



**US Army Corps  
of Engineers®**  
New York District

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**NEW YORK AND NEW JERSEY HARBOR AND  
TRIBUTARTIES COASTAL STORM RISK  
MANAGEMENT STUDY**

**INTEGRATED FEASIBILITY REPORT & Tier 1  
ENVIRONMENTAL IMPACT STATEMENT**

**APPENDIX E: Map Series**

**Sub-Appendix B: Alternative 3A Map Series**

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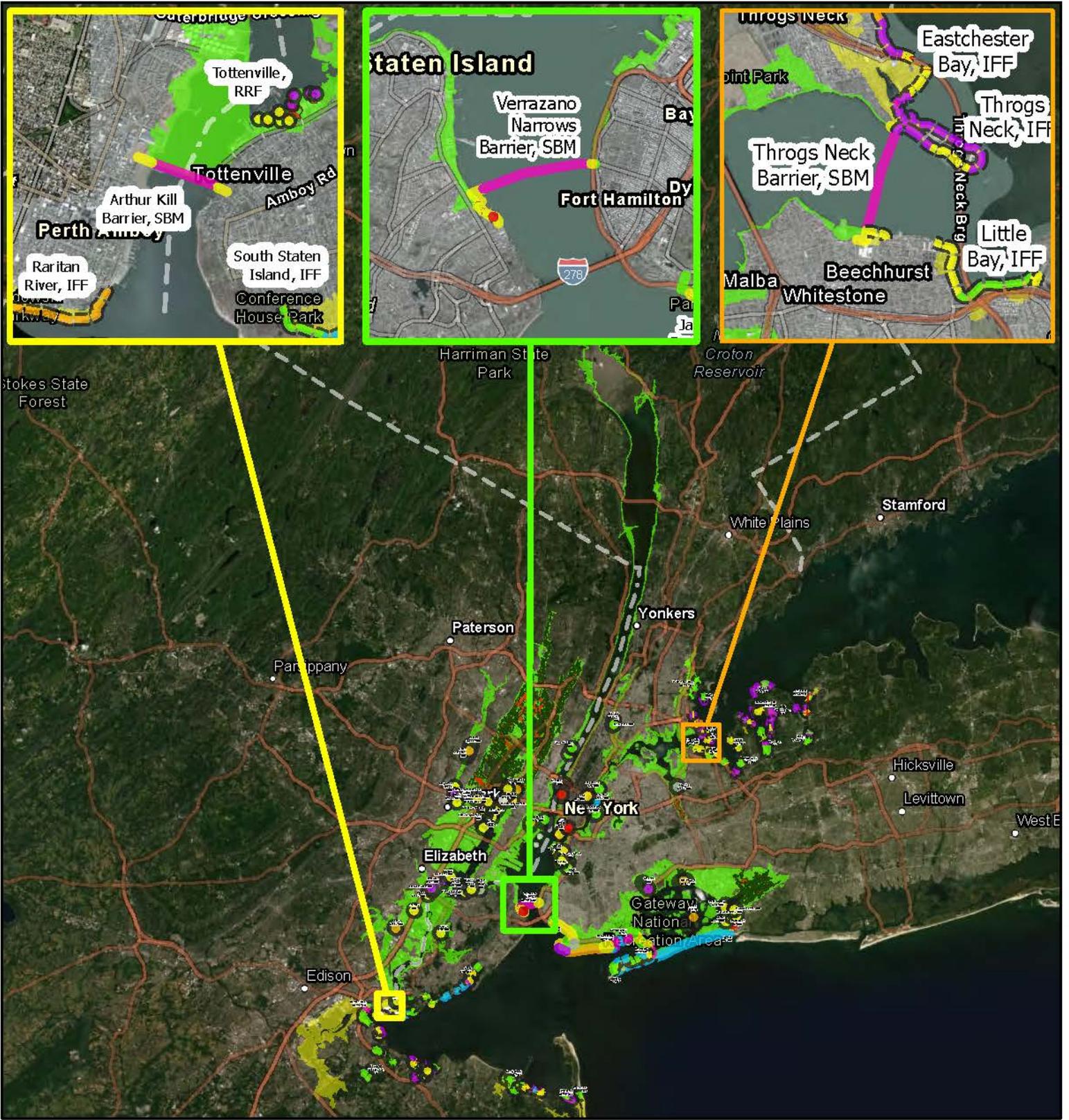
# Introduction

There are five sets of map series graphics contained within this appendix. Each map series displays the various features associated with that specific alternative, the location of those features, and the specific measures that are a part of those features. The risk reduction areas associated with those features are also displayed.

The maps are organized by alternative and then broken down by the type of feature. Storm Surge Barriers (SSBs) and Shoreline Based Measures (SBMs) are grouped together in a set of maps, followed by a set of maps for Induced Flood-Mitigation Features (IFFs), and finally the Risk Reduction Features (RRFs) map sets. Each alternative includes these three types of features except for Alternative 5 which only includes SBMs.

Each feature and the area of reduced risk associated with it has its own map; however, it should be noted that the following specific maps represent more than one feature because they provide risk reduction to a shared area and/or are dependent on one another hydraulically:

- Alternative 2 – SSB/SBM Map Series  
Outer Harbor Barrier and associated Shoreline Based Measure  
Throgs Neck Barrier and associated Shoreline Based Measure
- Alternative 3A – SSB/SBM Map Series  
Arthur Kill Barrier and associated Shoreline Based Measure  
Verrazzano Narrows Barrier and associated Shoreline Based Measure  
Throgs Neck Barrier and associated Shoreline Based Measures
- Alternative 3B – SSB/SBM Map Series  
Arthur Kill Barrier and associated Shoreline Based Measure  
Kill Van Kull Barrier and associated Shoreline Based Measure
- Alternative 2 and Alternative 3A – IFF Map Series  
Eastchester Bay IFF  
Throgs Neck IFF
- Alternative 2, Alternative 3A, and Alternative 3B – RRF Map Series  
Kearny Point RRF  
S. Kearny Point RRF



Legend		
ALT3A Features/Measures		
	SBM, Deployable Flood Barrier	
	SBM, Elevated Promenade	
	SBM, Floodwall	
	SBM, Levee	
	SBM, Reinforced Dune	
	SBM, Seawall	
	SBM, Storm Surge Barrier	
	SBM, Tide Gate	
	RRF, Berm	
	RRF, Bulkhead	
	RRF, Deployable Flood Barrier	
	RRF, Floodwall	
	RRF, Navigable Gate	
	RRF, Revetment	
	RRF, Road Raising	
	RRF, Tide Gate	
	IFF, Deployable Flood Barrier	
	IFF, Elevated Promenade	
	IFF, Floodwall	
	IFF, Levee	
	IFF, Reinforced Dune	
	IFF, Seawall	
	IFF, Storm Surge Barrier	
	IFF, Tide Gate	
	ALT3A Reduced Risk Areas	
	SSB/SBM Reduced Risk Areas	
	RRF Reduced Risk Areas	
	IFF Reduced Risk Areas	

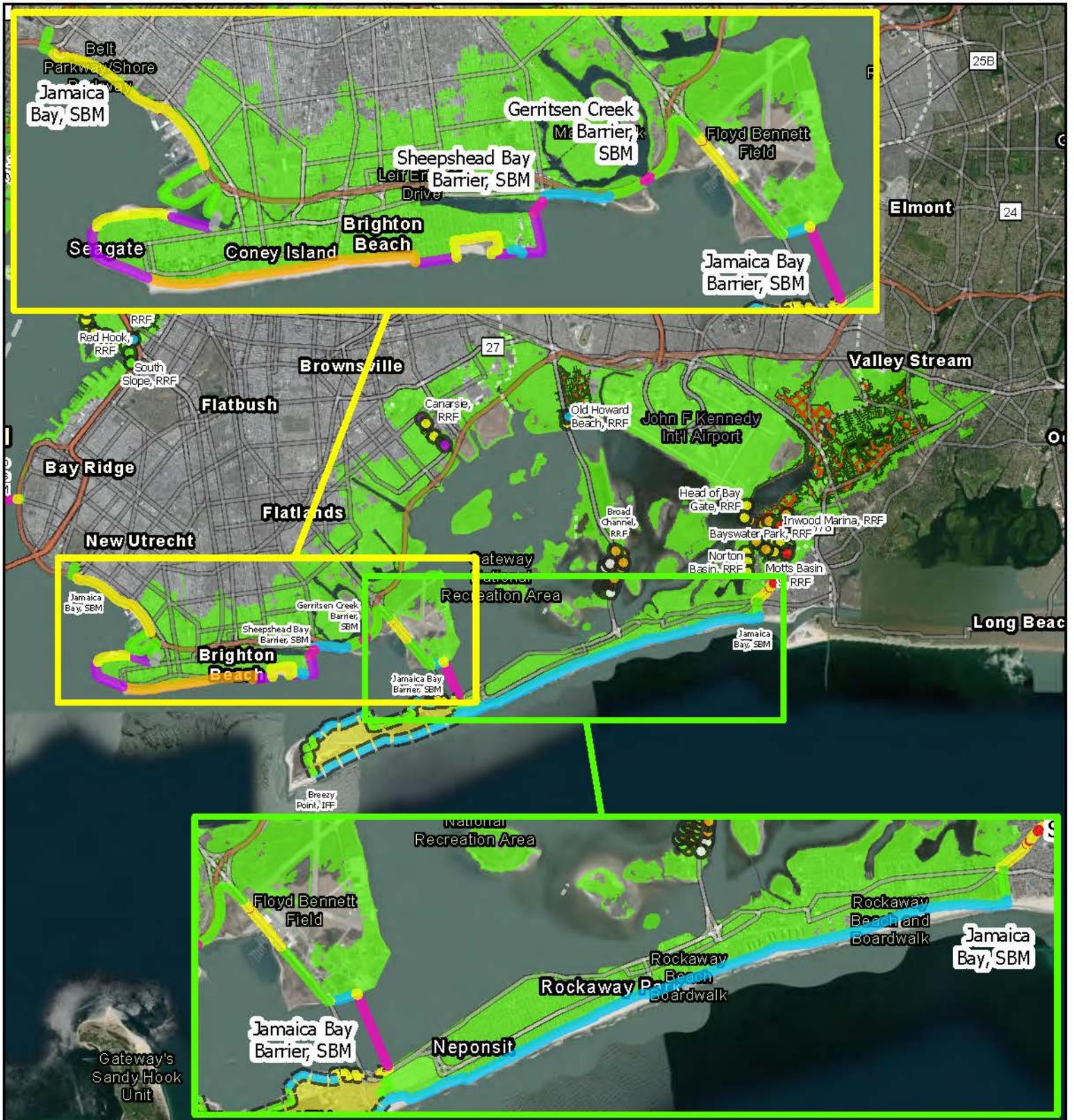
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**Alternative 3A - SSB/SBMs**  
Feature: Arthur Kill, Verrazano Narrows, & Throgs Neck

Page 1 of 2

0 50000 Feet

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Legend	
Alt3A Features/Measures	
	SBM, Deployable Flood Barrier
	SBM, Elevated Promenade
	SBM, Floodwall
	SBM, Levee
	SBM, Reinforced Dune
	SBM, Seawall
	SBM, Storm Surge Barrier
	SBM, Tide Gate
	RRF, Berm
	RRF, Bulkhead
	RRF, Deployable Flood Barrier
	RRF, Floodwall
	RRF, Navigable Gate
	RRF, Revetment
	RRF, Road Raising
	RRF, Tide Gate
	IFF, Deployable Flood Barrier
	IFF, Floodwall
	IFF, Levee
	IFF, Reinforced Dune
Alt3A Reduced Risk Areas	
	SSB/SBM Reduced Risk Areas
	RRF Reduced Risk Areas
	IFF Reduced Risk Areas

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**Alternative 3A - SSB/SBMs**

Feature Name: Jamaica Bay

Page 2 of 2

0 10000 Feet

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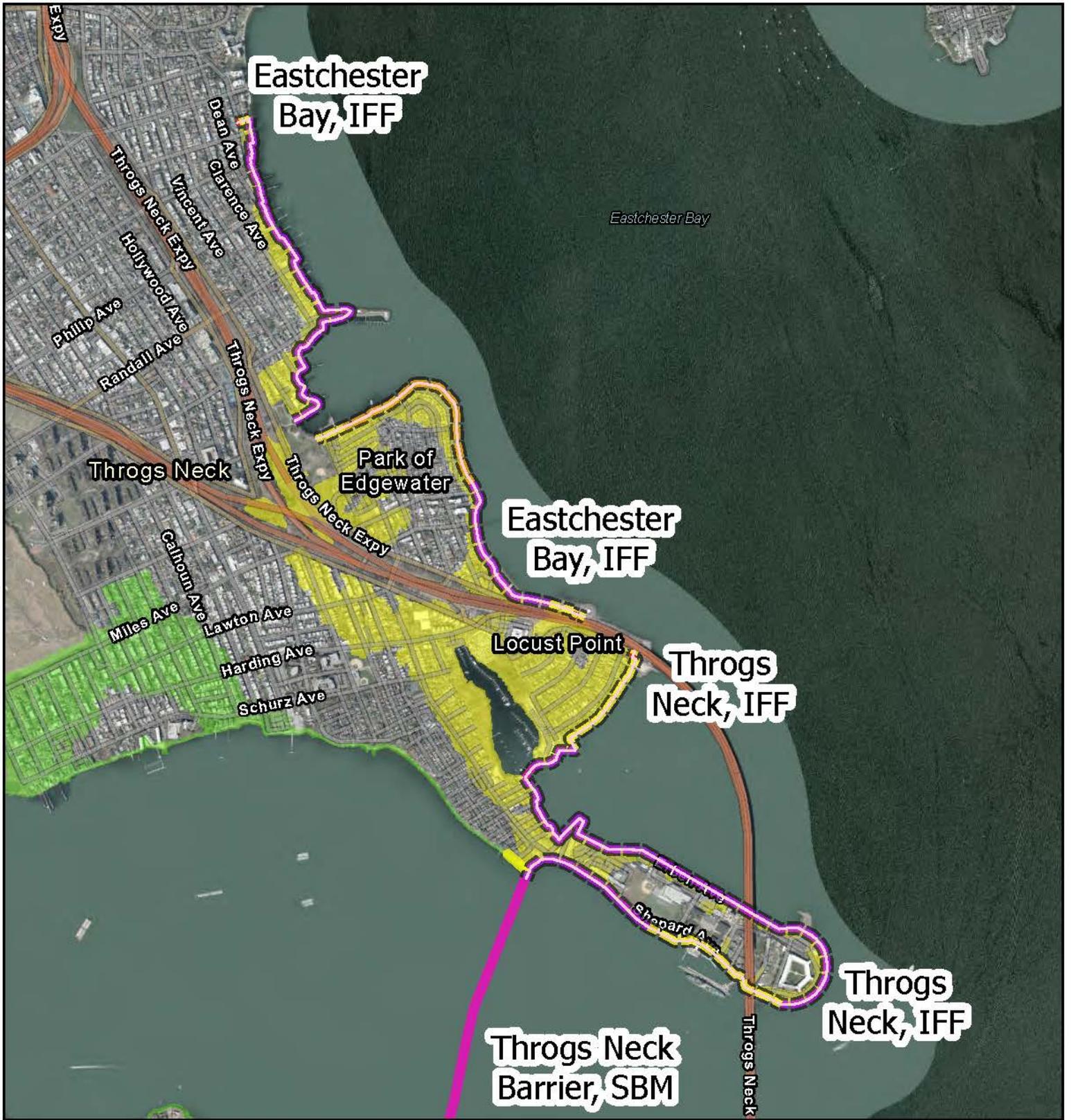
Legend	
Alt3A Features/Measures	IFF, Floodwall
SBM, Floodwall	IFF, Levee
SBM, Levee	IFF, Reinforced Dune
SBM, Reinforced Dune	Alt3A Reduced Risk Areas
SBM, Seawall	SSB/SBM Reduced Risk Areas
SBM, Storm Surge Barrier	IFF Reduced Risk Areas
IFF, Deployable Flood Barrier	HATS_ IFF_ 20220613

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**Alternative 3A - IFFs**  
 Feature Name: Breezy Point  
 Page 1 of 18

0 2000 Feet

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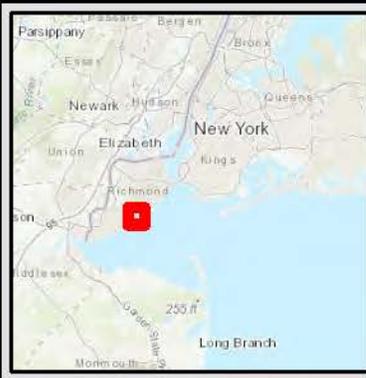
Legend	
Alt3A Features/Measures	IFF, Seawall
SBM, Floodwall	IFF, Storm Surge Barrier
SBM, Storm Surge Barrier	Alt3A Reduced Risk Areas
IFF, Deployable Flood Barrier	SSB/SBM Reduced Risk Areas
IFF, Elevated Promenade	IFF Reduced Risk Areas
IFF, Floodwall	HATS_ IFF_ 20220613

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**Alternative 3A - IFFs**  
Feature: Eastchester Bay & Throgs Neck  
Page 2 of 18

0 2000 Feet

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**Legend**

Alt3A Features/Measures	■ IFF, Seawall
■ IFF, Floodwall	■ IFF Reduced Risk Areas
■ IFF, Levee	■ HATS_ IFF_ 20220613
■ IFF, Reinforced Dune	

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**Alternative 3A - IFFs**

Feature Name: Great Kills  
Page 3 of 18

0 1000 Feet

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Legend	
Alt3A Features/Measures	IFF, Seawall
IFF, Floodwall	IFF, Tide Gate
IFF, Levee	IFF Reduced Risk Areas
IFF, Reinforced Dune	HATS_ IFF_ 20220613

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**Alternative 3A - IFFs**  
Feature Name: Great Neck  
Page 4 of 18

0 2000 Feet

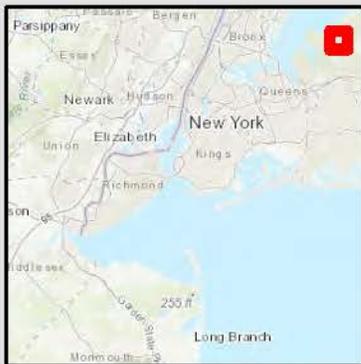
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Hempstead Harbor, IFF

Hempstead Harbor, IFF

Hempstead Harbor, IFF



**Legend**

- Alt3A Features/Measures
- IFF, Deployable Flood Barrier
- IFF, Floodwall
- IFF, Levee
- IFF, Seawall
- IFF, Storm Surge Barrier
- IFF Reduced Risk Areas
- HATS\_IFF\_20220613

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**Alternative 3A - IFFs**  
 Feature Name: Hempstead Harbor  
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**Legend**

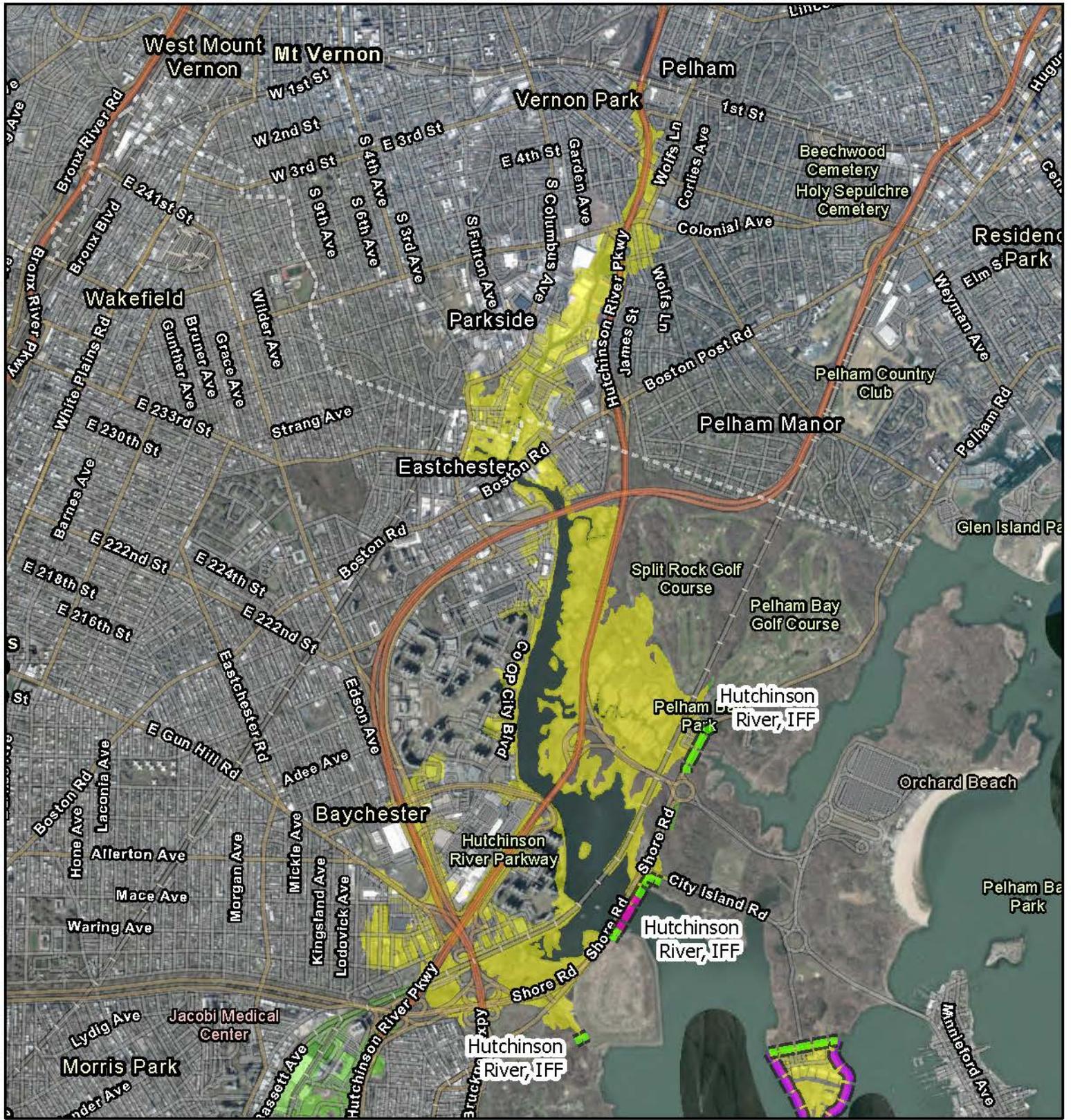
Alt3A Features/Measures	IFF, Seawall
IFF, Deployable Flood Barrier	IFF, Storm Surge Barrier
IFF, Floodwall	IFF, Tide Gate
IFF, Levee	IFF Reduced Risk Areas
IFF, Reinforced Dune	

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**Alternative 3A - IFFs**  
Feature Name: Highlands  
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0 5000 Feet

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**Legend**

- Alt3A Features/Measures
- IFF,Levee
- IFF,Seawall
- IFF,Storm Surge Barrier
- Alt3A Reduced Risk Areas
- SSB/SBM Reduced Risk Areas
- IFF Reduced Risk Areas

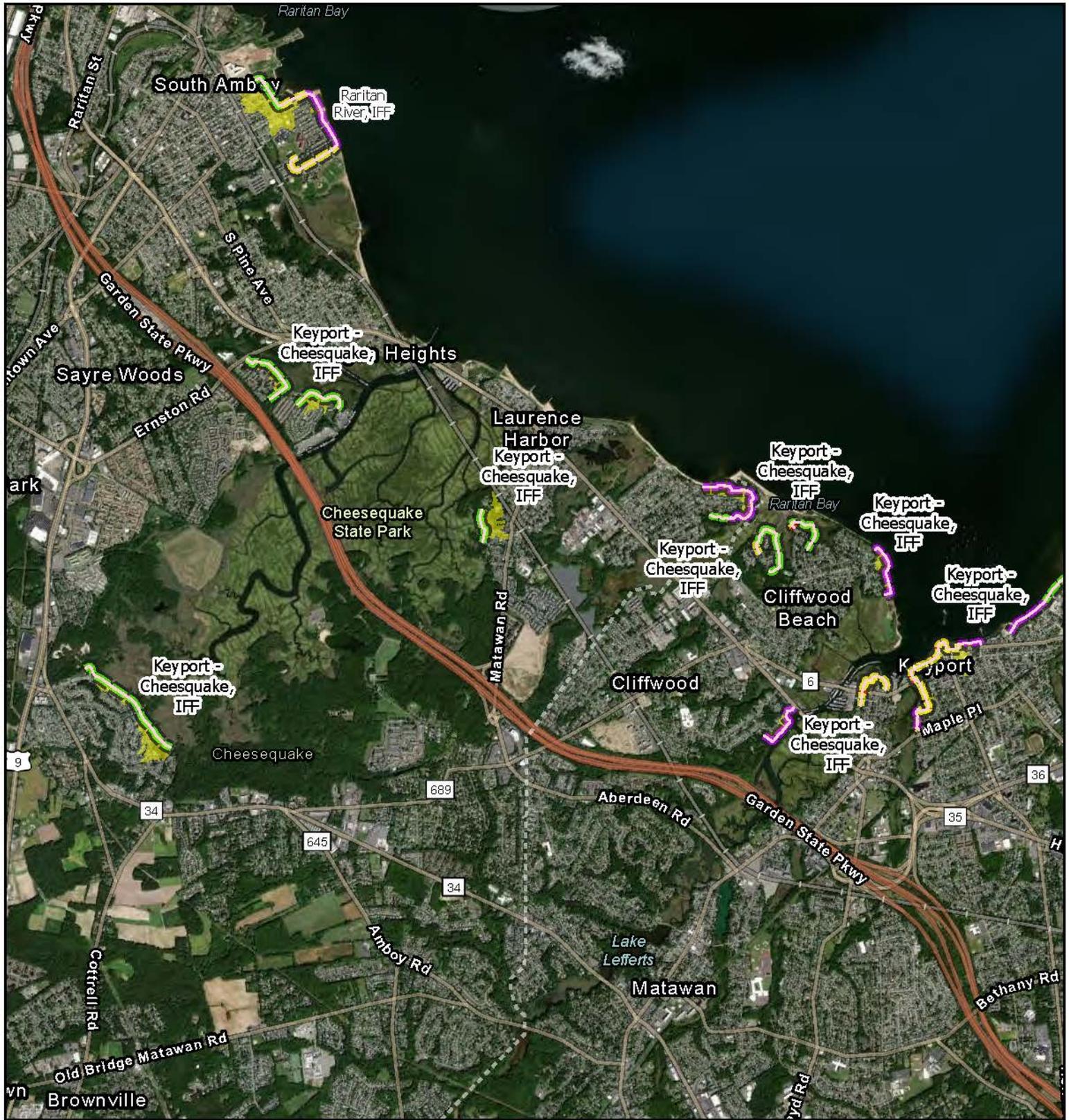
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**Alternative 3A - IFFs**

Feature Name: Hutchinson River  
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**Legend**

IFF, Deployable Flood Barrier	IFF, Seawall
IFF, Floodwall	IFF, Tide Gate
IFF, Levee	IFF Reduced Risk Areas
	HATS_ IFF_ 20220613

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**Alternative 3A - IFFs**  
Feature Name: Keyport - Cheesquake  
Page 8 of 18

0 4000 Feet

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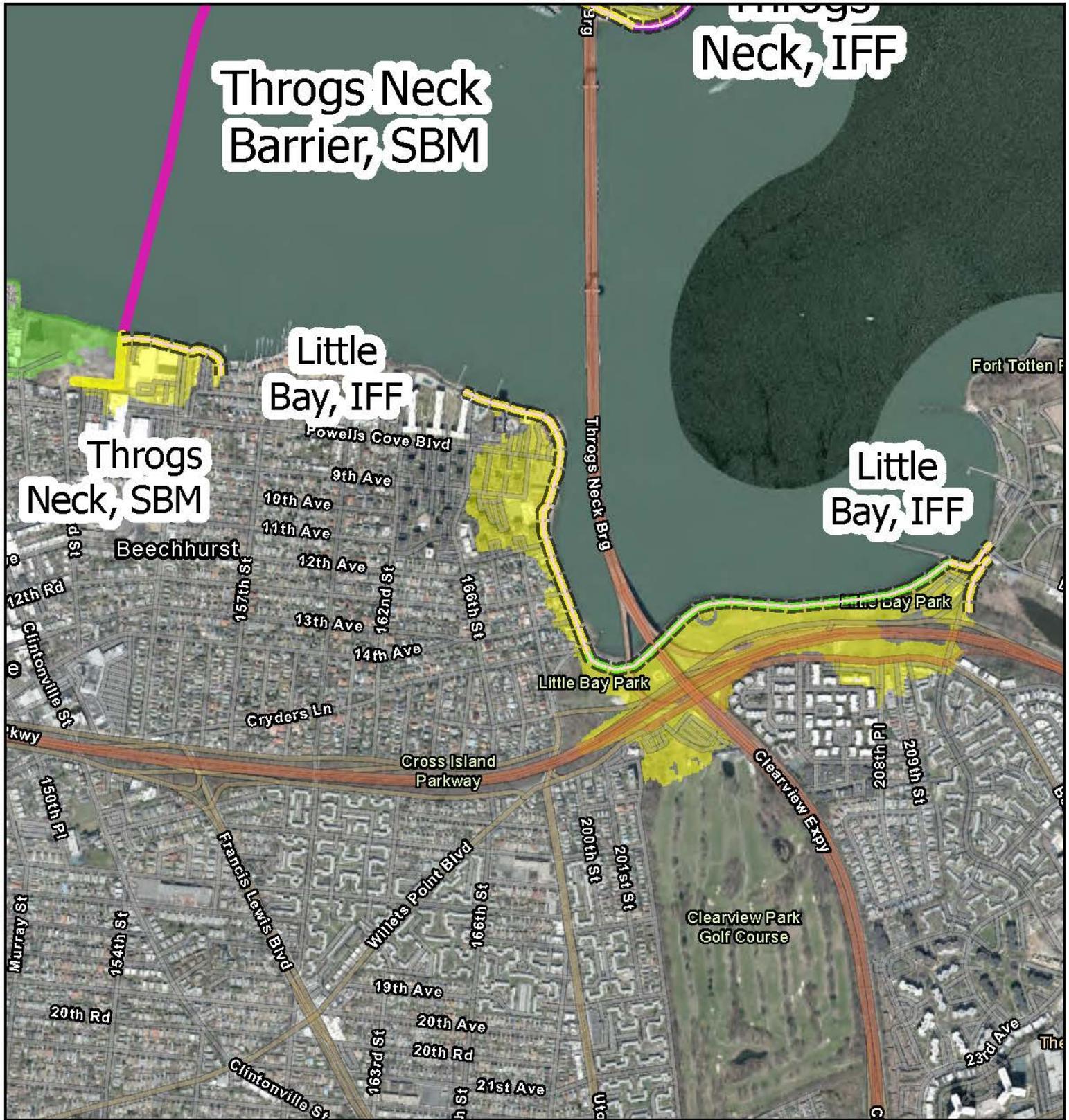
Throgs Neck  
Barrier, SBM

Throgs  
Neck, IFF

Little  
Bay, IFF

Little  
Bay, IFF

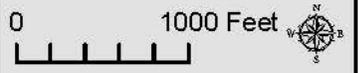
Throgs  
Neck, SBM

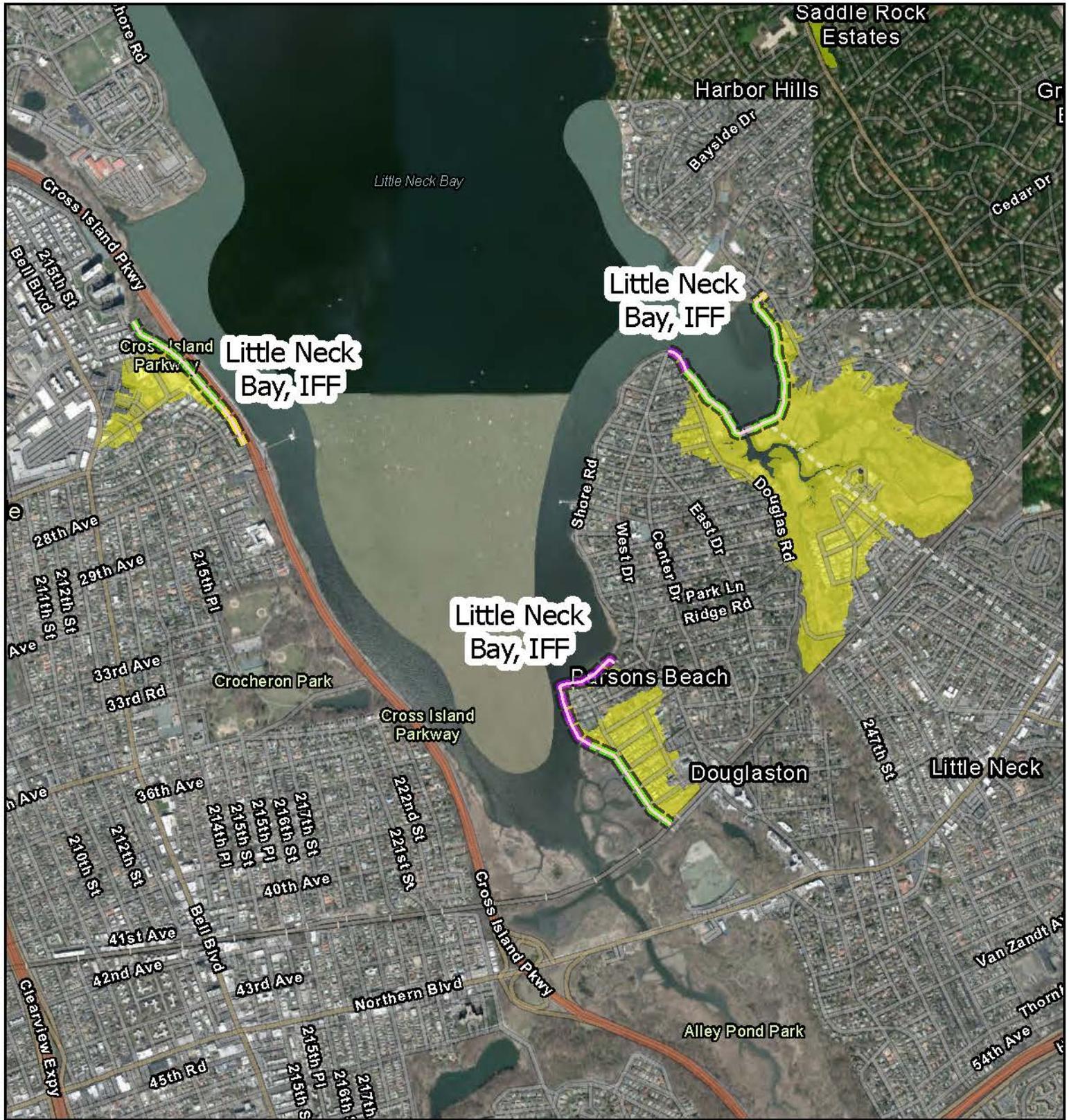


- Legend**
- Alt3A Features/Measures
  - SBM, Floodwall
  - SBM, Storm Surge Barrier
  - IFF, Floodwall
  - IFF, Levee
  - IFF, Seawall
  - Alt3A Reduced Risk Areas
  - SSB/SBM Reduced Risk Areas
  - IFF Reduced Risk Areas
  - HATS\_ IFF\_ 20220613

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**Alternative 3A - IFFs**  
Feature Name: Little Bay  
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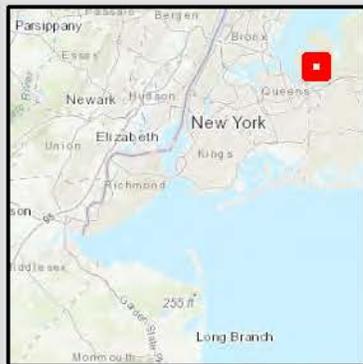
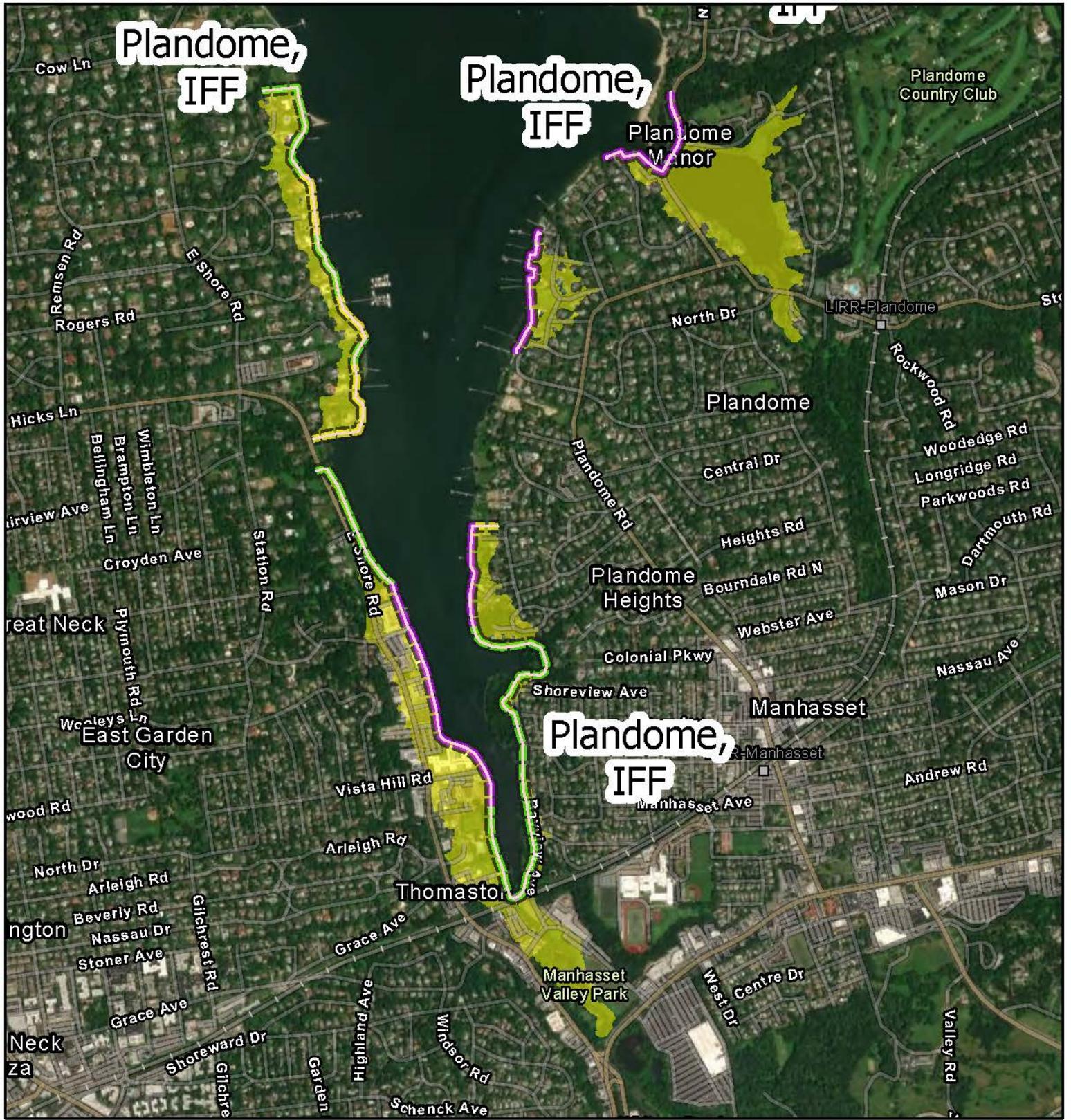
Legend	
Alt3A Features/Measures	■ IFF, Tide Gate
■ IFF, Floodwall	■ IFF Reduced Risk Areas
■ IFF, Levee	— HATS_ IFF_ 20220613
■ IFF, Seawall	

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**Alternative 3A - IFFs**  
Feature Name: Little Neck Bay  
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0 1000 Feet

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**Legend**

- Alt3A Features/Measures
- IFF, Floodwall
- IFF, Levee
- IFF, Seawall
- IFF, Tide Gate
- IFF Reduced Risk Areas
- HATS\_ IFF\_ 20220613

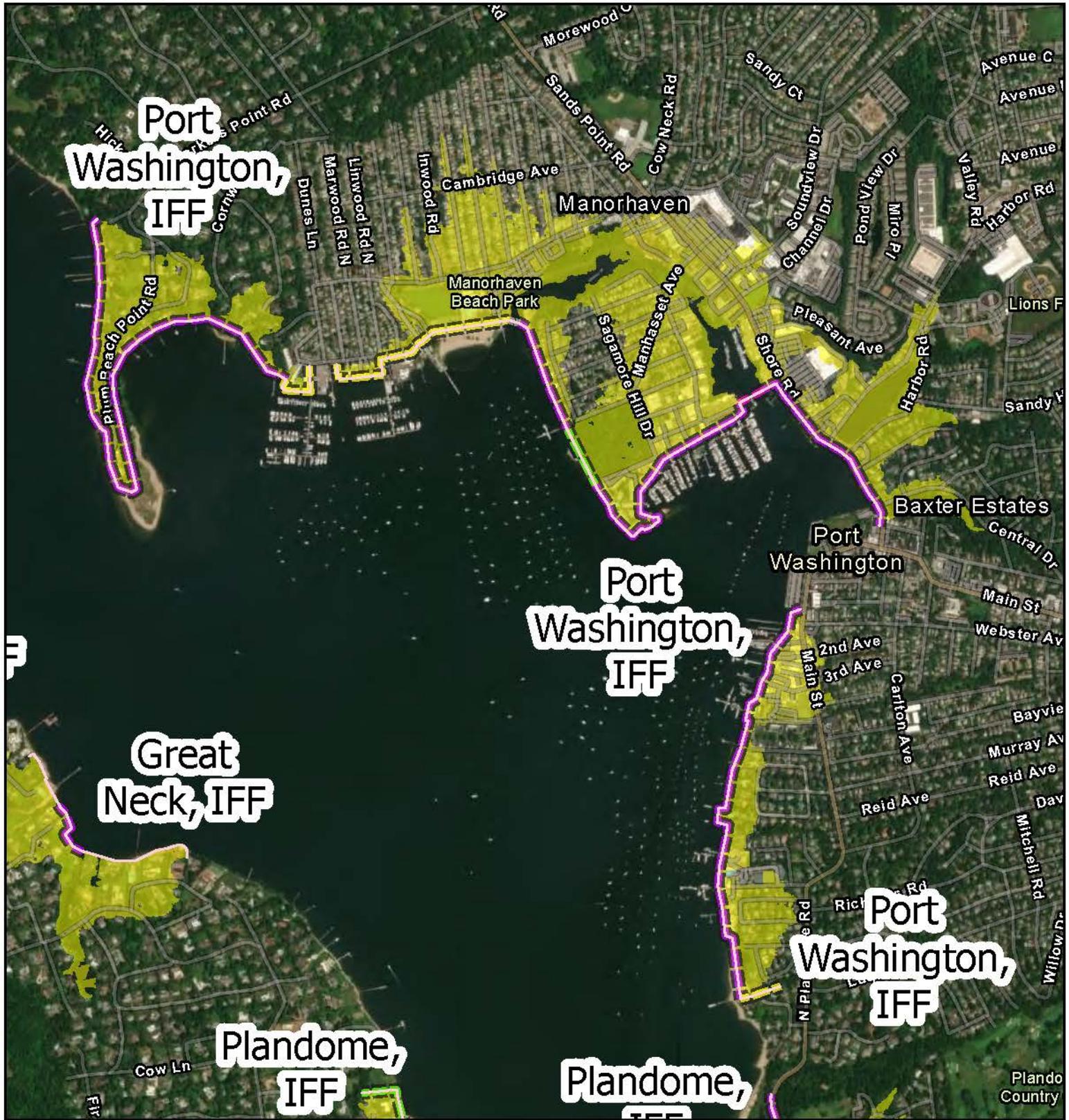
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**Alternative 3A - IFFs**

Feature Name: Plandome  
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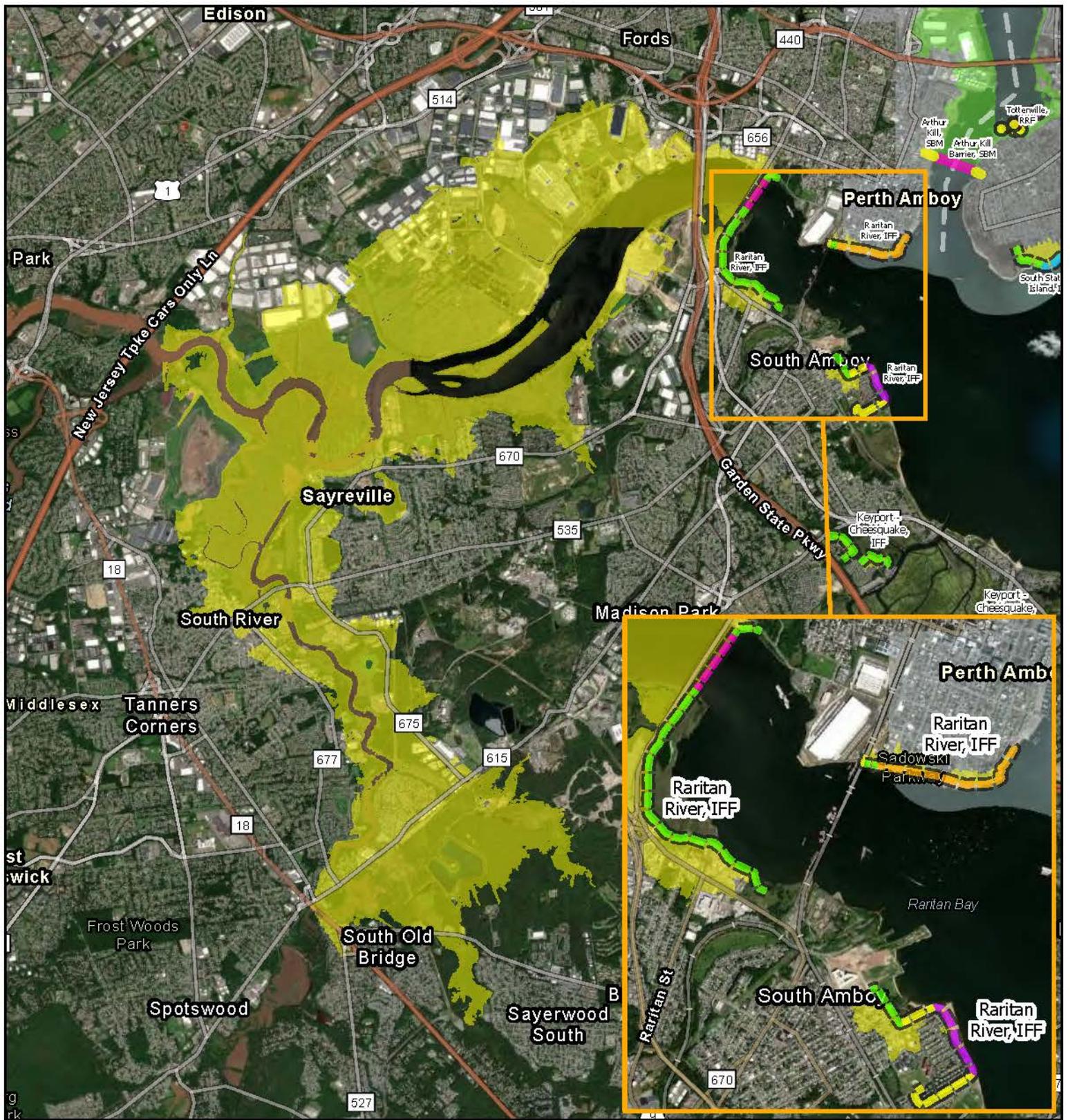
Legend	
Alt3A Features/Measures	IFF, Storm Surge Barrier
IFF, Floodwall	IFF, Tide Gate
IFF, Levee	IFF Reduced Risk Areas
IFF, Seawall	HATS_ IFF_ 20220613

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**Alternative 3A - IFFs**  
Feature Name: Port Washington  
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0 1000 Feet

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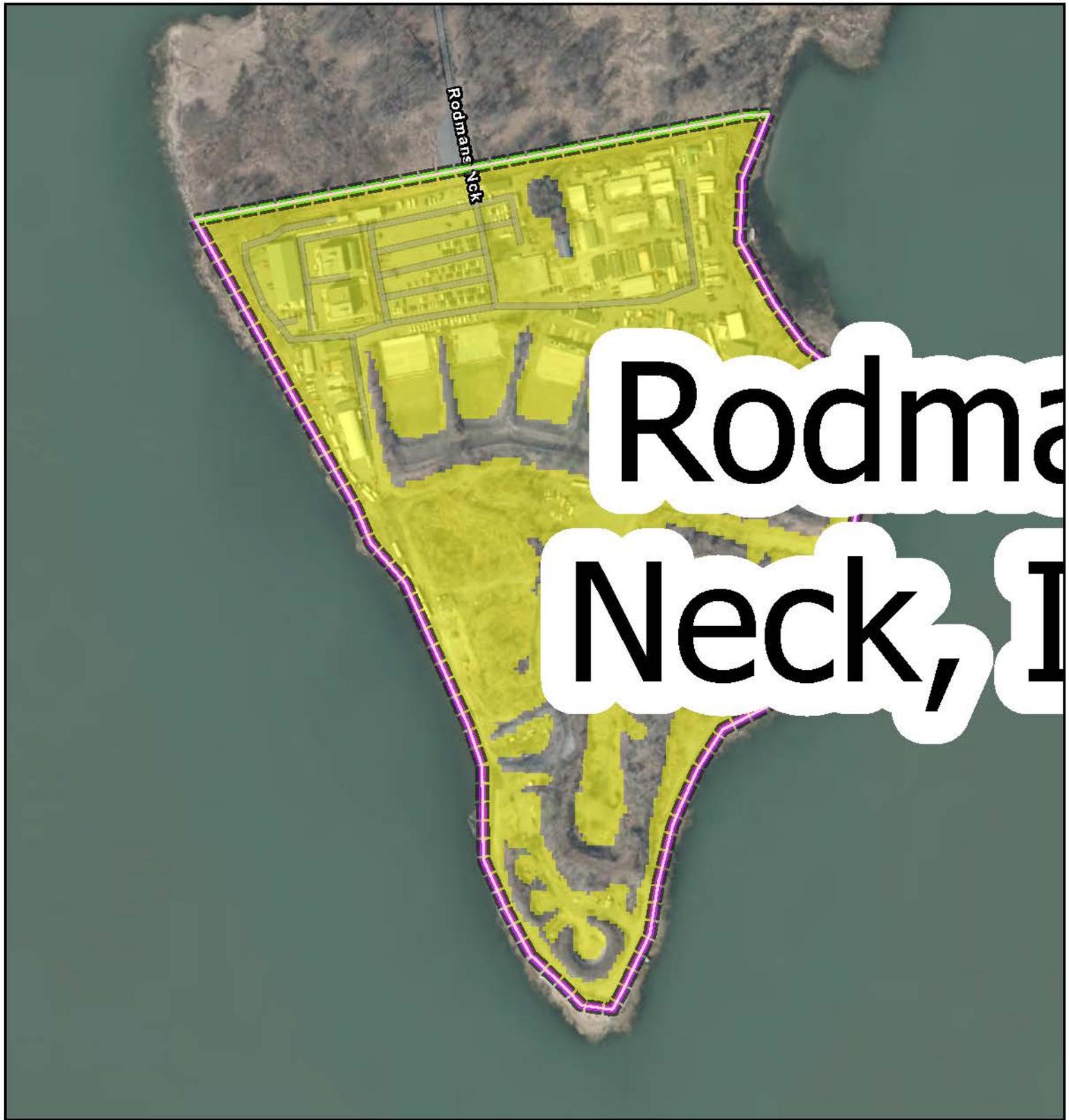
Legend	
Alt3A Features/Measures	IFF, Reinforced Dune
SBM, Floodwall	IFF, Seawall
SBM, Storm Surge Barrier	IFF, Storm Surge Barrier
RRF, Bulkhead	IFF, Tide Gate
RRF, Floodwall	Alt3A Reduced Risk Areas
RRF, Revetment	SSB/SBM Reduced Risk Areas
IFF, Elevated Promenade	RRF Reduced Risk Areas
IFF, Floodwall	IFF Reduced Risk Areas
IFF, Levee	

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**Alternative 3A - IFFs**  
Feature Name: Raritan River  
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0 5000 Feet

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# Rodman Neck, NJ



### Legend

- Alt3A Features/Measures**
- ▬ IFF, Levee
  - ▬ IFF, Seawall
  - IFF Reduced Risk Areas
  - ▬ HATS\_IFF\_20220613

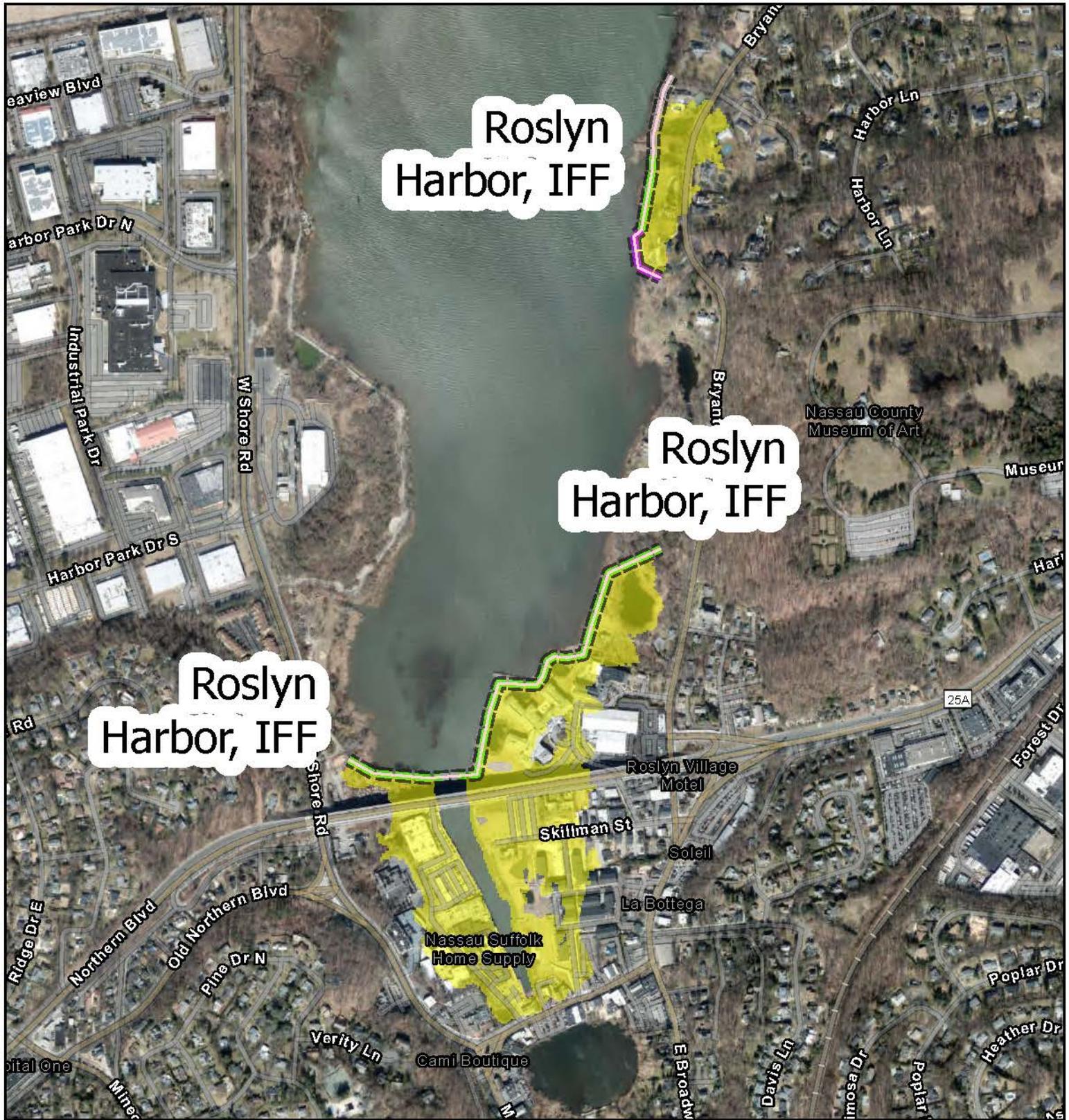
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### Alternative 3A - IFFs

Feature Name: Rodman Neck  
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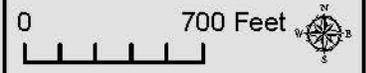
**Legend**

Alt3A Features/Measures

- IFF,Levee
- IFF,Seawall
- IFF,Tide Gate
- IFF Reduced Risk Areas
- HATS\_ IFF\_ 20220613

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**Alternative 3A - IFFs**  
Feature Name: Roslyn Harbor  
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**Legend**

**Alt3A Features/Measures**

-  IFF, Levee
-  IFF, Seawall
-  IFF, Tide Gate
-  IFF Reduced Risk Areas
-  HATS\_ IFF\_ 20220613

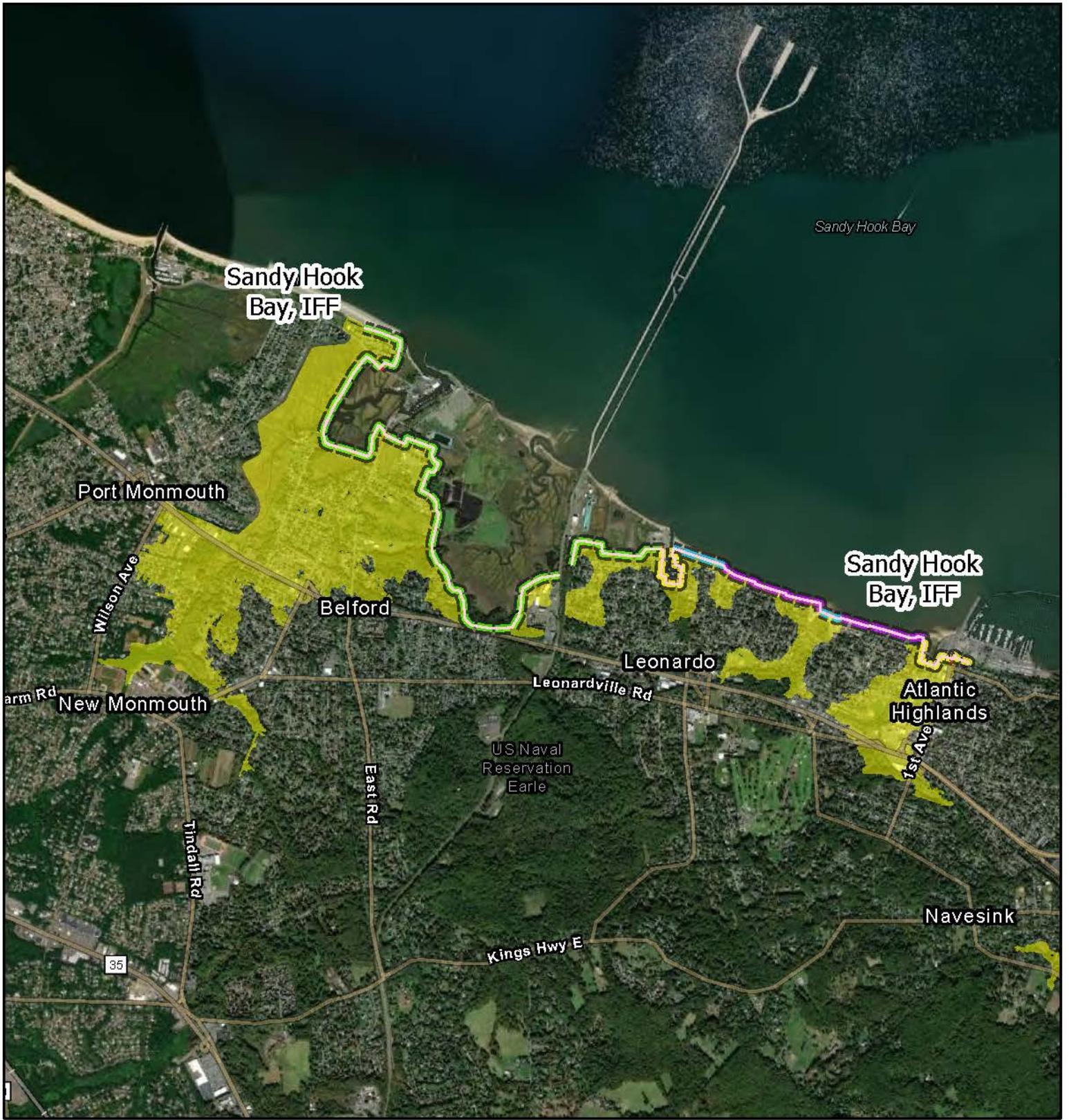
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**Alternative 3A - IFFs**

Feature Name: Sands Point  
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**Legend**

Alt3A Features/Measures	IFF, Seawall
IFF, Deployable Flood Barrier	IFF, Tide Gate
IFF, Floodwall	IFF, Reduced Risk Areas
IFF, Levee	HATS_ IFF_ 20220613
IFF, Reinforced Dune	

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**Alternative 3A - IFFs**  
Feature Name: Sandy Hook Bay  
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0 3000 Feet

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Legend	
Alt3A Features/Measures	IFF, Reinforced Dune
SBM, Floodwall	IFF, Tide Gate
SBM, Storm Surge Barrier	Alt3A Reduced Risk Areas
RRF, Bulkhead	SSB/SBM Reduced Risk Areas
RRF, Floodwall	RRF Reduced Risk Areas
RRF, Revetment	IFF Reduced Risk Areas
IFF, Floodwall	HATS_ IFF_ 20220613
IFF, Levee	

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**Alternative 3A - IFFs**  
Feature Name: South Staten Island  
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0 3000 Feet

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**Arthur Kill, RRF**



**Legend**

**Alt3A Features/Measures**

- RRF, Floodwall

**Alt3A Reduced Risk Areas**

- SSB/SBM Reduced Risk Areas
- RRF Reduced Risk Areas

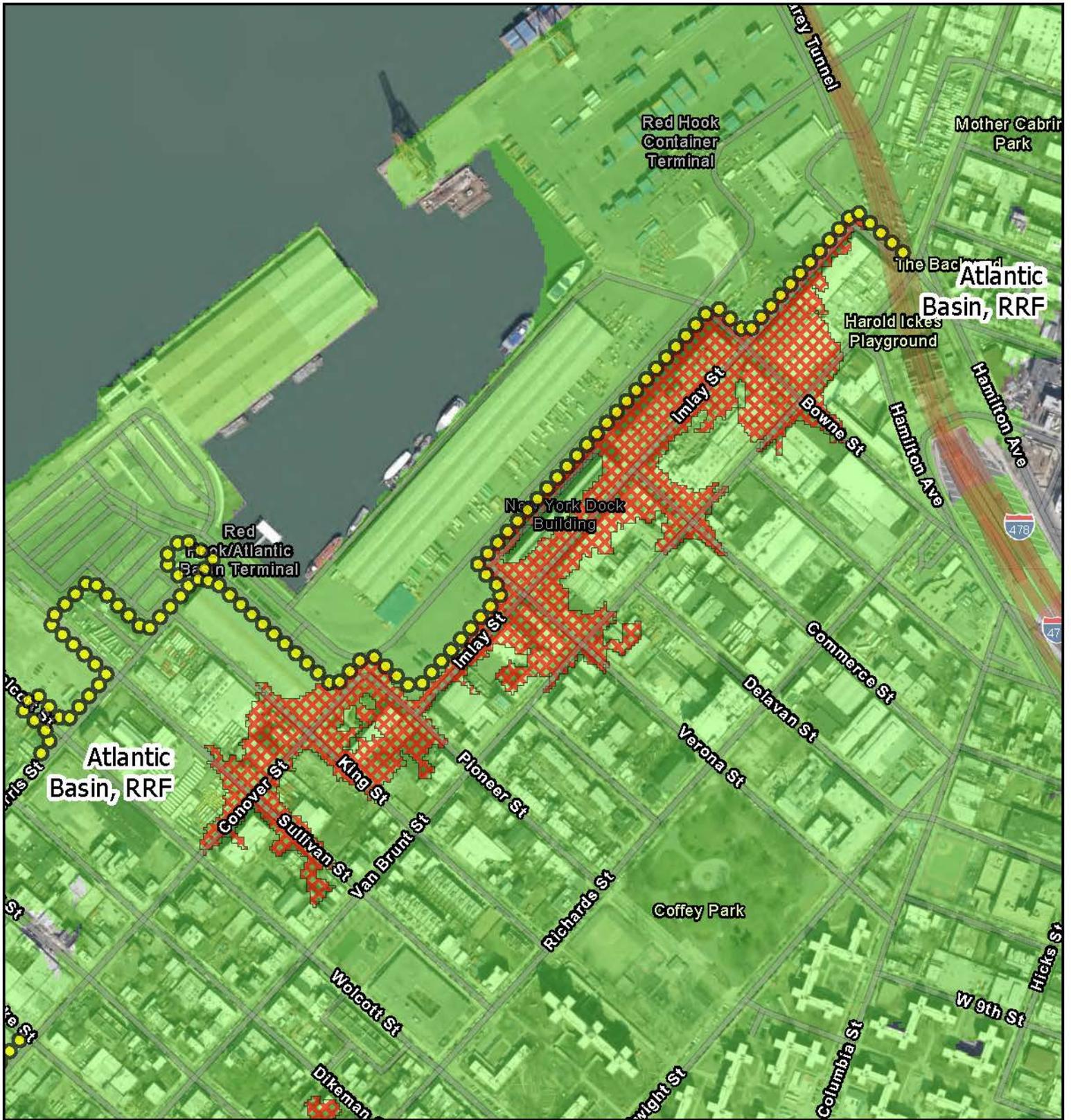
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**Alternative 3A - RRFs**

Feature Name: Arthur Kill  
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0 200 Feet

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**Legend**

**Alt3A Features/Measures**

●● RRF, Floodwall

**Alt3A Reduced Risk Areas**

■ SSB/SBM Reduced Risk Areas

▣ RRF Reduced Risk Areas

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**Alternative 3A - RRFs**

Feature Name: Atlantic Basin  
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# Bayonne Bridge, RRF

All American School Bus Corp.

Richmond Ter

Richmond Ter

Openview Ln

Edgeview Ln

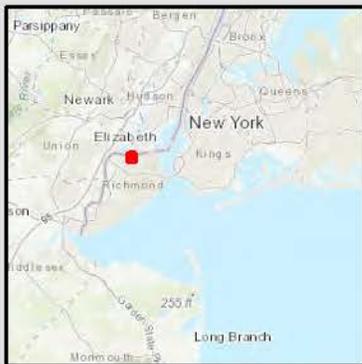
Nicholas Ave

Port Ln

Treadwell Ave

Port Ln

Riverside Ln



## Legend

### Alt3A Features/Measures

●● RRF, Floodwall

### Alt3A Reduced Risk Areas

■ SSB/SBM Reduced Risk Areas

▣ RRF Reduced Risk Areas

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### Alternative 3A - RRFs

Feature Name: Bayonne Bridge  
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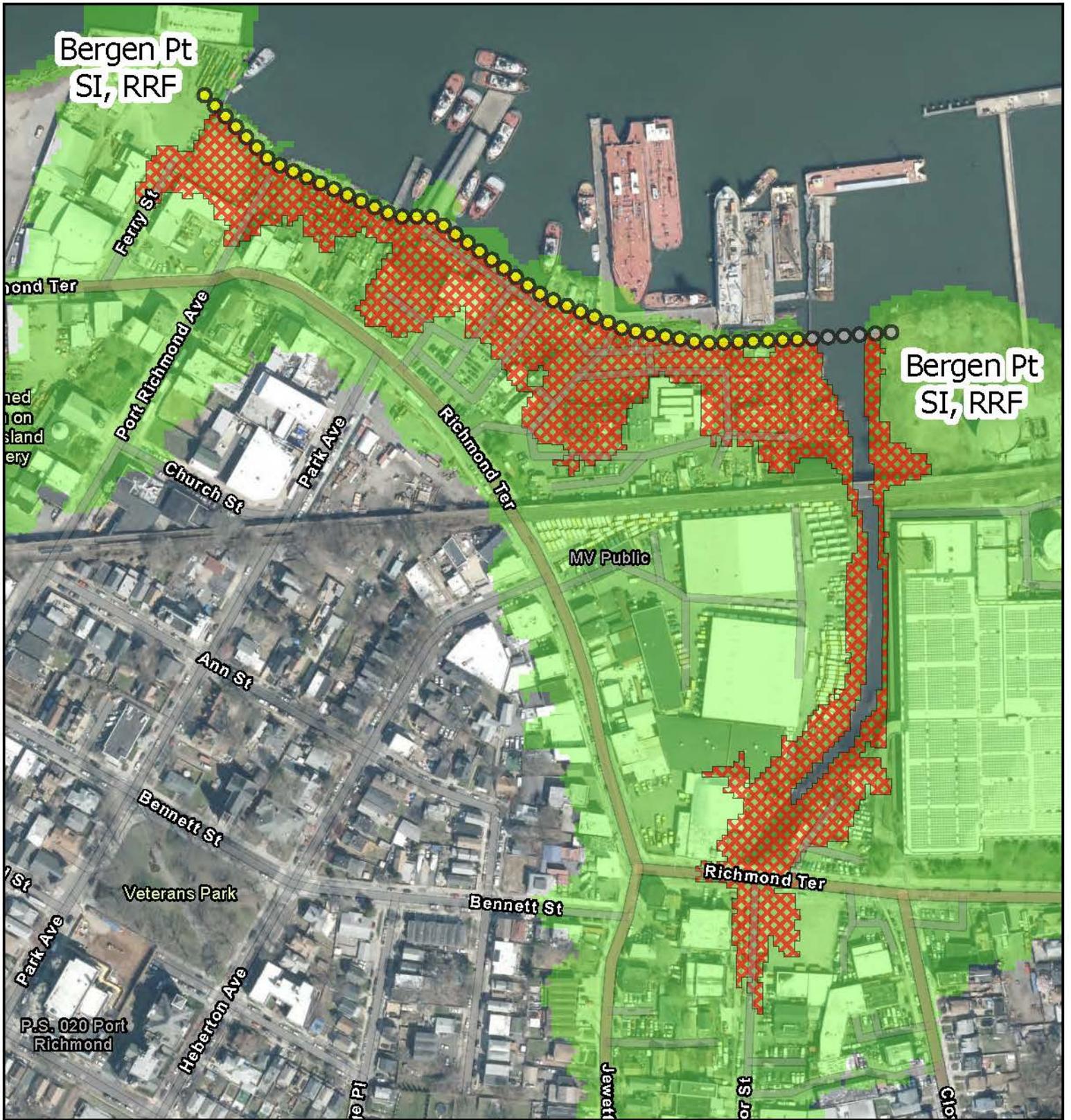


- Legend**
- Alt3A Features/Measures
  - RRF, Berm
  - RRF, Bulkhead
  - RRF, Floodwall
  - Alt3A Reduced Risk Areas
  - SSB/SBM Reduced Risk Areas
  - RRF Reduced Risk Areas

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**Alternative 3A - RRFs**  
 Feature Name: Bayswater Park  
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- Legend**
- Alt3A Features/Measures
  - RRF, Floodwall
  - RRF, Tide Gate
  - Alt3A Reduced Risk Areas
  - SSB/SBM Reduced Risk Areas
  - ▣ RRF Reduced Risk Areas

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HARBOR & TRIBUTARIES STUDY

**Alternative 3A - RRFs**  
Feature Name: Bergen Pt SI  
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**Legend**

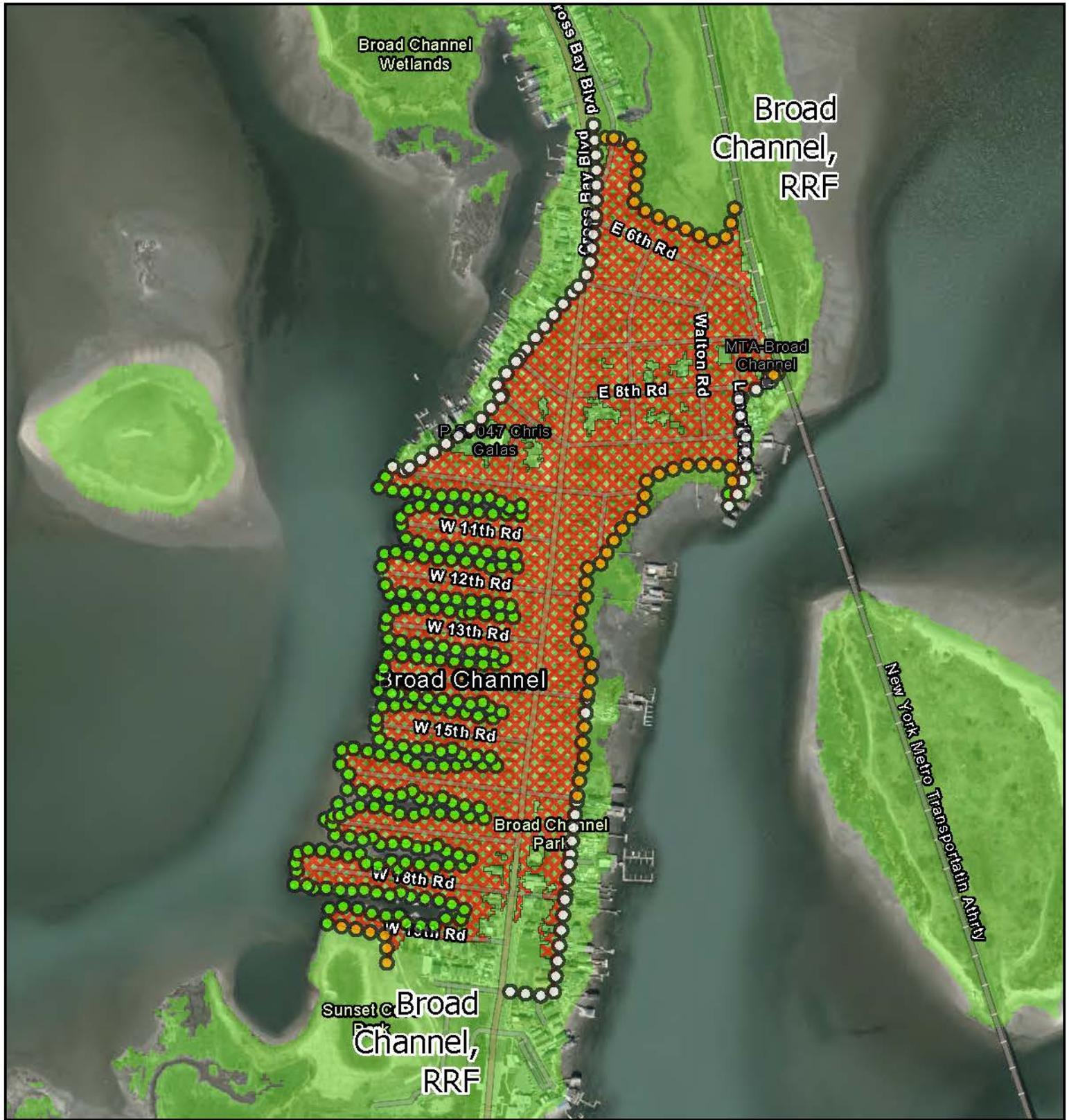
- Alt3A Features/Measures
- RRF, Revetment
- Alt3A Reduced Risk Areas
- SSB/SBM Reduced Risk Areas
- ▣ RRF Reduced Risk Areas

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**Alternative 3A - RRFs**  
Feature Name: Bridge Street Bridge  
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0 200 Feet

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**Legend**

- Alt3A Features/Measures
- RRF, Berm
- RRF, Bulkhead
- RRF, Road Raising
- Alt3A Reduced Risk Areas
- SSB/SBM Reduced Risk Areas
- RRF Reduced Risk Areas

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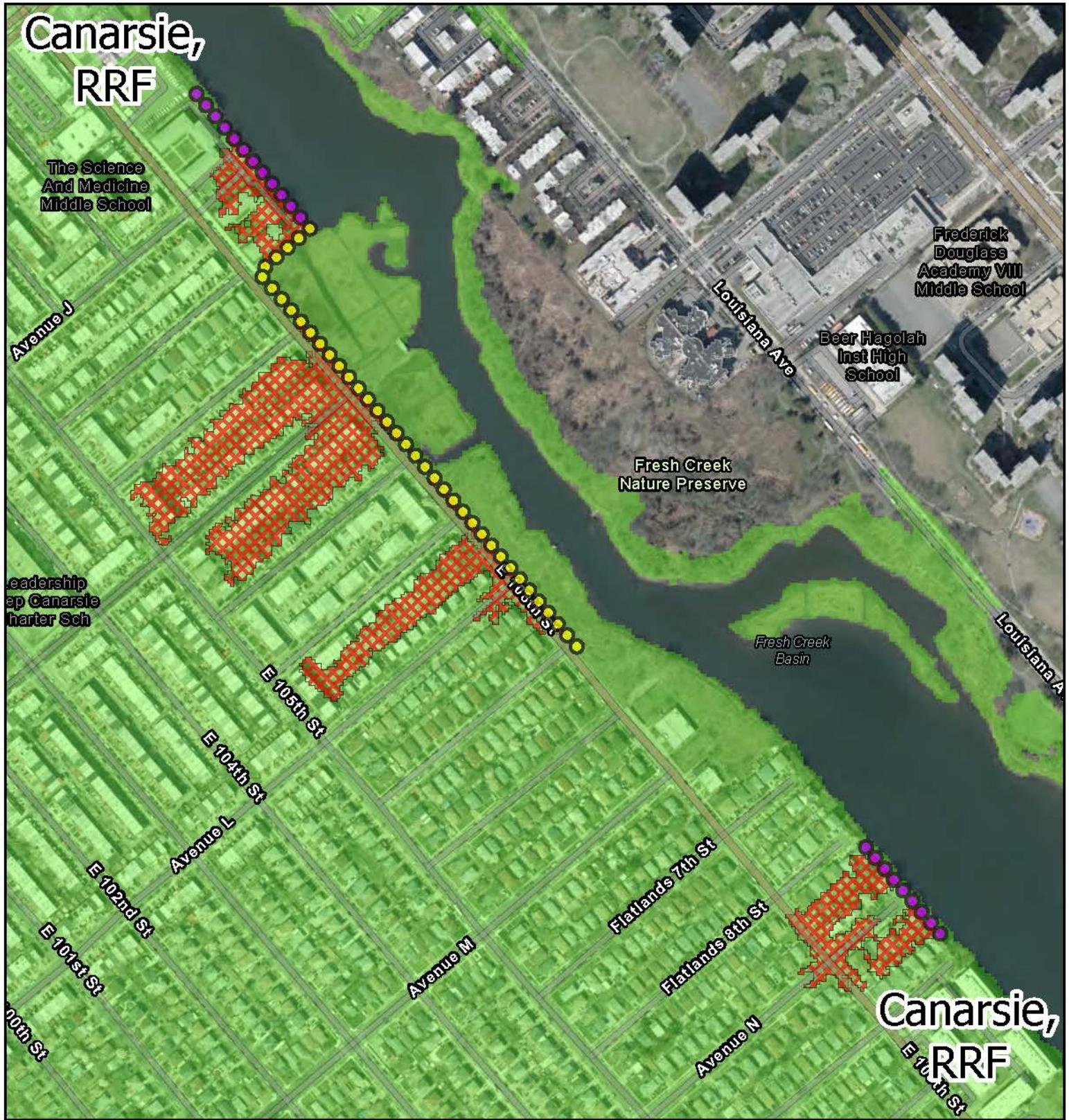
**Alternative 3A - RRFs**

Feature Name: Broad Channel

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0 600 Feet

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**Legend**

**Alt3A Features/Measures**

- RRF, Floodwall
- RRF, Revetment

**Alt3A Reduced Risk Areas**

- SSB/SBM Reduced Risk Areas
- ▨ RRF Reduced Risk Areas

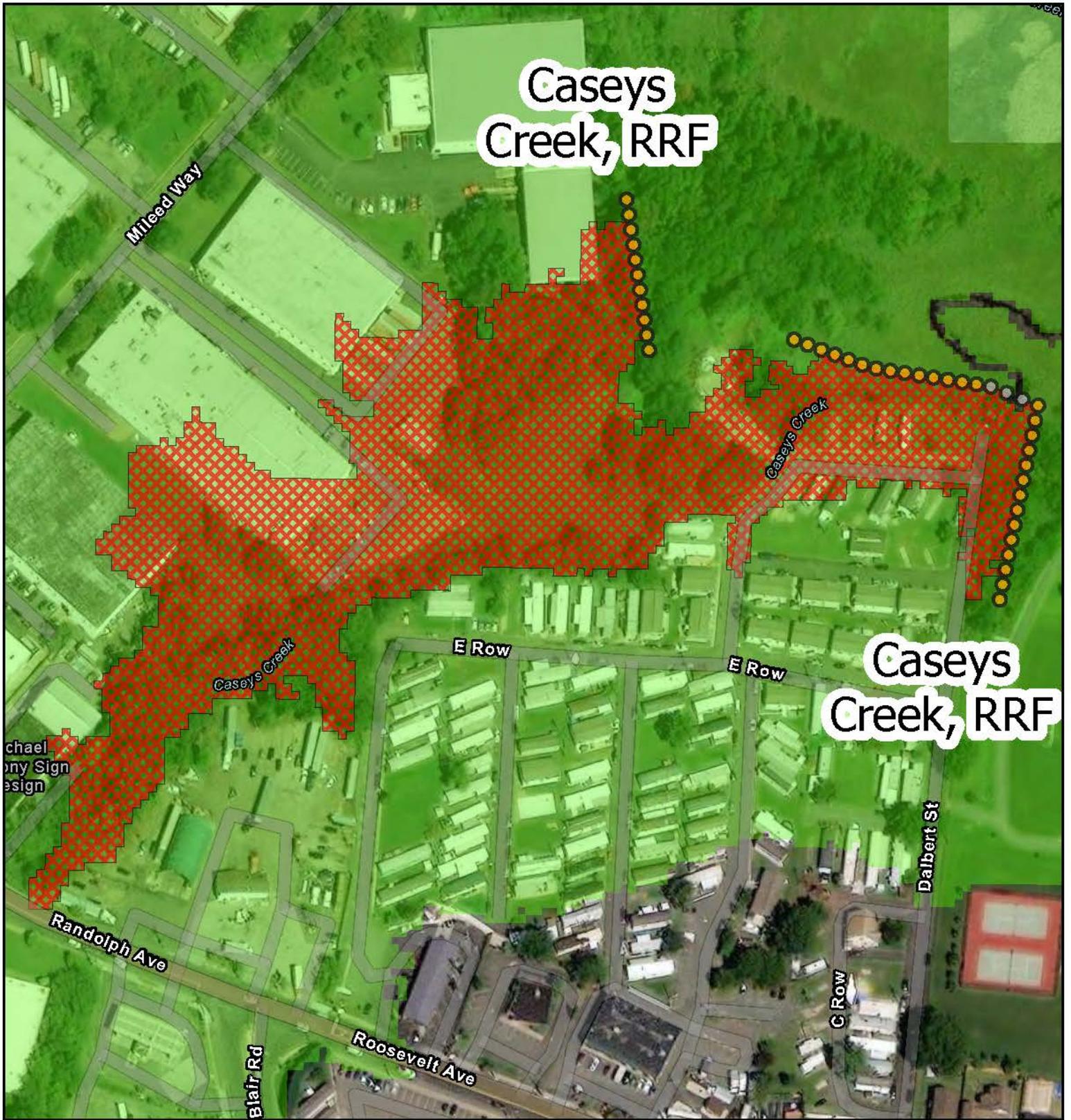
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**Alternative 3A - RRFs**

Feature Name: Canarsie  
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0 400 Feet

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- Legend**
- Alt3A Features/Measures
  - RRF, Berm
  - RRF, Tide Gate
  - Alt3A Reduced Risk Areas
  - SSB/SBM Reduced Risk Areas
  - ▣ RRF Reduced Risk Areas

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**Alternative 3A - RRFs**  
Feature Name: Casey's Creek  
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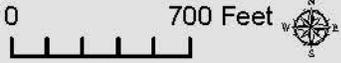
**Legend**

- Alt3A Features/Measures
- RRF,Bulkhead
- RRF,Deployable Flood Barrier
- RRF,Floodwall
- Alt3A Reduced Risk Areas
- SSB/SBM Reduced Risk Areas
- RRF Reduced Risk Areas

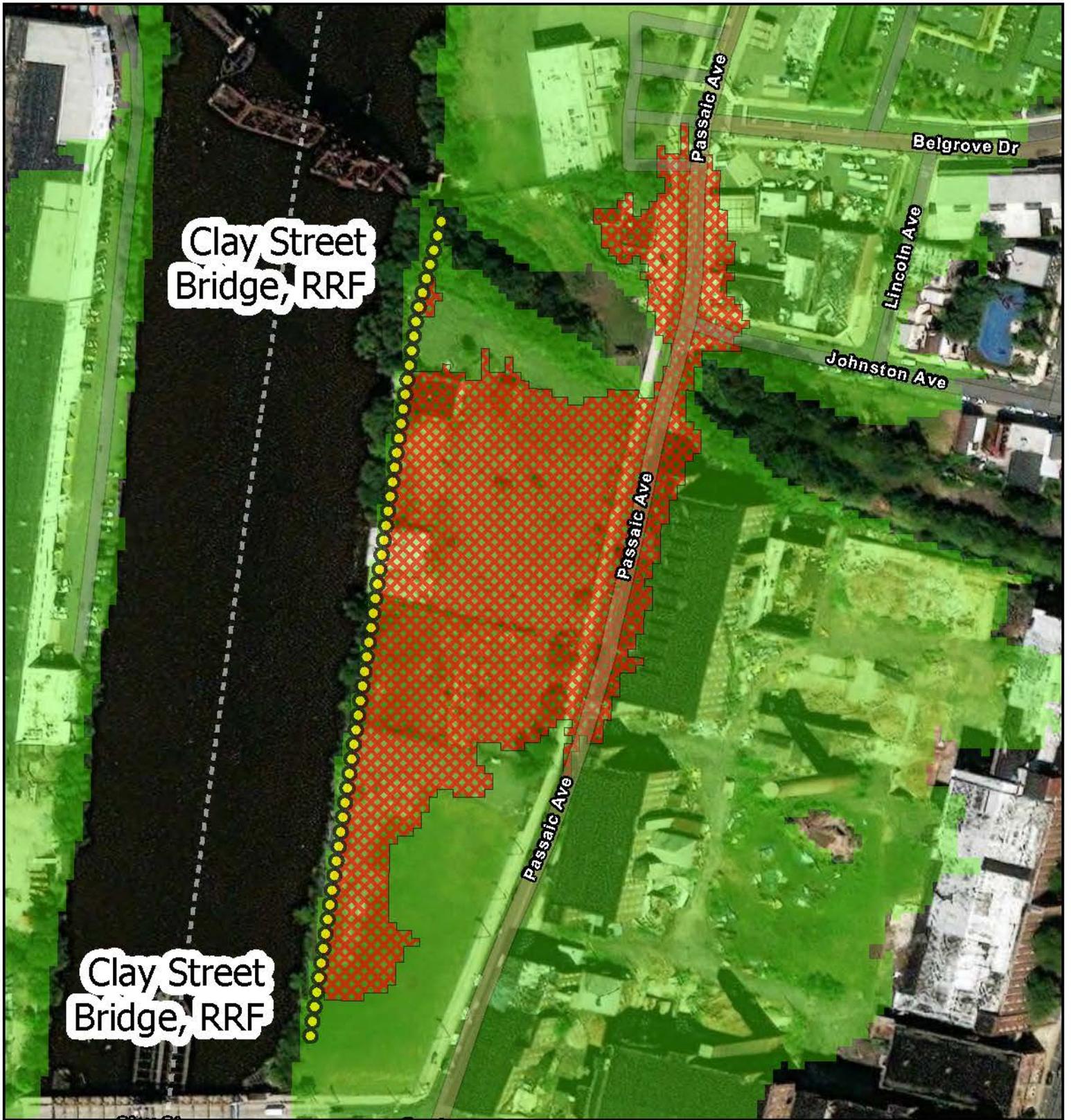
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**Alternative 3A - RRFs**

Feature Name: Chelsea  
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**Legend**

**Alt3A Features/Measures**

●● RRF, Floodwall

**Alt3A Reduced Risk Areas**

■ SSB/SBM Reduced Risk Areas

▣ RRF Reduced Risk Areas

NEW YORK - NEW JERSEY HARBOR & TRIBUTARIES STUDY

**Alternative 3A - RRFs**

Feature Name: Clay Street Bridge  
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