

THIRD AMENDMENT
TO
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY
MEMORANDUM OF UNDERSTANDING

THIS THIRD AMENDMENT (the "Third Amendment") to the Community Development Block Grant Disaster Recovery Memorandum of Understanding dated November 17, 2014 is entered into and made effective as of July 14, 2016 (the "Effective Date"), by and between the Housing Trust Fund Corporation ("HTFC"), operating by and through its division, the Governor's Office of Storm Recovery ("GOSR" and, together with HTFC, referred to herein collectively as the "Grantee") and the New York State Office of Parks, Recreation and Historic Preservation ("Agency" or "OPRHP"), a New York State administrative agency. The foregoing Grantee and Agency shall sometimes be referred to herein individually as a "Party" and, collectively, the "Parties".

WHEREAS, the Parties entered into a Community Development Block Grant Disaster Recovery Memorandum of Understanding effective November 17, 2014 (as amended from time to time, the "MOU"), the terms of which govern OPRHP's receipt of funds from the State of New York's Community Development Block Grant-Disaster Recovery ("CDBG-DR") program to provide certain services in support of the State of New York's recovery efforts following Hurricane Irene, Tropical Storm Lee, and Hurricane Sandy ("Storms");

WHEREAS, the Parties entered into a first amendment to the MOU dated August 3, 2015 (the "First Amendment") to append a program description for conducting studies, gathering data, and designing improvements to Hempstead Lake State Park and Dam as part of the Rebuild by Design Living with the Bay project, and to increase the Grant Funds by \$524,370 from \$70,442,976 to \$70,967,346;

WHEREAS, the Parties entered into a second amendment to the MOU dated April 13, 2016 (the "Second Amendment") to append a program description and budget for the complete design and implementation of the improvements to Hempstead Lake State Park and Dam as part of the Rebuild by Design Living with the Bay project, and to increase the Grant Funds by \$34,500,000 from \$70,967,346 to \$105,467,346;

WHEREAS, due to a clerical error, the Second Amendment listed the starting amount of Grant Funds incorrectly as "\$70,976,346" instead of "\$70,967,346" and the amended Grants Funds as amended by the Second Amendment incorrectly as "\$105,476,346" instead of "\$105,467,346," and the Parties desire to correct such errors; and

WHEREAS, the Parties desire to amend the MOU and Second Amendment by means of this Third Amendment, more specifically to append the Program Description for undertaking design and construction of improvements to Robert Moses State Park, in Exhibit A and the Budget in Exhibit B.

NOW THEREFORE, pursuant to and in consideration of the above, and other mutual covenants and obligations herein contained, it is

STIPULATED AND AGREED as follows:

1. Section 2 of the Second Amendment is hereby deleted and replaced with the following:

“The amount of the Grant Funds currently set at \$70,967,346 under Section IV of the MOU, is hereby increased by \$34,500,000 to a total amount not to exceed \$105,467,346.”

2. In Section IV of the MOU, the following is hereby added between the first and second paragraphs:

“\$3,266,880.70¹ of the Grant Funds is hereby designated as contingency funds (“MOU Contingency”) not currently allocated to any Project Description set forth in Exhibit A or any Budget set forth in Exhibit B, each as amended from time to time. The Parties agree that OPRHP shall submit no invoices and Grantee shall make no payments in respect of the MOU Contingency. Funds may be removed from the MOU Contingency only upon the mutual agreement of the Parties to allocate such funds to a Project Description and Budget to be appended to Exhibit A and Exhibit B, respectively. Only upon removal from the MOU Contingency may such funds be invoiced and paid pursuant to the appropriate Project Description and Budget.”

3. Exhibit A3 to this Third Amendment is hereby appended to Exhibit A of the MOU.
4. Exhibit B3 to this Third Amendment is hereby appended to Exhibit B of the MOU.
5. The Budget for “Program 2” set forth in Exhibit B of the original MOU is hereby deleted and replaced in its entirety by the “Budget for Program 2. Robert Moses State Park Dredging and Beach Stabilization Project” set forth in Appendix I of this Third Amendment.
6. Except as specifically modified herein, all terms and conditions in the MOU will remain the same, continuing in full force and effect, and apply to this Third Amendment.

¹ Note: The MOU Contingency is the result of (A) the revision of the Program 2 budget from a total of \$13,000,000.00 (as set forth in Exhibit B to the original MOU) to \$5,734,119.30 (as set forth in Appendix I hereof), a decrease of \$7,265,880.70 for Program 2 and (B) the addition of the Program 6 budget, an increase of \$3,999,000.00 (as set forth in Exhibit B3 hereof). The resulting difference is \$3,266,880.70 not allocated to a specific Program Description or Budget, and therefore designated as MOU Contingency within the Grant Funds amount.

IN WITNESS WHEREOF, the parties executed this Third Amendment on the day and year first above written.

**New York State Office of Parks, Recreation
and Historic Preservation**

Housing Trust Fund Corporation

By: 

Name: Marc S. Talluto *3/12/16*
Title: Director of Agency
Operations and Programs, OPRHP



By: 
Name: Lisa Bova-Hiatt
Title: Executive Director
Governor's Office of Storm Recovery

EXHIBIT A3
Third Amendment Subrecipient Program Description

The following Program 6 is in addition to the existing Programs provided for in Exhibit A of the MOU, as amended by the First Amendment and Second Amendment: Program 1 – Robert Moses State Park Emergency Beach Nourishment; Program 2 – Robert Moses State Park Dredging and Beach Stabilization Project; Program 3 – Roberto Clemente State Park Revitalization – Bulkhead, Esplanade, Tidal Pool, Lower Plaza & Northern Shoreline; Program 4 – Living with the Bay Concept Designs, Environmental Studies and Data Collection; and Program 5 – Living with the Bay Hempstead Lake State Park Project.

Program 6. Robert Moses State Park Water Treatment Plant

A. Background

As described in the project application submitted to Grantee on April 20, 2016, OPRHP proposes to replace the existing water treatment plant at Robert Moses State Park (RMSP) with a new facility designed to be more resilient to storm damage.

The project site is located within two towns: Babylon and Islip. RMSP is wholly owned and operated by the State of New York which maintains regular annual operations funds to maintain the site through General Fund appropriations and Agency revenue.

The existing water treatment system was constructed in the 1960s on the north side of the island, adjacent to the Robert Moses Causeway. The plant treats groundwater extracted by two pumping wells and conveys the treated water to a storage tower, from where it is gravity fed to all facilities throughout the park. The water treatment plant is a public water system where pump control systems were damaged by Superstorm Sandy; contact switches were compromised; pipe system undermined and distribution systems collapsed into the bay.

Flood insurance rate maps indicate that both the existing and the proposed, new water treatment plants are located within a FIRM Zone X, where regulatory requirements for elevation or flood proofing of structures do not apply. However, the maps also indicate that the area is very near to the boundary with Zone AE, with Base Flood Elevations of 5 feet.

B. Scope of Work

Given that the park was strongly affected by Superstorm Sandy's storm surge, the proposed new water treatment facility will be constructed with a first floor elevation nearly four feet higher than that of the existing Plant, raising it significantly above the nearby flood zone elevations. In addition, the project will improve the system's resiliency to future storm damage through upgrades to the Park's primary electrical system and structural components such as anchoring the bladder tanks to prevent buoyancy in case of flooding and constructing the building on 40" wide spread footings.

For the purposes of replacing the existing treatment system, the following design parameters were considered:

Flow Rate	800 GPM
Fe	4.0 PPM
Mn	0.1 PPM
H ₂ S	0.1 PPM
Filter Loading Rate	3.9 gpm/sq. ft
Backwash Rate	12.0 gpm/sq. ft

The existing iron treatment system filter media consists of anthracite and sand on a gravel support. By using a anthracite/magnesium dioxide coated greensand filter media instead of the anthracite/sand filter media, efficient removal of Mn and H₂S as well as the iron can be achieved. This eliminates the need to replace the H₂S agitation system, simplifying the operation by eliminating the high lift pumping system, thus improving the operational reliability of the system. The pressurized treatment system will consist of two horizontal pressure vessels each with three filter cells.

Both wells will not be expected to operate simultaneously. When the filters are in normal flow, one of the wells will operate to filter. The second well will remain in lag unless the lead faults. Backwash will be prompted by either differential pressure, gallons treated (throughput) or time of day and will initiate as the park's water storage standpipe nears its well off set point. This will permit maximized system capacity during the intervals when the filter plan is in its backwash/rinse mode.

The wells do not currently have a means to discharge direct to waste (blow-off) which would cause the first draw of water with the significantly elevated Fe and Mn to be run through the filtration system. An automated well blow off has been incorporated into the design.

The facility will continue to use 25% sodium hydroxide for pH adjustment and 12.5% sodium hypochlorite for oxidation and disinfection. Daily chemical demand, assuming a daily production of 250,000 gallons is estimated at 19 GPD NaClO and 12 GPD for NaOH. No other chemical additions are anticipated for normal operations. A new 1,500 gallon steel AST for NaOH storage and a 650 gallon XLHDPE AST for NaClO storage that will be incorporated into the floor plan of the new treatment building.

With the elimination of the hi-lift boosters, it will be necessary to replace the existing well pumps with higher head pumps. This will require that the motor starters be upsized, additionally the fixed speed starters will be replaced with variable frequency drives in order to operate the system on pressure controls in the event that the standpipe is off-line.

FEMA flood maps have been reviewed and the finish floor of the treatment building and all electrically operated equipment will be maintained a minimum of 9 feet above the flood elevation. Underground routing of utilities will be constructed such that potential damage due to flooding is minimized.

The new treatment system will normally operate as follows:

- The standpipe water level will initiate the lead well pump start signal. Due to the high static water level, the well will not undergo a pre-lube cycle before starting. Initially, water will be discharged to the blow off structure for a preset time before motorized valves are operated and the water begins to enter the treatment system. Once the three chemical safeties are satisfied (flow/flow rate, auxiliary motor starter contact and differential pressure) the pre and post NaOH and NaClO treatment pumps will start. Constant pH and chlorine residual measurement will monitor the respective levels and initiate alarms if either is above or below their alarm set points. When the standpipe water level reaches the well pump stop elevation, the well pump will stop.
- Once a backwash cycle is called it will delay initiating until a well pump is running and is within a set point elevation below the pump stop, the full well flow will then be directed to one vessel. The treated water will be used to backwash one of the cells of the second vessel. Upon the completion of the backwash of each cell, the cell will be rinsed in forward flow to waste. Upon completion of the backwashing of both vessels, the filling of the standpipe will be continued.
- In order to maintain treatment capacity through construction, once the new treatment building is nearly completed, Well No 3's replacement pump will be installed and its piping will be reconfigured to pump directly to the new treatment system for start-up and commissioning. When the facility is approved for operation by the Suffolk County Department of Health Services, Well No 2 will then be removed from service and its pump replaced and piping reconfigured.
- When the existing treatment system is no longer required, it will be decommissioned and demolished. Well No 2 will be partitioned off within the existing building that will remain to be converted to a maintenance building.
- The new one story treatment building will have an enclosed area of approximately 1,280 square feet and its architectural style will be in keeping with the park and require minimal maintenance. The filter room will include the three filter vessel faces and the associated large piping, valves and fittings. The steel NaOH storage tank will be installed within a 3-foot tall containment area. The NaOH treatment pumps will be installed adjacent to the tank.
- The HDPE NaOCl (Sodium hypochlorite) storage tank and treatment system will be installed in a separate room to minimize the migration of nuisance chlorine gas that deteriorates metallic surfaces. An automated exhaust fan will periodically ventilate the NaOCl room to minimize any accumulation of the chlorine gas. It should be noted that the chlorine gas levels are very low and well below any level dangerous to the occupants of the building.
- The laboratory will be a separate room and will include the water quality testing station, full time plant monitoring systems and electrical equipment.
- Chemical transfer facilities will be provided outside the building for the purposes of replenishing the NaOH and NaOCl storage tanks. The storage tanks will be provided with full time leak, level and over fill protection.

C. Key Deliverables and Schedule

Regulatory Approvals	Complete
Advertisement	Month 1 - June 2016
Receive Bids	Month 2 – July, 2016
Award of Contracts	Month 6 – November 2016
Construction Start	Month 8 – January 2016
Treatment Plant Startup And Commissioning	Month 20 – January 2018
Well No. 2 Work Complete Demolition of Existing	Month 24 – May 2018
Treatment Plant	Month 27 – August 2018
Project Completion	Month 30 – November 2018

OPRHP shall not commence any construction related activities prior to receiving written approval from Grantee and prior to completion of environmental review as set forth in the MOU.

EXHIBIT B3
Third Amendment Budget

Budget for Program 6 – Robert Moses State Park Water Treatment Plant

	Budget Description	COST (est.)
General Conditions	Bonds and insurances	\$75,000
	Temporary electric	\$15,000
	General conditions	\$75,000
Site Work	Clearing, excavation, subgrade preparation, grading, restoration	\$50,000
	Drainage piping / blow-off system	\$100,000
	Paving, sidewalks, aprons and curbs	\$75,000
	Site piping and hydrants	\$75,000
	Chemical Transfer Station	\$35,000
Demolition	Demolition of existing treatment system	\$150,000
	Demolition of existing chemical storage and treatment systems	\$30,000
	Demolition of electrical equipment	\$12,000
Building Work	Masonry treatment building (1,280 sqft. X \$300 sq. ft.)	\$384,000
	Concrete foundation and pipe trench (1280 sq.ft. x \$125 sq. ft.)	\$175,000
	Exterior stairs, loading dock and railings	\$40,000
Mechanical Work	Iron removal system (within building)	\$275,000
	Chemical treatment and bulk storage	\$50,000
	Small piping, valves, and appurtenances	\$75,000
	Water heater and shower/eyewash stations	\$20,000
	Large piping, valves and appurtenances	\$110,000
Well Work	New Well 2 Pump	\$90,000
	New Well 3 Pump	\$90,000
	Well cleaning and development	\$75,000
	Well pump removals and inspections	\$15,000
Electrical Work	New Primary service, switchgear and transformer	\$300,000
	Electric power distribution	\$325,000
	Electrical controls and instrumentation	\$225,000
	New secondary service equipment	\$75,000
HVAC	Radiant Heating System	\$30,000
	Ventilation System	\$12,000
CONSTRUCTION TOTAL		\$3,058,000*

	Contingencies 10%	\$306,000*
	Allowance 5%	\$168,000*
OTHER COSTS*	Construction Inspection	\$353,000
	Design	\$50,000
	Parks Staff	\$64,000
PROJECT TOTAL		\$3,999,000*

*NOTE: WHILE THE INDIVIDUAL LINE ITEMS ABOVE ARE ESTIMATES AND APPROXIMATE, THE CONSTRUCTION TOTAL ABOVE WILL NOT EXCEED \$3,058,000, CONTINGENCIES WILL NOT EXCEED \$306,000, ALLOWANCES WILL NOT EXCEED \$168,000, OTHER COSTS WILL NOT EXCEED \$467,000 AND THE PROJECT TOTAL WILL NOT EXCEED \$3,999,000 UNLESS OTHERWISE AGREED TO BY GRANTEE IN WRITING.

APPENDIX I
Revised Budget for Program 2

Budget for Program 2 – Robert Moses State Park Dredging and Beach Stabilization Project

Description of Work	Obligated CDBG-DR Funds	Total Project Cost
Mobilization and Preparation	\$1,700,000.00	
Dredging	\$4,034,119.30	
Subtotals	\$5,734,119.30*	
		\$5,734,119.30²

*NOTE: WHILE THE INDIVIDUAL LINE ITEMS ABOVE ARE ESTIMATES AND APPROXIMATE, THE TOTAL OBLIGATED CDBG-DR FUNDS WILL NOT EXCEED \$5,734,119.30, UNLESS OTHERWISE AGREED TO BY GRANTEE IN WRITING.

² NYS OPRHP also completed a separate project at a different location in Robert Moses State Park known as “Democrat Point”, utilizing the same contract with Village Dock that was used to complete the Robert Moses Emergency Beach Nourishment. The Democrat Point project was the result of a storm dating back to 2009 (FEMA disaster DR-1869), and is completely unrelated to the CDBG-DR project known as “Program 2 – Robert Moses State Park Dredging and Beach Stabilization Project”. The Democrat Point project was funded by FEMA (Project Worksheet 113) in the amount of \$3,025,880.70. This work was identified as Invoice #4 in the reimbursement documentation provided to GOSR.