A. INTRODUCTION

This chapter assesses the potential for temporary significant adverse effects on publicly accessible open space resources during the proposed project's construction. According to the *CEQR Technical Manual*, a publicly accessible open space resource is publicly or privately owned land that is publicly available for leisure, play, sport, or serves to protect and enhance the natural environment. The proposed project involves the temporary displacement of open space resources (East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk), in phases, over an approximately 3.5- to 5-year period. The proposed project's construction would also generate noise and air pollutant emissions that could affect nearby open space resources that would remain open to the public. The analysis considers these direct effects, as well as the indirect effects of construction (e.g., whether the temporary loss of open space or construction effects could result in the overtaxing of other open spaces in the study area).

B. PRINCIPAL CONCLUSIONS

The proposed project requires construction within a number of public parks (East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk), in phases, over an approximately 3.5- to 5-year period. The direct effects include the temporary closure of open space resources, during which time the public would not have access or limited access to these public parks. The adequacy of open space in the study area was quantitatively and qualitatively assessed for existing conditions, the No Action Alternative, and the With Action Alternatives (Alternatives 2 through 5) by each analysis year (2020 through 2025). Construction under the Preferred Alternative would have a 3.5-year construction period with completion in 2023, whereas construction would occur for the full 5 years under Alternatives 2, 3, and 5.

The analysis follows the procedures outlined in the 2014 *City Environmental Quality Review* (*CEQR) Technical Manual*. The summary of potential construction open space effects is described below.

NO ACTION ALTERNATIVE (ALTERNATIVE 1)

DIRECT EFFECTS

With the planned construction of Pier 42 Park, Pier 35, East River Waterfront Esplanade-Phase IV, and the Rutgers Slip Open Space, the open space acreage within the ½-mile study area will increase from 85.15 acres under existing conditions to approximately 92.53 acres by the 2025 analysis year. Under the No Action Alternative, with no new comprehensive coastal protection system installed in the project area, East River Park and other open space resources in the protected area would remain vulnerable to storm damage.

INDIRECT EFFECTS

Under the No Action Alternative, total open space ratios are below the Citywide Community District median ratio of 1.5 acres per 1,000.

PREFERRED ALTERNATIVE (ALTERNATIVE 4): FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK

DIRECT EFFECTS

There is the potential for temporary adverse direct effects under the Preferred Alternative over multiple analysis years due to the extent of displacement of recreational facilities and open space amenities in East River Park over the 3.5-year construction period. However, once completed, the Preferred Alternative would directly affect East River Park, Stuyvesant Cove Park, Murphy Brothers Playground and Asser Levy Playground in a positive manner, by enhancing their design and increasing their accessibility to the public. The proposed project under the Preferred Alternative would also enhance the resiliency of open space and protect park resources from future design storms.

Construction Noise

As described in Chapter 6.12, "Construction—Noise and Vibration," predicted noise level increases at these open space locations would be noticeable; however, the total noise levels would be in the range considered typical for Manhattan, and for this area in general. Many New York City parks and open space areas located near heavily trafficked roadways and/or near construction sites, experience comparable, and sometimes higher noise levels. Maximum construction noise levels at receptors nearest floodwall construction with the Preferred Alternative would be slightly lower because pile driving at the Preferred Alternative would generally occur further from to the receptors. As with Alternative 3, East River Park, Asser Levy Playground (outdoor) and Murphy Brothers Playground would be closed under the Preferred Alternative during the times when construction activities would occur at these park resources. Therefore, the duration of construction noise would be limited at any given area of open space that would remain open in proximity to construction activities. Furthermore, the construction noise predictions are conservative in that they consider the area of open space that remains open and accessible closest to the construction area. While construction would likely disturb the Asser Levy outdoor pool temporarily, it is anticipated that construction would take place during the off-season of the pools (mid-September to early June) and not affect the operational season of the pools. Based on these factors, the Preferred Alternative construction noise on these open space resources would not result in a significant adverse effect. However, at Asser Levy Recreation Center, construction activity including pile driving that would occur west of the Franklin Delano Roosevelt East River Drive (FDR Drive) immediately adjacent to this building would produce noise level increases considered high for this area. While the duration of maximum noise levels at this location would be limited and the receptor is typically used for active recreation with a lower sensitivity to noise, the maximum noise levels predicted by the construction noise analysis are high (i.e., in the "clearly unacceptable" range according to CEQR noise exposure guidance). Consequently, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction.

Construction of the Preferred Alternative would be required to follow the requirements of the *New York City Noise Control Code* and would use additional measures, including both path control

(e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors) and source control (i.e., reducing noise levels at the source or during the most sensitive time periods) to minimize the effects of the Preferred Alternative's construction activities on the surrounding community.

Construction Air Quality

Construction of the proposed project under the Preferred Alternative would adhere to Local Law 77 of 2003 for emissions reductions on non-road construction engines, *New York City Air Pollution Control Code* regulations regarding construction-related dust emissions, and *New York City Administrative Code* limitations on construction-vehicle idling time. With the implementation of these measures, the detailed analysis presented in Chapter 6.10, "Construction—Air Quality," showed there would be no significant adverse air quality effects on sensitive receptors, including open space areas near the construction activities.

INDIRECT EFFECTS

As a result of the extended open space closures due to construction, the total open space ratios within the study area would decrease in the Preferred Alternative from the No Action Alternative. The proposed project would reduce open space ratios by a minimum of 42.6 percent in 2023 and a maximum of 49.6 percent in 2020, and therefore would result in potential temporary significant adverse indirect effects on open space resources within the study area under the Preferred Alternative. There are no significant adverse indirect effects for the 2024 and 2025 analysis years, as any remaining construction would be minimal and the vast majority of displaced open space areas would be restored and reopened to the public with new and enhanced park features.

OTHER ALTERNATIVE (ALTERNATIVE 2): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – BASELINE

The Flood Protection System on the West Side of East River Park – Baseline (Alternative 2) would involve less construction in City parkland (e.g., East River Park), resulting in less temporary displacement of recreational facilities than the Preferred Alternative. Therefore, the temporary significant adverse direct and indirect open space effects under Alternative 2 would be less than the Preferred Alternative. However, Alternative 2 would result in fewer resiliency and enhanced park and access benefits it would not provide flood protection to East River Park; would not reconstruct and improve the landscapes, recreational fields, playgrounds, and amenities within East River Park; and would not redesign and reconstruct the Murphy Brothers and Asser Levy Playgrounds. Additionally, under Alternative 2, a new raised and landscaped park-side plaza landing would not be created at the entrance to East River Park from the East Houston Street overpass.

Similar to the Preferred Alternative, construction activity under Alternative 2 would include pile driving that would occur west of the FDR Drive immediately adjacent to the Asser Levy Recreation Center. These activities would produce noise level increases considered high for this area and in the "clearly unacceptable" range according to CEQR noise exposure guidance. Consequently, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction.

OTHER ALTERNATIVE (ALTERNATIVE 3): FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – ENHANCED PARK AND ACCESS

The Flood Protection System on the West Side of East River Park – Enhanced Park and Access (Alternative 3) would involve a similar level of temporarily displaced open space as the Preferred Alternative and would therefore result in a similar significant adverse effect as compared to the Preferred Alternative for the 2020 to 2023 analysis years. However, Alternative 3 would involve a longer construction duration, resulting in prolonged significant adverse effects. As a result of the extended open space closures due to construction, the total open space ratios within the study area would decrease in Alternative 3 from the No Action Alternative. Since the open space ratios would be reduced by a minimum of 44.0 percent in 2025 and a maximum of 48.2 percent in 2022 and 2023, the proposed project would result in potential temporary significant adverse indirect effects on open space resources within the study area under Alternative 3. Therefore, the temporary significant adverse direct and indirect open space effects under Alternative 3 would be greater than the Preferred Alternative. In addition, Alternative 3 would result in fewer resiliency benefits and would not provide flood protection to East River Park.

Similar to the Preferred Alternative, construction activity under Alternative 3 would include pile driving that would occur west of the FDR Drive immediately adjacent to the Asser Levy Recreation Center. These activities would produce noise level increases considered high for this area and in the "clearly unacceptable" range according to CEQR noise exposure guidance. Consequently, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction.

OTHER ALTERNATIVE (ALTERNATIVE 5): FLOOD PROTECTION SYSTEM EAST OF FDR DRIVE

The displacement of open space necessary to accommodate construction under the Flood Protection System East of FDR Drive (Alternative 5) would be comparable to the Preferred Alternative. Therefore, any potential temporary significant adverse direct and indirect open space effects identified under Alternative 5 would be of comparable magnitude as the Preferred Alternative. Similar to the Preferred Alternative, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction.

MITIGATION

The proposed project would introduce potential temporary significant adverse direct and indirect effects on open space during the construction period. Therefore, potential on-site or off-site measures to mitigate the effect to the greatest extent practicable are being explored by the City. The mitigation measures being explored for the Preferred Alternative include accommodating permit users at other existing facilities; identify recreational resources that can be available to the community during construction; providing alternative recreational opportunities (e.g., programs like Shape-Up classes, walking clubs, Arts, greening programs); implementing improvements (e.g., lighting) to parks and playgrounds in the study area; rerouting greenway users to the most direct alternative route; and supporting bicycle projects in the study area. In addition, the City is assessing opportunities to open parts of East River Park as work is completed. The introduction of new publicly accessible open space—such as Pier 42 Park, Pier 35, and Phase IV of the East River Waterfront Esplanade project, totaling 4.81 acres—could be considered a potential mitigation effort. In addition, there has been funding allocated for the demolition of LaGuardia Bathhouse and interim recreation improvements which will create approximately 7,000 square

feet of new publicly accessible open space. The feasibility of utilizing quieter construction methods (i.e., press in pile) in the vicinity of the Asser Levy Recreation Center as it is a public facility, are being explore as potential mitigation measures. However, these measures, would only partially mitigate construction effects on open space resources.

According to the *CEQR Technical Manual*, on-site improvements are considered a mitigation measure. Although construction would temporarily displace open space resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk, the end result would be a refurbished open space resource. After construction, East River Park would be a newly landscaped and raised park with pathways for the Preferred Alternative, which would enhance the user experience of the park. In addition, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. The Preferred Alternative would be especially beneficial for the open space resources in East River Park, as this alternative includes reconstruction of the park, raising it by approximately eight feet to meet the design flood protection criteria while also reducing the risk for effects from future storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future storm events on the community. The Preferred Alternative proposes the replacement of pedestrian crossings at Delancey Street, East 10th Street, and Corlears Hook bridges. The enhancement of pedestrian bridges to East River Park would improve the east-west connectivity for residents in the ½-mile study area to East River Park upon project completion. The improvements to these open space resources under the proposed project would be considered partial mitigation. Additionally, as stated in the *CEQR Technical Manual*, the implementation of missing segments of the City's greenway network would be considered a mitigation strategy. By remedying a long-standing narrowed pathway at the Con Edison "pinch-point," the proposed project under all alternatives would significantly improve the usability and access to the greenway with the construction of the shared-use flyover bridge.

As discussed above, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction. The feasibility of utilizing less impactful construction methods (i.e., press in pile) are being explored to mitigate this noise effect.

C. REGULATORY CONTEXT

A detailed discussion of the regulatory context governing the open space analysis is presented in Chapter 5.3, "Open Space."

D. METHODOLOGY

According to the *CEQR Technical Manual*, a preliminary construction assessment for open space is needed as the proposed project's construction activities are considered long-term (more than two years). The assessment includes consideration of both direct and indirect effects of the proposed project.

DIRECT EFFECTS

A direct effects analysis should be performed if a project would: directly affect open space conditions by causing a loss of public open space; change the use of an open space so that it no longer serves the same user population; limit public access to an open space; or increase noise, air pollutant emissions, odor, or shadows that would temporarily or permanently affect the usefulness

of a public open space. A project can also directly affect an open space in a positive manner, by enhancing its design or by increasing its accessibility to the public. The direct effects related to the construction of the proposed project include the temporary displacement of open space resources for periods of time due to construction phasing in segments ("Segments"), during which the public would not have access to those resources. The construction segments are referred to as: Segment 1 ([East River Park] Ball Fields No. 1 and No. 2 and Soccer Field, Basketball and Volleyball Courts, Multi-Purpose Field, and Water Play Area); Segment 2 ([East River Park] Tennis Court Complex and Comfort Station, Ball Fields No. 5 and No. 6); Segment 3 ([East River Park] North End of East River Park, Ball Fields No. 7 and No. 8, Playground, Basketball Court and BBQ Area); Segment 4 (Murphy Brothers Playground); Segment 5 (Stuyvesant Cove Park); and Segment 6 (Asser Levy Playground) (see **Figure 6.2-1 through Figure 6.2-8**). For the purposes of analysis, it is assumed that the closure of each segment for construction activities occurs for a full analysis year (i.e., If construction within a segment is complete within an analysis year, this analysis still assumes that the segment is unavailable for that full analysis year); this represents a reasonable worst case scenario for the temporary displacement of open space resources. Under each alternative, qualitative consideration is provided of newly reconstructed open space resources that may be available to the public (once construction is complete within that segment).The analysis also considers whether there are other open space resources within close proximity to the unavailable resources that would provide similar recreational opportunities to the public.

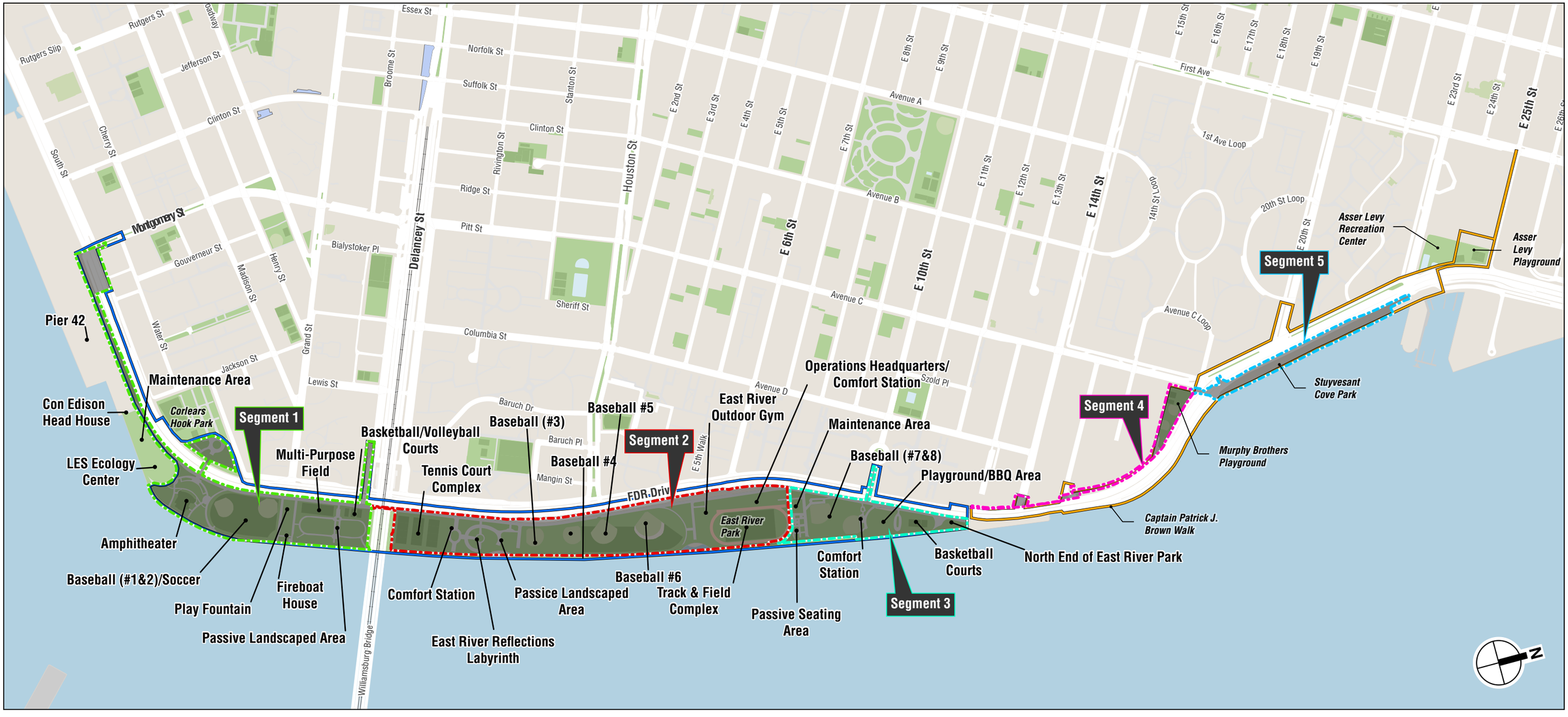
Construction activities may also produce noise and air pollutant emissions affecting neighboring open space resources. Therefore, potential construction noise and air quality effects on open space resources are also considered. The direct effects assessment includes estimates of the extent and timing of open space displacement during construction and considers construction-related noise and pollutant emissions on the usability of the open space resources.

INDIRECT EFFECTS

An indirect effects analysis should be performed if a project would add sufficient population, either residents or non-residents, to noticeably diminish the capacity of open space in an area to serve the future population. Due to the direct effects of temporary displacement of open space resources, the capacity of open space in the area could be affected, therefore causing indirect open space effects. In particular, an increase in demand for other resources in the study area (within a reasonable walking distance) that would remain available during construction of the proposed project may result in temporary significant adverse effects. The indirect effects assessment applies the indirect effects analysis methodologies described in Chapter 5.3, "Open Space," to determine how open space ratios for the ½-mile open space study area could change over the course of the 3.5- to 5-year construction period.

COMPARISON TO CITY GUIDELINES

The adequacy of open space in the study area was quantitatively and qualitatively assessed for existing conditions, the No Action Alternative, and the With Action Alternatives (Alternatives 2 through 5). According to CEQR guidelines, the quantitative assessment is based on ratios of usable open space acreage to the study area populations (the "open space ratios"). These ratios are then compared with the City's open space guidelines for residential populations. For residential populations, there is a City-wide median open space ratio of 1.5 acres per 1,000 residents, which is used as a guideline. In addition to this median ratio, the City has set an open space ratio planning goal of 2.5 acres per 1,000 residents, which includes 0.50 acres of passive space and 2.0 acres of



Project Area One

Project Area Two

Construction Limits of Work

Segment

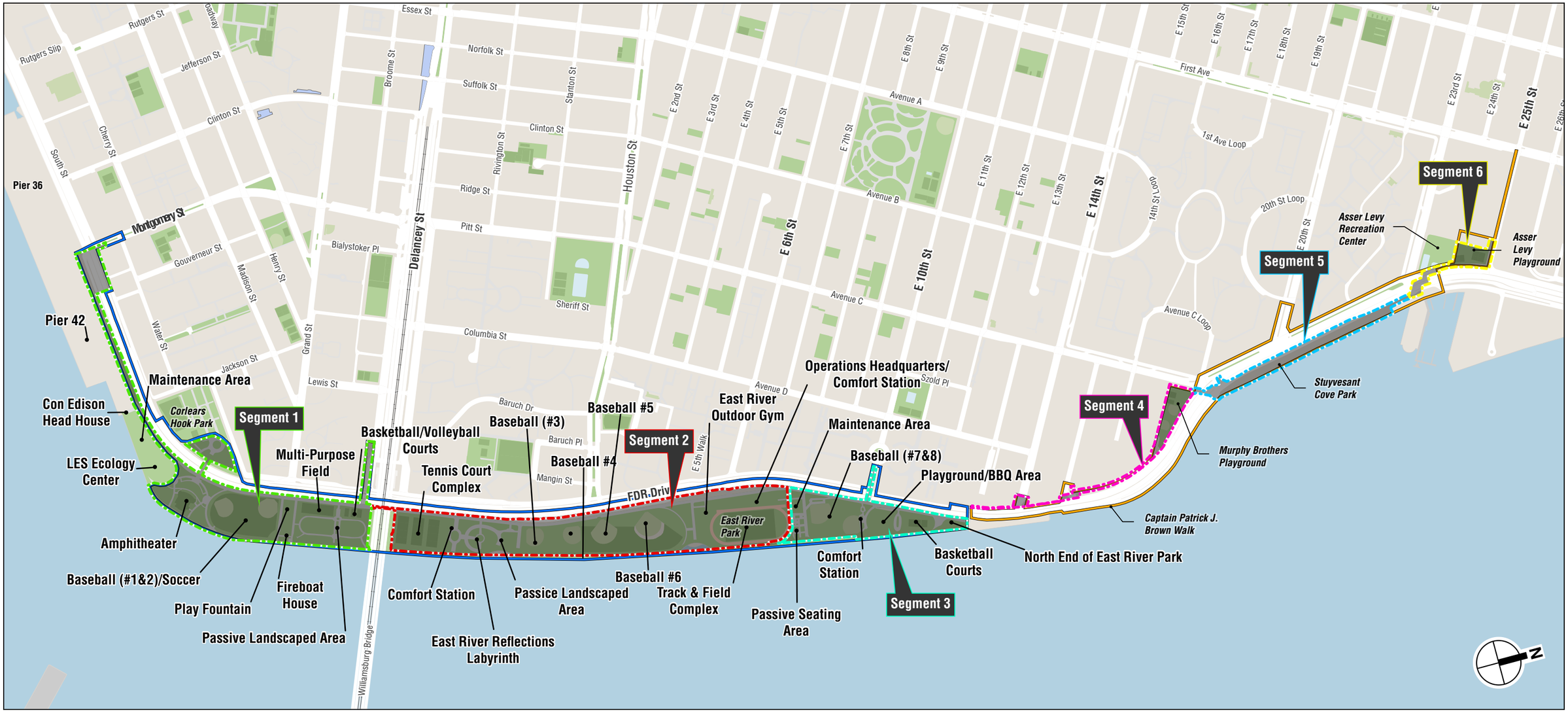
0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Preferred Alternative - Construction Segments 2020

Figure 6.2-1

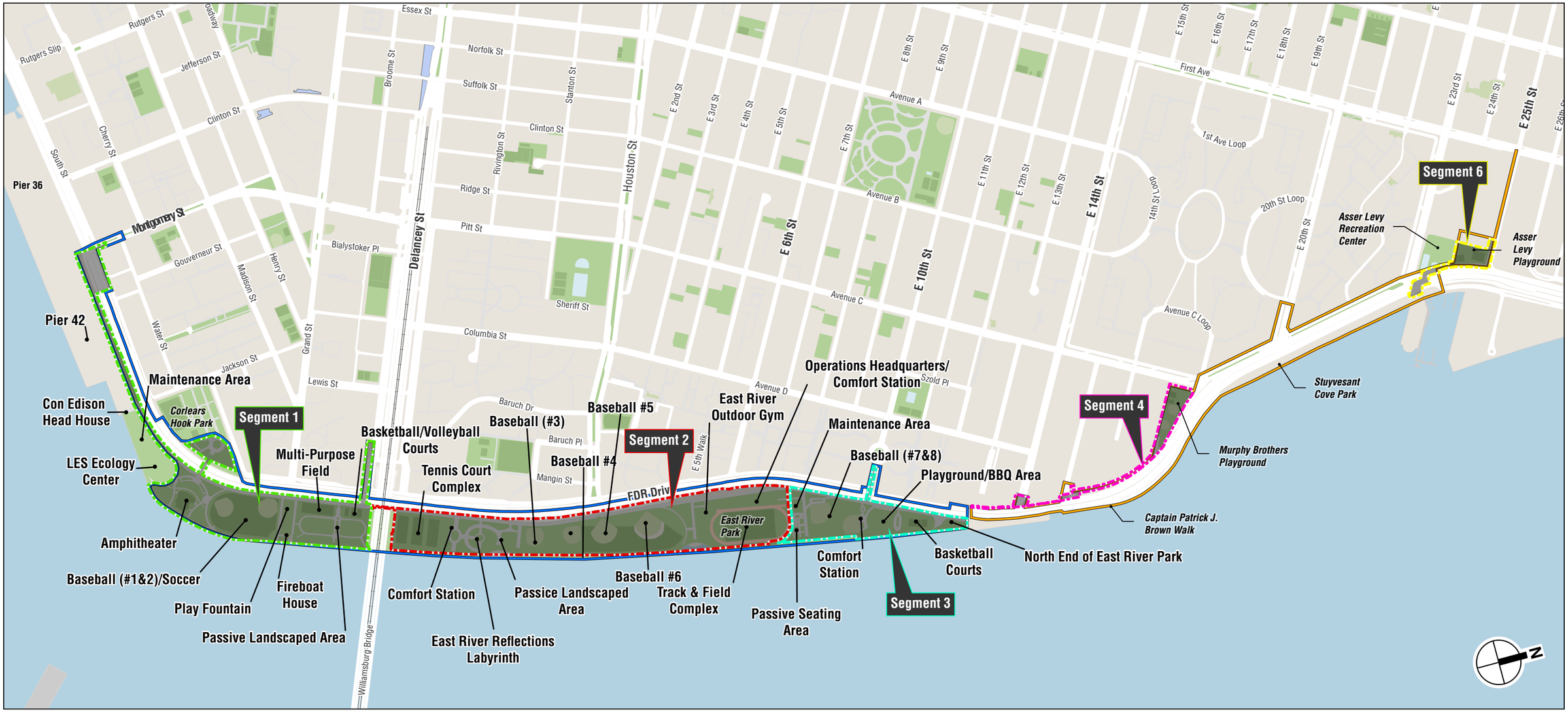


Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Preferred Alternative - Construction Segments 2021

Figure 6.2-2



Project Area One

Project Area Two

Construction Limits of Work

Segment

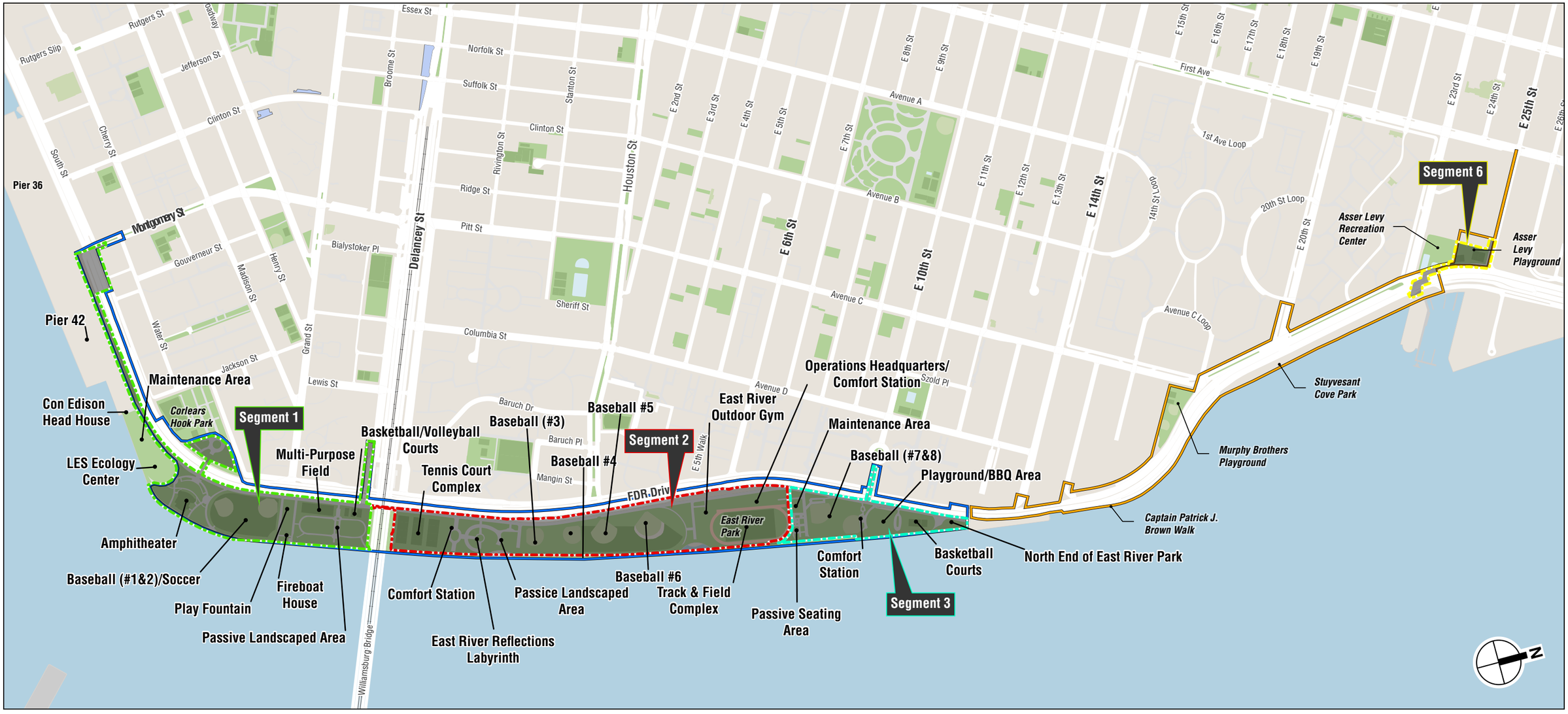
0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Preferred Alternative - Construction Segments 2022

Figure 6.2-3

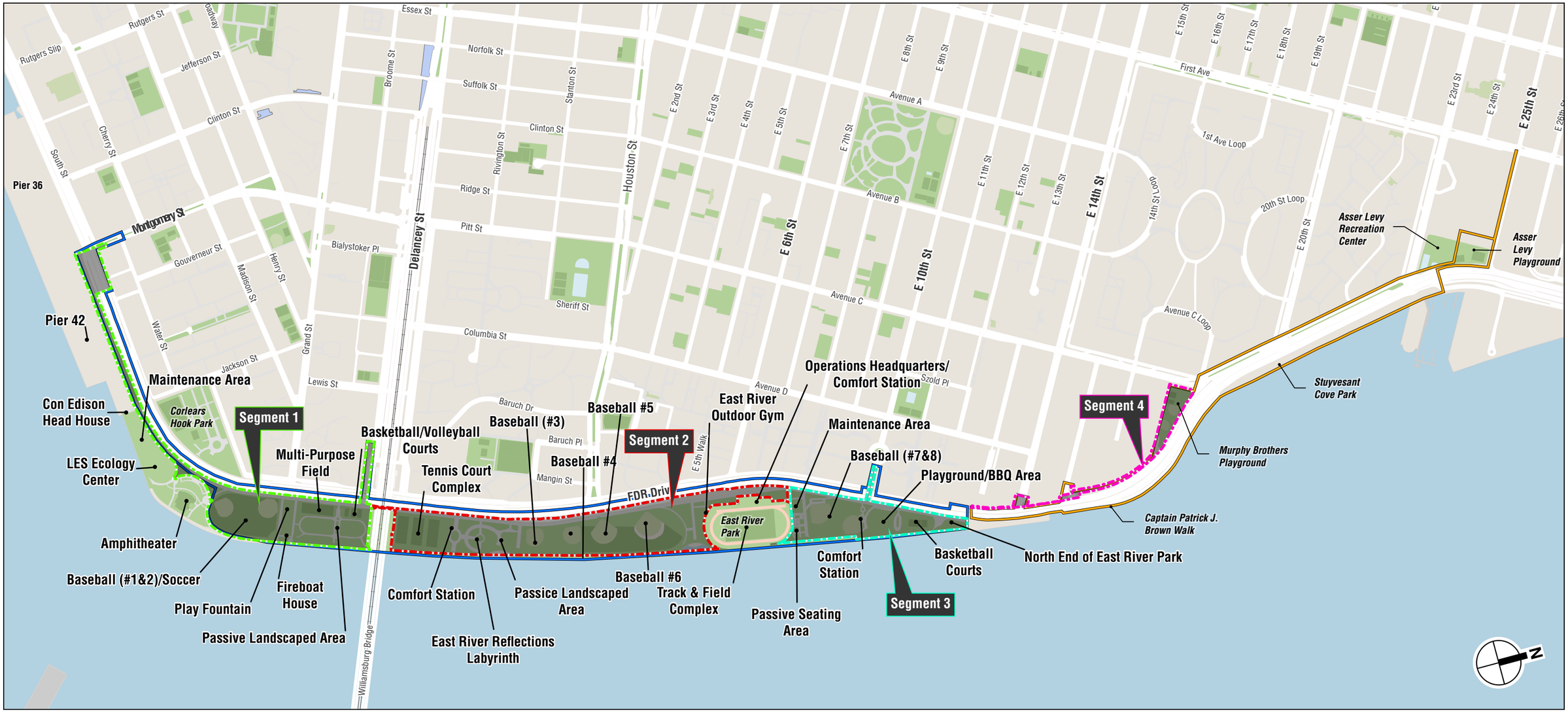


Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Preferred Alternative - Construction Segments 2023

Figure 6.2-4



Project Area One

Project Area Two

Construction Limits of Work

Segment

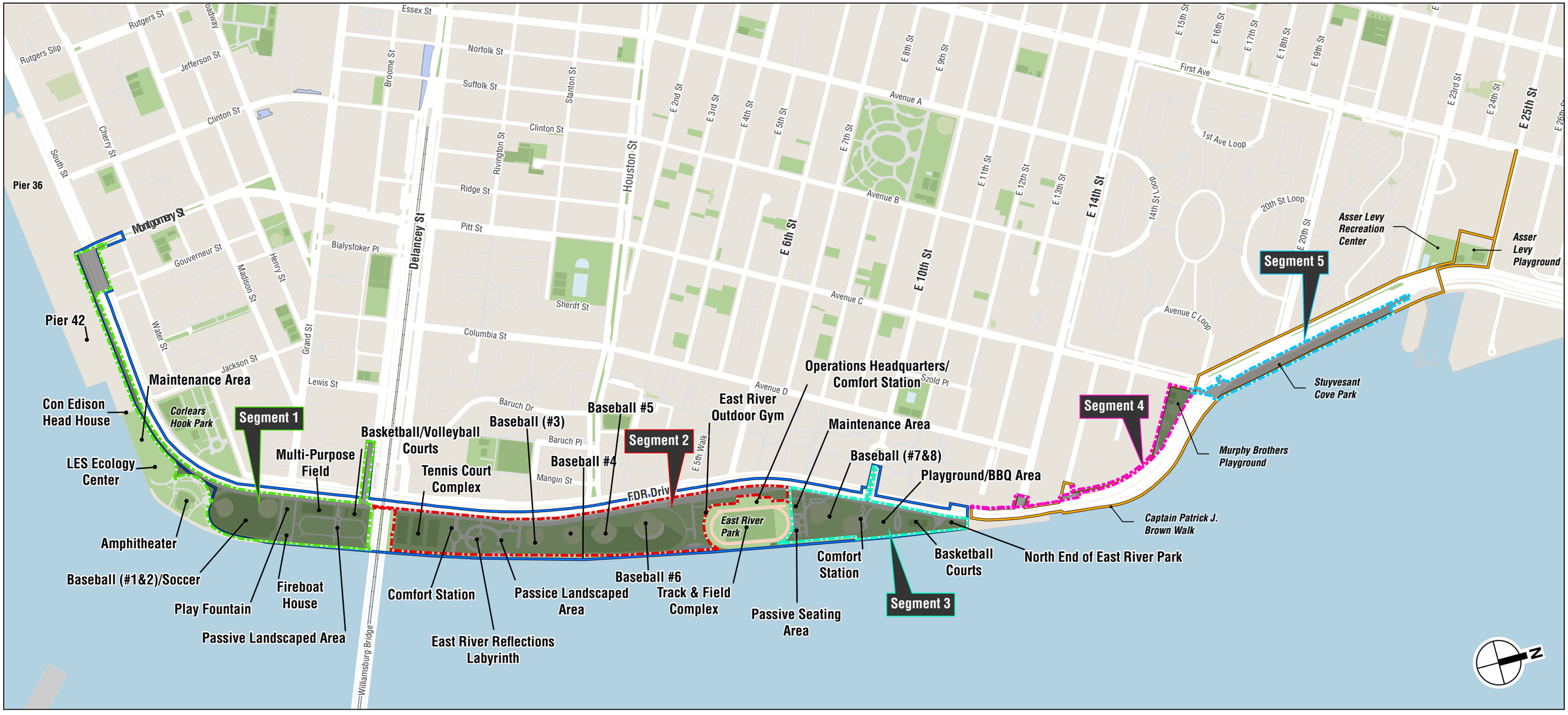
0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Alternative 3 - Construction Segments 2020

Figure 6.2-5

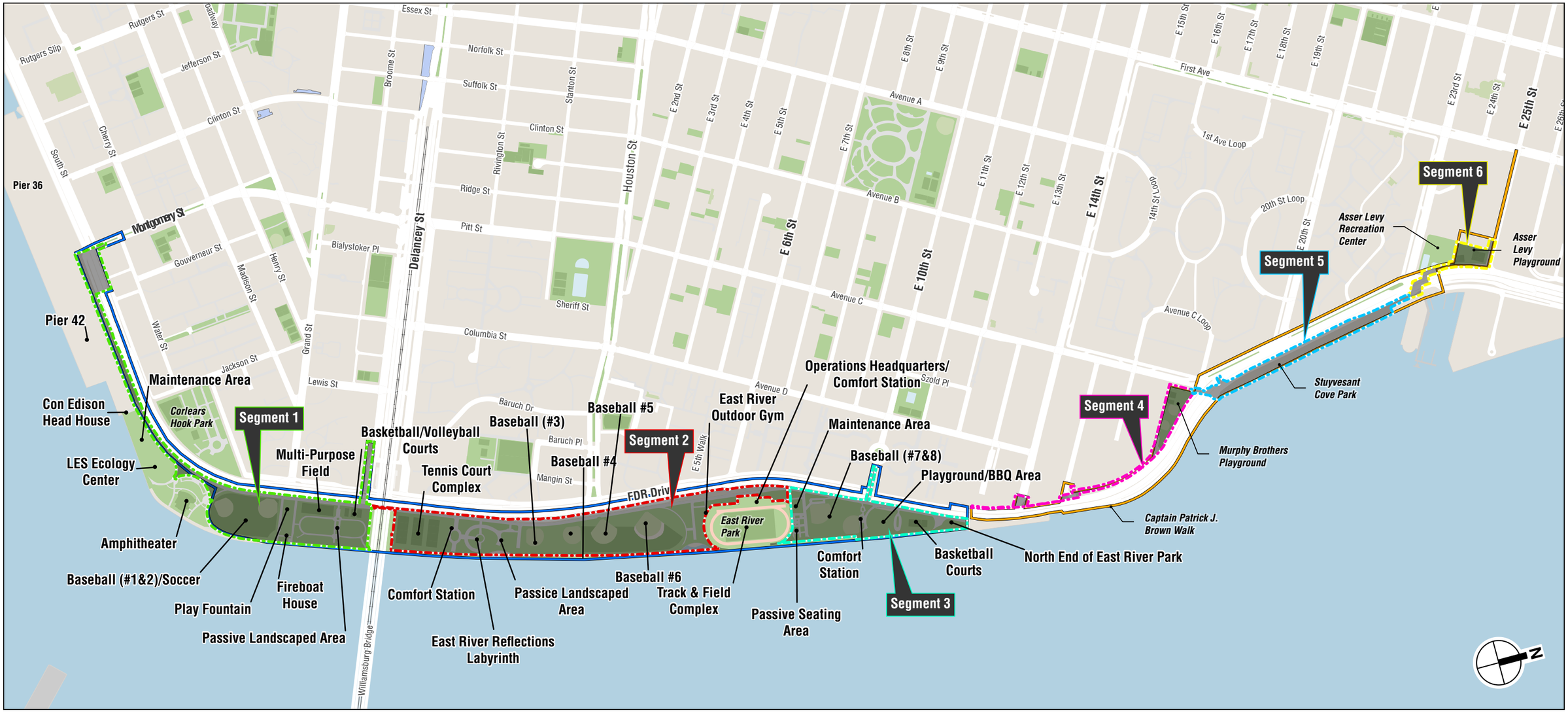


Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Alternative 3 - Construction Segments 2021

Figure 6.2-6



Project Area One

Project Area Two

Construction Limits of Work

Segment

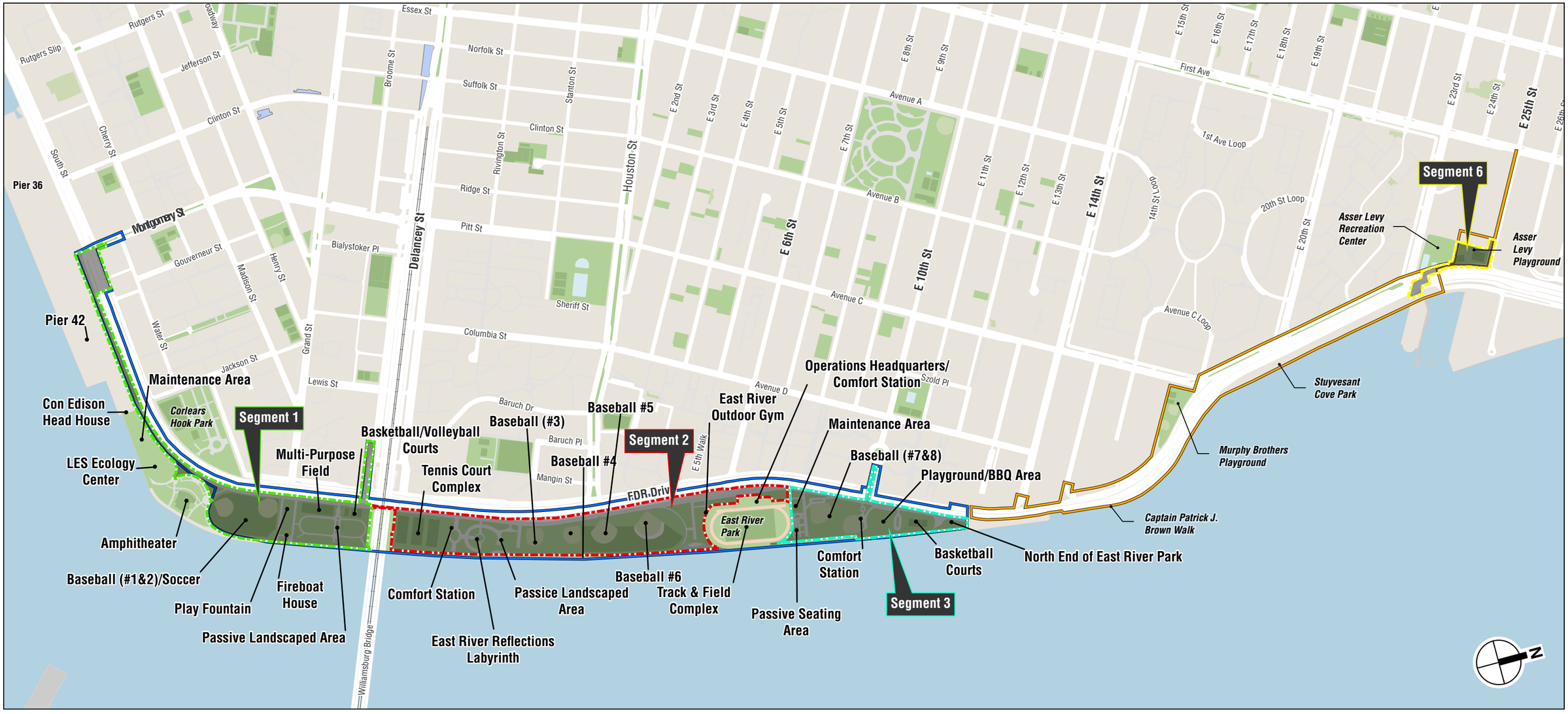
0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Alternative 3 - Construction Segments 2022-2023

Figure 6.2-7



Project Area One

Project Area Two

Construction Limits of Work

Segment

0 1,000 FEET

Capital Project SANDRESM1

EAST SIDE COASTAL RESILIENCY PROJECT

Alternative 3 - Construction Segments 2024-2025

Figure 6.2-8

active space per 1,000 residents. It should be noted that the City's open space planning goals are often not feasible for many areas of the City, and they are not considered a significant adverse effect threshold. Rather, they are used as benchmarks to represent how well an area is served by its open space resources.

ANALYSIS YEARS

This chapter assesses the potential direct and indirect effects by each analysis year (2020–2025) for the proposed five-year construction period under all alternatives (it should be noted that construction would occur for the full five years under Alternatives 2, 3, and 5, whereas construction under the Preferred Alternative would have a 3.5-year construction period with a completion in 2023.

EFFECTS ASSESSMENT

The determination of temporary significant adverse effects is based on one of two factors following *CEQR Technical Manual* guidelines. Regarding direct effects: a significant adverse effect would occur if there would be a direct displacement/alteration of existing open space within the study area without a comparable replacement (size, usability, and quality) within the study area, or if a proposed project results in a significant physical effect (such as increasing noise or air pollutant emissions) that would affect the usefulness of a public open space. Regarding indirect effects: if the proposed project would reduce an open space ratio and consequently result in overburdening existing facilities, or if it would substantially exacerbate an existing deficiency in open space, it may result in a significant effect on open space resources. The determination of significant adverse effects is based on how a project would change the open space ratios in the study areas, as well as qualitative factors not reflected in the quantitative assessment. In general, if a study area's open space ratios fall below City guidelines, and the proposed project would result in a decrease in the open space ratio of more than five percent, it could be considered a substantial change. However, in areas which have been determined to be extremely lacking in open space, a reduction as small as one percent may be considered significant.

ALTERNATIVES ANALYZED

The alternatives described below and analyzed in this chapter are described in greater detail in Chapter 2.0, "Project Alternatives." For the purposes of this assessment, the Preferred Alternative is the focus for analysis. The displacement of open space necessary to accommodate construction under Alternative 2 would be comparable to or less than that under the Preferred Alternative. Alternative 5 proposes a flood protection alignment similar to the Preferred Alternative, except for the approach in Project Area Two between East 13th Street and Avenue C, where the northbound lanes of the FDR Drive in this area would be raised. Maintaining the flood protection alignment along the east side of the FDR Drive would eliminate the need to cross the FDR Drive near East 13th Street as well as the need to install floodwalls adjacent to NYCHA Jacob Riis Houses, Con Edison property and Murphy Brothers Playground. Therefore, Alternative 5 would result in temporary displacement of open space similar to that of the Preferred Alternative.

E. AFFECTED ENVIRONMENT

DIRECTLY AFFECTED AREAS

This analysis considers the effects of construction on open space within Project Area One and Two, as described in Chapter 5.3, "Open Space" (see Figure 5.3-1).

STUDY AREA

The study area utilized for analysis is based on the distance a person is assumed to be willing to walk to reach a neighborhood open space based on *CEQR Technical Manual* guidelines. Residents are assumed to walk approximately 10 minutes (about a ½-mile distance) to reach both passive and active neighborhood open spaces. Since the proposed project would be located primarily within parks adjacent to a predominantly residential user population and would not have a substantial amount of commercial user population, a study area based on a ½-mile distance from the boundaries of Project Areas One and Two was established. For a detailed description of open space resources in the study area, refer to Chapter 5.3, "Open Space." As described in Chapter 5.3, "Open Space," the existing total open space acreage within the ½-mile study area is 85.15 acres, of which 53.66 acres are active and 31.49 acres are passive (see Table 5.3-3).

OPEN SPACES TEMPORARILY DISPLACED FOR CONSTRUCTION

This section includes a description of each construction segment, the publicly accessible open spaces in these segments, and the comparable nearby open space resource(s) that would be available to the public during the temporary displacement of open space resources within that construction segment. The order and duration of construction activities during which open spaces in these segments would be unavailable to the public is provided in the next section and is discussed for each alternative.

Segment 1

Segment 1 is approximately 12.99 acres and incorporates open space resources, mainly East River Park, from Montgomery Street to the south and Williamsburg Bridge to the north between the FDR Drive and the East River. The resources (moving south to north) within this segment are as follows: the shared-use path adjacent to the FDR Drive from Montgomery Street to the Williamsburg Bridge; the amphitheater and the tree lined grassy knolls to the west of the amphitheater; a large soccer field straddled by two baseball fields (Ball Fields No. 1 and No. 2) enclosed with a tall chain-linked fence and planted areas to the south, east and north of these fields; a water play area containing multiple sprinkler jets set in the ground, rocks that create pool areas, and bronze sculptures of sea lions at play, paved promenades with benches flank the play area and connect the shared-use path to the East River Promenade (a pedestrian walkway located directly adjacent to the East River extending the length of the park); a multi-purpose field with artificial turf, 2 paved volleyball courts, and 1 paved basketball court enclosed with chain-link fences adjacent to the shared-use path as well as a large lawn encircled with soft-surfaced paths adjacent to the East River Promenade. Additionally, Segment 1 includes the Delancey Street Bridge and the East River Promenade from Ball Fields No. 1 and No. 2 to the Williamsburg Bridge. Segment 1 also include an access point to the NYC Ferry service. Construction activities within this segment are not anticipated to obstruct NYC Ferry access or service.

Outside of Segment 1, comparable resources of similar type and quality would be available at Baruch Playground (soccer fields, basketball courts, and water play areas), Corlears Hook Park (baseball fields), Seward Park, and Little Flower Playground (volleyball courts), Hamilton Fish Park and Luther Gulick Playground (water play areas). Nearly all 29 other open space resources in the ½-mile study area have comparable passive recreation areas (lawns, pathways, seating, etc.). Other than other sections of East River Park, which may also be temporarily unavailable due to construction, there are no comparable shared-use pathways in the ½-mile study area.

Segment 2

Segment 2 is approximately 18.36 acres and incorporates open space resources in East River Park, from north of the Williamsburg Bridge to the south and East 8th Street between the FDR Drive and the East River. The resources (moving south to north) within this segment include the following: the shared-use path adjacent to the FDR Drive and the East River Promenade adjacent to the East River from the Williamsburg Bridge to East 8th Street; a tennis center with 12 tennis courts enclosed with a tall chain link fence; a comfort station flanked by two lawns; a paved promenade that connect the shared-use path to the East River Promenade with landscaped areas, benches, fixed tables, and a dance circle to approximately Stanton Street; baseball fields (Ball Fields No. 3 and No. 4) enclosed with a tall chain-linked fence and planted areas to the south, west, and east; the East Houston Street overpass connects to East River Park adjacent to this area; baseball fields (Ball Fields No. 5 and No. 6) separated by a planted area; additional tree-lined lawns with pathways that connect the shared-use path and the East River Promenade with outdoor fitness equipment enclosed with a tall chain-link fence; the Track and Field Complex; and the area of East River Park north of the Track and Field Complex up to East 8th Street.

Other comparable resources are Coleman Field and Murry Bergtraum Softball Field, which are just outside of the ½-mile study area. Nearly all 29 other open space resources in the ½-mile study area have comparable passive recreation areas (lawns, pathways, seating, etc.). Aside from other sections of East River Park, which may also be temporarily unavailable due to construction, there are no comparable shared-use pathways in the ½-mile study area.

Segment 3

Segment 3 is approximately 7.83 acres and incorporates open space resources in East River Park, from north of East 8th Street to East 13th Street between the FDR Drive and the East River. The resources (moving south to north) within this segment include: the shared-use path adjacent to the FDR Drive and the East River Promenade adjacent to the East River from East 8th Street to East 13th Street; maintenance yards and paved seating areas separated by planted areas that connect the shared-use path to the East River Promenade between the Track and Field Complex and baseball fields (Ball Fields No. 7 and No. 8); a comfort station and playground at the terminus of the East 10th Street bridge; a paved playground, which contains play equipment, a sprinkler, and benches enclosed by a metal fence; basketball half-courts; and areas to grill and picnic. Additionally, Segment 3 is inclusive of the East 10th Street Bridge. At the northern end of the park, where the esplanade transitions to a narrow path alongside the Con Edison East River Generating Facility, there are trees and a grassy area with benches and fixed tables.

Outside of Segment 3, comparable resources of similar type and quality could be utilized at Dry Dock Playground and Tompkins Square Park (basketball courts). Nearly all 29 other open space resources in the ½-mile study area have comparable passive recreation areas (lawns, pathways, seating, etc.). Aside from other sections of East River Park, which may also be temporarily unavailable due to construction, there are no comparable shared-use pathways in the ½-mile study area. Additionally, there are no comparable grilling areas within the ½-mile study area.

Segment 4 (Murphy Brothers Playground and Captain Patrick J. Brown Walk)

Segment 4 is approximately 2.96 acres and incorporates approximately 1.27 acres of Murphy Brothers Playground. Located east of Stuyvesant Town, Murphy Brothers Playground includes a mixture of active and passive recreational amenities, such as tee-ball fields, a basketball court, playground equipment, hopscotch squares, and benches. Segment 4 also includes Captain Patrick J. Brown Walk, an esplanade that runs along the shoreline, which also serves as the East River

Bikeway. The surface of the walk is covered in decorative pavers and contains benches and an ornamental fence along the FDR Drive. Captain Patrick J. Brown Walk provides expansive river views that include the Queens waterfront, Roosevelt Island, the Ed Koch Queensboro Bridge, and Midtown Manhattan, including views of the United Nations Secretariat and the Empire State Building.

Outside of Segment 4, comparable resources of similar type and quality to Murphy Brothers Playground include, but are not limited to the Baruch Playground, P.S. 110 Playground, Sol Lain Playground, and Augustus St. Gardens Playground. Asser Levy Playground, located directly north of Murphy Brothers Playground at East 23rd Street and would potentially be open during construction of this Segment under certain alternatives (described below).

Segment 5 (Stuyvesant Cove Park)

Segment 5 is approximately 3.27 acres and incorporates approximately 1.90 acres of Stuyvesant Cove Park. Located along the waterfront, Stuyvesant Cove Park provides passive recreation, gardens, and paved area which is used for educational programming and special events (e.g., movies). In addition to the walking, jogging, and bicycling paths, park users may fish, or utilize benches and tables for social gathering or waterfront viewing. The northernmost portion of the park includes the Solar One building, which is maintained by a non-profit organization of the same name. The Solar One Environmental Education Center is proposed to be rebuilt as part of a separate project. Segment 5 also includes an access point to the NYC Ferry service. Construction activities within this segment are not anticipated to obstruct NYC Ferry access or service.

Outside of Segment 5, a comparable resource of similar type and quality includes Stuyvesant Square located within the ½-mile study area along 2nd Avenue between East 15th and East 17th Street.

Segment 6 (Asser Levy Playground)

Segment 6 is approximately 1.79 acres and incorporates approximately 0.77 acres of Asser Levy Playground. The totality of Asser Levy Playground is 2.44 acres. Construction would require use of the park excluding the Asser Levy Recreation Center building and the outdoor pools. While construction would likely disturb the outdoor pool temporarily, it is anticipated that construction would take place during the off-season of the pools (mid-September to early June) and not affect the operational season of the pools. Located just north of Peter Cooper Village, this segment is comprised of the Asser Levy Recreation Center, located just north of East 23rd Street, as well as the playground complex adjacent to the recreation center. Asser Levy Recreation Center houses a diverse set of active areas, including an indoor pool within the recreation center building, an outdoor intermediate pool, and an outdoor wading pool located east of the recreation center building. Asser Levy Playground contains specially designed free-form game tables, wood and concrete benches, drinking fountains, as well as pull-up bars, balance boards, steps and ramps, chain ladders, and parallel bars. Neighborhood residents and visitors play ping pong, badminton, chess, soccer, football, tee-ball, exercise, jog, practice yoga, or enjoy shaded seating on an expanded park area that was former Right-of-Way. Outdoor adult fitness equipment is also available.

Outside of Segment 6, comparable resources of similar size and quality include, but are not limited to the Baruch Playground, Sol Lain Playground, and Augustus St. Gardens Playground. Murphy Brothers Playground, located directly south of Asser Levy Playground is expected to be open during construction of this Segment under certain alternatives (described below).

F. ENVIRONMENTAL EFFECTS

NO ACTION ALTERNATIVE – (ALTERNATIVE 1)

DIRECT EFFECTS

As described in Chapter 5.3, "Open Space," some of these projects have the potential to affect open spaces within the study area.

The Pier 42 project will introduce approximately 2.93 acres of new passive open space to the study area by 2021. Pier 35 will introduce approximately 0.65 acres of new passive open space to the study area by 2019. The New York City Economic Development Corporation's (NYCEDC's) East River Waterfront Esplanade-Phase IV project by 2025will introduce 1.23 acres of recreational open space, of which, 0.62 is active and 0.62 is passive. The Two Bridges Large-Scale Residential Development (LSRD) project will convert the existing private Rutgers Slip Open Space into 0.77 acres of publicly accessible open space, of which, 0.21 acres is active and 0.56 acres is passive by 2021. With the construction of these projects, open space within the ½-mile study area would increase from 85.15 acres under existing conditions to approximately 85.80 acres by the 2020 analysis year and 90.73 acres by the 2025 analysis year. Of the 90.73 acres, 54.49 will be active and 36.87 acres will be passive (see Table 5.3-4 and **Table 6.2-1**).

Table 6.2-1
Alternative 1: Open Space in ½-Mile Study Area (Acres)
No Action Alternative

Analysis Year	Open Space in the ½-Mile Study Area (Acres)	Active (Acres)	Passive (Acres)
2020	85.80	53.66	32.14
2021	89.50	53.87	35.63
2022	89.50	53.87	36.25
2023	89.50	53.87	36.25
2024	89.50	53.87	36.25
2025	90.73	54.49	36.87

Note: Pier 35 will introduce 0.65 acres of passive open space by 2019; Pier 42 will introduce 2.93 acres of passive open space by the 2021 analysis year; the Two Bridges-LSRD development would introduce 0.77 acres, on its Site 5, of which 0.21 acres will be active and 0.56 acres will be passive; and NYCEDC's East River Esplanade-Phase IV project will introduce 1.23 acres, of which 0.62 acres will be active and 0.62 acres will be passive.

Under Alternative 1, with no new comprehensive coastal protection system installed in the project area, existing and planned open space resources will remain vulnerable to storm damage.

INDIRECT EFFECTS

The open space ratios for Alternative 1 were calculated for each analysis year, accounting for the planned open spaces and new residents from planned projects. The open space ratios in **Table 6.2-2** were calculated by dividing the existing and projected open space acreages within the ½-mile study area from **Table 6.2-1** by the combined residential population and projected residential population anticipated to be generated from the projected development as outlined in **Appendix A1**. The open space ratios under existing conditions and Alternative 1 are used as the baseline condition for the indirect effects analysis for the Preferred Alternative.

As shown in **Table 6.2-2**, during each analysis year total open space ratios will be below the Citywide Community District median ratio of 1.5 acres per 1,000 residents.

Table 6.2-2
Open Space Ratios for ½-Mile Study Area with Future Residential Population
No Action Alternative

Analysis Year	Open Space Ratios Acres per 1,000 Residents		
	Total	Active	Passive
2020	0.53	0.33	0.20
2021	0.54	0.32	0.21
2022	0.53	0.32	0.22
2023	0.55	0.33	0.22
2024	0.53	0.32	0.21
2025	0.52	0.31	0.21

PREFERRED ALTERNATIVE: FLOOD PROTECTION SYSTEM WITH A RAISED EAST RIVER PARK (ALTERNATIVE 4)

DIRECT EFFECTS ANALYSIS

Construction sequencing

As described in Chapter 6.0, "Construction Overview," a preliminary construction schedule was developed for the Preferred Alternative that illustrates which construction segment would be engaged in construction activity by month and year for the 2020–2023 analysis period (see Table 6.0-2 in Chapter 6.0, "Construction Overview"). Activities at each of the construction segments are anticipated to range in duration from approximately two to three years with periods of overlapping activities when work on multiple segments would be occurring concurrently during a particular year.

For the purposes of the construction open space analysis, using the preliminary construction schedule as a basis, the information provided in **Table 6.2-3** was developed. To evaluate a reasonable worst-case scenario for the temporary displacement of open space resources, it is assumed that the construction segment is engaged in construction activities for the full analysis year (i.e., if construction within a segment is complete within an analysis year, this analysis still assumes that the segment is unavailable for that full analysis year). A description of the reconstructed resources that would become available mid-year, if any, is provided below.

Table 6.2-3
Construction Open Space Direct Effects Analysis
The Preferred Alternative: Summary Table

Analysis Year	Construction Segments[1]	Displaced Open Space (Acres)
2020	1, 2, 3, 4, 5	42.35
2021	1, 2, 3, 4, 5, 6	43.12
2022	1, 2, 3, 4, 6	41.22
2023	1, 2, 3, 6	39.95
2024[2]	None	Minimal
2025[2]	None	Minimal

Notes:
[1] The Segments within the Project Areas that are engaged in construction activities and therefore temporarily unavailable to the public. See **Figures 6.2-1 through 6.2-4**.
[2] Under the Preferred Alternative, construction would be complete by May 2023 with minimal construction activities displacing open space areas during the 2024 and 2025 analysis years.

Construction segments that would be temporarily unavailable during each analysis year and are illustrated in **Figures 6.2-1 through 6.2-4**.

2020 Analysis Year

Commencing in March 2020, construction Segments 1, 2, and 3 (encompassing the entirety of East River Park), as well as Segments 4 (Murphy Brothers), and 5 (Stuyvesant Cove Park) would be unavailable to the public. Construction Segment 6 (Asser Levy Playground) would not yet be engaged in construction activities and would therefore remain open to the public during the first analysis year (see **Figure 6.2-1**). By the 2020 analysis year, Pier 35 (planned No Action project) is anticipated to be complete and will introduce 0.65 acres of passive open space on the waterfront to the study area. Due to the temporary displacement of approximately 42.35 acres, there is the potential for temporary significant adverse direct effects during this analysis year.

2021 Analysis Year

All construction segments would be unavailable to the public (see **Figure 6.2-2**). Additionally, both Asser Levy Playground (Segment 6) and Murphy Brothers Playground (Segment 4) would be engaged in construction activities during this analysis year. By the 2021 analysis year, the Pier 42 project and the Rutgers Slip Open Space (planned No Action projects) will introduce approximately 3.70 acres—of which 0.21 acres is active and 3.49 acres is passive—to the study area. However, due to the temporary displacement of approximately 43.12 acres, there is the potential for temporary significant adverse direct effects during this analysis year.

2022 Analysis Year

Construction Segments 1, 2, 3 (encompassing the entirety of East River Park), 4 (Murphy Brothers Playground), and 6 (Asser Levy Playground) would be unavailable to the public. The majority of construction activities would be complete in Segment 5 (Stuyvesant Cove Park) and would be available to the public by this analysis year. However, due to the temporary displacement of approximately 41.22 acres of public open space, there is the potential for temporary significant adverse direct effects during this analysis year (see **Figure 6.2-3**).

Both Asser Levy Playground (Segment 6) and Murphy Brothers Playground (Segment 4) would be engaged in construction activities during this analysis year.

Construction on the flyover bridge would commence during this analysis year. Therefore, additional temporary displacement of Captain Patrick J. Brown Walk would occur. However, this additional displacement (approximately 1 acre) is minimal compared to the overall temporary displacement of open space resources during this analysis year.

2023 Analysis Year

Construction Segments 1, 2, and 3 (encompassing the entirety of East River Park), as well as Segment 6 (Asser Levy Playground), would be unavailable to the public. It is anticipated that Segment 4 (Murphy Brothers Playground) would be reopened and would introduce reconstructed open space resources to the public (see **Figure 6.2-4**). Due to the temporary displacement of approximately 39.95 acres, there is the potential for temporary significant adverse direct effects during this analysis year. In addition, the shared-used flyover bridge would be under construction during this analysis year.

2024 and 2025 Analysis Years

Construction would largely be complete by the 2024 and 2025 analysis years (September 2023) with the exception of construction on the shared-use flyover bridge during these analysis years, which would result in the temporary displacement of Captain Patrick J. Brown Walk. However, this additional displacement is minimal (approximately 1 acre). East River Park, Stuyvesant Cove

Park, Murphy Brothers Playground, and Asser Levy Playground would be reopened and would introduce reconstructed open space resources to the public. The displaced open space areas would be restored and reopened to the public with new and enhanced park features.

Although there is the potential for temporary significant adverse effects on open space during construction for the 2020 to 2023 analysis years under the Preferred Alternative, once completed, the proposed project would have positive direct effects on East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground, by enhancing their design through reconstruction and their improved programming, including landscapes, recreational fields, playgrounds, and/or amenities. In addition, accessibility to East River Park would be enhanced with the reconstruction of the pedestrian bridges at Delancey Street, East 10th Street, and Corlears Hook, a new raised landscaped park-side plaza landing at the entrance to the park from the East Houston Street overpass, and the construction of a shared-use flyover bridge to address the Con Edison pinch point. Under the Preferred Alternative, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. Unlike the No Action Alternative, Alternative 2 and Alternative 3, the Preferred Alternative would also protect East River Park from future design storms.

Construction Noise

As described in Chapter 6.12, "Construction—Noise and Vibration," East River Park, Asser Levy Playground (outdoor) and Murphy Brothers Playground would be closed under the Preferred Alternative during the times when construction activities would occur at these park resources. As described in Chapter 6.12, "Construction—Noise and Vibration," at the open space receptors along the FDR Drive (Corlears Hook Park and Stuyvesant Cove Park), construction is predicted to produce noise levels at these receptors in the mid 60s to mid 80s dBA, resulting in noise level increases of up to approximately 10 dBA when construction occurs at the shortest distance from them. The predicted noise level increases at these open space locations would be noticeable and would exceed CEQR construction noise screening thresholds, and the total noise levels would exceed the levels recommended by CEQR for passive open spaces (55 dBA L_{10}). (Noise levels in these areas also exceed CEQR recommended values for existing and No Action conditions.) However, the total noise levels would be in the range considered typical for Manhattan, and for this area in general. Many New York City parks and open space areas located near heavily trafficked roadways experience comparable, and sometimes higher noise levels.

At these open space receptors, noise level increases exceeding the CEQR construction noise screening thresholds are predicted to occur during no more than two of the five years of construction. At these open space receptors, the construction activity that would produce the highest noise levels would be pile installation, as well as landscaping work. Both pile installation and landscaping would occur in a single location for a relatively brief period of time, typically not more than a month. Consequently, the maximum noise levels predicted by the construction noise analysis would not persist throughout the entire construction period. Lower construction noise levels that would be expected to occur during activities other than pile installation may still result in exceedances of CEQR construction noise screening thresholds at some times, but would be substantially lower than the maximum levels that would occur during pile installation.

Maximum construction noise levels at receptors nearest floodwall construction would be slightly lower because pile driving would occur further from the receptors.

While the noise from construction would be noticeable at times, the duration of construction noise would be limited at any given area of open space that would remain open in proximity to

construction activities. Furthermore, the construction noise predictions are conservative in that they consider the area of open space that remains open and accessible closest to the construction area. Based on these factors, construction noise at nearby open space receptors would not result in a significant adverse effect.

At Asser Levy Recreation Center, construction activity including pile driving that would occur west of the FDR Drive immediately adjacent to this building would produce exterior noise levels in the mid 80s dBA during the day and at nighttime, resulting in noise level increases up to approximately 19 dBA. These noise level increases would be noticeable and noise levels in the mid 80s are high for this area. Noise level increases at the Recreation Center exceeding the CEQR construction noise screening thresholds are predicted to occur during the construction activity including pile installation in Reach P west of the FDR Drive immediately adjacent to this building. Construction in Reach P is expected to occur over the course of approximately 20 months, however, pile installation would occur in a single location for a relatively brief period of time not greater than 4 months. It is expected that this pile installation would be scheduled outside of the summer months when the Recreation Center's pool would be in use. While the duration of maximum noise levels at this location would be limited and the receptor is typically used for active recreation with a lower sensitivity to noise, the maximum noise levels predicted by the construction noise analysis are high, i.e., in the "clearly unacceptable" range according to CEQR noise exposure guidance. Consequently, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction. The feasibility of utilizing less impactful construction methods (i.e., press in pile) are being explored to mitigate this noise effect.

Construction of the proposed project would be required to follow the requirements of the NYC Noise Control Code and would use additional measures, including both path control (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors) and source control (i.e., reducing noise levels at the source or during the most sensitive time periods) to minimize the effects of the proposed project's construction activities on the surrounding community.

Construction Air Quality

Construction of the proposed project under the Preferred Alternative would adhere to Local Law 77 of 2003 for emissions reductions on non-road construction engines, New York City Air Pollution Control Code regulations regarding construction-related dust emissions, and New York City Administrative Code limitations on construction-vehicle idling time. With the implementation of these measures, the detailed analysis presented in Chapter 6.10, "Construction—Air Quality," showed there would be no significant adverse air quality effects on sensitive receptors, including open space areas near the construction activities.

INDIRECT EFFECTS

The indirect effects analysis considers how the temporary closures of open space during construction would affect the utilization of remaining study area open spaces, which due to the closures, are expected to experience greater demand. The analysis will focus on the quantification of displaced open space discussed in the direct effects analysis above by analysis year (see **Table 6.2-4**). As a result of the extended open space closures due to construction, the total open space ratios within the study area would decrease in the Preferred Alternative from the No Action Alternative. The indirect effects analysis is summarized in **Table 6.2-4**.

Table 6.2-4
Construction Open Space Indirect Effects Analysis
The Preferred Alternative: Summary Table

Analysis Year	No Action Open Space Ratio (Acres/1,000)	Construction Open Space Ratio (Acres/1,000)	Percent Change	Significant Adverse Effect
Alternative 4				
2020	0.54	0.27	-49.64%	Yes
2021	0.53	0.28	-47.80%	Yes
2022	0.55	0.29	-47.67%	Yes
2023	0.53	0.30	-42.57%	Yes
2024*	0.53	0.53	0.00%	No
2025*	0.52	0.52	0.00%	No

Note:
* Under the Preferred Alternative, construction of the flood protection system and raised East River Park would be complete by 2023 and minimal construction activities of other components displacing open space areas would occur in the 2024 and 2025 analysis years.

As the proposed project would reduce open space ratios by a minimum of 42.57 percent in 2023 and a maximum of 49.64 percent in 2020, the proposed project would result in potential temporary significant adverse indirect effects on open space resources within the study area. As shown in **Table 6.2-4**, there are no significant adverse indirect effects for the 2024 and 2025 analysis years, as the majority of construction would be complete and the displaced open space areas would be restored and reopened to the public with new and enhanced park features.

OTHER ALTERNATIVE: FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – BASELINE (ALTERNATIVE 2)

As Alternative 2 involves reconstruction of fewer components (e.g., pedestrian bridge landings), the magnitude of construction activities during the peak construction period for Alternative 2 would be lower than the Preferred Alternative. In addition, the displacement of open space necessary to accommodate construction under Alternative 2 would be comparable to or less than that under the Preferred Alternative. Therefore, any potential temporary significant adverse direct and indirect open space effects identified under Alternative 2 would be of lesser magnitude than the effects identified under the Preferred Alternative presented above.

Under Alternative 2, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. However, East River Park will remain vulnerable to storm damage from future design storms.

OTHER ALTERNATIVE: FLOOD PROTECTION SYSTEM ON THE WEST SIDE OF EAST RIVER PARK – ENHANCED PARK AND ACCESS (ALTERNATIVE 3)

DIRECT EFFECTS ANALYSIS

Construction Sequencing

Similar to the Preferred Alternative, a preliminary construction schedule was developed for Alternative 3. Activities at each of the construction segments are anticipated to range in duration from approximately two to three years with periods of overlapping activities when work on multiple segments would be occurring concurrently during a particular year (see **Table 6.2-5**). To

evaluate a reasonable worst case scenario for the temporary displacement of open space resources, it is assumed that the construction segment is engaged in construction activities for the full analysis year (i.e., If construction within a segment is complete within an analysis year, this analysis still assumes that the segment is unavailable for that full analysis year).However, a qualitative description of the reconstructed resources that would become available following the completion of construction is provided below. The construction segments that would be temporarily unavailable during each analysis year are summarized in **Table 6.2-5** and illustrated in **Figures 6.2-5 through 6.2-8**.

Table 6.2-5
Construction Open Space Direct Effects Analysis
Alternative 3: Summary Table

Analysis Year	Construction Segments[1]	Displaced Open Space (Acres)
2020	1, 2, 3, 4	40.45
2021	1, 2, 3, 4, 5	42.35
2022	1, 2, 3, 4, 5, 6	43.12
2023	1, 2, 3, 4, 6	41.22
2024	1, 2, 3, 6	39.95
2025[2]	1, 2, 3, 6	39.95

Note:
[1] The segments within the Project Areas that are engaged in construction activities and therefore temporarily unavailable to the public. See **Figures 6.2-5 through 6.2-8**.
[2] Construction is anticipated to be complete by March 2025.

2020 Analysis Year

Commencing in May 2020, construction segments 1, 2, 3, and 4 (Murphy Brothers Playground) would be unavailable to the public. Construction segments 5 (Stuyvesant Cove Park), and 6 (Asser Levy Playground) would not yet be engaged in construction activities and would therefore remain open to the public during the first analysis year (see **Figure 6.2-5**). By the 2020 analysis year, Pier 35 (planned No Action project) is anticipated to be complete and would introduce 0.65 acres of passive open space on the waterfront to the study area. Due to the temporary displacement of approximately 40.45 acres, there is the potential for temporary significant adverse direct effects during this analysis year.

2021 Analysis Year

Construction, construction segments 1, 2, 3, 4 (Murphy Brothers Playground), and 5 (Stuyvesant Cove Park) would be unavailable to the public. It is anticipated that Asser Levy Playground (Segment 6) would remain open during this second analysis year (see **Figure 6.2-6**). By the 2021 analysis year, the Pier 42 project and the Rutgers Slip Open Space (planned No Action projects) will introduce approximately 3.70 acres, of which 0.21 acres is active and 3.49 acres is passive, to the study area. However, due to the temporary displacement of approximately 42.35 acres, there is the potential for temporary significant adverse direct effects during this analysis year.

2022 Analysis Year

All construction segments would be unavailable to the public, resulting in the temporary displacement of approximately 43.12 acres of public open space. Therefore, as with the 2021 analysis year, there is potential for temporary significant adverse direct effects (see **Figure 6.2-7**).

Both Asser Levy Playground (Segment 6) and Murphy Brothers Playground (Segment 4) would be engaged in construction activities during this analysis year.

Construction of the shared-use flyover bridge would commence during this analysis year. Therefore additional temporary displacement of Captain Patrick J. Brown Walk would occur. However, this additional displacement is minimal compared to the overall temporary displacement of open space resources during this analysis year.

2023 Analysis Year

Construction segments 1, 2, 3, 4 (Murphy Brothers Playground), and 6 (Asser Levy Playground) would be unavailable to the public. The majority of construction activities will have been complete in Segment 5 (Stuyvesant Cove Park) and would be available to the public by this analysis year. However, due to the temporary displacement of approximately 41.22 acres of public open space, there is the potential for temporary significant adverse direct effects during this analysis year (see **Figure 6.2-7**).

As with the 2022 analysis year both Asser Levy Playground (Segment 6) and Murphy Brothers Playground (Segment 4) would also be engaged in construction activities during this analysis year. In addition, the shared-use flyover bridge would be under construction.

2024 Analysis Year

Construction Segments 1, 2, 3, and 6 (Asser Levy Playground) would be unavailable to the public. Approximately 39.95 acres would be temporarily displaced under this analysis year (see **Figure 6.2-8**). Therefore, there is potential for temporary significant adverse direct effects during this analysis year. In addition, the shared-use flyover bridge would be under construction during this analysis year.

2025 Analysis Year

Construction Segments 1, 2, 3, and 6 (Asser Levy Playground) would be unavailable to the public, however construction is anticipated to be complete by March 2025 (see **Figure 6.2-8**). Additionally, by the 2025 analysis year, the East River Waterfront Esplanade-Phase IV project (planned No Action project) will introduce 1.23 acres of recreational open space, of which, 0.62 acres will be active and 0.62 acres will be passive. However, approximately 39.95 acres would be temporarily displace under this analysis year. Therefore, there is potential for temporary significant adverse direct effects during this analysis year. In addition, the shared-use flyover bridge would be under construction during this analysis year.

Although there is the potential for temporary significant adverse effects on open space during construction for every analysis year under Alternative 3, once completed, the proposed project would also have positive direct effects similar to those described under the Preferred Alternative East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, and Asser Levy Playground. Similar to the Preferred Alternative, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. However, East River Park will remain vulnerable to storm damage from future design storms under Alternative 3.

Construction Noise

Similar to the Preferred Alternative, East River Park, Asser Levy Playground (outdoor), and Murphy Brothers Playground would be closed during the times when construction activities would occur at these park resources.

Construction of the proposed project would be required to follow the requirements of the *New York City Noise Control Code*. At the open space receptors along the FDR Drive (Corlears Hook Park and Stuyvesant Cove Park), the predicted noise level increases at these open space locations

would be noticeable and would exceed CEQR construction noise screening thresholds. However, the total noise levels would be in the range considered typical for Manhattan, and for this area in general.

At Asser Levy Recreation Center, construction activity including pile driving that would occur west of the FDR Drive immediately adjacent to this building would produce noise level increases that would be noticeable and are considered relatively high, i.e., in the "clearly unacceptable" range according to CEQR noise exposure guidance. Consequently, as with the Preferred Alternative, the Asser Levy Recreation Center is predicted to experience a significant adverse noise effect as a result of construction of Alternative 3.

Construction Air Quality

Construction of the proposed project under Alternative 3 would adhere to Local Law 77 of 2003 for emissions reductions on non-road construction engines, *New York City Air Pollution Control Code* regulations regarding construction-related dust emissions, and *New York City Administrative Code* limitations on construction-vehicle idling time. With the implementation of these measures, the detailed analysis presented in Chapter 6.10, "Construction—Air Quality," showed that there would be no significant adverse air quality effects on sensitive receptors, including open space areas near the construction activities. The effects of the proposed project's construction activities on air quality is discussed in more detail in Chapter 6.10, "Construction—Air Quality."

INDIRECT EFFECTS

The indirect effects analysis considers how the temporary closures of open space during construction would affect the utilization of remaining study area open spaces, which due to the closures, are expected to experience greater demand. The analysis will focus on the quantification of displaced open space as discussed in the direct effects analysis above by analysis year (see **Table 6.2-6**). The displaced open space (in acres) was utilized to obtain total open space ratios for Alternative 3, which are compared to the No Action Alternative to determine if there would be temporary significant adverse indirect effects.

As a result of the extended open space closures due to construction, the total open space ratios within the study area would decrease in Alternative 3 from the No Action Alternative. The indirect effects analysis is summarized in **Table 6.2-6**.

Table 6.2-6
Construction Open Space Indirect Effects Analysis
Alternative 3: Summary Table

Analysis Year	Displaced Open Space (Acres)	No Action Open Space Ratio (Acres/1,000)	Construction Open Space Ratio (Acres/1,000)	Percent Change	Significant Adverse Effect
Alternative 3					
2020	40.45	0.53	0.28	-47.14%	Yes
2021	42.35	0.54	0.28	-47.32%	Yes
2022	43.12	0.53	0.28	-48.18%	Yes
2023	41.22	0.55	0.30	-46.05%	Yes
2024	39.95	0.53	0.29	-44.63%	Yes
2025	39.95	0.52	0.29	-44.03%	Yes

According to the *CEQR Technical Manual*, if the percent change between the No Action and With Action open space ratios exceeds 5 percent, it is considered significant, as the loss of open space may result in overburdening of other existing facilities within the study area. As the proposed project would reduce open space ratios by a minimum of 44.03 percent in 2025 and a maximum of 48.18 percent in 2022, the proposed project would result in potential temporary significant adverse indirect effects on open space resources within the study area under Alternative 3.

OTHER ALTERNATIVES– FLOOD PROTECTION SYSTEM EAST OF FDR DRIVE (ALTERNATIVE 5)

The displacement of open space necessary to accommodate construction under Alternative 5 would be comparable to Alternative 4 for park components and comparable to Alternative 3 with respect to the flyover bridge component. Therefore, any potential temporary significant adverse direct and indirect open space effects identified under Alternatives 3 and 4 would be of comparable magnitude.

G. MITIGATION OF EFFECTS

The open space resources within the project area, including East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, Asser Levy Playground, and Captain Patrick J. Brown Walk, would be partially or fully closed for at least a portion of the approximately 3.5- to 5-year-long construction duration to accommodate the construction of the proposed project. Therefore, there is potential for temporary significant adverse direct effects over multiple analysis years due to the displacement of the numerous recreational resources in East River Park across all alternatives. The open space ratios would exceed the *CEQR Technical Manual* threshold of 5 percent change between the With Action and No Action conditions during construction. Temporary displacement of open space for construction over the 5 percent threshold is considered significant since it could result in the overburdening of remaining available open spaces within the study area. Therefore, the analysis concluded that there would be the potential for significant adverse indirect effects on open space during the construction period across all alternatives. As described in further details below, on-site or off-site measures would be made to partially mitigate these open space effects to the greatest extent practicable.

According to the *CEQR Technical Manual*, on-site improvements are considered a mitigation measure. Although construction would temporarily displace open space resources in East River Park, Stuyvesant Cove Park, Murphy Brothers Playground, Asser Levy Playground, and Captain Patrick J. Brown Walk under the With Action Alternatives, the end result would be a refurbished open space resource. After construction, East River Park would be newly landscaped and raised park with pathways for the Preferred Alternative, which would enhance the user experience of the park. In addition, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. The Preferred Alternative would be especially beneficial for the open space resources in East River Park, as it includes a full reconstruction of the park, raising it by approximately eight feet to meet the design flood protection criteria. These enhancements would ensure that East River Park would be more resilient in future storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future storm events on the community. The Preferred Alternative propose the replacement of pedestrian crossings at the Delancey Street, East 10th Street, and Corlears Hook bridges. The enhancement of pedestrian bridges to East River Park would improve the east-west connectivity for residents in the ½-mile study area to East River Park upon

project completion. The improvements to these open space resources under the proposed project would be considered partial mitigation. By remedying a long-standing restriction/obstacle at the Con Edison "pinch-point," the proposed project under all alternatives would significantly improve the usability and access to the greenway with the construction of the shared-use flyover bridge.

The proposed project introduces potential temporary significant adverse direct and indirect effects on open space during the construction period. Since the proposed project would result in temporary significant adverse effects, potential on-site or off-site measures to mitigate these effects to the greatest extent practicable are being explored by the City.

POTENTIAL MITIGATION MEASURES

As per *CEQR Technical Manual* guidance, a mitigation effort would be to improve existing open spaces in the study area and increase the utility, safety, and capacity of those resources. To that end, the mitigation measures being explored for the Preferred Alternative by the City include:

- The New York City Department of Parks and Recreation (NYC Parks) would work to accommodate permit users, with youth leagues as highest priority, within existing facilities under NYC Parks jurisdiction. Due to the high volume of permitted use across all NYC Parks, permittees may have to limit playing time to be accommodated;
- The City is working with other entities with open space resources, such as DOE, to identify recreational resources that may be opened to the community during construction;
- The City is assessing opportunities to open parts of East River Park as work is completed;
- NYC Parks is exploring providing alternative recreational opportunities throughout the Lower East Side neighborhoods through programs like Shape-Up classes, walking clubs, Arts, greening programs, etc.;
- The New York City Department of Transportation (NYCDOT) would reroute greenway users to the most direct alternate route within the existing bicycle network, primarily along the protected bike lanes on First Avenue and Second Avenue; bicycles looking to access Stuyvesant Cove Park ferry landing would have access via the existing protected bike lanes onto East 20th Street;
- Investigating supporting bicycle infrastructure upgrades along the alternate route, including new markings and signage;
- NYC Parks is exploring a Lower East Side greening program with the opportunity to plant up to 1,000 trees in parks and streets, and create up to 40 bioswales;
- The City is exploring purchasing lighting to be used at several Lower East Side parks to extend playing time at fields for permitted use during construction of the proposed project;
- The City is assessing opportunities for improvements to parks and playgrounds in the vicinity; and
- The City is also assessing the feasibility of utilizing quieter construction methods (i.e., press in pile), to partially mitigate noise effects that would be experienced at the Asser Levy Recreation Center.

Additionally, the introduction of new publicly accessible open space such as Pier 42 Park, Pier 35, and the Phase IV of the East River Waterfront Esplanade project, totaling 4.81 acres could be considered a mitigation effort. In addition, there has been funding allocated for the demolition of LaGuardia Bathhouse and interim recreation improvements which will create approximately 7,000 square feet of new publicly accessible open space.

Although full mitigation of the significant adverse construction open space effects is not possible as it is not feasible to acquire enough land to develop new open spaces to replace the existing resources that would be displaced under the proposed project, the measures proposed above would mitigate to the extent practicable, the construction effects on open space resources. Furthermore, the proposed project would substantially improve existing open space resources. All temporary displacement would be met with the refurbishment and re-construction of the displaced open space amenities. After construction, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground would be redesigned and reconstructed and East River Park would be reconstructed as a newly landscaped and raised open space with pathways, which would enhance the user experience of the park. Upon completion of the proposed project, the upland open space resources in the ½-mile study area would be protected against future storm events, thus increasing the utility and safety of those resources. Furthermore, the Preferred Alternative would be especially beneficial for the open space resources in East River Park, as the alternatives seek to enhance the park features to be fully resilient in future design storm events. The flood protection measures proposed to be integrated into park features aim to reduce the effects from future design storm events on the community.

IMPROVEMENT OF NON-MOTORIZED ACCESS TO PARKS

The Preferred Alternative would include the replacement of the Delancey Street, East 10th Street, and the Corlears Hook bridges. The enhancement of these bridges to East River Park would improve the east-west connectivity for residents in the ½-mile study area to East River Park upon project completion.

The proposed project would also include a shared-use flyover bridge in the East River Bikeway along the Con Edison facility between East 13th Street and East 15th Streets. This would allow pedestrians and cyclists to travel between Stuyvesant Cove Park and the East River Esplanade/East River Bikeway without conflict with visitors travelling in the opposite direction or requiring cyclist dismounts. As stated in the *CEQR Technical Manual*, the implementation of missing segments of the City's greenway network would be considered a mitigation strategy. By remedying a long-standing restriction/obstacle, the proposed project would significantly improve the usability and access to the greenway. ✷