

# Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement

**Atlantic Coast of New York** 

East Rockaway Inlet to Rockaway Inlet and Jamaica Bay

# Sub Appendix A2-B: HFFRRF Phase 2 Projects

**US Army Corps of Engineers** 

# B. SUB-APPENDIX A2-B: HFFRRF PHASE 2 PROJECTS AND PROJECT MAPS

The table below list all Phase 2 projects on a reach by reach basis.

RPV = Rockaway Peninsula Vicinity

FCV = Fresh Creek Vicinity

NCV = Nassau County Vicinity

Subsequent pages display plan view maps of each of the Phase 2 projects.

Table B-1: Phase 2 Reach by Reach Project Data

Project Location	Reach-ID	Feature Type	Length (ft)	Approx. Ground Elevation	Design Elevation	Feature Top Elevation
Mid- Rockaway Backbay with NNBFs	RPV-081-a	Low Berm	278	4.0	7.8	8.0
	RPV-081-aa	Hybrid Berm	299	4.5	7.8	8.0
	RPV-081-b	Medium Berm	585	4.0	9.4	9.5
	RPV-081-c	Medium Berm	65	4.0	9.4	9.5
	RPV-081-d	Medium Berm	855	4.0	9.4	9.5
	RPV-081-e	Hybrid Berm	161	5.0	9.4	9.5
	RPV-081-f	Hybrid Berm	334	5.0	9.4	9.5
	RPV-082-a	Hybrid Berm	348	5.0	9.4	9.5
	RPV-082-b	Shallow Bulkhead	40	5.0	8.8	9.0
	RPV-082-c	Hybrid Berm	233	5.0	9.4	9.5
	RPV-082-d	Shallow Bulkhead	85	5.0	8.8	9.0
	RPV-082-e	Hybrid Berm	178	5.0	9.4	9.5
	RPV-082-f	Shallow Bulkhead Urb	192	5.0	8.8	9.0
	RPV-082-g	Medium Floodwall	203	5.0	7.8	8.0
	RPV-083-a	Road Ramp	53	5.0	7.8	8.0
	RPV-084-a	Medium Floodwall	275	5.0	7.8	9.5
	RPV-084-b	High Berm	81	7.0	12.4	12.5
	RPV-084-c	Medium Berm	560	6.5	11.0	11.5
	RPV-085-a	High Floodwall	664	5.0	11.0	11.5
	RPV-085-b	Low Berm	849	5.0	7.8	8.0
	RPV-085-c	Low Berm	69	5.0	7.8	8.0
	RPV-085-d	Low Berm	313	5.0	7.8	8.0
	RPV-091-a	Low Berm	653	6.0	9.5	9.5
	RPV-091-b	Low Berm	60	6.0	9.5	9.5
	RPV-091-c	Low Berm	366	6.0	9.5	9.5

Mid-Rockaway Backbay with NNBFs

RPV-091-d	Low Floodwall	524	5.0	7.9	8.0
RPV-091-e	Road Ramp	40	5.0	7.9	8.0
RPV-091-f	Low Floodwall	622	5.0	7.9	8.0
RPV-091-q	Revetment	150	5.5	10.5	10.5
RPV-091-h	Revetment	26	5.5	10.5	10.5
RPV-091-i	Shallow Bulkhead	380	5.5	11.1	11.5
RPV-091-j	Revetment	538	5.5	10.5	10.5
RPV-092-a	Revetment	273	5.5	10.5	10.5
RPV-092-b	Deep Bulkhead	318	5.5	11.1	11.5
RPV-093-a	Low Berm	1415	5.0	7.8	8.0
RPV-093-b	Hybrid Berm	292	6.0	8.0	8.0
RPV-094-a	Shallow Bulkhead	176	5.5	9.5	10.0
RPV-094-b	Shallow Bulkhead	69	5.5	9.5	10.0
RPV-094-c	Shallow Bulkhead	716	5.5	9.5	10.0
RPV-094-d	Shallow Bulkhead Urb	146	5.5	9.5	10.0
RPV-094-e	Shallow Bulkhead Urb	54	5.5	9.5	10.0
RPV-094-f	Shallow Bulkhead	345	5.5	9.5	10.0
RPV-094-q	Shallow Bulkhead Urb	694	5.5	11.0	11.5
RPV-094-i	Shallow Bulkhead	119	5.5	11.0	11.5
RPV-094-i	Shallow Bulkhead	135	5.5	11.0	11.5
RPV-094-k	Medium Floodwall	118	4.0	11.5	11.5
RPV-095-a	Medium Berm	1138	7.0	12.4	12.5
RPV-096-a	High Floodwall	439	5.5	11.0	11.5
RPV-097-a	Deep Bulkhead	267	5.0	11.0	11.5
RPV-111-a	Low Floodwall	281	5.5	8.9	9.0
RPV-111-b	Low Floodwall	50	5.5	8.9	9.0
RPV-111-c	Low Floodwall	296	5.5	8.9	9.0
RPV-111-d	Low Floodwall	54	5.5	8.9	9.0
RPV-111-e	Low Floodwall	21	5.5	8.9	9.0
RPV-111-f	Deep Bulkhead	536	6.0	11.1	11.5
RPV-111-g	Low Floodwall	195	6.0	7.9	8.0
RPV-111-h	Road Ramp	37	6.0	7.9	8.0
RPV-111-i	Low Floodwall	820	6.0	7.9	8.0
RPV-111-j	Vehicular Gate	25	6.0	7.9	8.0
RPV-111-k	Low Floodwall	237	6.0	7.9	8.0
RPV-111-I	Road Ramp	34	6.0	7.9	8.0
RPV-111-m	Low Floodwall	67	6.0	11.1	11.5
RPV-111-n	Medium Floodwall	247	6.0	11.1	11.5
RPV-113-a	Road Ramp	33	6.0	7.9	8.0
RPV-113-b	Low Floodwall	303	6.0	7.9	8.0
RPV-113-c	Road Ramp	40	6.0	7.9	8.0
RPV-113-d	Low Floodwall	434	6.0	7.9	8.0

Mid- Rockaway Backbay with NNBFs	RPV-113-e	Road Ramp	44	6.0	7.9	8.0
	RPV-113-f	Low Floodwall	545	6.0	7.9	8.0
	RPV-121-b	Low Floodwall	125	5.0	7.8	8.0
	RPV-122-a	Road Ramp	31	5.0	7.8	8.0
	RPV-123-a	Low Floodwall	474	5.0	7.8	8.0
	RPV-123-b	Road Ramp	30	5.0	7.8	8.0
	RPV-123-c	Low Floodwall	185	5.0	7.8	8.0
	RPV-123-d	Road Ramp	40	5.0	7.8	8.0
	RPV-124-a	Low Floodwall	214	5.0	7.8	8.0
	RPV-124-b	Low Floodwall	16	5.0	7.8	8.0
	RPV-124-c	Low Floodwall	253	5.0	7.8	8.0
Matta Dania	RPV-072-a	Low Floodwall	536	6.0	7.7	8.0
Motts Basin North	RPV-072-b	Medium Floodwall	47	6.0	7.7	8.0
NOITH	RPV-072-c	Low Floodwall	105	6.0	7.7	8.0
	FCV-067-a	Revetment	562	6.0	9.5	9.5
	FCV-067-b	Low Floodwall	612	6.0	8.0	8.0
	FCV-067-c	Low Floodwall	48	6.0	8.0	8.0
Canarsie	FCV-067-d	Low Floodwall	751	6.0	8.0	8.0
	FCV-067-e	Low Floodwall	29	6.0	8.0	8.0
	FCV-067-f	Low Floodwall	266	6.0	8.0	8.0
	FCV-067-g	Revetment	238	6.0	9.4	9.5
	FCV-067-h	Revetment	52	6.0	9.4	9.5
	FCV-067-i	Revetment	234	6.0	9.4	9.5
Cedarhurst- Lawrence	NCV-010-a	Deep Bulkhead	286	4.0	9.7	10.0
	NCV-010-b	Deep Bulkhead	192	4.0	9.7	10.0
	NCV-010-c	Deep Bulkhead	57	4.0	9.7	10.0
	NCV-010-d	Deep Bulkhead	43	4.0	9.7	10.0
	NCV-010-e	Deep Bulkhead	385	4.0	9.7	10.0
	NCV-010-f	Medium Floodwall	23	5.5	9.7	10.0



Project Alignments (v20180717)

- 20% AEP (5yr RP) Flood Extents (2068)



Project Alignments (v20180717)

HFFRR-Feature

- Low Floodwall
  - 20% AEP (5yr RP) Flood Extents (2068)
  - City Street
  - Alley

0 40 80 160 240 33



Project Alignments (v20180717)

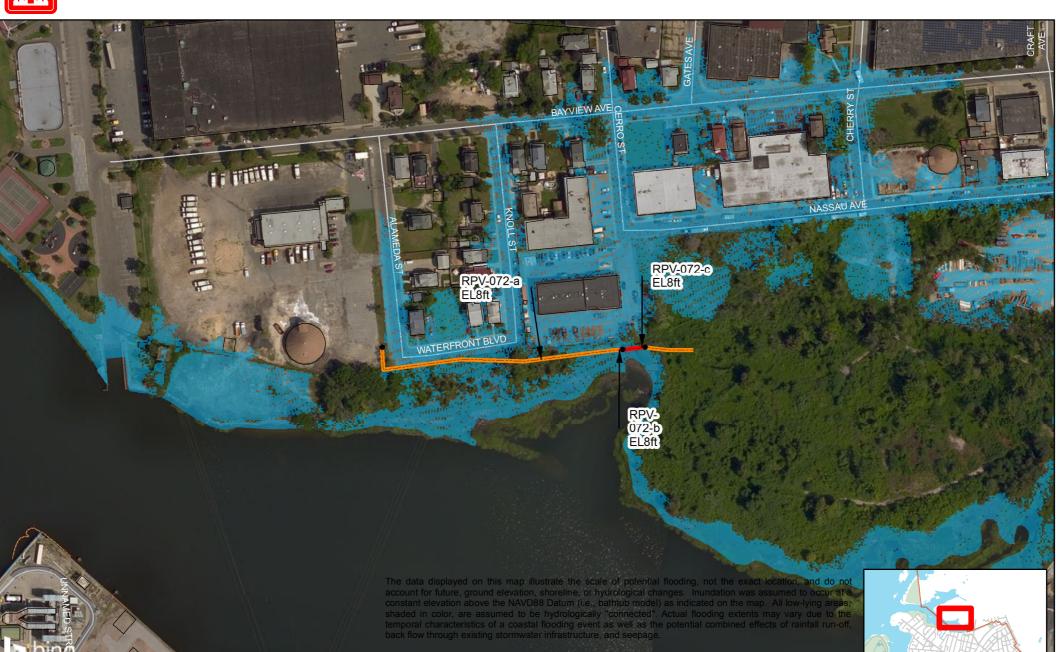
HFFRR-Feature

► Low Floodwall

20% AEP (5yr RP) Flood Extents (2068)

City Street

# Motts Basin N



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# Legend

# Project Alignments

#### HFFRR-Feature

- Low Floodwall
- Medium Floodwall
- 20% AEP (5yr RP) Flood Extents (2068)

### **Nassau County**

Nassau County Streets City Street





Proposed Pump Station Locations

#### **NNBF Gains Areas**

#### Planting

- Scrub-shrub
- Smooth Cordgrass

### **Project Alignments**

- Rock Sill
- Low Berm
- Medium Berm
- Hybrid Berm
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- Railroad Track







Proposed Pump Station Locations

#### NNBF Gains Areas (20180717)

#### Planting

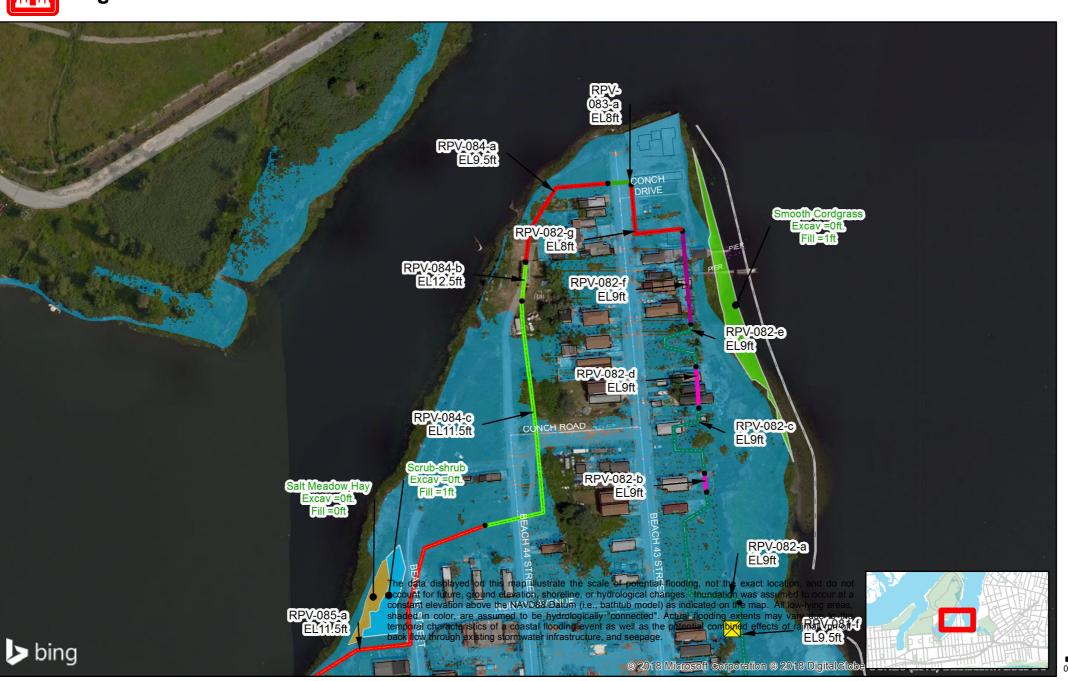
- Salt Meadow Hay
- Scrub-shrub
- Smooth Cordgrass

#### **Project Alignments (v20180717)**

#### HFFRR-Feature

- Rock Sill
- High Floodwall
- Medium Berm
- Hybrid Berm
- Shallow Bulkhead
- 20% AEP (5yr RP) Flood Extents (2068)

City Street







Proposed Pump Station Locations

#### NNBF Gains Areas (20180717)

#### Planting

- Salt Meadow Hay
- Scrub-shrub
- Smooth Cordgrass

# Project Alignments (v20180717)

#### HFFRR-Feature

- Rock Sill
- Medium Floodwall
- High Floodwall
- Medium Berm
- High Berm
- Hybrid Berm
- Shallow Bulkhead
- Shallow Bulkhead Urban
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)

City Street

Physical Non-Street Feature







Proposed Pump Station Locations

#### NNBF Gains Areas (20180717)

#### Planting

- Salt Meadow Hay
- Scrub-shrub

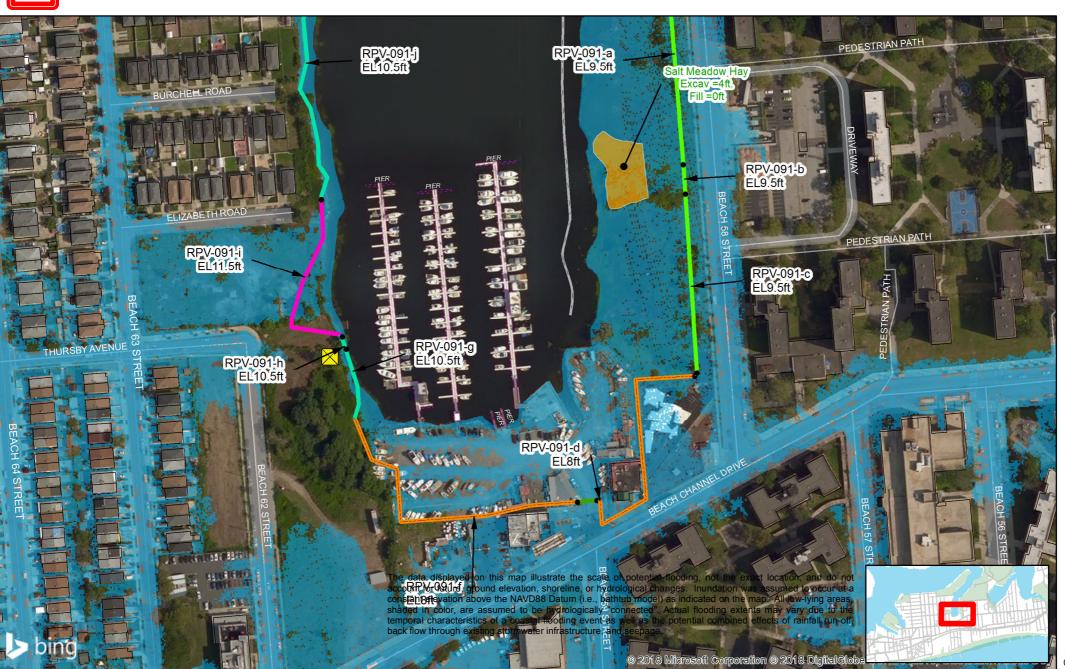
### **Project Alignments (v20180717)**

#### HFFRR-Feature

- Rock Sill
- High Floodwall
- Low Berm
- Hybrid Berm
- 20% AEP (5yr RP) Flood Extents (2068)

City Street

0 40 80 160







# NNBF Gains Areas (20180717)

#### Planting

Salt Meadow Hay

# Project Alignments (v20180717)

- Rock Sill
- Low Floodwall
- 2011 1 100011011
- Low Berm
- Shallow Bulkhead
- Revetment
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- Private Street; 6, V
- Physical Non-Street Feature







Proposed Pump Station Locations

# NNBF Gains Areas (20180717)

#### Planting

- Canopy Tree
- Smooth Cordgrass

### Project Alignments (v20180717)

#### HFFRR-Feature

- Rock Sill
- Low Berm
- Deep Bulkhead
- Revetment
- 20% AEP (5yr RP) Flood Extents (2068)

City Street

Private Street; 6, V

40 80 160







# NNBF Gains Areas (20180717)

#### Planting

- Canopy Tree
- Salt Meadow Hay
- Smooth Cordgrass

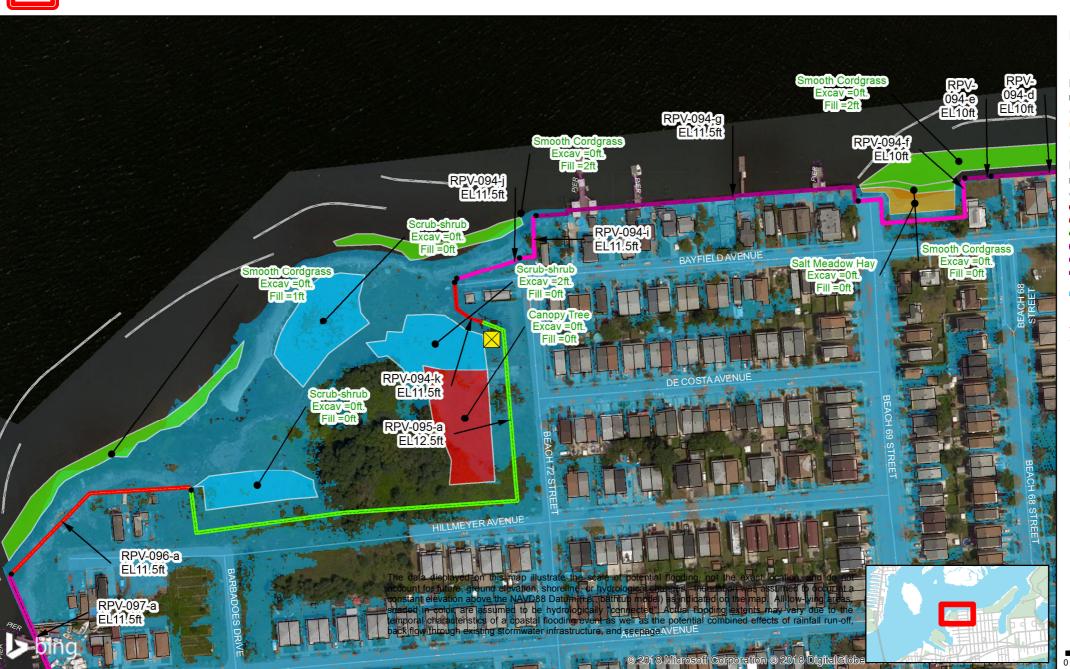
# Project Alignments (v20180717)

- Rock Sill
- Low Berm
- Hybrid Berm
- Shallow Bulkhead
- Shallow Bulkhead Urban
- Revetment
- 20% AEP (5yr RP) Flood Extents (2068)

City Street

Private Street; 6, V

0 40 80 160





Proposed Pump Station Locations

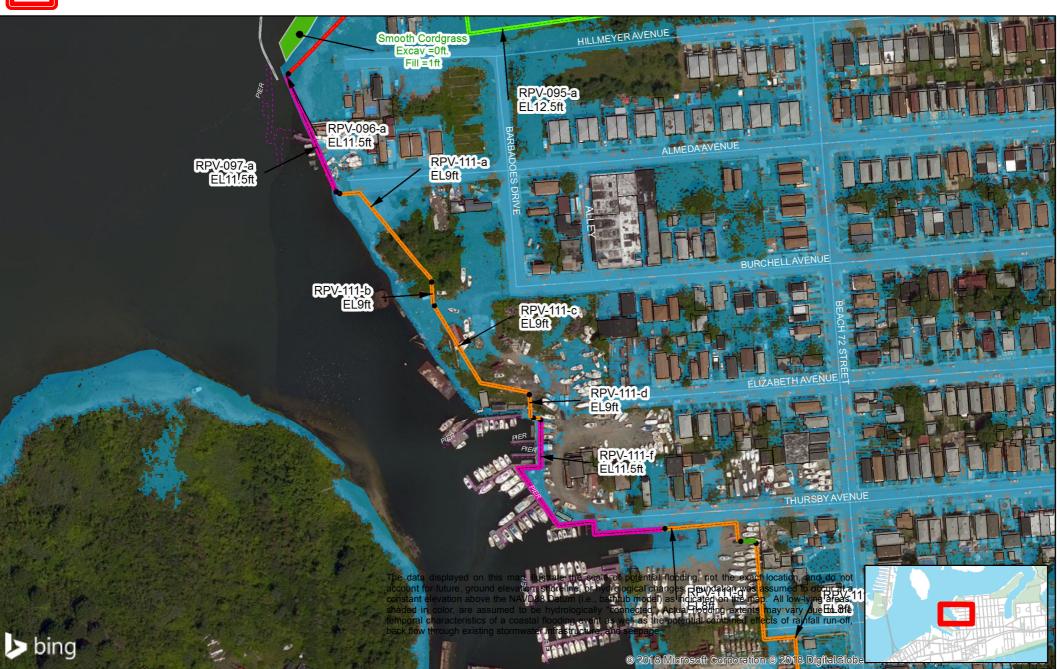
#### **NNBF Gains Areas**

#### Planting

- Canopy Tree
- Salt Meadow Hay
- Scrub-shrub
- Smooth Cordgrass

#### **Project Alignments**

- Rock Sill
- Medium Floodwall
- High Floodwall
- Medium Berm
- Deep Bulkhead
- Shallow Bulkhead
- Shallow Bulkhead Urban
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- Physical Non-Street Feature



# NNBF Gains Areas

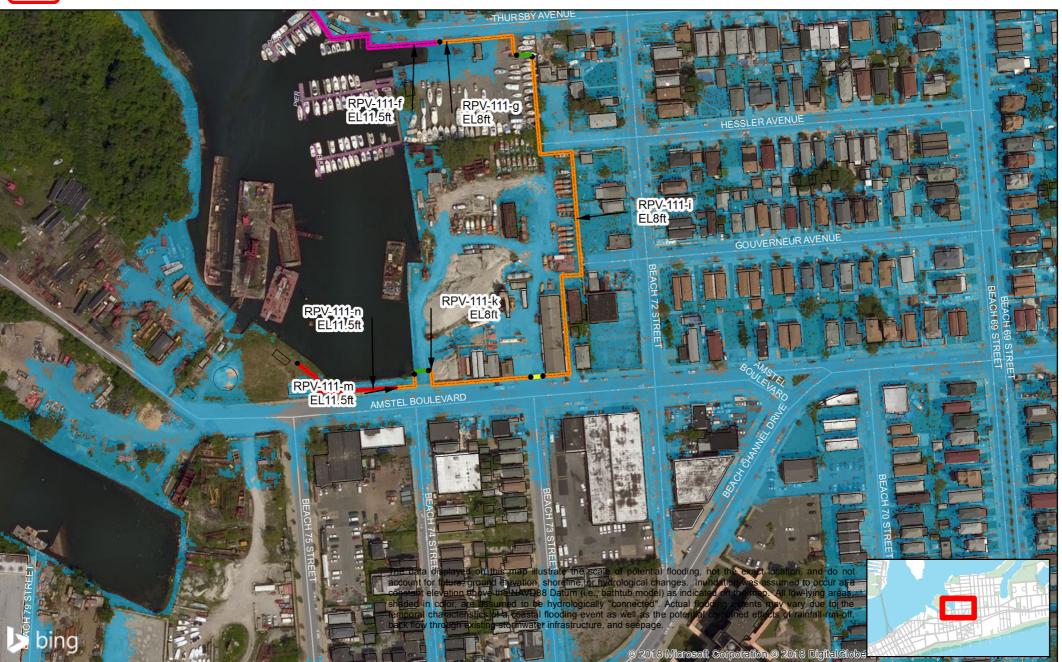
Planting

Smooth Cordgrass

### **Project Alignments**

- Rock Sill
- Low Floodwall
- High Floodwall
- Medium Berm
- Deep Bulkhead
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- Physical Non-Street Feature
- Alley





# Project Alignments

HFFRR-Feature

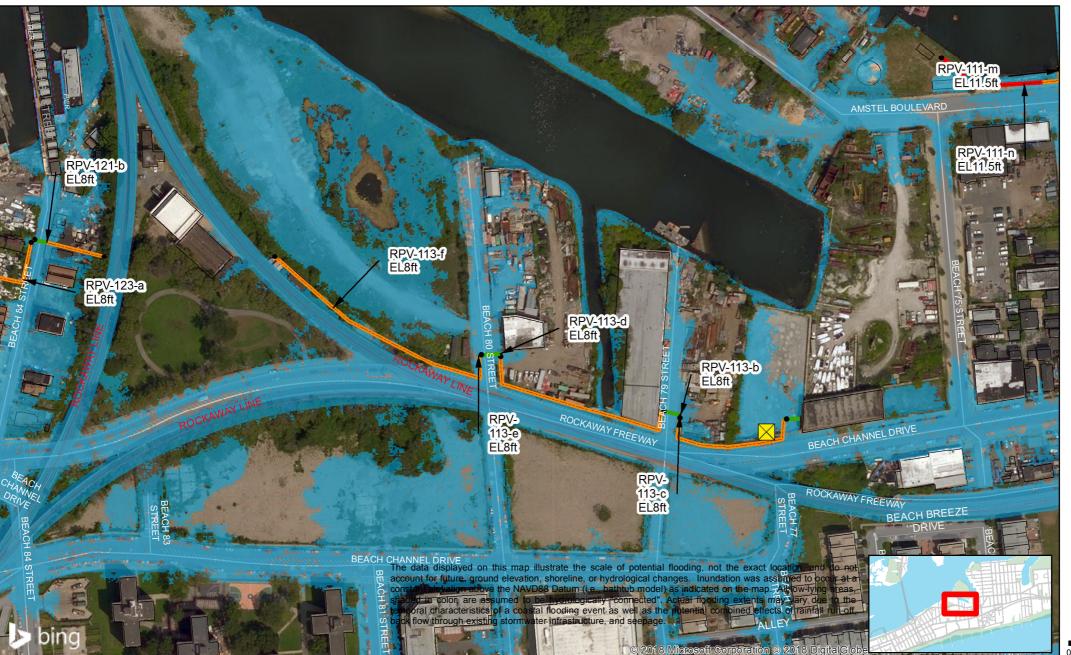
- Low Floodwall
- Medium Floodwall
- Deep Bulkhead
- Vehicular Gate
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)

City Street

- Physical Non-Street Feature

0 40 80 160 240 320

# Hammels



# Legend



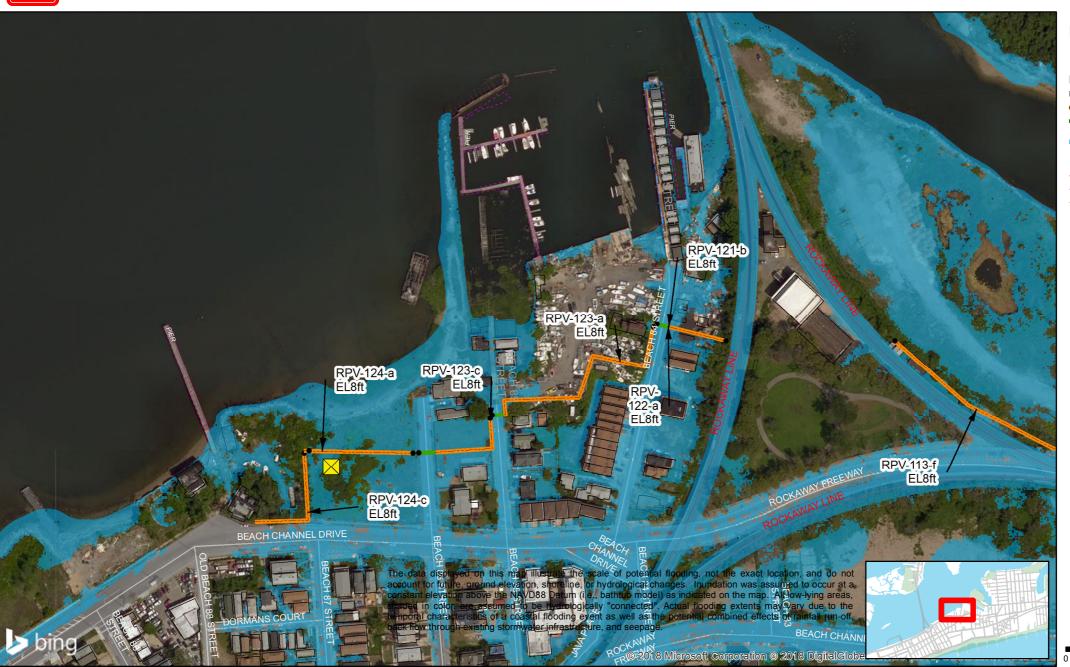
Proposed Pump Station Locations

# **Project Alignments**

#### HFFRR-Feature

- Low Floodwall
- Medium Floodwall
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- → Railroad Track
- Private Street; 6, V
- Physical Non-Street Feature
- Alley
- Addressable Path

0 40 80 160 240 320



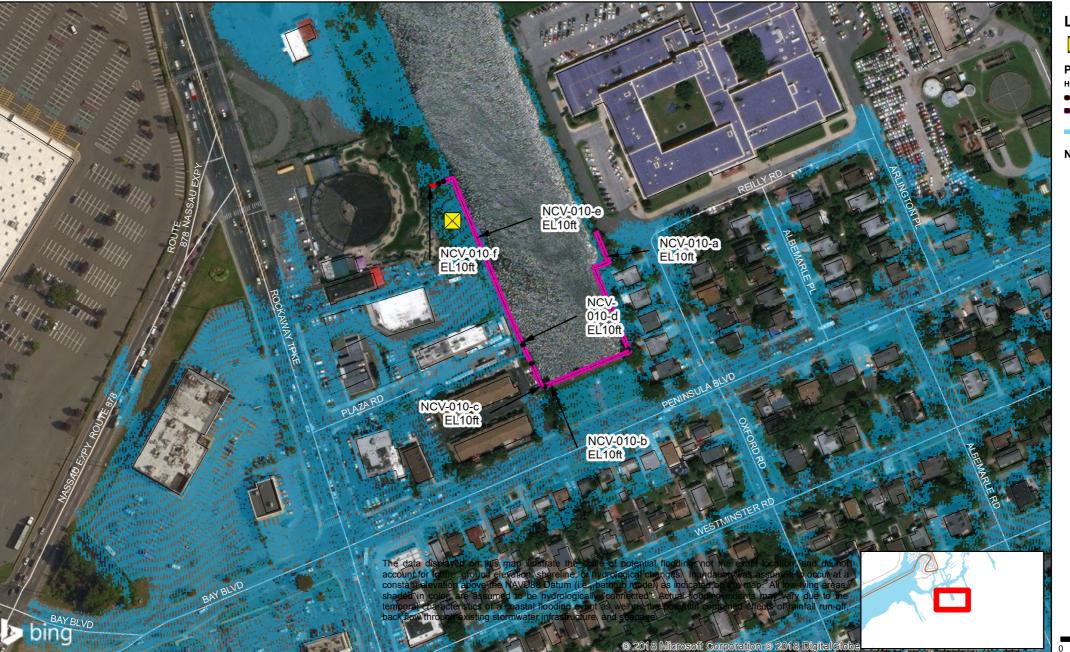




# Project Alignments (v20180717)

- Low Floodwall
- Road Ramp
- 20% AEP (5yr RP) Flood Extents (2068)
- City Street
- Railroad Track
- Physical Non-Street Feature
- Addressable Path

# **Cedarhurst-Lawrence**



# Legend



Proposed Pump Station Locations

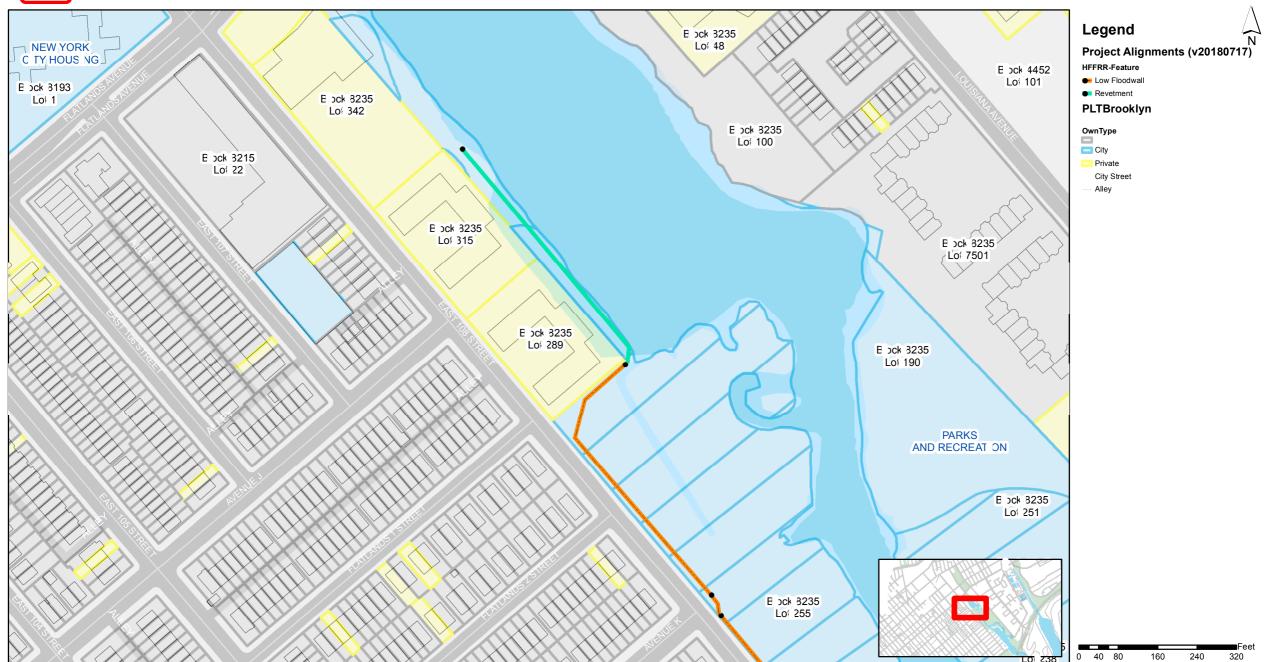
# Project Alignments (v20180717)

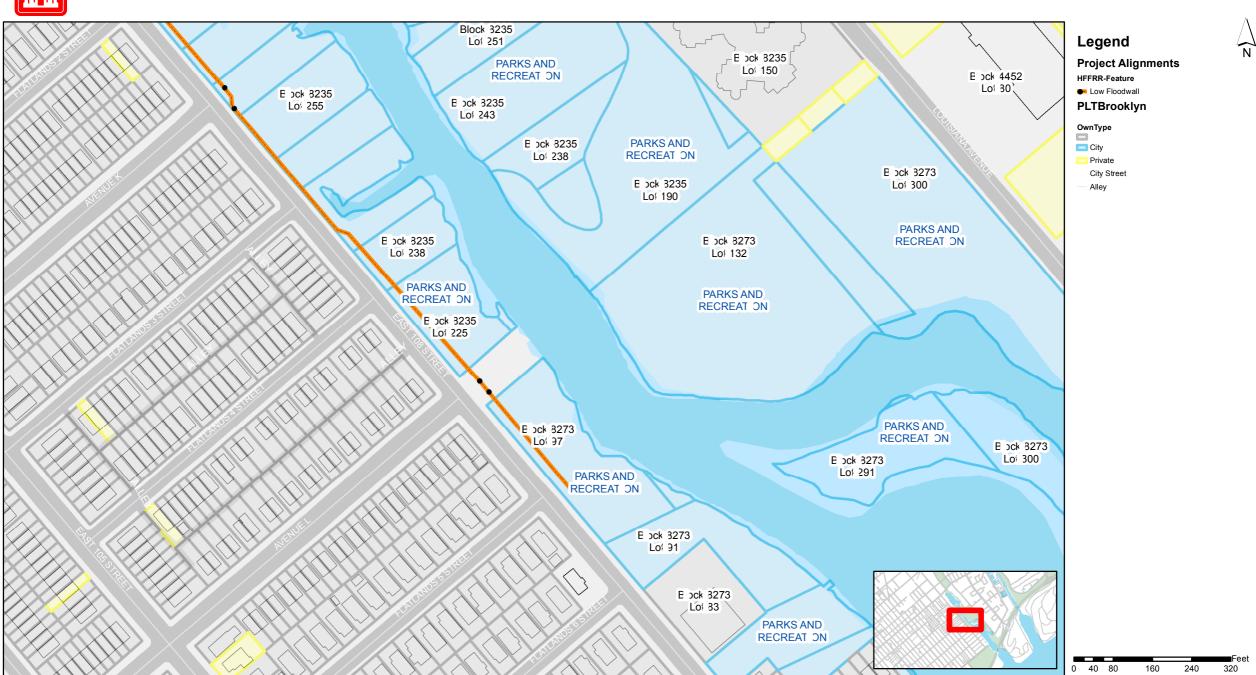
HFFRR-Feature

- Medium Floodwall
- Deep Bulkhead
- 20% AEP (5yr RP) Flood Extents (2068)

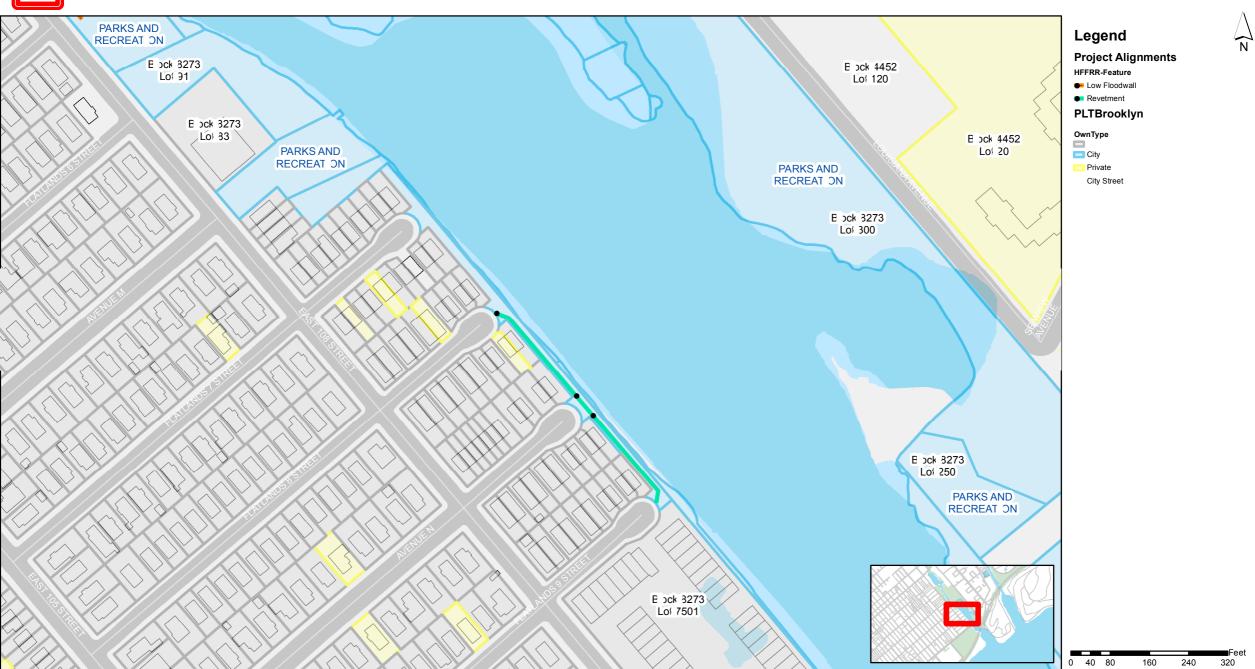
### **Nassau County Streets**

Nassau County Streets





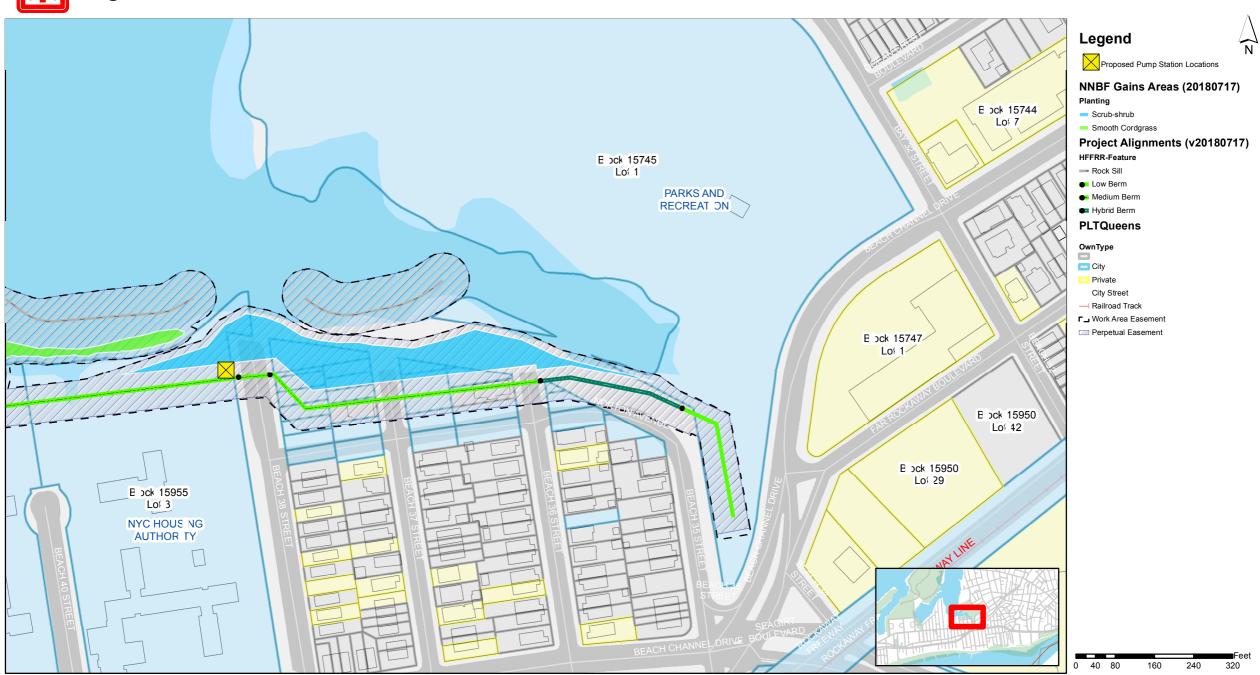




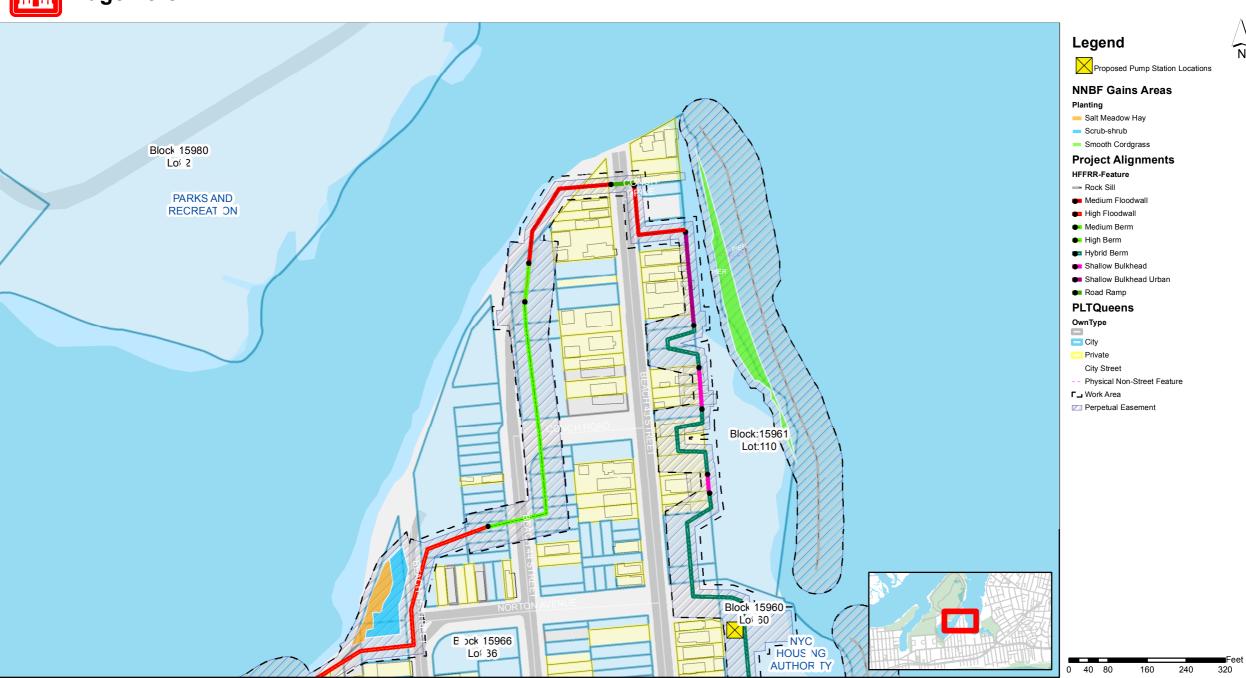
# Motts Basin N







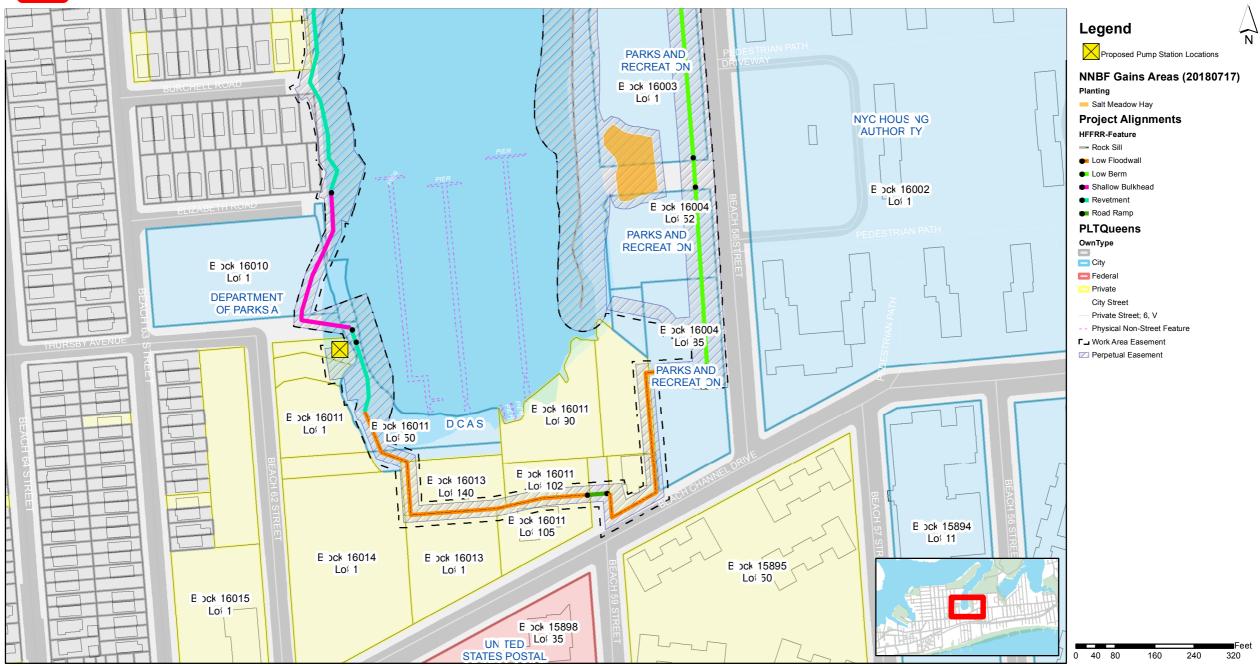


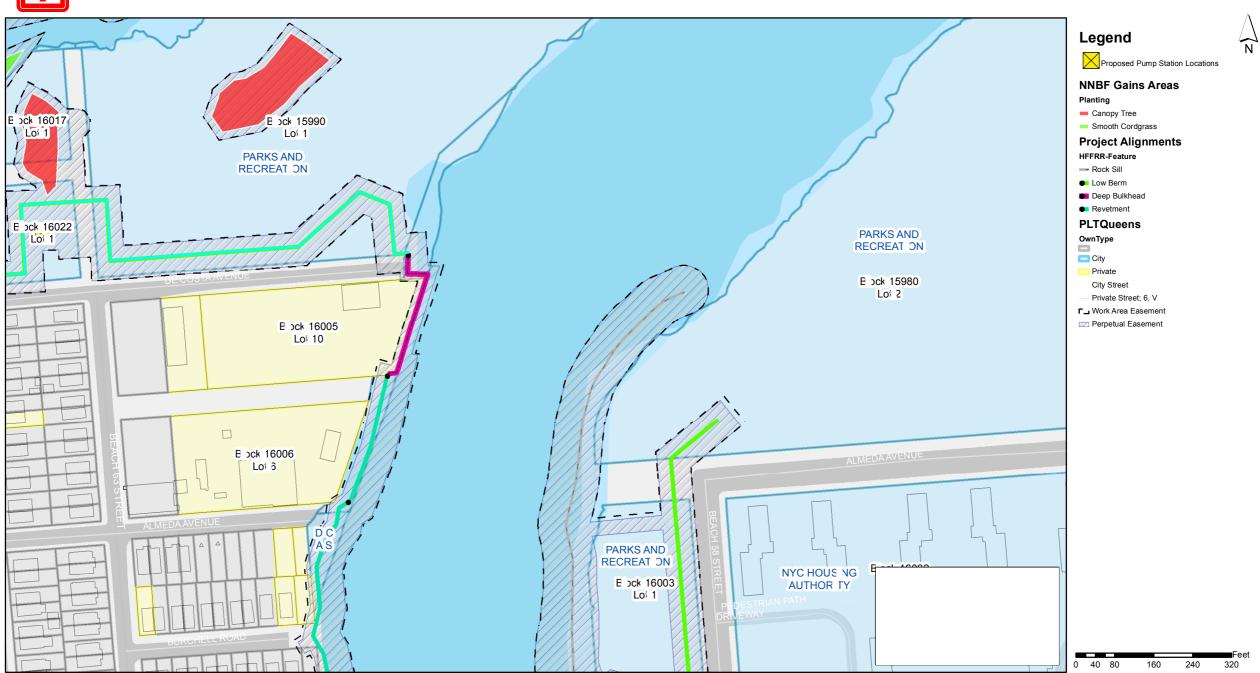






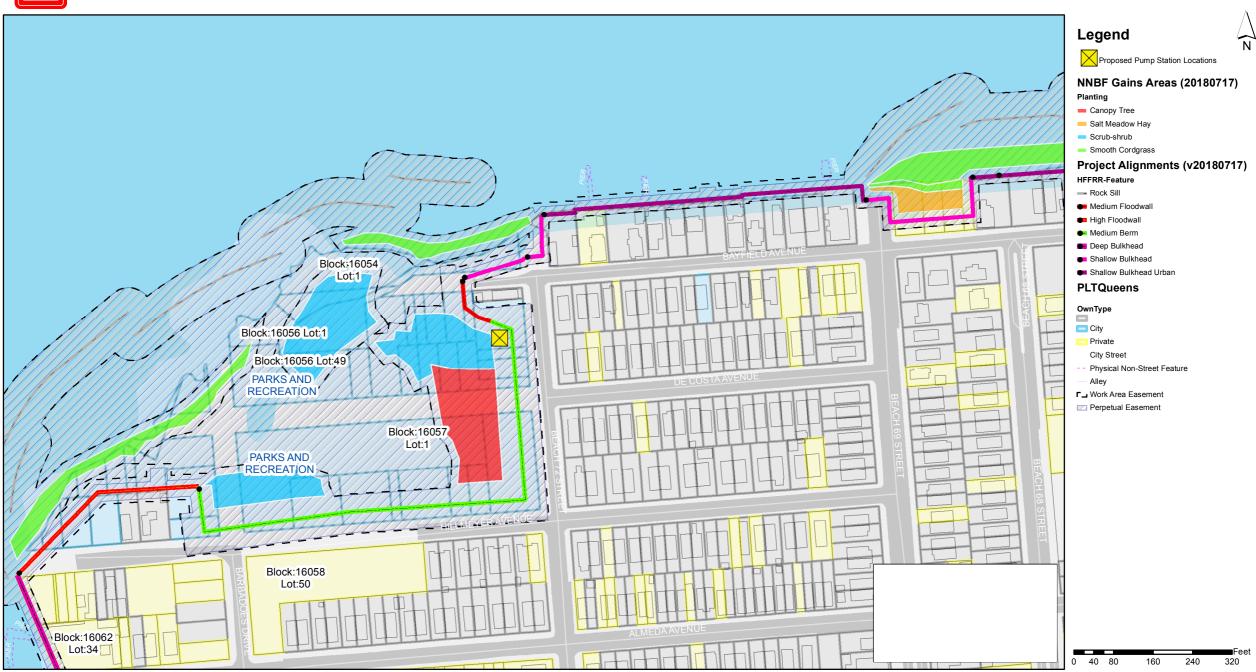




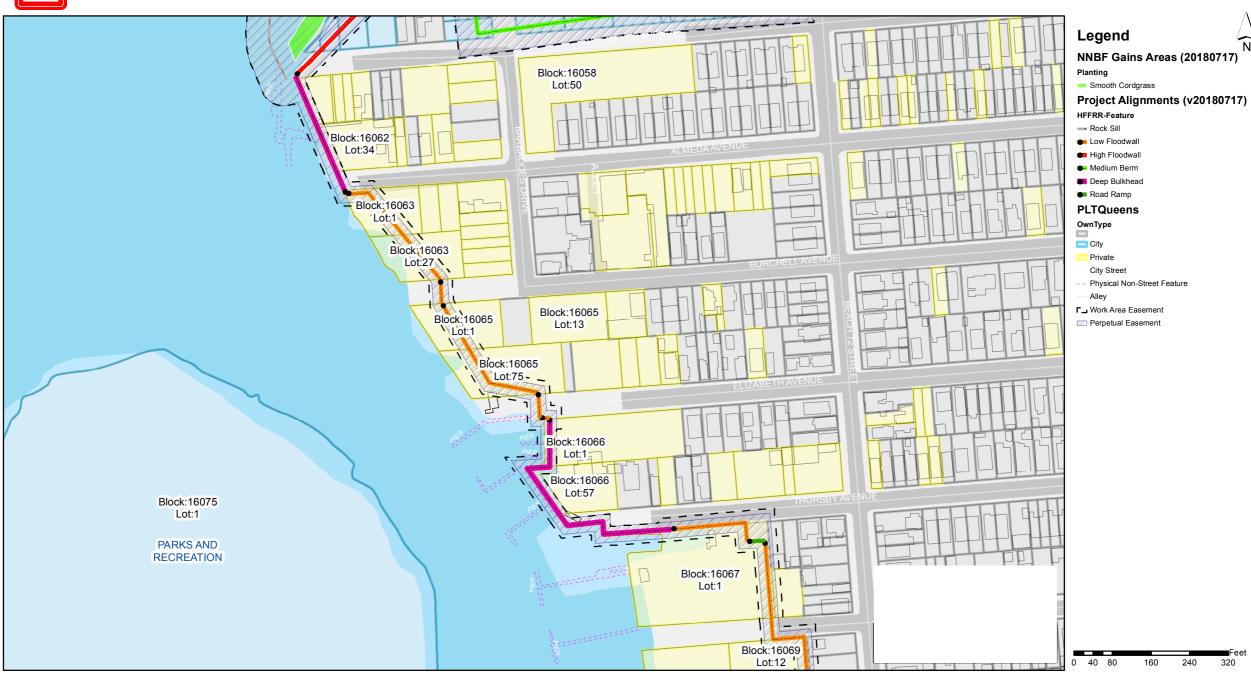






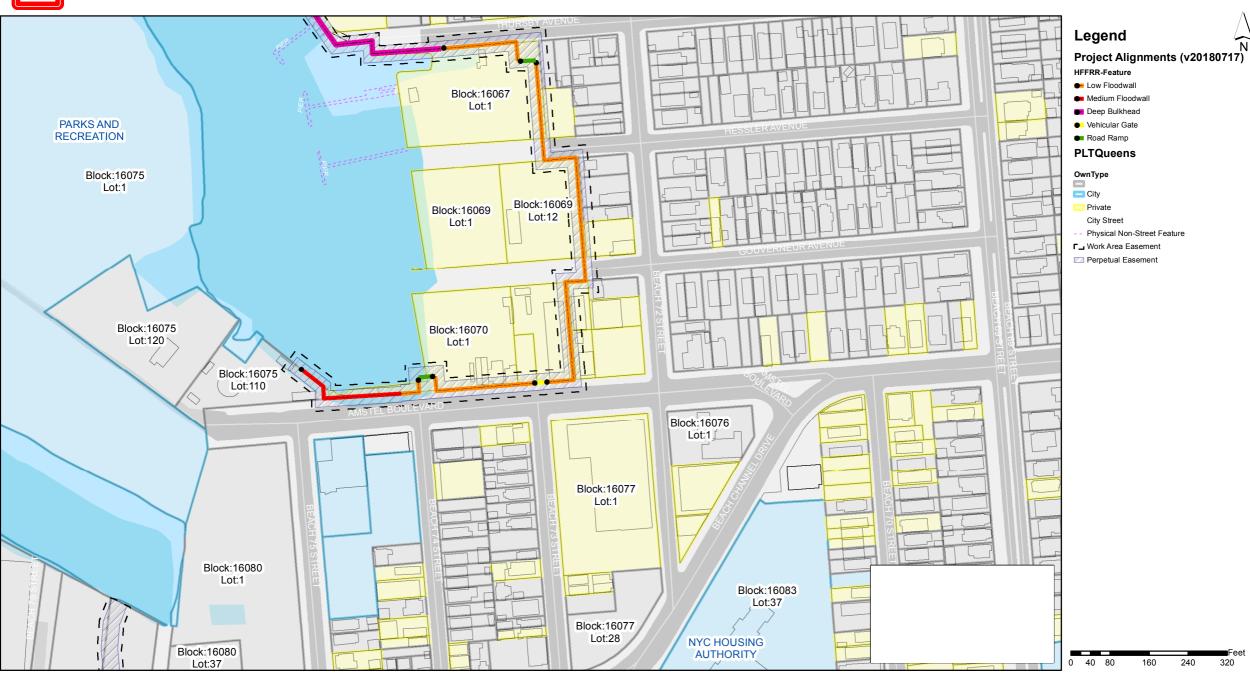




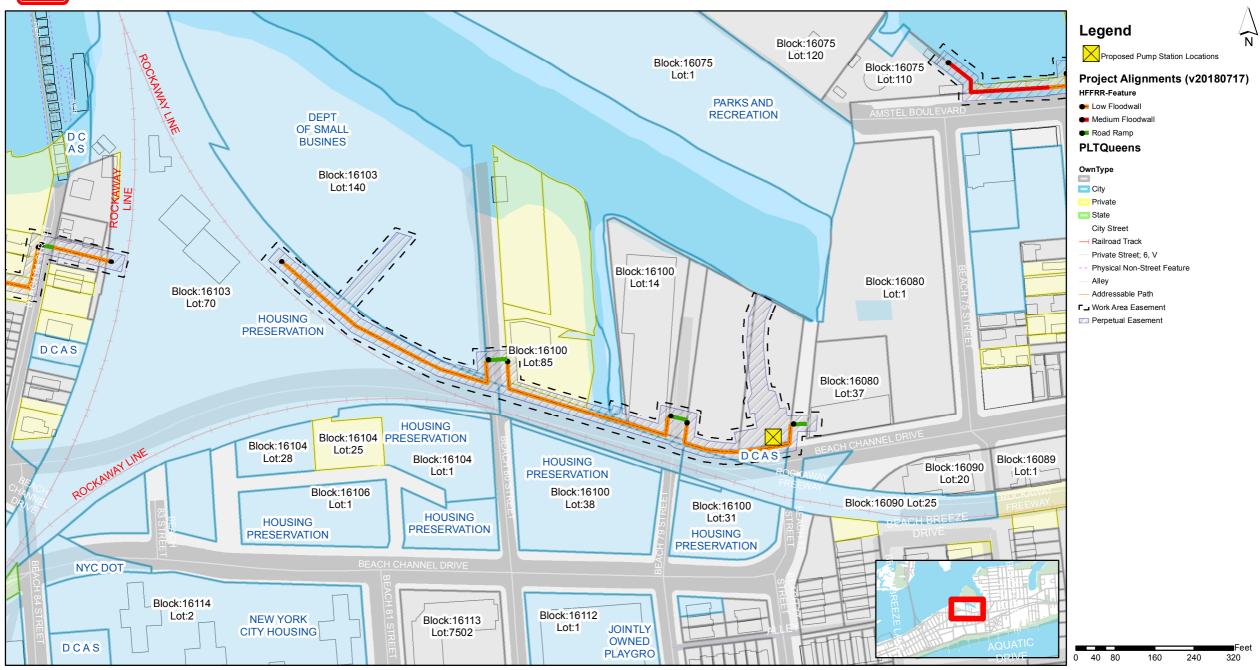




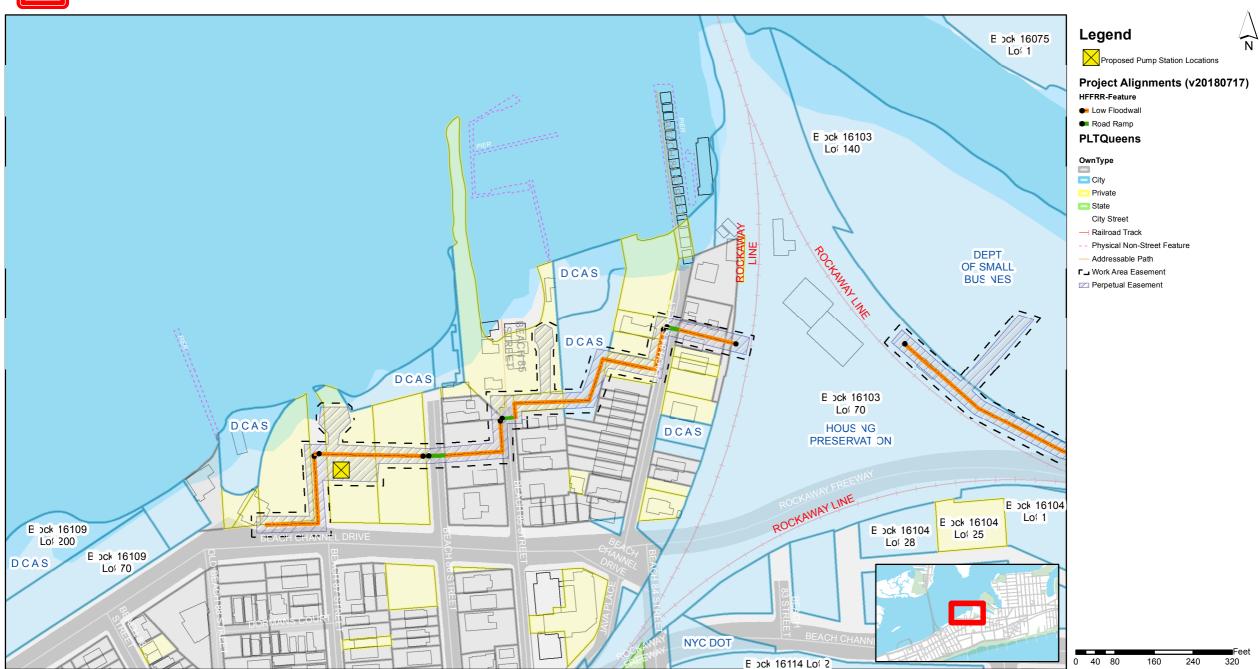




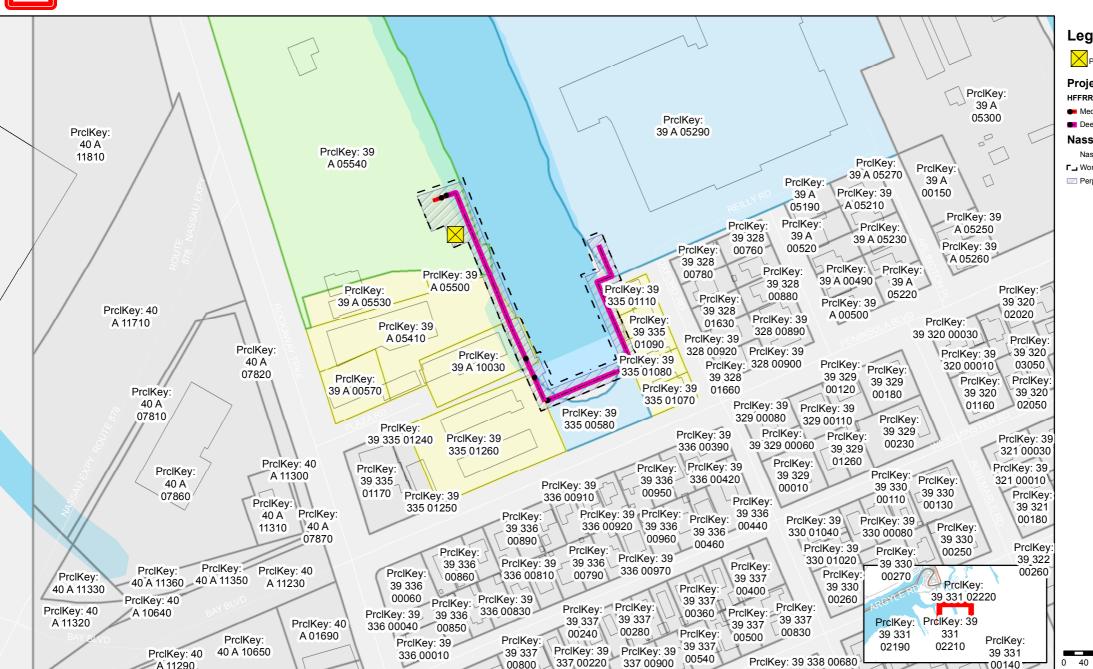
# Hammels







# **Cedarhurst-Lawrence**



#### Legend



Proposed Pump Station Locations

#### **Project Alignments**

HFFRR-Feature

- Medium Floodwall
- Deep Bulkhead

#### **Nassau County Streets**

160

Nassau County Streets

- **Г**\_ Work Area Easement
- Perpetual Easement