MEMORANDUM OF UNDERSTANDING FOR THE OPERATIONS AND MAINTENANCE OF THE EAST SIDE COASTAL RESILIENCY FLOOD PROTECTION SYSTEM

This Memorandum of Understanding ("MOU"), dated and effective as of ________, 2021, shall confirm the mutual understandings between the New York City Department of Transportation ("DOT"), the New York City Department of Environmental Protection ("DEP"), the New York City Department of Parks & Recreation ("Parks"), the New York City Economic Development Corporation ("EDC"), the New York City Department of Design and Construction ("DDC"), the New York City Mayor's Office of Climate Resiliency ("MOCR"), New York City Emergency Management ("EM"), and the New York City Office of Management & Budget ("OMB") regarding the obligations of each agency (each individually a "Party" and collectively the "Parties") in relation to the management of the operations and maintenance ("O&M") program for the flood protection system ("FPS") constructed as part of the U.S. Department of Housing and Urban Development ("HUD") Community Development Block Grant-Disaster Recovery ("CDBG-DR") funded East Side Coastal Resiliency ("ESCR") project in the Lower East Side, Manhattan.

WHEREAS, pursuant to the Disaster Relief Appropriations Act, 2013 (Public Law 113-2, approved January 29, 2013) and subsequent amendment for Rebuild by Design projects (79 FR 62182, published October 16, 2014), HUD awarded CDBG-DR grant funds to the City of New York ("City") to assist in the design and construction of the ESCR project conceived through the Rebuild by Design, a planning and design competition to increase resilience in the Hurricane Sandy-affected region;

WHEREAS, the ESCR FPS once constructed will reduce the risk of flooding from storm surge and rainfall for the area between Montgomery Street and East 25th Street within the Federal Emergency Management Agency ("FEMA") 100-year Special Flood Hazard Area, as well as areas projected to be within the 100-year flood hazard area in the 2050s taking into account the 90th percentile projection for sea level rise, as referenced in Exhibit A;

WHEREAS, the ESCR FPS is comprised of a combination of floodwalls and closure structures (i.e., swing and roller floodgates) located primarily within the City right-of-way and in East River Park, as well as supporting interior drainage infrastructure, as referenced in Exhibit A; and

WHEREAS, pursuant to the CDBG-DR grant agreement, the City is responsible for operating and maintaining the ESCR FPS and is required to take action to ensure the system is certified and meets FEMA standards contained in Title 44 of the Code of Federal Regulations, Part 65.10 and is subsequently accredited by FEMA, which includes identifying specific agency(ies) responsible for O&M of the FPS and conducting O&M activities in accordance with the an established O&M Manual for the system, as referenced in Exhibit B.

NOW THEREFORE, the Parties hereby set forth their understandings as follows:

I. Project Components and Responsible O&M Party

- **a.** FPS Components
 - i. Components of the FPS and corresponding responsible O&M Party are identified in Exhibit C;
 - ii. The ESCR FPS connects into existing flood protection systems designed and constructed by non-City entities at least two locations: (1) Consolidated Edison Company of New York ("Con Edison") property at the East River Generating Station (Block 988, Lot 1); and (2) U.S. Department of Veterans Affairs ("VA Medical Center") property (Block 955, Lot 5). O&M roles and responsibilities as

- it relates to the existing flood protection systems designed and constructed by Con Edison and VA Medical Center will be detailed under separate agreements and not part of this MOU.
- iii. Also not covered by this MOU are areas of the project that are constructed on Cityowned property, but will require access agreements for operation, inspection, and maintenance of the FPS on to properties not currently in City ownership. The four properties are (1) Gouverneur Gardens Housing Cooperative property (Block 244, Lot 19); (2) East River Housing Corporation property (Block 321, Lot 1); (3) New York City Housing Authority ("NYCHA") Jacob Riis Houses property (Block 367, Lot 1); and (4) Con Edison property (Block 990, Lot 1).
- iv. Coordination between relevant Parties and the Metropolitan Transit Authority (MTA) related to activation of MTA's flood protection for the Canarsie Tubes (L Train) will be detailed under separate agreements and not part of this MOU.

b. Other ESCR Project Components

i. In addition to providing reliable FPS in this area, the ESCR project improves access to and enhances open space resources along the waterfront, by reconstructing three pedestrian bridges (Corlears Hook Bridge, Delancey Street Bridge, and East 10th Street Bridge) and Houston Street entry plaza; reconstructing park amenities and landscaping in East River Park, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground; and reconstructing and reinforcing the bulkhead and esplanade. These improvements are within each responsible Party's existing jurisdiction and necessary operation, maintenance, and inspection would follow existing O&M programs and procedures of each agency; therefore, O&M of these components is not part of this MOU.

II. Party Responsibilities

- a. DOT's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. DOT has jurisdiction over the right-of-way at multiple locations throughout the City, and will be responsible for routine operations, maintenance, and inspection of the FPS components identified in Exhibit C, in accordance with the criteria established in the ESCR project O&M Manual;
 - ii. Emergency operations of FPS closure structures, in coordination with the New York City Department of Emergency Management and in accordance with the criteria established in the ESCR project Emergency Response Plan part of the O&M Manual for the FPS;
 - iii. Planning and coordination with DEP, Parks, and MOCR to maintain FEMA accreditation of the FPS; and
 - iv. Any other applicable responsibility listed herein or in the ESCR project O&M documents.
- **b.** DEP's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. DEP has jurisdiction over matters relating to the public sewer systems, and will be responsible for routine operations, maintenance, and inspection of the new and reconstructed sewer infrastructure critical to the FPS identified in Exhibit C; O&M is to be performed in accordance with standards established in the ESCR project O&M Manual or existing DEP protocols and procedures, whichever is most stringent;

- **ii.** Emergency operations of such sewer infrastructure critical to the FPS, in accordance with the criteria established in the ESCR project Emergency Response Plan part of the O&M Manual for the FPS;
- iii. Planning and coordination with DOT, Parks, and MOCR to maintain FEMA accreditation of the FPS: and
- iv. Any other applicable responsibility listed herein or in the ESCR project O&M documents.
- c. Parks' responsibilities under the MOU shall include, but not be limited to, the following:
 - i. Parks has jurisdiction over O&M in City parks, including maintenance of bulkheads and other waterfront infrastructure within parkland, and will be responsible for routine operations, maintenance, and inspection of the FPS components identified in Exhibit C, in accordance with standards established in the ESCR project O&M Manual;
 - **ii.** Emergency operation responsibilities established in the ESCR project Emergency Response Plan part of the O&M Manual for the FPS;
 - **iii.** Planning and coordination with DOT, DEP, and MOCR to maintain FEMA accreditation of the FPS; and
 - iv. Any other applicable responsibility listed herein or in the ESCR project O&M documents.
- **d.** EDC's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. Pursuant to the Maritime Contract between EDC and the New York City Department of Small Business Services ("DSBS"), EDC shall continue to be responsible for Stuyvesant Cove Park waterfront subsurface infrastructure, including the bulkhead and waterfront piles, as well as the reconstructed landscaping in this area, in accordance with existing EDC maintenance protocols and procedures;
 - **ii.** This MOU shall in no way override the existing Maritime Contract between EDC and DSBS. If a conflict should arise between the Maritime Contract and this MOU, the Maritime Contract shall govern, as it pertains to the rights and responsibilities of EDC and DSBS;
 - **iii.** If EDC interprets a conflict between the Maritime Contract and its responsibilities as delineated in the O&M Manual, it shall immediately notify all parties hereto;
 - **iv.** Emergency operation responsibilities established in the ESCR project Emergency Response Plan part of the O&M Manual for the FPS; and
 - v. Any other applicable responsibility listed herein or in the ESCR project O&M documents.
- e. DDC' responsibilities under the MOU shall include, but not be limited to, the following:
 - i. DDC is the City's design and construction manager and in collaboration with DOT, DEP, Parks, MOCR, OMB, and other City agencies, will prepare all required documentation for FEMA accreditation as part of the ESCR design and construction project, including but not limited to an O&M Manual, Emergency Response Plan, and engineering design and as-built plans for the FPS;
 - **ii.** Develop a schedule outlining the point at which each responsible Party will assume responsibility for O&M as design is finalized, and an initial construction schedule is developed. The timing of such handoff shall be finalized and formally identified by DDC to each responsible Party as construction is finalized; and
 - iii. Any other applicable responsibility listed herein.

- f. MOCR's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. MOCR leads resiliency policy and program development for the City and will be responsible for providing best-available climate science, planning, and analysis for periodic assessments to be conducted by the responsible Parties every ten (10) years to ensure the design assumptions for the FPS remain valid with actual progression of sea level rise and other climate hazards, as well as future projections beyond the assessment period, to determine if and when plans should begin to adapt the FPS:
 - **ii.** Planning and coordination with DOT, DEP, and Parks to maintain FEMA accreditation of the FPS; and
 - iii. Any other applicable responsibility listed herein.
- **g.** EM's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. EM serves as coordinating agency during a coastal storm event, which may include activating the Coastal Storm Plan, convening the Coastal Storm Steering Committee, and coordinating information and operations that support the needs of the public, and may convene relevant Parties for an interagency conference call and to track progress and issues related to the activation of different ESCR FPS closure structures:
 - **ii.** Coordinate emergency response and recovery operations established in the ESCR project Emergency Response Plan part of the O&M Manual for the FPS; and
 - iii. Any other applicable responsibility listed herein.
- **h.** OMB's responsibilities under the MOU shall include, but not be limited to, the following:
 - i. OMB serves as the Responsible Entity for the disbursement and management of CDBG-DR grant funds, and will be responsible for providing technical assistance as needed to comply with the federal grant requirements;
 - ii. Assess funding requests for the O&M and provide funding subject to availability of funds and consistent with OMB procedures on evaluating needs requests and existing resources, to ensure Parties tasked with maintaining and operating all portions of the constructed ESCR FPS have adequate resources to do so; and
 - iii. Any other applicable responsibility listed herein.

III. MOU Oversight and Enforcement

Once executed, DOT along with DEP and Parks shall be responsible for maintaining the current status of this MOU, including but not limited to, FPS components, responsible O&M Party, attachments and future modifications, and for enforcement between the various Parties.

IV. Term

This MOU shall commence as of the date of the latest signature below and shall continue for a term of ten (10) years, unless terminated in accordance with the provisions set forth herein, and can be extended and/or modified by mutual written agreement by the Parties hereto.

V. Renewal

This MOU shall automatically renew for successive ten (10) year terms, unless terminated or modified in accordance with the provisions set forth herein.

VI. Modification

Any modification to this MOU must be by the mutual consent of all Parties and/or their successors in interest. The Parties agree that five (5) years from the date of execution of this MOU (the date of the latest signature below) the Parties to the MOU will revisit the terms of the funding for this project and review the status of the project contemplated by this MOU. To the extent that there are modifications or adjustments that need to be made to reflect the then present status, the Parties will discuss and come to an agreement on modification.

VII. Termination

If any Party desires to terminate this MOU, the terminating agency will give no less than one hundred twenty (120) days advance written notice to the primary contacts of each agency that is a Party to this MOU identifying a responsible agency that will assume the terminating agency's roles and responsibilities. This MOU may then be terminated as to that party through the mutual written consent of all parties, while concurrently modifying the MOU to reflect the name and duties of the responsible agency assuming the terminating agency's role and responsibilities.

VIII. Resolution of Disagreements

In the event of a dispute between the Parties which they are unable to resolve, the respective Parties will each notify the Office of the Mayor in writing within five (5) business days of the dispute, and the Office of the Mayor will set a meeting to arbitrate the disagreement within five (5) business days of receiving notification, to the greatest extent practicable.

IX. Agency Contacts

For DOT: Margaret Forgione, First Deputy Commissioner

New York City Department of Transportation

55 Water Street

New York, New York 10041

For EDC: Joshua Kraus, Executive Vice President, President's Office

New York City Economic Development Corporation

110 William Street

New York, New York 10038

For Parks: Mark Focht, Deputy Commissioner/ Chief Operating Officer

New York City Department of Parks & Recreation

830 Fifth Avenue, 4th Floor New York, NY 10065

For DEP: Joseph Murin, Chief Financial Officer

New York City Department of Environmental Protection

59-17 Junction Boulevard Flushing, NY 11373

For DDC: Rachel Laiserin, Chief Financial Officer

New York City Department of Design & Construction

30-30 Thomson Avenue

Long Island City, New York 11101

For MOCR: Jainey Bavishi, Director

New York City Mayor's Office of Climate Resiliency

253 Broadway, 14th Floor New York, NY 10007

For NYCEM John Scrivani, Commissioner

New York City Emergency Management

165 Cadman Plaza East Brooklyn, NY 11201

For OMB: Chris Blanco, Associate Director | Budget Resources and Recovery Grant

Management

New York City Office of Management & Budget

255 Greenwich Street, 8th Floor

New York, NY 10007

X. No Third-Party Beneficiaries

This MOU is for the Parties' sole benefit and their respective successors and permitted assigns and nothing herein, express or implied, is intended or shall confer upon any other person or entity any legal or equitable right, benefit or remedy of any nature whatsoever under or by reason of this MOU.

XI. Counterparts; Facsimile Signatures

This MOU may be executed in any number of counterparts, each of which when executed by the Parties and delivered shall be deemed to be an original, and all such counterparts taken together shall be deemed to be but one and the same instrument. This MOU may be executed and delivered by facsimile or .PDF signature, and upon such delivery the facsimile signature or .PDF signature will be deemed to have the same effect as if the original signature had been delivered to the other Party or Parties.

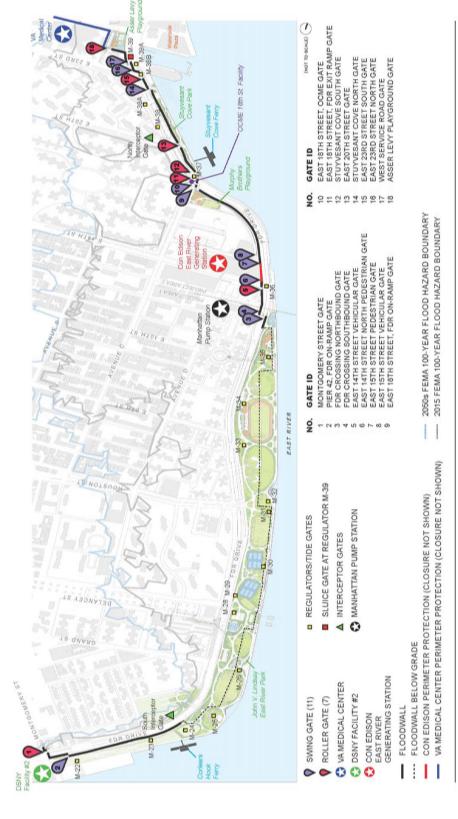
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LIST OF EXHIBITS A. FPS Assets

- B. ESCR FPS O&M Manual
- C. Responsible O&M Party for Critical Elements of the ESCR FPS
- D. O&M Cost Estimate
- E. FPS Inspection Schedule Overview

EXHIBIT AFlood Protection System Assets



ESCR Flood Protection System Assets

EXHIBIT B ESCR FPS O&M Manual

Version: December 2020 to June 2021 Emergency Response Plan available:

https://ddcnyc.box.com/s/g9esn8rdte5lggi55aswiu7qrjpj9lm6

EXHIBIT C Responsible O&M Party for Critical Elements of the ESCR FPS.¹

Component	Description	Responsible O&M Party
Floodwalls		Occurranty
Above grade floodwalls	Located on City right-of-way, including but not limited to: Montgomery Street along Gouverneur Gardens Housing Cooperative property (605 Water Street) FDR Drive and Ramps at various locations, including: South Street Along the East River Greenway North end of East River Park and across FDR Drive, near East 13th Street Along NYCHA Jacob Riis Houses (152 Avenue D) between East 12th Street and East 13th Street East 14th Street East 15th Street Along Con Edison property (729 East 16th Street) Along Murphy Brothers Playground East 18th Street Along Asser Levy Park Recreation Center and Playground Along Stuyvesant Cove Park between Avenue C and East 23rd Street (below elevated FDR Drive) East 23rd Street	DOT
Below grade floodwall	In East River Park, beginning approximately south of the amphitheater to the north end of the park near East 13th Street where FPS returns to above grade condition.	DOT and Parks
Closure Structures		DOT
Roller Gates	All locations, including but not limited to: • Montgomery Street • East 14th Street • East 18th Street (FDR Drive Exit Ramp) • Stuyvesant Cove Park • East 20th Street • East 23rd Street • Asser Levy Playground	DOT

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¹ Refer to the ESCR FPS O&M Manual for additional information on FPS component.

Component	Description	Responsible O&M Party	
Swing Gates	All locations, including but not limited to: • Pier 42 (FDR Drive On-Ramp) • FDR Drive Crossing (Northbound & Southbound) • East 14th Street • East 15th Street • East 18th Street (FDR Drive On-Ramp and Avenue C) • Stuyvesant Cove Park • East 23rd Street	DOT DOT	
Interior Drainage	FDR Drive West Service Road		
Interceptor Gate Chamber and House	New infrastructure located on City right-of-way along: • FDR Drive and Corlears Hook Park near Jackson Street • East 20th Street between Avenue C and 1st Avenue	DEP	
Parallel Conveyance	New combined sewers at various upland areas on City right-of-way and on non-City property, including but not limited to: Regulator M-22 along Gouverneur Slip East Regulator M-23 along Water Street and Jackson Street Regulator M-27 on East River Housing Corporation at 26 Lewis Street Regulator M-28 on Delancey Street North Regulator M-31 along Columbia Street and East Houston Street Regulator M-37 along East 18th Street and Avenue C Regulator M-38 along East 20th Street, Avenue	DEP	
Branch Interceptor	C, and East 23rd Street Reconstructed and upsized on East 10th Street and in East River Park	DEP	

Component	Description			Responsible O&M Party	
Tide Gates	All existing and reco East River Park:	All existing and reconstructed locations, including in East River Park:			
	REGULATOR ID	REACH	TYPE		
	M-22	A	Regulator		
	M-23	В	Regulator		
	M-24	С	Regulator	I	
	M-25	C	Regulator	1	
	M-26	D	Regulator	1	
	N-27	D	Tide Gate Chember		
	M-28	E	Tide Gate Chamber		
	M-29	F	Regulator		
	M-3D	F	Regulator		
	M-31	G	Tide Gate Chamber		
	M-32	G	Regulator		
	M-33	Н	Regulator		
	M-34	Н	Regulator		
	M-35	T.	Regulator		
	Proposed Tide Gate 1	L.	Tide Gate Chamber		
	Proposed Tide Gate 2	L	Tide Gate Chamber		
	Propose Tide Gate 3	M	Tide Gate Chamber		
	M-36	M	Regulator		
	M-37	N	Regulator		
	M-38	0	Tide Gate Chamber	I	
	M-S8-M	0	Tide Gate Chamber	I	
	M-38B	Q	Tide Gate Chamber	1	
	М-39	q	Tide Gate Chamber	1	
	M-38A	Q	Tide Gate Chamber		
Isolation Gate Valve	New in regulator M-	39 on in Ass	ser Levy Playground		
Manhattan Pump Stati	n Existing infrastructur	re on East 13	3th Street and Avenue	DEP	
	D				

EXHIBIT D

O&M Cost Estimate

May 7, 2021 Life Cycle Cost Analysis Memorandum available: https://ddcnyc.app.box.com/s/vkq2w1q5dw44q60147r9uwhehtb9zsnl/file/ 814296893011

EXHIBIT E

FPS Inspection Schedule Overview²

Upon construction completion and handoff by DDC, responsible O&M Parties shall commence implementation of the maintenance and inspections program according to the requirements and procedures detailed in the ESCR FPS O&M Manual. Inspections are to be performed at the following frequency:

- Quarterly visual inspections in January, April (before the start of the hurricane season), July, and October
- Annual visual inspections of FPS components and operation of closure mechanisms
- Periodic engineering inspections every five (5) years
- Periodic design and engineering assessment every ten (10) years
- Special inspections after events which could damage the FPS

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² Refer to ESCR FPS O&M Manual for detailed information on the inspection program and frequency.