, structure, and debris removals with the intent of restoring the littoral zone/benthic habitat. It is understood that additional project related improvements may need to be established for the construction of the UN Esplanade section of the proposed esplanade. Based upon the project timeline, it is proposed that these additional improvements be provided through one of three options: 1) additional off-site removals; 2) mitigation bank (if/when available); or 3) in-lieu fee arrangement (if/when available). Future coordination with NYSDEC to establish these additional project related improvements will be determined prior to or in concurrence with construction of the UN Esplanade section.

3.3.5 Miscellaneous

The proposed design intends to reuse 20 out of 24 existing caissons as support structures for the new ODR Esplanade structure between approximately East 53rd and East 60th Streets. It is anticipated that the caissons would be retrofitted as permanent supports to the proposed esplanade. A preliminary feasibility assessment conducted in 2011 confirmed the viability of this reuse program (Refer to Appendix E for East Midtown Waterfront Esplanade Marine Structures Condition Survey & Structural Assessment), and a joint USACE and NYSDEC permit has been prepared in support of this portion of the work. This permit application would be revised to include any proposed design modifications related to this re-use of the caissons as well as to include the additional portions of the Esplanade project. Any unused caissons would be removed.

CHAPTER 4 - SOCIAL, ECONOMIC and ENVIRONMENTAL CONDITIONS & CONSEQUENCES

4.1 Introduction

This chapter reviews potential social, economic and environmental impacts and consequences that may result from the construction of the proposed 0.96 mile long waterfront esplanade located along the Manhattan side of the East River, the Proposed Project. See Figure 1.2-1 Project Location Map.

4.1.1 Environmental Classification

4.1.1.1 NEPA Classification

This project is classified as a NEPA Class III project. NEPA Class III projects are actions in which the significance of the environmental impact is not clearly established. All actions that are not Class I or II are Class III. All actions in this class require the preparation of an Environmental Assessment (DR/EA). Refer to Appendix I for NEPA Checklist.

Based on the Environmental Assessment in the Final DR/EA a determination is made as to whether the action:

- Will not have a significant effect on the environment and a "Finding of No Significant Impact" (FONSI) is issued.
- Will have a potential for a significant effect, and an Environmental Impact Statement (EIS) is required.

4.1.1.2 SEQR Classification

NYSDOT has determined that this project is a SEQR Type II Action in accordance with 17 NYCRR Part 15 - Procedures for Implementation of State Environmental Quality Review Act. SEQR Type II projects include actions which have been determined not to have a significant effect on the environment.

4.1.2 Coordination with Agencies

FHWA and NYSDOT are lead agencies for the preparation of this NEPA/SEQR documentation.

4.1.2.1 NEPA Cooperating and Participating Agencies

The following agencies are Cooperating Agencies in accordance with 23 CFR 771.111(d):

- National Marine Fisheries Services
- NYC Economic Development Corporation
- NYC Department of Transportation
- NYC Department of Parks and Recreation
- NYS Department of Environmental Conservation
- NYS Office of Parks, Recreation and Historic Preservation
- U.S. Department of Transportation Federal Highway Administration (also, the NEPA lead agency)
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Fish and Wildlife Service

4.2 Social

The study area (defined as within approximately 400 feet of the Proposed Project) includes upland areas situated west of the proposed esplanade and the FDR Drive. The landside study area can generally be divided into two portions: a southern portion adjacent to the United Nations Headquarters and other high-rise buildings from approximately East 41st to 53rd Streets; and a northern portion along the waterfront from East 53rd to 60th Streets.

4.2.1 Land Use

4.2.1.1 Demographics and Affected Population

Existing Conditions

Existing land use within the study area is illustrated on Figure 4.2-1. A field survey was conducted to determine the existing land use and neighborhood characteristics of the study area. A photograph map key is provided as Figure 4.2-2 and photographs of the waterfront area and adjacent upland areas are provided in Figure 4.2-3.

Directly south of the study area is an existing pier, known as the Waterside Pier, which is no longer used and not accessible to the public. This Waterside Pier is situated on platforms over the East River, between East 38th and 41st Streets. The pier is approximately 850 feet in length. There is an at-grade connection (at East 37th Street) to the pier from the northern end of Glick Park. The park is located east of the FDR Drive between East 36th and 38th Streets.

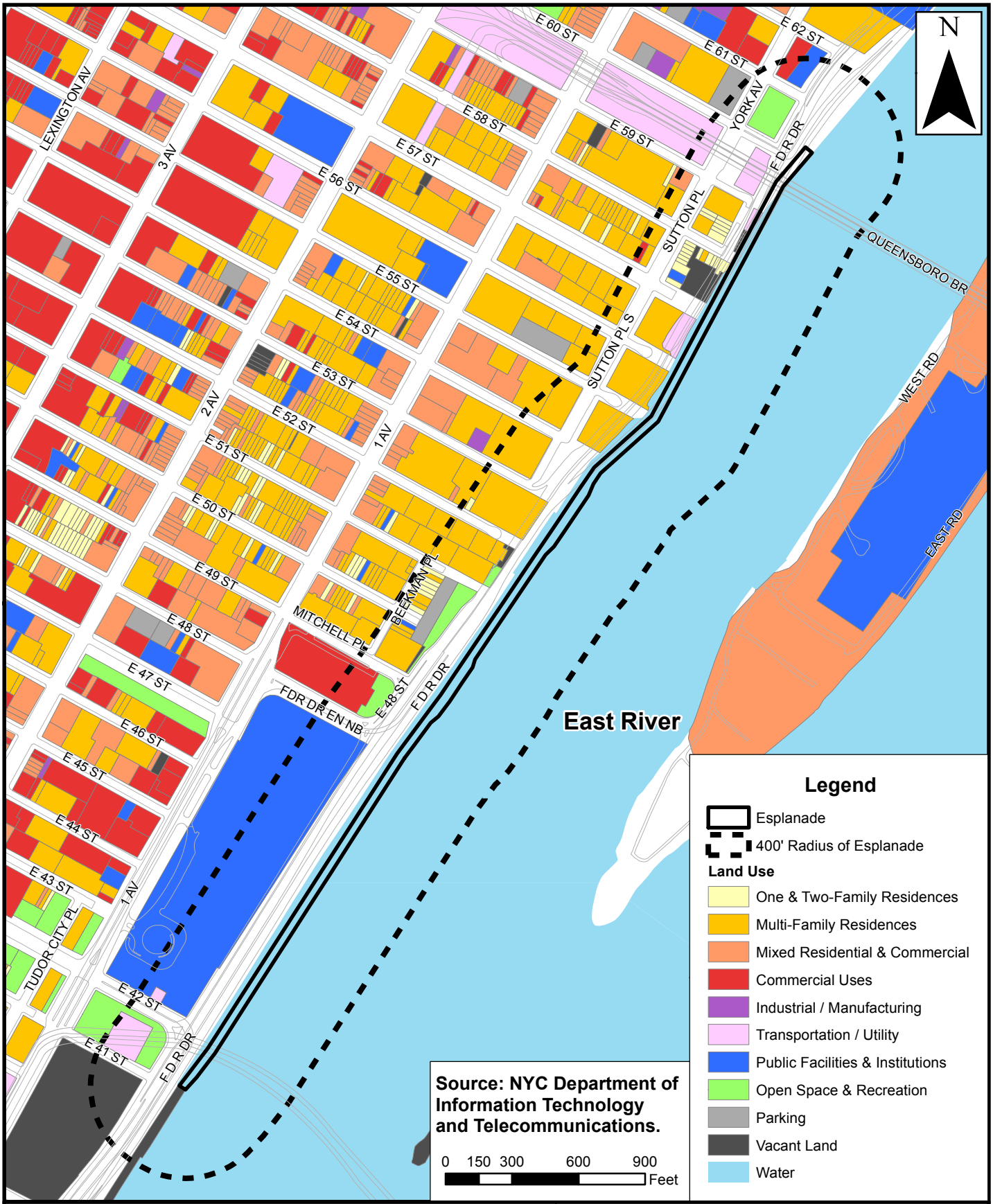
A large vacant area is located north of East 38th Street extending to East 41st Street. This area was formerly occupied by a Con Edison power plant and associated buildings, which have all been demolished and removed. The vacant area extends westward to First Avenue. Construction on a portion of the site, between East 35th and East 36th Streets started in July 2013. Two high-rise residential towers (accommodating 800 rental units) are expected to be completed by early 2016. The development will include a public elementary school, to open in the fall of 2014, and a private park (contingent on approval from NYCDCP).

To the north, between East 41st and 42nd Streets and First Avenue to the East River is a ventilation tower for the Queens Midtown Tunnel. The Robert Moses Playground, a NYCDPR open space resource is located around the ventilation tower, adjacent to the FDR Drive along the waterfront. The playground contains basketball and handball courts.

The landside study area from East 42nd Street to East 48th Street contains the United Nations Headquarters. The UN complex consists of both low- and high-rise office buildings surrounded by open grass areas and landscaping. The 39-story Secretariat building is located due north of East 42nd Street, parallel to the waterfront, with the three-story Dag Hammarskjold Library and other meeting halls situated east of the office tower, adjacent to and partially extending on a platform over the FDR Drive. There are garden areas north of the low-rise assembly buildings situated due west of the FDR Drive. A temporary building is also located in this section of the UN complex, west of the garden areas and south of East 48th Street.

Between East 48th to 49th Streets is a large office and mixed-use building complex known as United Nations Plaza. The complex contains two six-story buildings with retail stores and banks. Two separate 50-story towers are situated in the middle of the block atop these bases. MacArthur Park, an open space resource, is located east of the United Nations Plaza buildings, adjacent to the FDR Drive.

North of East 49th Street and the United Nations Plaza are high-rise buildings along Mitchell and Beekman Places. A 17-story multi-family residential building is located along the east side of Beekman Place, at the terminus of Mitchell Place. East of the main building is a private roof-deck landscaped area on top of a two-story addition, situated adjacent to FDR Drive. North of this building, along the east side



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East Midtown Waterfront Esplanade
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Figure 4.2-1

Land Use Map

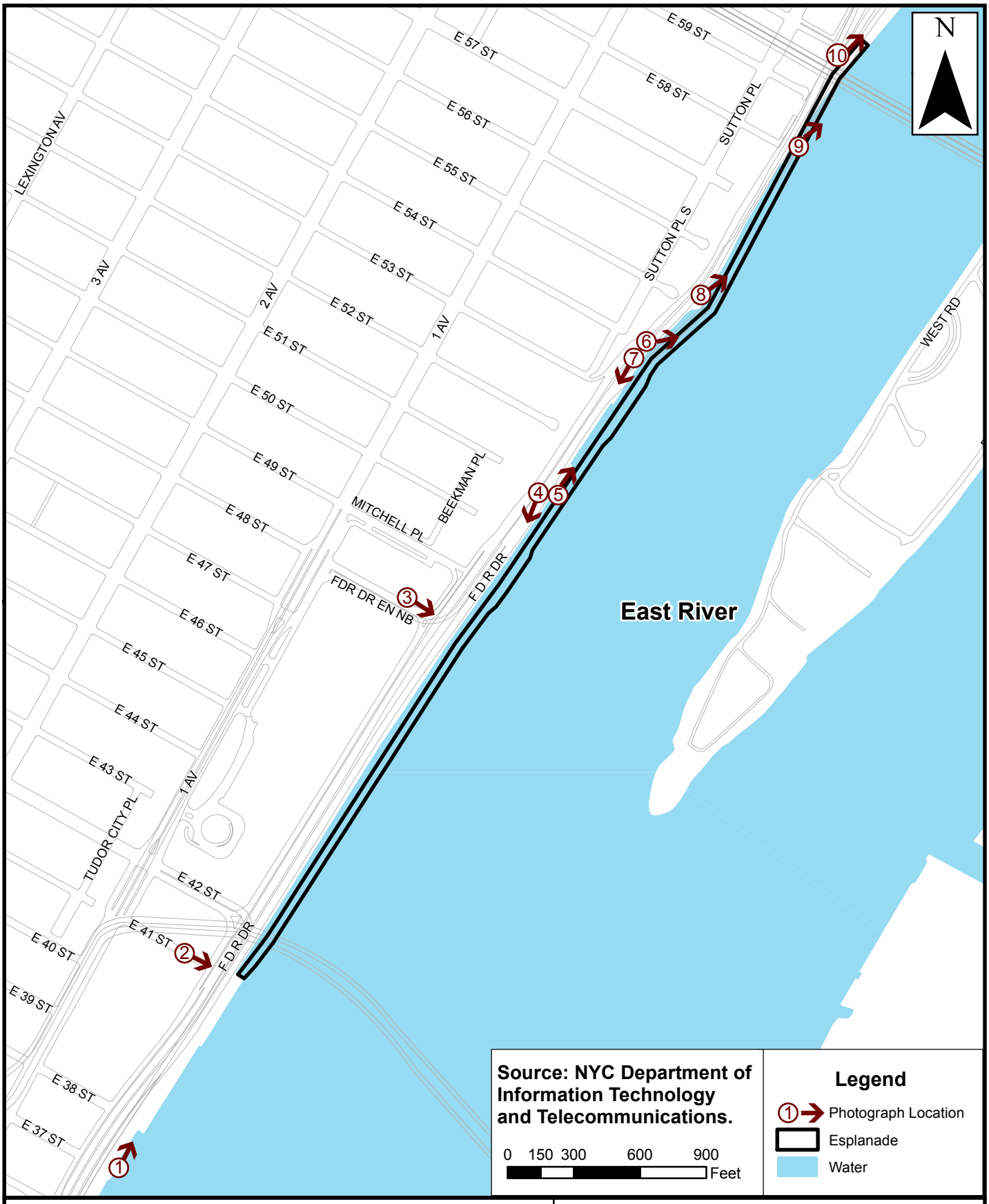

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Figure 4.2-2

Photograph Key Map

1. View looking North from East River Esplanade Park (at 37th Street)

2. Terminus of 41st Street, looking East to the FDR Drive and East River

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Figure 4.2-3
Photographs of the Project Site

3. Terminus of 48th Street, looking East towards Queens and the East River

4. View looking South from Peter Detmold Park (at 51st Street) with the United Nations Secretariat building in the background

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Figure 4.2-3
Photographs of the Project Site

5. View looking North of the Ed Koch Queensboro Bridge from Peter Detmold Park at 51st Street

6. View looking North of the East River and Roosevelt Island from Sutton Place Park at 54th Street

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Figure 4.2-3
Photographs of the Project Site

7. View of the FDR Drive and East River, looking South from Sutton Place Park at 54th Street

8. View of East River and Roosevelt Island, looking North from Sutton Place Park 55th Street

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East Midtown Waterfront Esplanade
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Figure 4.2-3
Photographs of the Project Site

9. Looking North from Sutton Place Park at 58th Street, with Views of Roosevelt Island

10. View looking North from East River Pavilion over FDR Drive at 60th Street

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Figure 4.2-3
Photographs of the Project Site

of Beekman Place, is Peter Detmold Park, stretching northward from East 49th Street to 51st Street. This half-acre open space resource includes paved and landscaped walkways adjacent to the FDR Drive.

Between East 53rd and East 60th Streets, a portion of proposed esplanade would be situated over existing ODR caissons placed in the East River up to and underneath the Ed Koch Queensboro Bridge. These caissons were used as temporary support structures for the former reconstruction of the FDR Drive.

The landside northern portion of the project area contains multi-family residential towers and open spaces that are part of the Sutton Place neighborhood, extending northward to the Ed Koch Queensboro Bridge, adjacent to the waterfront. Starting from East 51st Street and continuing to East 54th Street, the area contains residential buildings ranging in heights from six to 26 stories, which are situated west of the FDR Drive. At the terminus of East 51st Street, there is a stairway and pedestrian bridge across the FDR Drive connecting the neighborhood to a narrow waterfront walkway along the East River. The waterfront walkway contains some trees and park benches.

Sutton Parks is located west of the FDR Drive between East 53rd and East 54th Streets. North of East 54th Street, the FDR Drive is situated underneath residential buildings that are built on platforms over the roadway. A 20-story residential building is situated over the FDR Drive between East 54th and 55th Streets. Another 20-story residential building is situated over the roadway between East 55th and 56th Streets, with a large open deck for that residential building located directly over the FDR Drive. Between East 53rd and 57th Streets, Sutton Parks is situated directly over the FDR Drive on a platform, with multi-family residential buildings located west of the park areas, fronting Sutton Place.

At the northern limit of the study area, several low- and mid-rise residential buildings are located due west of the FDR Drive, fronting Riverview Terrace. Six attached four-to six-story townhouses are located along the west side of Riverview Terrace, facing the FDR Drive and waterfront, with a 20-story multi-family residential building located to the north along East 59th Street. North of East 59th Street, along York Avenue, is an industrial power station. At York Avenue and East 60th Street, a ramp over the FDR Drive provides shared access for bicycles and pedestrians to a waterside path that extends north along the East River, under the Ed Koch Queensboro Bridge.

No-Action Alternative

Under the No-Action Alternative, the proposed esplanade would not be constructed, and the areas over the East River would remain in their existing state. Existing conditions in this area of the river are expected to remain consistent by the 2025 study year, with the exception of the removal of the ODR caissons between East 54th and 60th Streets. No changes are expected to occur to the proposed Upland Bridge Connection areas at the termini of East 48th and 54th Streets. However, significant land use changes are expected to occur within the upland study area, as further discussed below, generally from south to north.

At 616 First Avenue, situated along the east side of First Ave between East 35th and East 36th Streets, 40- and 49-story tall residential buildings are under construction, to be completed by the year 2016. The buildings would contain a mixture of residential, retail, and publicly-accessible open space. A total of 1,008,121 gross square feet (above-grade) is proposed, including 800 residential units (within 748,574 gross square feet of residential space) along with approximately 2,071 square feet of commercial retail space, approximately 34,507 square feet (0.79 acres) of open space, and 294 underground public parking spaces.

Adjacent to this portion of the upland study area and due south of the proposed waterfront esplanade is the Waterside Pier, which is currently not used and public access is restricted. As part of a separate action stipulated in the MOU signed in October 2011, the City of New York would take possession of the Waterside Pier, with EDC as the responsible agency. The Waterside Pier would be rehabilitated with through funds from ConEdison, resulting in approximately 38,000 square feet (0.9 acres) of new open space and a connection to Glick Park to its south. The rehabilitation of the pier is expected to begin in 2014 and be open to the public in 2015.

The upland area contains a large vacant parcel between East 38th to 41st Streets, formerly occupied by a Con Edison power plant and associated buildings, which have all been demolished. This vacant parcel is anticipated to be developed by the 2025 study year. At 685 First Avenue, located along the west side of First Ave between East 39th and East 40th Streets, a 69-story mixed-use building is proposed with a total of approximately 1,006,093 gross square feet (above-grade), including 1,006 residential units (within approximately 967,376 gross square feet of residential space) and approximately 6,352 commercial retail square feet, along with approximately 7,605 square feet (0.17-acres) of publicly open space and 110 underground accessory parking spaces.

At 700 First Avenue, located along the north side of East 38th Street, a new development called the Waterside is proposed. It would contain three towers of 66, 60, and 57 stories with a mixture of uses, totaling approximately 2,053,825 gross square feet (above-grade). Approximately 2,267 residential units (within approximately 2,037,657 gross residential square feet) would be provided, along with approximately 58,074 square feet of commercial retail, approximately 168,659 square feet (3.87 acres) of public open space, and parking that includes 499 underground accessory parking spaces and 651 underground public parking spaces.

At 708 First Avenue, located along the south side of East 41st Street between First Avenue and the East River, a 47-story building with a total of approximately 1,537,107 gross square feet (above-grade) is proposed. The building would contain approximately 1,532,437 square feet of commercial office and approximately 4,670 square feet of commercial retail space. Open space and underground parking would be shared with the Waterside development at 700 First Avenue.

North of the vacant Con Edison site is the ventilation tower for the Queens Midtown Tunnel contained within the Robert Moses Playground, along the east side of First Avenue between East 41st and East 42nd Streets. State enabling legislation and a Memorandum of Understanding between the City and State has been executed that provides a framework for the United Nations to consolidate its New York City campus with a new 546-foot height office building (the United Nations Consolidation Building), while creating funding sources for this Proposed Project and a replacement playground situated on Asser Levy Place between East 23rd and East 25th Street. Under this concept, the United Nations Development Corporation would build on the western half of the playground, which is now a blacktop area used for recreational activities, including roller hockey, while the existing dog run and basketball courts to the east (adjacent to the FDR Drive) would not be altered. Based on the Draft Scope of Work for the Preparation of an Environmental Impact Statement, United Nations Consolidation Project (8/29/2013), it is expected that this building would consist of approximately 900,000 square feet of institutional (commercial office) space and include a pedestrian tunnel under East 42nd Street that connects to the UN Headquarters. The building would accommodate office space for use by approximately 2,700 UN employees, with a cafeteria and support space on the lower floors. Construction is expected to be completed by the year 2018.

United Nations Perimeter Security measures are planned (preliminary design), including modifications to the UN's loading and receiving operations, vehicular access in the parking garage, and related perimeter security enhancements. The plan would result in geometric modifications along First Avenue, East 42nd Street, and East 48th Street.

At 50 United Nations Plaza (345 East 46th Street), a 44-story tall residential condominium building is planned with 87 residential units and with 240,000 gross square feet of commercial office space. Changes in the UN Headquarters are also expected by the 2025 study year. The complex contains a temporary building south of East 48th Street, which is outside of the study area. The temporary building is expected to no longer be necessary by the 2025 study year. The UN has embarked on an extensive renovation project in 2008 which is expected to last through 2015, during which the 55 year old Headquarters will be gutted and restored with contemporary infrastructure. However, such changes do not alter the overall land uses within the UN Headquarters.

The Andrew Haswell Green (AHG) Park, located between East 60th Street and East 63rd Street on the east side of the FDR Drive, would be connected to the northern section of the proposed esplanade. The

rehabilitation of this existing pier structure is expected to be completed prior to the completion of the proposed esplanade. The rehabilitated pier would occupy the same footprint of the existing pier.

Proposed Project

The Proposed Project would not result in any significant adverse impacts to land use or the surrounding area. The development of the Proposed Project would provide more public waterfront access and is consistent with City land use goals and policies. The Proposed Project would benefit the surrounding residential and mixed-use neighborhood by providing additional open space amenities for residents of and visitors to the area. Areas to the south contain high-rise multi-family residential developments between East 37th and East 38th Streets, as do areas adjacent to the northern portion of the Proposed Project in the East 40s and East 50s. Directly south of the Proposed Project is the Waterside Pier project, which will be developed separately as open space and would be linked to the Proposed Project as well as Glick Park and other open space areas to the north underneath the Ed Koch Queensboro Bridge.

The proposed Upland Bridge Connections to the esplanade for pedestrians and bicyclists would not result in any significant adverse land use impacts. The southern limits of the Proposed Project would connect to the Waterside Pier which ends at East 41st Street. The Waterside Pier is itself proposed to be rehabilitated for new open space use and open to the public in 2015. At East 48th Street, a ramp for pedestrians and bicyclists to the esplanade would be built over the FDR Drive, modifying the southbound exit ramp from the FDR Drive on the southern side of East 48th Street adjacent to the northern boundary of the UN Headquarters, but not resulting in a loss of travel lanes or land use changes. At East 51st Street, east of Sutton Place, there is a stairway and pedestrian bridge across FDR Drive connecting the neighborhood to an existing walkway along the East River, which would be connected to the proposed esplanade. At East 54th Street, a ramp for pedestrian and bicycle access to the esplanade would be built from the existing Sutton Parks at the terminus of the roadway over the FDR Drive. The new access ramp would impact the park but would not limit the continued use of the park as a passive open space and would provide access to new recreational land uses provided by the proposed esplanade. The northern limit of the proposed esplanade would be connected to existing Andrew Haswell Green Park, underneath the Ed Koch Queensboro Bridge.

As significant adverse land use impacts would not occur as a result of the Proposed Project, further land use assessments are not warranted.

4.2.1.2 Comprehensive Plans and Zoning

Zoning

The *New York City Zoning Resolution* (ZR) dictates the use, density and bulk of development within New York City. New York City has three basic zoning district classifications: residential (R), commercial (C) and manufacturing (M) districts. These three basic classifications are further divided into low-, medium- and high-density districts, as well as into standard and contextual districts. Certain areas of the City are also established as "Special Mixed-Use Districts", which allow mixed residential and industrial neighborhoods while permitting the expansion of existing developments and the creation of new developments with a variety of uses. The maximum bulk permitted for new developments within any zoning district is mainly governed by the district's maximum floor area ratio (FAR)[2] and, when applicable, minimum required open space.

Existing Conditions

The location of the proposed esplanade corridor area, along the East River, is located adjacent to portions of zoning districts that extend from the adjacent upland areas eastward to the pierhead line.

[2] The floor area ratio, when multiplied by the area (in square feet) of a zoning lot, represents the maximum building floor area that can be developed on the lot.

This section will focus on the existing zoning designations for the surrounding upland study area, as illustrated in Figure 4.2-4. Exhibit 4.2-1 provides a summary of the zoning districts within the upland study area.

The southern portion of the upland study area is designated C5-2, mapped over the former Con Edison plant site between East 37th to 41st Streets, First Avenue and the East River. The C5-2 zoning district is intended for office and retail stores, as well as mixed-use and high-rise residential buildings. The C5-2 district allows for a maximum FAR of 10.0 for commercial, residential and community facility uses, with a 20 percent increase for plaza bonuses. Buildings occupied by commercial, residential and/or community facility uses may be configured as a tower that penetrates the sky exposure plane, with a maximum allowable base height of 85 feet. The residential equivalent of the C5-2 district is R10. All commercial uses in C5 districts are exempt from parking requirements, as public transportation is generally easily accessible.

North of the former Con Edison plant is the UN headquarters, which extends from East 42nd Street to East 48th Street, from First Avenue to the waterfront. The UN headquarters is also mapped within a C5-2 zoning district.

North of East 49th Street to East 51st Street, the upland area is a mapped as an R8B zoning district. As the R8B zone is a contextual residential district, the Quality Housing Program is mandatory. This program establishes bulk regulations that set height limits and allow high lot coverage buildings that are set at or near the street line. Quality Housing buildings must also have amenities related to the planting of trees, landscaping and recreation space. R8B zoning districts permit a maximum FAR of 4.0 for residences and community facilities. The base height of a building before a 10-foot setback is between 55 and 60 feet, with a maximum building height of 75 feet. All open areas between the street wall and front lot line must be planted. In R8B zoning districts, parking is generally required for 50 percent of the number of dwelling units, and can be waived if 15 or fewer spaces are required.

An R10 district is mapped north of East 51st Street to East 58th Street. R10 zoning districts permit the highest residential density in the City, with a maximum FAR of 10.0 for residences and community facilities, with a 20 percent increase for plaza bonuses. In an R10 district, a residential building fronting on a wide street must have a contextual base between 60 and 85 feet high, extending continually along the street line. For buildings with only narrow street frontage, no contextual base is required, and towers are permitted if they are set back from the street line at least 15 feet. In both instances, building heights are governed by tower rules and setback requirements. In R10 zoning districts, parking is generally required for 40 percent of the number of dwelling units (waived in the Manhattan Core, expect for the Special Hudson Yards District).

An M3-2 district is mapped north of East 58th Street to East 60th Street. M3 districts are mapped for heavy industries usually located near the waterfront, that generally generate noise, traffic or pollution, such as power plants, solid waste transfer facilities and recycling plants. A maximum FAR of 2.0 is allowed for manufacturing and commercial uses. Buildings cannot penetrate the sky exposure plane, after a 60 foot maximum base height. Parking is not required.

As noted in Article 6, Section 2 of the New York City *Zoning Resolution*, certain residential zoning districts (R6, R7, R8, R9 and R10 districts), some of which are found in the upland study area, may also be subject to special waterfront use regulations. Uses defined as “waterfront-enhancing,” such as recreational and cultural uses located on the water’s edge, that add to the public use and enjoyment of the waterfront, may be permitted in these districts. The provisions establish special regulations which are designed to guide development along the City's waterfront and in so doing to promote and protect public health, safety and general welfare. These general goals include, among others, the following purposes: to maintain and reestablish physical and visual public access to and along the waterfront; to promote a greater mix of uses in waterfront developments in order to attract the public and enliven the waterfront; to encourage water dependent uses; to create a desirable relationship between waterfront development and the water's edge, public access areas and adjoining upland communities; to preserve historic resources along the waterfront; and to protect natural resources in environmentally sensitive areas along the shore.

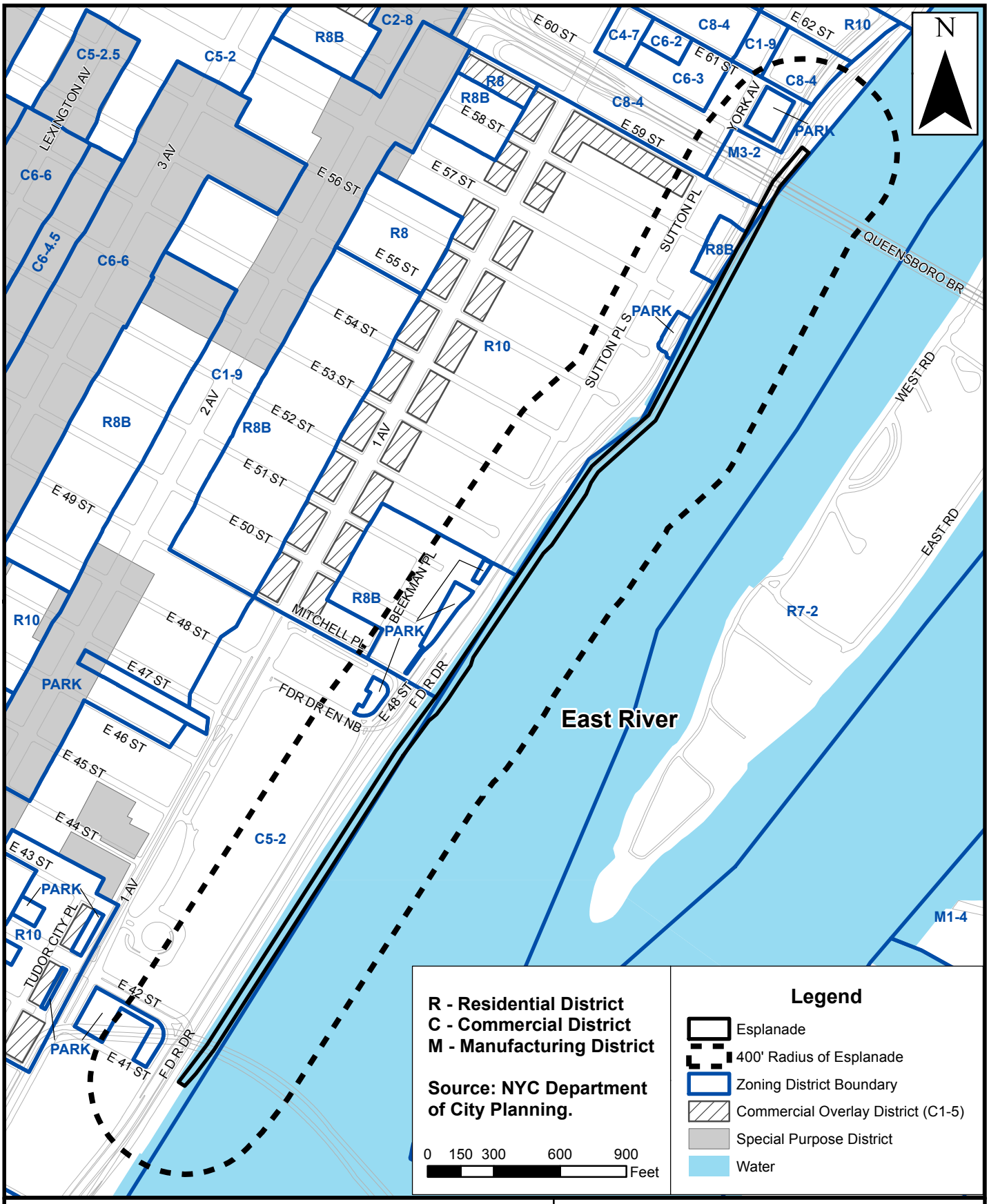

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Figure 4.2-4

Zoning Map

Exhibit 4.2-1 Summary of Zoning Districts in the Study Area		
Zoning District	**Type and Use Groups** [3]	**Maximum Floor Area Ratio (FAR)**
C5-2	Central Commercial (Restricted) UGs 1-6, 9-11	Commercial: 10.0 [1] Residential: 10.0 [1] Com. Facility: 10.0 [1,2]
R8B	Higher-Density Residential UGs 1-4	4.0 FAR – Residential 4.0 FAR – Community Facility
R10	Higher-Density Residential UGs 1-4	10.0 FAR – Residential [2] 10.0 FAR – Community Facility
M3-2	Heavy Manufacturing UGs 6-14, 16-18	2.0 FAR – Manufacturing 2.0 FAR – Commercial

Notes: [1] Up to 20 percent increase for a plaza bonus
[2] Up to 12 FAR with Inclusionary Housing bonus
[3] See ZR §62-29 for special use regulations in waterfront districts
UG = Use Groups
Source: Zoning Handbook, New York City Department of City Planning, January 2006.

No-Action Alternative

The No-Action Alternative would result in no changes to zoning within the corridor. Existing zoning controls would remain consistent and currently planned land use development in the area proposed by others would be carried out.

The upland area to the south contains a large vacant parcel between East 38th to East 41st Streets, formerly occupied with a Con Edison power plant and associated buildings, which have all been demolished and removed. This vacant parcel is anticipated to be developed, potentially with a mixed-use development including residential, commercial office and retail uses.

It is expected that the proposed UN Consolidation Building would be constructed on the western portion of Robert Moses Playground, north of the vacant Con Edison site, and occupied by the year 2018. Therefore, ULURP and zoning changes to enable the construction of the building would be completed by the end of 2015.

Proposed Project

The proposed esplanade would be constructed beyond the pierhead line; therefore, it would not be subject to zoning regulations. Regardless, the project would be consistent with the Special Regulations Applying in the Waterfront Area (Article VI) of the zoning resolution, which guides development along the City's waterfront, including pier and similar type structures. The Proposed Project would not result in any significant adverse impacts to zoning.

4.2.1.3 Comprehensive Plans and Public Policies

The Proposed Project is consistent with City and County comprehensive plans.

Aside from land use and zoning regulations, other public policies can affect the allowable uses on a project site. There are several public policy initiatives that pertain to the Proposed Project. These public policy initiatives include a variety of waterfront revitalization plans and policies put forth by the City to help preserve and protect the City's waterfront. The public policies applicable to the Proposed Project include the following:

- PlaNYC 2030
- PlaNYC: A Stronger, More Resilient New York
- NYC Waterfront Revitalization Program (WRP)
- New York City Waterfront Vision and Enhancement Strategy (WAVES)

- Manhattan CB-6 197-A Plan

PlaNYC 2030

PlaNYC 2030 is New York City's Plan to achieve a sustainable future and enhance New York's urban environment. Released in April 2007 and updated in 2011, PlaNYC 2030 provides strategies to manage the City's growing needs given the fixed amount of available land and to create a greater and more environmentally-friendly New York City. The original plan focuses on the five key dimensions of the City's environment: land, air, water, energy, and transportation.

The April 2011 update to *PlaNYC: A Greener, Greater New York* includes policies to address three key challenges the City faces over the next 20 years: (1) population growth of over one million new residents over the next two decades; (2) repairing and maintaining the City's aging infrastructure, including the City's bridges, water mains and sewer systems, transportation and transit facilities, buildings and power systems; and (3) conserving resources related to global climate change.

The April 2011 updated plan divides goals into ten areas, to be achieved through over a hundred separate policy initiatives designed to meet the City's sustainability goals. An evaluation of sustainability is generally focused on "large publicly-sponsored projects". As the Proposed Project is a City-sponsored project, an evaluation of sustainability is provided below, including a discussion of how PlaNYC's sustainability initiatives apply to the Proposed Project and an assessment of its consistency with the City's sustainability goals.

1. Housing and Neighborhoods: This goal is about creating homes for almost a million additional New Yorkers while making housing and neighborhoods more affordable and sustainable. The plan contains 11 initiatives within three sub-areas. Initiatives to create capacity for new housing include continuing transit-oriented rezoning, exploring additional areas for new development, and enabling new and expanded housing models to serve evolving population needs. To finance and facilitate new housing, objectives include developing new neighborhoods on underutilized sites and developing new housing units on existing City properties, while increasing the sustainability of City-financed and public housing.

   The Proposed Project involves the construction of a public esplanade. No residential units would be created or rehabilitated as part of the Proposed Project. As such, this goal is not applicable.

2. Parks and Public Space: The goal is to ensure that all New Yorkers live within a 10-minute walk to a park. The plan for parks and public space contains 15 initiatives within five sub-areas, including targeting high impact projects in neighborhoods underserved by parks, by opening underutilized spaces for parks and playgrounds, creating destination-level spaces for all types of recreation with new and upgraded flagship parks, and re-imagining the public realm by creating a network of green corridors and supporting ecological connectivity.

   The Proposed Project is consistent with PlaNYC's goals and initiatives for parks and public space, as it includes the creation of a new park site and public esplanade along the East River, providing enhanced recreational amenities for area residents and visitors. The new public esplanade would create a destination-level space for a variety of users, as part of a continuing re-imagination of the public realm and the creation of a larger connected waterfront esplanade throughout the east side of Manhattan.

3. Brownfields: Under PlaNYC, all contaminated land in the City would be cleaned up. The plan for Brownfields contains 11 initiatives within four sub-areas to develop programs to accelerate brownfield cleanup and redevelopment and to strengthen incentives for brownfield cleanup and redevelopment.

   This goal is not applicable to the Proposed Project as no Brownfield sites are present within the project limits.

4. Waterways: Under PlaNYC, the quality of the City's waterways would be improved in order to increase opportunities for recreation and restore coastal ecosystems. The plan for waterways contains 15 initiatives within four sub-areas, including continuing the implementation of grey infrastructure upgrades to wastewater treatment plants, expanding the sewer network, using green infrastructure to manage stormwater, providing incentives for green infrastructure, removing industrial pollution from waterways, and protecting and restoring wetlands, aquatic systems, and ecological habitat.

   This PlaNYC 2030 goal is generally not applicable to the Proposed Project. However, the Proposed Project would remove any pollution encountered within the area (underwater) during construction. On-site stormwater source controls would be implemented to clean and slowly release stormwater runoff with controlled discharge rates to the East River, as appropriate.

5. Water Supply: The main goal related to water supply is to ensure the quality and reliability of the City's water supply system. The plan for water supply contains 13 initiatives within four sub-areas, including ensuring the quality of drinking water by continuing the Watershed Protection Program, maintaining and enhancing infrastructure that delivers water to NYC, modernizing in-city distribution, upgrading water main infrastructure, improving the efficiency of the water supply system by increasing operational efficiency with new technology, and increasing water conservation.

   Although it is anticipated that the Proposed Project would contain drinking fountains that incorporate new and efficient technologies for water conservation, such as low-flow fixtures that would help conserve the water supply, this PlaNYC 2030 goal is generally not applicable to the Proposed Project.

6. Transportation: The main goal for transportation is to expand sustainable transportation choices and ensure the reliability and quality of the City's transportation network. The plan for transportation contains 14 initiatives within three sub-areas, including improving and expanding sustainable transportation infrastructure and options such as bus service, make bicycling safer and more convenient, enhancing pedestrian access and safety, and maintaining and improving the physical condition of roads and the transit system.

   The Proposed Project meets PlaNYC's goal of expanding sustainable transportation choices and ensuring the reliability and quality of the City's transportation network. The proposed esplanade would allow for pedestrians and bicyclists to travel along the East Midtown Waterfront along a separate pathway from automobiles. This would help to make bicycling safer and more convenient and further enhance pedestrian access and safety.

7. Energy: The main goal of this area of PlaNYC is to reduce energy consumption and make energy systems cleaner and more reliable. The plan for energy contains 17 initiatives within four sub-areas, including improving energy planning and efficiency, providing cleaner, more reliable, and affordable energy by encouraging the development of clean distributed generation, and modernizing the transmission and distribution systems.

   Although it is anticipated that the Proposed Project would include some green building components and could obtain energy usage from renewable sources, for lighting and other applicable components, this PlaNYC 2030 goal is generally not applicable to the Proposed Project.

8. Air Quality: The main goal of this technical section of PlaNYC is to achieve the cleanest air quality of any major city in the United States. The plan for air quality contains 10 initiatives within four sub-areas, including monitoring and modeling neighborhood-level air quality, reducing transportation emissions, reducing emissions from buildings by promoting the use of cleaner-burning heating fuels, and updating codes and standards.

It is anticipated that the Proposed Project would include trees and other plantings; however, this PlaNYC 2030 goal is generally not applicable to the Proposed Project.

9. Solid Waste: The main goal of PlaNYC related to solid waste is to divert 75 percent from landfills. The plan for solid waste contains 13 initiatives within four sub-areas, including reducing waste through waste prevention opportunities and the reuse of materials, improving the efficiency of the waste management system by reducing the impact of the waste system on communities, and reducing the City government's solid waste footprint.

   Although the Proposed Project would promote waste prevention opportunities and the possible reuse of materials, with strong incentives for recycling during and after construction, this PlaNYC 2030 goal is generally not applicable to the Proposed Project.

10. Climate Change: The main goals of PlaNYC related to climate change are to reduce greenhouse gas (GHG) emissions by more than 30 percent over the next two decades (as well as 80 percent by 2050), while increasing the resilience of communities, natural systems, and infrastructure to climate risks. The plan for climate change contains 13 initiatives within six sub-areas, including reducing and tracking GHG emissions, assessing vulnerabilities and risks from climate change, increasing the resilience of the City's built and natural environments, protecting public health from the effects of climate change by mitigating the urban heat island effect and enhancing understanding of the impacts of climate change on public health, increasing the City's preparedness for extreme climate events, and creating resilient communities though public information and outreach.

    The Proposed Project complies with this goal of PlaNYC for climate change and is consistent with some of the initiatives, while others are not applicable. The Proposed Project would create new park amenities with tree plantings and landscaping. This will help increase the resilience of the natural environment over the river, and mitigate the urban heat island effect. The proposed esplanade would be constructed at 2.20 feet above the 2088 mean high water line of the East River and would be expected to withstand major storm events and sea level rise that may occur as a result of climate change.

PlaNYC: A Stronger, More Resilient New York

PlaNYC—A Stronger, More Resilient New York presents initiatives aimed at making New York City less vulnerable to future extreme weather events. The initiatives are organized into 14 thematic categories, including: coastal protection, buildings, economic recovery, insurance, utilities, liquid fuels, healthcare, telecommunications, transportation, parks, water and wastewater. The new PlaNYC edition also includes "Community Rebuilding and Resiliency Plans" for some of the communities hardest hit by Superstorm Sandy in the fall of 2012.

Of the thematic categories and community plans, the set of initiatives most relevant to the Proposed Project are those presented in the chapter on parks. The goal of the parks initiative is create parks that are more effective at absorbing and buffering the impacts of extreme events. This goal is being achieved through the implementation of 16 specific initiatives.

1. Initiative 1: Restore city beaches

   The Proposed Project involves the construction of a public esplanade in the East River. The project site is not in proximity to any city beach. As such, this initiative is not applicable.

2. Initiative 2: Harden or otherwise modify shoreline parks and adjacent roadways to protect adjacent communities

The proposed esplanade would be constructed at elevation above the 100-year floodplain. While it would not provide protection for adjacent existing parkland and communities, it would itself be a new "hardened" recreational asset.

3. Initiative 3: Reinforce or redesign bulkheads in coastal parks

The Proposed Project does not involve modifications or renovations to any existing bulkhead. As such, this initiative is not applicable.

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4. Initiative 4: Expand the City's Greenstreets, including Jamaica Bay

   The esplanade, although not a Greenstreet, shares several characteristics with the program. The esplanade design includes plantings and water retention strategies to reduce the amount of total stormwater runoff.

5. Initiative 5: Fortify marinas and piers

   The Proposed Project does not involve work on piers or marinas. However, two other, separate but related actions involve the reconstruction of existing piers. At its southern end, the esplanade will connect into Waterside Pier which is being rehabilitated. At its northern end, the esplanade will connect with a reconstructed pier on which Andrew Haswell Green Park is located. The pier's northern end will also be elevated, making it more resistant to flooding.

6. Initiative 6: Relocate or increase the resiliency of playgrounds and athletic fields

   The Proposed Project does not involve modifications or renovations to any existing playground or athletic field. As such, this initiative is not applicable.

7. Initiative 7: Protect mechanical systems at major park facilities and buildings

   The Proposed Project is a major open space facility but it does not involve any buildings or major mechanical systems. The esplanade would have basic utility connections (drinking water and electricity only). Electrical systems would mostly be above the floodplain and certain electrical conduits may include waterproof housing, as appropriate.

8. Initiative 8: Move or protect critical operations centers

   The Proposed Project does not involve modifications or renovations to any critical NYCDPR operations centers. As such, this initiative is not applicable.

9. Initiative 9: Work with the Federal government to transform Jamaica Bay

   This initiative is targeted to a specific geographic area and is not applicable to the Proposed Project.

10. Initiative 10: Increase the health and resiliency of natural areas, including Tibbetts Brook

    The project area does not include freshwater streams and associated wetlands that are the target of this initiative. As such, this initiative is not applicable.

11. Initiative 11: Improve the health and resiliency of the city's urban forest

    The project area does not include urban forests that are the target of this initiative. As such, this initiative is not applicable.

12. Initiative 12: Increase growth of local plant material for restoration work

This initiative is targeted specifically at the Greenbelt Native Plant Center and, as such, is not applicable to the Proposed Project.

13. Initiative 13: Establish a center for resiliency and restoration efforts in the Jamaica Bay-Rockaway Parks

    This initiative is focused on a specific action and as such is not applicable to the Proposed Project.

14. Initiative 14: Quantify the benefits of the city's ecosystems and green infrastructure

    This initiative is focused on a specific action and as such is not applicable to the Proposed Project.

15. Initiative 15: Create climate adaptation plans for all parks in the 100-year floodplain

    The Proposed Project is consistent with this initiative. In determining the appropriate elevation for the esplanade, rises in sea level and future flood elevations were considered. The proposed esplanade was designed to be at an elevation 2.20 feet above the predicted 2088 mean high water line of the East River and would be expected to withstand major storm events and sea level rise that may occur as a result of climate change. The top of the esplanade deck was designed to be above the 100-year flood elevation (2013 Preliminary FIRM), except at the connection to Andrew Haswell Green Park.

16. Initiative 16: Map the city's overhead utilities and street trees

    This initiative is focused on a specific action and as such is not applicable to the Proposed Project.

Waterfront Revitalization Program (WRP) / Coastal Zone Management

Proposed projects that are located within the designated boundaries of New York City's Coastal Zone must be assessed for their consistency with the City's Waterfront Revitalization Program (WRP). The Federal Coastal Zone Management Act of 1972, established to support and protect the nation's coastal areas, sets forth standard policies for the review of proposed projects along coastlines. As part of the Federal Coastal Zone Management Program, New York State has adopted a state Coastal Zone Management Program, designed to achieve a balance between economic development and preservation that promotes waterfront revitalization and water-dependent uses; protects fish, wildlife, open space, scenic areas, public access to the shoreline, and farmland. The program is also designed to minimize adverse changes to ecological systems, erosion, and flood hazards.

The state program contains provisions for local governments to develop their own local waterfront revitalization programs. New York City has adopted such a program, the New York City Waterfront Revitalization Program, the City's principal coastal zone management tool. The WRP was originally adopted in 1982 and approved by the New York State Department of State (NYSDOS) for inclusion in the New York State Coastal Management Program. The NYSDOS administers the program at the State level, and the NYCDCP administers it in the City. The WRP was last revised by the New York City Department of City Planning and approved by the New York City Council in October 1999. Additionally, in August 2002, the NYSDOS and other federal authorities, including the U.S. Army Corps of Engineers (USACE) and the U.S. Fish and Wildlife Service (USFWS), adopted the City's WRP policies for most of the properties located within its boundaries.

The local WRP establishes the City's Coastal Zone, and includes policies that address the waterfront's economic development, environmental preservation, and public use, while minimizing the conflicts among those objectives. The WRP encourages coordination among all levels of government to promote sound waterfront planning and requires consideration of the program's goals in making land use decisions. There are ten policy areas of the WRP, as follows:

1. Residential and Commercial Redevelopment;
2. Maritime and Industrial Development;
3. Waterways Usage;
4. Ecological Resources Protection;
5. Water Quality;
6. Flooding and Erosion;
7. Solid and Hazardous Wastes;
8. Public Access;
9. Visual Quality; and
10. Historic, Archaeological, and Cultural Resources.

Since the site of the Proposed Project falls within the City's designated coastal zone, it must be assessed for its consistency with the policies of the City's WRP.

Actions located within New York City's Coastal Management Zone generally require submission of the New York City Waterfront Revitalization Program Consistency Assessment Form. This form is intended to assist an applicant in certifying that a proposed project is consistent with the WRP. The completed form and accompanying information is used by New York City and State agencies to review the applicant's certification of consistency. A copy of the completed form and supplemental answers for the Proposed Project has been attached in Appendix B. The application certifies that the Proposed Project is consistent with NYC's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program, and will be conducted in a manner consistent with such program. NYSDOS concurred with the consistency certification in a letter dated June 19, 2014 and NYCDCP recommended the Proposed Project be found consistent with the WRP policies in an email dated July 23, 2014 (see Appendix B).

The New York City Waterfront Vision and Enhancement Strategy (WAVES)

Led by the NYCDCP, the New York City Waterfront Vision and Enhancement Strategy (WAVES) is a citywide initiative that provides a new sustainable blueprint for the City's 578 miles of shoreline, serving as a guide for future land-use decisions along the City's shoreline, recognizing the diversity of the waterfront and balancing the needs of environmentally sensitive natural areas, the working waterfront, public access, open space, housing and commercial activity.

The WAVES strategy includes two core components:

- Vision 2020 – New York City's Comprehensive Waterfront Plan that establishes long-term goals for the next decade and beyond, including expanding public access to the waterfront and waterways on public and private property for all New Yorkers and visitors; and
- The New York City Waterfront Action Agenda – Sets forth future priority initiatives to be implemented within three years.

Together, the initiatives provide a blueprint for the City's waterfront and waterways, and focus on the following categories: open space and recreation, the working waterfront, housing and economic development, natural habitats, climate change adaptation and waterborne transportation.

Vision 2020 builds on the original 1992 Comprehensive Waterfront Plan and the City's experience over the past two decades, in order to set forth a new long range vision for a 21st-Century waterfront. Specifically, Vision 2020 identifies key opportunities for improving the waterfront and outlines strategies to realize this new vision. Since 1992 and as a result of the original Comprehensive Waterfront Plan, New York City has made great progress in redefining the waterfront as a critical asset, understanding the sense of place it can create, and reconnecting New Yorkers to the water as an additional form of open space. The NYCDCP is required by local law to revise the report every 10 years to ensure that the City's waterfront policies are updated.

The eight main goals of the Vision 2020 plan, and the proposed projects consistency with them, are as follows:

1. Expand public access to the waterfront and waterways on public and private property for all New Yorkers and visitors alike.

   The Proposed Project would allow for the construction of a new waterfront esplanade, which would expand public access to the East River for both area residents and visitors.

2. Enliven the waterfront with a range of attractive uses integrated with adjacent upland communities.

   The Proposed Project would provide recreational and passive amenities for a variety of users among different age groups, including education signage and connections to the upland areas due west of the esplanade. Amenities include plantings and attractive lighting, benches and railings.

3. Support economic development activity on the working waterfront.

   The Proposed Project would support the economic development of the upland area, especially the adjacent large vacant area to the southwest (the former Con Edison site), as the proposed esplanade would be an attractive element for the neighborhood that could spur other redevelopment initiatives.

4. Improve water quality through measures that benefit natural habitats, support public recreation, and enhance waterfront and upland communities.

   The Proposed Project would allow for enhanced protection of the aquatic environment within the river and the identified habitats located in the area (see Section 4.4.9) while supporting public recreation and connection to the upland community.

5. Restore degraded natural waterfront areas and protect wetlands and shorefront habitats.

   While the Proposed Project would restore portions of the adjacent and adjoining bulkheads, this area does not contain wetlands, and as such, this goal is generally not applicable.

6. Enhance the public experience of the waterways that surround New York—our Blue Network.

   Although the Proposed Project would enhance the public experience of the East River along a portion not currently accessible by pedestrians, it would not provide direct access to the water or in-water recreation and would not significantly contribute to the other strategies for this goal.

7. Improve governmental regulation, coordination and oversight of the waterfront and waterways.

   This goal is not applicable to the Proposed Project.

8. Identify and pursue strategies to increase the City's resilience to climate change and sea level rise.

   The Proposed Project would create new park amenities with tree plantings/placements. This would help increase the resilience of the natural environment over the river, and mitigate the urban heat island effect. The proposed esplanade was designed to be at an elevation 2.20 feet above the predicted 2088 mean high water line of the East River that would be expected to withstand major storm events and sea level rise that may occur as a result of climate change.

The Mayor's Waterfront Action Agenda is the three year implementation component of Vision 2020 New York City Comprehensive Waterfront Plan. The Waterfront Action Agenda establishes a set of actions for promoting the waterfront and waterways as a world-class destination, a globally competitive port, and a rich and vital natural resource that draws all New Yorkers to its edge and onto the water. The Waterfront Action Agenda includes 130 specific, high-priority projects that demonstrate the City's commitment to investing in the waterfront's transformation. Each project is organized under one of the eight goals of Vision 2020, identifies the dollar amount allocated to a project, the City agency leading its implementation, and the date by which the project will be undertaken.

Specific to the Proposed Project, Vision 2020 includes goals of forming a long-term management strategy to design, fund, construct and maintain an entire greenway from the Brooklyn Bridge to East 59th Street. Vision 2020 includes recommendations for building an esplanade and ensuring that the existing waterfront is improved for safe public access and used as a park. The Proposed Project is consistent with this goal.

Manhattan CB 6 197-A Plan

In 2007, Manhattan Community Board (CB) 6 prepared a 197-A Plan to address the ongoing changes in the eastern section of the community district, as amended and adopted by the City Planning Commission and the City Council in 2008. CB 6 has prepared the 197-A plan as a guide for constructive cooperation among the proponents of the various proposed projects on open space, waterfront, transportation, urban design, and related issues. The 197-A Plan Study Area is defined with particular attention to those areas where these new changes are anticipated. The area is bounded to the south by East 14th, to the north by East 59th Streets, to the east by the East River, and to the west by the line 100 feet west of the west side of Second Avenue.

The overall goals and objectives addressed in the 197-A Plan are briefly summarized as follows:

- Open Space (Parks and Waterfront Access)
    - Increase the amount of useful, active and passive public open space.
    - Explore use of public open space in parks such as Sutton Parks; create additional recreational space near St. Vartan's Park by decking over Midtown tunnel access areas.
    - Improve access to and from the waterfront by creating safer pedestrian crossings and additional pedestrian bridges.
    - Create the links to complete the East River Esplanade running through the area, connecting with the East River Park, to the south, and the promenade extending north of the Ed Koch Queensboro Bridge, to the north.
    - Designate the waterfront as a special waterfront use and recreation district.
- Streets
    - Make the best use of the streets, highways, and riverfront in the area.
    - Remap streets that have been closed east of First Avenue within the East River Science Park and the Con Edison Waterside facilities to preserve view corridors, restore the street grid, and provide public access to the waterfront.
- Transportation
    - Improve transportation systems, including new water taxi service within the area, and new bus stop locations to facilitate inter-modal transfer points.
    - Examine the incompatibility of the heliport located on the riverfront between East 32nd and East 33rd Streets with nearby parks, open space, residential and institutional uses.
    - Address traffic, parking, and pedestrian safety issues, including the inappropriate location of parking facilities directly on the waterfront rather than under the FDR Drive viaduct.
    - Address the potential impacts of the construction of the Second Avenue subway.
- Land Use
    - Recommend the appropriate mix of uses (residential/commercial) to maintain the predominantly residential character of the area, while accommodating specialized non-residential uses such as Bellevue/NYU Hospitals and the United Nations.

  - Define the appropriate land uses for the Con Edison First Avenue Properties, including density of residential/commercial uses, and open space and waterfront access features.
  - Develop policy for rezoning that prohibits any additional high-density office development east of the midline between Second and Third Avenues in order to prevent the Midtown Central Business District (CBD) from moving further east.
- Residential
  - Maintain and encourage new residential uses on the east side of First Avenue.
  - Encourage the development and retention of affordable housing in the area.
- Urban Design
  - Conserve the character of the existing built urban form of the area.
  - Map contextual districts to maintain residential character in the area.
- Preservation
  - Retain buildings and spaces of aesthetic, historic, or cultural significance that enhance the character of area neighborhoods.
  - Consider preservation options for Stuyvesant Town and Peter Cooper Village such as placement on the National Register of Historic Places, designation as a NYC landmark or a Special Planned Community District.

The Proposed Project is compatible with several of the stated goals of the 197-A Plan. The Proposed Project would increase the amount of useful and passive public open space in the area and improve access to and from the waterfront, while creating another link to complete the East River Esplanade.

4.2.2 Neighborhoods and Community Cohesion

4.2.2.1 Community Cohesion

The Proposed Project would not divide neighborhoods, isolate part of a neighborhood, generate new development or otherwise affect community cohesion. The age and ethnic background of the affected population is of a similar composition as the rest of the surrounding area. No occupied dwellings will be acquired and no minority or low-income populations will be displaced.

Neighborhood character is considered to be an amalgam of the various elements that give a neighborhood its distinct personality. These elements include land use, socioeconomic conditions, historic and cultural resources, urban design and visual resources, transportation, noise, open space and shadows, as well as any other physical or social characteristics that help to define a community.

If a project has the potential to result in any significant adverse impacts on any of the above technical areas, a preliminary assessment of neighborhood character may be appropriate. A significant impact identified in one of these technical areas is not automatically equivalent to a significant impact on neighborhood character; rather, it serves as an indication that neighborhood character should be examined. In addition, depending on the project, a combination of moderate changes in several of these technical areas may potentially have a significant effect on neighborhood character.

The following subsections review the defining features of the neighborhood and examine the Proposed Project's potential to affect the neighborhood character. The study area is generally coterminous with the study area used for the land use and zoning analysis in Section 4.2.1 (400 foot buffer around the proposed esplanade). The impact analysis of neighborhood character that follows below focuses on changes to those technical areas listed that exceeded preliminary screening thresholds.

4.2.2.2 Socioeconomic Conditions

Changes in socioeconomic conditions have the potential to affect neighborhood character when they result in substantial direct or indirect displacement or addition of population, employment, or businesses; or substantial differences in population or employment density.

The Proposed Project would not result in the direct displacement of existing residents or businesses. The Proposed Project would also not affect real estate market conditions in a way that would result in indirect displacement of residents or businesses. Therefore, no moderate effects or significant impacts are anticipated and further analysis is not warranted.

4.2.2.3 Open Space

When an action would potentially have a direct or indirect effect on open space that would adversely affect utilization of existing resources, there is a potential to affect neighborhood character.

The Proposed Project involves the creation of a new public open space and waterfront esplanade along the East River, which would be linked and connected to existing public park areas situated directly south and north. The Proposed Project would not remove or alter any components of the existing park to the south, and utilization levels of the existing park areas to the north are expected to only be moderately increased as a result of the Proposed Project. Views of the East River from Peter Detmold Park may be altered by the proposed structure; however, the esplanade would provide improved exposure to the River for additional pedestrians and cyclists. The waterside walkway opposite to Peter Detmold Park would become a transitional space leading to the esplanade, where there would be expanded access to views and a greater variety of amenities. The Upland Bridge Connection at 54th Street would occur at the northern end of Sutton Parks, having minor impacts to the park but greatly improving access to the East River. Although the existing adjacent open space has the potential to experience moderate effects from the Proposed Project as a result of more users, significant adverse impacts regarding open space resources are not expected. As such, further open space assessment is not warranted.

4.2.2.4 Historic and Cultural Resources

When an action would result in substantial direct changes to a historic and cultural resource or substantial changes to public views of a resource, or when a historic and cultural resource analysis identifies a significant impact in this category, there is a potential to affect neighborhood character.

As further discussed in Section 4.4.11, historic and cultural resources include both archaeological and historic architectural resources, and are defined as districts, buildings, structures, sites, and objects of historical, aesthetic, cultural, and archaeological importance. This includes resources listed in the State/National Registers of Historic Places (S/NR), resources determined eligible for listing in the S/NR by the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP), landmarks designated or under consideration for designation by the New York City Landmarks Preservation Commission (LPC), National Historic Landmarks (NHL), National Monuments, and previously unidentified resources that meet the S/NR and/or LPC eligibility requirements.

The area for the Proposed Project would be situated over the East River and along sections of existing caissons within the river, with two new pedestrian bridges crossing over the FDR Drive at East 48th and East 54th Streets. None of these structures are designated as a New York City Landmark, although OPRHP has determined that the FDR Drive is eligible for S/NR listing. The area is not located within an historic district designated by the LPC, nor is the area listed on either the S/NR of Historic Places.

Several designated/landmarked resources are located west of the location for the proposed esplanade, within the upland study area (400 feet away from the proposed corridor location) and just outside of the study area (approximately 600 feet from the proposed corridor area). From south to north, those designated historic resources include:

- The Tudor City Historic District (LP-01579, SNR-92NR00295), mapped west of First Avenue between East 40th to 44th Streets, approximately 600 feet from the proposed location of the esplanade and waterfront.
- The Panhellenic Tower (LP-01972), located at One Mitchell Place along the north side of East 49th Street east of First Avenue, approximately 600 feet from the proposed location of the esplanade and waterfront.

- The Paul Rudolph Penthouse Apartments (LP-02390), located at 23 Beekman Place at the terminus of East 50th Street, approximately 400 feet from the proposed location of the esplanade and waterfront.
- Historic street lampposts (LP-01961), located at the southeast corner of Beekman Place and East 51st Street, approximately 400 feet from the proposed location of the esplanade and waterfront.
- The Sutton Place Historic District (SNR-90NR00839), mapped over 1-21 Sutton Place and 4-16 Sutton Square (between East 57th to 58th Street along the east side of Sutton Place), approximately 100 feet from the proposed location of the esplanade and waterfront.
- Historic street lampposts (LP-01961), located at the south side of Sutton Place at East 58th Street, approximately 100 feet from the proposed location of the esplanade and waterfront.
- The Ed Koch Queensboro Bridge (LP-00828), spanning eastward from East 59th Street, located over the waterfront and over the proposed location of the esplanade.

A Cultural Resources Survey, including Phase IA Archaeological Survey and Historic Architectural Reconnaissance Survey, was prepared in March 2013 for review by NYSOPRHP (see Appendix B). The survey identified one S/NR-listed historic district (Sutton Place Historic District) and one S/NR-listed structure (Ed Koch Queensboro Bridge) within the project area, as well as eight resources recommended for further study to determine S/NR eligibility status.

After reviewing the Phase 1A survey, OPRHP requested an analysis of the potential effects of the Proposed Project on the identified historic resources. The impacts of the Proposed Project were assessed to determine if the undertaking may alter, directly or indirectly, any of the characteristics that qualify the property as a designated/landmark resource. The impacts assessment is included in the Finding Documentation which was prepared in accordance with Section 106 Procedures for NYSDOT memorandum dated July 2, 2001. Upon its review of the assessment, OPRHP determined one resource would be directly affected by the proposed esplanade, the FDR Drive.

The FDR Drive was constructed under Robert Moses using Public Works Administration funds. It appears to be historically significant as a large-scale federally funded highway and for its engineering and design. Due to reconstruction and replacement of historic materials over time it was found that the majority of the segments that comprise the FDR Drive do not appear to retain integrity. The highway would be directly impacted by the introduction of pedestrian overpasses that would provide access to the esplanade from the west side of the highway. However, because the FDR Drive is currently spanned by a number of overpasses, introduction of two additional overpasses would be in keeping with the character of the existing setting, and would therefore not alter the characteristics that contribute to its significance. As a result, the proposed esplanade would have no adverse effect on the FDR Drive.

In terms of indirect effects, the Proposed Project would be visible from the 11 historic architectural resources. Of the six resources whose river views are integral to their significance, the Proposed Project would not diminish the integrity of the setting of these resources because the setting would generally remain the same. Similarly, for the five resources where river views are not integral to their significance, the proposed esplanade would also have no adverse effect because it would not diminish the integrity of their setting. The Finding Documentation concluded that, overall, the proposed esplanade would not adversely affect historic architectural resources in the Area of Potential Effect (APE). In their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources (see Appendix J).

Unlike the architectural evaluation of a study area that extends beyond the footprint of a project's block and lot lines, the analysis of potential and/or projected impacts to archaeological resources is controlled by the actual footprint of the limits of proposed soil disturbance. The project area for the proposed esplanade is located over the East River, with sections for the proposed esplanade to be situated over existing waterfront piers and over existing caissons within the river, adjacent to the FDR Drive. The area for the Proposed Project is located within a designated archaeological sensitive zone by the SHPO of the New York State OPRHP; however, the Archeology Unit of SHPO has no archeological concerns since the Proposed Project will be approximately 30 feet east of the bulkhead (see letter dated September 13, 2013 in Appendix J).

The Finding Documentation and correspondence from OPRHP were transmitted to FHWA for concurrence. In a letter dated December 8, 2014, FHWA concurred with SHPO's opinion and stated that the Proposed Project would have No Adverse Impact and the Section 106 process is complete (see Appendix J).

4.2.2.5 Urban Design and Visual Resources

In developed areas, urban design changes have the potential to affect neighborhood character by introducing substantially different building bulk, form, size, scale, or arrangement. Urban design changes may also affect block forms, street patterns, or street hierarchies, as well as streetscape elements such as street walls, landscaping, curb cuts, and loading docks. Visual resource changes could affect neighborhood character if they directly alter key visual features such as unique and important public view corridors and vistas, or block public visual access to such features.

The Proposed Project is intended to enhance the pedestrian experience along the waterfront and provide for increased views along the East River, enhancing the public realm. The new esplanade would not affect the block forms of the surrounding area or alter any street patterns, hierarchies or streetscape elements (see Section 4.4.13). Therefore, no moderate effects or significant adverse impacts regarding urban design and visual resources are expected, and further related assessment is not warranted.

4.2.2.6 Transportation

Changes in traffic and pedestrian conditions can affect neighborhood character in a number of ways. For traffic to have an effect on neighborhood character, it must be a contributing element to the character of the neighborhood (either by its absence or its presence), and it must change substantially as a result of the action. Such substantial traffic changes can include: changes in level of service (LOS) to C or below; change in traffic patterns; change in roadway classifications; change in vehicle mixes, substantial increase in traffic volumes on residential streets; or significant traffic impacts, as identified in the technical traffic analysis. Regarding pedestrians, when a proposed project would result in substantially different pedestrian activity and circulation, it has the potential to affect neighborhood character.

As vehicular access to the proposed esplanade would be limited to maintenance and emergency vehicles, thresholds for additional vehicle trips through intersections are not projected to be exceeded.

In New York City detailed pedestrian analyses are usually not considered to be warranted unless the proposed action would generate 200 or more pedestrian trips at any single location. This threshold would not be exceeded under the Proposed Project. The proposed esplanade would be a link that would bridge the existing gap that stretches past the Waterside Pier to East 60th Street. As such, a substantial portion of existing users of the esplanade north and south of the Proposed Project can be expected to extend their trips through the newly constructed section. It is estimated that a total of 1,527 users, 535 pedestrians and 992 cyclists, would utilize the Proposed Project area once constructed during the Saturday peak hour. Of these 1,527 pedestrian and cyclist trips, 75 percent would already be on the esplanade north and south of the project limits, and the remaining 25 percent (382 trips; 248 cyclists and 134 pedestrians) would access the esplanade via proposed Upland Bridge Connections at East 48th Street and East 54th Street, and the existing East 51st Street pedestrian bridge connection. Assuming an even distribution among the three access points, this would result in fewer than 200 combined bicycle and pedestrian trips during the Saturday peak hour traversing any of these NYC street intersections.

The bicycle path and the pedestrian path are projected to operate at LOS B during the Saturday peak hour at ETC.

The Proposed Project would not result in significant adverse traffic or parking impacts, and thus no significant adverse traffic impacts would occur during operational periods. Design of the two Upland Bridge Connections that would connect the landside to the esplanade would minimize impacts to the existing roadways and maintain existing traffic lanes. The Proposed Project would not alter the LOS for

vehicles on area roadways, as the esplanade is to be used by pedestrians and cyclists only. Further, there would be no adverse air quality impacts or noise impacts that are typically associated with increased vehicular traffic as the traffic impacts are negligible.

4.2.2.7 Noise

The Proposed Project would not result in a significant adverse noise impact to the community or change any acceptable noise categories. Existing park and esplanade uses are situated south and north of the proposed esplanade, and the Proposed Project would allow for an expansion of these recreational uses. Users would not introduce any new noises to the area that would be noticeable in the surrounding neighborhood, due in part to the high ambient noise levels already present from vehicular traffic along the adjacent FDR Drive (see Section 4.4.17).

4.2.2.8 Home and Business Relocations

The construction of a new esplanade over the East River would not cause adverse impacts upon neighborhood character and stability. The Proposed Project would require no displacement of residences or businesses and there would be no relocation impacts.

Overall, the Proposed Project would not cause adverse impacts upon neighborhood character and stability.

4.2.3 Social Groups Benefited or Harmed

4.2.3.1 Elderly and/or Disabled Persons or Groups

The Proposed Project would be situated over the East River, adjacent to the United Nations Headquarters, FDR Drive, and Sutton Place neighborhood. A review of US Census data for this area of New York County indicates that there is no significant concentration of elderly or disabled persons in the immediate project area, as much of the area to the west contains the United Nations Headquarters. The north portion of the esplanade contains the Sutton Place neighborhood. Regardless, the accommodations for handicapped and elderly persons are being incorporated into the design of the proposed esplanade, and such users will be able to access the esplanade via ramps over the FDR Drive and down to the waterfront esplanade. Accessibility accommodations for these user groups will be improved by the Proposed Project.

4.2.3.2 Transit Dependent, Pedestrians, and Bicyclists

The Proposed Project is not expected to result in any significant adverse impacts to pedestrians. On the contrary, the Proposed Project would have a positive effect on cycling and pedestrian experience along a continuous greenway facility.

4.2.3.3 Low Income, Minority and Ethnic Groups (Environmental Justice)

According to Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), proposed actions that receive federal funding are required to identify any disproportionately high and adverse effect on minority and low-income populations.

A disproportionately high and adverse effect to a minority or low-income population is one that is predominantly borne by a minority and/or low-income population and is noticeably more severe or greater in magnitude than the adverse effect to a non-minority or non-low-income population. Minority populations include persons identified by the U.S. Census Bureau as African-American/Black, American Indian, Asian and/or Pacific Islanders, and Hispanic, while low-income populations are defined as a population having an annual income less than the U.S. Census Bureau poverty threshold.

The federal Council on Environmental Quality (CEQ) has oversight of the federal government's compliance with Executive Order 12898. The CEQ has developed guidance to assist federal agencies with their NEPA procedures to ensure that Environmental Justice concerns are effectively identified and addressed. Their methodology for Environmental Justice involves collecting demographic information on the area where a proposed action may cause high and adverse effects, identifying any low-income and minority populations in that area using census data, and then identifying whether the proposed action has a disproportionate adverse effect on that population.

As set forth in the CEQ guidance, a minority community includes any area (e.g., census track, borough, etc.) where more than 50 percent of its population is minority or of a particular racial or ethnic group. While CEQ guidance does not suggest a threshold to be used in identifying low-income populations, standard analyses include census tracts with a proportional population of low-income persons which are noticeably greater than the overall area. For the Proposed Project, in the overall area (i.e., the Borough of Manhattan) approximately 20 percent of the population has been determined to live below the poverty level. As such, an area (i.e., census tract) with more than approximately 20 percent of persons living below the poverty level can be considered a low-income area.

The Proposed Project was reviewed for its potential to have disproportionately high and adverse human health and environmental effects on minority and low-income populations within the study area. As shown in Exhibit 4.2-2, the study area in the East Midtown neighborhood of Manhattan includes the following census tracts: 86.01, 86.02, 86.03, and 106.01. These census tracts extend west to First Avenue. As shown in the table, the study area contains an overall minority population of approximately 12 percent, as well as approximately four percent of those respondents who listed themselves as Hispanic or Latino. In comparison, the percentages of minority populations in the Borough of Manhattan of approximately 43 percent and in all of New York City of approximately 56 percent are substantially higher than the study area. Approximately 85 percent of the population in the study area classified themselves as "White", in comparison to 57 percent in the Borough of Manhattan and 44 percent for the City overall.

As shown in Exhibit 4.2-3, the population that lives below the poverty threshold varies within the census tracts within the study area from approximately two percent to approximately 7.7 percent, a rate considerably lower than the Borough of Manhattan (approximately 18 percent) and New York City (approximately 21 percent). Additionally, the median household incomes of the census tracts within the study area varies from $126,141 to $137,366, while the Borough of Manhattan has an approximate median household income of $66,299 and New York City has an approximate median household income of $49,461. Based on this, the study area would be not considered either a minority community or a low-income population and, therefore, no Environmental Justice impacts would be anticipated. In fact, the Proposed Project is expected to provide benefits to the surrounding community with new waterfront recreational space and improved pedestrian and bicycle access to the waterfront. Therefore, significant adverse impacts to environmental justice communities would not occur as a result of the Proposed Project.

Exhibit 4.2-2
Environmental Justice Population Profile

Area	Population Profile									
		Race and Ethnicity								
	Total	White	Black	Asian	AIAN	NHPI	Some Other Race	Two or More Races	Total Minority	Hispanic or Latino
Census Tract 86.01	2,618	1,762 (67%)	49 (2%)	611 (23%)	0 (0%)	0 (0%)	4 (<1%)	56 (2%)	720 (28%)	136 (5%)
Census Tract 86.02	0	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Census Tract 86.03	4,799	4,174 (87%)	35 (1%)	288 (6%)	2 (<1%)	0 (0%)	8 (<1%)	72 (2%)	405 (8%)	220 (5%)
Census Tract 106.01	7,351	6593 (90%)	60 (1%)	334 (5%)	5 (<1%)	0 (0%)	13 (<1%)	279 (4%)	691 (9%)	267 (4%)
Study Area	14,768	12,529 (85%)	144 (1%)	1,233 (8%)	7 (<1%)	0 (0%)	25 (<1%)	407 (3%)	1,816 (12%)	623 (4%)
Borough of Manhattan	1,585,873	911,073 (57%)	246,687 (16%)	179,552 (11%)	8,669 (1%)	873 (<1%)	175,696 (11%)	63,323 (4%)	674,800 (43%)	403,577 (25%)
New York City	8,175,133	3,597,341 (44%)	2,088,510 (26%)	1,038,388 (13%)	57,512 (1%)	5,147 (<1%)	1,062,334 (13%)	325,901 (4%)	4,577,792 (56%)	2,336,076 (29%)

Source: New York City Department of City Planning (http://www.nyc.gov/html/dcp/html/census/demo_tables_2010.shtml), compiled from the U.S. Department of Commerce, Bureau of Census, U.S. Census of Population of Housing, 2010.

Notes: 1. "White", "Black", "Asian", "American Indian and Alaska Native (AIAN)", and "Native Hawaiian and Pacific Islander (NHPI)" populations may also be Hispanic or non-Hispanic.
2. The "Hispanic or Latino" category consists of those respondents who classified themselves in one or more of the several Hispanic Origin categories in the Census questionnaire. Respondents of this ethnic group may be any race.
3. "Some Other Race" includes respondents who did not identify with any listed racial groups,
4. Two or More Races" includes respondents who indicated that they are of more than one race.
5. The total minority population includes all respondents of "Black", "Asian", "AIAN", and "NHPI".

Exhibit 4.2-3
Environmental Justice Economic Profile

Area	Economic Profile	
	Median Household Income	Percentage Of Persons Below Poverty Level
Census Tract 86.01	$137,366	7.7%
Census Tract 86.02	$0 (N/A)	N/A
Census Tract 86.03	$131,180	3.2%
Census Tract 106.01	$126,491	2.0%
Borough of Manhattan	$66,299	18.3%
New York City	$49,461	20.9%

Source: http://factfinder2.census.gov/

4.2.4 School Districts, Recreational Areas, and Places of Worship

4.2.4.1 School Districts

The Proposed Project is located within the East River and would not include any residential components that would result in increased school-aged children attending New York City public schools. There are no schools or school properties within or near the Proposed Project.

4.2.4.2 Recreational Areas

A number of existing open spaces and recreational areas exist within the area surrounding the Proposed Project (see Figure 4.2-5). Due south of the proposed location of the esplanade is Glick Park (south of the Waterside Pier). The park is located east of the FDR Drive between East 36th and 38th Streets along a platform over the East River. Access is provided underneath the elevated FDR Drive at East 37th Street. The park contains benches and viewing areas surrounded by trees and other plantings.

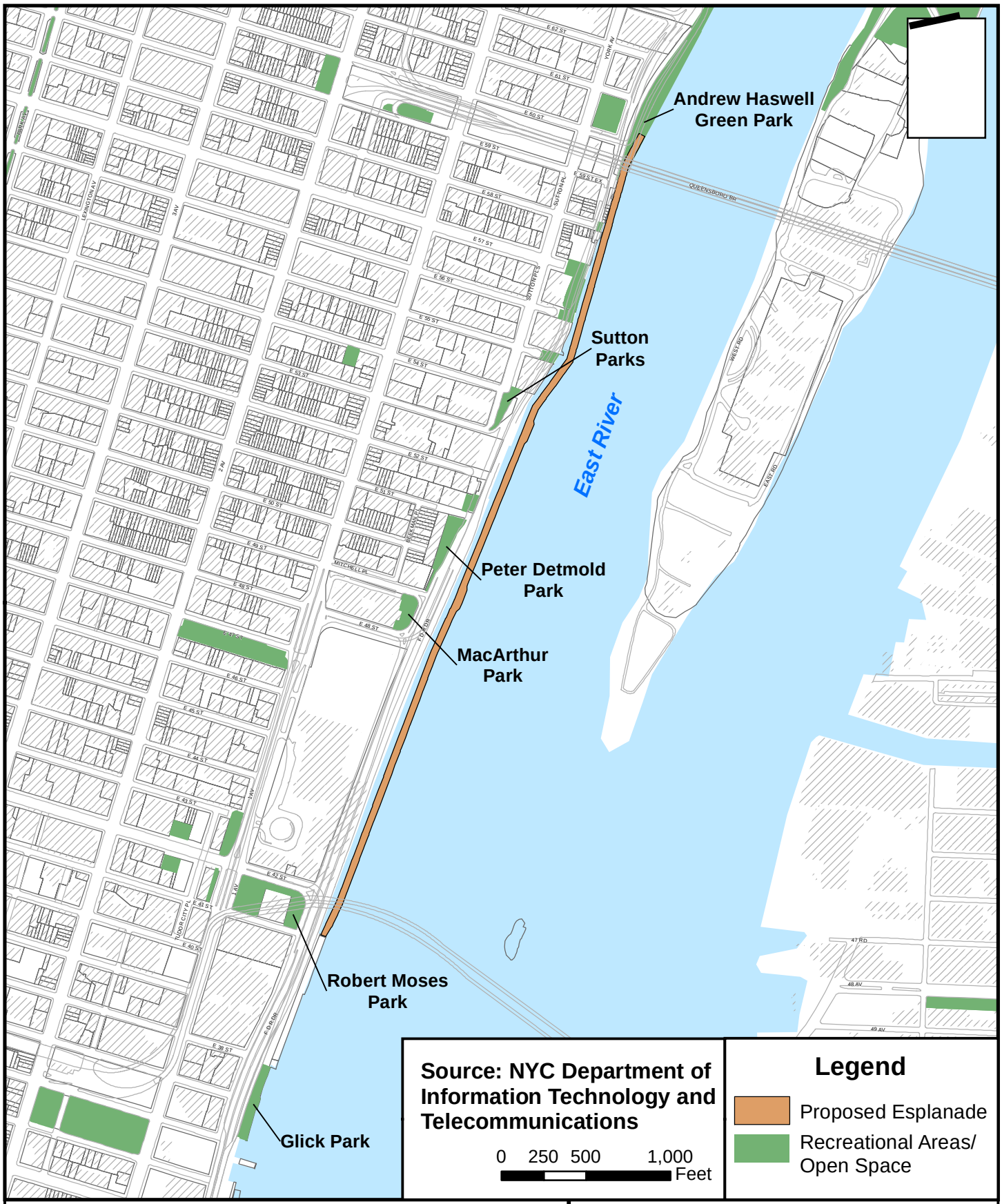

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Figure 4.2-5

Recreational Areas

The Robert Moses Playground is located around the ventilation tower for the Queens Midtown Tunnel between East 41st and 42nd Streets and First Avenue to the East River, adjacent to the FDR Drive along the waterfront. The playground contains basketball and handball courts.

Between East 48th to 49th Streets is a large office and mixed-use building complex known as United Nations Plaza. MacArthur Park is located east of the United Nations Plaza buildings, adjacent to the FDR Drive.

Along the east side of Beekman Place at East 49th Street is Peter Detmold Park, stretching northward from East 49th Street to 51st Street. This half-acre open space resource includes paved and landscaped walkways adjacent to the FDR Drive. At East 51st Street east of Sutton Place, there is a stairway and pedestrian bridge across FDR Drive connecting the neighborhood to a small walkway along the East River.

One parcel of Sutton Parks is located west of the FDR Drive between East 53rd and East 54th Streets. The small park is primarily a passive recreation resource, consisting of benches, pathways, and plantings. The proposed esplanade would run parallel to these parks to the east. Existing recreational uses would not be limited by the Proposed Project.

The AHG Park is located east of the FDR Drive between East 60th and 63rd Streets along a platform over the East River. Access is provided through a roadway ramp at East 60th street over the FDR Drive. The park contains benches, dog runs, viewing areas surrounded by trees and other planting.

The Proposed Project involves the creation of a new public open space and waterfront esplanade along the East River, which would be linked and connected to existing public park areas situation directly south and north. The Proposed Project would not remove or alter any components of the existing park to the south, and utilization levels of the existing park areas to the north are expected to only be moderately increased as a result of the Proposed Project. The esplanade would provide improved exposure to the East River for additional pedestrians and cyclists. Significant adverse impacts to recreational areas are not expected as a result of the Proposed Project.

4.2.4.3 Places of Worship

The closest places of worship are located in the Sutton Place neighborhood hundreds of feet west of the FDR Drive, around First Avenue. The St. John Evangelist Church is located at 348 East 55th Street on the west side of First Avenue, approximately 900 feet from the FDR Drive and East River bulkhead. There are no places of worship in the immediate vicinity of the proposed esplanade; therefore, there would be no impact from the Proposed Project.

4.3 Economic

The purpose of this section is to evaluate and analyze the economic effects and impacts of design alternatives as well as construction activities resulting from a project. Alternatives that divert traffic (customers) away from businesses, eliminate parking spaces, or require the acquisition of businesses may create impacts. Construction activities, such as detours and lane closures, may direct vehicular and pedestrian traffic away from businesses resulting in impacts. Alternatively, there may be long term beneficial impacts to the local economy.

4.3.1 Regional and Local Economies

The Proposed Project is not expected to result in any significant adverse impacts to the regional or local economies of the area of East Midtown, the Borough of Manhattan or the City of New York. No established businesses exist in the project area where the proposed esplanade is to be located, as the area is over the East River, and as such, no displacement of businesses will occur. The Proposed Project would also not result in any indirect commercial retail impacts or adverse impacts to specific industries.

4.3.2 Business Districts

4.3.2.1 Established Business Districts

The location of the Proposed Project would not be situated within a Business Improvement District (BID) established by the City of New York. The closest BID is the East Midtown Partnership BID, which extends west from Second Avenue (from East 49th past 60th Street), approximately one-quarter of a mile west of the proposed esplanade. Established in 2002, the BID covers 132 block faces with 859 supporting retail businesses.

4.3.2.2 Effects on Business Districts

No established business districts exist in the project area where the Proposed Project would be located, as the area is over the East River. Long-term impacts to existing business districts in the immediate area are anticipated to be positive, as the proposed pedestrian and bicycle movements from the proposed esplanade would bring new users to the waterfront. This would generate more pedestrian and bicycle traffic passing businesses in the area along First Avenue and within the Sutton Place neighborhood, as well as the East Midtown Partnership BID further west. The introduction of the additional amenities on the esplanade, such as benches and lighting, would enhance usage for window shoppers, tourists, and local leisure users to and from the esplanade.

4.3.3 Specific Business Impacts

4.3.3.1 Established Businesses

There are no existing or established businesses within the area of the proposed esplanade, which is to be located over the East River adjacent to the FDR Drive. The nearest businesses to the Proposed Project location are located west of the FDR Drive around the United Nations Headquarters, along portions of First Avenue and within the Sutton Place neighborhood.

4.3.3.2 Effects Assessment

There would not be any significant adverse effects or impacts to the any businesses as a result of the Proposed Project. The proposed esplanade would be situated over the East River where no businesses exist or are planned. The Proposed Project would create a new waterfront esplanade for pedestrians and bicyclists to travel up and down the east side of Manhattan from East 41st to 60th Streets, connecting to existing and proposed park areas to the south and north along the waterfront. While it is expected that some of the new users of the esplanade would be employees commuting to and from work during the course of a standard weekday, such users would be limited, and the esplanade is projected to witness more visitors and recreational users than commuters. Overall, the business climate in the immediate area should not have any appreciable changes except for additional customers traveling past such establishments on the way to and from the proposed esplanade.

4.4 Environmental

4.4.1 Wetlands

4.4.1.1 State Freshwater Wetlands

There are no NYSDEC regulated freshwater wetlands or regulated adjacent areas within the project area as per the NYSDEC Freshwater Wetlands Mapping for New York County.[3] Site visits were performed to

[3] New York State Department of Environmental Conservation's Environmental Resource Mapper (November 20,

verify that no freshwater wetlands exist within the limits of the Proposed Project over the East River. No further investigation is required.

4.4.1.2 State Tidal Wetlands

It has been determined that there are NYSDEC regulated tidal wetlands within the study area associated with the East River. As per NYSDEC mapping, the waters within and adjacent to the project area are mapped as LZ (littoral zone; see Figure 4.4-1). NYSDEC regulates tidal wetlands between the spring high tide line and 6 feet below mean low water. The wetlands consist of sparsely vegetated rock outcrops between East 55th Street and East 58th Street. No vegetated marshes occur in the project area.

Care will be taken during design to avoid and minimize any impact to these wetlands. A shading study conducted in the summer of 2013 indicated the potential for these wetlands to be in partial shading during mid-morning hours.

4.4.1.3 Federal Jurisdiction Wetlands

It has been determined that there are wetlands within the study area that are regulated by the USACE under Section 404 of the Clean Water Act (see Figure 4.4-1). These wetlands are associated with the East River and care will be taken during design to avoid and minimize any impact to these wetlands. Proposed activities will require a project specific 401 Water Quality Certificate, pursuant to 15 NYCRR 608, Protection of Waters as well as a USACE Section 404 wetlands permit. Permits would be obtained prior to commencement of project activities, and the Proposed Project would adhere to any conditions or requirements stipulated in the permits. Further coordination will be required with NYSDEC during Final Design to determine the nature and extent of potential surface quality impacts posed by the project alternatives during and after construction. Public Notification requirements would apply.

4.4.1.4 Executive Order 11990

Executive Order 11990 Wetland Finding has been prepared stating and supporting that (1) there are no practicable alternatives to construction in the wetland(s), and (2) the Proposed Project includes all practicable measures to minimize harm to the wetland(s) which may result from such use (see Appendix N).

4.4.1.5 Mitigation Summary

All appropriate measures would be taken to avoid and minimize any impacts. Because the Proposed Project would likely meet the Nationwide Permit conditions, and require impacts to less than 0.10 acre of wetlands, no wetland mitigation would be required.

4.4.2 Surface Waterbodies and Watercourses

4.4.2.1 Surface Waters

It is anticipated that the Proposed Project would require impacts to Waters of the U.S. The project sponsor will obtain all necessary federal, state, and local permits prior to the start of work. The permit(s) would be obtained once the location and the extent of the impacts are ascertained. Mitigation to minimize impacts may be required. Work would not commence until the permit is acquired, and adhere to any conditions set forth by the permit requirements.

2012): http://www.dec.ny.gov/imsmaps/ERM/viewer.htm

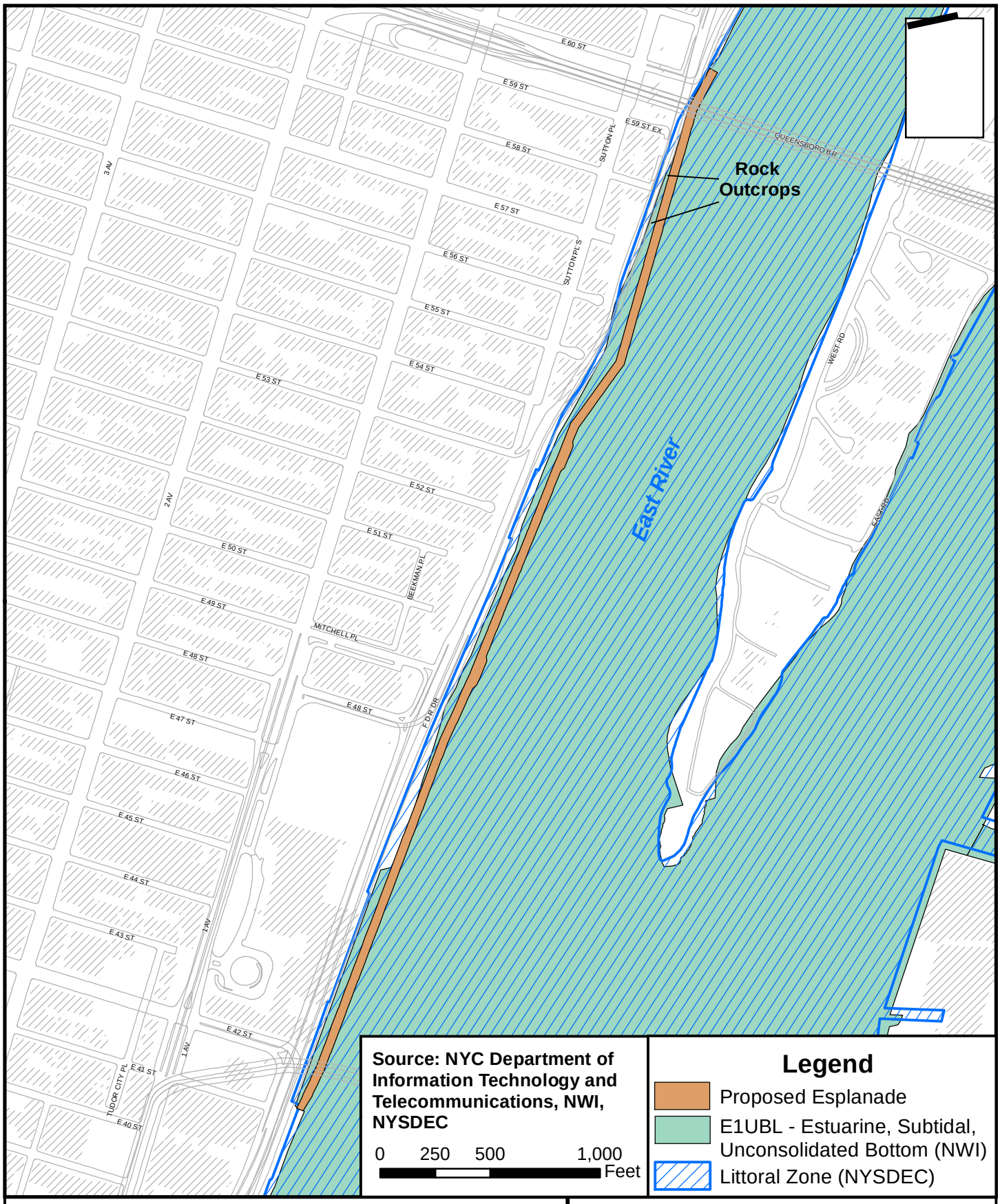

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Figure 4.4-1

Wetlands

4.4.2.2 Surface Water Classification and Standards

There is one waterbody within the project limits, the East River. The East River is tidally influenced along its entire length from the Battery of Manhattan to Long Island Sound. The mean tide level is variable over the course of the river and is greatest at the northern portion of the river above Hell Gate. Mean tide at East 41st Street is 2.4 feet with a mean range of 4.31 feet. Maximum predicted tidal current velocity obtained from a stationary recording Acoustic Doppler Current Profiler (ADCP) during 2008 for the Roosevelt Island Tidal Energy (RITE) Project located approximately one mile north of the Proposed Project measured approximately 5.2 knots (Verdant, 2010).

Within the West Channel, depths along the Manhattan shoreline are variable but often in excess of 30 feet in depth. Depths in the center of the West Channel vary between 50 and 70 feet in depth.

Water Quality

The East River is listed on New York State's List of Section 303(d) Priority Waters. The water quality is stressed largely due to combined sewer overflow, municipal discharges (e.g., Newtown Creek Waste Water Treatment Plant), and other sanitary discharges. Also impacting the water are toxins and other contaminates from current and former industrial activities as well as urban storm runoff (NYSDEC, 2011). The East River is a Class I: Saline Surface Waters. The best usages of Class I waters are fishing or boating and secondary recreation contact.

The NYCDEP conducts water quality evaluations as part of their City-Wide Long-Term CSO Control Planning Project, including the East River. The results of this sampling indicate that the CSOs, wastewater discharges, urban stormwater runoff and dry weather sanitary flows cause periodic low dissolved oxygen (DO) levels that do not meet water quality standards. Pathogen levels in East River typically meet applicable criteria (NYCDEP, City-Wide Long-Term CSO Control Planning Program, June 2011). The waters of the East River are stressed due to combined sewage overflow, municipal waste discharge and other pollutants. In the EFH Report (Appendix B) there is a comparison of water quality within East River and other locations in New York Harbor. Comparison of NYCDEP monitoring stations shows that the East River monitoring stations closest to the project area often had lower DO and higher bacteria (Fecal Coliform and Enteroccuss) counts than monitored locations closer to the open ocean.

Water quality parameters are influential in determining the spatial and temporal distribution of marine populations when identifying preferred habitat. East River water quality is affected by temperature, rainfall, stormwater runoff, and waste influx.

In addition to industrial discharges and combined sewer overflow, the East River and Western Long Island Sound region receive treated sewage from 18 wastewater treatment plants located in New York and the southern Connecticut area. About 83 percent of this effluent is discharged into the East River (Sweeney, 2004). A study conducted by Sweeney et al. showed that the East River had elevated levels of lead, phosphates, silver, copper, cadmium, and nitrates. There were also a number of inorganic pollutants in the waterway (Sweeney, 2004).

The waters of the project area are turbid, with low visibility. The closest NYCDEP monitoring station is Station E2, located near East 23rd Street. During 2012, the visibility at E2 varied from 0.6 to 1.5 meters. By comparison, location N16, which is located in the open ocean south of Brooklyn, the visibility ranged from 0.9 to 6.1 meters. The average seasonal visibility at location E2 was 0.8 meters in the spring, 0.9 meters in the summer and fall, and 1.2 meters in the winter.

4.4.2.3 Stream Bed and Bank Protection

A NYSDEC Protection of Waters permit would be required for the Proposed Project. The Proposed Project would not diminish the water quality standards of the East River. During construction, precautions would be taken to prevent contamination of the waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutants. Promptly after construction, care would be taken to stabilize all disturbed areas. If

applicable, vegetated pipe outlet locations would be utilized, as well as plantings in select locations to allow water to percolate prior to entering the East River.

4.4.2.4 Mitigation Summary

No mitigation measures would be necessary, as significant adverse impacts to surface waterbodies and watercourses are not expected as a result of the Proposed Project.

4.4.3 Wild, Scenic, and Recreational Rivers

Federal and State laws, regulations, and a Presidential directive require that special consideration be given to inventoried wild, scenic, and recreational rivers. In addition, the Presidential directive also requires that special consideration be given to rivers that are designated or authorized for study for nomination as a wild, scenic, and recreational river.

4.4.3.1 State Wild, Scenic and Recreational Rivers

The East River is not designated by NYSDEC as a wild, scenic and/or recreational river.[4] There are no NYSDEC Designated, Study or Inventory State Wild, Scenic or Recreational Rivers within or adjacent to the Proposed Project site. No further review is required.

4.4.3.2 National Wild and Scenic Rivers

The East River is not a designated National Wild or Scenic River. The Proposed Project does not involve a National Wild and Scenic River as shown by the Nationwide Rivers Inventory List of National Wild and Scenic Rivers.[5] The only such designated river in New York State is the Delaware River (Upper). No further review is required.

4.4.3.3 Section 4(f) Involvement

The Proposed Project does not involve work in or adjacent to a wildlife or waterfowl refuge. No further consideration is required for Section 4(f) involvement related to wildlife or waterfowl refuge.

4.4.3.4 Mitigation Summary

No mitigation measures are necessary, as significant adverse impacts to designated wild, scenic and recreational rivers, including wildlife and waterfowl refuges, are not expected as a result of the Proposed Project.

4.4.4 Navigable Waters

Navigable waters of the U.S. are those waters that are subject to the ebb and flow of the tide and/or are presently used, have been used in the past, or may be susceptible to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody and is not affected by later actions or events that impede or destroy navigable capacity (33 CFR 329).

[4] New York State Department of Environmental Conservation website (November 12, 2012): http://www.dec.ny.gov/lands/32739.html.
[5] New York State Department of Environmental Conservation website (November 12, 2012): http://www.rivers.gov/rivers/new-york.php

Formed by glacial activity over 50,000 years ago, the East River is a 26-km (16-mi) long tidal strait that connects the western portion of Long Island Sound to the upper reaches of the New York Harbor. Both the Long Island Sound and New York Harbor open to meet the Atlantic Ocean. At the project site, the river is approximately 0.5 miles wide and is bounded by Manhattan Island to the west and the western portion of Long Island (Queens and Brooklyn) to the east. The deepest point of the East River is 116 feet, located between Long Island (Queens) and Ward's Island. Generally, the East River varies in depth between 40 and 70 feet.

From approximately 48th Street to 86th Street, Roosevelt Island divides the river into two 0.2 mile wide by 2-mile long channels, referred to as the West Channel and the East Channel. The Proposed Project is located in the West Channel, which is a deep, rock bottomed stretch of the river that is subject to strong currents that vary from 0.0 knots at slack water to 5.2 knots at five hours after high tide. Depths in mid-channel near the proposed esplanade average over 60 feet. Manhattan's eastern shoreline (the East River's western bank) has been filled and expanded over the last 3,000 years. The shoreline is generally bulkheaded, with adjacent water depths of over 30 feet. Navigability of the waters would not be severely affected, as the esplanade would be approximately 40 to 50 feet wide, with a 30 foot offset from the shoreline/bulkhead.

The landward-most limit of the Rivers and Harbors Act under Section 10 is the mean high water line (MHW). The National Oceanic and Atmospheric Administration (NOAA) National Ocean Survey tidal bench mark nearest to the project site is the East 41st Street Pier. The MHW elevation for this station has been calculated to be 4.55 feet National Geodetic Vertical Datum (NGVD) (NOAA, 1996).

The U.S. Army Corps of Engineers (USACE) maintains a 35-foot deep, 550 to 1,000-foot wide navigation channel from the Throgs Neck Bridge to the former Brooklyn Navy Yard. Within the West Channel, the USACE maintained navigation channel is 550 feet in width and is generally located in the center of the waterway.

4.4.4.1 State Regulated Waters

The Proposed Project would be located within the East River, part of state regulated waters. The waterway is used for both recreational and commercial traffic. The project work would require placement of fill for the construction of the Proposed Project in these waters. A NYSDEC Protection of Waters Permit for Excavation or Placement of Fill in Navigable Waters will be required, pursuant to ECL Article 15, Title 5. Consultation with NYSDEC is underway regarding project related improvements. The permit will be obtained once the location and extent of the impacts are ascertained.

4.4.4.2 Office of General Services Under Water Lands

The Proposed Project would be located within the East River and the work would require the use of underwater NYSOGS holdings. NYSOGS has been contacted and arrangements for an easement will be finalized once the location and extent of the impacts are ascertained.

4.4.4.3 Rivers and Harbors Act Section 9

To preserve the public right of navigation and to prevent interference with interstate and foreign commerce, Section 9 of the Rivers and Harbors Act of 1899 (33 USC 401) requires authorization from the U.S. Coast Guard to construct any bridge or causeway in a navigable water of the U.S. The Proposed Project would involve the placement of the proposed esplanade over a navigable water of the United States, the East River. The East River is used primarily for recreational and commercial traffic. The placement of the proposed esplanade would not reduce the existing vertical clearance or affect the navigability of the river. In addition, the Proposed Project would involve the construction of the proposed esplanade over a navigable water of the United States, the East River. The construction would necessitate the placement of caissons and associated work in the river, and would require a USCG Section 9 Permit. The U.S. Coast Guard has been consulted and a USCG Section 9 Permit Application

Package has been prepared and submitted to them for approval. During a public comment period for the permit from June 17 to July 17, 2015, comments were received from USCG and the New York Police Department, Counterterrorism Division. The comments and responses are presented in Appendix O, USCG Comments on the DR/EA.

4.4.5 Floodplains

4.4.5.1 State Flood Insurance Compliance Program

The Proposed Project would be within the 100 year floodplain of the East River, as indicated by the 2013 Preliminary FEMA flood insurance rate map (FIRM).

In accordance with the provisions of 6 NYCRR 502, *Flood Plain Management for State Projects*, the practicality of alternatives to any floodplain encroachments were considered and evaluated. The results of this evaluation indicate that the amount of flood plain area would not change with any reasonable alternative. Additionally, this evaluation finds that (1) a significant encroachment to the floodplain would not occur with the Proposed Project, (2) there is no significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles, and (3) the Proposed Project would have no significant impacts on natural beneficial floodplain values.

A floodplain hydraulic analysis will be performed by the NYSDOT Regional Hydraulics Engineer during the advance detail plan phase.

4.4.5.2 Executive Order 11988

In compliance with EO 11988, an evaluation of potential effects of any actions taken within the floodplain was performed, and alternatives to avoid any adverse effects were considered. No practicable alternative would avoid use of the floodplain. As the design is finalized, potential impacts will be minimized and, consistent with the regulations issued in accordance with Section 2(d) of this Order, NYSDOT will prepare and circulate a public notice containing an explanation of why the action is proposed to be located within the floodplain.

4.4.6 Coastal Resources

4.4.6.1 State Coastal Zone Management Program

The Proposed Project is a SEQR Type II action but within a State Coastal Zone Management Area. The Proposed Project would be located directly over the East River. The East River and its adjacent jurisdictional lands are governed by New York State's Coastal Zone Management regulations, administered by the NYS Department of State (DOS).

A State Consistency Review is required (see Section 4.2.1). This review included completion of the State Coastal Assessment Form (CAF) and Federal Consistency Assessment Form (FCAF) and submission to NYSDOS. A copy of the completed form is attached in Appendix B. The form certifies that the Proposed Project will be conducted in a manner consistent with the New York State Coastal Management Program. DOS concurred with the consistency certification in a letter dated June 19, 2014 (see Appendix B). As a condition of concurrence, NYCEDC must submit full plan drawings and details for further DOS review, when they become available, and engage in ongoing coordination with DOS and NYCDCP.

4.4.6.2 State Coastal Erosion Hazard Area

The Proposed Project would not be located in or near a Coastal Erosion Hazard Area.

4.4.6.3 Waterfront Revitalization and Coastal Resources Program

According to NYS DOS "List of Approved Coastal Local Waterfront Revitalization Programs (LWRPs)," dated March 2007, the Proposed Project would be located in a Local Waterfront Revitalization Area. New York City has an approved Local Waterfront Revitalization Program (LWRP). Coordination with the City of New York is required, including a notification that the Proposed Project would occur within the boundaries of its LWRP, and a request for the municipality's coastal consistency determination (see Section 4.2.1). See a copy of the Coastal Assessment Form and supplemental answers in Appendix B. The application certifies that the Proposed Project is consistent with NYC's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program, and would be conducted in a manner consistent with such program. NYCDCP recommended the proposed project be found consistent with the WRP policies in an email dated July 23, 2014 (see Appendix B). As a condition of the concurrence, NYCDCP supported the conditions set forth by DOS in their letter dated June 19, 2014 requiring that, as phases of work are developed, NYCEDC will submit full plan drawings and details for further review and engage in ongoing coordination with DOS and NYCDCP to ensure the long-term project goals, State coastal policy objectives, and LWRP policy objectives are being concurrently met.

4.4.6.4 Federal Coastal Barrier Resources Act (CBRA) and Coastal Barrier Improvement Act (CBIA)

The Proposed Project would not be located in, or near, a coastal area under the jurisdiction of the Coastal Barrier Resources Act (CBRA) or the Coastal Barrier Improvement Act (CBIA).

4.4.7 Groundwater Resources, Aquifers, and Reservoirs

4.4.7.1 Aquifers

The Proposed Project would not be located in an identified Primary Water Supply or Principal Aquifer Area. No further investigation for designated aquifers is required.

4.4.7.2 Drinking Water Supply Wells (Public and Private Wells) and Reservoirs

There are no municipal drinking water wells, wellhead influence zones, or reservoirs within or near the Proposed Project, according to the NYS Atlas of Community Water System Sources, issued by the NYS Department of Health.

4.4.8 Stormwater Management

The Proposed Project is subject to State Pollutant Discharge Elimination System (SPDES) requirements regulating stormwater discharges. The project area would create an estimated 4.8 acres of new impervious surface over the East River and relatively small areas of soil disturbance at the Upland Bridge Connection touchdown areas and pier foundations. A Stormwater Pollution Prevention Plan (SWPPP) would be required for the Proposed Project. NYSDEC concurrence with the proposed stormwater management design is required.

(1) Proposed Upland Bridge Connections over land: Construction of the Upland Bridge Connections to the esplanade would require temporary erosion and sediment controls at touchdown areas and pier foundations where existing soil or fill is disturbed during construction. Erosion and sedimentation control plans would be developed and incorporated into the project. Erosion and sedimentation control measures may include: erosion control fabric, silt fence, inlet protection and stabilized construction access points, as needed. Soil erosion plans and details will be developed during the advance detail design phases of the project in accordance with Section 209 Soil Erosion and Sediment Control of the NYSDOT Standard Specifications in order to satisfy the SWPPP.

(2) Proposed esplanade over the East River: Runoff from the bike path is proposed to discharge to flow-through stormwater planters constructed in the median. The stormwater planters are an infiltration or filtering practice which uses soil infiltration and biogeochemical processes to improve water quality, similar to rain gardens and green roofs. The stormwater planters would be configured to treat the Water Quality Volume (WQV), or roughly the runoff from the first 1.2 inches of precipitation falling on the bike path. The runoff would be filtered by percolating the runoff through the plant roots and soil media. Then, the treated runoff would flow into perforated underdrains near the bottom of the planter. The underdrains would be connected to downspouts placed through the concrete deck and structure to the river below. Discharges exceeding the WQV equivalent would spill into vertical standpipes acting as overflow devices set above the soil layer in each planter, which would then discharge the overflow through the downspouts directly to the river below. These arrangements would allow water quality treatment to filter trash, nutrients, sediment, dust and bacteria from the bikepath runoff. Situations where discharges of treated stormwater could cause erosion or disturbance of the river mudline or silt bottom below the esplanade would be avoided or mitigated with baffles if needed to reduce discharge velocities. See Figure 4.4-2 below.

The feasibility of providing water quality treatment for runoff from the pedestrian path was considered. Because the pedestrian path is proposed at a lower elevation than the bike path, and has minimal vertical clearance to the box beam structure below, there would be insufficient vertical height to drain the pedestrian path runoff to the flow-through stormwater planters, which require a minimum 3.5 feet of vertical space for the runoff storage, soil media and drainage layers of the planters. Drainage slots through the pedestrian path parapet will discharge the gutter flows from the pedestrian path to the river below. Installation of screens to capture trash and debris at the slot openings are an option to provide a minimum level of treatment of the pedestrian path runoff. The screens would be designed to facilitate regular maintenance intervals.

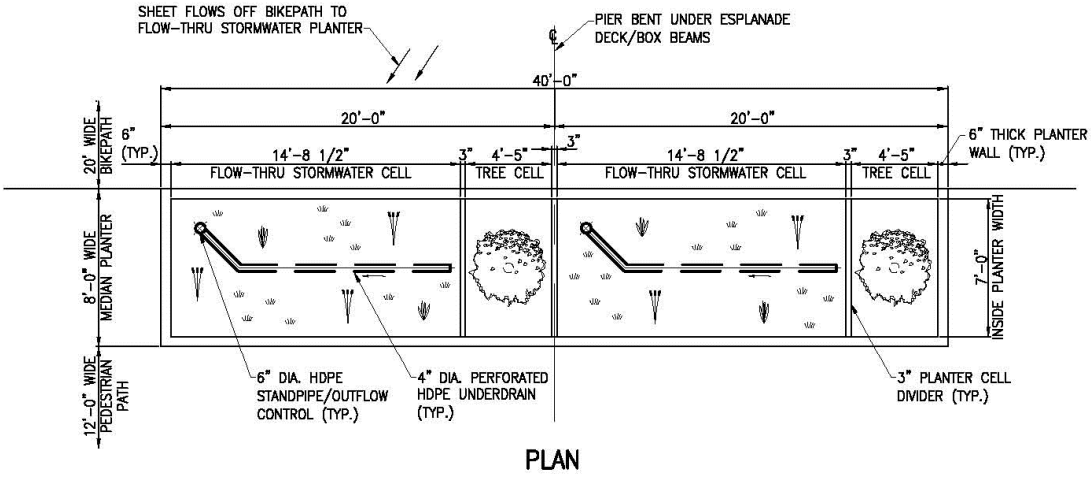
Water Quality Volumes (WQVs) and Water Quality Peak Flows (WQFs) will be computed during the advanced detail plan design phase for each drainage area to a flow-through stormwater planter to be installed. The WQV and WQF for the contributing area to a typical flow-through stormwater planter are summarized below in Exhibit 4.4-1.

Exhibit 4.4-1
Water Quality Volume/Peak Flow Analysis

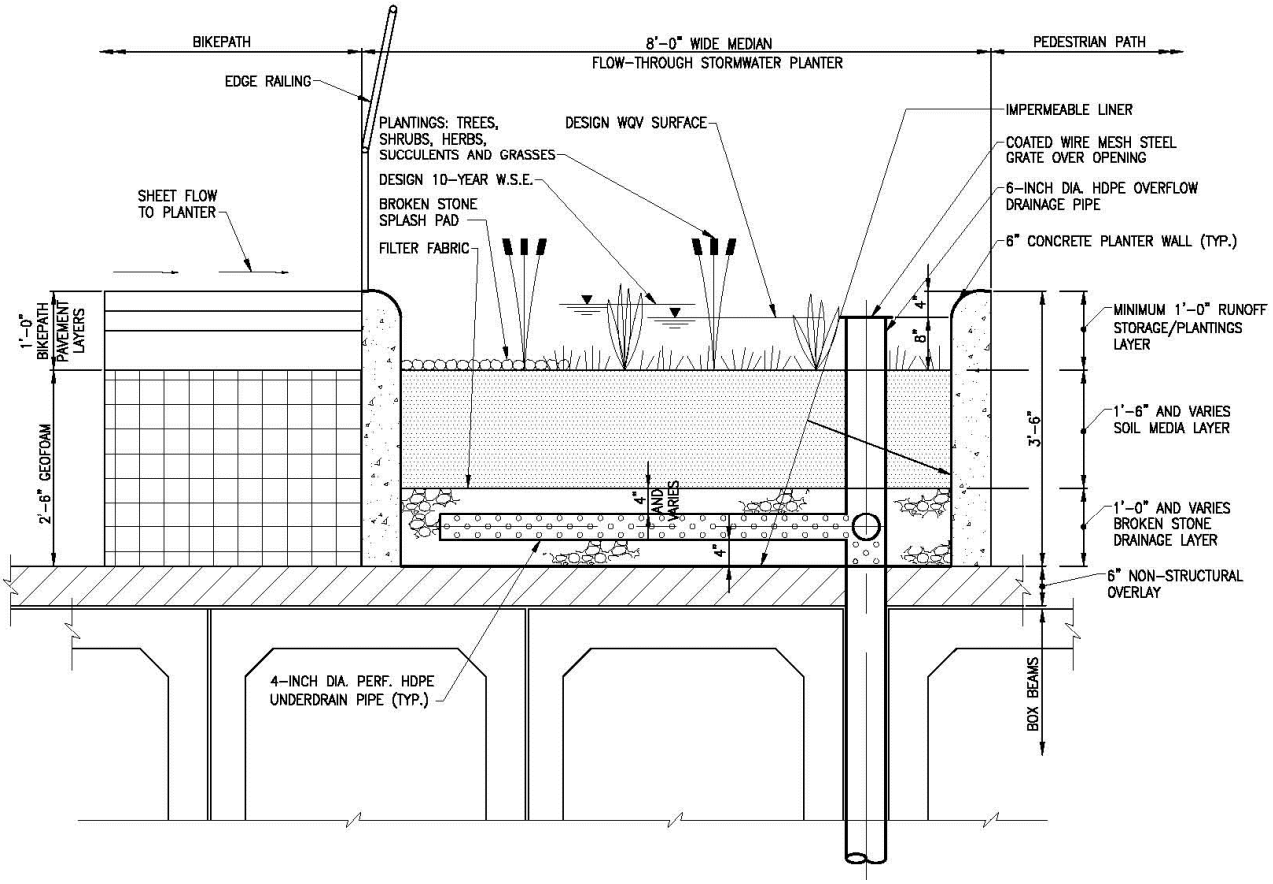
Drainage Area #	Contributing Area (acres)	Bike path Area To Be Treated (acres)	Water Quality Volume (acre-feet) Generated/Treated
UN Esplanade	2.85	1.41	0.27 / 0.13
Upland Bridge Connection to 48th Street Node	0.12	0	0.01 / 0.00
ODR Esplanade	1.81	0.89	0.17 / 0.08
Upland Bridge Connection to 53th Street Node	0.01	0	0.00 / 0.00

Potential impacts on surface water quality associated with the project would be the result of stormwater runoff and associated pollutants. Pollutants associated with the project could include trash, debris, total suspended solids (TSS), oil, and grease. Pollutant sources may include recreational users of the esplanade facilities, esplanade maintenance activities, and by-products of combustion. Of these pollutants, trash is considered a primary pollutant due to the presence of recreational users on the proposed esplanade.

Figure 4.4-2 – Stormwater Planter Typical Section



PLAN



4.4.9 General Ecology and Wildlife Resources

4.4.9.1 Fish, Wildlife, and Waterfowl

Except for a few isolated roof-top gardens and very small urban parks, the terrestrial environment along the FDR Drive adjacent to the project area is paved and/or developed. Within and immediately adjacent to the project area, there are no vegetated wetlands and/or submerged aquatic vegetation (SAV) beds. Plant life is limited to algae growing on hard surfaces. New York Harbor is located within the Hudson River Estuary. Numerous estuarine and marine species occur regularly in the harbor, along with various anadromous and catadromous fish species. The project area likely provides low to moderate habitat value to estuarine and marine species due to the swift current and limited rugosity.

When first explored and settled by European settlers, mudflats, tidal marshes, and several small streams were located along much of Manhattan's eastern shoreline. In fact, Turtle Bay on Manhattan's east side (approximately East 45th to East 48th Streets) was so named because of the sea turtle population residing in its eel grass meadows (Fordham, 2013).

The Manhattan shoreline of the West Channel has undergone significant development over the last few centuries. The development has expanded the shoreline waterward; the shallow bays and creeks that were once present in the project area have been filled. Today, the shoreline is largely comprised of concrete facades and sheetpile bulkheads. Many storm sewer and road drainage pipes empty into the project area. Within the project area, there are two rock out-crops located near East 55th and East 58th Streets. Depths adjacent to the rock outcrop are 30 feet in many locations and almost 60 feet north of East 58th Street.

The shorelines of the East Channel along eastern Roosevelt Island and western Queens are less developed than the project area. In the East Channel, shallow shoals are present along both shorelines. Several of these shoals are extensive and occupy almost half of the width of the channel. The Queens shoreline is comprised of pile supported piers, rip rap and bulkheads and formerly developed areas that have become dilapidated and now consist of sediments, rocks, and debris. In fact some waterfront structures located along portions of the shoreline of the East River have deteriorated and created shallow water habitat with sloping shorelines that provide additional limited nursery habitat for certain species of fish (USFWS 1997, USACE, 2004).

Ecological Underwater Survey

An Ecological Underwater Survey was performed as part of the preliminary baseline assessment necessary for identifying potential ecological impacts from the construction of the Proposed Project and onsite habitat enhancement opportunities along the eastern shoreline of the East River (see Appendix B). The survey was conducted between East 38th and East 61st Streets in Manhattan, from October 3 to October 5, 2011.

The survey consisted of the following:

- Visual dive survey performed parallel to the shoreline to a distance of 50 feet riverward from the existing bulkhead or Waterside Pier (located between East 38th and East 41st Street) documenting: observed habitat types, size, and general locations; general health of habitat; species presence and visual density (biodiversity); substrate type; and any other anomalies that could assist in assessing impacts from construction and potential on-site mitigation design.
- Piling survey at two locations underneath the Waterside Pier to determine changes (if any) in spatial distribution, biodiversity, and abundance of species moving shoreward and away from direct sunlight.
- Submerged aquatic vegetation (SAV) presence/absence survey.
- Identification of types, size, and general location of micro-habitats/habitats present riverward to 50 feet (depth permitting) of existing infrastructure (documented with video).
- Identification of observed marine/estuarine species, and

- Video documentation of density, type, and spatial distribution of encrusting organisms underneath the Waterside Pier, bordering pilings along the steel bulkhead, two bedrock outcrops located along the northern portion of the survey area, and the existing caissons installed as part of the construction of the FDR Drive Outboard Detour Roadway (ODR).

A total of 17 underwater transects were completed parallel to shore out to a distance of 50 feet spanning a distance of 1.3 miles along the shore, including the 0.96 mile section of the proposed esplanade. An additional two bisecting transects approximately 50 feet in length were completed underneath the Waterside Pier between East 37th to 41st Streets to determine changes (if any) in spatial distribution, species abundance, and species composition on individual pilings as the diver moved underneath the pier structure and away from direct sunlight.

A total of 19 species of flora and fauna were identified onboard via real-time video and through collection of samples (e.g. macro-algae at bedrock) when identification could not be confirmed via video. Overall, three different habitat types were identified based on differences in structure present, substrate type, species composition and distribution, and include:

- Piling/Open Water Edge Habitat - consisting of riprap/rubble substrate with some anthropogenic debris and wooden pilings;
- Natural Bedrock Outcrops and Caissons Habitat - located in the northern portion of the study area consisting of large rocks and bedrock substrate and the surface of the metal caissons; and
- Offshore Habitat – located to 50 feet from existing shoreline consisting mostly of sand/silt and some riprap.

Offshore habitat was included in each of the aforementioned habitat types and not discussed separately as substrate type was usually a function of corresponding shore-side habitat. For all habitat types, no submerged aquatic vegetation (SAV) was observed.

Piling/Open Water Edge Habitat

Piling/Open Water Edge Habitat was located along the edge of the existing bulkhead along the FDR Drive in the vicinity of the Queens Midtown Tunnel Entrance from East 43rd Street to East 53rd Street. Depth ranged from 15 to 25 feet at the time of survey. Substrate located nearest East 43rd Street consisted of low relief habitat (one to two feet high) with riprap-sized rocks (approximately a foot in diameter), concrete rubble, and an occasional sandy pocket. Some anthropogenic debris (e.g. steel, rebar) was observed. The slope was relatively flat. Debris was less prevalent than observed at the under-pier habitat. Bottom habitat had very little benthic community coverage and was sparsely populated by sponge or dogwhelk (approximately 3 to 5 percent overall coverage).

Natural Bedrock Outcrops and Caissons Habitat

Natural Bedrock Outcrop and Caissons Habitat were located north of East 53rd Street with terminus at East 61st Streets. Habitat included two large natural rock outcrops with a tide pool located adjacent to the FDR Highway between East 57th Street and East 59th Street and encrusting habitat on the caissons slightly riverward (approximately 50 feet) of the shoreline. Depth varied between two feet in the tide pool to depths greater than 40 feet at the rock wall. Slope on bedrock was steep at about a 90 degree vertical drop. Substrate was either bedrock or small rock (approximately 12 inches in diameter) with little or no silt layer. Percent coverage varied by depth along the bedrock but overall coverage was approximately 40 to 50 percent. Caisson species composition was similar to that of the under-pier and piling open water habitats. Overall, habitat condition and biodiversity was best along natural outcrops with overall rating of moderate to fair. The substrate riverward was mostly silt and rubble and of poor quality.

There were few observations of fish in the project area during the survey in 2011. This is likely due to the currents and limited habitat for fish. Observations of the bulkheads and rock outcrops identified some foraging opportunities for fish; however, the near vertical bulkheads provide limited cover for fish. Bulkheads have been found to provide limited habitat due to the lack of cover (Gothues and Able, 2010;

Ianuzzi and Ludwig 2004). In the project area, fish likely use the area as a transit corridor. The East Channel may be favored as a transit corridor over the West Channel due to its habitat diversity (shallow waters, limited sheet pile bulkheads, shoreline structures, and large shoals).

Offshore Habitat

Offshore Habitat consisted mostly of sand/silt and some riprap. Substrate type was usually a function of corresponding shore-side habitat.

Summary

Overall the habitat conditions in the Proposed Project area are generally poor. The waters are deep and subject to strong currents. The shoreline is largely bulkheaded with outfalls. Higher value shallow water habitats (mudflats, SAV beds, etc.) are not present in the project area. Species diversity in the project area was highest at the natural rock outcrops and habitat condition appeared to be of higher quality. Sheetpile bulkheads provide little, if any, habitat value. The bottom habitats had little to no visible encrusting biological communities.

Fish in the project area vary seasonally and consist of species that occupy various depths in the water column. The species vary from schooling baitfish that occur in the upper portions of the water column to demersal fish that occur on benthic habitats as well as predatory species (e.g., blue fish, striped bass, etc.) that may be found at all depths. Many fish species utilize the project area to transit between lower New York Harbor, Long Island Sound and the Harlem River to the Hudson River. Moreover, the lack of shallow shoals makes the area unattractive habitat for species that spawn in this habitat (e.g., winter flounder).

Some fish are likely to utilize the floral and faunal organisms on the bulkheads and rock outcrops as prey species; however, the vertical structures provide limited resources along the shoreline in the project area to attract fish. By comparison, the shorelines of Roosevelt Island and the East Channel are shallower with various structures that provide more attractive habitat resources for fish than the project area.

Impacts

The construction and operation of the Proposed Project could impact marine organisms (i.e., fish and benthic invertebrates). With respect to fish, the Proposed Project would occupy portions of the water column and shade a portion of the river that is currently unshaded. Construction of structures in the water has the potential to directly and indirectly remove or alter habitat as well as potentially create new habitat.

Operations

Water Column Removal – The construction of the Proposed Project would require the occupation of water column habitat through the installation of new piles. The new piles would occupy approximately 56,300 cubic feet of water column. The piles would be generally placed every 100 feet in a row of two to three over the course of approximately one mile. It is not anticipated that the placement of these piles would alter the flow of the river and/or affect the local currents as the piles would occupy an imperceptible quantity of water column.

Within the West Channel the river is subject to strong flows. The percent of water volume the Proposed Project would occupy within the one-mile length of the West Channel was calculated:

Approximate length of the proposed esplanade (parallel to the shoreline), of approximately 5,000 feet, multiplied by the average width of the West Channel in the project area (approximately 950 feet), multiplied by the average depth across the West Channel near the project area (approximately 40 feet).

This volume of water measures approximately 190,000,000 cubic feet of water. Divided by the amount of water column to be removed (approximately 79,000 cubic feet), the piles of the Proposed Project would occupy only 0.040 percent of the one mile length of the West Channel.

It is not anticipated that the new structure would pose a barrier to fish movement in the East River. As stated earlier, the West Channel is approximately 950 feet wide. The Proposed Project would extend a maximum of approximately 80 feet from the shoreline; thus, leaving over 870 feet (perpendicular to the river's flow) for fish to travel in the East River. In fact, the placement of the piles for the Proposed Project may have positive benefits. Due to the very strong currents in the West Channel, the piles may serve as a refuge for fish to rest and stay out of the current.

Shading – Anthropogenic development within and adjacent to the marine environment may result in negative, and in some instances, positive impacts.

A recent study by Able and Grothues (2011) studied the shading impacts underneath Pier 40 on fish. Pier 40 was selected because it is a large pier (i.e., approximately 830 feet x 735 feet wide) and the effect of shading would be most easily observed and quantified in such an extreme case; although, the authors did caution that the shading effect may not have a linear relationship with scale (size of the structure). In that study, a marked reduction in fish populations, especially small planktivorous baitfish (e,g., bay anchovies, etc.), was identified at approximately 16.1 feet from the edge of the pier line – the distance that light was below useful levels for fish vision (light was measured at 0 $\mu E\ m^{-2}\ s^{-1}$) (Able and Grothues, 2011). The study also determined a reduction in predatory fish species as well; although, the correlation was not as strong as that of the baitfish. There is a dense pile field that supports Pier 40.

In order to identify the potential for adverse impacts, the extent of shading projected to result from the Proposed Project was calculated (see Appendix B). Using a computer model, the shaded areas under and/or adjacent to the Proposed Project were calculated. The calculations determined shading for the summer and winter solstices and the vernal and autumnal equinoxes, representing the dates of December 21st, March 20th, June 21st and September 21st. For each of these days, the amount of shading is calculated for 9:00 a.m., 12:00 p.m. (noon), 3:00 p.m. and 6:00 p.m. and at low and high tide.

The waters of the project area are deep (often in excess of 30 feet). In 2011, the NYCDEP conducted sampling in the open waters at the Harbor Monitoring Station E2, located in the East River roughly parallel to East 23rd Street. Light measurements of 0 $\mu E\ m^{-2}\ s^{-1}$ were recorded at depth as shallow as 28 feet. Many demersal species in the East River (e.g., flounders, eels, etc.) occupy the bottom habitats, which is well below the sunlit portion of the upper water column. Thus, it could be assumed that the presence of the Proposed Project would not preclude demersal fish or many other species from swimming under the esplanade at such depths as there would be minimal, if any, change to lighting. Also, given the strong currents in the area, the pilings may serve at an attractive refuge for fish.

The design of the Proposed Project is considerably different than Pier 40 or other large piers with intense shading. The proposed esplanade would largely stand on a north-south alignment with greater spacing between pier bents; generally spaced at 90 feet. At mean high and low tides, the difference between the surface of the water and the bottom of the deck and the water surface would be approximately 7.5 feet and 11 feet, respectively. With a width of only 40 feet and open to sunlight on both sides, the intense shading under Pier 40 would not occur under the Proposed Project. As reported above, Grothues and Able (2010) reported that a large school of bait fish passed completely under Pier 57 (approximately 40 meters wide) - a pier smaller than Pier 40 without dense pile fields.

The east-west connections of the Proposed Project would be of similar construction to the north-south portion of the Proposed Project, which would allow light to pass underneath the structure. Thus, it therefore stands to reason that the anticipated amount of under pier shading would not serve as an impenetrable barrier to fish that occupy the upper portions of the water column.

With respect to fish travel at night, previous studies have shown fish are often abundant away from the pier edges. It is possible that the Proposed Project may actually attract fish. The combination of the refuge provided by the esplanade's piles, the pedestrian and deck lighting of the Proposed Project, and the residual lighting of the Manhattan skyline could result in an increase number of fish around the esplanade compared to the number that currently exists in the project area.

Although some impacts to the marine environment may occur from the Proposed Project; it is projected that, based on the quality of the habitat and the dimensions of the esplanade, the project would not cause significant environmental impacts to the marine environment. Significant impacts are considered if the Proposed Project would create shading conditions in the river that would serve as a permanent barrier for fish swimming to Manhattan's shoreline; provide a barrier or significantly impair the ability of fish to swim north and south in the East River; and/or provide a situation that significantly reduces the population of an endangered species or another species of fish within the Hudson Raritan Estuary (HRE). The anticipated impacts to fish are not considered significant.

4.4.9.2 Habitat Areas, Wildlife Refuges, and Wildfowl Refuges

The East River is not classified as a wildlife or waterfowl refuge. No further consideration is required.

As stated in the September 25, 2013 response letter from the New York Natural Heritage Program (see Appendix B) the only known occurrence of listed species within 0.5 miles of the project area is the endangered peregrine falcon (breeding population), *Falco peregrines*.

In New York City, peregrine falcons make their nests on tall structures (e.g., bridges, church steeples, skyscrapers, etc.) (NYCDEP, 2013), there are currently 20 known nesting pairs of falcons in New York City (WNYC, 2013). Peregrine falcons prey on a variety of birds common to the city (e.g., pigeons, starlings, etc.). It is unlikely that the Proposed Project would impact the falcons as it would be low to the water and would not serve as an obstacle to the flight nor would the Proposed Project serve as a suitable nesting structure. Also, unlike some city parks that are home to many of their prey species, the project area provides limited habitat for their prey species; thus, the construction of the Proposed Project would not reduce the abundance of potential prey for the falcons.

4.4.9.3 Endangered and Threatened Species

Endangered Species Act (ESA)

The ESA established protection over and conservation of federally threatened and endangered species and the ecosystems upon which they depend. An "endangered" species is a species that is in danger of extinction throughout all or a significant portion of its native habitat, while a threatened" species is one that is likely to become endangered within the foreseeable future throughout all or in a significant portion of its native habitat. Federal species of concern is an informal term that indicates species might be in need of conservation actions. Federal species of concern do not receive legal protection and this term does not imply the species will eventually be proposed for listing.

The USFWS and the NMFS jointly administer the ESA and are also responsible for the listing of species (i.e., the labeling of a species as either threatened or endangered). The USFWS has primary management responsibility for management of terrestrial and freshwater species, while the NMFS has primary responsibility for marine species and anadromous fish species (species that migrate from saltwater to freshwater to spawn). The ESA allows the designation of geographic areas as critical habitat for threatened or endangered species.

According to agency databases, there are Federally-protected, threatened, or endangered species located in or near (within ½ mile) the Proposed Project. The U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have been contacted for confirmations that a rare, threatened, or endangered species may exist in the project impact area.

National Marine Fisheries Service

NMFS indicated in a letter dated September 18, 2012 (see Appendix B) and confirmed during a July 30, 2013, conference call that several Federally-listed species may occur in the East River. Those species include:

- Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered
- Gulf of Maine Distinct Population Segment (DPS) of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) – Threatened
- New York Bight DPS of Atlantic sturgeon – Endangered
- Chesapeake Bay DPS of Atlantic sturgeon – Endangered
- Carolina DPS of Atlantic sturgeon – Endangered
- South Atlantic DPS of Atlantic sturgeon – Endangered
- Northwest Atlantic Ocean DPS of loggerhead sea turtle (*Caretta caretta*) – Threatened
- Kemp's ridley sea turtle (*Lepidochelys kempi*) – Endangered
- Green sea turtle (*Chelonia mydas*) – Endangered
- Leatherback turtle (*Dermochelys coriacea*) – Endangered

Consultation pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended, has occurred and a Biological Assessment and Essential Fish Habitat prepared (see Appendix B and summary above). No designated critical habitats exist for Atlantic sturgeon, shortnose sturgeon or the four marine turtle species. In a letter dated October 24, 2014, NMFS concurred with FHWA's determination (dated June 25, 2014) that the proposed project may affect, but is unlikely to adversely affect, any species listed as threatened or endangered by NMFS under the ESA of 1973, as amended (see Appendix B). No further consultation pursuant to Section 7 of the ESA is required. In a letter dated December 8, 2014, FHWA requested concurrence from NMFS that the amount of habitat impacted and the duration of impacts is so minor that it is anticipated that the impacts to EFH-listed species would be negligible. NMFS had no issues with the EFH but require that a mitigation plan be submitted prior to construction. (See Appendix B for all correspondence.)

United States Fish and Wildlife Service

The United States Fish and Wildlife Service's (USFWS's) website[6] was consulted to ascertain which species in Manhattan are listed as threatened and endangered. The USFWS indicated that there are no listed species in New York County, although the northern long-eared bat is listed as proposed endangered. The website identified the hawksbill and leatherback sea turtles, found in Brooklyn and Queens are listed as endangered and the green sea turtle is listed as threatened. In addition, the website also indicated that the piping plover *Charadrius melodus* in Queens is listed as threatened.

The northern long-eared bat's (*Myotis septentrionalis)* home range encompasses much of the eastern half of the United States and Canada (USFWS, 2014b). White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the northeast (USFWS, 2014b). In New York State, the population of this species has declined approximately 98% since white-nose syndrome began in New York in 2006 (NYNHP, 2014)

The northern long-eared bat spends the winter hibernating in caves and mines. During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. It has also been found, rarely, roosting in structures like barns and sheds (USFWS, 2014b). This species is typically associated with mature interior forest (Carroll et al. 2002, as cited in NYNHP, 2014) and tend to avoid woodlands with significant edge habitat (Yates and Muzika 2006 as cited in NYNHP, 2014). Review of the USFWS's Information, Planning, and Conservation (IPaC) References

[6] Website reviewed on April 24, 2014.
http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=36061

website did not identify the project area as critical habitat for the species (USFWS, 2014c). The species generally feeds in the pre-dawn and dusk hours. Insects are the main prey items.

It is highly unlikely the northern long-eared bat would occur within the project area. The east side of Manhattan does not have suitable winter or summer habitat for the northern long-eared bat. Once constructed, neither the structure of the esplanade nor the proposed plantings would not provide suitable habitat for the species. The USFWS Long Island Ecological Services Field Office was contacted and conversations with USFWS personnel indicated that due to the location of the proposed esplanade, there should be no effect on the species (USFWS, 2014d).Thus, it is anticipated that neither the construction nor operation of the esplanade would affect the northern long-eared bat.

Potential impacts to sea turtles are addressed in Appendix B. Within the project area there are no suitable turtle nesting locations. Also, piping plover nest on beaches. They would not find suitable nesting habitat in the project area.

New York State Department of Environmental Conservation – New York Natural Heritage Program

The State of New York regulates endangered species as identified in Environmental Conservation Law, § 11-0535, Part 182: Endangered and Threatened Species of Fish and Wildlife; Species of Special Concern; Incidental Take Permits.

A review of the Natural Heritage Program database found that the only threatened or endangered species documented at or near the Proposed Project site (generally within 0.5 miles) is the State-endangered peregrine falcon (breeding habitat) (see letter dated September 25, 2013 in Appendix B).

Biological Assessment (BA)

The Biological Assessment was prepared pursuant to Section 7 of the Endangered Species Act (ESA), as amended, to evaluate the effect of the Proposed Project on ESA-listed species (listed as endangered or threatened under the ESA), or their designated critical habitat (see Appendix B). The BA details the expected effects on these species which include: shortnose sturgeon (*Acipenser brevirostrum*), five Distinct Population Segments (DPS) of Atlantic sturgeon (*Acipenser oxyrinchus*), one DPS of loggerhead sea turtle (*Caretta caretta*), Kemp's ridley sea turtle (*Lepidochelys kempii*), green sea turtle (*Chelonia mydas*), and leatherback turtle (*Dermochelys coriacea*). Designated critical habitat is not present within the project area for these listed species.

Total benthic impact from each esplanade collectively is 1,820 square feet or 0.04 acres. Additionally, it was observed during the dive survey performed in October 2012 that light within the proposed esplanade attenuates between 10 and 12 feet below the river's surface. This portion of the water column where light penetrated had the more dense populations of sessile organisms. It is estimated that installation of new piles on the UN platform will provide an additional lateral surface for attachment of encrusting organisms between 61,905 square feet (1.4 acres) and an additional 18,102 square feet (0.4 acres) of lateral surface for attachment of encrusting organisms on the ODR platforms for a total of approximately 80,000 square feet (1.8 acres) collectively.

The BA focused on potential direct and indirect effects on the aforementioned species, the species population, and associated critical habitat (if applicable) in the project area. The effects evaluated in the BA include those associated with expected pile driving and drilling, the re-suspension of sediment, increased vessel traffic associated with construction, and effects associated with the addition of permanent structure within the East River (e.g. shading).

The results of the Biological Assessment are described below:

1. The majority of piles would be drilled into place. Only a small number of piles (approximately 34 piles) would be installed by vibratory hammer. Based on the results of other projects, it is anticipated that drilling and vibratory hammers would produce a cumulative sound exposure level

(SELcum) that is less than the 187dB re 1µPa2-s. Impact hammers can produce a single strike above 206 dB re 1µPa_{Peak} and noise above 187dB re 1µPa2-s; however, the only time an impact hammer would be used is to set the pile into the rock. To set a pile, it is anticipated that impact hammering would only require a low blow count and lower energies than compared to normal pile driving operations where a pile is being driven through the sediments. Although field conditions are not expected to necessitate any instances of impact hammering at levels that would exceed the impact criteria, noise attenuating devices (e.g., isolation casing) could be employed if necessary, Impacts from seating the pile are therefore considered insignificant and discountable.

2. Pile driving would be minimized through the use of drilling, vibratory installation methods, and noise attenuating measures (if needed) and thus, would have insignificant and discountable effects to shortnose and Atlantic sturgeon and the aforementioned four species of marine turtles during foraging activities.

3. Vessels would be limited to tugs and barges. Tug movement would be mostly contained within the work area once barges are secure. Crane barges would use spuds and would need to be repositioned throughout the project duration. Incidental vessel strikes would not affect the shortnose and Atlantic sturgeon as they are generally found within three feet of the bottom and the tug and barge drafts would not reach that depth. Turtle strikes are possible though extremely unlikely as barges would be moored and moved only short distances. The Proposed Project area is not considered preferred foraging habitat for any of the aforementioned species.

4. Indirect effects from re-suspended sediments are not expected to jeopardize species due to use of best management practices and the settlement rates associated with the strong currents in the East River.

5. No critical habitat exists for Atlantic sturgeon, shortnose sturgeon, or the four marine turtle species within the Proposed Project area.

6. Addition of pile habitat and loss of benthic habitat could be compensated through on-site habitat enhancement and offsite project related improvements.

Based on the analysis provided in the BA, it was concluded that while the Proposed Project may have the potential to adversely affect individual transient shortnose and Atlantic sturgeon and marine turtles in the immediate vicinity of pile placement, the Proposed Project would not jeopardize the continued existence of their corresponding populations.

Essential Fish Habitat (EFH)

An Essential Fish Habitat (EFH) study was prepared in September 2013, pursuant to the Magnuson Fishery Conservation and Management Act (MSFCMA) to analyze potential impacts to federally-managed fishes and invertebrates from the proposed undertaking of constructing the Proposed Project in the East River between East 41st and East 60th Streets in Manhattan (see Appendix B).

The EFH assessment focuses on potential direct and indirect effects on the protected aquatic species and habitats in the Proposed Project area. The effects evaluated in the EFH include those associated with expected pile driving and drilling, the re-suspension of sediment, increased vessel traffic associated with construction, and effects associated with the addition of permanent structure within the East River (e.g. shading).

The main points of the EFH assessment are:

- Minor increases in turbidity and sedimentation may be generated by the proposed construction activities; however, these increases would be exceedingly small and localized;
- If eggs and larvae are present during construction, they could be affected by any increases in turbidity, however these increases would be insignificant;

- During construction activities, adult and juvenile fish may leave the area of construction and move to nearby suitable locations outside the area of disturbance;
- After construction, there may be a reduction in benthic organisms in and adjacent to areas that were affected by construction activities (spud pile footprints, anchor drag, etc.) but they would recover quickly;
- Underwater acoustic energy at levels that may injure fish would likely not occur. Steel piles would be installed with drilled shafts and driven with a vibratory hammer. An impact hammer may be necessary to seat piles; however, it is anticipated the seating of a pile could be accomplished at low energy with only a few hammer blows;
- The removal of water column and benthic EFH would have exceedingly small and insignificant, long-term impacts; and
- The Proposed Project would not impact the water flow and circulation of the East River's West Channel.

Based on the analysis provided in the EFH assessment, it is concluded that, while construction activities may affect individual fish in the immediate vicinity of the Proposed Project, they would not adversely affect populations of EFH fish species or their habitats, as summarized in Exhibit 4.4-2. Any impacts would be exceedingly small and insignificant. The impacts would not threaten the long-term survivability of EFH managed species or their potential prey species. Upon cessation of construction activities, changes within the Proposed Project area would not inhibit fish movement, increase or decrease water velocity, substantially reduce potential long-term food resources, or affect water quality.

Exhibit 4.4-2
Summary of Impacts to EFH Species and Essential Fish Habitats

Resource	Effect Determination for Pile Driving	Effect Determination for Vessel Traffic	Effect Determination from Suspended Sediment	Effect Determination for Spawning or Migration	Effect Determination for Shading	Overall Effect Determination for Project
EFH species	*No adverse effect*	*No adverse effect*	*No adverse effect*	*No adverse effect*	*No adverse Effect*	*No adverse Effect*
Essential fish habitats	*No adverse effect*	*No adverse effect*	*No adverse effect*	*No adverse effect*	*No adverse Effect*	*No adverse Effect*

The habitat of the Proposed Project area is of low to moderate value and is similar to habitat throughout West Channel of the East River. The habitat of the Proposed Project area does not represent an area solely used by EFH-listed species for critical life cycle activities (e.g., spawning, migration route, etc.). The amount of habitat impacted and the duration of impacts is so minor that it is anticipated that the impacts to EFH-listed species would be negligible.

In order to limit the amount of potential impacts during construction, it is anticipated that the following reasonable and prudent measures would be implemented:

- Use of silt management techniques and soil erosion practices to limit the downriver transport of re-suspended sediment;
- Observance of seasonal restriction and special permit conditions associated with anadromous fish migration;
- No over-loading;
- Use of high propeller support vessels;
- Limited movement of barges;
- Stockpiled materials would have appropriate containment measures;
- When possible, the contractor would work with pre-cast materials over the water;
- Any landside work would be performed in accordance with a sediment and erosion control plan; and
- Contractors would only refuel vessels and vehicles in designated areas that have appropriate containment systems to capture accidental spills.

Marine Mammals

According to the NMFS, there is little chance for construction of the proposed esplanade to result in interaction with marine mammals; therefore, no action pursuant to the Marine Mammal Protection Act (MMPA) is necessary (letter dated August 29, 2013; see Appendix B).

Avifauna

Sea bird and resident bird usage of the project area is minimal. Thus, impacts to birds during the construction of Proposed Project are anticipated to be minor perturbations associated with construction. Once built, the structures would offer some additional resources (e.g., landscaped plantings) for avifauna and perches for resting. Bird strikes may occur; however, strikes by avifauna are anticipated to be low as the structure would sit low to the water and is in close proximity to very tall structures.

4.4.9.4 Invasive Species

A review of the existing corridor did not indicate any significant presence of known invasive species within the right-of-way (over the East River). Precautions will be taken to prevent the introduction of invasive species during design and construction of the Proposed Project.

4.4.9.5 Roadside Vegetation Management

Existing roadside vegetation consists primarily of street trees along the end of east-west streets where modifications would occur to allow for Upland Bridge Connections over the FDR Drive and down to the proposed esplanade. There are no other maintained lawn areas, wooded areas or waste areas within the Proposed Project. Efforts will be made to replace street trees and this wildlife-supporting vegetation that is removed in the course of and after construction.

4.4.10 Critical Environmental Areas

4.4.10.1 State Critical Environmental Areas

According to information obtained from NYSDEC, there are no Critical Environmental Areas within or adjacent to the project site.

4.4.10.2 State Forest Preserve Lands

According to information obtained from NYSDEC, the Proposed Project would not involve work in or near state forest preserve lands.

4.4.11 Historic and Cultural Resources

4.4.11.1 National Heritage Areas Program

The Proposed Project would not impact areas identified as National Heritage Areas. Within New York State, the designated National Heritage Areas include Hudson River Valley National Heritage Area, the Erie Canalway National Heritage Corridor, the Champlain Valley National Heritage Partnership, and the Niagara Falls National Heritage Area (a designation bill was introduced in Congress in October 2007 for this area).

4.4.11.2 National Historic Preservation Act – Section 106 / State Historic Preservation Act – Section 14.09

The National Historic Preservation Act (NHPA) of 1966 was enacted to integrate consideration of historic resources into the early stages of project planning by a federal agency. Under Section 106 of NHPA, prior to execution of a project, a federal agency or federally funded agency is required to consider the project's impact on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). The New York State Historic Preservation Act (SHPA) has similar requirements to consider the impacts of state-funded or licensed projects on districts, sites, buildings, structures and objects listed in or eligible for inclusion in the New York State Register of Historic Places (SRHP).

A Draft Cultural Resources Survey Report was prepared in March 2013 to identify potentially significant cultural resources, also known as archaeological and historic architectural resources, in the project area in accordance with the NEPA, Section 106 (16 USC 470f) of the NHPA of 1966, as amended, SEQRA, and the SHPA (see Appendix B).

Multiple historic properties listed in, or eligible for inclusion in, the S/NRHP have been identified within the Proposed Project's APE, as further discussed below. Following identification of historic properties, impacts of the proposed action must be assessed to determine if the undertaking may alter, directly or indirectly, any of the characteristics that qualify the property for inclusion in the S/NRHP, in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. OPRHP requested an analysis of the potential effects of the Proposed Project on the identified historic resources (letter dated September 13, 2013; see Appendix J). The Finding Documentation concluded that the proposed esplanade would not adversely affect historic architectural resources in the APE. In their letter of November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources (see Appendix J). The Finding Documentation and correspondence from OPRHP were transmitted to FHWA for concurrence. In a letter dated December 8, 2014, FHWA concurred with OPRHP's opinion that the proposed project would have no adverse impact and the Section 106 process is complete (see Appendix J).

4.4.11.3 Architectural Resources

A historic architectural APE was delineated to take into account direct and indirect effects of development of the proposed esplanade and pedestrian bridges on historic architectural resources. The northern and southern boundaries of the APE correspond to the northern and southern limits of the Proposed Project, at approximately East 60th Street, and East 41st Street, respectively. The eastern boundary extends approximately 100 feet from the FDR Drive into the East River. The western boundary corresponds to the western lot lines of properties adjacent to the FDR Drive because properties in this area have the potential to be impacted by construction-related activities (i.e. vibration) and possess the greatest potential to have views of the proposed esplanade.

Background research was conducted at government agencies and public repositories. State and local government agencies were contacted to determine the extent of significant historic architectural resources in the historic architectural APE.

The historic architectural APE is characterized by a dense concentration of high-end, pre-and-post-World War II-era residences and apartment buildings, interspersed with a few more recently constructed buildings. A number of small-scale parks, major transportation infrastructure, and an international territory occupied by the United Nations (UN) Headquarters are also situated within the APE.

Three resources within the historic architectural APE have been previously evaluated:

- Sutton Place Historic District – S/NRHP-listed resource
- Ed Koch Queensboro Bridge – S/NRHP-listed and LPC-designated resource

- Lamppost – LPC-designated resource

In addition, 27 resources over 50 years old were identified in the historic architectural APE. Of these, eight resources appear to be historically and/or architecturally significant, and retain integrity. In a letter dated August 15, 2013, NYSHPO determined the eight resources S/NRHP-eligible and concurred that the remaining resources were not eligible (see Appendix B). These S/NRHP-eligible resources include:

- FDR Drive
- Queens Midtown Tunnel and Ventilation Building
- UN Headquarters
- 1 Beekman Place
- River House – 435 East 52nd Street
- Cannon Point South – 45 Sutton Place
- Cannon Point North – 25 Sutton Place
- 1 Sutton Place South

Effects on cultural resources listed in, or eligible for listing in, the NRHP are evaluated with regard to the Criteria of Adverse Effect set forth in 36 CFR 800.5(a)(1). The Criteria of Adverse Effect identifies specific criteria for identifying effects on historic properties to determine if an undertaking may directly or indirectly affect any of characteristics that qualify a resource for inclusion in the S/NRHP, in a manner that would diminish the integrity of location, design, setting, materials, workmanship, feeling, or association. The impacts assessment is included in the Finding Documentation which was prepared in accordance with Section 106 Procedures for NYSDOT memorandum dated July 2, 2001.

The impacts analysis included in the Finding Documentation applies the Criteria of Adverse Effect to determine if the proposed esplanade may directly or indirectly affect 11 historic architectural resources in the APE. These resources include one State/National Register of Historic Places (S/NRHP)-listed resource (Sutton Place Historic District), one S/NRHP-listed and New York City Landmarks Preservation Commission (LPC)-designated resource (Ed Koch Queensboro Bridge), one LPC-designated resource (Lamppost), and the eight S/NRHP-eligible resources (FDR Drive, Queens Midtown Tunnel and Ventilation Building, United Nations [UN] Headquarters, 1 Beekman Place, River House, Cannon Point South, Cannon Point North, and 1 Sutton Place South).

Only one resource would be directly affected by the proposed esplanade, the FDR Drive. The highway would be impacted by the introduction of pedestrian overpasses that would provide access to the esplanade from the west side of the highway. However, because the FDR Drive is currently spanned by a number of overpasses, introduction of two additional overpasses would be in keeping with the character of the existing setting, and would therefore not alter the characteristics that contribute to its significance. As a result, the proposed esplanade would have no adverse effect on the FDR Drive.

In terms of indirect effects, the proposed esplanade would be visible from the 11 historic architectural resources. Of these 11 resources, the significance of six resources (Sutton Place Historic District, 1 Beekman Place, River House, Cannon Point North, Cannon Point South, and 1 Sutton Place South) is tied, in part, to river views. Therefore, construction of the proposed esplanade has the potential to impact the setting of these resources. Similarly, the proposed esplanade would also be visible from five resources (Ed Koch Queensboro Bridge, Lamppost, FDR Drive, Queens-Midtown Tunnel and Ventilation Building, and UN Headquarters) whose significance is not specifically tied to river views, although the river is in their view shed. Of these, one (Lamppost) is a historic replica, and as a result, the project would have no effect on it.

In terms of the six resources whose river views are integral to their significance, the proposed esplanade would be constructed at a lower elevation, and would only be approximately 40-feet wide. While the proposed esplanade would be visible, it would not obstruct views of the East River, or of the resources from the river. Therefore, the proposed esplanade would not diminish the integrity of the setting of these resources because the setting would generally remain the same. Similarly, for the five resources where river views are not integral to their significance, the proposed esplanade would also have no adverse

effect because it would not diminish the integrity of their setting. Therefore, overall, construction of the proposed esplanade would not adversely affect historic architectural resources in the APE. In their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources (see Appendix J).

4.4.11.4 Archaeological Resources

Completion of the Phase IA assessment survey involved a site reconnaissance walkover survey, archival documentary and cartographic research, and analysis of all collected information. The archaeological APE defined for the survey includes terrestrial and underwater components. The archaeological study area for the survey was one-quarter-mile radius of the project area.

The archaeological APE is concerned with direct effects of the Proposed Project on previously identified and potential archaeological resources. The archaeological APE was delineated as those areas in which ground disturbance will occur as a result of proposed project actions, both on land and in the bed of the East River. Ground disturbance areas can also include construction staging or work areas. The archaeological APE includes both horizontal and vertical components, which are determined through an examination of project design plans. The horizontal component of the archaeological APE is the footprint of proposed ground disturbance; the vertical component varies within the APE, depending upon the Proposed Project.

The main objectives of the archaeological assessment were twofold:

- To identify known prehistoric and historic archaeological sites and shipwrecks within the archaeological APE and archaeological study area.

- To determine the potential for encountering intact, potentially significant archaeological resources within the archaeological APE that would be impacted by proposed project actions.

UN Esplanade

The UN portion of the archaeological APE is in the East River from East 41st to East 53rd Streets. The search of the NYSHPO Shipwreck Database revealed that no previously documented shipwrecks are located within the APE. However, two shipwrecks that are listed in the NYSHPO database were located within the archaeological study area through a side-scan sonar survey conducted by Parsons Brinckerhoff in 2004. There is very limited information given in the NYSHPO database concerning these two resources. A search of the site reports at NYSHPO failed to locate the 2004 report, despite its being listed as submitted on November 10, 2004 (03PR00489). Although the information regarding the two shipwrecks was sent to NYSHPO by Parsons Brinckerhoff in 2004, no report was completed because the proposed project was interrupted and changed. AECOM was able to obtain information concerning the areal extent of the 2004 survey coverage directly from former Parsons Brinckerhoff personnel. The data received confirmed that there are no shipwrecks in the APE in the East River from East 41st Street to the northern boundary of the UN Headquarters property, just south of East 48th Street.

The construction of the FDR Drive and the installation of its bulkhead have in all likelihood caused extensive subsurface disturbance along its length. Additional disturbance may have been caused by dredging actions prior to the FDR Drive construction, and in the 60-plus years since its completion.

Research indicates that the western channel of the East River exhibits the greatest current and tidal action, resulting in relatively little sediment accumulation (TAMS 1999). Sediment depths were obtained through the boring survey for the current project's proposed drilled pile locations. The age of these sediments, however, is not known at this time. The accumulated sediments noted in the borings may well date to millennia prior to any human habitation of the area.

Data from 2004 confirmed that there are no shipwrecks in the APE in the East River from East 41st Street to the northern boundary of the UN Headquarters property, just south of East 48th Street. While it cannot

be stated with absolute certainty, it is unlikely that undocumented archaeological resources such as historic shipwrecks are located in the East 48th Street to East 53rd Street portion of the APE in the East River. After review of the Phase IA assessment survey, OPRHP found "No Archeological Concerns" (letter dated September 13, 2013; see Appendix J).

ODR Esplanade

The ODR Esplanade portion of the archaeological APE is in the East River from East 53rd to East 60th Streets. The search of the NYSHPO Shipwreck Database revealed that no previously documented shipwrecks are located within the APE or within the archaeological study area.

The construction of the FDR Drive and the installation of its bulkhead have in all likelihood caused extensive subsurface disturbance along their length. The construction of the Ed Koch Queensboro Bridge in 1909 has also impacted the riverbed near the northern end of the study area. Benthic mapping conducted for the FDR Drive Rehabilitation Project, between East 53rd Street and East 64th Street, described the benthic substrate, or river bottom, as "rocky", containing pieces of rip-rap and construction debris resulting from the extensive building activities that have taken place in this area" (TAMS 1999: S-13). It was further noted that strong currents and tidal action prevent the deposition of large amounts of sediment along this section of the East River.

The installation of the 59 54-inch-diameter ODR drilled shafts/piles has impacted the riverbed from East 53rd Street to East 60th Street, which is the length of the entire proposed ODR Esplanade. It was also noted above that 33 of these ODR drilled shafts/piles were cut off at the mud line following the project's completion. The method by which these drilled shafts/piles were cut is not known, but it is quite likely that additional subsurface disturbance was created at that time.

While it cannot be stated with absolute certainty, it is highly unlikely that undocumented archaeological resources are located in this portion of the APE in the East River.

East 48th Street Upland Bridge Connection

The proposed pedestrian/cyclist bridge portion of the archaeological APE is located between the FDR Drive East 48th Street northbound entrance ramp, and the north side of the UN Headquarters property, east of First Avenue, and would require the completion of an extant partial ramp. The completion of the ramp would require substantial ground disturbance at four locations landside of the FDR Drive. The areas of ground disturbance would be created by the installation of support pilings at depths of 10, 15, 40, and 85 feet below grade (from west to east). The completed ramp would bridge the FDR Drive and then turn northward to connect with the proposed UN Esplanade in the river.

This portion of the APE possesses little to no historic archaeological sensitivity. No documented structures have been identified for this portion of the APE. The review of numerous cartographic resources consulted shows that East 48th Street east of First Avenue contains substantial fill deposits that have created much of the land on which the East 48th Street ramp was built. Historically, the East River shoreline at today's East 48th Street consisted of a rocky bluff on the north side of Turtle Bay that dropped in elevation inland to the west and north. Vast amounts of fill would have been needed to bring the area to a more or less level grade with the rocky bluff that forms today's Beekman Place neighborhood between East 48th and East 51st Streets. The area to the south, between East 48th and East 42nd Streets is now the UN Headquarters, the construction of which required vast amounts of fill, and caused extensive disturbance to the area and the street grid.

This portion of the APE possesses little to no prehistoric sensitivity, as most of the area was within Turtle Bay until it was filled during the 1860s. In addition, the entire area was extensively disturbed during the construction of the UN Headquarters from 1947 to 1953.

The connection of the pedestrian/cyclist bridge to the UN Esplanade would require the installation of four additional drilled piles in the East River between East 48th Street and East 49th Street. While it cannot be

stated with absolute certainty, it is unlikely that undocumented archaeological resources are located in this portion of the APE.

East 54th Street Upland Bridge Connection

This proposed pedestrian/cyclist bridge portion of the archaeological APE begins in Sutton Parks, east of Sutton Place, and south of East 54th Street, adjacent to the FDR Drive. The latest project plans call for a pedestrian/cyclist ramp and its abutment walls to be constructed on fill, but will also require excavation to four-feet below grade. The proposed bridge leaves the park from a bridge pier support structure that will be supported on piles, 85-feet below grade. The bridge would span the FDR Drive and then turn southward to connect with the ODR Esplanade.

This portion of the APE possesses little to no historic archaeological sensitivity. No documented structures have been identified for this portion of the APE. The review of numerous cartographic resources consulted shows that most of the land east of Sutton Place and south of East 54th Street is filled land. Historically, the East River shoreline on the north side of today's East 54th Street consisted of a rocky bluff trending north around an inland hill located at today's East 55th Street and Sutton Place; the south side of East 54th Street would have been in the river. The Sutton Place neighborhood is located on the high ground to the north.

This portion of the APE possesses little to no prehistoric sensitivity, as most of the area was within the East River or the face of a rocky bluff until the 20th century. In addition, the entire area was extensively disturbed during the construction of the FDR Drive and the residential building spanning the roadway.

The connection of the pedestrian/cyclist bridge to the existing waterfront park and proposed ODR Esplanade would require the installation of three additional drilled piles in the East River south of East 54th Street. Existing ODR caissons in this area would be reused to connect the bridge to the existing park and new esplanade. While it cannot be stated with absolute certainty, it is unlikely that undocumented archaeological resources are located in this portion of the APE in the East River. It is likely that extensive prior subsurface disturbance resulted from the installation of the ODR drilled shafts/piles.

SHPO Findings

After review of the Phase IA assessment survey, the OPRHP found "No Archeological Concerns" (letter dated September 13, 2013; see Appendix J). A determination of the potential effects of the Proposed Project on historic and cultural resources was performed. The Finding Documentation concluded that the proposed esplanade would not result in any adverse effects on archaeological resources. In their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic or archeological resources (see Appendix J).

4.4.11.5 Historic Bridges

The Ed Koch Queensboro Bridge is located over the East River. The bridge is listed in NYSDOT's Historic Bridge Inventory, the S/NRHP, and is also a LPC-designated resource. Completed in 1909, the bridge is a double cantilever bridge with two cantilever spans, one over the channel on each side of Roosevelt Island. Impacts to the bridge were assessed in accordance with Section 106 and provided to ORPHP in a Finding Documentation for concurrence. In their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources (see Appendix J).

4.4.11.6 Historic Parkways

According to NYSDOT, the FDR Drive is considered a downstate parkway. As noted in the architectural resources section, the FDR Drive was determined to be eligible for listing in the S/NRHP as part of this project. Therefore, it may be considered a historic parkway. Impacts to the FDR Drive were assessed in accordance with Section 106 and provided to OPRHP in a Finding Documentation for concurrence. In

their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources (see Appendix J).

4.4.11.7 Native American Involvement

The Proposed Project site would not lie within Federal, Tribal, or Indian-owned property. The Archaeological Resources Protection Act of 1979 does not apply. Furthermore, conformance with this Act is covered in the Section 106 Process.

4.4.11.8 Section 4(f) Involvement

A historic architectural survey conducted in March 2013 identified multiple S/NRHP-listed/eligible resources within the historic architectural APE. A determination of the potential effects of the Proposed Project on historic and cultural resources was performed. The Finding Documentation concluded that the proposed esplanade would not adversely affect historic architectural resources in the APE. In their letter dated November 13, 2013, OPRHP concluded that the proposed esplanade would have No Adverse Effect upon historic resources; therefore, a 4(f) evaluation is not required for historic resources (see Appendix J).

An archaeological survey was conducted in March 2013, as previously discussed above, to determine the presence of archaeological resources. After reviewing the Phase IA assessment, NYSHPO found "No Archeological Concerns"; therefore, a 4(f) evaluation is not required for archaeological resources (see Appendix J).

4.4.12 Parks and Recreational Resources

4.4.12.1 State Heritage Area Program

There are 18 State Heritage Areas across New York that recognize a location's unique contribution to the history and culture of the state. Each site is administered locally, with support from the NYS Office of Parks, Recreation and Historic Preservation. The closest State Heritage Area is located at the southern end of Manhattan at the Battery, known as New York City Harbor Park Heritage Area. The Proposed Project would not impact areas identified as State Heritage Areas.

4.4.12.2 National Heritage Areas Program

Within New York State, the designated National Heritage Areas include Hudson River Valley National Heritage Area, the Erie Canalway National Heritage Corridor, the Champlain Valley National Heritage Partnership, and the Niagara Falls National Heritage Area (a designation bill was introduced in Congress in October 2007 for this area). The Proposed Project would not impact areas identified as National Heritage Areas (see Section 4.4.11).

4.4.12.3 National Registry of Natural Landmarks

There are no listed nationally significant natural areas within, or adjacent to, the Proposed Project area.

4.4.12.4 Section 4(f) Involvement

The Proposed Project would be located adjacent to Peter Detmold Park, a publicly owned park that stretches from East 49th to East 51st Streets along the east side of Beekman Place. The elevation of the proposed esplanade would result in the blocking of some views of the East River from the park (see Figure 4.4-3); however, use of the park would remain under the Proposed Project and, overall, the proposed esplanade would provide improved exposure to the East River, with landscaping, programmed activity areas and other amenities. The proposed esplanade would effectively become an extension of

Peter Detmold Park and the existing waterfront walkway. In addition, the Upland Bridge Connection at 54th Street would include a pedestrian ramp (built to ADA specifications) that would impact 0.2 acres along the northern edge of Sutton Parks, a small publicly-owned open space west of the FDR Drive between East 53rd and 54th Streets (see Figure 4.4-3). The seating and general use of the park as a passive recreational use would not be limited; however, the sundial, bronze armillary sphere, and several trees within the park would be impacted by the pedestrian ramp. The sundial and armillary sphere would be relocated within the park and maintained for public viewing and any trees that would be potentially impacted or removed would be protected or replaced as required by the New York City Department of Parks & Recreation's Forestry Division. The pedestrian bridge would effectively extend the park use across the FDR Drive, providing direct access to improved, unobstructed views of the East River, with additional amenities. As stated by New York City Department of Parks & Recreation in a letter dated December 16, 2013, the Proposed Project will not adversely affect the activities, features, and attributes that qualify the parks for protection under Section 4(f) (see Appendix F). FHWA concurred with the Section 4(f) *de minimis* determination in a letter dated December 31, 2014 (see Appendix F).

4.4.12.5 Section 6(f) Involvement

The Proposed Project would not impact parklands or facilities that have been partially or fully federally funded through the Land and Water Conservation Act.

4.4.12.6 Section 1010 Involvement

The Proposed Project would not involve the use of land from a park to which Urban Park and Recreation Recovery Program funds have been applied.

4.4.13 Visual Resources

4.4.13.1 Introduction

Within New York City, an assessment for urban design and visual resources generally considers whether and how a project may change the experience of a pedestrian in the project area, as stated in the *CEQR Technical Manual*. The assessment focuses on the components of a proposed project that may have the potential to alter the arrangement, appearance, or functionality of the built environment. In general, an assessment of urban design is needed when the project may have effects on one or more of the elements that contribute to the pedestrian experience (e.g., streets, buildings, visual resources, open space, natural features, wind, etc.). An analysis is not required if a proposed project would be constructed within existing zoning envelopes, and would not result in physical changes beyond the bulk and form permitted "as-of-right" with the zoning district. However, as the Proposed Project will affect existing views of the East River from a number of vantage points, a preliminary analysis was conducted.

The study area for urban design is the area within which the project may influence land use patterns and the built environment, and is generally consistent with that used for the land use analysis (in this case, 400 feet), as stated in the *CEQR Technical Manual*. For visual resources, the view corridors within the study area, from which such resources are publicly viewable, should be identified. The purpose of the preliminary assessment is to determine whether any physical changes proposed by a project might raise the potential to significantly and adversely affect elements of urban design and effect visual resources

4.4.13.2 Effects Assessment

The proposed 0.96 mile esplanade would be located over the East River adjacent to the FDR Drive, from East 41st to 60th Streets. The study area includes upland areas situated west of the proposed waterfront corridor and FDR Drive.

Views from the Esplanade

The Proposed Project is intended to enhance the pedestrian experience along the waterfront and provide increased opportunities for views along the East River, enhancing the public realm, for the primary user groups (pedestrians and cyclists). A photograph map key was previously provided as Figure 4.2-2 and photographs of the waterfront area and adjacent upland areas were previously provided in Figure 4.2-3. Looking south in the upland study area, views from the proposed esplanade would consist of an old wooden pier, the tall brick towers of the Waterside apartment complex, the eight-story Con Edison East River Power Plant at 14th Street, and the Williamsburg Bridge. Westerly views of the Chrysler Building on East 42nd Street are also found within the study area. Views of the Ed Koch Queensboro Bridge, which is a designated New York City landmark, would be available from most points along the esplanade.

Views from the esplanade between East 42nd and 48th Streets, along the United Nations (UN) complex, would take in the variety of tall buildings that contribute to the general urban design of this part of Manhattan. These views include the decorative stone ornament on the top of the Tudor City towers and the upper portion of the Trump World Tower, as well as the Secretariat building of the United Nations Headquarters. The Secretariat is an important visual resource currently best seen from north of East 40th Street, as intervening buildings block northerly views on First Avenue from south of East 38th Street. The proposed esplanade would provide unique views of the Secretariat and UN complex. The FDR Drive would run parallel to the esplanade to the west.

North of East 49th Street are high-rise residential buildings along Mitchell and Beekman Places. Peter Detmold Park stretches northward from East 49th Street to East 51st Street, adjacent to the FDR Drive which is uncovered in this segment. An entrance ramp from East 48th Street to the FDR Drive is a prominent feature looking west from the esplanade. A pedestrian overpass crossing over the FDR Drive at the terminus of East 51st Street allows pedestrians to access the waterfront and experience views up and down the East River, as well as across to Roosevelt Island and the Boroughs of Queens and Brooklyn. This walkway would become a transitional area between the FDR Drive and the proposed esplanade, at a lower elevation than the esplanade. The elevation of the esplanade would allow views down, across the FDR Drive and of both Peter Detmold Park and Sutton Parks (between East 53rd and 54th Streets).

North of 54th Street the upland area contains multi-family residential towers and open spaces that are part of the Sutton Place neighborhood. The buildings are constructed over the FDR Drive and therefore in closer proximity to the proposed esplanade. Views from the proposed esplanade would include the covered FDR Drive. The last portion of the esplanade would pass underneath the Ed Koch Queensboro Bridge. Views north would be of an existing waterside path that continues north along the East River, as well as low- and mid-rise residential buildings fronting Riverview Terrace.

Easterly views from the esplanade would consist of industrial and warehousing uses on the Queens shoreline, a large, prominently visible Pepsi Cola sign, taller round cement plant structures, a large brick power plant, and various Queens West Development buildings. Also present in this view are Gantry Plaza State Park and the 50-story Citibank Tower that is located further inland in Queens. The northern portion of the esplanade would have views of Roosevelt Island – parkland in the south and the former Coler-Goldwater Specialty Hospital and Nursing Facility building further north towards the Ed Koch Queensboro Bridge.

Views from the east toward the Proposed Project would be of the proposed esplanade structure, its programmed uses (bicyclists and pedestrians), and of the many trees and plantings anticipated to line the proposed esplanade. The tall buildings that contribute to the character of the area would continue to be visible as a backdrop.

Esplanade Impacts on Views from Upland Areas

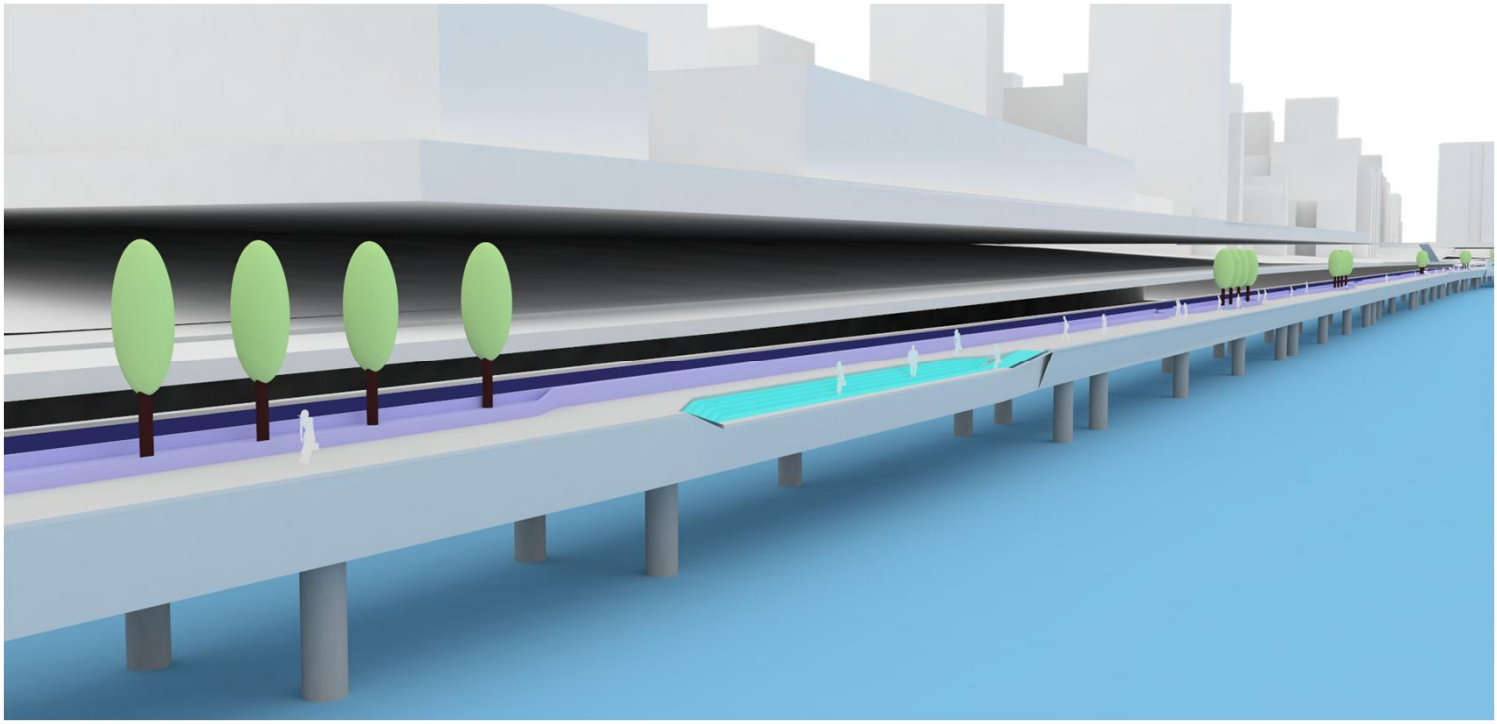
The Proposed Project is expected to have significant, positive effects to the existing visual corridor. New elements and fixtures introduced to the area will be selected to reflect and enhance the context and

1. Rendering of Esplanade looking north from Waterfront Walkway at 53rd Street

2. Rendering of Esplanade looking south from Andrew Haswell Green Park

NYSDOT Draft Design Report and Environmental Assessment
East Midtown Waterfront Esplanade
NYC Economic Development Corporation

Figure 4.4-3
Three-Dimensional Renderings



3. Rendering of Esplanade looking north at UN Deck

4. Rendering of Esplanade looking north (Environmental Education Landing Node)

NYSDOT Draft Design Report and Environmental Assessment
East Midtown Waterfront Esplanade
NYC Economic Development Corporation

Figure 4.4-3
Three-Dimensional Renderings

5. Existing Peter Detmold Park view looking east (between East 50th and 51st Streets)

6. Rendering of Peter Detmold Park view looking east at the proposed esplanade

NYSDOT Draft Design Report and Environmental Assessment
East Midtown Waterfront Esplanade
NYC Economic Development Corporation

Figure 4.4-3
Three-Dimensional Renderings

7. Existing Sutton Parks view looking east (between East 53rd and 54th Streets)

8. Rendering of Sutton Parks view looking east at the proposed esplanade

NYSDOT Draft Design Report and Environmental Assessment
East Midtown Waterfront Esplanade
NYC Economic Development Corporation

Figure 4.4-3
Three-Dimensional Renderings

architecture of the existing structures within the surrounding area. Figure 4.4-3 shows expected three-dimensional rendered views to and from the proposed esplanade. The constructed esplanade would not affect the block forms of the surrounding area or alter NYC street patterns, hierarchies or streetscape elements. In most cases the esplanade structure would not block views of the East River from cross-streets, parks, and residences.

From the southern end of the project area (East 41st Street), the FDR Drive 42nd Street off-ramp is a prominent feature in the foreground of the river. The proposed esplanade would be visible across the six lanes of FDR Drive, at an elevation similar to that of the roadway. Views across the river are wide and expansive and include the Queens and Brooklyn waterfronts, as well as the Ed Koch Queensboro Bridge to the north. Further in the distance to the south, the Manhattan and Williamsburg Bridges are also visible. The immediate views of the river would be only partially blocked by the trees and design features of the esplanade.

Between East 42nd and East 48th Streets, the upland study area contains the UN Headquarters complex, situated over the FDR Drive along the shoreline. The photographs of the waterfront area and adjacent upland areas in Figure 4.2-3 show that existing pedestrian access to the shoreline is limited and generally restricted, due to the UN complex. East 43rd and 44th Streets terminate in front of the Secretariat building. The proposed esplanade would be viewed from the elevated vantage points of the commercial office buildings and landscaped areas of the UN complex. Views of the river, bridges and Queens/Brooklyn waterfronts would not be obstructed. In this segment, views of the East River from the FDR Drive are already significantly obstructed by support structures. The proposed esplanade would be at approximately an equivalent elevation to the roadway, only slightly limiting views of the water.

Peter Detmold Park is on the west side of the FDR Drive from East 49th to north of East 51st Streets. It has views of the water, across the six lanes of FDR Drive and of the Queens waterfront beyond. Construction of the esplanade would potentially obscure direct views of the water. A pedestrian bridge over the FDR Drive at East 51st Street, through Peter Detmold Park, provides the only access to an existing waterfront walkway that extends from East 51st Street north almost to East 54th Street. The existing walkway has park benches and very little greenery. The proposed esplanade would be approximately 30 feet east of the bulkhead and elevated approximately 8 feet from the existing walkway. The views of the East River from the existing waterfront walkway would be largely blocked by the side of the proposed esplanade structure. Overall the proposed esplanade would provide improved exposure to the East River for pedestrians and cyclists, compared to the existing waterfront esplanade. Instead of a narrow, three-block walkway situated directly against a noisy highway, the proposed esplanade would provide continuous viewing opportunities along its entire 1-mile length, with landscaping, programmed activity areas and other amenities. The proposed esplanade would effectively become an extension of Peter Detmold Park and supplement the existing waterfront walkway, which would become a transitional area that would be available for additional public activities.

This portion of Sutton Parks is a small, triangular-shaped park along the East 53rd Street exit ramp of the FDR Drive. It has views of the water, across six lanes of FDR Drive and Roosevelt Island beyond. Immediately to the north is a high-rise building built over the FDR Drive. The initial landside portion of the East 54th Street Upland Bridge Connection would be a pedestrian ramp (built to ADA specifications) that would impact 0.2 acres along the eastern edge of the park. While the functionality of the park would remain the same, direct views of the water would be partially obstructed by this initial ramp segment. However, the overall Upland Bridge Connection would provide direct access to improved, unobstructed views of the East River with additional amenities, and would integrate Sutton Parks into the proposed esplanade.

From East 54th Street north to the Ed Koch Queensboro Bridge, residential buildings and a small park are constructed over the FDR Drive. Views of the proposed esplanade from the residential buildings or park would be from higher vantage points of pedestrian/bicycling activity consistent with surrounding area, without obstructing existing views of the East River. Views of the East River from the FDR Drive are already significantly obstructed by support structures. The proposed esplanade would be elevated slightly above the roadway, further limiting views of the water and Roosevelt Island. View corridors to the river

can also be found along certain east-west side streets that are not blocked by buildings or the FDR Drive, such as along East 54th, East 56th, and East 57th Streets, as well as from the easterly terminus of Sutton Square. These streets are elevated above the river and the view corridors would not be blocked by the proposed esplanade.

North of East 60th Street looking south towards the esplanade, views would be of the Ed Koch Queensboro Bridge and Roosevelt Island Tramway, High-rise buildings along the East River would be evident, as well as the Roosevelt Island shoreline. The proposed esplanade could be seen from the waterside path along the East River, but would otherwise only be seen from higher floors of buildings west of the FDR Drive.

Views of the proposed esplanade site would also be available from across the river, along the shorelines of Queens and Brooklyn and from Roosevelt Island; however, views of the shoreline would not be appreciably different with the addition of the esplanade and may be enhanced by the trees, plantings and other features.

The impacts of the Proposed Project on visual resources would not be significant since the obstructed views of the East River would be replaced by improved waterfront exposure with increased viewing opportunities for pedestrians and cyclists.

4.4.14 Farmlands

4.4.14.1 State Farmland and Agricultural Districts

Based on a review of the NYS Agricultural District Maps for Manhattan County, the Proposed Project would not be located in or adjacent to an Agricultural District.

4.4.14.2 Federal Prime and Unique Farmland

The Proposed Project activities would not convert any prime or unique farmland, or farmland of state or local importance, as defined by the USDA Natural Resources Conservation Service, to a nonagricultural use.

4.4.15 Air Quality

4.4.15.1 Regulatory Framework

The United States Environmental Protection Agency (USEPA), under the requirements of the 1970 Clean Air Act (CAA), as amended in 1977 and 1990, has established National Ambient Air Quality Standards (NAAQS) for six contaminants (see Exhibit 4.4-3), referred to as criteria pollutants (40 CFR 50). These are ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter (PM_{10} and $PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2). Areas that meet the NAAQS standard for a criteria pollutant are designated as being “in attainment.” Areas where a criteria pollutant level exceeds the NAAQS are designated as being “in non-attainment.” O_3 non-attainment areas are categorized based on the severity of their pollution problem -- marginal, moderate, serious, severe, or extreme. CO and PM_{10} non-attainment areas are categorized as moderate or serious. When a non-attainment area is re-designated as an attainment area, the CAA requires that a maintenance plan be put in place to ensure continued compliance with the corresponding NAAQS. Therefore, a former non-attainment area is also defined as a maintenance area. Where insufficient data exist to determine an area’s attainment status, an area is designated unclassifiable (or in attainment).

4.4.15.2 Transportation Conformity

The Proposed Project would be located New York County, which is currently designated as a:

- Marginal non-attainment area for 8-hour O_3.
- Non-attainment area for $PM_{2.5}$.
- Moderate non-attainment area for PM_{10}.
- CO maintenance area.
- Attainment area for all other criteria pollutants.

In accordance with the CAA, it is required that a transportation project in a nonattainment area of the National Ambient Air Quality Standards (NAAQS) be assessed to determine if it conforms to the purpose of the State Implementation Plan (SIP). The *Final Conformity Regulations on Transportation Conformity (40 CFR, Parts 51 and 93)* published by USEPA on November 24, 1993 and effective January 31, 1994 provide procedures to address the transportation conformity requirements.

Since New York County is classified as a marginal air quality nonattainment area under the 2008 ozone standard (NAAQS) and a nonattainment area for PM_{10} and $PM_{2.5}$, the transportation conformity regulations apply to any transportation project in New York County.

This Proposed Project is on the approved Transportation Improvement Program (TIP) as project No. X776.00 and X770.14. The project is exempt for the purposes of transportation conformity consistent with 40 CFR Part 93.126 and conforms to the SIP for air quality conformity.

Exhibit 4.4-3
National and New York State Ambient Air Standards for Criteria Pollutants

Pollutant (Final Rule Cite)	Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	
Lead	Primary and secondary	Rolling 3-month average	0.15 µg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide	Primary	1-hour	100 ppb	98th percentile, averaged over 3 years
	Primary and secondary	Annual	53 ppb(2)	Annual Mean
Ozone	Primary and secondary	8-hour	0.075 ppm(3)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particle Matter ($PM_{2.5}$)	Primary	Annual	12 µg/m^3	Annual mean, averaged over 3 years
	Secondary	Annual	15 µg/m^3	Annual mean, averaged over 3 years
	Primary and secondary	24-hour	35 µg/m^3	98th percentile, averaged over 3 years
Particle Matter (PM_{10})	Primary and secondary	24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide	Primary	1-hour	75 ppb(4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Notes: Ppm indicates parts per million; ppb indicates parts per billion; µg/m^3 indicates micrograms per cubic meter.

4.4.15.3 Carbon Monoxide (CO) Microscale Analysis

An air quality analysis for CO is not required since the Proposed Project would not increase traffic volumes, reduce source-receptor distances by 10 percent or more, or change other existing conditions to such a degree as to jeopardize attainment of the National Ambient Air Quality Standards. The Proposed Project does not require a project-level conformity determination.

4.4.15.4 Mesoscale Analysis

A Mesoscale Analysis is not required for the Proposed Project since it would not significantly affect air quality conditions over a large area and is not a regionally significant project.

4.4.15.5 Mobile Source Air Toxics (MSATs) Analysis

A Mobile Source Air Toxics Analysis would not be required for the Proposed Project.

4.4.15.6 Particulate Matter (PM) Analysis

A PM analysis is not required for the Proposed Project. The Proposed Project has not been classified as a NEPA Categorical Exclusion, but has been classified as a SEQR Type II action and determined to result in no increased traffic volumes. The Proposed Project components would not individually or cumulatively have a significant effect on PM emissions. In addition, according to 40 CFR 93.123(b)(1), the Proposed Project is not the type of project that would require a hot-spot analysis for $PM_{2.5}$. It can therefore be concluded that the Proposed Project would have no significant adverse impact on ambient PM levels.

4.4.15.7 Greenhouse Gas Analysis

A Greenhouse Gas Analysis is not required for the Proposed Project.

4.4.16 Energy

4.4.16.1 Introduction

An energy assessment is not required for the Proposed Project since it is not expected to:

a. Increase or decrease vehicle miles traveled (VMT);
b. Generate additional vehicle trips;
c. Significantly affect land use development patterns;
d. Result in a shift in travel patterns; or
e. Significantly increase or decrease vehicle operating speeds.

4.4.16.2 Energy Analysis

The Proposed Project would not require an energy analysis since it would not significantly impact energy utilization.

4.4.16.3 Mitigation Summary

The Proposed Project would not significantly affect energy consumption; therefore, no mitigation is required.

4.4.17 Noise

The Proposed Project would not significantly change either the horizontal or vertical alignment, or increase the number of through-traffic lanes. Therefore, the Proposed Project is not a Type I project and does not require a traffic noise analysis as per 23 CFR 772. However, because of the Proposed Project's location, approximately 30 feet from the FDR Drive, baseline noise measurements were taken to project the potential exposure of future users of the proposed esplanade to high noise levels.

Noise is typically understood to be any unwanted sound, and sound is defined as any air pressure variation that the human ear can detect. The perception of noise is a subjective process. Human beings can detect a large range of sound pressures ranging from 20 to 20 million micropascals, but only those air pressure variations occurring within a particular set of frequencies are experienced as sound. Air pressure changes that occur between 20 and 20,000 times a second, stated as units of Hertz (Hz), are registered as sound as heard by the human ear.

Noise is measured in sound pressure level (SPL), which is converted to a decibel scale. The decibel is a relative measure of the sound level pressure with respect to a standardized reference quantity. Decibels on the A-weighted scale are termed "dB(A)." The A-weighted scale is used for evaluating the effects of noise in the environment because it most closely approximates the response of the human ear. On this scale, the threshold of discomfort is 120 dB(A), and the threshold of pain is about 140 dB(A).

An existing baseline ambient noise monitoring was conducted on September 20, 2012 over three daytime periods along the Waterside Pier adjacent to the FDR Drive: AM peak, mid-day peak, and PM peak. The monitor was placed along the pier fence line at two locations, approximately 30- and 55-feet away from the FDR Drive mainline curb. These two locations were chosen to determine existing noise levels on the pier where the open space will be constructed and are considered to be representative of the proximity to the project-generated new sensitive uses along the proposed esplanade. The monitored levels are summarized in Exhibit 4.4-4.

Exhibit 4.4-4
Monitored Noise Levels at the Waterside Pier

Site	Period	L_{10} (dBA)
30 feet from FDR Drive mainline curb	AM	77
	Mid-day	76
	PM	74
55 feet from FDR Drive mainline curb	AM	76
	Mid-day	74
	PM	72

Within New York City, NYCDEP has set external noise exposure standards, as shown in Exhibit 4.4-5. Noise exposure is classified into four categories: acceptable; marginally acceptable, marginally unacceptable; and clearly unacceptable.

Due to the close proximity of the FDR Drive traffic, the monitored noise levels collected indicate that the area is considered marginally unacceptable for general external noise exposure, and the monitored levels are above the acceptable general external noise level for outdoor areas requiring serenity and quiet. The noise level specified for outdoor areas, requiring serenity and quiet, is 55 dBA for L_{10}.

However, specified noise levels for other types of uses, such as residences, schools and businesses, which are also noise-sensitive but do not require the same level of serenity and quiet as certain outdoor uses. Noise levels for these uses are recommended to be at or below 65 dBA, and are considered to be marginally acceptable between 65 and 70 dBA. For the purposes of this analysis, passive open space would fall into the former category (L_{10} levels of no greater than 55 dBA) and active recreational uses, such as pedestrians walking on the proposed open space and cyclists using its dedicated bicycle lanes, would be held to the standards of the latter (L10 levels of no greater than 65 dBA).

Most of the noise measured in the area results from vehicular traffic along the FDR Drive. Therefore, no practical and feasible project-related improvement measures could be implemented to reduce noise levels to below 55 dBA, if not 65 dBA. Although noise levels on the proposed adjacent open space are

expected to continue to be above 65 dBA, these levels are comparable to other noise levels in a number of open space areas situated within a range of substantial noise generators. The 55 dBA and 65 dBA L10 guidelines are worthwhile goals for outdoor areas requiring serenity and quiet or for those areas with active uses. However, due to the level of activity present at most open space areas and parks throughout the City (except for park areas that are situated far away from traffic and other typical urban activities), these relatively low and moderate noise levels are often not achievable. In addition, visitors of the proposed open space would use the passive area on a voluntary basis, and as such, be able to relocate if they feel that noise levels are too high, on an individual by individual basis, which generally occurs throughout the City. Therefore, no significant adverse impacts are expected and no further analysis is warranted.

Exhibit 4.4-5
New York City Noise Exposure Guidelines

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Exposure	Marginally Acceptable General External Exposure	Airport[3] Exposure	Marginally Unacceptable General External Exposure	Airport[3] Exposure	Clearly Unacceptable General External Exposure	Airport[3] Exposure
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	Ldn ≤ 60 dBA	NA	NA	NA	NA	NA	NA
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 65$ dBA	60 < Ldn ≤ 65 dBA	$65 < L_{10} \leq 80$ dBA	(1) 65 < Ldn ≤ 70 dBA, (II) 70 ≤ Ldn	$L_{10} > 80$ dBA	Ldn > 75 dBA
3. Residence, residential hotel or motel	7 AM to 10 PM	$L_{10} \leq 65$ dBA		$65 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
	10 PM to 7 AM	$L_{10} \leq 55$ dBA		$55 < L_{10} \leq 70$ dBA		$70 < L_{10} \leq 80$ dBA		$L_{10} > 80$ dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
5. Commercial or office		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)		Same as Residential Day (7 AM-10 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:

(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more;

[1] Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

[2] Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.

[3] One may use the FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

[4] External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Source: *New York City Department of Environmental Protection (adopted policy 1983)*

4.4.18 Asbestos

4.4.18.1 Screening

An asbestos screening has been performed for the Proposed Project and it has been determined that there are no areas of potential asbestos material present, since the scope of the project is limited and does not involve underground utilities, bridges, large culverts, or structure demolitions. No structures exist within the Proposed Project limits with the exception of the existing ODR caissons in the river, which do not contain asbestos.

4.4.18.2 Assessment and Quantification

There are no areas of potential asbestos material present within the Proposed Project; therefore, no assessment or quantification was performed.

4.4.18.3 Mitigation Summary

There are no areas of potential asbestos material present within the Proposed Project; therefore, no mitigation is required.

4.4.19 Hazardous Waste and Contaminated Materials

4.4.19.1 Screening

A hazardous material is any substance that poses a threat to human health or the environment. Substances that may be of concern include, but are not limited to, heavy metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), methane, polychlorinated biphenyls (PCBs), pesticides, dioxins, hazardous wastes, radiation sources, etc. For hazardous materials, the goal for CEQR is to determine whether the Proposed Project would increase the exposure of people or the environment to hazardous materials, and, if so, whether this increased exposure would result in potential significant public health or environmental impacts. If significant adverse impacts are identified, CEQR requires that the impacts be disclosed and mitigated or avoided to the greatest extent practicable.

4.4.19.2 Assessment and Quantification

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) for the proposed pedestrian bridges at East 48th and East 54th Streets was prepared in March 2013. These are the locations were upland, above-grade ground disturbance is proposed as part of the Proposed Project. The Phase I ESA was performed in general conformance with the scope and limitations of the American Society for Testing and Materials Standard Practice Designation E 1527-05 for ESAs. The site visit occurred on January 30, 2013.

The East 48th Street crossing ramp is a concrete paved area that is currently used to store construction equipment, materials and vehicles. Although within the Right-of Way (ROW), the area is secured by a chain link fence and gate. The East 54th Street crossing ramp is located within the northeastern corner of the Sutton Parks. The area has a vegetated island and benches. The proposed improvements associated with the pedestrian bridges will consist of disturbing the vegetated area and benches located in the northeastern portion of the park. Several underground utility vaults maintained by the New York City Department of Public Work and New York City Department of Environmental Protection are located in this area. In addition, an underground utility vault maintained by the New York City Fire Department is located along the sidewalk within Sutton Place Street.

During the site visit, no visual evidence of underground storage tanks (e.g., vent pipes, fill ports), monitoring wells, clarifiers, septic tanks, or leach fields was observed on the subject properties. Gasoline

service stations and dry cleaners were not observed in the immediate vicinity (approximately 500 feet) of the subject properties.

Staff could not perform inspection of the proposed pedestrian bridge at East 48th Street. The proposed crossing at East 48th Street is a concrete paved area that is currently used to store construction equipment, vehicles and materials. The area is secured by a chain link fence and gate. In addition, an entrance to an enclosed UN parking garage is located underneath this subject property. Staff was unable to conduct a site visit of the storage areas or the enclosed UN parking garage at East 48th Street. Based on the use of this subject property (storage for construction equipment, vehicles and material and entrance to enclosed UN parking garage) this particular site-related limiting condition is not expected to have a significant limitation to this assessment. In addition, automobiles may be temporarily parked in the driveway of the enclosed UN parking garage. Based on the current use of this subject Property, minor leaks from automobiles are expected on the concrete pavement and floor of the enclosed UN parking garage. These minor impacts are considered *de minimis* conditions.

A previously prepared Phase I ESA for the separate Waterside Pier project identified several recognized environmental concerns (RECs). The Waterside Pier is located hydraulically down gradient of the area for the potential crossings. As such, any spills or releases on Waterside Pier are not expected to impact this subject property. Other off-site sources of concern were not identified in the immediately vicinity.

Historical research indicates that the existing ramp on East 48th Street was developed by acquiring the northern portion of the Block 1359. Historical research indicates that this subject property was developed since 1890. However, the 1890 Sanborn Map is not legible to determine the nature of development. The 1899 Sanborn Map depicts that this area was developed with two to five story structures, stables, an iron works, and a stable and wagon yard maintained by the Department of Street Cleaning. The 1910 Sanborn Map depicts that former areas occupied by the Department of Street Cleaning are undeveloped. The 1929 Sanborn Map depicts that three garages, a bakery and poultry business were developed on this subject property, while the iron works and Department of Street Cleaning no longer occupy the subject property. The 1968 Sanborn Map shows that this subject property is developed as a ramp to FDR Drive.

Historical research indicates that the area for the potential crossing ramp at East 54th Street has been developed since 1892. The site use remained unchanged through the 2005 Sanborn Map.

The subject properties do not have a dedicated site address. The subject properties are not listed in any database. Several sites located up gradient of the subject properties are listed in regulatory databases. Based on review of these database listings, none of these sites are expected to present any REC to the subject properties based on their distance from the subject properties, regulatory status (i.e. corrective action taken, closed, no violations found), media impacted (i.e. soil only), type of spill (i.e., #2 fuel oil, etc.), and topographical position from the subject properties (i.e. down-gradient or cross-gradient).

No RECs or historical RECs (HREC) were identified during the Phase I ESA; however, after review of the Phase I ESA, and based on the historical on-site and surrounding area land uses, NYCDEP recommended a Phase II ESA be performed to adequately identify/characterize the surface and subsurface soils at the locations of the Upland Bridge Connections (letter dated August 29, 2013; see Appendix B). The purpose of this Phase II ESA will be to evaluate whether past practices at the subject properties have significant contamination-related environmental liabilities as they pertain to hazardous substance or petroleum hydrocarbon contamination problems on or beneath these properties, including contamination possibly originating from off-site sources. Soil samples (up to two samples from each boring) will be collected at the proposed Upland Bridge Connections at East 48th and East 54th Streets and analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for the presence of VOCs, SVOCs, pesticides, PCBs, and total metals. In addition, up to two grab groundwater samples will be collected if field observations indicate potential environmental impacts. An Investigative Health and Safety Plan (HASP) will be submitted to NYCDEP for review and approval prior to initiating sampling. No soil disturbance for the Proposed Project will be performed prior to the completion of the Phase II ESA.

Marine Structures Condition Survey & Structural Assessment Report

As part of the *East Midtown Waterfront Esplanade Marine Structures Condition Survey & Structural Assessment Report* (AECOM, 2012), a survey was conducted of the existing and remaining ODR caissons for repurposed use as part of the foundations for the new esplanade. The caissons were found to be typically in good condition, experiencing minor amount of section loss. The report concluded that "these uncoated caissons have less than ten percent section loss and can be repurposed as part of the envisioned esplanade, and with recoating or encapsulation will further extend life expectancy."

East River Sediment Chemistry Investigation

As part of the *East Midtown Waterfront Esplanade East River Sediment Chemistry Investigation* (AECOM, 2012), samples of East River sediments were obtained within 13 locations to represent the excavated material, related to the pile construction, which would likely be removed and disposed during construction of the Proposed Project for laboratory analysis and assessment of potential disposal issues associated with this material. A technical memorandum was prepared to document the sampling and analysis effort, and present conclusions regarding potential disposal options (see Appendix B).

As part of the geotechnical design investigation, sediment samples were collected and submitted for laboratory analysis of a typical suite of contaminants that might be expected in this area, based on the current and historic nearby land uses. The primary set of evaluation criteria used was the New York State Department of Environmental Conservation (NYSDEC) soil cleanup objectives (SCOs) identified in Title 6 of the New York Codes, Rules and Regulations, Part 375 (6 NYCRR Part 375).

As an additional point of comparison that is directly related to options for the disposal of the excavated material, related to the pile construction, the results were also compared to the Toxicity Characteristic Leaching Procedure (TCLP) criteria. TCLP testing is part of a testing panel used to determine if a material is considered "hazardous," which has a specific meaning under federal and state regulation. The disposal of hazardous materials is highly regulated, and such materials generally require treatment prior to disposal. While direct application of TCLP criteria requires subjecting samples to a specific TCLP test (which was not performed on any samples as part of this investigation), it is possible to make qualitative assessments about a material using total-sample analytical results and applying the "Rule of 20." Based on the methodology used in TCLP testing, the extract of a sample whose total concentration of a given analyte does not exceed 20 times the TCLP regulatory criteria cannot, by definition, exceed the TCLP criteria. However, this methodology can only be used to definitively rule out the potential that a material might be considered hazardous; for samples that exceed a Rule of 20 threshold only an actual TCLP test can confirm whether the material in question is hazardous or non-hazardous. For this reason, only qualitative assessments are made herein in relation to TCLP criteria.

- The results of the metals analyses indicate that concentrations of ten metals (arsenic, barium, chromium, copper, lead, nickel, mercury, selenium, silver, and zinc) exceeded Part 375 unrestricted use SCOs. Twelve of the 13 locations sampled exceeded a criterion for at least one metal. Concentrations of six metals (arsenic, barium, chromium, lead, mercury, and silver) exceeded both the Part 375 unrestricted and residential use SCOs. The TCLP Rule of 20 criteria were exceeded in ten samples for lead. While the maximum concentration of lead was high at two locations, the remainder of the samples where such exceedances were observed did not simultaneously exceed the Part 375 residential use SCO, or only nominally exceeded that criterion. Further, only one sample exceeded the Part 375 industrial use SCO for lead. One sample exceeded the TCLP Rule of 20 criterion for mercury.

- The Volatile Organic Compounds (VOC) data indicate that most VOCs were not detected at the 12 VOC locations sampled. Six VOCs were detected in one sample. The Part 375 unrestricted use criteria were not exceeded for four of the detected VOCs in this sample, and there are no criteria for the remaining two compounds. Acetone was detected in nine samples, four of which exceeded unrestricted use SCOs. None of the VOC samples exceeded any TCLP Rule of 20 criteria.

- The Semi-Volatile Organic Compounds (SVOC) data found detectable concentrations of polycyclic aromatic hydrocarbon (PAH) compounds in ten of 12 samples analyzed. Seven SVOCs exceeded both the unrestricted and residential use SCOs in at least one sample. No SVOC samples exceeded any TCLP Rule of 20 criteria.

- A polychlorinated biphenyl (PCB) aroclor was detected in four out of 12 samples, and one of these samples exceeded both the unrestricted and residential use SCOs for total PCBs. Total PCB concentrations in the remaining 12 samples were less than both SCOs. There is no TCLP criterion for PCBs, but no samples exceeded the PCB hazardous waste threshold of 50 mg/kg established by the Toxic Substances Control Act (TSCA). Amongst pesticides, p,p'-DDD was detected in two samples, in both cases exceeding the unrestricted use SCO. None of the pesticide samples exceeded any TCLP Rule of 20 criteria.

Overall, while elevated levels of several metals have been identified in sediments collected from within the area, this is not considered atypical for the area, and while contamination may be widespread spatially, in general it should not be considered severe. While several metals exceeded Part 375 SCOs, only lead was also found to routinely exceed the TCLP Rule of 20 criterion. These results notwithstanding, however, the Part 375 industrial use SCO for lead was exceeded at only one location. In general, this suggests that it is very unlikely that East River sediment (while contaminated) would be considered hazardous due to metals or PAH content. Although detectable concentrations of VOCs, PCBs or pesticides were found, these contaminants were found at levels that either do not exceed residential or unrestricted use SCOs or TCLP criteria, or only nominally exceed such criteria. The only exception is acetone, a VOC that was detected in nine samples (four of which exceeded unrestricted use SCOs); however, acetone is a common laboratory reagent, and detections in the general absence of other VOCs are typically disregarded as laboratory error.

In general, East River sediments in the vicinity of the proposed esplanade area have been determined to have elevated concentrations of metals and PAHs, and excavated material, related to the pile construction, requiring disposal will most likely require management as contaminated, non-hazardous material. This characterization is not uncommon for material excavated in and around New York Harbor and the East River, and there is a vigorous commercial market for the economic management of such material. Most heavy-construction contractors, and especially marine contractors, can be expected to be familiar with the procedures for handling and disposing of contaminated, nonhazardous excavated material.

Nevertheless, the conclusion that the sediment tested is properly considered to be contaminated and/or nonhazardous is provisional, as the full testing suite necessary to confirm that East River sediments are not a hazardous waste has not been performed. Actual disposal testing requirements vary from facility to facility depending on the specific terms of their individual permits to accept contaminated material. Analytical results obtained during the present investigation can be provided to interested bidders during the construction bid process so that they may evaluate the data in conjunction with potential disposal facilities, and in turn evaluate the need for further testing. However, as stated above, the implementation of the RAP and CHASP (which would be prepared by contractors during pre-construction actives) would ensure in no significant adverse impacts from hazardous materials as a result of the construction activities associated with the proposes esplanade. The Proposed Project would follow and comply with any necessary hazardous materials remediation procedures in accordance with all applicable local, state, and federal procedures. Significant adverse impacts related to hazardous materials are not expected.

4.4.19.3 Screening and Site Assessment

A Hazardous Waste/Contaminated Materials Site Screening has been conducted in accordance with NYSDOT Environmental Procedures Manual, Chapter 5, in order to document the likely presence or absence of hazardous/contaminated environmental conditions. A hazardous/contaminated environmental condition is the presence or likely presence of any hazardous substances or petroleum products (including products currently in compliance with applicable regulations) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous

substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.

The Hazardous Waste/Contaminated Materials Site Screening included a review of NYSDEC regulatory data files and a site 'walkover' on the date noted above, January 30, 2013.

No hazardous waste/contaminated materials were identified within or adjacent to the project area during the course of the Hazardous Waste/Contaminated Materials Site Screening. The potential risk for involvement with documented or undocumented inactive hazardous waste/contaminated materials is low. No RECs or HREC were identified during the Phase I ESA. *De minimis* conditions were identified during the Phase I ESA related to the proposed ramps. Staff could not perform inspection of the proposed pedestrian bridge located at East 48th Street. Construction vehicles and materials are stored on the concrete paved area within the fence. In addition, automobiles may be temporarily parked in the driveway of the enclosed UN parking garage. Based on the current use of this subject Property, minor leaks from automobiles are expected on the concrete pavement and floor of the enclosed UN parking garage. These minor impacts are considered *de minimis* conditions.

However, based on the historical on-site and surround area land uses, NYCDEP recommended a Phase II ESA be conducted to adequately identify/characterize the surface and subsurface soils in the locations of the Upland Bridge Connections (letter dated August 29, 2013).Soil samples (up to two samples from each boring) will be collected at the proposed Upland Bridge Connections at East 48th and East 54th Streets and analyzed by a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory for the presence of VOCs, SVOCs, pesticides, PCBs, and total metals. In addition, up to two grab groundwater samples will be collected if field observations indicate potential environmental impacts. An Investigative Health and Safety Plan (HASP) will be submitted to NYCDEP for review and approval prior to initiating sampling. No soil disturbance for the Proposed Project will be performed prior to the completion of the Phase II ESA.

4.4.19.4 Mitigation Summary

No hazardous waste/contaminated materials were identified in the Hazardous Waste/Contaminated Materials Site Screening. No remediation activities are likely warranted for the Proposed Project.

4.5 Construction Effects

Construction impacts, although temporary in duration, can have disruptive and noticeable effects on the environment that surrounds a project site. The potential for construction impacts to become significant could occur when construction activity results in a significant adverse effect on transportation, air quality, noise, historic and cultural resources, hazardous materials, natural resources, open space, socioeconomic conditions, community facilities, land use and public policy, neighborhood character or infrastructure. The determination of significance and need for related mitigation is generally based on the duration and magnitude of the potential construction impacts, generally with further studies if construction is expected to last over two years.

The Proposed Project is currently anticipated to be built in the following phases:

Phase 1: The ODR Esplanade is estimated to start in 2017 and be completed by 2019; and
Phase 2: The UN Esplanade is estimated to start in 2021 and be completed by 2025, including proposed Upland Bridge Connections as funding becomes available.

The Proposed Project site is located near a major vehicle transportation arterial in East Midtown along the water's edge. As such, further assessment of potential construction impacts is warranted.

Construction Schedule and Activities

Construction of the ODR Esplanade is expected to occur over a 30 month time period. It is anticipated that work below the Spring High Tide Line or SHTL (e.g., pile driving, filling, etc.) will occur during designated months when aquatic resources are at their lowest number for periods of up to 3 continuous months in duration.

For the ODR Esplanade, approximately 84 new piles and 20 existing piles would be necessary to support the esplanade. Individual pile lengths would vary depending on rock elevations which are referenced in the geotechnical report. The 84 new piles to be installed would be as follow:

- 37 piles will be 54-inch diameter steel piles with a 5/8-inch thick wall approximately 30 feet in length
- 47 piles will be 24-inch diameter steel piles with a 5/8-inch thick wall approximately 30 feet in length.

The piles are expected to be drilled and placed over the course of a three month period.

All of the piles will require rock sockets and will be drilled into the bedrock. Once seated on rock, piles requiring sockets will be fitted with a drilling rig with up to 50,000 ft-lbs torque capacity that is capable of drilling within the pile to the required rock socket depth. After the piles are driven into place, and any required sockets are drilled, reinforcing cages will be lowered into the socket and approximately 160 cubic feet of grout/concrete will be poured into each pile.

Construction of the UN Esplanade is expected to occur over a 60-month time period. It is anticipated that work below the SHTL (pile driving, filling, etc.) will occur during designated months for periods of up to 3 continuous months in duration within this 60-month period. It is anticipated that pile installation will be accomplished in the first half of this 60 month period.

For the UN Esplanade, approximately 92-48 inch diameter steel piles would be necessary. The length of the piles on average will be approximately 65 feet with a 5/8 inch-thick wall. Individual pile lengths will vary depending on rock elevations which are referenced in the geotechnical report.

Approximately 58 of the piles would require rock sockets and will be drilled into the bedrock. Once seated on rock, piles will be fitted with a drilling rig with up to 50,000 ft-lbs torque capacity capable of drilling within the pile to the required rock socket depth. After the piles are driven into place, and any required sockets are drilled, reinforcing cages will be lowered into the socket and approximately 160 cubic feet of grout/concrete will be poured into each pile.

Approximately 34 of the piles will not require rock sockets and can be vibrated into the sediment to the top of rock.

The equipment that would be used for the pile installation is projected to include the following:

- Barge Mounted 250 Ton Crane (2 units)
- Sheetpile Vibratory Hammer (1 unit)
- Pile Vibratory Hammer (1 unit)
- Compressors (2 units)
- Generators (2 units)
- Rock Socket Drilling Rig (1 unit)
- Tugboats (2 units)
- Flat Deck Barges (1 unit)
- Concrete Delivery Barges (1 unit)
- Concrete Pumping Barges (1 unit)
- Pile Delivery Barges (1 unit)
- Hopper Scow (1 unit)

- Dump Scow (1 unit)

Pile installation would be accomplished by as many as two crews operating at a time, working an eight hour workday, utilizing up to four barges. Two of the barges would hold 250 ton cranes and at least one additional barge would be used for materials. The crane barges would be jack-up barges with four spud piles lowered into the riverbed. The materials barge would tie up to the crane barge, or would set anchors to maintain position during construction. Two of the barges may be placed next to each other, extending up to 135 feet (15-foot buffer, plus 60-feet long and 60-feet wide) into the East River beyond the edge of the esplanade under construction.

The equipment required for esplanade construction is expected to be as follows:

- Compressors for surface tools (2 units)
- Concrete Pump (1 unit)
- Crane 100 Ton (1 unit)
- Excavator (1 unit)
- Mini-Excavator (1 unit)
- Front End Loader (1 unit)
- Generators(1 unit)
- Water Pumps
- Forklift (2 units)
- Vibratory Compactor Roller (1 unit)
- Truck, Concrete (1 unit)
- Truck, Delivery and Haul Away (1 unit)
- Pickup Trucks (1 unit)

The number of anticipated daily one way peak construction trips in-land to a waterfront staging area would be as follows:

- Concrete Trucks (4)
- Heavy equipment (i.e., excavator) (2)
- Trucks (deliveries) (4)
- Trucks (Haul away) (4)
- Pick-up trucks (8)
- Crew vehicles (2)

The waterfront staging area would be determined during Final Design. It is anticipated that concrete supply could be provided by a barge mounted concrete batch plant. After the piles are filled, the pile caps and all other structural members that would be located above the SHTL would be constructed offsite and put in place on site with the 250-ton crane operating from a barge. Subsequent phases of esplanade construction which would include concrete and asphalt placement, furniture placement and landscaping could be supplied by trucks.

4.5.1 Construction Impacts

4.5.1.1 Transportation

Construction activities may affect several elements of the City's transportation system, including vehicle traffic, transit, pedestrians, and parking. A transportation analysis of construction activities is predicated upon the duration, intensity, complexity and/or location of construction activity. Analysis of construction activities on transportation is often not required, as many projects do not generate enough construction traffic to warrant such analysis. However, due to the location, extent, and intensity of construction, this is not always the case, and three main factors are considered before determining whether a preliminary assessment of the effect of construction on transportation is needed. The factors include:

- Whether the project's construction would be located in a Central Business District (CBD) or along an arterial or major thoroughfare.
- Whether the project's construction activities would require closing, narrowing, or other-wise impeding moving lanes, roadways, key pedestrian facilities (*e.g.,* sidewalks, crosswalks, corners/corner reservoirs), parking lanes and/or parking spaces in on-site or nearby parking lots and garages, bicycle routes and facilities, bus lanes or routes, or access points to transit.
- Whether the project would involve construction on multiple development sites in the same geographic area, such that there is the potential for several construction timelines to overlap, and last for more than two years overall.

The proposed esplanade and the Upland Bridge Connection areas are located within the Midtown CBD, adjacent to the FDR Drive, a major thoroughfare along the eastern side of Manhattan. However, the corridor is separated from the roadway and all vehicle traffic by a series of dividers and fences. Construction-related trucks would not travel along the FDR Drive, as truck traffic is not allowed on the roadway, and construction staging would not alter conditions or access of the FDR Drive.

While the corridor for the proposed esplanade is located directly east of the FDR Drive, the Proposed Project would require only minor, temporary closings or impediments to the FDR Drive or other roadways, key pedestrian facilities, parking lanes, bicycle routes or transit services. As such, further preliminary assessment is not warranted.

The Proposed Project would not involve construction on multiple development sites in the same geographic area. The proposed Upland Bridge Connections at East 48th and East 54th Streets are approximately one-third of a mile from each other. As such, further preliminary assessment of the effects of construction on transportation is not warranted.

Based on the projected low volume of construction-related vehicles during construction, no potential traffic impacts are anticipated to occur during construction. During the design phase of the project, an appropriate staging and contractor laydown area will be identified. This area will be sited to avoid creating any conflicts with vehicular or pedestrian/bicycle traffic in the area.

4.5.1.2 Air Quality and Noise

Generally, if a transportation analysis is not needed with regard to construction activities, an air quality or noise assessment of construction vehicles is also likely not warranted. An assessment of air quality and noise for construction activities is likely not warranted if the project's construction activities:

- Are considered short-term;
- Are not located near sensitive receptors;
- Do not involve construction of multiple buildings where there is a potential for on-site receptors on buildings to be completed before the final build-out; and
- The pieces of diesel equipment that would operate in a single location at peak construction are limited in number.

Construction activities associated with the Proposed Project are not considered short-term, as the development of the proposed waterfront esplanade would last several years. However, air quality conditions in the area, would not be significantly altered during construction, and baseline conditions around the area and the City, as recorded by the NYSDEC, would not change.
While the corridor location of the proposed esplanade is located adjacent to open spaces to the south and north, visitors use these passive areas on a voluntary basis, and as such, they are able to relocate if they feel that noise levels may be too high during certain activities, such as pile driving. The area already contains high background ambient noise levels, as so much of the noise measured in the area results from vehicular traffic along the FDR Drive. These noise levels are comparable to other noise levels in a number of open space areas situated within a range of substantial noise generators. Additionally, the Proposed Project would not involve construction of multiple buildings, and it is expected that the on-site

diesel equipment operating during peak construction, would be limited in number. It is also expected that Best Available Technology (BAT) for construction equipment would be used.

4.5.1.3 Hazardous Materials

A construction assessment is not needed for hazardous materials unless the construction activities would disturb a site, or be located adjacent to a site containing hazardous materials. For any potential construction sites and areas along the routes of proposed utilities that have been found to have a potential to contain hazardous materials, possible effects on construction workers and the surrounding community during construction should generally be assessed.

Phase I ESA

As previously noted, a Phase I Environmental Site Assessment (ESA) for the proposed pedestrian bridges at East 48th and East 54th Streets was prepared in March 2013. These are the locations were upland, above-grade ground disturbance is proposed as part of the Proposed Project. The Phase I ESA was performed in general conformance with the scope and limitations of the American Society for Testing and Materials Standard Practice Designation E 1527-05 for ESAs.

A site visit was conducted on January 30, 2013. During the site visit, no visual evidence of underground storage tanks (e.g., vent pipes, fill ports), monitoring wells, clarifiers, septic tanks, or leach fields was observed on the proposed site. Gasoline service stations and dry cleaners were not observed in the immediate vicinity (approximately 500 feet) of the proposed site.

The proposed sites for the Upland Bridge Connections do not have a dedicated site address and are not listed in any database. Several sites located up gradient of the subject properties are listed in regulatory databases. Based on review of these database listings, none of these sites are expected to present any REC to the subject properties based on their distance from the subject properties, regulatory status (i.e. corrective action taken, closed, no violations found), media impacted (i.e. soil only), type of spill (i.e., #2 fuel oil, etc.), and topographical position from the proposed site (i.e. down-gradient or cross-gradient).

An inspection of the proposed site for the Upland Bridge Connection at East 48th Street could not be performed due to restrictions on accessing the site. The proposed Upland Bridge Connection at East 48th Street is a concrete paved area that is currently used to store construction equipment, vehicles and materials. The area is secured by a chain link fence and gate. Also, an entrance to an enclosed UN parking garage is located underneath this proposed site. Staff was unable to conduct a site visit of the storage areas or the enclosed UN parking garage at East 48th Street. Based on the use of the proposed site (storage for construction equipment, vehicles and material and entrance to enclosed UN parking garage) this particular site-related limiting condition is not expected to have a significant limitation to this assessment.

No RECs or historical RECs (HREC) were identified during the Phase I ESA. Staff could not perform inspection of the proposed pedestrian bridge located at East 48th Street, representing a *de minimis* condition identified during the Phase I ESA related to the proposed ramps at East 48th and East 54th Streets. Construction vehicles and materials are stored on the concrete paved area within the fence. In addition, automobiles may be temporarily parked in the driveway of the enclosed UN parking garage. Based on the current use of this subject Property, minor leaks from automobiles are expected on the concrete pavement and floor of the enclosed UN parking garage. These minor impacts are considered *de minimis* conditions.

East Midtown Waterfront Esplanade East River Sediment Chemistry Investigation

As part of the *East Midtown Waterfront Esplanade East River Sediment Chemistry Investigation* (AECOM, 2012), samples of East River sediments were obtained within 13 locations to represent the excavated material, related to the pile construction, which would likely be removed and disposed during construction of the proposed project for laboratory analysis and assessment of potential disposal issues associated

with this material. A technical memorandum was prepared to document the sampling and analysis effort, and present conclusions regarding potential disposal options.

As part of the geotechnical design investigation, sediment samples were collected and submitted for laboratory analysis of a typical suite of contaminants that might be expected in this area, based on the current and historic nearby land uses. The primary set of evaluation criteria used was the NYSDEC soil cleanup objectives (SCOs) identified in Title 6 of the New York Codes, Rules and Regulations, Part 375 (6 NYCRR Part 375).

The results of the metals analyses indicate that concentrations of ten metals exceeded Part 375 unrestricted use SCOs. Twelve of the 13 locations sampled exceeded a criterion for at least one metal. Concentrations of six metals exceeded both the Part 375 unrestricted and residential use SCOs. The TCLP Rule of 20 criteria was exceeded in ten samples for lead. While the maximum concentration of lead was high at two locations, the remainder of the samples where such exceedances were observed did not simultaneously exceed the Part 375 residential use SCO, or only nominally exceeded that criterion. Further, only one sample exceeded the Part 375 industrial use SCO for lead. One sample exceeded the TCLP Rule of 20 criterion for mercury.

The Volatile Organic Compounds (VOC) data indicate that most VOCs were not detected at the 12 VOC locations sampled. Six VOCs were detected in one sample. The Part 375 unrestricted use criteria were not exceeded for four of the detected VOCs in this sample, and there are no criteria for the remaining two compounds. Acetone was detected in nine samples, four of which exceeded unrestricted use SCOs. None of the VOC samples exceeded any TCLP Rule of 20 criteria. The Semi-Volatile Organic Compounds (SVOC) data found detectable concentrations of polycyclic aromatic hydrocarbon (PAH) compounds in ten of 12 samples analyzed. Seven SVOCs exceeded both the unrestricted and residential use SCOs in at least one sample. No SVOC samples exceeded any TCLP Rule of 20 criteria.

A polychlorinated biphenyl (PCB) aroclor was detected in four out of 12 samples, and one of these samples exceeded both the unrestricted and residential use SCOs for total PCBs. Total PCB concentrations in the remaining 12 samples were less than both SCOs. There is no TCLP criterion for PCBs, but no samples exceeded the PCB hazardous waste threshold of 50 mg/kg established by the Toxic Substances Control Act (TSCA). Amongst pesticides, p,p'-DDD was detected in two samples, in both cases exceeding the unrestricted use SCO. None of the pesticide samples exceeded any TCLP Rule of 20 criteria.

Overall, while elevated levels of several metals have been identified in sediments collected from within the area, this is not considered atypical for the area, and while contamination may be widespread spatially, in general it should not be considered severe. While several metals exceeded Part 375 SCOs, only lead was also found to routinely exceed the TCLP Rule of 20 criterion. These results notwithstanding, however, the Part 375 industrial use SCO for lead was exceeded at only one location. In general, this suggests that it is very unlikely that East River sediment (while contaminated) would be considered hazardous due to metals or PAH content. Although detectable concentrations of VOCs, PCBs or pesticides were found, these contaminants were found at levels that either do not exceed residential or unrestricted use SCOs or TCLP criteria, or only nominally exceed such criteria. The only exception is acetone, a VOC that was detected in nine samples (four of which exceeded unrestricted use SCOs); however, acetone is a common laboratory reagent, and detections in the general absence of other VOCs are typically disregarded as laboratory error.

In general, East River sediments in the vicinity of the proposed esplanade area have been determined to have elevated concentrations of metals and PAHs, and excavated material requiring disposal will most likely require management as contaminated, non-hazardous material. This characterization is not uncommon for material excavated in and around New York Harbor and the East River, and there is a vigorous commercial market for the economic management of such material. Most heavy-construction contractors, and especially marine contractors, can be expected to be familiar with the procedures for handling and disposing of contaminated, nonhazardous excavated material.

Nevertheless, the conclusion that the sediment tested is properly considered to be contaminated and/or non-hazardous is provisional, as the full testing suite necessary to confirm that East River sediments are not a hazardous waste has not been performed. Actual disposal testing requirements vary from facility to facility depending on the specific terms of their individual permits to accept contaminated material. Analytical results obtained during the present investigation can be provided to interested bidders during the construction bid process so that they may evaluate the data in conjunction with potential disposal facilities, and in turn evaluate the need for further testing. However, as stated above, the implementation of the RAP and CHASP (which would be prepared by contractors during pre-construction actives) would ensure in no significant adverse impacts from hazardous materials as a result of the construction activities associated with the proposes esplanade. NYCEDC is committed to following any necessary hazardous materials remediation procedures per all applicable local, state, and federal procedures. Therefore, significant adverse impacts related to hazardous materials are not expected.

4.5.1.4 Natural Resources

Natural resources may be affected during construction, particularly during such activities as excavation, grading, site clearance or other vegetation removal, cutting, filling, installation of piles, bulkheads or other waterfront structures, dredging, dewatering, or soil compaction from construction vehicles and equipment. A construction assessment is generally not needed for natural resources unless the construction activities would disturb a site or be located adjacent to a site containing natural resources.

A Biological Assessment (BA) has been prepared pursuant to Section 7 of the Endangered Species Act (ESA), as amended, to evaluate the effect of the Proposed Project on ESA-listed species (listed as endangered or threatened under the ESA), or their designated critical habitat. That document details the expected effects on these species which include: shortnose sturgeon (*Acipenser brevirostrum*), five Distinct Population Segments (DPS) of Atlantic sturgeon (*Acipenser oxyrinchus*), one DPS of loggerhead sea turtle (*Caretta caretta*), Kemp's ridley sea turtle (*Lepidochelys kempii*), green sea turtle (*Chelonia mydas*), and leatherback turtle (*Dermochelys coriacea*). Designated critical habitat is not present within the Proposed Project area for these listed species. The results of the BA are presented in Section 4.4.9.3 of this report.

Based on the analysis provided in the BA, it is concluded that while the proposed esplanade may have the potential to adversely affect individual transient shortnose and Atlantic sturgeon and marine turtles in the immediate vicinity of pile placement, resulting in an incidental take, the Proposed Project is not likely to jeopardize the continued existence of their corresponding populations.

4.5.2 Mitigation Measures

The best practices and reasonable and prudent measures presented in the sections above could be implemented during construction to ensure there are no adverse impacts to natural resources and the surrounding community during construction of the Proposed Project.

4.6 Indirect and Secondary Effects

4.6.1 Indirect Socioeconomic Effects

The Proposed Project has the ability to help catalyze the recreational use of the East River waterfront in Midtown Manhattan and assist with the redevelopment of blighted and underutilized properties in the surrounding area, including the former Con Edison site located southwest of the esplanade. However, the Proposed Project would not result in any significant adverse indirect social or economic impacts.

4.6.2 Social Consequences

The Proposed Project would not generate any new residential or commercial floor area, and as such, would not cross indirect displacement thresholds per the *CEQR Technical Manual* (200 residential units

or 200,000 square feet of retail space) requiring further study. The Proposed Project is expected to help spur growth and redevelopment of the surrounding area, by enticing residents and visitors to the waterfront and the new public esplanade, yet such growth is anticipated to occur independent of the Proposed Project.

4.6.3 Economic Consequences

An analysis of the growth-inducing aspects is not appropriate, as the Proposed Project would not add substantial new land use, new residents or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or introduces or greatly expands infrastructure capacity.

4.7 Cumulative Effects

Cumulative effects result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7). In this case, future actions are those that are expected to occur after the 2019 and 2025 completion years of the proposed esplanade. Cumulative impacts were taken into consideration on a discipline-by-discipline basis in the preceding sections of this report. Cumulative impacts were not discussed for those disciplines where the Proposed Project would not result in any impact, such as groundwater or historic and cultural resources. In addition, for some disciplines the impacts are specific to the location and time, such that there would be no incremental impact from other actions (e.g., hazardous waste and contaminated materials). The agency review for coastal resources and air quality considered cumulative effects in their evaluation and determination of consistency and conformity, respectively. Project-related improvements at sites in the East River and greater New York Harbor area would ensure no cumulative impacts to navigable waters and the marine environment. The findings for endangered and threatened species were cumulative in that the Proposed Project would not jeopardize the species populations or their habitats.

Other separately planned actions in the surrounding area of the proposed esplanade, within similar time periods as the construction of the Proposed Project, include the redevelopment of portions of the United Nations Headquarters and the Robert Moses Playground. There are no other anticipated future Federal, New York State, or private activities. The incremental construction impacts from these projects would not be significant.

CHAPTER 5 – EVALUATION AND COMPARISON OF ALTERNATIVES

This chapter provides a comparison among the feasible design alternatives (Alternatives 1 and 2), as defined in Chapter 3, with respect to their potential to meet the project's goals and objectives as well as user safety, level of service conditions and community support. Exhibit 5-1 summarizes these comparisons based on the detailed analyses of these alternatives presented in Chapter 3. Exhibit 5-2 summarizes the major effects expected to occur with each alternative, as described in Chapter 4.

Exhibit 5-1
Comparison of Feasible Alternatives

Objectives	**Alternative 1** Single Shared-Use Path	**Alternative 2** Separated Bicycle and Pedestrian Paths
Close the existing gap in the Manhattan Waterfront Greenway	Yes	Yes
Provide public access to the waterfront and new public open space	Yes	Yes
Provide opportunity for water dependent uses	Yes	Yes
Promote understanding of East River as a natural feature	Yes	Yes
Require ROW acquisition	No	No
User compatibility and comfort	Partial Compatibility	Full Compatibility
Safety of Bicyclists and Pedestrians	Major safety issues due to joint use of paths	Minor safety issues for both pedestrians and cyclists
Potential conflicts between pedestrians and bicycles	Major	Minor
Level of Service Conditions (LOS)	Fails Required LOS in Peak Hours	Meets required LOS in Peak Hours
Potential Environmental Impacts	Minor	Minor
Potential Land Use, Community and Visual Impacts	Positive Impacts	Positive Impacts
Potential Impacts during Construction	Minor Impacts	Minor Impacts
Support from community	Not Preferred	Preferred
Construction Cost	$220 million	$220 million

Exhibit 5-2
Summary of Environmental Impacts

Impact Category	Alternative 1 Single Shared-Use Path	Alternative 2 Separated Bicycle and Pedestrian Paths
Social	No significant adverse impacts; consistent with land use goals, public policies, and zoning regulations; positive impact on neighborhood character and social groups	Same as Alternative 1
Economic	No significant adverse impacts to regional or local economies	Same as Alternative 1
Wetlands	Care will be taken during design to avoid or minimize impacts to tidal wetlands in the vicinity of the esplanade	Same as Alternative 1
Surface Waterbodies	No significant adverse impacts to the East River; precautions during construction would prevent contamination to the waterbody; NYSDEC Protection of Waters permit required	Same as Alternative 1
Wild, Scenic and Recreational Rivers	No state or national wild, scenic or recreational rivers within or adjacent to the project site	Same as Alternative 1
Navigable Waters	No impact to the navigability of the East River; NYSDEC Protection of Waters and USCG Section 9 permits required	Same as Alternative 1
Floodplains	Within the 100-year floodplain but no significant encroachment and no significant impacts on natural beneficial floodplain values; no practicable alternative would avoid use of the floodplain	Same as Alternative 1
Coastal Resources	Within state coastal zone management area; consistent with NYC's Waterfront Revitalization Program	Same as Alternative 1
Groundwater Resources	Not located in Primary Water Supply or Principal Aquifer Area	Same as Alternative 1
Stormwater Management	4.8 acres of new impervious surface subject to SPDES requirements and NYSDEC concurrence	Same as Alternative 1
General Ecology	May have the potential to adversely affect individual transient shortnose and Atlantic sturgeon, marine turtles, and EFH managed species during construction; would not jeopardize continued existence of corresponding populations	Same as Alternative 1
Critical Environmental Areas	No Critical Environmental Areas within or adjacent to the project area	Same as Alternative 1
Historic and Cultural Resources	No adverse effect on historic architectural resources and no archeological concerns	Same as Alternative 1

Exhibit 5-2 Summary of Environmental Impacts		
Impact Category	**Alternative 1 Single Shared-Use Path**	**Alternative 2 Separated Bicycle and Pedestrian Paths**
Parks and Recreational Resources	No impacts to state or national heritage areas; No adverse effect on the activities, features and attributes that qualify Sutton Parks for protection under Section 4(f)	Same as Alternative 1
Visual Resources	No adverse effect to the elements of urban design and visual resources	Same as Alternative 1
Farmlands	Not located in or adjacent to Agricultural District or convert any federal prime or unique farmland or farmland of state or local importance	Same as Alternative 1
Air Quality	Exempt for the purposes of transportation conformity and conforms to the SIP for air quality conformity	Same as Alternative 1
Energy	No impact	Same as Alternative 1
Noise	No significant adverse impacts	Same as Alternative 1
Asbestos	No areas of potential asbestos material present	Same as Alternative 1
Hazardous Waste	Protection of human health and the environment would be ensured through implementation of a CHASP and elimination of post-construction exposure on the upland connection sites (i.e., no landscaped areas); no significant adverse impacts	Same as Alternative 1
Construction Effects	No significant impacts	Same as Alternative 1
Indirect and Secondary Effects	No significant adverse indirect social or economic impacts	Same as Alternative 1
Cumulative Effects	No significant adverse impacts	Same as Alternative 1

CHAPTER 6 – PROJECT COORDINATION

The Proposed Project's impacts during construction and operation to the local community are expected to be minimal. Steps are being taken during construction to minimize potential traffic, air and noise quality and other potentially disruptive impacts, including maximizing the amount of material delivery and other construction activity to be done by waterside equipment. Construction will be phased in two segments:

- The UN Esplanade and Upland Bridge Connections
- The ODR Esplanade. A portion of this segment would be placed over existing ODR caissons.

No long term impacts are projected due to the Proposed Project's construction or operation on vehicular traffic in the surrounding local street network or the adjacent FDR Drive. The Proposed Project would increase waterfront access from the adjacent East Midtown communities, and provide additional active and passive recreational areas. Anticipated public involvement coordination during design and construction, as well as coordination with Federal, State and City agencies are discussed in greater detail in Appendix G, Public Involvement Plan.