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Coastal Storm (CSTORM) Modeling System Storm Surge and Waves Feasibility Study for New York & New Jersey Harbor and Tributaries Focus Area Study

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Abstract: The U.S. Army Corps of Engineers New York District (NAN) is currently undertaking a feasibility study known as the New York & New Jersey Harbor and Tributaries Focus Area Study (NYNJHATS). This coastal storm risk management study (CSRM) is focused on the New York & New Jersey Harbor and regional tidally affected tributaries. This study is designed to evaluate four initial CSRM alternatives and a future without project condition, along with 13 different combinations or sequences of including/excluding key components of the full alternative components. To examine these alternatives, storm surge and wave modeling was performed by the Coastal and Hydraulics Laboratory (CHL) using the Coastal Storm Modeling System (CSTORM-MS), which for this study is comprised of the coupled Advanced Circulation (ADCIRC) model and the nearshore Steady-State Spectral Wave (STWAVE) model. Model setup was based on that of the North Atlantic Coast Comprehensive Study (NACCS), with the ADCIRC mesh used in that study being refined and updated in the project region in order to represent the four alternatives, their sequence combinations, and the future without project condition. Twenty synthetic tropical storms serve as feasibility-level proxy events representing the 1-yr to 10,000-yr annual exceedance frequency for water levels for the study area. These twenty storms were simulated for each of the four CSRM alternatives, their 13 sequence combinations, plus the future without project condition under a present day sea level condition. This report details the modeling approach taken and provides summary details of model results.

1 INTRODUCTION:

The New York & New Jersey Harbor and Tributaries Focus Area Study (NYNJHATS) is a coastal storm risk management (CSRM) study being undertaken by the U.S. Army Corps of Engineers (USACE) New York District (NAN). It covers the New York & New Jersey Harbor and tidally affected tributaries encompassing all of New York City; the Hudson River to Troy, NY; the lower Passaic, Hackensack, Rahway, and Raritan Rivers; the Upper and Lower Bays of New York Harbor; Newark, Jamaica, Raritan and Sandy Hook Bays; the Kill Van Kull, Arthur Kill and East River tidal straits; and western Long Island Sound (USACE 2020). A map of the study area is shown in Figure 1 with different focus regions indexed by color-coded polygons.

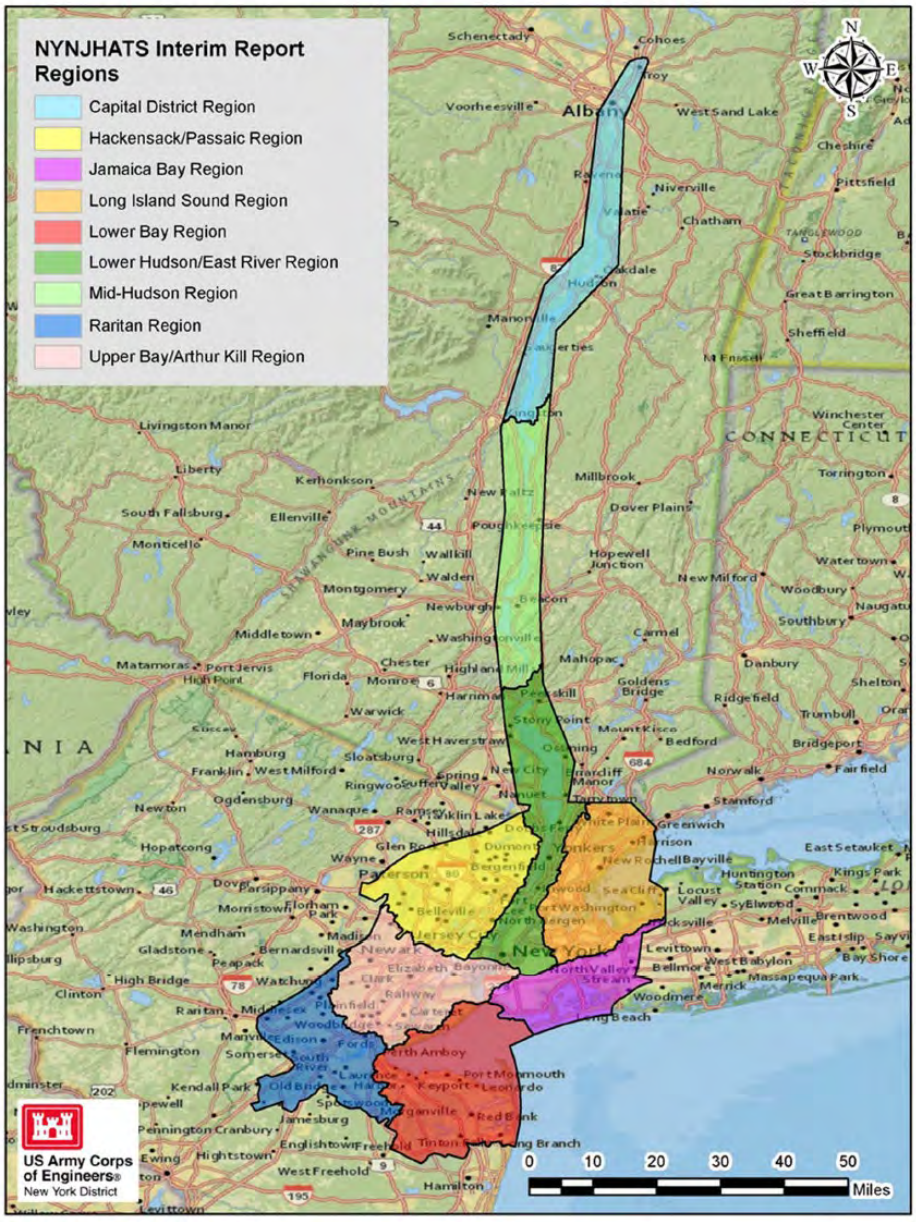


Figure 1 NYNJHATS Study Area Map with Region Index.

The NYNJHATS study is evaluating five initial CSRM alternatives that address severe coastal storm risks for specific geographic regions within the study area, in addition to the no action alternative. “These five alternatives encompass a variety of water- and land-based measures identified throughout the estuary at areas of high projected coastal storm risk and include combinations of shoreline structures, such as beach nourishment, levees, floodwalls and seawalls, and storm-surge barriers. This initial range of alternatives was developed in part from the analysis provided in the North Atlantic Coast Comprehensive Study, as well as coordination with the States of New York and New Jersey and the City

of New York. The alternatives are taking into account other ongoing and planned actions being taken within the study area by the Corps, other federal agencies, both states and New York City, and other municipalities" (USACE 2022).

Alternative 5 was not selected for modeling storm surge and wave modeling due to other issues such as potential adverse effects to a National Historic Landmarks. To evaluate the effects of the remaining four CSRM alternatives on surge, currents, and nearshore waves, numerical modeling was performed using the Coastal Storm Modeling System (CSTORM-MS), (Massey et al. 2011, and Massey et al. 2015). For this study, the components of the CSTORM-MS that were used were the two-way coupled ADCIRC (Westerink et al. 1994, Luettich et al. 1992) and STWAVE (Smith et al. 2001 and Massey et al. 2011) models. Model grids/meshes used in this study were adapted from those developed as part of the North Atlantic Coast Comprehensive Study (NACCS) (Cialone et al. 2015). In addition, out of the 1050 synthetic tropical storms developed for the NACCS, 20 storms were selected for use as proxy storms for representing the annual exceedance probability curves for water levels within the study area.

More details about the four CSRM alternatives and the 13 sequence combinations that were modeled along with the CSTORM model development and setup, selected proxy storms, simulation results, statistical calculations of annual exceedance frequencies, and modeling conclusions drawn from this study are discussed in the following sections.

2 NYNJHATS STUDY CSRM ALTERNATIVES

Four different CSRM alternative designs were modeled in this study. Images showing the general locations and components of the four CSRM alternatives and the future without project condition (Figures 2 through 6) are shown below. Descriptions of the specifics of these alternatives can be found in the NYNJHATS interim report (USACE 2019) and are not repeated here. The no action, future without project (FWOP), condition is shown in Figure 2. The FWOP includes nearly 4 dozen substantial projects that either are in place or planned to be in construction by July of 2020. These measures will thus be included in all the other alternative conditions as well. A map with descriptions of features for Alternative 2 (Alt2), which includes a large harbor-wide surge gate, is shown in Figure 3. A map giving similar details for Alternative 3a (Alt3a) is shown in Figure 4, one for Alternative 3b (Alt3b) is shown in Figure 5, and one showing Alternative 4 (Alt4) is presented in Figure 6.

In addition to evaluating the performance of each full CSRM alternative, assessments to water level changes will be made by systematically including or removing individual components of each measure. This sequencing of the alternative measure components will allow information to be garnered about the relative contributions of each component or components. For example, Alt3b has major system components such as the Arthur Kill gate, the Kill van Kull gate, and a levee structure at Jamaica Bay to name a few, and different sequences of including or leaving out key components will be considered. Seventeen combinations of CSRM components are evaluated in this study, including the full CSRM measure, i.e. the scenario with all components included. Table 1 provides a

list of the 13 combinations of CSRM measure features sequencings that will be evaluated along with descriptions of components left in or removed from the full measure.

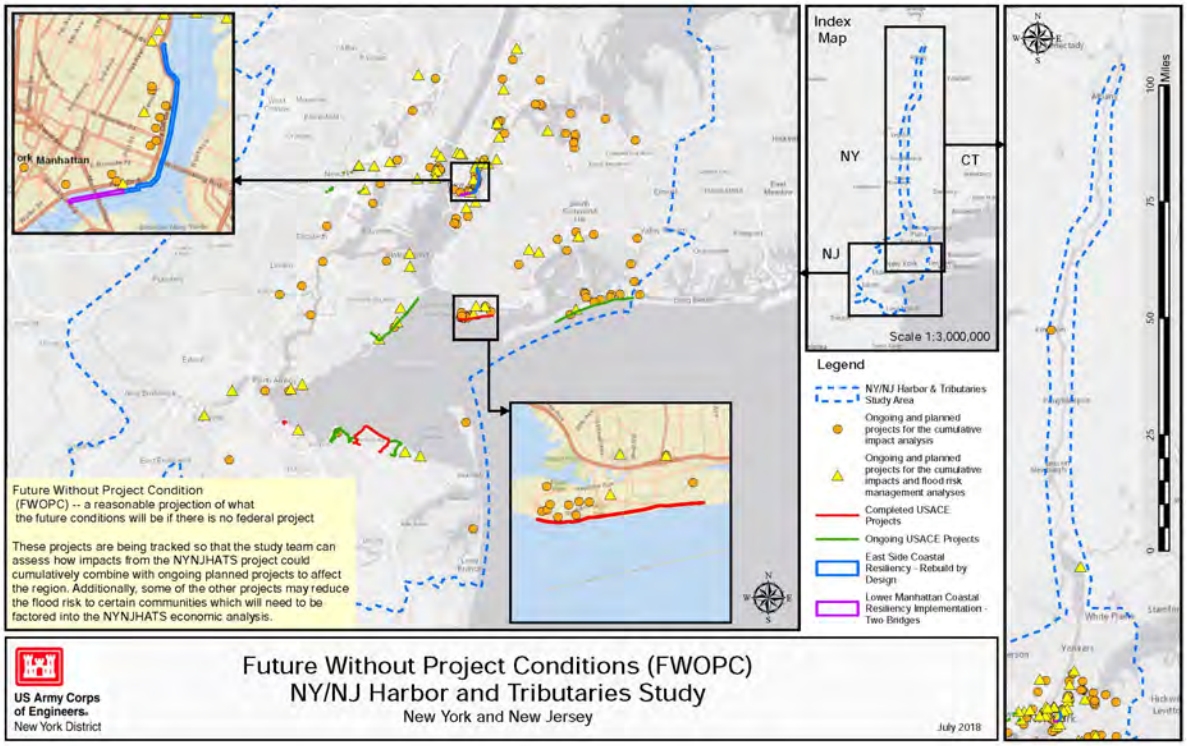


Figure 2 Map showing locations and general details of the no action alternative, future without project (FWOP) conditions.

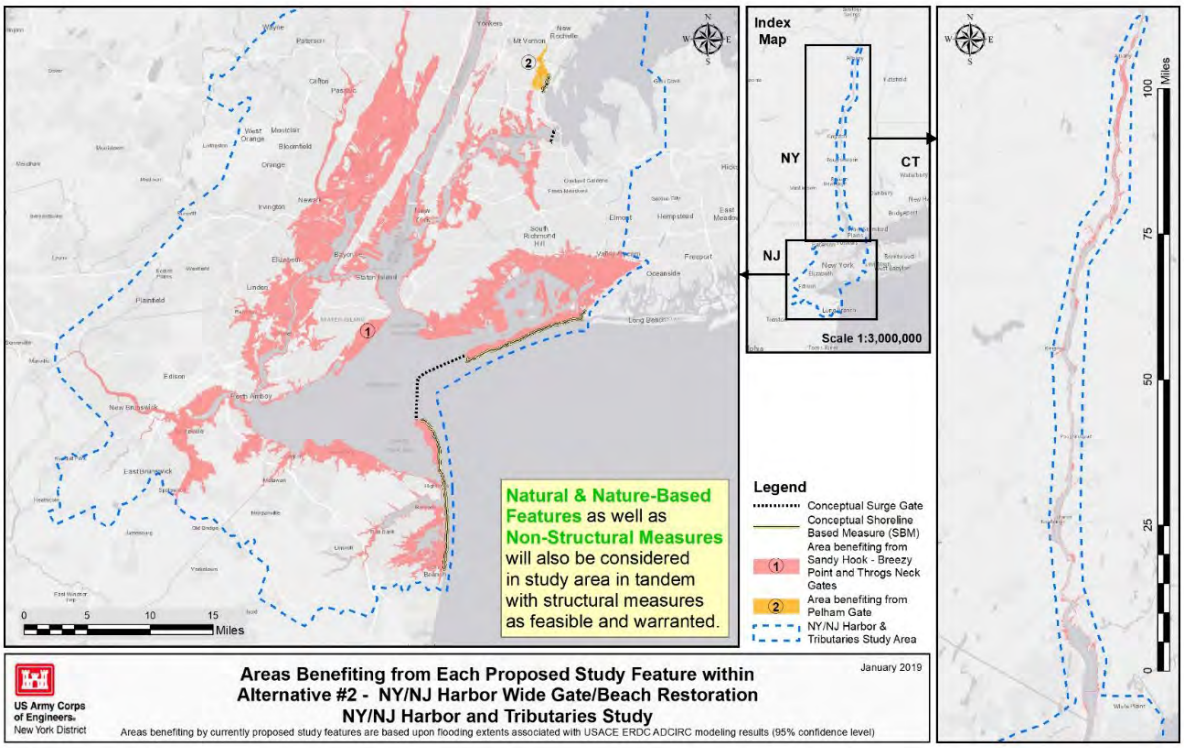


Figure 3 Map showing locations and general details of the Alternative 2 (Alt2) CSRM designs.

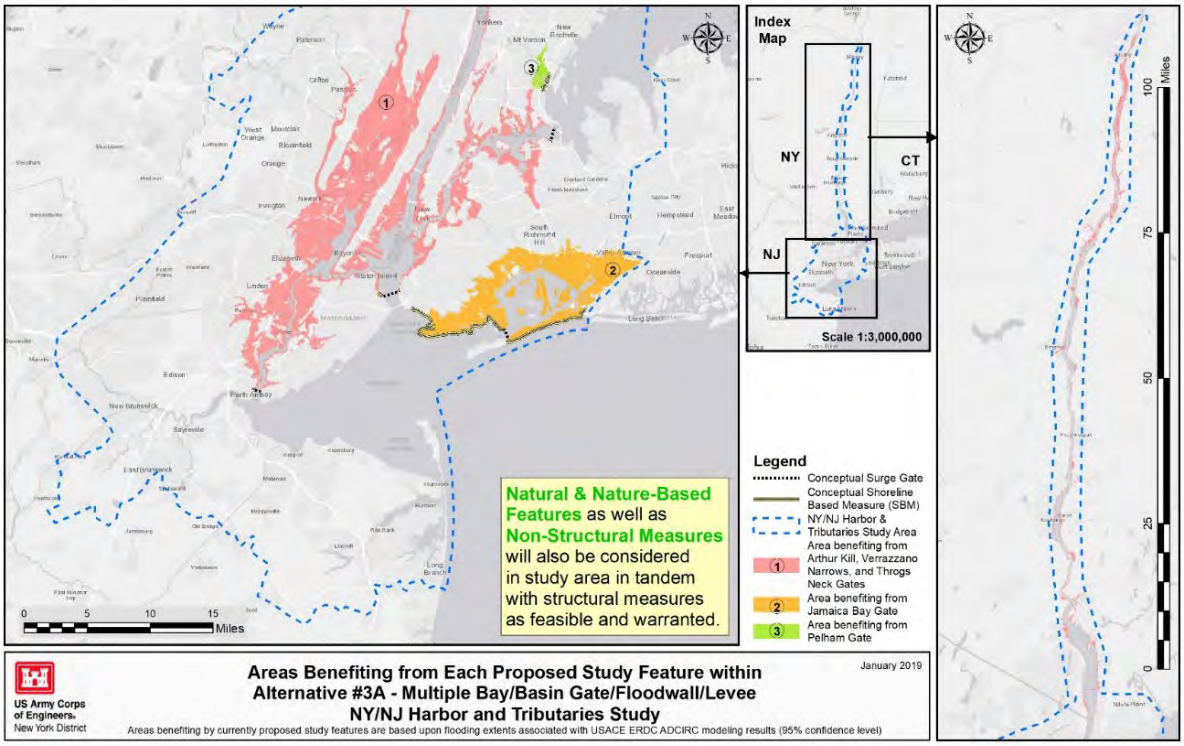


Figure 4 Map showing locations and general details of the Alternative 3a (Alt3a) CSRM designs.

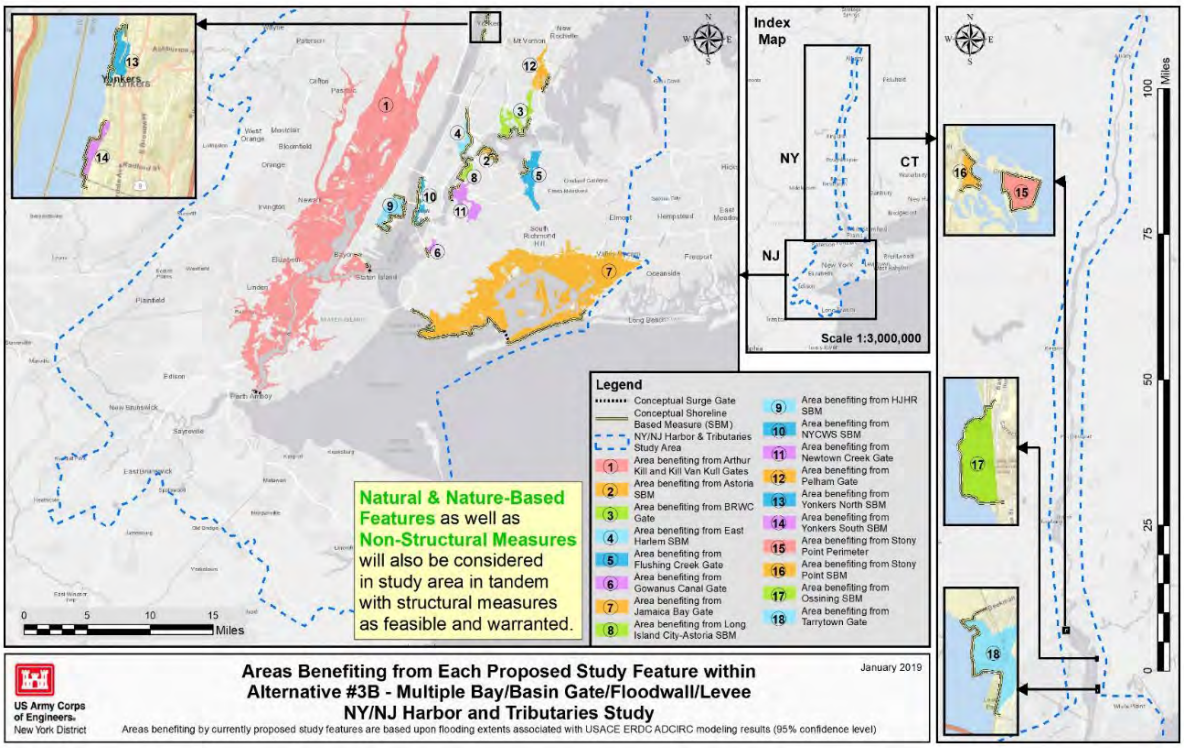


Figure 5 Map showing locations and general details of the Alternative 3b (Alt3b) CSRM designs.

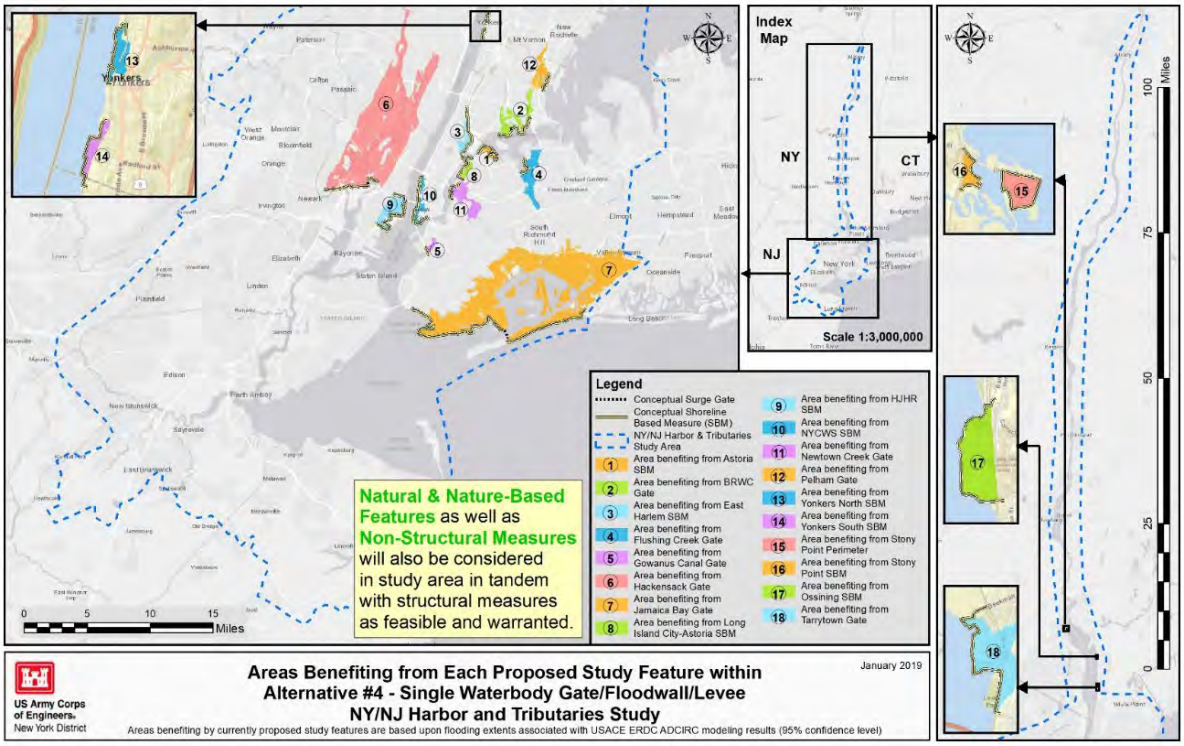


Figure 6 Map showing locations and general details of the Alternative 4 (Alt4) CSRM designs.

Table 1 List of the 13 CSRM alternatives and their sequenced inclusion/removal of features.

Abbreviated Name	**Description**
Alt2	Alt2 full CSRM alternative
Alt2SeqA01	Alt2 minus Throgs Neck gate and its tie-ins
Alt3a	Alt3a full CSRM alternative
Alt3aSeqA01	Alt3a minus Throgs Neck gate and its tie-ins
Alt3aSeqB01	Alt3a minus Arthur Kill gate
Alt3aSeqC01	Alt3a minus Arthur Kill and Throgs Neck gate
Alt3aSeqD01	Alt3a with only Arthur Kill, Verrazano, and Throgs Neck gates included
Alt3aSeqE01	Alt3a with only Jamaica Bay features
Alt3b	Alt3b full CSRM alternative
Alt3bSeqA01	Alt3b minus Arthur Kill gate
Alt3bSeqB01	Alt3b minus Arthur Kill and Kill van Kull gates
Alt3bSeqC01	Alt3b minus Jamaica Bay feature
Alt3bSeqD01	Alt3b with only Arthur Kill and Kill van Kull gates and Jamaica Bay feature
Alt4	Alt4 full CSRM alternative
Alt4SeqA01	Alt4 minus Hackensack gate
Alt4SeqB01	Alt4 minus Jamaica Bay feature
Alt4SeqC01	Alt4 with only Hackensack gate and Jamaica Bay features

3 ADCIRC MODEL DEVELOPMENT

The ADCIRC model is a finite-element-based hydrodynamic free surface circulation model (Westerink et al. 1994, Luettich et al. 1992). ADCIRC is a computational model that solves for a form of the two-dimensional depth-integrated shallow-water equations using highly flexible, unstructured meshes. The meshes are composed of nodes with specified locations at longitude and latitude coordinates along with a topographic/bathymetric depth value, which make up triangular-shaped elements that form a tessellation of the computation domain. ADCIRC applies wind velocity vectors, atmospheric surface pressure, tidal forcing conditions, river flow rates, and other specified forcing values (such as wave radiation stress gradients, which in this case come from a coupled wave model) as inputs to solve the above-mentioned depth-averaged shallow water equations. ADCIRC assumes that the water is incompressible, and that hydrostatic pressure conditions exist. The solution to these equations provides the depth-averaged water currents and water height at each of the element nodes at every time step during the model simulation.

3.1 ADCIRC Nodal Attributes

The ADCIRC model also uses a nodal attribute file, i.e. a fort.13 file, which specifies model parameters, such as Manning's n values used to represent friction and surface directional effective roughness lengths used to alter wind speeds due to land use types, at each node location. The same nodal attribute settings that were used and validated in the North Atlantic Coast Comprehensive Study (NACCS) were used for this model (Cialone et al. 2015). Many of these nodal attributes are derived from land use/land cover data. Table 2 provides a list of the National Oceanographic and Atmospheric Association's (NOAA's) Coastal Change Analysis Program (C-CAP) Land Cover Atlas categories and associated Manning's n values used to represent them within the ADCIRC model (Riverside Technology and AECOM 2015).

Table 2: Manning's n Values Derived from NOAA's C-CAP Data

CCAP Class	Land Cover Description	Manning's *n*
2	High-intensity developed, Impervious Surface	0.120
3	Medium-intensity developed	0.120
4	Low-intensity developed	0.070
5	Developed open space	0.035
6	Cultivated land	0.100
7	Pasture/hay	0.055
8	Grassland	0.035
9	Deciduous forest	0.160
10	Evergreen forest	0.180
11	Mixed forest	0.170
12	Scrub/shrub	0.080
13	Palustrine forested wetland	0.200
14	Palustrine scrub/shrub wetland	0.075

15	Palustrine emergent wetland	0.070
16	Estuarine forested wetland	0.150
17	Estuarine scrub/shrub wetland	0.070
18	Estuarine emergent wetland	0.050
19	Unconsolidated shore	0.030
20	Bare land	0.030
21	Open water	0.025
22	Palustrine aquatic bed	0.035
23	Estuarine aquatic bed	0.030

3.2 Vertical Datum

The ADCIRC mesh used as the basis for this study was developed as part of the NACCS study and has a vertical datum set to mean sea level (MSL) (Cialone et al. 2015). The mean sea level is referenced against the 1992 tidal epoch, spanning 1983 to 2001. Since the vertical datum is assumed by the ADCIRC model to be MSL by default, no vertical adjustment was required to account for the model convention. Whenever project details, such as levee heights, were specified in NAVD88, NOAA's VDatum tool was used to convert between NAVD88 and MSL for use in the ADCIRC model. Figure 7 shows spatial variations, as computed by the VDatum tool, between NAVD88 and MSL in the project area for the NACCS ADCIRC mesh nodes. On average, the vertical difference (MSL – NAVD88) in the area is 2.65 inches with a standard deviation of 1.32 inches.

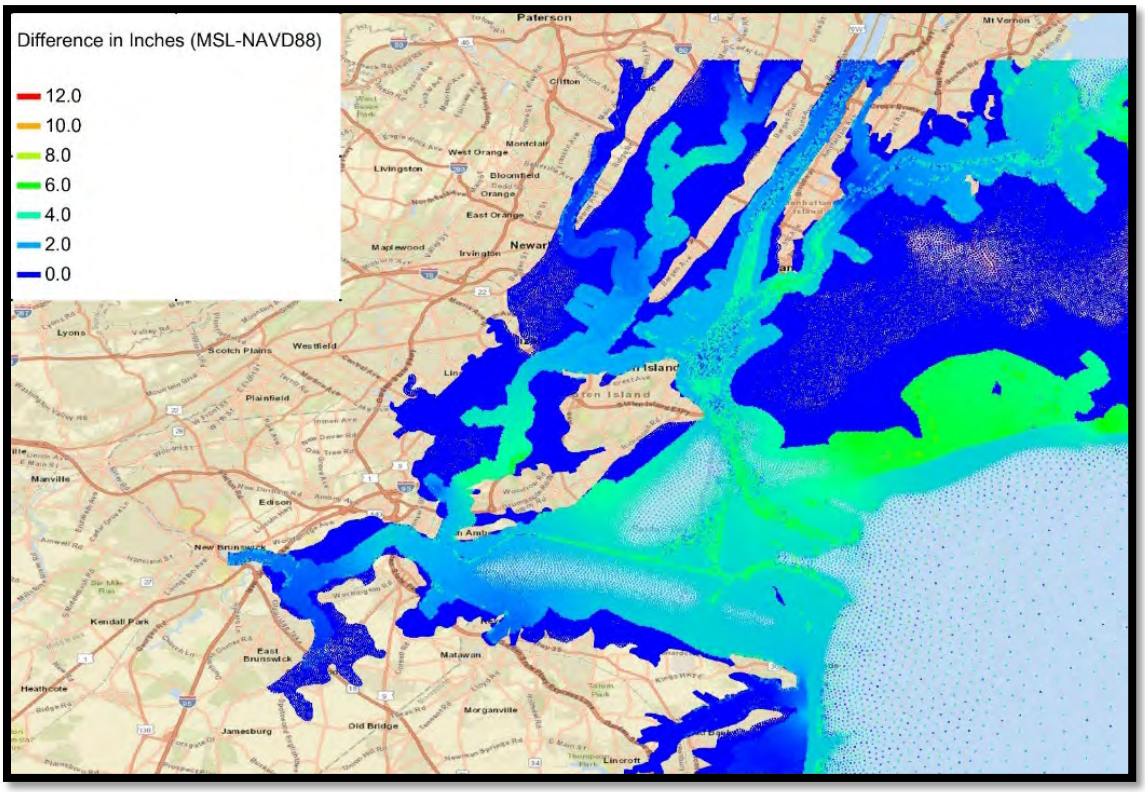


Figure 7 Map showing the difference between MSL and NAVD88 at the NACCS ADCIRC mesh nodes. Results computed using the VDatum tool.

3.3 Steric Adjustment

The ADCIRC model is barotropic and as such does not account for baroclinic effects in the oceans caused by seasonal changes in temperature and salinity throughout the model domain. To account for some of the sea surface variability caused by real-world baroclinicity, a single value referred to as the steric adjustment was added to the initial still water value throughout the entirety of the model domain. The steric adjustment value used for this study was 0.109 m and is the same value used in the NACCS study. This value represents the average expected seasonal MSL variability in the Atlantic (Cialone et al. 2015). This value was calculated by obtaining the mean monthly spatial sea surface variability at two different NOAA water level stations located in the model domain. A weighted average temporal variability was then determined by applying weighting factors based on hurricane frequency to the average variability values for each month during hurricane season ranging from June to November (see Cialone et al. 2015 for more details).

3.4 ADCIRC Grid Modification for NYNJHATS Study

The ADCIRC unstructured mesh developed for the NACCS (Cialone et al. 2015) was used as a starting point for the mesh used for the NYNJHATS study modeling. Figure 8 shows the NACCS topography and bathymetry used in this study along with the mesh element edges drawn to provide a visual indication of the range in element size and density used in the model mesh. The NACCS ADCIRC mesh was modified to include enhanced resolution in each of the project areas in order to sufficiently represent the proposed CSRM project features. Since multiple CSRM alternatives are being considered and inter-compared, as shown in Figure 9, mesh resolution enhancements were made for all features for all alternatives regardless if the feature is included in that particular alternative or not. Thus, all ADCIRC meshes have approximately the same spatial resolution, which allows potential solution differences to be more likely attributed to inclusion of a project feature rather than differences in mesh resolution. Figure 9 shows the inland extents of the ADCIRC mesh boundaries in the project area as cyan-colored line segments, while the FWOP CSRM measure locations are shown as magenta line segments and the combined locations of all the NYNJHATS CSRM alternative measures are shown as red line segments.

Figure 10 and Figure 11 show color contour maps of ADCIRC mesh resolution on a logarithmic scale for the NACCS mesh and the FWOP alternative NYNJHATS mesh for the entire NYNJHATS area. A logarithmic scale is used to bring out more details in resolution over such largely varying values. Notice that while the NACCS mesh has mesh resolution in the 100’s to 1000’s of meters in the project area, the FWOP mesh (along with all of the CSRM alternative meshes) has resolutions in the 10’s to 100’s of meters (shown by the darker blue contours) around the project features. Note in Figure 11 that the FWOP mesh features are shown as red line segments. To illustrate further the ADCIRC mesh enhancements and inclusion of the CSRM alternative measures, a series of close-up comparisons are shown in Figure 12 through Figure 18. A complete

set of close-up images for all CSRM features on each of the six meshes (NACCS, FWOP, Alt2, Alt3a, Alt3b, and Alt4) are shown in Appendix I.

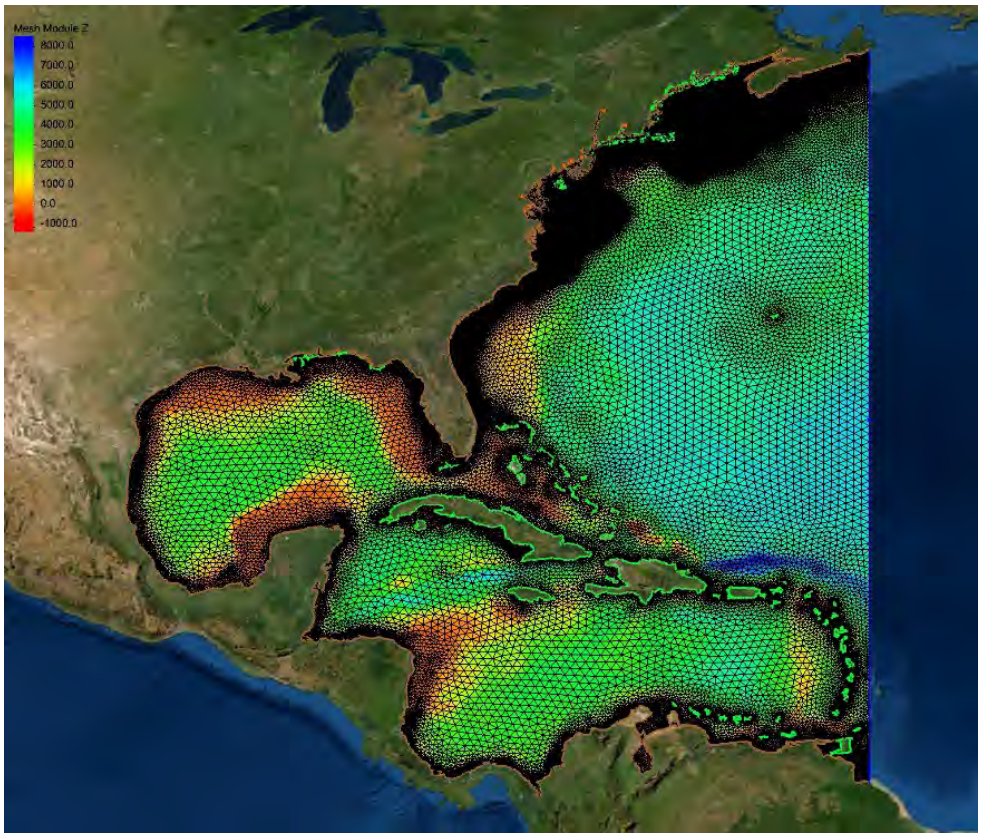


Figure 8 Topography and bathymetry (meters MSL) of the NACCS ADCIRC unstructured grid.

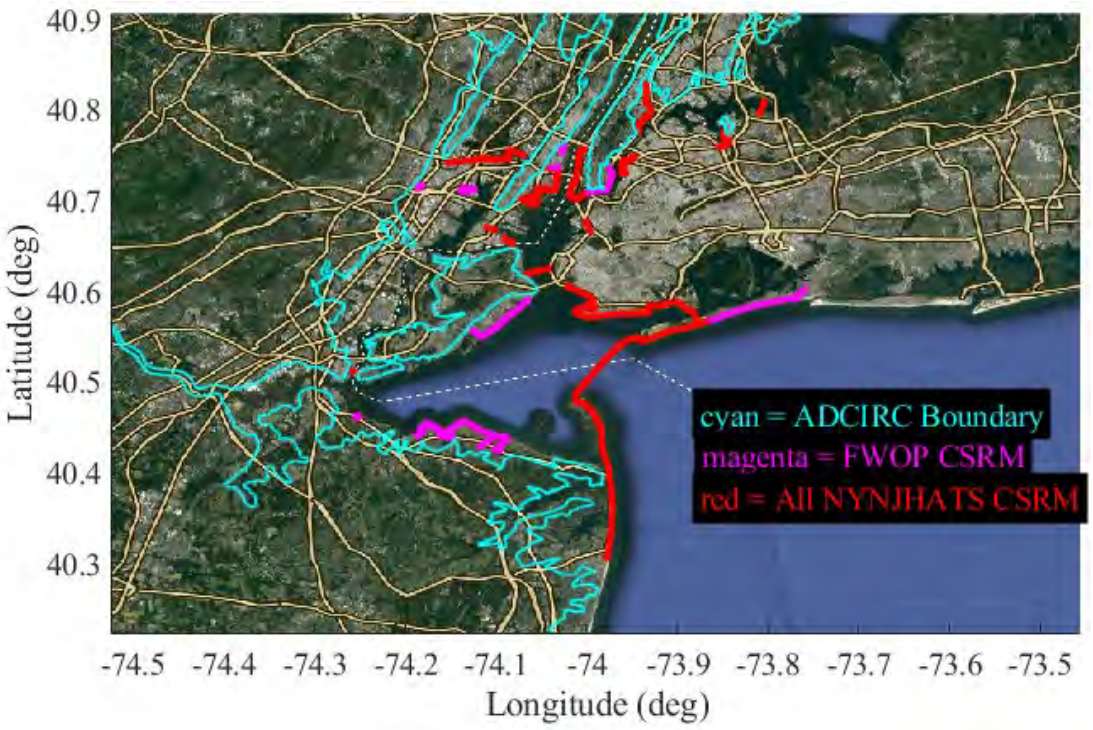


Figure 9 Map showing the NYNJHATS project area along with colored line segments showing the ADCIRC mesh extent boundary (cyan), the FWOP CSRM measures (magenta), and combined locations of all four CSRM alternative locations (red).

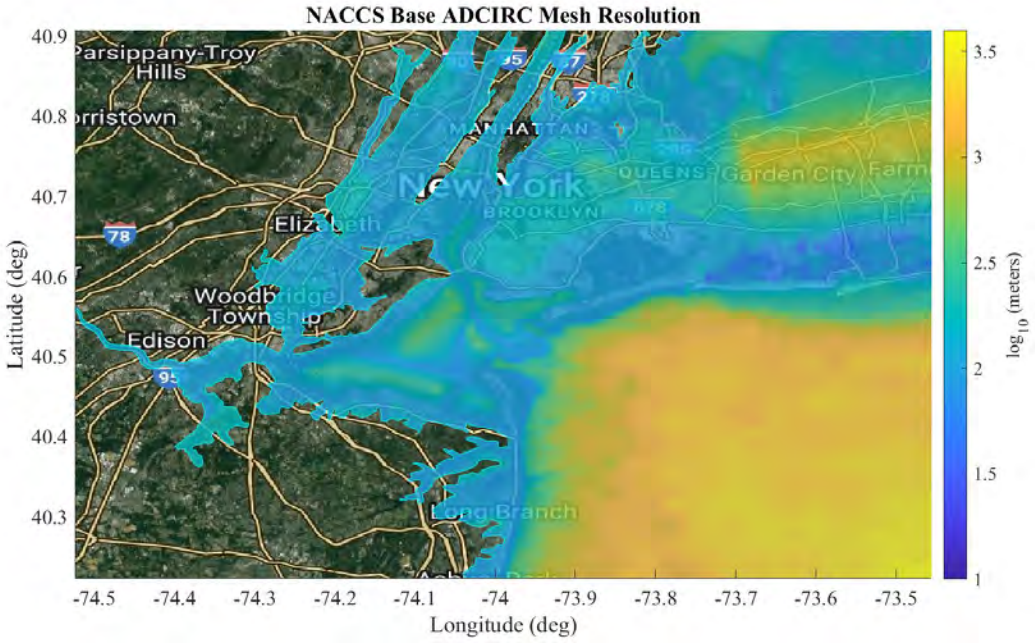


Figure 10 Map with two-dimensional color contour plot of ADCIRC mesh resolution on a logarithmic scale for the NACCS mesh.

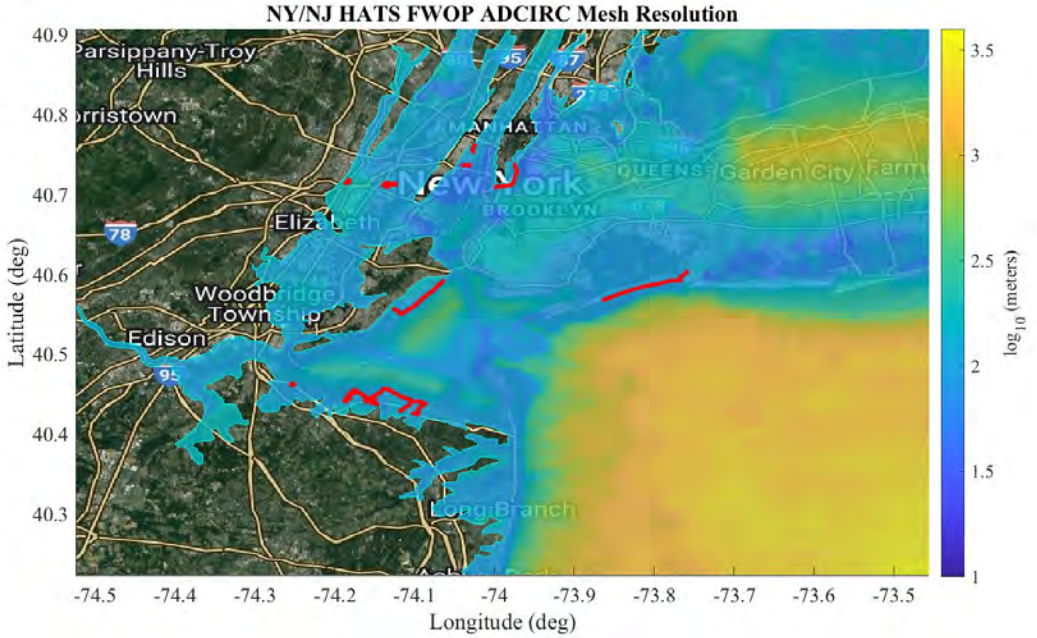


Figure 11 Map with two-dimensional color contour plot of ADCIRC mesh resolution on a logarithmic scale for the FWOP alternative mesh for the NYNJHATS study. The red lines indicate features included in the FWOP mesh.

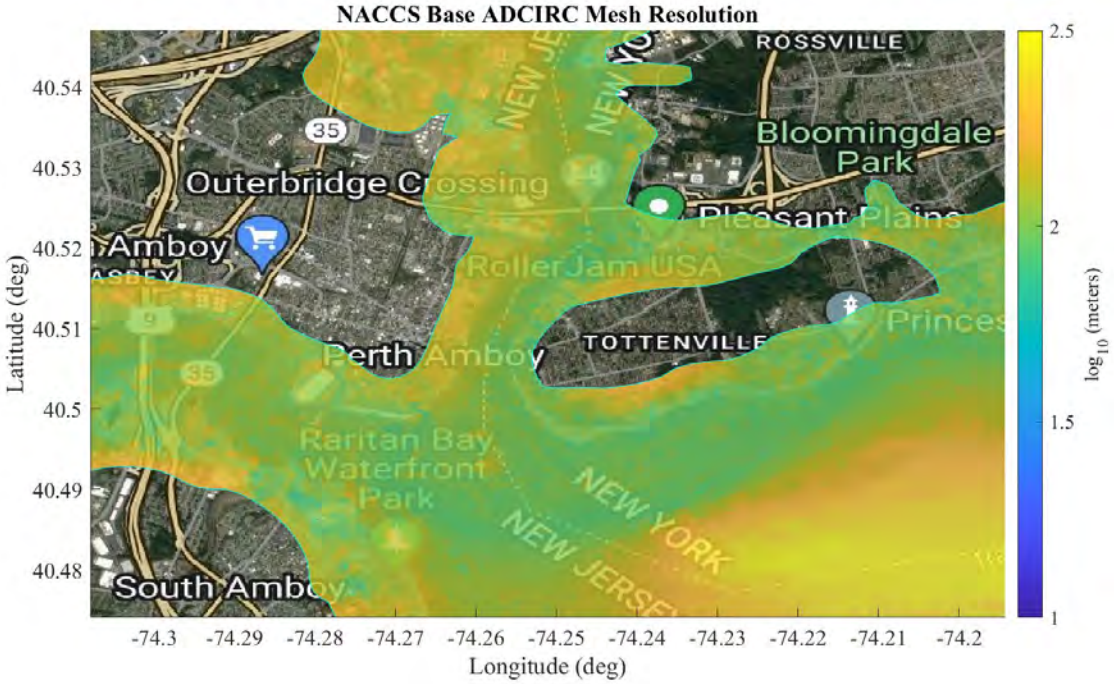


Figure 12 Map showing mesh resolution for the NACCS ADCIRC mesh in the Raritan Bay area.

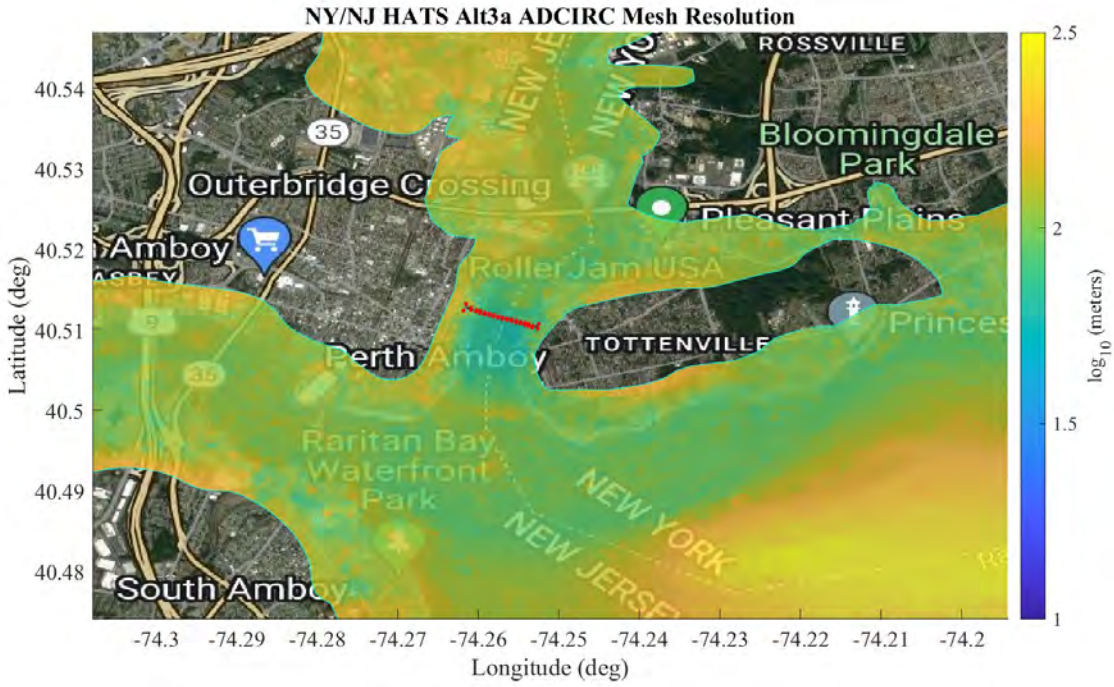


Figure 13 Map showing mesh resolution for the NYNJHATS ADCIRC mesh in the Raritan Bay area. Note that the CSRM measure shown in red is included in Alt3a and Alt3b.

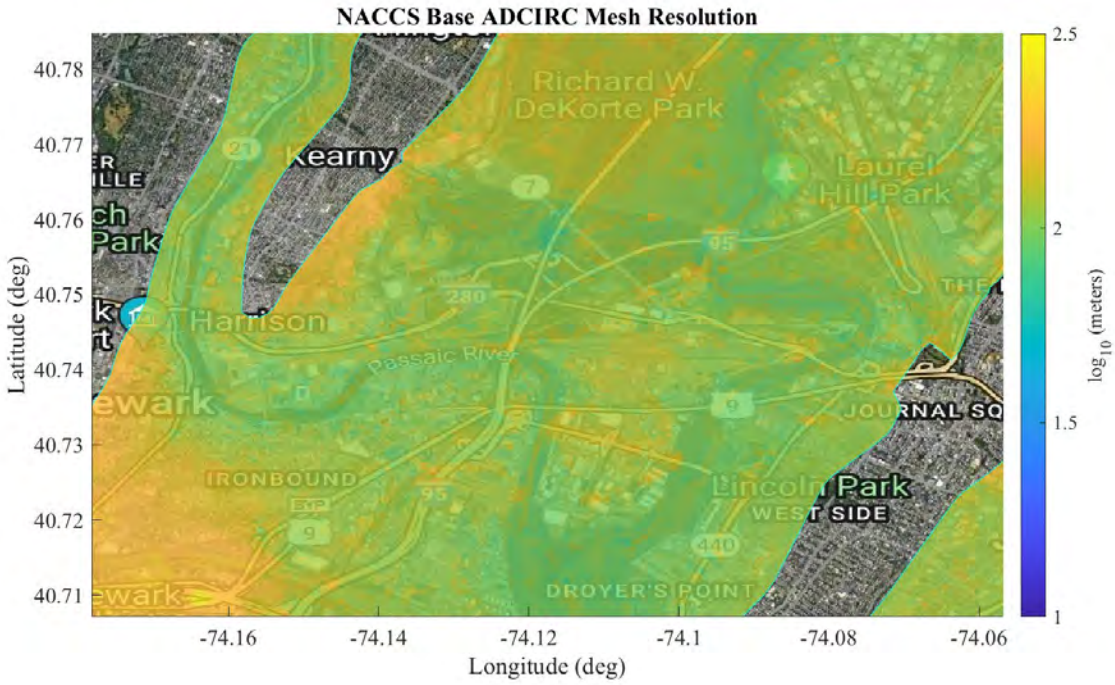


Figure 14 Map showing mesh resolution for the NACCS ADCIRC mesh in the Passaic River area.

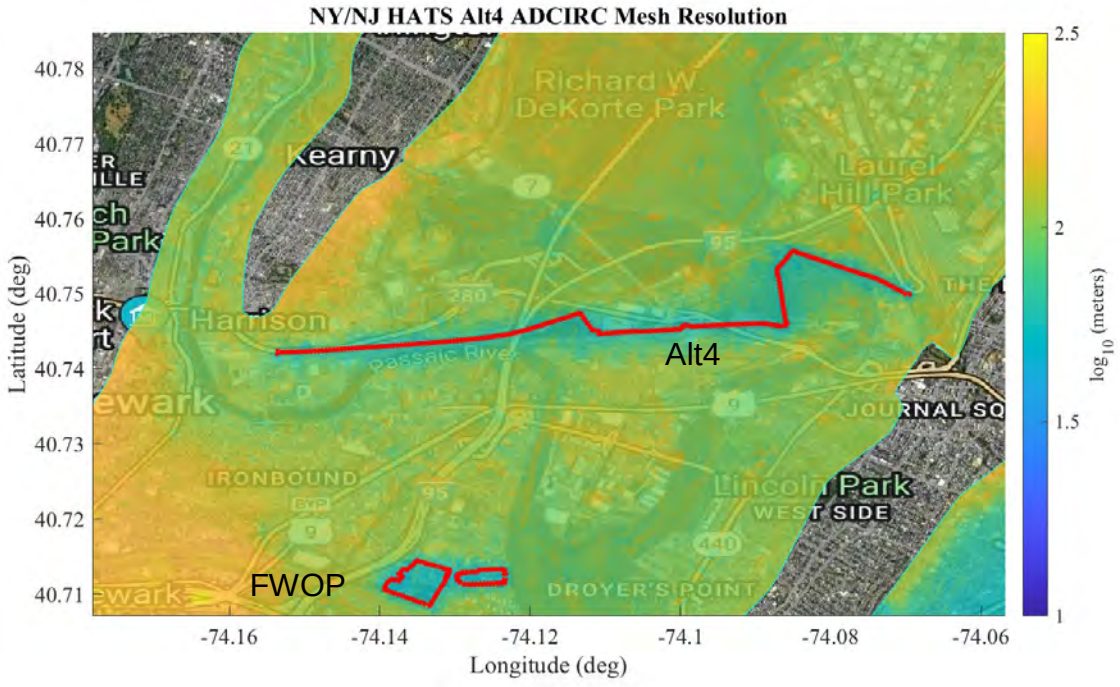


Figure 15 Map showing mesh resolution for the NYNJHATS ADCIRC mesh in the Passaic River area. Note the long red feature along the Passaic River is included in Alt4 only. The two smaller structures are FWOP features.

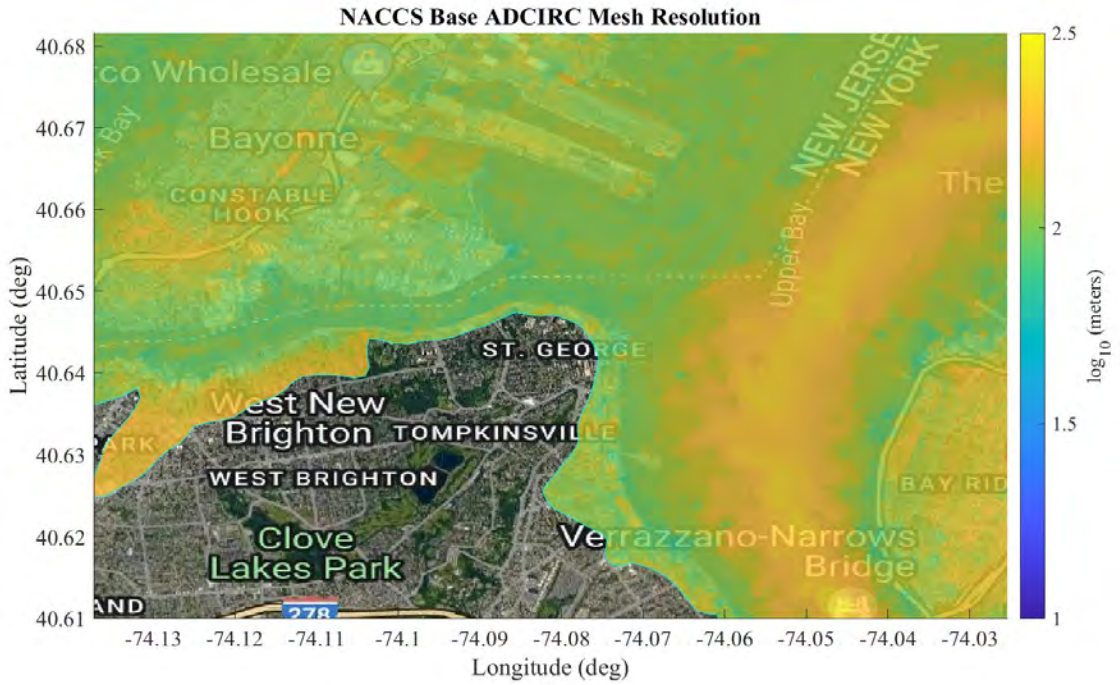


Figure 16 Map showing mesh resolution for the NACCS ADCIRC mesh in the Upper Bay area.

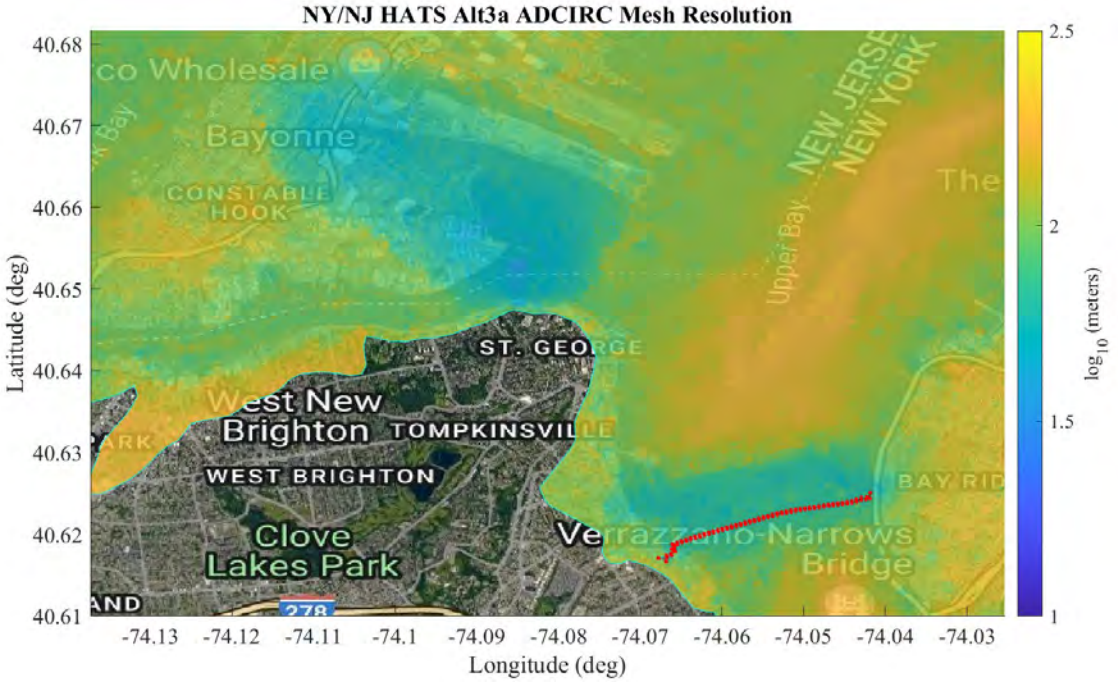


Figure 17 Map showing mesh resolution for the NYNJHAT ADCIRC mesh in the Upper Bay area for Alt3a.

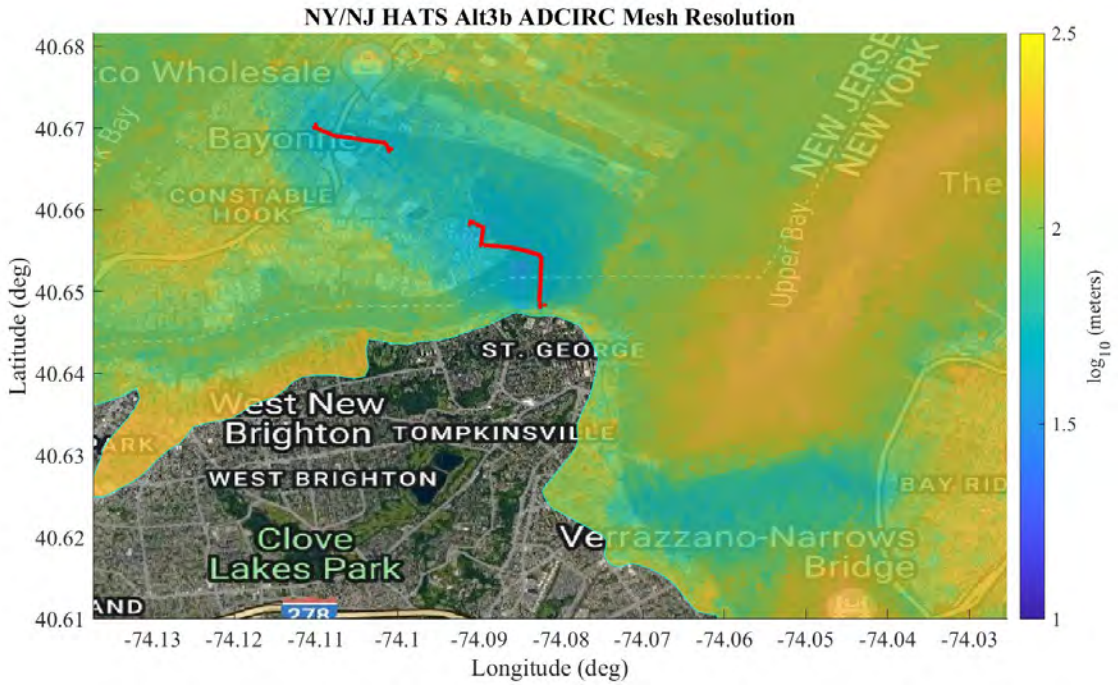


Figure 18 Map showing mesh resolution for the NYNJHAT ADCIRC mesh in the Upper Bay area for Alt3b.

3.5 ADCIRC Mesh CSRM Representations

All CSRM features in the ADCIRC mesh are represented as ADCIRC sub-grid-scale boundary conditions known as internal weir-pairs. This boundary condition allows for the relatively narrow floodwalls, gates, and even levees to be represented in the mesh without having to use meter-scale or finer resolution sized elements, which would significantly increase the computational requirements of the model. Not only would there be more elements for which to perform computations, but also because of the Courant-Friedrichs-Lewy (CFL) condition (Courant et al. 1967) restrictions relating spatial and temporal sizing, the ADCIRC model time-step size would have to shrink to well below 1 second. Representing the CSRM features for NYNJHATS with mesh element sizes that sometimes reached as small as 15.0 meters for this project already required the use of a 0.5-second ADCIRC model time step size, as compared to the 1.0-second time step size used for the NACCS mesh. Figure 19 shows a close-up view of a section of one of the Alt3b CSRM features as represented in the ADCIRC mesh. In Figure 19, the color contours show the mesh topography and bathymetry values, while the light gray lines are the mesh element edges, the red line segments are the outer edges of the interior weir-pair boundary conditions representing the CSRM features, and the black lines are drawn in to show the flow-paths across the weir-pairs. Note the interior of the weir-pairs has been filled in with color contours representing the height of the weir-pairs, i.e. the height of the CSRM. When water levels on either side of the weir-pair exceed the weir-pair height, then water is allowed to transfer from one side of the structure to the other, across the flow-paths, using a weir flow formula. It is noted that while water levels are preserved across the structure with the weir flow formula, momentum is not. Nevertheless, the use of interior weir-pair boundary conditions is a standard of practice for representing vertical structures in ADCIRC and allows for more robust model calculations and faster adjustments for structure height changes.

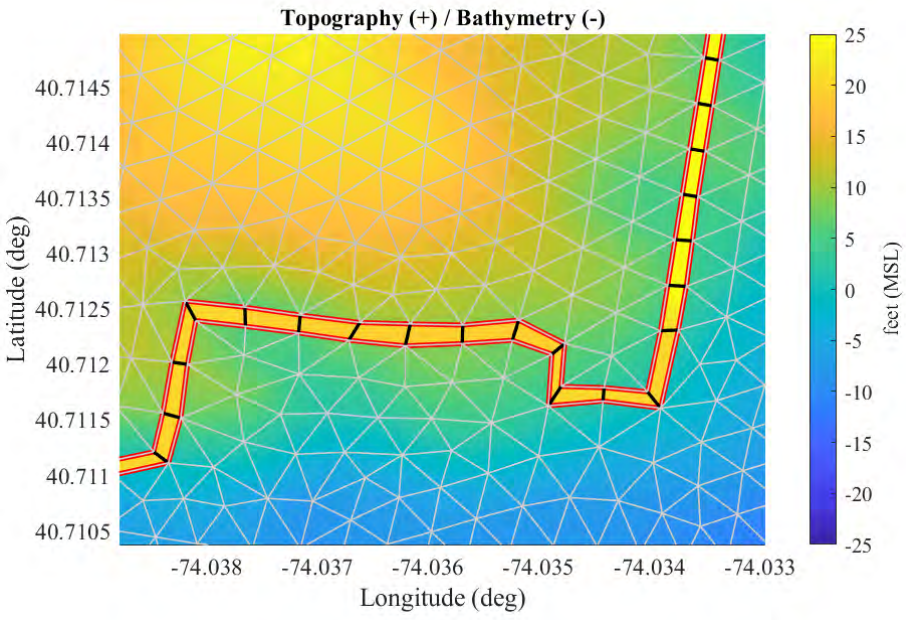


Figure 19 A portion of the ADCIRC mesh for Alt3b with interior weir-pair boundary conditions shown as red lines. Color contours represent topographic and bathymetric values as well as the height of the CSRM structure.

4 ADCIRC RIVER INFLOWS AND NAVIGATION GATES

In the original NACCS ADCIRC mesh, 14 different rivers were large enough to be included as inflow boundary conditions. Figure 20 is a map showing the names and locations of the river inflow boundary conditions for each of these rivers. The Hudson River, Passaic River, and Raritan River are the major rivers that are in the immediate NYNJHAT study area that are included in the NACCS ADCIRC mesh. Table 3 provides a sampling of the flow rates in these 14 rivers for Hurricane Sandy and Hurricane Irene, the 1992 Nor'easter and the statistically derived values used for the synthetic storm events, see the NACCS report (Cialone et al. 2015) for details on how the river flow rates were derived.

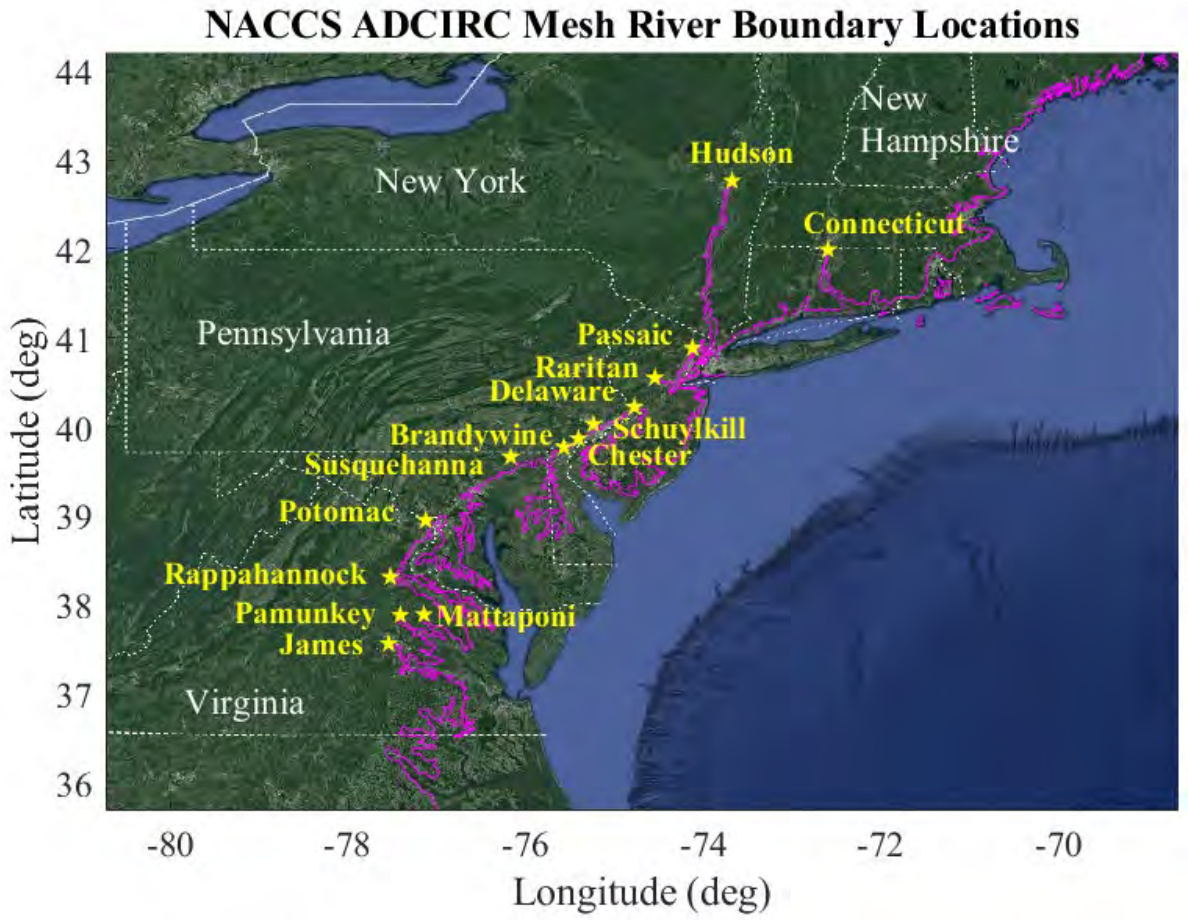


Figure 20 Map showing the names and locations of the 14 river inflow boundary locations included in the NACCS ADCIRC mesh.

Table 3 Flow rates used for the 14 rivers in the NACCS.

River / Event	Hurr. Sandy (CFS)	Hurr. Irene (CFS)	1992 Nor'easter (CFS)	Synthetic Storms (CFS)
Raritan	**1,310**	**12,395**	**17,174**	**23,000**
Pamunkey	**324**	**394**	**7,528**	**11,000**
Mattaponi	**215**	**531**	**1,216**	**3,000**
Connecticut	**14,340**	**25,746**	**15,900**	**69,000**
James	**1,836**	**1,937**	**26,720**	**70,000**
Rappahannock	**4,656**	**340**	**31,150**	**26,000**
Potomac	**33,099**	**2,900**	**61,570**	**134,000**
Susquehanna	**45,357**	**17,419**	**52,860**	**269,000**
Brandywine	**1,790**	**1,992**	**2,484**	**9,000**
Chester	**492**	**606**	**1,028**	**2,000**
Schuylkill	**8,253**	**11,167**	**17,110**	**33,000**
Delaware	**16,386**	**34,406**	**21,830**	**78,000**
Passaic	**820**	**4,303**	**2,595**	**10,000**
Hudson	**18,186**	**28,428**	**16,810**	**51,000**

For the NYNJHATS simulations, all river inflows were set to a zero flow rate for all simulations. The reason for not including river inflows is that several of the CSRM features are navigation gates that span rivers or the entire mouth of the bay in the case of Alt2. The ADCIRC model does not presently have a suitable mechanism for representing the opening and closing of navigation gates during the course of a simulation. Thus for the entire duration of the simulation, the navigation gate would have to be specified in the model as either open or closed. In practice, a navigation gate would be closed for only a small portion, such as 12 to 36 hours, of a storm's full history. In comparison, most storm durations last around 3 to 7 days. Having inflows in the rivers and keeping the navigation gates closed for the entire storm simulation would cause unrealistically large buildups of water behind the gates, which in turn would induce flooding behind the structures. As a

result, no river inflows were used for this phase of the study. In Appendix III, additional details and three example storms simulations are presented comparing with- and without-river flows.

Enhancements to the ADCIRC model itself will eventually allow for functioning navigation gates during a simulation, i.e. gates that can open and close in the course of the simulation. With these enhancements, river inflows could be included and gate operation scenarios could be conducted to determine suitable gate operation procedures during actual storm events. Some possible considerations that may be explored would be to close the navigation gates at the low tide level just prior to a storm surge buildup in the area. Another example might be to close the gates when a certain surge level is detected. For some of the alternatives being considered, more than one navigation gate is included; as such, study of the overall system operation, where gates may be opened/closed in different sequences, could be considered. These kind of options represent operational considerations and design optimization steps of the CSRM. As such, they should be examined in future studies after the tentatively selected plan has been selected which will reduce the total computational requirements for such studies to a manageable level.

5 STWAVE MODEL DEVELOPMENT

The Steady-State Spectral Wave (STWAVE) (Smith et al. 2001 and Massey et al. 2011) model is a phase-averaged spectral nearshore wave model that is capable of being tightly two-way coupled with ADCIRC as part of the CSTORM suite of numerical models. The model is based on the wave action balance equation and can be executed in either half-plane or full-plane mode. It is capable of calculating wave transportation phenomena including breaking, refraction, shoaling, and wind-wave generation (Massey et al. 2011).

As with ADCIRC, the setup of the STWAVE model for NYNJHATS was directly derived from that of the NACCS study. Three STWAVE grids used in the NACCS cover the project area: the Central New Jersey (CNJ), the North New Jersey (NNJ) and the Long Island (LID) grids, as shown in Figure 21. These three STWAVE domains cover all the NYNJHATS CSRM footprints and provide adequate coverage for computing nearshore wave conditions and the interaction of those waves with the water levels and vice-versa. All three grids have a uniform cell resolution of 200 meters and were set up for full-plane mode for this project. Additional grid geometry and discretization details are provided in Table 4. For each CSRM alternative, the feature heights were added to the corresponding STWAVE grid cells as topographic features. This allows for wave energy blocking whenever the water levels as computed by ADCIRC and interpolated onto the STWAVE domains do not overtop the structures. When the water levels do overtop the structures, then wave energy is able to propagate across the structures. All other STWAVE properties and characteristics are left unchanged from the NACCS. All simulations for this study were performed using CSTORM coupled ADCIRC+STWAVE since inclusion of waves in the coupled model can have a significant impact on the final water elevation results and accuracy of the solution. It is noted that since water levels were the primary concern for this screening analysis, no wave results are included in the report.

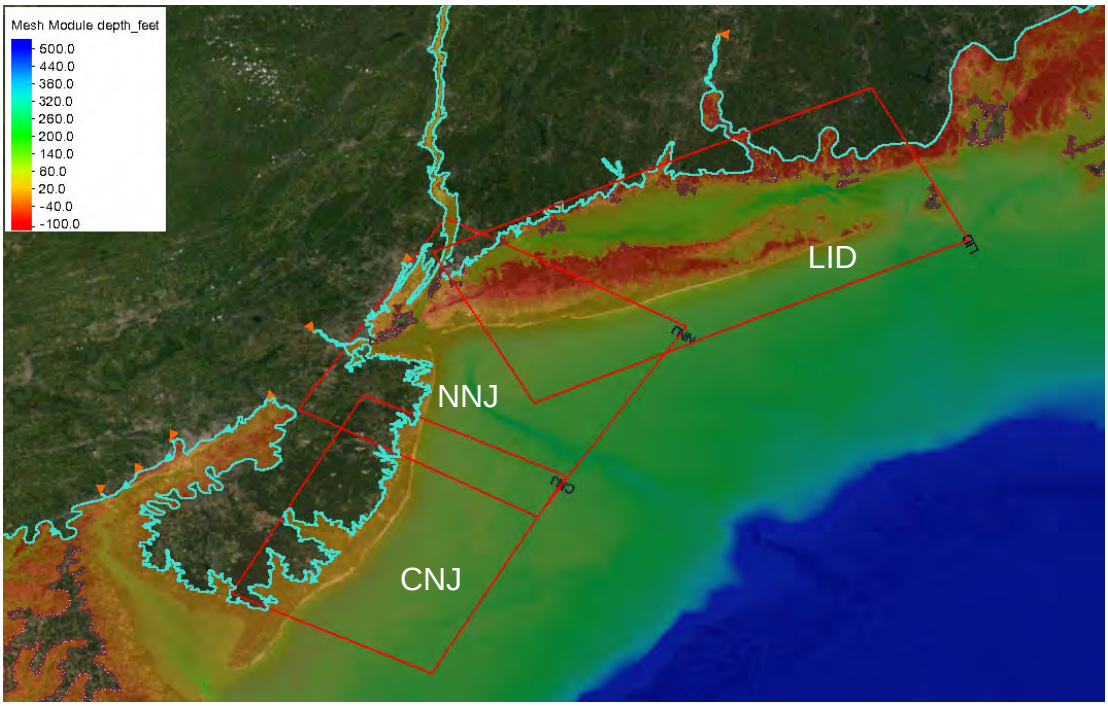


Figure 21 The boundary of the three NYNJHATS STWAVE grids (CNJ, NNJ, and LID) shown as red lines overlaid on two-dimensional color contour plots of bathymetry and topography (in feet) from the ADCIRC mesh.

Table 4 STWAVE grid geometries.

Grid	Projection	Grid Origin (x,y) (m)	Azimuth (deg)	Resolution (m)	Number of Cells	
					I	J
Long Island (LID)	UTM 18	802679.3, 4544326.0	117.9	200.0	453	986
North New Jersey (NNJ)	UTM 18	689660.5, 4494212.9	150.2	200.0	569	593
Central New Jersey (CNJ)	UTM 18	642056.1, 4413284.8	153.1	200.0	468	596

6 STATISTICAL ANALYSIS

As part of the North Atlantic Coast Comprehensive Study (NACCS), the U.S. Army Engineer Research and Development Center (ERDC) completed a coastal storm wave and water level numerical modeling and probabilistic coastal storm hazard analysis effort for the U.S. North Atlantic Coast. The NACCS provides nearshore wind, wave, and water level estimates and the associated marginal and joint probabilities critical for effective CSRM. This effort involved the application of the Coastal Hazards System (CHS)

Probabilistic Coastal Hazard Analysis (PCHA) framework (Nadal-Caraballo et al. 2020) and corresponding storm suite consisting of 1,050 synthetic tropical cyclones (TCs) and 100 historical extratropical cyclones (XCs). Hydrodynamic simulations of these storms were conducted using the suite of high-fidelity numerical models within the Coastal Storm Modeling System (CSTORM-MS). Documentation of the numerical modeling effort is provided in Cialone et al. 2015, and documentation of the probabilistic analysis is provided in Nadal Caraballo et al. 2015. Products of the study are available for viewing and download on the CHS website: https://chs.erdc.dren.mil/.

The New York & New Jersey Harbor and Tributaries (NYNJHATS) feasibility study made use of existing still water level (SWL) data, hydrodynamic modeling setup, and probabilistic analysis tools developed for the NACCS (Nadal-Caraballo et al. 2015; Cialone et al. 2015). Updating SWL hazard statistics for NYNJHATS, both without- and with-project scenarios, using the CHS PCHA framework for the North Atlantic region requires the simulation of both TC- and XC-induced SWL. The NACCS Full Storm Suite (FSS) consists of 1,050 synthetic TCs and 100 historical XCs. SWL hazard curves are initially developed for TCs and XCs independently, and are subsequently integrated to compute Combined Cyclone (CC) SWL hazard curves. The next section discusses the design of experiments (DoE) approach employed in the selection of the Reduced Storm Suite (RSS) applied in the numerical modeling for this study.

6.1 Selection of Reduced Storm Suite (RSS)

For the NYNJHATS study, a reduced storm suite (RSS) of 20 TCs was identified. The number of storms sampled for each RSS was limited by budget and/or schedule constraints and informed by previous studies where DoE had been applied (*e.g.*, Melby et al. 2020). The goal of the storm selection was to find the optimal combination of storms, given a predetermined number of events to be sampled out of the 1,050-TC FSS, to obtain a reasonable estimation of the SWL hazard. The storm selection process was performed using the DoE approach documented in Taflanidis et al. (2017) and Zhang et al. (2018). The DoE compares the RSS SWL hazard curves to benchmark hazard curves corresponding to the FSS at a given number of specific locations or save points. The difference between the RSS hazard curves and FSS benchmark curves is minimized by initially sampling a small subset of TCs, and then iteratively adding additional TCs (*e.g.*, 5 by 5) until the difference between the two curves is significantly reduced or becomes negligible. The save points where the hazard curve optimization takes place correspond to critical locations within the study area. A total of 1,112 save points were considered in this study.

Following are the general steps in the DoE approach used for the selection of the TC RSS:

1. Identify a set of save points within the study area where the DoE optimization is to be performed.
2. Develop or use existing TC SWL hazard curves for the FSS.
3. Determine the number of TCs to be sampled.

4. Develop new hazard curves for the RSS.
5. Select the annual exceedance frequency (AEF) range at which the RSS and FSS hazard curves will be compared. Differences can be computed along the entire hazard curve, a segment of the hazard curve, or at specific AEFs (*e.g.*, 0.02 to 0.002 storms/year, equivalent to 50 to 500 years).
6. Calculate errors between the RSS and FSS hazard curves at predetermined AEFs.
7. Conduct an iterative optimization analysis, described in Melby et al. (2020), Appendix C, to evaluate the benefit of increased RSS size; (*e.g.*, 5 by 5, from 10 to 20 TCs).
8. Once the sought number of storms is reached (*e.g.*, 20), in order to evaluate the overall RSS performance, the RSS selected through optimization indicated in Step 7 is compared to multiple RSS where TCs are sampled in a single batch.
9. Complete storm selection by choosing the optimal RSS from Step 8.
10. The selected storms are simulated in ADCIRC, and the results are used to reconstruct hazard curves for NYNJHATS without- and with-project conditions.

For this study, an RSS of 20 TCs was selected for simulating in the hydrodynamic models. Using 20 storms allows for a good balance between accuracy and overall computational cost and is sufficient for making comparisons of the different CSRM measures for a screening level analysis. Figure 22 and Figure 23 show the locations of the selected storm tracks relative to the project area. Table 5 provides some of the storm characteristics for each of the 20 storms, including the forward velocity of the storm, the minimum central pressure (intensity) of the storm, the approximate radius of maximum winds (size) of the storm, and the maximum wind speed. Maps showing the track and relative size and intensity of each storm are provided in Appendix II.

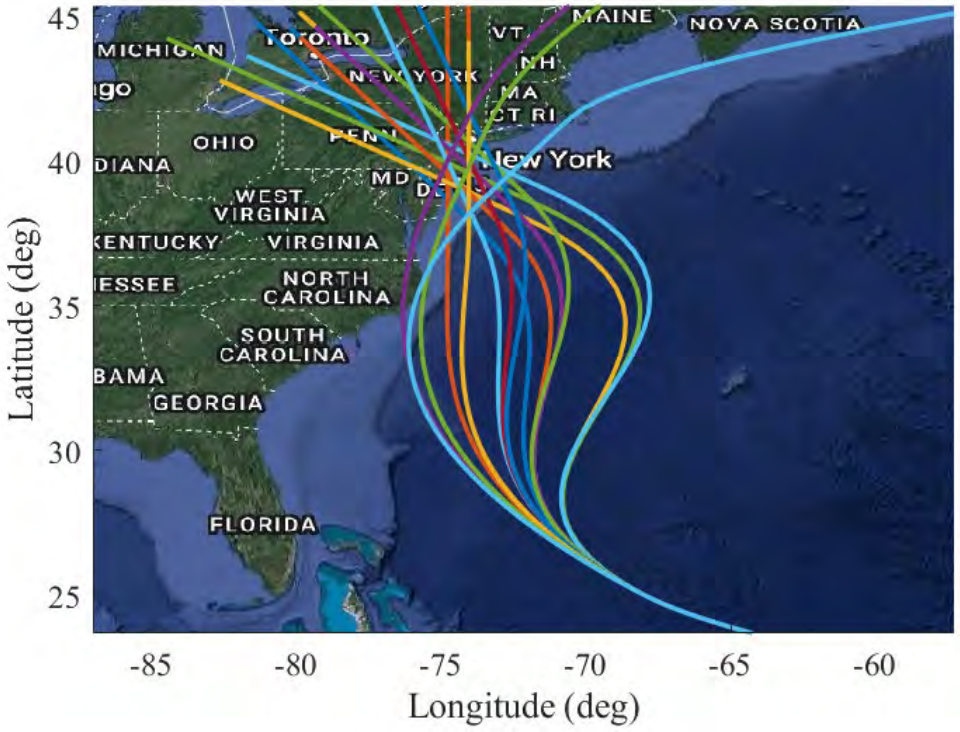


Figure 22 Map with storm tracks for the 20 screening level storms.

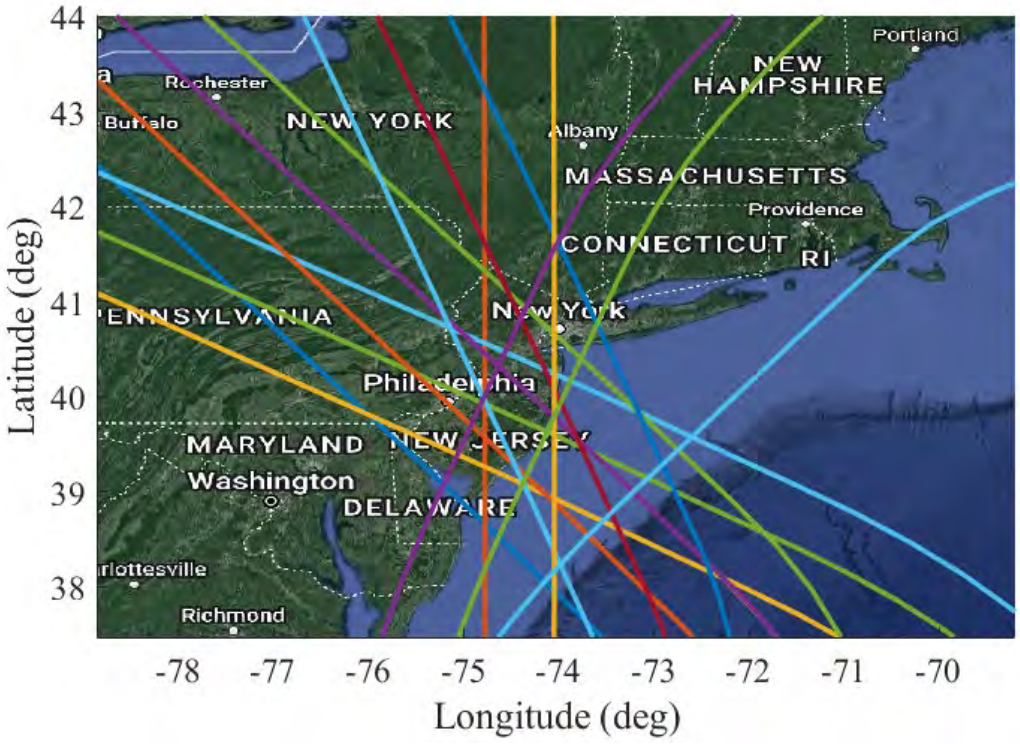


Figure 23 Map showing a closer view of the storm tracks for the 20 screening level storms.

Table 5 Storm characteristics of the selected feasibility-level screening storms.

Storm #	Forward Speed (kts)	Minimal Central Pressure (mb)	Radius of Maximum Winds (nmi)	Max. Wind Speed (MPH)
100	23.8	935	36.3	104
184	27.5	945	40.4	98.0
349	35.1	935	103.7	78.0
355	19.4	935	33.9	99.0
356	29.7	945	105.9	69.0
363	33.5	955	48.8	89.0
391	30.8	935	30.8	119.0
392	22.7	945	109.2	65.0
396	31.9	985	55.0	61.0
397	34.0	935	47.1	108.0
400	20.5	965	28.5	82.0
403	32.9	935	47.1	107.0
433	33.5	925	37.1	124.0
439	19.4	925	30.8	109.0
445	24.3	925	41.2	108.0
470	42.7	940	67.0	98.0
478	10.3	980	34.7	57.0
525	44.3	940	64.1	98.0
536	32.9	940	48.8	99.0
655	29.2	975	36.3	76.0

6.2 Overview of Water Lever Reconstruction and Development of Hazard Curves

The process of reconstructing the SWL hazard curves for the NYNJHATS began with the selection of the RSS using the DoE approach (Zhang et al. 2018; Melby et al. 2020). For the NYNJHATS study, ADCIRC simulations of storm surge (*i.e.*, SWL without tides) were conducted for the 20-TC RSS in order to perform a comprehensive evaluation of select with-project alternatives. Relying only on RSS simulations would result in increased uncertainty relative to the FSS. Therefore, a key component of the methodology used in this study for the reconstruction of hazard curves is the application of surrogate modeling, or metamodeling, (*e.g.*, Taflanidis et al. 2014; Kim et al. 2015) for the estimation of the FSS with-project SWL.

More specifically, results from new NYNJHATS hydrodynamic simulations corresponding to the 20-TC RSS were used to determine SWL ratios and absolute differences between, first, NACCS and NYNJHATS base condition and, second, between NYNJHATS base condition and with-project alternatives. A machine-learning method known as Gaussian process metamodeling (GPM) (Jia et al. 2015) was trained on these SWL ratios and differences. The use of GPM within the context of a PCHA study is summarized in Nadal-Caraballo et al. (2020). GPM leverages the TC parametrization scheme that allows for TCs to be described in terms of climatological characteristics and atmospheric forcing, including intensity (central pressure deficit), size (radius of maximum winds), track path

(forward translation speed and track reference location), and angle of approach (track heading direction).

In a typical PCHA application, the GPM is used to generate the response (*e.g.*, surge, wave height) of augmented tropical cyclone suites consisting of thousands to millions of synthetic TCs. In the present study, GPM was used to predict the SWL attenuation or amplification of the FSS (i.e., 1,050 TCs) based on the SWL results of the RSS (i.e., 20 TCs) employed in NYNJHATS. This is achieved by using the GPM output to adjust existing NACCS results, as discussed in this section. Following the methodology for the New Jersey Back Bays (Slusarczyk et al. 2021) and Nassau County Back Bays (Nadal-Caraballo et al. 2022) CSRM studies, the main steps in the reconstruction of NYNJHATS TC SWL hazard curves at individual save points are:

1. Conduct hydrodynamic surge-only simulations of the 20-TC RSS.

2. Compute both the ratio (K_R) between NACCS and NYNJHATS base condition. Since the NYNJHATS simulations excluded astronomical tide, these results were directly compared in this step to NACCS results that also excluded tides. The base condition average ratio ($K_{R,base}$) of the NACCS to NYNJHATS SWL was computed as follows:

$$K_{R,base} = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{SWL_{RSS,NYNJHATS,base}}{SWL_{RSS,NACCS,base}}\right)_i \quad \text{Eq. (1-a)}$$

   where: *SWL* = still water level; *RSS* = reduced storm set; *base* = base condition; *n* is the RSS size.

3. For base condition, compute the absolute difference ($K_{A,base}$) between the NYNJHATS SWL to NACCS SWL for the RSS:

$$K_{A,base} = \frac{1}{n}\sum_{i=1}^{n}\left(SWL_{RSS,NYNJHATS,base} - SWL_{RSS,NYNJHATS,base}\right)_i \quad \text{Eq. (1-b)}$$

4. For the assessment of with-project alternatives, $K_{R,alt}$ was computed as follows:

$$K_{R,alt} = \frac{1}{n}\sum_{i=1}^{n}\left(\frac{SWL_{RSS,NYNJHATS,alt}}{SWL_{RSS,NYNJHATS,base}}\right)_i \quad \text{Eq. (2-a)}$$

   where: *alt* = with-project alternatives.

5. For the assessment of with-project alternatives, $K_{A,alt}$ is computed as follows:

$$K_{A,alt} = \frac{1}{n}\sum_{i=1}^{n}\left(SWL_{RSS,NYNJHATS,alt} - SWL_{RSS,NYNJHATS,base}\right)_i$$

Eq. (2-b)

6. Train and validate GPM using the TC SWL ratios and absolute differences computed for the 20-TC RSS.

7. Use GPM results to estimate the TC SWL ratios and differences for the remaining of FSS (i.e., 1,050 TCs – 20 TCs = 1,030 TCs).

8. The ratios and differences computed up to the previous step are used to estimate NYNJHATS SWL (i.e., surge + waves + tide) by correcting existing NACCS SWL. Therefore, the reconstructed NYNJHATS SWL and SWL hazard curves account for the astronomical tide component. For base condition, estimate the NYNJHATS TC SWL for the FSS by correcting the NACCS SWL:

$$SWL_{FSS,NYNJHATS,base} = \left[\left(SWL_{FSS,NACCS,base} \cdot K_{R,base}\right) + \left(SWL_{FSS,NACCS,base} + K_{A,base}\right)\right]/2$$

Eq. (3)

9. This approach, consisting of assigning equal weighting to the ratio- and difference-base adjustments, reduces the average error over the range of adjusted SWL relative to using either of the adjustments alone. Alternatively, an optimization process could also be conducted to determine the weights (i.e., *w* and *w*-1) that minimize the average error over the range of SWL specific to this study.

10. For with-project alternatives, estimate the NYNJHATS TC SWL for the FSS by correcting the NACCS SWL:

$$SWL_{FSS,NYNJHATS,alt} = \left[\left(SWL_{FSS,NACC,base} \cdot K_{R,alt}\right) + \left(SWL_{FSS,NACCS,base} + K_{A,alt}\right)\right]/2$$

Eq. (4)

11. Compute TC SWL hazard curves using the joint probability analysis (JPA) previously developed for NACCS (Nadal-Caraballo et al. 2015).

The hydrodynamic simulations of SWL conducted for the NYNJHATS did not account for the occurrence of XCs. While it is possible to identify an RSS of synthetic TC events to inform a joint probability model, given that XCs lack the well-defined vortex that characterizes TCs, the standard of practice for XCs is to sample historical events based on water level observations instead of relying on specific atmospheric forcing parameters.

The following are the general steps for reconstructing the NYNJHATS XC SWL hazard curves on a per-save point basis:

1. Using the new NYNJHATS and previous NACCS hydrodynamic results, develop a regression model to establish the likely NYNJHATS TC SWL attenuation or amplification (*i.e.*, response variable) as a function of the NACCS TC SWL (*i.e.*, predictor variable) at each evaluated save point.
2. Apply the regression model to estimate the NYNJHATS XC SWL from the SWL results corresponding to the original 100 XCs simulated for NACCS.
3. Compute XC SWL hazard curves using extreme value analysis (EVA).

Finally, the CC SWL hazard curves are computed by integrating the individual TC and XC hazard curves at each NYNJHATS save point.

6.3 Reconstruction of Still Water Levels for Without-Project (Base) Conditions

The primary goal of the 20-TC RSS is to determine the change in storm surge and SWL hazards for the different NYNJHATS alternatives under consideration, leveraging existing NACCS results for 1,050 TCs and 100 XCs. However, it is necessary first to reconstruct the base condition SWL to account properly for any changes arising from updated bathymetry and topography within the study area, and from modifications to the ADCIRC grid. Therefore, the NYNJHATS SWL must be corrected for the lack of wave effects, such as wave setup. The reconstruction of TC and XC base condition SWL are discussed next.

6.3.1 Tropical Cyclones

After the NYNJHATS simulations are corrected by adding wave setup, the next step in the SWL reconstruction process is the computation of NYNJHATS TC SWL to NACCS TC SWL ratios ($K_{R,base}$) and absolute differences ($K_{A,base}$) for the different with-project alternatives. $K_{R,base}$ and $K_{A,base}$ are computed for the 20-TC RSS in order to estimate the SWL change (i.e., attenuation or amplification) resulting from these alternatives. The relationship between the NYNJHATS to NACCS TC SWL ratios (y-axis) and the NACCS TC SWL (x-axis) is not exclusively linear and can exhibit significant spread at some locations. Consequently, instead of relying on linear regression models, GPMs were trained for both $K_{R,base}$ and $K_{A,base}$, so SWL changes could be estimated for the 1,050-TC FSS used in the development of updated SWL hazard curves for the NYNJHATS study.

GPM is a mathematical approximation for the input/output (x/z) relationship of a complex numerical model. It is formulated based on a database of simulations for complex processes such as hurricane storm surge. This database is frequently referenced as experiments or support points, as shown in Figure 24. The basis for the GPM framework used in this study is the TC parametrization in the NACCS JPA (Nadal-Caraballo et al. 2015). The synthetic TCs are the GPM input (x), while the output (z) are the CSTORM-

MS water level simulation results. Each input/output pair constitutes a support point. Support points are used to train a GPM and construct a 3-dimensional (3D) surface. Herein, the reconstruction of the NYNJHATS SWL is a 7-dimensional hyperspace, with six TC parameters as inputs and either $K_{R,base}$ or $K_{A,base}$ as a single output.

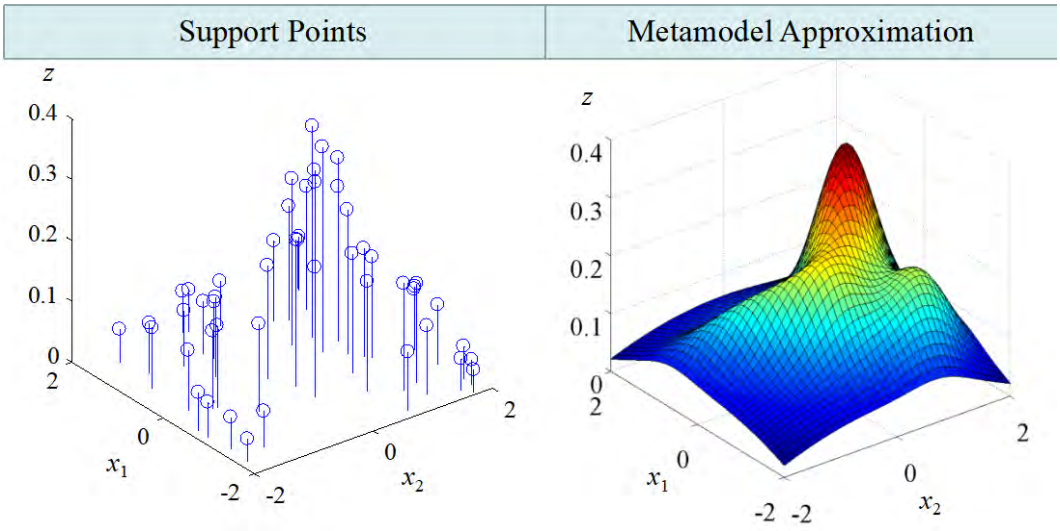


Figure 24 GPM input/output relationship.

As discussed in Nadal-Caraballo et al. (2015; 2020), synthetic TCs are developed considering the historical climatology and characteristic storms of a specific region, and reflect likely combinations of storm intensity and size, track and landfalling location. The input vector (x) used in the training of GPM consists of the following TC parameters:

- Latitude of landfalling or bypassing reference location, x_{lat}
- Longitude of landfalling or bypassing reference location, x_{lon}
- Track heading direction, θ
- Central pressure deficit, Δp
- Radius of maximum winds, R_{max}
- Forward translation speed, V_t

Training and validation of the GPM is discussed in detail in Taflanidis et al. (2014), Jia et al. (2015), Taflanidis et al. (2017), and Zhang et al. (2018).

6.3.2 Extratropical Cyclones

The standard of practice for the assessment of XC storm surge and other coastal hazards does not require this storm population to be parameterized. Without a parameterization scheme, the training of a GPM is unfeasible. Therefore, a regression model is used to

estimate the general relationship between the NYNJHATS and NACCS SWL and, thus, the expected value of SWL attenuation or amplification, regardless of storm forcing. This allows the estimation of XC SWL for NYNJHATS using a linear regression model as a function of the previous NACCS results for 100 XCs. SWL hazard curves for XCs and CC hazard curves were developed as described in Nadal-Caraballo et al. (2015).

6.4 Reconstruction of Water Levels for With-Project Alternatives

This section discusses the reconstruction of SWL for the different NYNJHATS with-project alternatives. The processes of reconstructing TC and XC with-project SWL are discussed in Section 6.4.1 and Section 6.4.2.

6.4.1 Tropical Cyclones

The methodology for the training of GPM and reconstructing TC SWL for the with-project alternatives follows steps similar to the methodology previously discussed in Section 1.3.1 -- Tropical Cyclones for the reconstruction of the base condition TC SWL. After the NYNJHATS TC SWL is corrected for wave setup, the NYNJHATS alternative to base TC SWL ratios (KR,alt) and absolute differences (KA,alt) for the 20-TC RSS are computed. Then, KR,alt and KA,alt are used as input in the training of the GPM for the different alternatives.

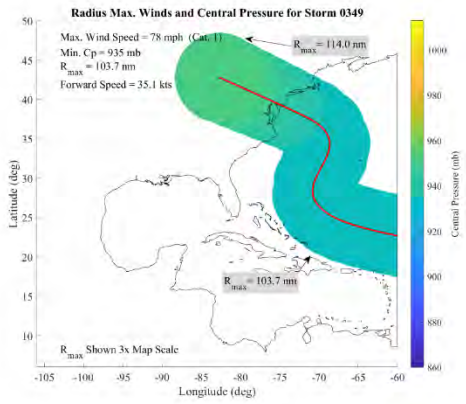
6.4.2 Extratropical Cyclones

As mentioned in Section 1.3.2 -- Extratropical Cyclones, XCs are not parameterized. Therefore, instead of employing GPM, which requires a set of input parameters to develop the input/output relationship, the reconstruction of XC SWL relies on regression models to establish the relationship between each NYNJHATS with-project alternative TC SWL and the NYNJHATS base condition TC SWL in order to estimate XC SWL. The with-project XC SWL hazard curves were developed using extreme value analysis as described in Nadal-Caraballo et al. (2015).

7 CSTORM MODEL RESULTS: MAXIMUM WATER SURFACE ELEVATION COMPARISONS BETWEEN WITHOUT- AND WITH-PROJECT CONDITIONS

CSTORM coupled ADCIRC + STWAVE model simulations were performed for each of the above 20 tropical synthetic storm events and for each of the 17 project configurations. Table 1 lists the various project descriptions considered in these simulations, and the corresponding project names and project abbreviations given to represent them in the figures within this document. Appendix IV has two-dimensional contour plots that show the simulated maximum Water Surface Elevations (WSE) for the 20 storm events (in feet relative to MSL) for the FWOP, Alt3a, Alt3b, and their sequencing configurations.

Appendix V similarly shows FWOP, Alt2 and Alt4, and their sequencing configurations. In order to describe and compare the impacts to maximum water surface elevations for the four main alternative measures (Alt2, Alt3a, Alt3b, and Alt4) against the no project condition, FWOP, results from two different storms are presented in this section. The first set of results shown is for synthetic tropical storm #349 (see Figure 25), which has a large diameter of 103.7 nm with a moderate forward speed at 35.1 kts. The peak wind speed reached only 78 mph, making it a Category 1 storm on the Saffir-Simpson Hurricane Wind scale. The storm track takes a near-perpendicular path to the coast and makes landfall south of the project area. This puts the project area in the most intense quadrant of the storm, the northeastern quadrant. Figure 26 presents color contour maps of the maximum water surface elevations for each of the four main alternatives plus the FWOP condition. All of the four with-project alternative configurations show reduced water levels "behind" the CSRM measures. Alt2, which included a large storm surge barrier across the Raritan Bay, reduces water levels in the most areas of the project region, which is to be expected for this storm track since the winds push water directly towards the "front" side of the barrier, thus preventing the water from ever entering the main project areas. Similarly, the small navigation gates and barriers in Alt3a, Alt3b, and Alt4 all significantly (2 ft or more) reduce storm water levels "behind" the structures.



Storm Characteristics for #349

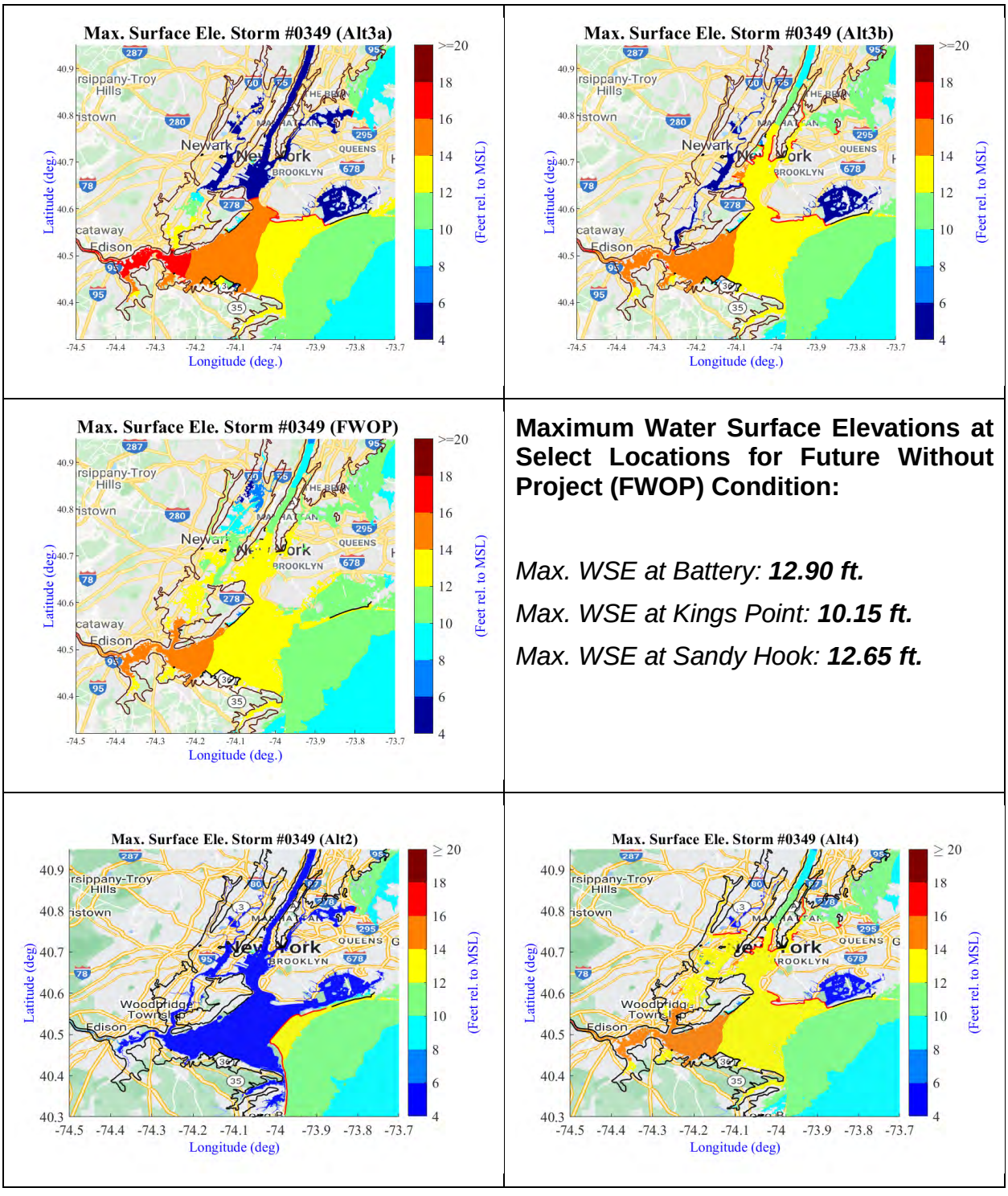
Max. Wind Speed: ***78 mph (Cat. 1)***

Min. Cp: ***935 mb***

Rmax: ***103.7 nm***

Forward Speed: ***35.1 kts***

Figure 25 Map showing the track of synthetic tropical storm #349 along with some key storm facts.



Maximum Water Surface Elevations at Select Locations for Future Without Project (FWOP) Condition:

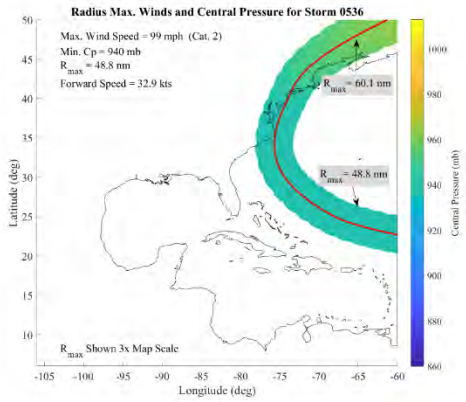
Max. WSE at Battery: ***12.90 ft.***

Max. WSE at Kings Point: ***10.15 ft.***

Max. WSE at Sandy Hook: ***12.65 ft.***

Figure 26 Color contour plots of maximim water surface elevation for storm #349 for Alt3a, Alt3b, FWOP, Alt2, and Alt4 mesh configurations.

Synthetic tropical storm #536 (see Figure 27) is a smaller-sized storm compared to #349, with a radius of maximum winds of 48.8 nm. The forward speed of the storm is 32.9 kts, which is similar in magnitude to that of storm #349, as is the minimum central pressure. This storm is ranked as a Category 2 hurricane on the Saffir-Simpson scale. The track is very different from storm #349. The track of storm #536 comes from the south, travels parallel to the coast south of NY and NJ, and then makes landfall right through the main project area. With the storm passing through and a little to the west of the study area, the dominate winds drive water toward the "front" of the structures, piling up the water "in front of" and reducing storm water levels "behind" the structures. Figure 28 shows the color contour plots of maximum water surface elevation for each of the four CSRM alternatives and the FWOP configuration. Comparing the results from FWOP versus the four main configurations Alt2, Alt3a, Alt3b, and Alt4, it is clear to see that the water levels "behind" the CSRM structures are significantly reduced and no observable areas of induced flooding are evident.



Storm Characteristics for #536

Max. Wind Speed: ***99 mph (Cat. 2)***

Min. Cp: ***940 mb***

Rmax: ***48.8 nm***

Forward Speed: ***32.9 kts***

Figure 27 Map showing the track of synthetic tropical storm #536 along with some key storm facts.

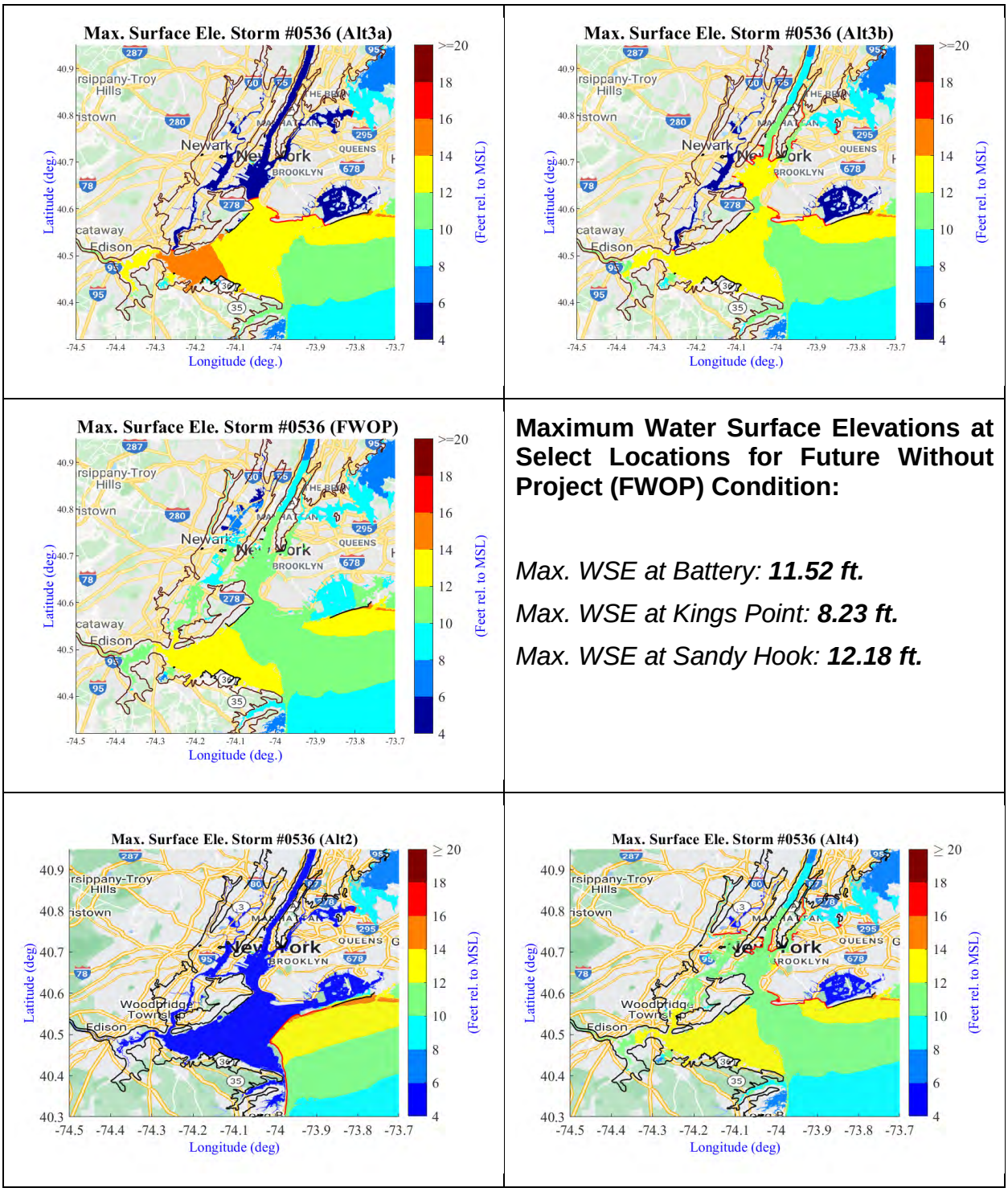
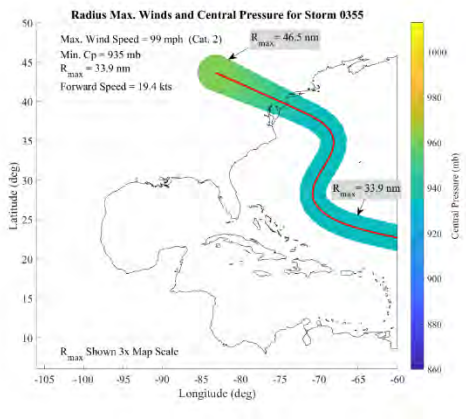


Figure 28 Color contour plots of maximim water surface elevation for storm #536 for Alt3a, Alt3b, FWOP, Alt2, and Alt4 mesh configurations.

Synthetic tropical storm #355 (see Figure 29) is a smaller-sized storm compared to #349, with a radius of maximum winds of 33.9 nm. The forward speed of the storm is 19.4 kts, which is much slower than storms #349 and #536. It has the lowest minimum central pressure compared to #349 and #536. This storm is ranked as a Category 2 hurricane on the Saffir-Simpson scale. The track is nearly identical to that of storm #349. With the storm making landfall to the south of the study area and again perpendicular to the main coastline, the dominate winds would drive water toward the “front” of the structures, piling up the water and reducing storm water levels “behind” the structures. This is seen in Figure 30, where water surface elevations are generally lower “behind” the structures. However, with the smaller diameter of this storm, the winds have a tendency to push water around “behind” the structures, and in some cases slightly increase the water surface elevations, as seen in the Newark area for Alt3.

There is also some leaking around the gates at Arthur Kill and at the Upper Bay area for all alternatives. This leaking in the Upper Bay was around the FWOP structures and has been determined to be due to low topographic values where the structures tie into high ground. After analysis, the lower ground elevations in the meshes were determined to have come from older LIDAR sources and did not adequately capture recent land elevation increases in the area. This low elevation appears in all the meshes and is thus consistent across all project alternatives. This error in the topography should be corrected for the updated modeling for the pre-construction engineering and design (PED) phase where optimization of the structure heights and placements will take place and many more storm simulations performed. The analysis of the maximum water surface elevation and resulting comparisons made to FWOP conditions, for the different sequencing combinations of the alternatives follows similar patterns to those presented here for the full alternatives for these three storms. All maximum water surface elevation solution results are presented in Appendix IV and Appendix V. Appendix VI contains two dimensional color contour plots showing the difference in maximum water surface elevations between the FWOP condition and the Alt3b conditions.



Storm Characteristics for #355

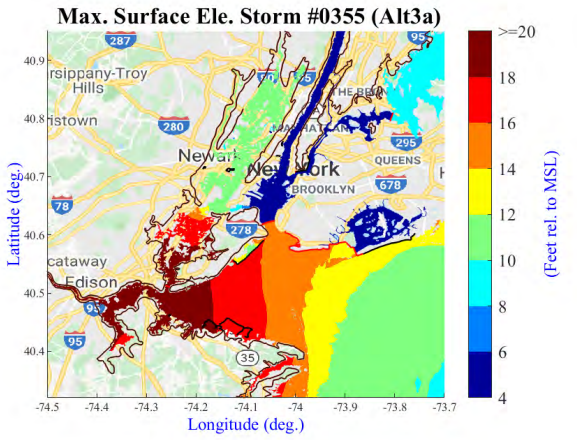
Max. Wind Speed: ***99 mph (Cat. 2)***

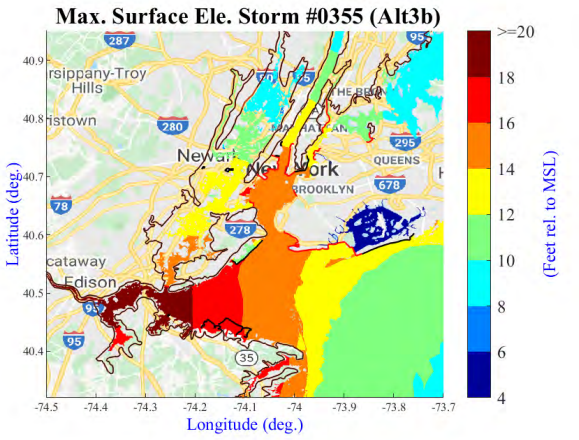
Min. Cp: ***935 mb***

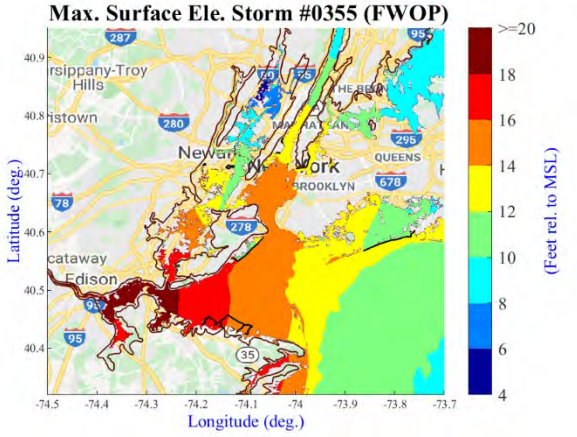
Rmax: ***33.9 nm***

Forward Speed: ***19.4 kts***

Figure 29 Map showing the track of synthetic tropical storm #355 along with some key storm facts.





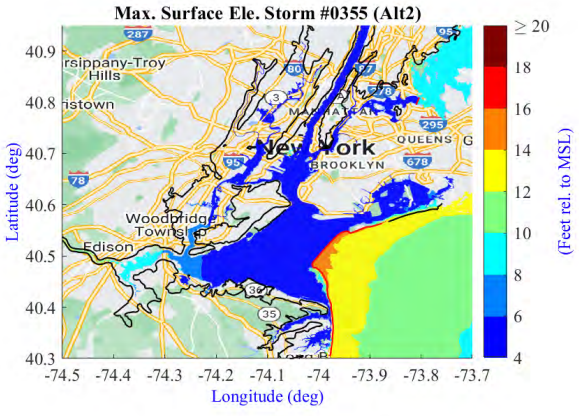


Maximum Water Surface Elevations at Select Locations for Future Without Project (FWOP) Condition:

Max. WSE at Battery: ***14.17 ft.***

Max. WSE at Kings Point: ***9.36 ft.***

Max. WSE at Sandy Hook: ***14.06 ft.***



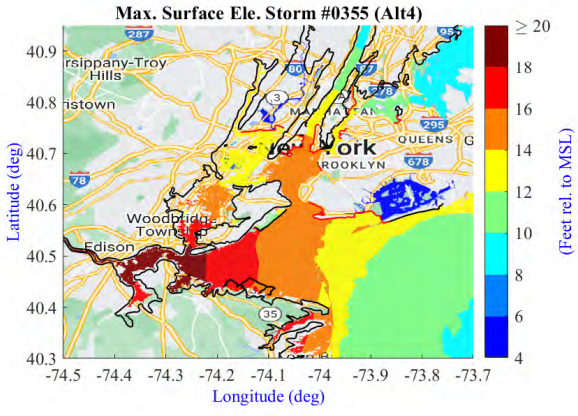


Figure 30 Color contour plots of maximim water surface elevation for storm #355 for Alt3a, Alt3b, FWOP, Alt2, and Alt4 mesh configurations.

8 ADDITIONAL MODELING DATA PRODUCTS

A set of save point locations consisting of 483 points were selected to be used for computing statistical annual exceedance probabilities of water levels in the study area. Of those, 456 point locations were subsampled directly from the nearly 19,000 save point locations used in the NACCS and the others were created specifically for this study. Figure 31 shows the locations of the save points used for this study. For each of the 4 CSRM alternatives and their 13 sequence combinations and 20 storm events, the maximum water surface elevations (WSE) computed by the CSTORM coupled ADCIRC+STWAVE were stored into comma separated value (CSV) files. While not presented in this document, the CSV files with the modeled maximum WSE results were produced as part of the modeling data. These files are available upon request.

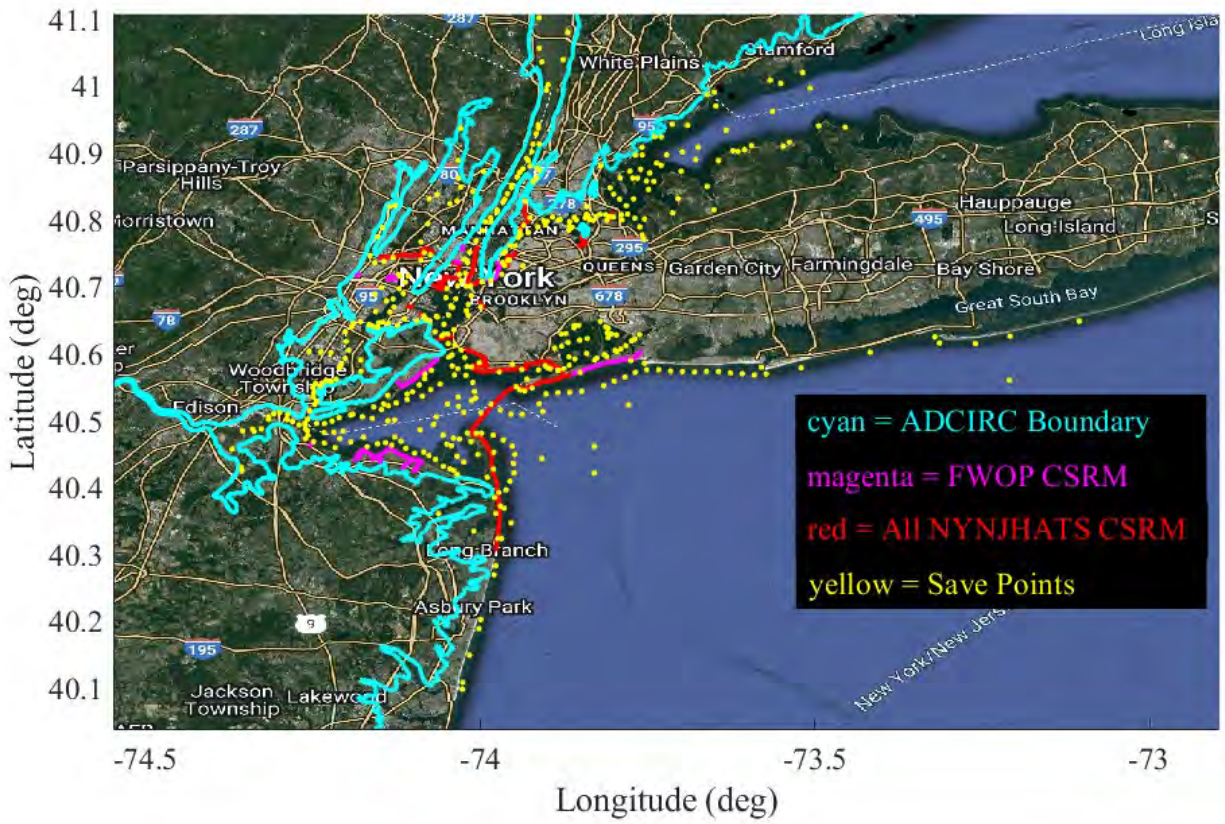


Figure 31 Map showing the NYNJHATS study area along with the ADCIRC model boundary and locations of all the CSRM features for all alternatives. The yellow dots show the location of the 483 save point locations.

9 ANNUAL EXCEEDANCE FREQUENCY FOR WATER LEVELS

Statistical AEF values for water levels was computed for all 18 modeling configurations. The water level AEF values were computed at all 483 save point locations. The best estimate value was computed along with 10%, 16%, 84%, and 90% confidence limits

associated with the best estimate values. All the AEF values are collected into Microsoft Excel spreadsheet documents and are available upon request. In Section 9.1 a discussion of the best estimate 50-year AEF water level values are presented for the FWOP case and then difference values are presented for Alt2, Alt4, Alt3a and Alt3b. Similarly, in Section 9.2 the best estimate 100-year AEF water level values are presented.

9.1 50-Year Annual Exceedance Frequency for Water Levels

Figure 32 shows a map with the best estimate 50-year AEF values for water levels at the 483 save point locations for the FWOP mesh configuration under present day sea level conditions. Values range from a low of 7 feet to a high of nearly 13.5 feet in the Raritan Bay/River area. High values in the range of 12 feet are observed in the New Rochelle and Glen Cove, NY at the southwestern end of Long Island Sound. Values along the Upper Bay east of Brooklyn and up to Manhattan are in the range of 11 feet and decrease to 9 to 10 feet moving north above Manhattan towards White Plains. Values in near Passaic and Hackensack range between 7 and 10 feet.

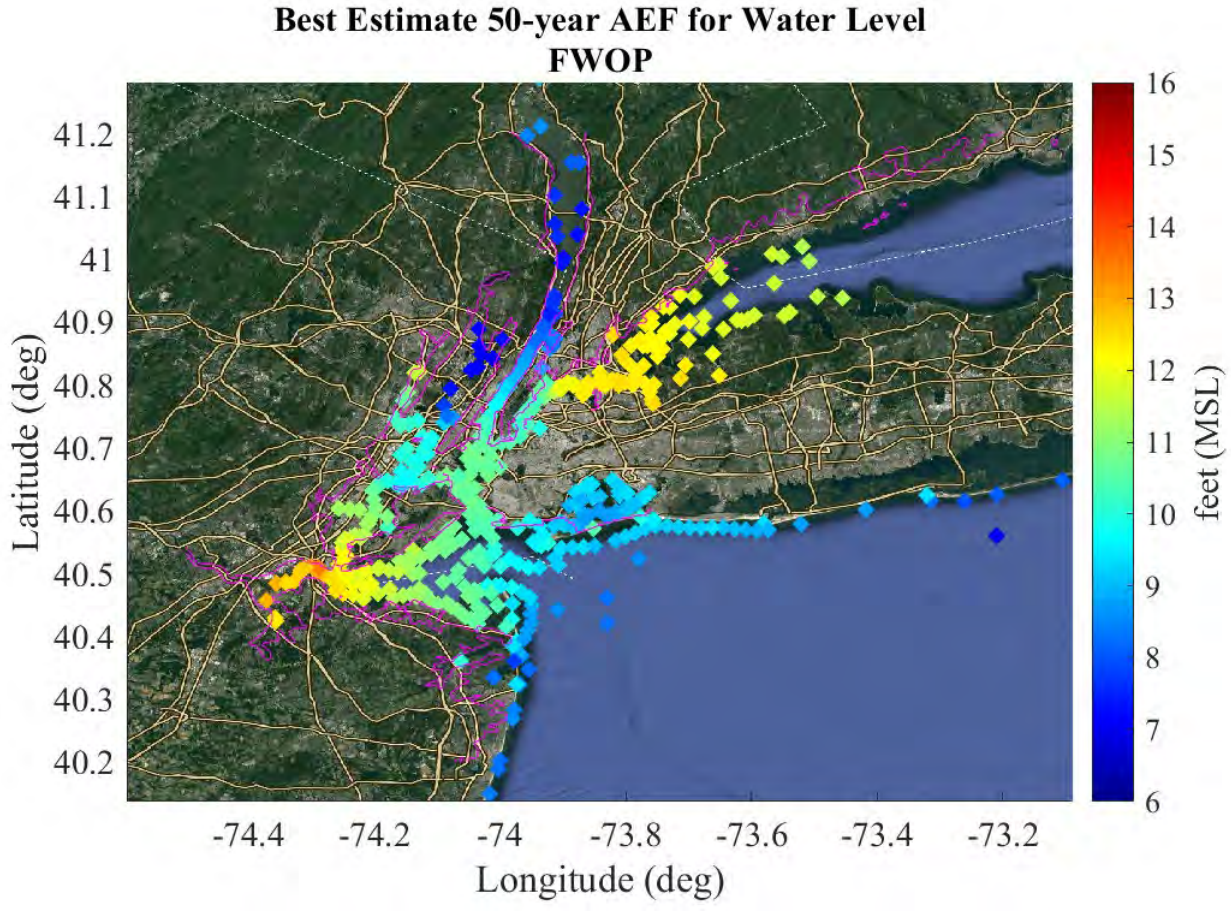


Figure 32 Map showing the best estimate 50-year AEF water level values in feet relative to MSL, at the save points, for the FWOP configuration.

Figure 33 is a map that shows the difference in best estimate 50-year AEF water level values between FWOP and Alt2. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt2 values and conversely, negative values indicate that the Alt2 values are higher than the FWOP values. Alt2 has the large bay wide barrier, which significantly reduces the 50-year AEF values behind it, with system wide reductions reaching over 9 feet at places. Locations near and in front of the barrier gate have an increase in 50-year AEF values over the FWOP by up to almost 1.5 feet.

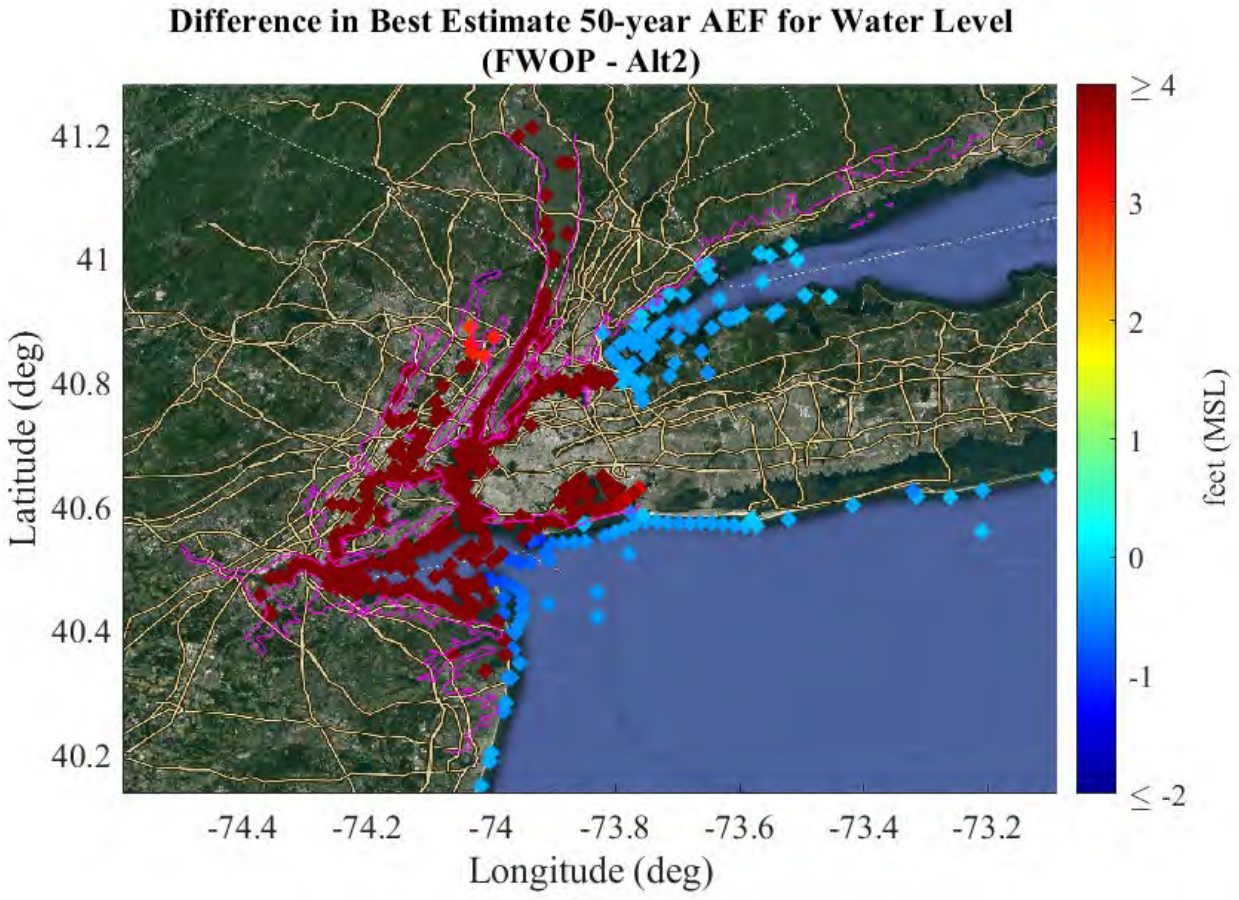


Figure 33 Map showing the best estimate 50-year AEF water level value differences between FWOP and Alt2. Values are in feet relative to MSL and are ploted at the save points.

Figure 34 is a map that shows the difference in best estimate 50-year AEF water level values between FWOP and Alt4. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt4 values and conversely, negative values indicate that the Alt4 values are higher than the FWOP values. Alt4 has a barrier system near Jamaica Bay, which significantly reduces the 50-year AEF values behind it, with system wide reductions reaching over 6 feet at places near Jamaica Bay. Most locations show only slight changes, values less than 1 feet, in 50-year AEF values with most being a lowering of the 50-year AEF values. Yet there are some locations near

CSRM structures and on the surge-exposed side where 50-year AEF values increase by as much as 3 feet.

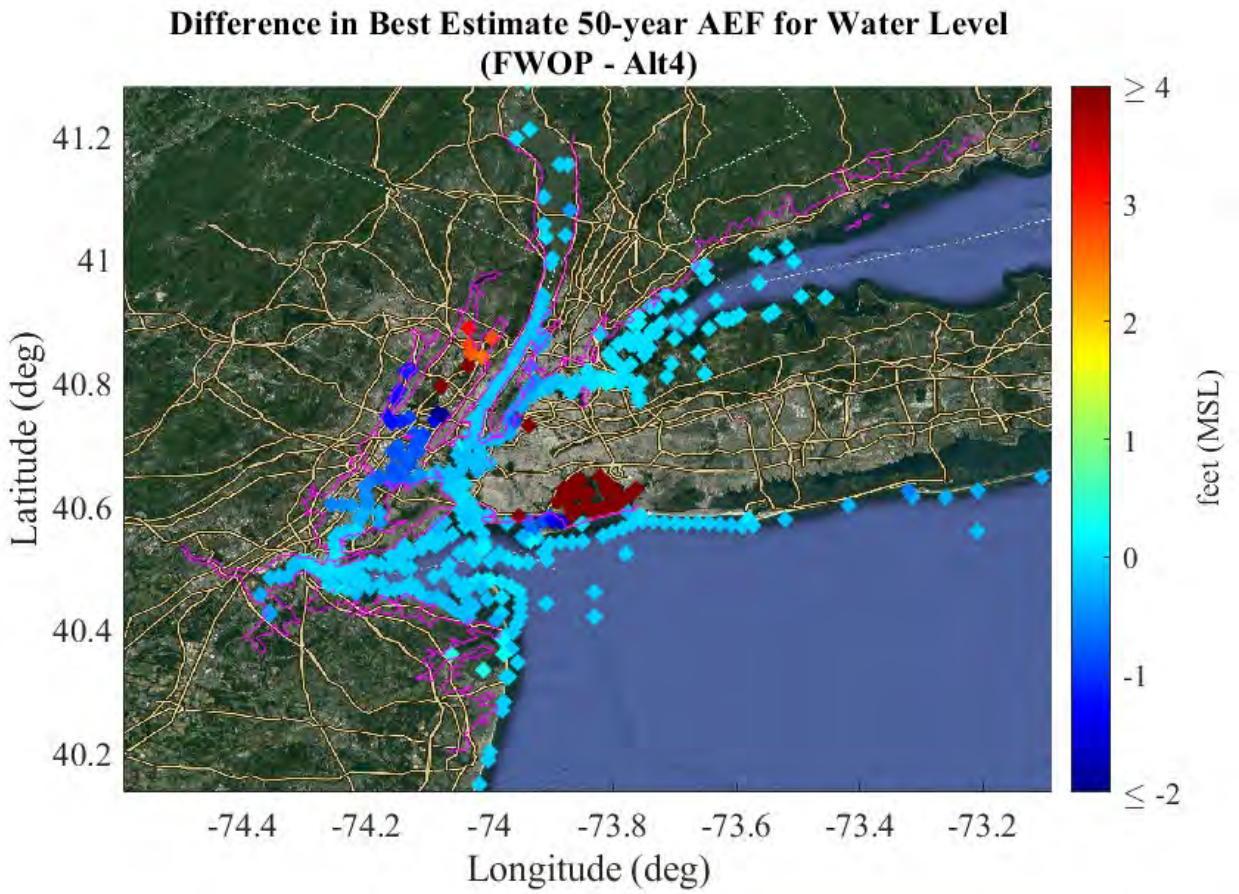


Figure 34 Map showing the best estimate 50-year AEF water level value differences between FWOP and Alt4. Values are in feet relative to MSL and are ploted at the save points.

Figure 35 is a map that shows the difference in best estimate 50-year AEF water level values between FWOP and Alt3a. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt3a values and conversely, negative values indicate that the Alt3a values are higher than the FWOP values. Alt3a has a barrier system near Jamaica Bay, which significantly reduces the 50-year AEF values behind it, with system wide reductions reaching over 9 feet. Locations north of the Upper Bay gate and west of the gate at the end of Long Island Sound also show reductions in AEF values by more than 4 feet. Some locations near CSRM structures and on the surge-exposed side where 50-year AEF values increase by as much as 2 feet. In the Lower Bay and areas near Sandy Hook, NJ in Raritan Bay, show increased 50-year AEF values around 1 foot.

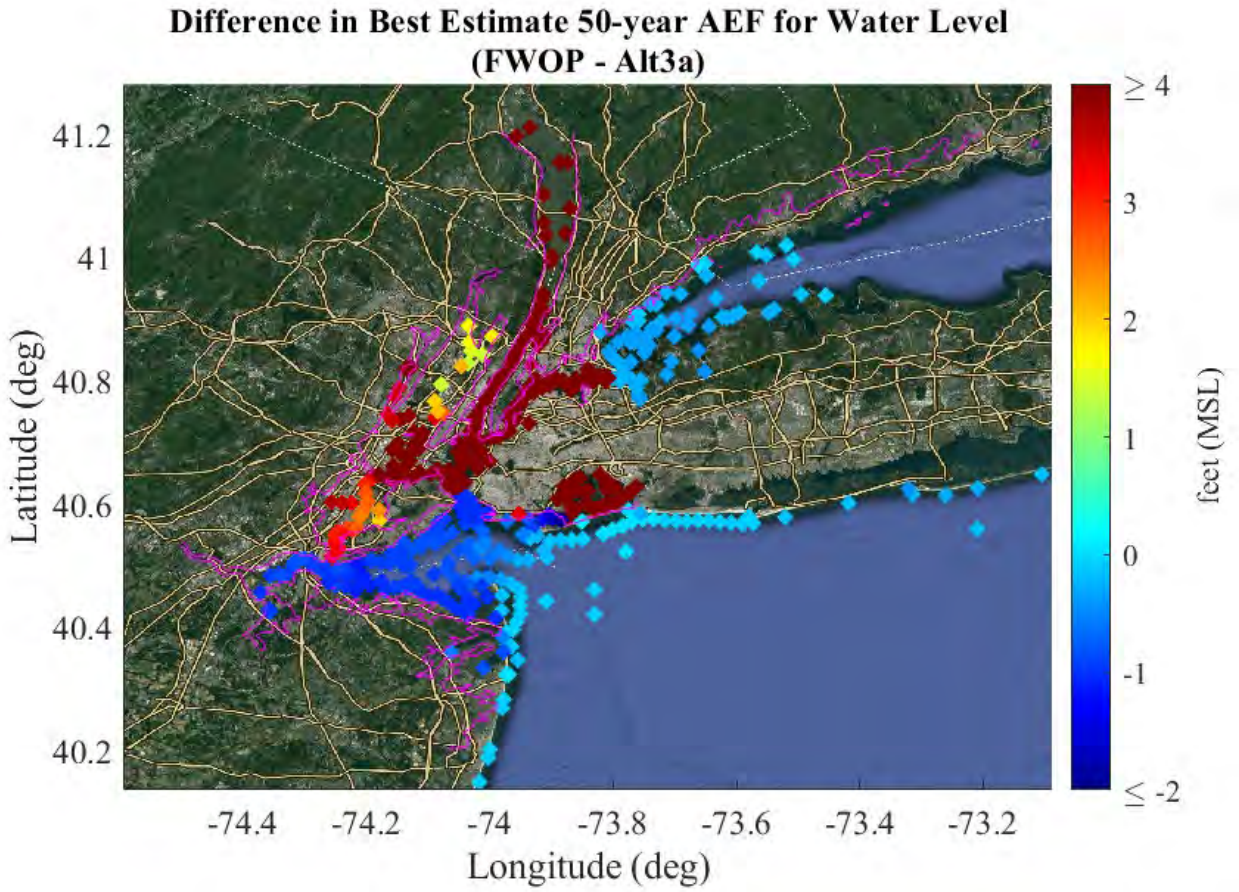


Figure 35 Map showing the best estimate 50-year AEF water level value differences between FWOP and Alt3a. Values are in feet relative to MSL and are ploted at the save points.

Figure 36 is a map that shows the difference in best estimate 50-year AEF water level values between FWOP and Alt3b. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt3b values and conversely, negative values indicate that the Alt3b values are higher than the FWOP values. Alt3b has a barrier system near Jamaica Bay, which significantly reduces the 50-year AEF values behind it, with system wide reductions reaching almost 7 feet in that area. Locations north of the Upper Bay and along the Lower Bay and areas near Sandy Hook, NJ in Raritan Bay, show increased 50-year AEF values around 1 foot. Areas north of the gate at Raritan Bay also show a large reduction in 50-year AEF values for Alt3b ranging from over 5 feet near the gate to around 1 foot in the Hackensack area.

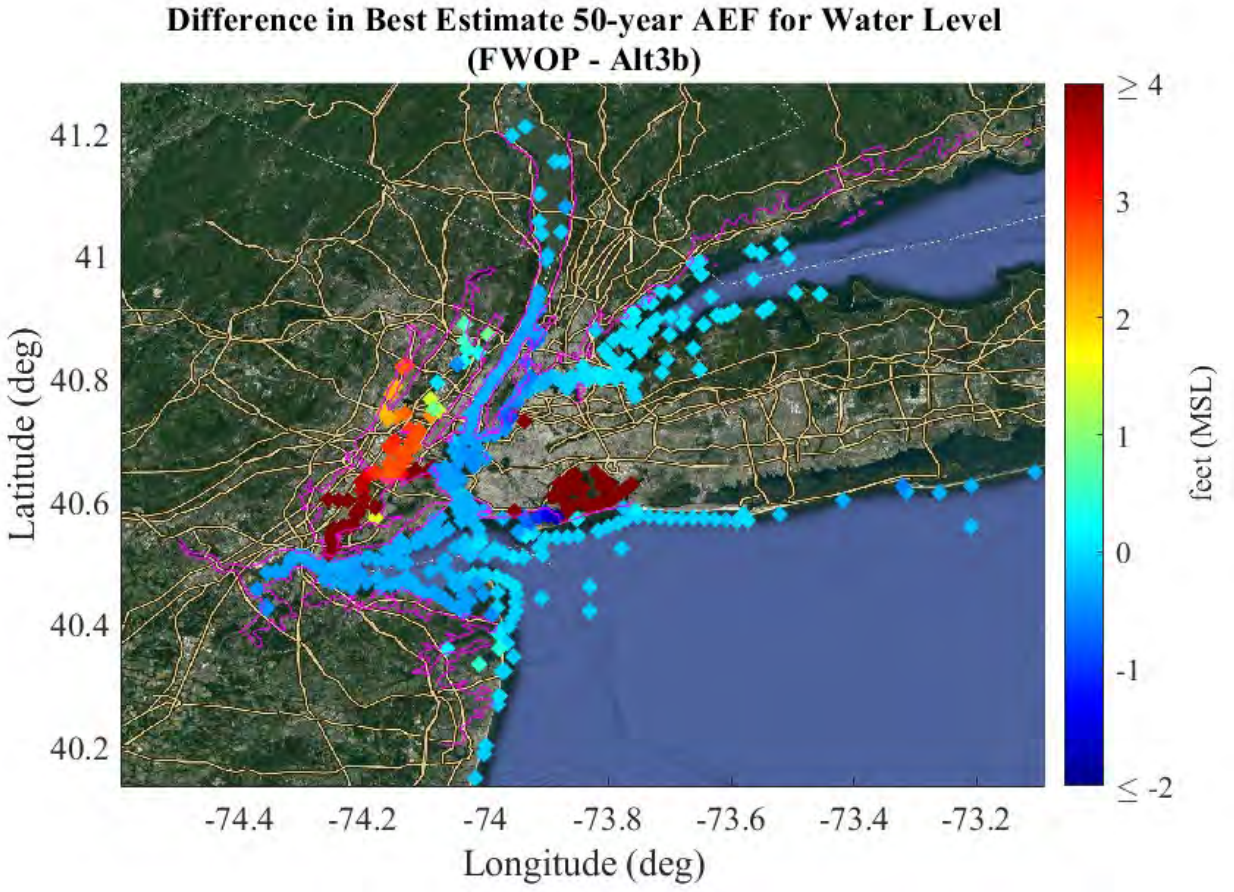


Figure 36 Map showing the best estimate 50-year AEF water level value differences between FWOP and Alt3b. Values are in feet relative to MSL and are ploted at the save points.

9.2 100-Year Annual Exceedance Frequency for Water Levels

Figure 37 shows a map with the best estimate 100-year AEF values for water levels at the 483 save point locations for the FWOP mesh configuration under present day sea level conditions. Values range from a low of 7.7 feet to a high of just over 15 feet in the Raritan Bay/River area. High values in the range of 13 to 14 feet are observed in the New Rochelle and Glen Cove, NY at the southwestern end of Long Island Sound. Values along the Upper Bay east of Brooklyn and up to Manhattan are in the range of 12 to 13 feet and decrease to 10 to 11 feet moving north above Manhattan towards White Plains and gradually decreasing to about 8 feet. Values in near Passaic and Hackensack range between 11 and 13 feet.

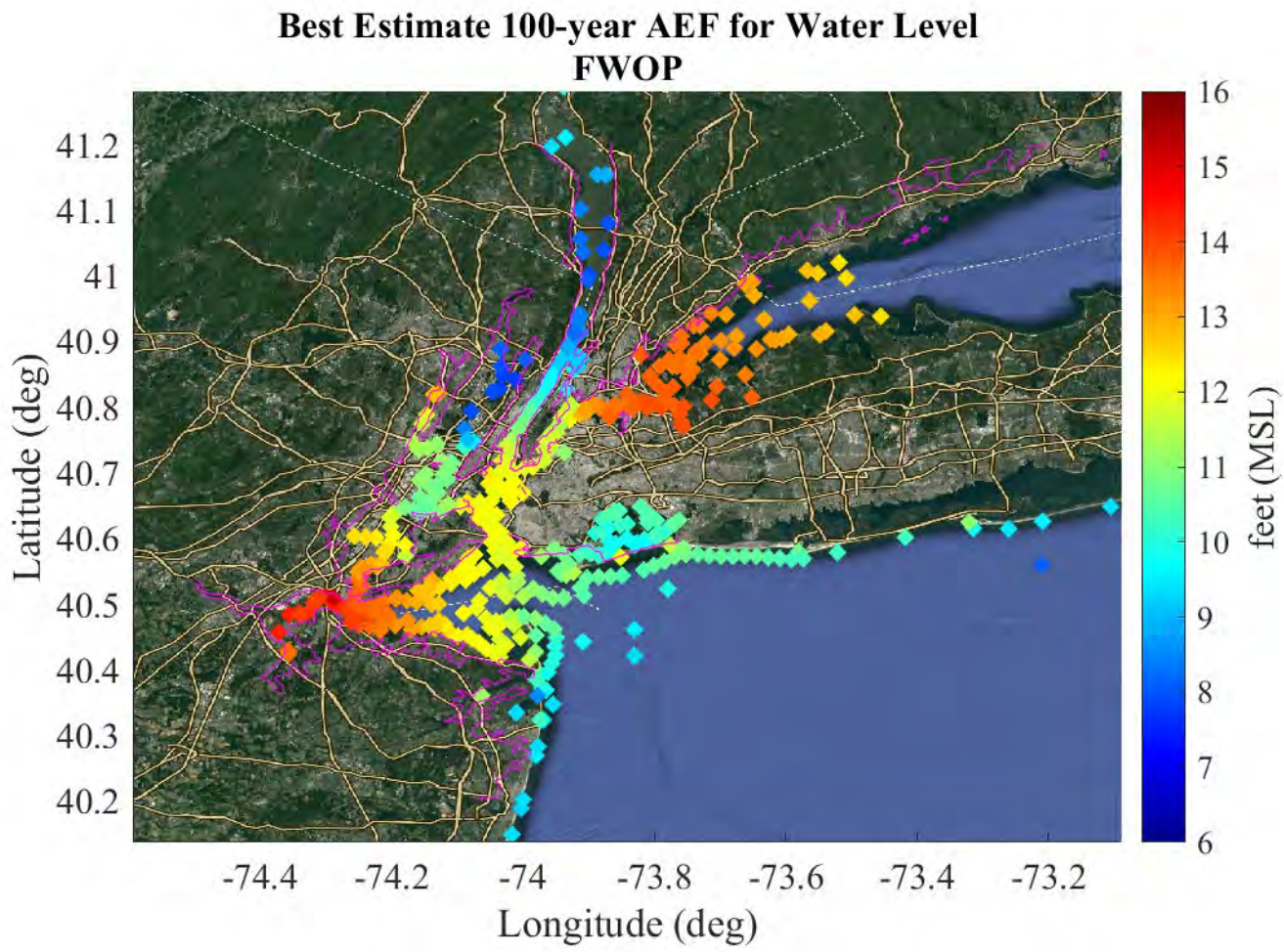


Figure 37 Map showing the best estimate 100-year AEF water level values in feet relative to MSL, at the save points, for the FWOP configuration.

Figure 38 is a map that shows the difference in best estimate 100-year AEF water level values between FWOP and Alt2. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt2 values and conversely, negative values indicate that the Alt2 values are higher than the FWOP values. Alt2 has the large bay wide barrier, which significantly reduces the 100-year AEF values behind it, with system wide reductions reaching over 10.4 feet at places. Locations near and in front of the barrier gate have an increase in 100-year AEF values over the FWOP by around 1 foot. Values in the southwestern end of Long Island Sound also show slight increases by about 1 foot.

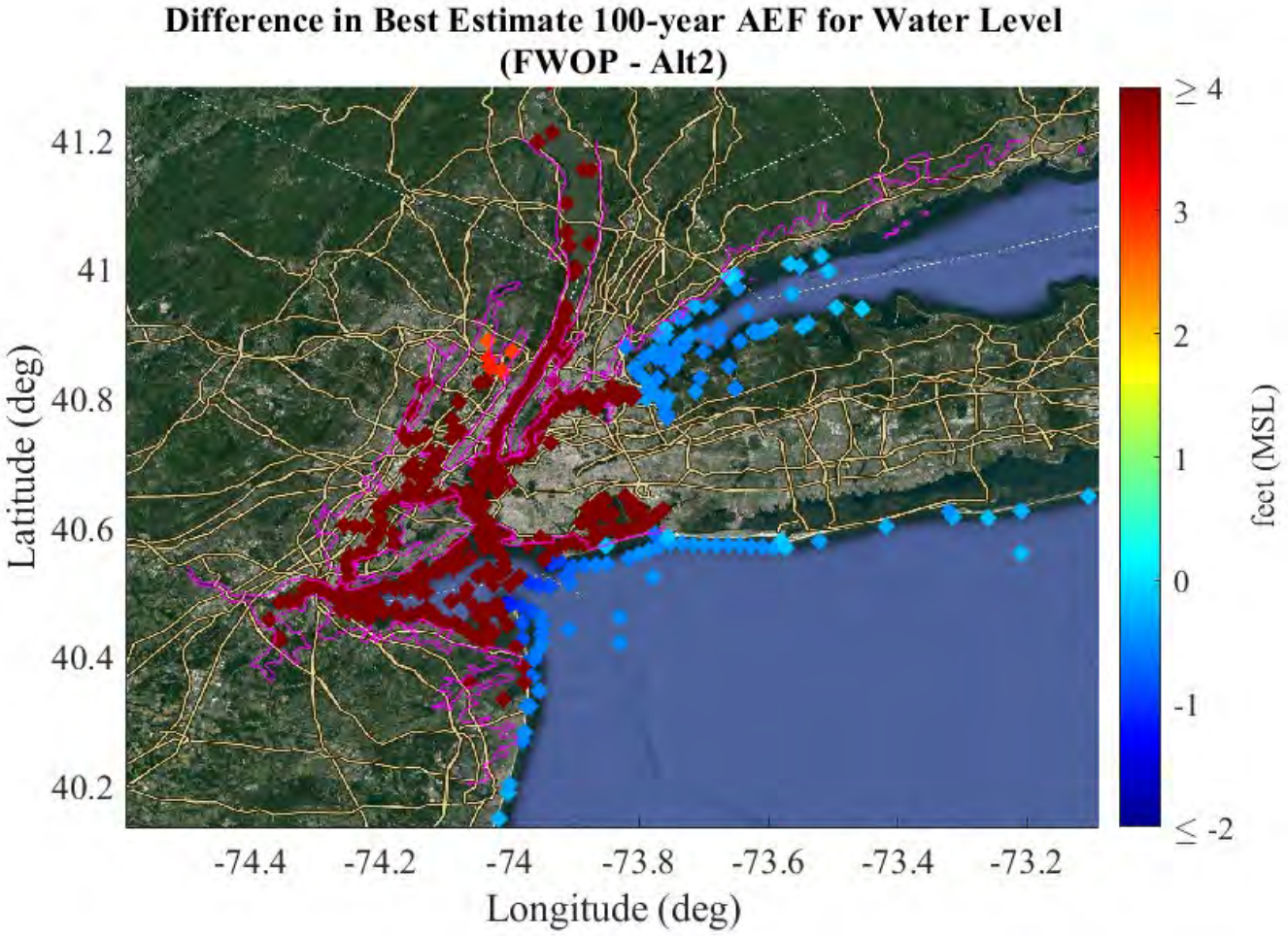


Figure 38 Map showing the best estimate 100-year AEF water level value differences between FWOP and Alt2. Values are in feet relative to MSL and are ploted at the save points.

Figure 39 is a map that shows the difference in best estimate 100-year AEF water level values between FWOP and Alt4. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt4 values and conversely, negative values indicate that the Alt4 values are higher than the FWOP values. Alt4 has a barrier system near Jamaica Bay, which significantly reduces the 100-year AEF values behind it, with system wide reductions reaching over 6.7 feet at places near Jamaica Bay. Most locations show only slight changes, values less than 1 feet, in 100-year AEF values with most being a lowering of the 100-year AEF values. Yet there are some locations near the Jamaica Bay CSRM structure on the surge-exposed side where 100-year AEF values increase by as much as 3 feet. Values are also observed to increase by over 1 foot up to as much as 2 feet in the Hackensack area.

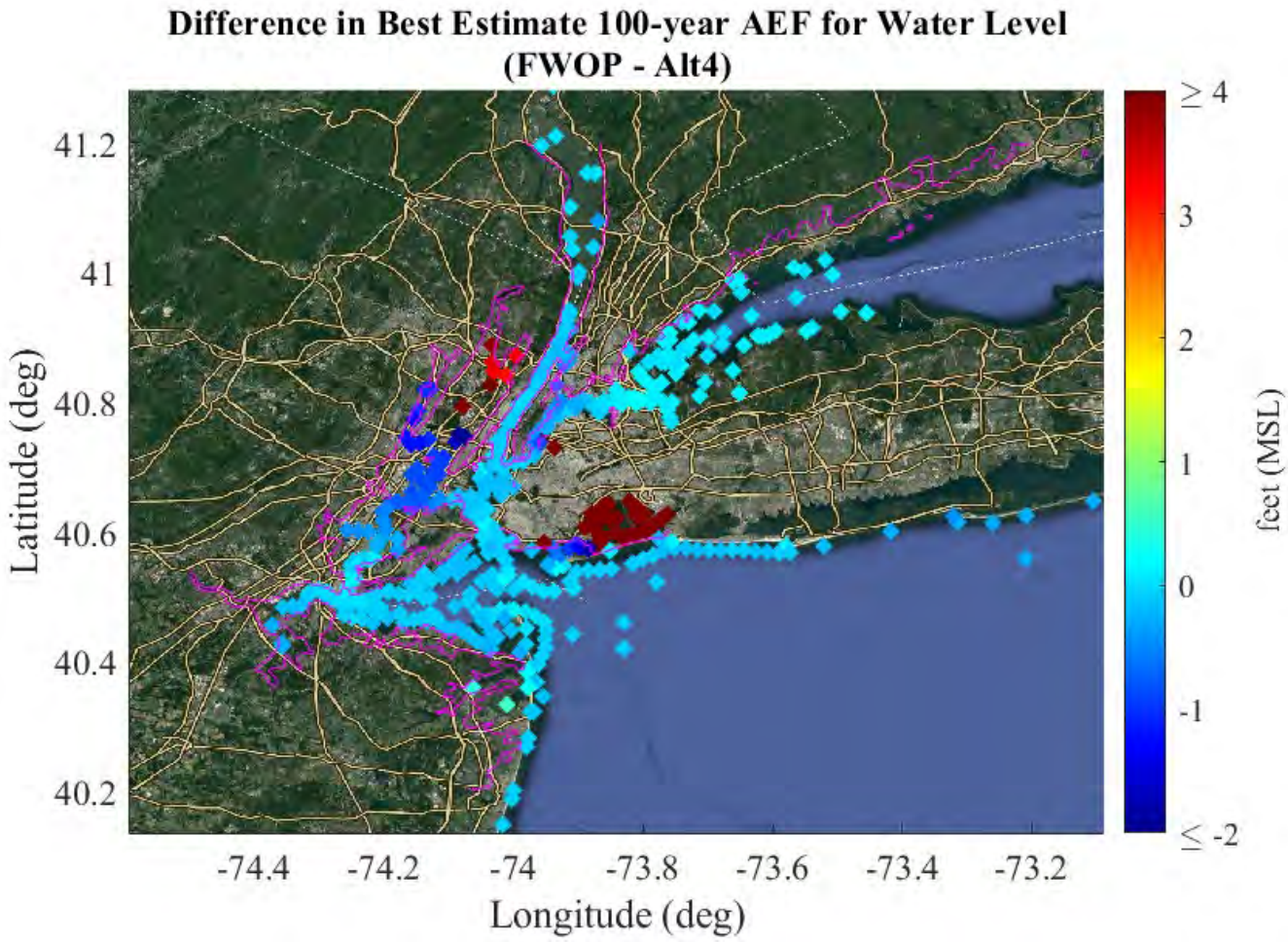


Figure 39 Map showing the best estimate 100-year AEF water level value differences between FWOP and Alt4. Values are in feet relative to MSL and are ploted at the save points.

Figure 40 is a map that shows the difference in best estimate 100-year AEF water level values between FWOP and Alt3b. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt3b values and conversely, negative values indicate that the Alt3b values are higher than the FWOP values. Alt3b has a barrier system near Jamaica Bay, which significantly reduces the 100-year AEF values behind it, with system wide reductions reaching almost 4 to 6 feet in that area. Locations north of the Upper Bay and over to the southwestern end of Long Island Sound, show the largest reductions of 7 to almost 10 feet. In the Lower Bay and areas near Sandy Hook, NJ in Raritan Bay, show an increase in the 100-year AEF values around 2 feet. Areas north of the gate at Raritan Bay also show a reduction in 100-year AEF values for Alt3b ranging from over 2 to 3 feet near the gate, to between 3 and 4 feet in the Hackensack area.

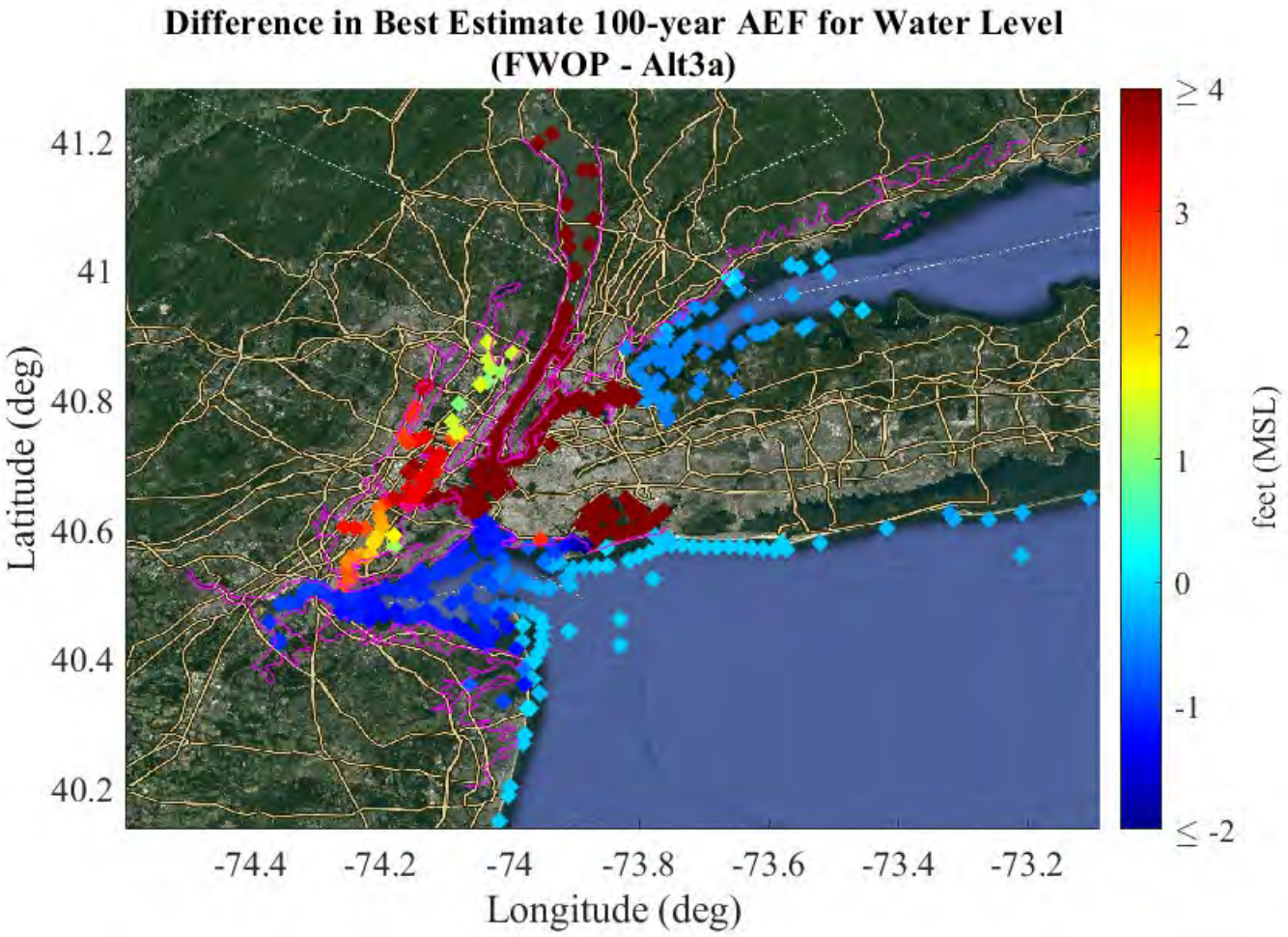


Figure 40 Map showing the best estimate 100-year AEF water level value differences between FWOP and Alt3a. Values are in feet relative to MSL and are ploted at the save points.

Figure 41 is a map that shows the difference in best estimate 100-year AEF water level values between FWOP and Alt3b. In the image, positive values indicate that the FWOP values were larger than the corresponding Alt3b values and conversely, negative values indicate that the Alt3b values are higher than the FWOP values. Alt3b has a barrier system near Jamaica Bay, which significantly reduces the 100-year AEF values behind it, with system wide reductions reaching almost 6 feet in that area. Locations north of the Upper Bay and along the Lower Bay and areas near Sandy Hook, NJ in Raritan Bay, show increased 100-year AEF values around 0.5 feet. Areas along Manhattan show approximately a 1-foot increase in the 100-year AEF values. Locations in the southwestern end of Long Island Sound have decreases around 0.5 feet. Areas north of the Raritan gate also show a large reduction in 100-year AEF values for Alt3b ranging from over 5 feet near the gate, to around 2 foot in the Hackensack area. In the upper reaches, there are a few locations with increased 100-year AEF values of approximately 0.5 feet.

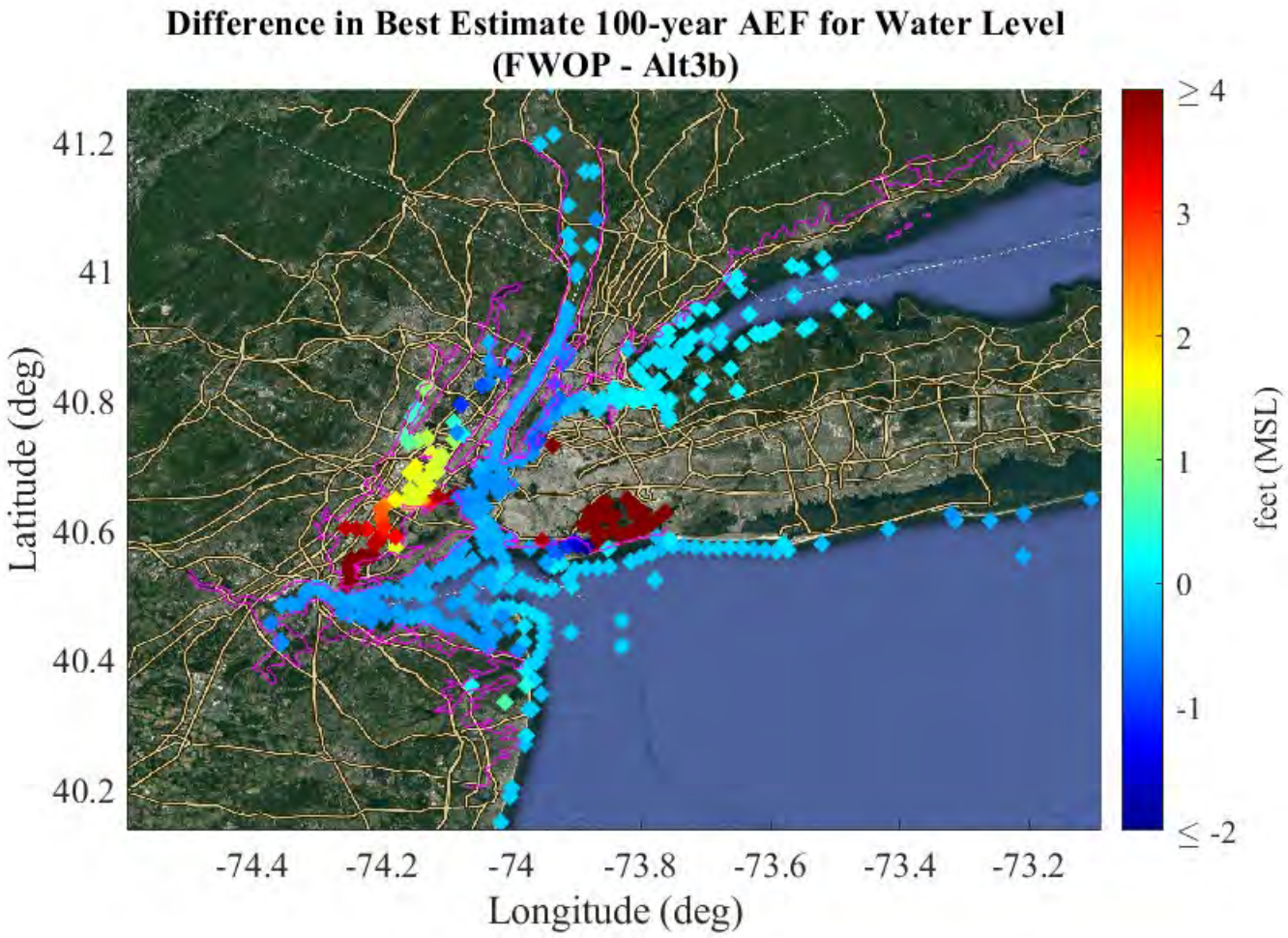


Figure 41 Map showing the best estimate 100-year AEF water level value differences between FWOP and Alt3b. Values are in feet relative to MSL and are ploted at the save points.

9.3 Additional Statistical Data AEF for Water Levels

Appendix VII has similar images of the best estimate 50-year and 100-year AEF water levels differences between FWOP and the 13 combinations of the alternative sequences. No analysis is provided for these cases.

Appendix VIII contains tables of best estimate AEF water level values for the FWOP condition at all 483 save points and for the 1-year out to the 10,000-year AEF. Appendix IX has the same tables for Alt2, Appendix X for Alt4, Appendix XI for Alt3a and Appendix XII for Alt3b. No additional analysis is provided for these tables. It is noted that tables of AEF for water levels were computed for all 13 sequence-combinations of the alternatives and are available in CSV file formats upon request. For all 18-mesh configurations, the AEF tables (CSV files) also contain the 10%, 16%, 84%, and 90% confidence limit values for all year-ranges and save point locations.

10 CONCLUSIONS

This report provides details on results from the surge and wave modeling study performed for the NYNJHATS using the CSTORM modeling system. Four different CSRM alternative measure designs were modeled, along with a future without project condition plus 13 variations, sequences combinations, of the CSRM alternatives where only selected portions of the total project design were included. Twenty synthetic tropical storms developed for the NACCS were used as screening level proxy events in order to represent the NACCS still water hazard curves in the project area. Using only 20 storms was deemed appropriate for a screening level analysis considering the four (4) CSRM alternatives, 13 sequencing combinations of the alternatives, plus the FWOP condition to be modeled. The modeling results and the subsequently computed still water level annual exceedance frequencies for each of the 18 configurations will provide sufficient data to make a tentatively selected plan (TSP) determination. In general, all CSRM alternatives reduce storm water levels “behind” the structures and do not noticeably induce flooding in neighboring areas, particularly when considering the AEF changes for each of the alternatives.

Once a TSP is made and efforts move into PED phase, an expanded set of storm conditions and sea level rise scenarios will need to be considered in order to reduce uncertainty in the AEP results and to consider future climate conditions. Those expanded simulation sets will allow for optimization of the CSRM design features, placements, and even operational considerations. Furthermore, extra-tropical storm events will also need to be modeled in the PED phase, as those events tend to have a longer duration than the tropical events. This will particularly be helpful for considerations of gate operations. To consider fully the gate operations impacts, modifications to the ADCIRC model source code will need to be completed to represent opening/closing of navigation gates during the course of a simulation. This will allow for longer duration storm events and the ability to include river flow rates and tides in the modeling.

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Appendix I: Two-Dimensional Color Contour Maps Showing Mesh Resolution and CSRM Feature Inclusion in the ADCIRC Meshes for NYNJHATS

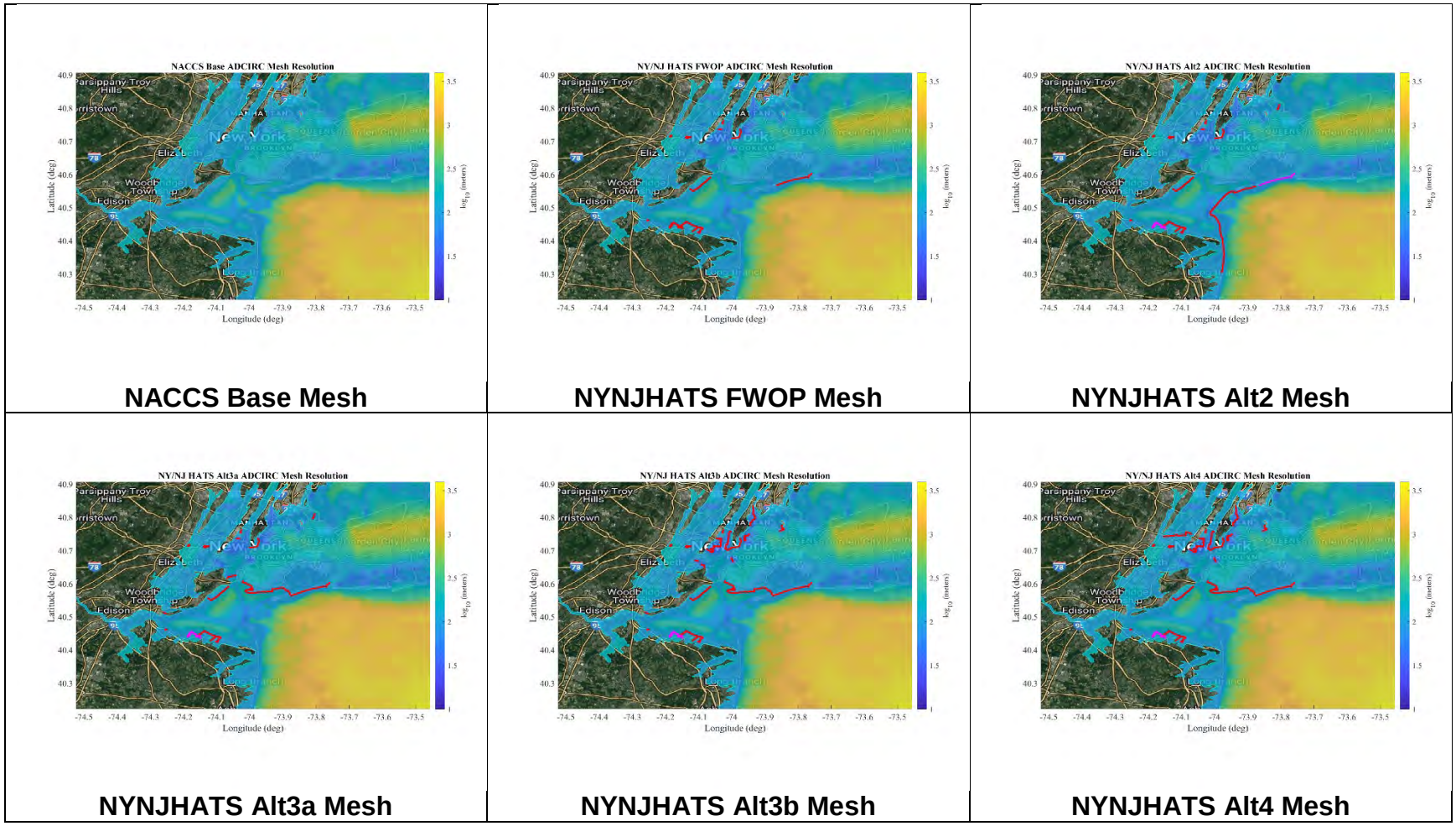


Figure 42 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments.

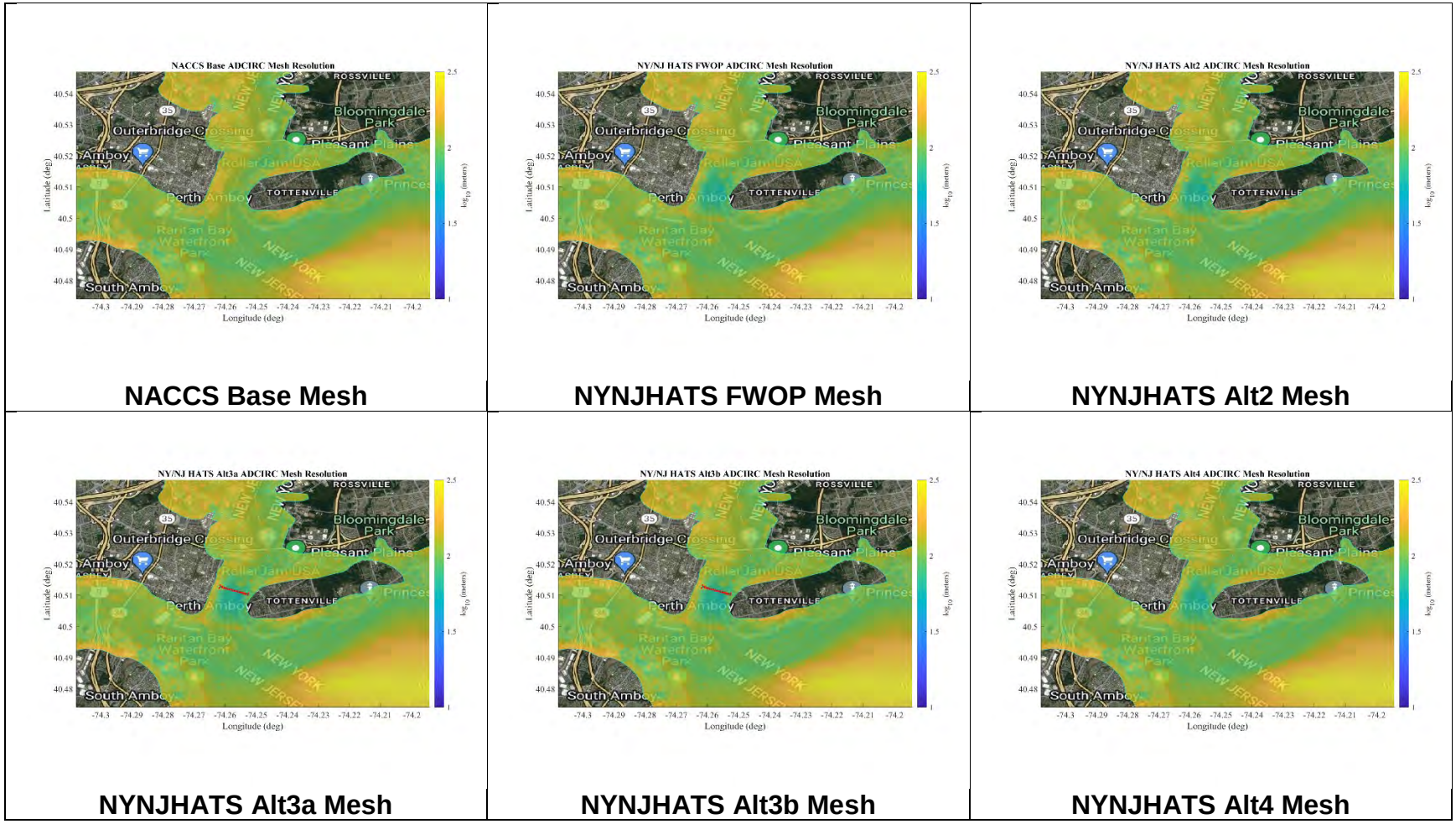


Figure 43 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Raritan Bay area.

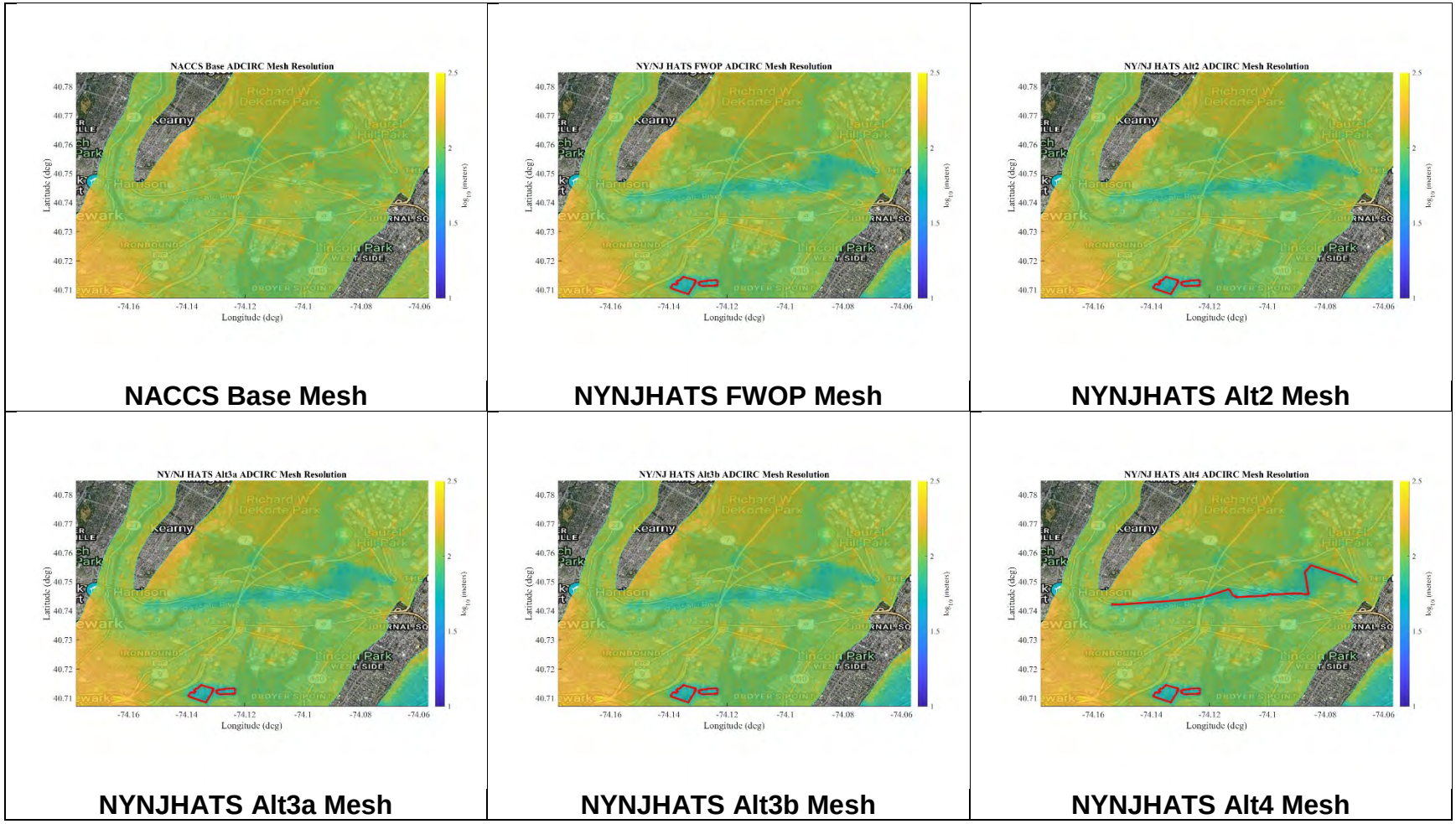


Figure 44 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Passaic River area.

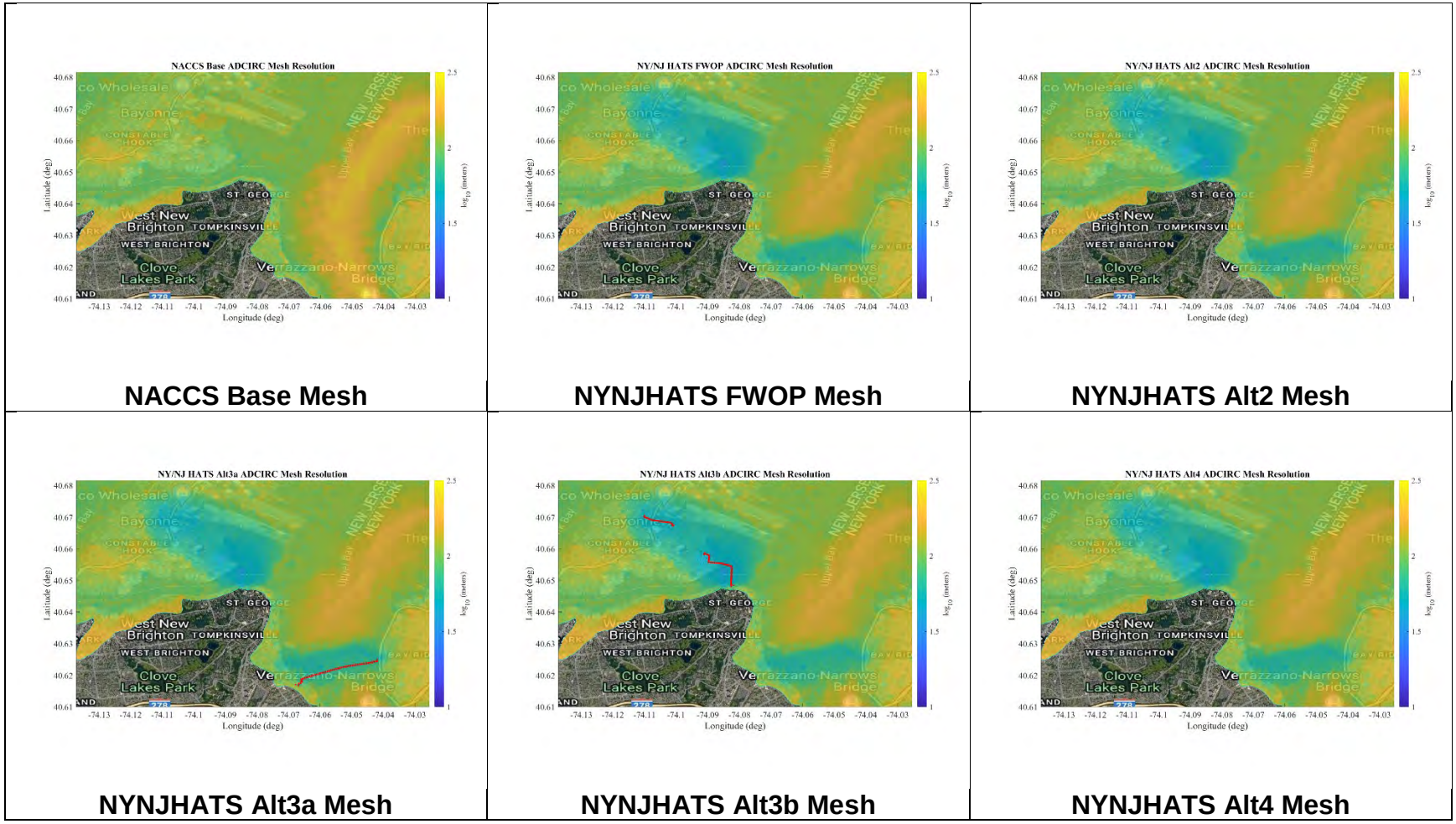


Figure 45 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Upper Bay near the Verrazzano-Narrows Bridge.

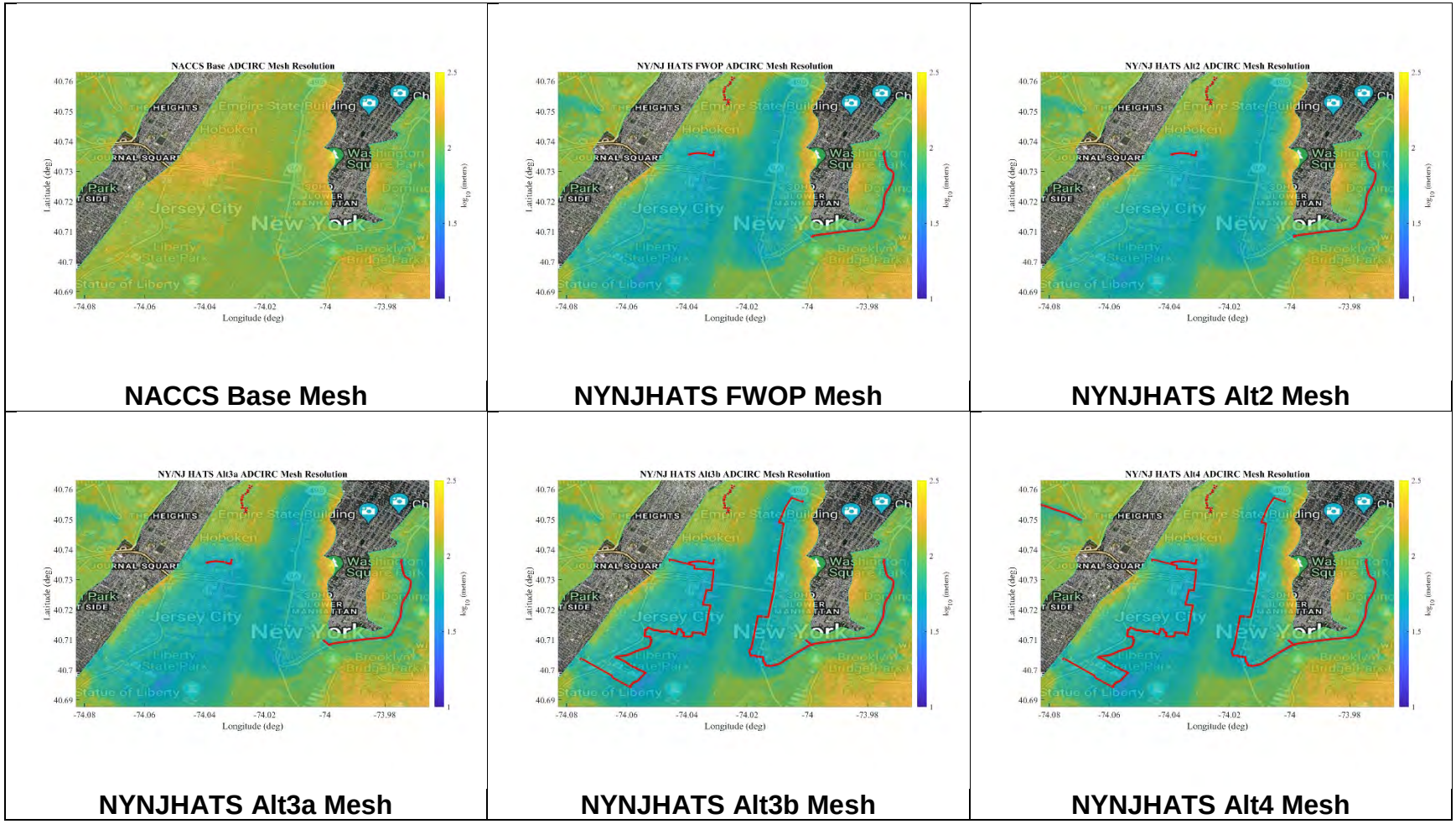


Figure 46 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Lower Manhattan and Hoboken area.

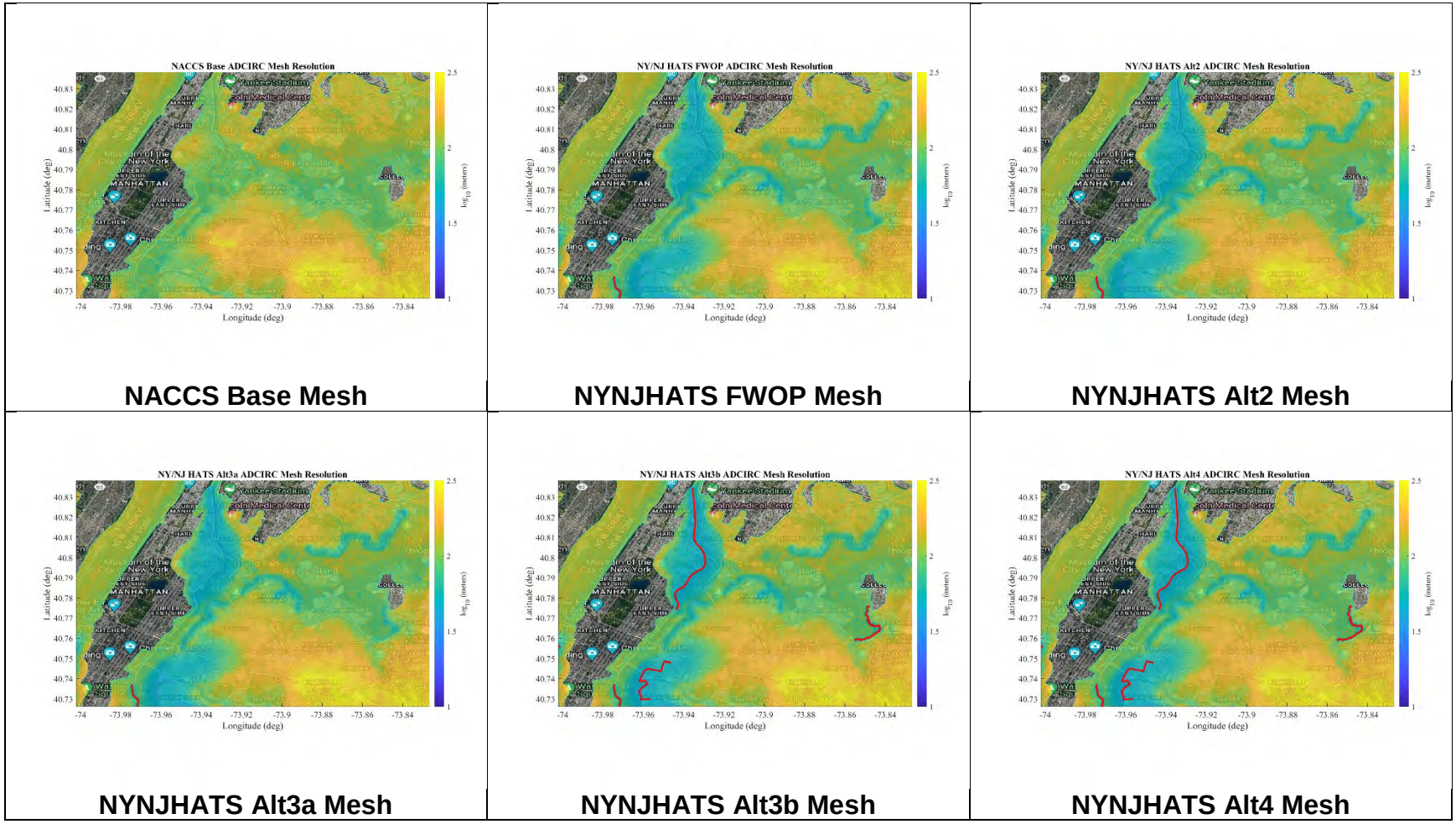


Figure 47 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Manhattan, Upper East Side, and Rikers Island areas.

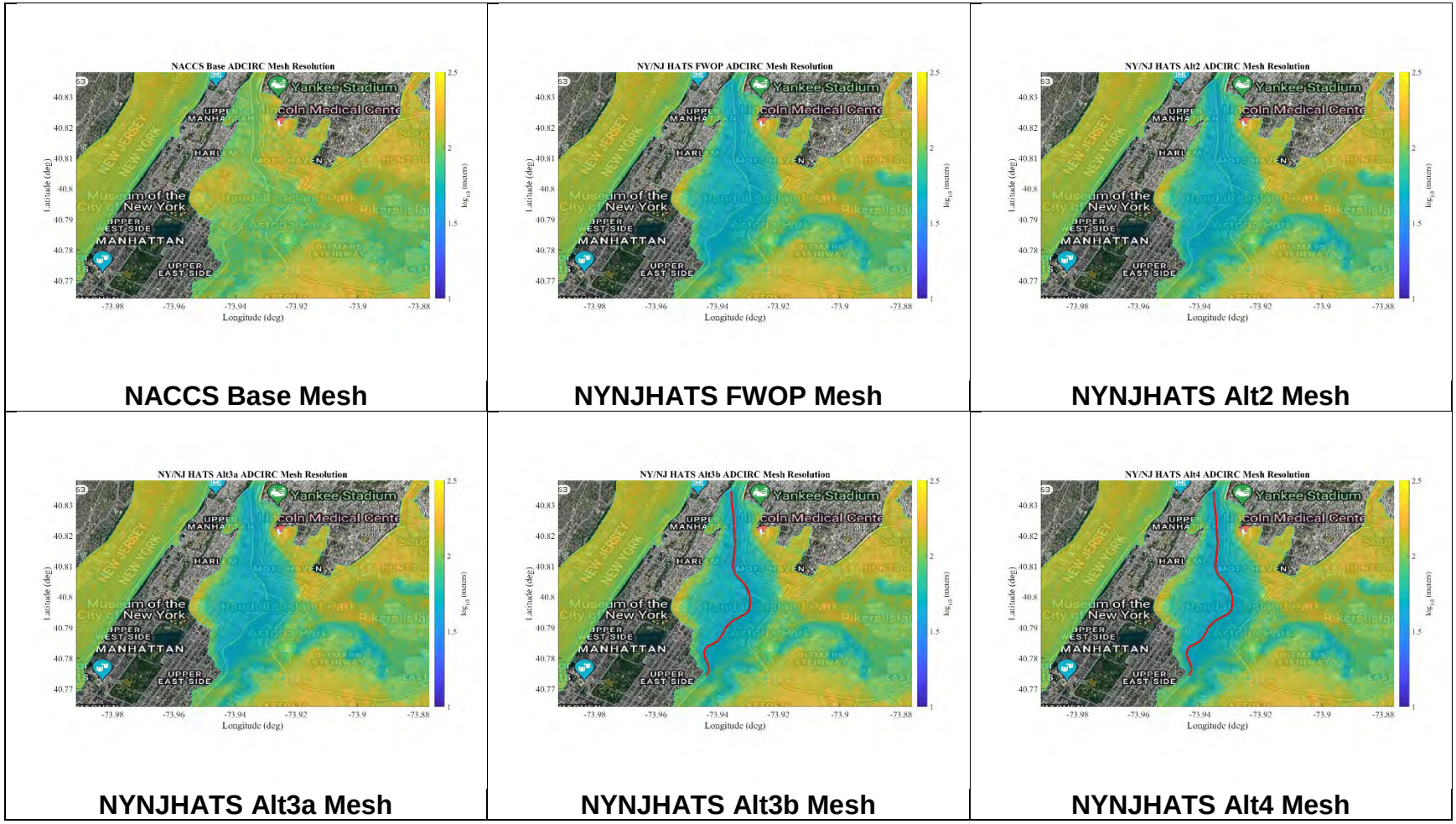


Figure 48 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Harlem and Astoria Park areas.

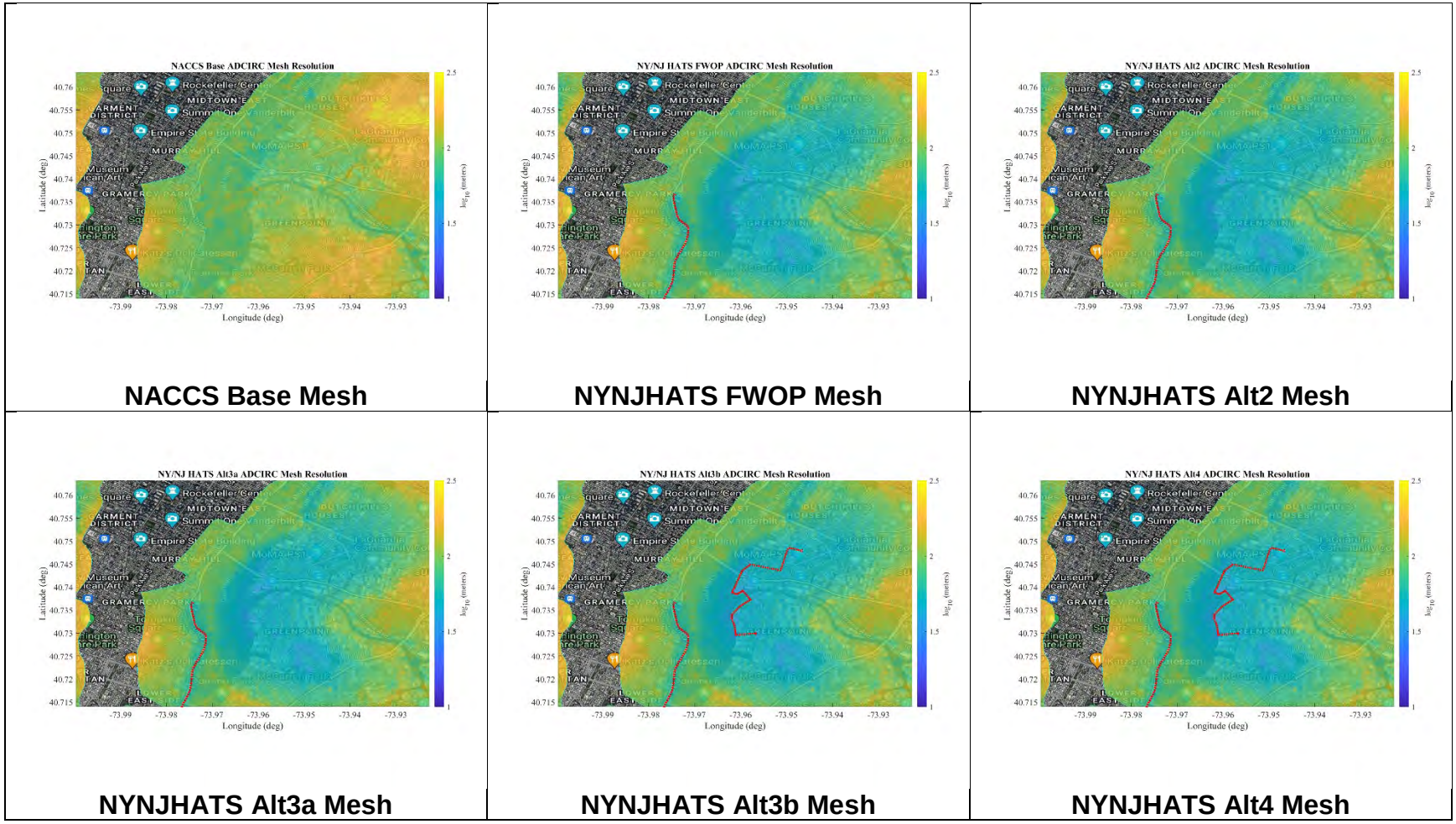


Figure 49 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Midtown East and Gramercy Park areas.

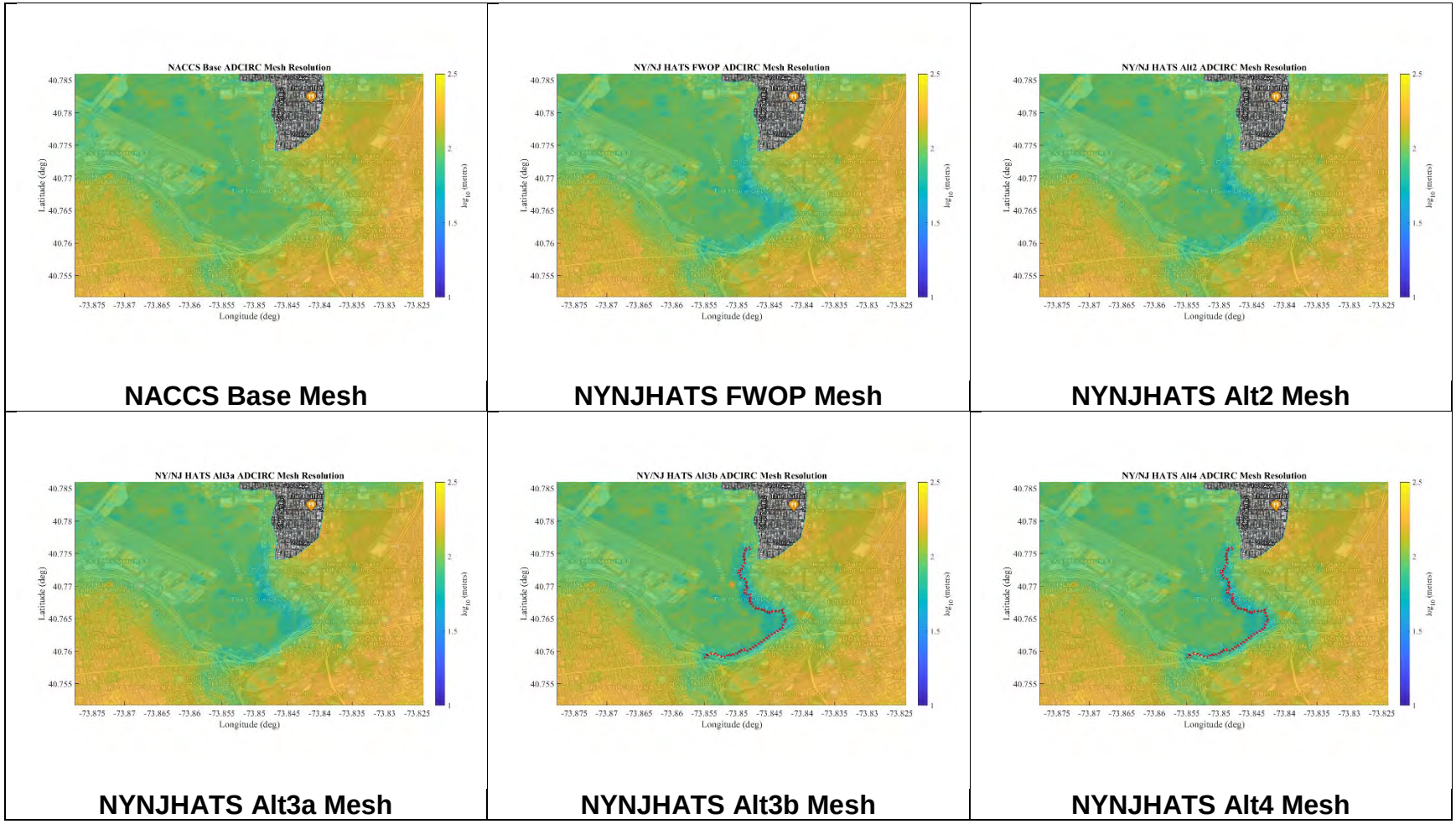


Figure 50 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Flushing Bay and LaGuardia Airport areas.

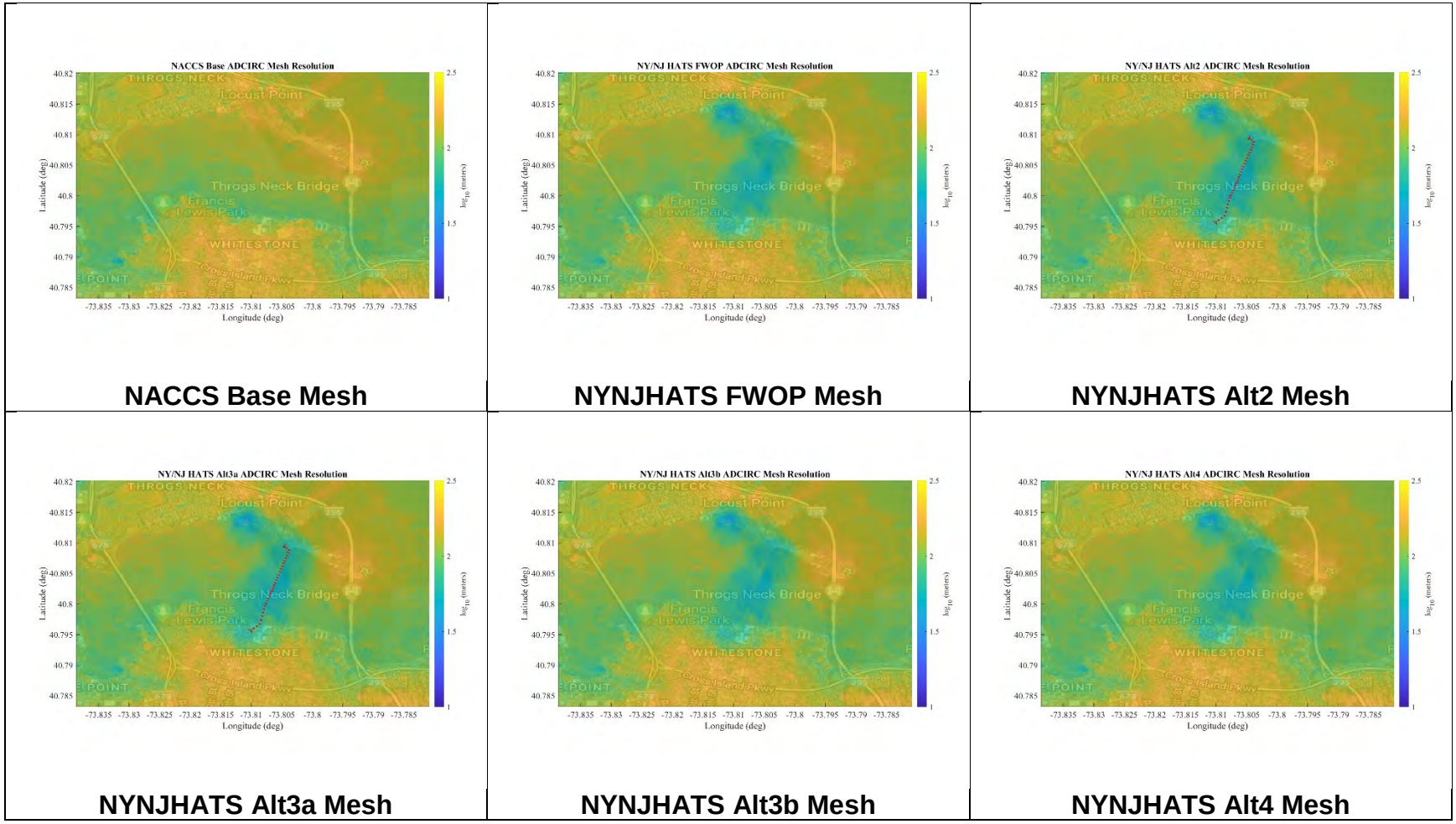


Figure 51 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Throgs Neck area.

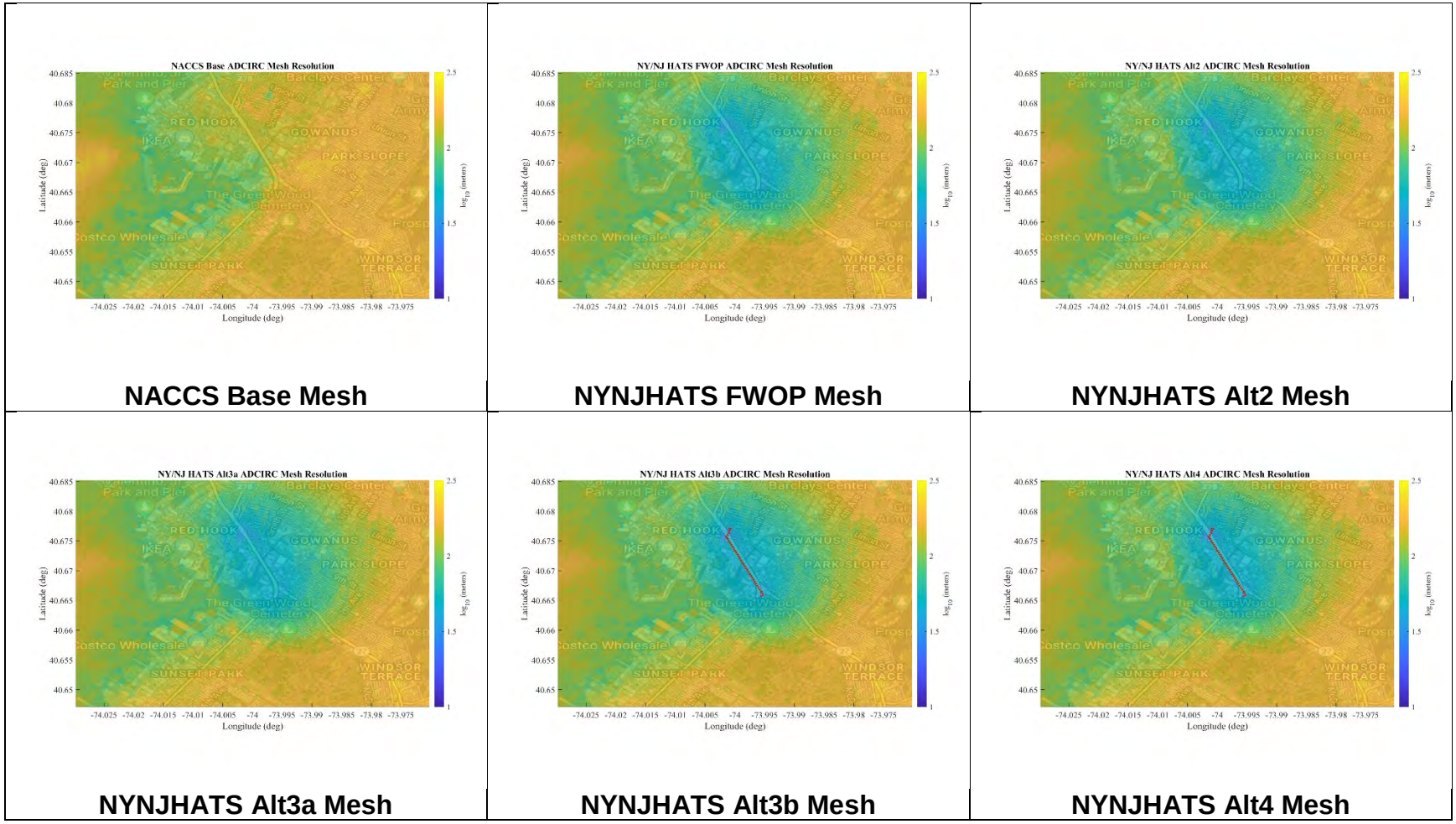


Figure 52 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Sunset Park and Red Hook areas.

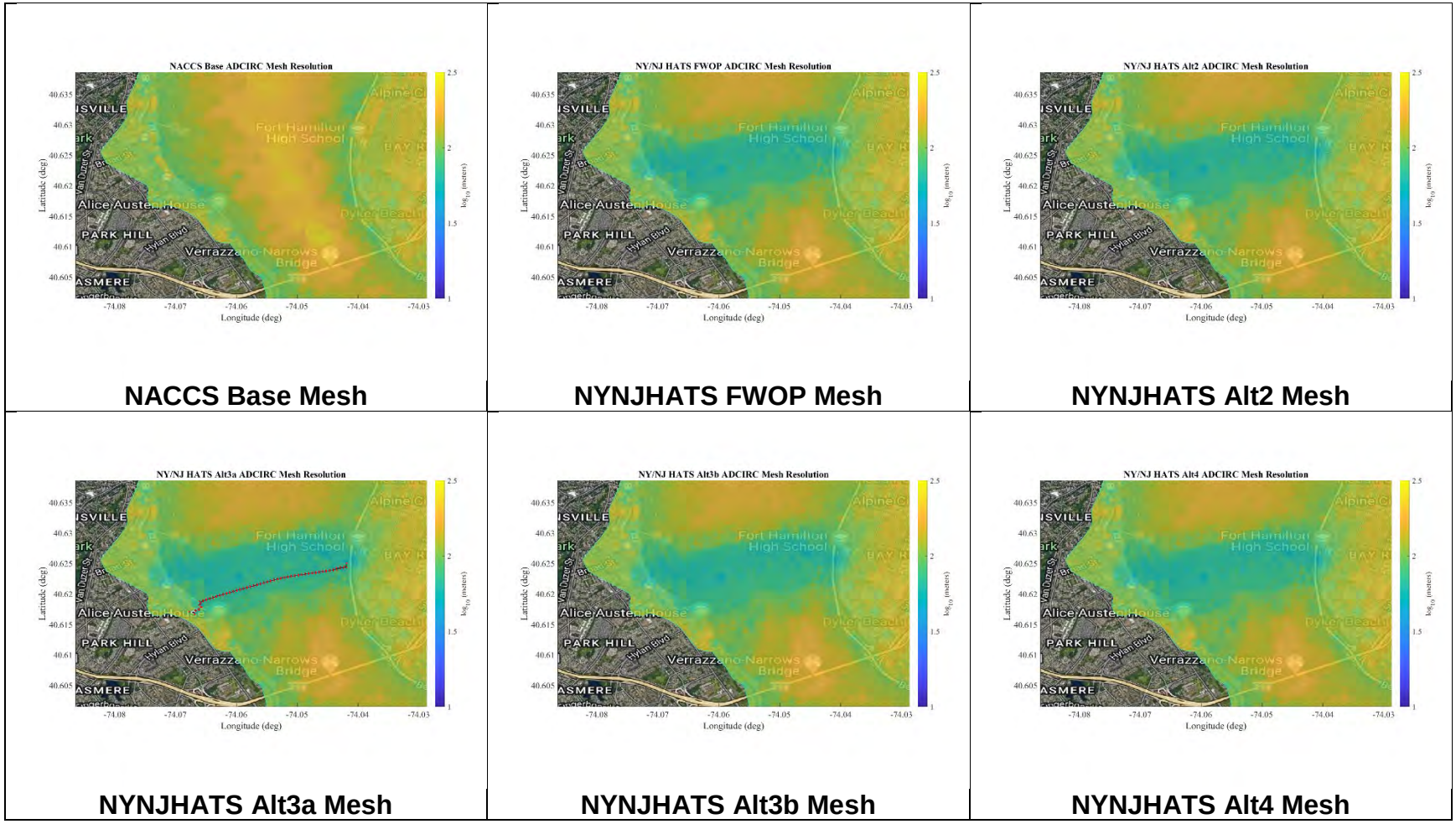


Figure 53 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is near the Verrazzano-Narrows Bridge.

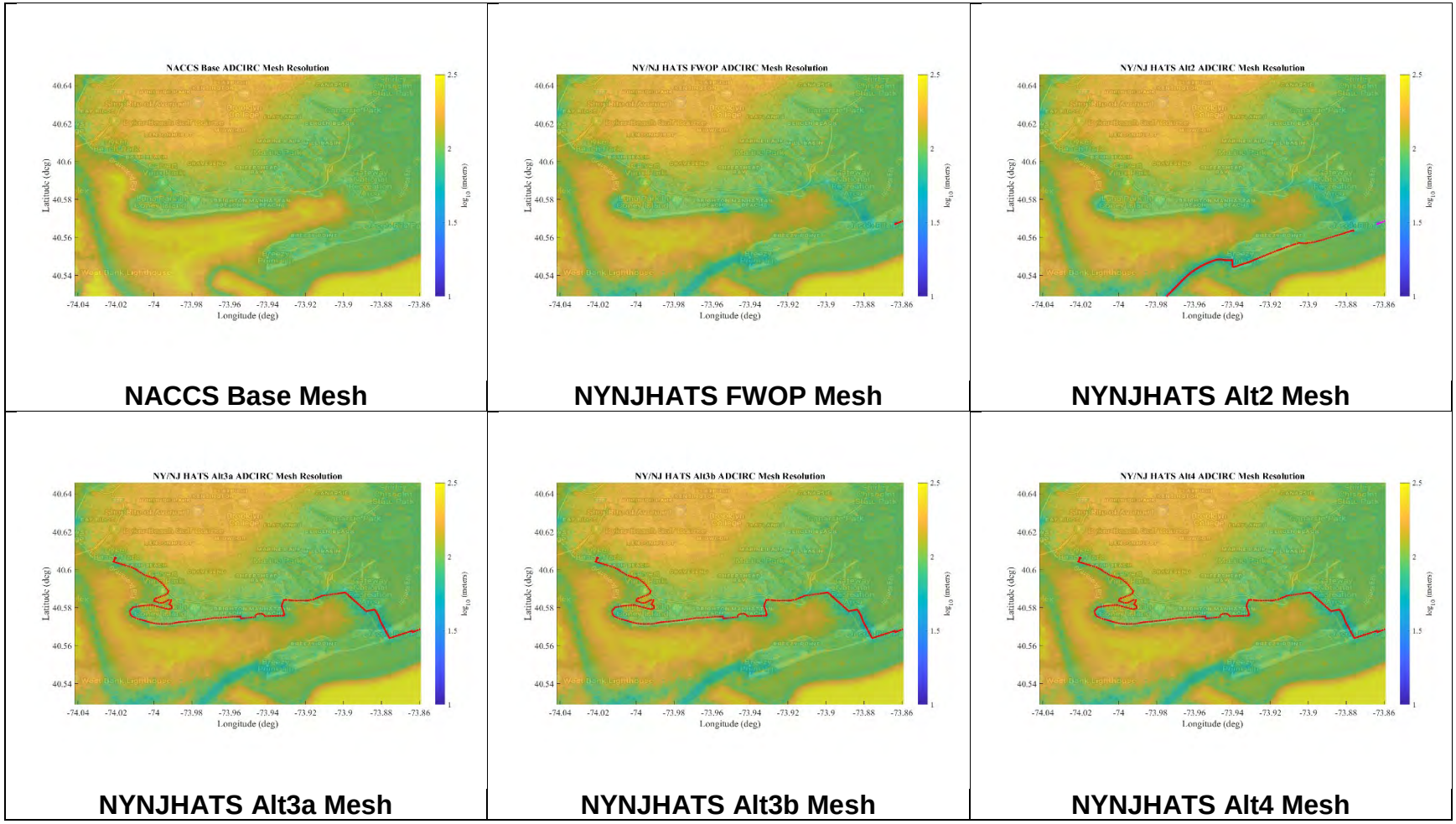


Figure 54 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Coney Island and Breeze Point areas.

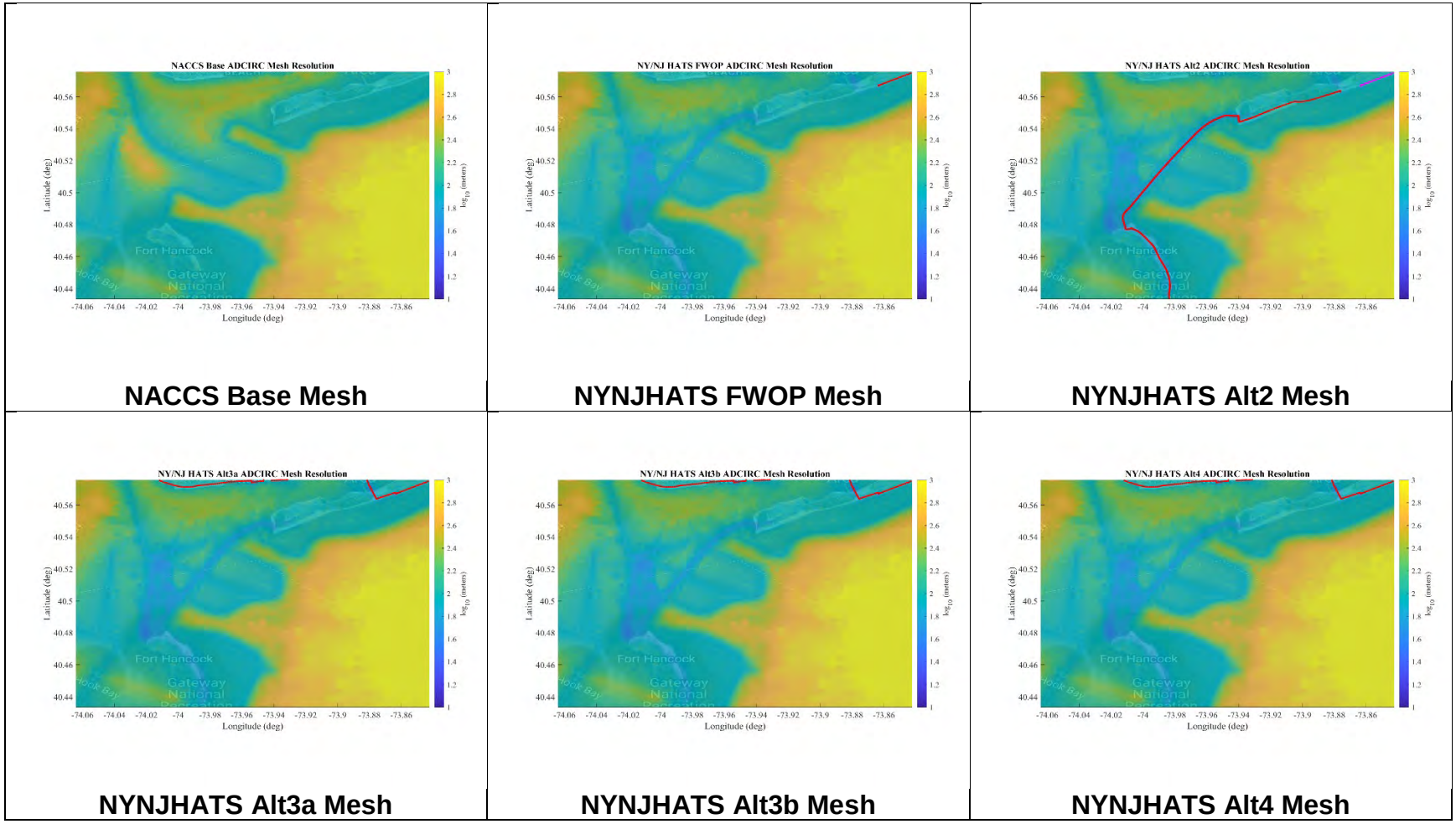


Figure 55 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is across the mouth of the Lower Bay in the Fort Hancock area.

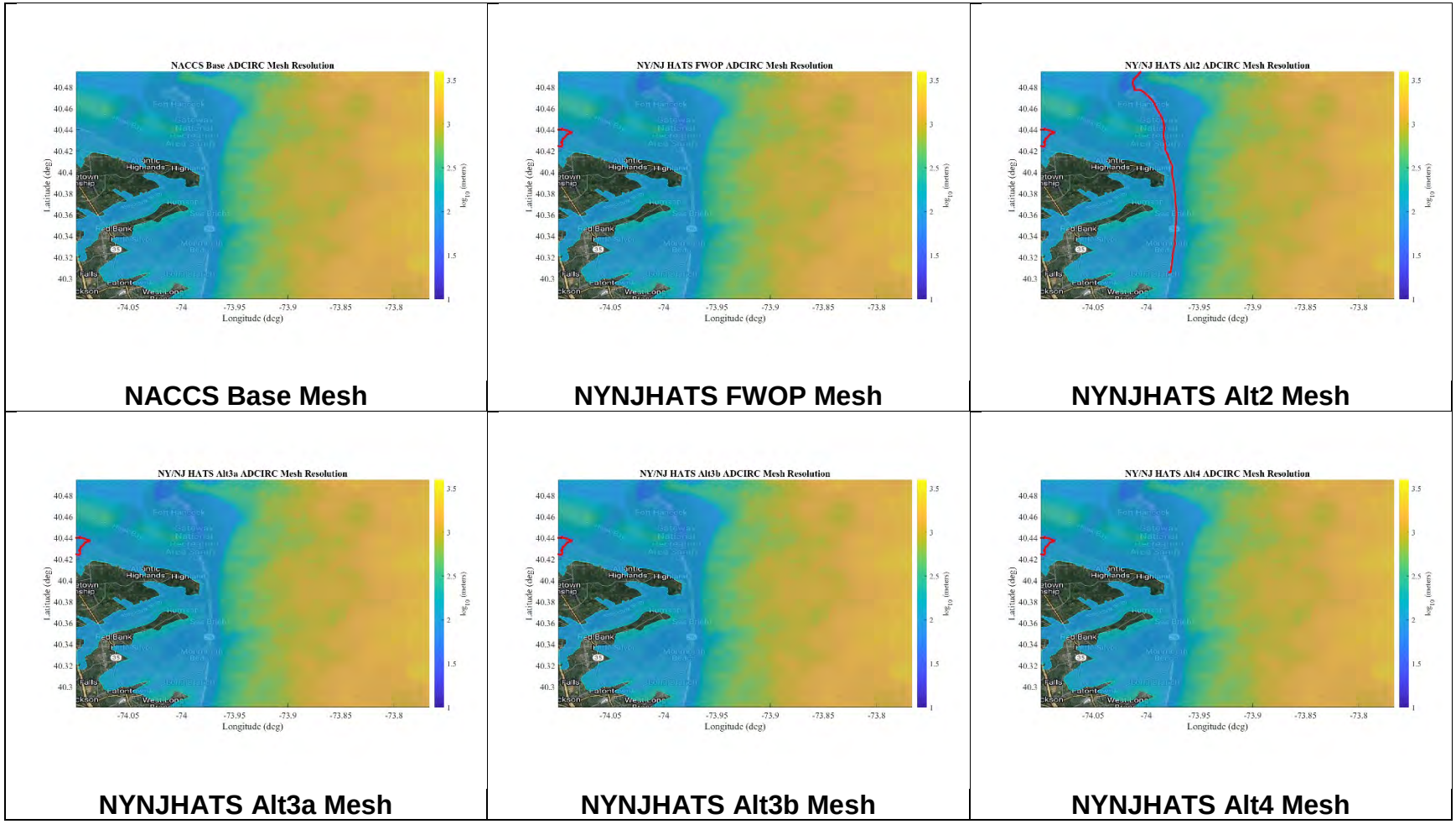
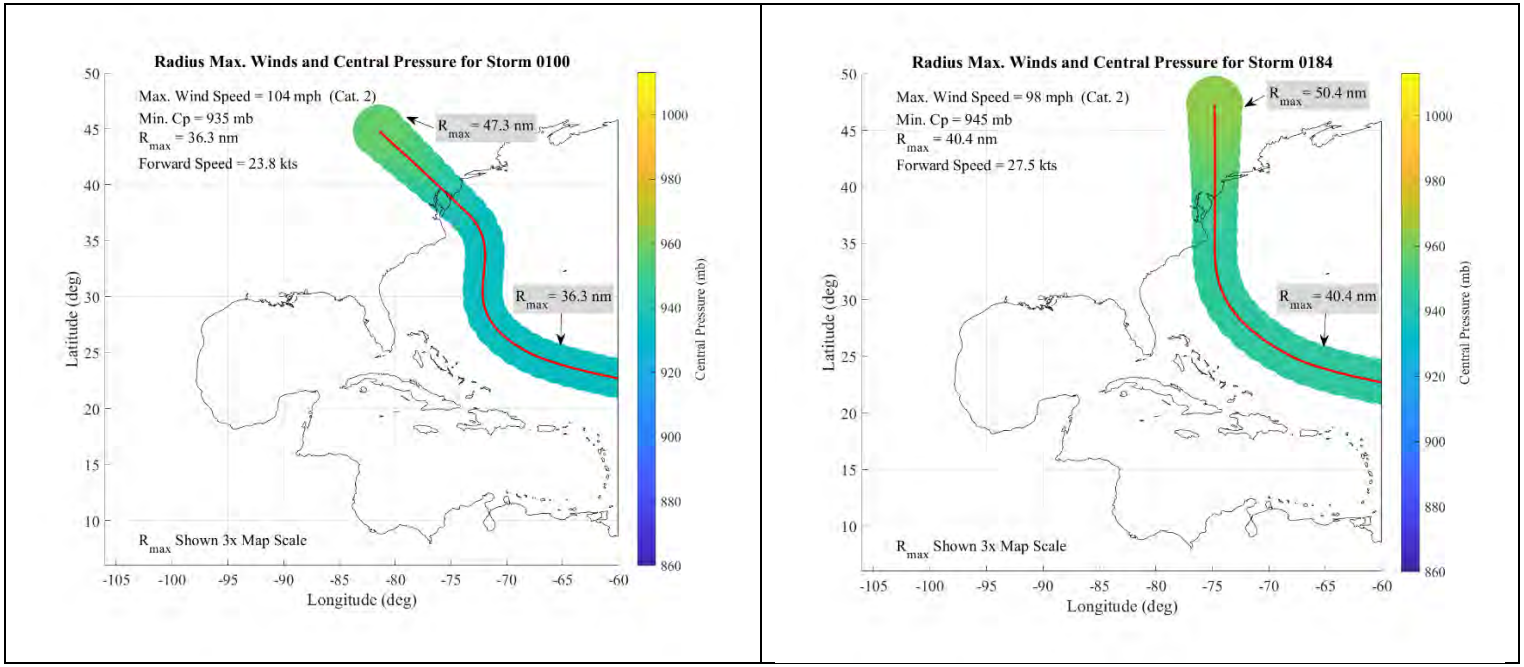
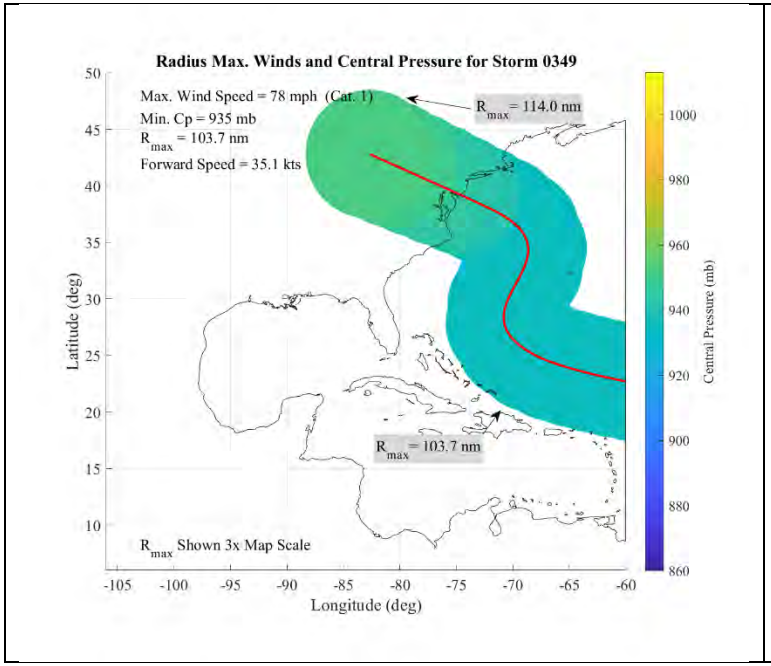
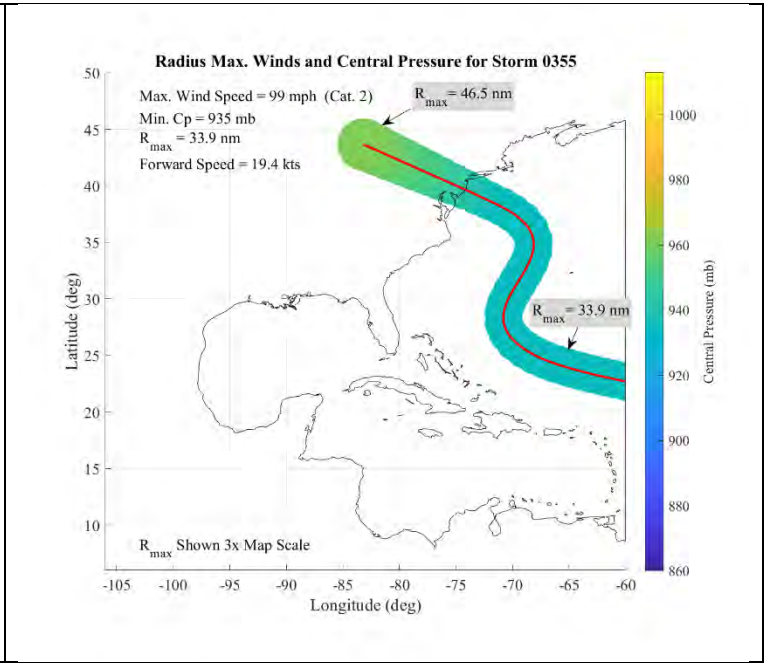


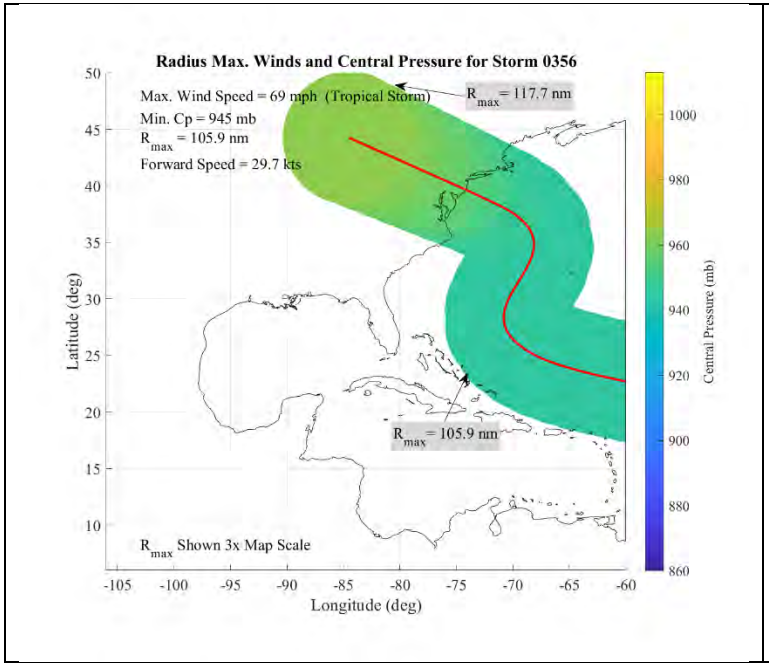
Figure 56 Maps showing two-dimensional color contour plots of ADCIRC mesh resolution for six different meshes and locations of CSRM features as red line segments. Location is in the Sandy Hook and Monmouth Beach area.

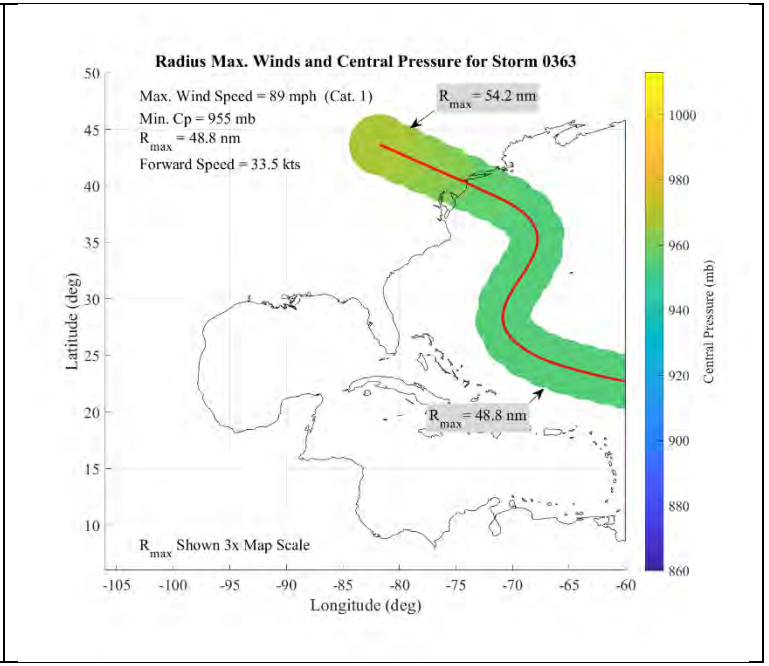
Appendix II: Synthetic Storm Track Images

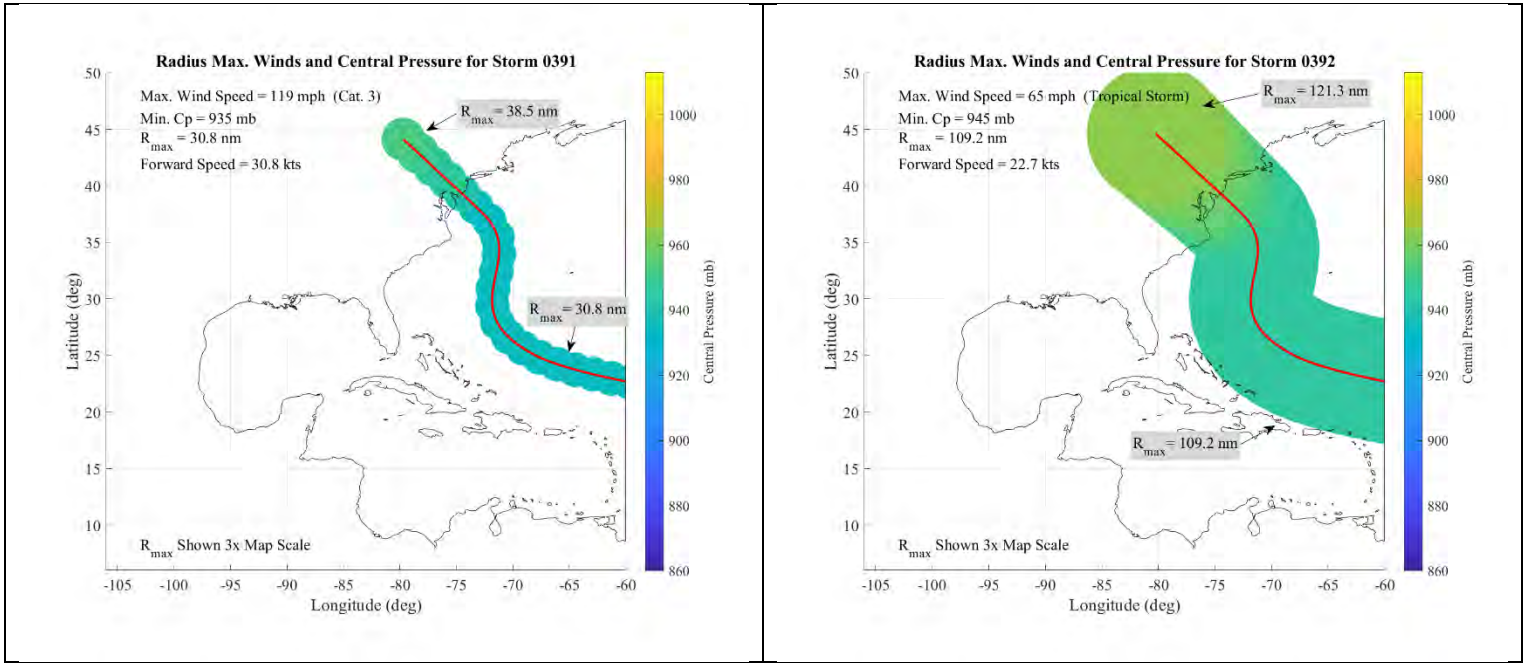


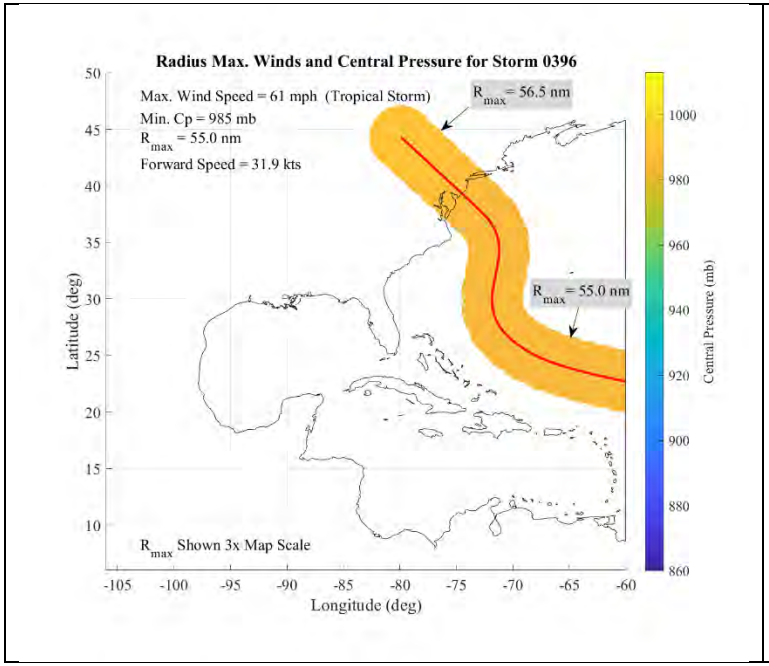

Radius Max. Winds and Central Pressure for Storm 0349
Max. Wind Speed = 78 mph (Cat. 1)
Min. Cp = 935 mb
R max = 103.7 nm
Forward Speed = 35.1 kts
R max = 114.0 nm
R max = 103.7 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

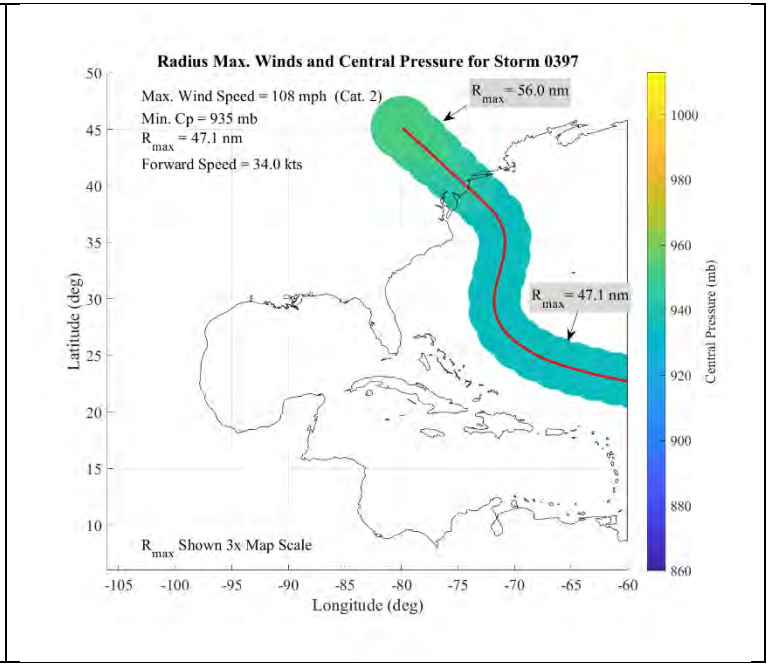

Radius Max. Winds and Central Pressure for Storm 0355
Max. Wind Speed = 99 mph (Cat. 2)
Min. Cp = 935 mb
R max = 33.9 nm
Forward Speed = 19.4 kts
R max = 46.5 nm
R max = 33.9 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

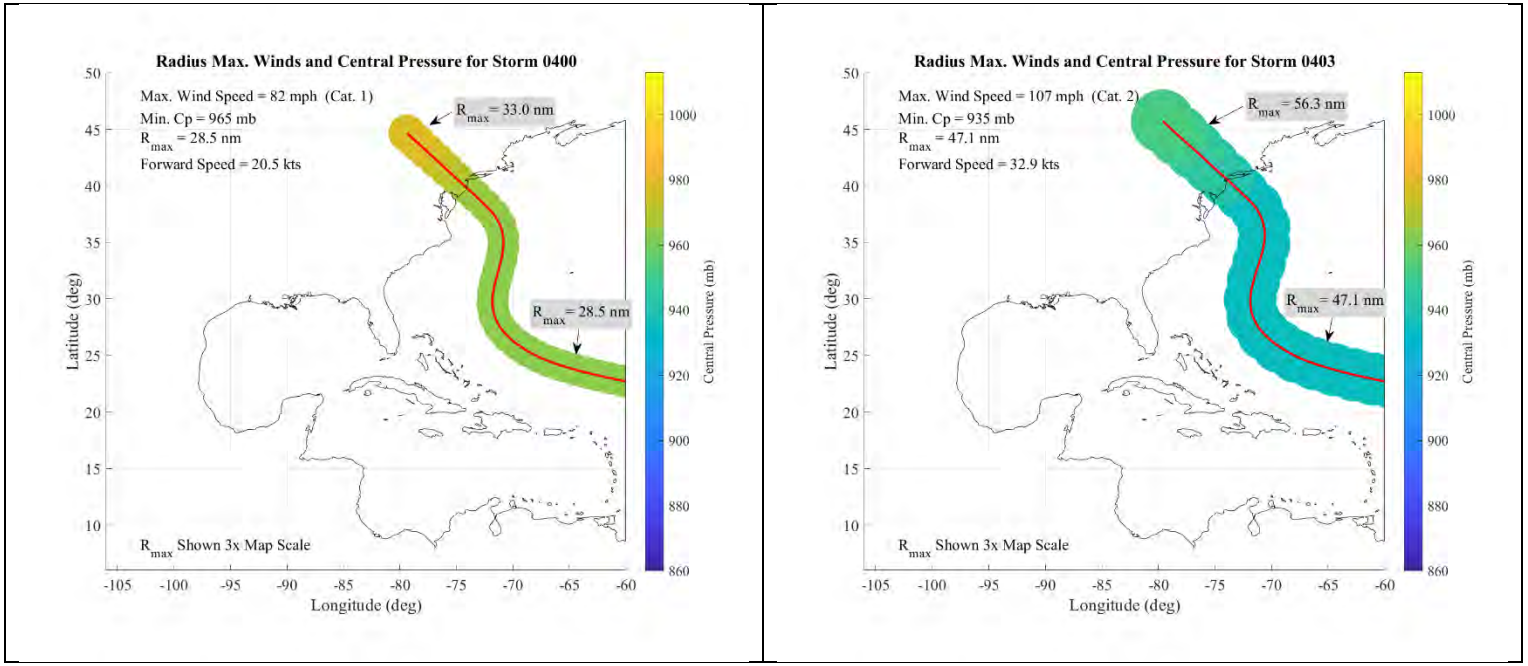

Radius Max. Winds and Central Pressure for Storm 0356
Max. Wind Speed = 69 mph (Tropical Storm)
Min. Cp = 945 mb
R max = 105.9 nm
Forward Speed = 29.7 kts
R max = 117.7 nm
R max = 105.9 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

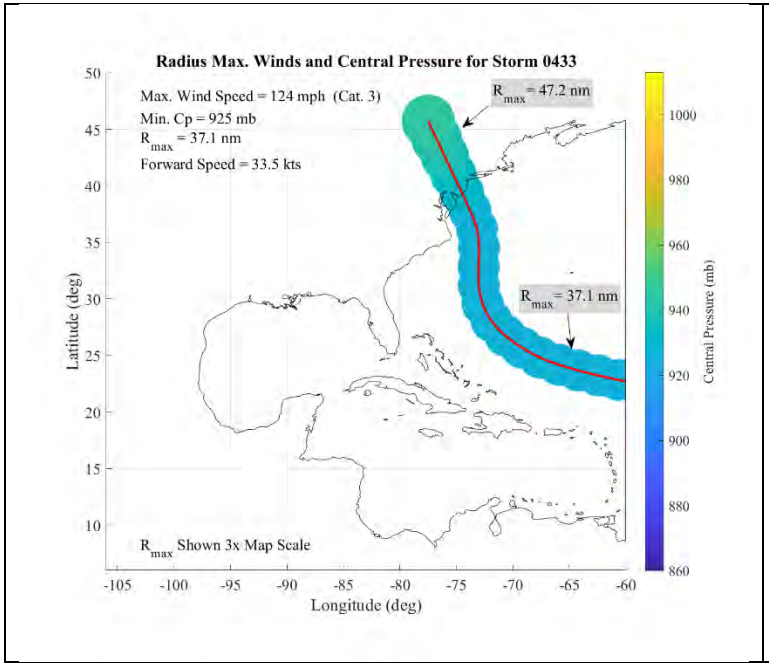

Radius Max. Winds and Central Pressure for Storm 0363
Max. Wind Speed = 89 mph (Cat. 1)
Min. Cp = 955 mb
R max = 48.8 nm
Forward Speed = 33.5 kts
R max = 54.2 nm
R max = 48.8 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

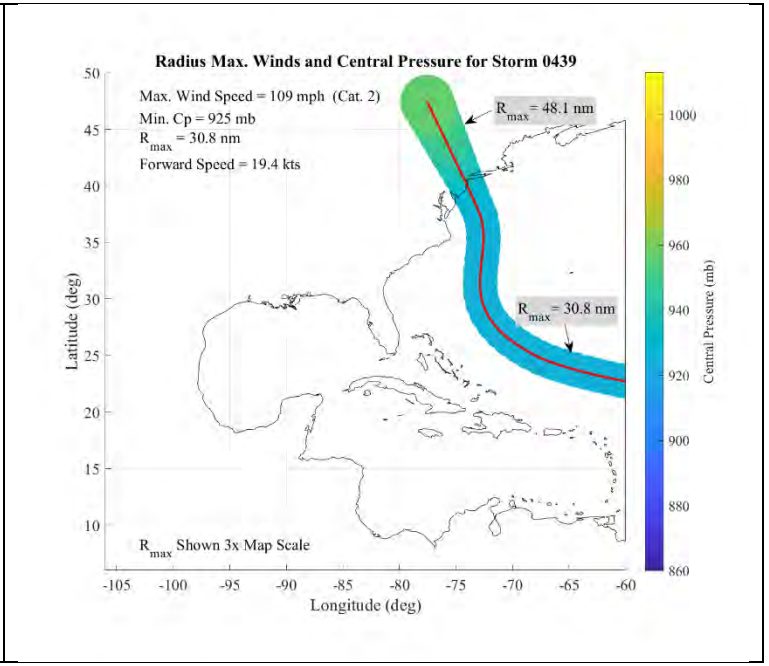

Radius Max. Winds and Central Pressure for Storm 0391
Max. Wind Speed = 119 mph (Cat. 3)
Min. Cp = 935 mb
R max = 30.8 nm
Forward Speed = 30.8 kts
R max = 38.5 nm
R max = 30.8 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)
Radius Max. Winds and Central Pressure for Storm 0392
Max. Wind Speed = 65 mph (Tropical Storm)
Min. Cp = 945 mb
R max = 109.2 nm
Forward Speed = 22.7 kts
R max = 121.3 nm
R max = 109.2 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

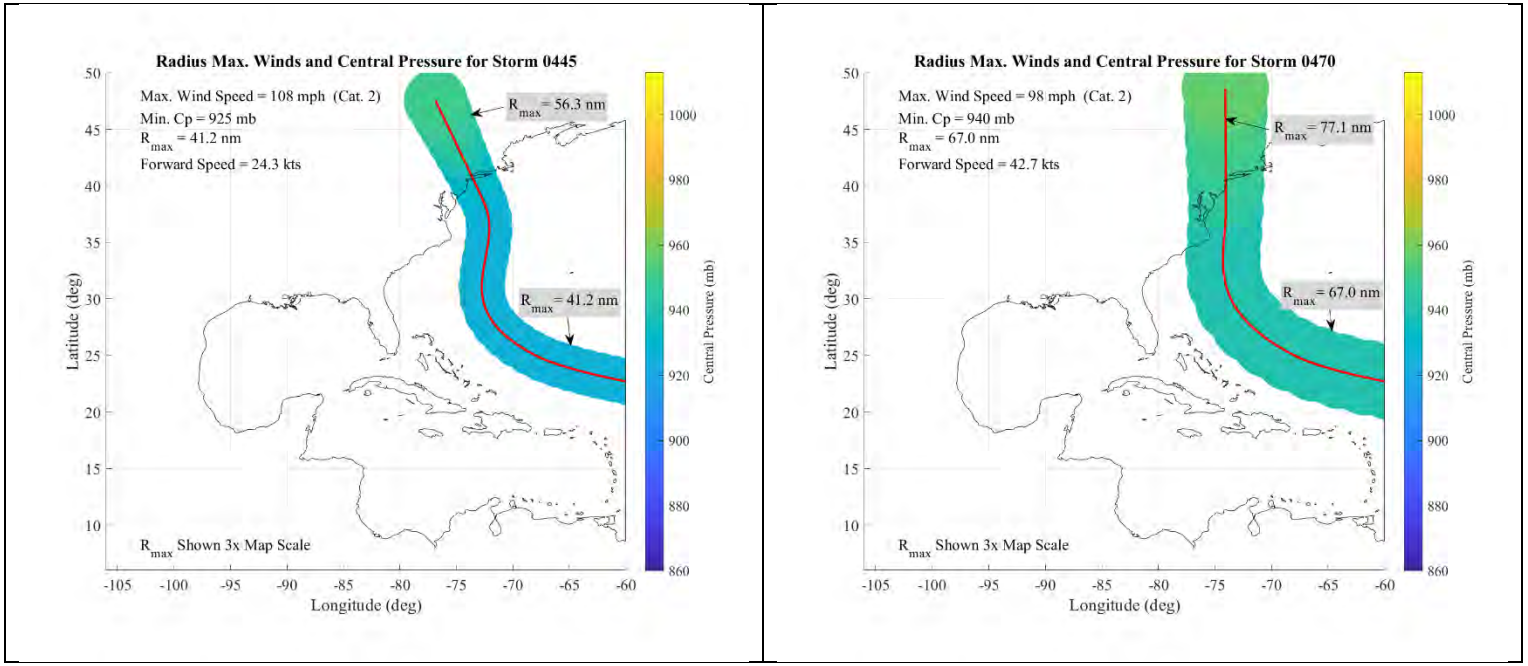

Radius Max. Winds and Central Pressure for Storm 0396
Max. Wind Speed = 61 mph (Tropical Storm)
Min. Cp = 985 mb
R max = 55.0 nm
Forward Speed = 31.9 kts
R max = 56.5 nm
R max = 55.0 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

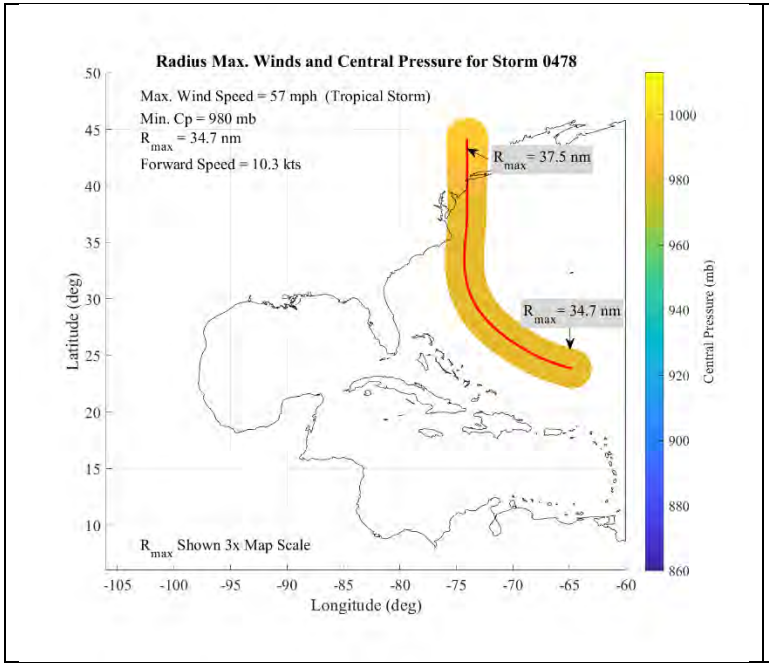

Radius Max. Winds and Central Pressure for Storm 0397
Max. Wind Speed = 108 mph (Cat. 2)
Min. Cp = 935 mb
R max = 47.1 nm
Forward Speed = 34.0 kts
R max = 56.0 nm
R max = 47.1 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

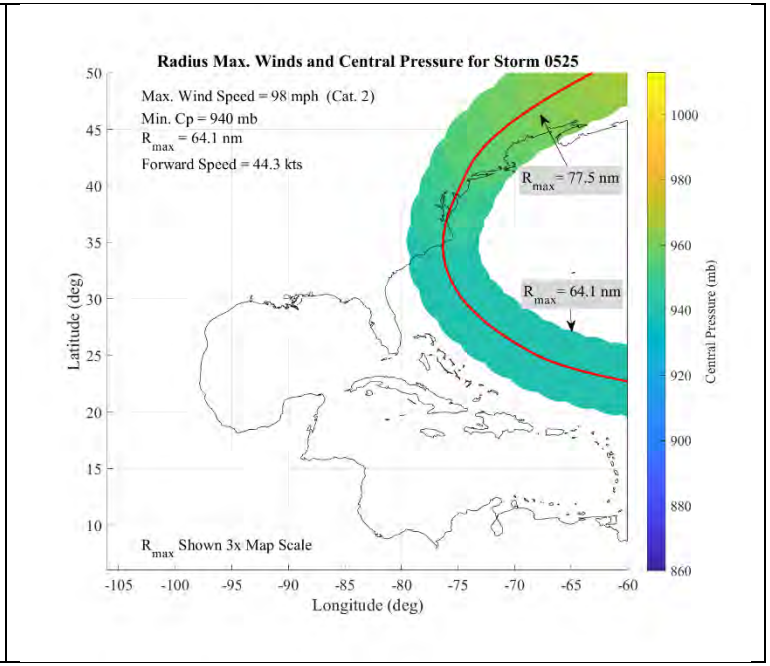

Radius Max. Winds and Central Pressure for Storm 0400
Max. Wind Speed = 82 mph (Cat. 1)
Min. Cp = 965 mb
R max = 28.5 nm
Forward Speed = 20.5 kts
R max = 33.0 nm
R max = 28.5 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)
Radius Max. Winds and Central Pressure for Storm 0403
Max. Wind Speed = 107 mph (Cat. 2)
Min. Cp = 935 mb
R max = 47.1 nm
Forward Speed = 32.9 kts
R max = 56.3 nm
R max = 47.1 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

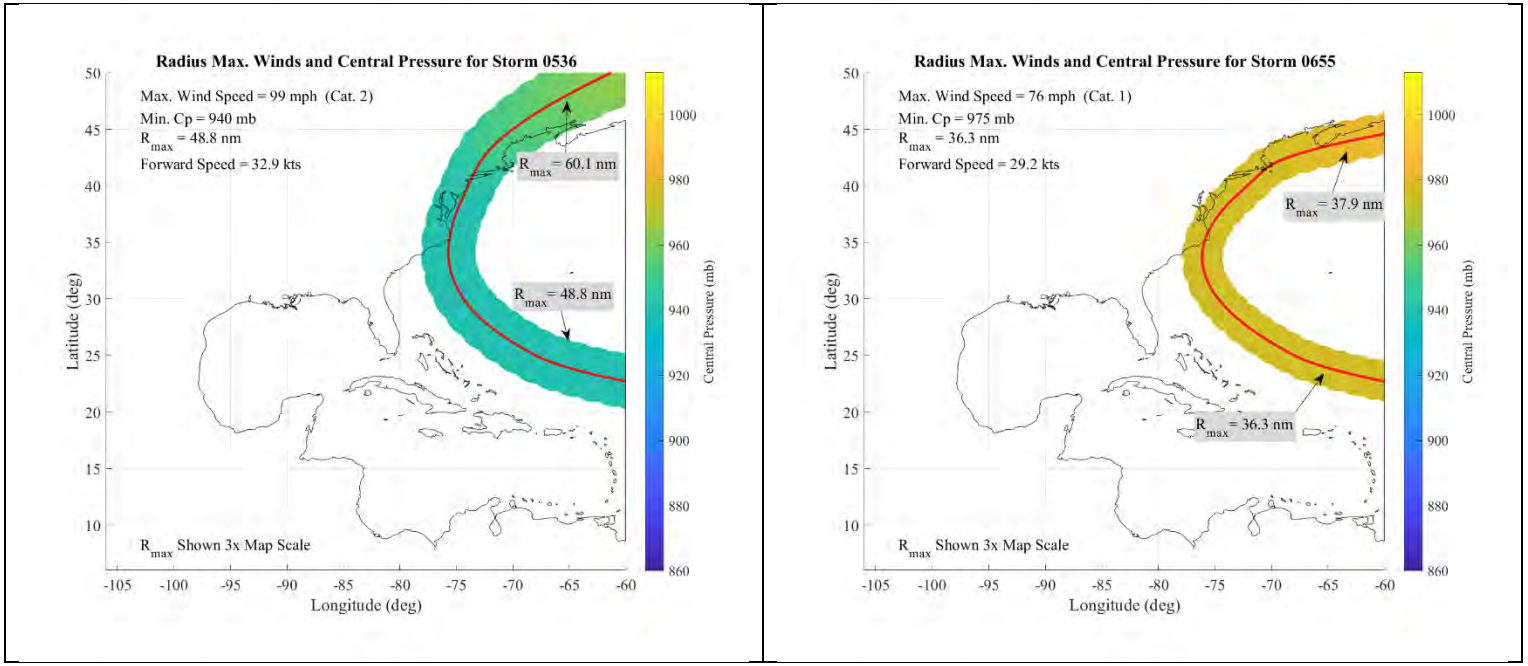

Radius Max. Winds and Central Pressure for Storm 0433
Max. Wind Speed = 124 mph (Cat. 3)
Min. Cp = 925 mb
R_max = 37.1 nm
Forward Speed = 33.5 kts
R_max = 47.2 nm
R_max = 37.1 nm
R_max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)


Radius Max. Winds and Central Pressure for Storm 0439
Max. Wind Speed = 109 mph (Cat. 2)
Min. Cp = 925 mb
R_max = 30.8 nm
Forward Speed = 19.4 kts
R_max = 48.1 nm
R_max = 30.8 nm
R_max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)


Radius Max. Winds and Central Pressure for Storm 0445
Max. Wind Speed = 108 mph (Cat. 2)
Min. Cp = 925 mb
R max = 41.2 nm
Forward Speed = 24.3 kts
R max = 56.3 nm
R max = 41.2 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)
Radius Max. Winds and Central Pressure for Storm 0470
Max. Wind Speed = 98 mph (Cat. 2)
Min. Cp = 940 mb
R max = 67.0 nm
Forward Speed = 42.7 kts
R max = 77.1 nm
R max = 67.0 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)


Radius Max. Winds and Central Pressure for Storm 0478
Max. Wind Speed = 57 mph (Tropical Storm)
Min. Cp = 980 mb
R max = 34.7 nm
Forward Speed = 10.3 kts
R max = 37.5 nm
R max = 34.7 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

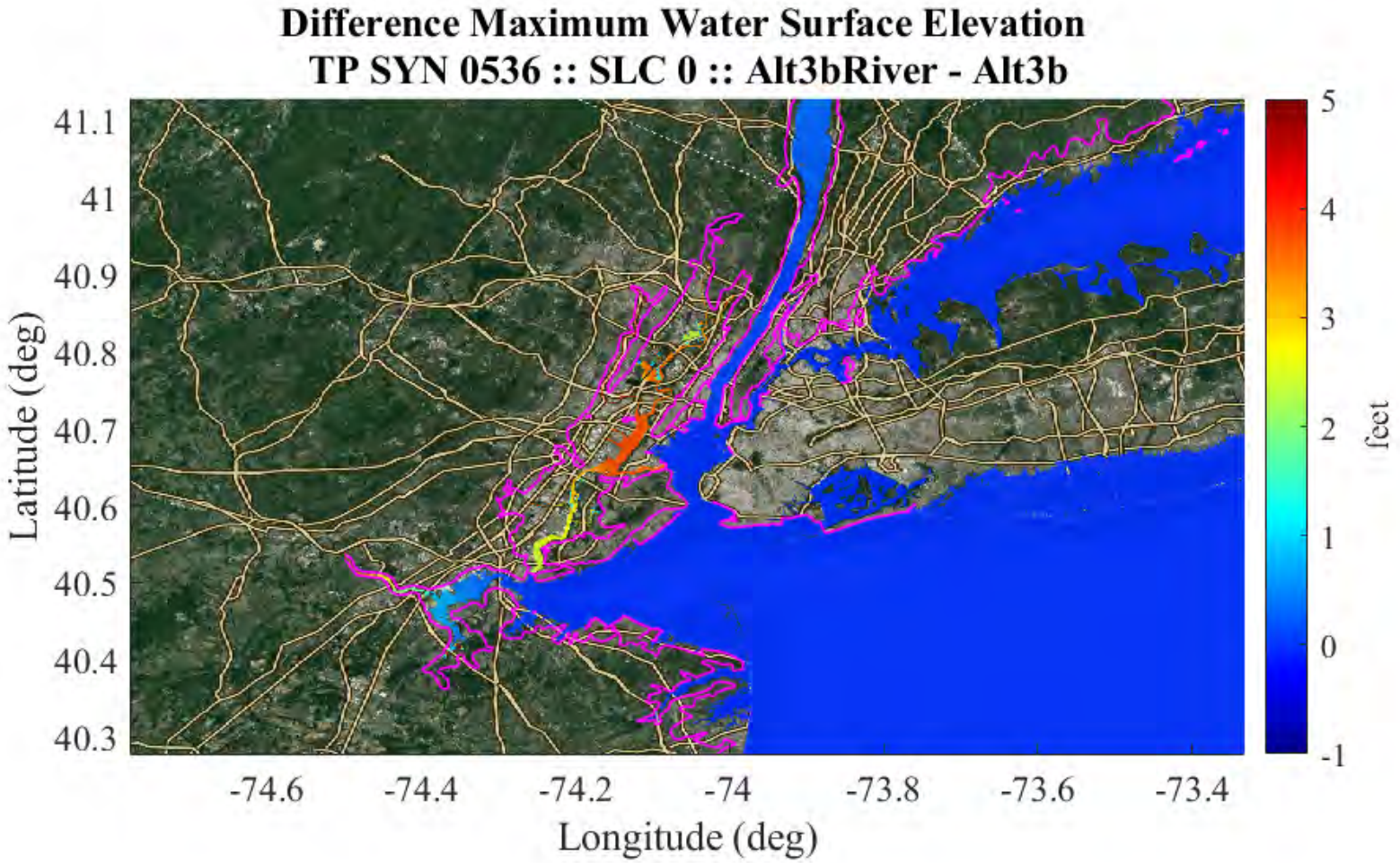

Radius Max. Winds and Central Pressure for Storm 0525
Max. Wind Speed = 98 mph (Cat. 2)
Min. Cp = 940 mb
R max = 64.1 nm
Forward Speed = 44.3 kts
R max = 77.5 nm
R max = 64.1 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

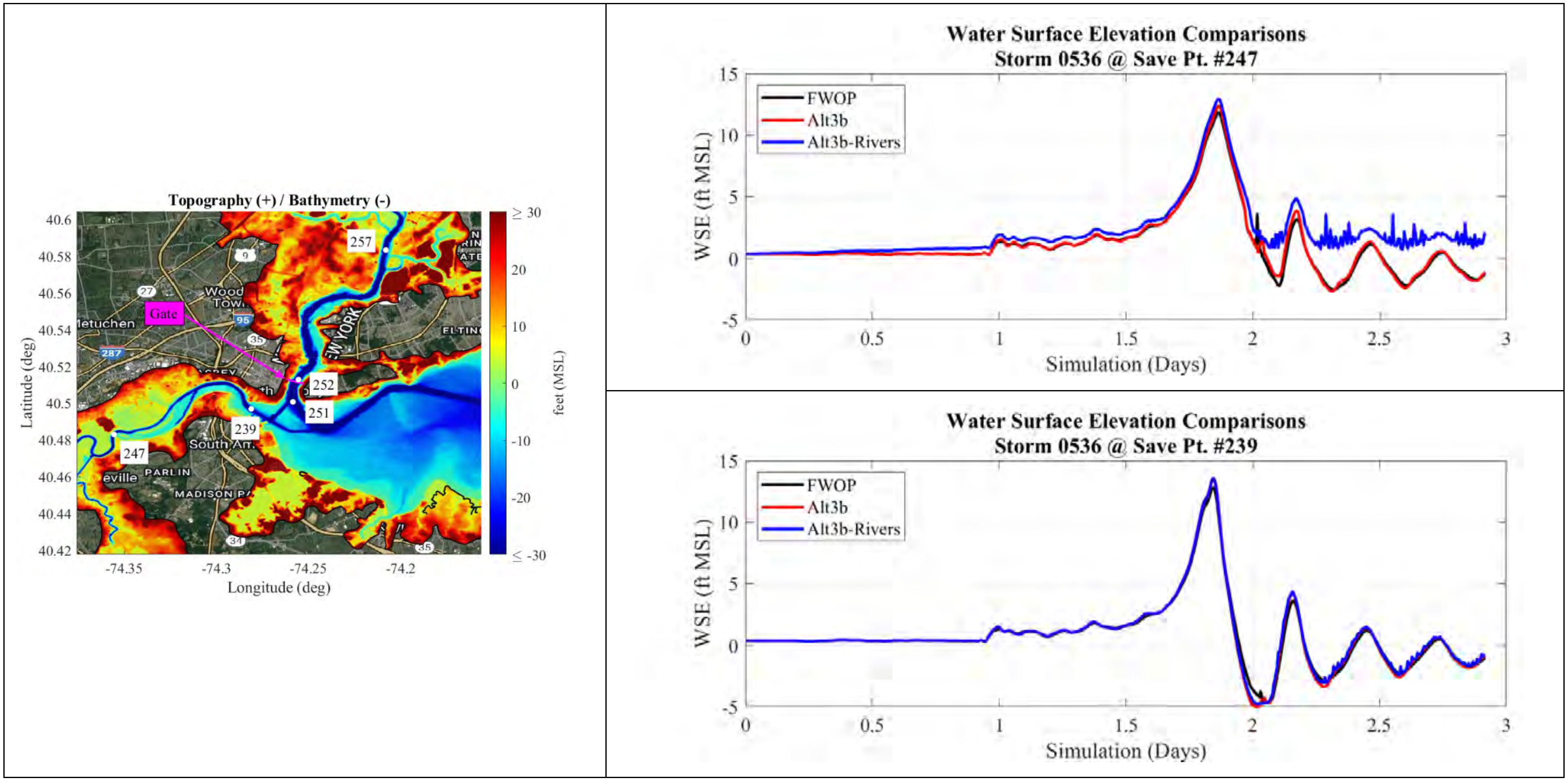

Radius Max. Winds and Central Pressure for Storm 0536
Max. Wind Speed = 99 mph (Cat. 2)
Min. Cp = 940 mb
R max = 48.8 nm
Forward Speed = 32.9 kts
R max = 60.1 nm
R max = 48.8 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)
Radius Max. Winds and Central Pressure for Storm 0655
Max. Wind Speed = 76 mph (Cat. 1)
Min. Cp = 975 mb
R max = 36.3 nm
Forward Speed = 29.2 kts
R max = 37.9 nm
R max = 36.3 nm
R max Shown 3x Map Scale
Latitude (deg)
Longitude (deg)
Central Pressure (mb)

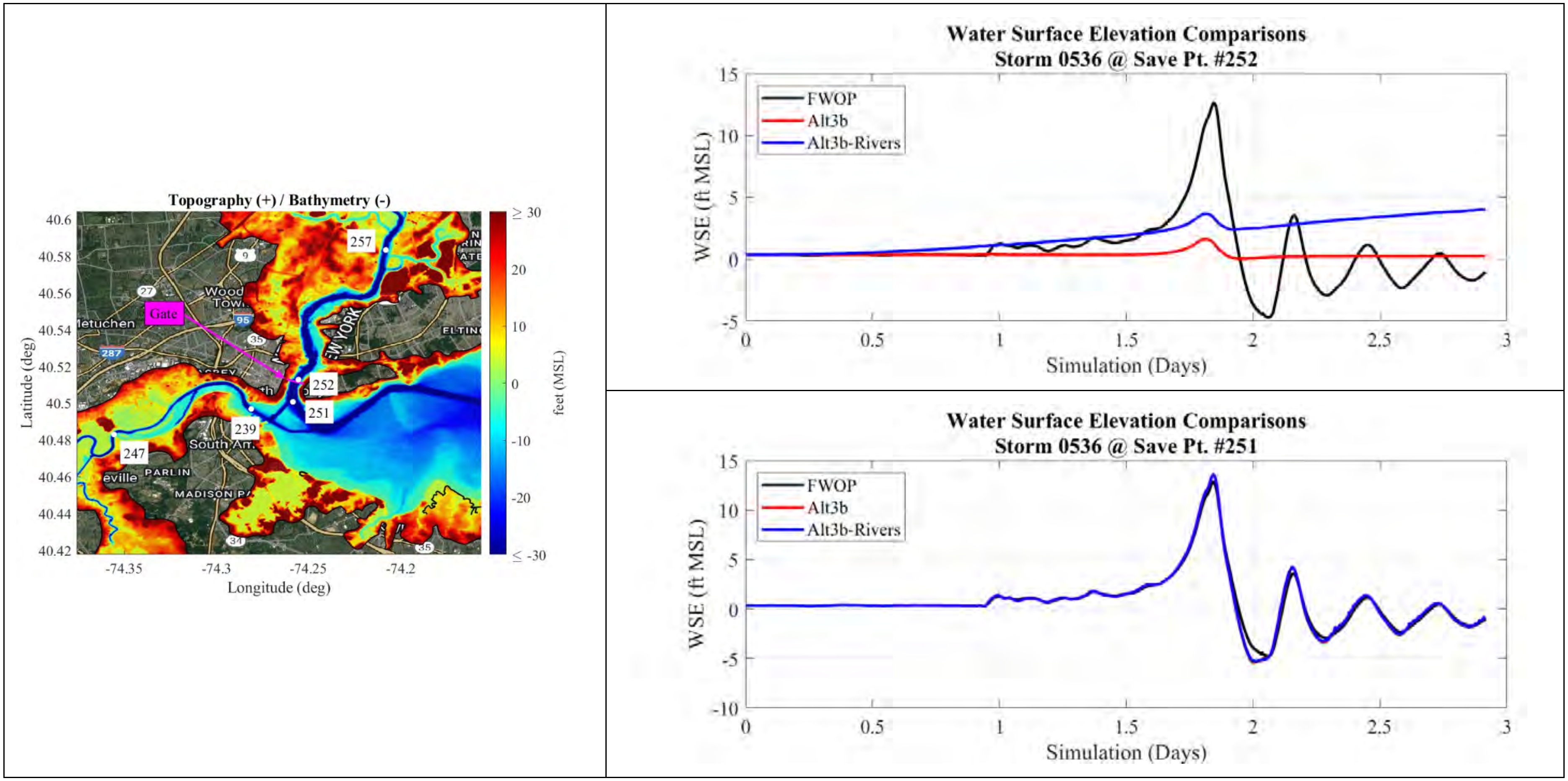
Appendix III: Comparison of Water Surface Elevations for With-River Flows vs. No River Flows

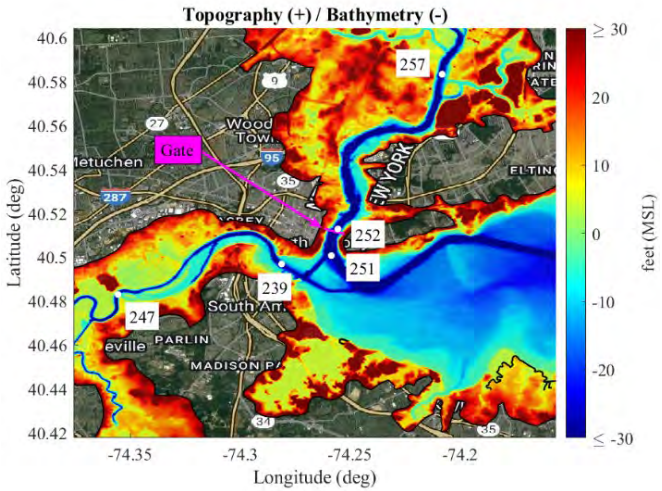
Due to current limitations in the ADCIRC model for simulating the operation of navigation gates, a gate must be represented as either open or closed for the entire simulation period. To test the CSRM features as a complete system, the navigation gates must be closed at some point during the storm event, therefore, the gate must be closed for the entire simulation. When river flows are included and the gates are closed for the entire simulation period, water levels tend to build up behind the gates to unrealistically high levels. This causes induced flooding which would not occur under normal gate operation conditions, i.e. the gate would only be closed for a fraction of the duration of the storm instead of the entire storm length. Presented herein are the results from simulating three (3) synthetic tropical storm events (536, 478, and 355) on Alt3b and FWOP configurations without using river flows and then Alt3b with river flows included. For each storm, a two-dimensional color contour plot showing the difference in maximum water surface elevations between the with-rivers and the without-rivers for Alt3b is presented first. Then for each storm, a set of time series plots of water surface elevations are presented at six (6) save point locations in the NYNJHAT study area with the water surface elevations for the FWOP, Alt3b, and Alt3b-Rivers configurations all plotted on the same graph. The track of storms 536 and 478 are such that the water levels clearly build behind the closed gates and the longer the storm length, the higher the water levels. See plots for save point 252 and 257 and 205. Note that location 205 is located in the Hudson River near Newburgh, NY, which is north, and outside of the limits of the map showing the other save point locations. Storm 478 is for 6 days and one can observe that at save point 252, the water surface elevations for the with-rivers condition is over 7 feet higher than the without-rivers Alt3b condition at the end of the simulation. At location 205, the difference is only about 1 foot for storm 478. Storm 536 only last for about 2.8 days and the ending water surface elevations at save point 252 for the with rivers condition is almost 5 feet higher and is again about 1 foot higher at save point 205.

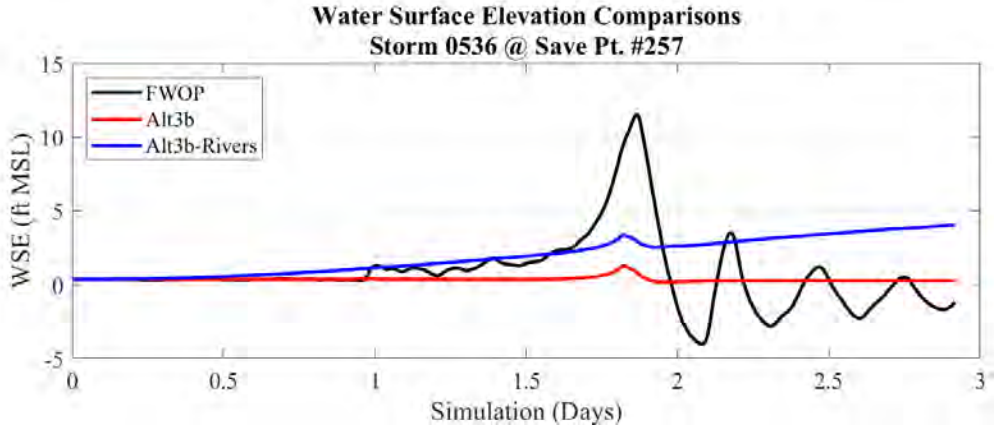
Storm 355 was included to illustrate that under certain storm tracks, the resulting wind directions can cause the maximum water surface elevation difference plots to change from what is first expected. In the case of storm 355, the extra water in the system, due to river flow inclusion actually caused there to be less water behind the gate at Raritan, when the storm wind directions changed as the center of the storm went past the study area. In this case, the winds initially drive the water toward the front or south side of the gate until about day 2.15, then the wind direction turns and drives the water toward the back or north side of the gate until about day 3 when the wind again turn toward the north. The driving wind caused the gate to be overtopped for both the with- and without-rivers case of Alt3b. The extra water in the system allowed the gate to overtop a little earlier than the without-rivers case and with the extra water in the system, there was more wetting and drying in the area behind the gate which allowed the water to diffuse easier than the without-river case which kept the water bounded together in less area.


Difference Maximum Water Surface Elevation
TP SYN 0536 :: SLC 0 :: Alt3bRiver - Alt3b
Latitude (deg)
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
-74.6
-74.4
-74.2
-74
-73.8
-73.6
-73.4
Longitude (deg)
5
4
3
2
1
0
-1
feet

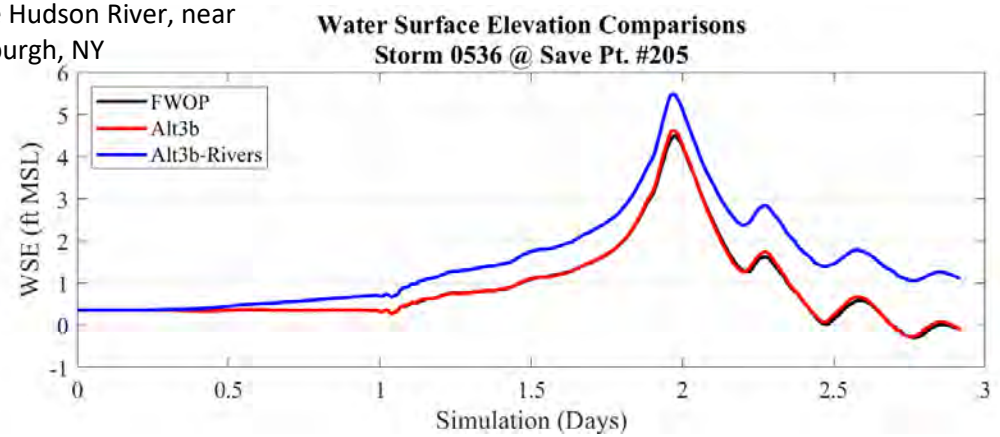

Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
≥ 30
20
10
0
-10
-20
≤ -30
Gate
257
252
251
239
247
Water Surface Elevation Comparisons
Storm 0536 @ Save Pt. #247
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
Water Surface Elevation Comparisons
Storm 0536 @ Save Pt. #239
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)

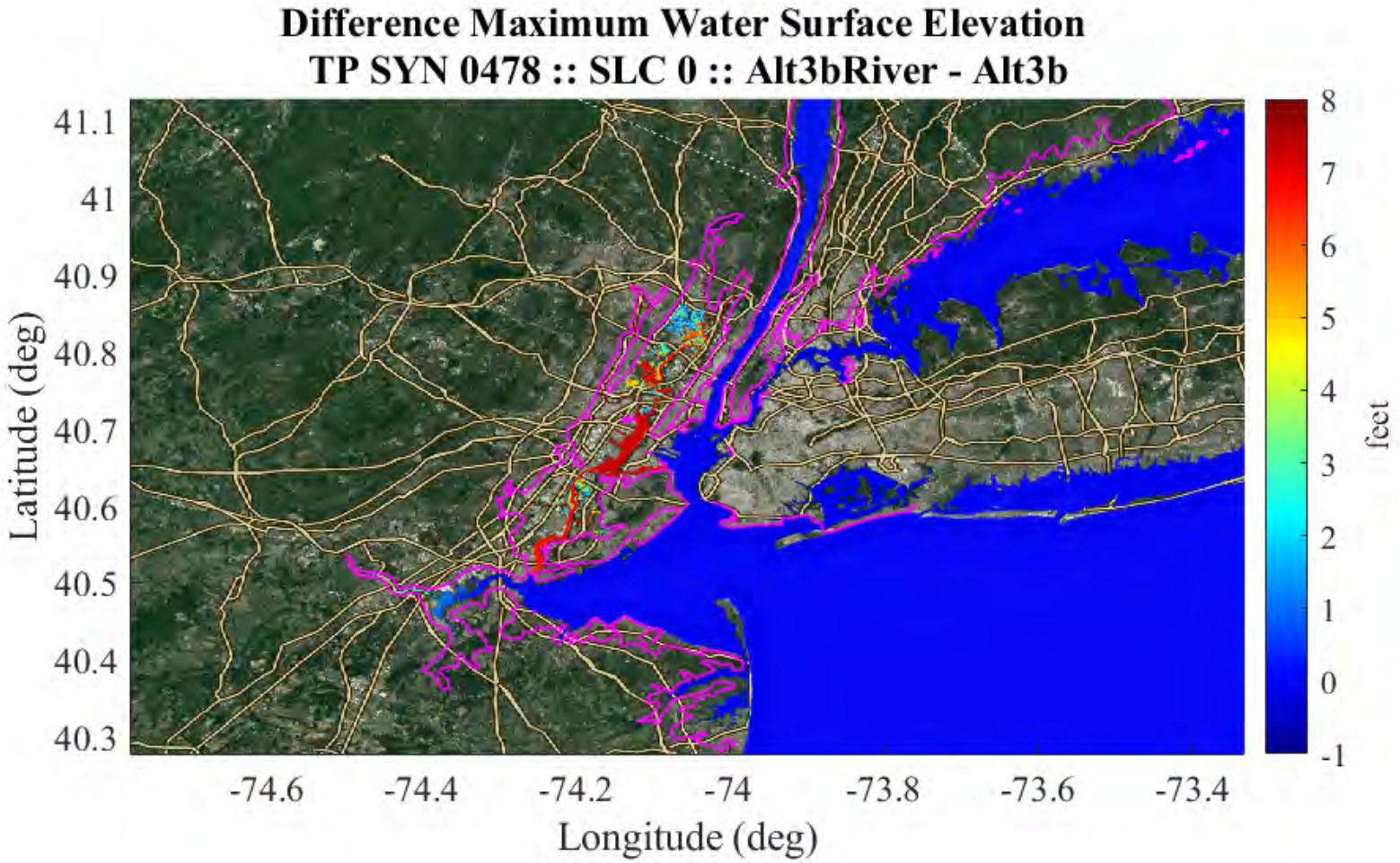

Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
Gate
257
252
251
239
247
≥ 30
≤ -30
Water Surface Elevation Comparisons
Storm 0536 @ Save Pt. #252
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
Water Surface Elevation Comparisons
Storm 0536 @ Save Pt. #251
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)

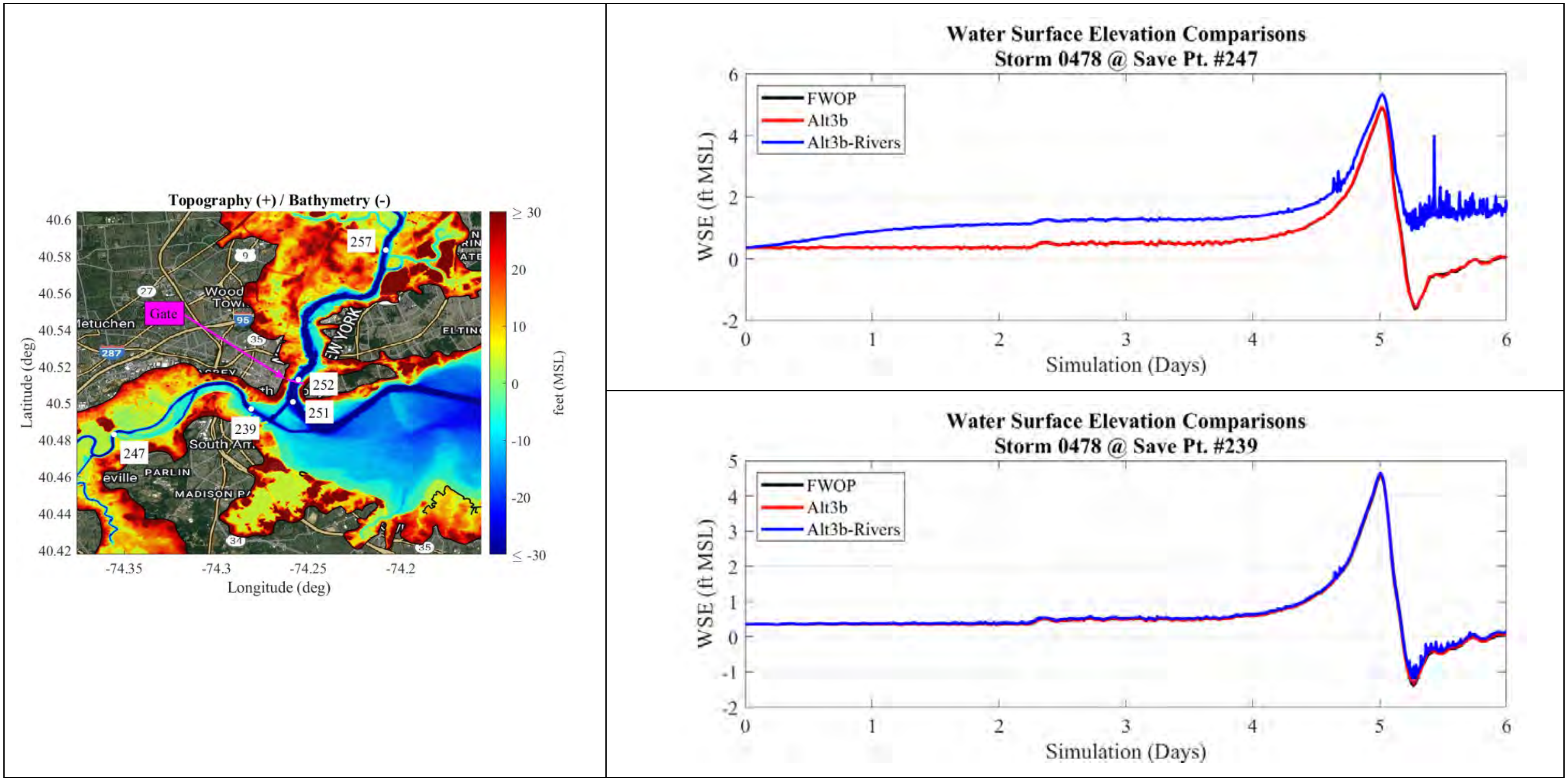


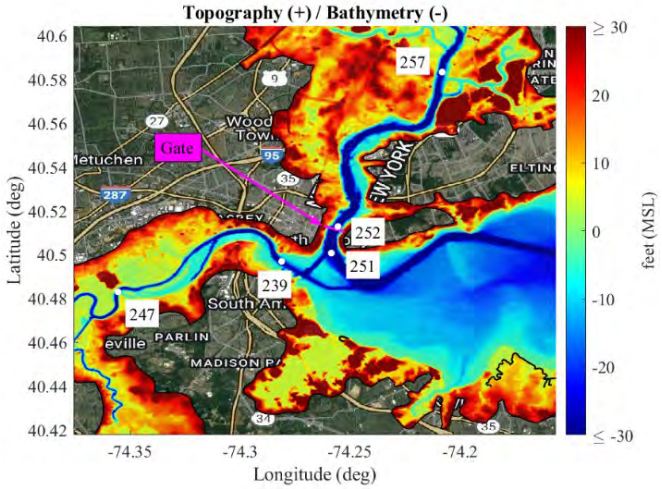


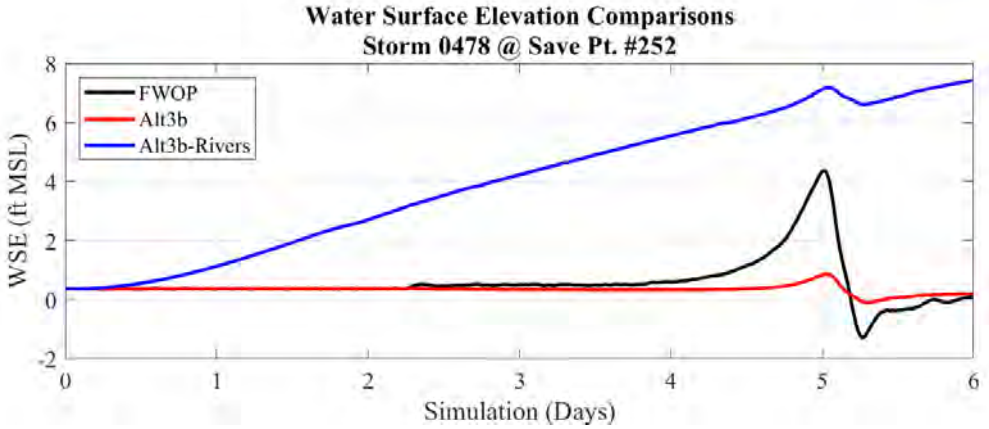
In the Hudson River, near Newburgh, NY

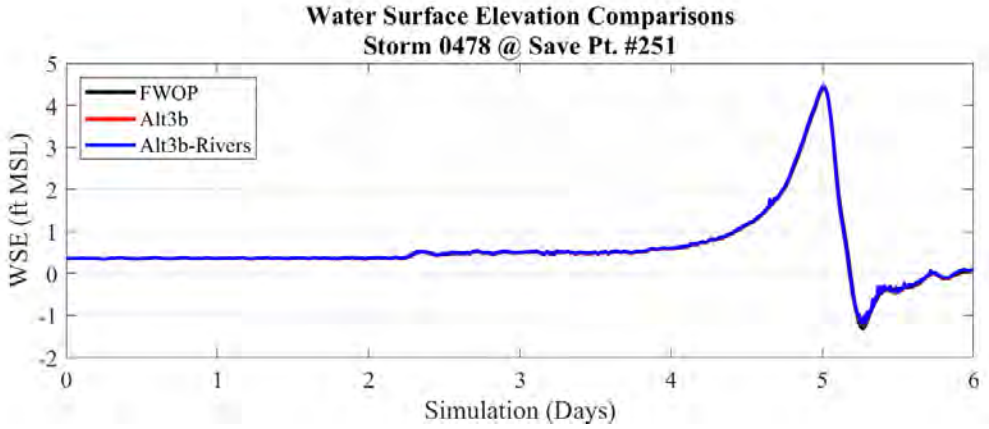


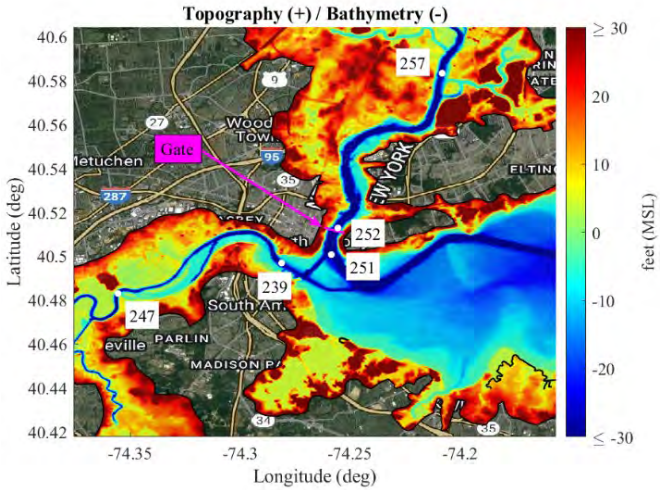

Difference Maximum Water Surface Elevation
TP SYN 0478 :: SLC 0 :: Alt3bRiver - Alt3b
Latitude (deg)
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
-74.6
-74.4
-74.2
-74
-73.8
-73.6
-73.4
Longitude (deg)
8
7
6
5
4
3
2
1
0
-1
feet

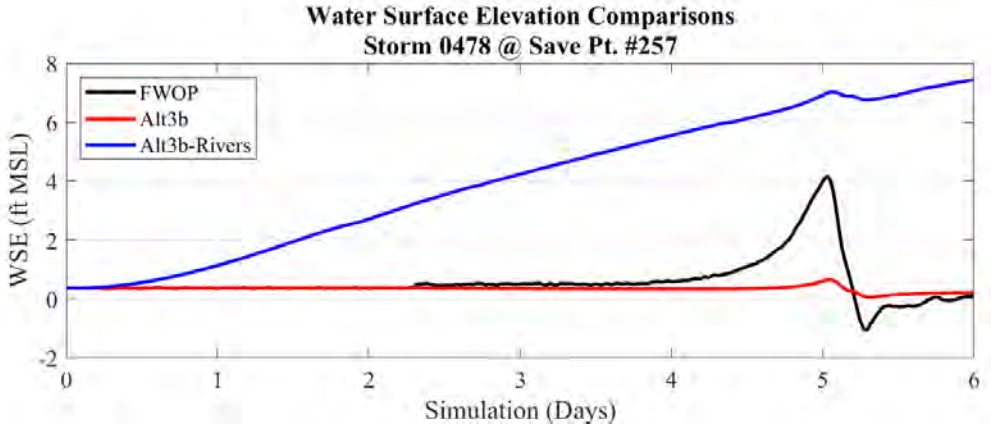

Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
Gate
257
252
251
239
247
Water Surface Elevation Comparisons
Storm 0478 @ Save Pt. #247
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
Water Surface Elevation Comparisons
Storm 0478 @ Save Pt. #239
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)


Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
≥ 30
20
10
0
-10
-20
≤ -30
40.6
40.58
40.56
40.54
40.52
40.5
40.48
40.46
40.44
40.42
-74.35
-74.3
-74.25
-74.2
257
252
251
239
247
Gate
Wood
South Am.
PARLIN
MADISON
NEW YORK

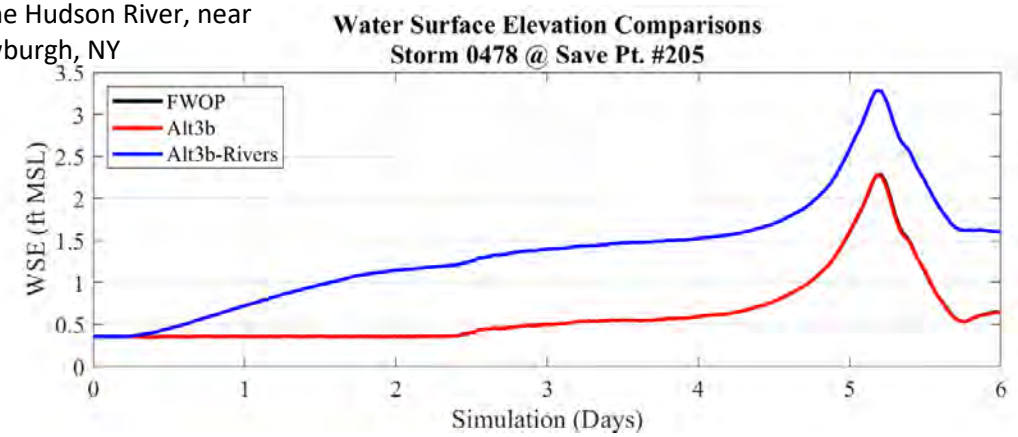

Water Surface Elevation Comparisons
Storm 0478 @ Save Pt. #252
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)

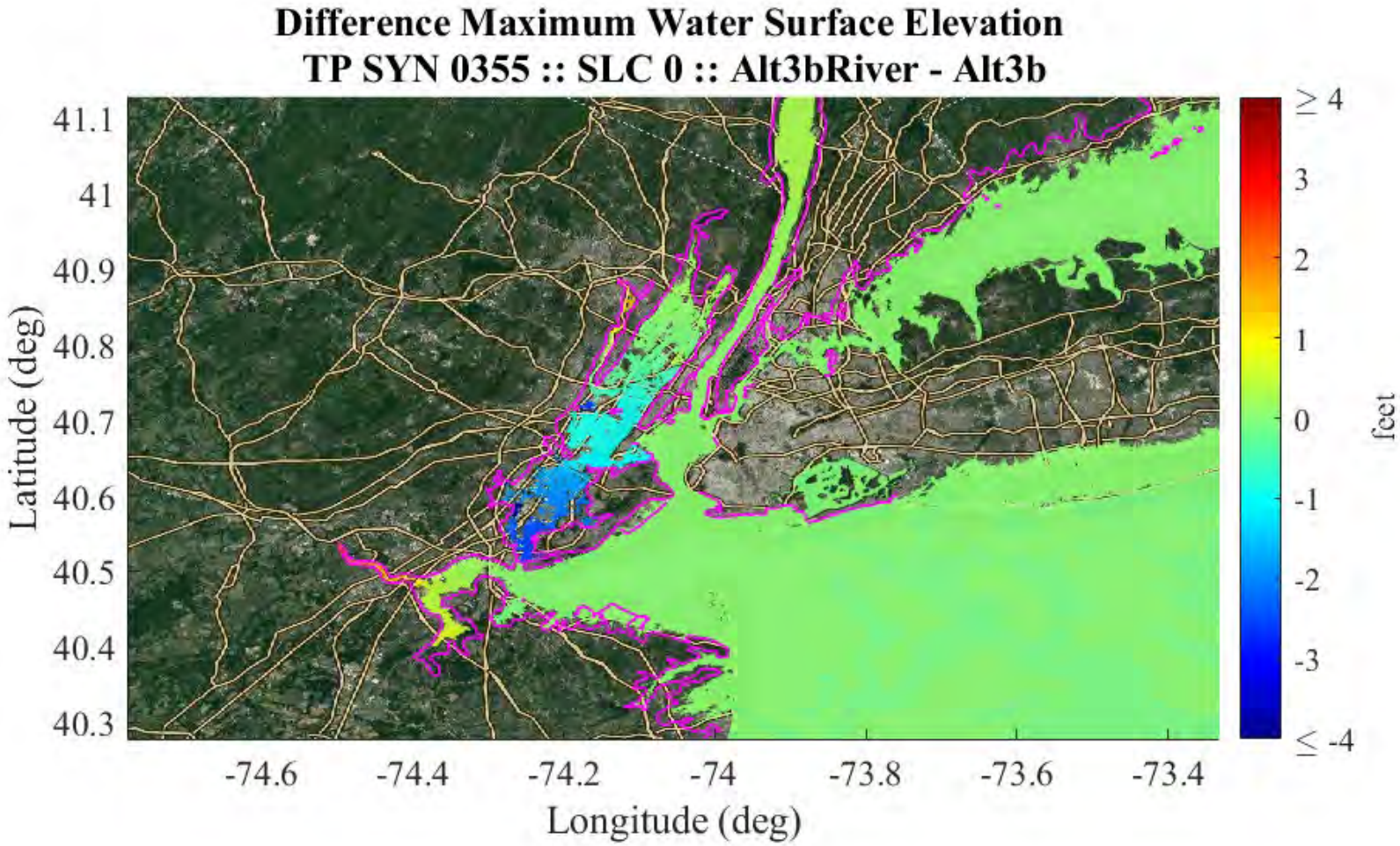

Water Surface Elevation Comparisons
Storm 0478 @ Save Pt. #251
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)

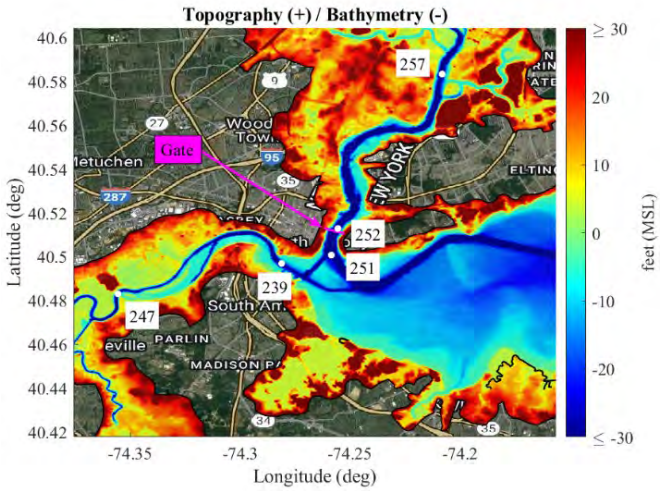


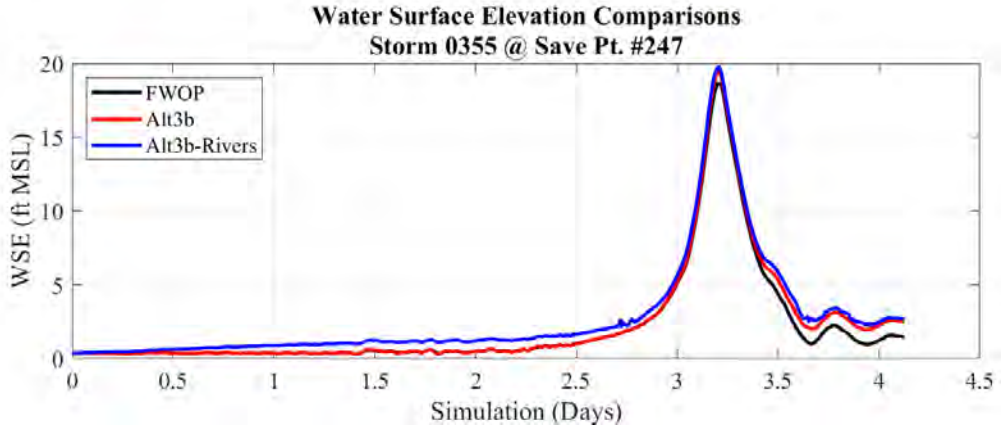


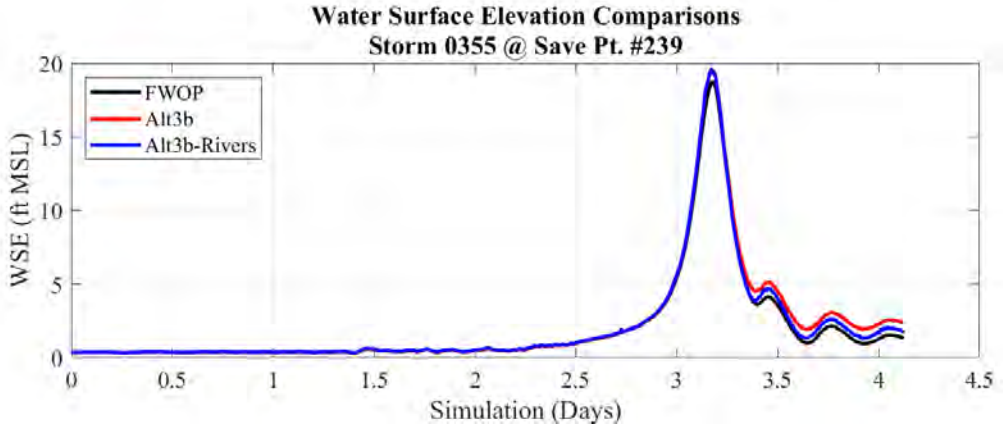
In the Hudson River, near Newburgh, NY

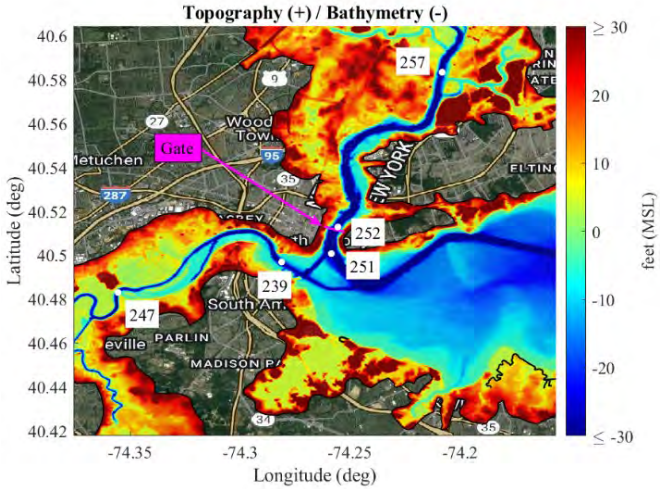


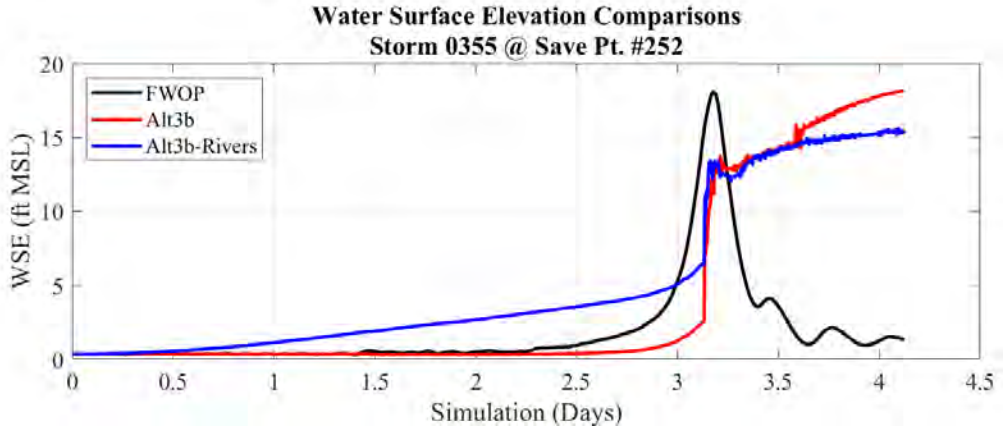

Difference Maximum Water Surface Elevation
TP SYN 0355 :: SLC 0 :: Alt3bRiver - Alt3b
Latitude (deg)
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
-74.6
-74.4
-74.2
-74
-73.8
-73.6
-73.4
Longitude (deg)
≥ 4
3
2
1
0
-1
-2
-3
≤ -4
feet

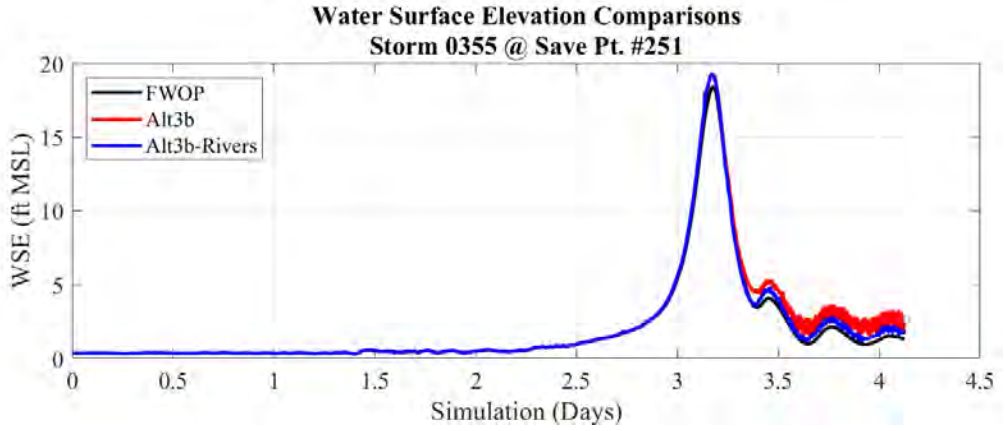

Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
≥ 30
20
10
0
-10
-20
≤ -30
40.6
40.58
40.56
40.54
40.52
40.5
40.48
40.46
40.44
40.42
-74.35
-74.3
-74.25
-74.2
257
252
251
239
247
Gate
Wood
South Am.
PARLIN
MADISON
NEW YORK

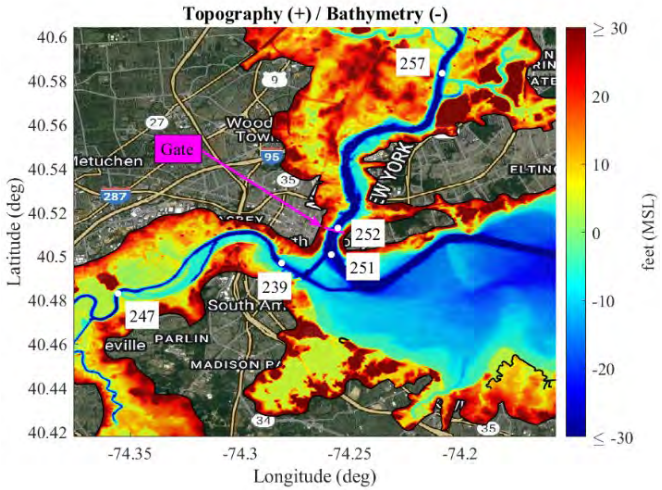

Water Surface Elevation Comparisons
Storm 0355 @ Save Pt. #247
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
0
5
10
15
20
0.5
1
1.5
2
2.5
3
3.5
4
4.5

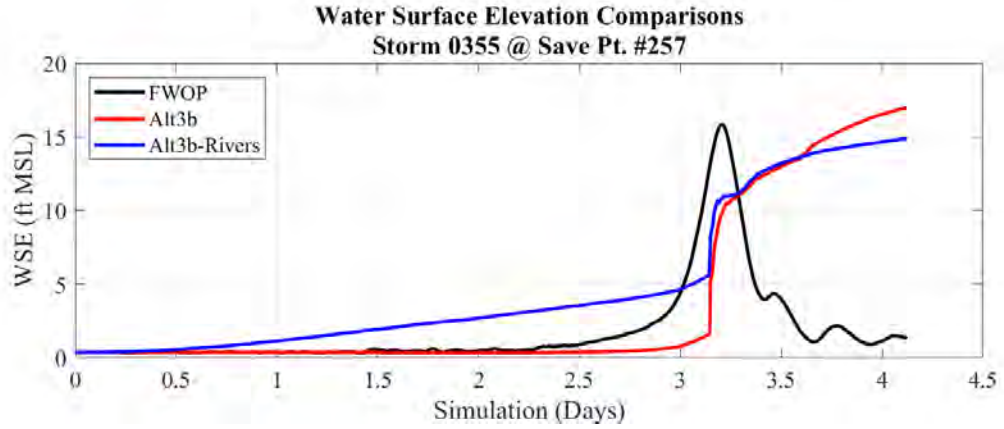

Water Surface Elevation Comparisons
Storm 0355 @ Save Pt. #239
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
0
5
10
15
20
0.5
1
1.5
2
2.5
3
3.5
4
4.5


Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
≥ 30
20
10
0
-10
-20
≤ -30
40.6
40.58
40.56
40.54
40.52
40.5
40.48
40.46
40.44
40.42
-74.35
-74.3
-74.25
-74.2
257
252
251
239
247
Gate
Wood
PARLIN
MADISON

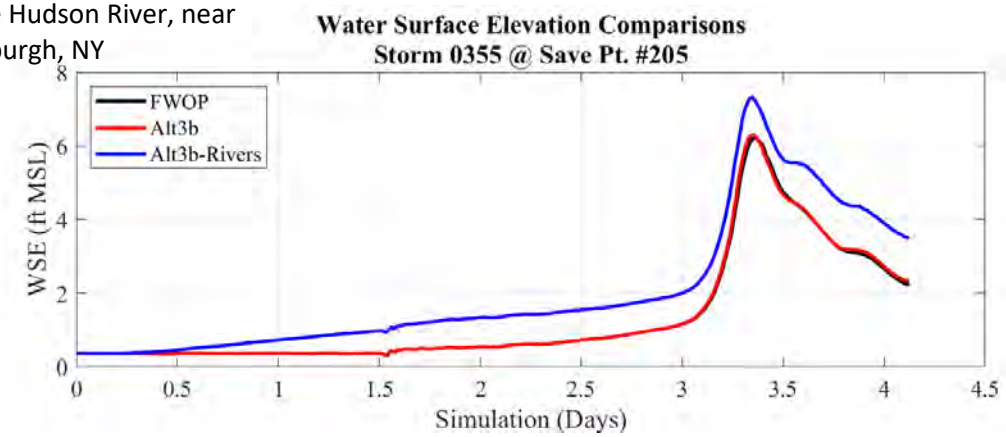

Water Surface Elevation Comparisons
Storm 0355 @ Save Pt. #252
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
0
5
10
15
20
0.5
1
1.5
2
2.5
3
3.5
4
4.5

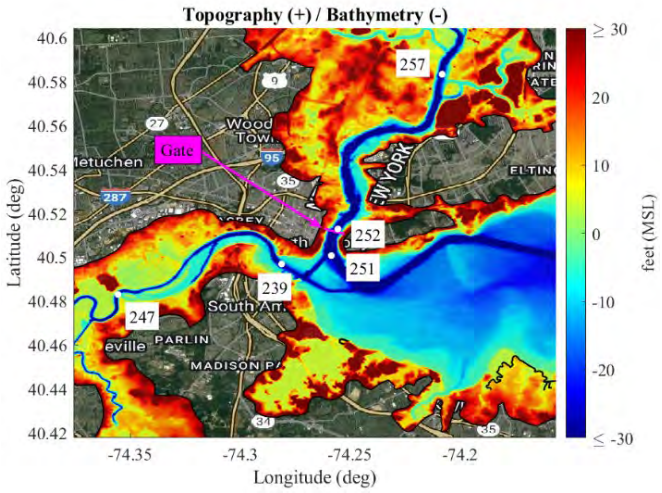

Water Surface Elevation Comparisons
Storm 0355 @ Save Pt. #251
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
0
5
10
15
20
0.5
1
1.5
2
2.5
3
3.5
4
4.5

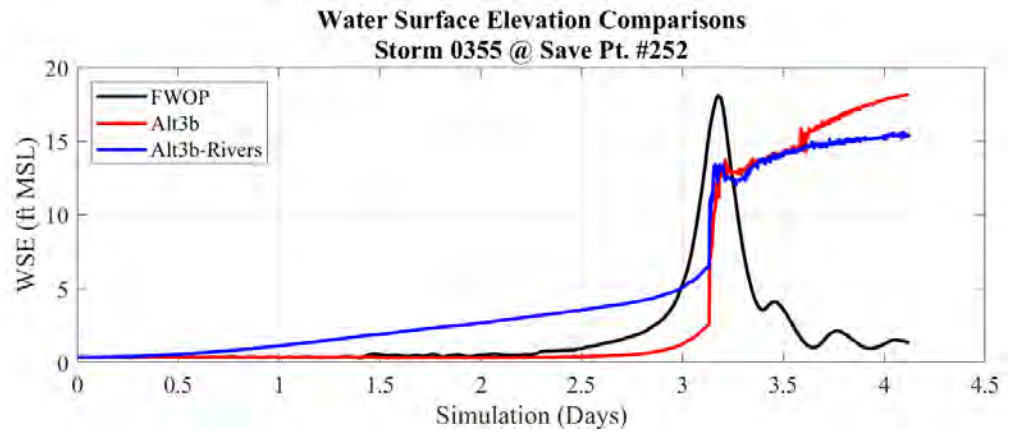


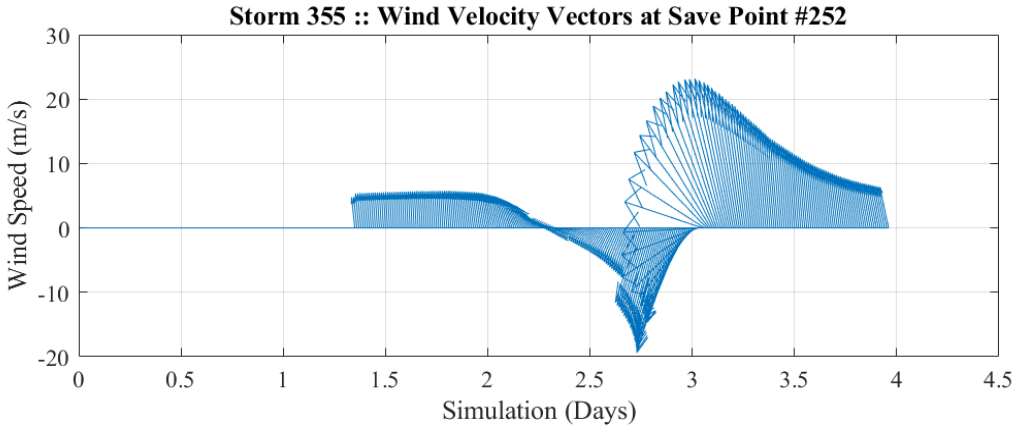


In the Hudson River, near Newburgh, NY




Topography (+) / Bathymetry (-)
Latitude (deg)
Longitude (deg)
feet (MSL)
≥ 30
20
10
0
-10
-20
≤ -30
40.6
40.58
40.56
40.54
40.52
40.5
40.48
40.46
40.44
40.42
-74.35
-74.3
-74.25
-74.2
257
252
251
239
247
Gate
Wood
South Am.
PARLIN
MADISON

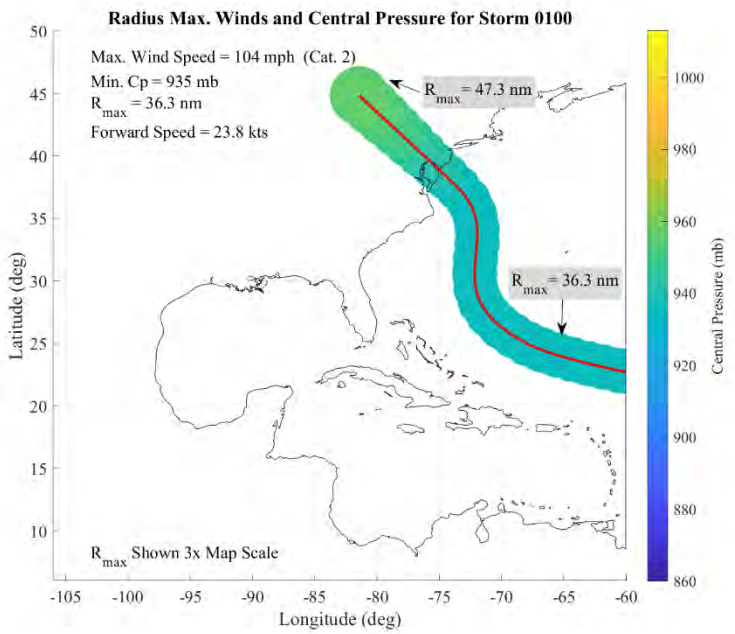

Water Surface Elevation Comparisons
Storm 0355 @ Save Pt. #252
FWOP
Alt3b
Alt3b-Rivers
WSE (ft MSL)
Simulation (Days)
20
15
10
5
0
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5


Storm 355 :: Wind Velocity Vectors at Save Point #252
Wind Speed (m/s)
Simulation (Days)
30
20
10
0
-10
-20
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5

Appendix IV

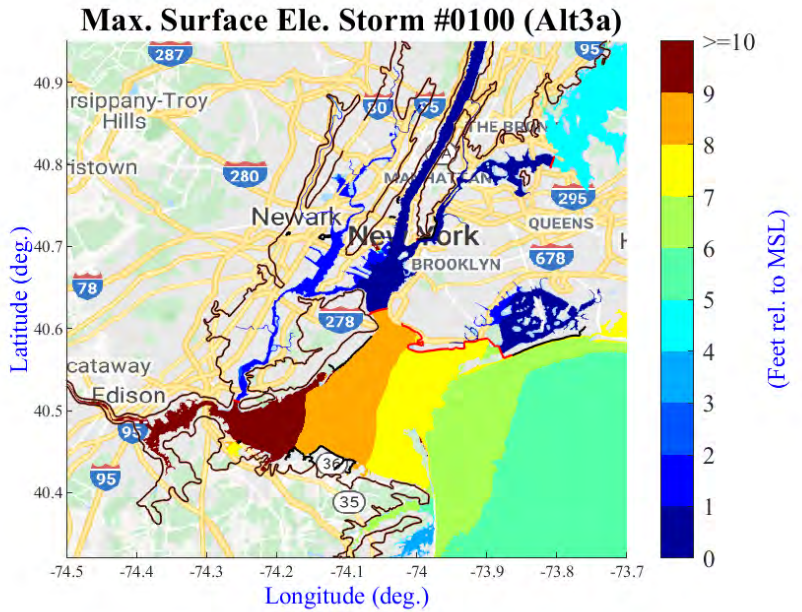
New York New Jersey Harbors and Tributaries CSTORM Modeled Maximum Water Surface Elevations for FWOP, Alt3a, Alt3b and Sequences

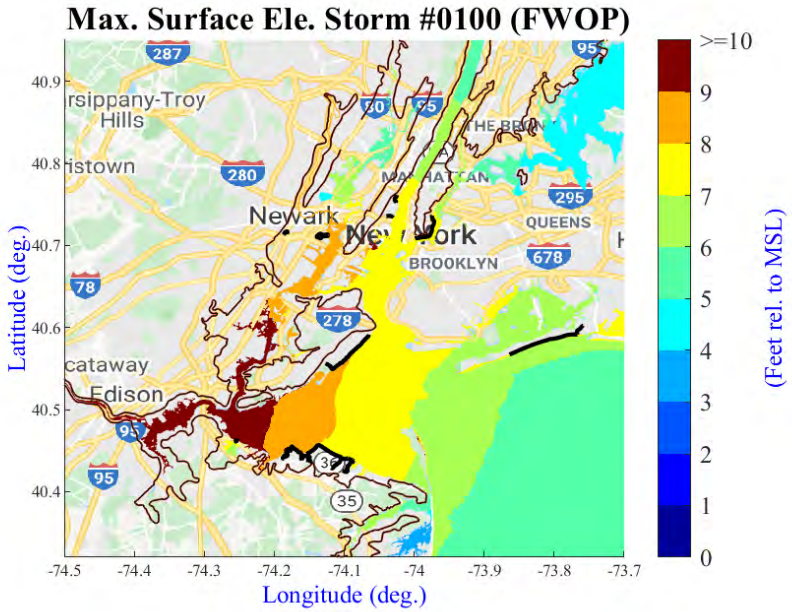
Storm #100

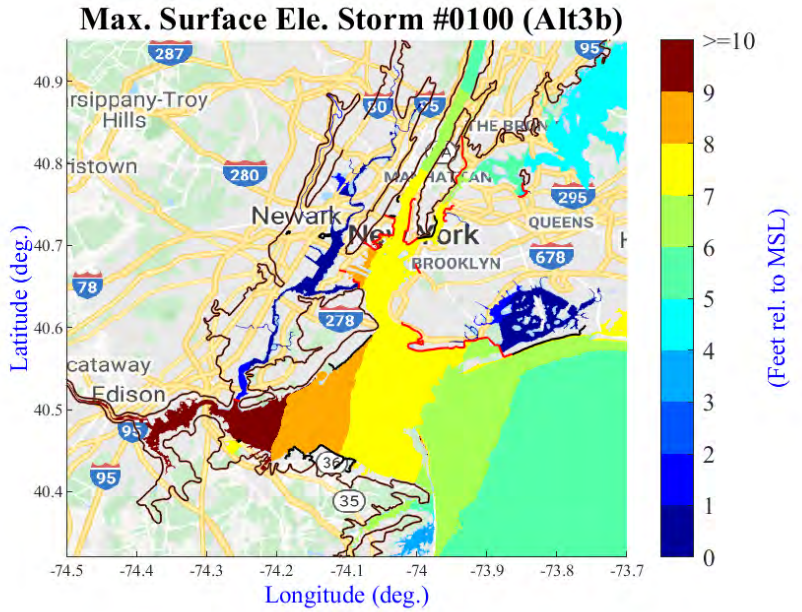


Max. Wind Speed: ***104 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***36.3 nm***
Forward Speed: ***23.8 kts***

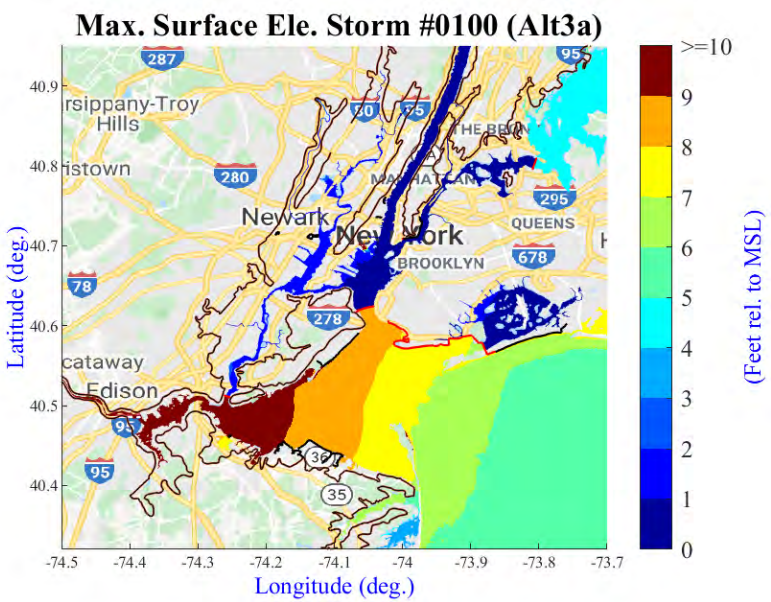
Future With Out Project:
Max. WSE at Battery: ***7.61 ft.***
Max. WSE at Kings Point: ***4.61 ft.***
Max. WSE at Sandy Hook: ***7.16 ft.***

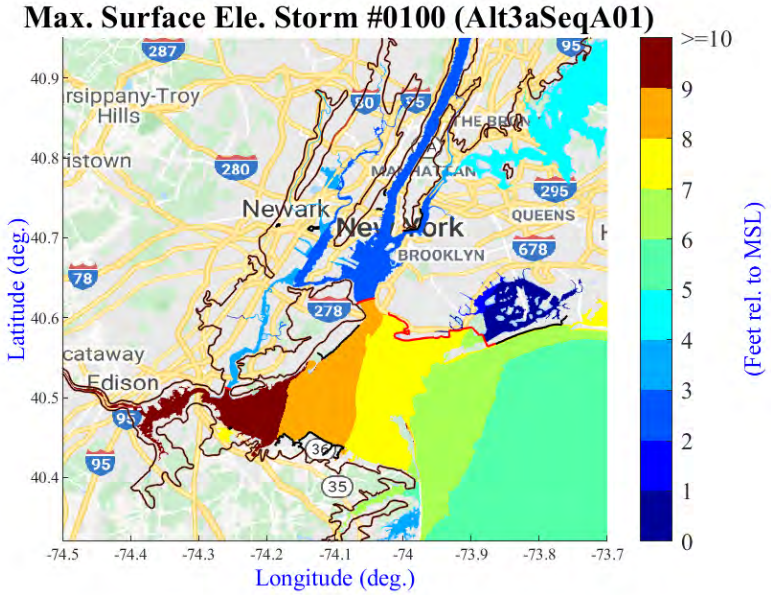


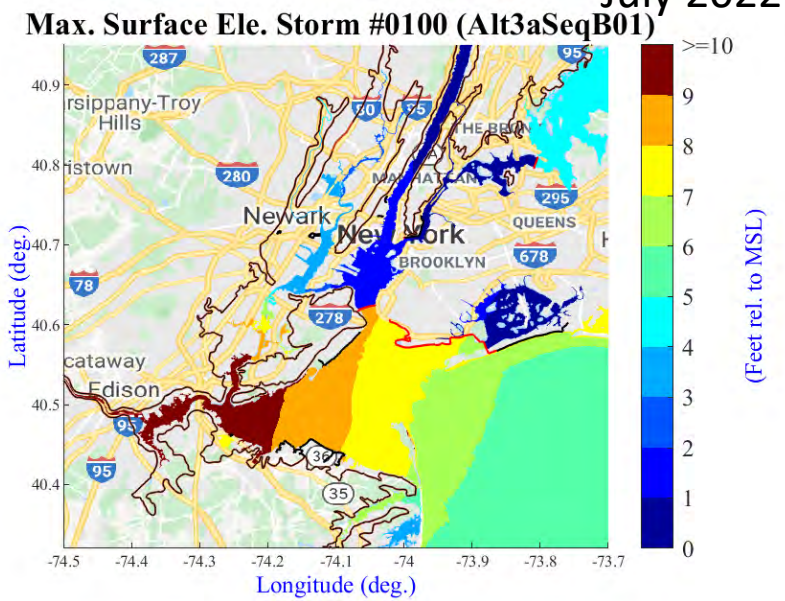


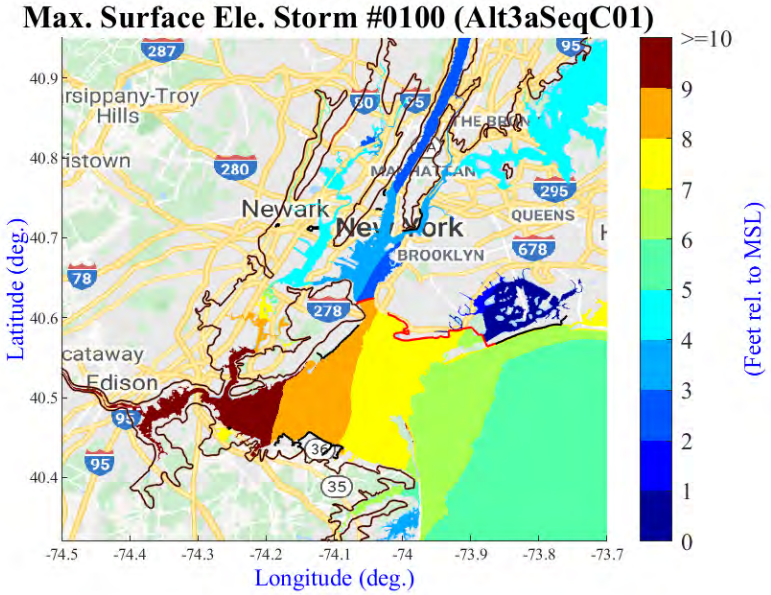


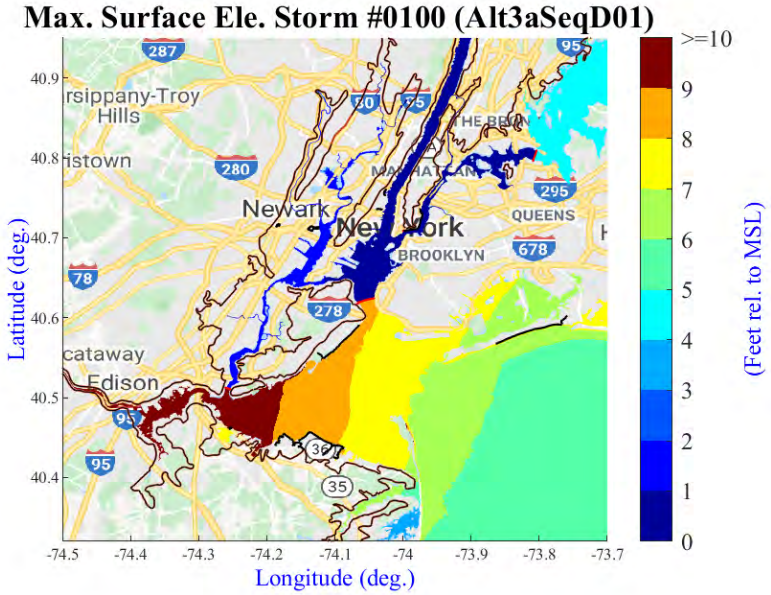
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

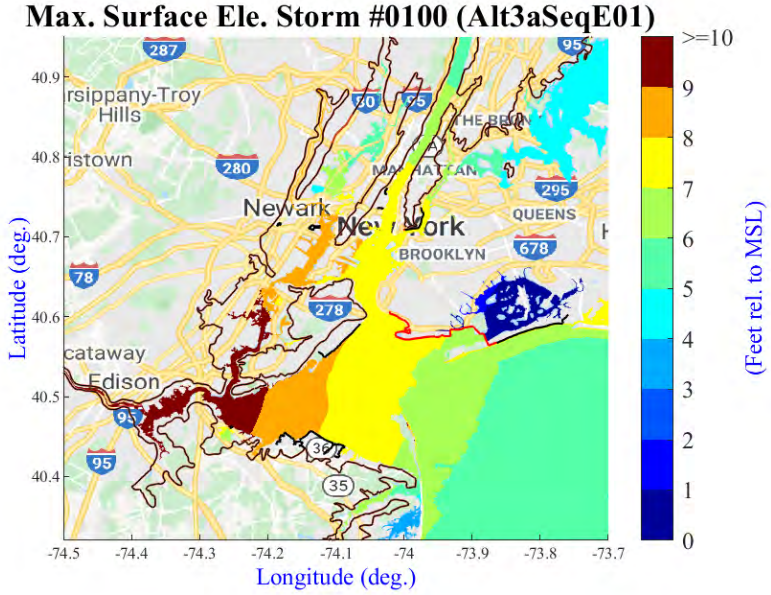




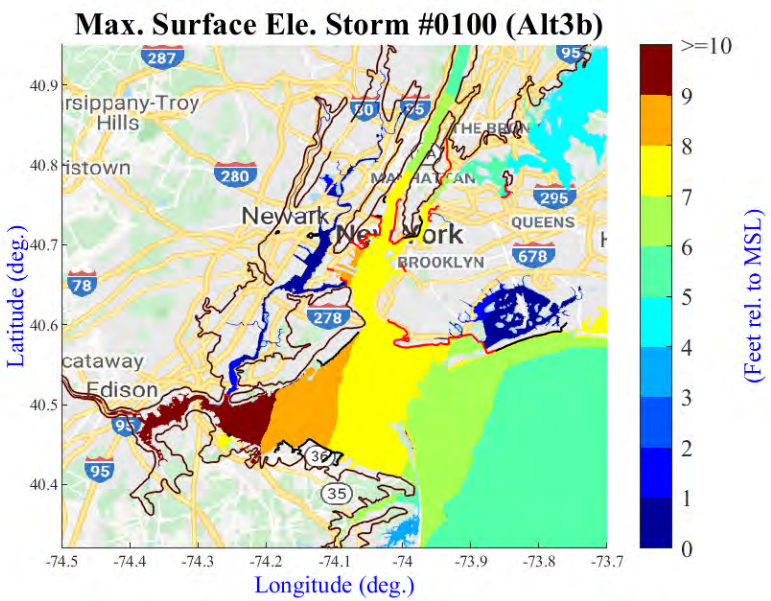


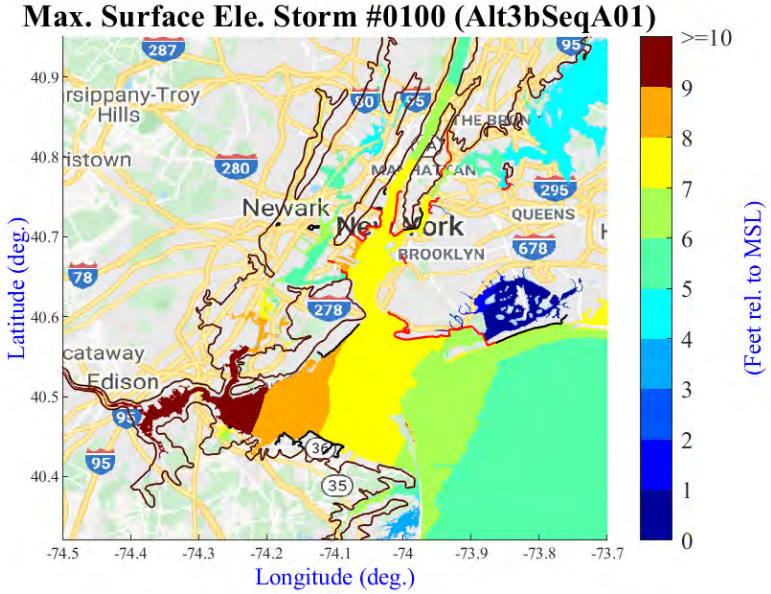


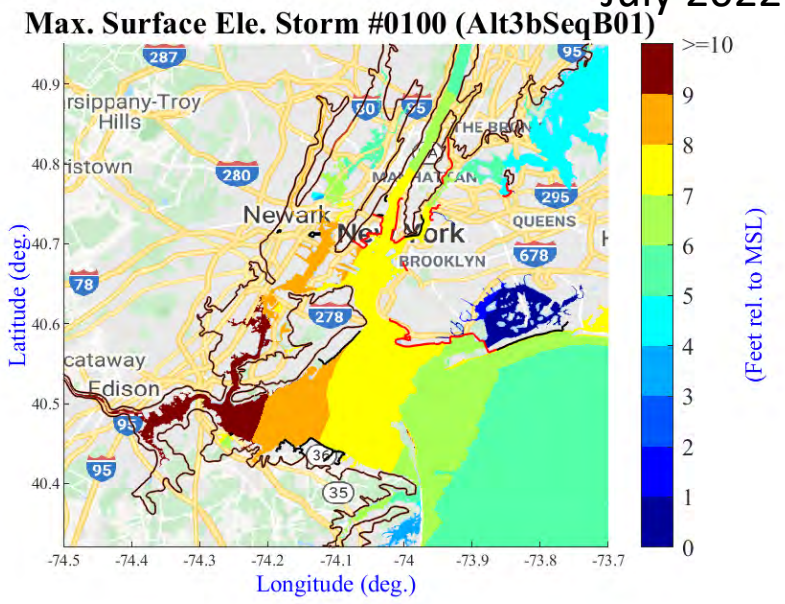


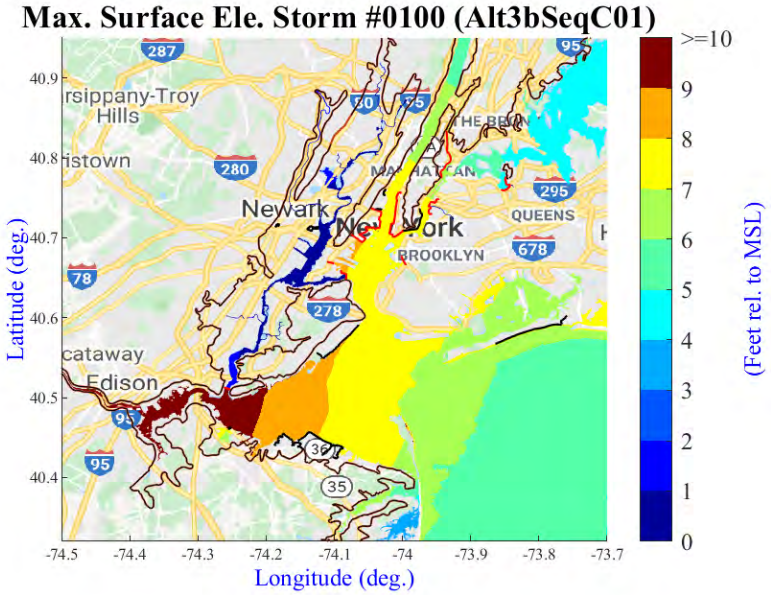


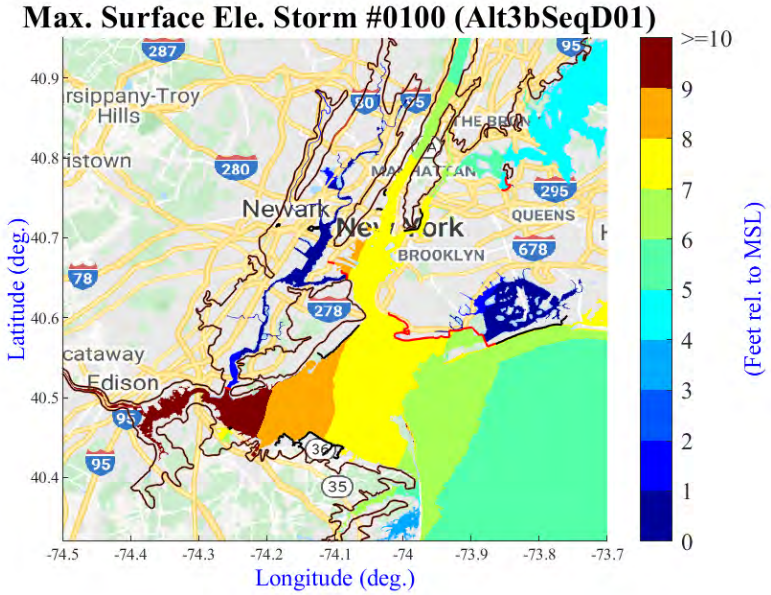
Storm #100 Alt3a







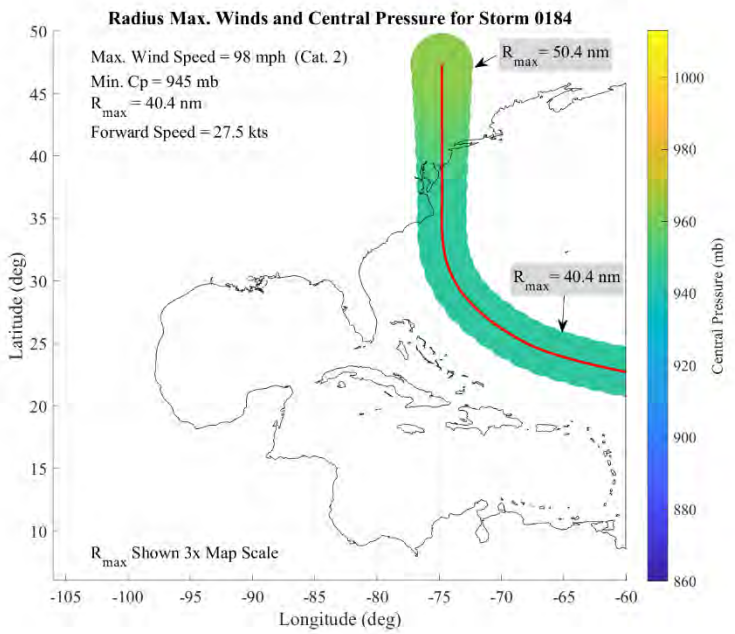




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

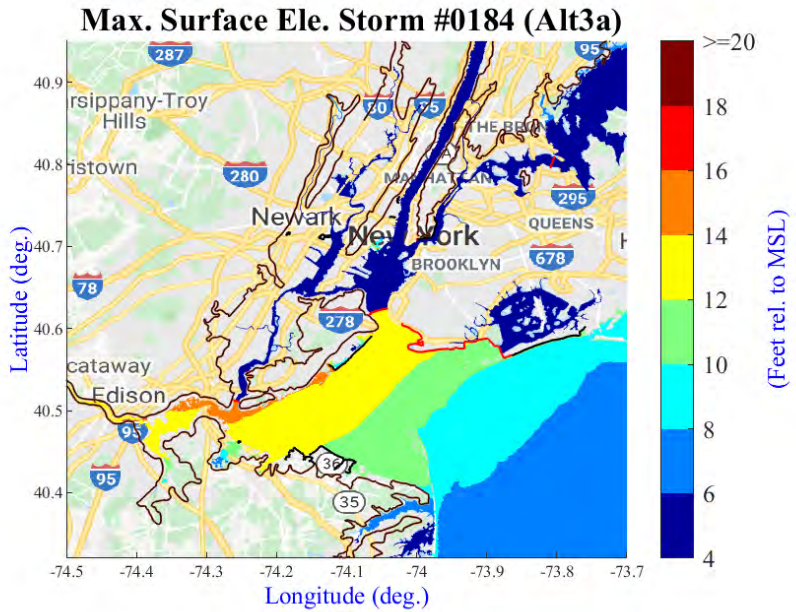
Storm #100 Alt3b

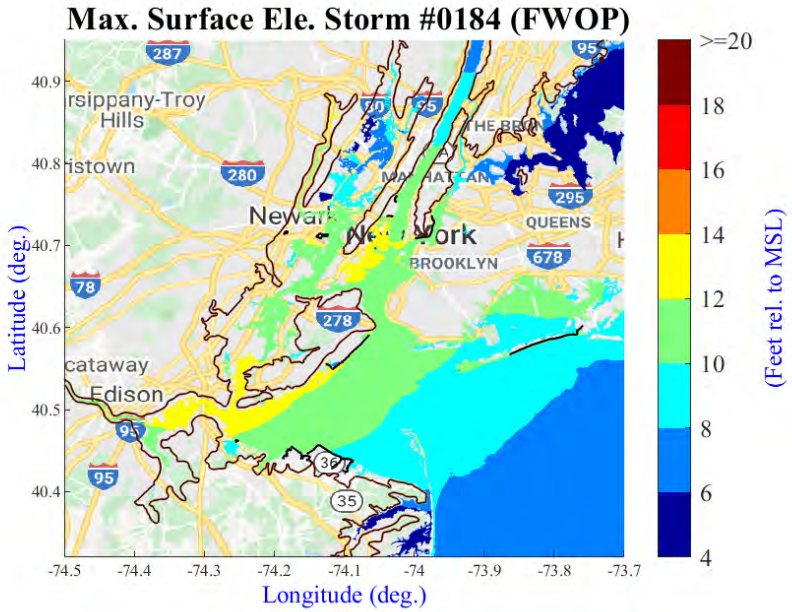
Storm #184

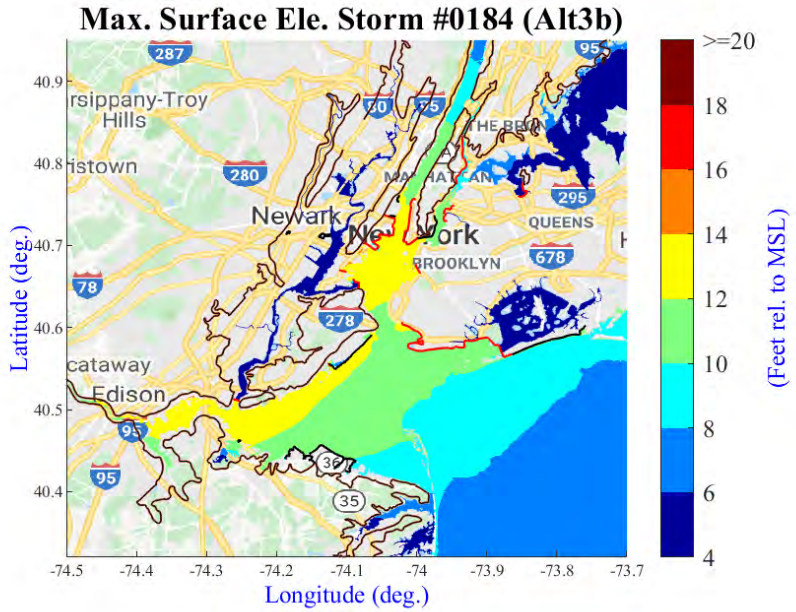


Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***945 mb***
Rmax: ***40.4 nm***
Forward Speed: ***27.5 kts***

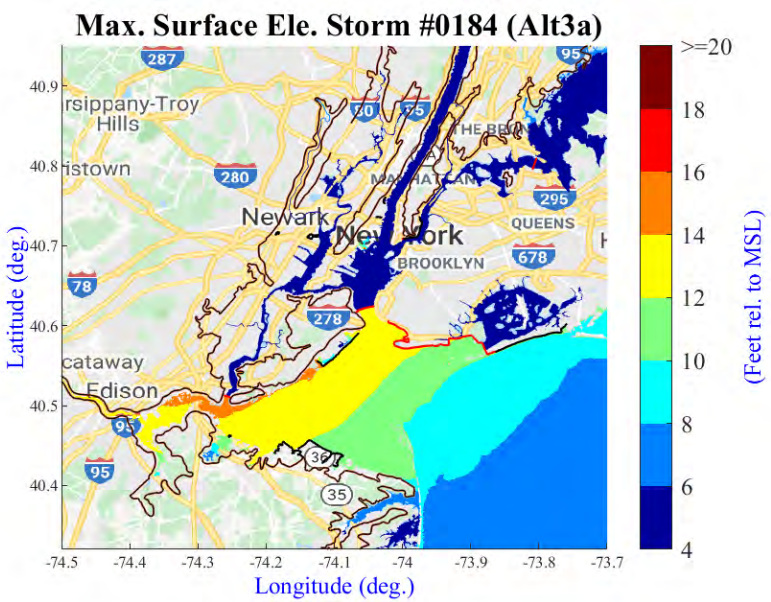
Future With Out Project:
Max. WSE at Battery: ***12.05 ft.***
Max. WSE at Kings Point: ***4.98 ft.***
Max. WSE at Sandy Hook: ***9.64 ft.***

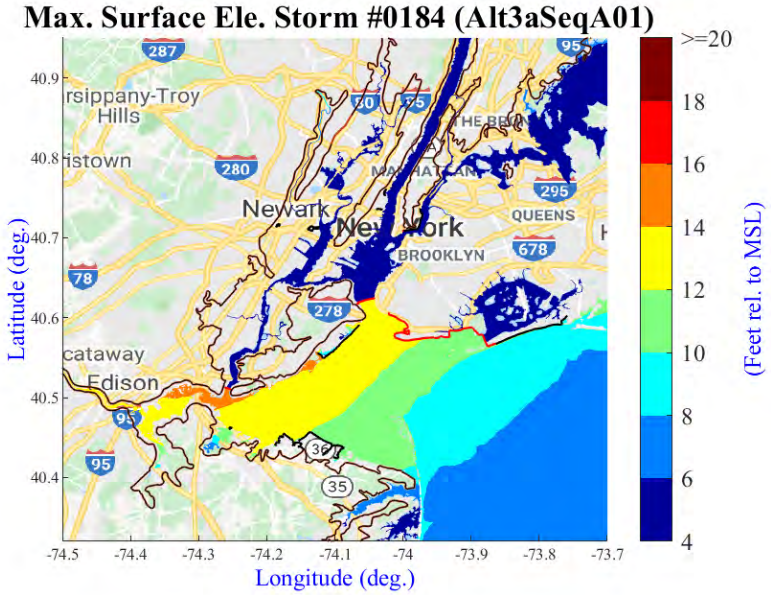


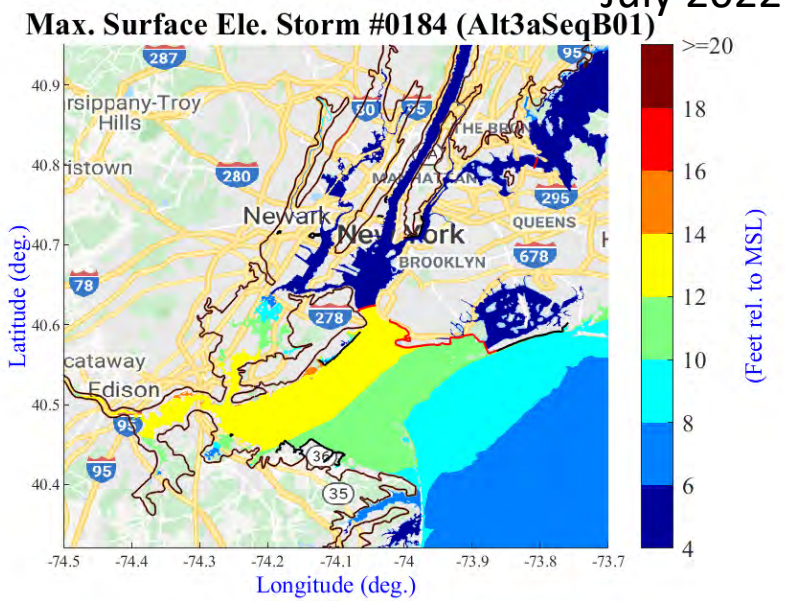


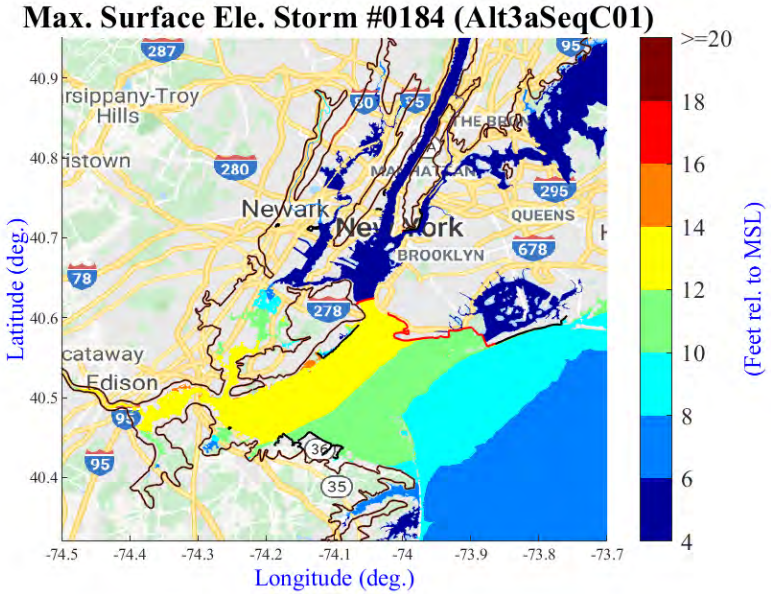


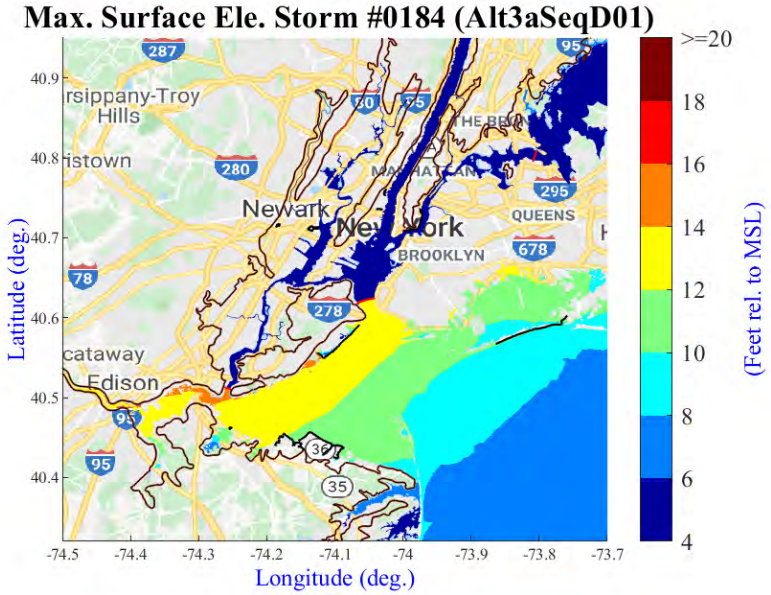
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

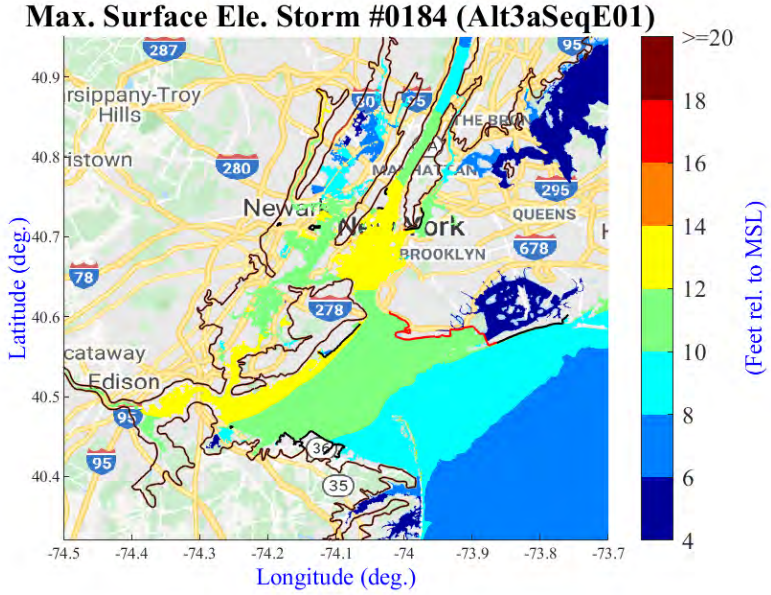




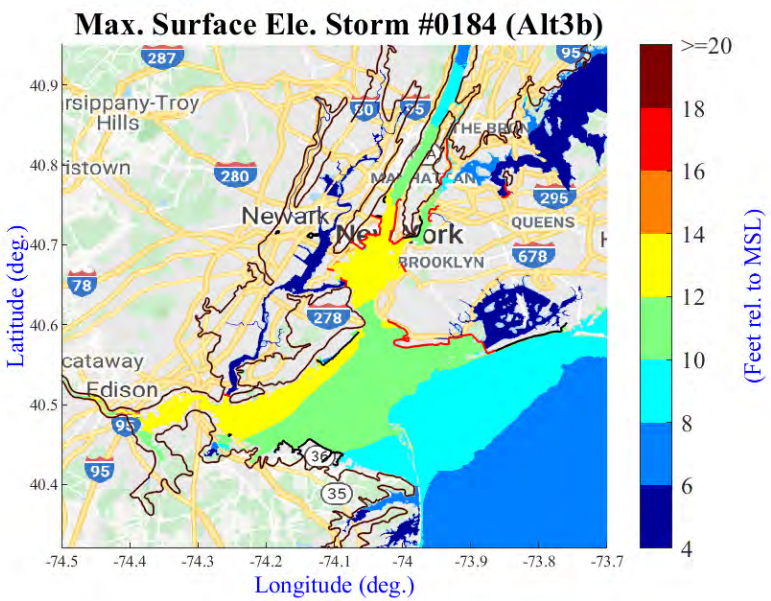


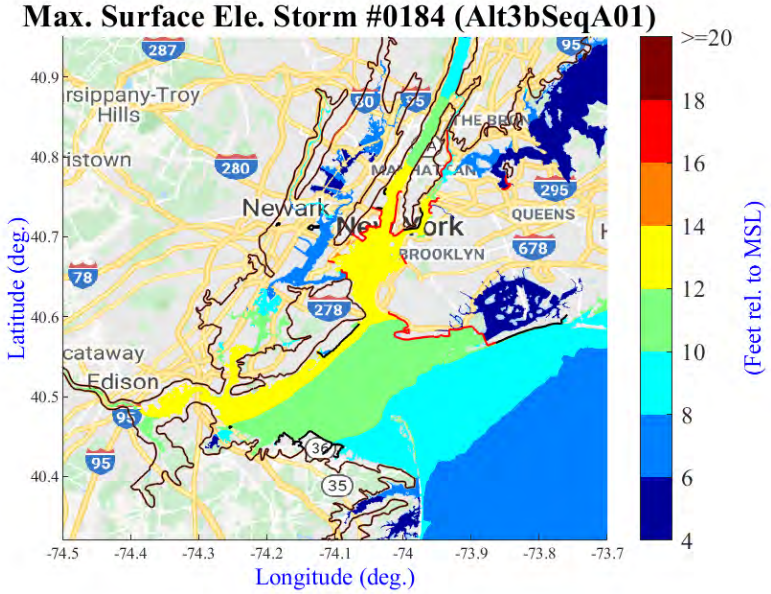


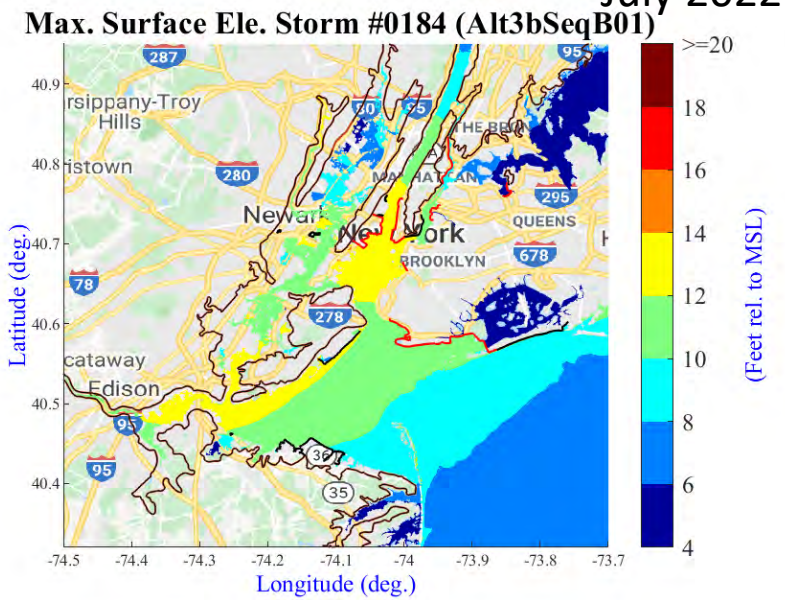


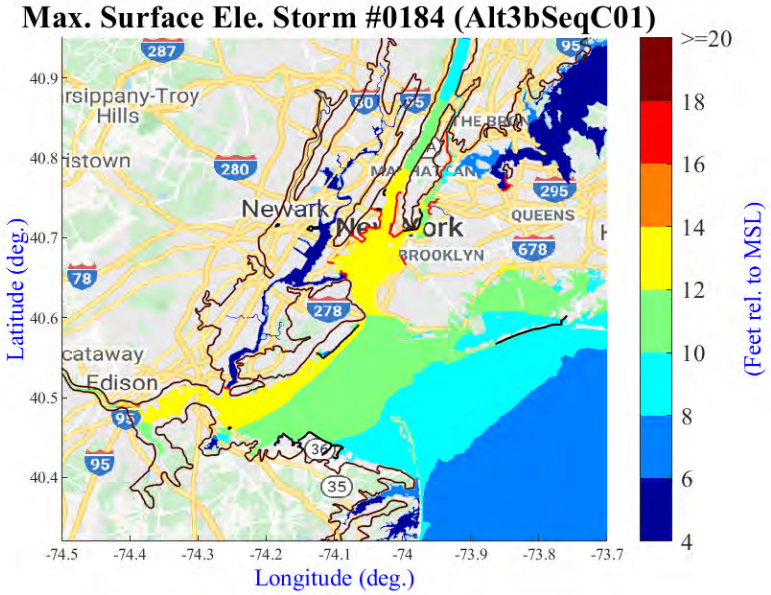


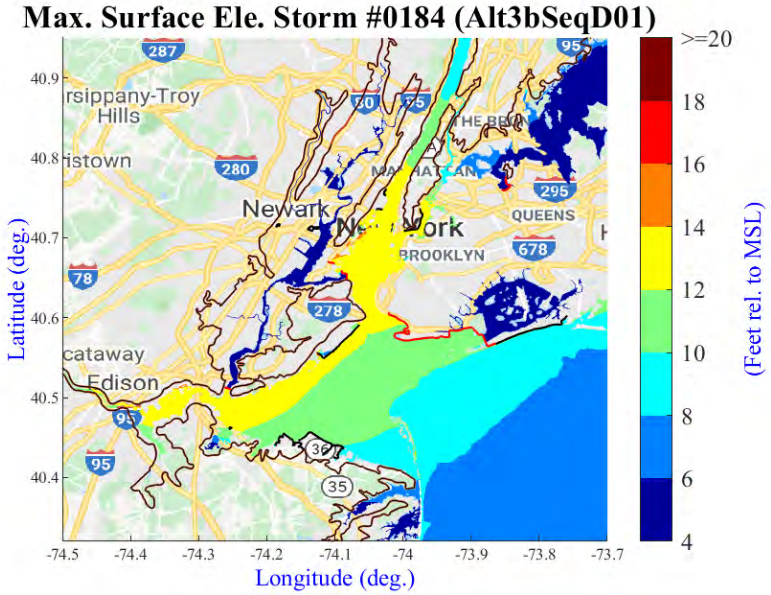
Storm #184 Alt3a







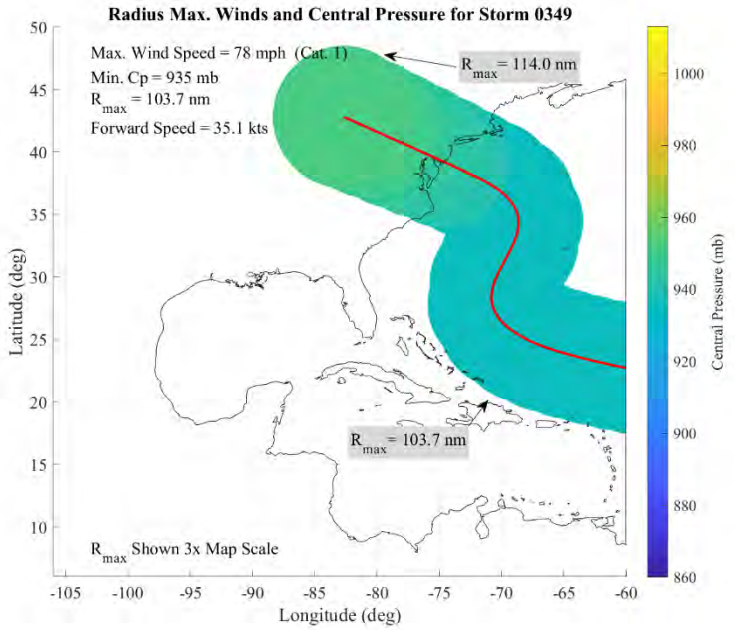




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

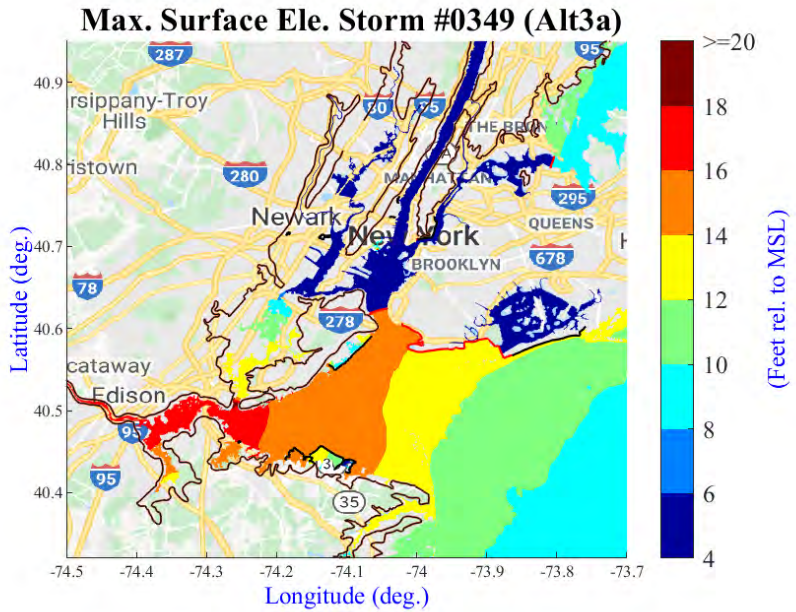
Storm #184 Alt3b

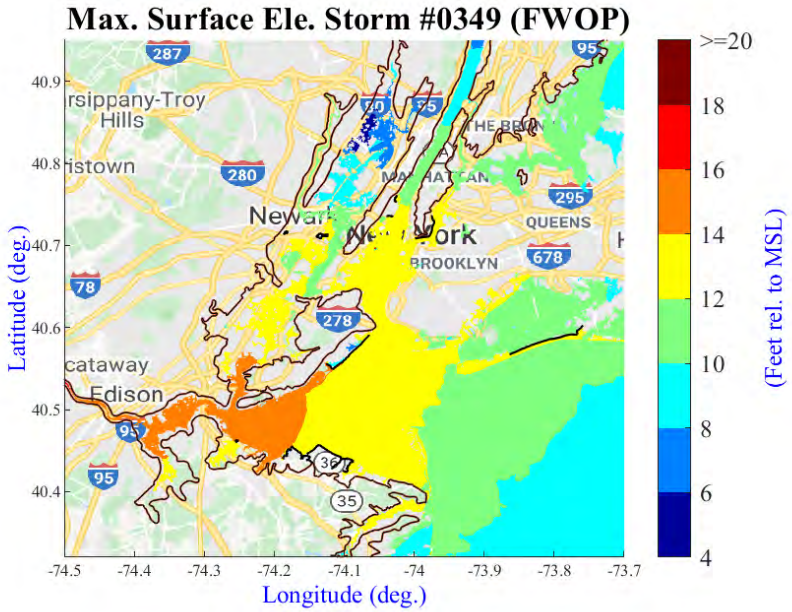
Storm #349

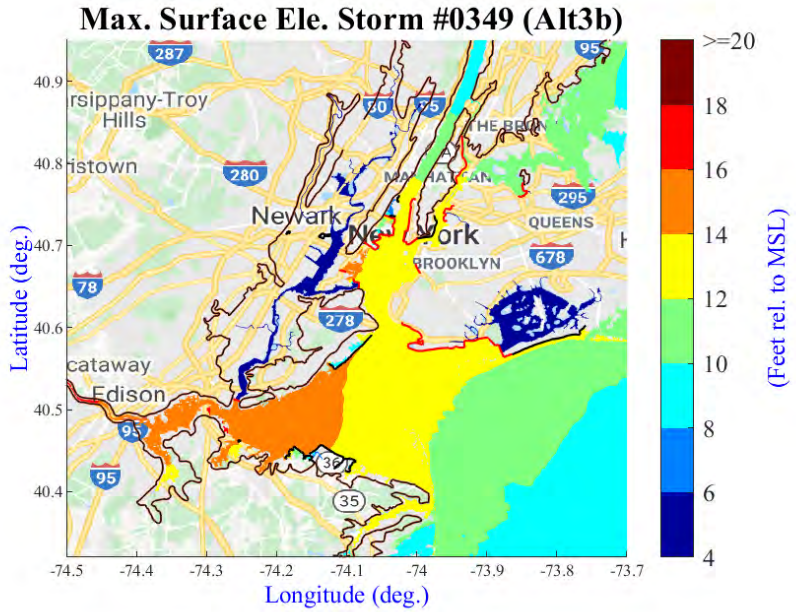


Max. Wind Speed: ***78 mph (Cat. 1)***
Min. Cp: ***935 mb***
Rmax: ***103.7 nm***
Forward Speed: ***35.1 kts***

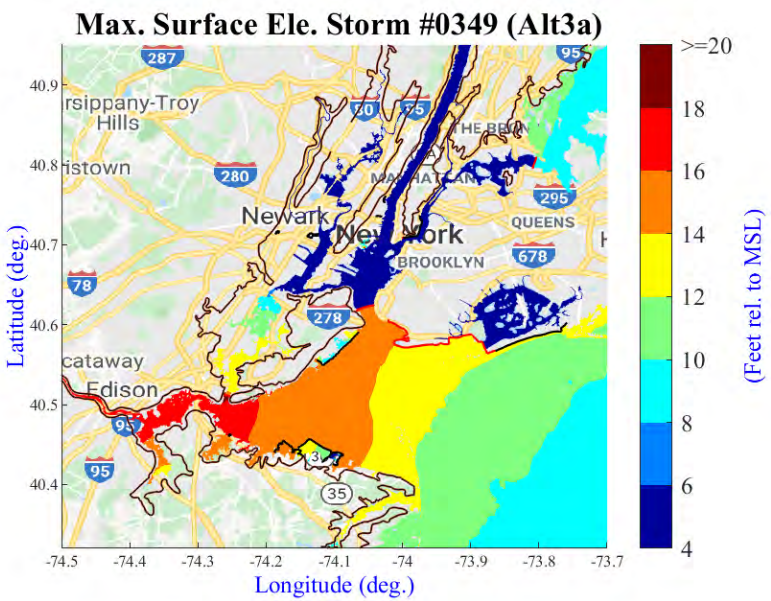
Future With Out Project:
Max. WSE at Battery: ***12.90 ft.***
Max. WSE at Kings Point: ***10.15 ft.***
Max. WSE at Sandy Hook: ***12.65 ft.***

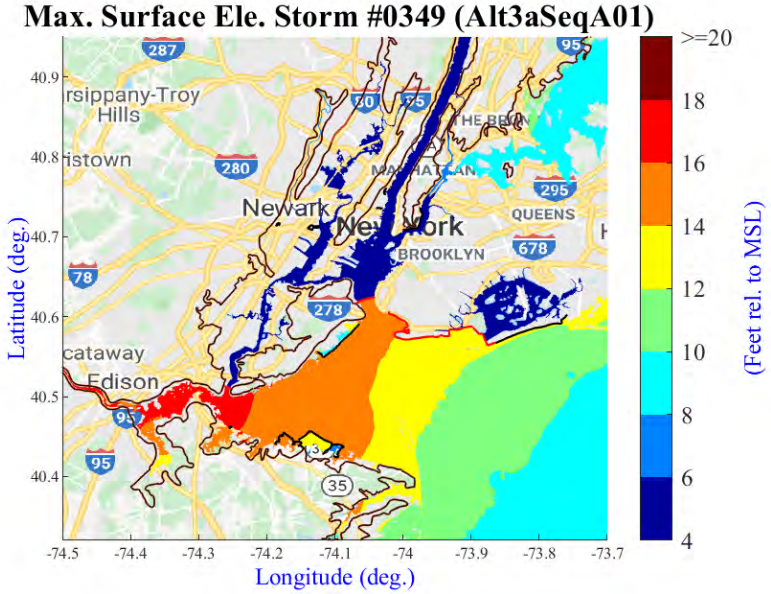


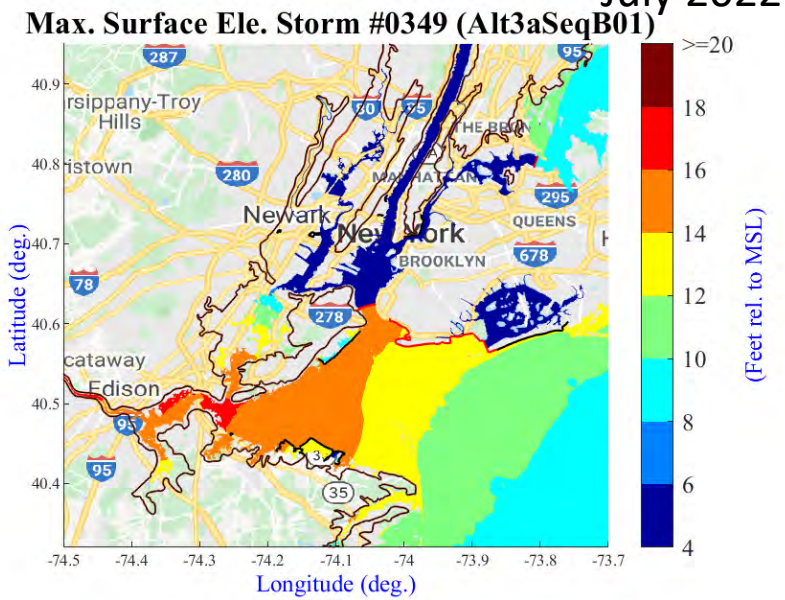


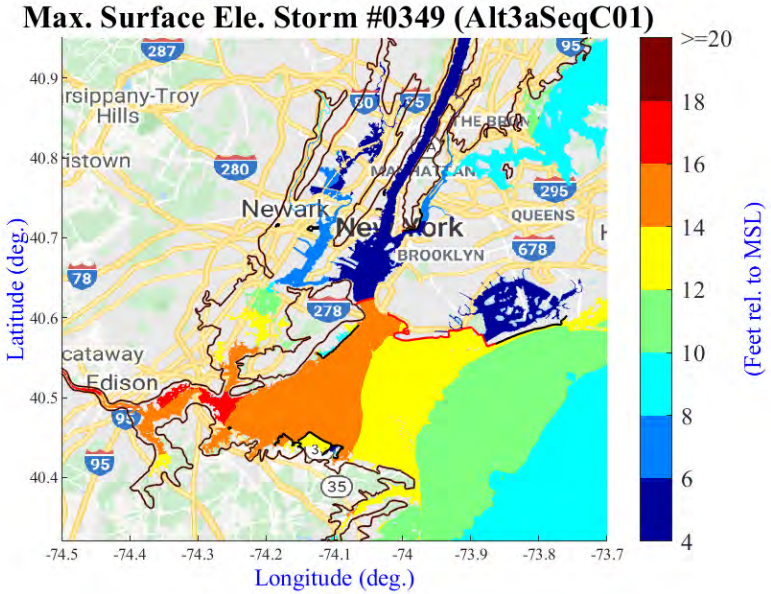


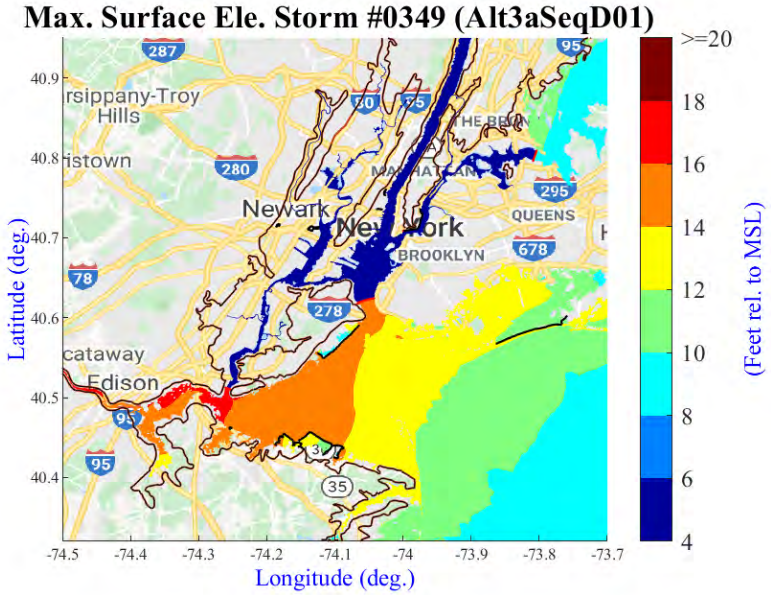
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

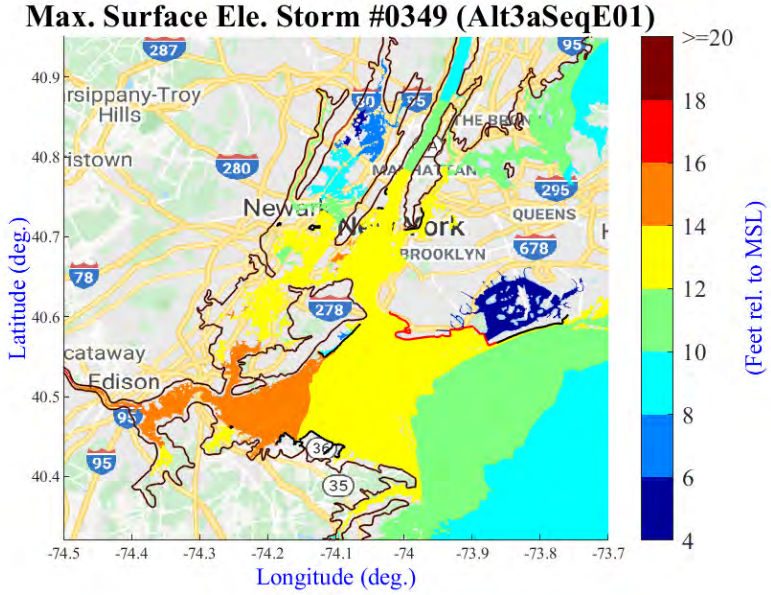




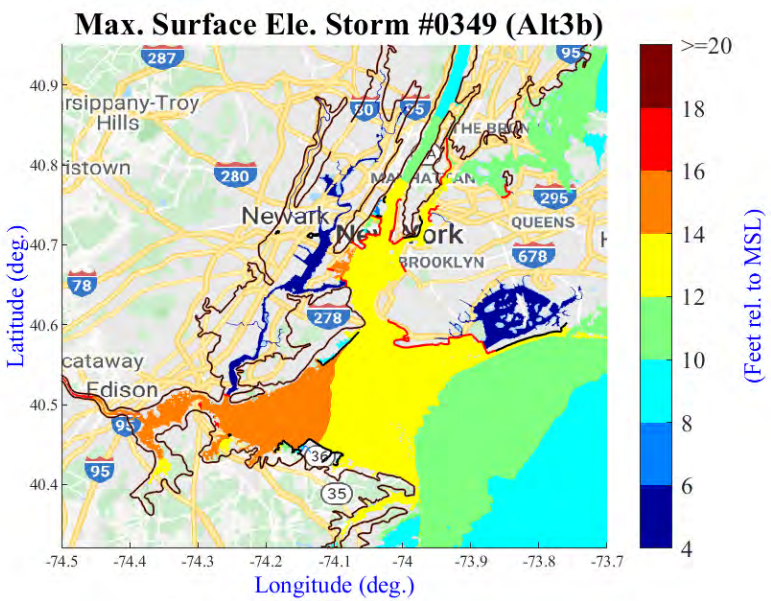


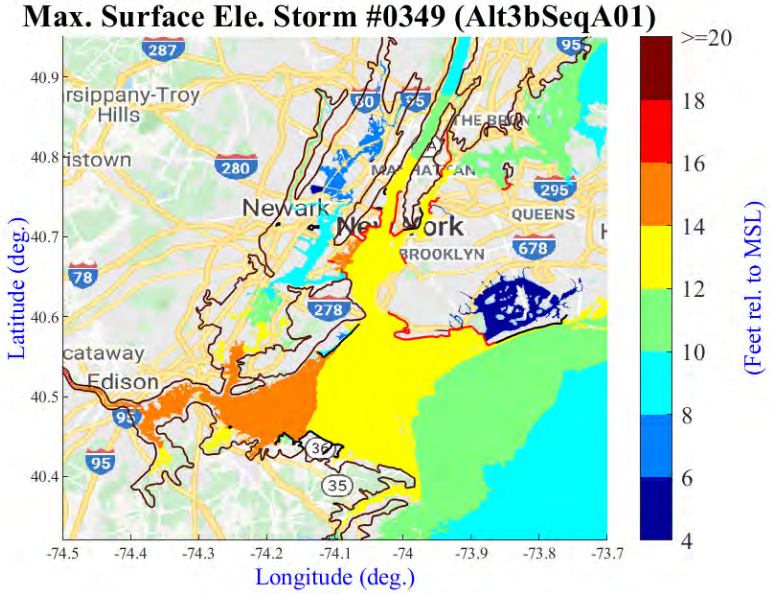


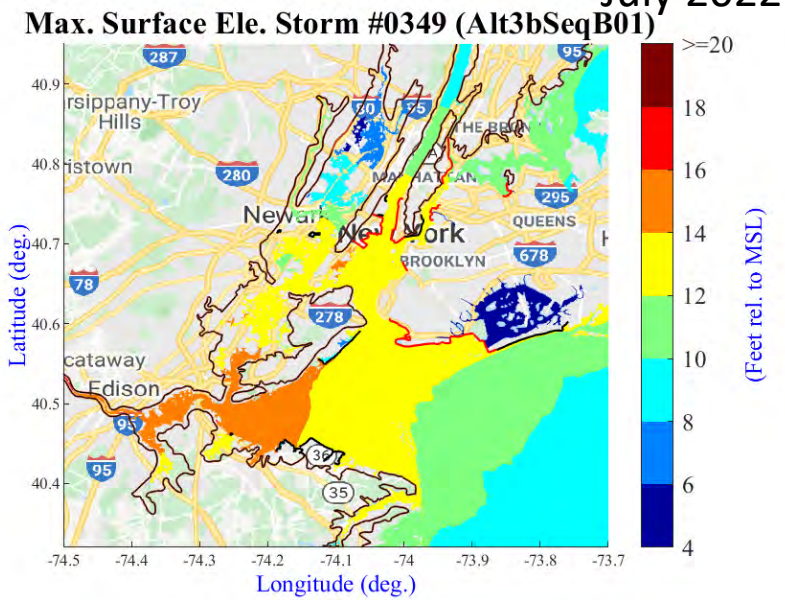


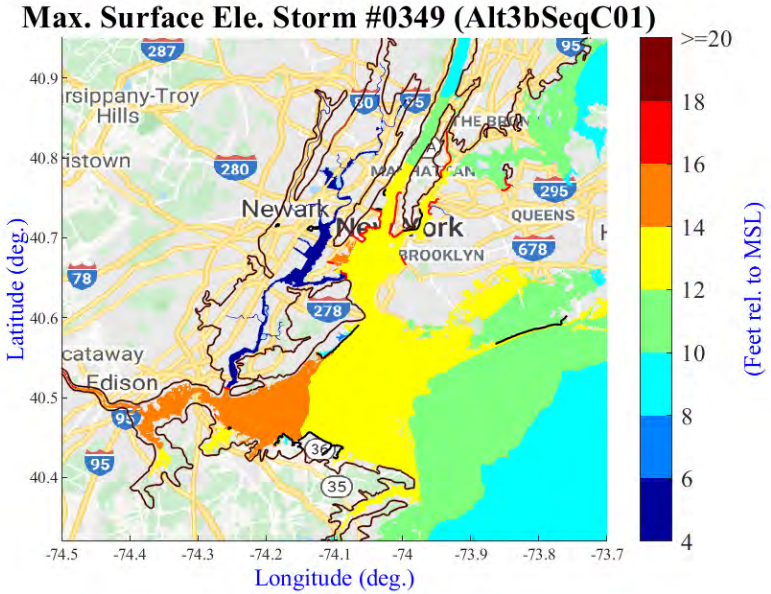


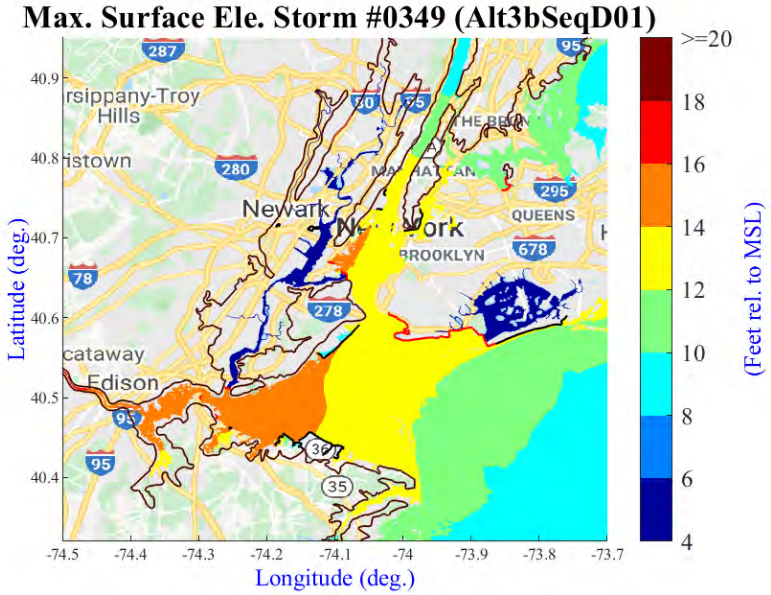
Storm #349 Alt3a







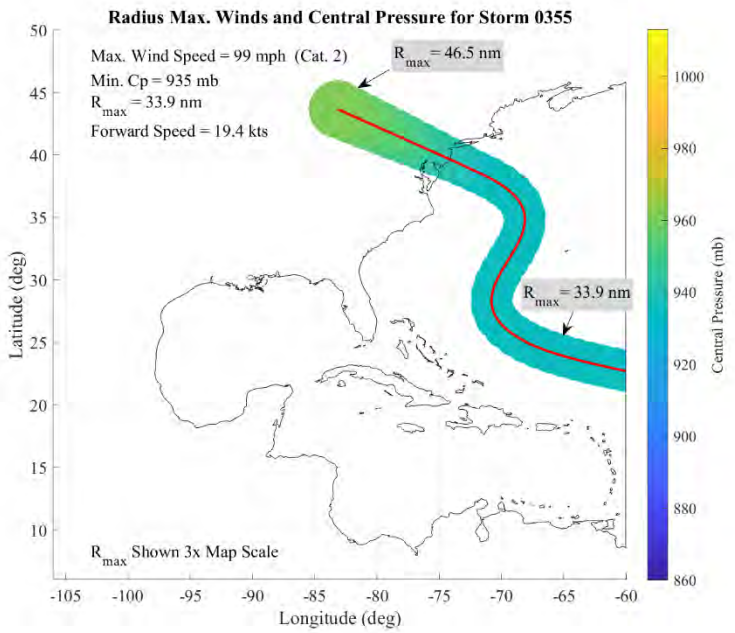




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

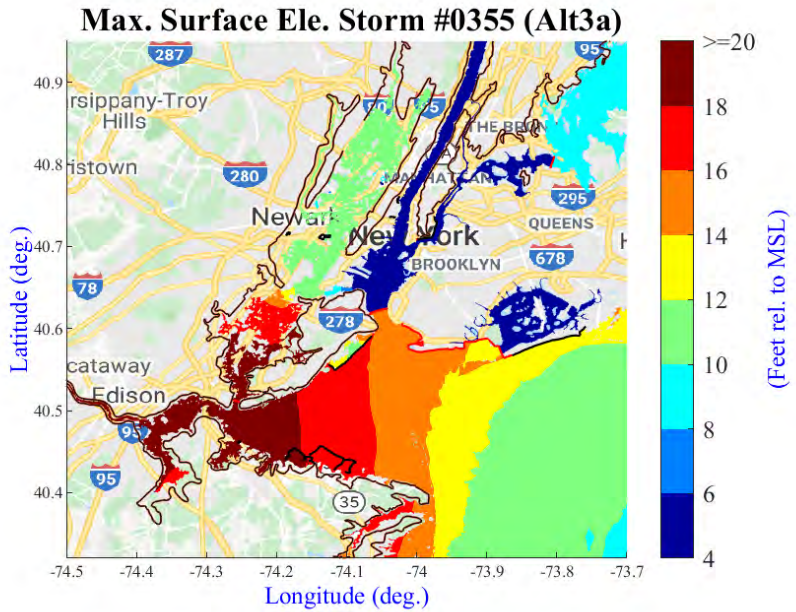
Storm #349 Alt3b

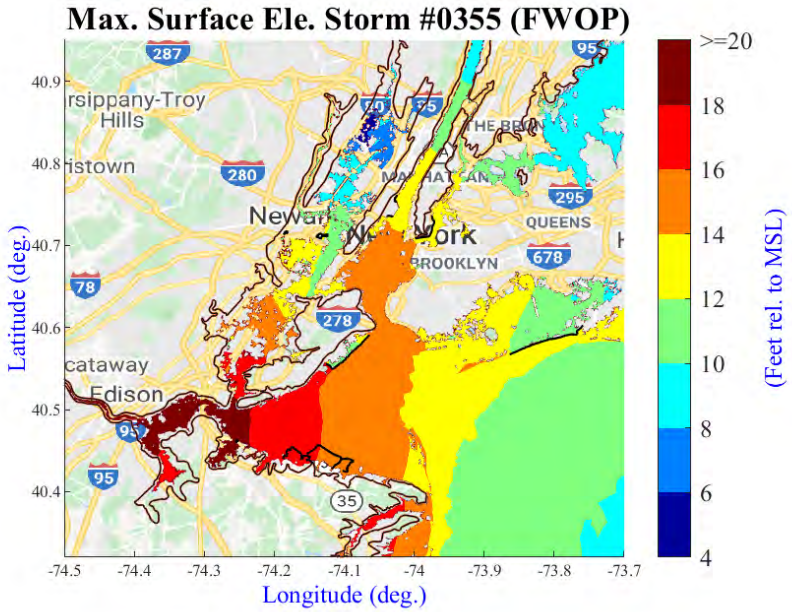
Storm #355

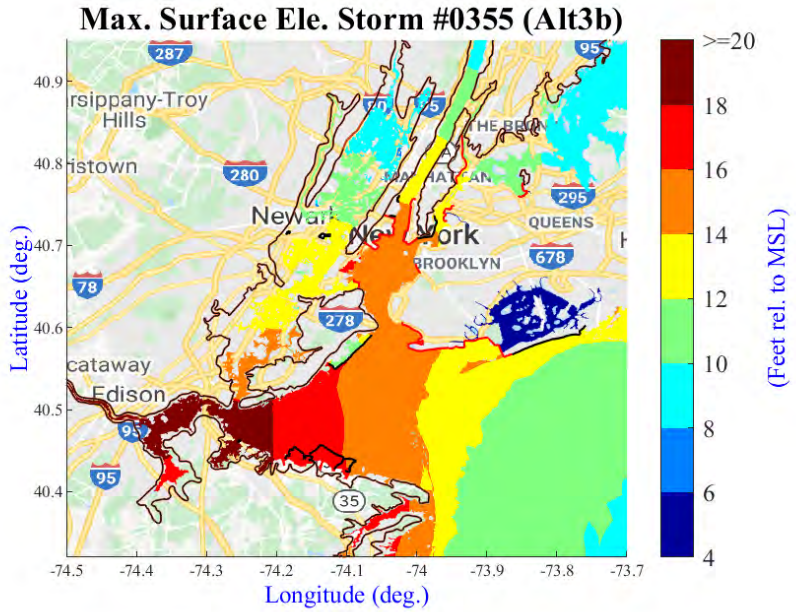


Max. Wind Speed: ***99 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***33.9 nm***
Forward Speed: ***19.4 kts***

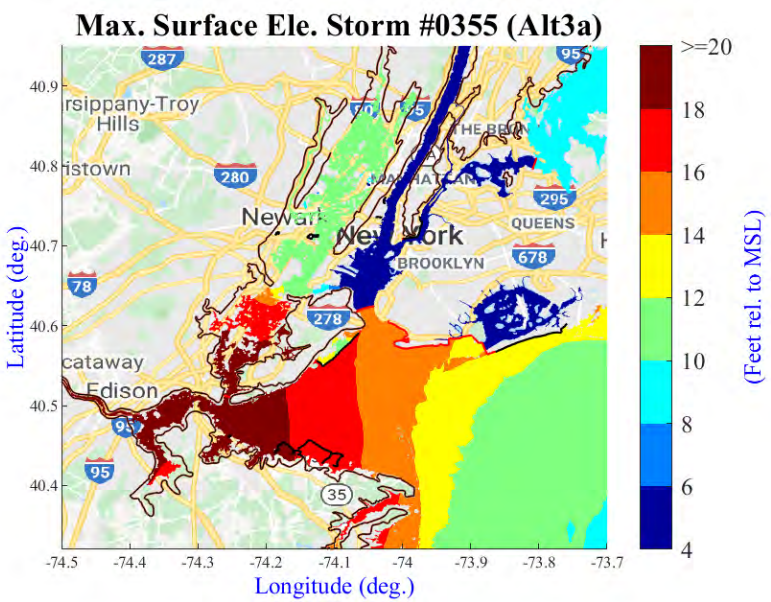
Future With Out Project:
Max. WSE at Battery: ***14.17 ft.***
Max. WSE at Kings Point: ***9.36 ft.***
Max. WSE at Sandy Hook: ***14.06 ft.***

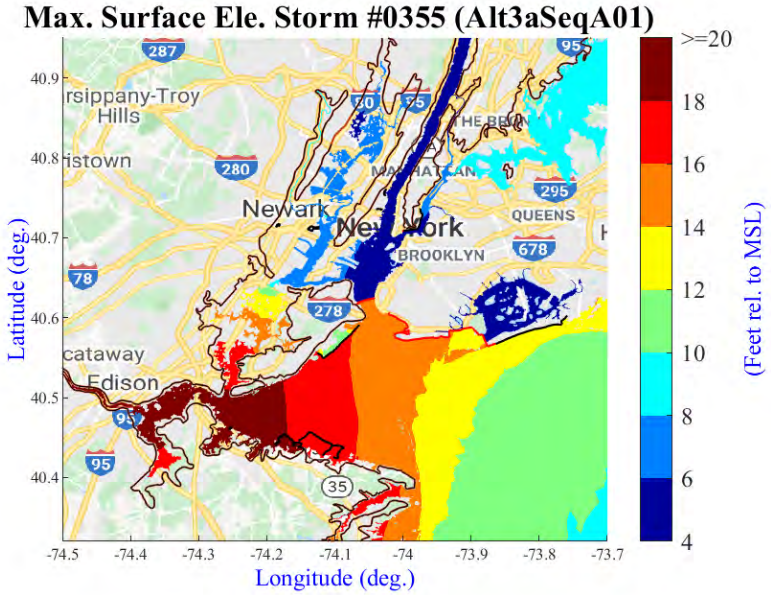


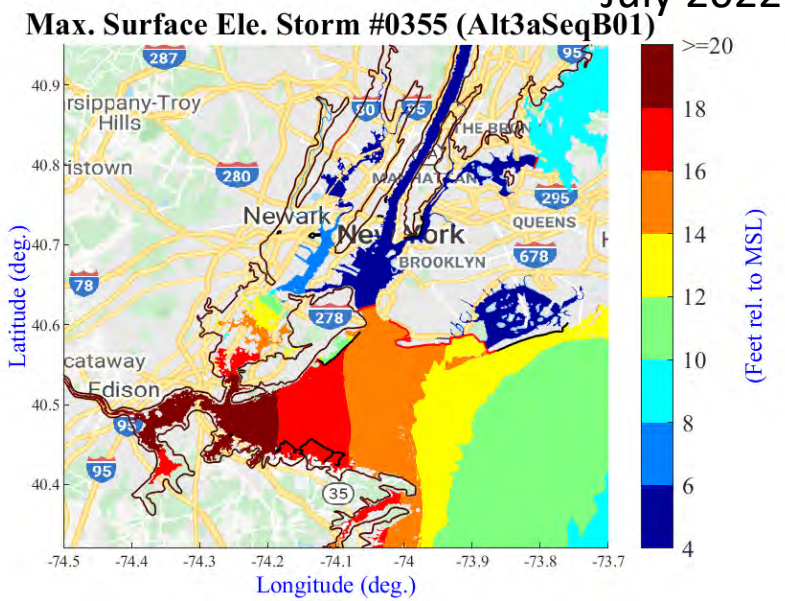


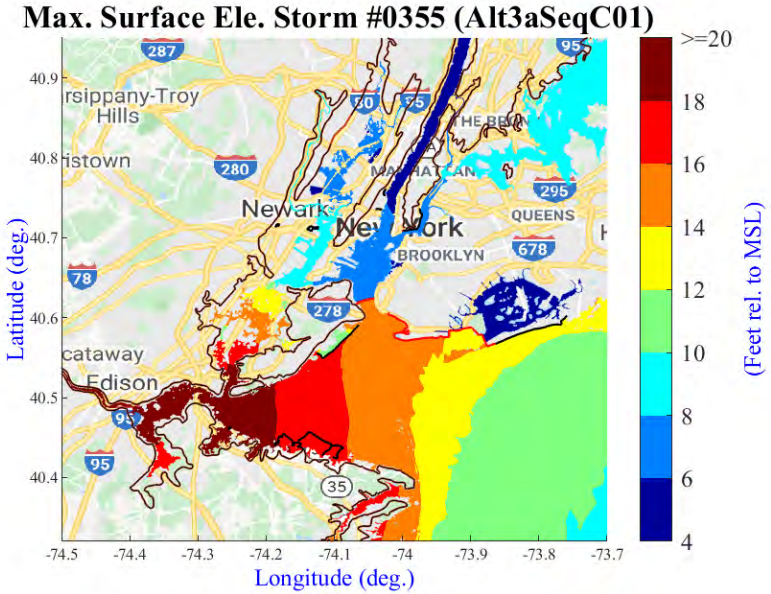


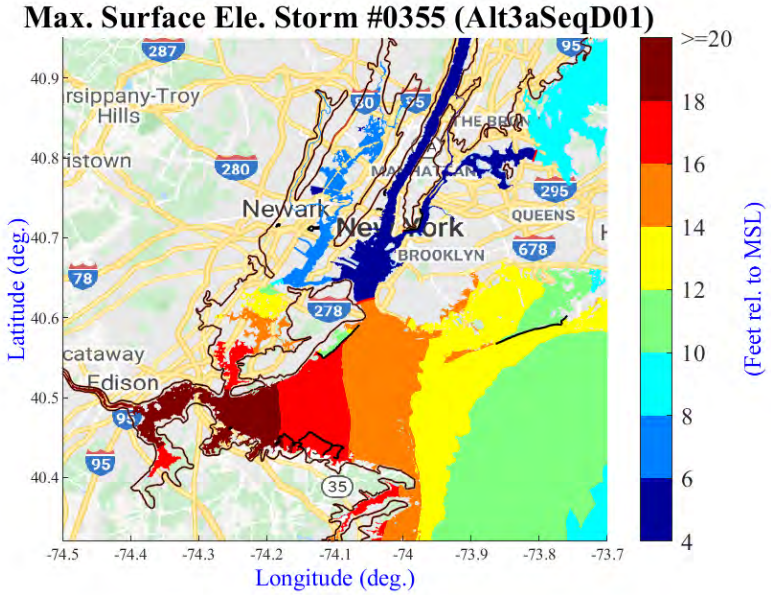
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

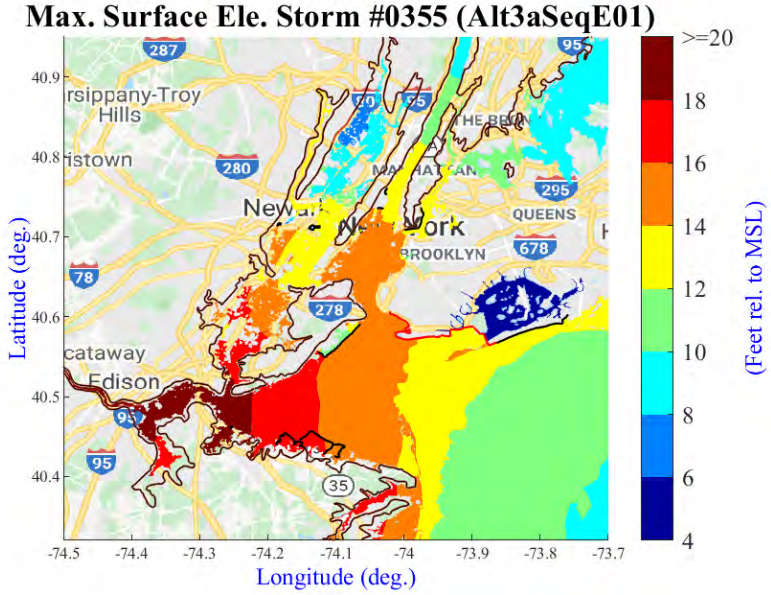




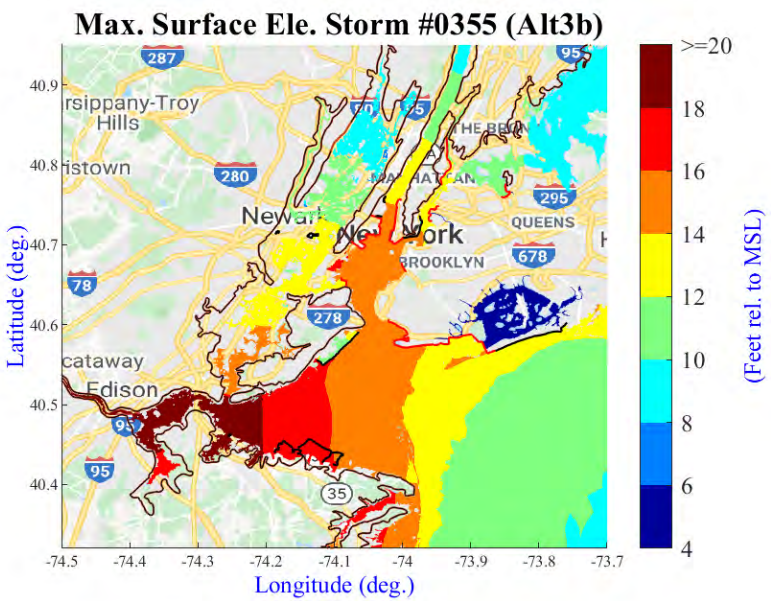


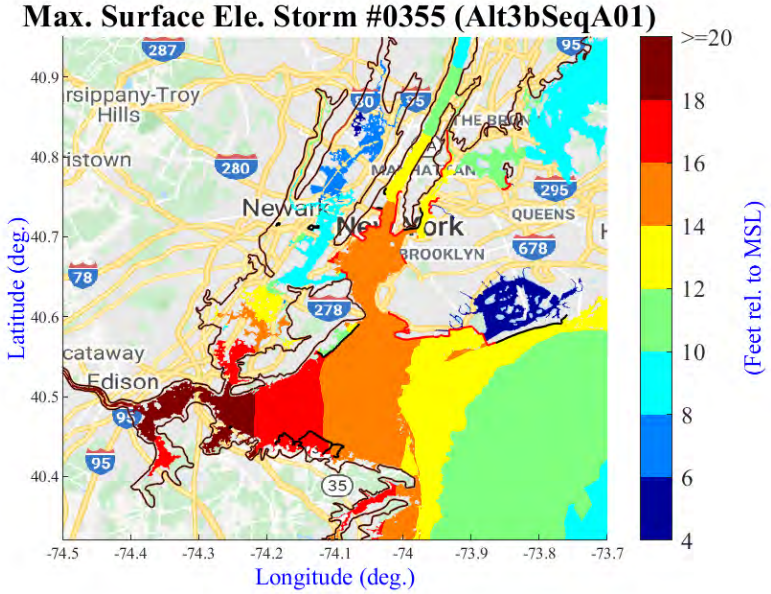


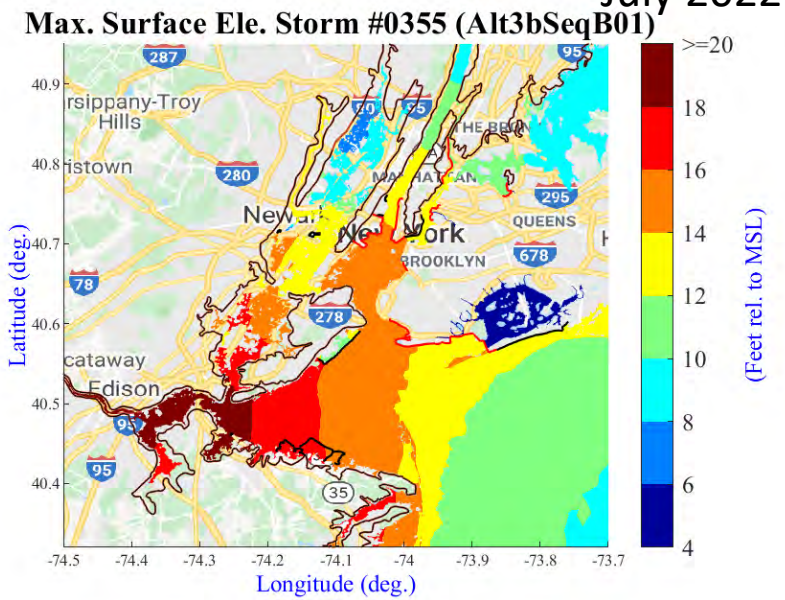


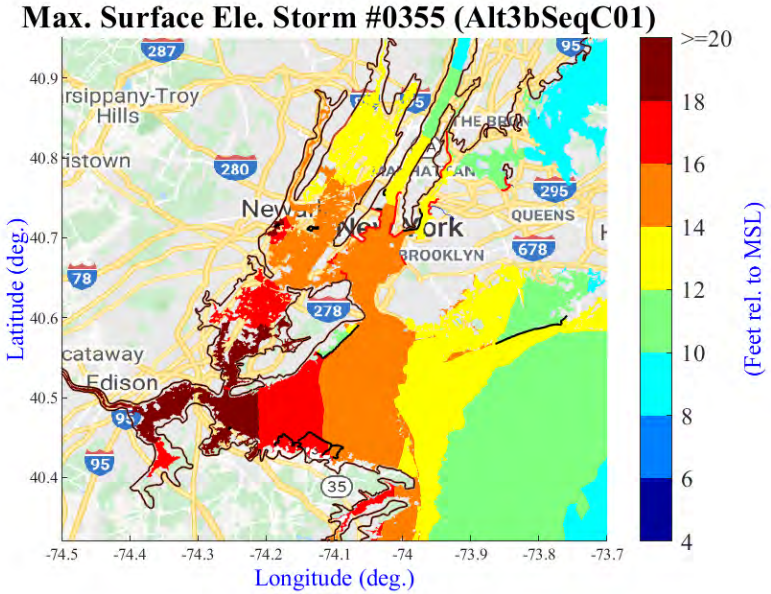


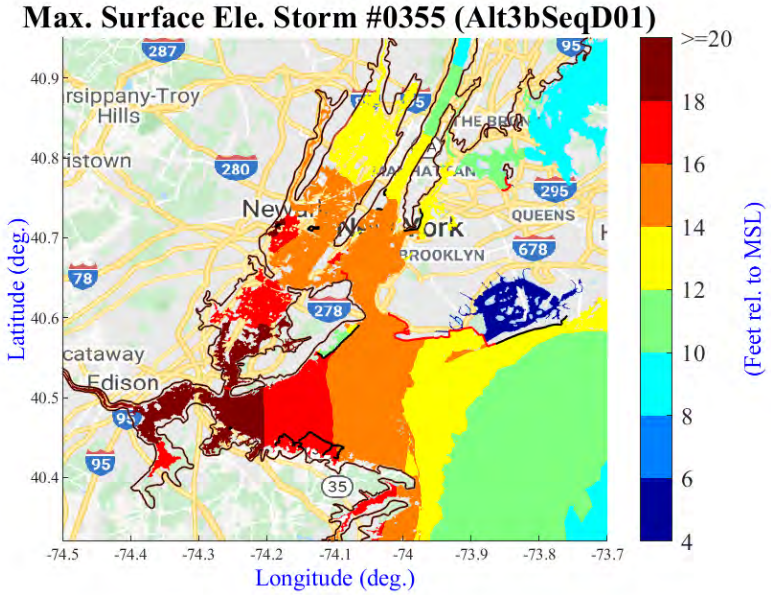
Storm #355 Alt3a







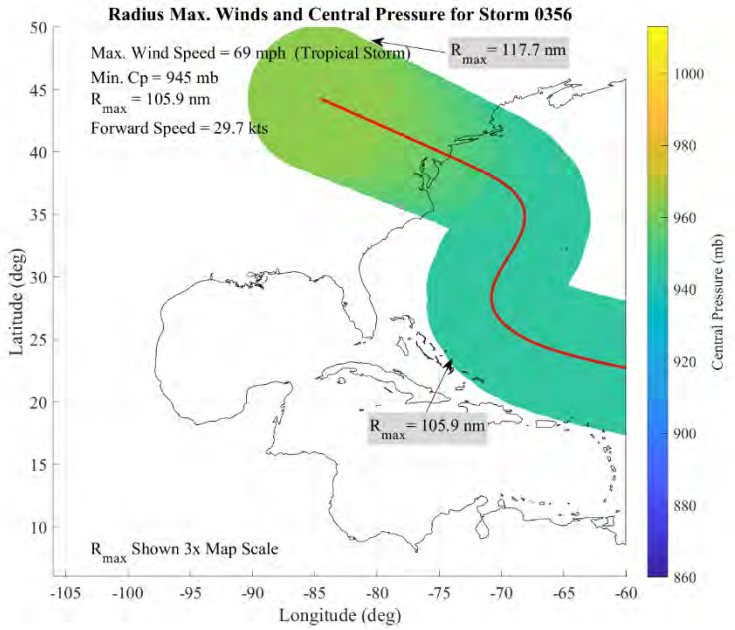




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #355 Alt3b

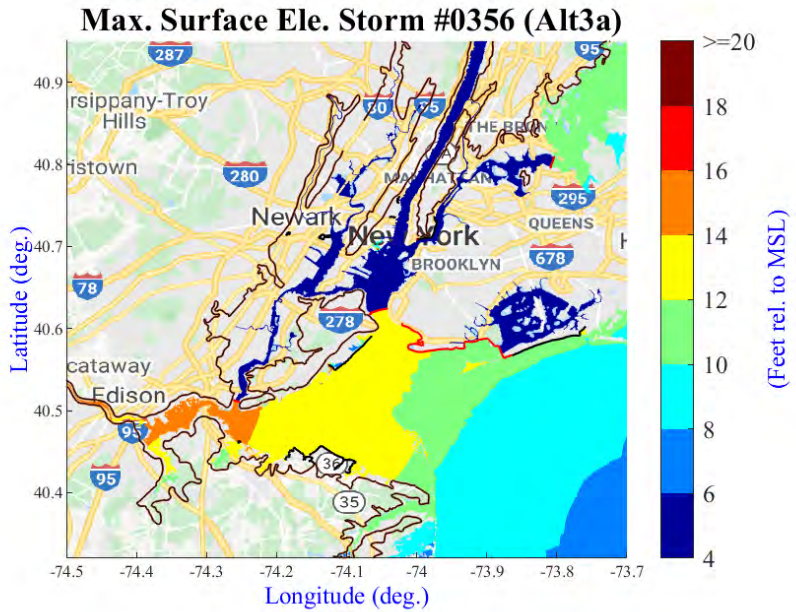
Storm #356

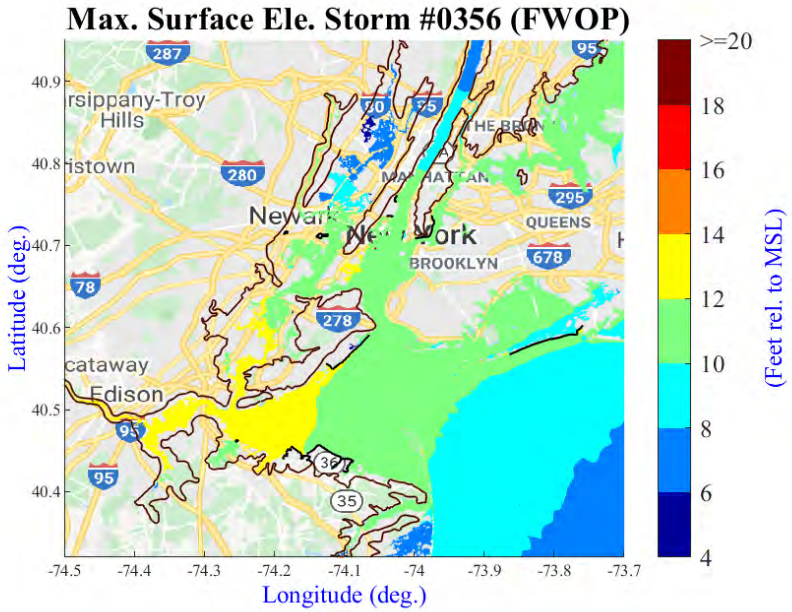


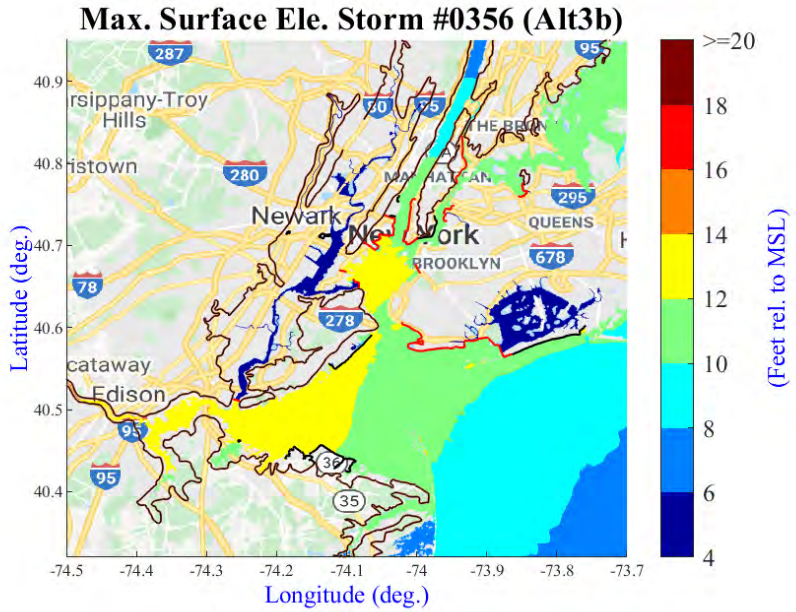
Max. Wind Speed: ***69 mph (Tropical Storm)***

Min. Cp: ***945 mb***
Rmax: ***105.9 nm***
Forward Speed: ***29.7 kts***

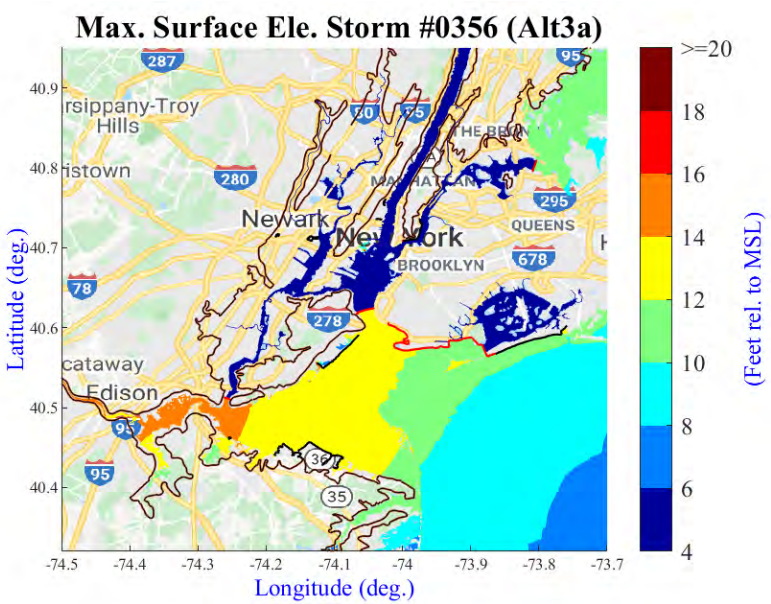
Future With Out Project:
Max. WSE at Battery: ***11.51 ft.***
Max. WSE at Kings Point: ***10.30 ft.***
Max. WSE at Sandy Hook: ***11.00 ft.***

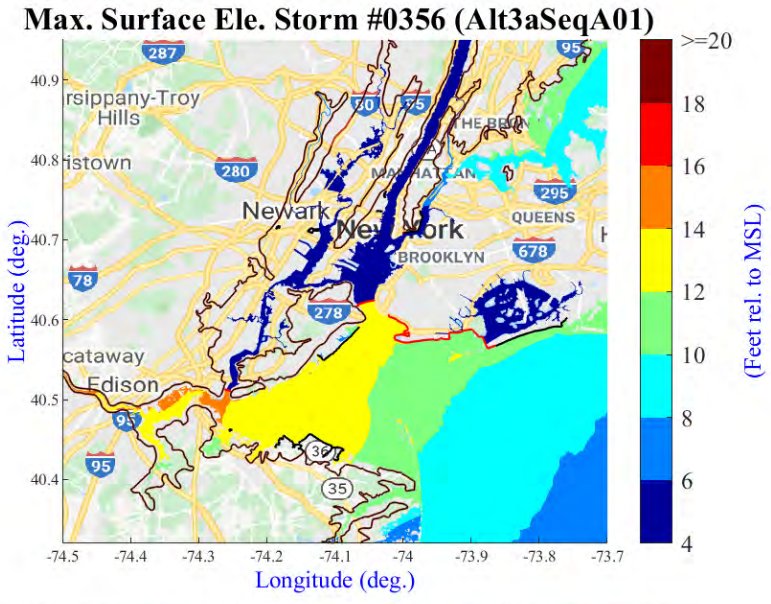


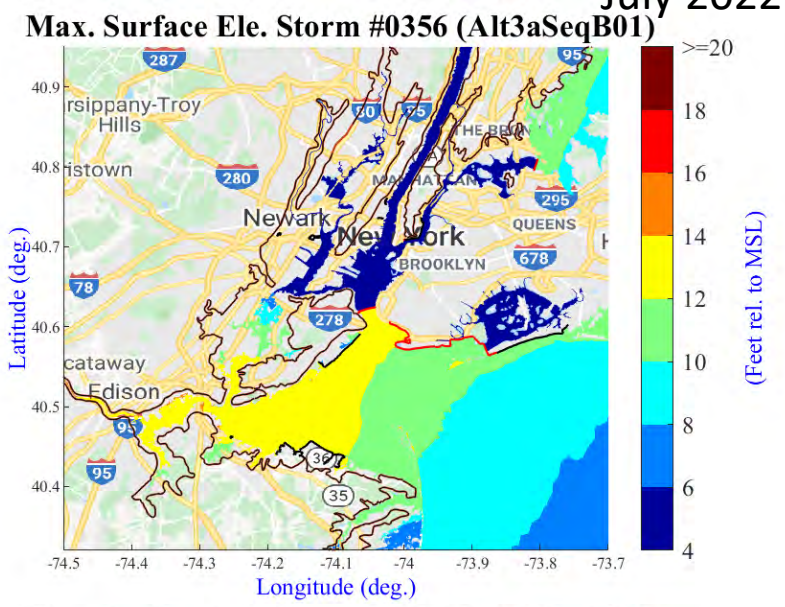


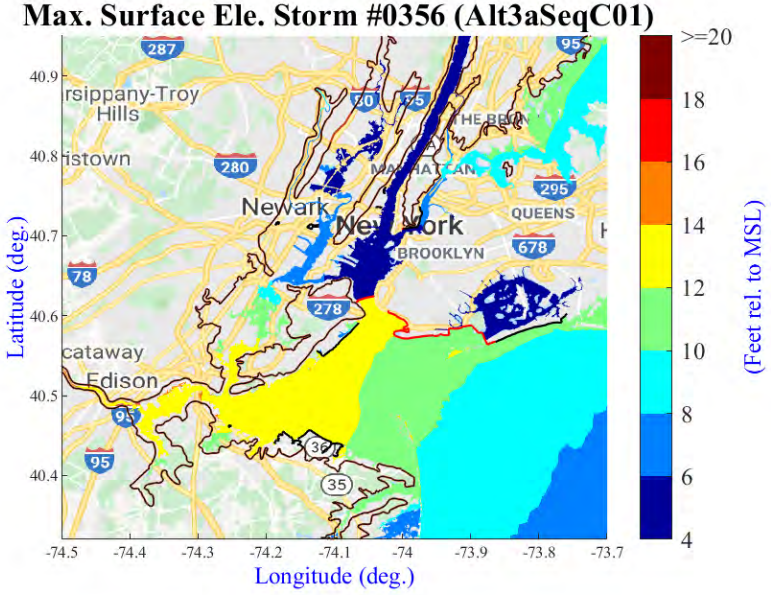


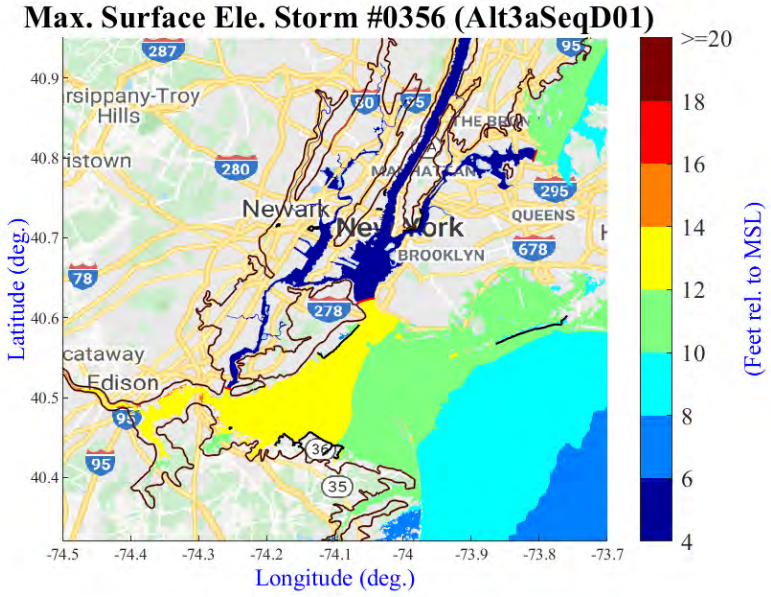
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

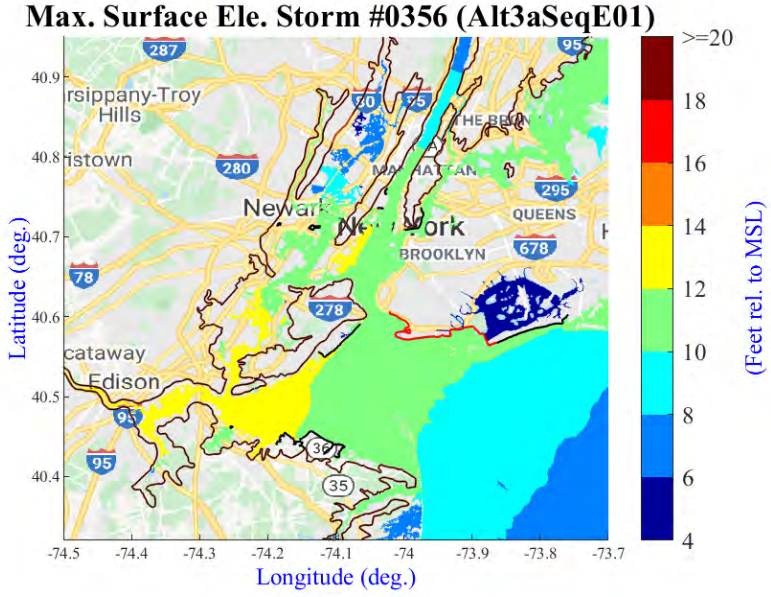




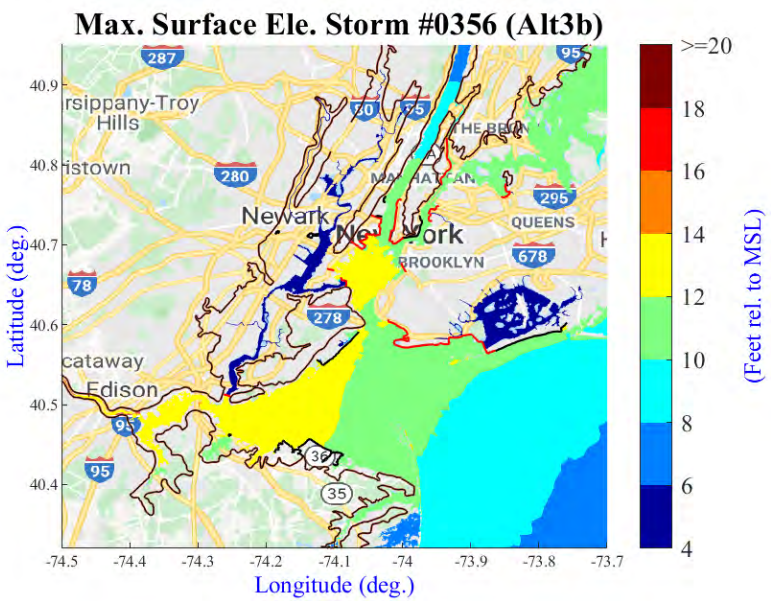


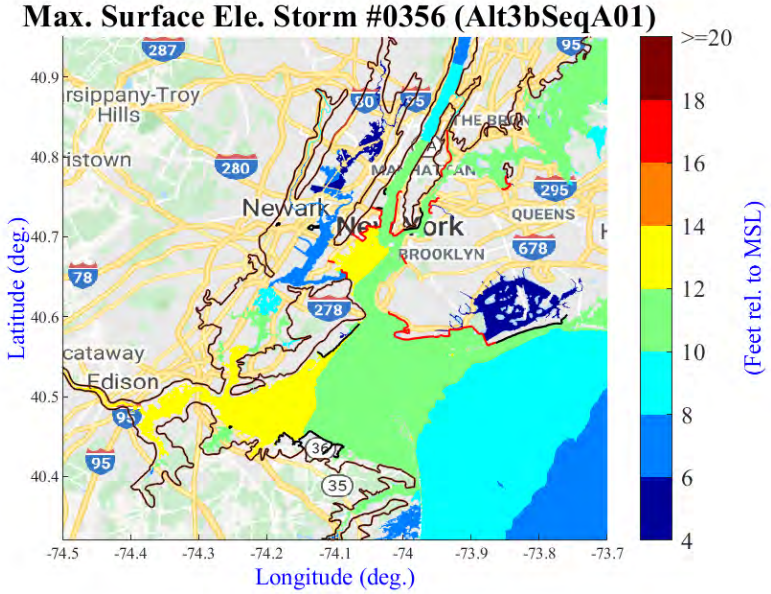


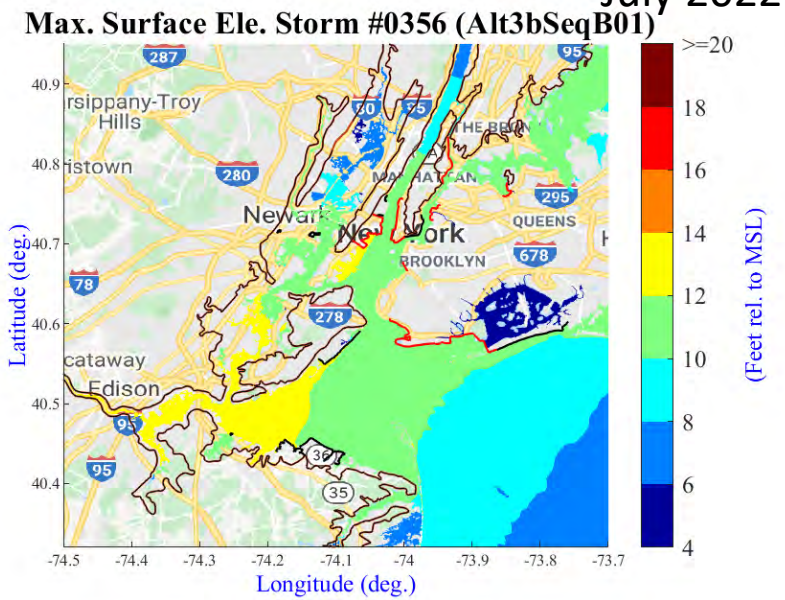


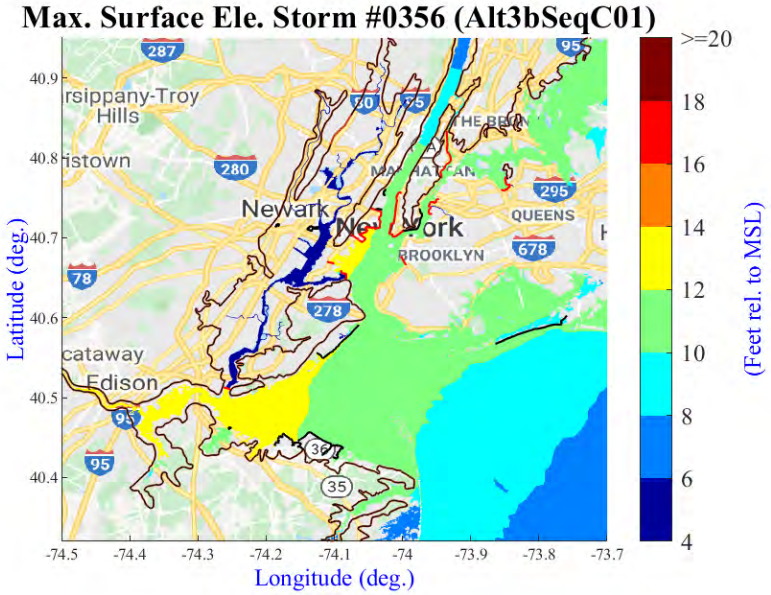


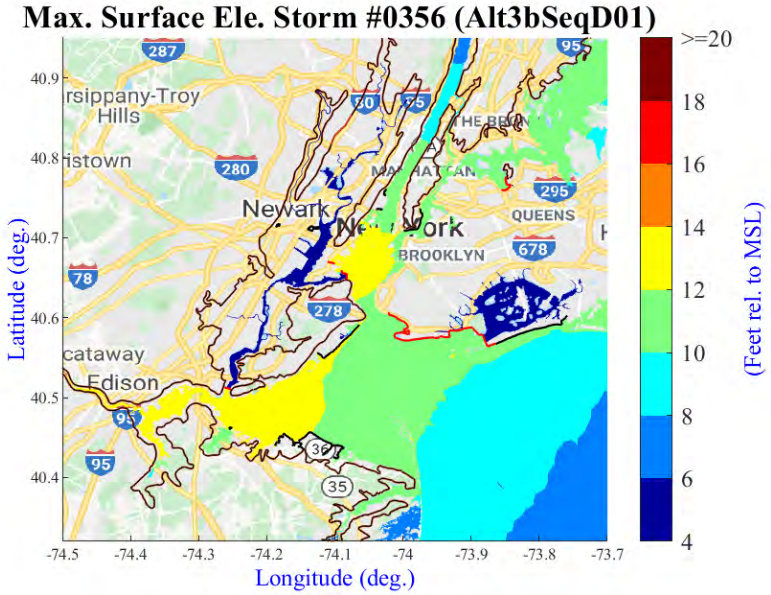
Storm #356 Alt3a







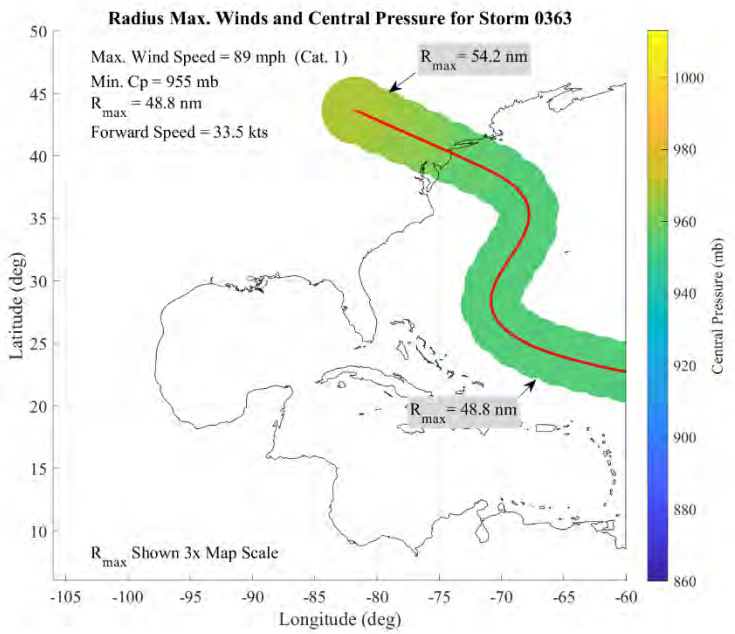




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #356 Alt3b

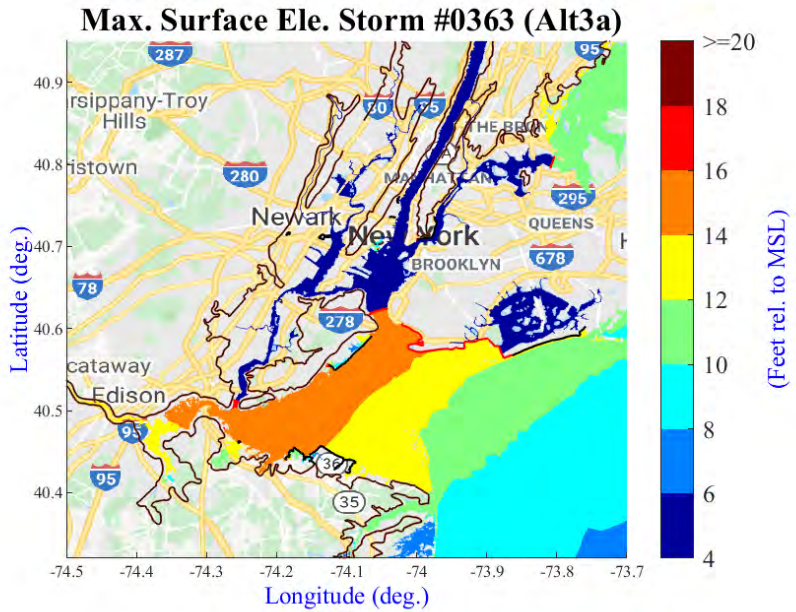
Storm #363

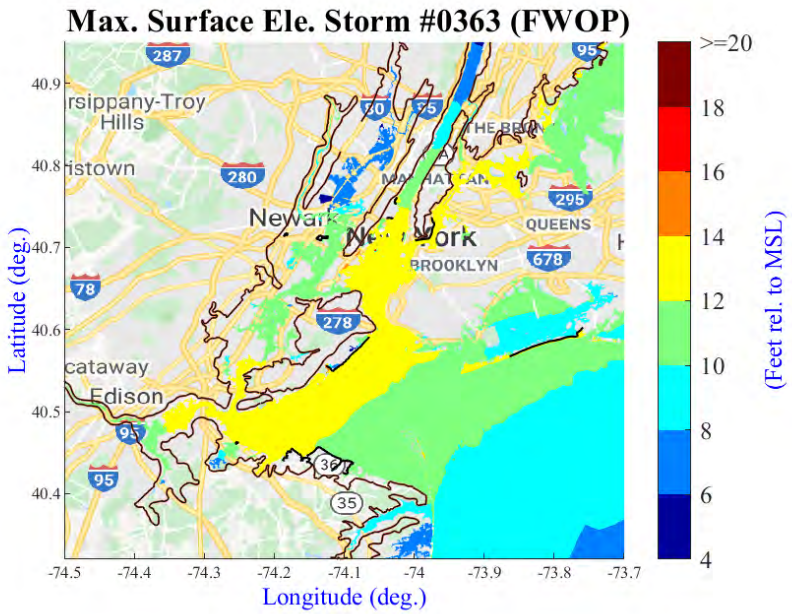


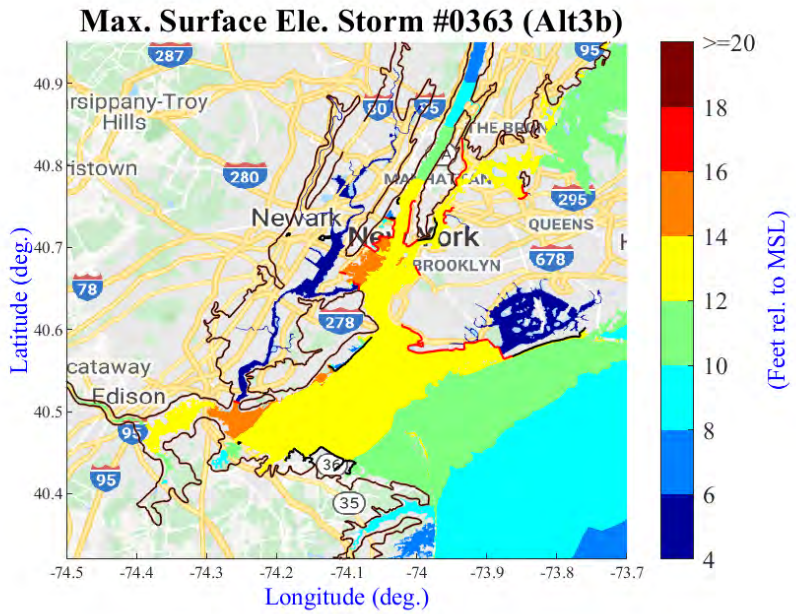
Max. Wind Speed: ***89 mph (Cat. 1)***
Min. Cp: ***955 mb***
Rmax: ***48.8 nm***
Forward Speed: ***33.5 kts***

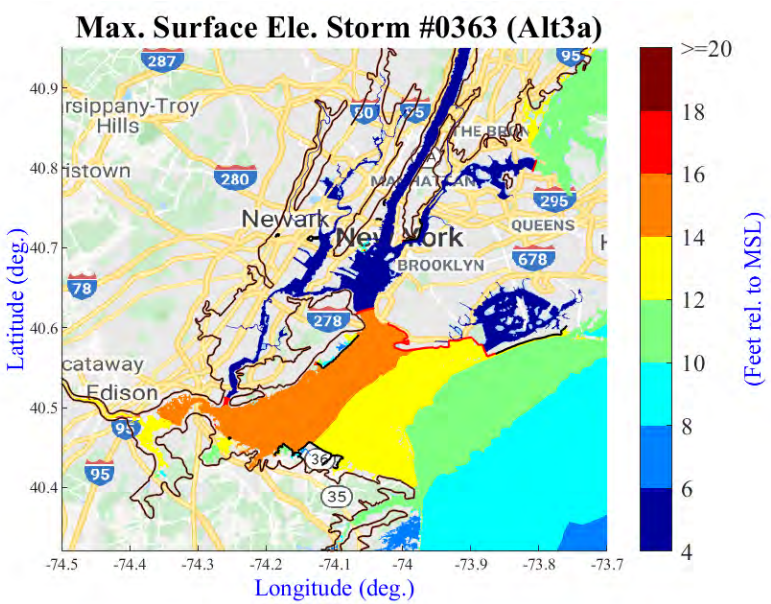
Future With Out Project:
Max. WSE at Battery: ***13.00 ft.***
Max. WSE at Kings Point: ***11.23 ft.***
Max. WSE at Sandy Hook: ***11.18 ft.***

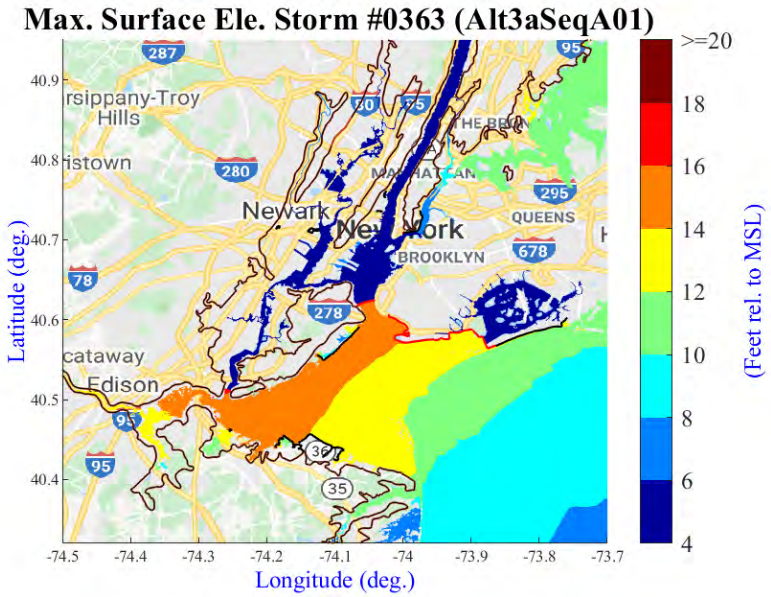
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

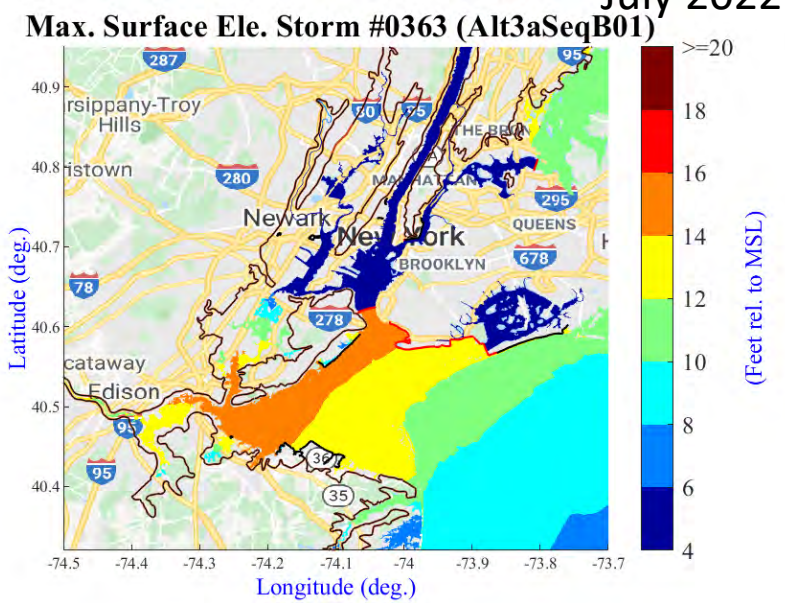


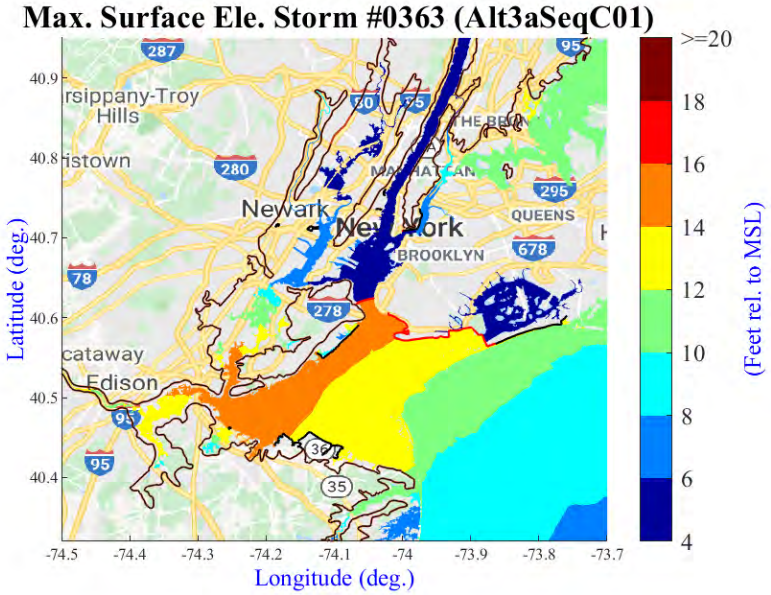


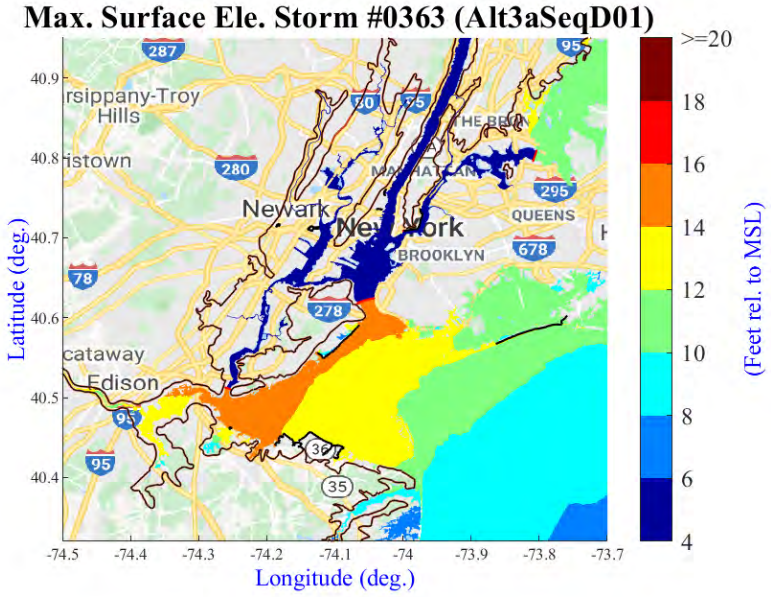


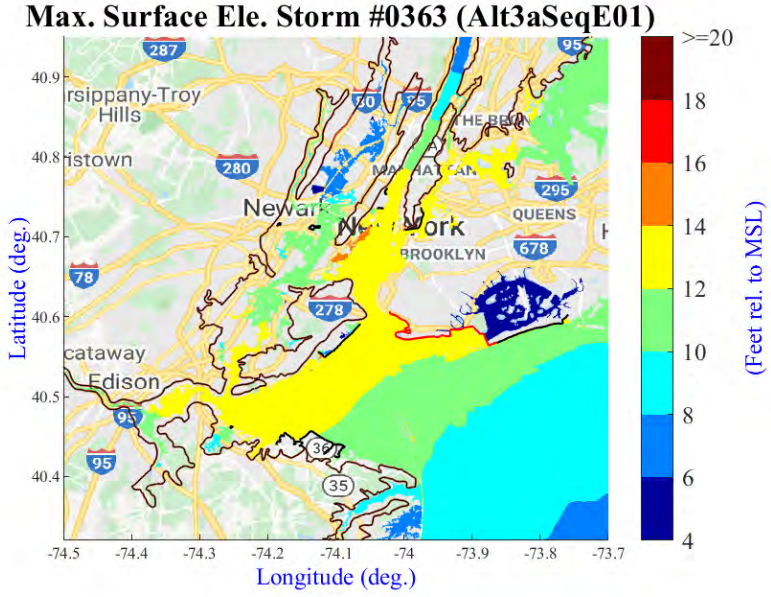




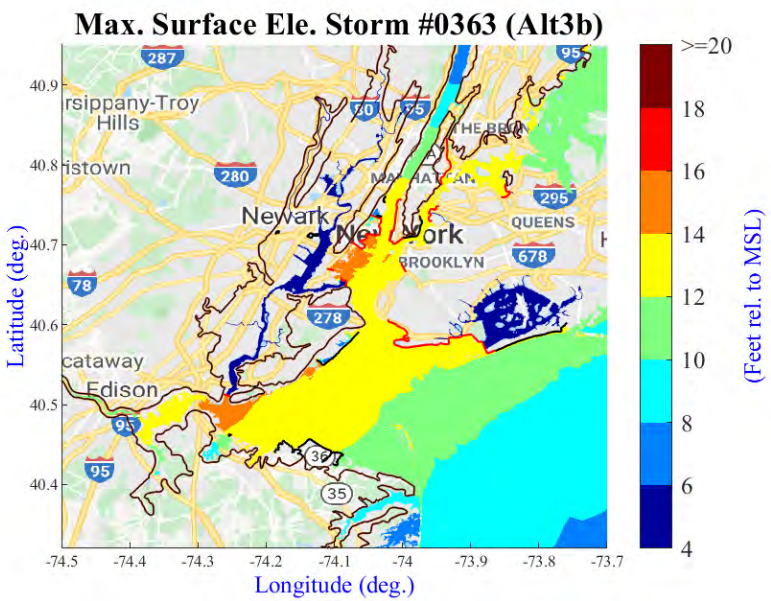


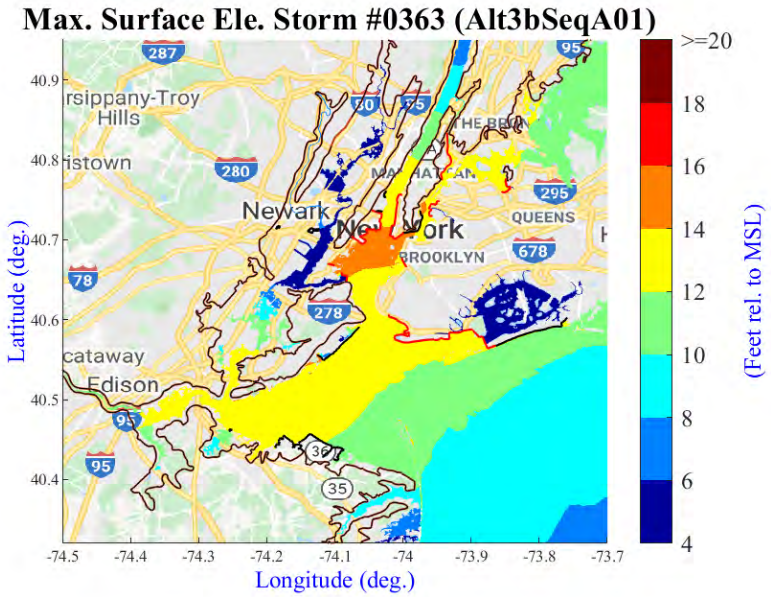


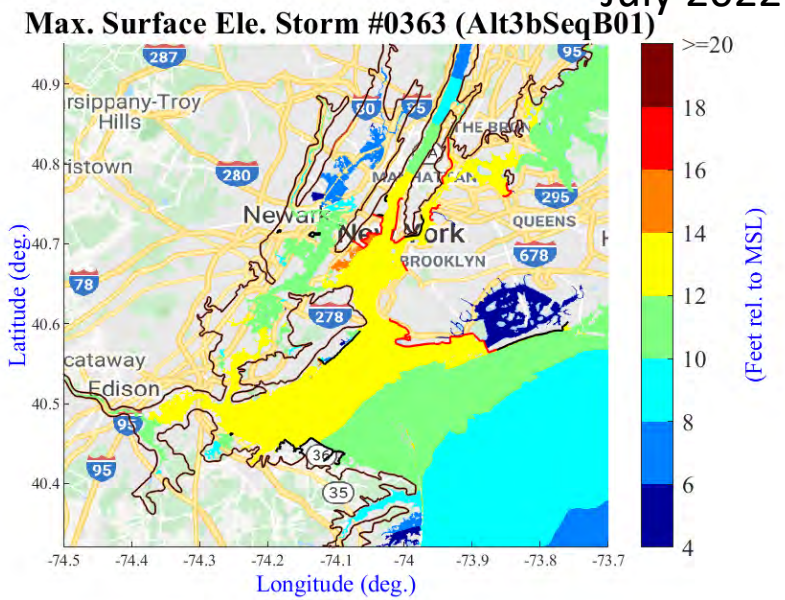


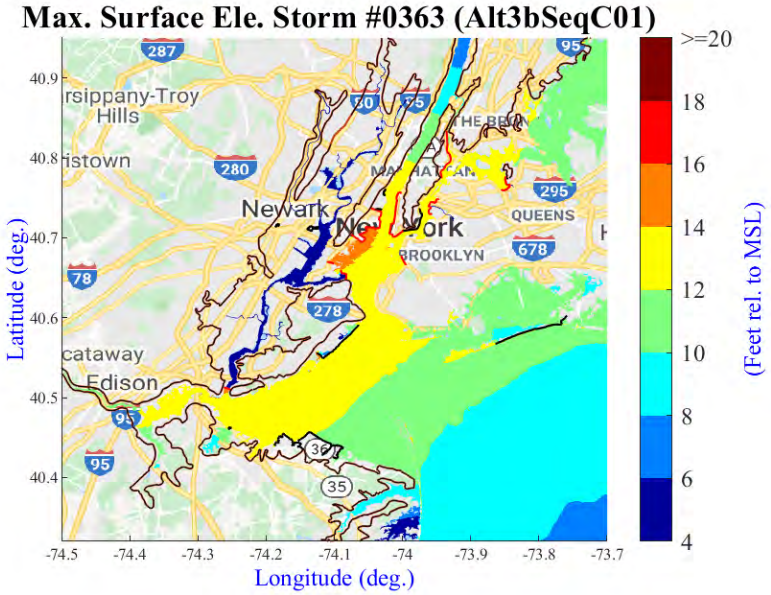


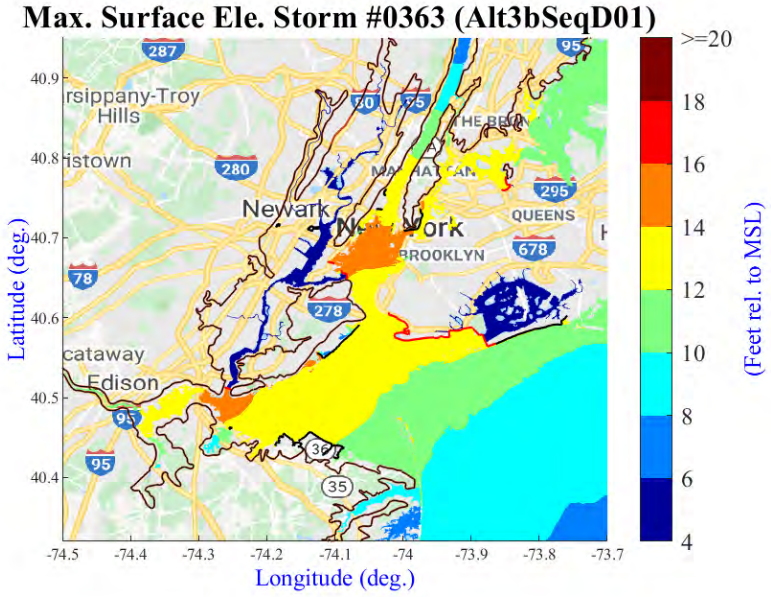
Storm #363 Alt3a







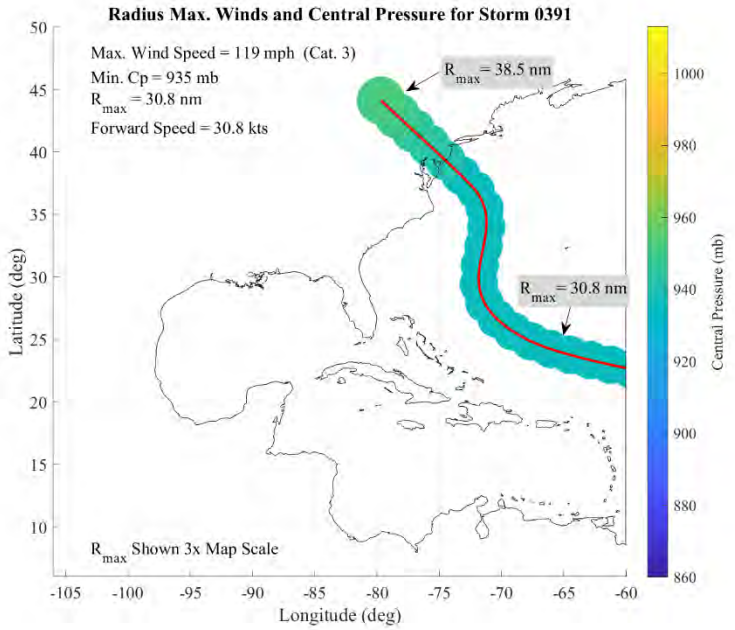




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

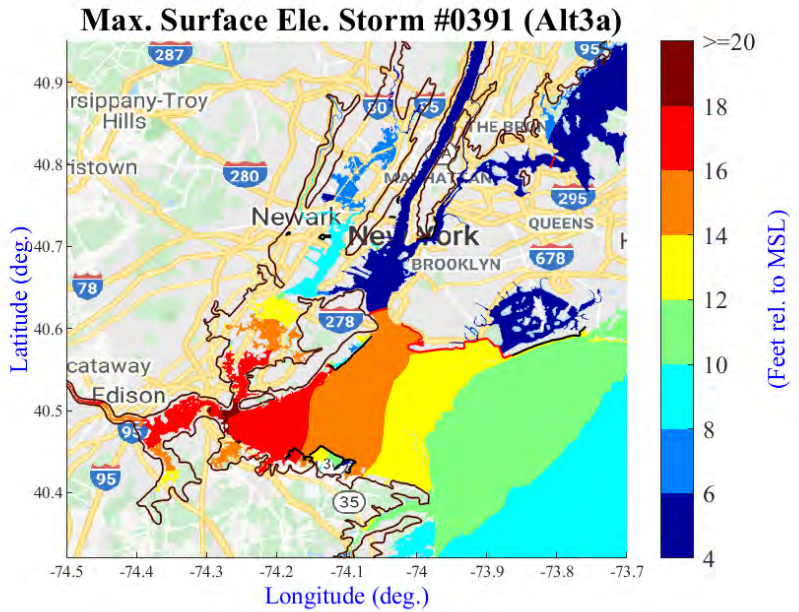
Storm #363 Alt3b

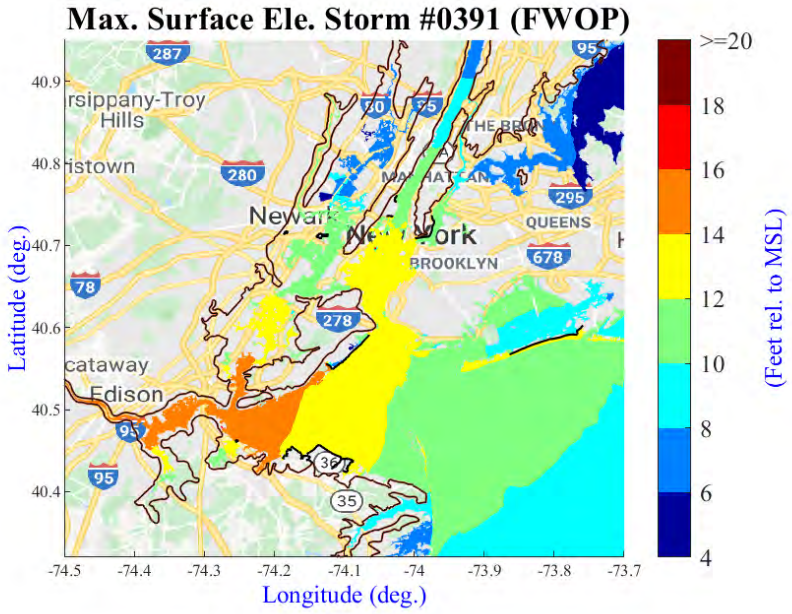
Storm #391

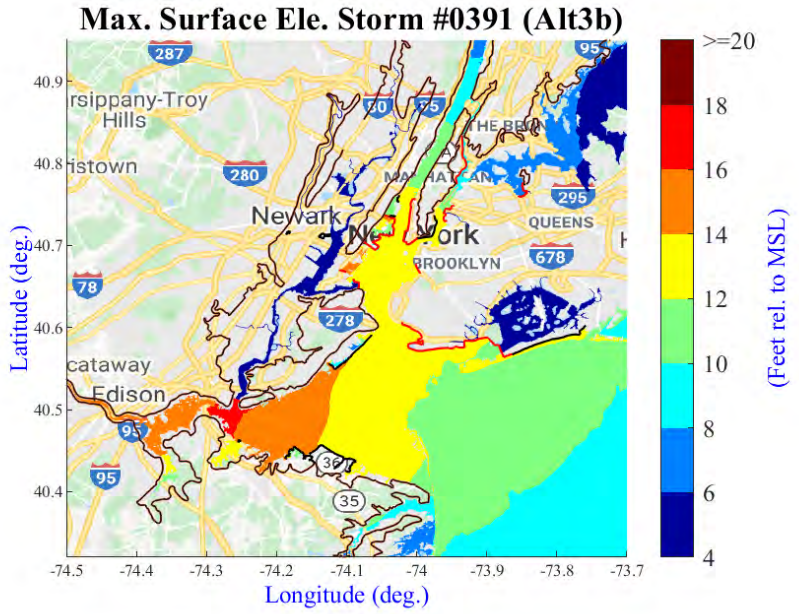


Max. Wind Speed: ***119 mph (Cat. 3)***
Min. Cp: ***935 mb***
Rmax: ***30.8 nm***
Forward Speed: ***30.8 kts***

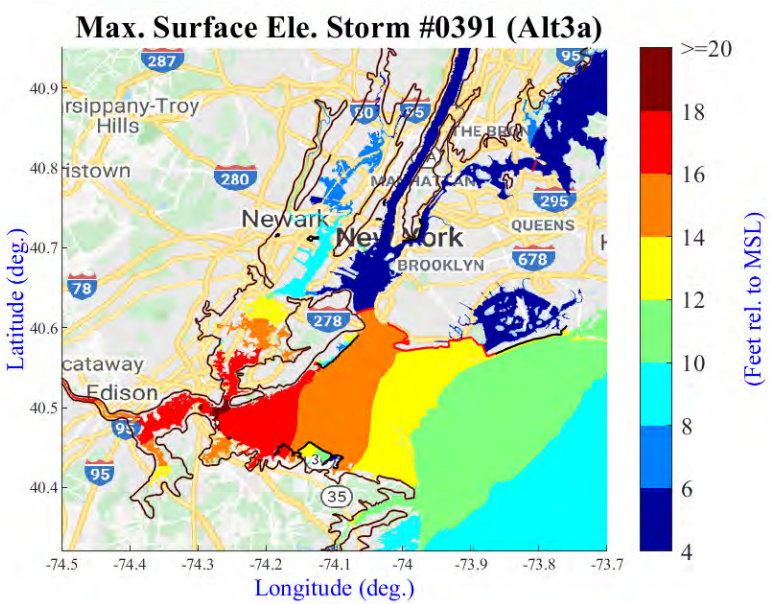
Future With Out Project:
Max. WSE at Battery: ***12.34 ft.***
Max. WSE at Kings Point: ***6.00 ft.***
Max. WSE at Sandy Hook: ***11.76 ft.***

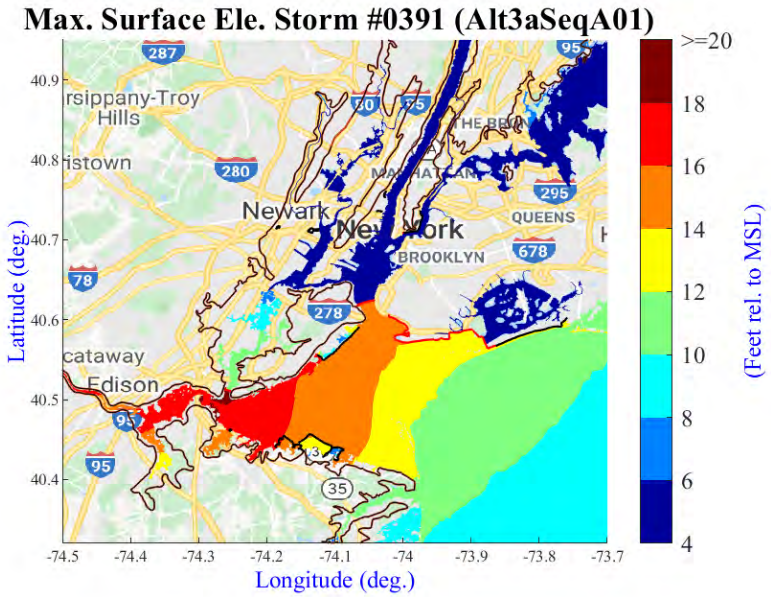


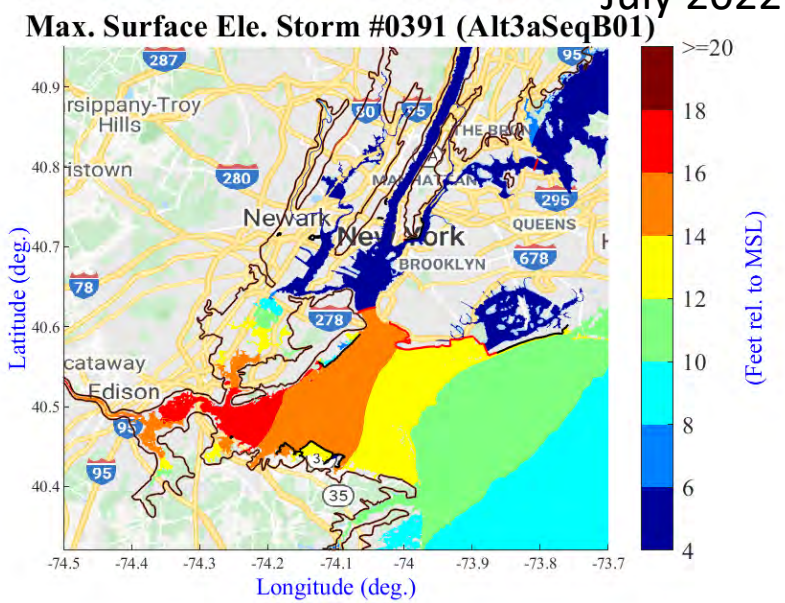


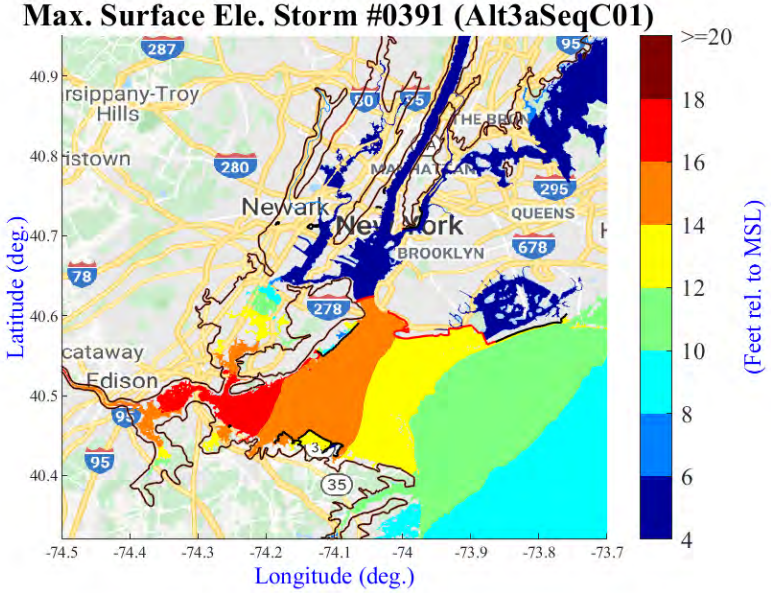


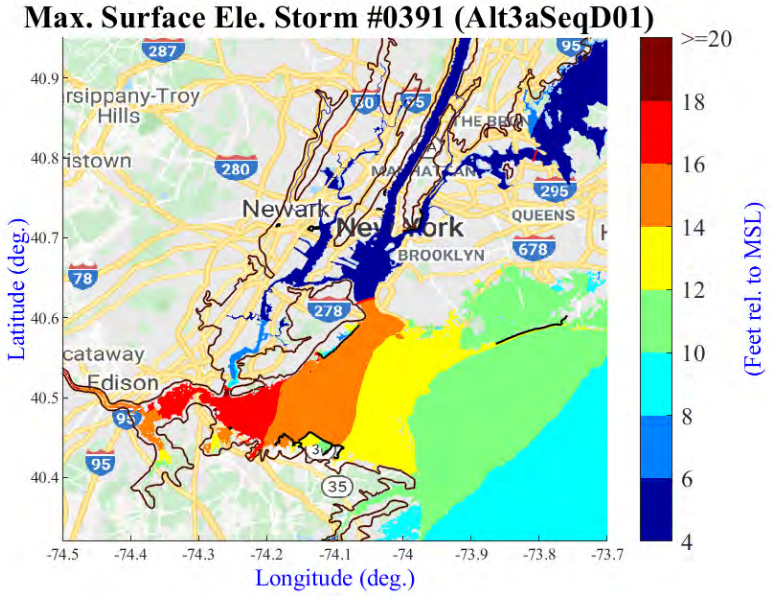
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

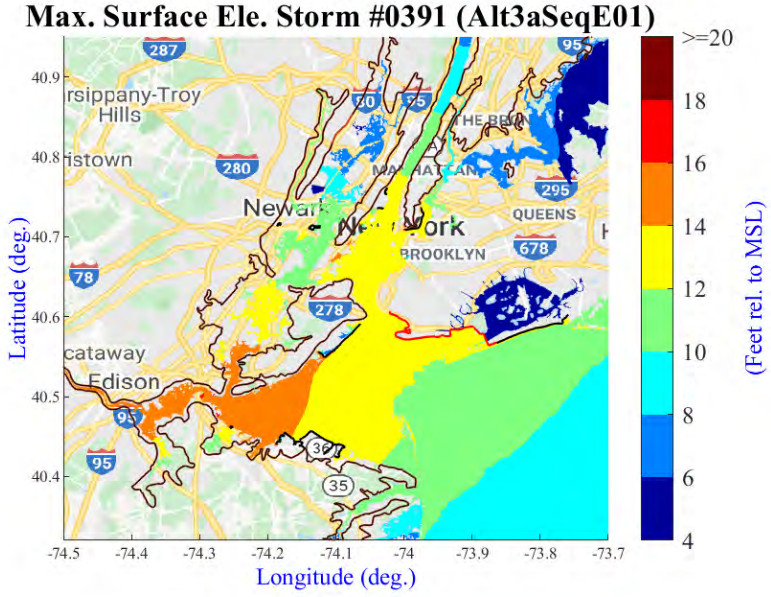




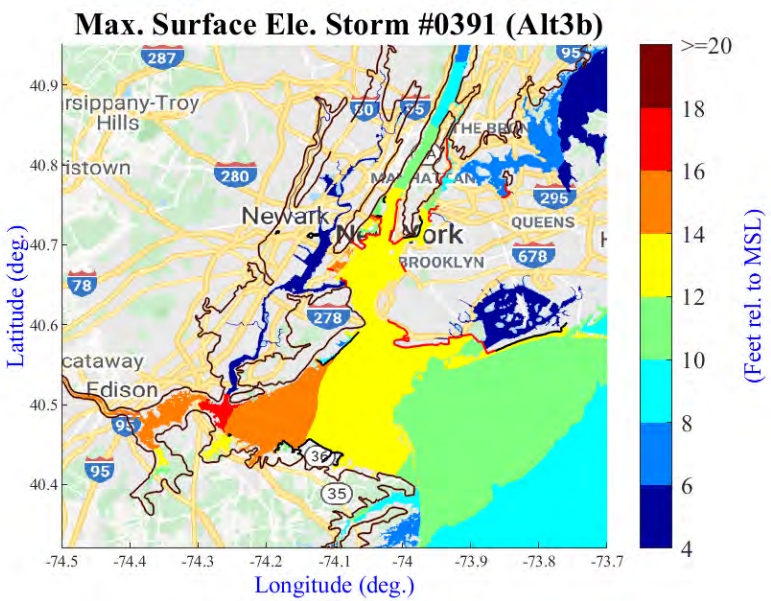


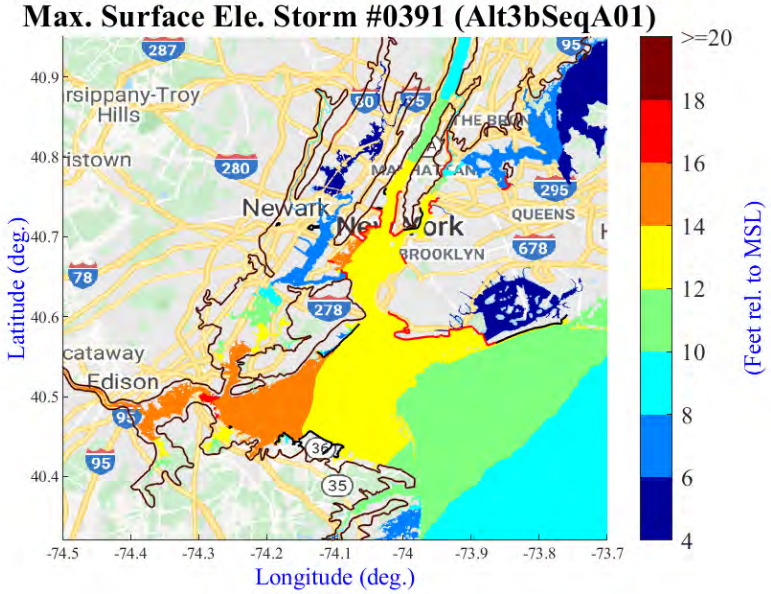


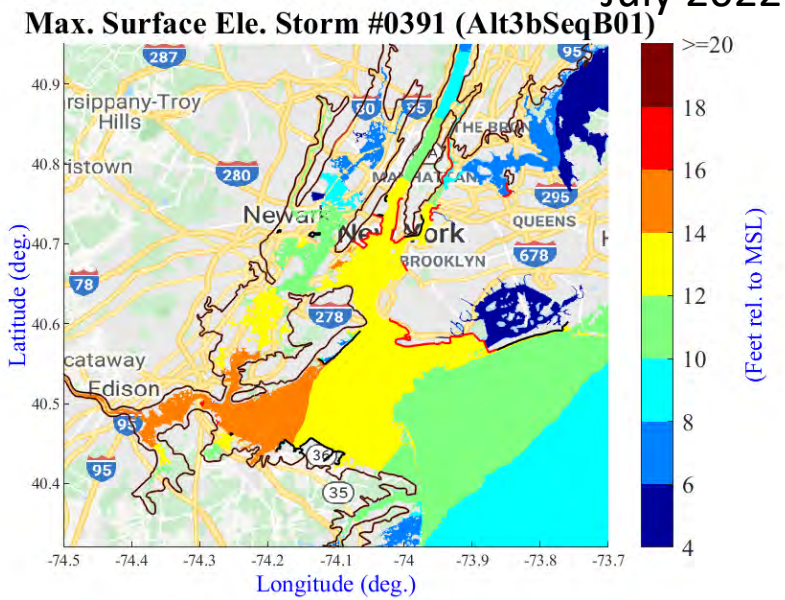


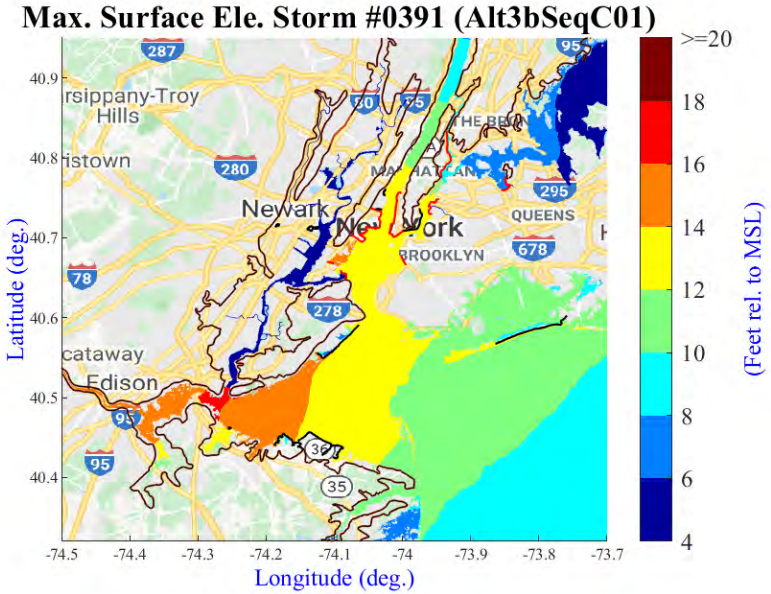


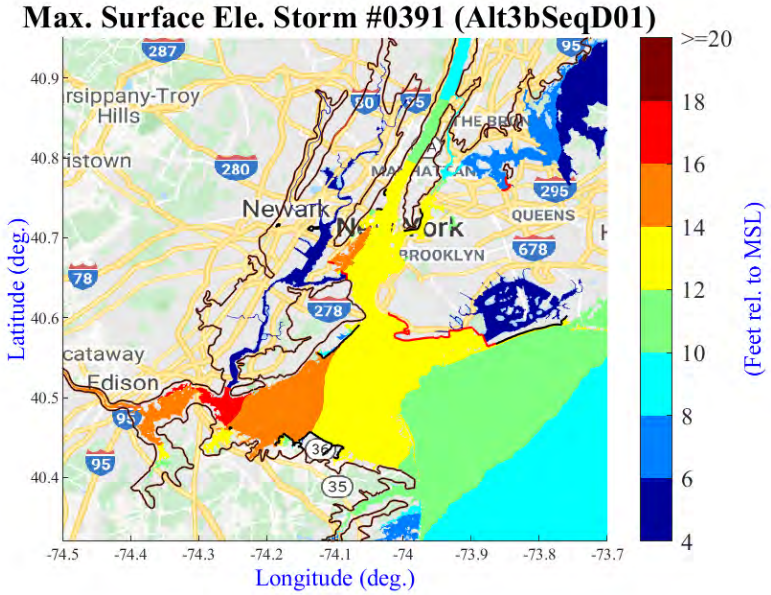
Storm #391 Alt3a







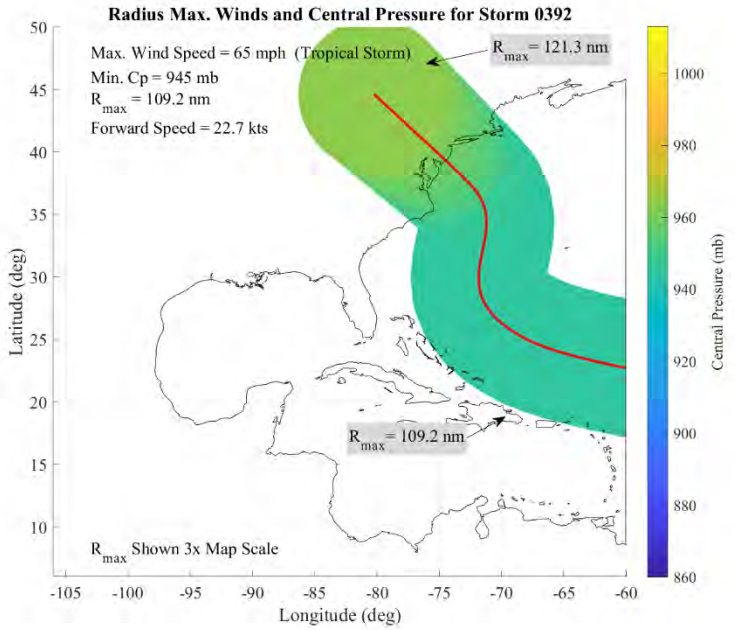




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #391 Alt3b

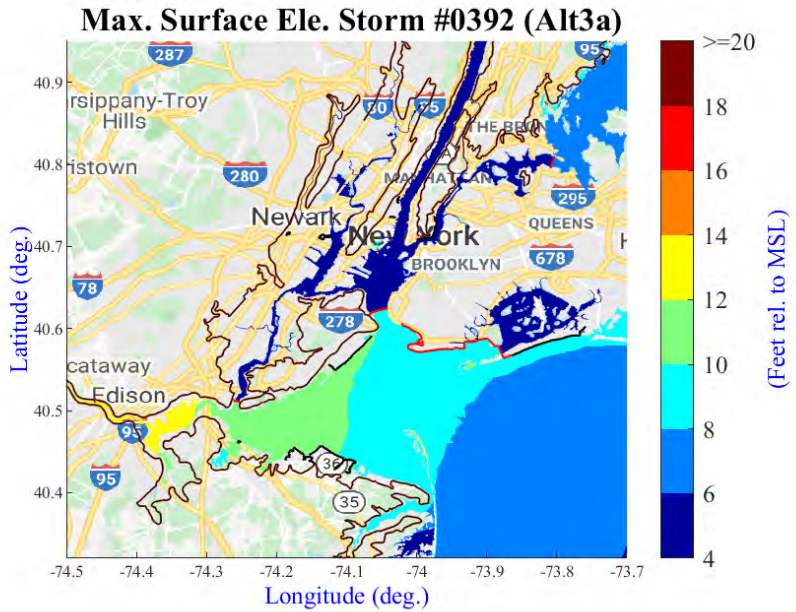
Storm #392

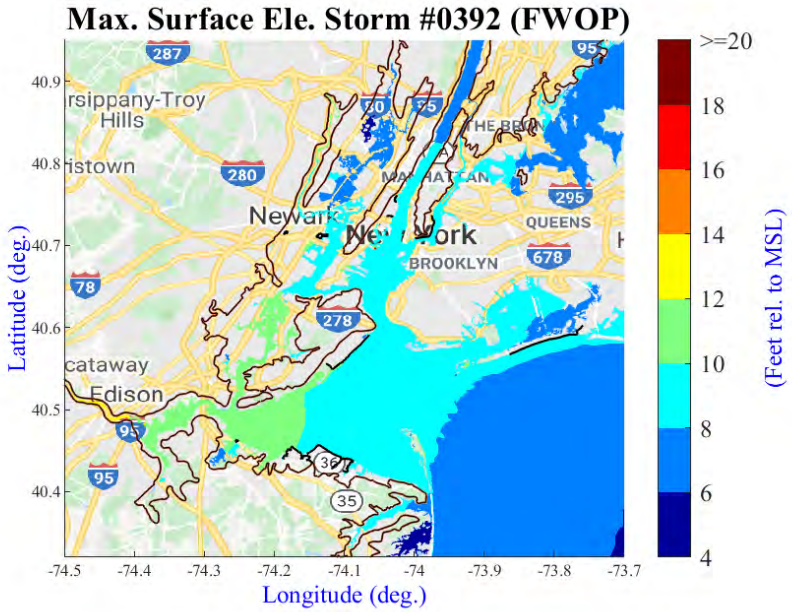


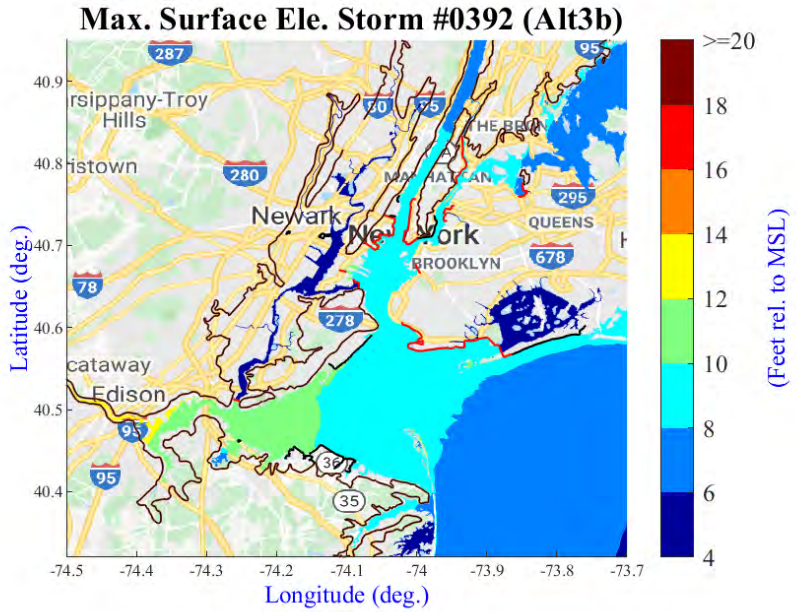
Max. Wind Speed: ***65 mph (Tropical Storm)***

Min. Cp: ***945 mb***
Rmax: ***109.2 nm***
Forward Speed: ***22.7 kts***

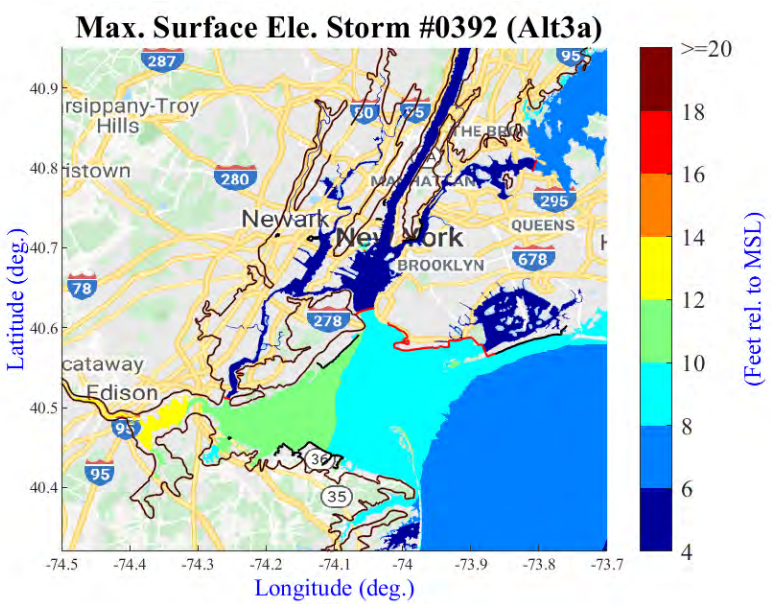
Future With Out Project:
Max. WSE at Battery: ***9.24 ft.***
Max. WSE at Kings Point: ***7.58 ft.***
Max. WSE at Sandy Hook: ***8.87 ft.***

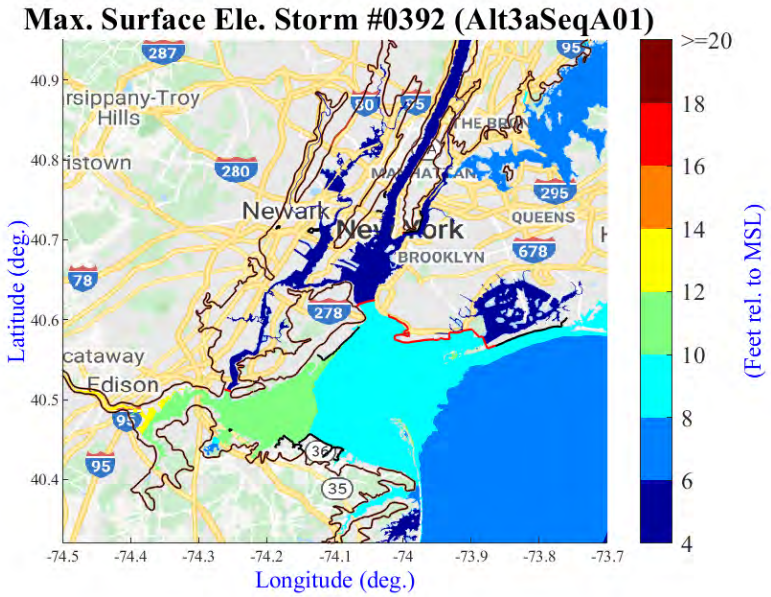


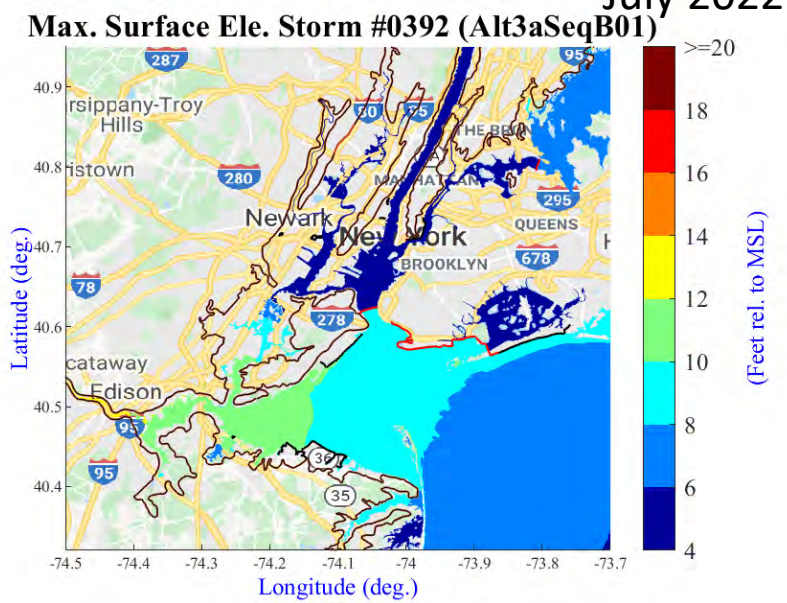


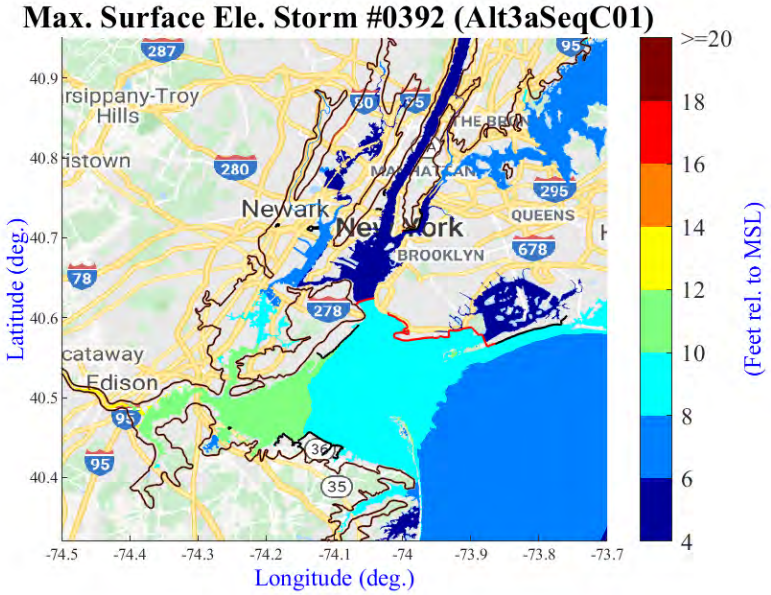


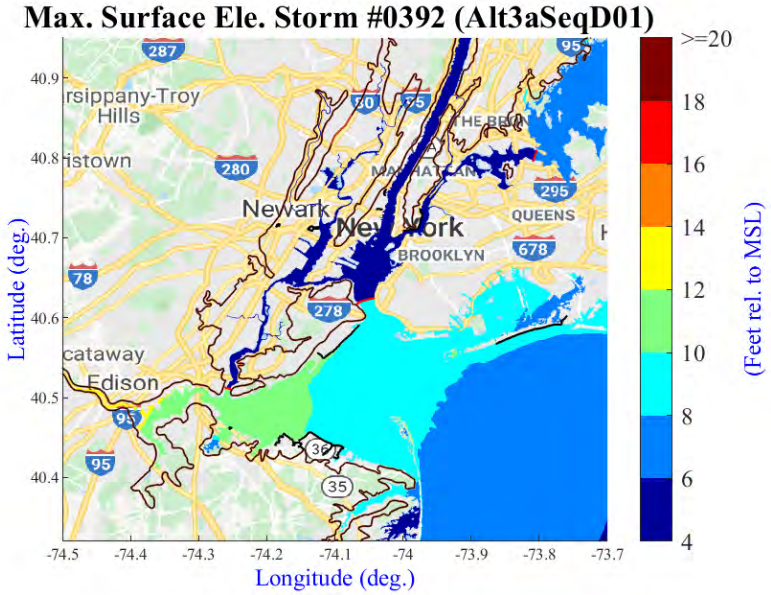
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

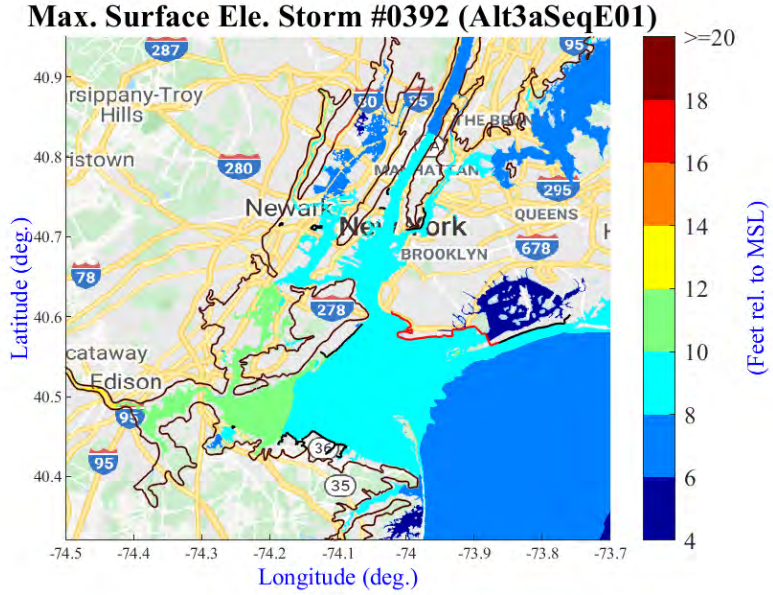




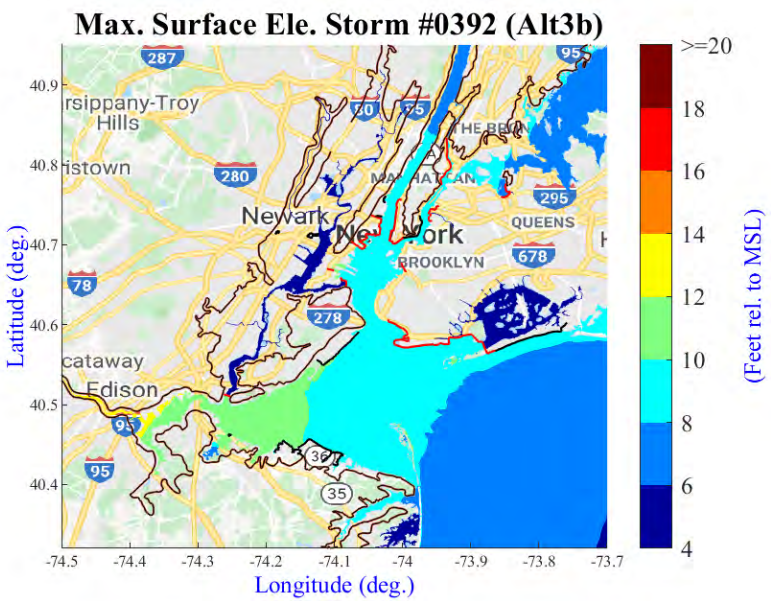


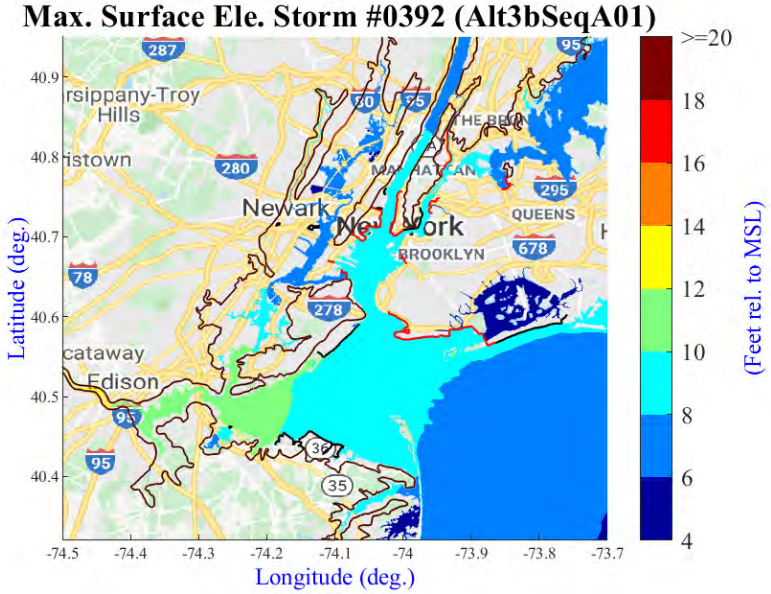


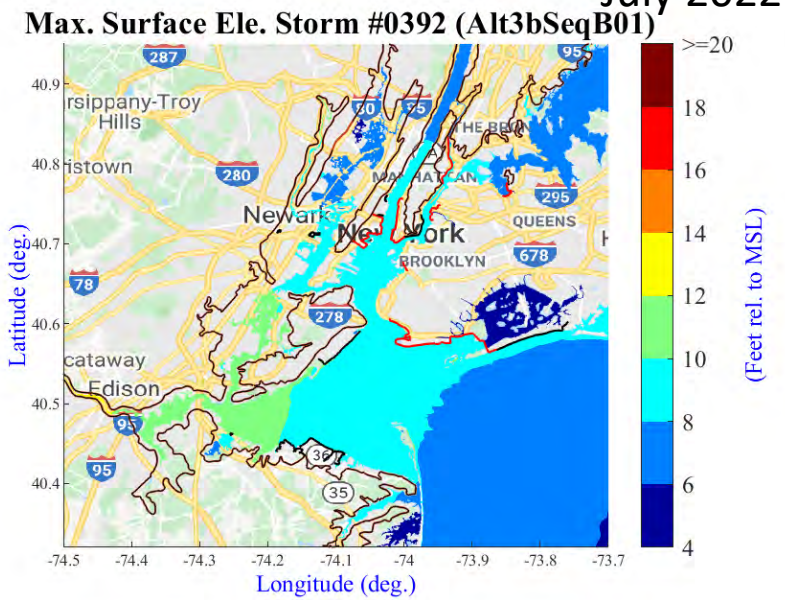


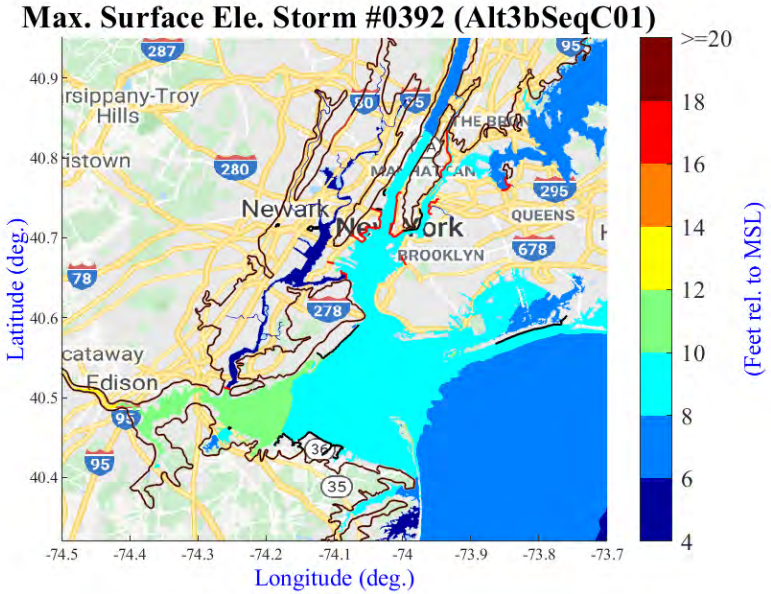


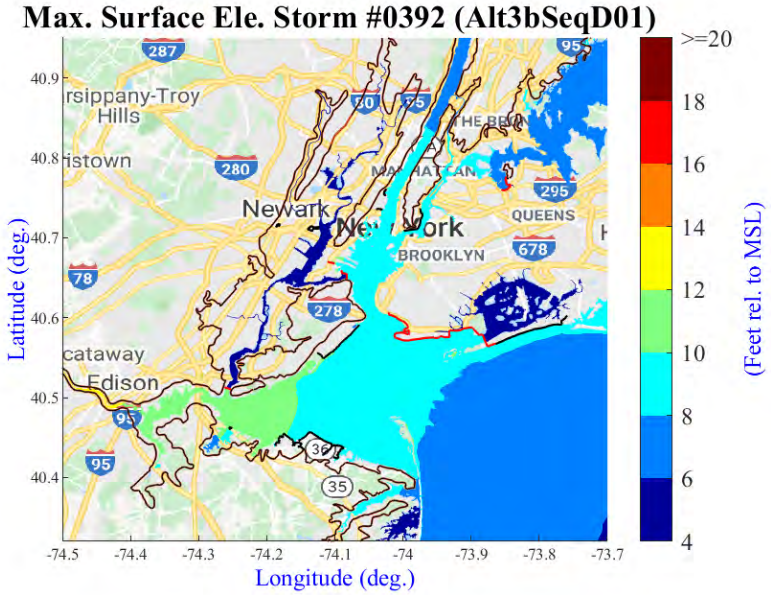
Storm #392 Alt3a







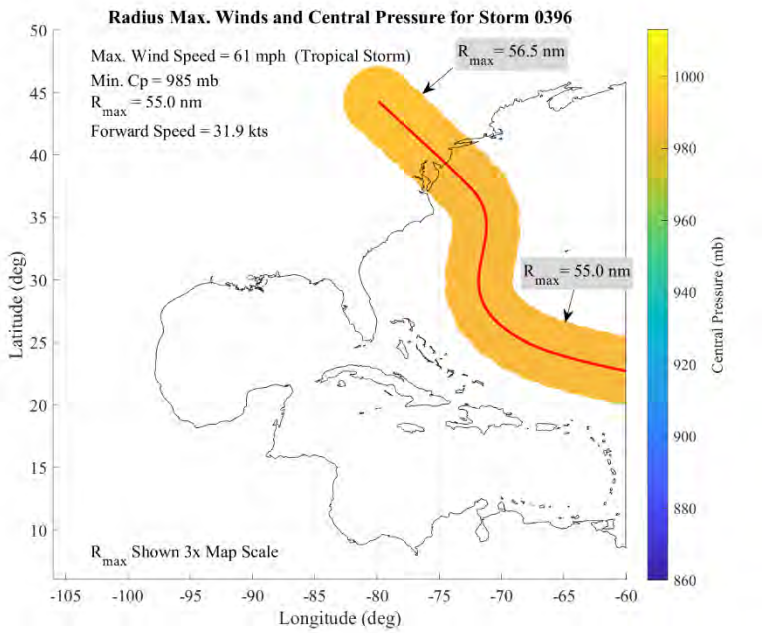




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #392 Alt3b

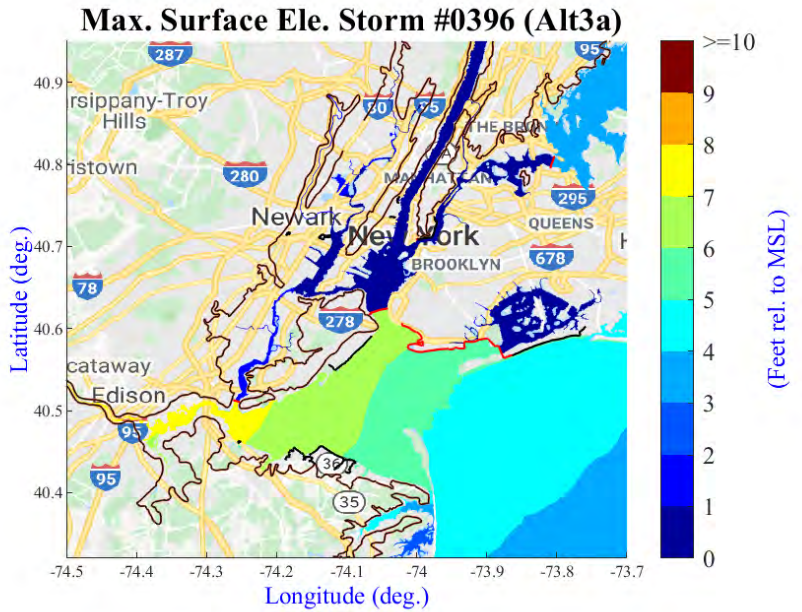
Storm #396

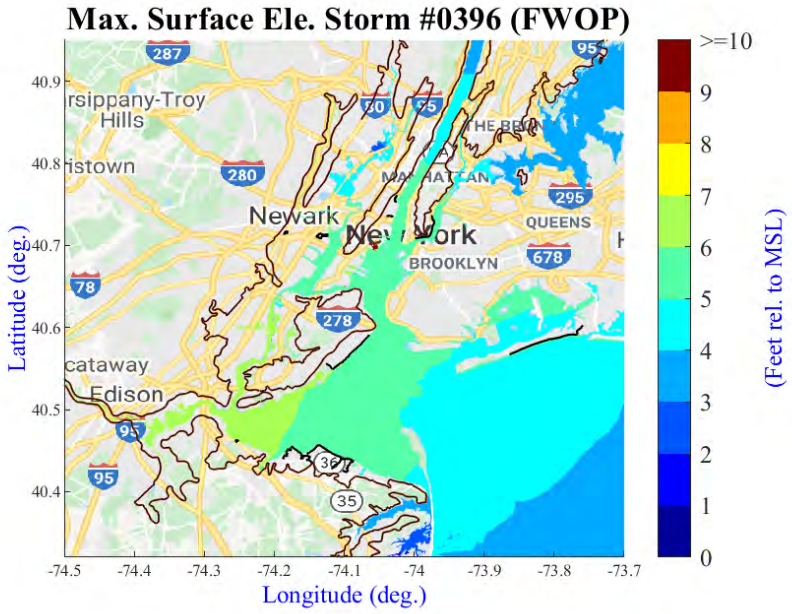


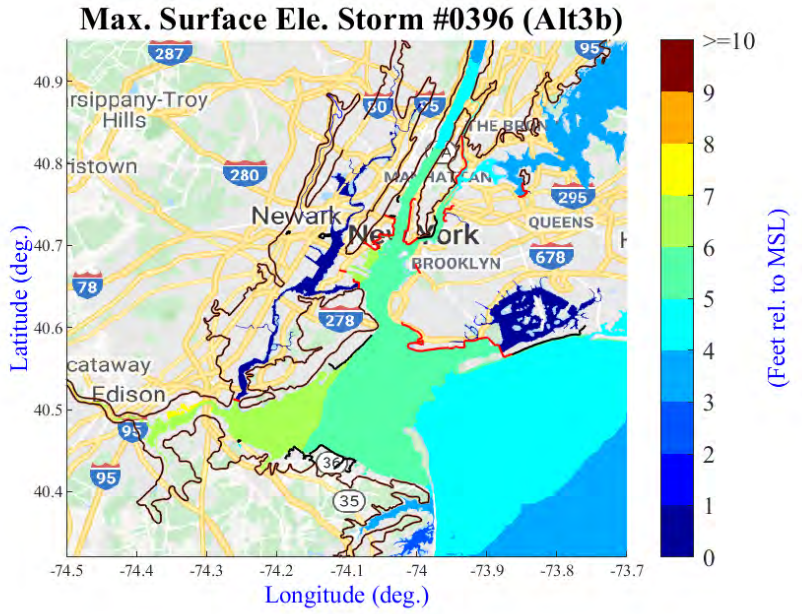
Max. Wind Speed: ***61 mph (Tropical Storm)***

Min. Cp: ***985 mb***
Rmax: ***55.0 nm***
Forward Speed: ***31.9 kts***

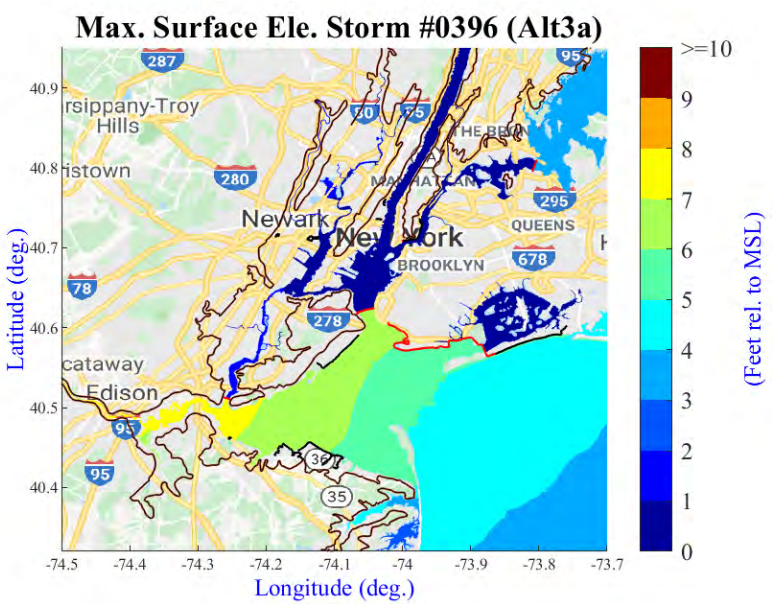
Future With Out Project:
Max. WSE at Battery: ***5.71 ft.***
Max. WSE at Kings Point: ***3.42 ft.***
Max. WSE at Sandy Hook: ***5.17 ft.***

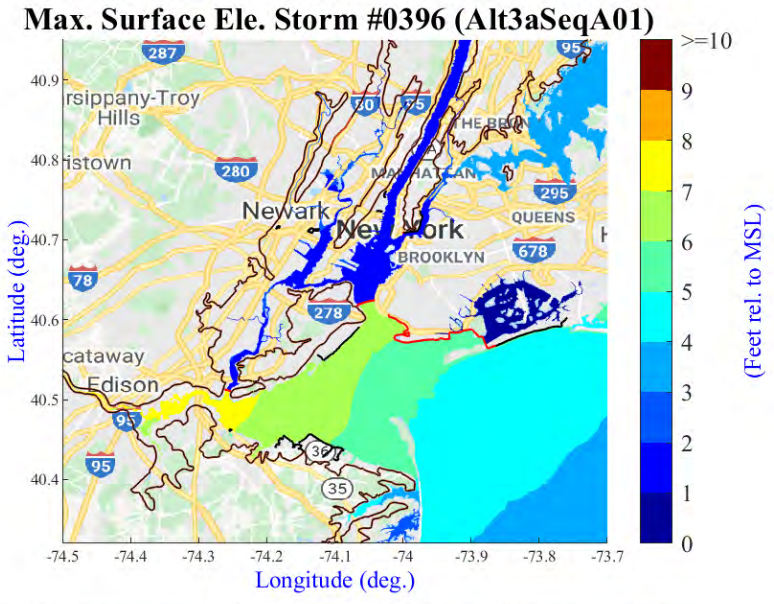


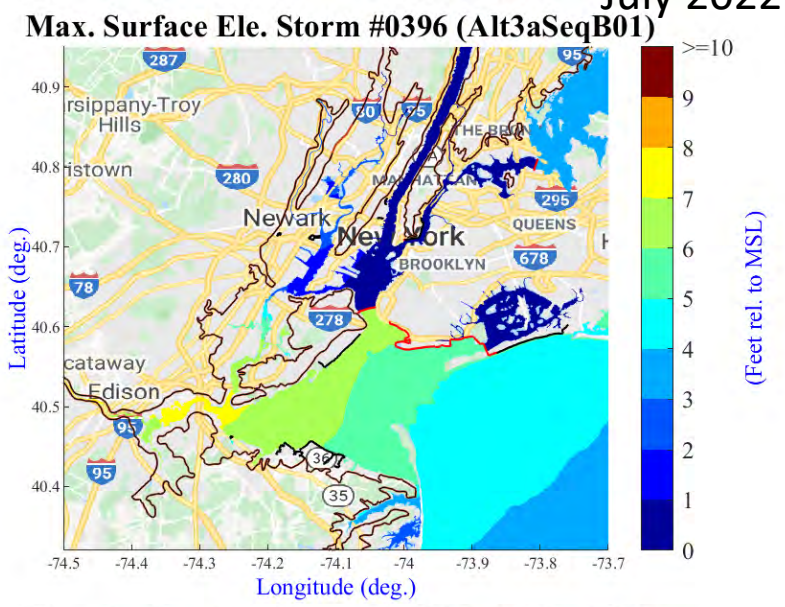


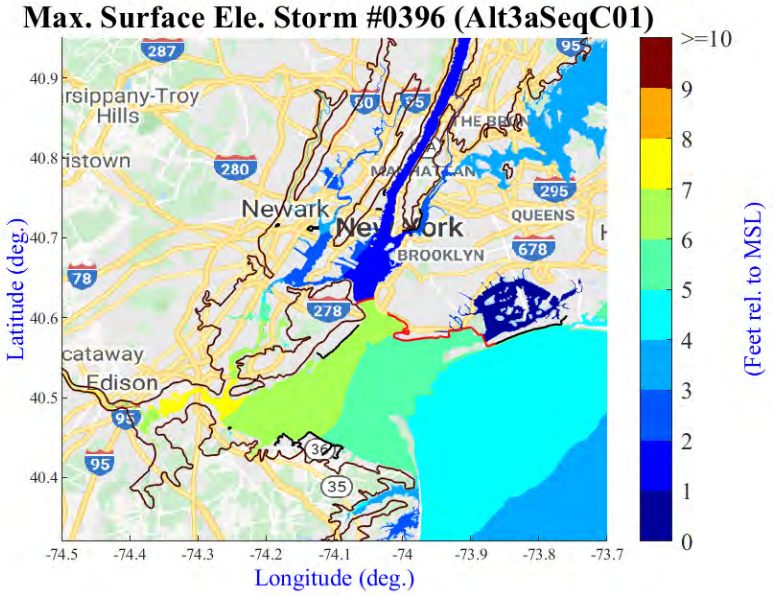


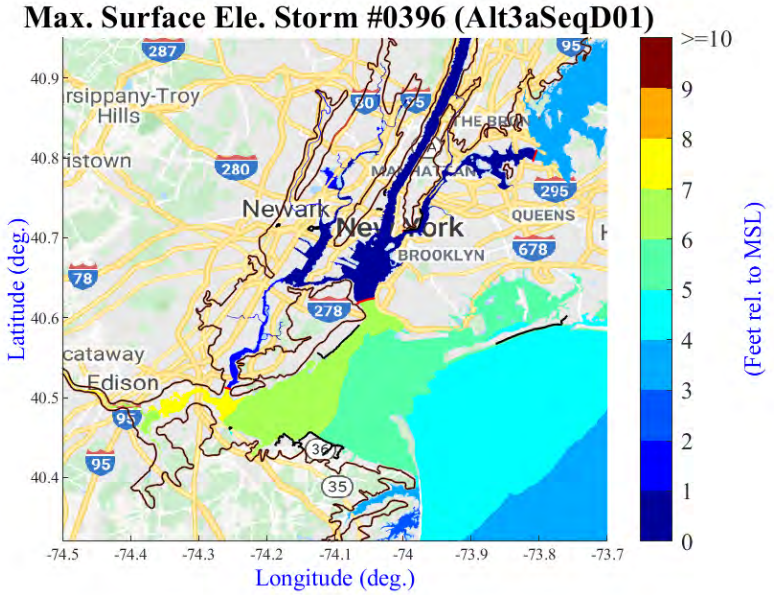
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

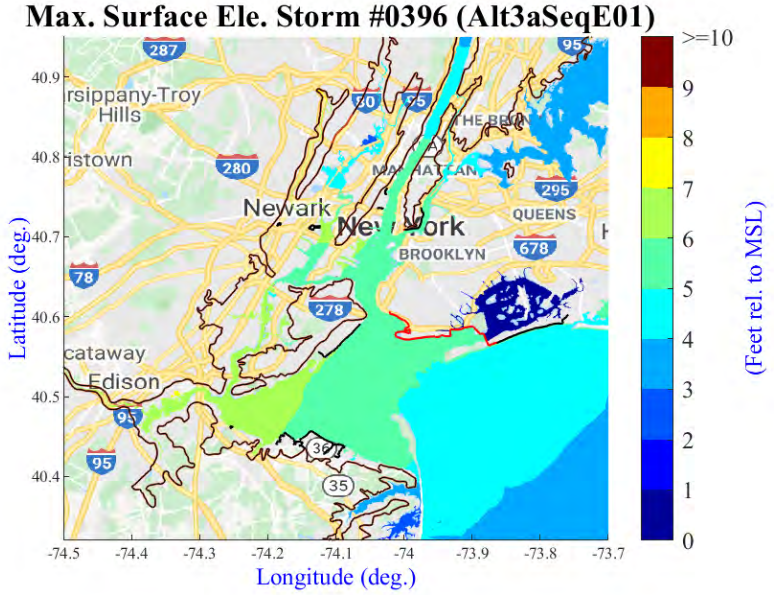




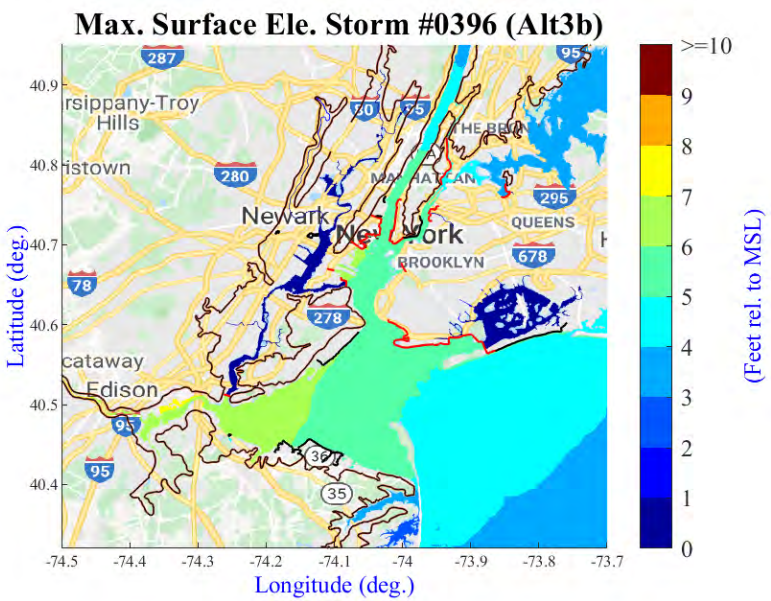


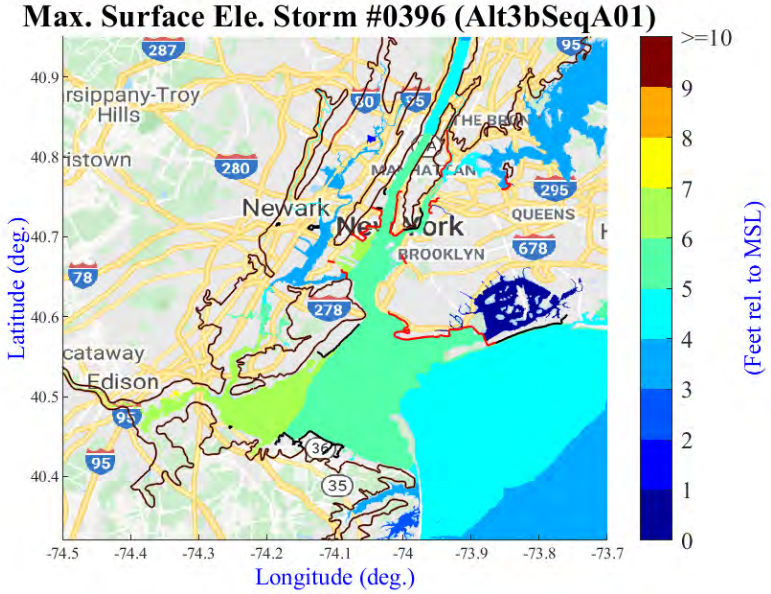


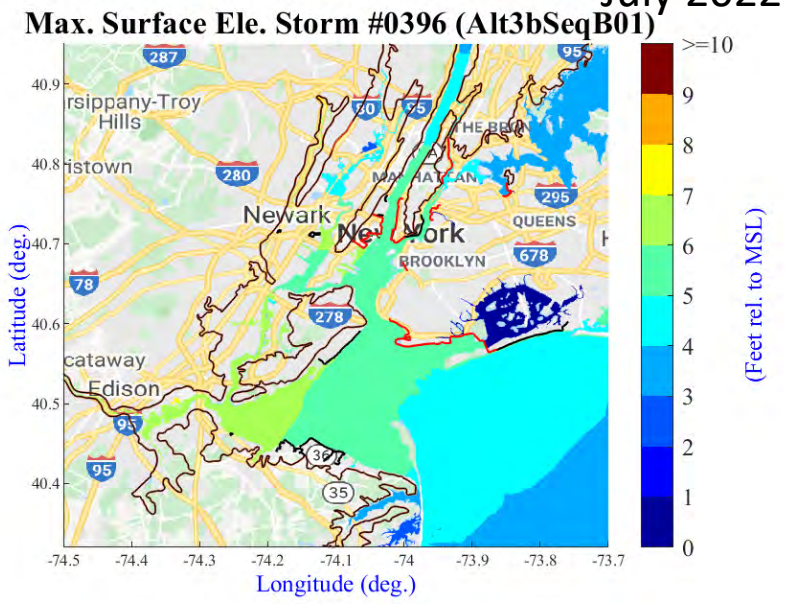


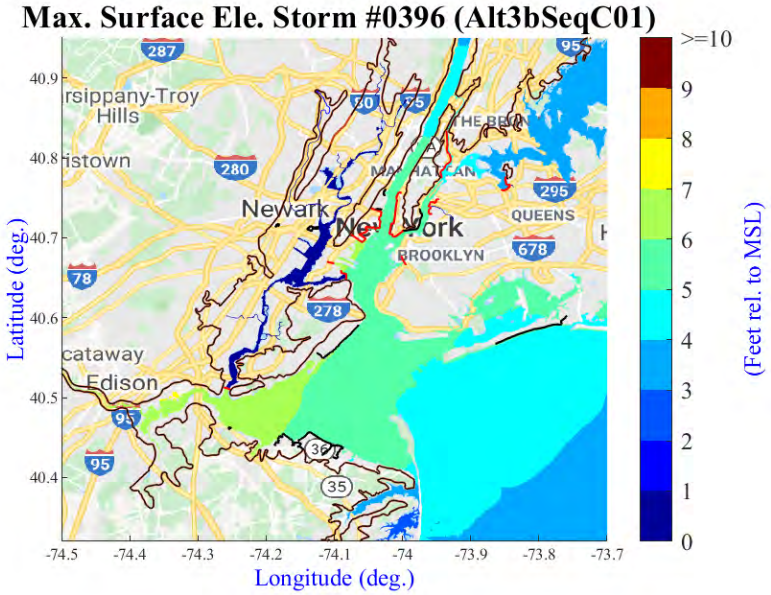


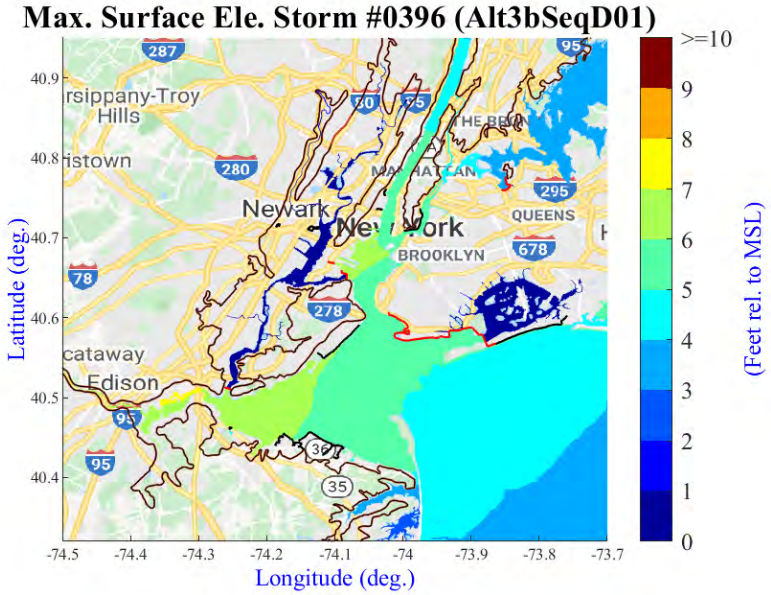
Storm #396 Alt3a







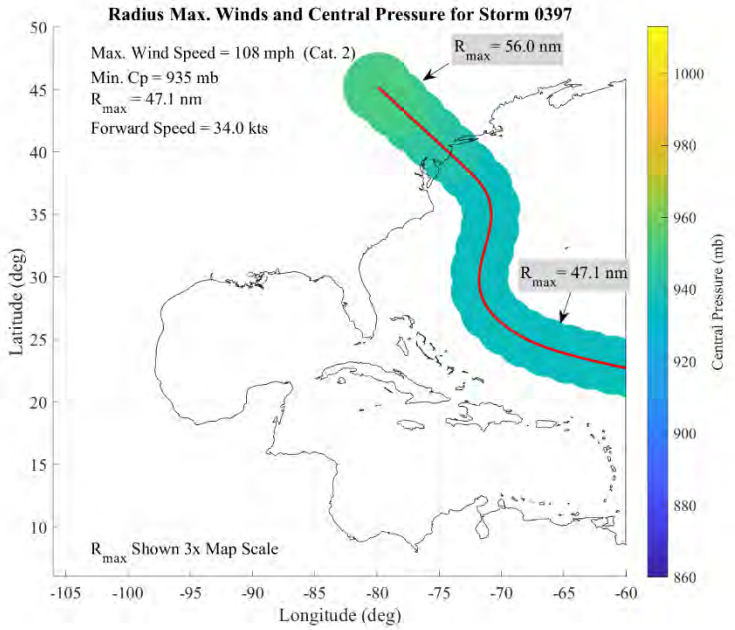




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

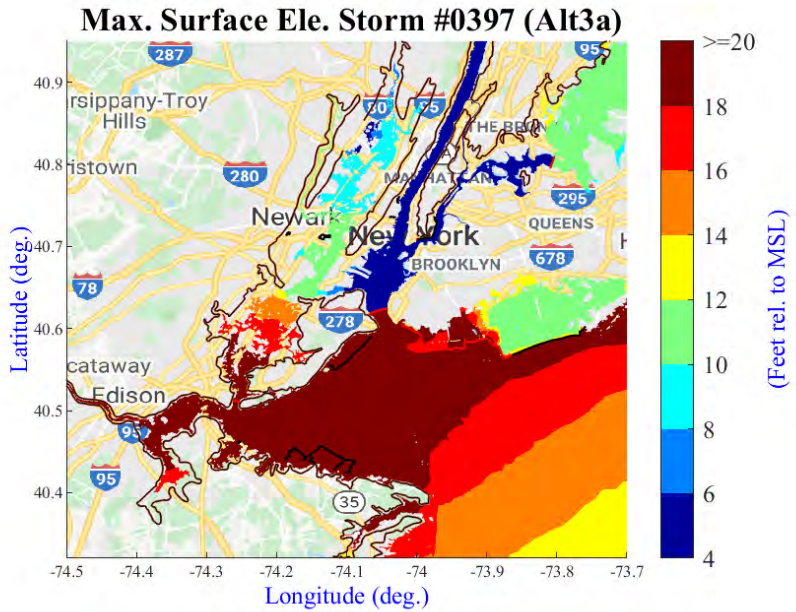
Storm #396 Alt3b

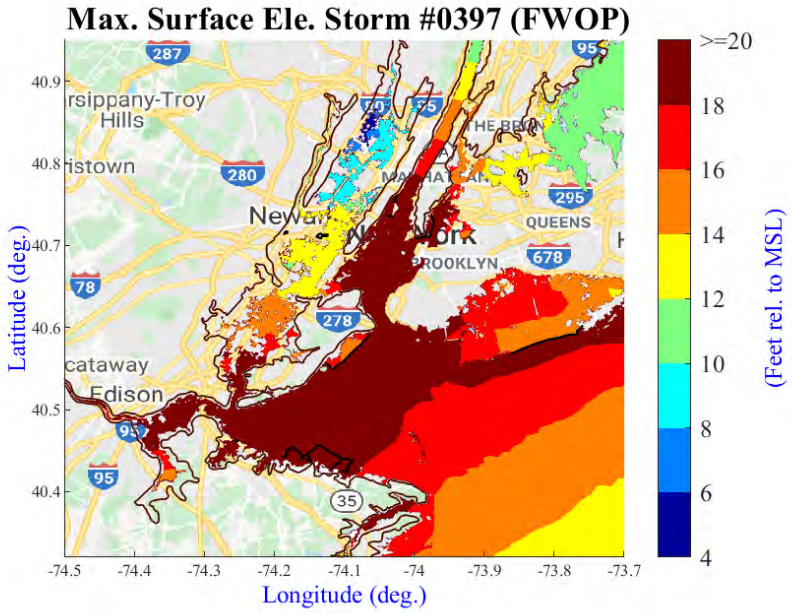
Storm #397

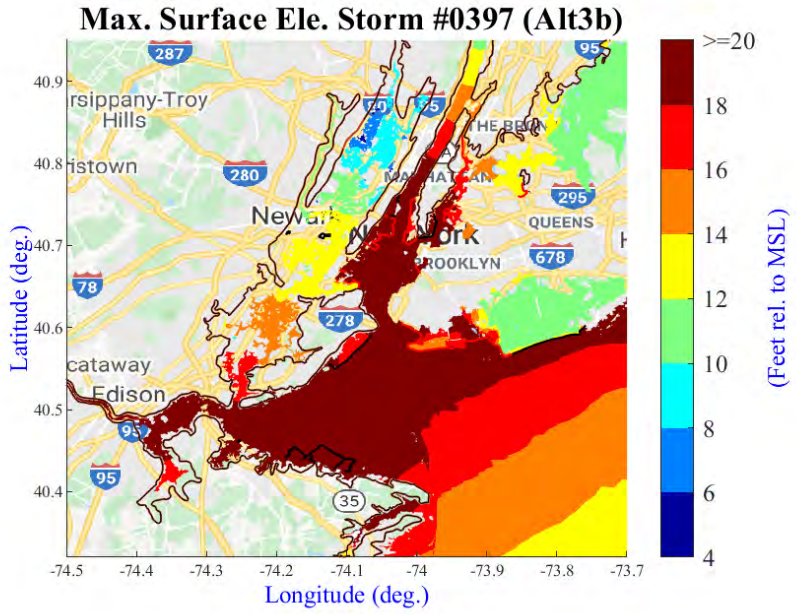


Max. Wind Speed: ***108 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***47.1 nm***
Forward Speed: ***34.0 kts***

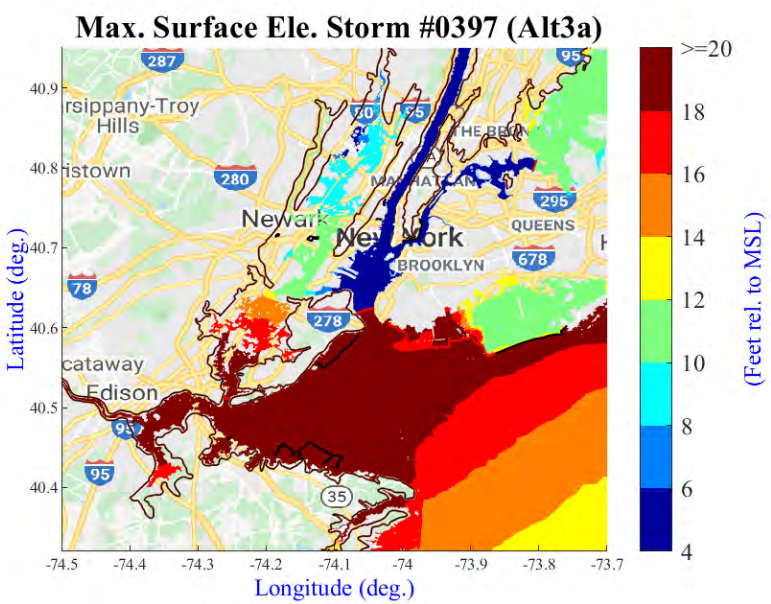
Future With Out Project:
Max. WSE at Battery: ***20.43 ft.***
Max. WSE at Kings Point: ***11.24 ft.***
Max. WSE at Sandy Hook: ***17.87 ft.***

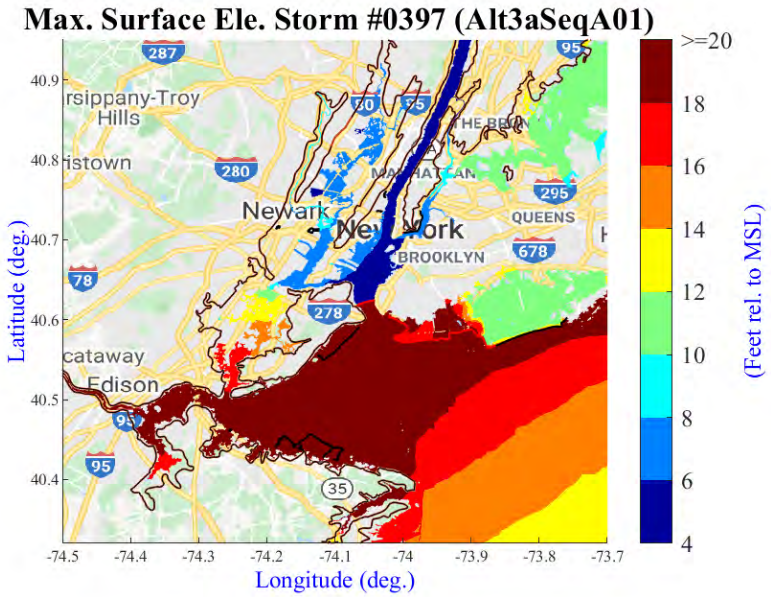


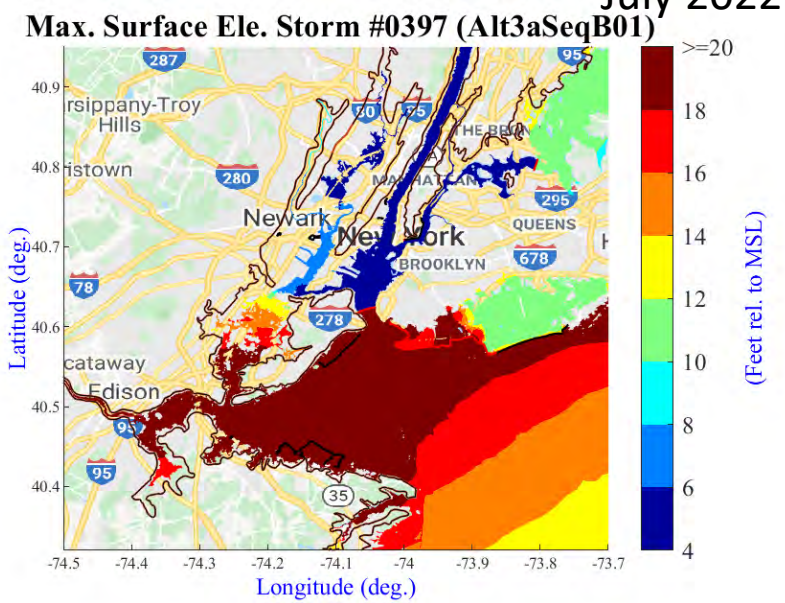


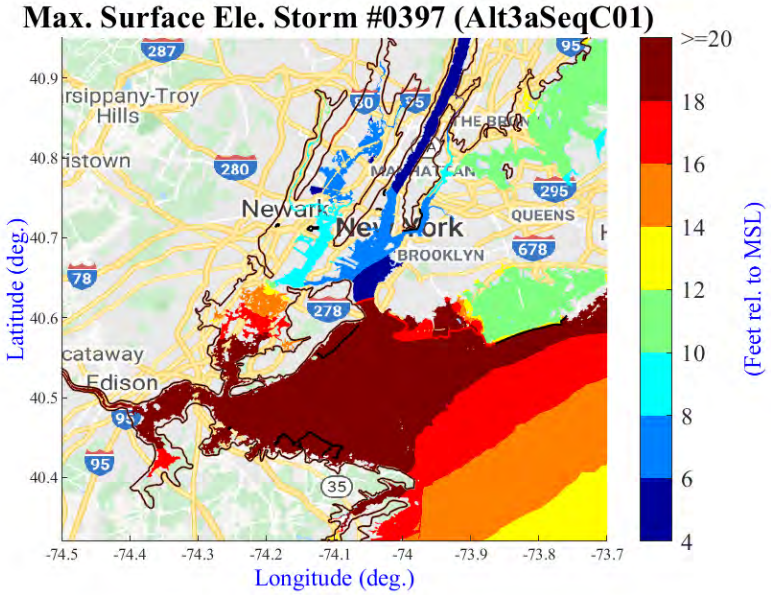


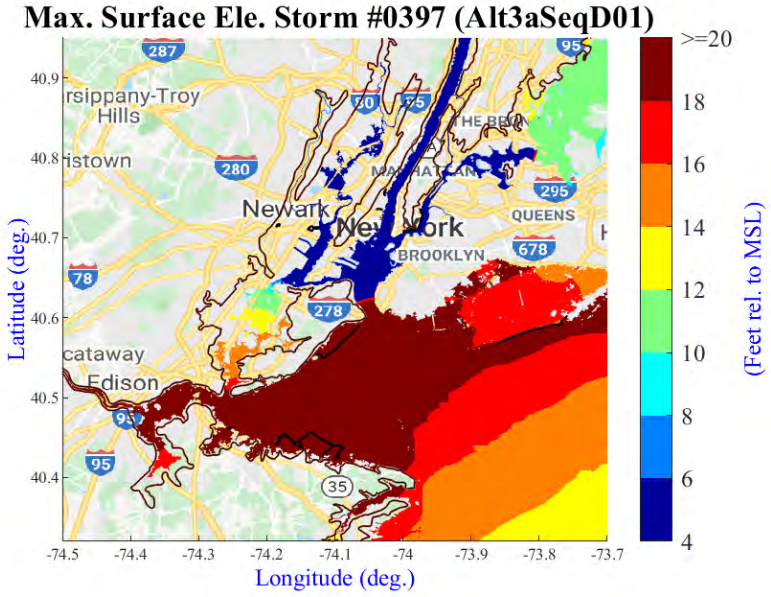
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

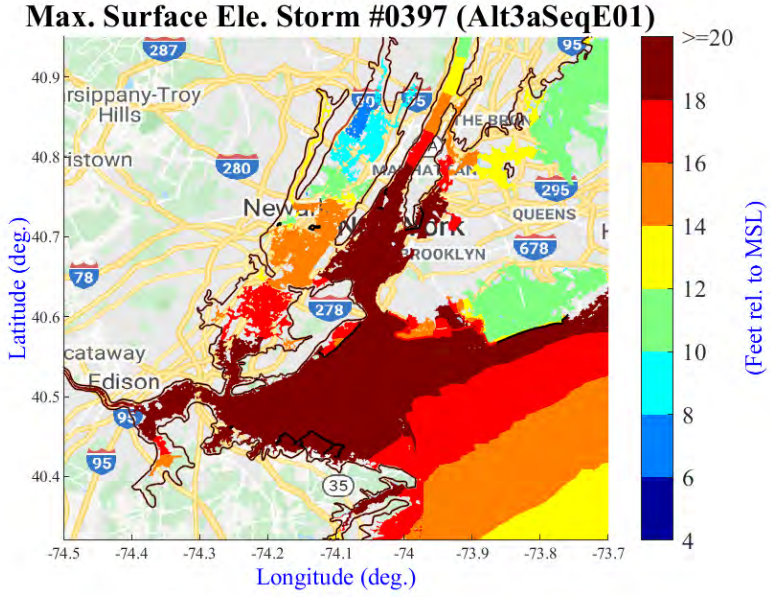




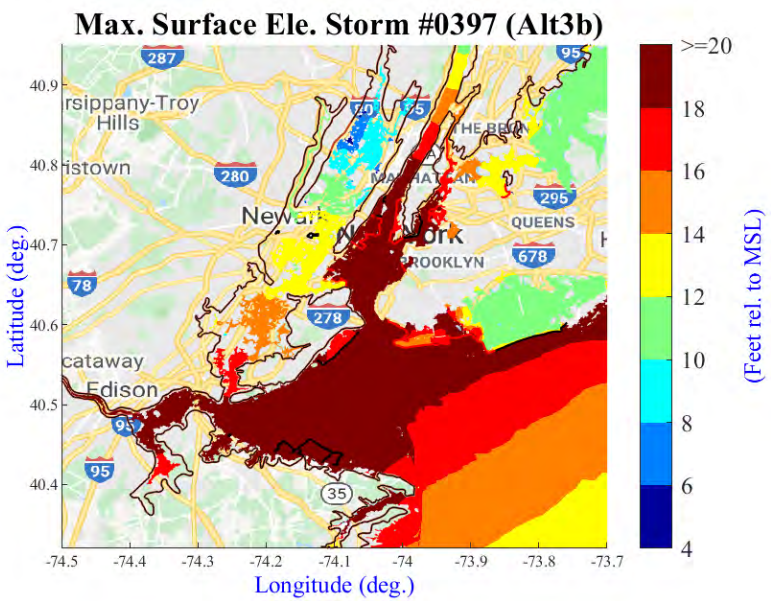


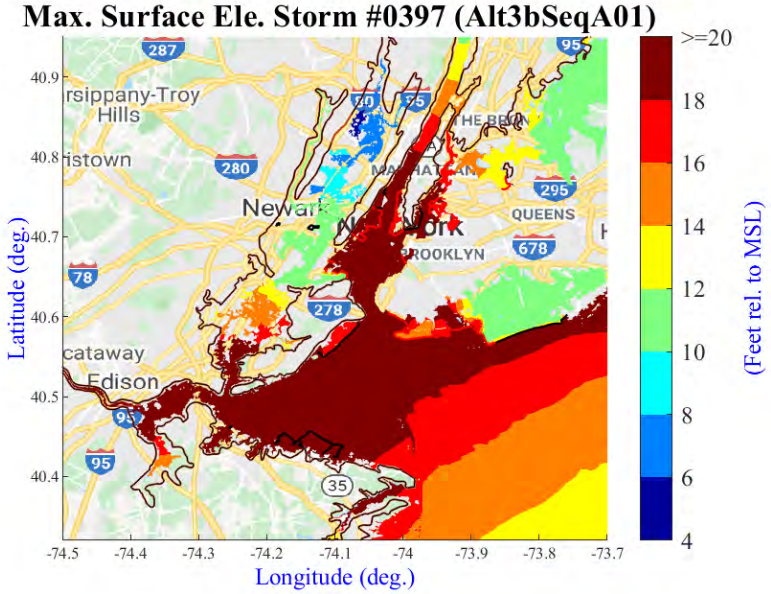


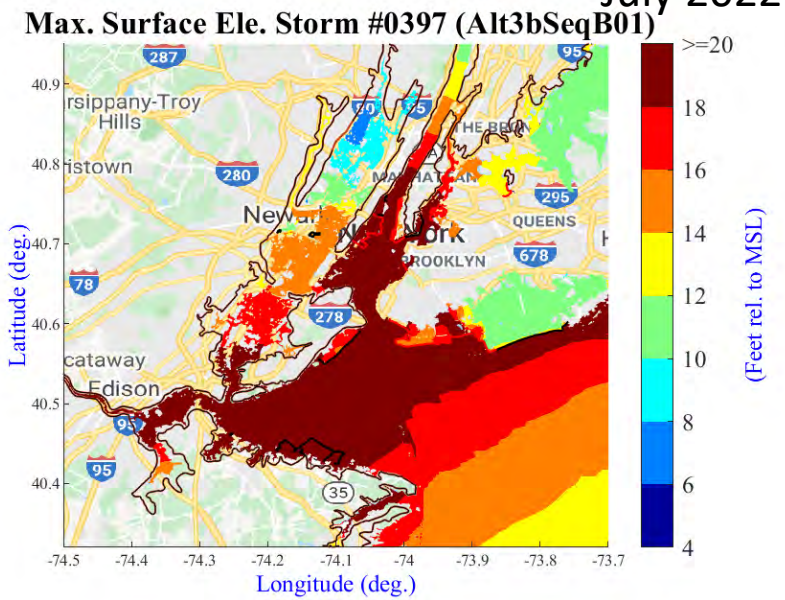


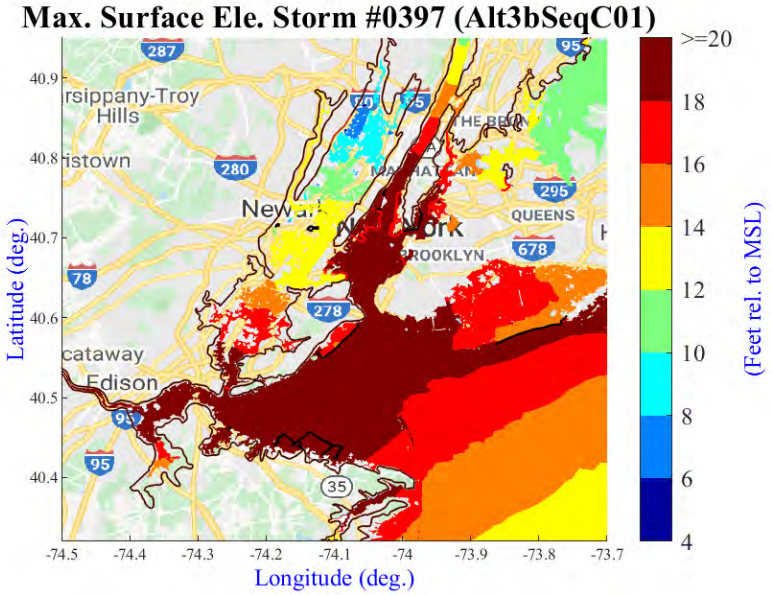


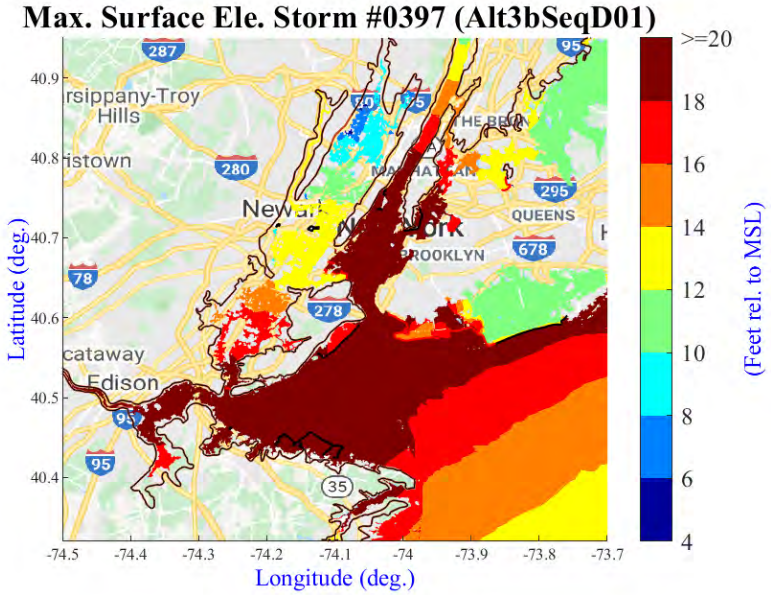
Storm #397 Alt3a







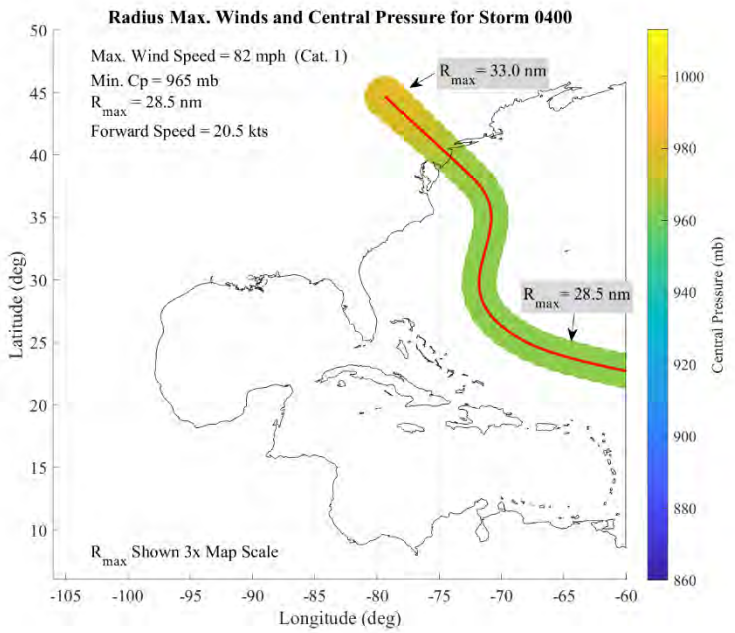




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

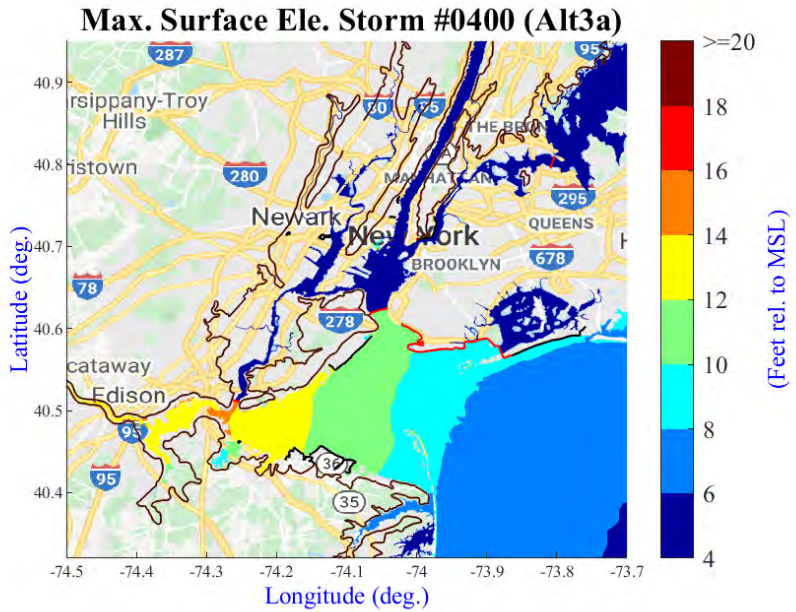
Storm #397 Alt3b

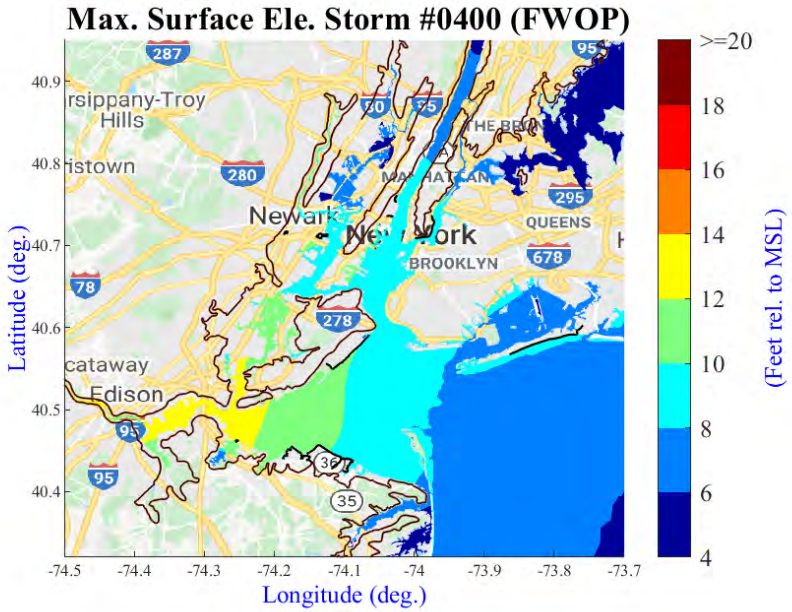
Storm #400

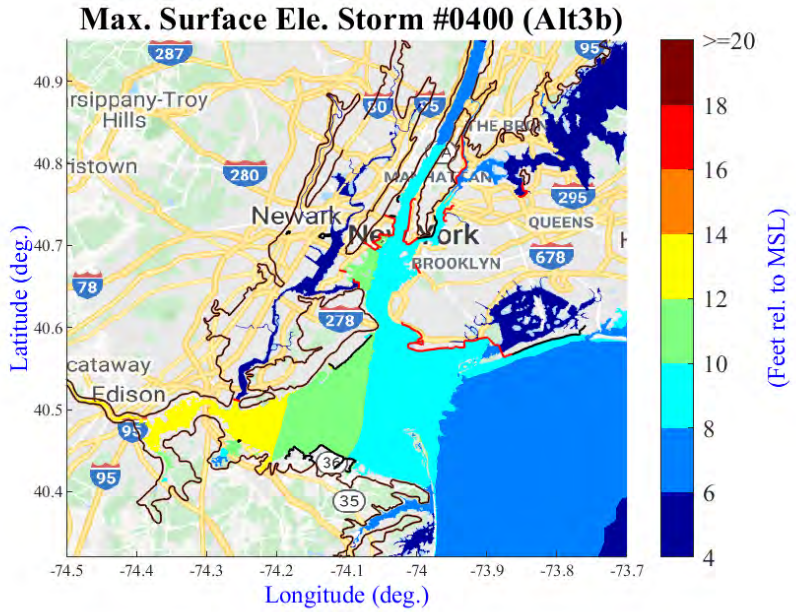


Max. Wind Speed: ***82 mph (Cat. 1)***
Min. Cp: ***965 mb***
Rmax: ***28.5 nm***
Forward Speed: ***20.5 kts***

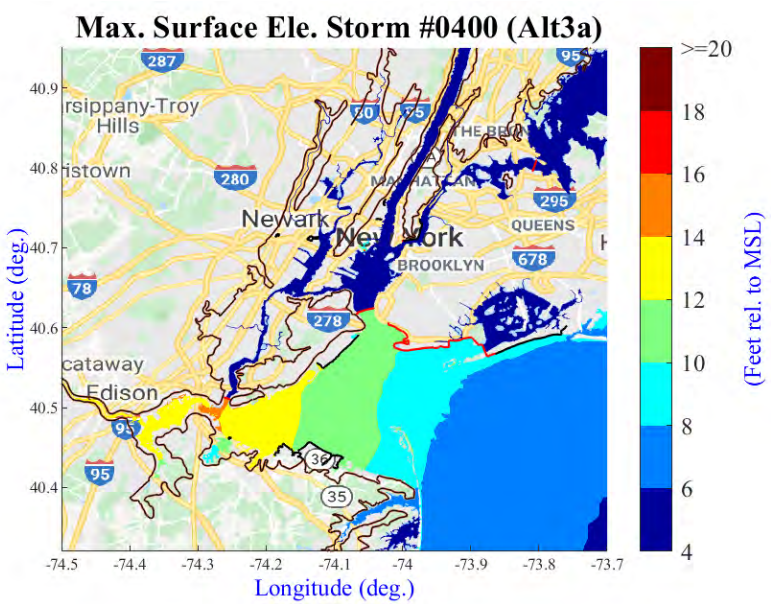
Future With Out Project:
Max. WSE at Battery: ***9.31 ft.***
Max. WSE at Kings Point: ***5.01 ft.***
Max. WSE at Sandy Hook: ***8.71 ft.***

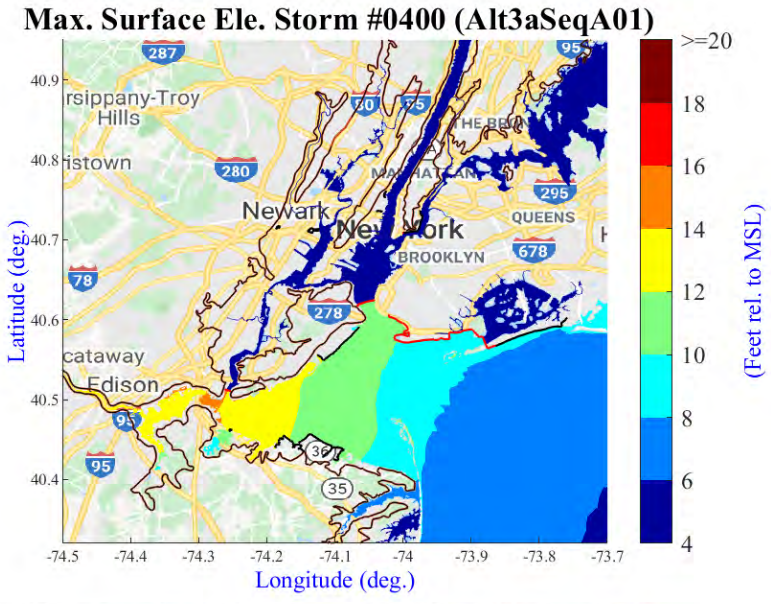


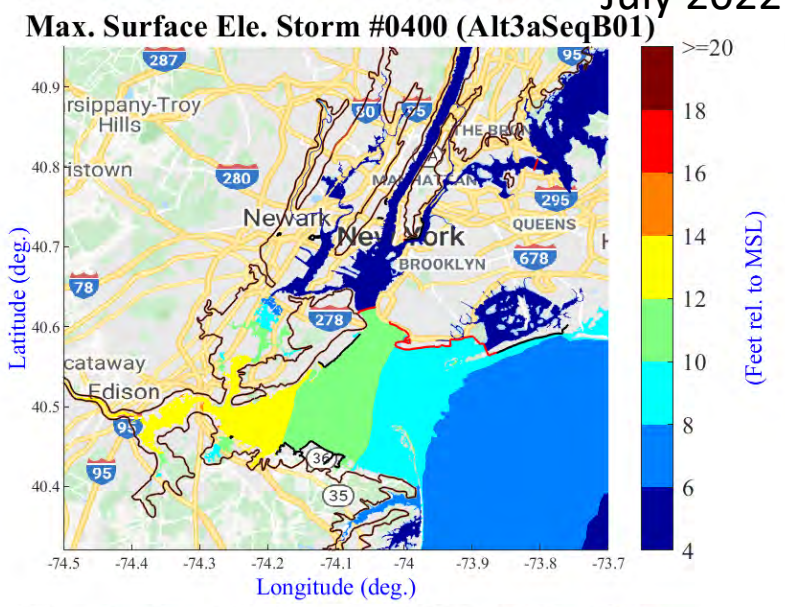


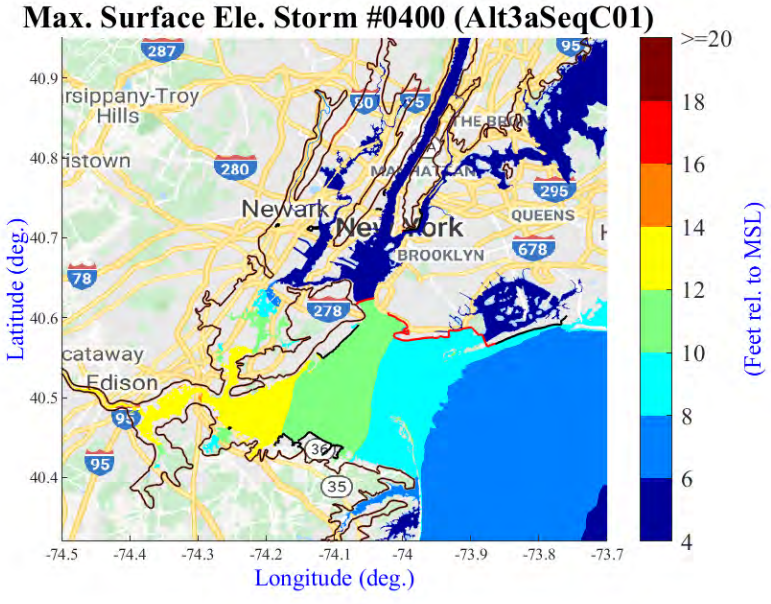


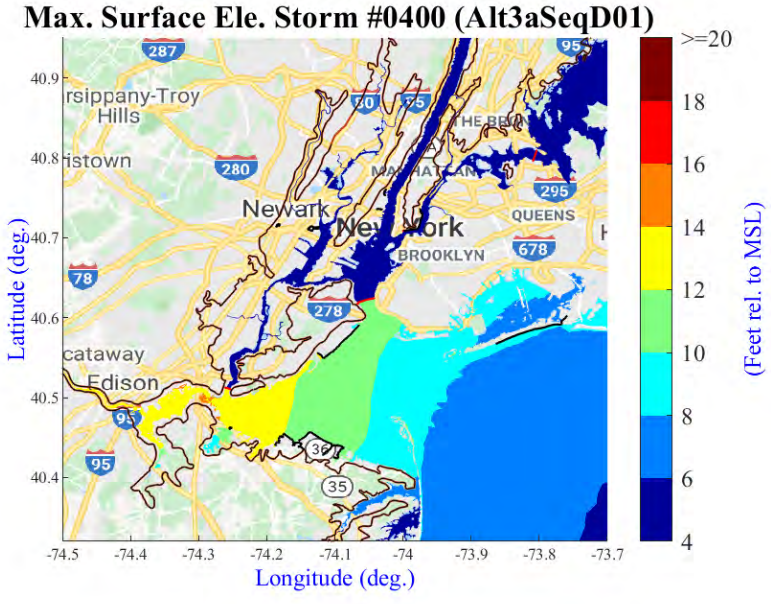
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

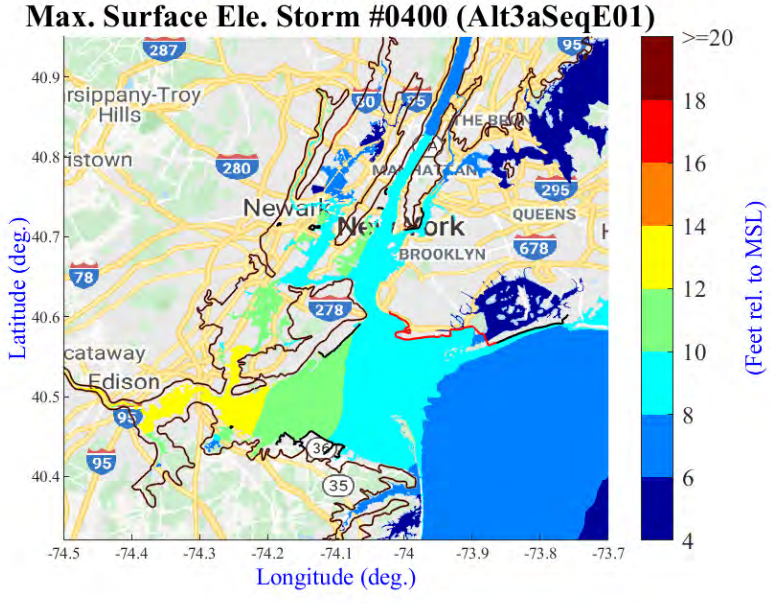




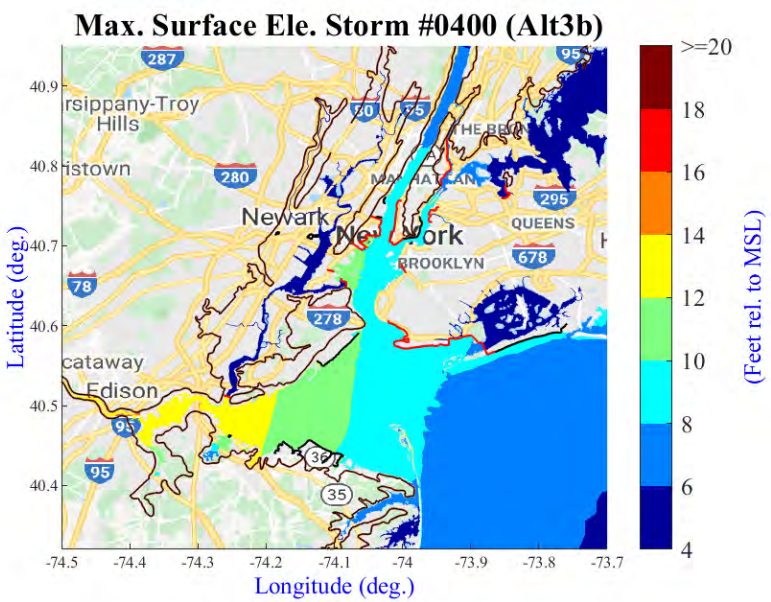


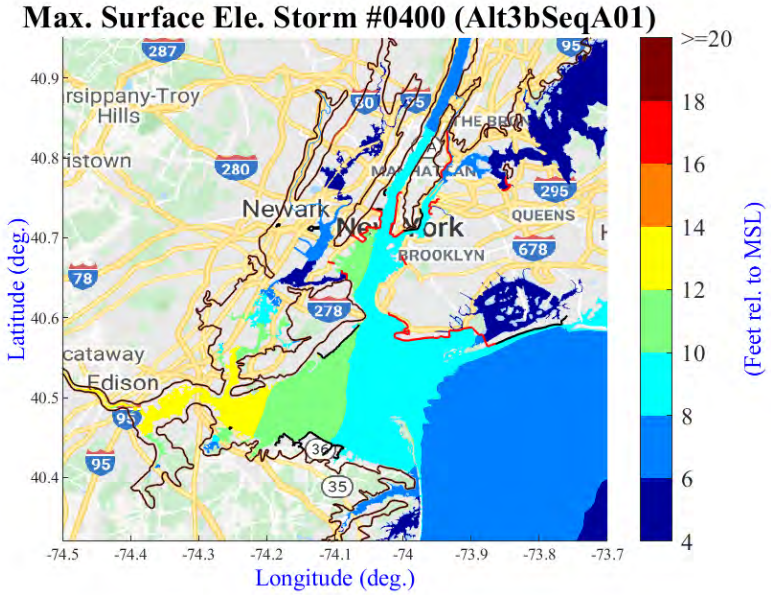


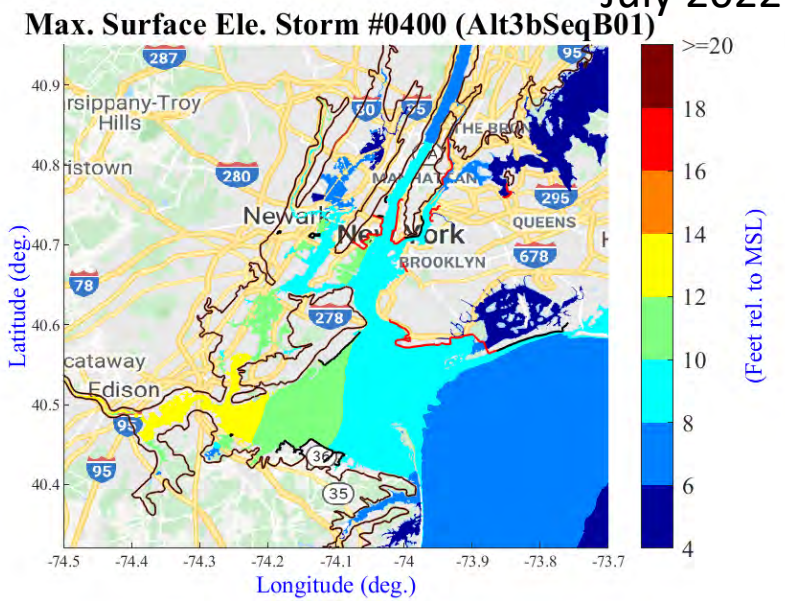


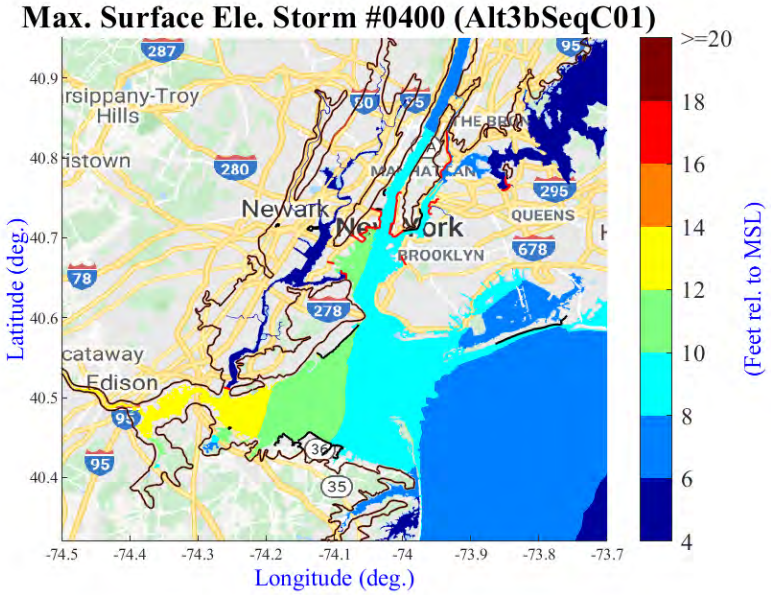


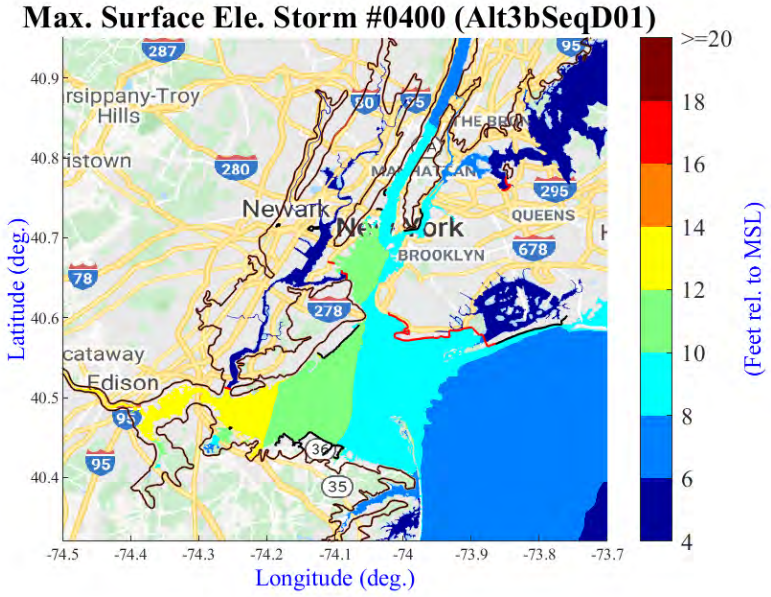
Storm #400 Alt3a







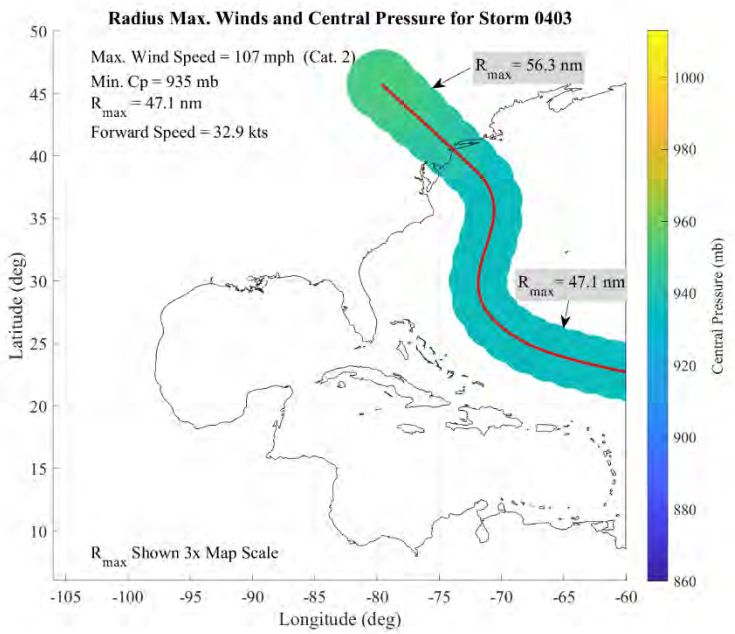




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #400 Alt3b

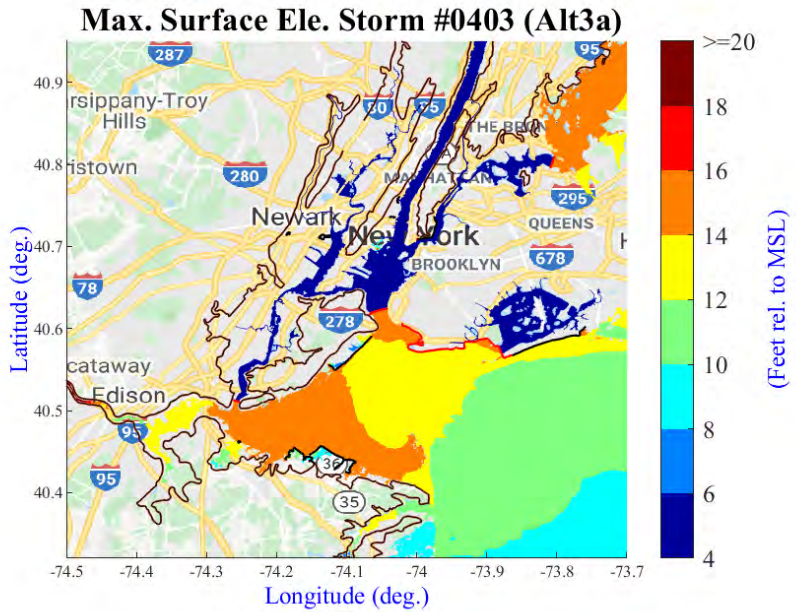
Storm #403

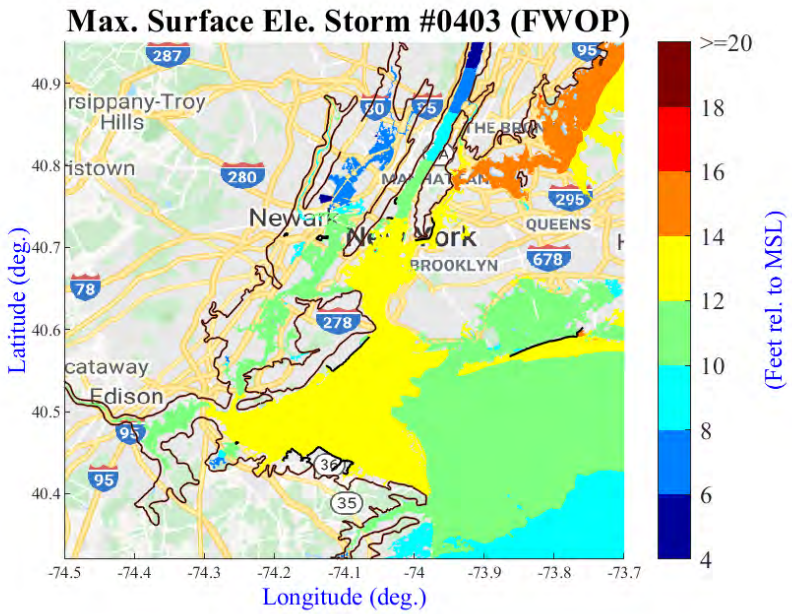


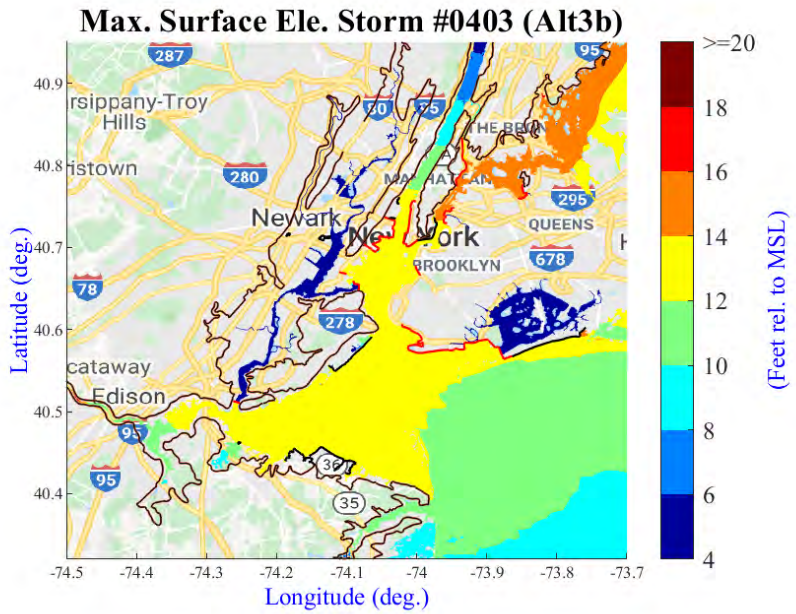
Max. Wind Speed: ***107 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***47.1 nm***
Forward Speed: ***32.9 kts***

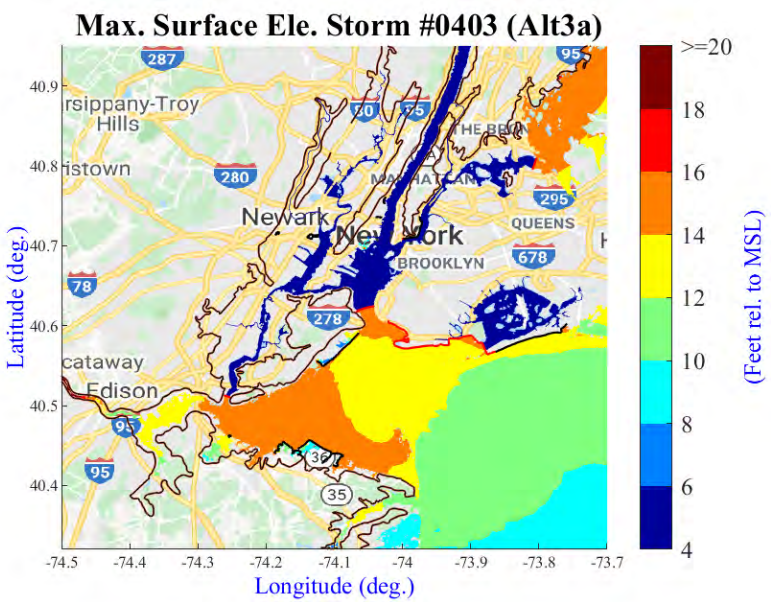
Future With Out Project:
Max. WSE at Battery: ***12.74 ft.***
Max. WSE at Kings Point: ***13.98 ft.***
Max. WSE at Sandy Hook: ***12.41 ft.***

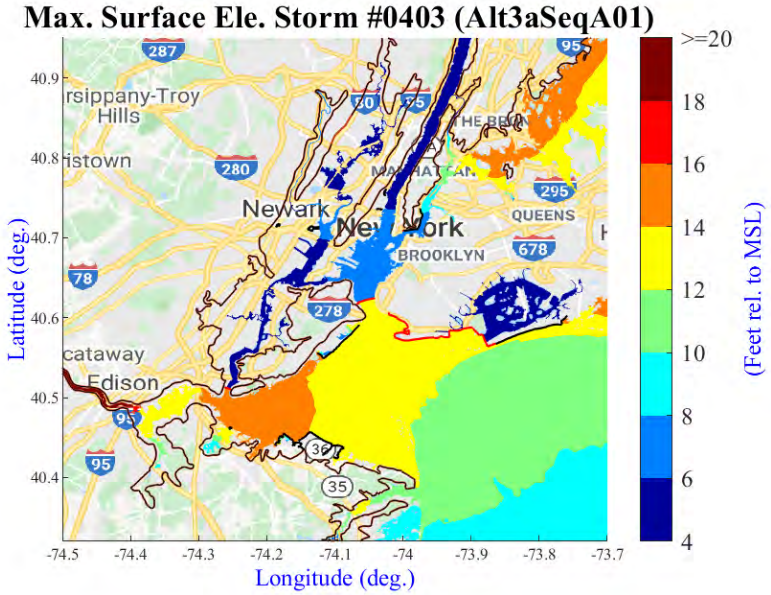
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

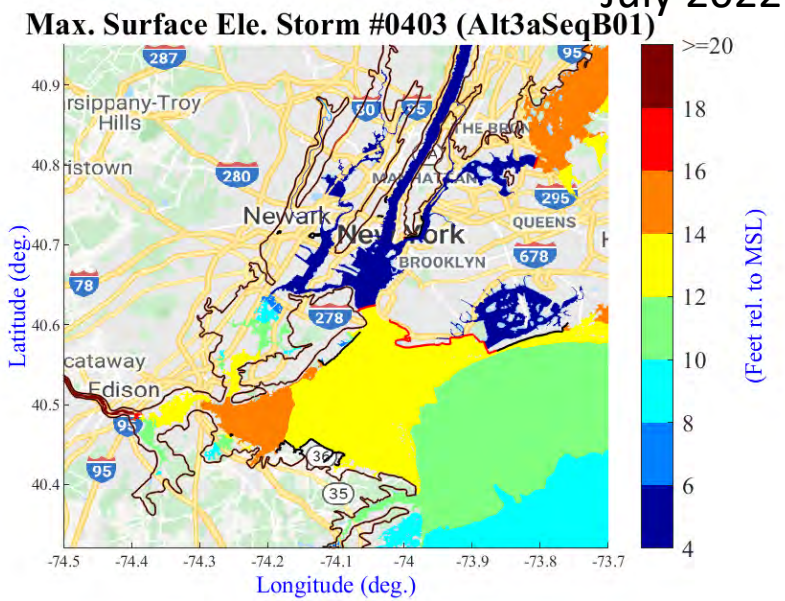


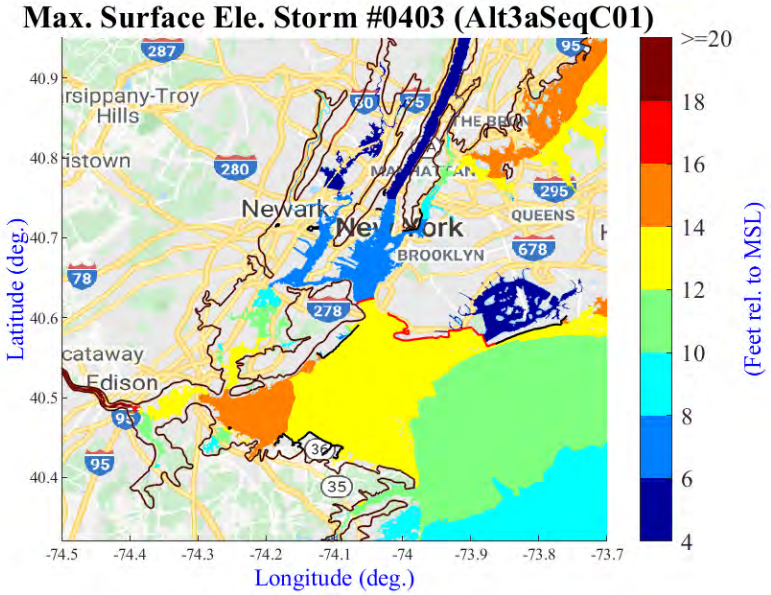


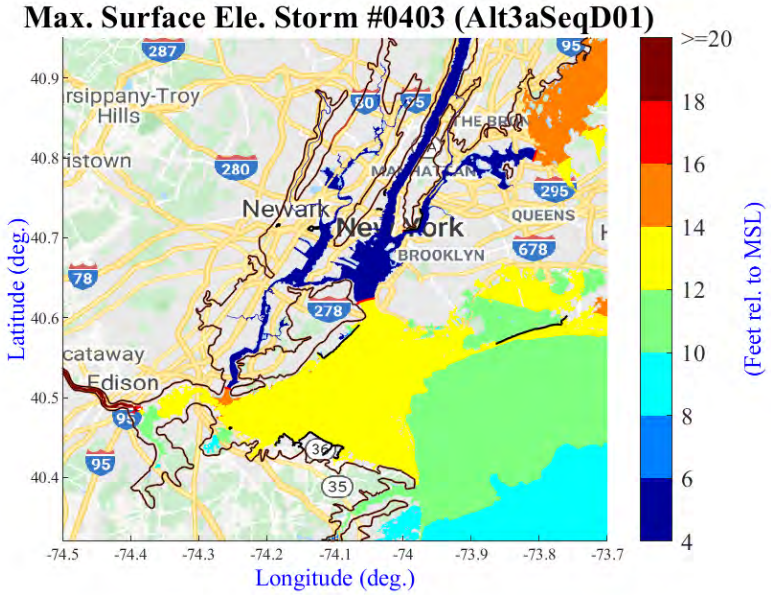


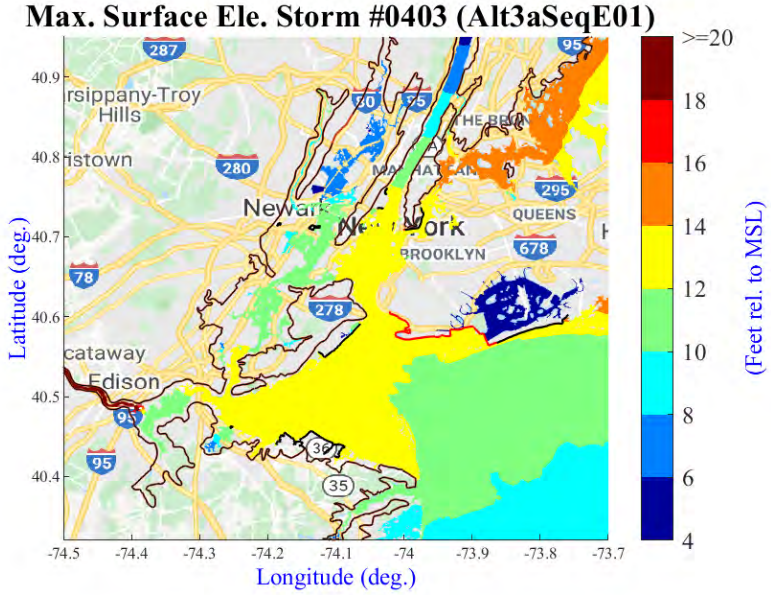




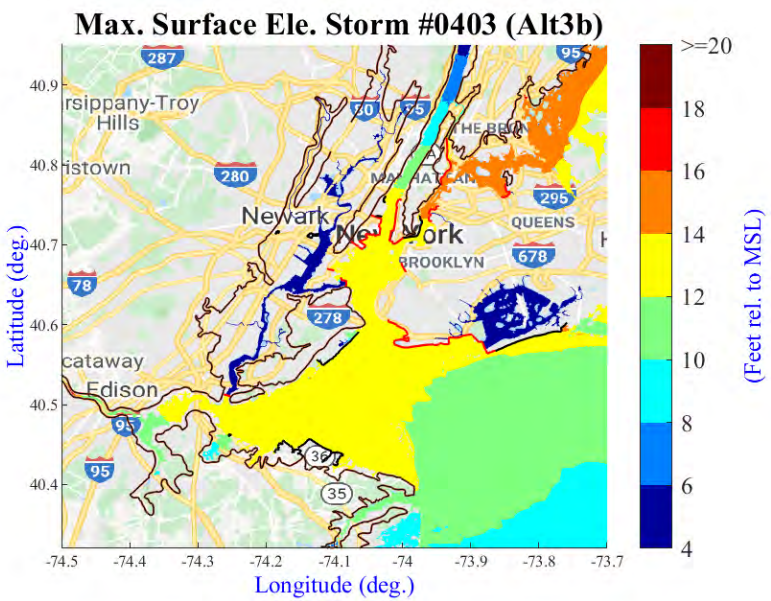


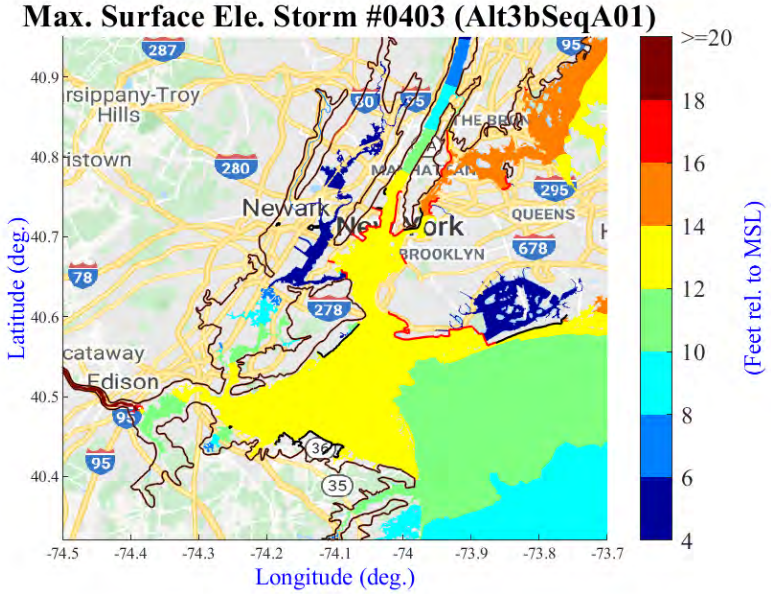


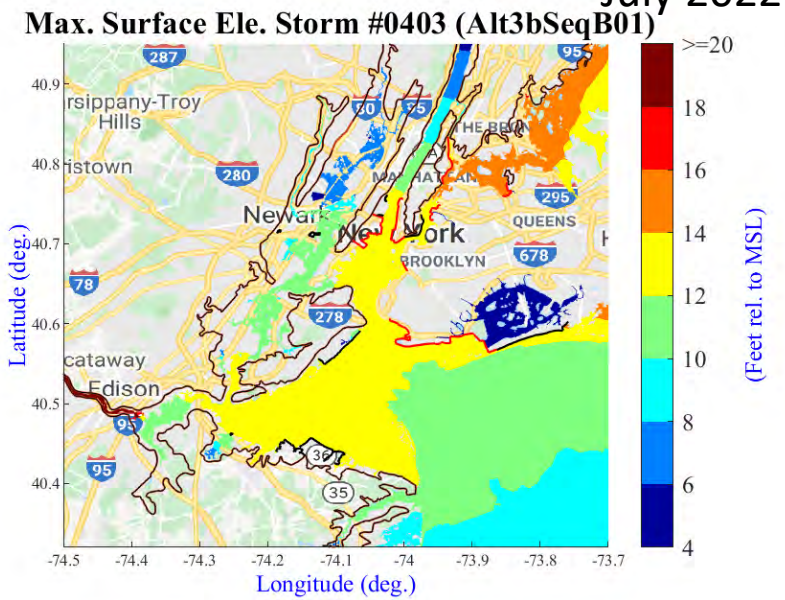


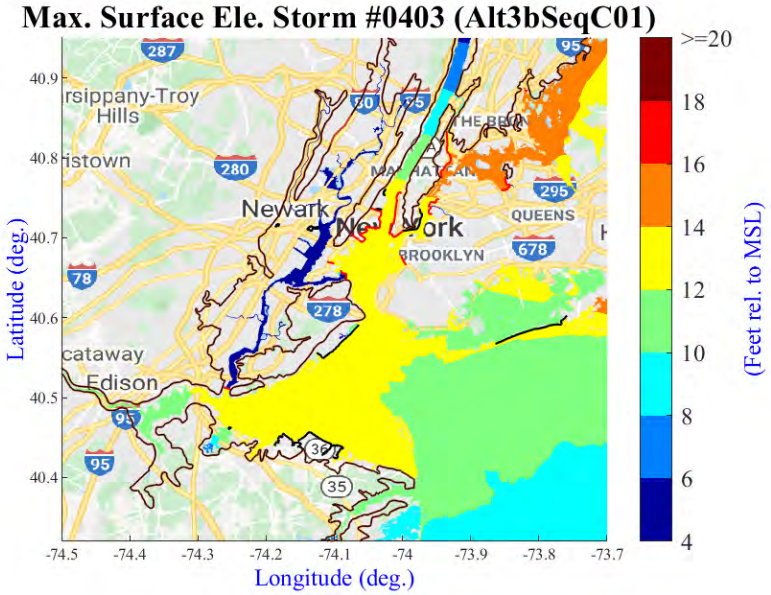


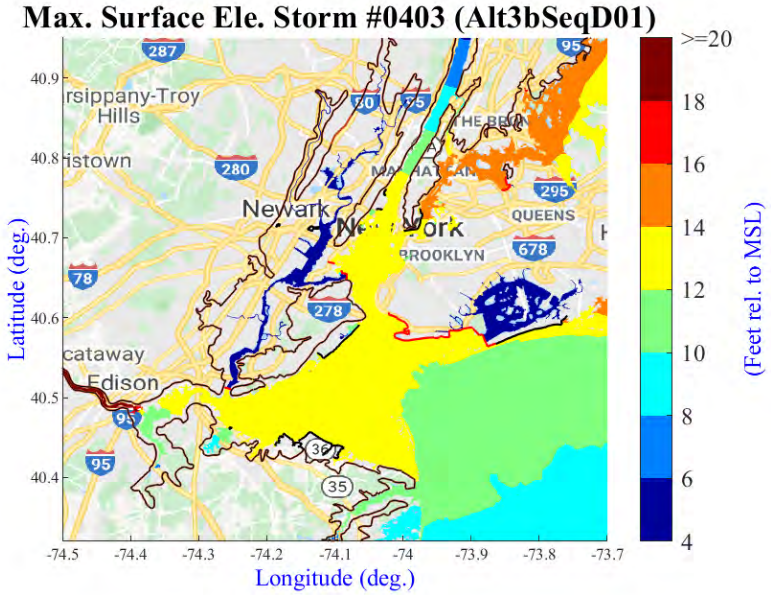
Storm #403 Alt3a







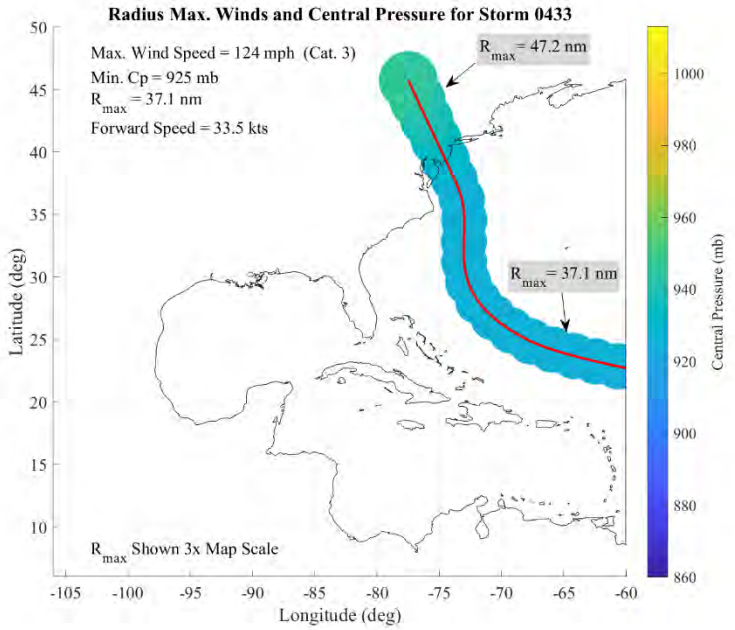




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

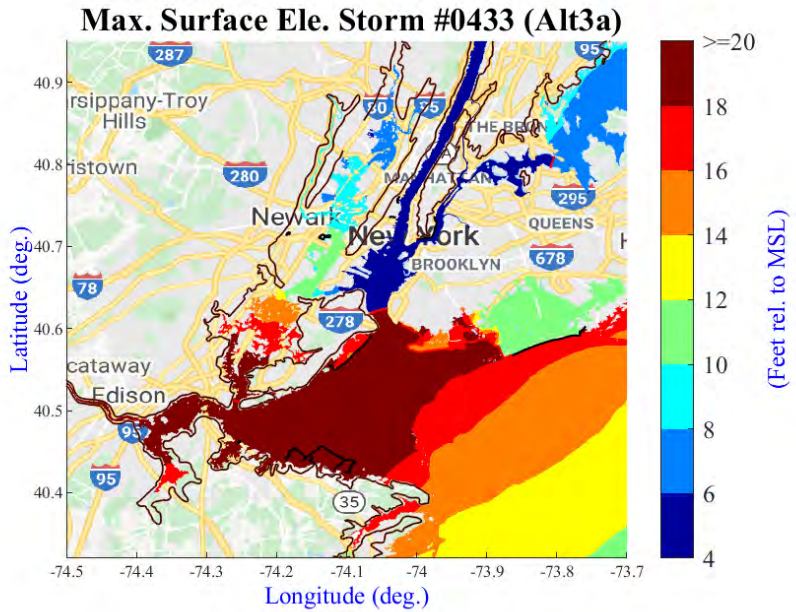
Storm #400 Alt3b

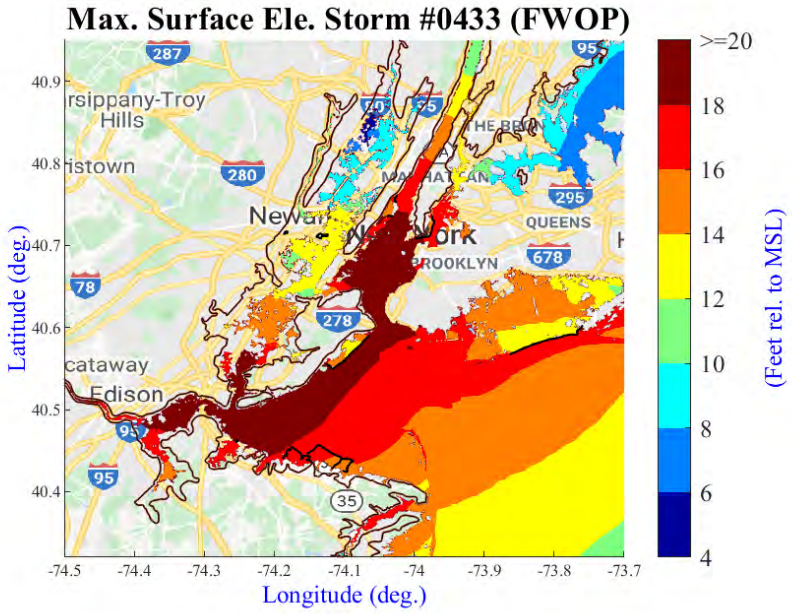
Storm #433

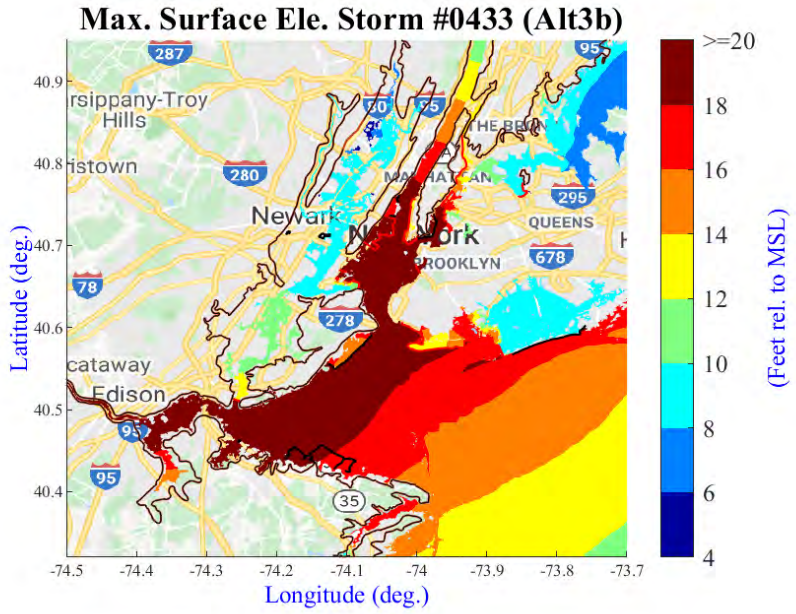


Max. Wind Speed: ***124 mph (Cat. 3)***
Min. Cp: ***925 mb***
Rmax: ***37.1 nm***
Forward Speed: ***33.5 kts***

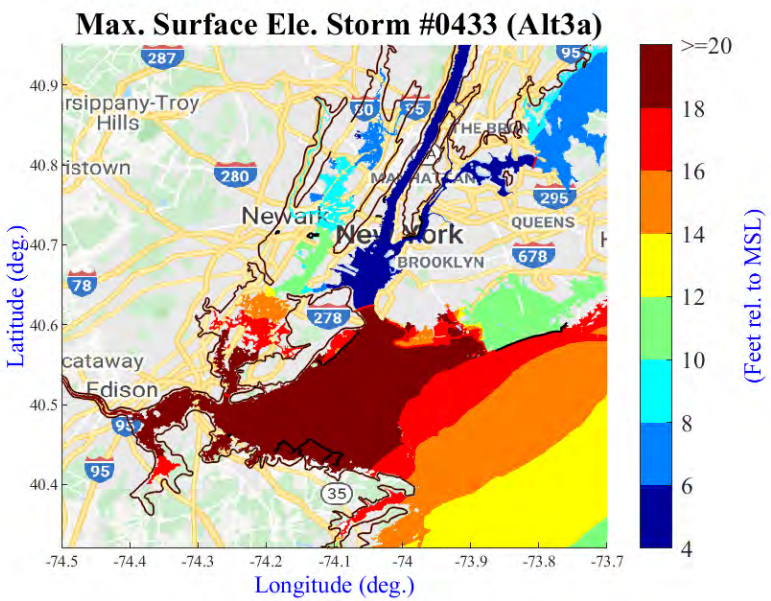
Future With Out Project:
Max. WSE at Battery: ***18.81 ft.***
Max. WSE at Kings Point: ***7.79 ft.***
Max. WSE at Sandy Hook: ***15.92 ft.***

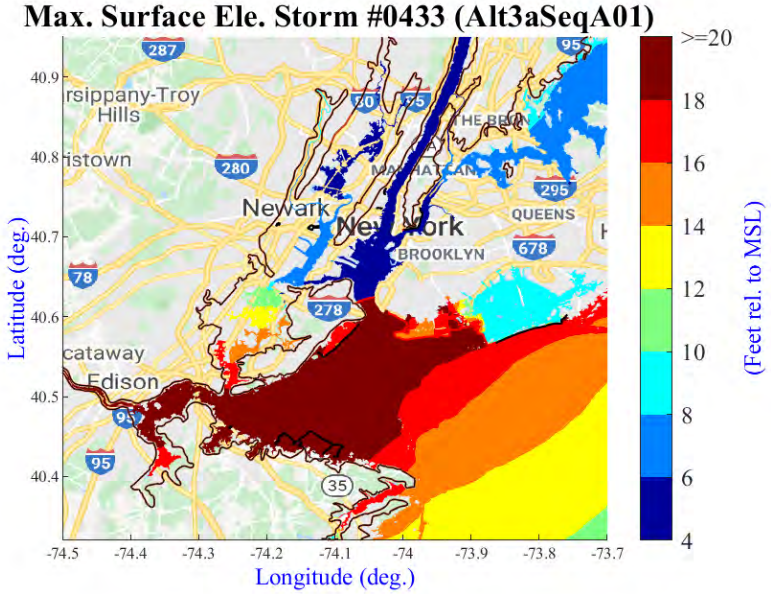


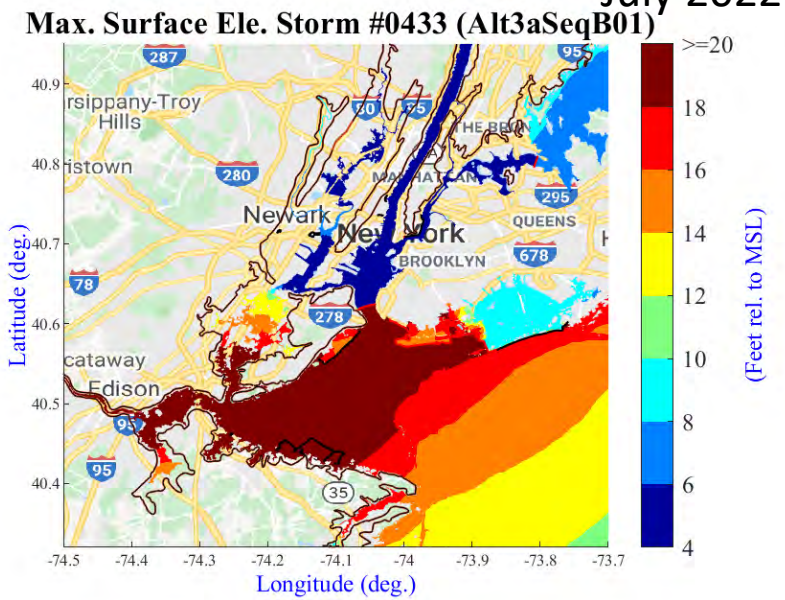


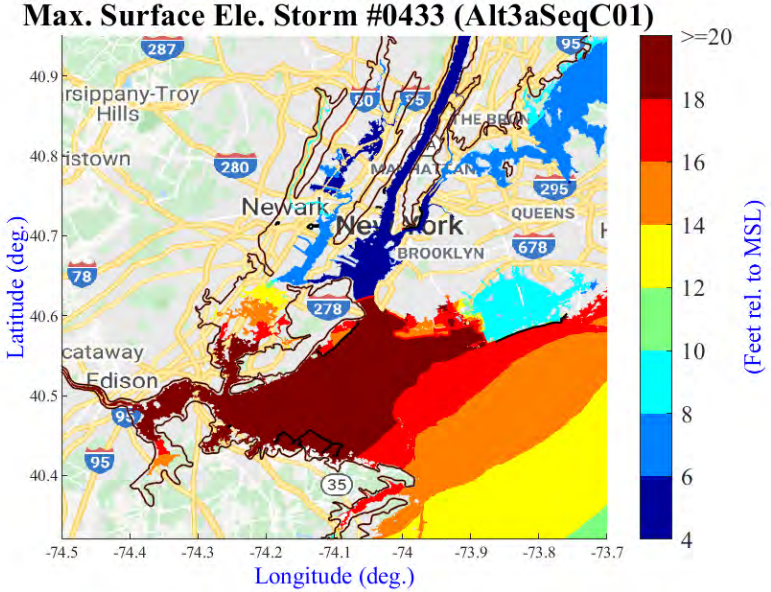


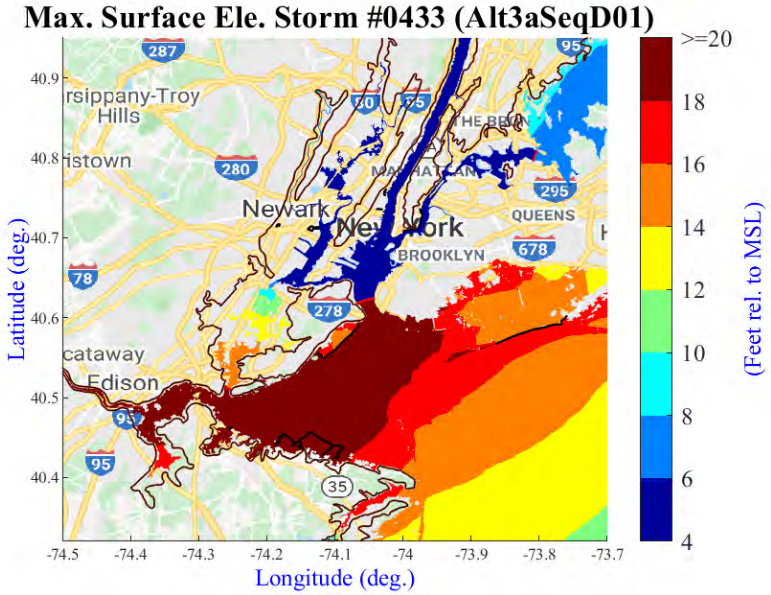
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

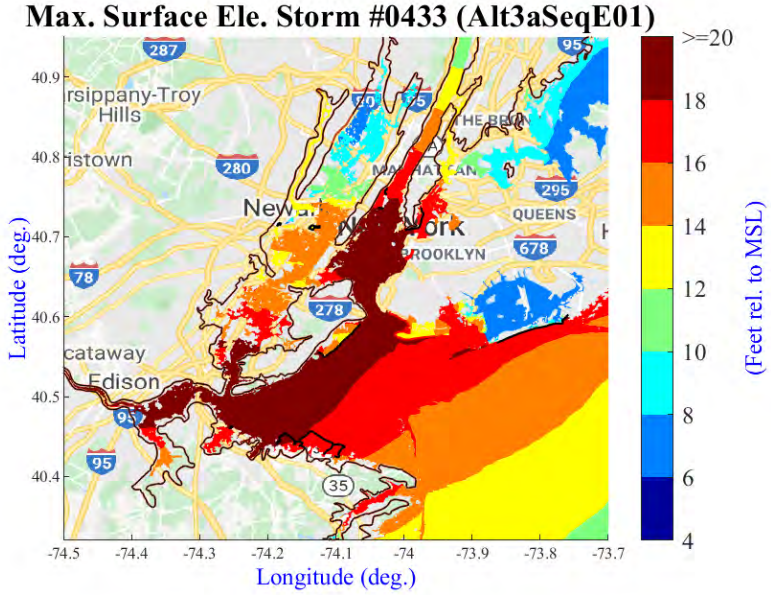




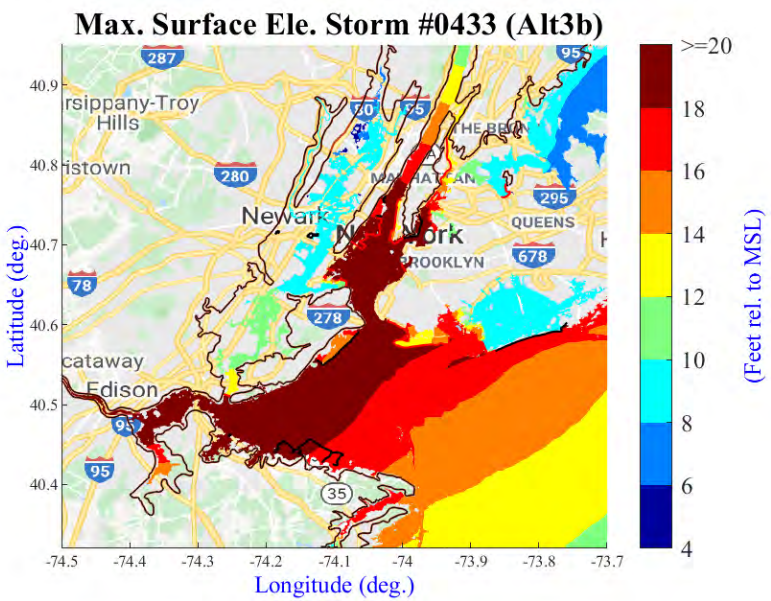


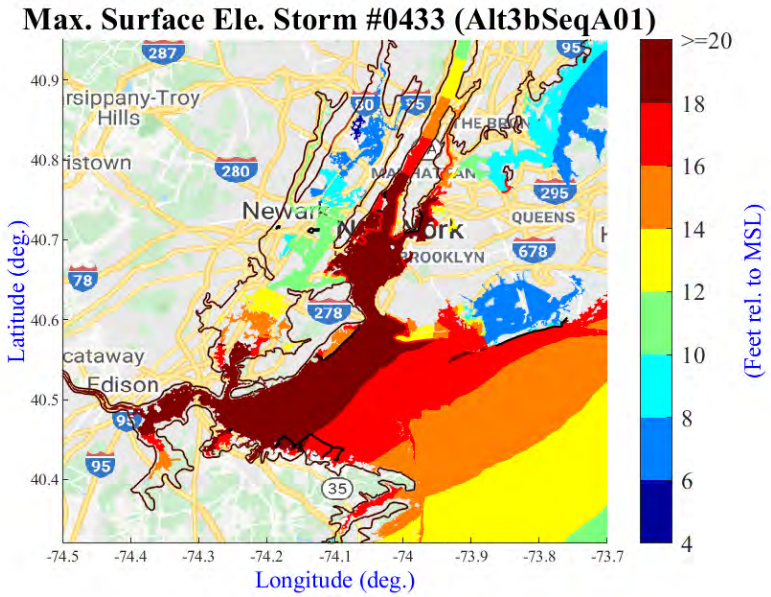


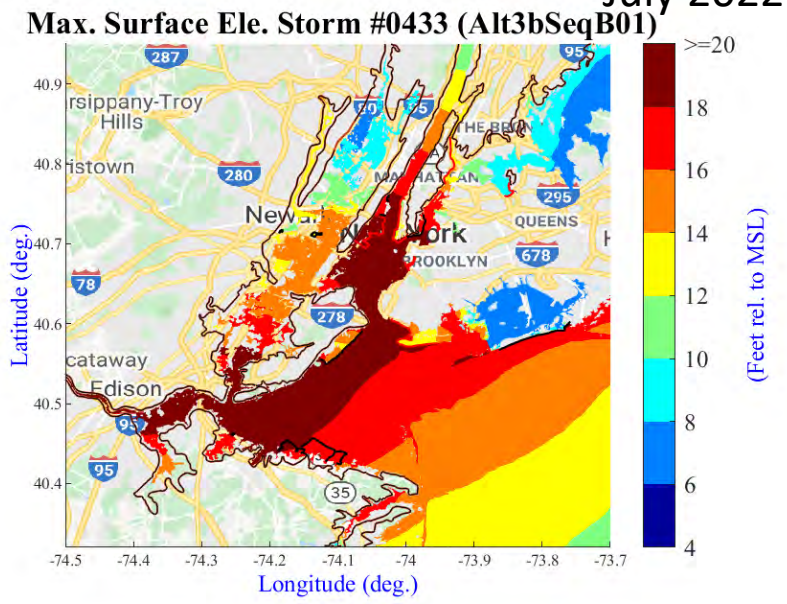


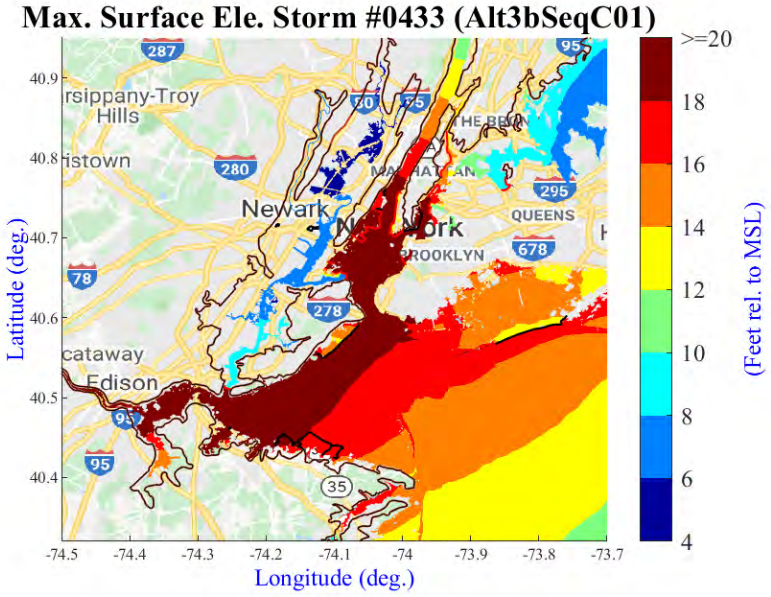


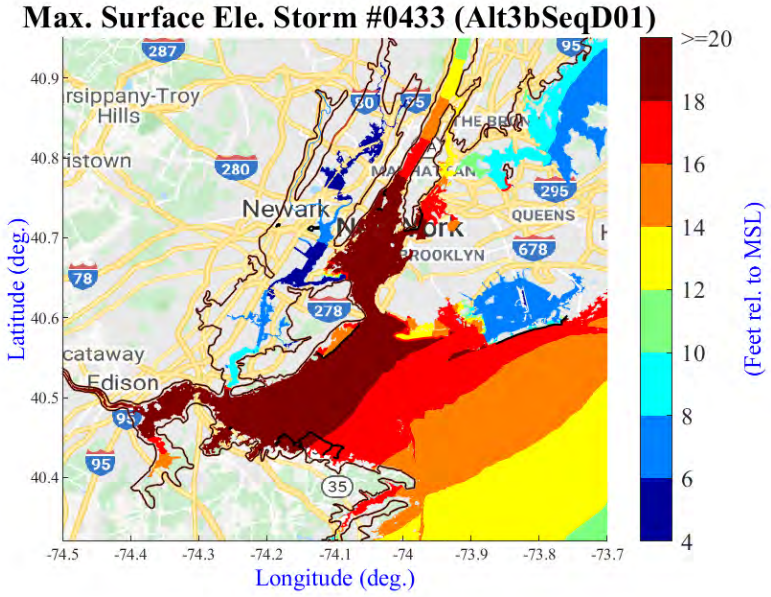
Storm #433 Alt3a







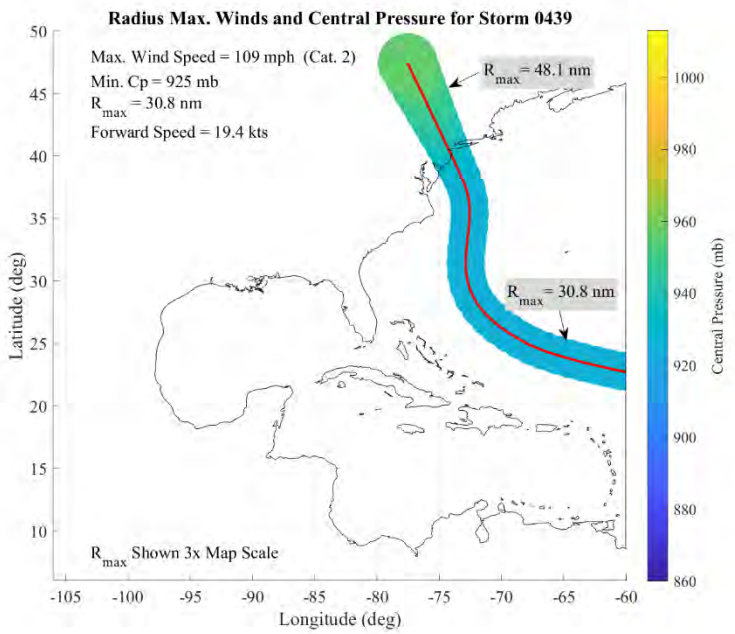




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

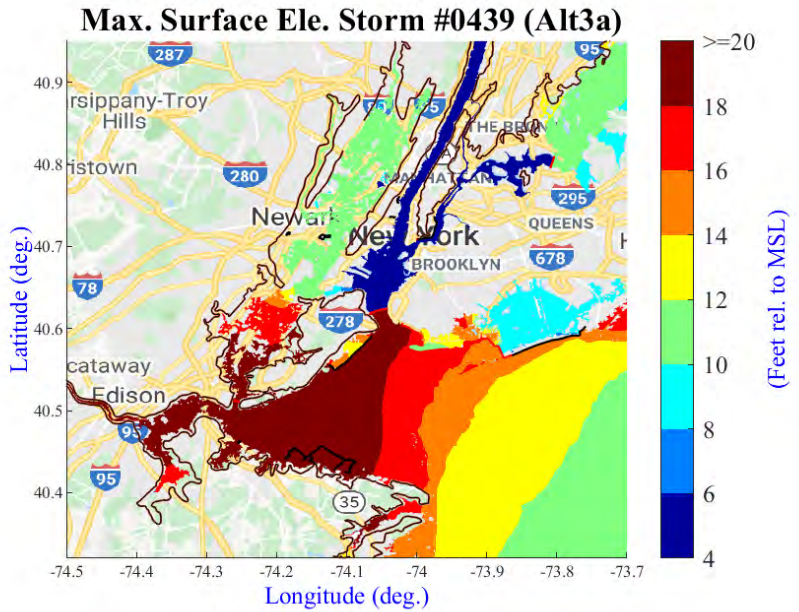
Storm #433 Alt3b

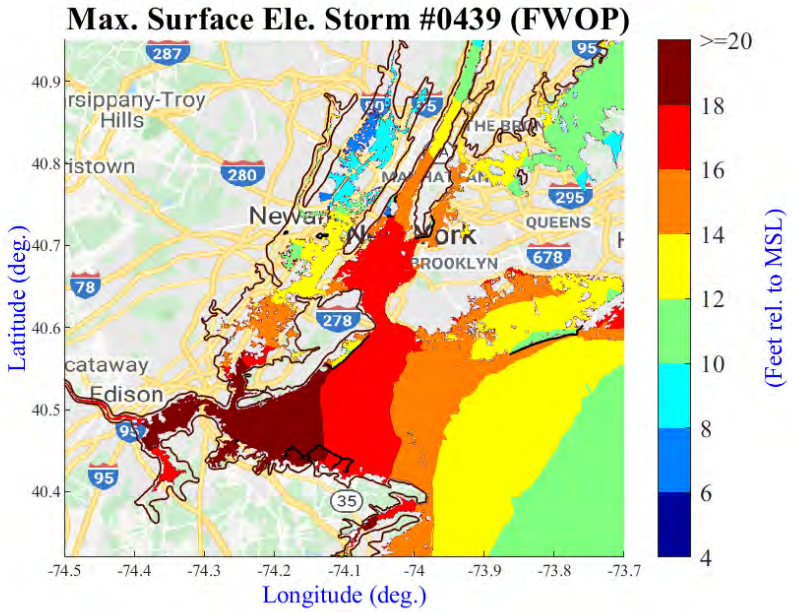
Storm #439

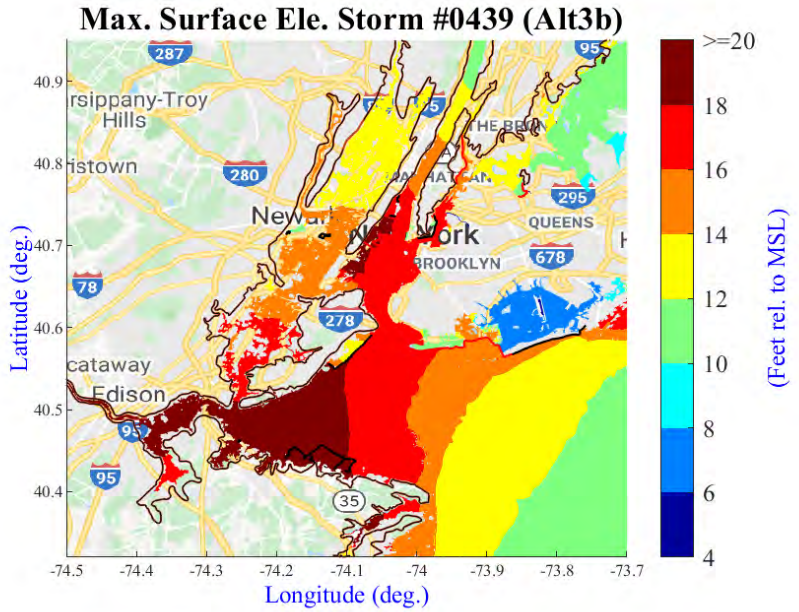


Max. Wind Speed: ***109 mph (Cat. 2)***
Min. Cp: ***925 mb***
Rmax: ***30.8 nm***
Forward Speed: ***19.4 kts***

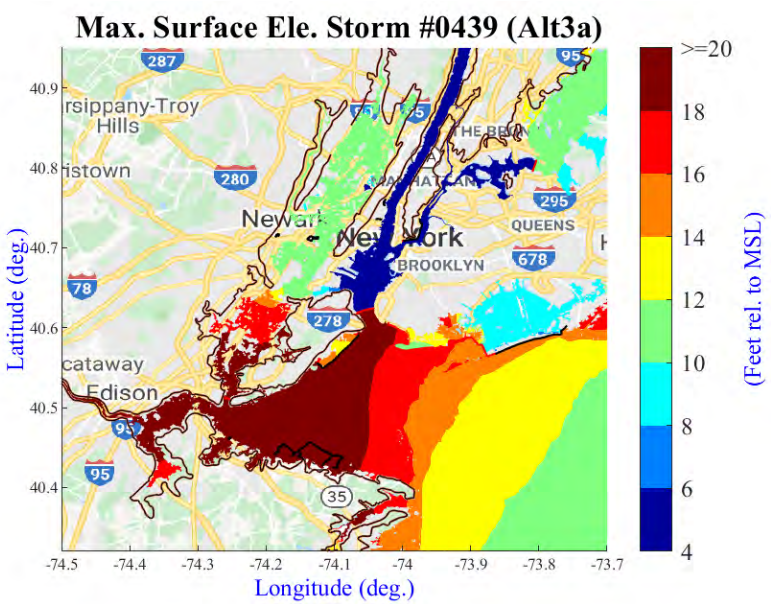
Future With Out Project:
Max. WSE at Battery: ***16.32 ft.***
Max. WSE at Kings Point: ***10.63 ft.***
Max. WSE at Sandy Hook: ***15.96 ft.***

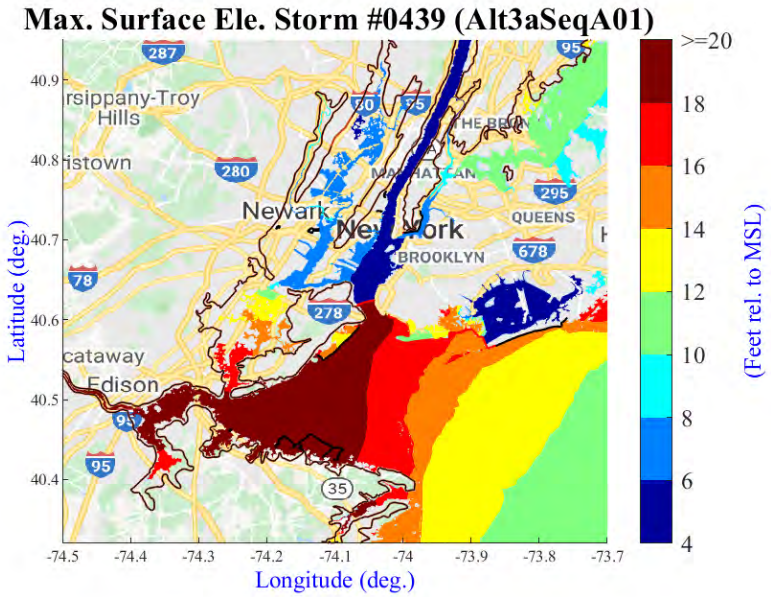


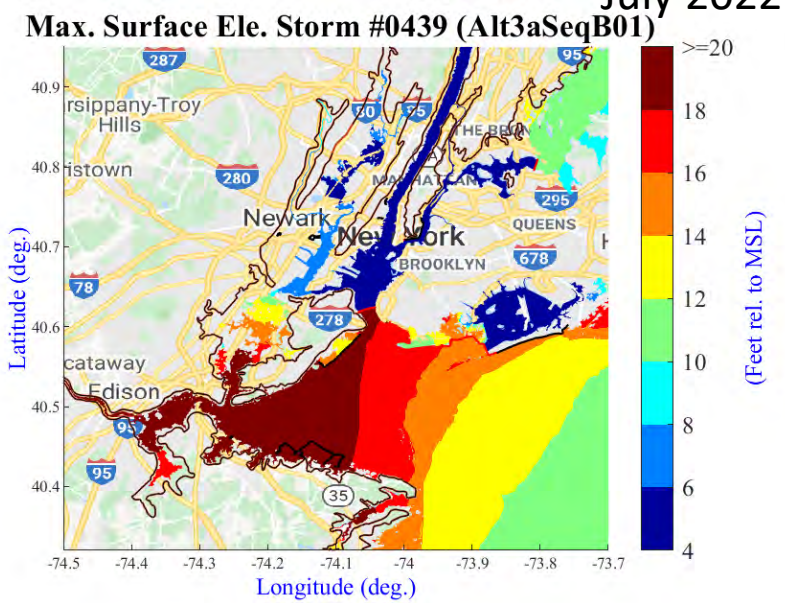


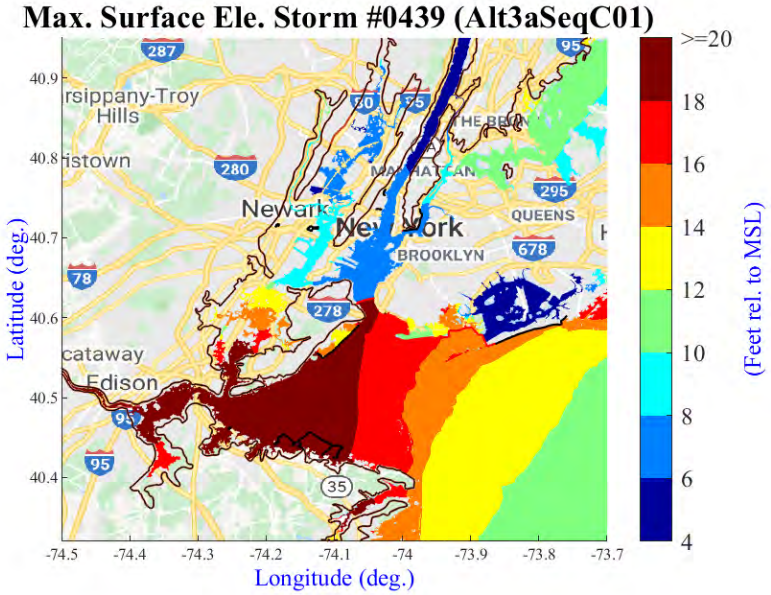


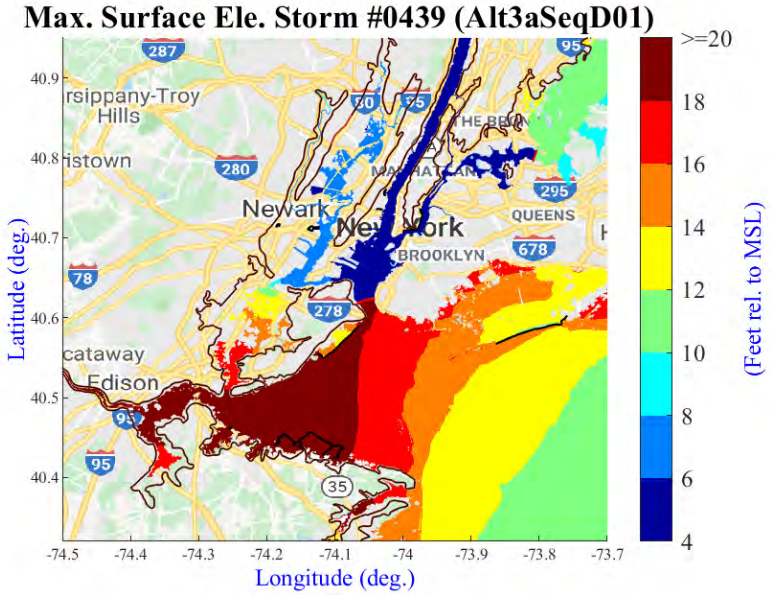
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

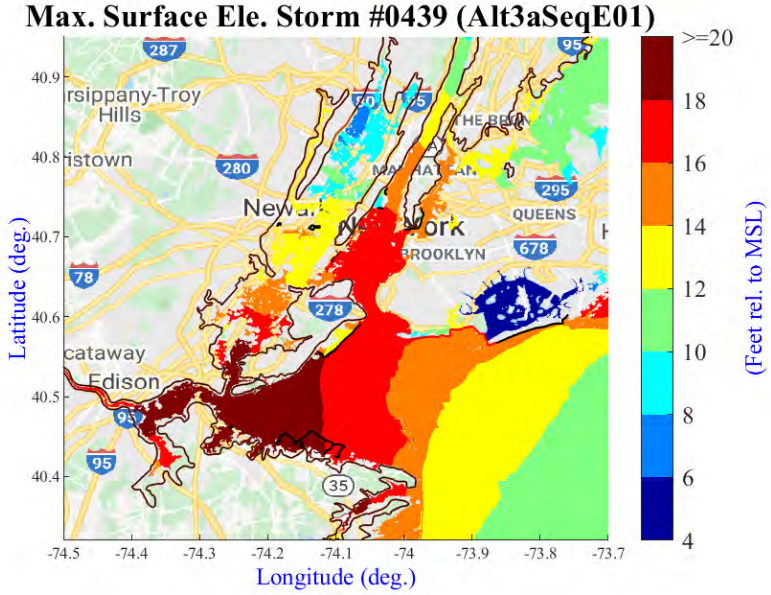




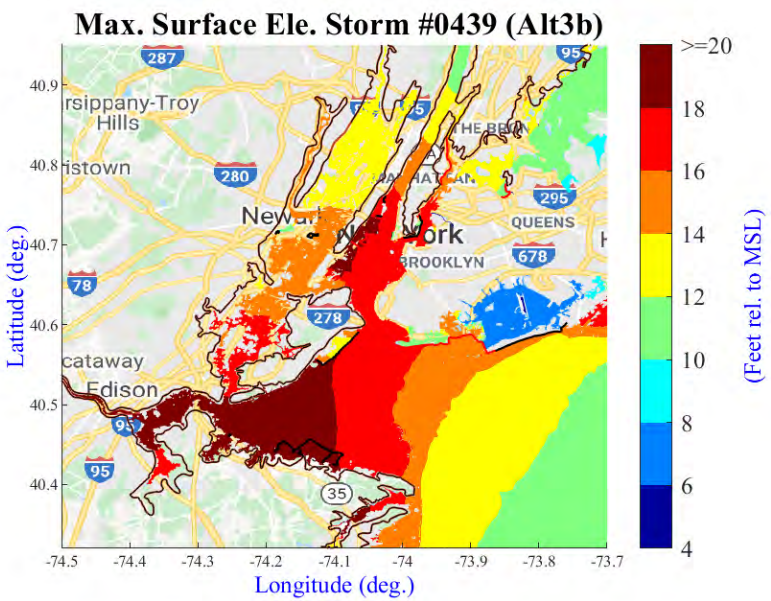


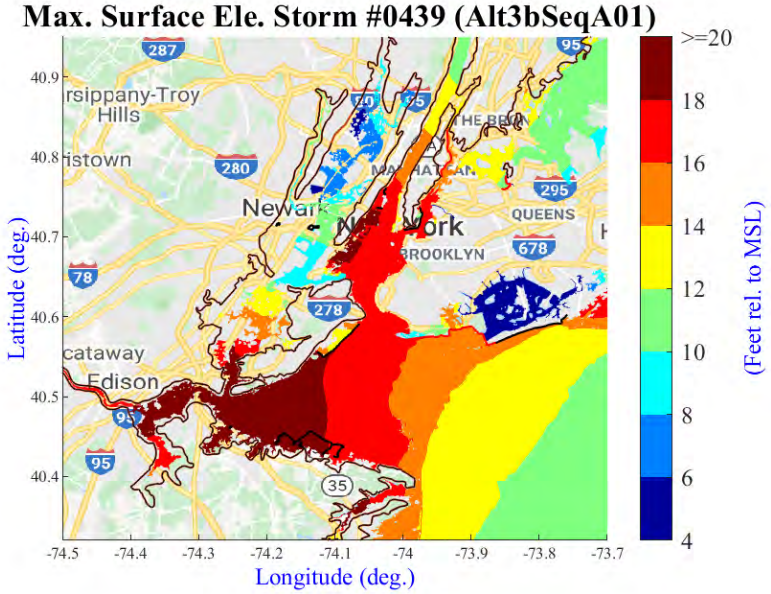


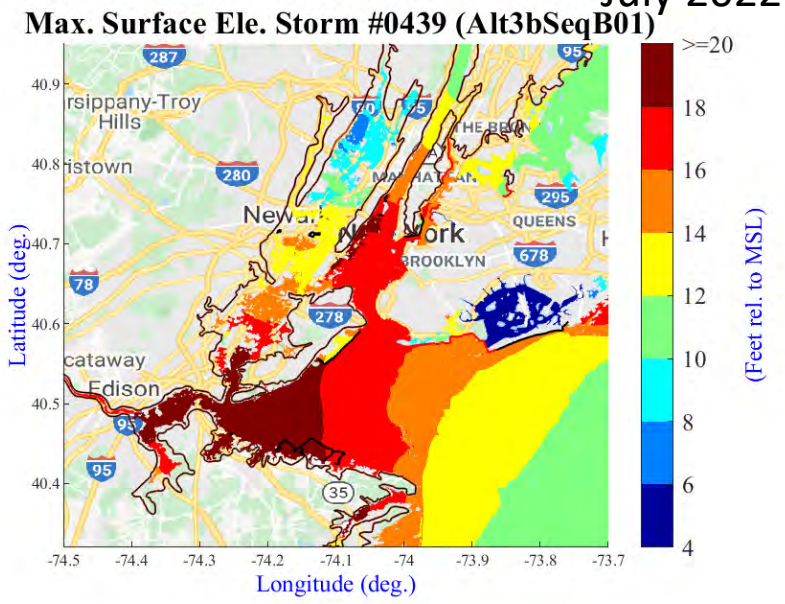


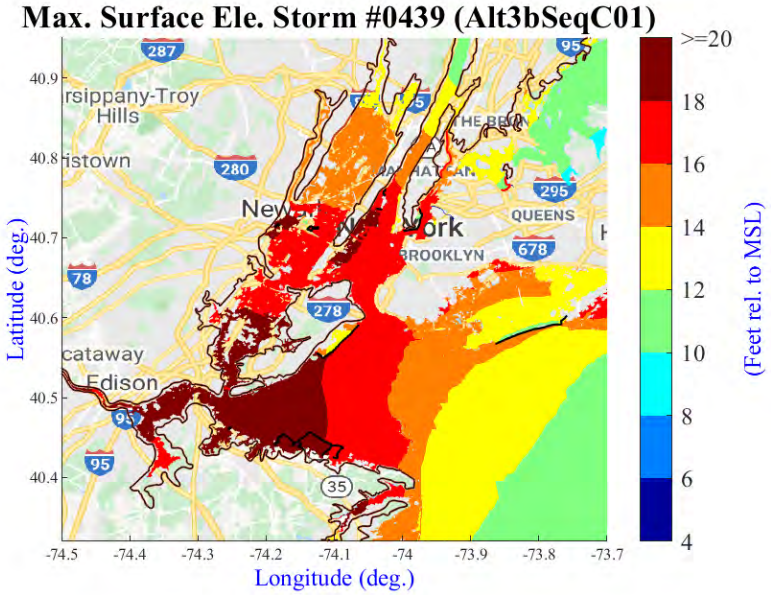


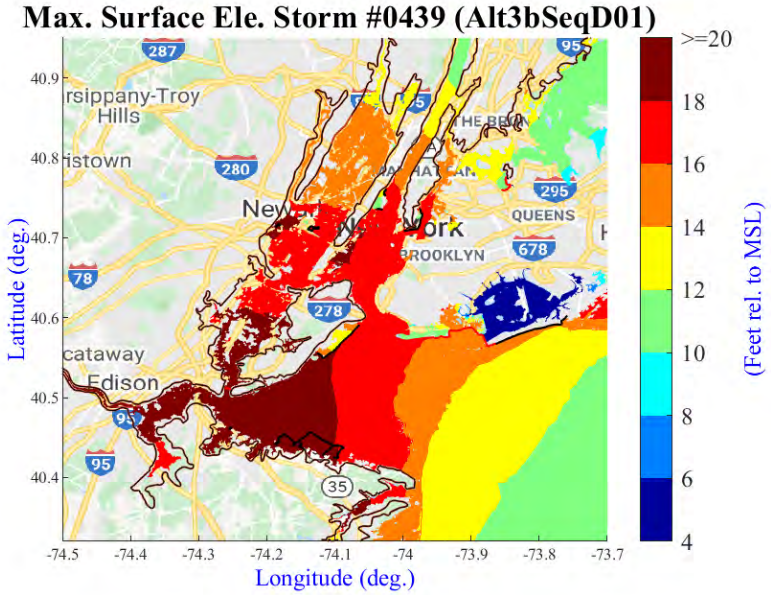
Storm #439 Alt3a







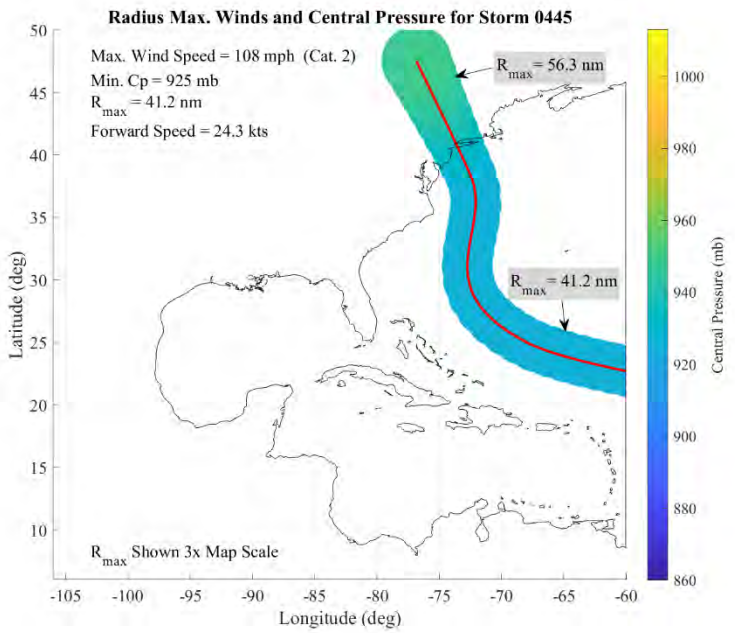




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

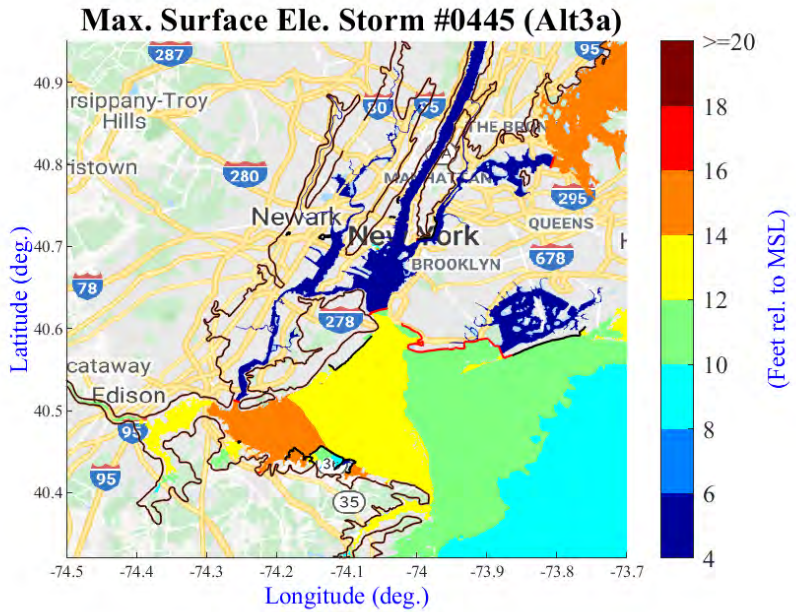
Storm #439 Alt3b

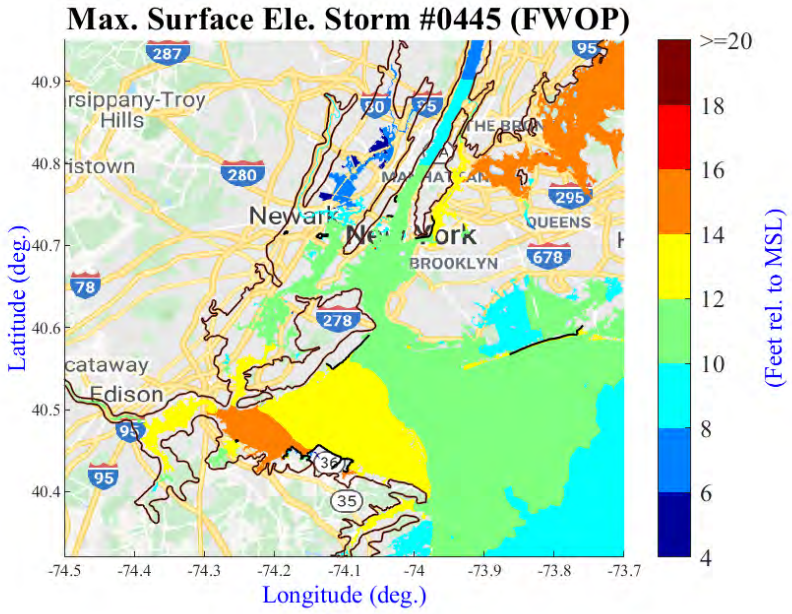
Storm #445

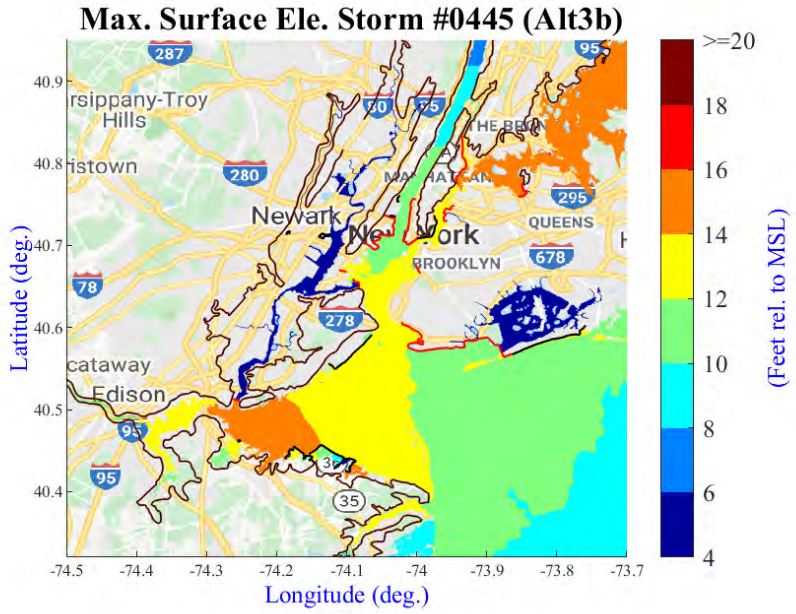


*Max. Wind Speed: **108 mph (Cat. 2)***
*Min. Cp: **925 mb***
*Rmax: **41.2 nm***
*Forward Speed: **24.3 kts***

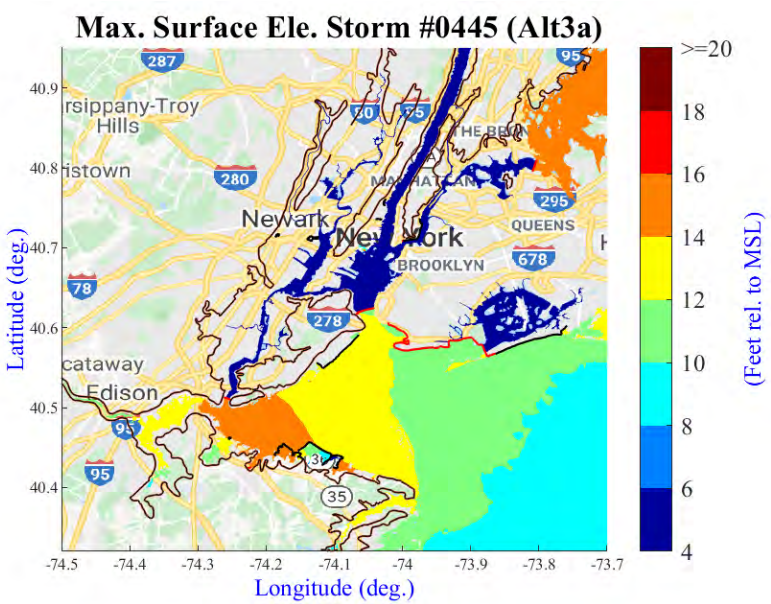
Future With Out Project:
*Max. WSE at Battery: **11.43 ft.***
*Max. WSE at Kings Point: **15.19 ft.***
*Max. WSE at Sandy Hook: **12.62 ft.***

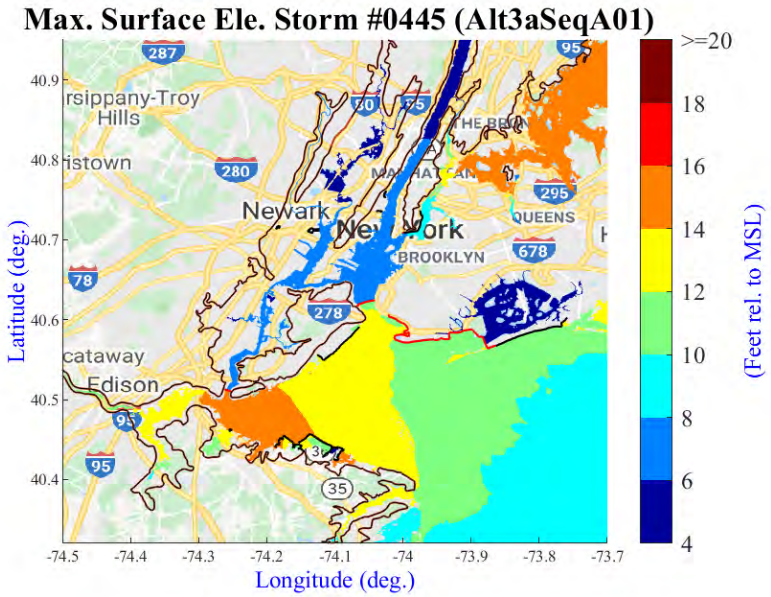


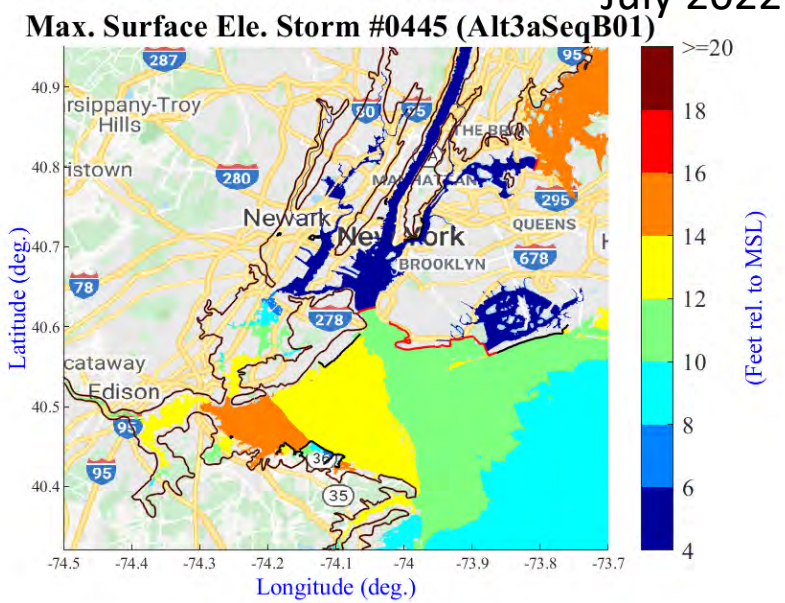


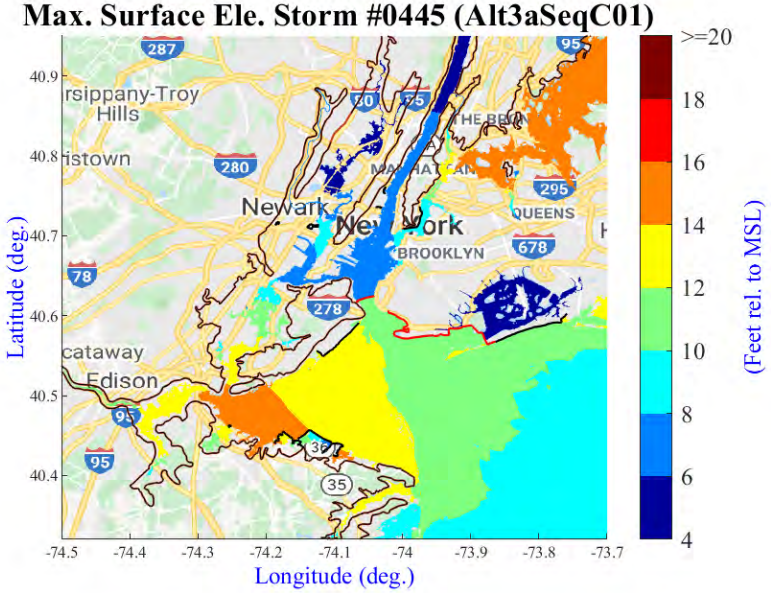


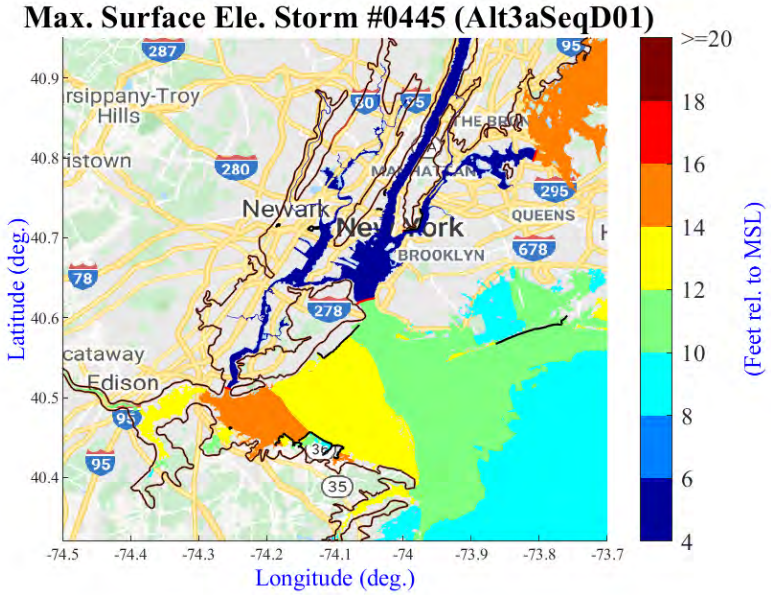
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

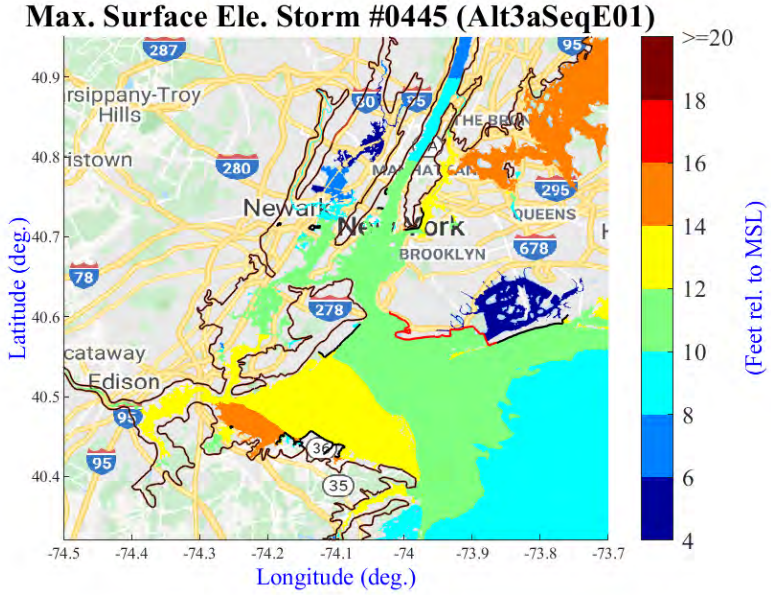




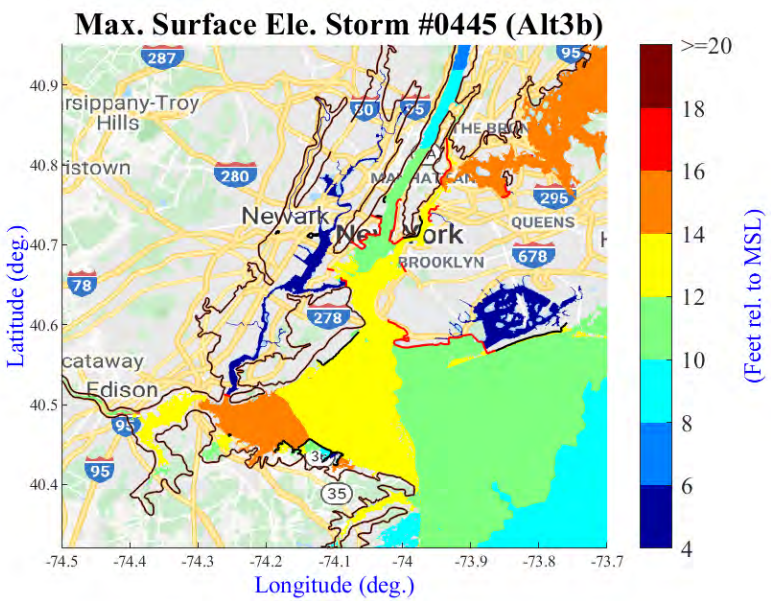


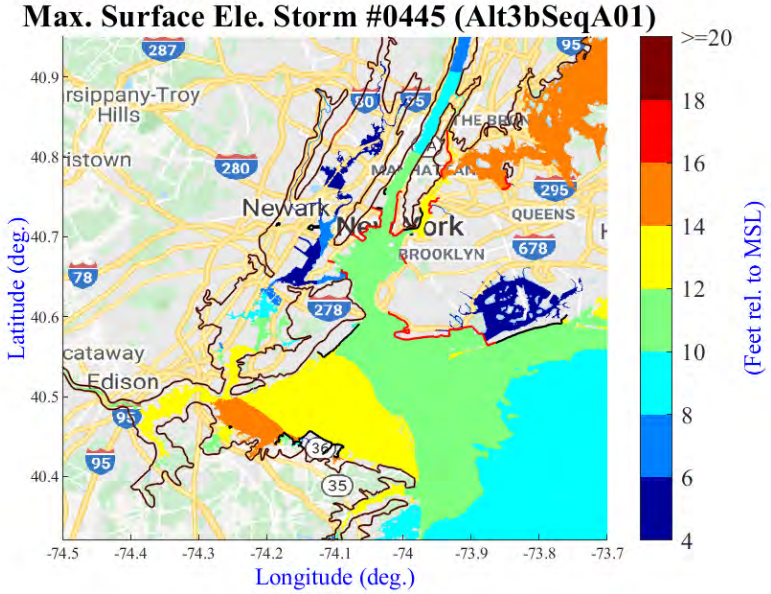


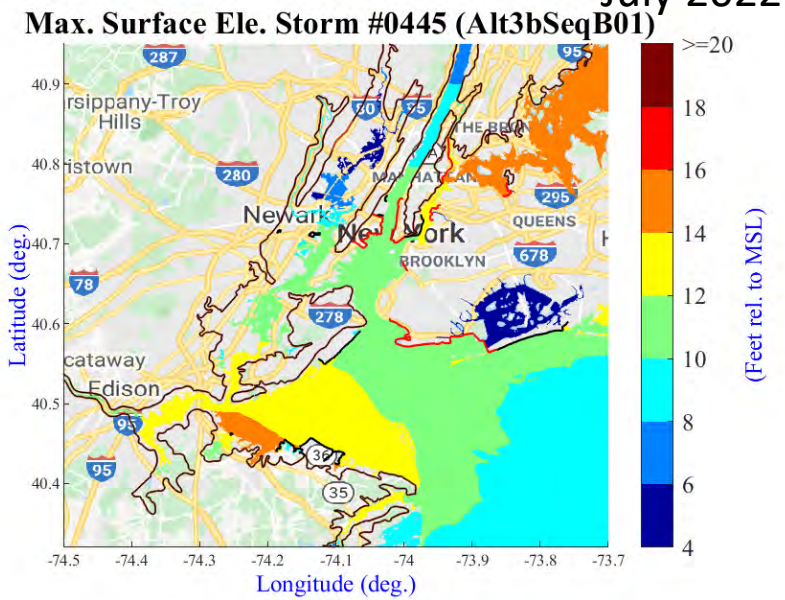


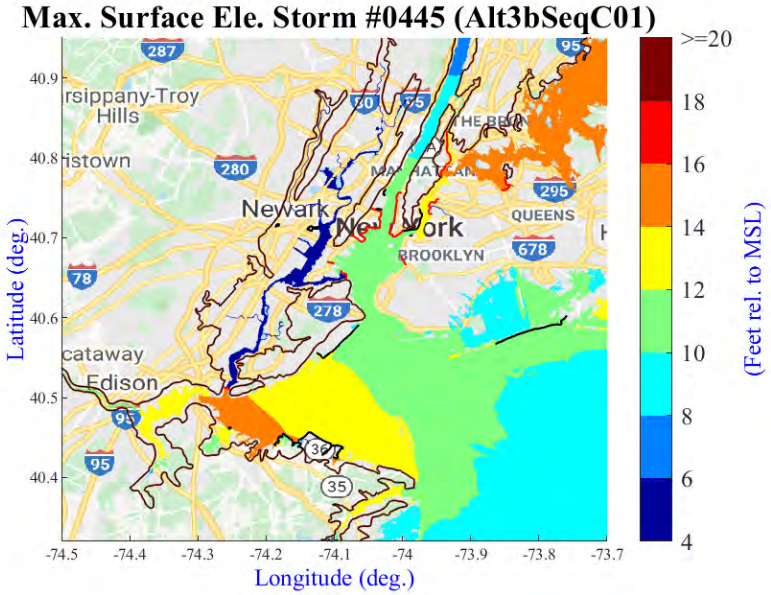


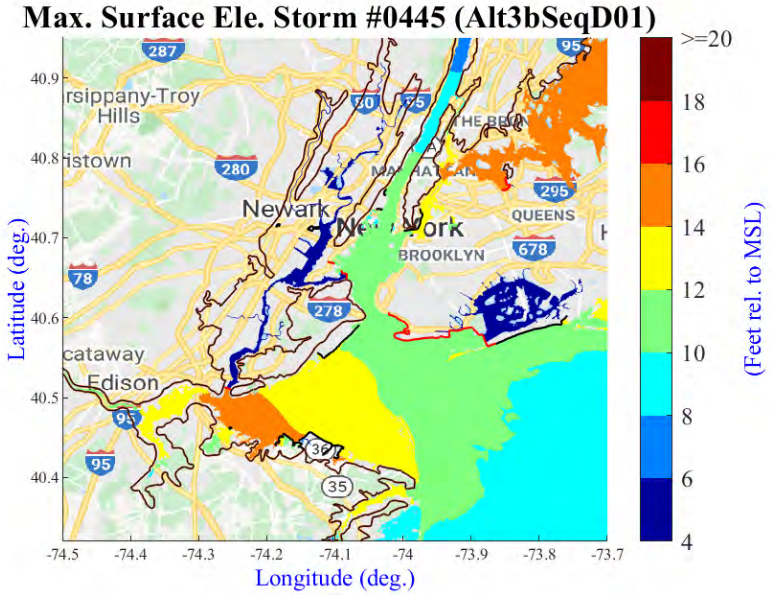
Storm #445 Alt3a







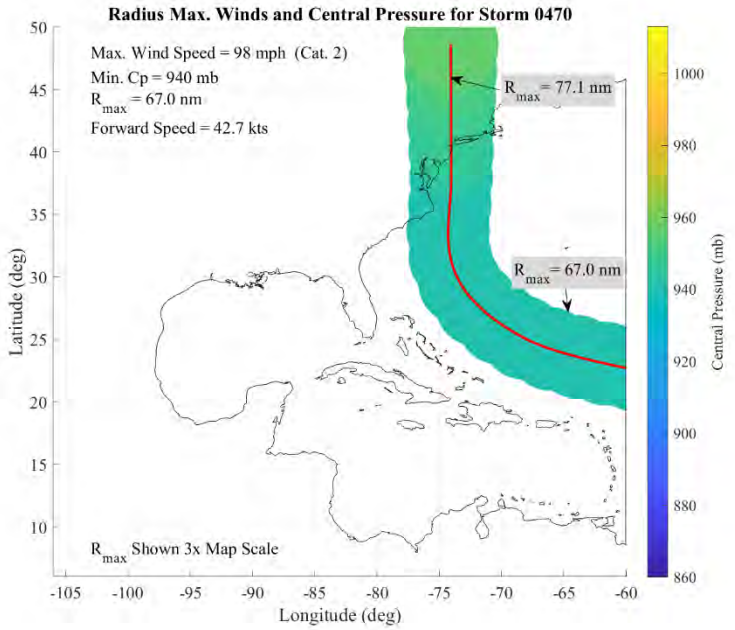




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #445 Alt3b

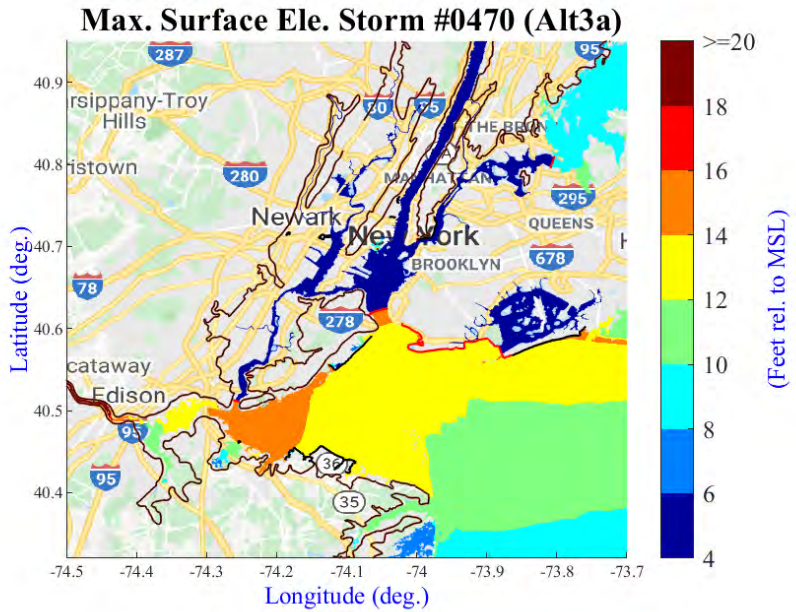
Storm #470

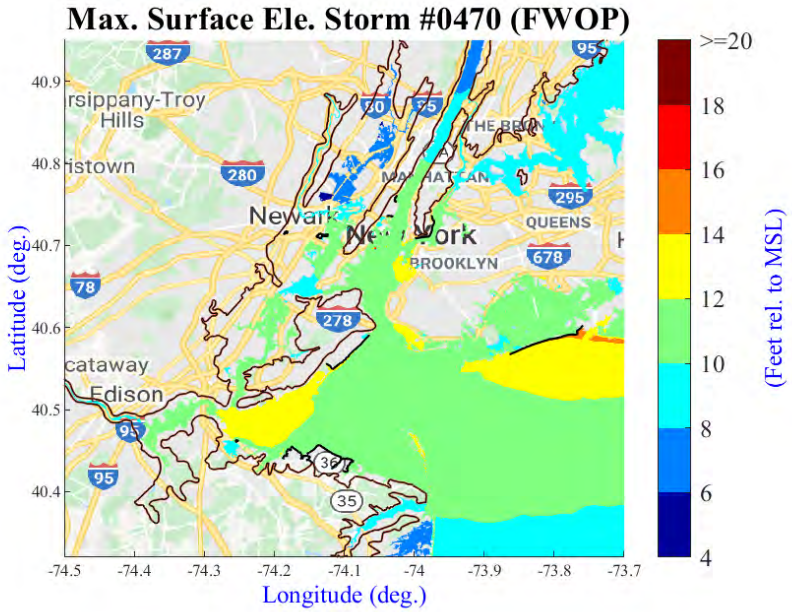


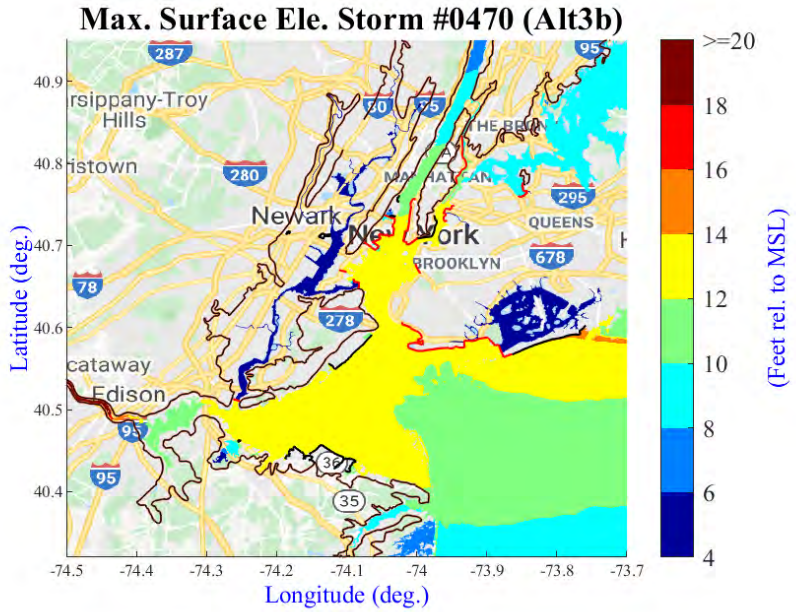
Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***67.0 nm***
Forward Speed: ***42.7 kts***

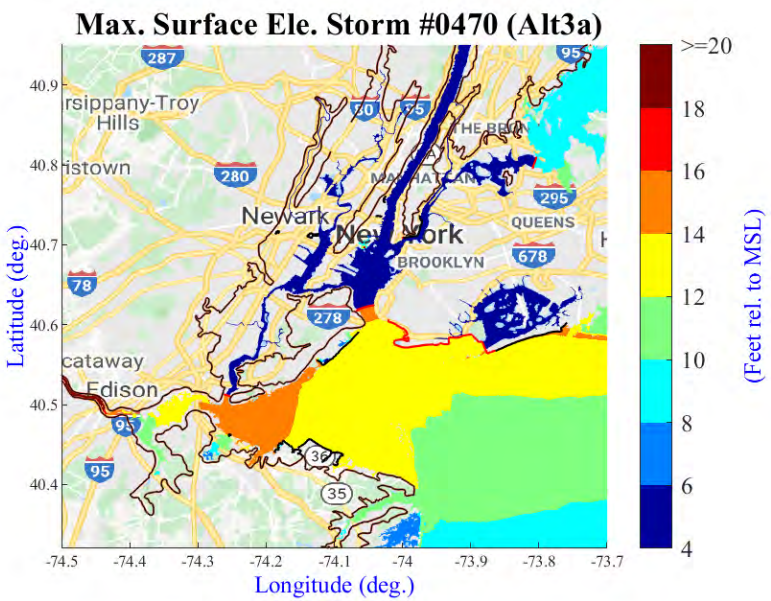
Future With Out Project:
Max. WSE at Battery: ***12.03 ft.***
Max. WSE at Kings Point: ***9.24 ft.***
Max. WSE at Sandy Hook: ***11.82 ft.***

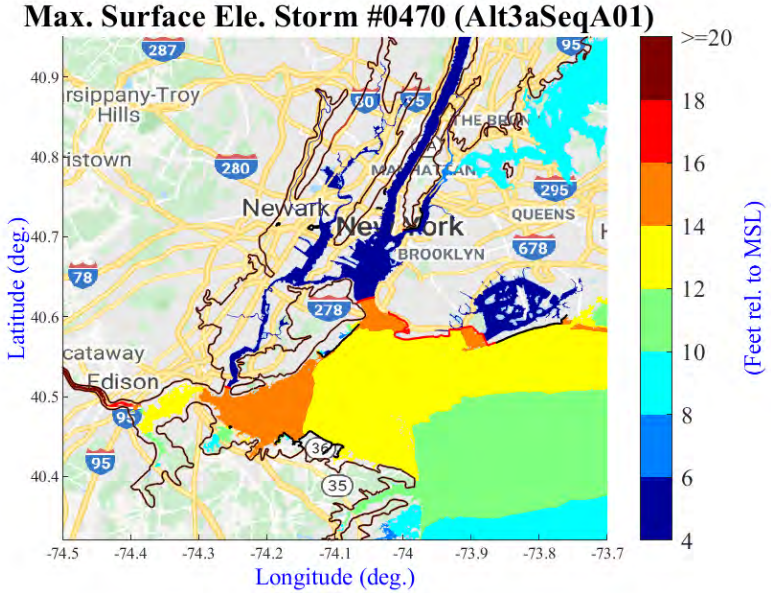
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

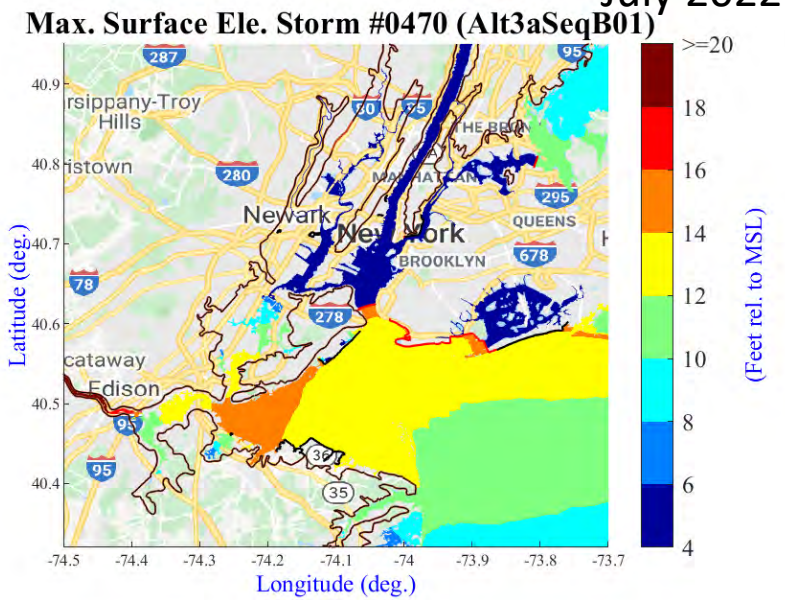


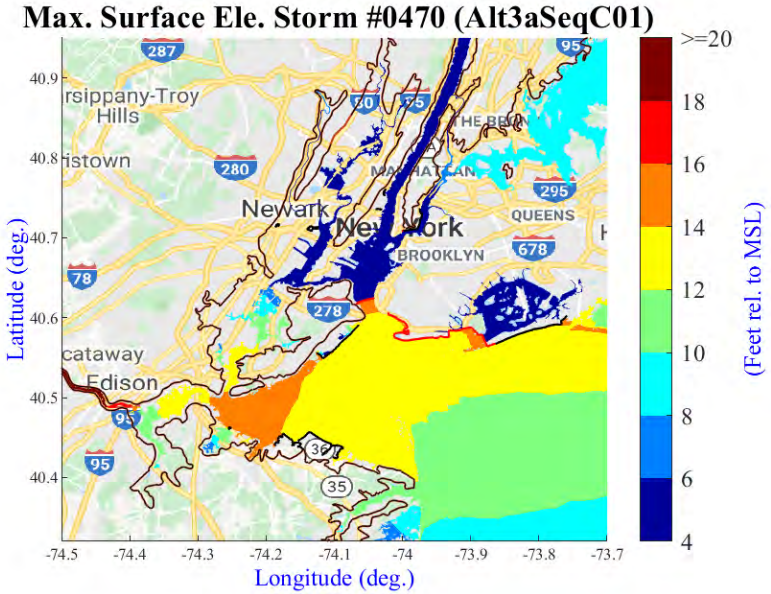


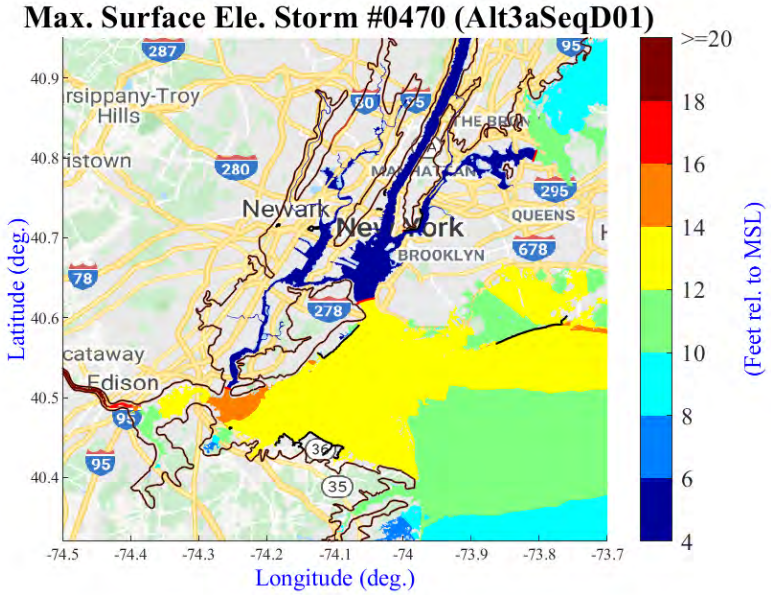


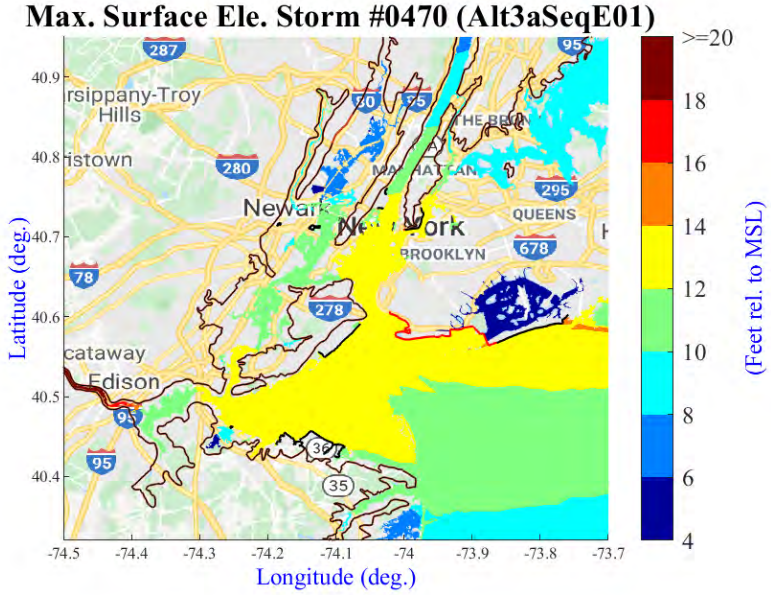




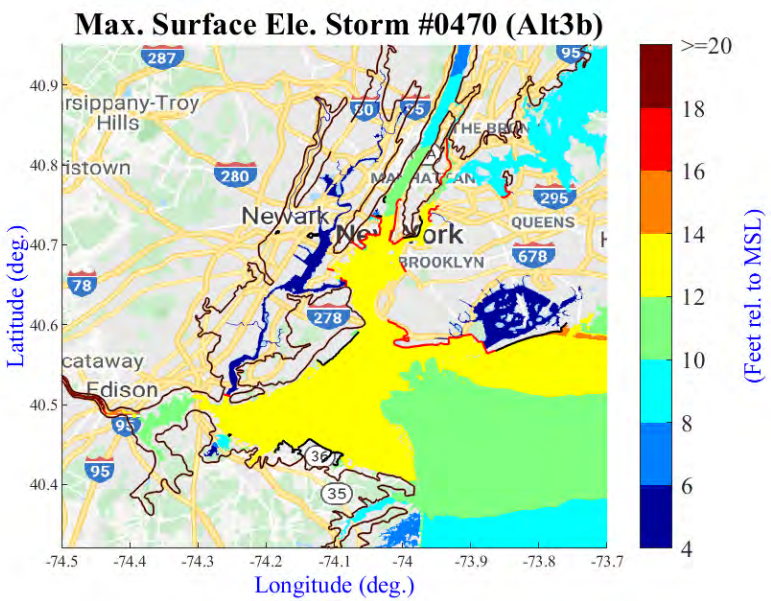


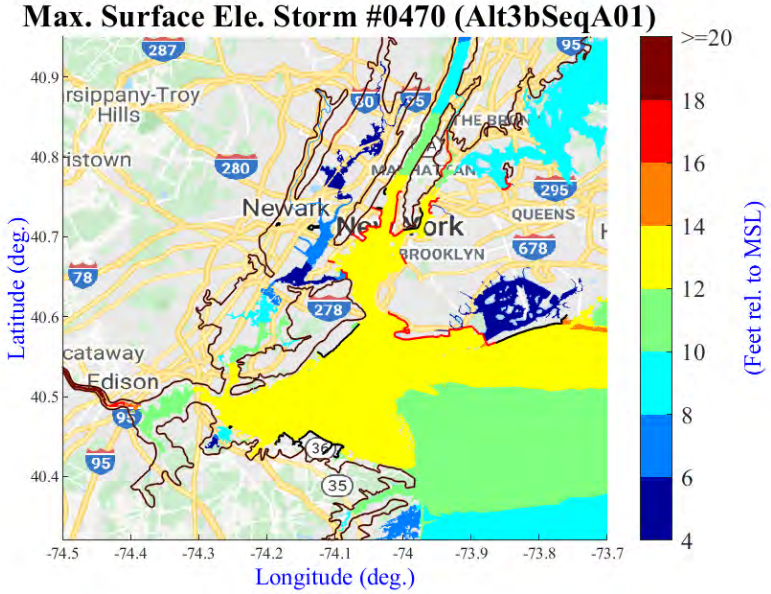


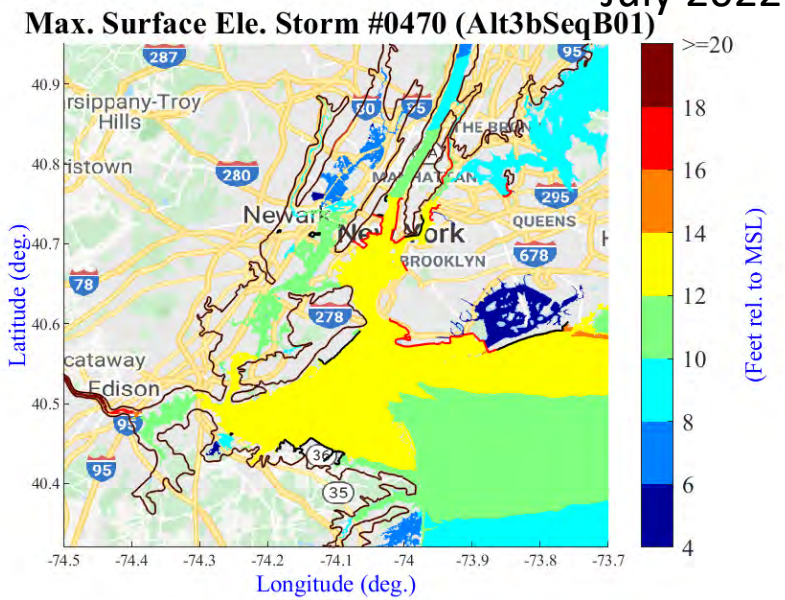


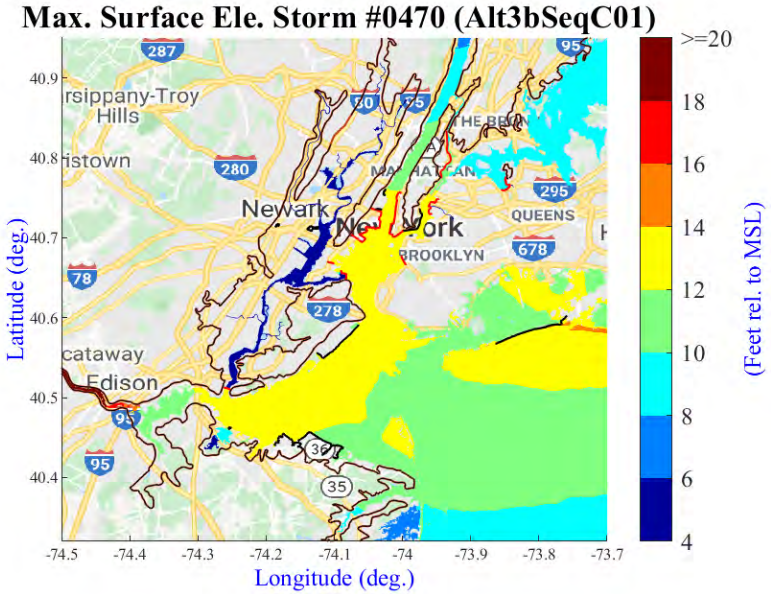


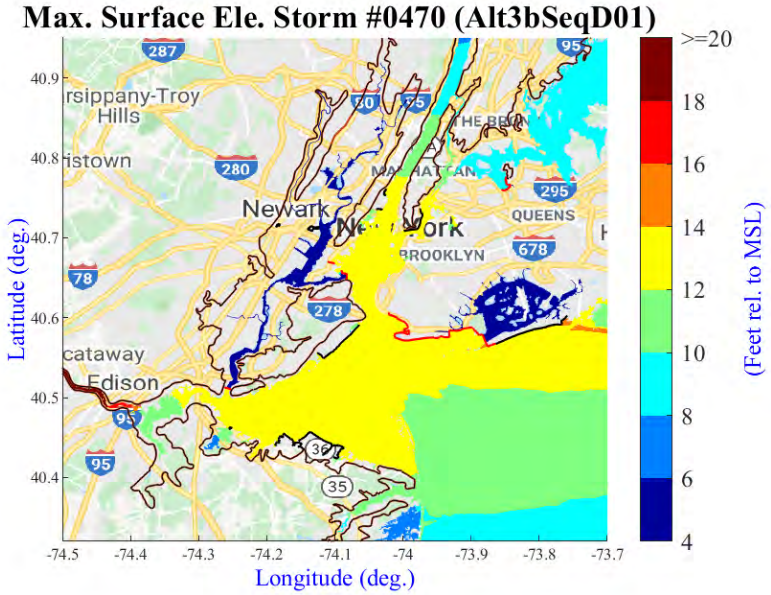
Storm #470 Alt3a







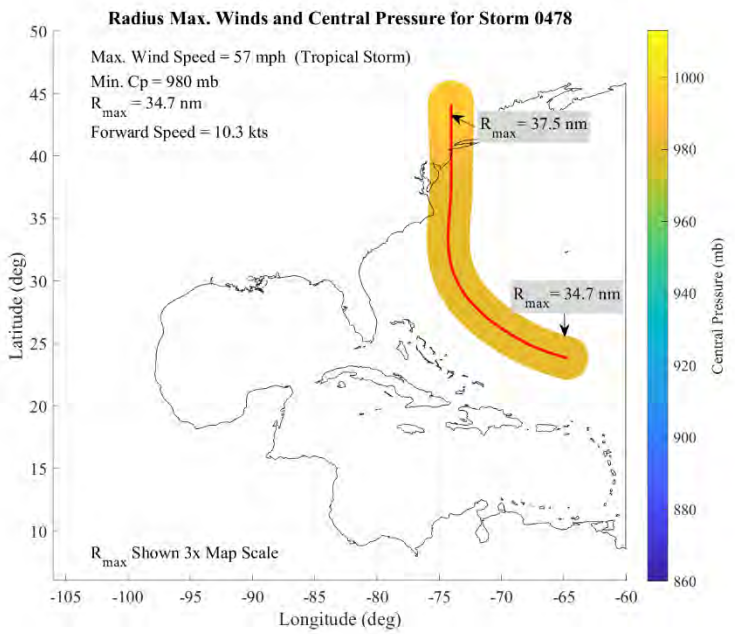




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #470 Alt3b

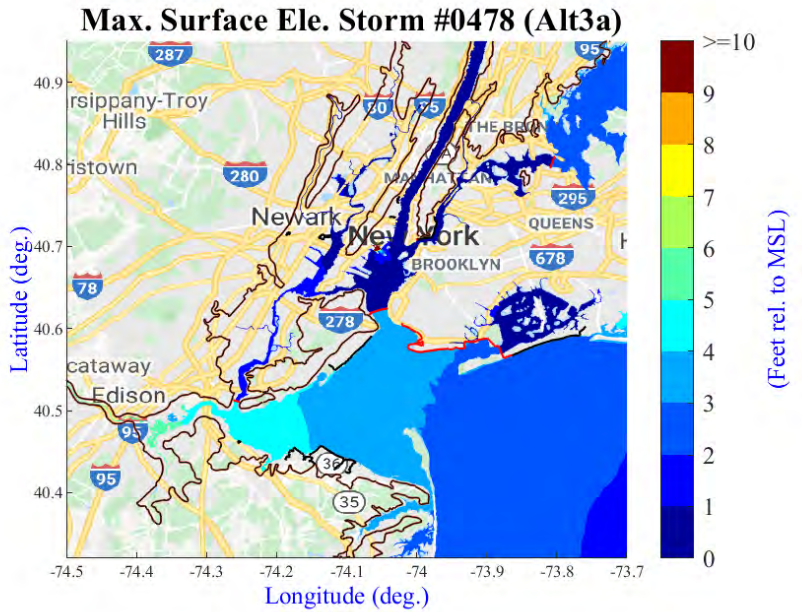
Storm #478

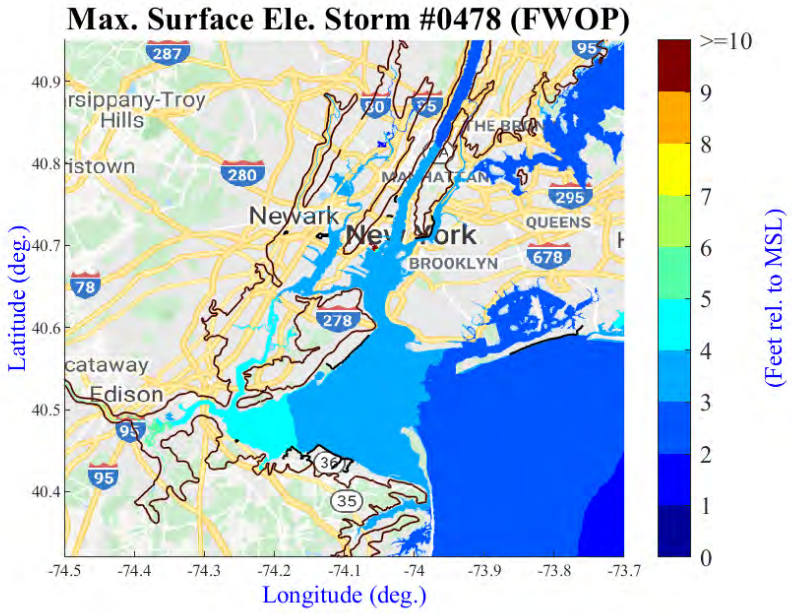


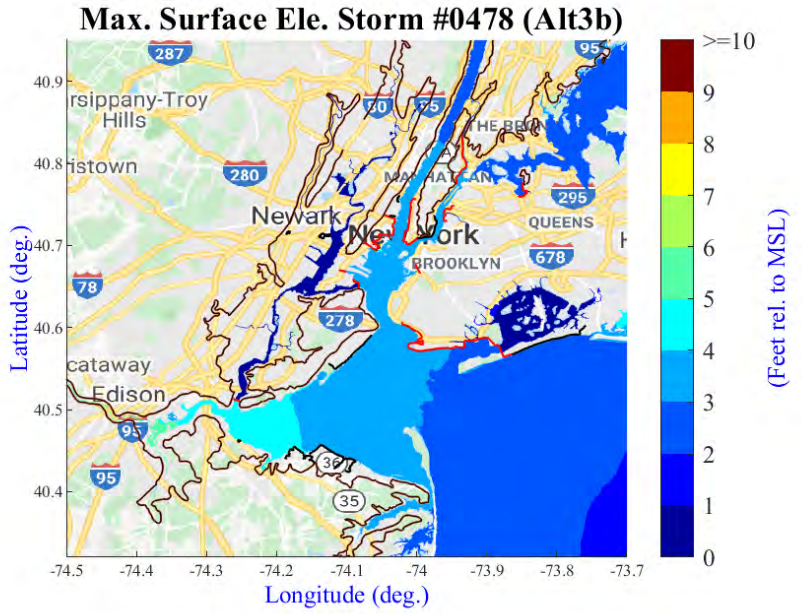
Max. Wind Speed: ***57 mph (Tropical Storm)***

Min. Cp: ***980 mb***
Rmax: ***34.7 nm***
Forward Speed: ***10.3 kts***

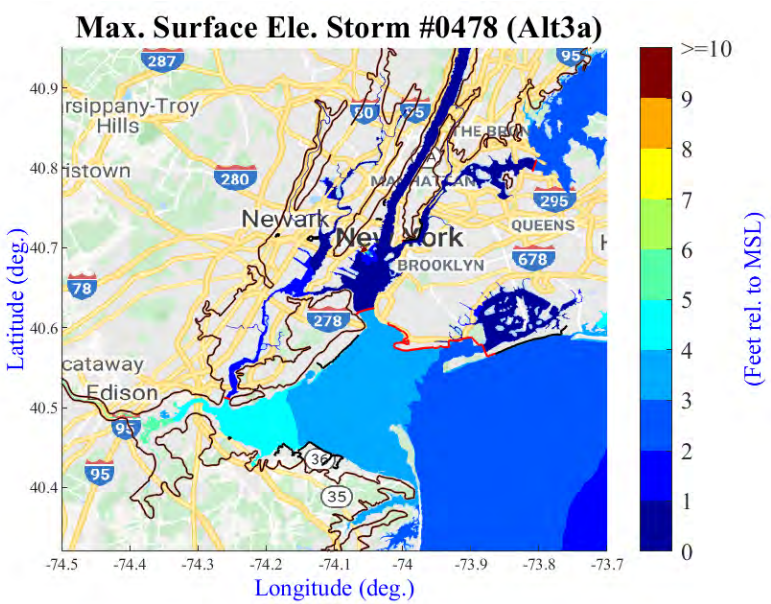
Future With Out Project:
Max. WSE at Battery: ***3.33 ft.***
Max. WSE at Kings Point: ***2.57 ft.***
Max. WSE at Sandy Hook: ***3.31 ft.***

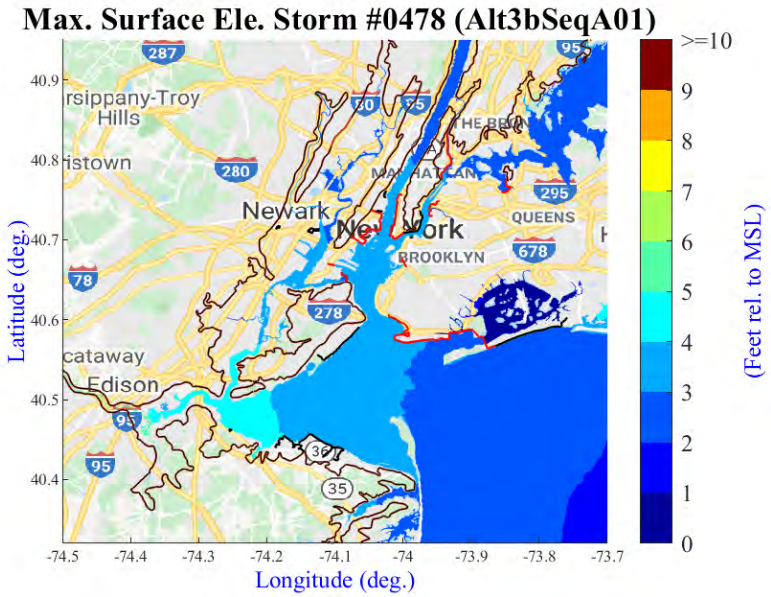


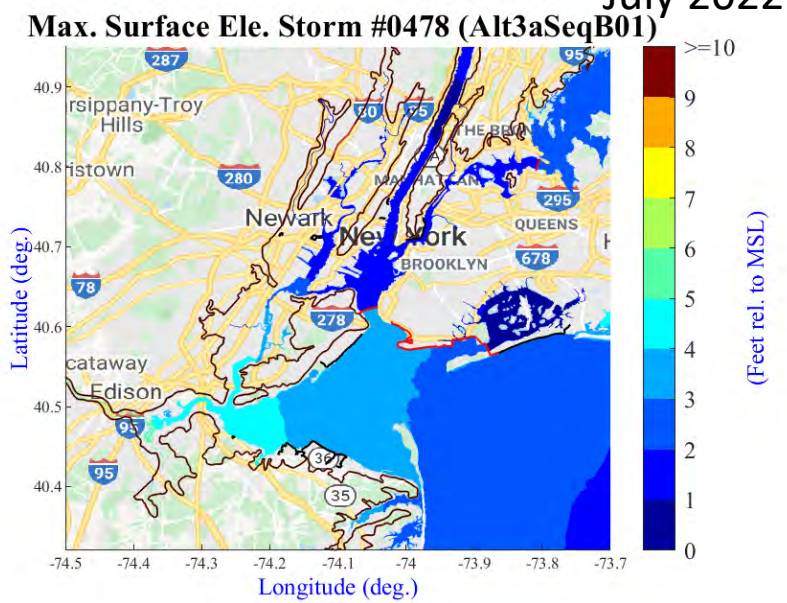


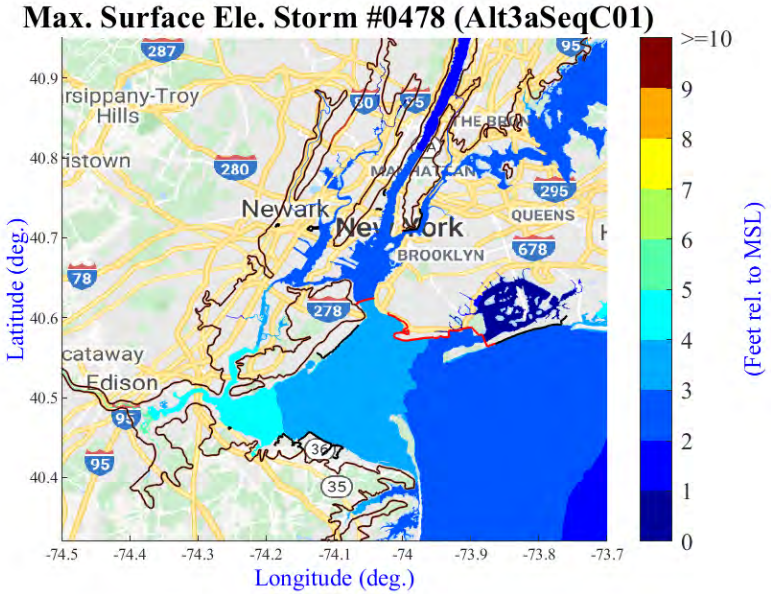


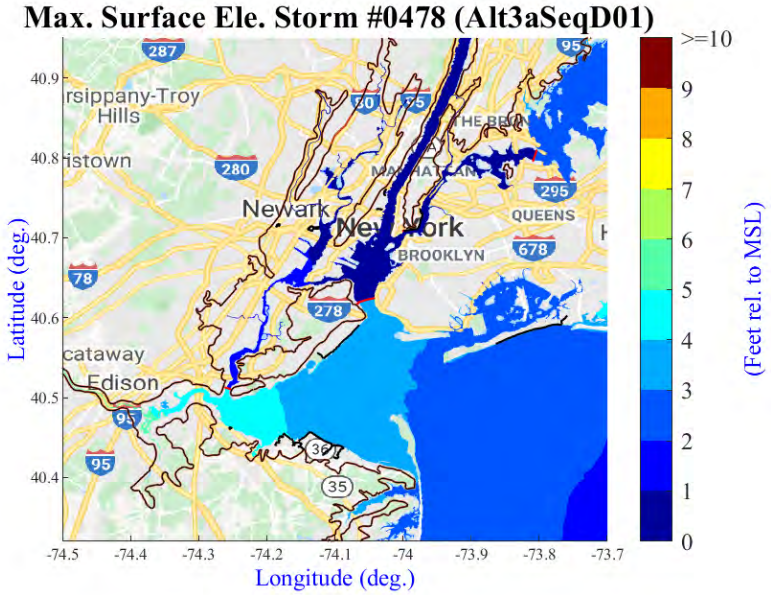
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

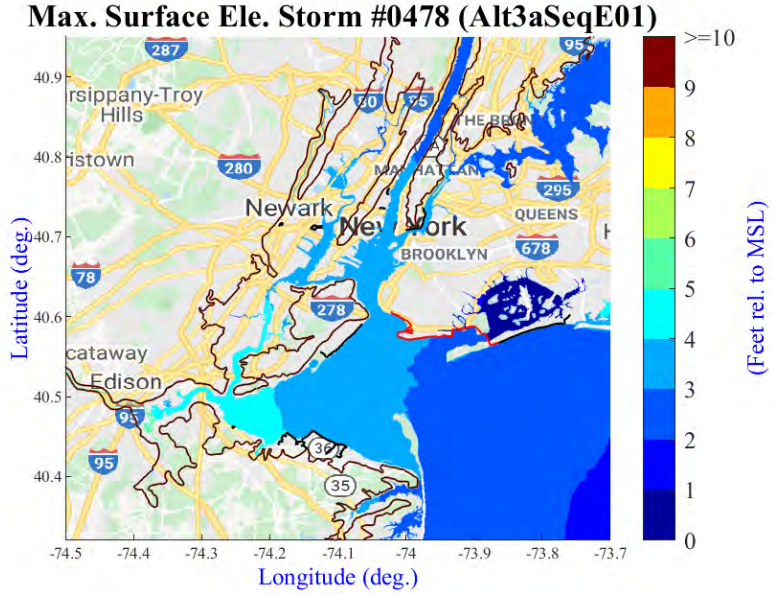




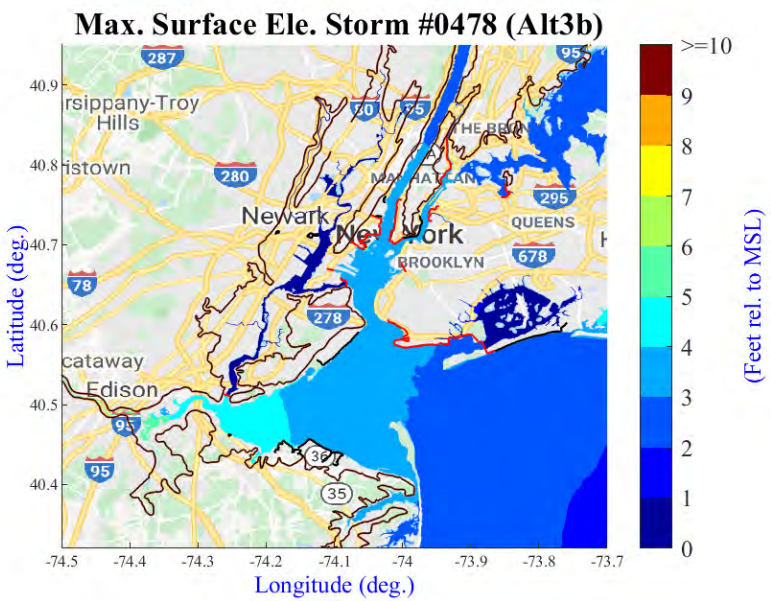


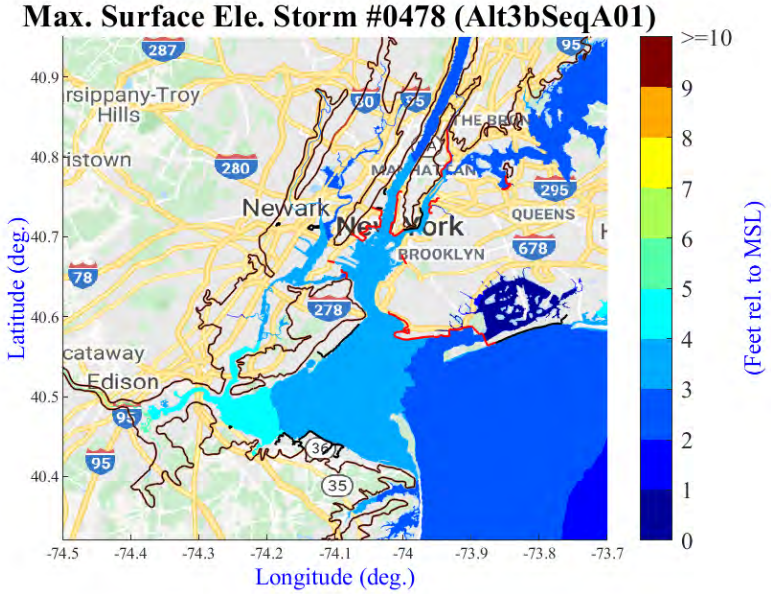


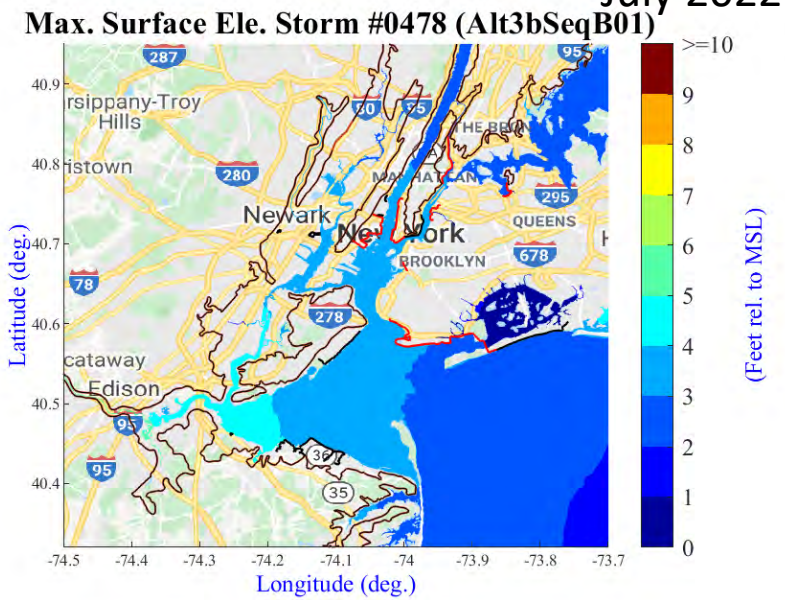


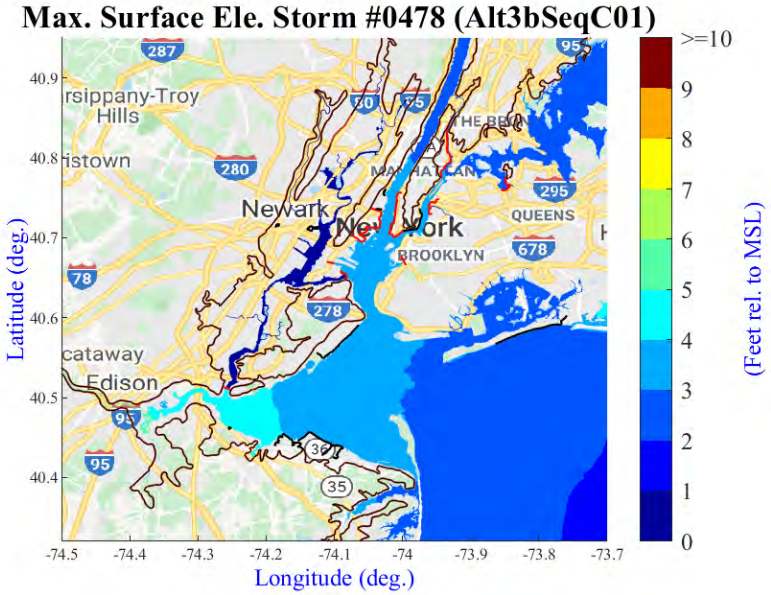


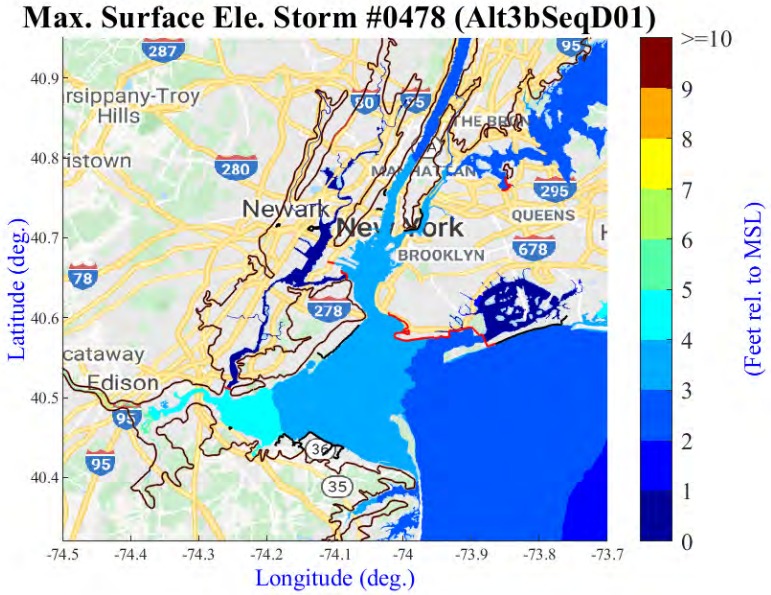
Storm #478 Alt3a







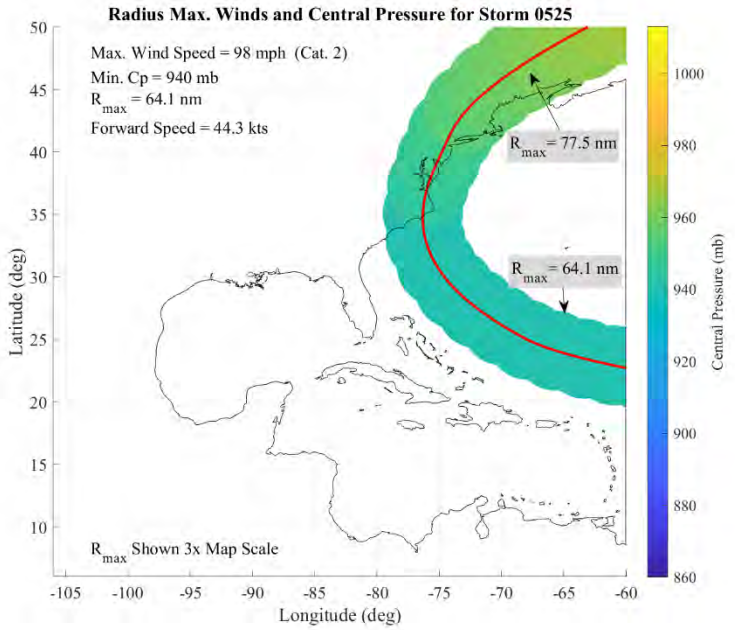




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

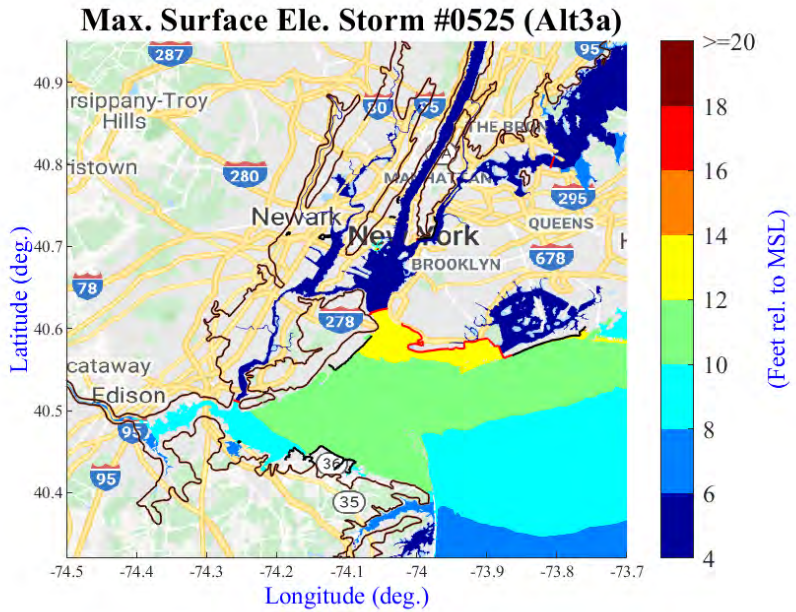
Storm #478 Alt3b

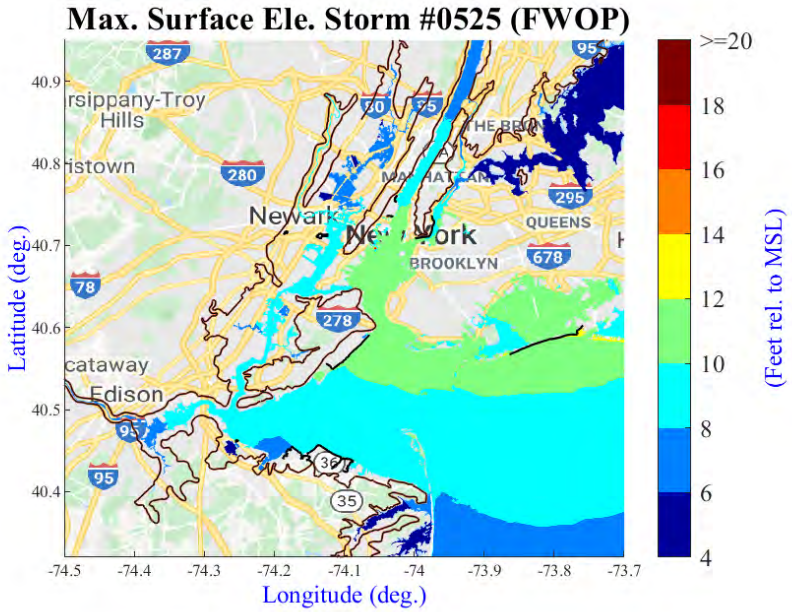
Storm #525

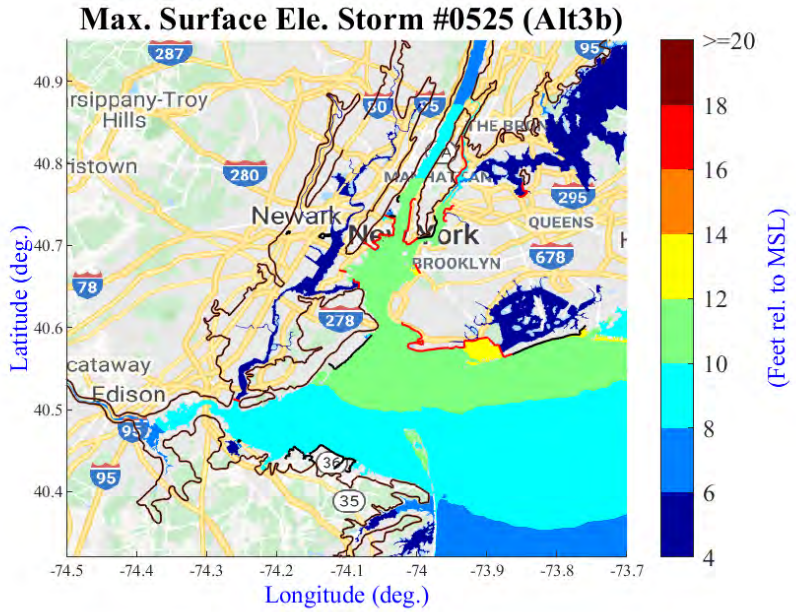


Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***64.1 nm***
Forward Speed: ***44.3 kts***

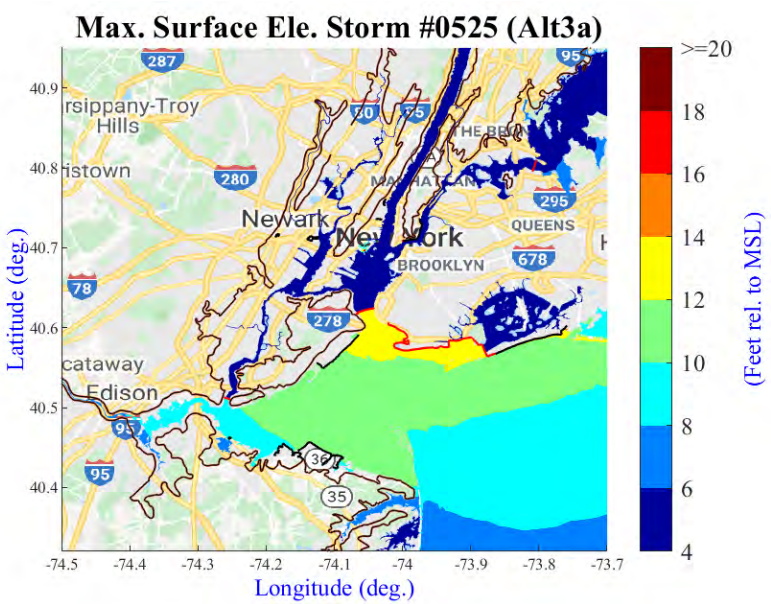
Future With Out Project:
Max. WSE at Battery: ***11.00 ft.***
Max. WSE at Kings Point: ***5.56 ft.***
Max. WSE at Sandy Hook: ***9.70 ft.***

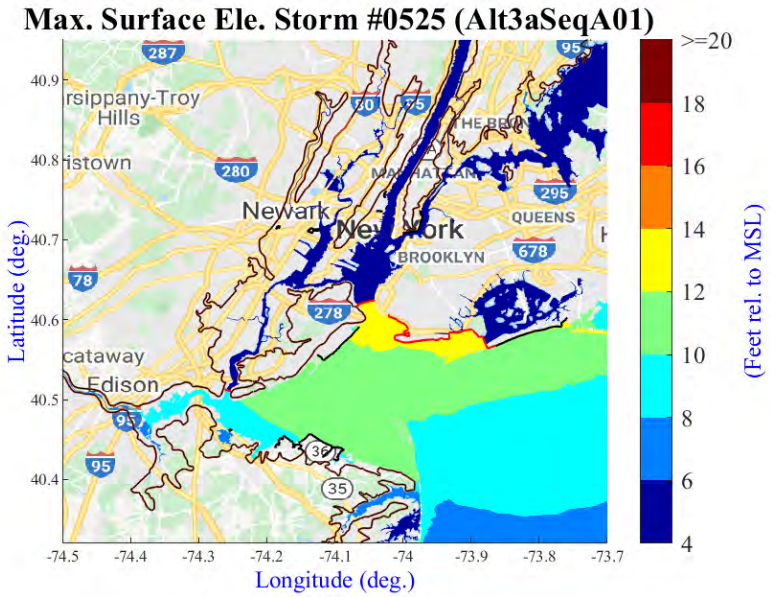


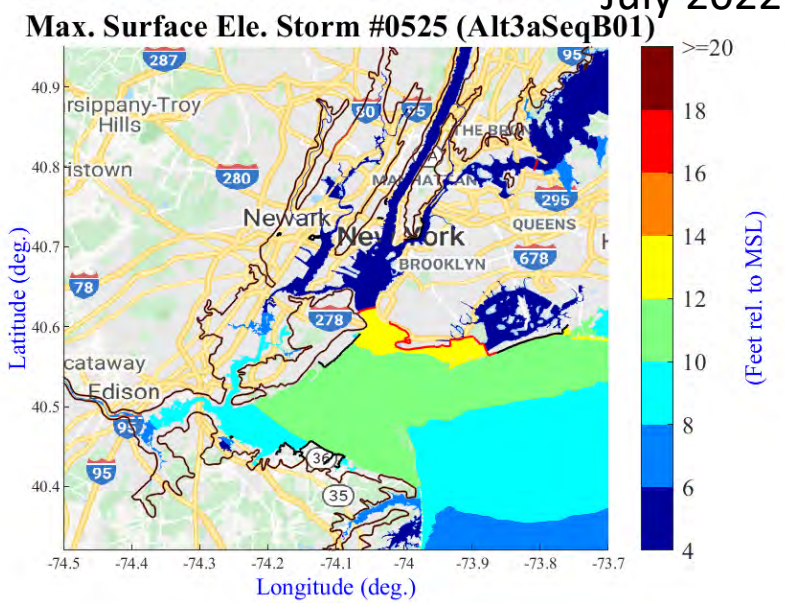


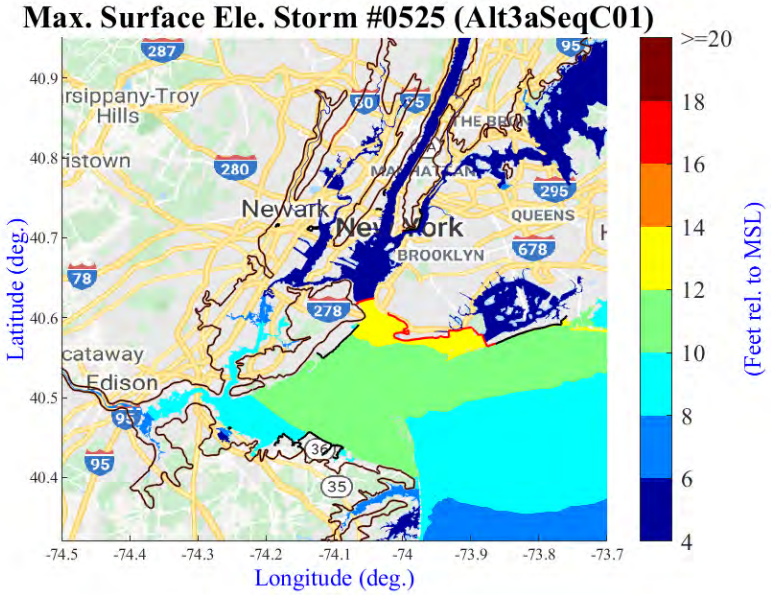


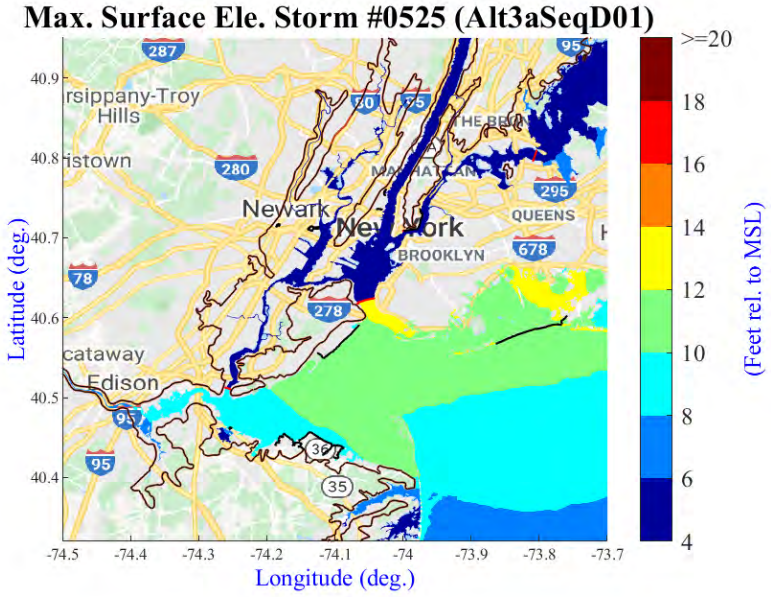
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

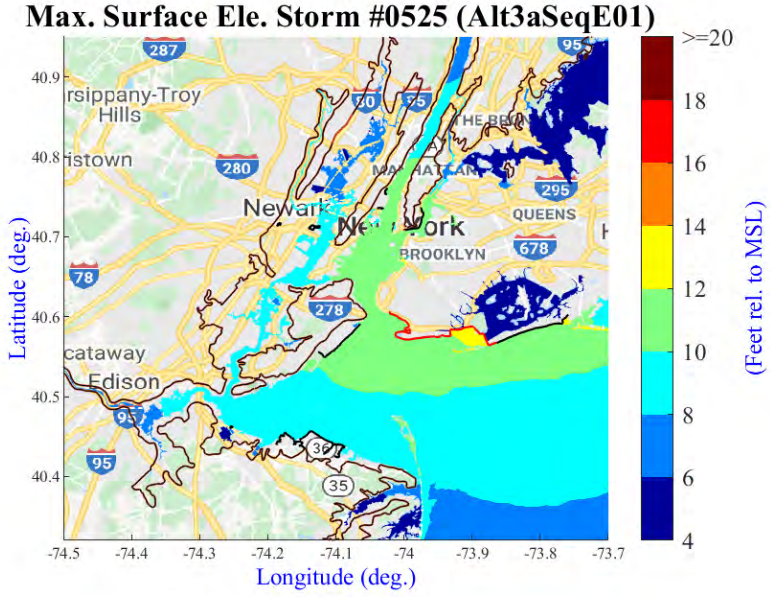




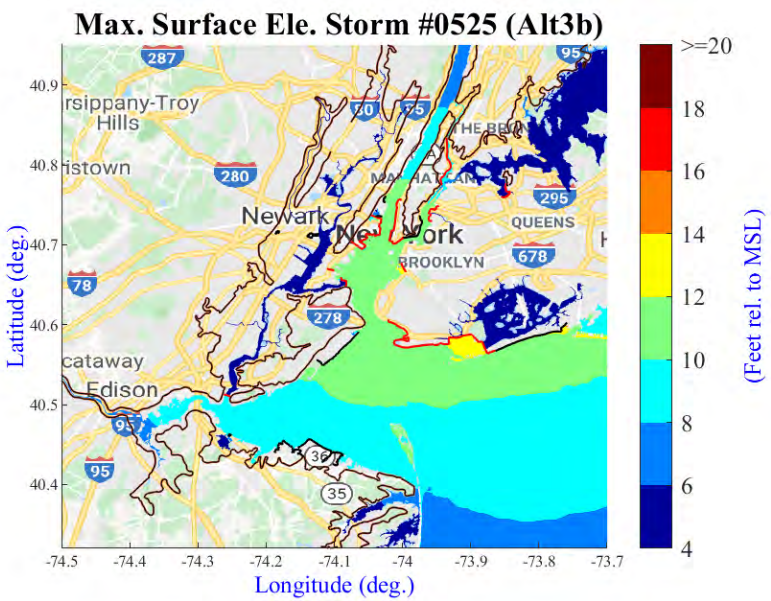


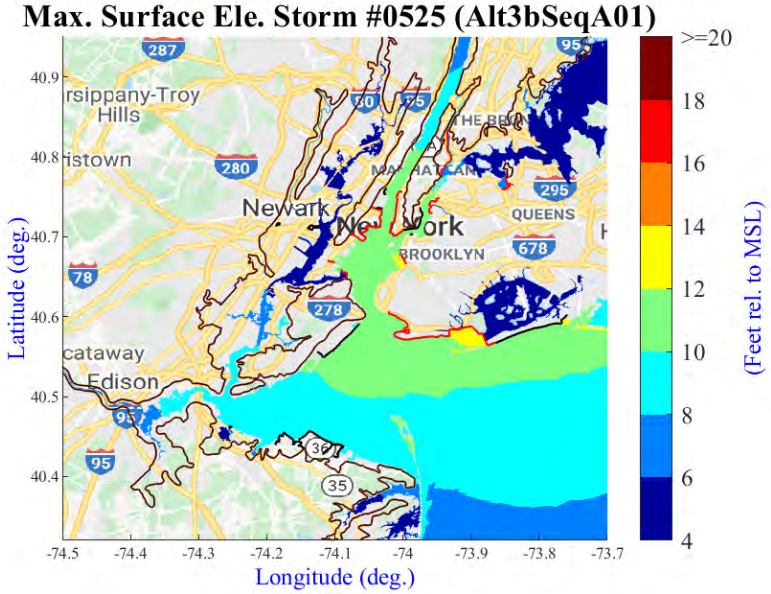


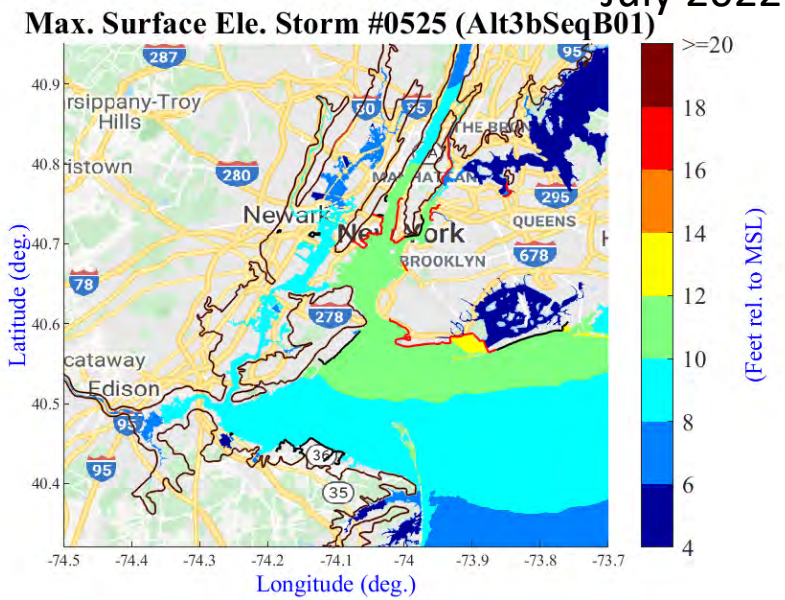


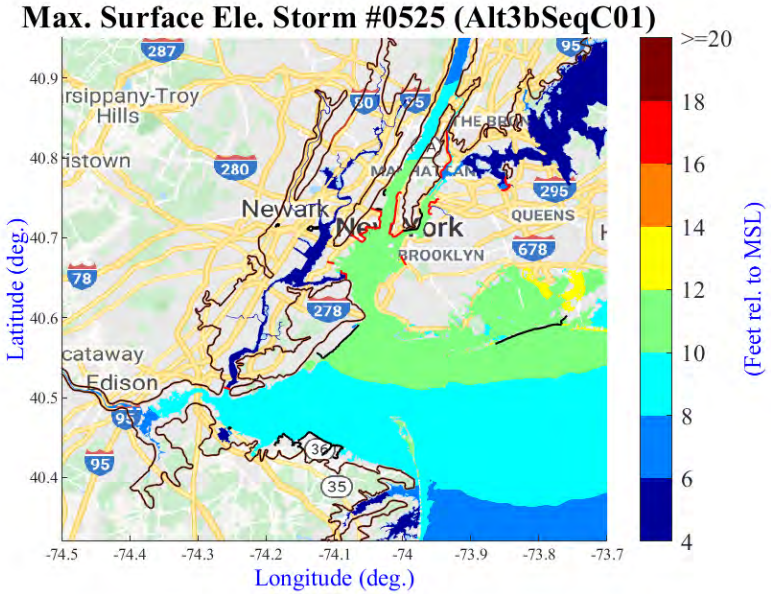


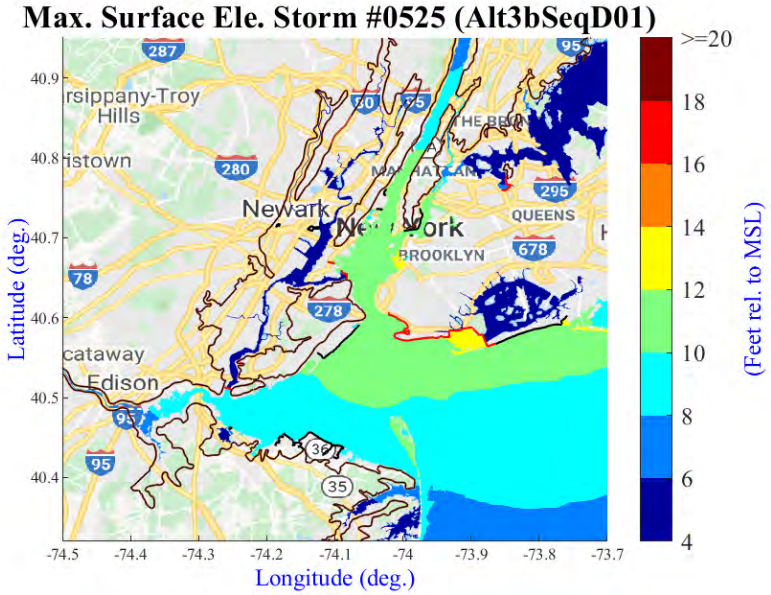
Storm #525 Alt3a







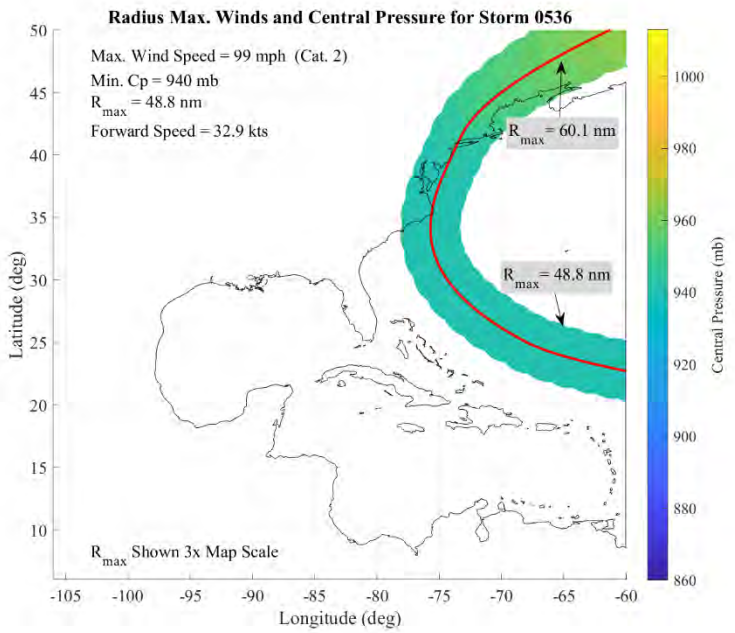




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

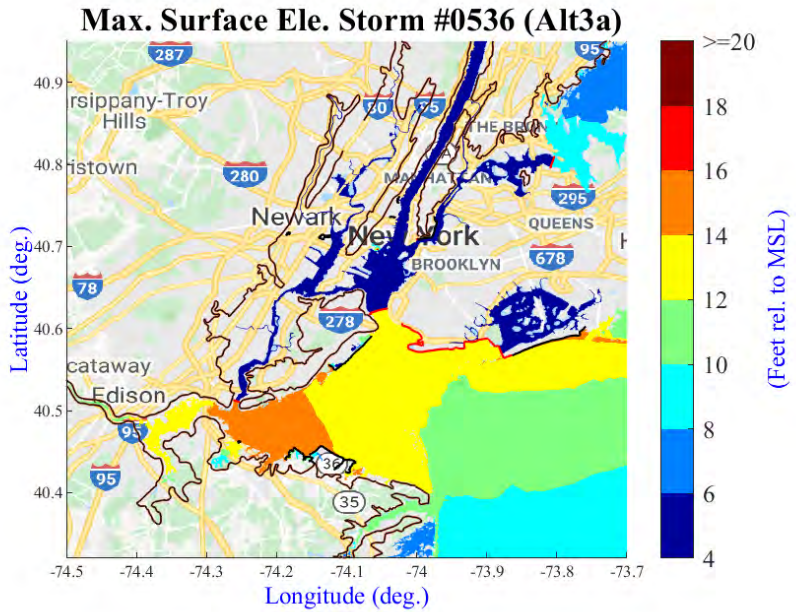
Storm #525 Alt3b

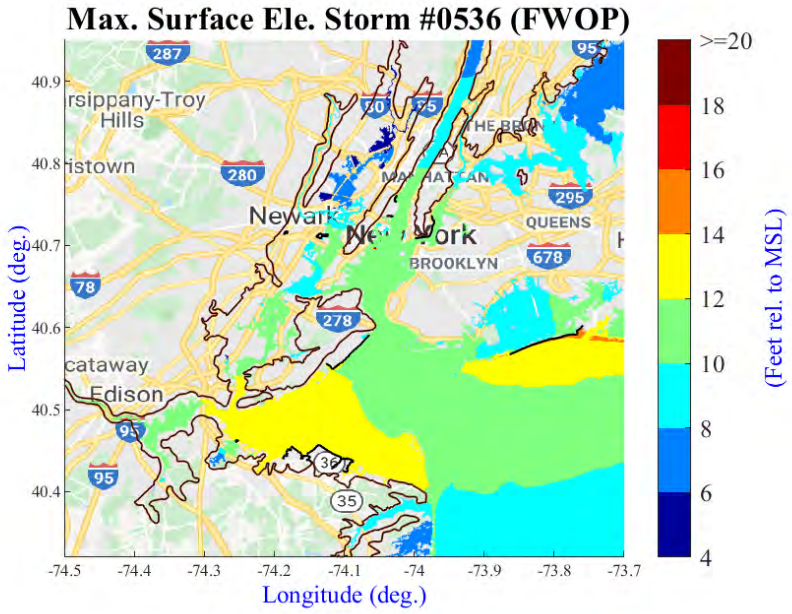
Storm #536

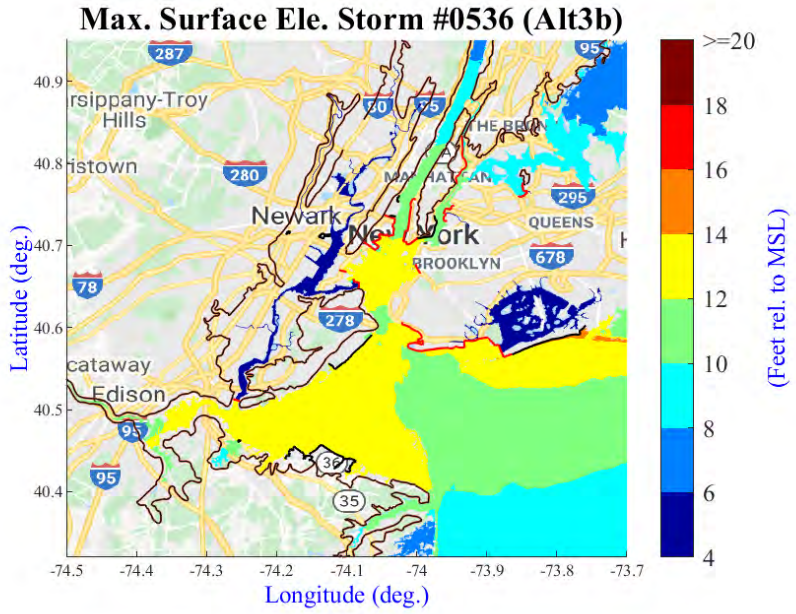


Max. Wind Speed: ***99 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***48.8 nm***
Forward Speed: ***32.9 kts***

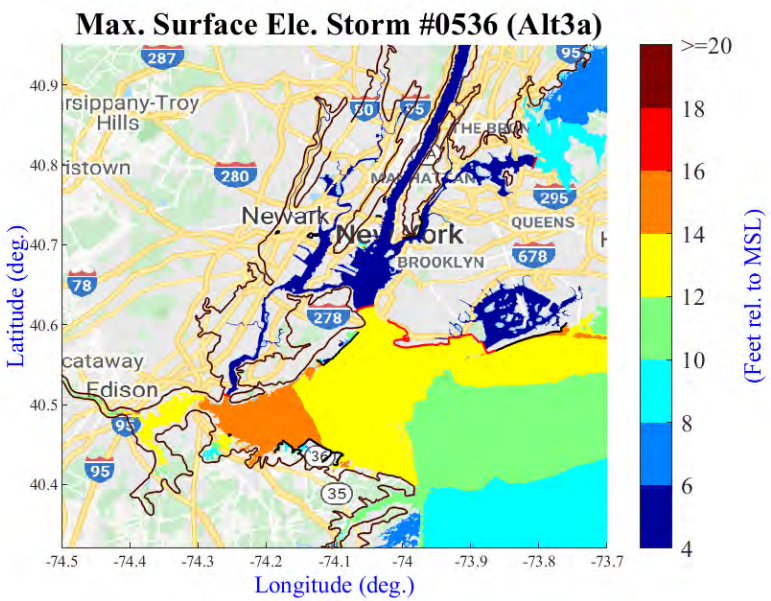
Future With Out Project:
Max. WSE at Battery: ***11.52 ft.***
Max. WSE at Kings Point: ***8.23 ft.***
Max. WSE at Sandy Hook: ***12.18 ft.***

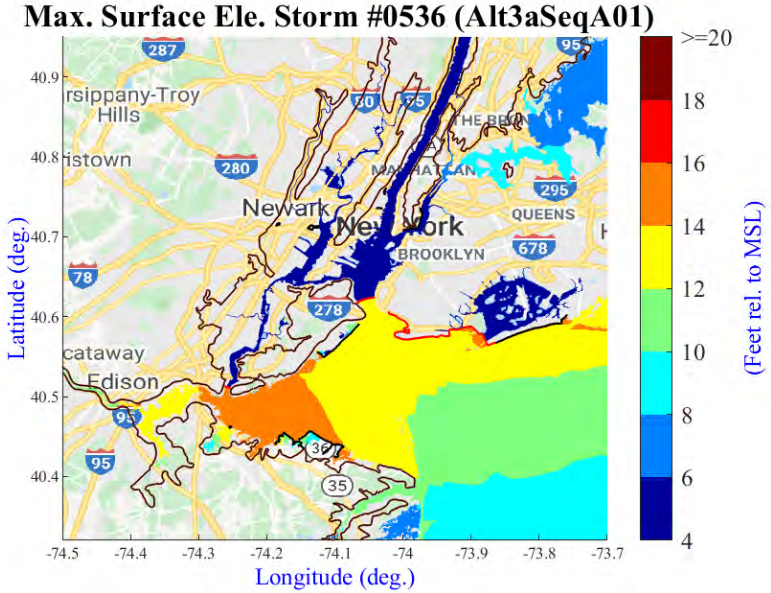


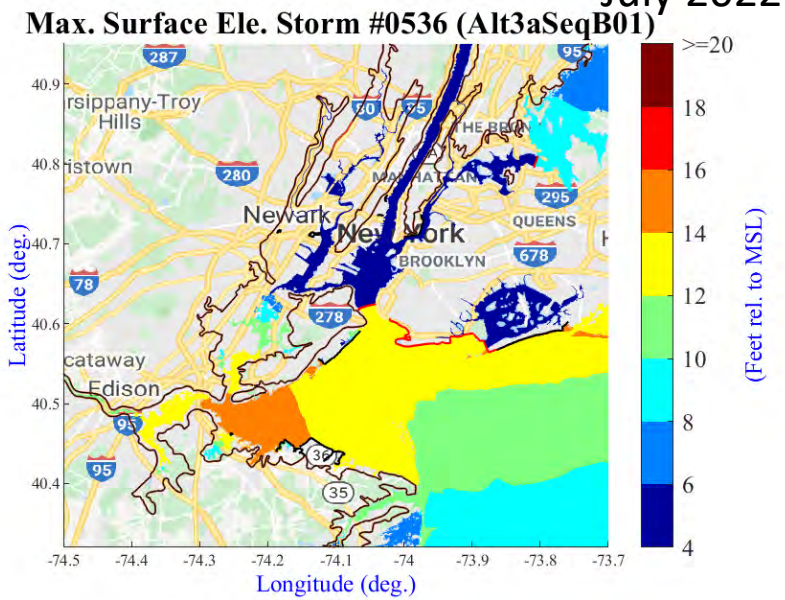


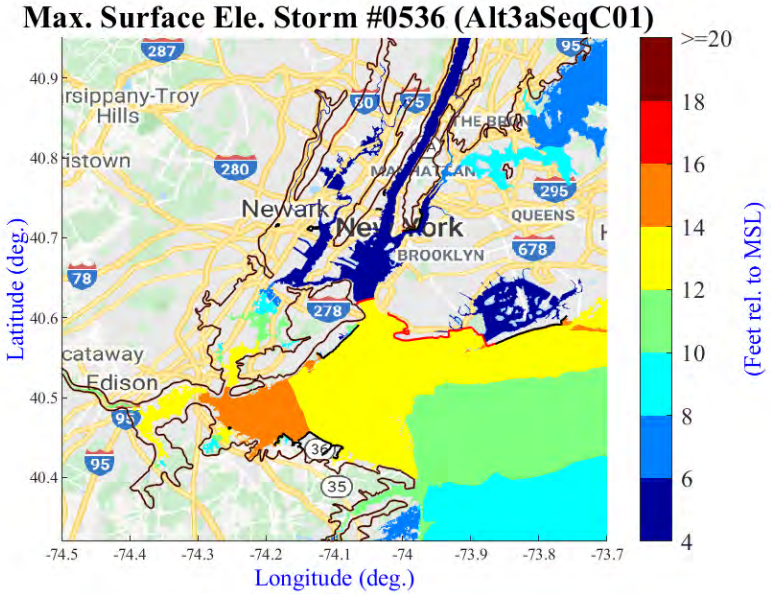


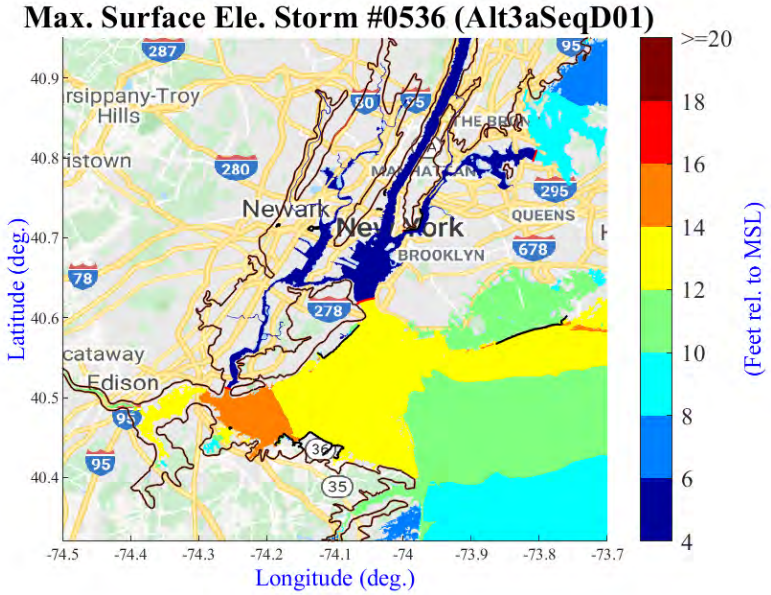
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

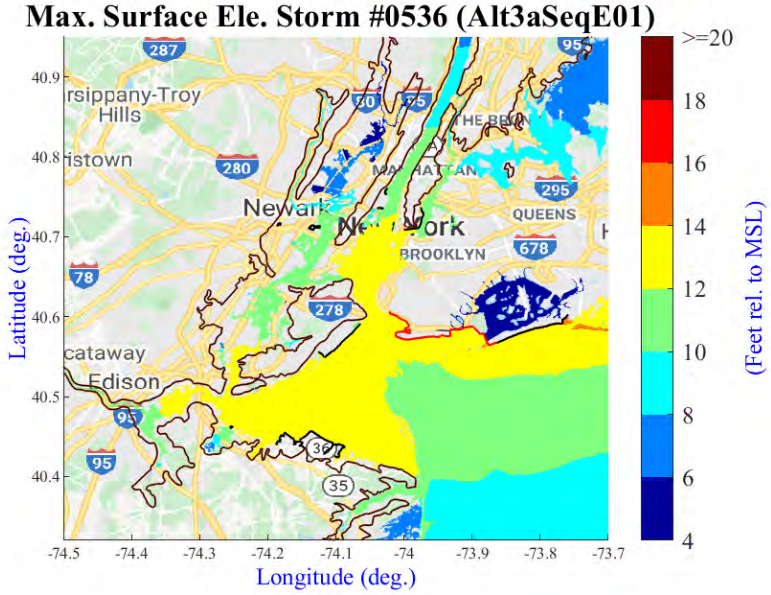




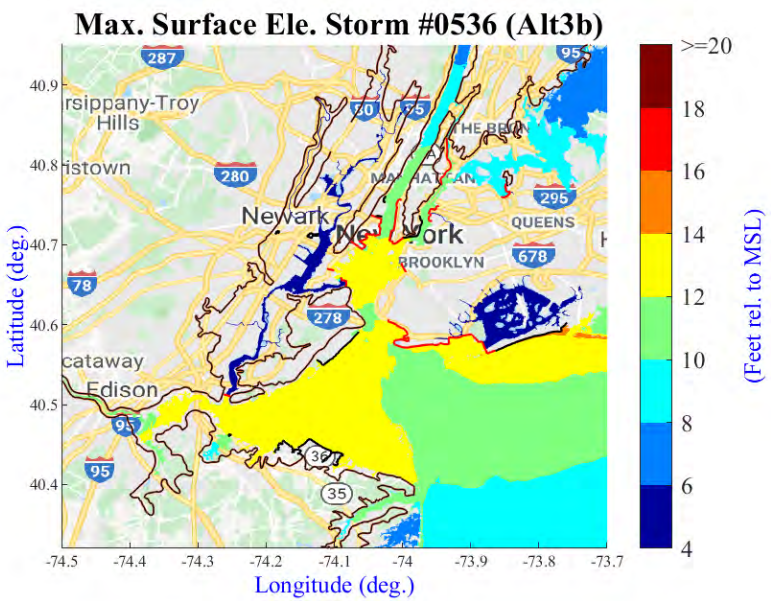


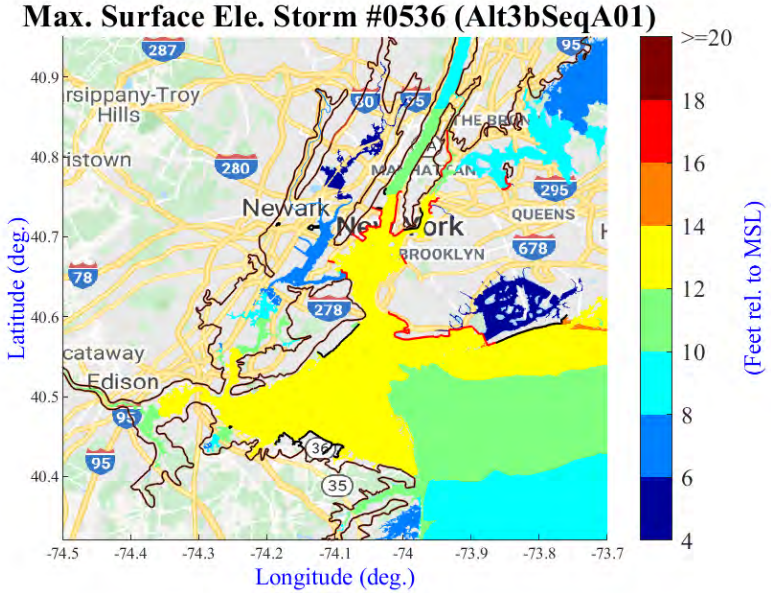


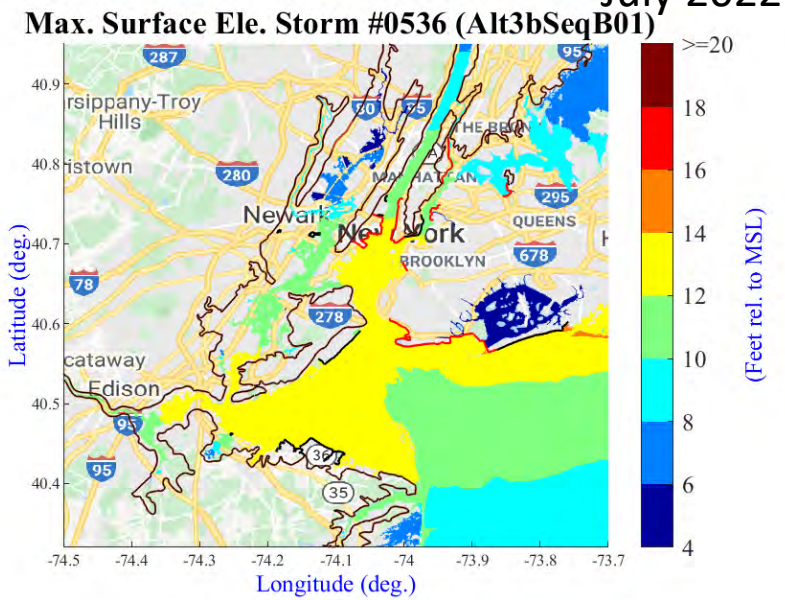


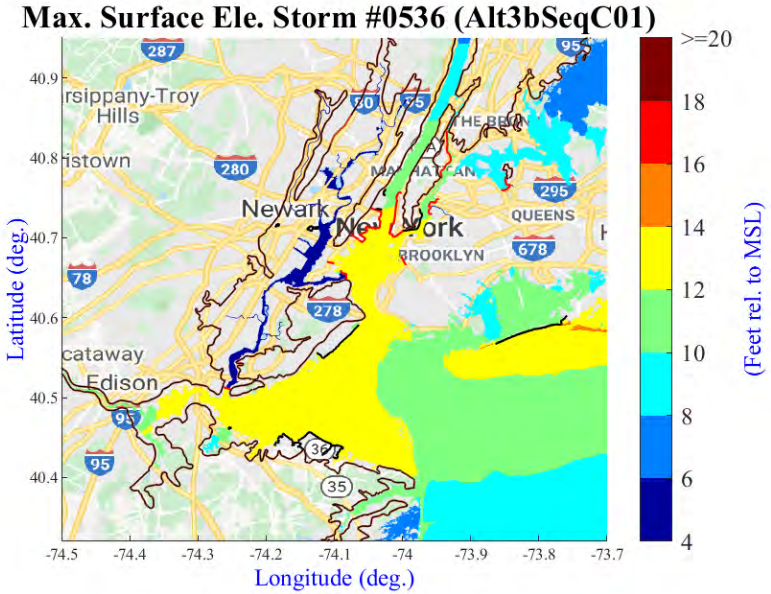


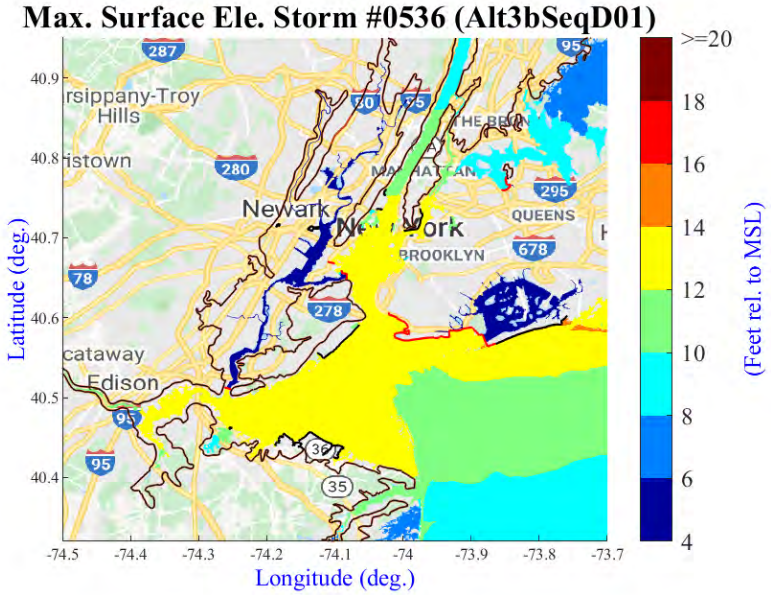
Storm #536 Alt3a







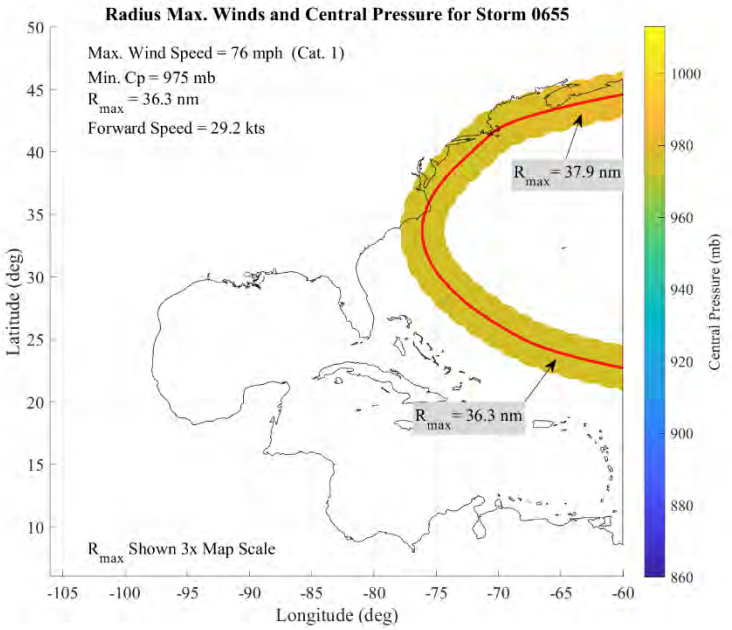




Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

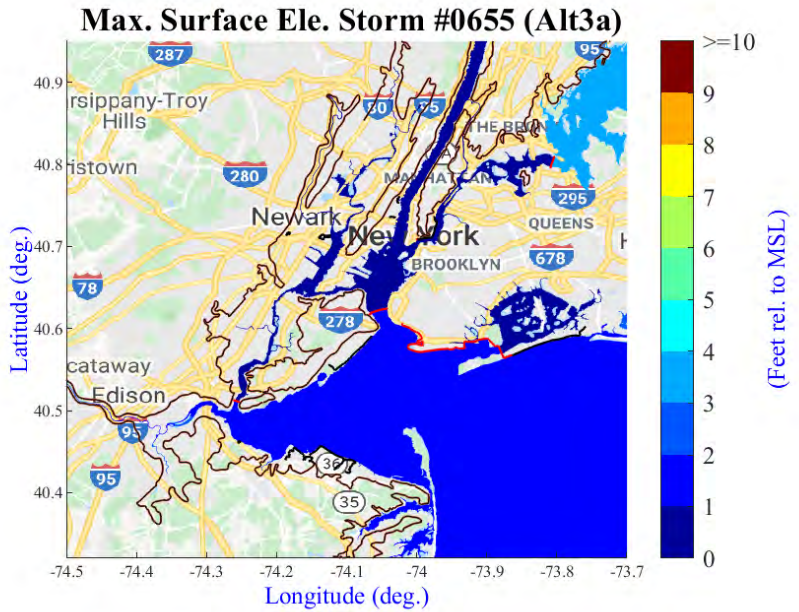
Storm #536 Alt3b

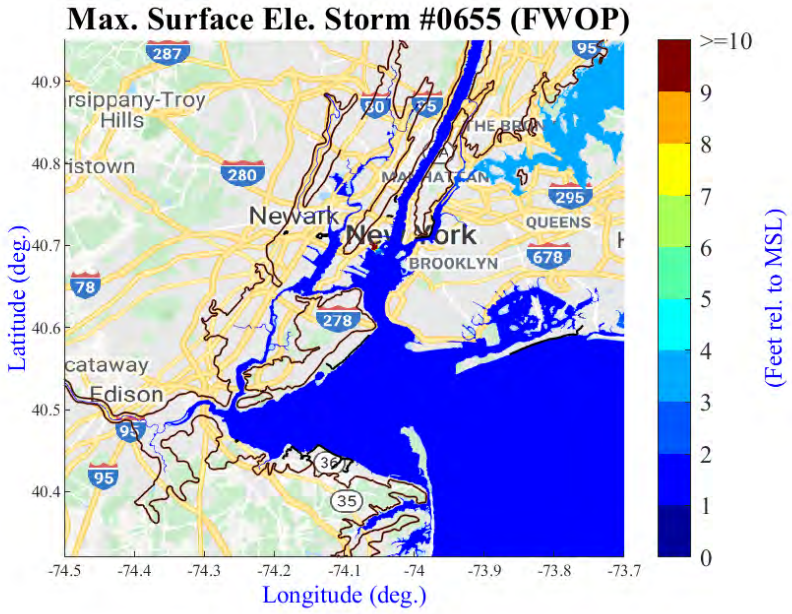
Storm #655

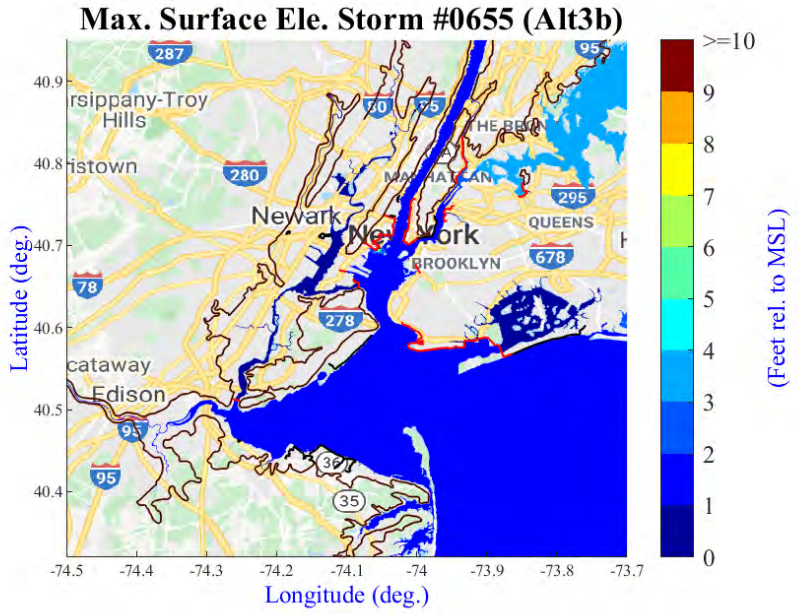


Max. Wind Speed: ***76 mph (Cat. 1)***
Min. Cp: ***975 mb***
Rmax: ***36.3 nm***
Forward Speed: ***29.2 kts***

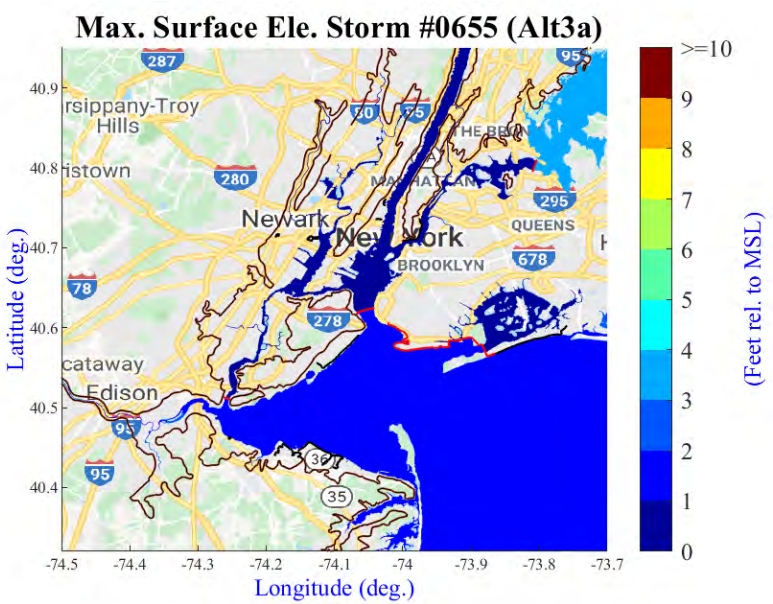
Future With Out Project:
Max. WSE at Battery: ***1.66 ft.***
Max. WSE at Kings Point: ***3.32 ft.***
Max. WSE at Sandy Hook: ***1.66 ft.***

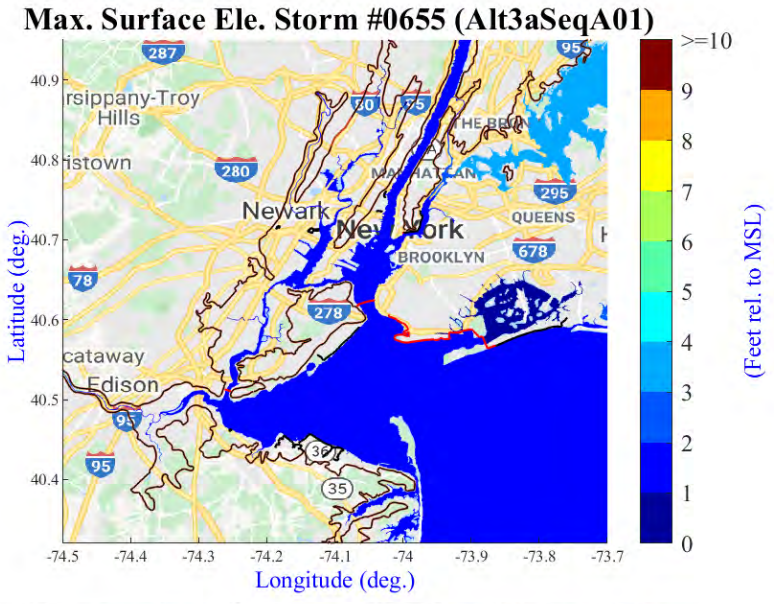


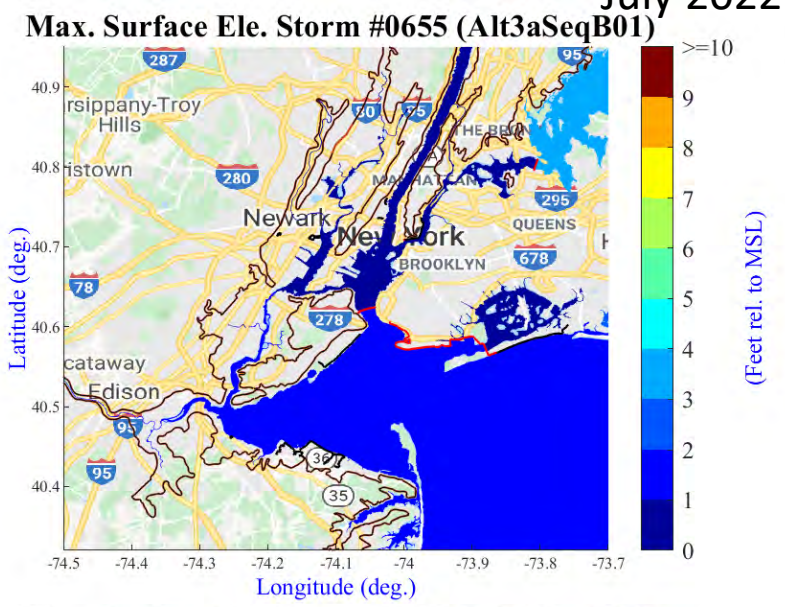


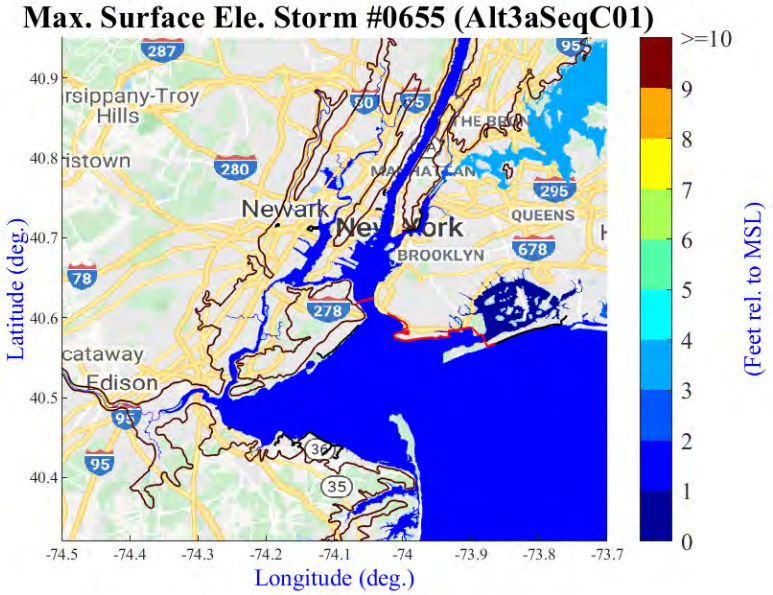


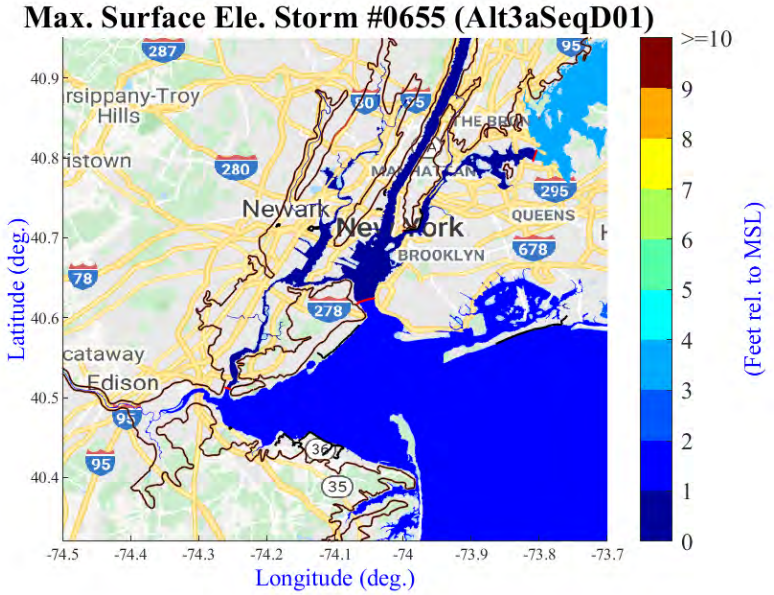
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

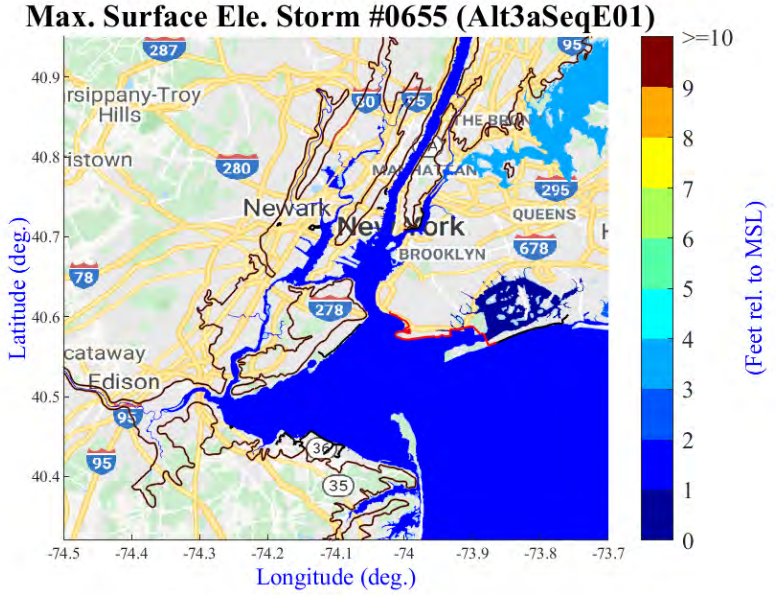




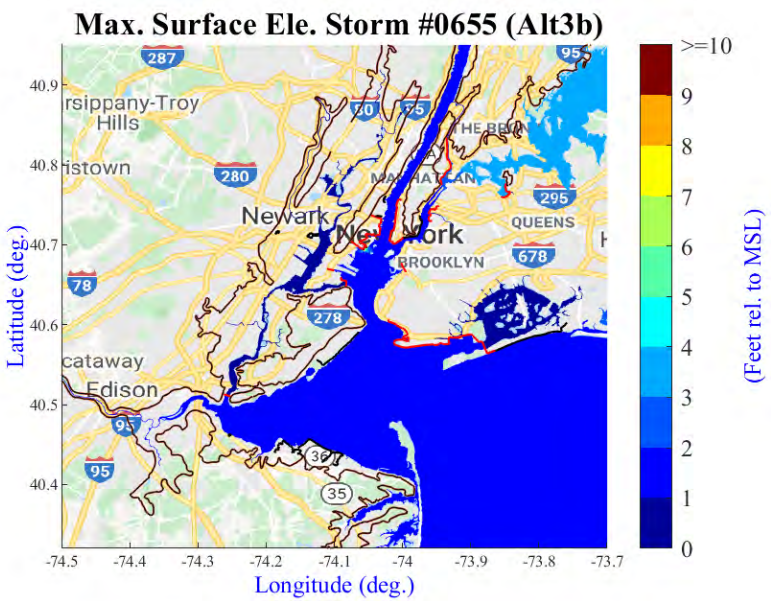


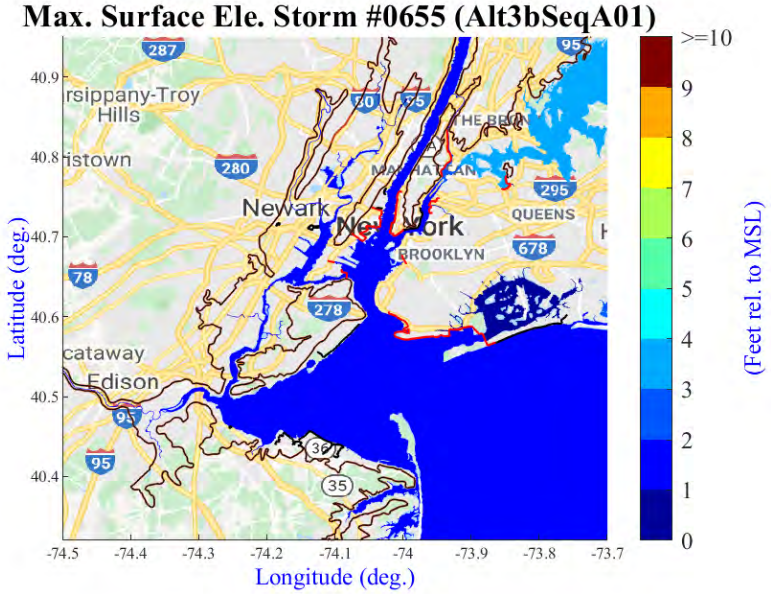


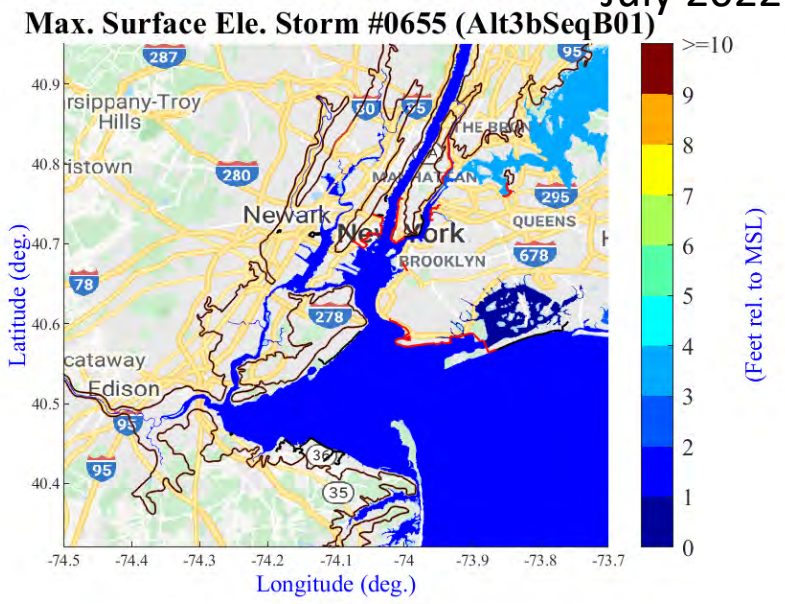


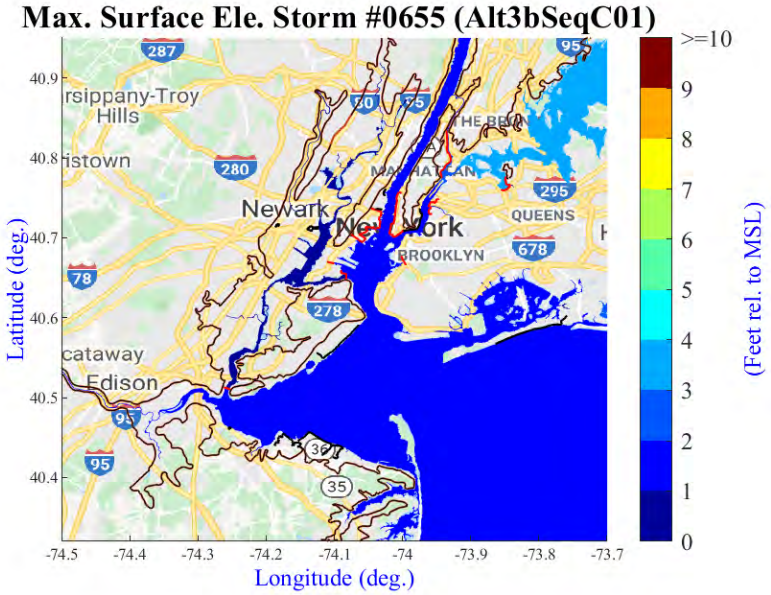


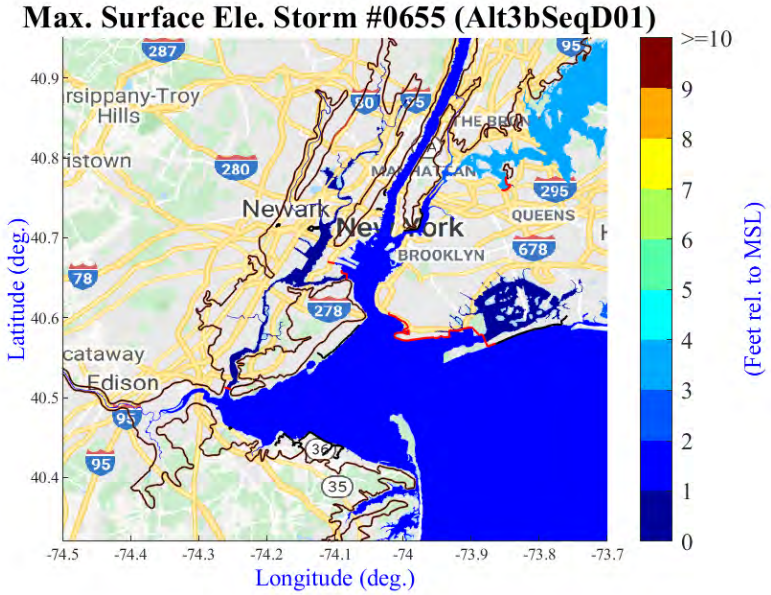
Storm #655 Alt3a











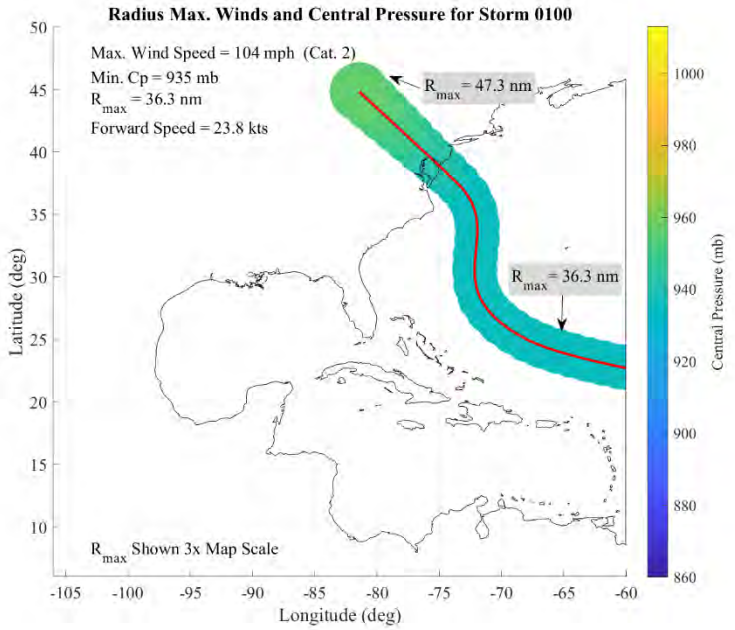
Alt3a	
Sequence A	No Throgs Neck Barrier
Sequence B	No Arthur Kill Barrier
Sequence C	No Throgs Neck and Arthur Kill Barrier
Sequence D	No Jamaica Bay Barrier
Sequence E	Only the Jamaica Bay Barrier
Alt3b	
Sequence A	No Arthur Kill Barrier
Sequence B	No Arthur Kill and Kill Van Kull Barrier, only Jamaica Bay Barrier
Sequence C	No Jamaica Bay Barrier
Sequence D	All Barriers in place (none removed)

Storm #655 Alt3b

Appendix V

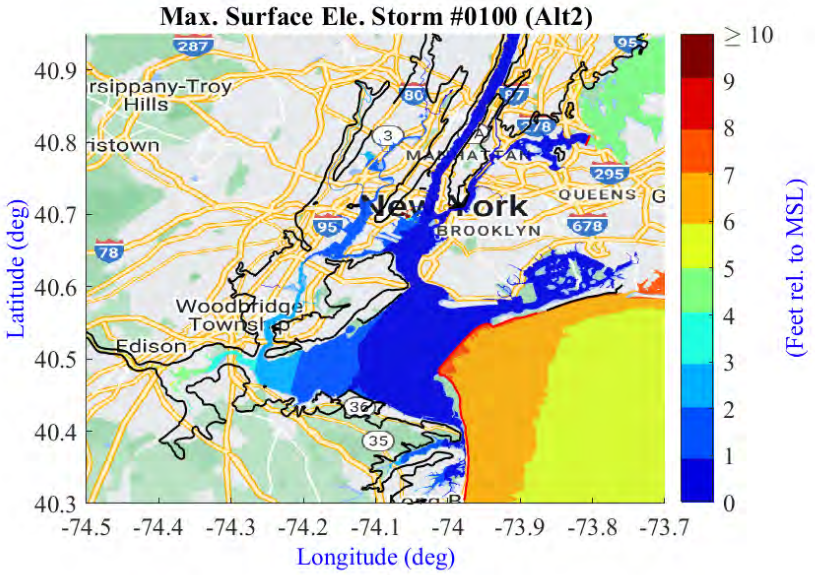
New York New Jersey Harbors and Tributaries CSTORM Modeled Maximum Water Surface Elevations for FWOP, Alt2, Alt4 and Sequences

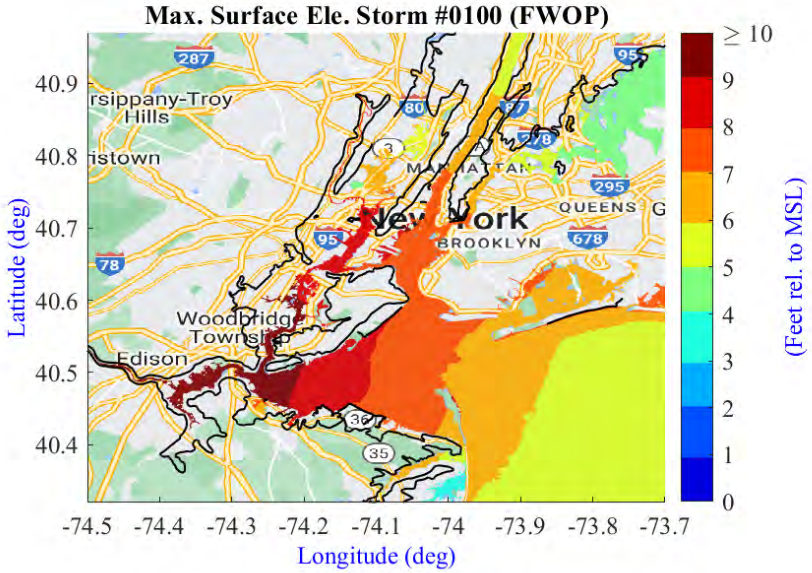
Storm #100

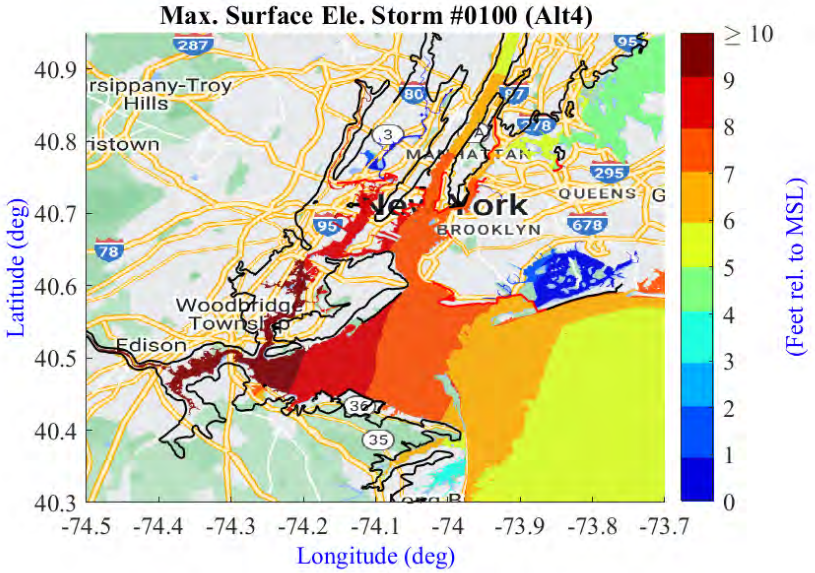


Max. Wind Speed: ***104 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***36.3 nm***
Forward Speed: ***23.8 kts***

Future With Out Project:
Max. WSE at Battery: ***7.61 ft.***
Max. WSE at Kings Point: ***4.61 ft.***
Max. WSE at Sandy Hook: ***7.16 ft.***

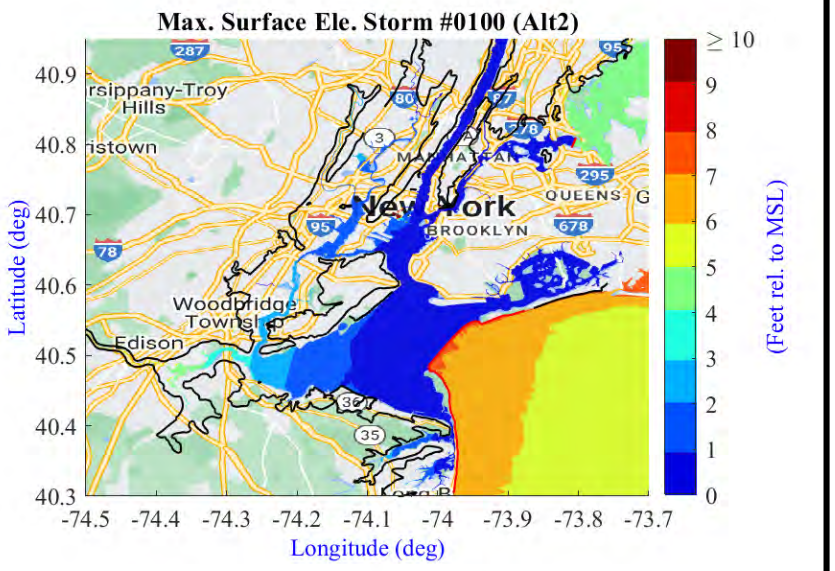


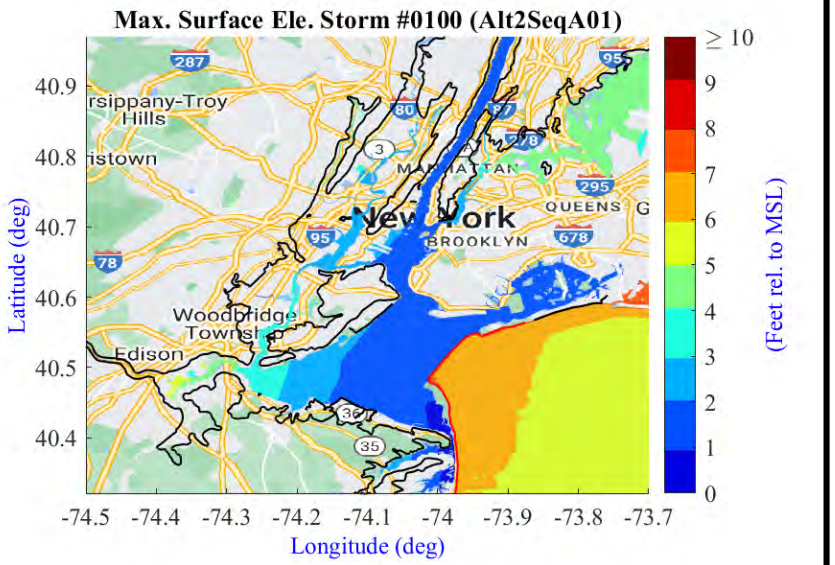


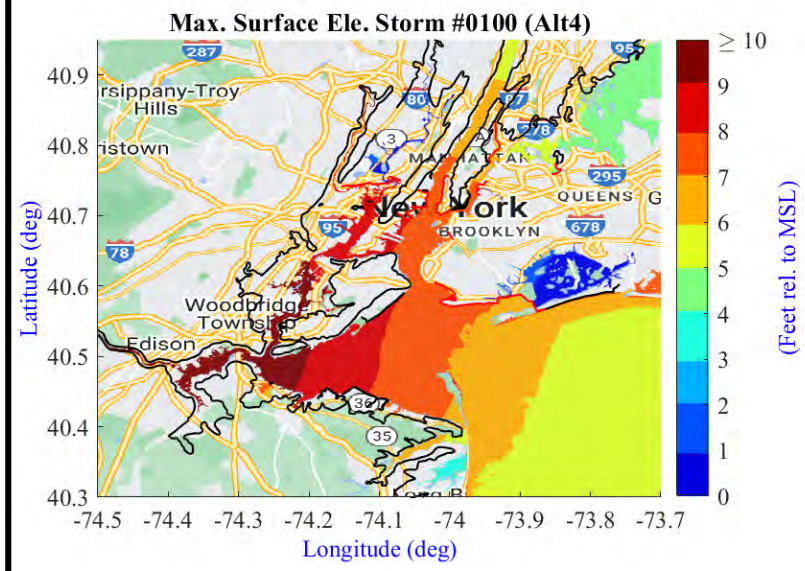


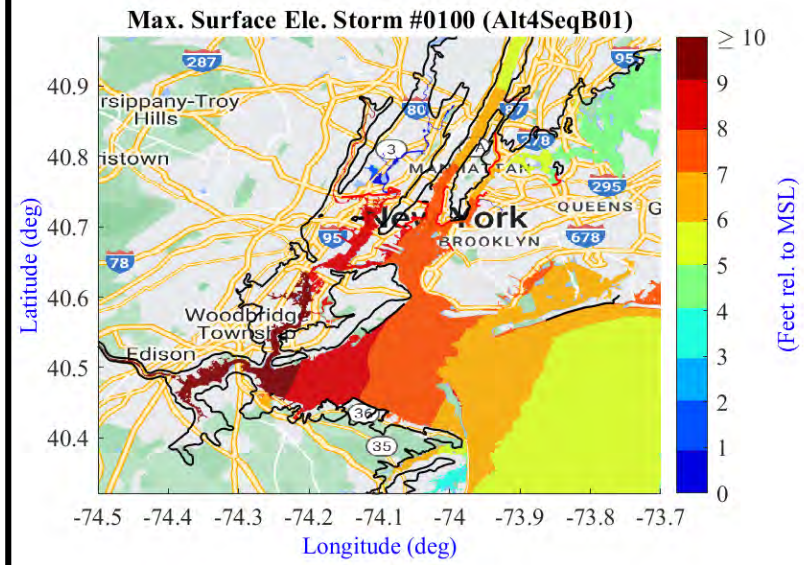
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

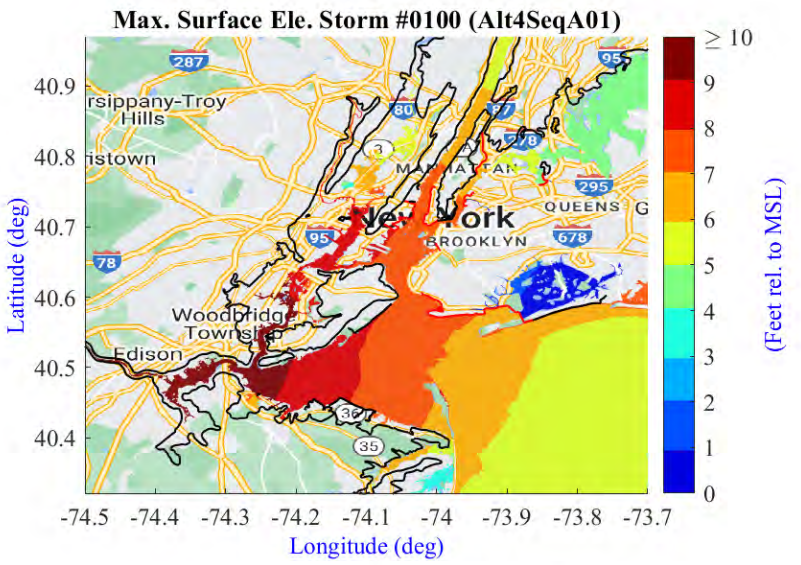
Alt2 Storm #100 Alt4

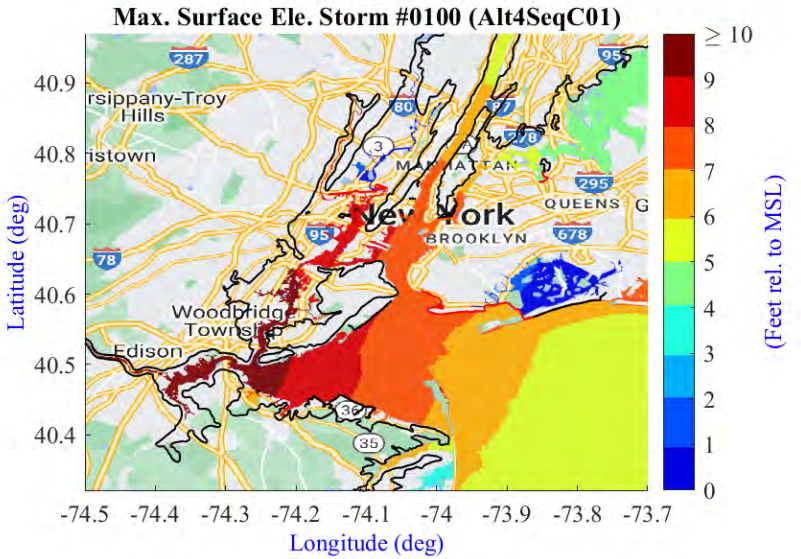




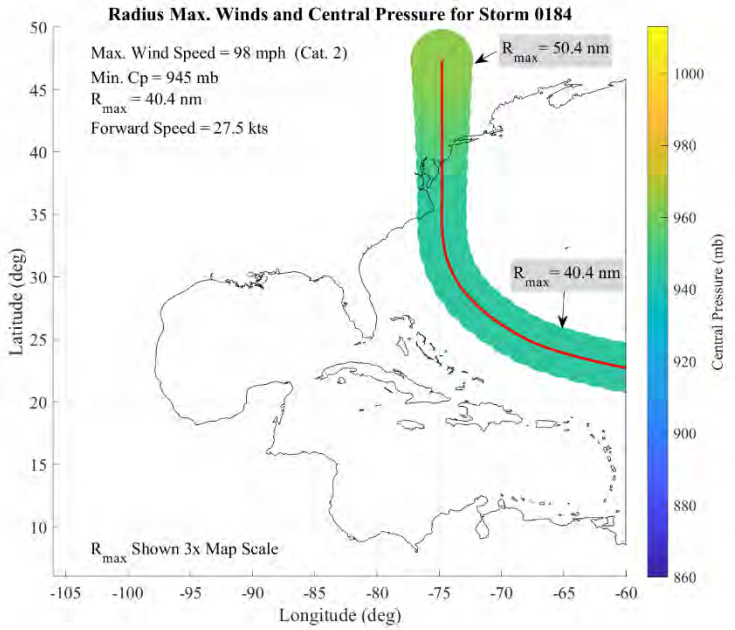






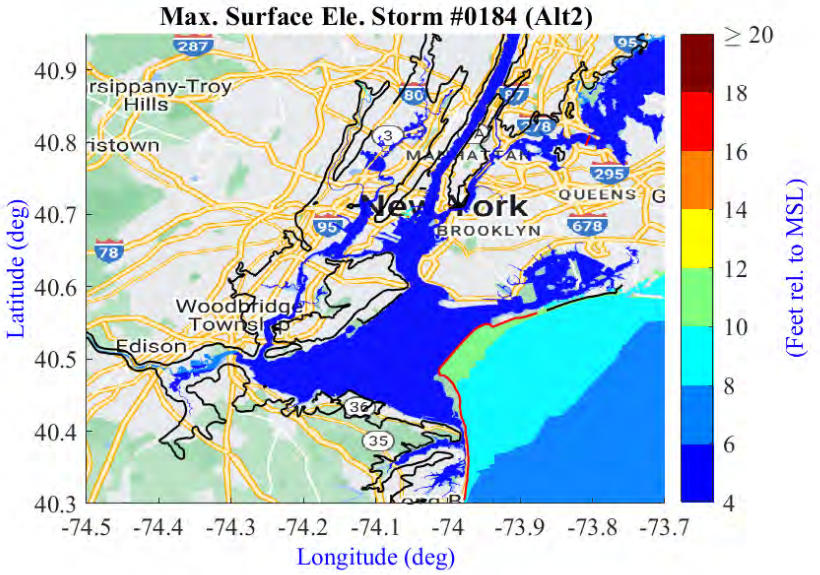


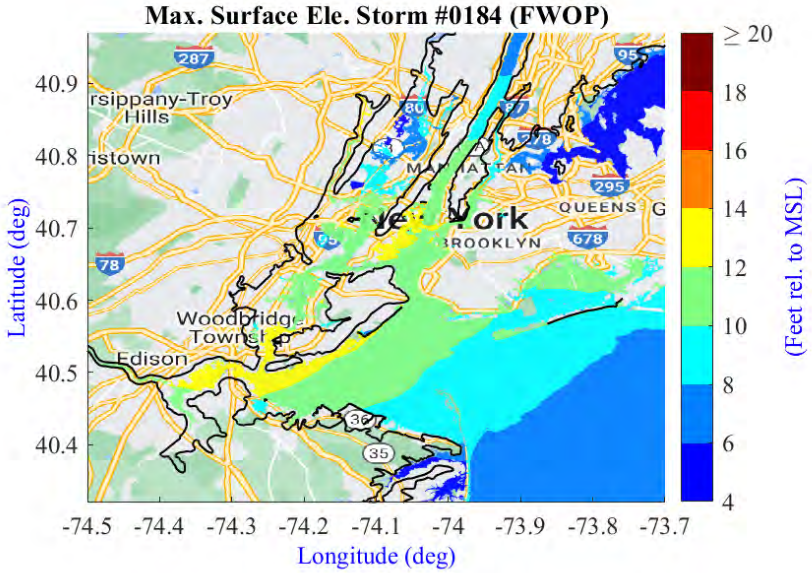
Storm #184

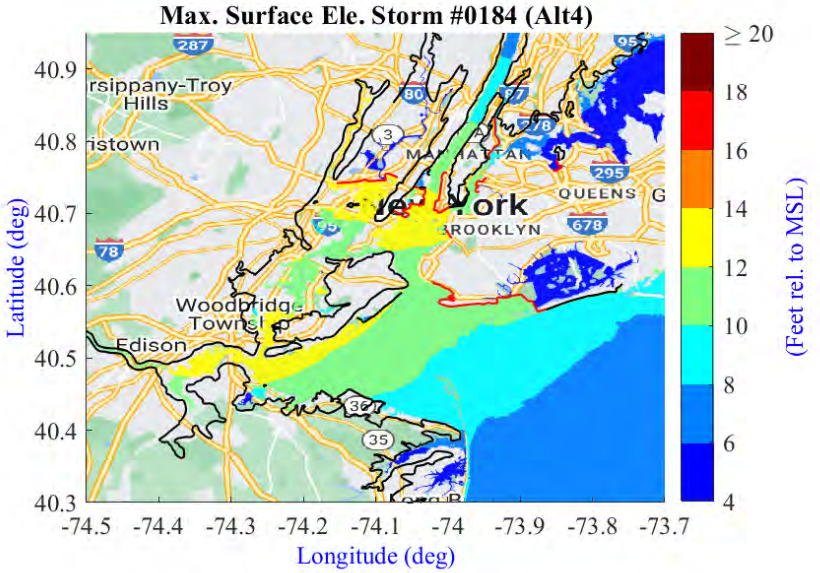


Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***945 mb***
Rmax: ***40.4 nm***
Forward Speed: ***27.5 kts***

Future With Out Project:
Max. WSE at Battery: ***12.05 ft.***
Max. WSE at Kings Point: ***4.98 ft.***
Max. WSE at Sandy Hook: ***9.64 ft.***

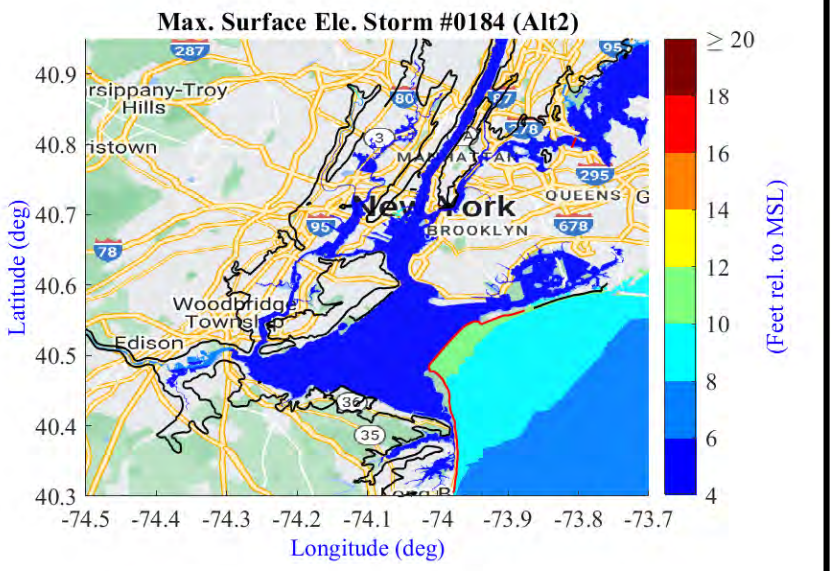


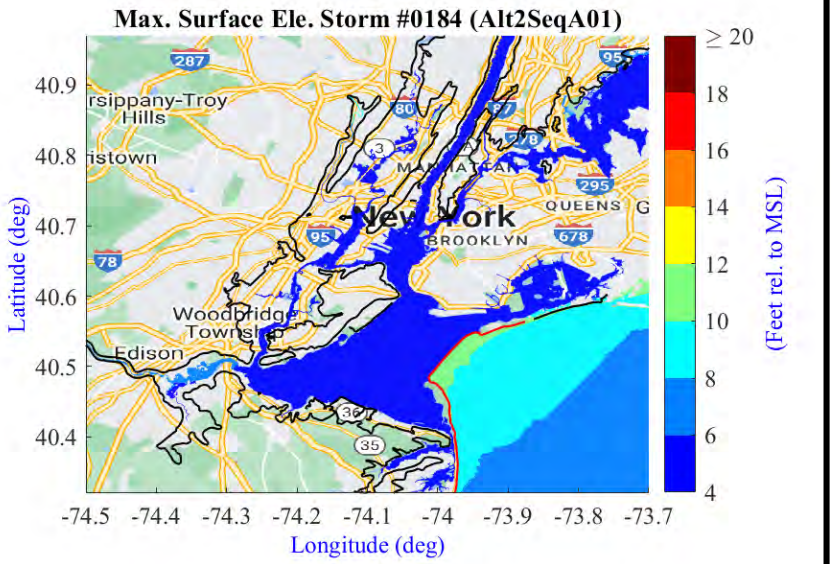


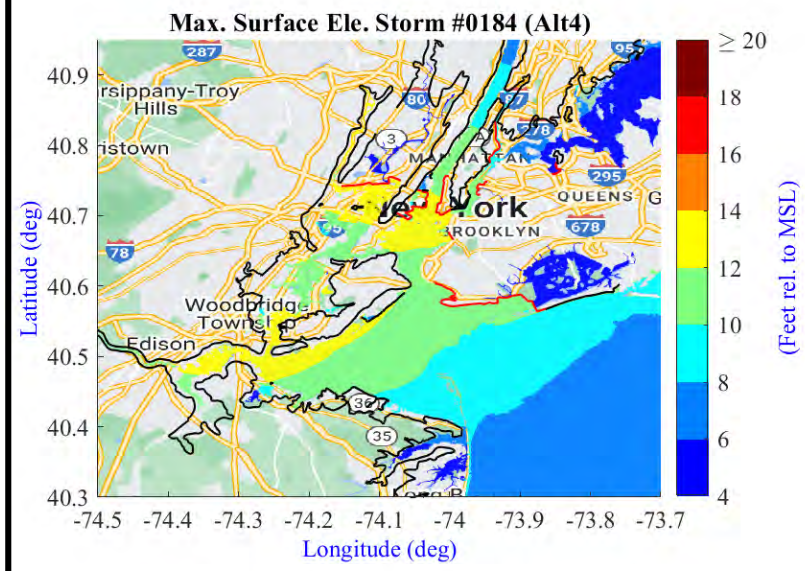


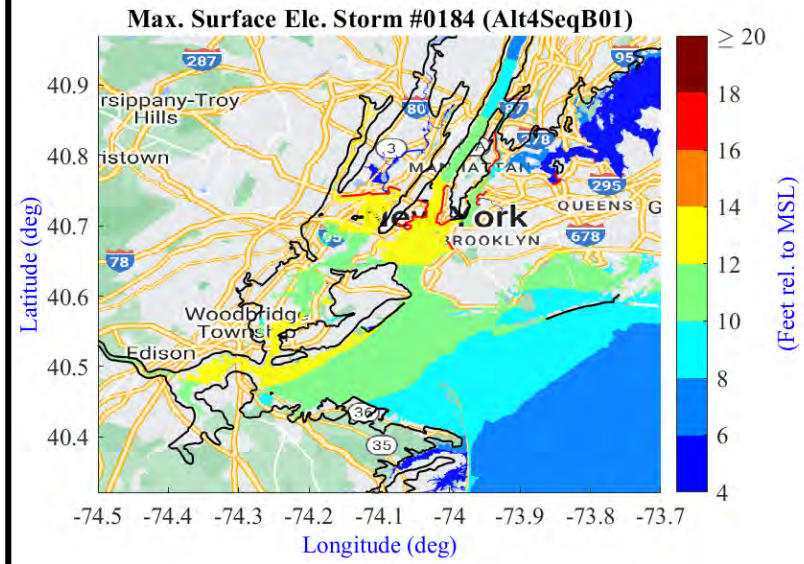
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

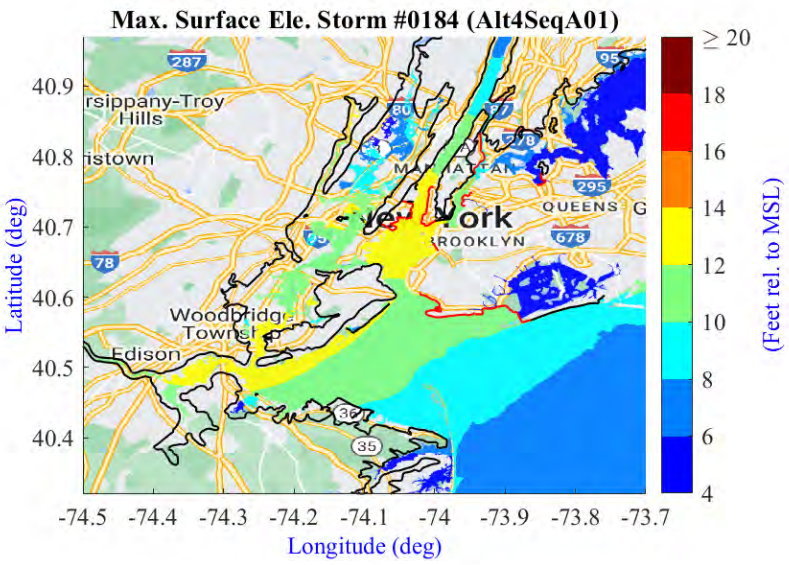
Alt2 Storm #184 Alt4

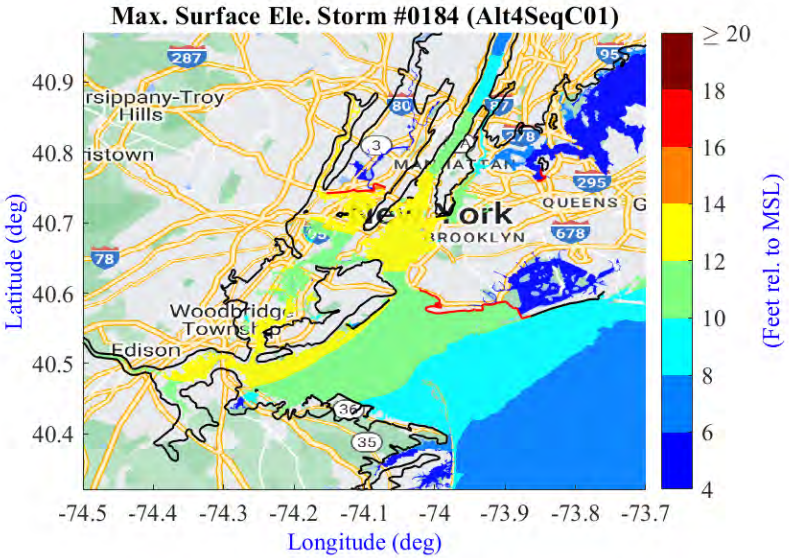




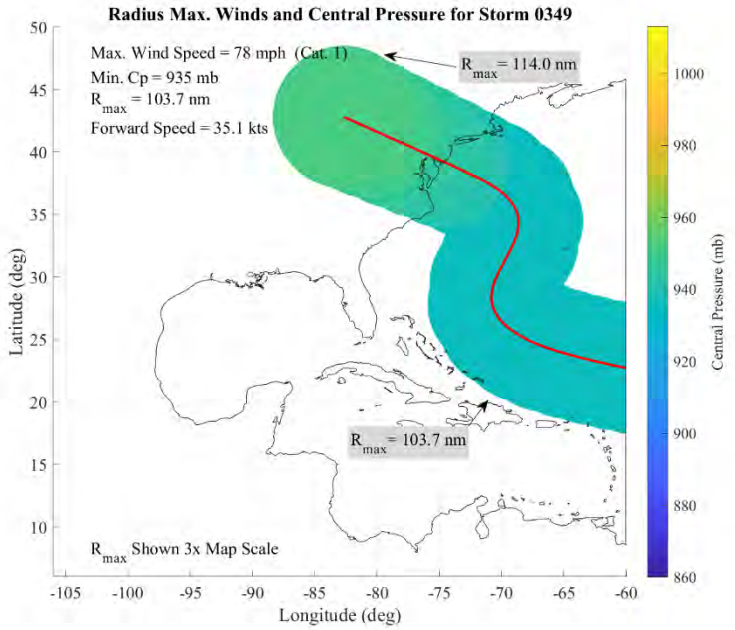






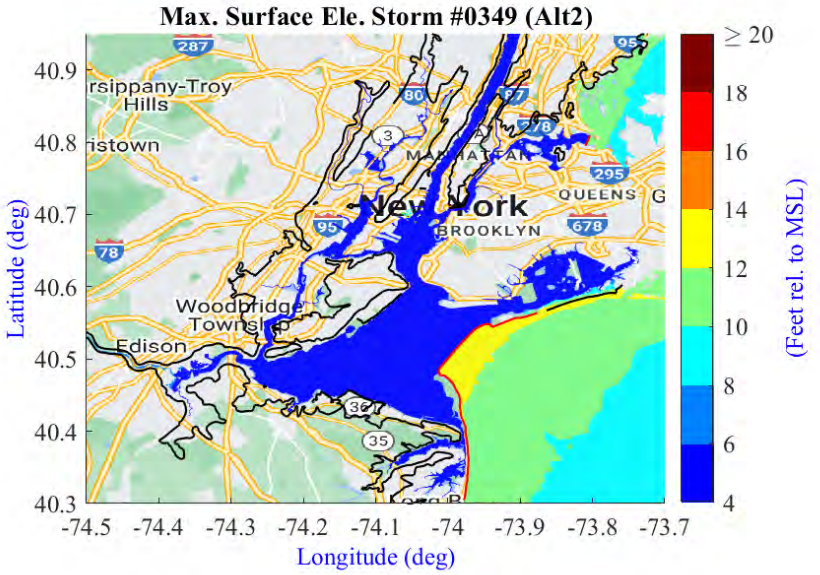


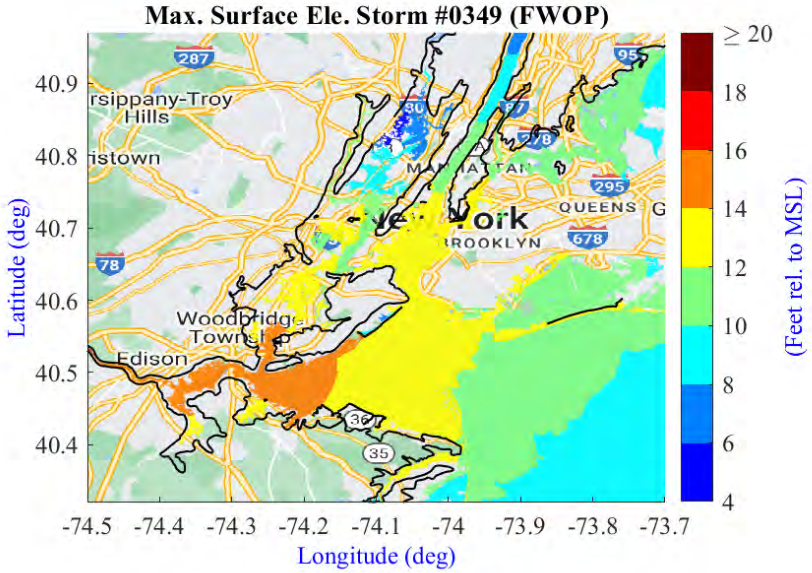
Storm #349

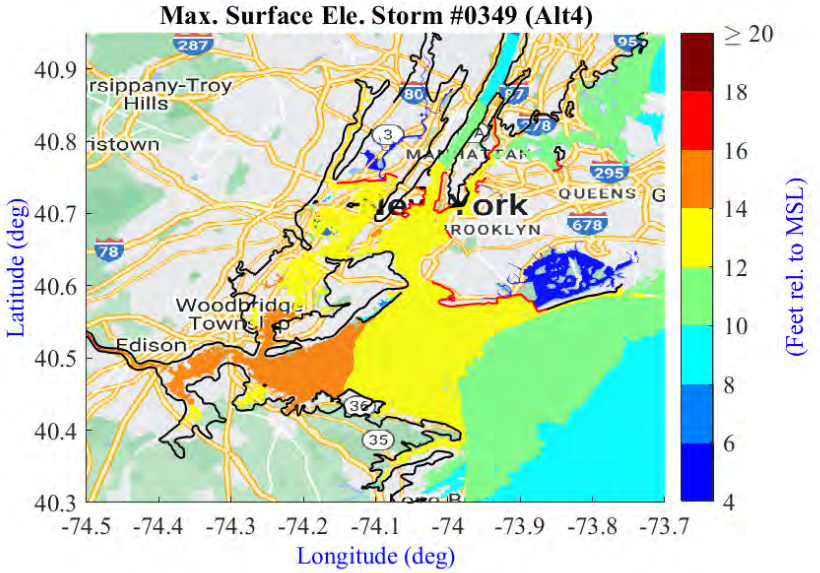


Max. Wind Speed: ***78 mph (Cat. 1)***
Min. Cp: ***935 mb***
Rmax: ***103.7 nm***
Forward Speed: ***35.1 kts***

Future With Out Project:
Max. WSE at Battery: ***12.90 ft.***
Max. WSE at Kings Point: ***10.15 ft.***
Max. WSE at Sandy Hook: ***12.65 ft.***

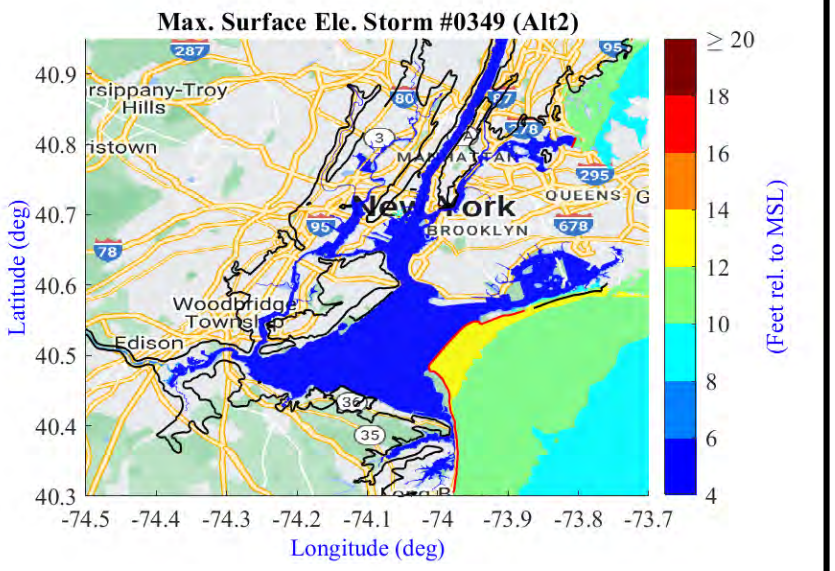


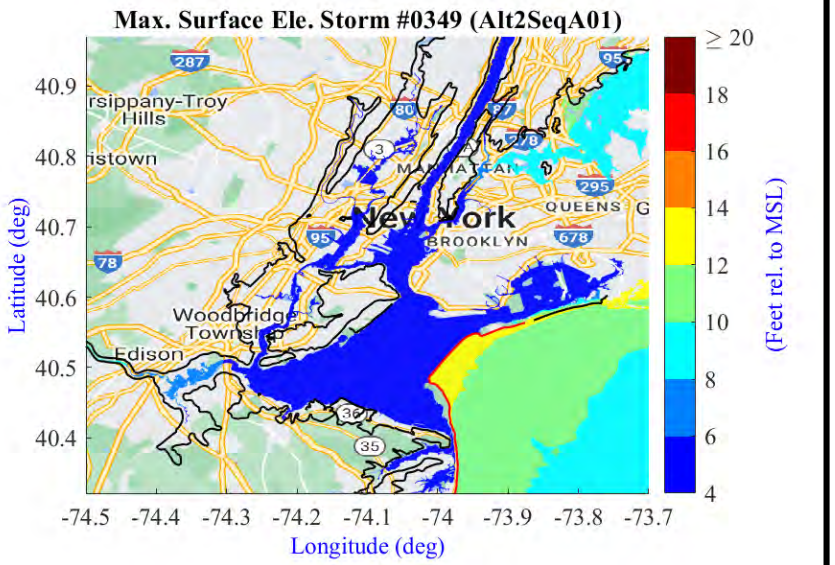


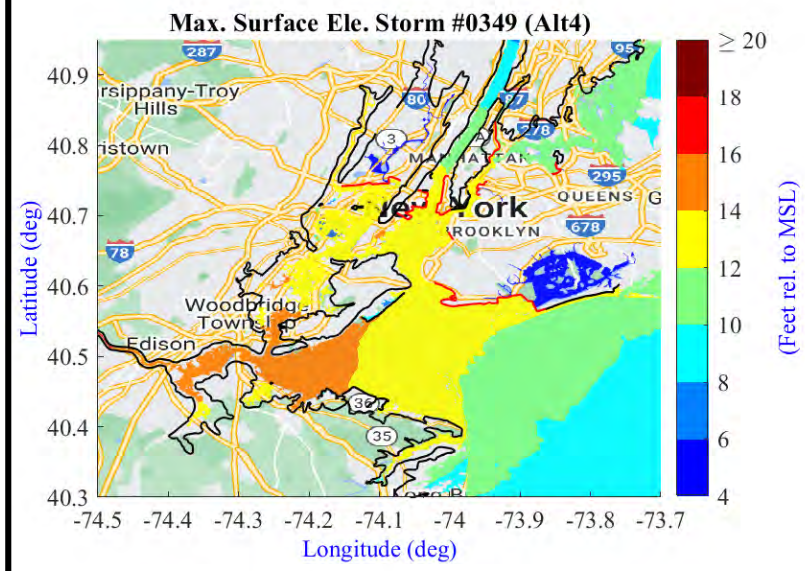


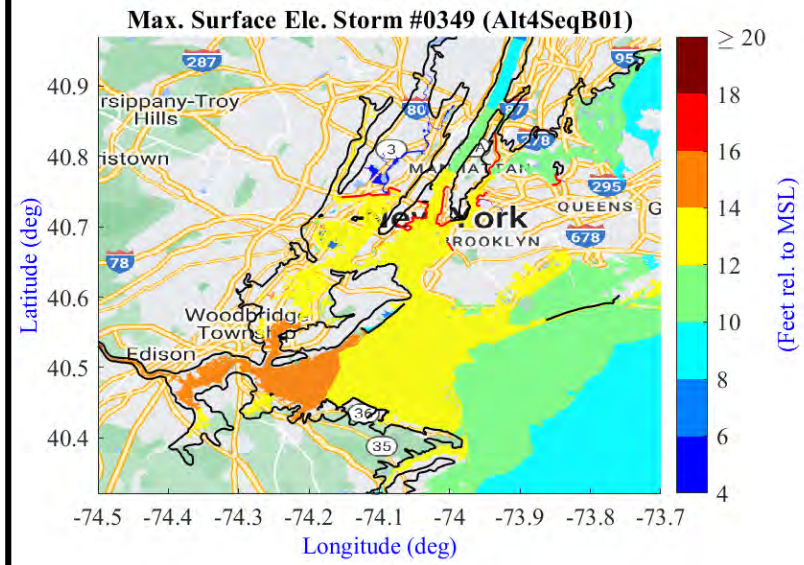
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

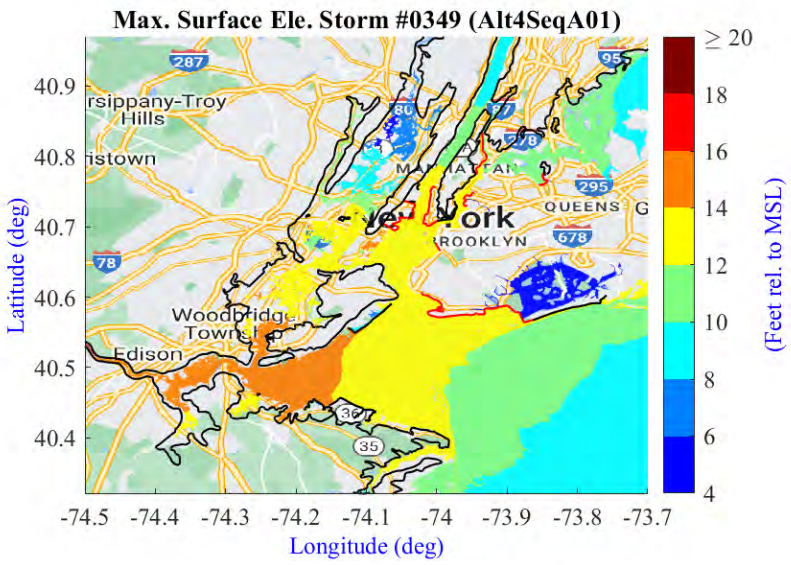
Alt2 Storm #349 Alt4

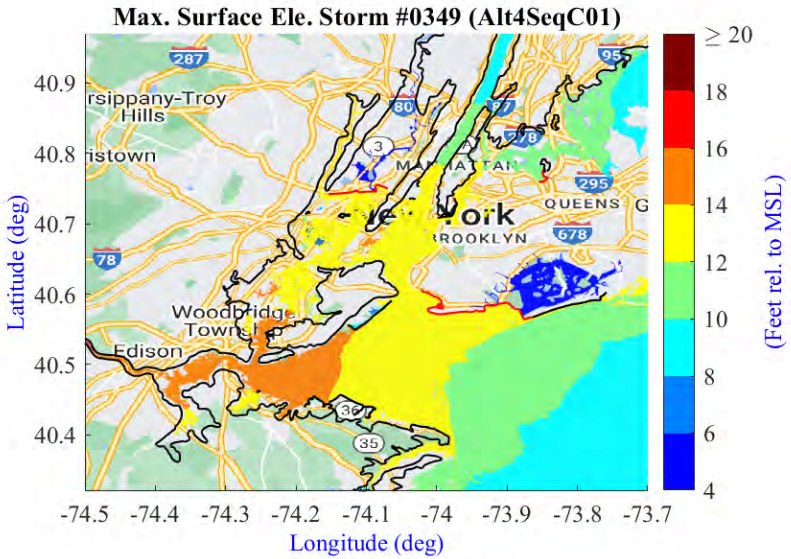




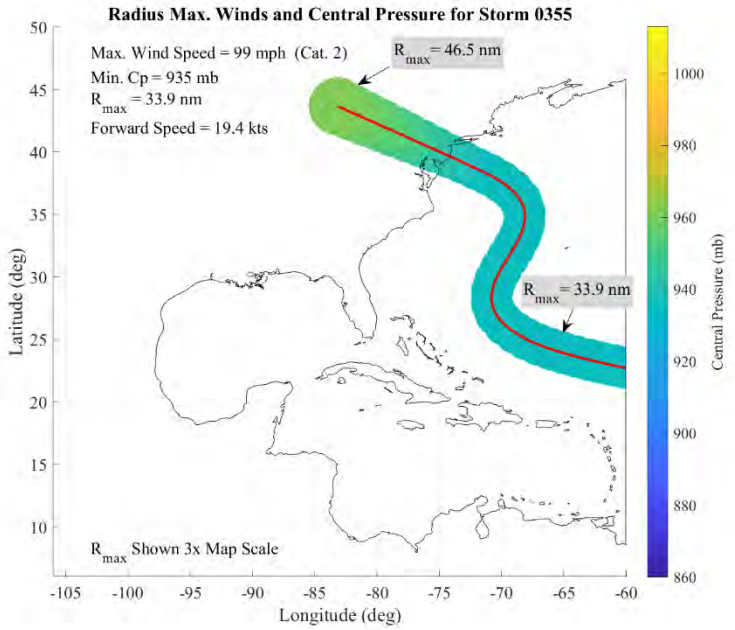






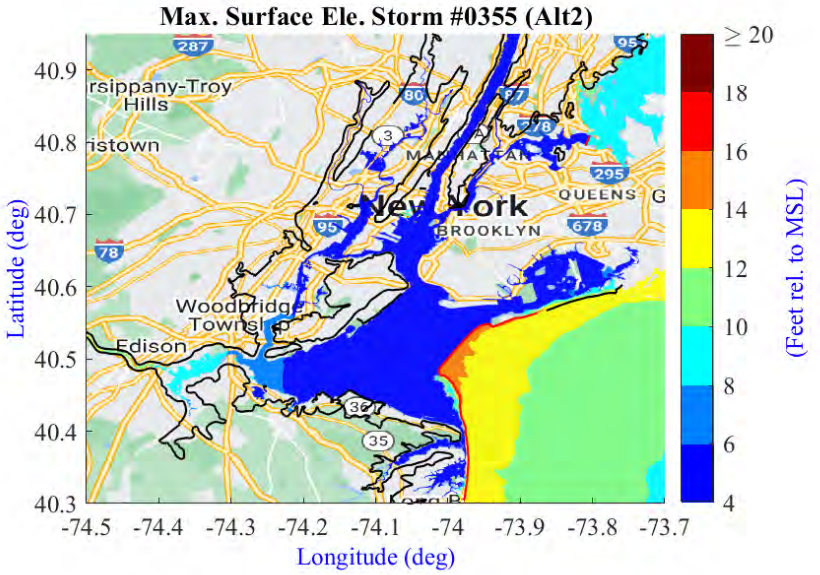


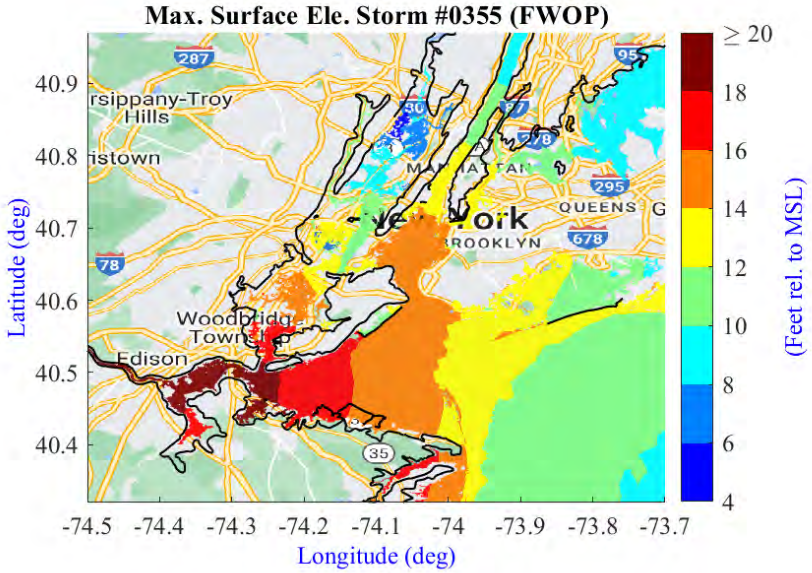
Storm #355

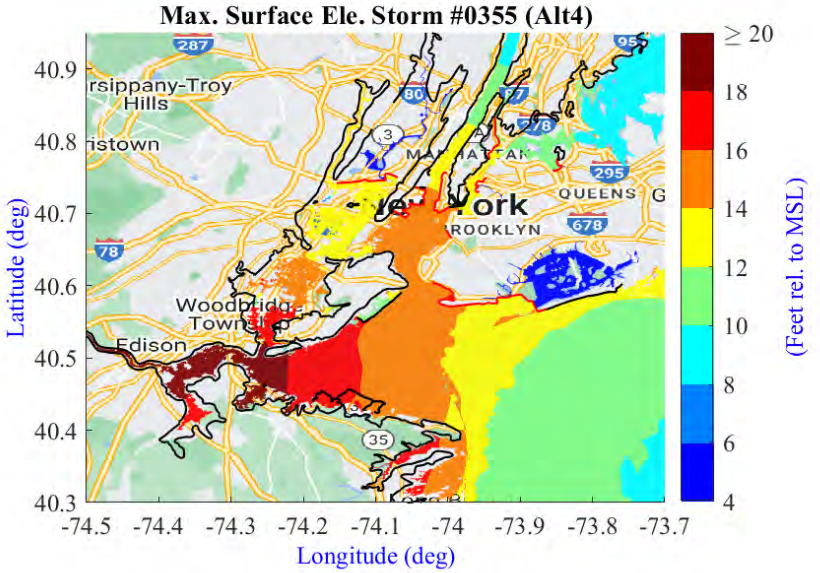


Max. Wind Speed: ***99 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***33.9 nm***
Forward Speed: ***19.4 kts***

Future With Out Project:
Max. WSE at Battery: ***14.17 ft.***
Max. WSE at Kings Point: ***9.36 ft.***
Max. WSE at Sandy Hook: ***14.06 ft.***

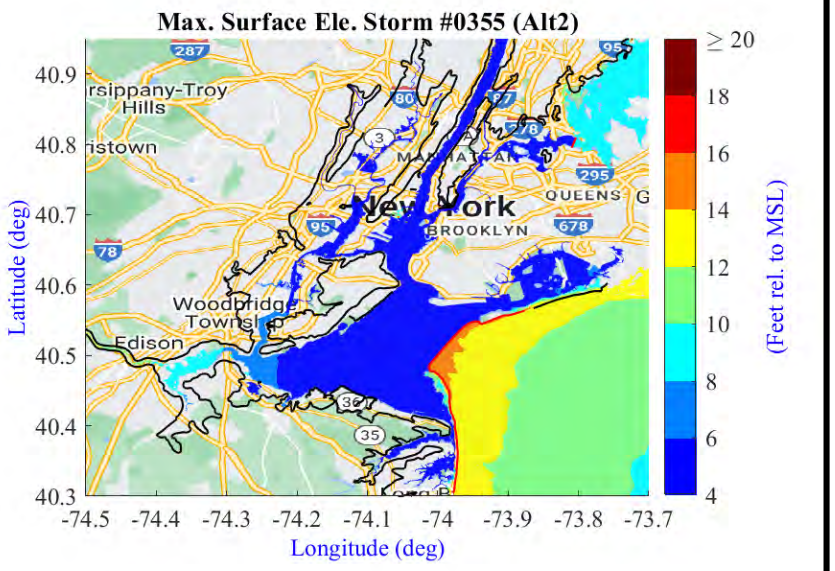


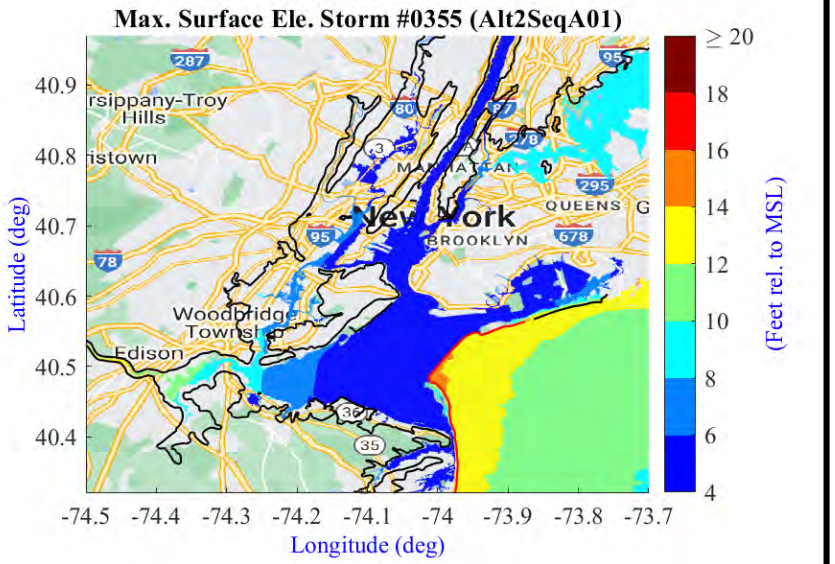


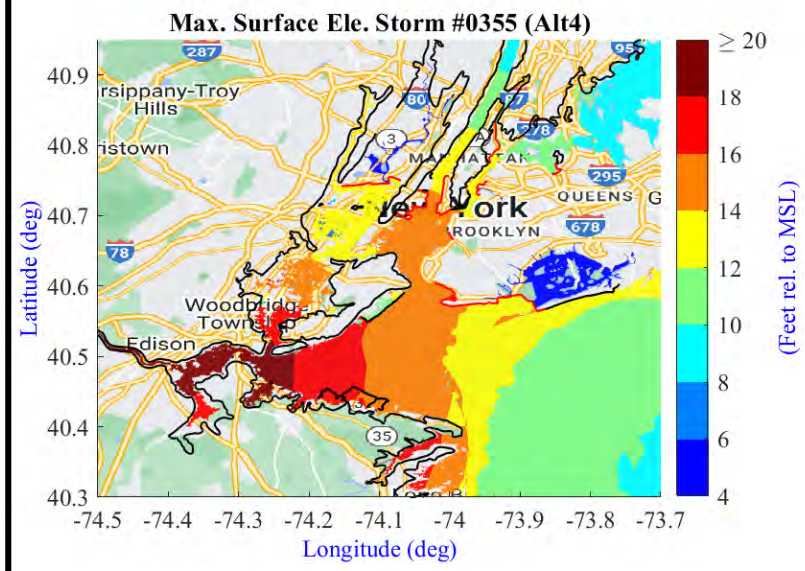


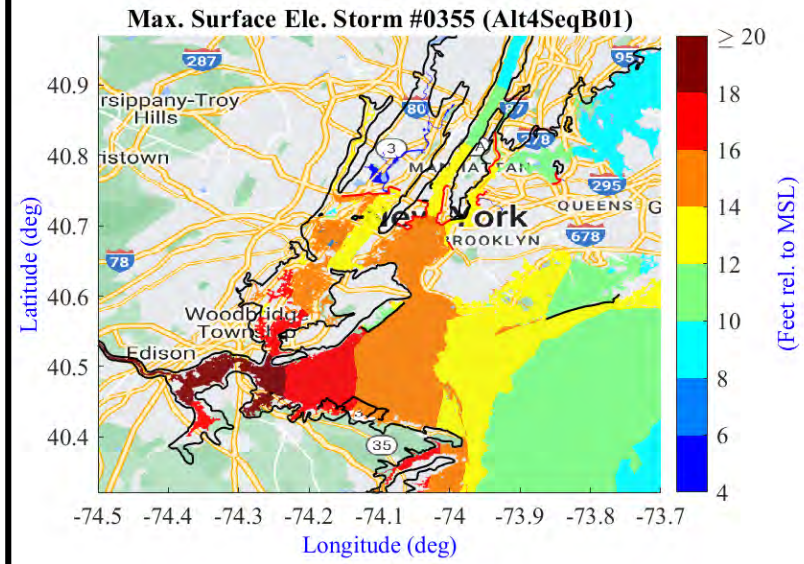
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

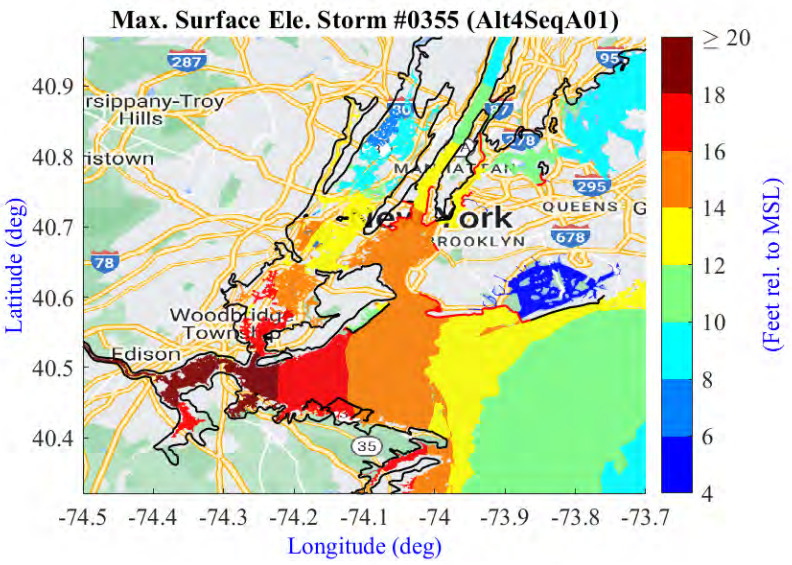
Alt2 Storm #355 Alt4

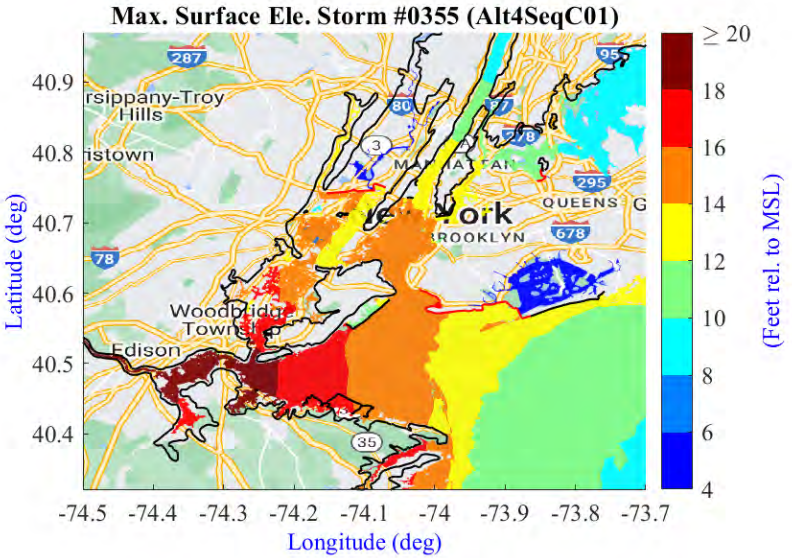




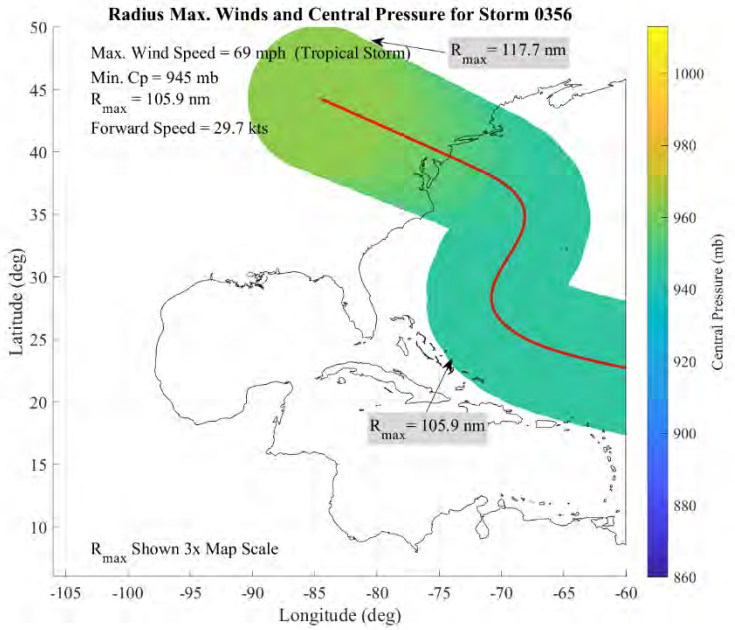








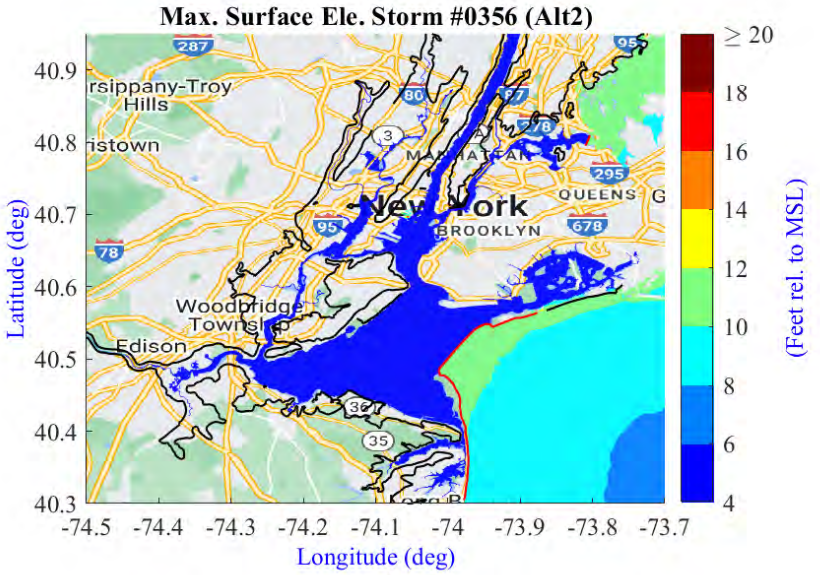
Storm #356

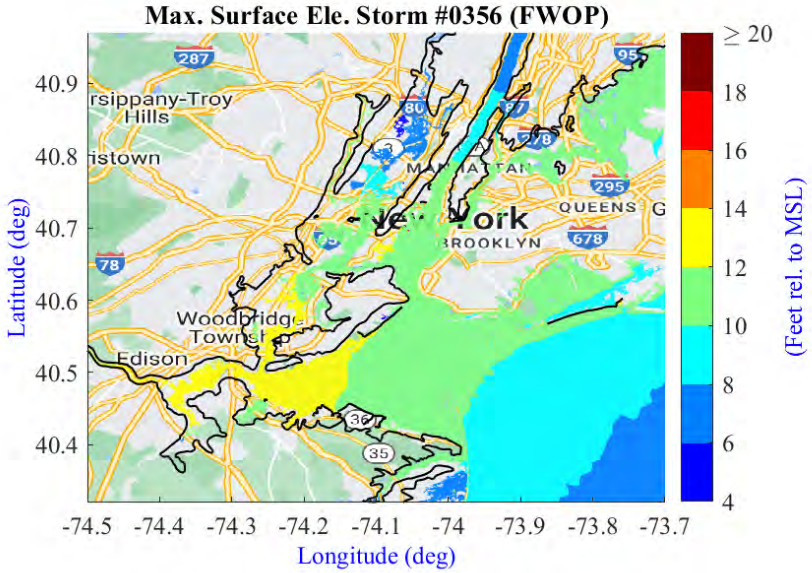


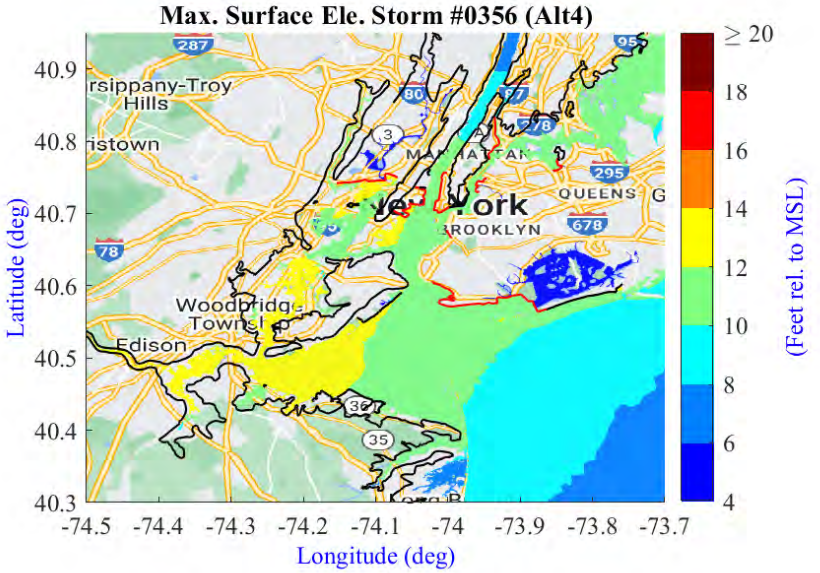
Max. Wind Speed: ***69 mph (Tropical Storm)***

Min. Cp: ***945 mb***
Rmax: ***105.9 nm***
Forward Speed: ***29.7 kts***

Future With Out Project:
Max. WSE at Battery: ***11.51 ft.***
Max. WSE at Kings Point: ***10.30 ft.***
Max. WSE at Sandy Hook: ***11.00 ft.***

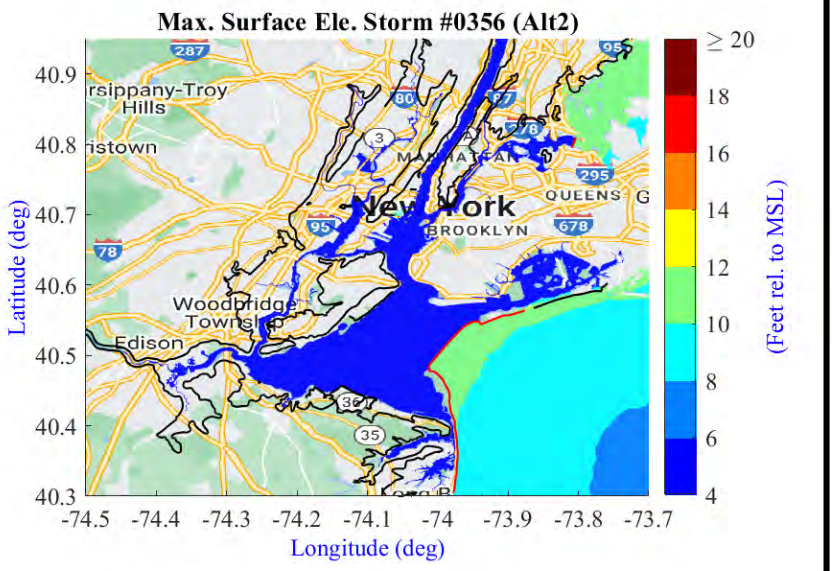


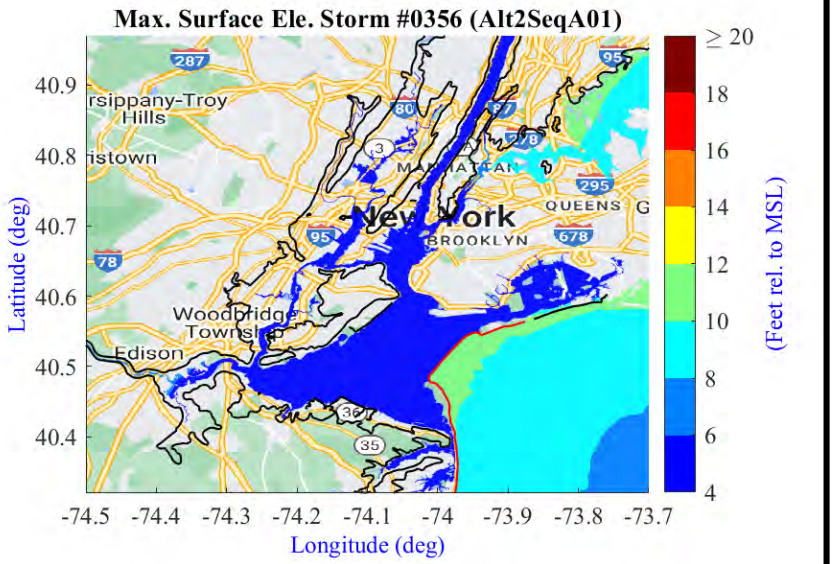


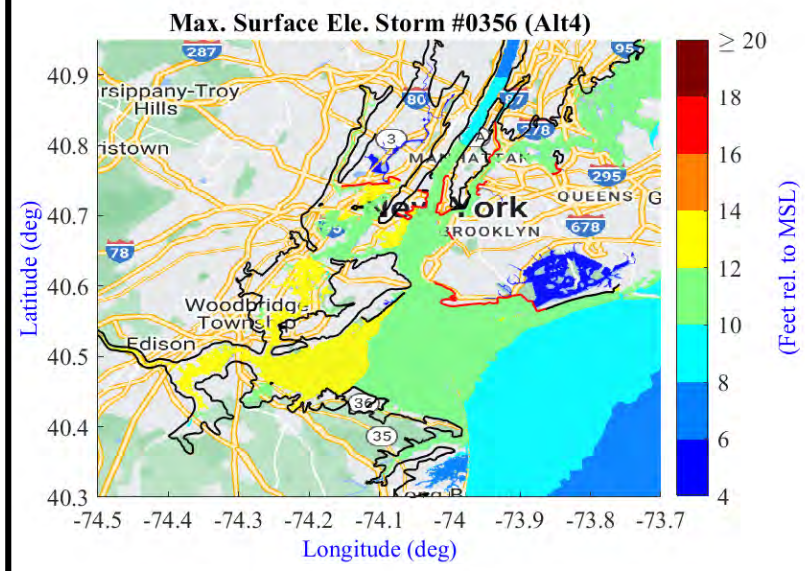


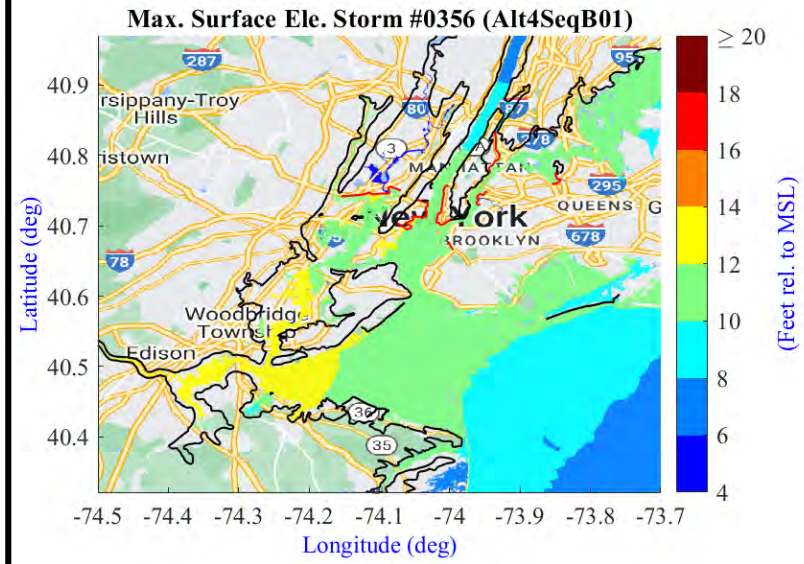
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

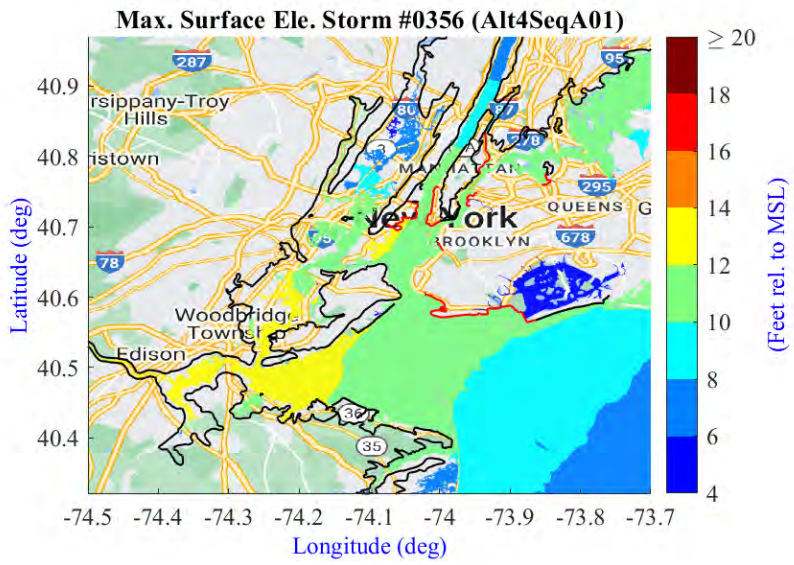
Alt2 Storm #356 Alt4

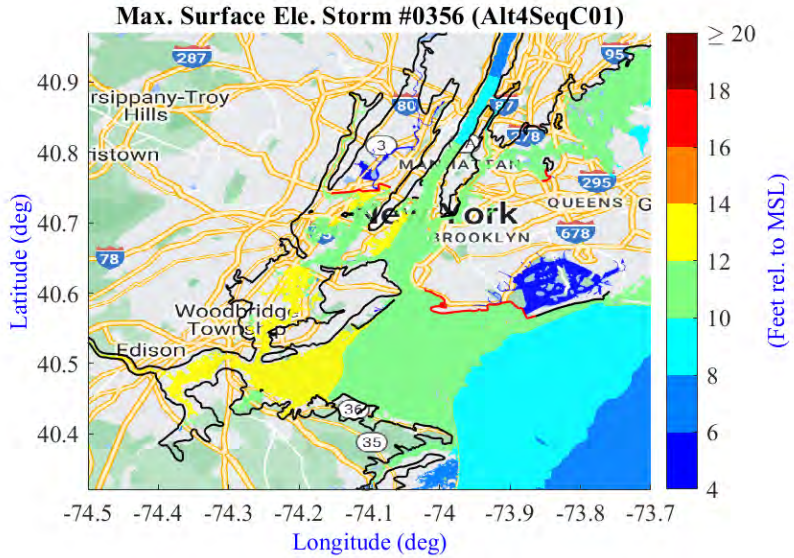




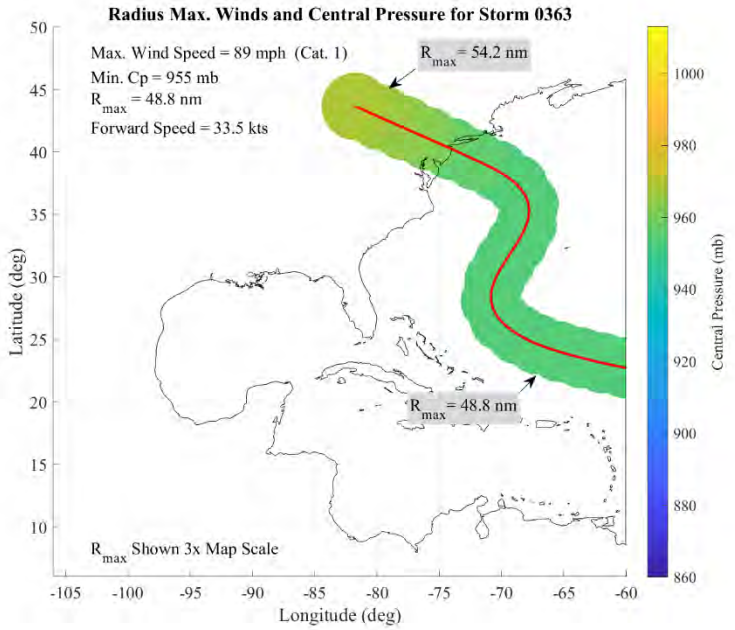






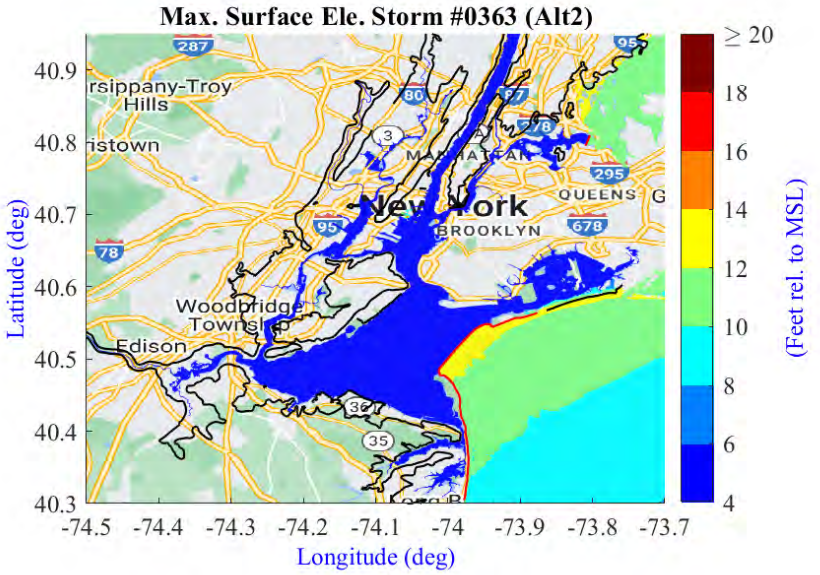


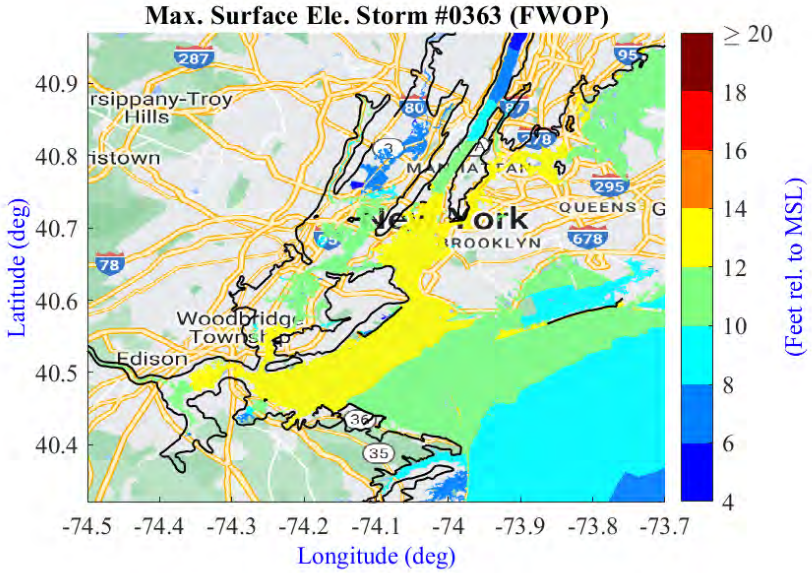
Storm #363

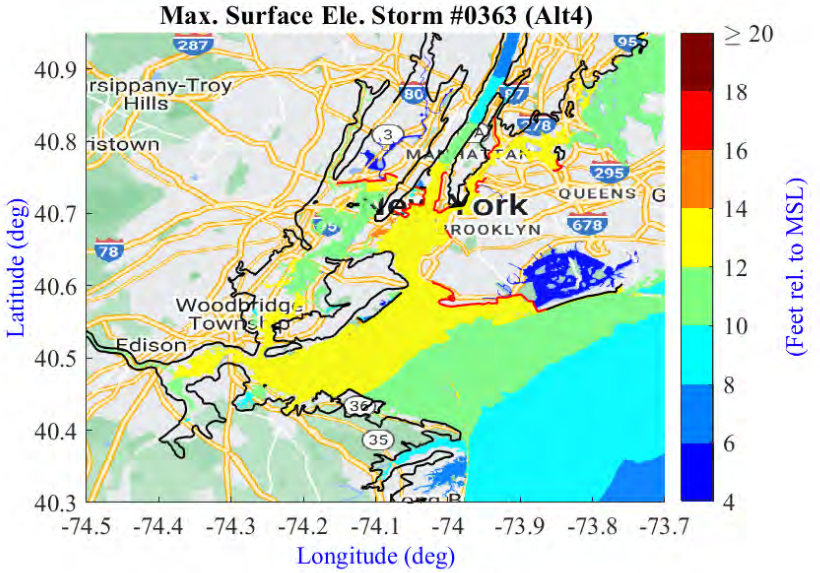


Max. Wind Speed: ***89 mph (Cat. 1)***
Min. Cp: ***955 mb***
Rmax: ***48.8 nm***
Forward Speed: ***33.5 kts***

Future With Out Project:
Max. WSE at Battery: ***13.00 ft.***
Max. WSE at Kings Point: ***11.23 ft.***
Max. WSE at Sandy Hook: ***11.18 ft.***

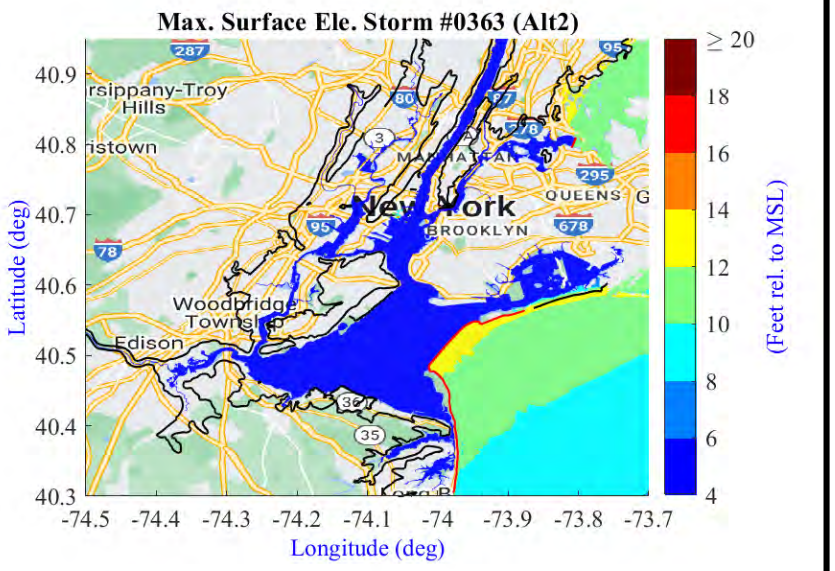


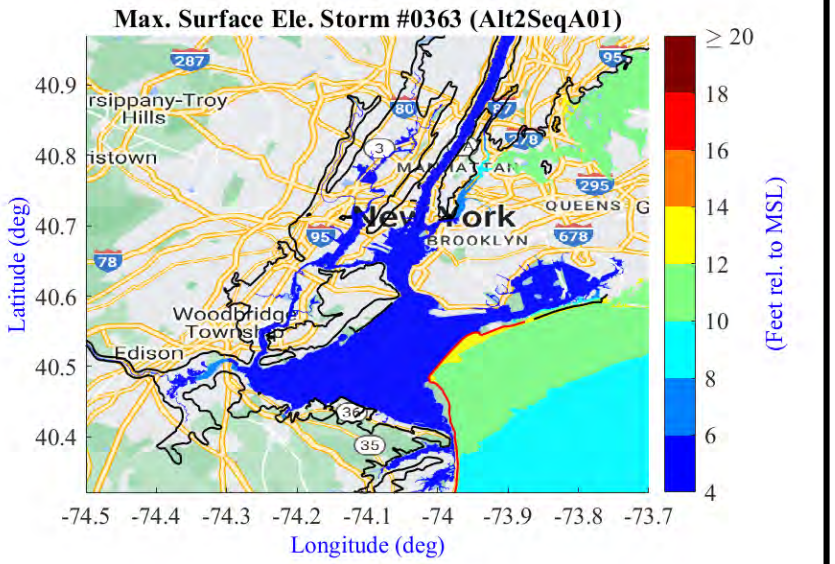


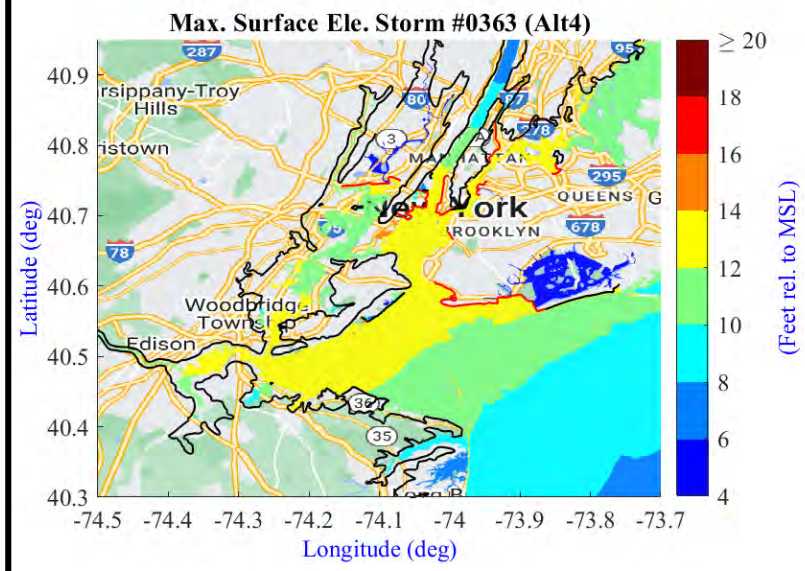


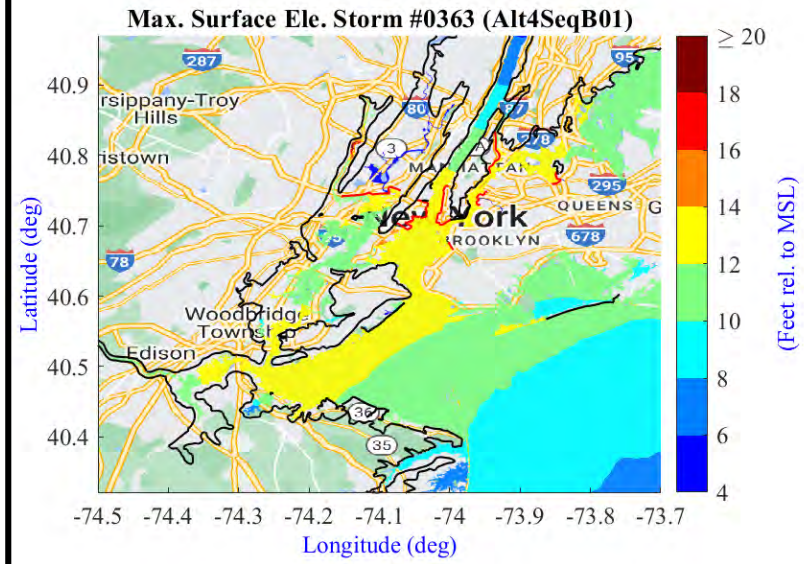
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

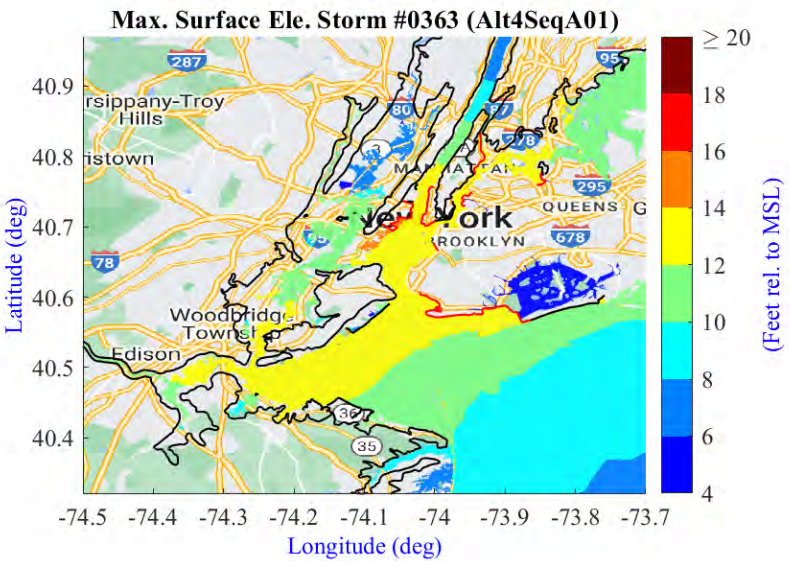
Alt2 Storm #363 Alt4

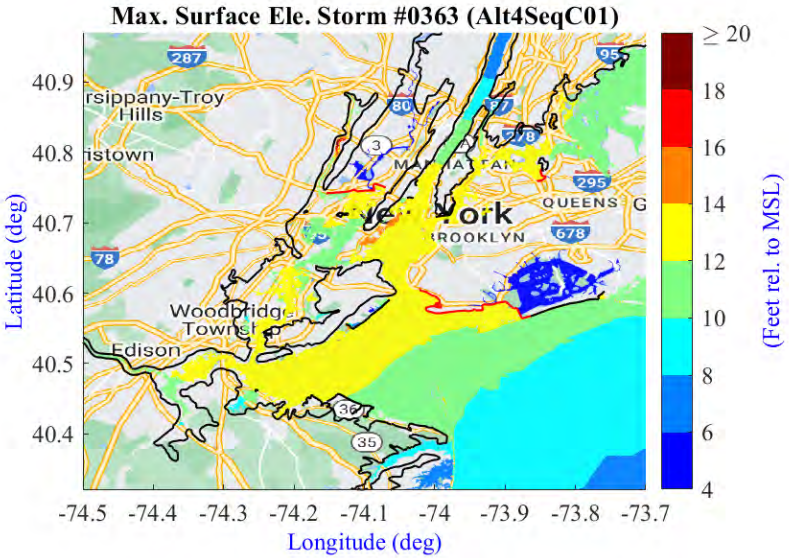




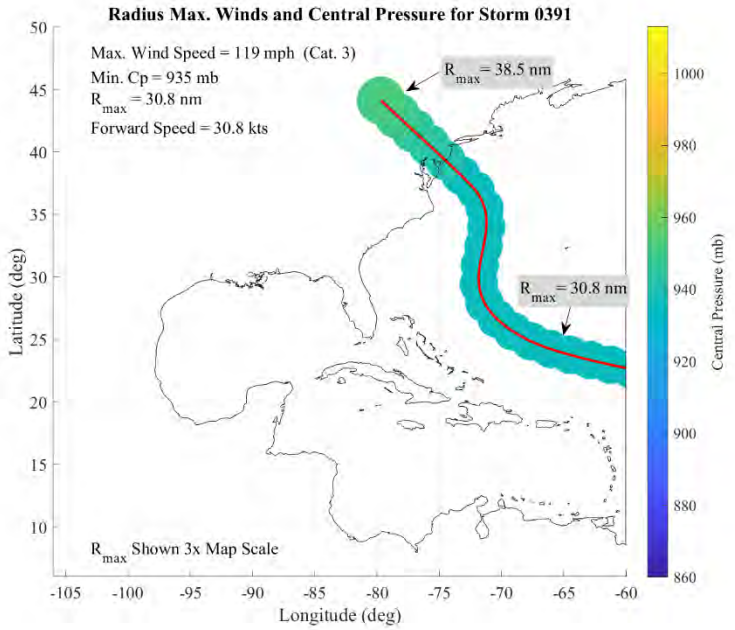






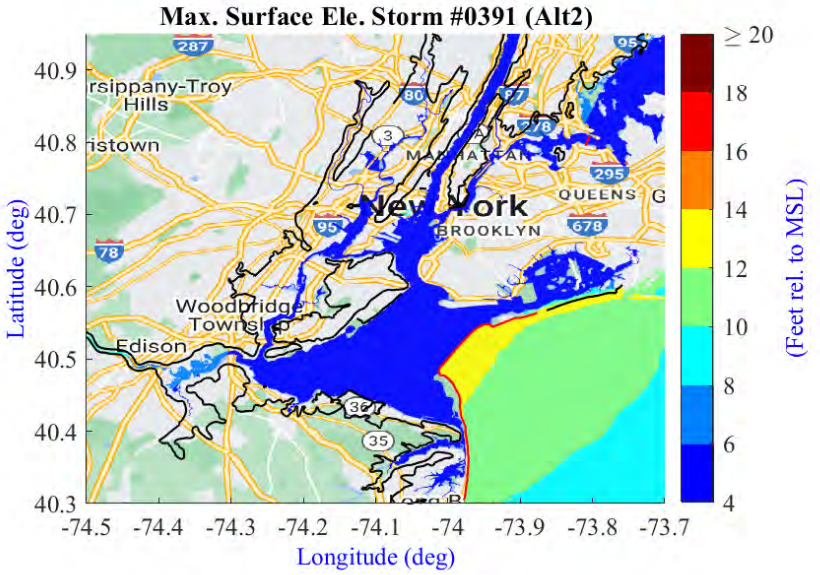


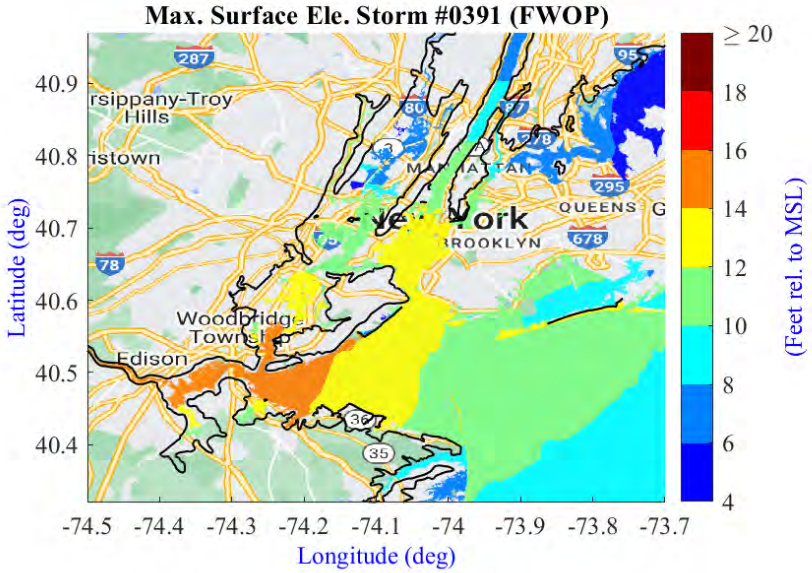
Storm #391

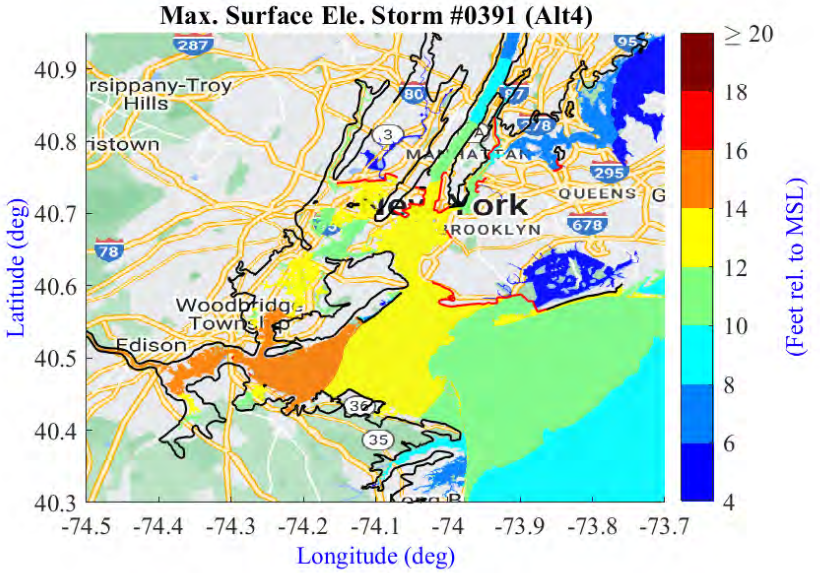


Max. Wind Speed: ***119 mph (Cat. 3)***
Min. Cp: ***935 mb***
Rmax: ***30.8 nm***
Forward Speed: ***30.8 kts***

Future With Out Project:
Max. WSE at Battery: ***12.34 ft.***
Max. WSE at Kings Point: ***6.00 ft.***
Max. WSE at Sandy Hook: ***11.76 ft.***

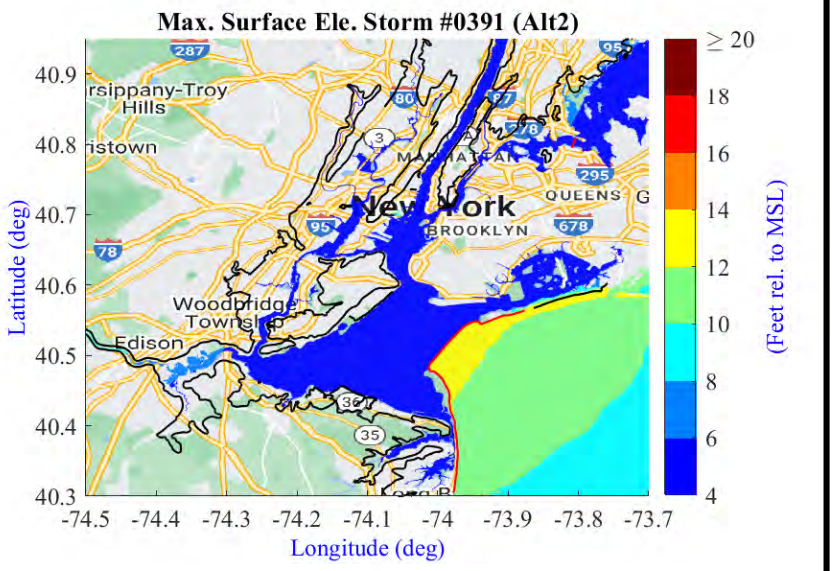


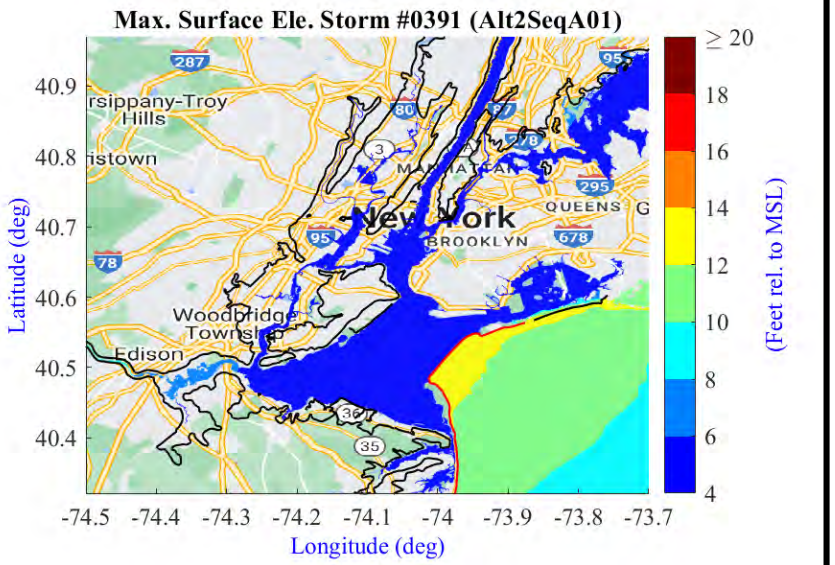


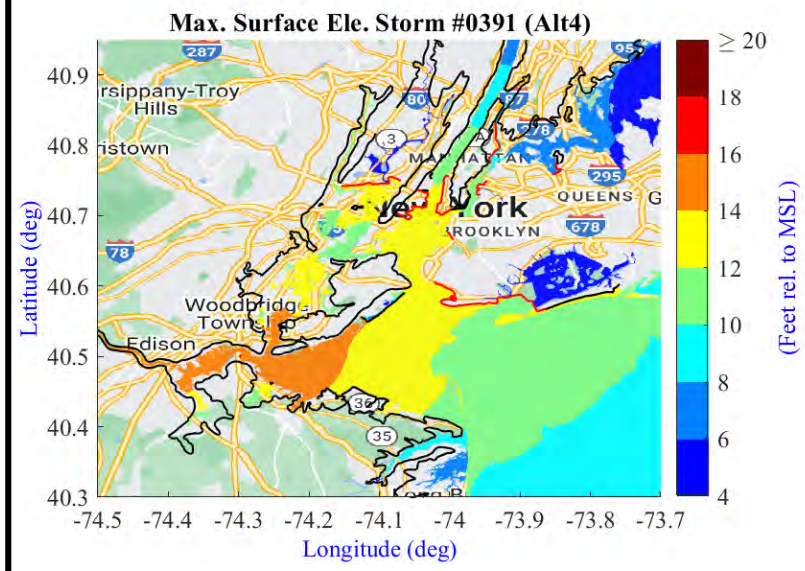


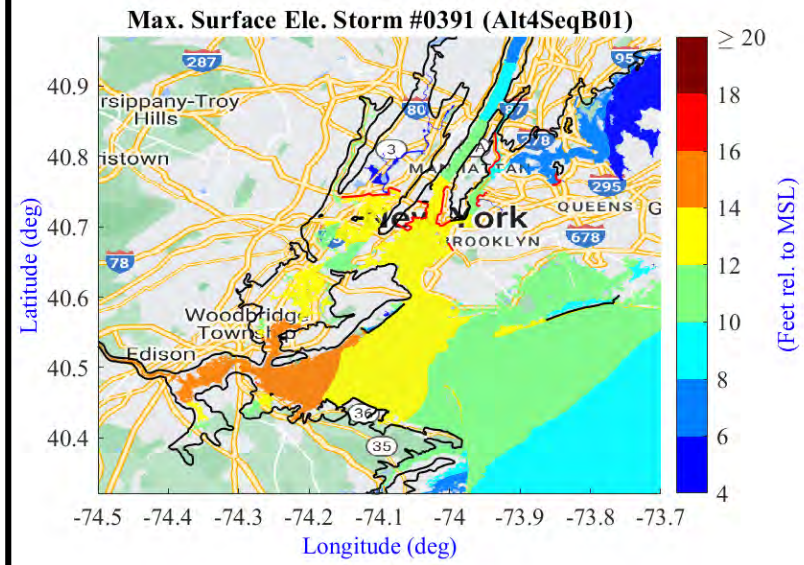
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

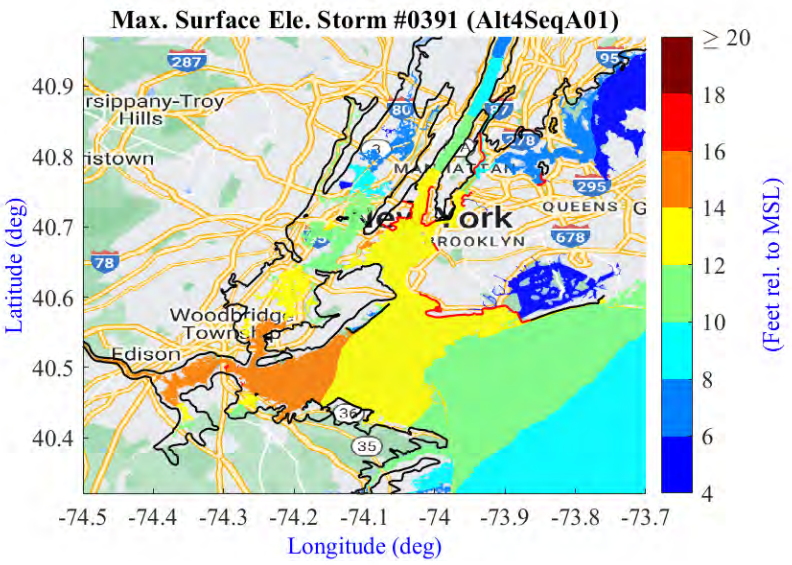
Alt2 Storm #391 Alt4

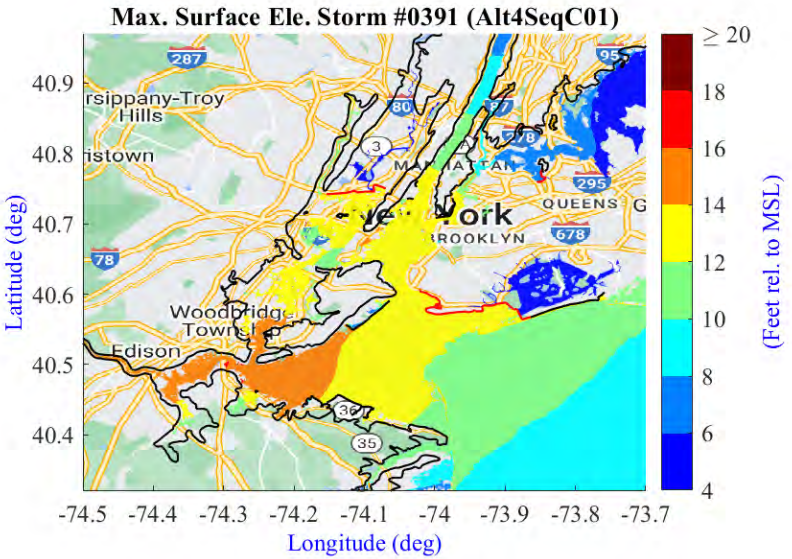




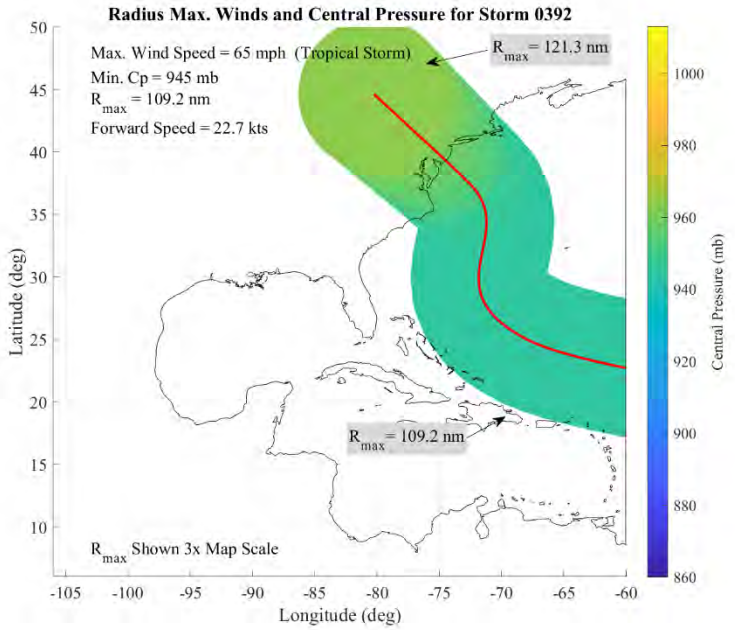








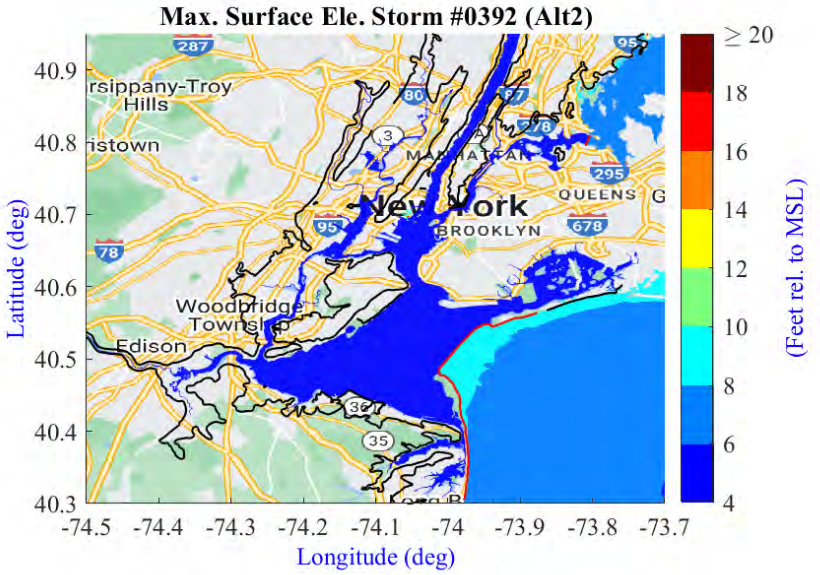
Storm #392

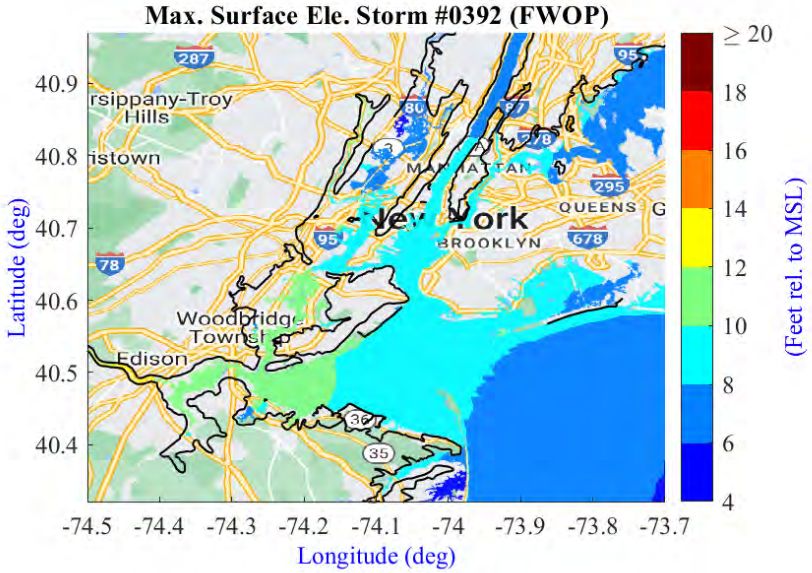


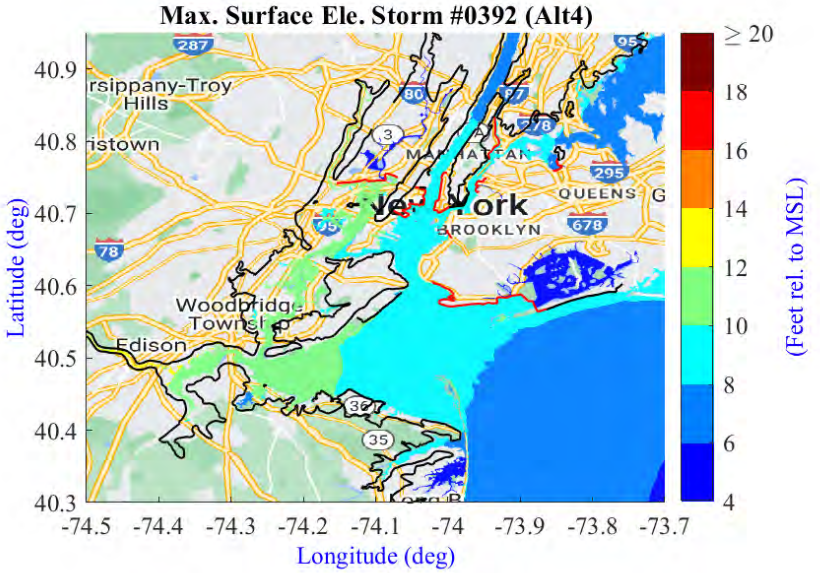
Max. Wind Speed: ***65 mph (Tropical Storm)***

Min. Cp: ***945 mb***
Rmax: ***109.2 nm***
Forward Speed: ***22.7 kts***

Future With Out Project:
Max. WSE at Battery: ***9.24 ft.***
Max. WSE at Kings Point: ***7.58 ft.***
Max. WSE at Sandy Hook: ***8.87 ft.***

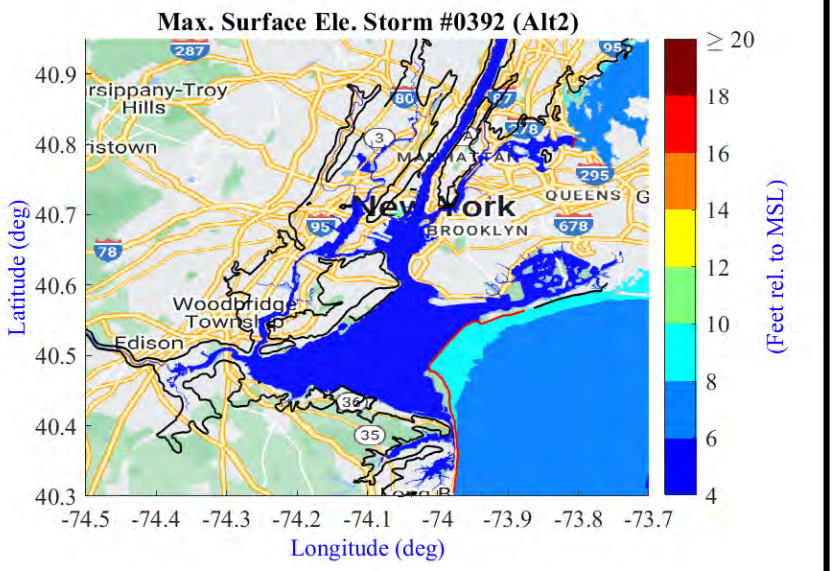


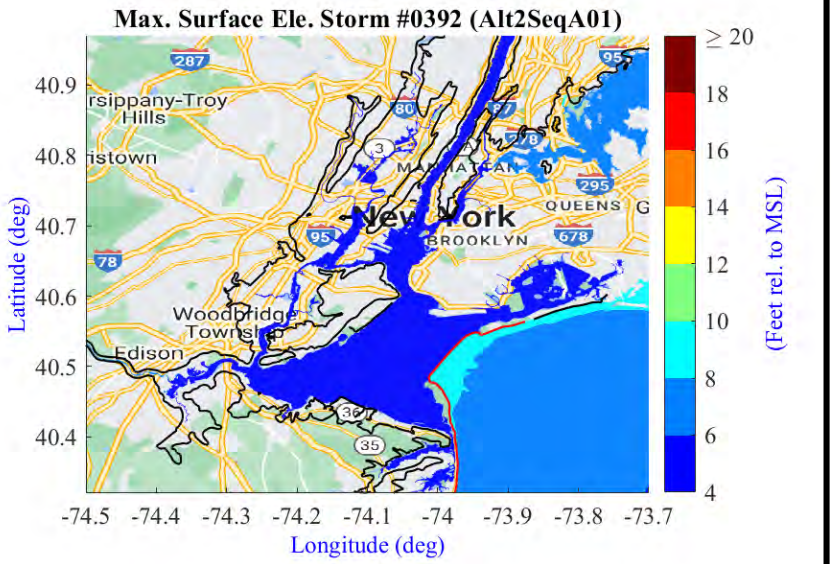


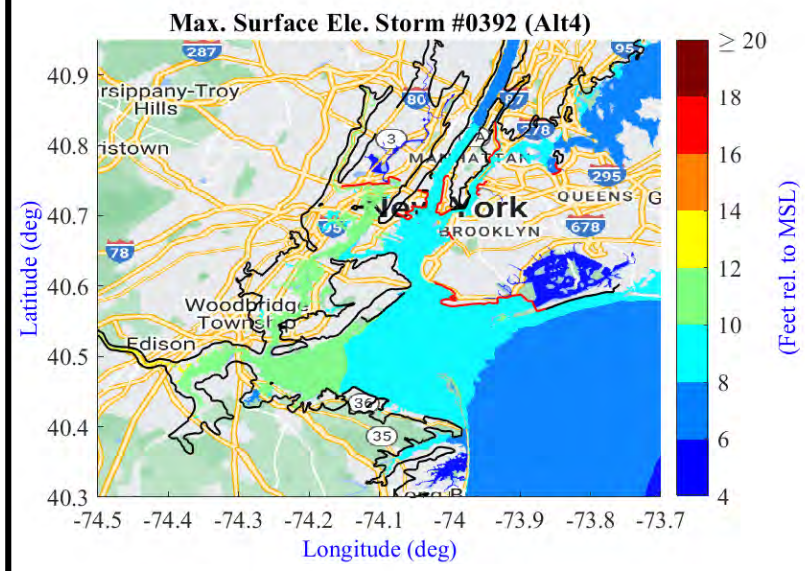


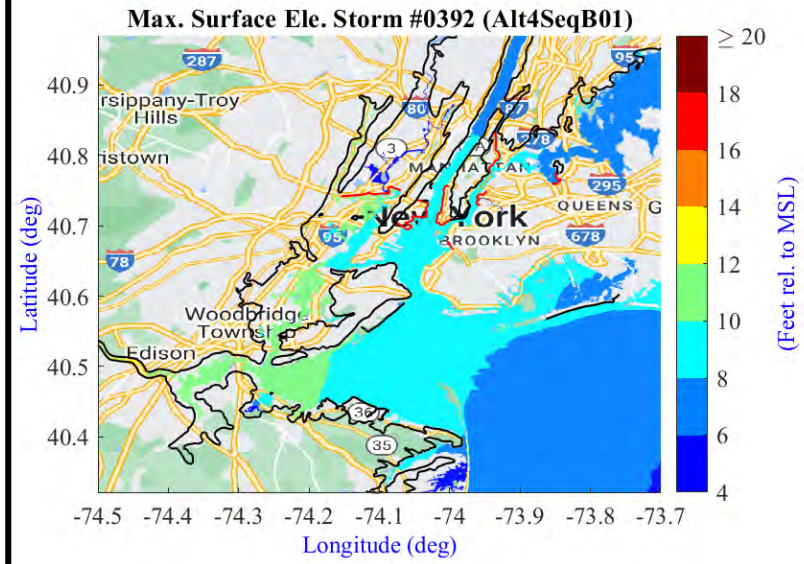
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

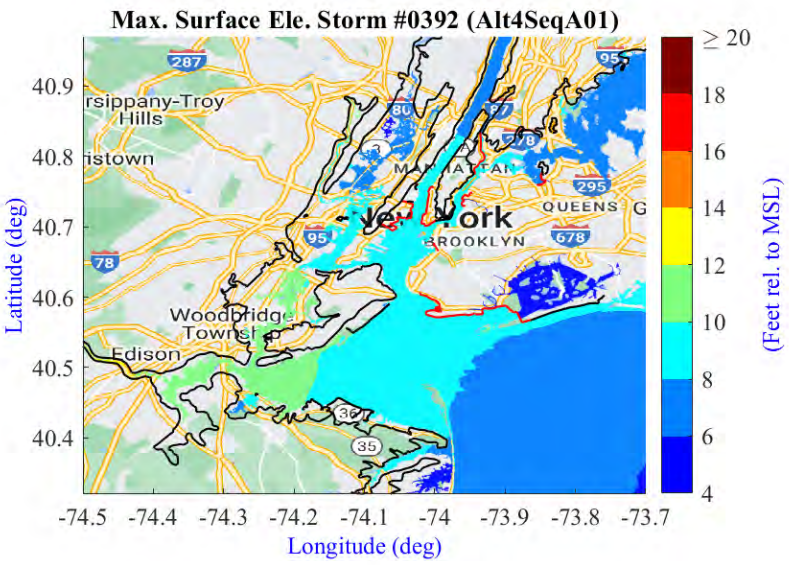
Alt2 Storm #392 Alt4

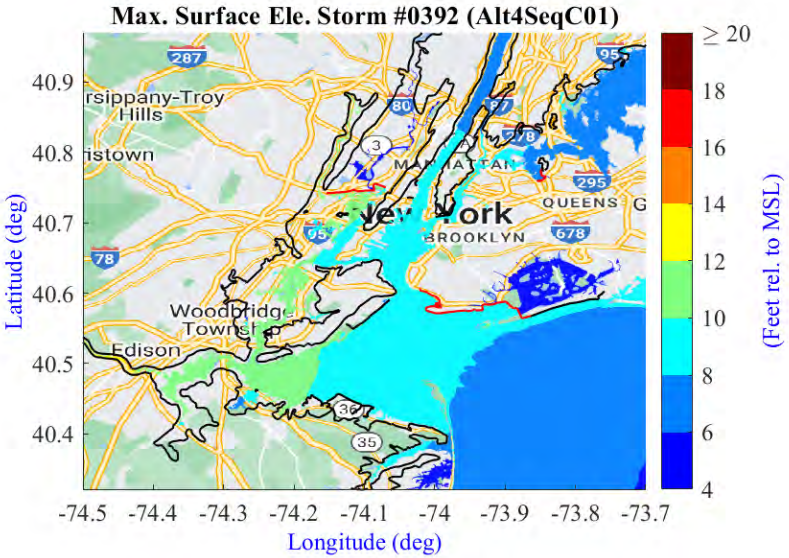




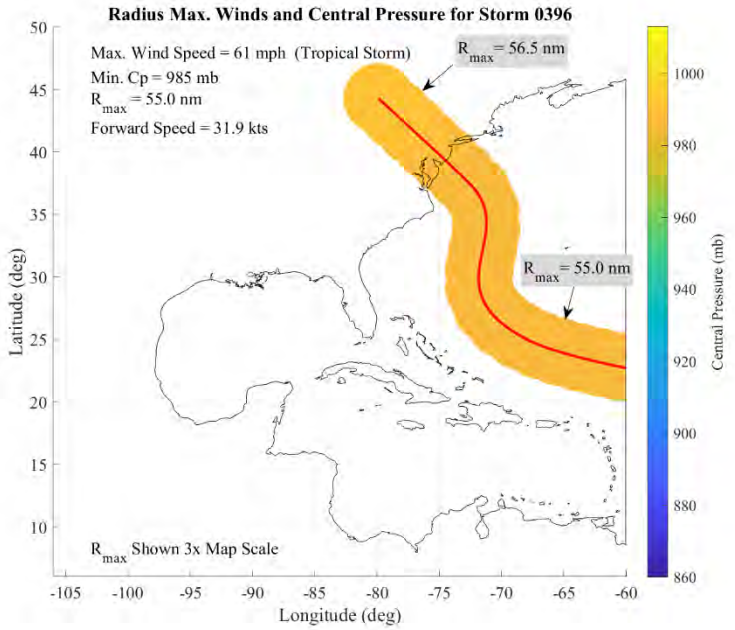








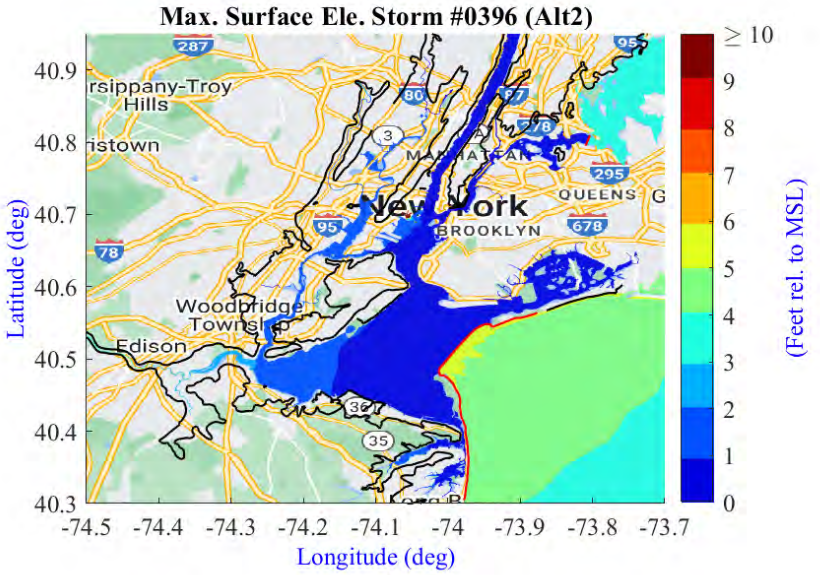
Storm #396

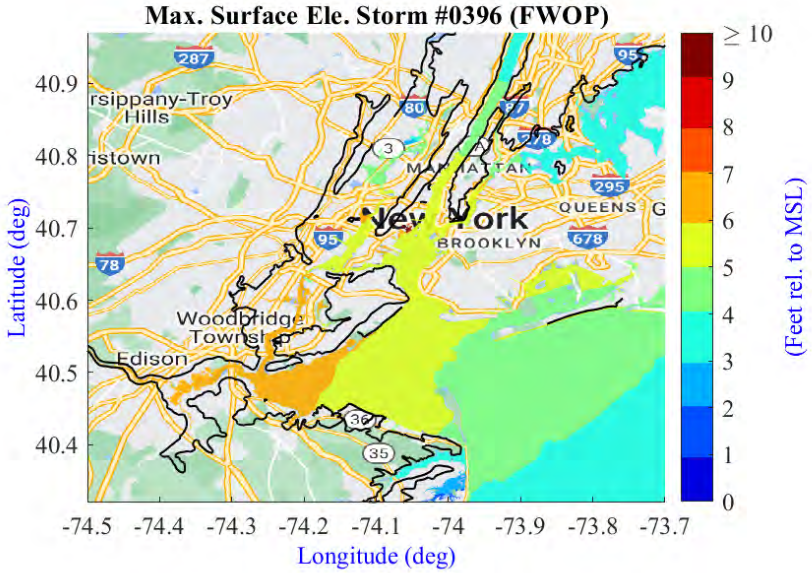


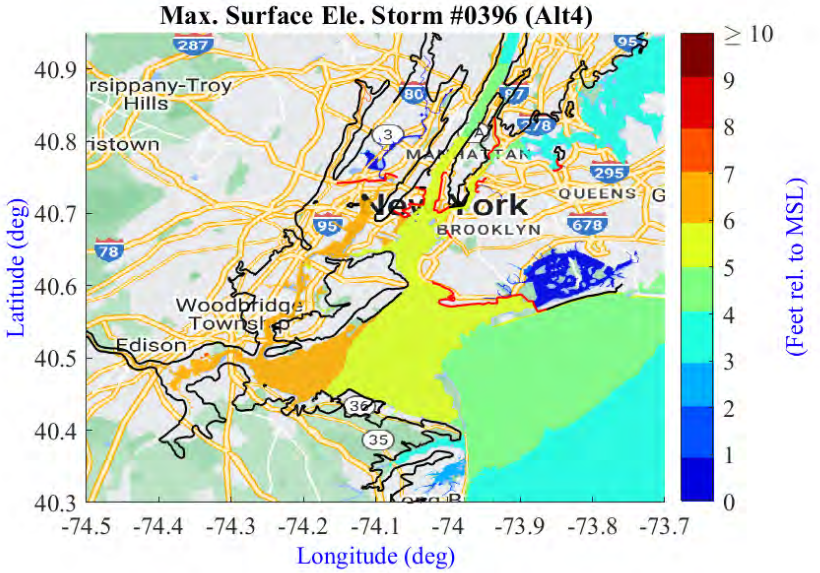
Max. Wind Speed: ***61 mph (Tropical Storm)***

Min. Cp: ***985 mb***
Rmax: ***55.0 nm***
Forward Speed: ***31.9 kts***

Future With Out Project:
Max. WSE at Battery: ***5.71 ft.***
Max. WSE at Kings Point: ***3.42 ft.***
Max. WSE at Sandy Hook: ***5.17 ft.***

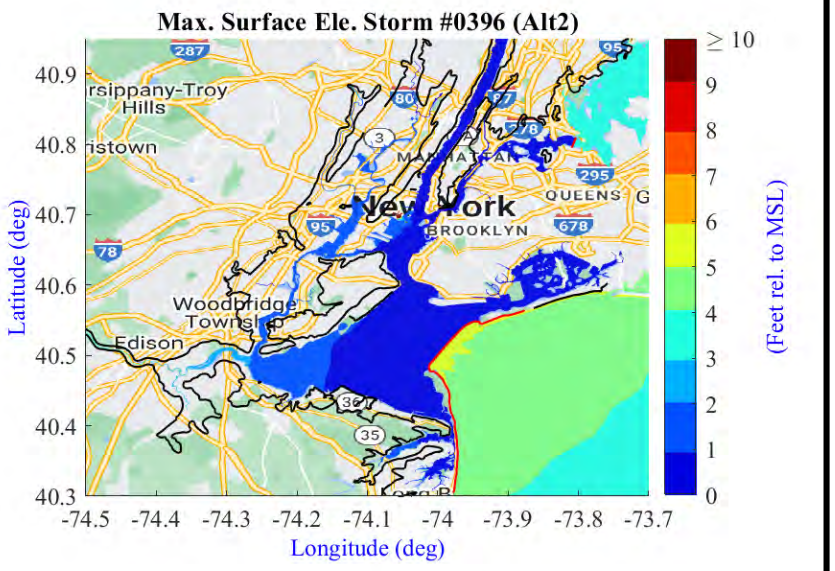


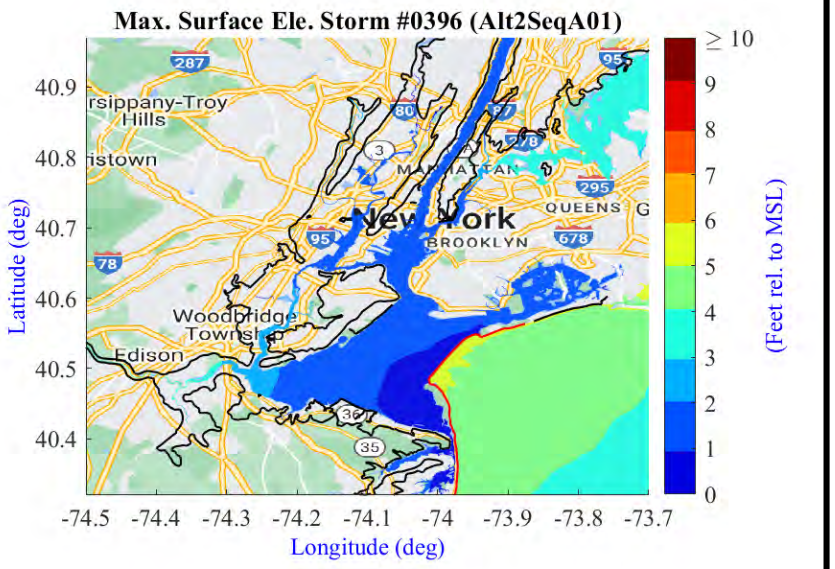


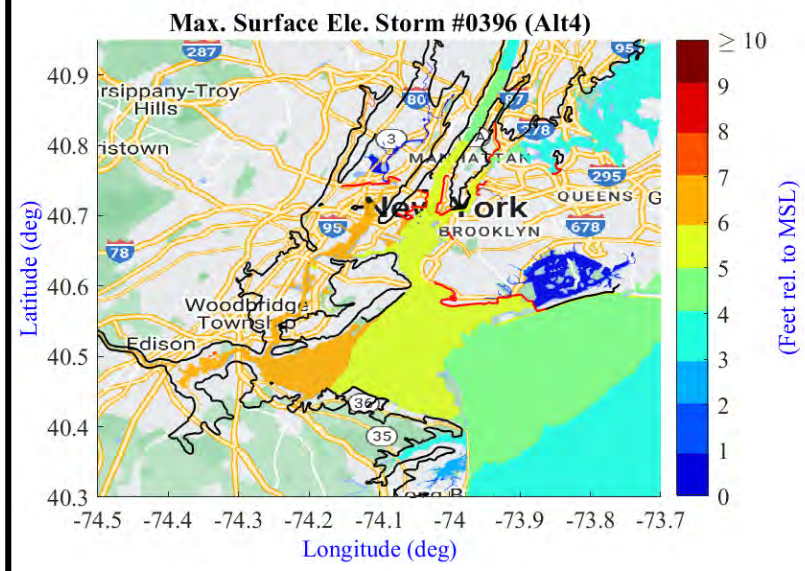


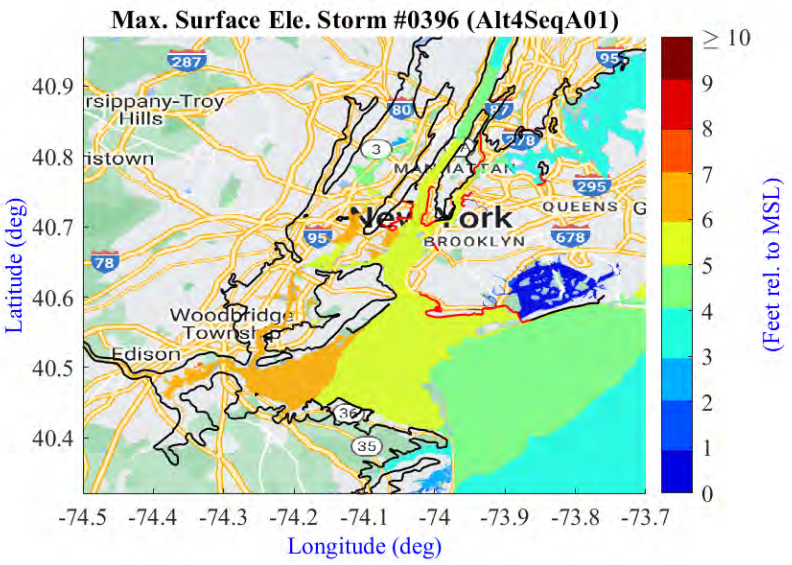
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

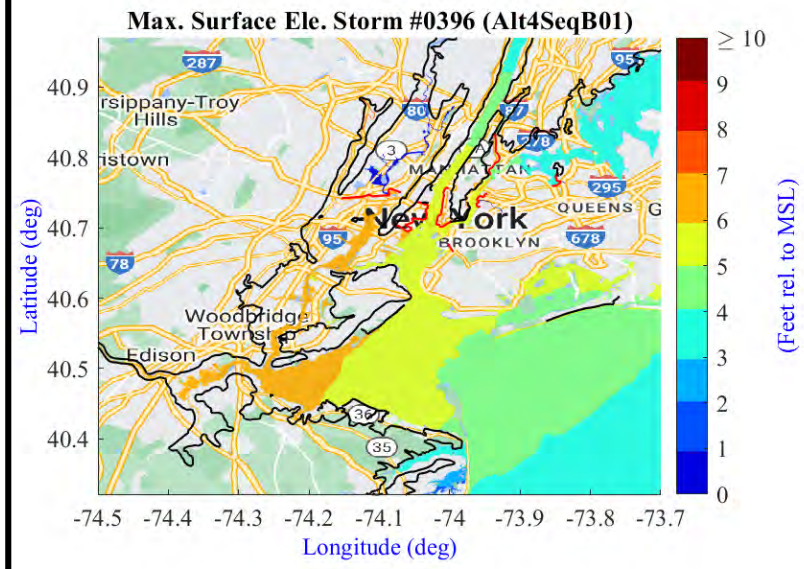
Alt2 Storm #396 Alt4

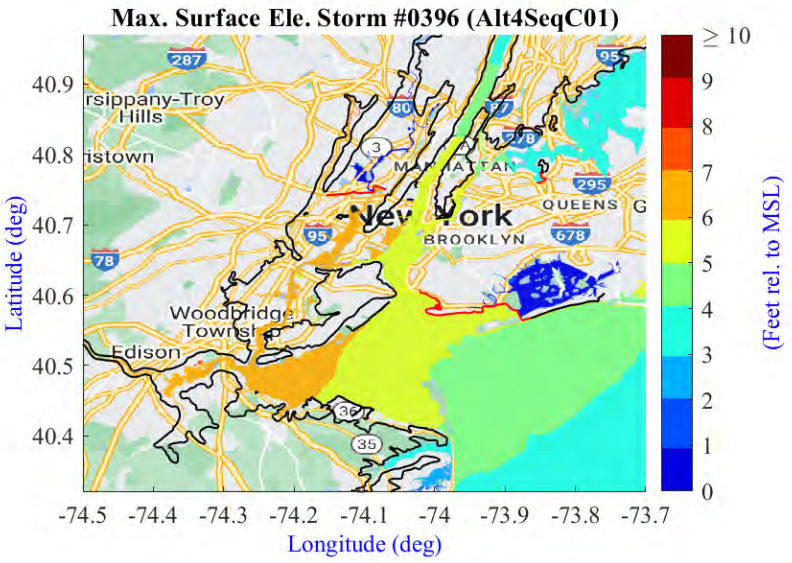




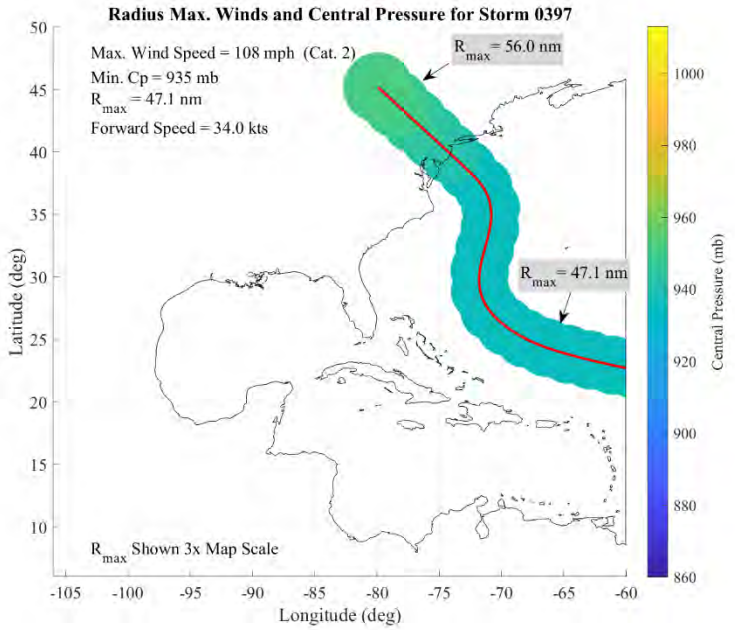






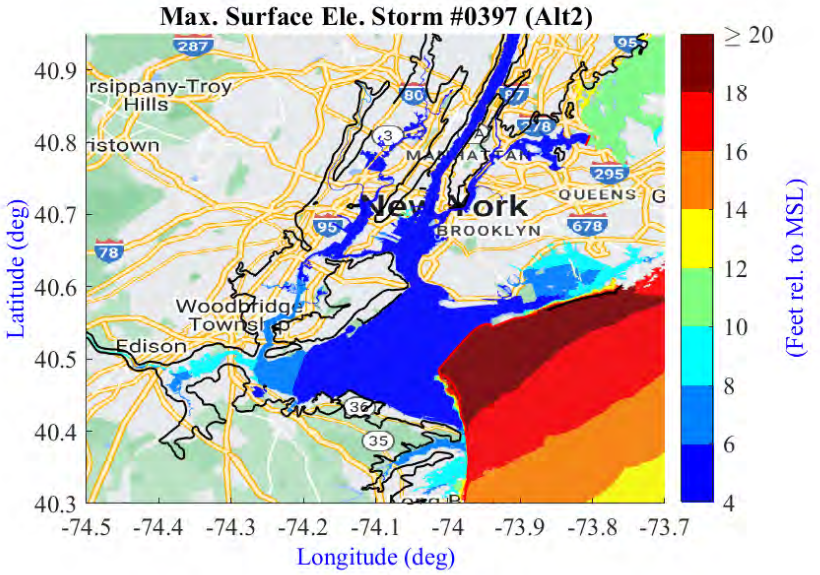


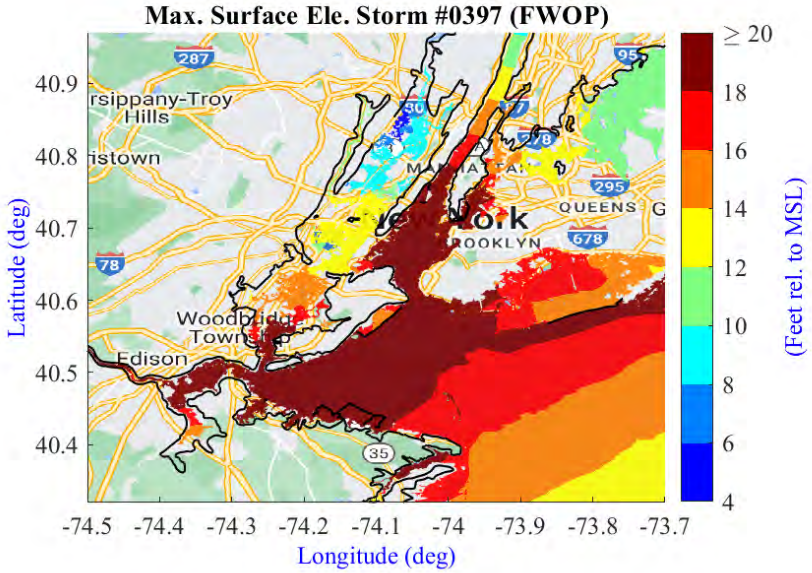
Storm #397

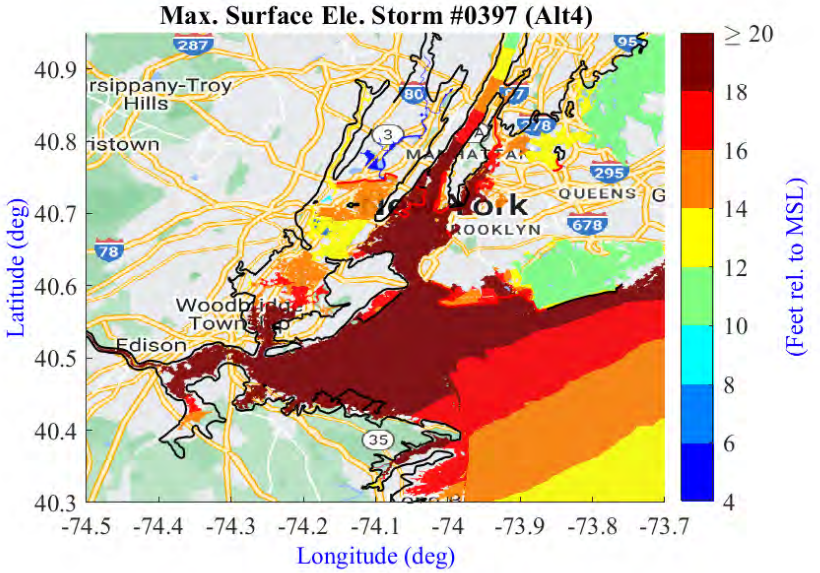


Max. Wind Speed: ***108 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***47.1 nm***
Forward Speed: ***34.0 kts***

Future With Out Project:
Max. WSE at Battery: ***20.43 ft.***
Max. WSE at Kings Point: ***11.24 ft.***
Max. WSE at Sandy Hook: ***17.87 ft.***

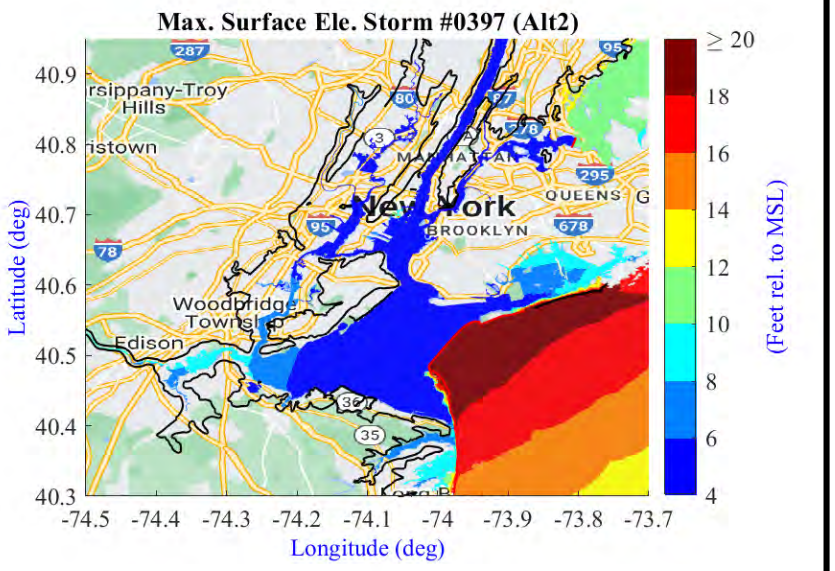


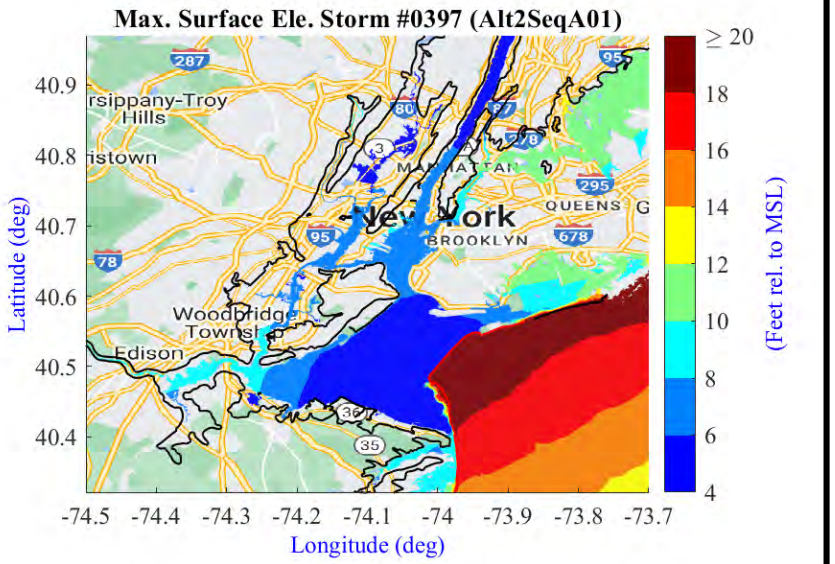


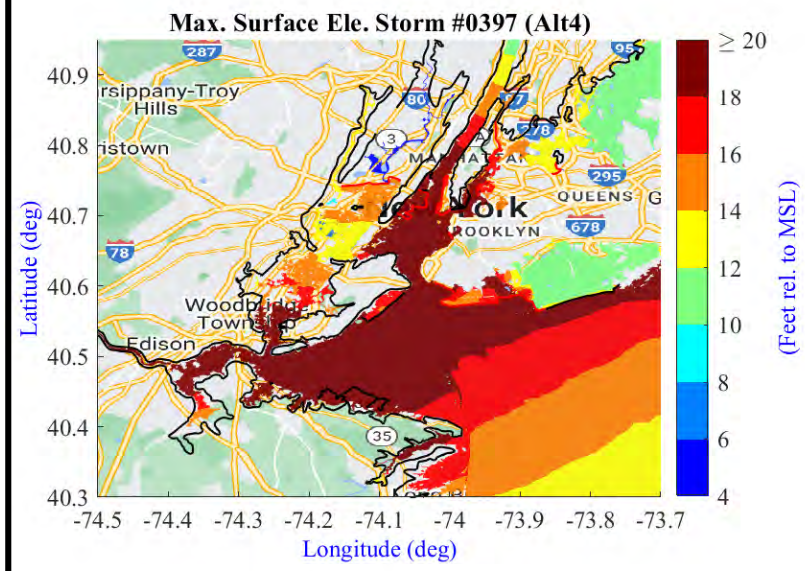


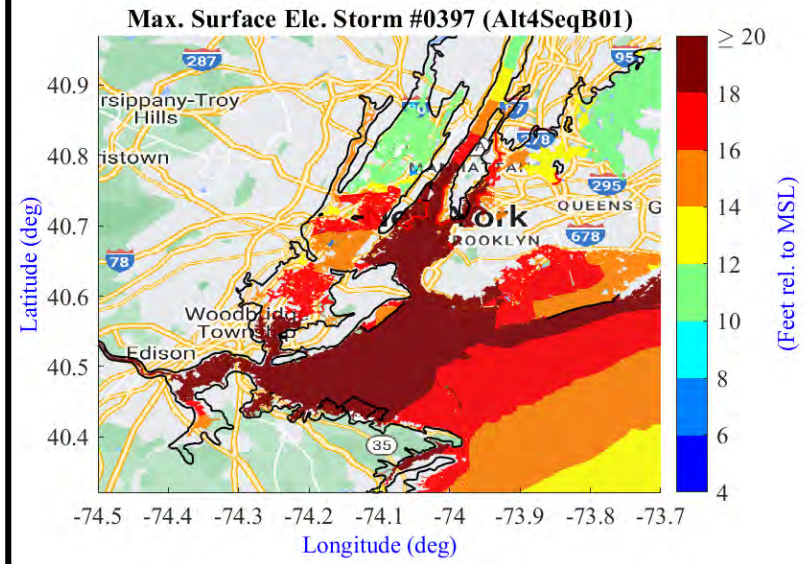
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

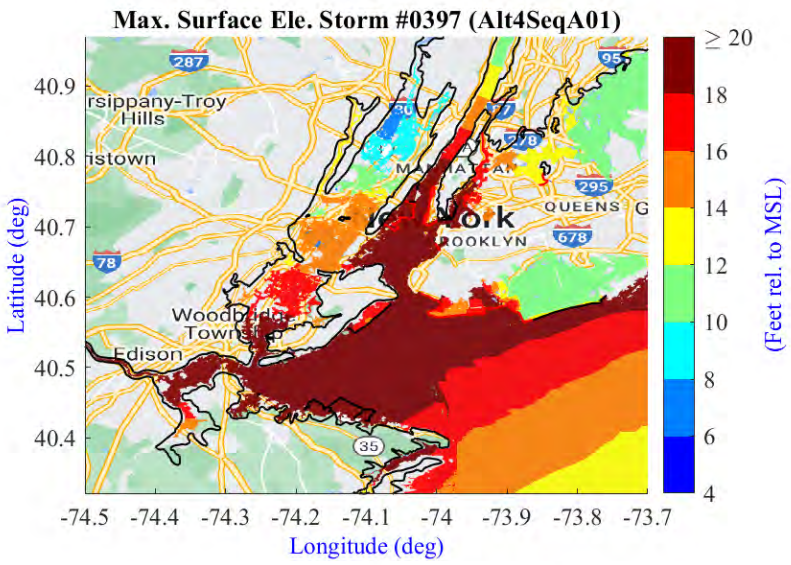
Alt2 Storm #397 Alt4

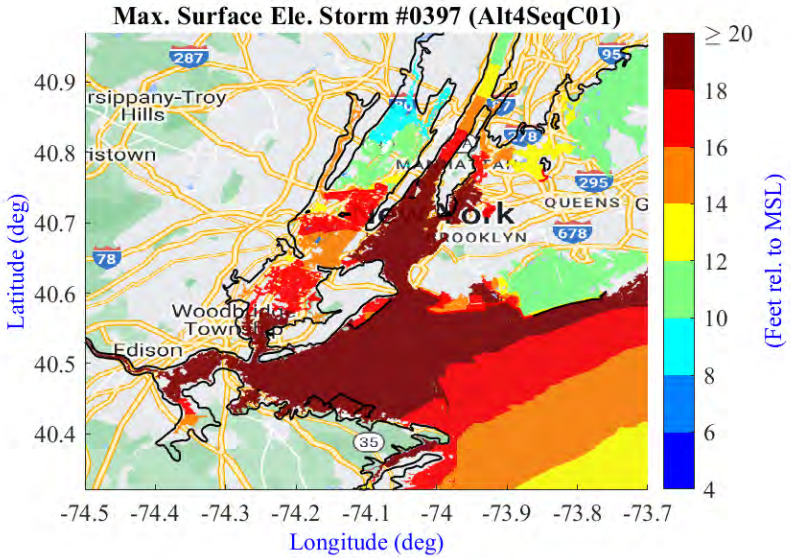




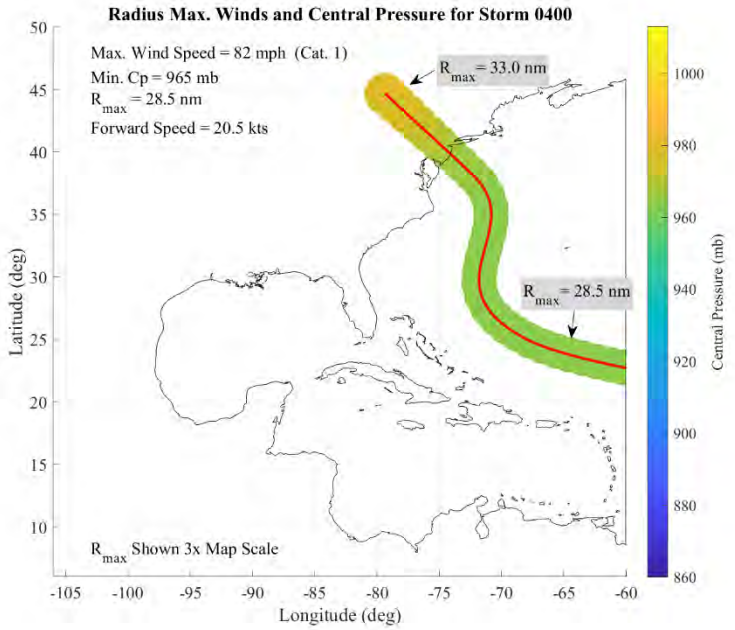






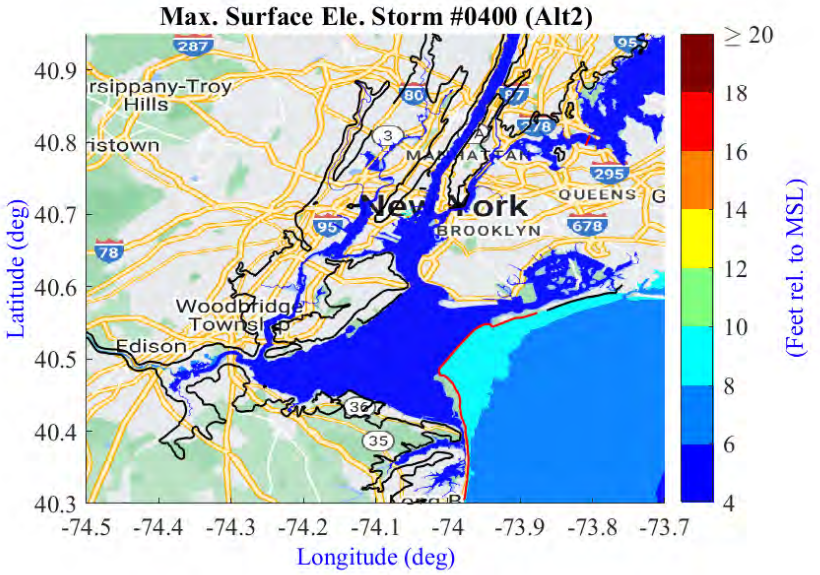


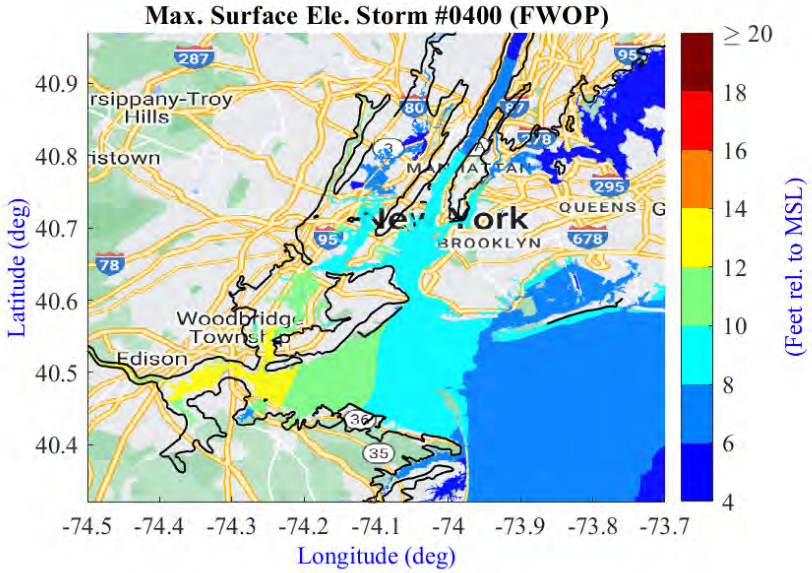
Storm #400

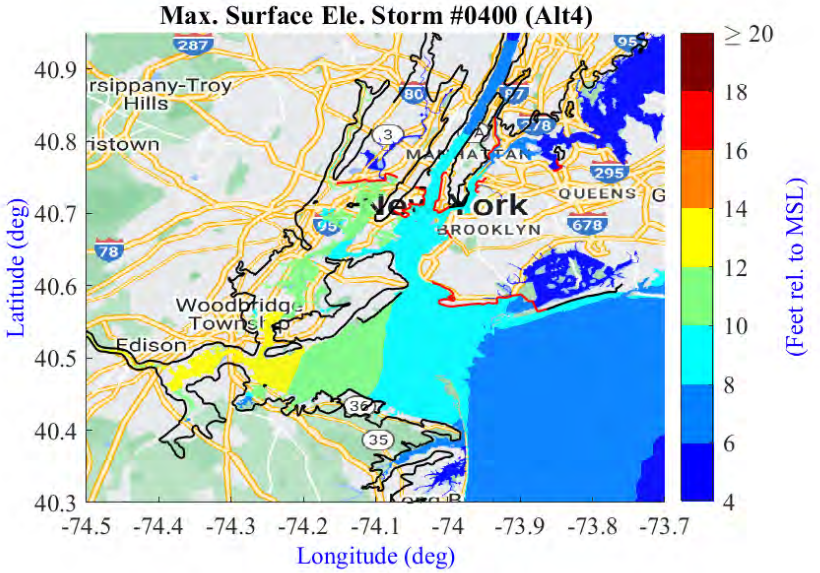


Max. Wind Speed: ***82 mph (Cat. 1)***
Min. Cp: ***965 mb***
Rmax: ***28.5 nm***
Forward Speed: ***20.5 kts***

Future With Out Project:
Max. WSE at Battery: ***9.31 ft.***
Max. WSE at Kings Point: ***5.01 ft.***
Max. WSE at Sandy Hook: ***8.71 ft.***

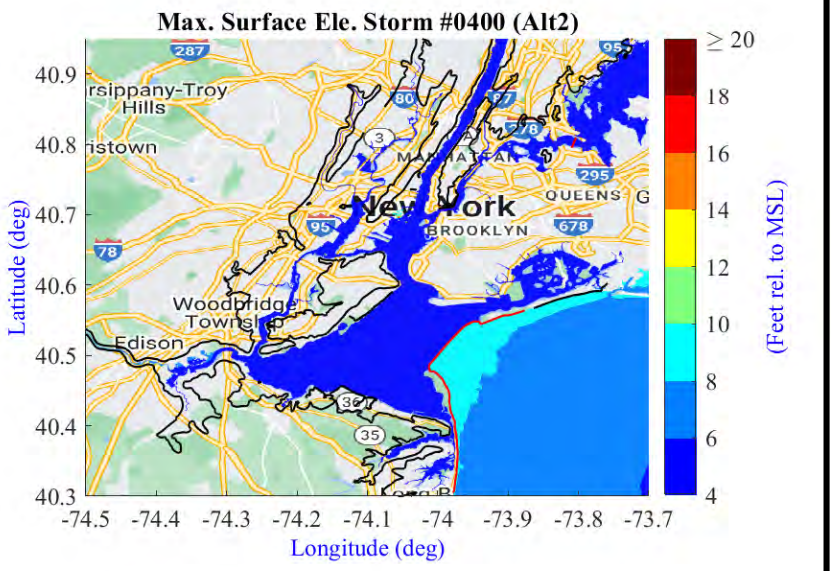


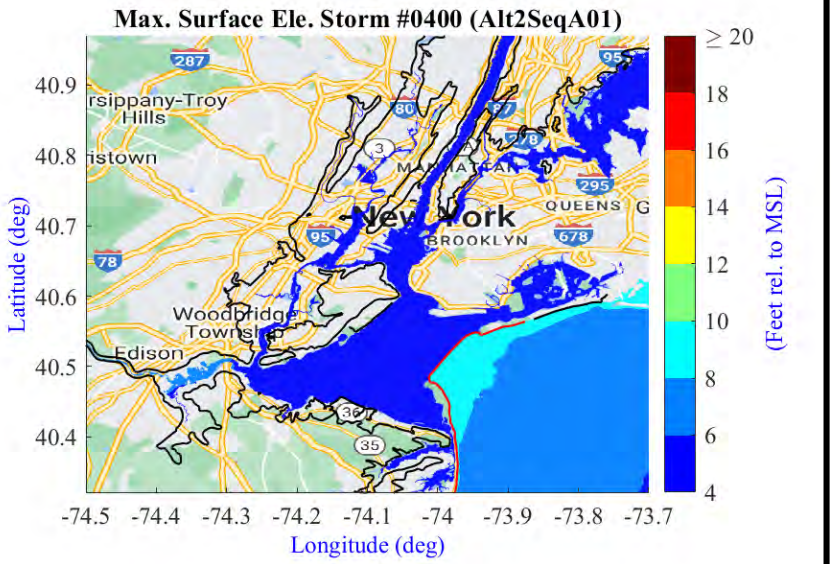


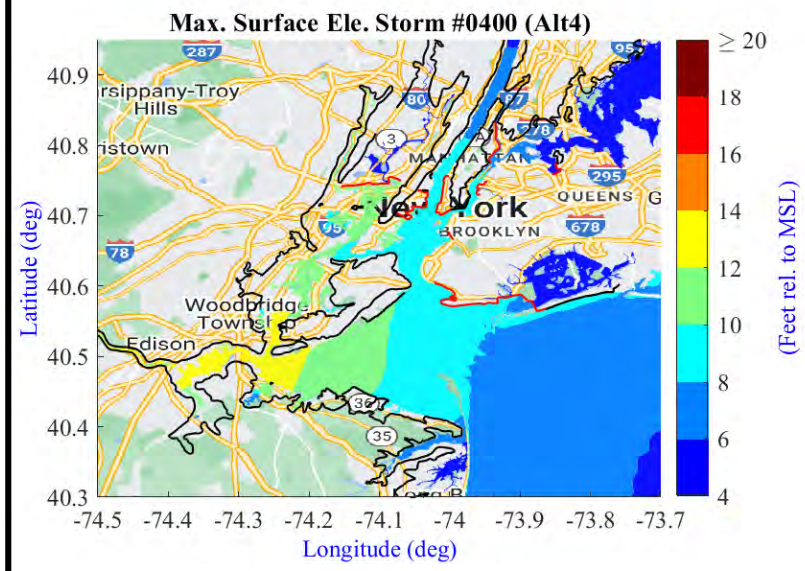


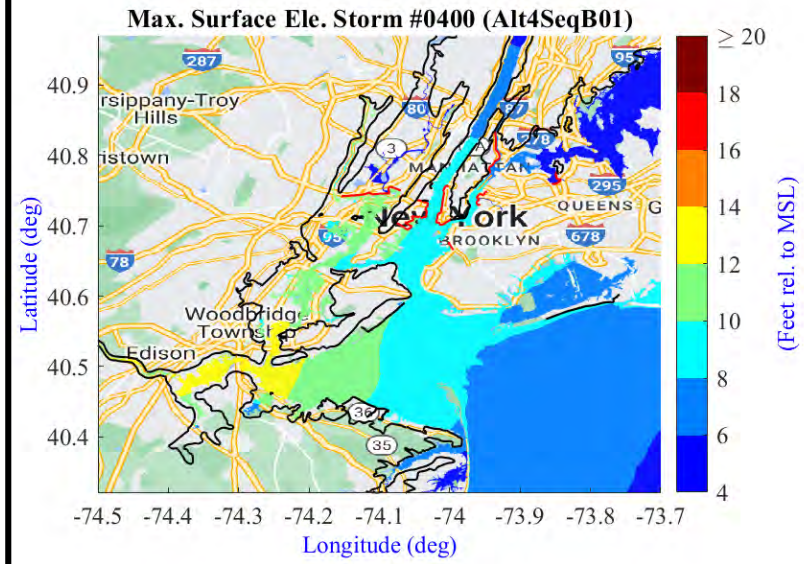
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

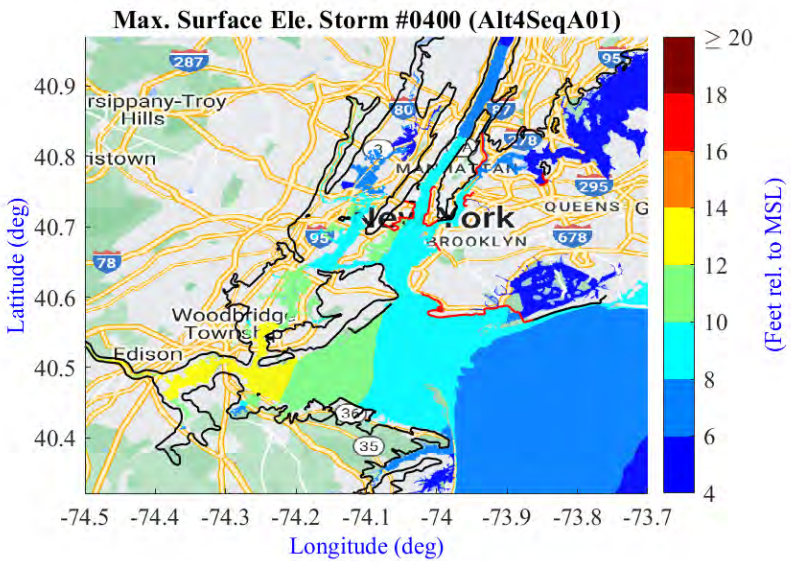
Alt2 Storm #400 Alt4

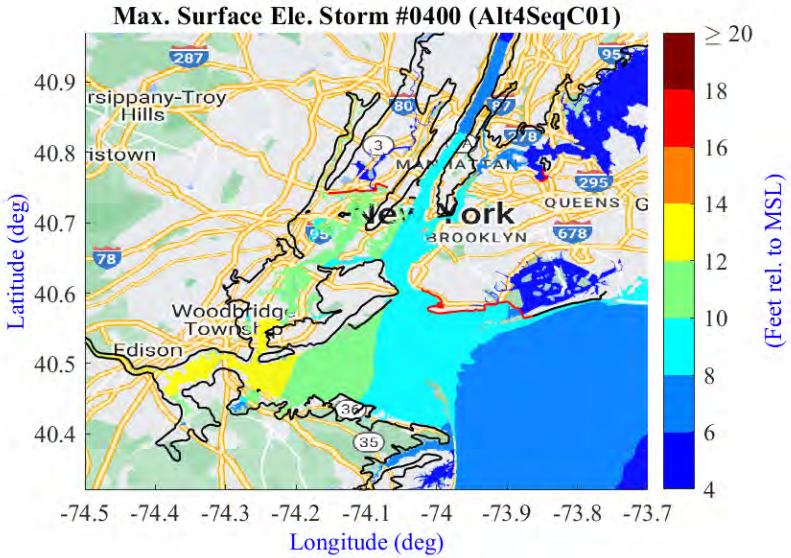




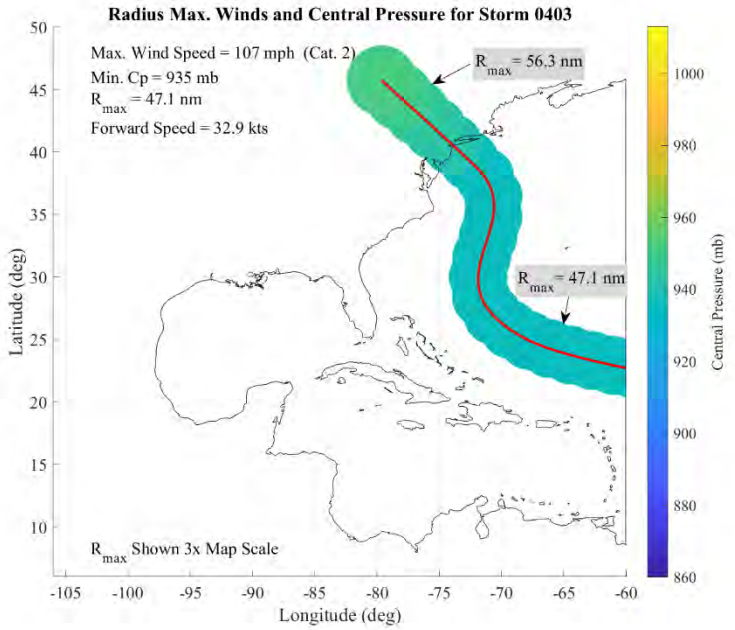






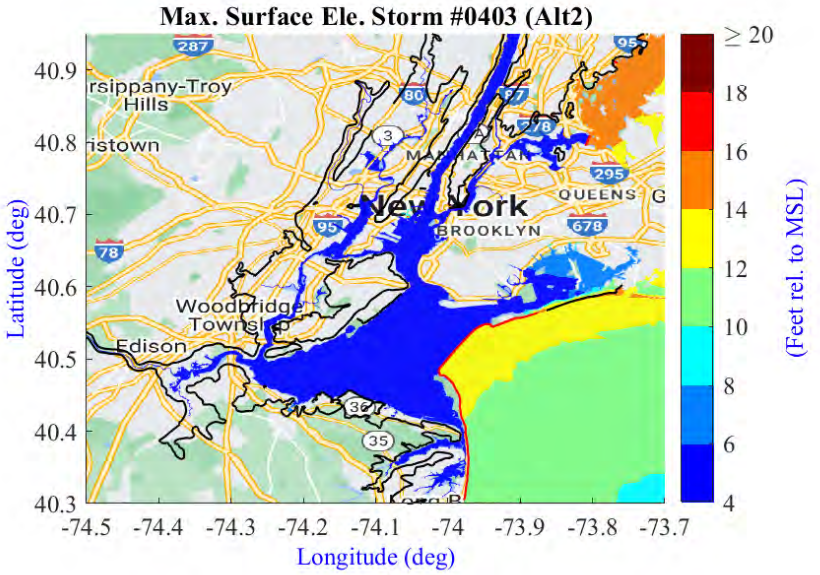


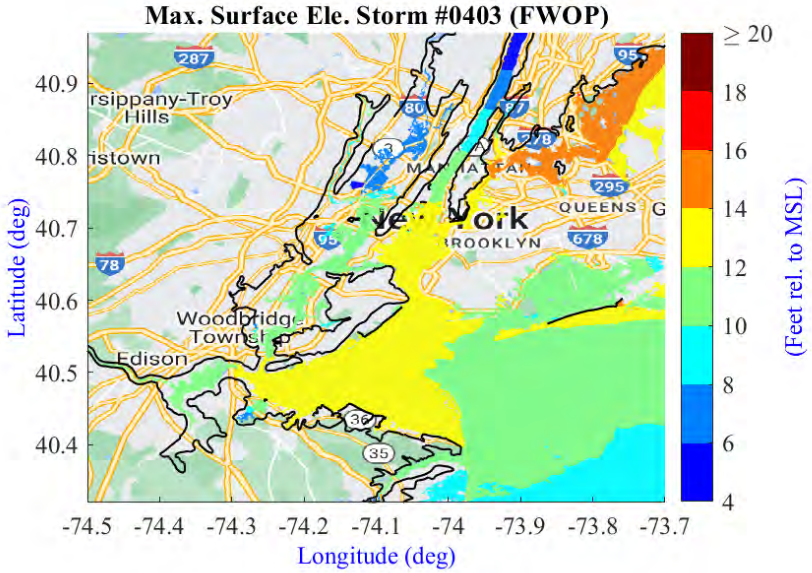
Storm #403

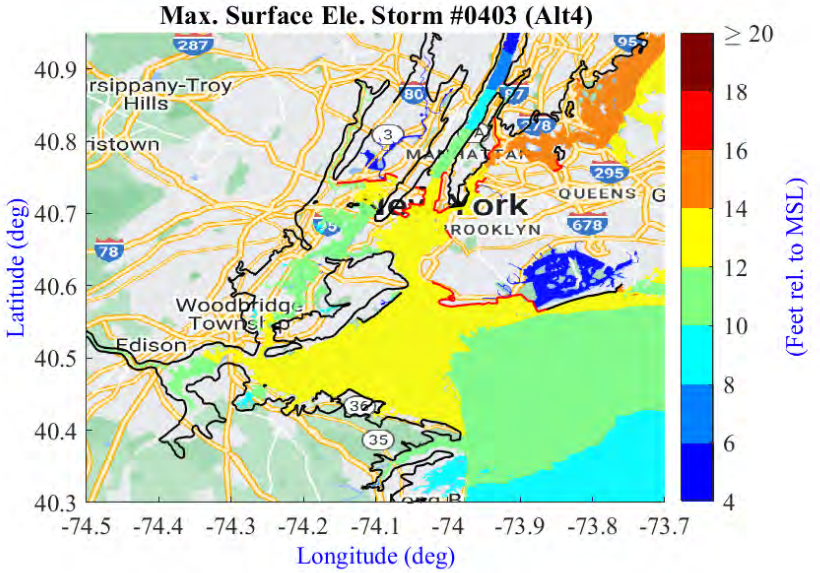


Max. Wind Speed: ***107 mph (Cat. 2)***
Min. Cp: ***935 mb***
Rmax: ***47.1 nm***
Forward Speed: ***32.9 kts***

Future With Out Project:
Max. WSE at Battery: ***12.74 ft.***
Max. WSE at Kings Point: ***13.98 ft.***
Max. WSE at Sandy Hook: ***12.41 ft.***

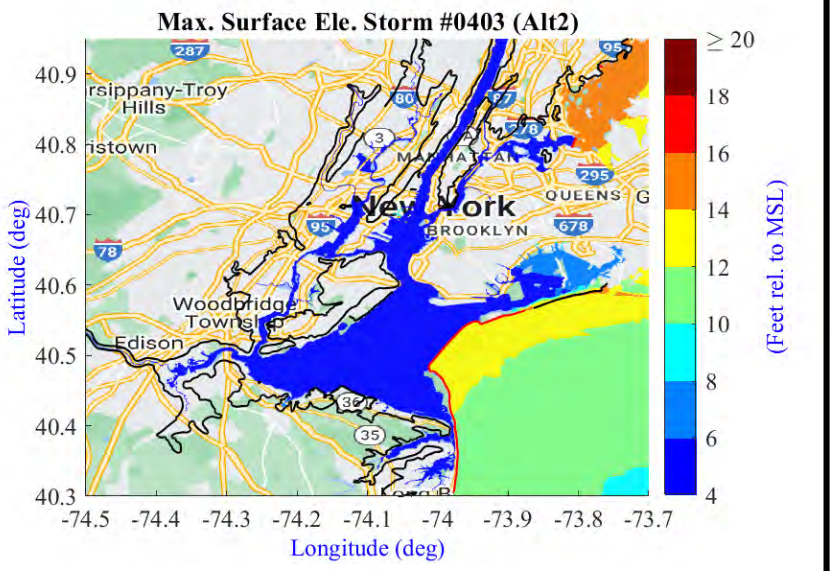


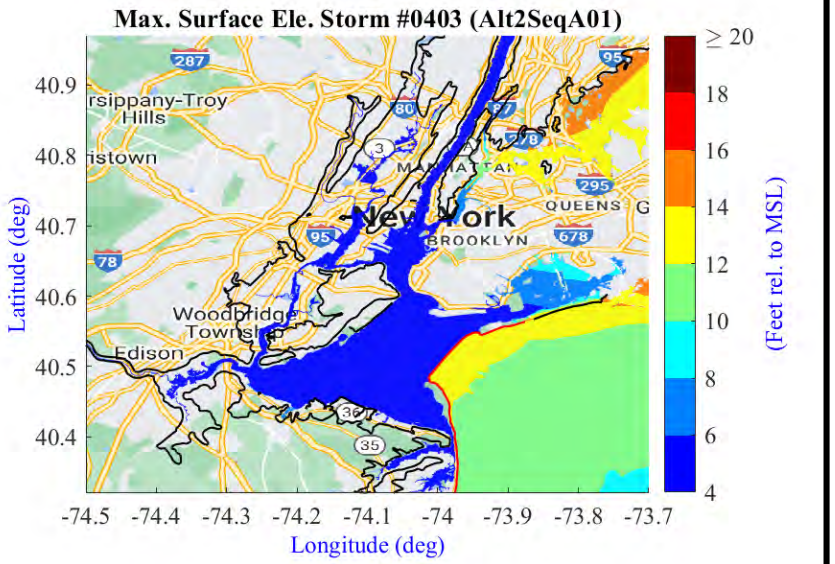


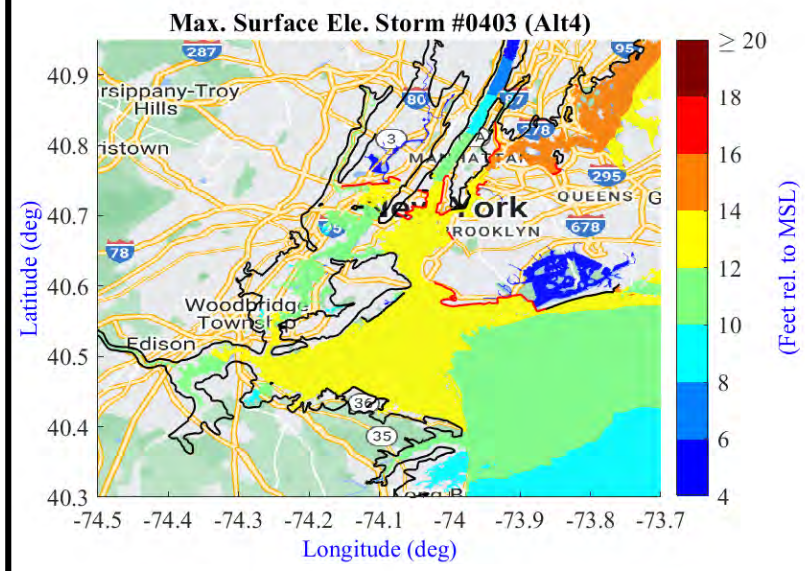


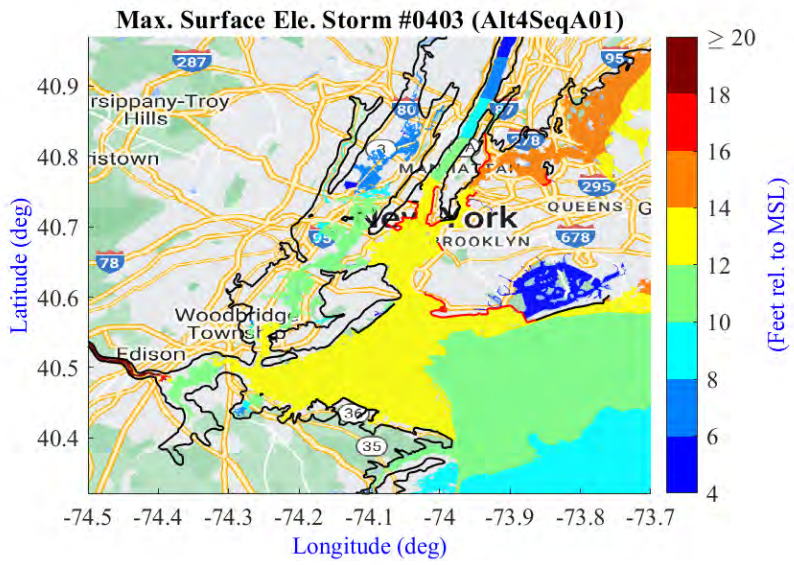
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

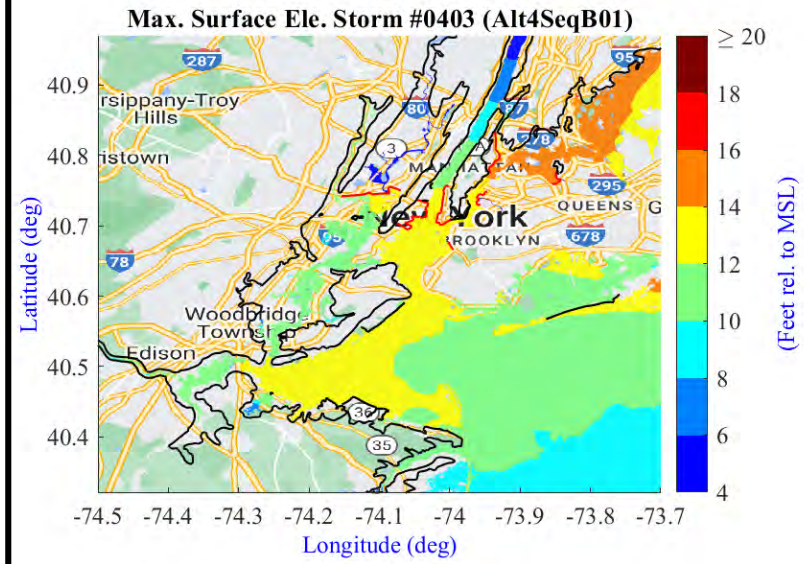
Alt2 Storm #403 Alt4

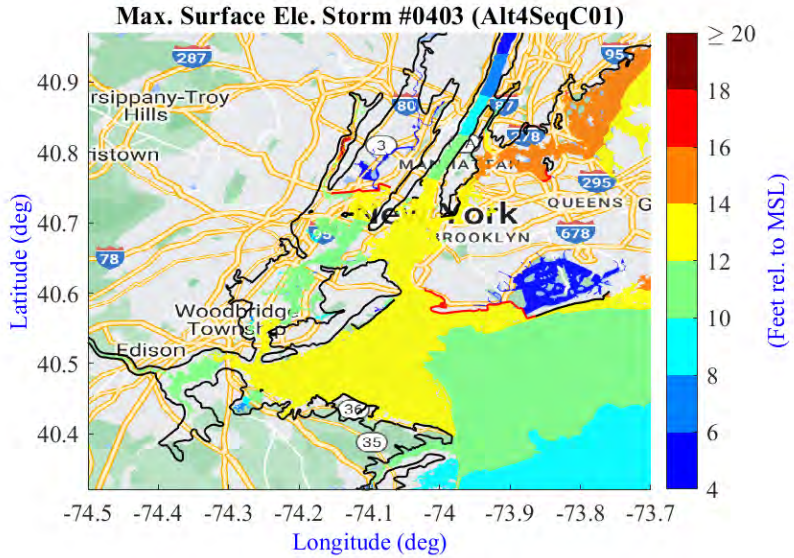




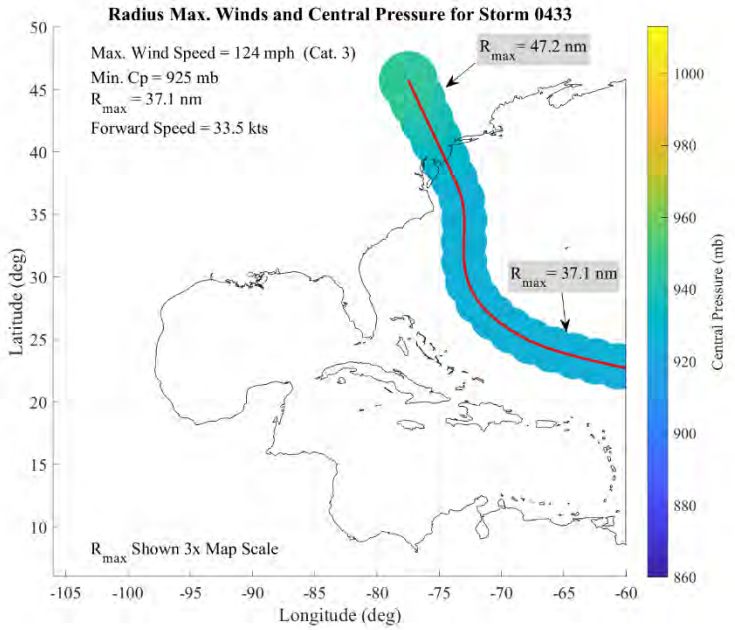






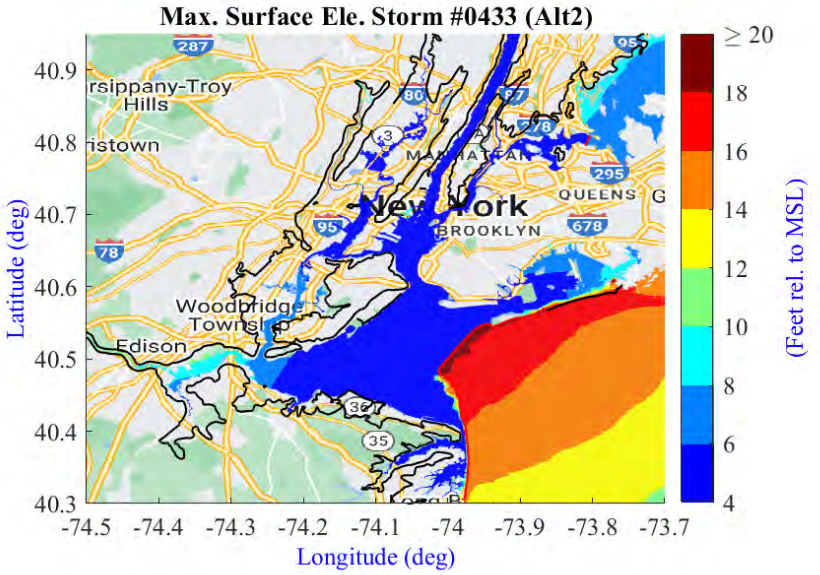


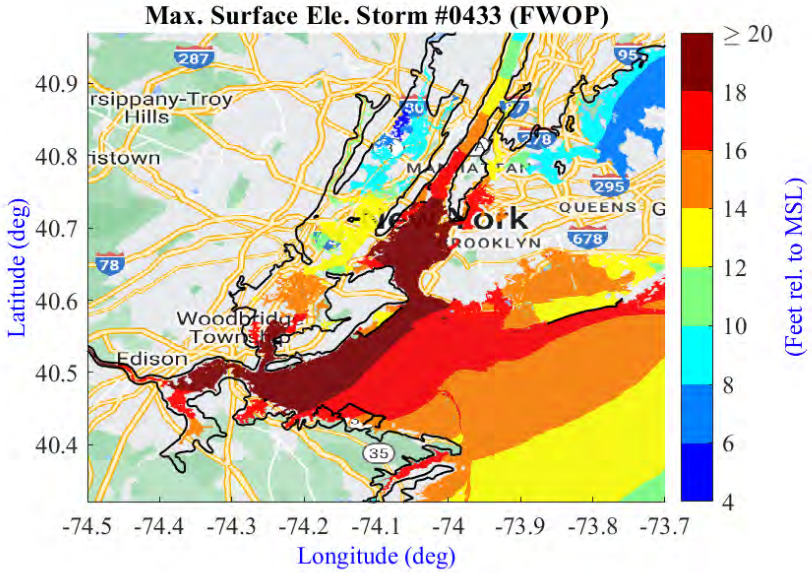
Storm #433

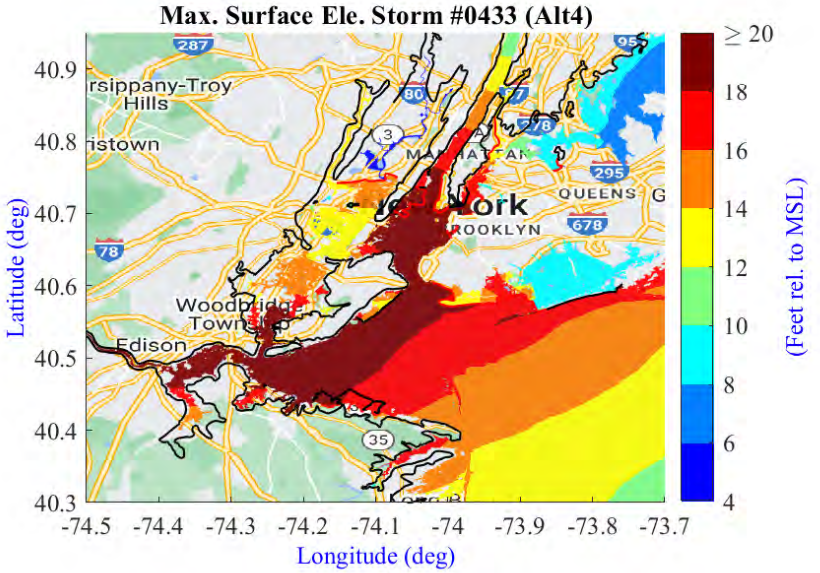


Max. Wind Speed: ***124 mph (Cat. 3)***
Min. Cp: ***925 mb***
Rmax: ***37.1 nm***
Forward Speed: ***33.5 kts***

Future With Out Project:
Max. WSE at Battery: ***18.81 ft.***
Max. WSE at Kings Point: ***7.79 ft.***
Max. WSE at Sandy Hook: ***15.92 ft.***

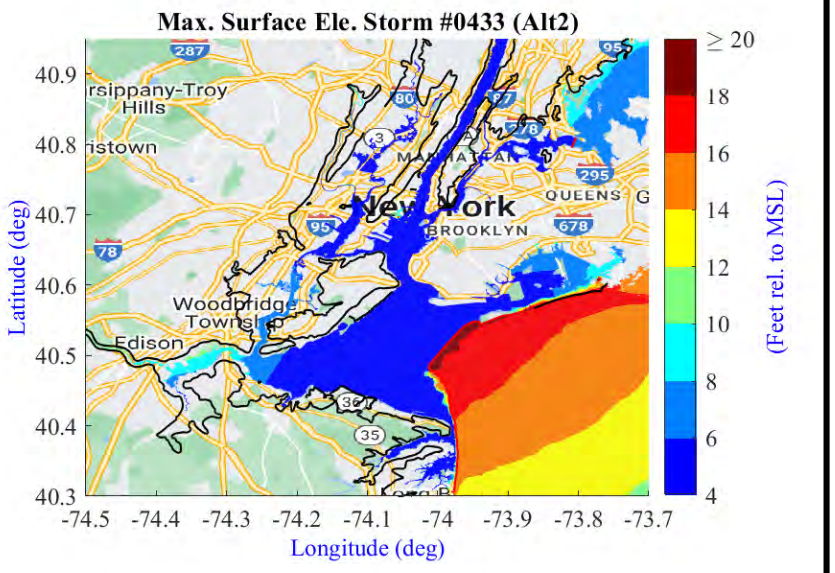


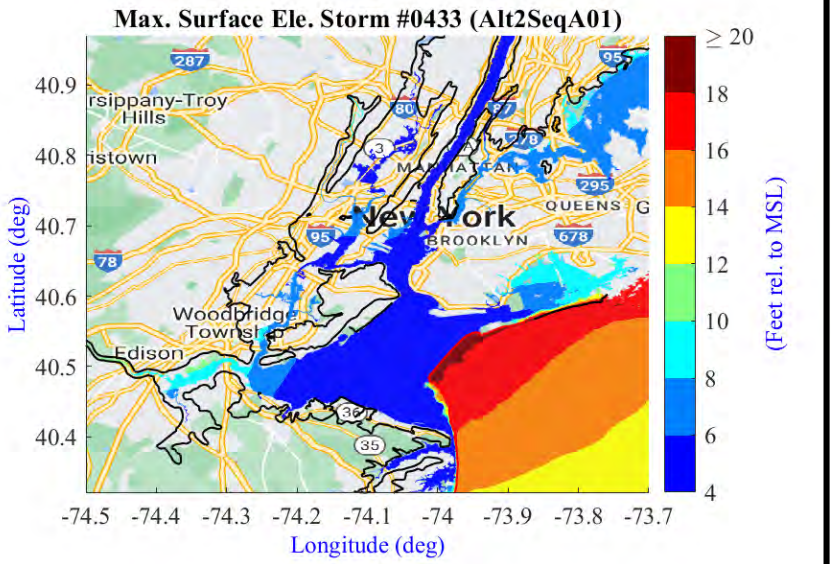


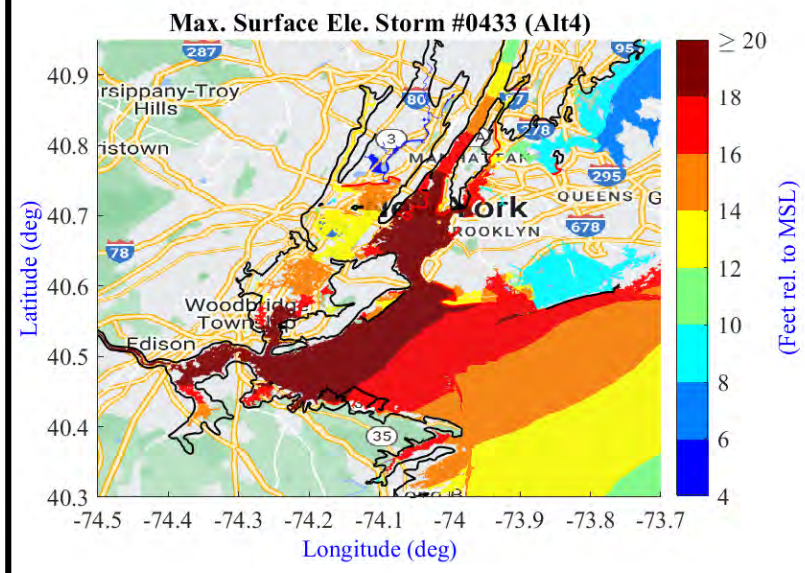


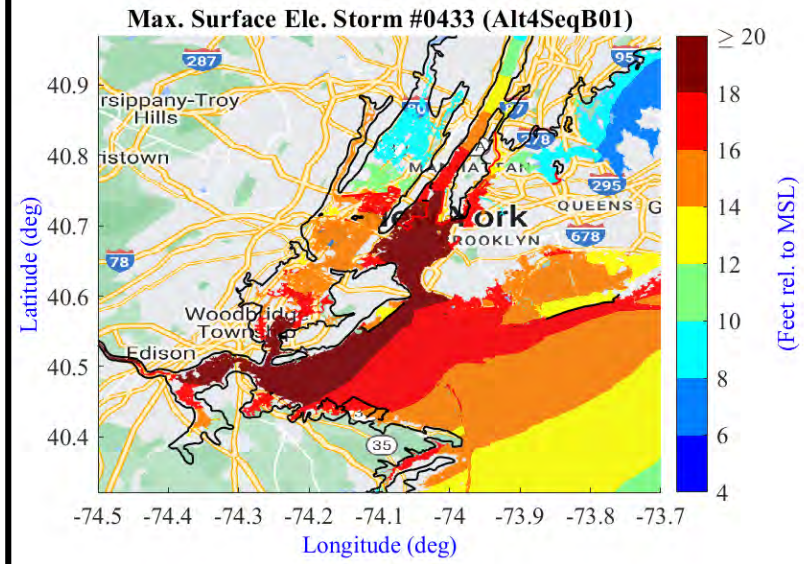
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

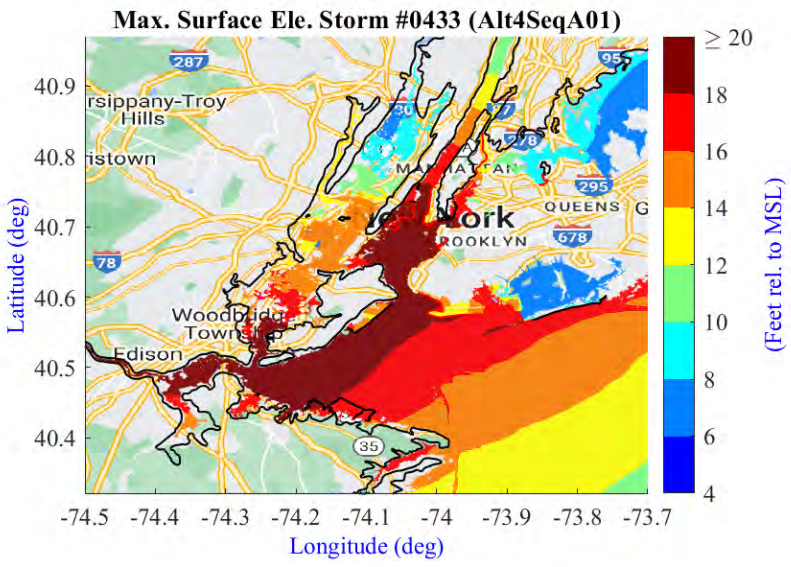
Alt2 Storm #433 Alt4

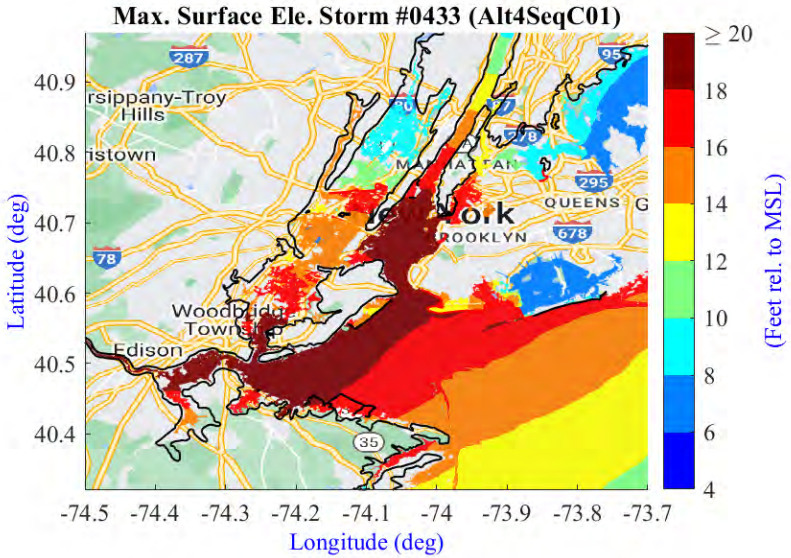




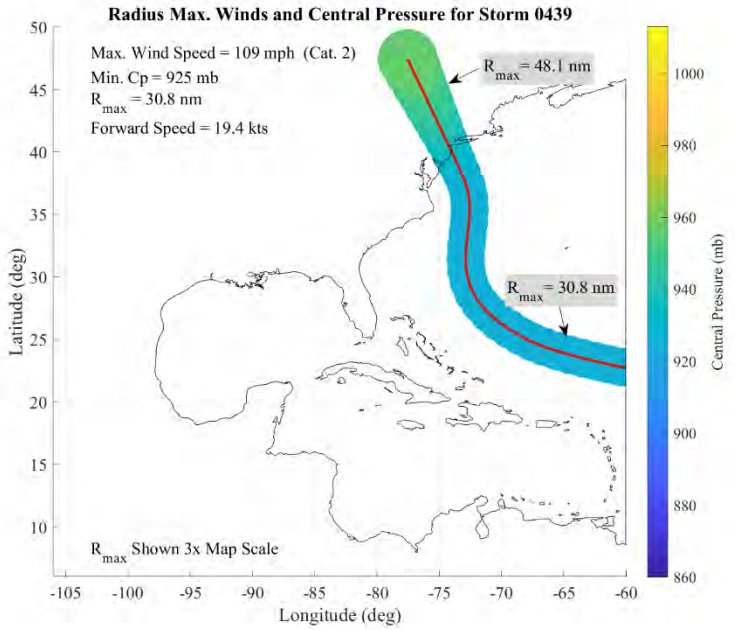






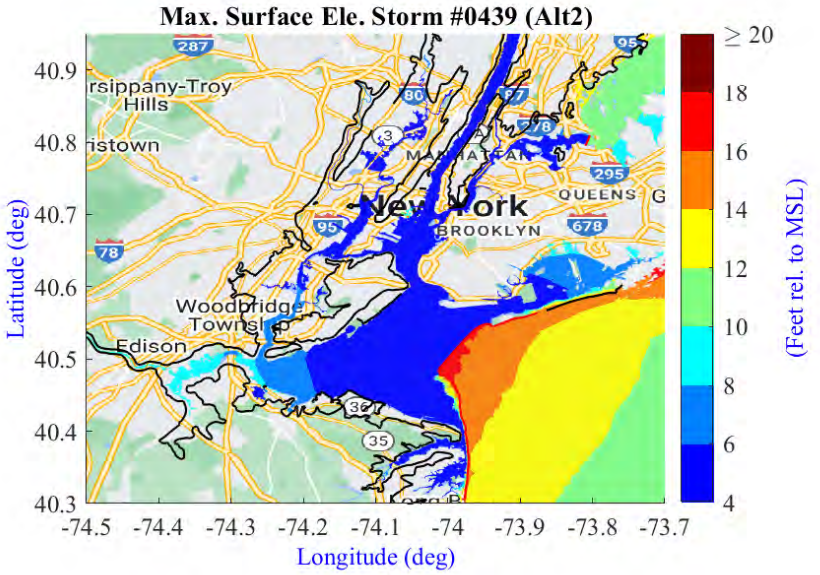


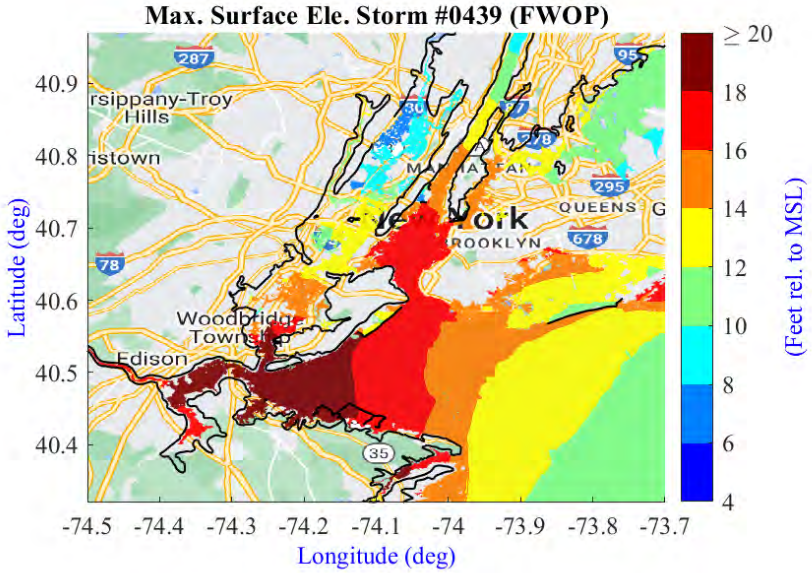
Storm #439

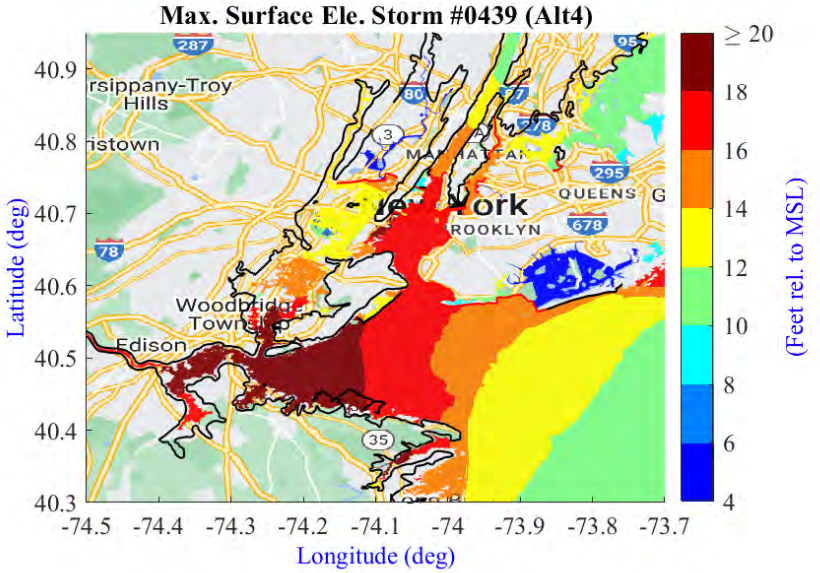


Max. Wind Speed: ***109 mph (Cat. 2)***
Min. Cp: ***925 mb***
Rmax: ***30.8 nm***
Forward Speed: ***19.4 kts***

Future With Out Project:
Max. WSE at Battery: ***16.32 ft.***
Max. WSE at Kings Point: ***10.63 ft.***
Max. WSE at Sandy Hook: ***15.96 ft.***

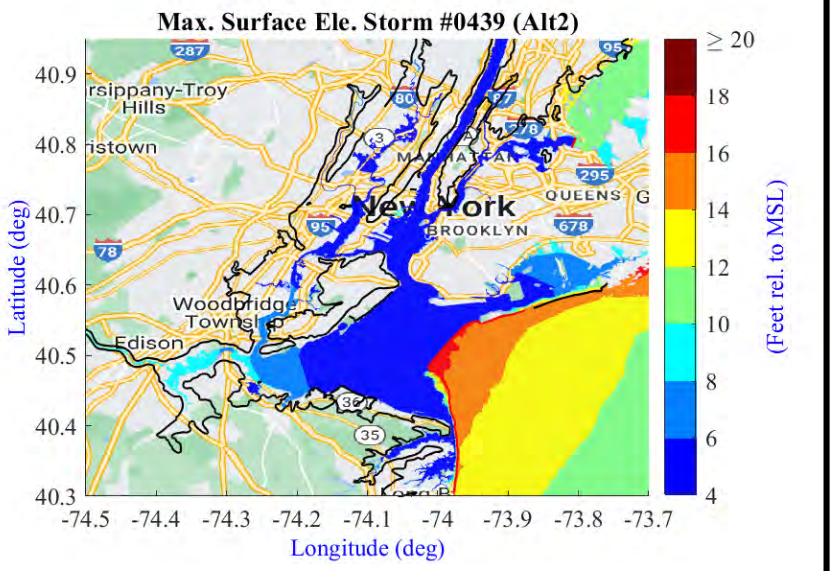


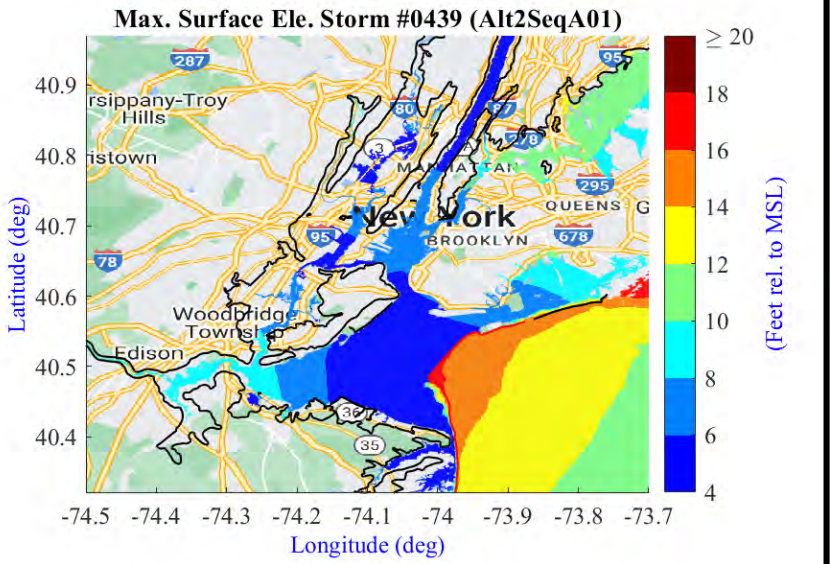


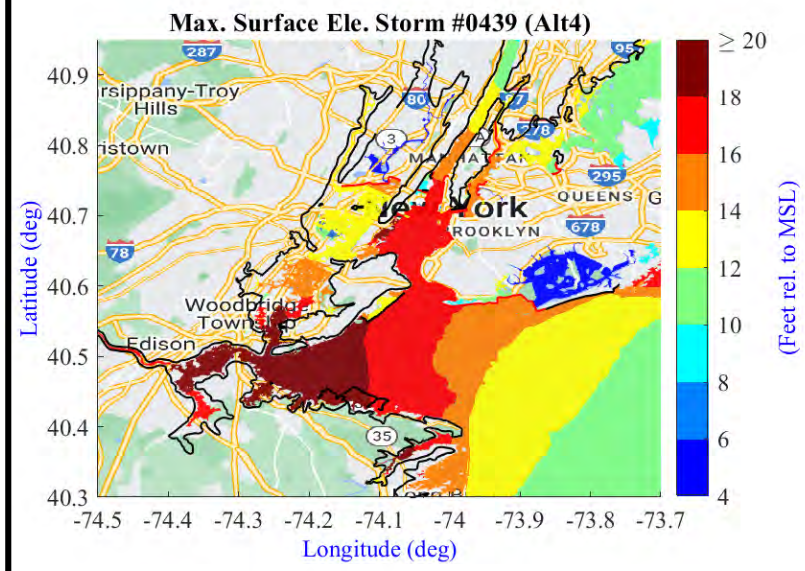


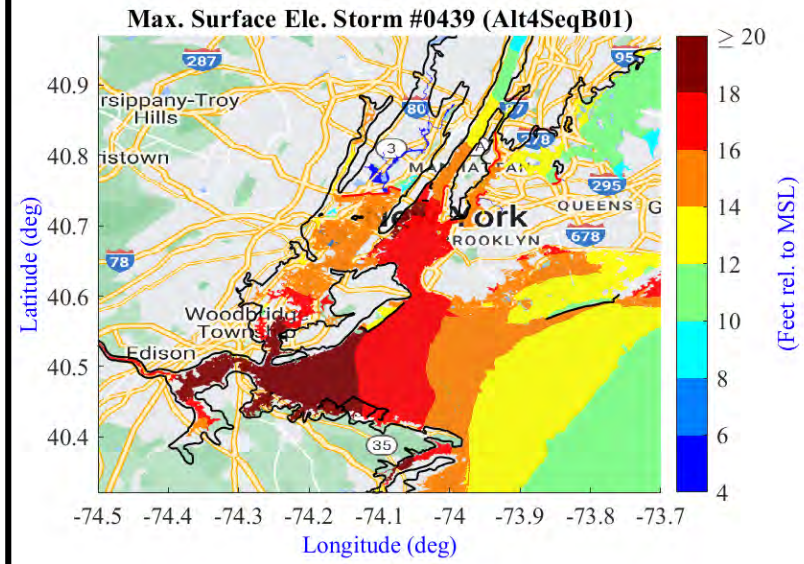
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

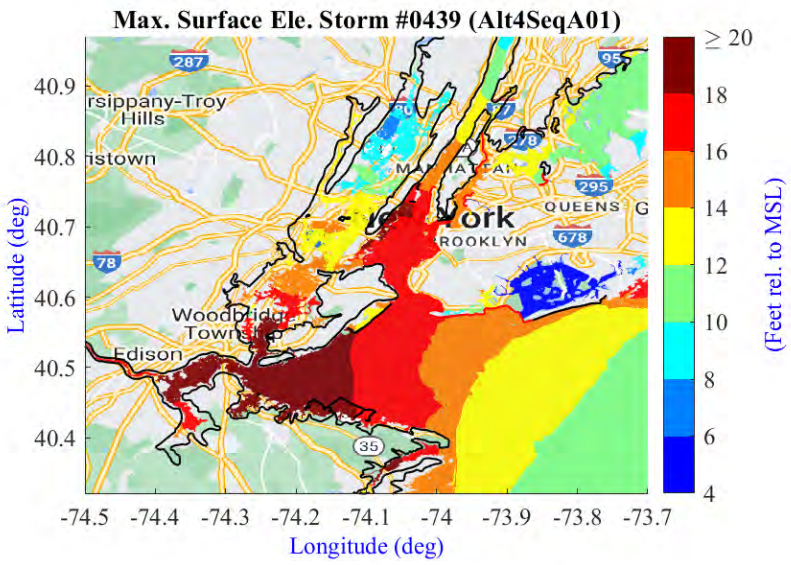
Alt2 Storm #439 Alt4

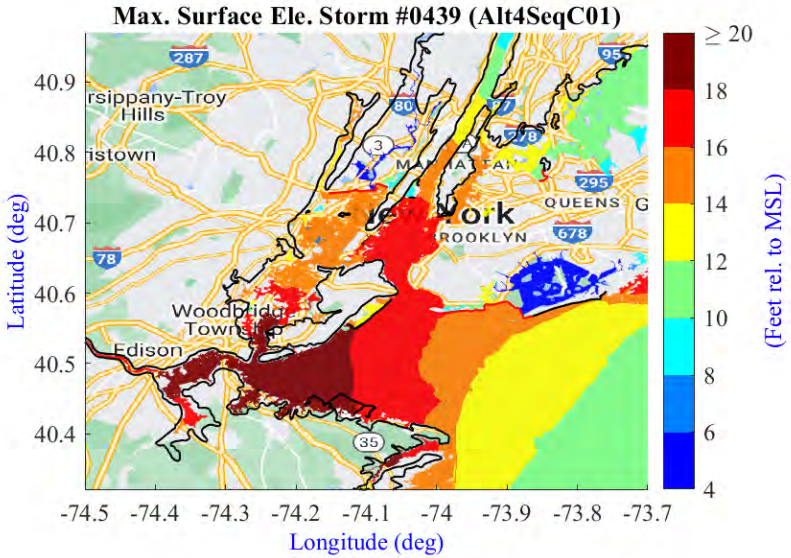




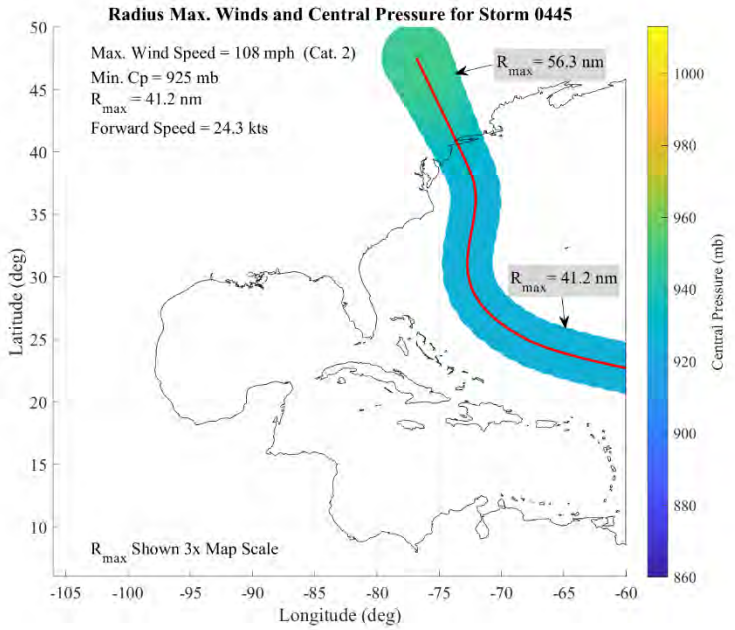






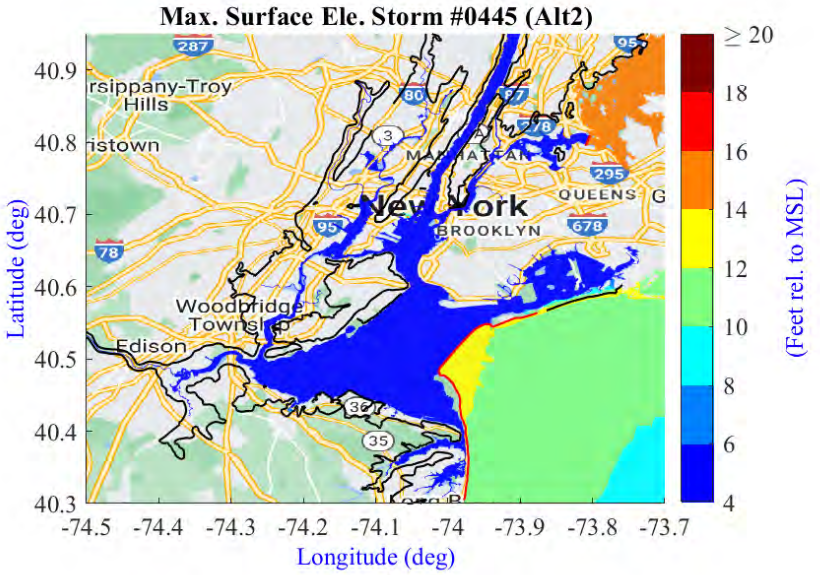


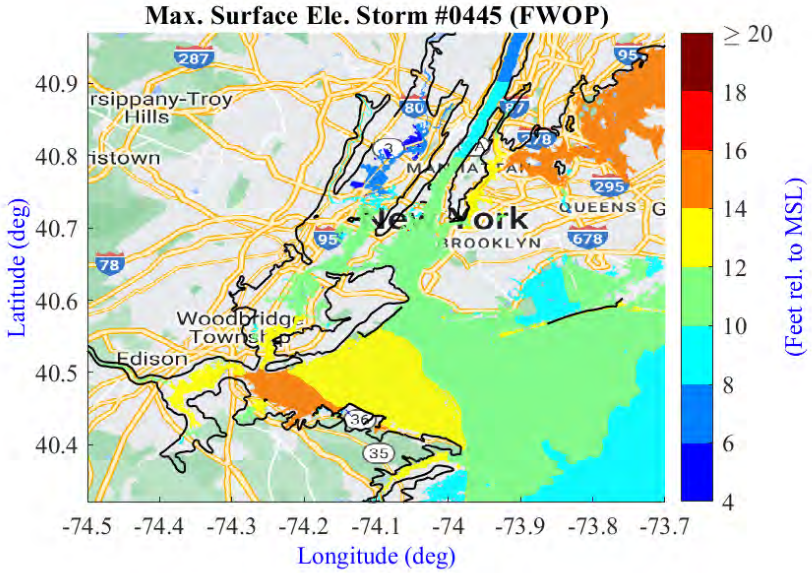
Storm #445

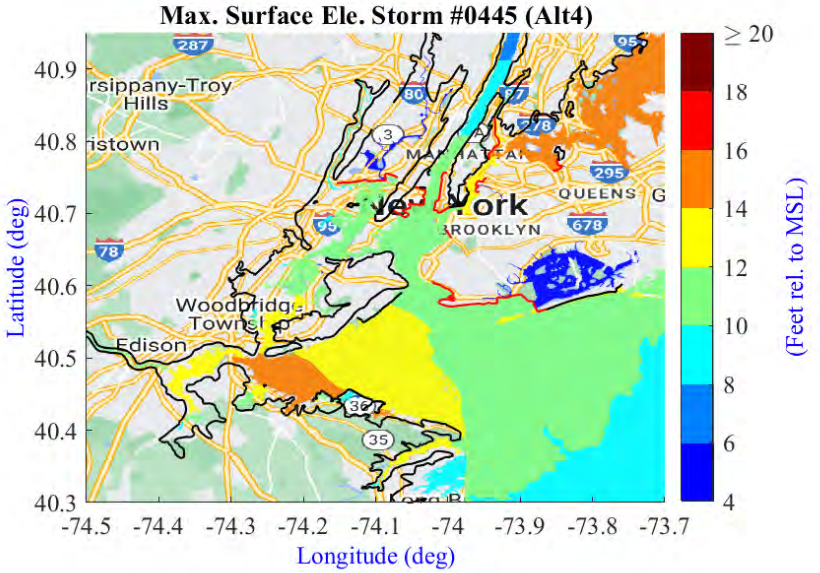


Max. Wind Speed: ***108 mph (Cat. 2)***
Min. Cp: ***925 mb***
Rmax: ***41.2 nm***
Forward Speed: ***24.3 kts***

Future With Out Project:
Max. WSE at Battery: ***11.43 ft.***
Max. WSE at Kings Point: ***15.19 ft.***
Max. WSE at Sandy Hook: ***12.62 ft.***

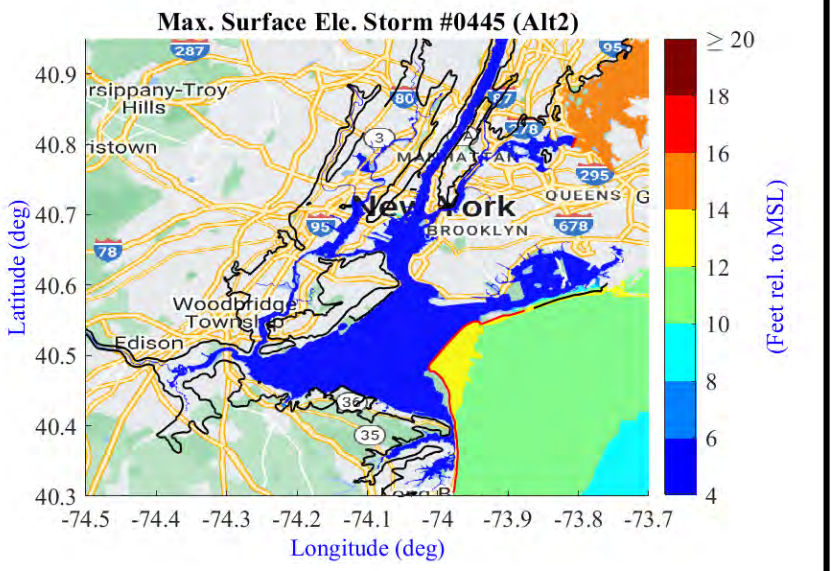


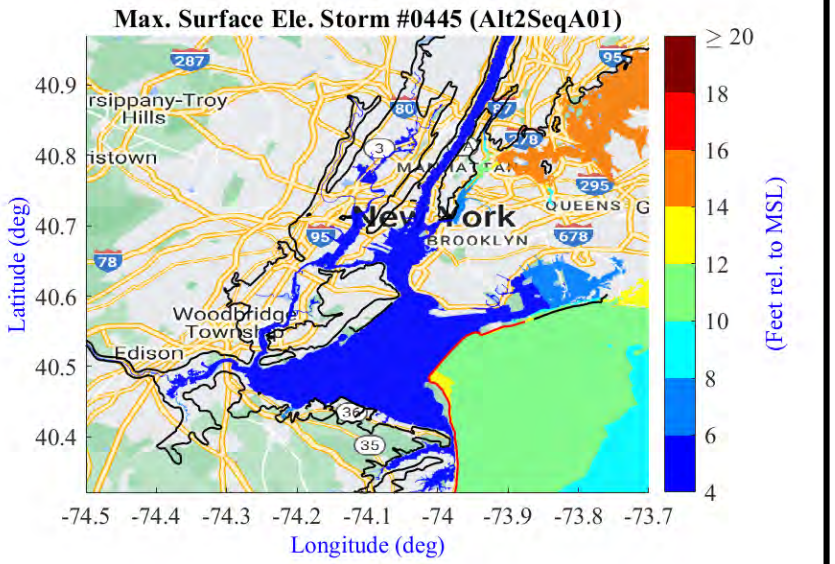


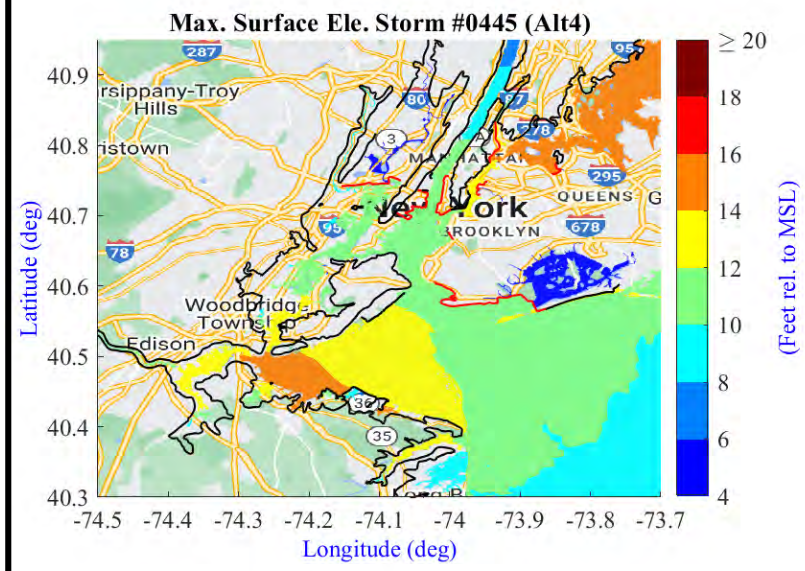


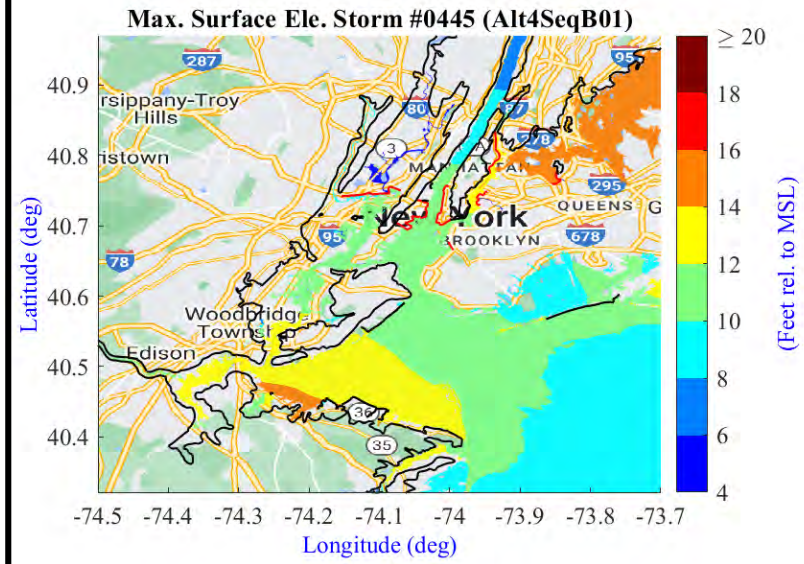
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

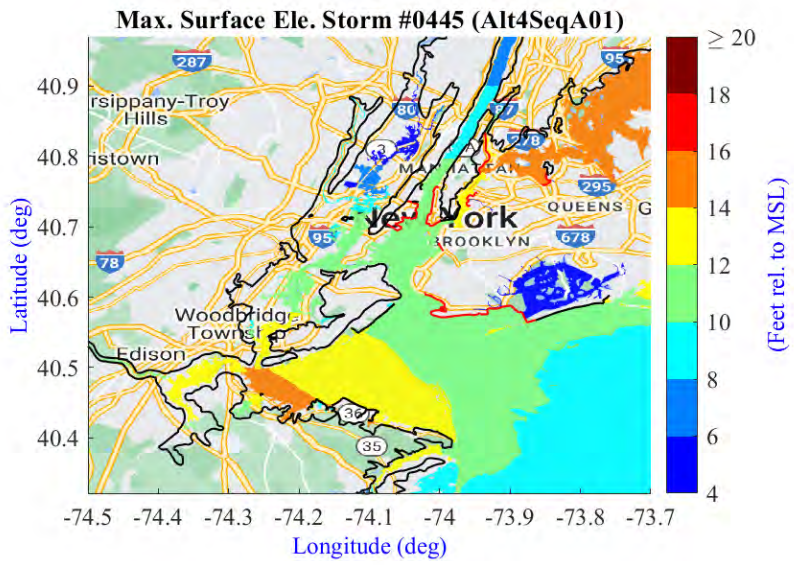
Alt2 Storm #445 Alt4

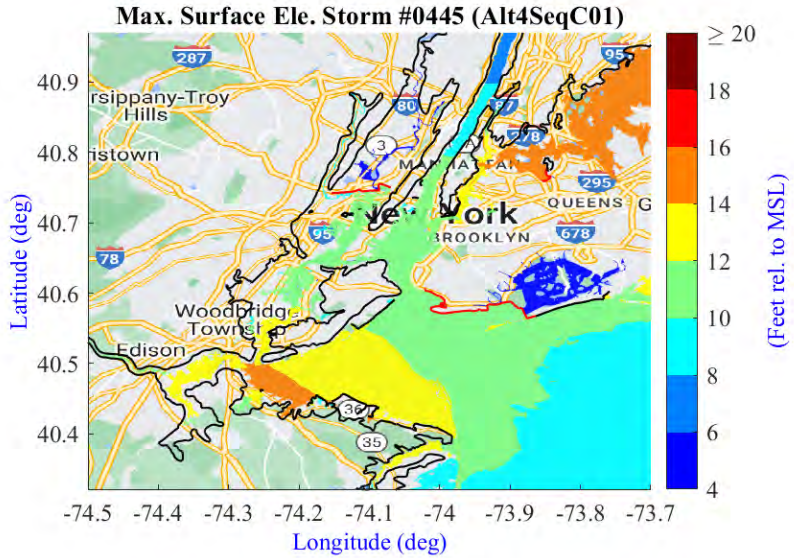




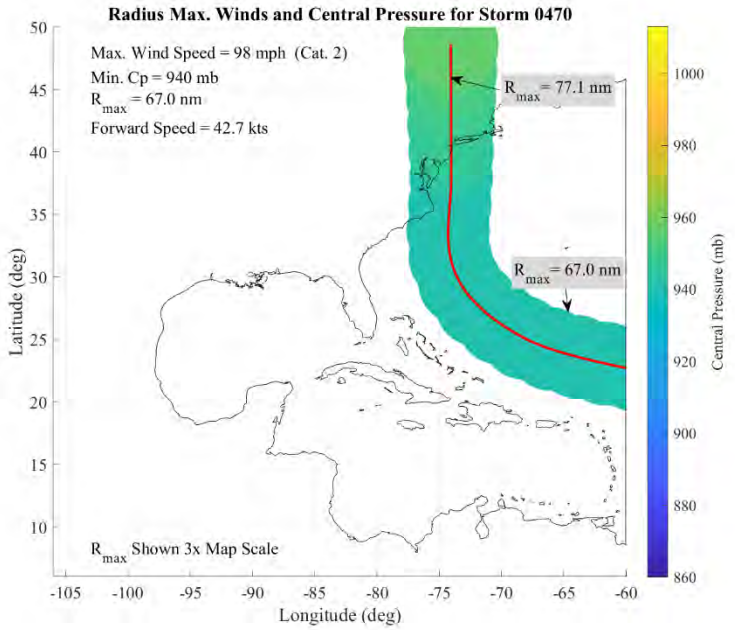






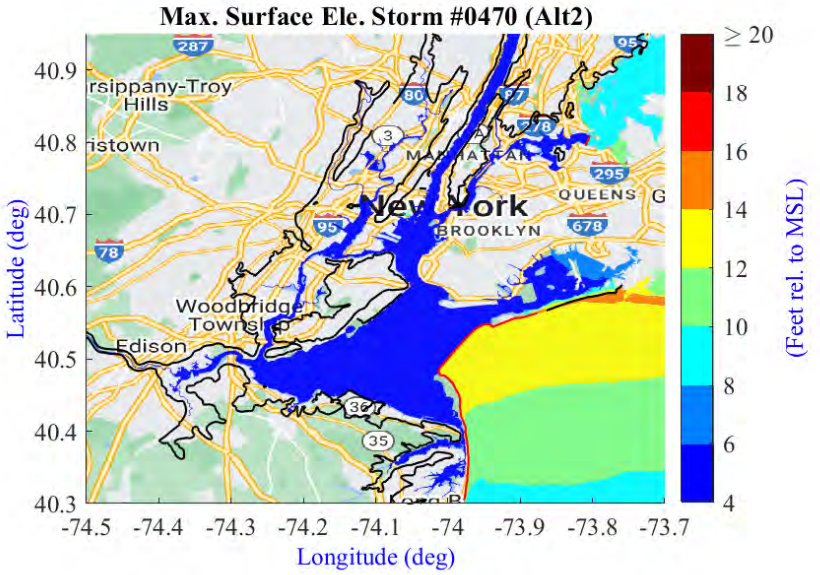


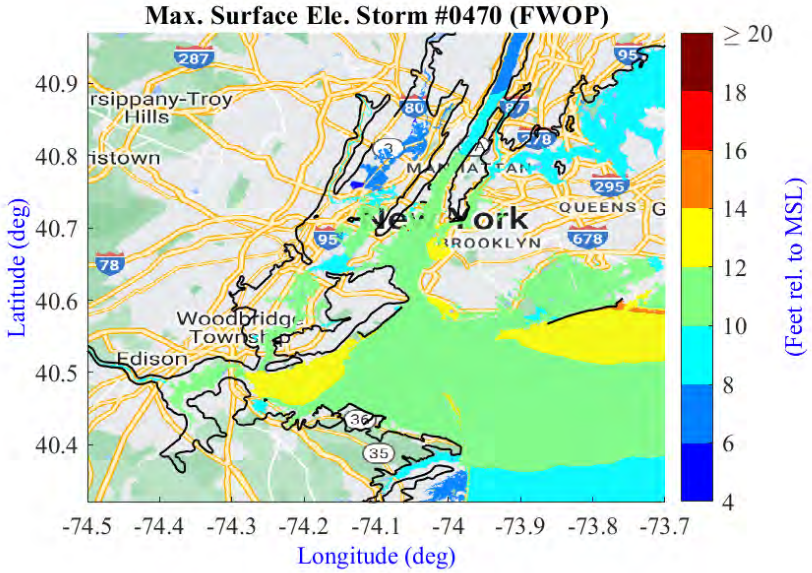
Storm #470

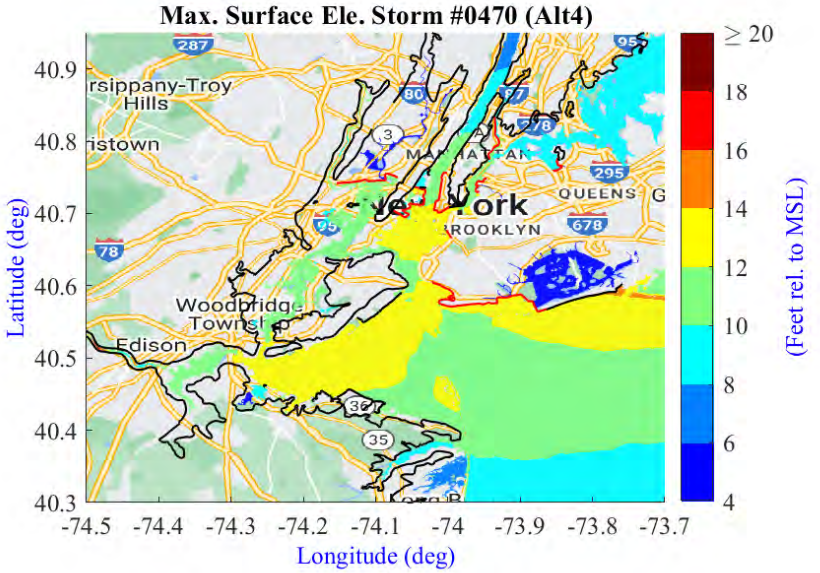


Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***67.0 nm***
Forward Speed: ***42.7 kts***

Future With Out Project:
Max. WSE at Battery: ***12.03 ft.***
Max. WSE at Kings Point: ***9.24 ft.***
Max. WSE at Sandy Hook: ***11.82 ft.***

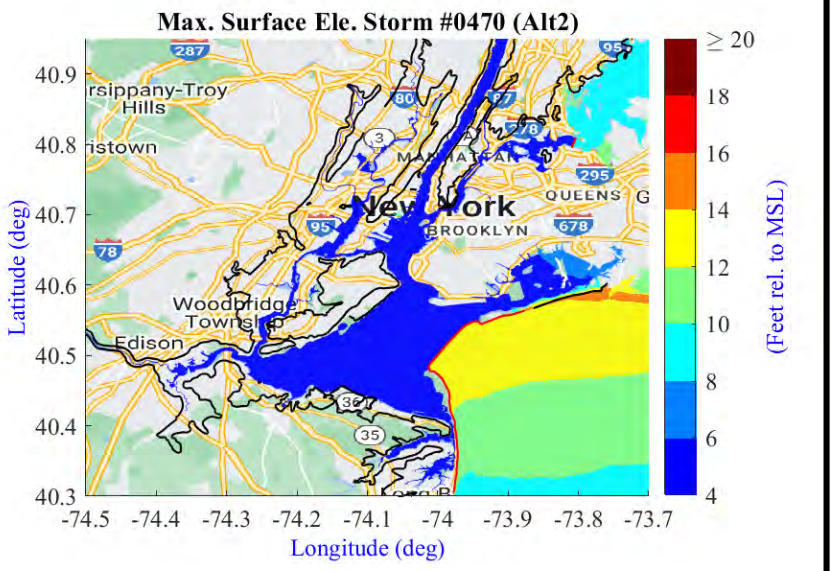


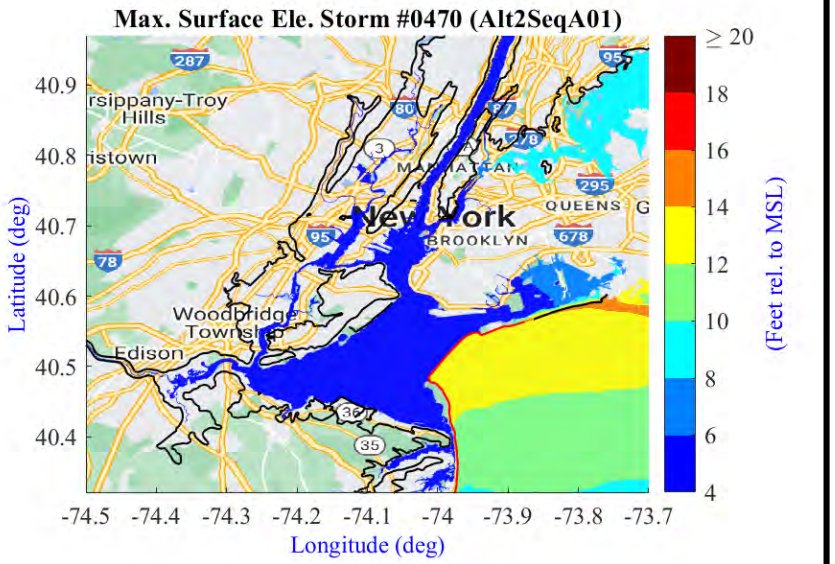


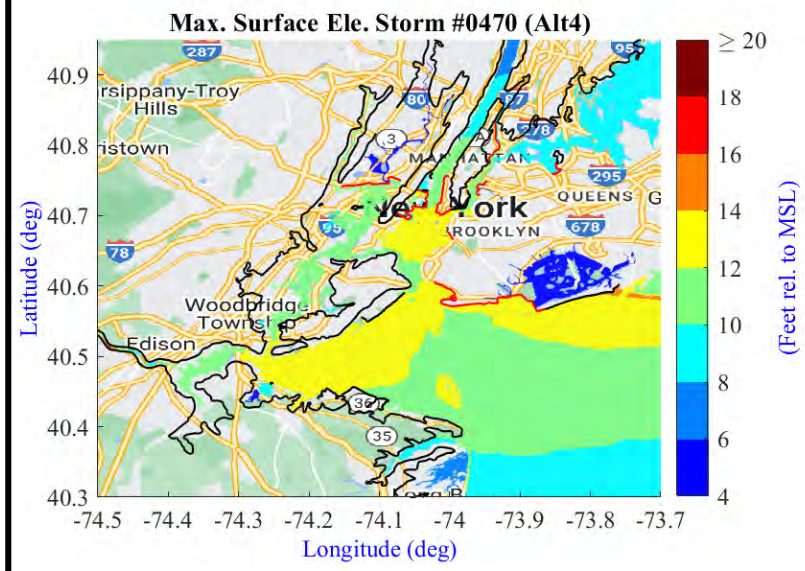


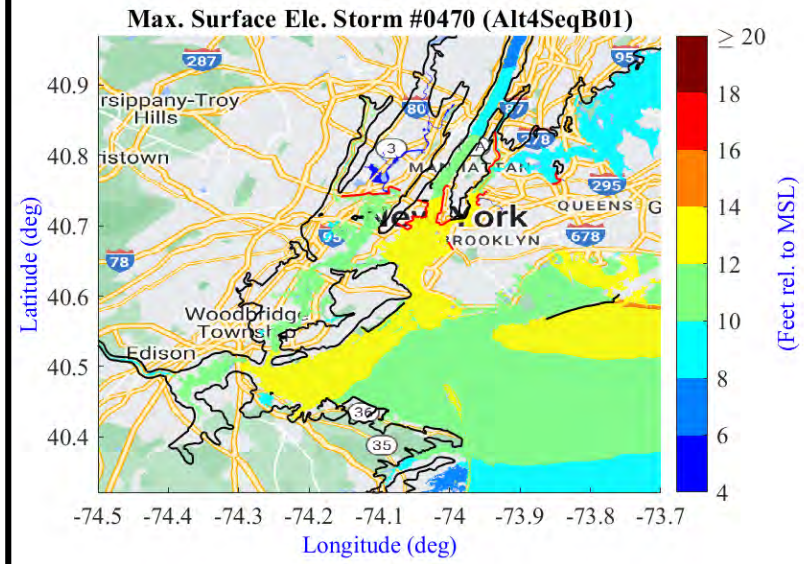
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

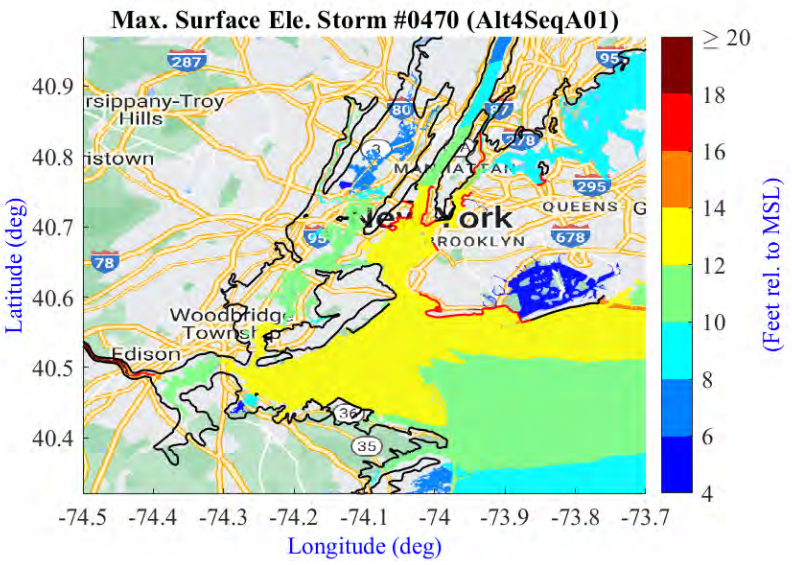
Alt2 Storm #470 Alt4

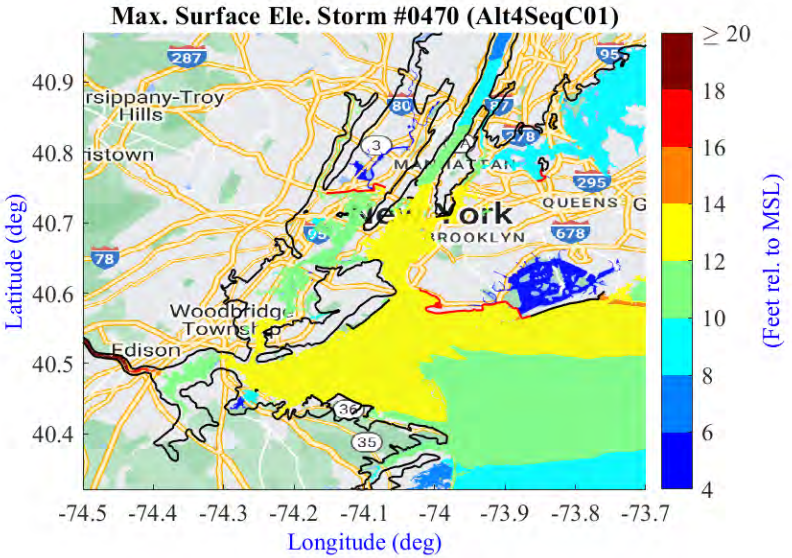




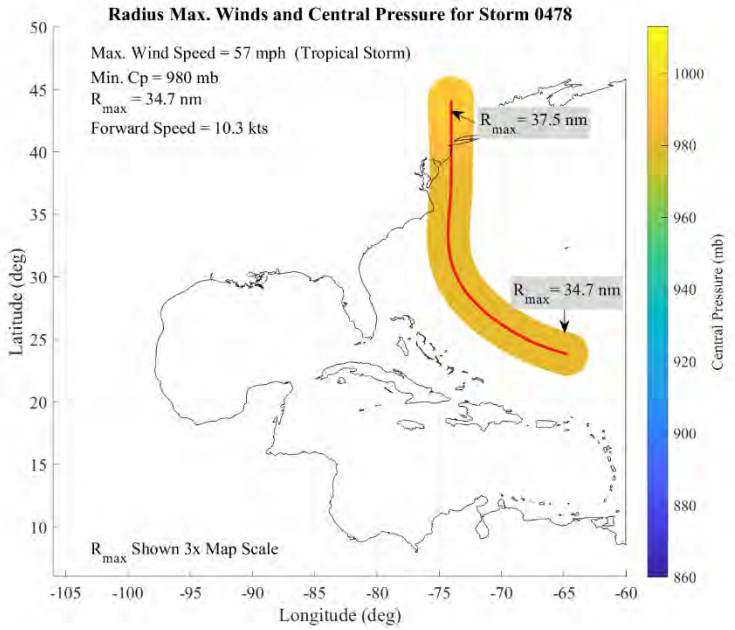








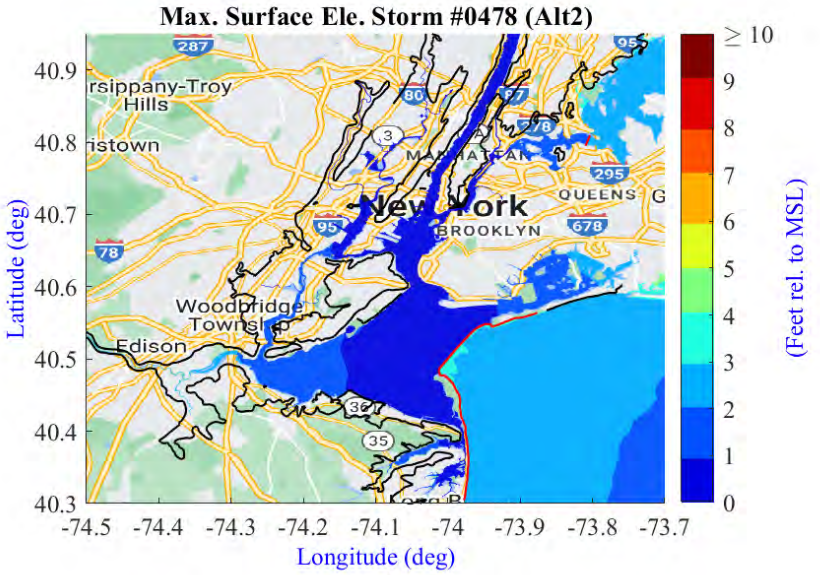
Storm #478

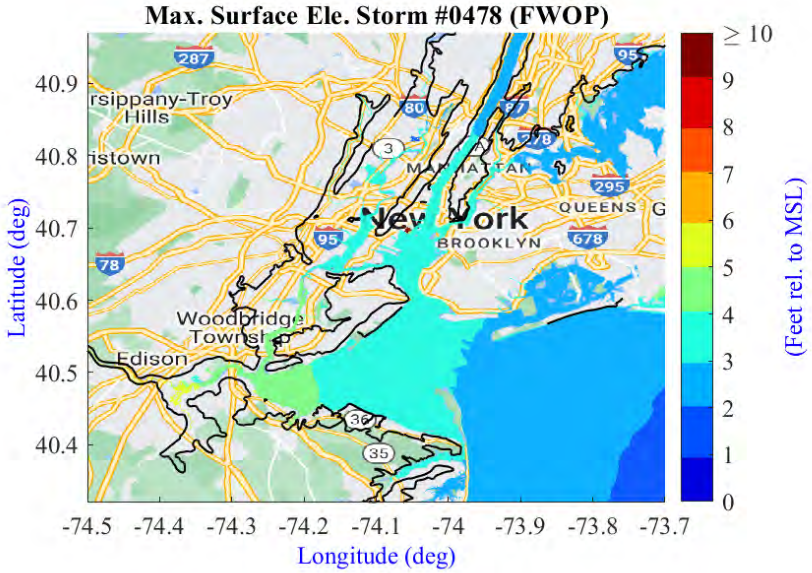


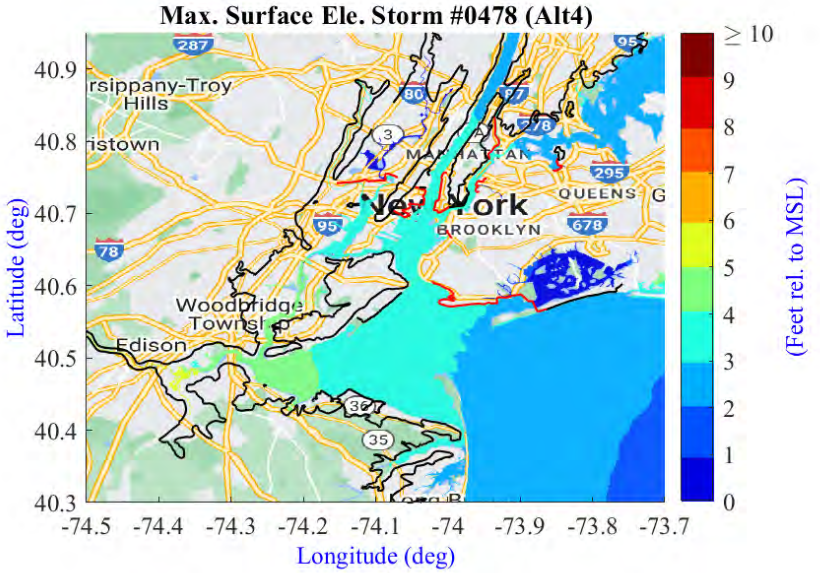
Max. Wind Speed: ***57 mph (Tropical Storm)***

Min. Cp: ***980 mb***
Rmax: ***34.7 nm***
Forward Speed: ***10.3 kts***

Future With Out Project:
Max. WSE at Battery: ***3.33 ft.***
Max. WSE at Kings Point: ***2.57 ft.***
Max. WSE at Sandy Hook: ***3.31 ft.***

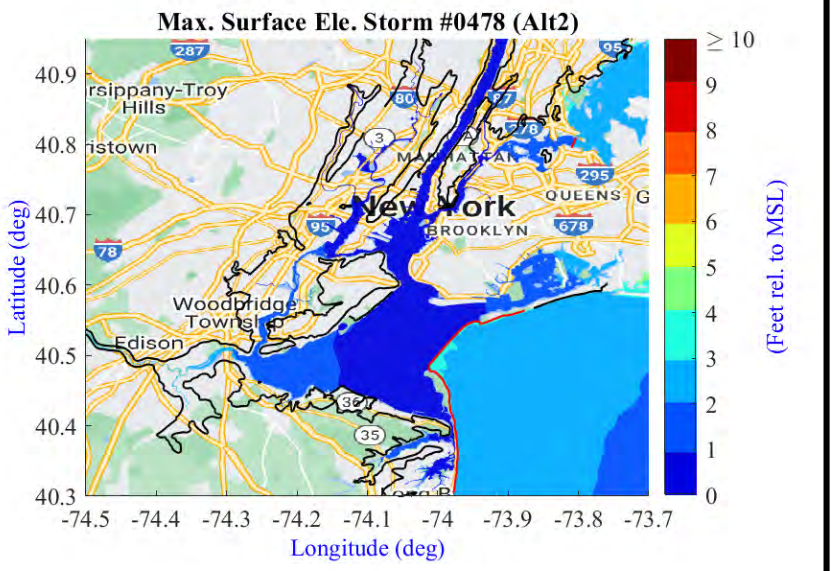


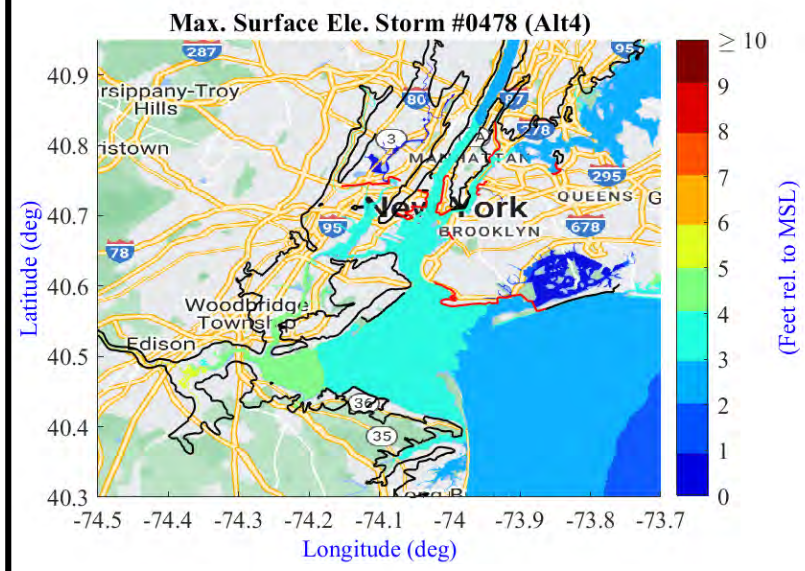


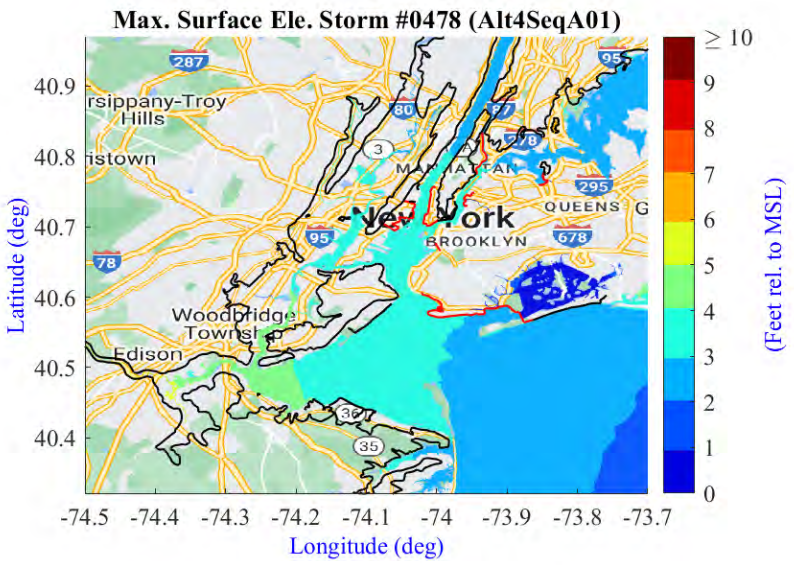


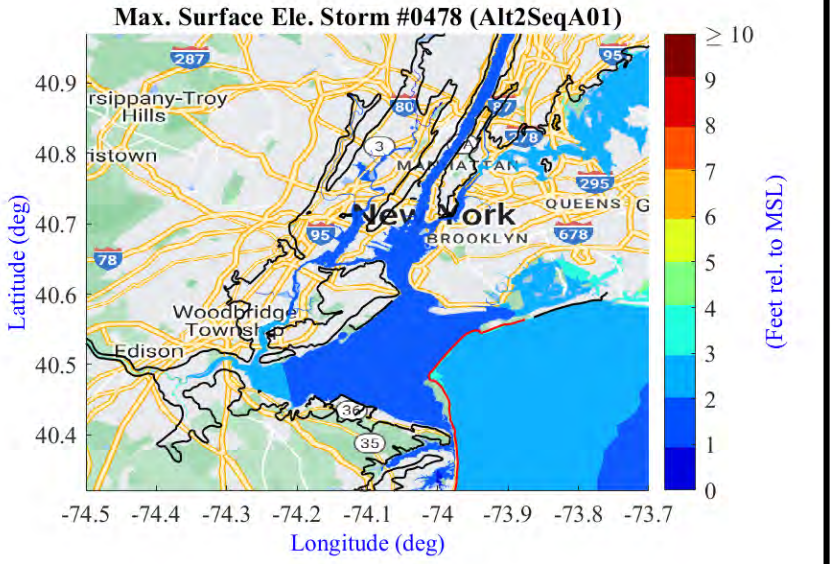
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

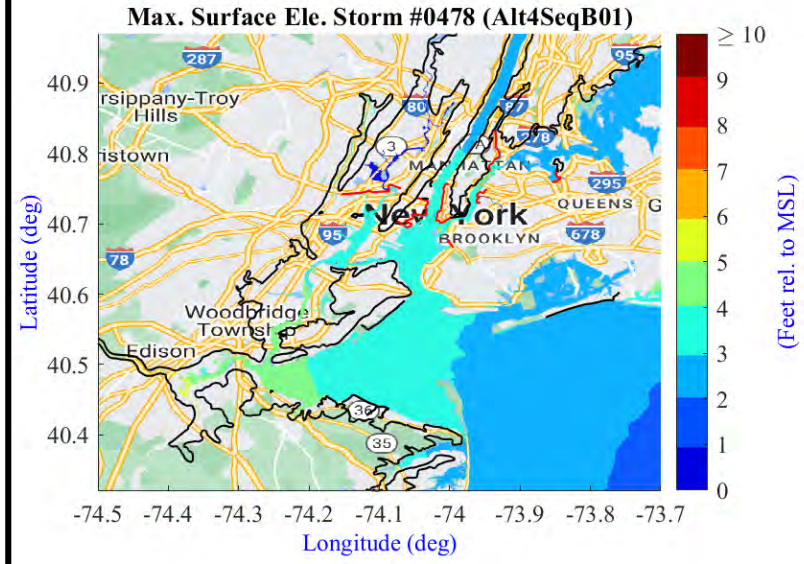
Alt2 Storm #478 Alt4

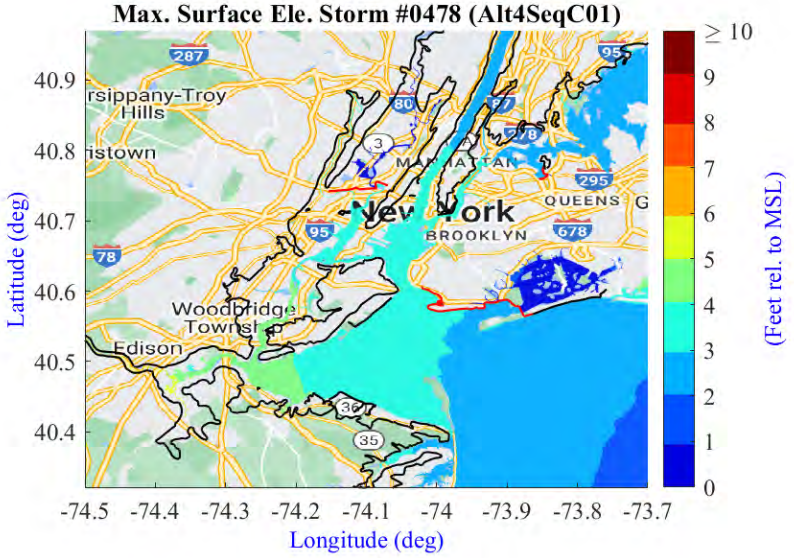




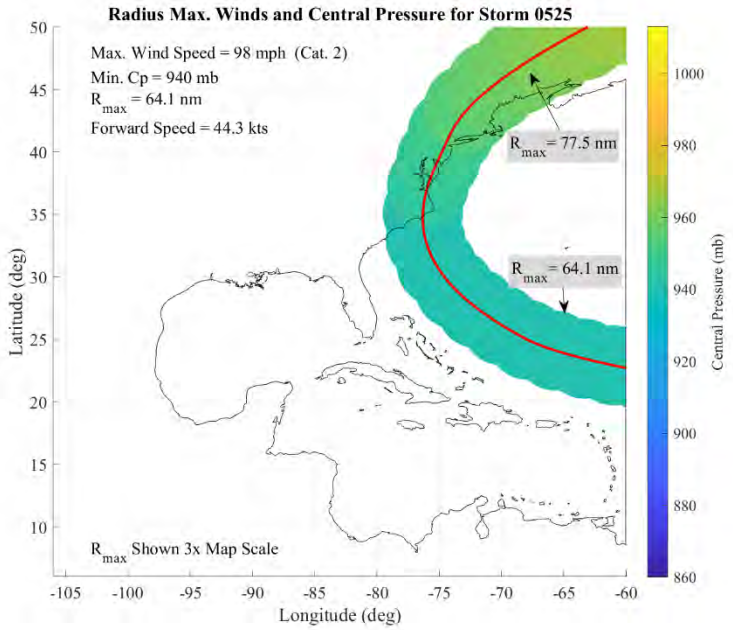






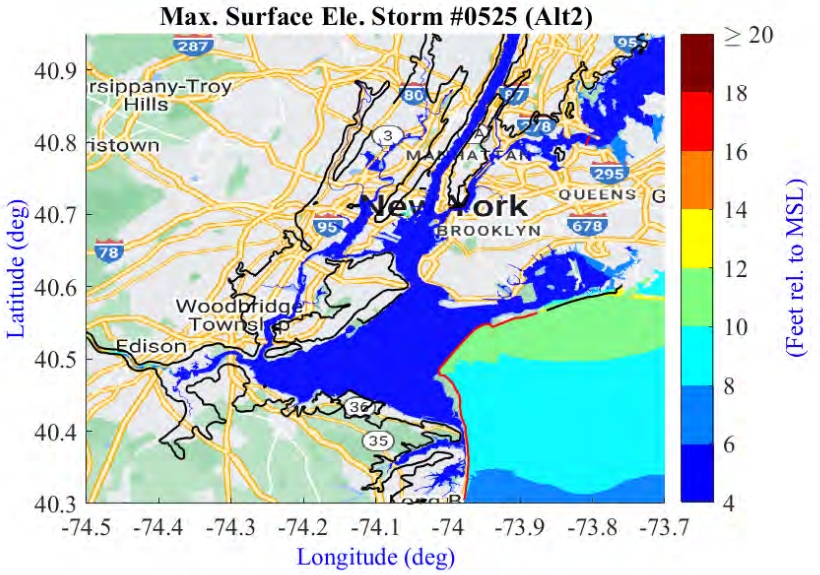


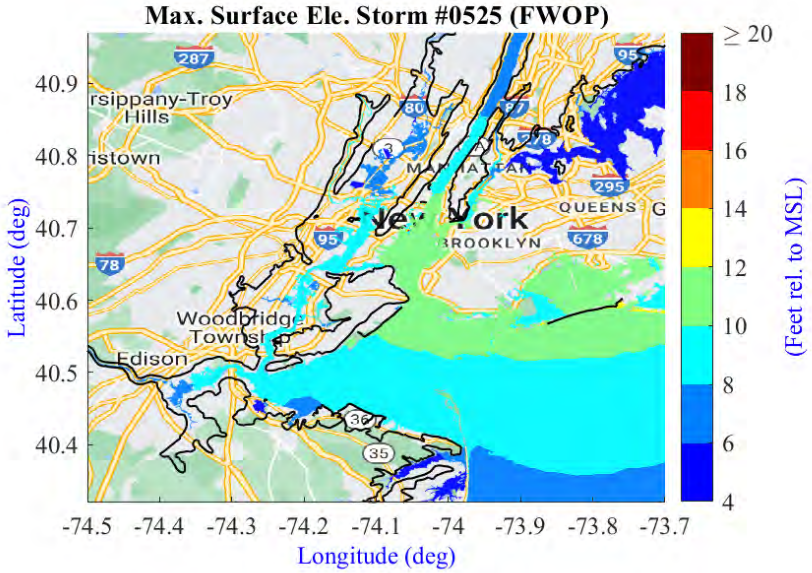
Storm #525

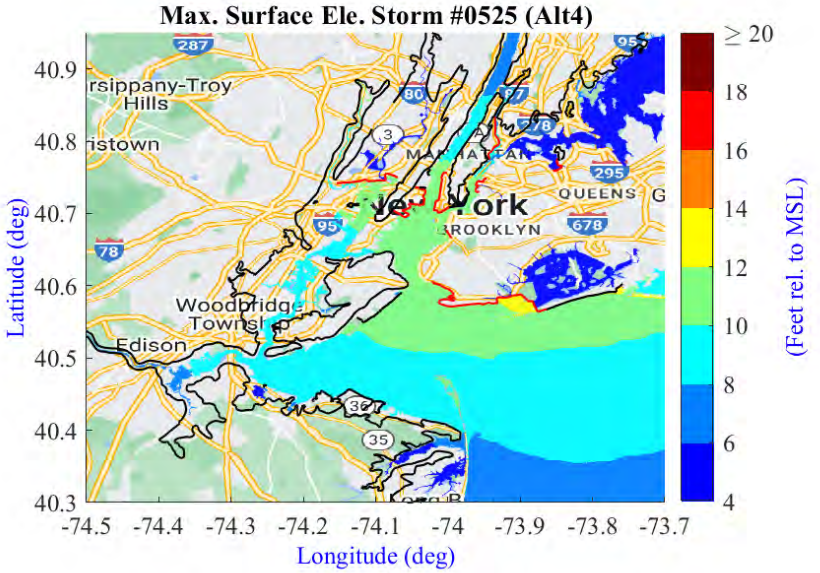


Max. Wind Speed: ***98 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***64.1 nm***
Forward Speed: ***44.3 kts***

Future With Out Project:
Max. WSE at Battery: ***11.00 ft.***
Max. WSE at Kings Point: ***5.56 ft.***
Max. WSE at Sandy Hook: ***9.70 ft.***

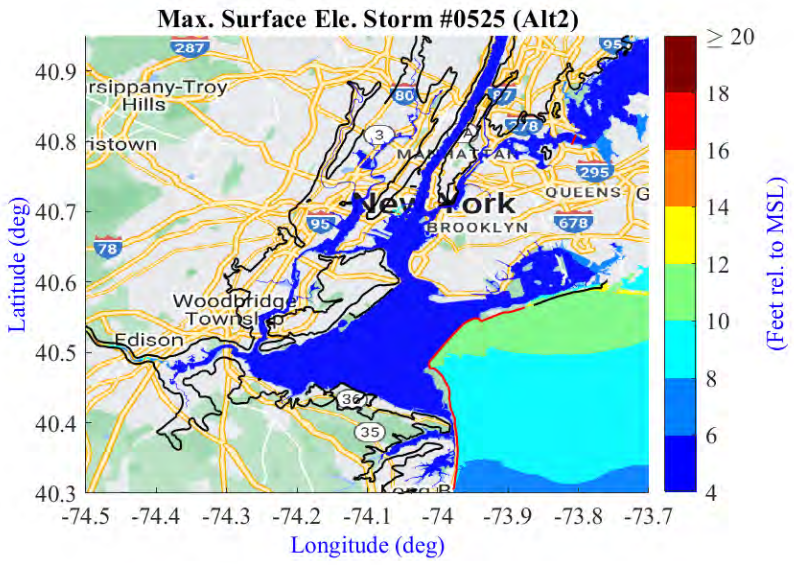


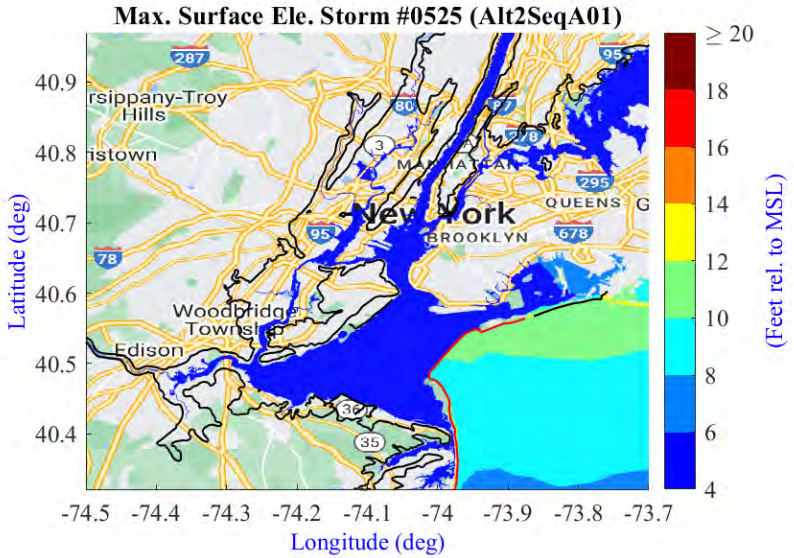


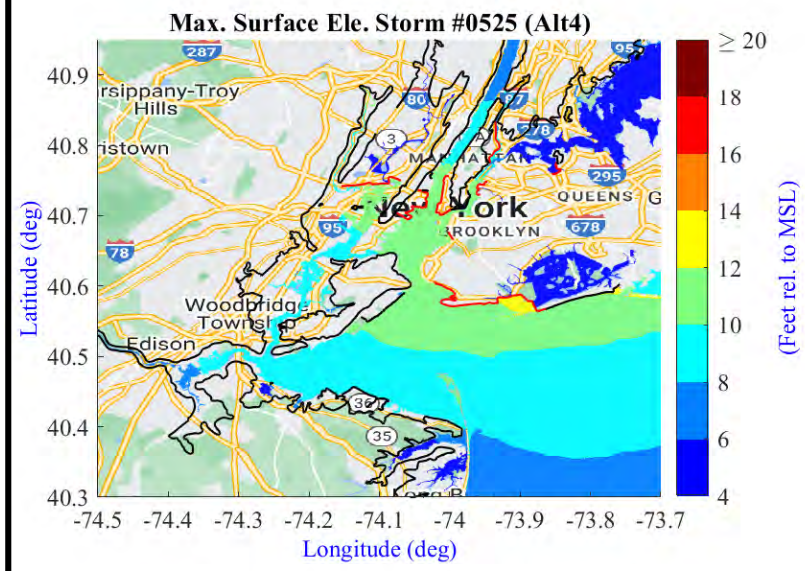


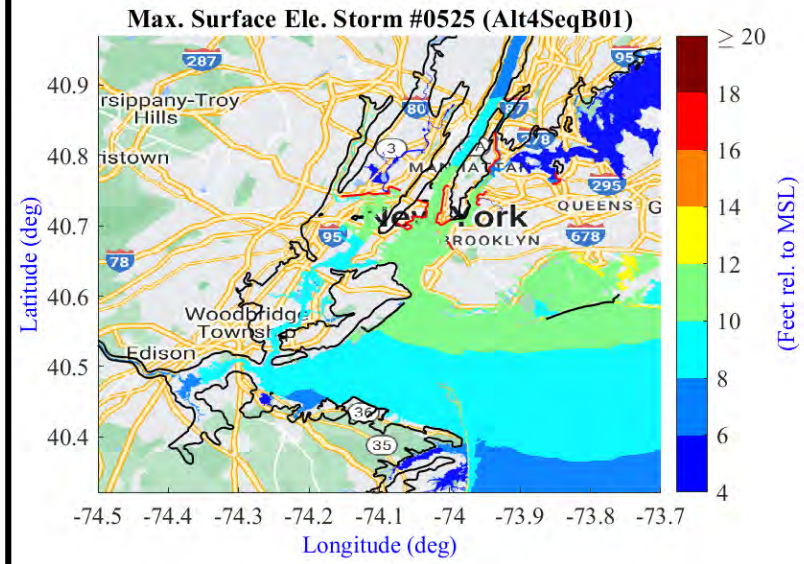
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

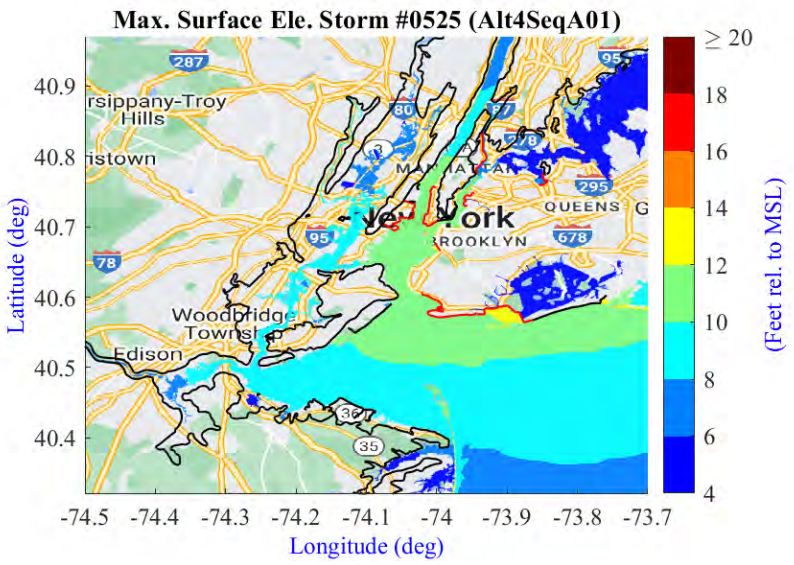
Alt2 Storm #525 Alt4

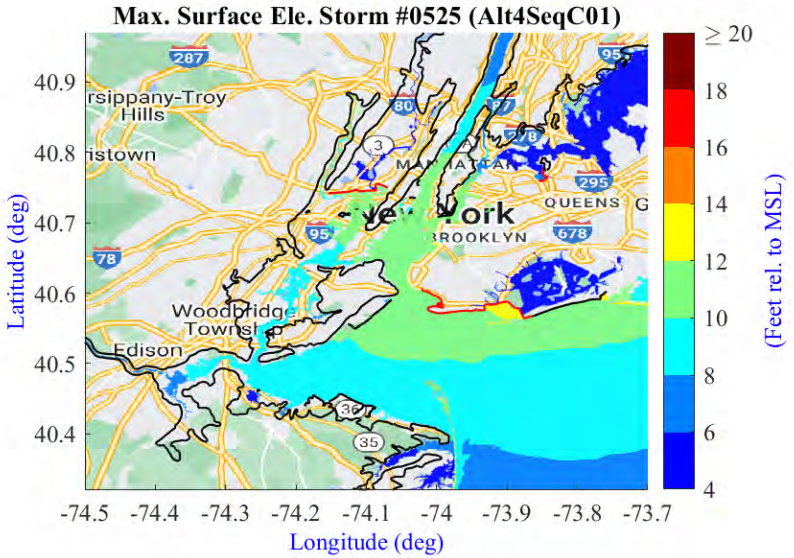




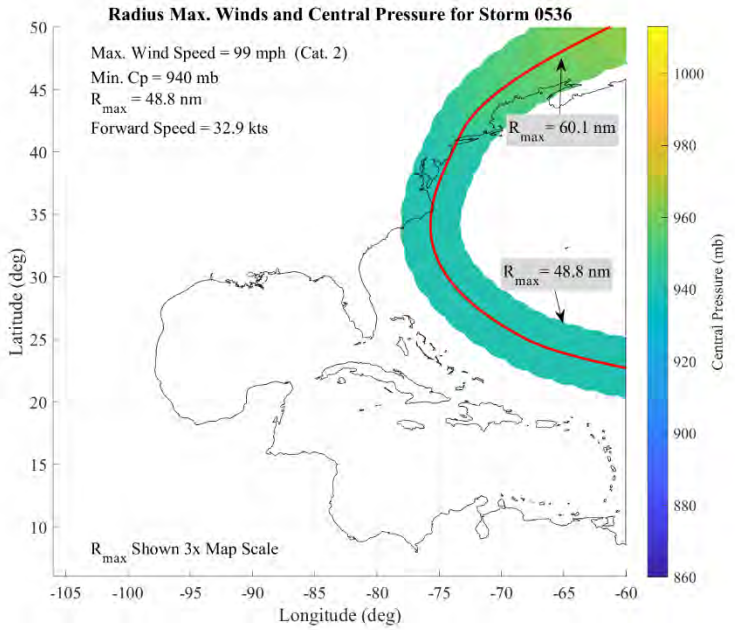






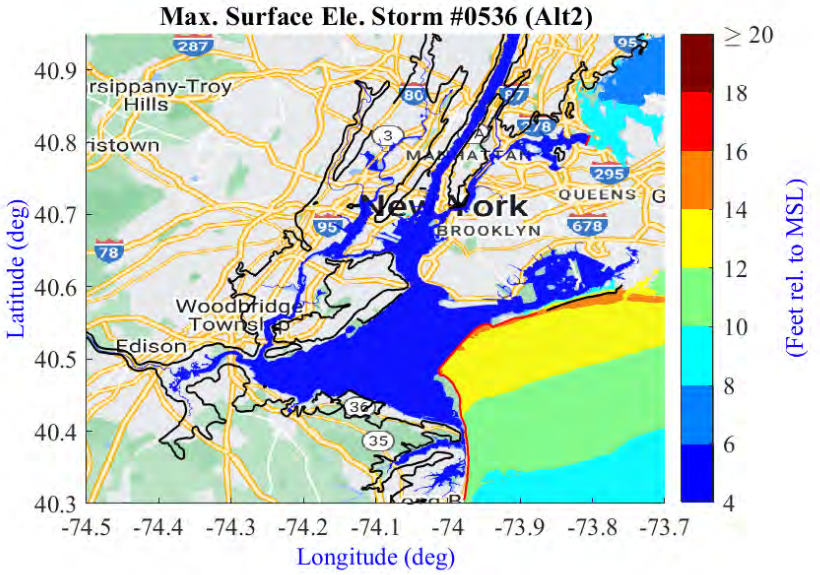


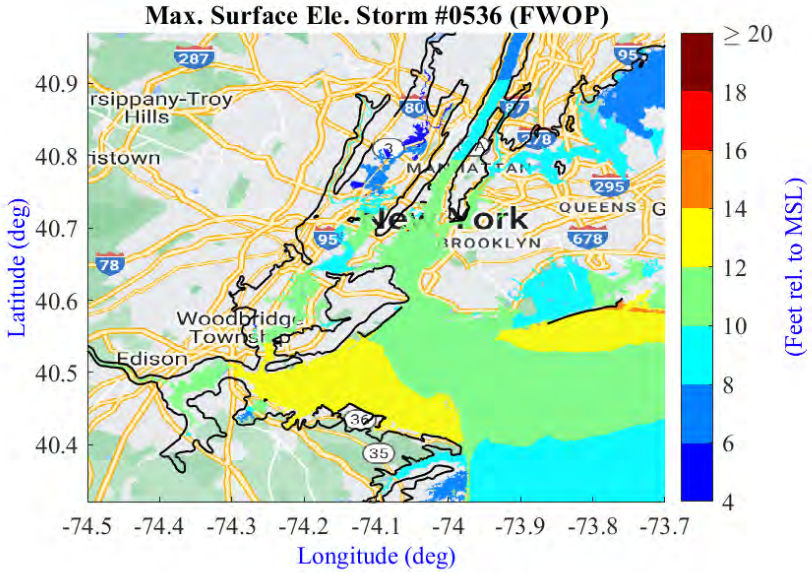
Storm #536

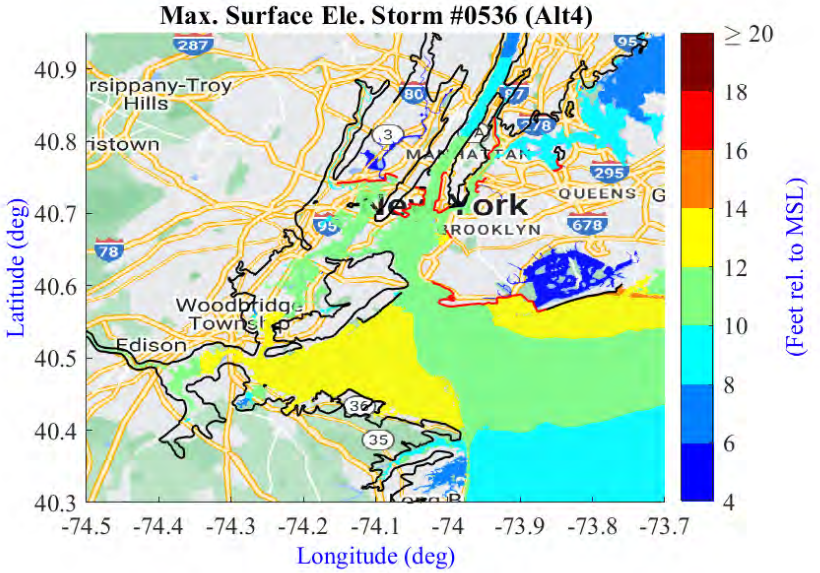


Max. Wind Speed: ***99 mph (Cat. 2)***
Min. Cp: ***940 mb***
Rmax: ***48.8 nm***
Forward Speed: ***32.9 kts***

Future With Out Project:
Max. WSE at Battery: ***11.52 ft.***
Max. WSE at Kings Point: ***8.23 ft.***
Max. WSE at Sandy Hook: ***12.18 ft.***

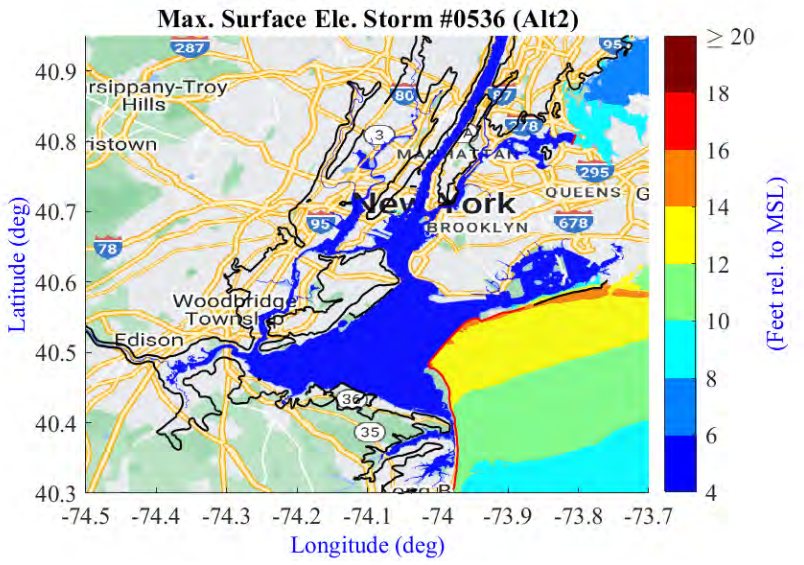


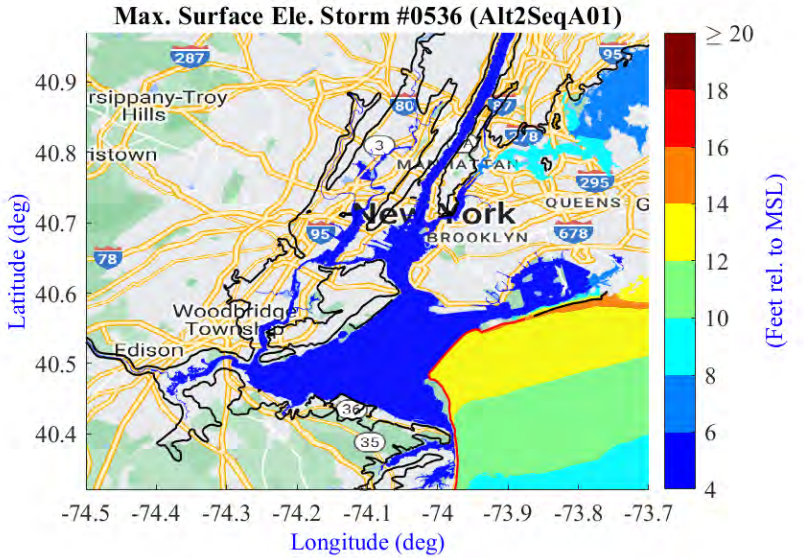


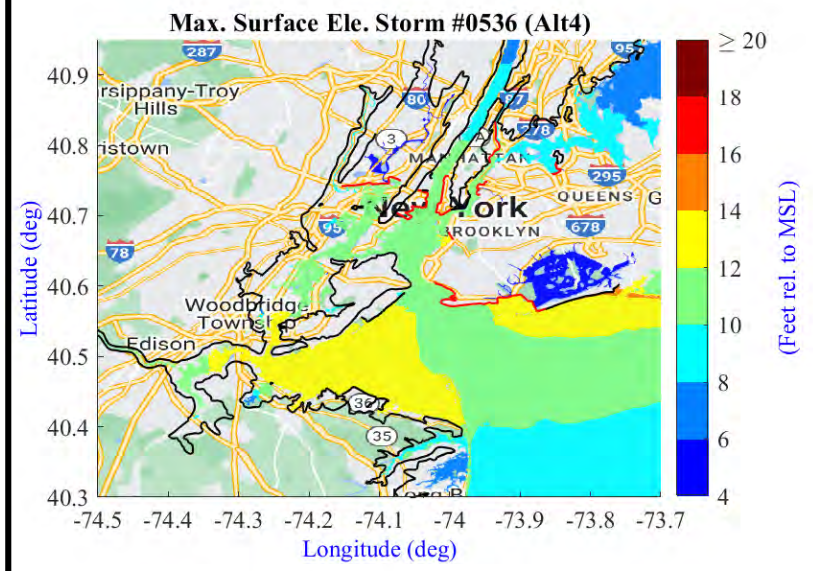


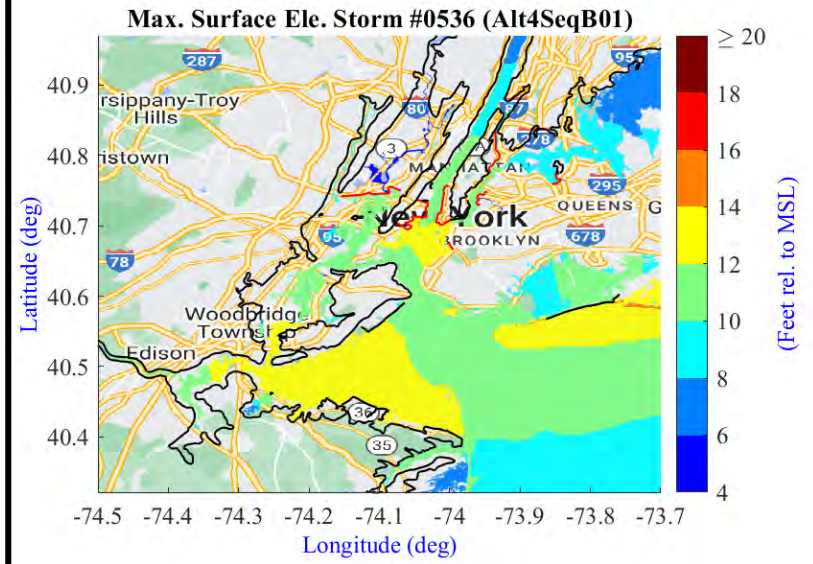
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

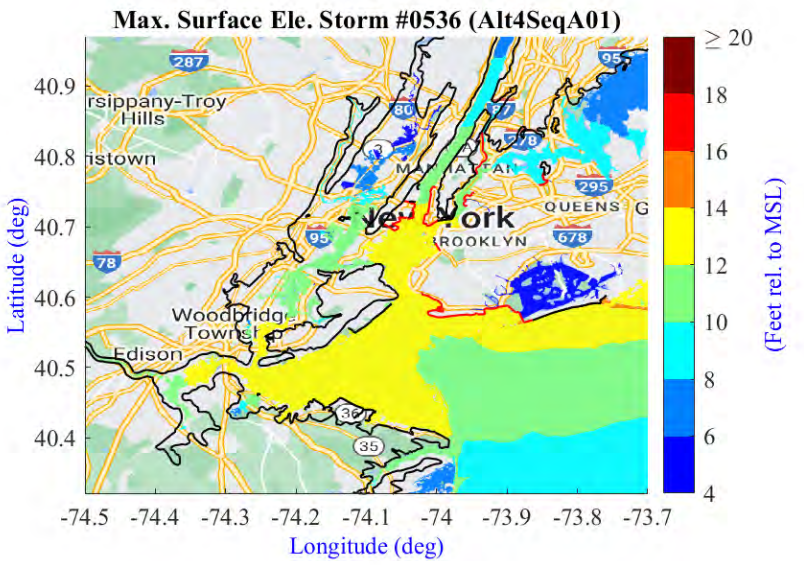
Alt2 Storm #536 Alt4

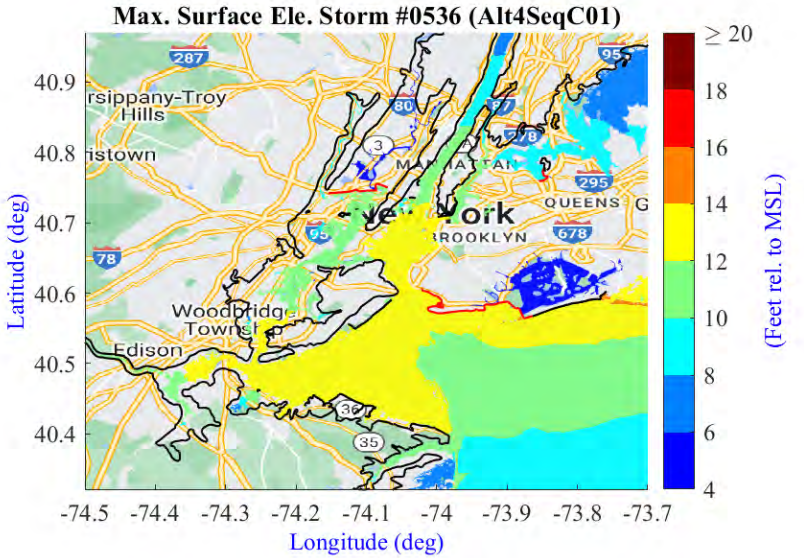




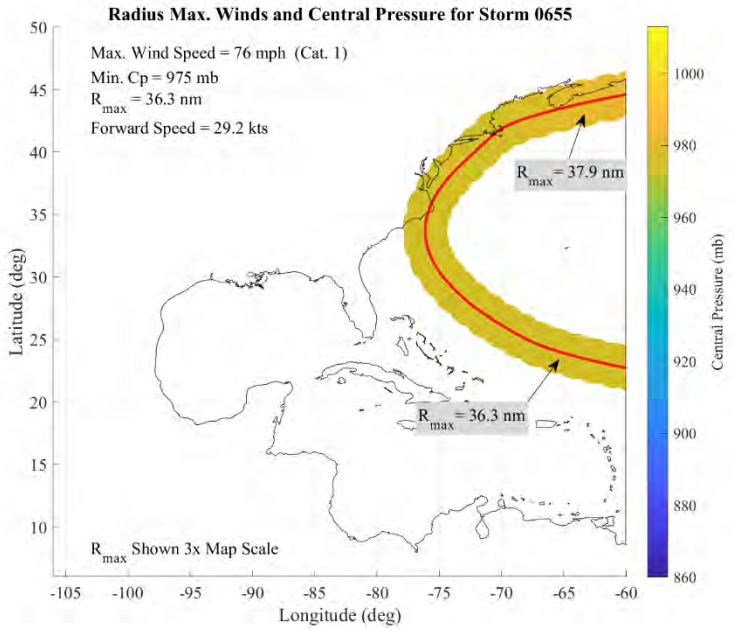






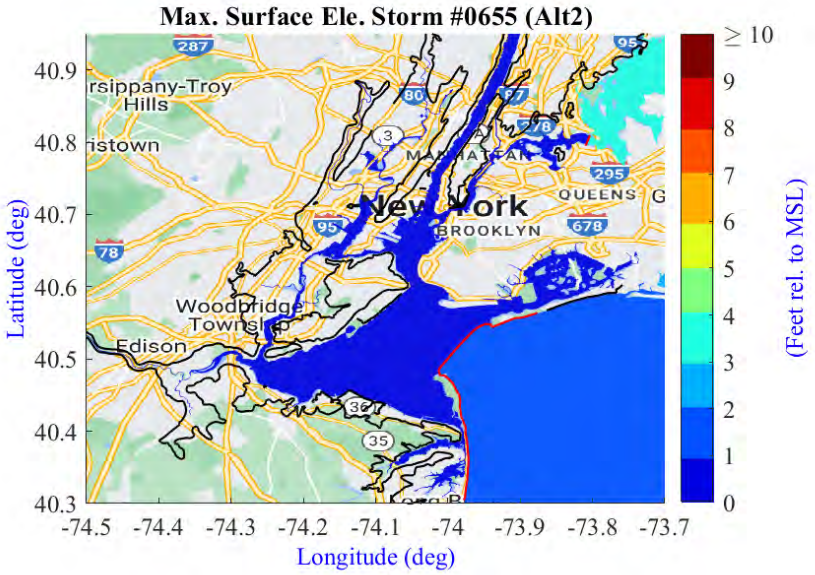


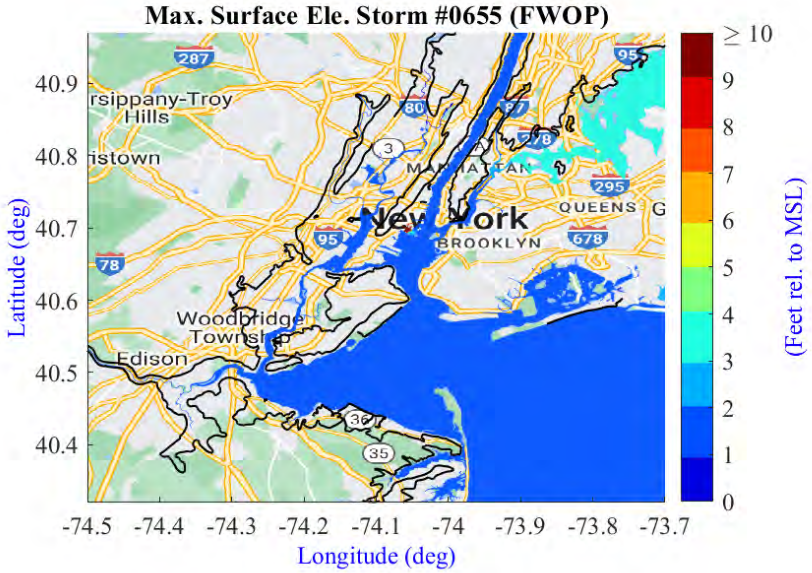
Storm #655

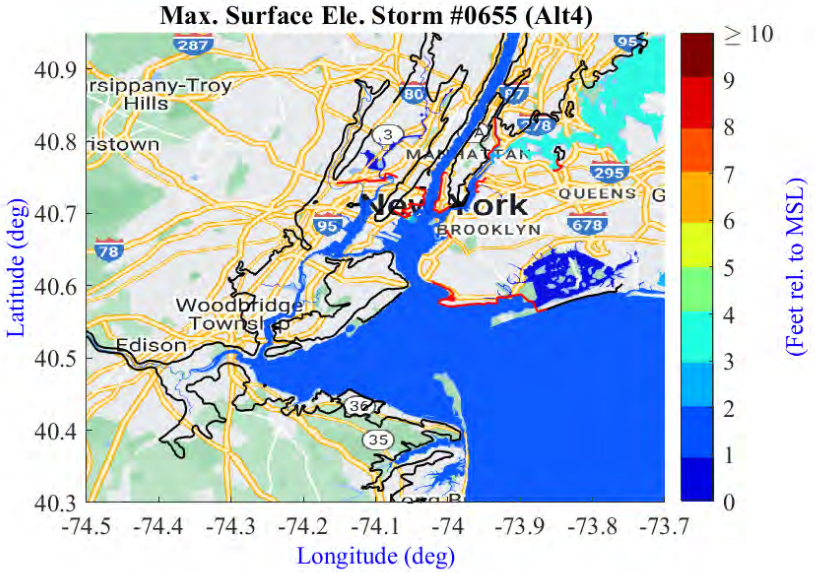


Max. Wind Speed: ***76 mph (Cat. 1)***
Min. Cp: ***975 mb***
Rmax: ***36.3 nm***
Forward Speed: ***29.2 kts***

Future With Out Project:
Max. WSE at Battery: ***1.66 ft.***
Max. WSE at Kings Point: ***3.32 ft.***
Max. WSE at Sandy Hook: ***1.66 ft.***

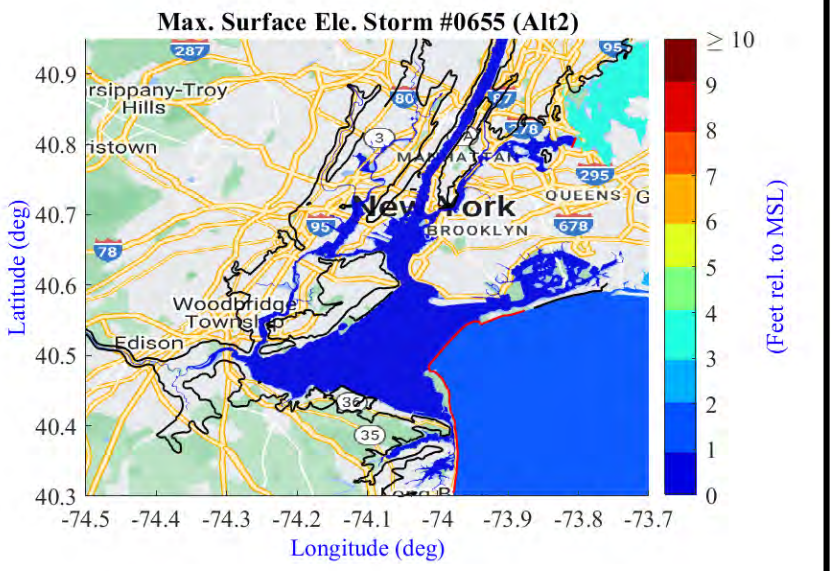


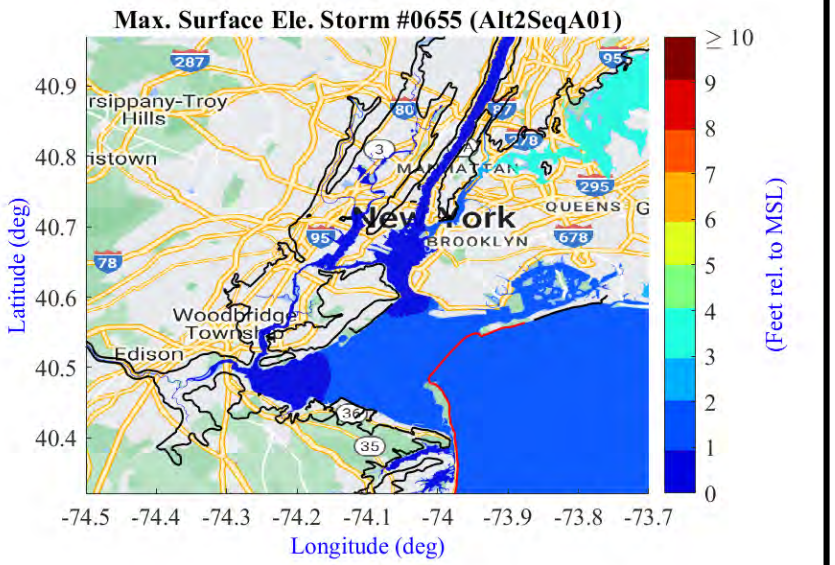


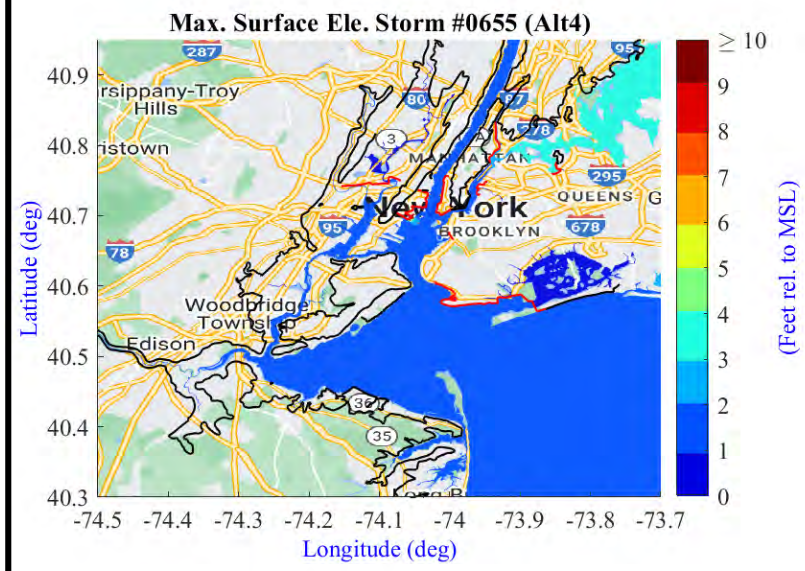


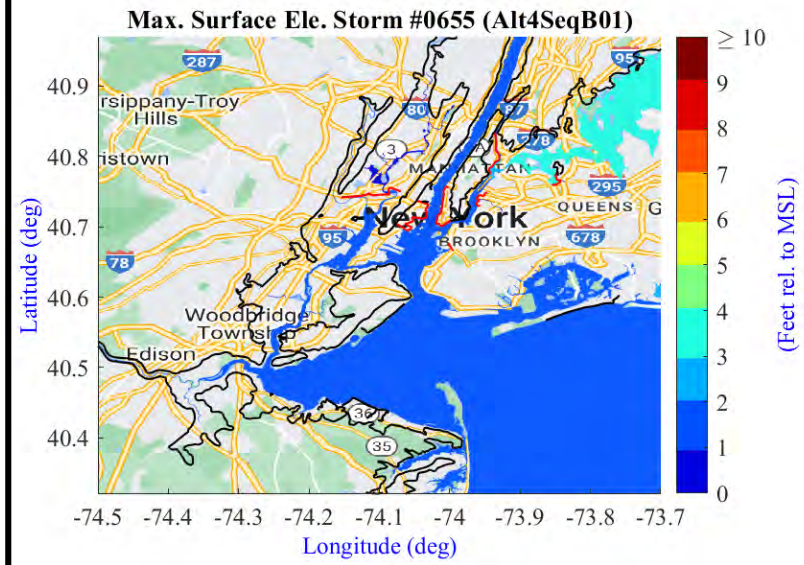
Alt2	
Sequence A01	No Throgs Neck Barrier
Alt4	
Sequence A01	No Hackensack Gate
Sequence B01	No Jamaica Bay Barrier
Sequence C01	Only Hackensack Gate & Jamaica Bay Barrier

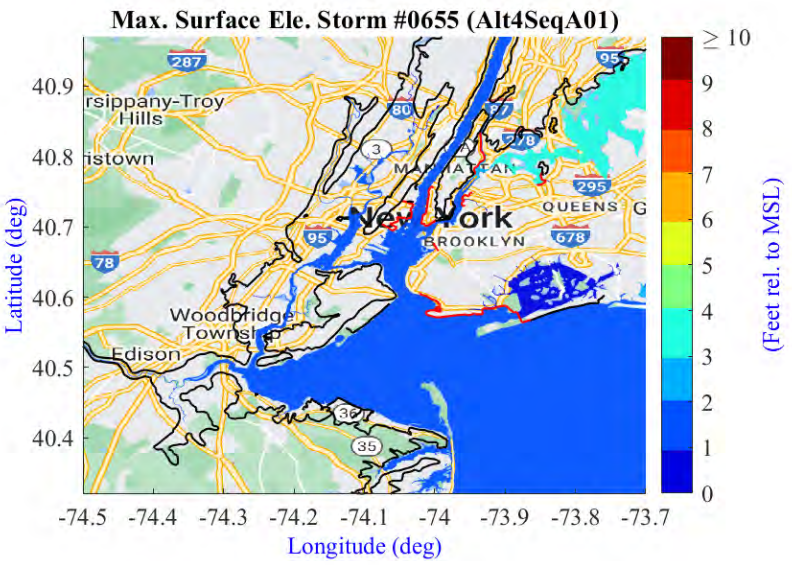
Alt2 Storm #655 Alt4

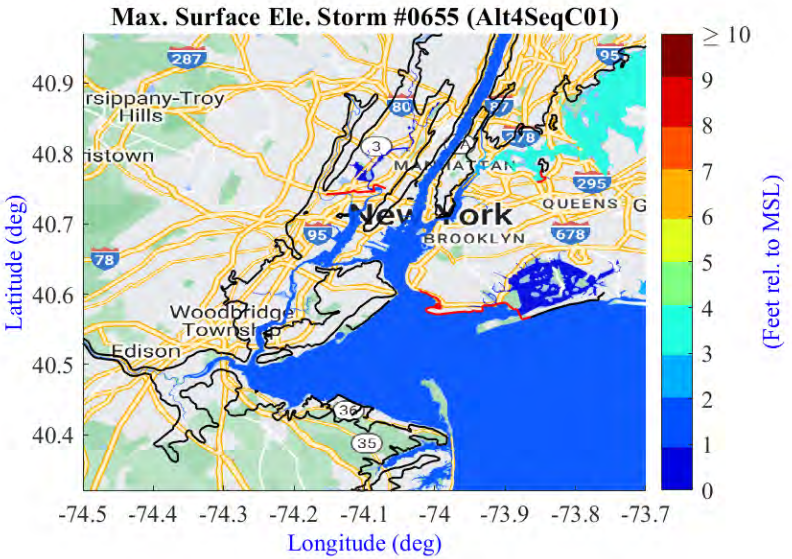








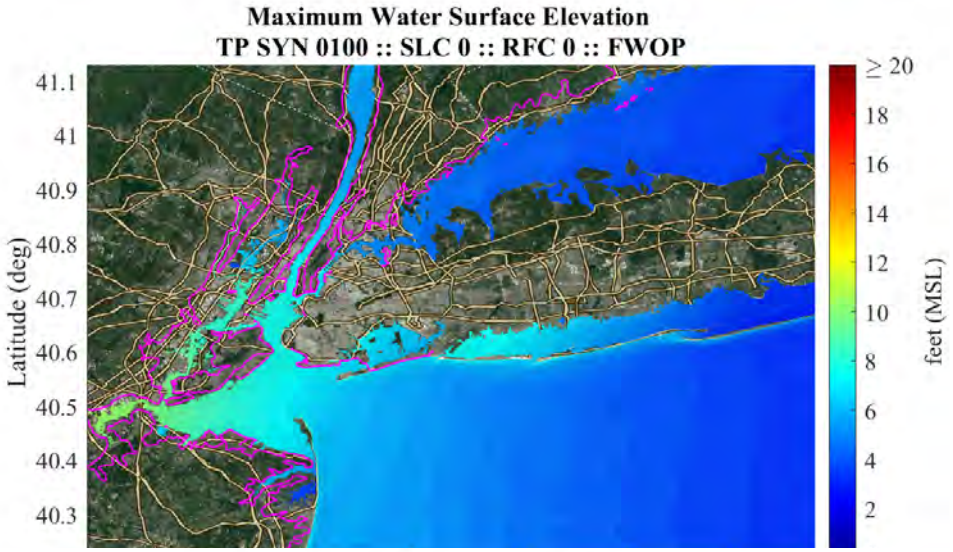


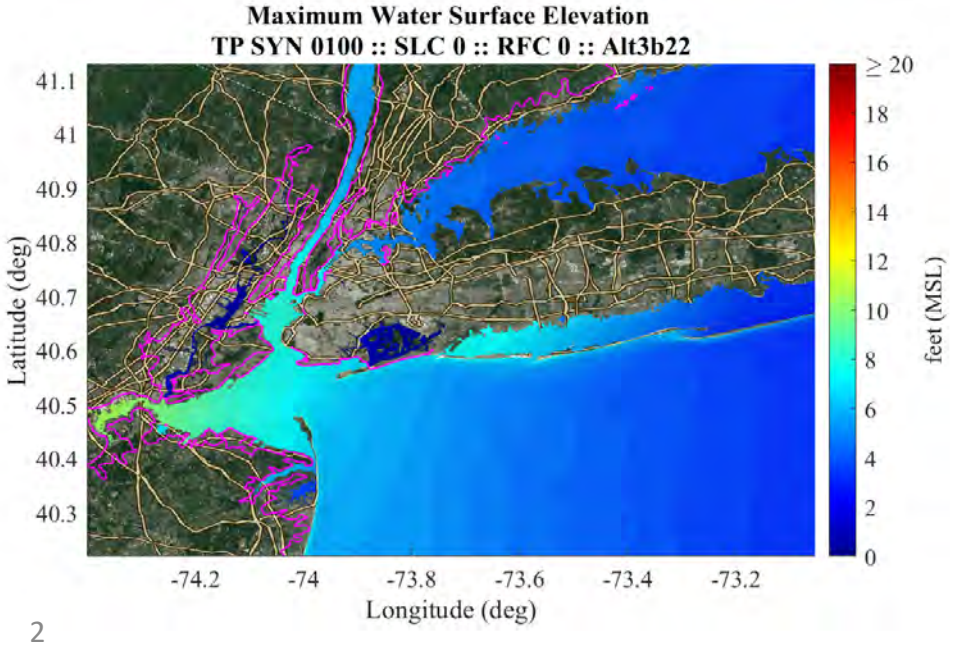


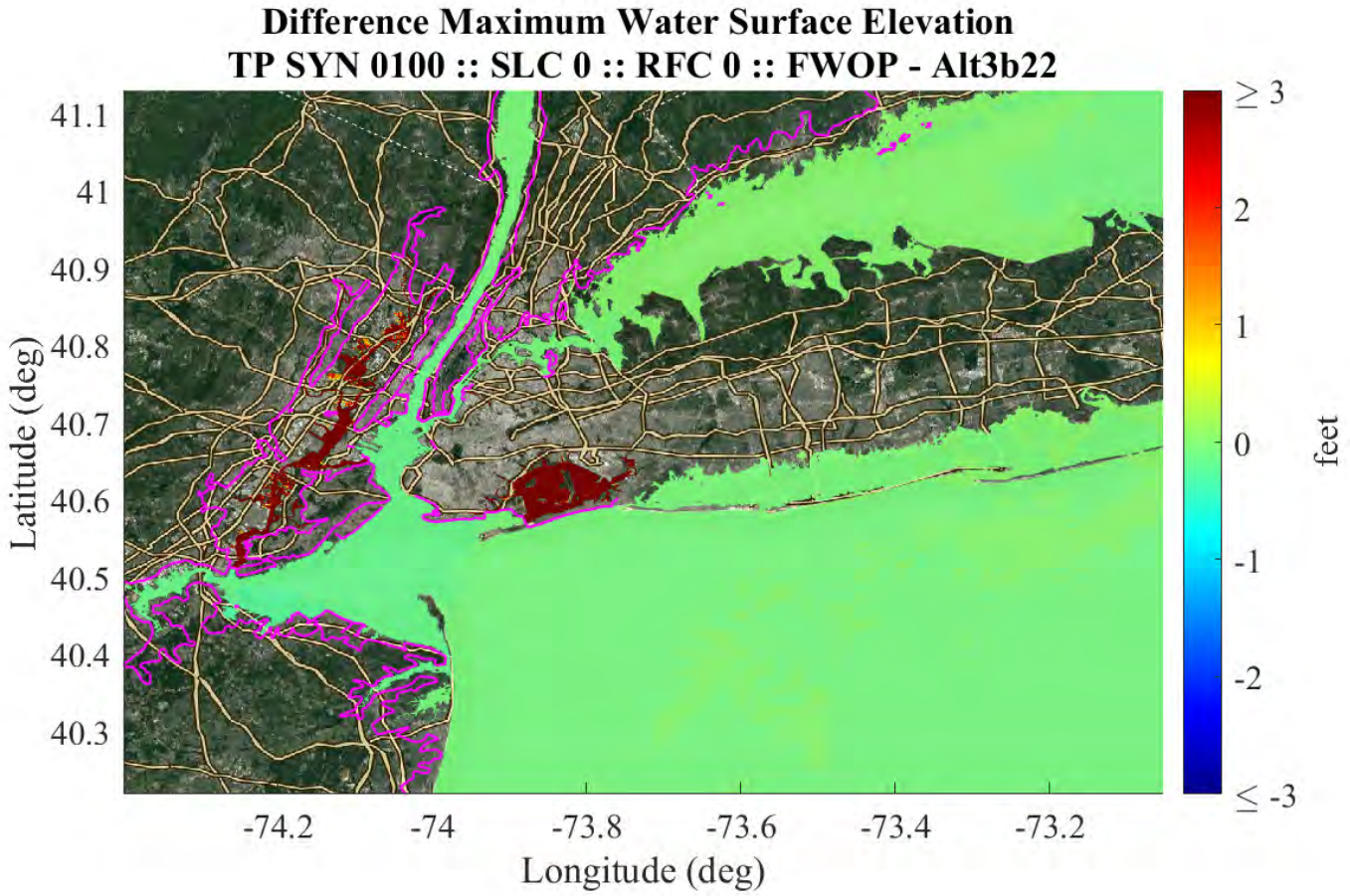
Appendix VI
Comparison of Maximum Water Surface Elevation Between FWOP & Alt3b

Note: Images in this appendix have Alt3b labeled as Alt3b22.

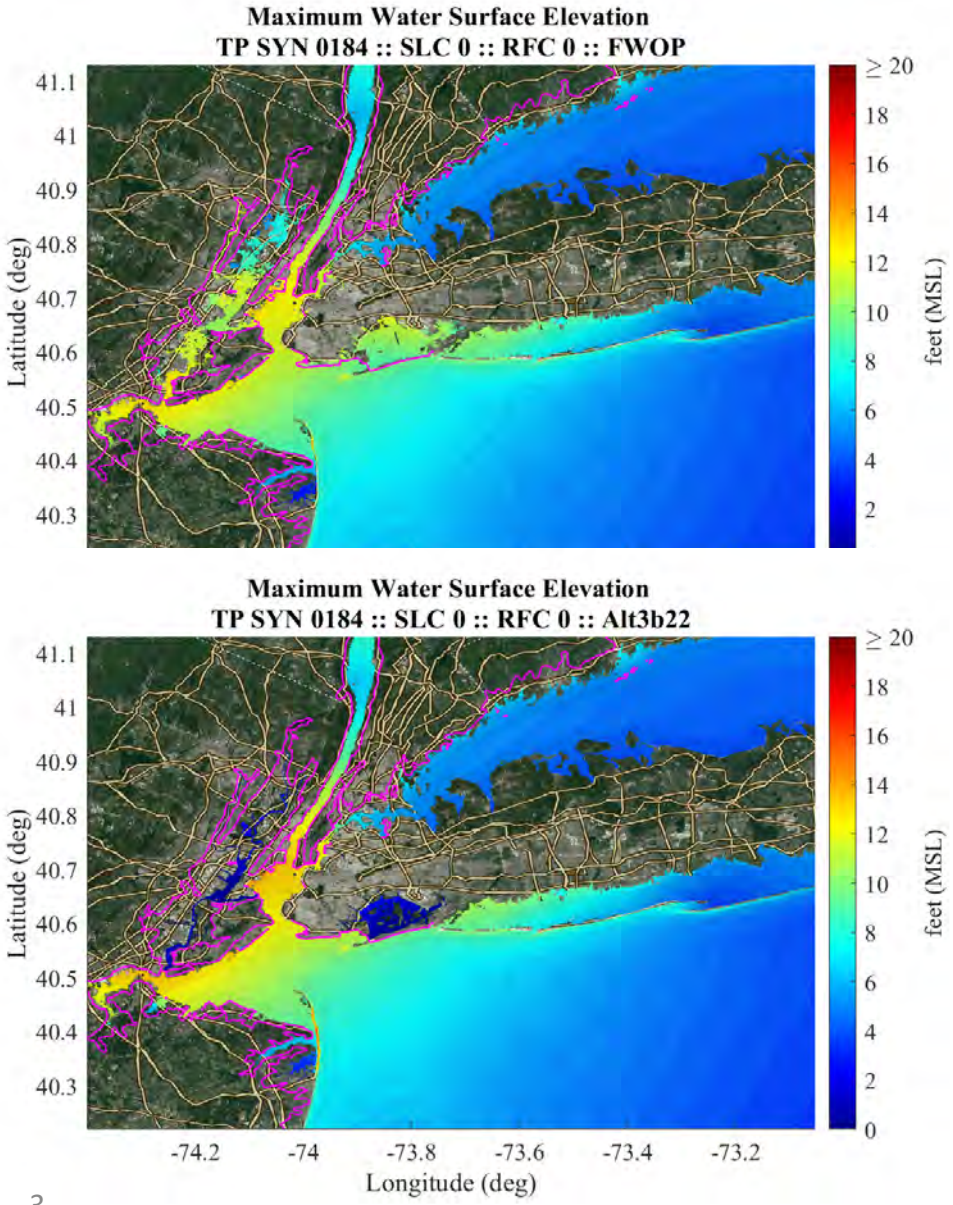
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 100

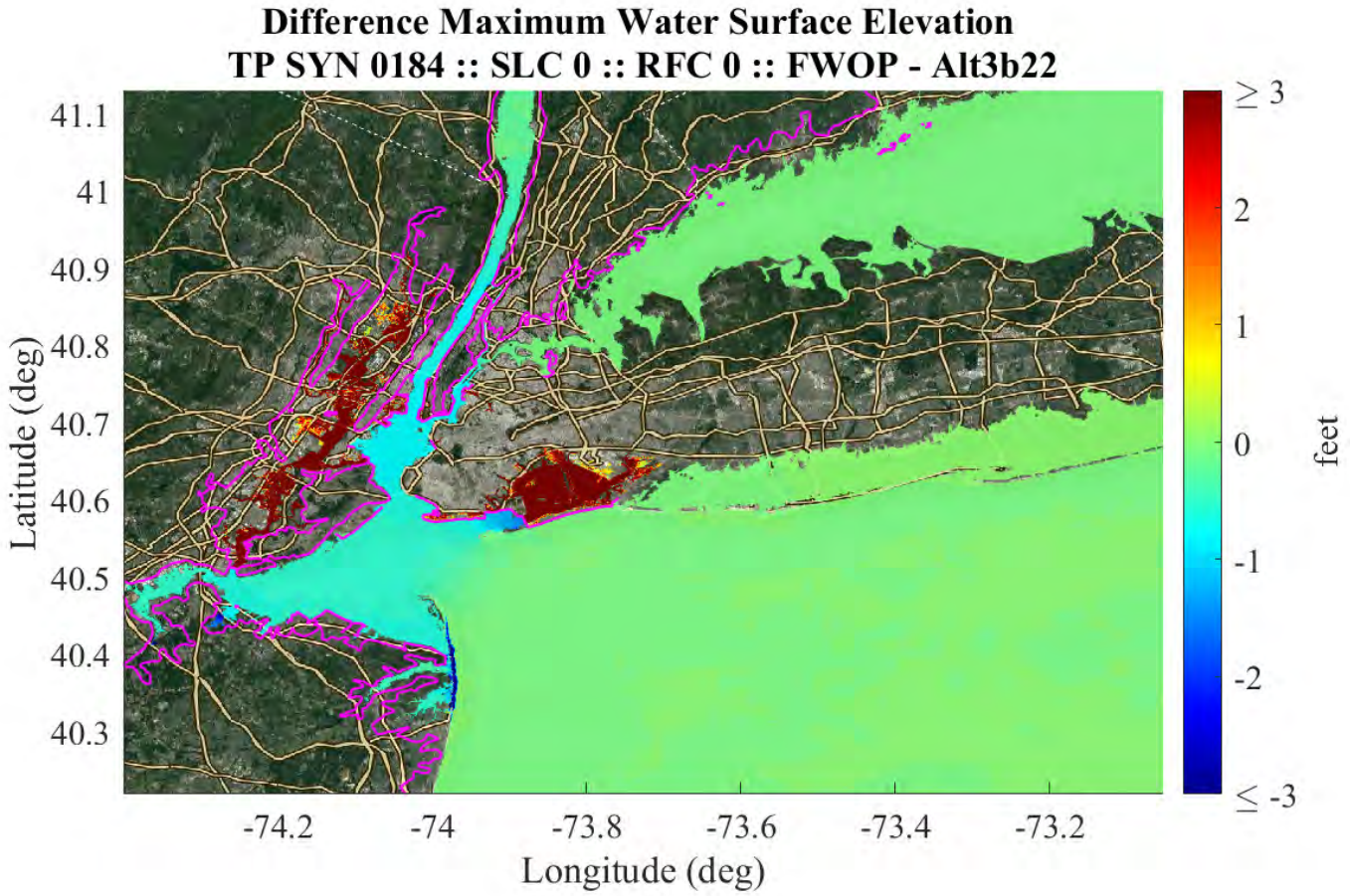




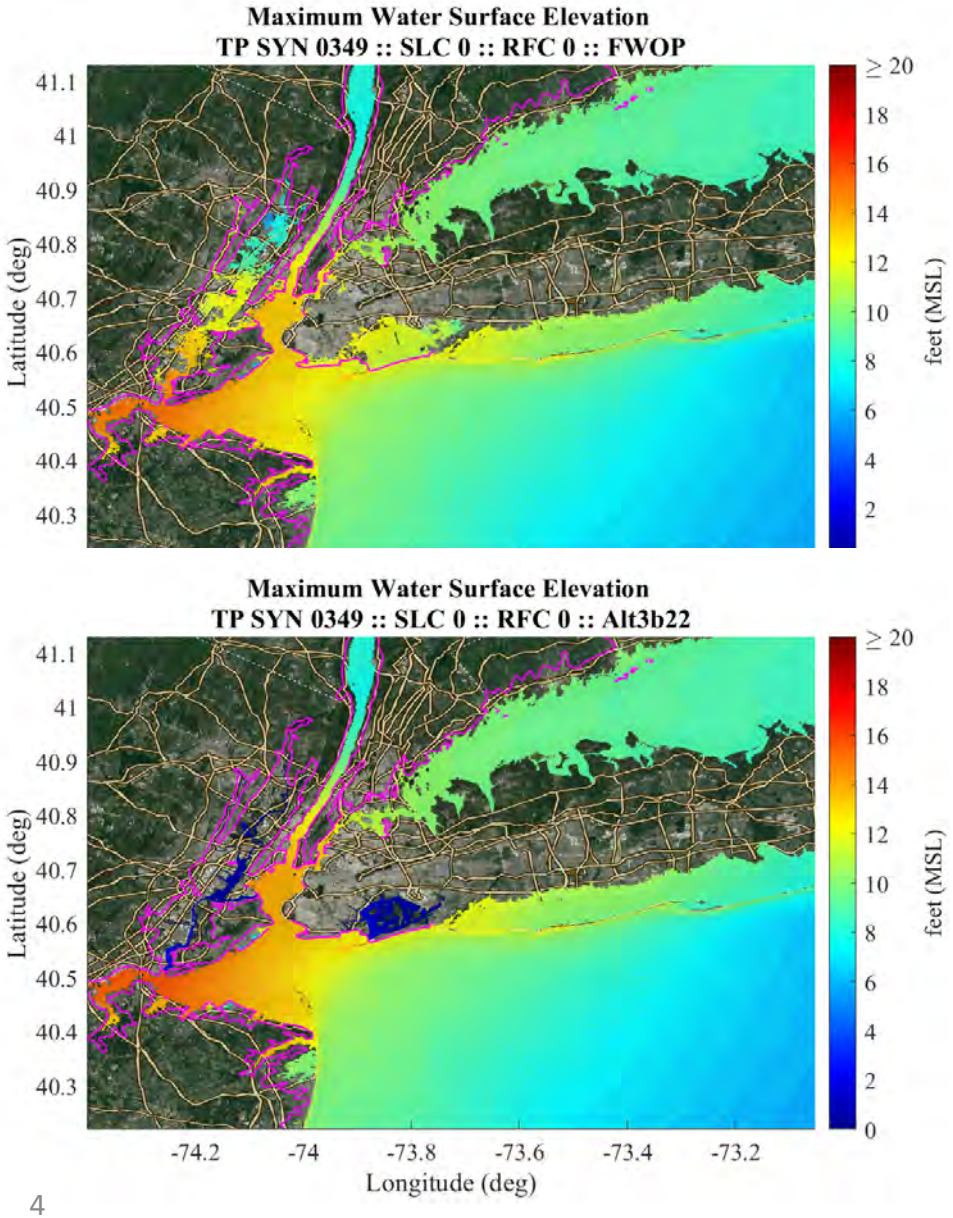


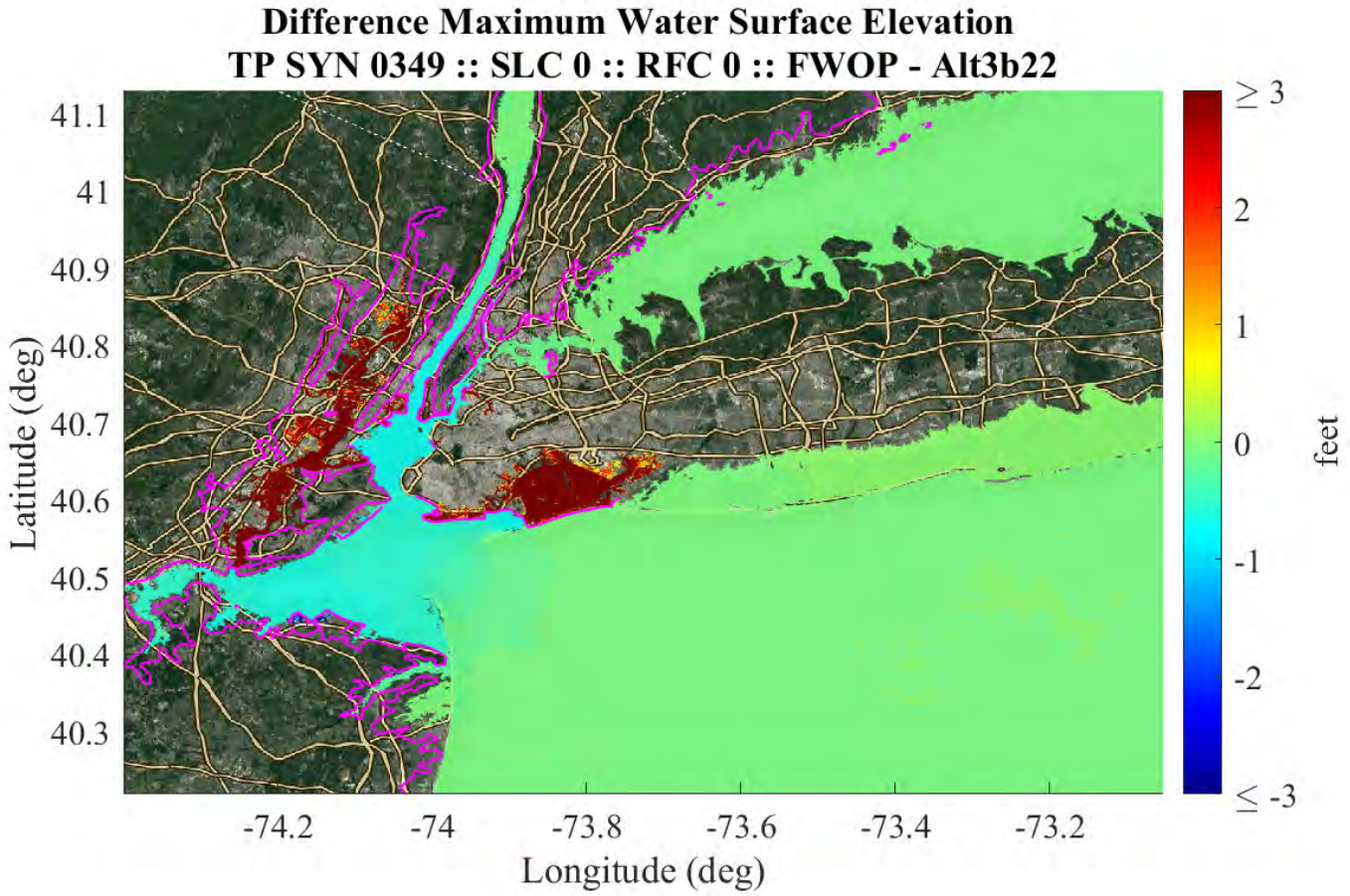
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 184



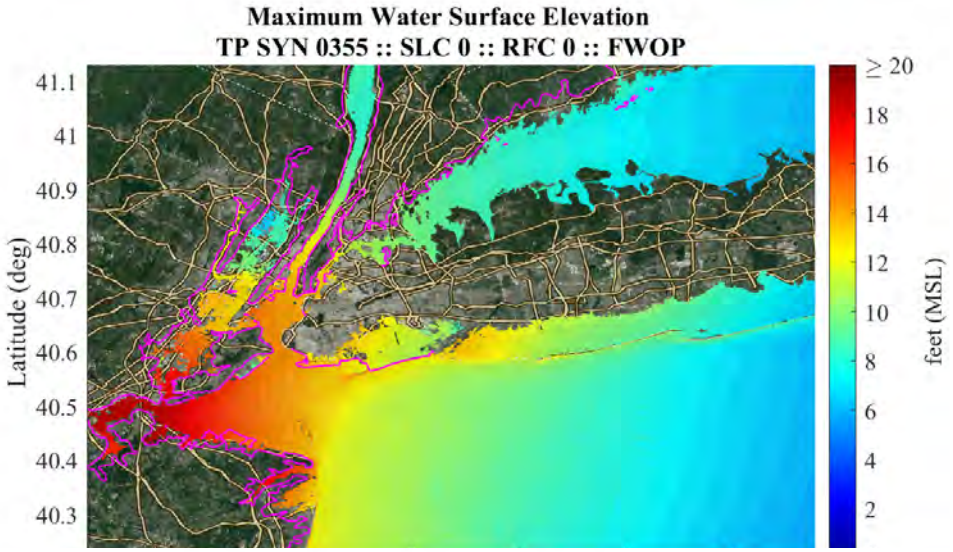


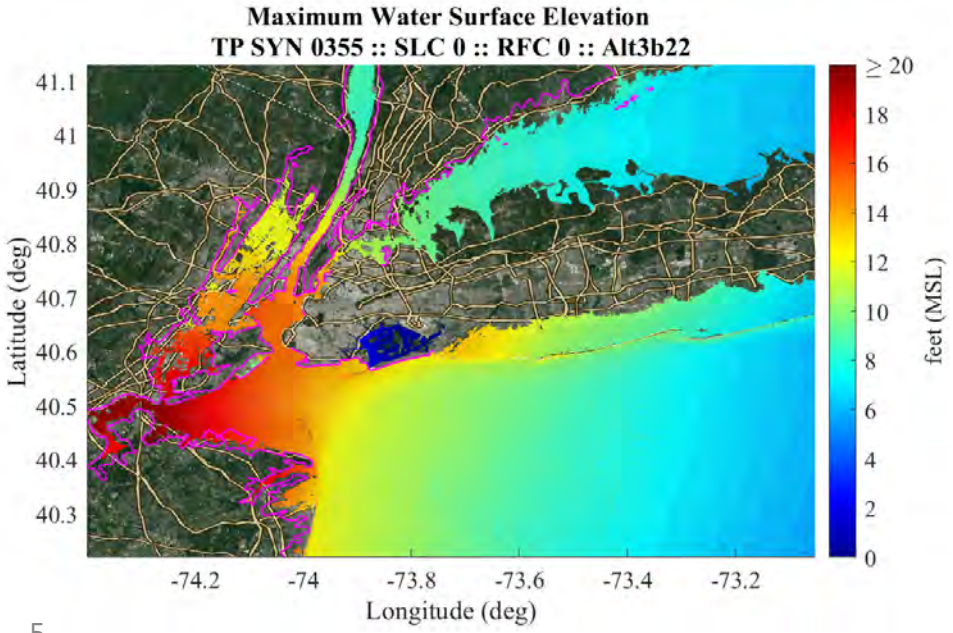
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 349

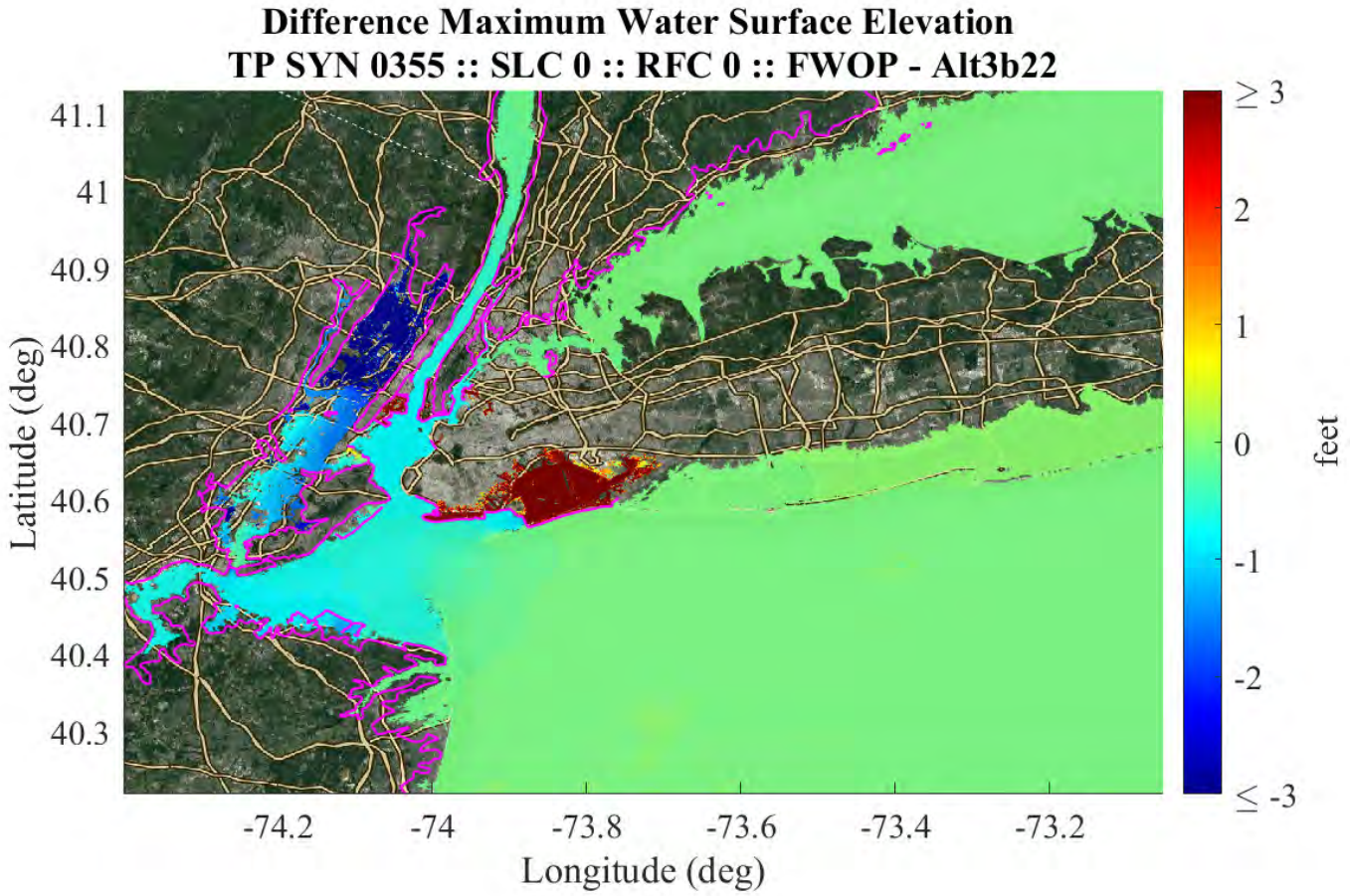




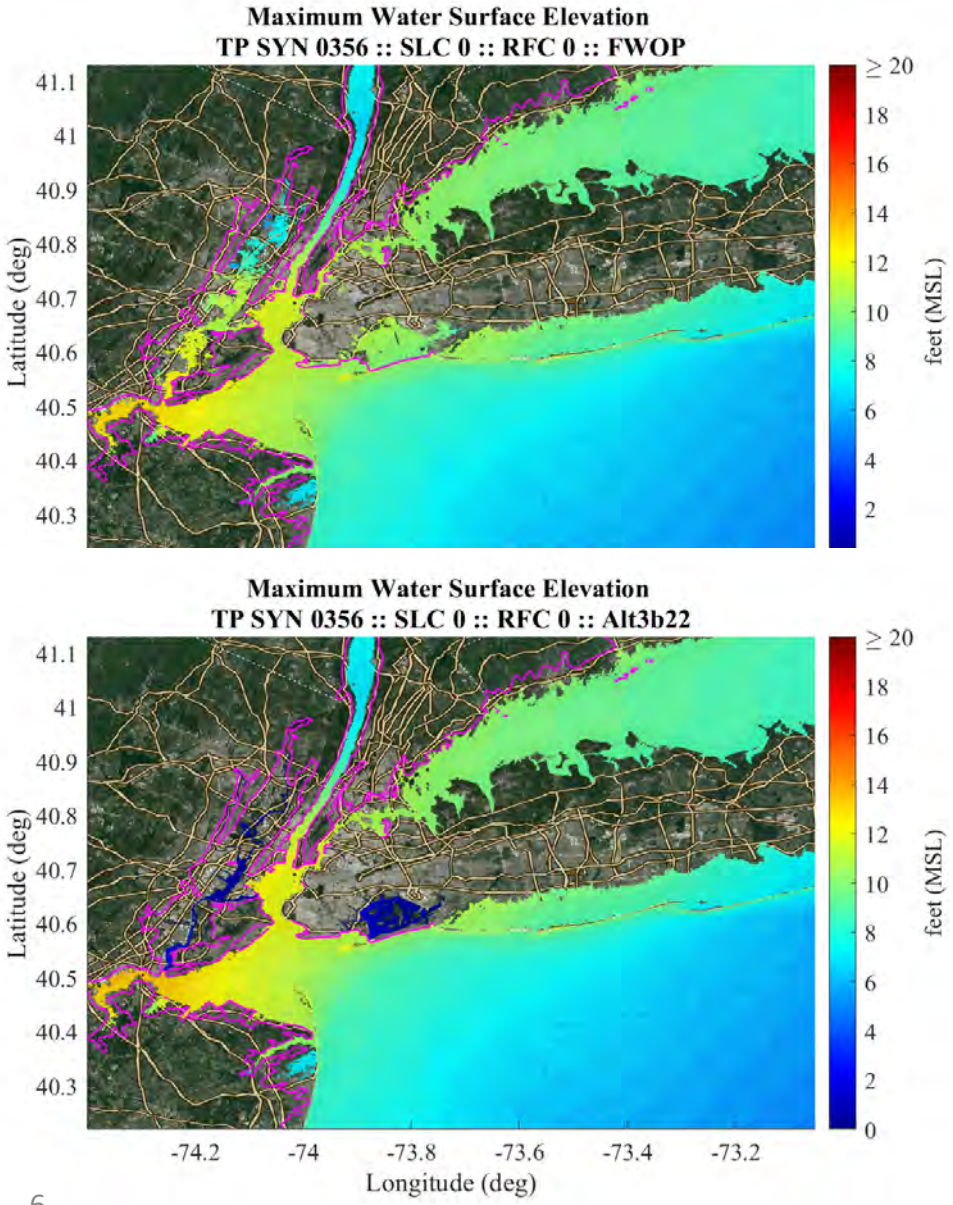
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355

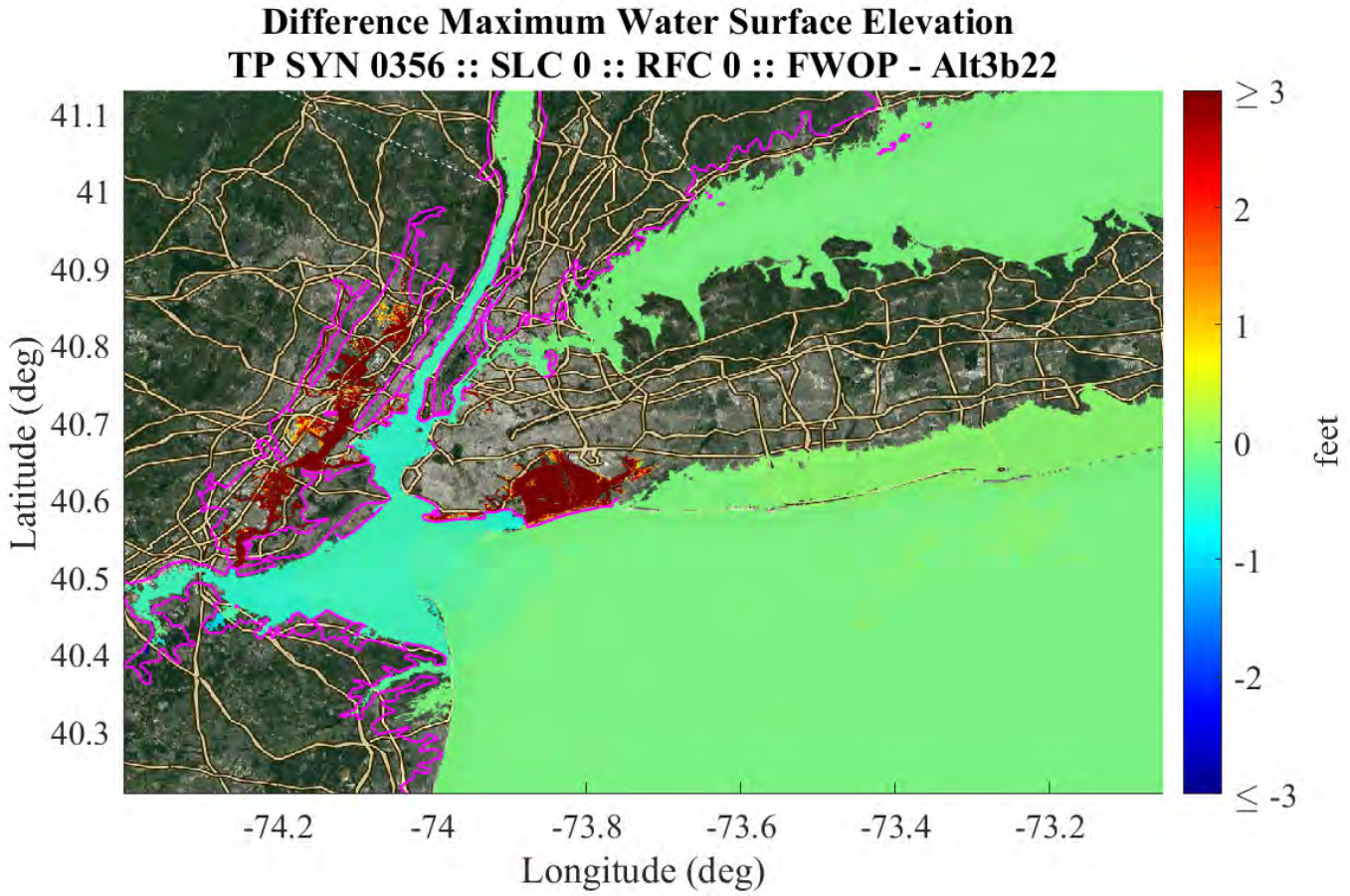




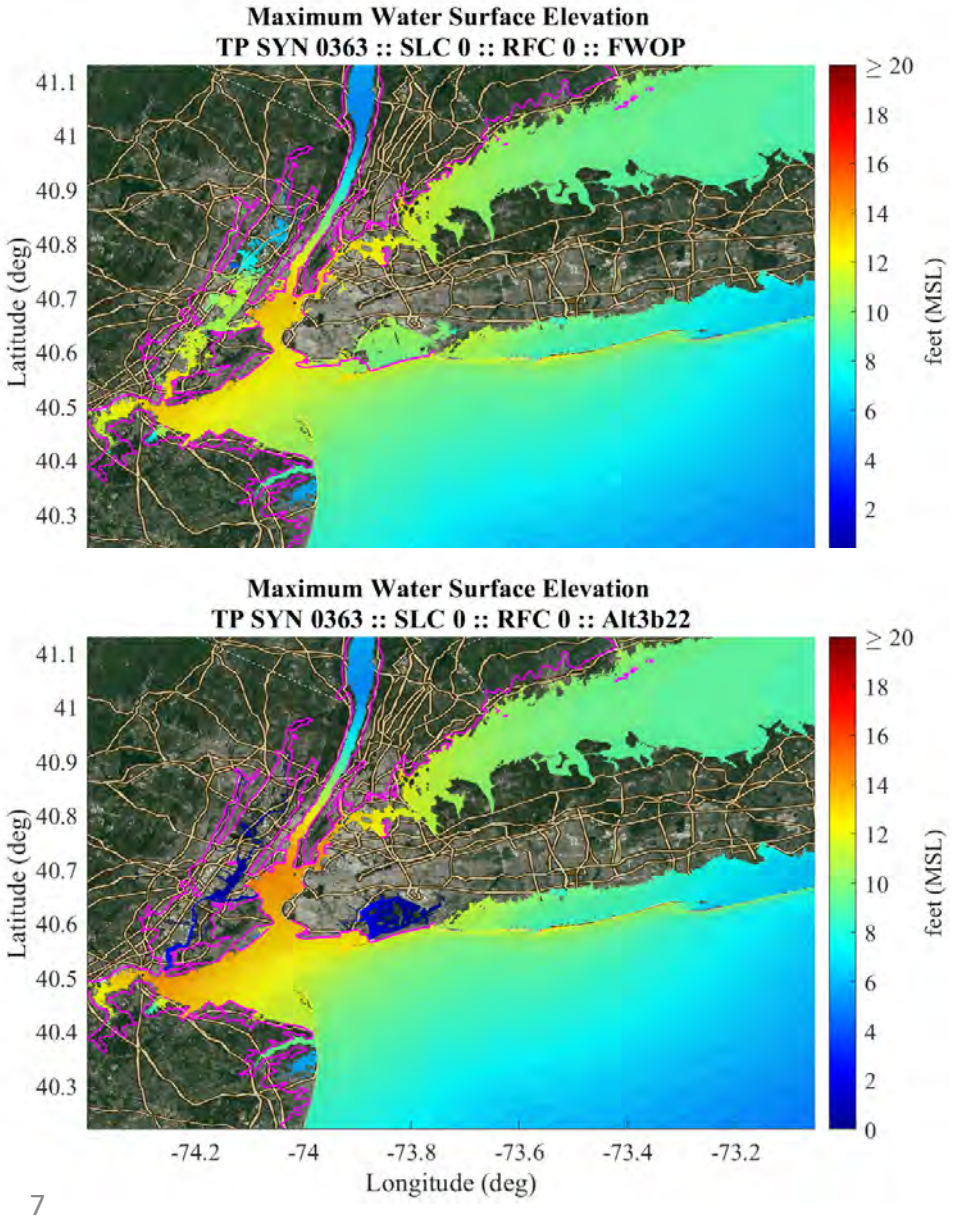


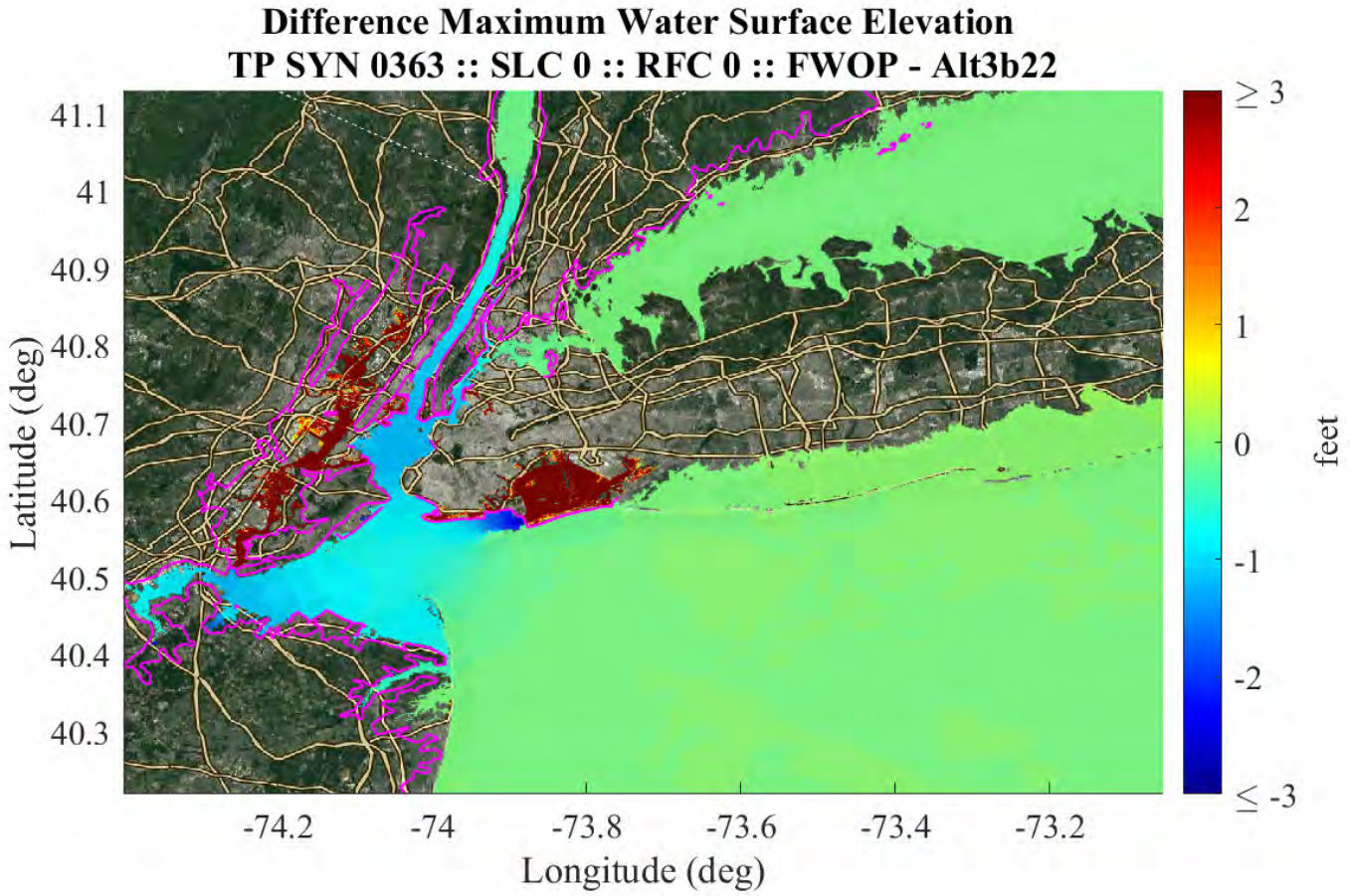
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 356



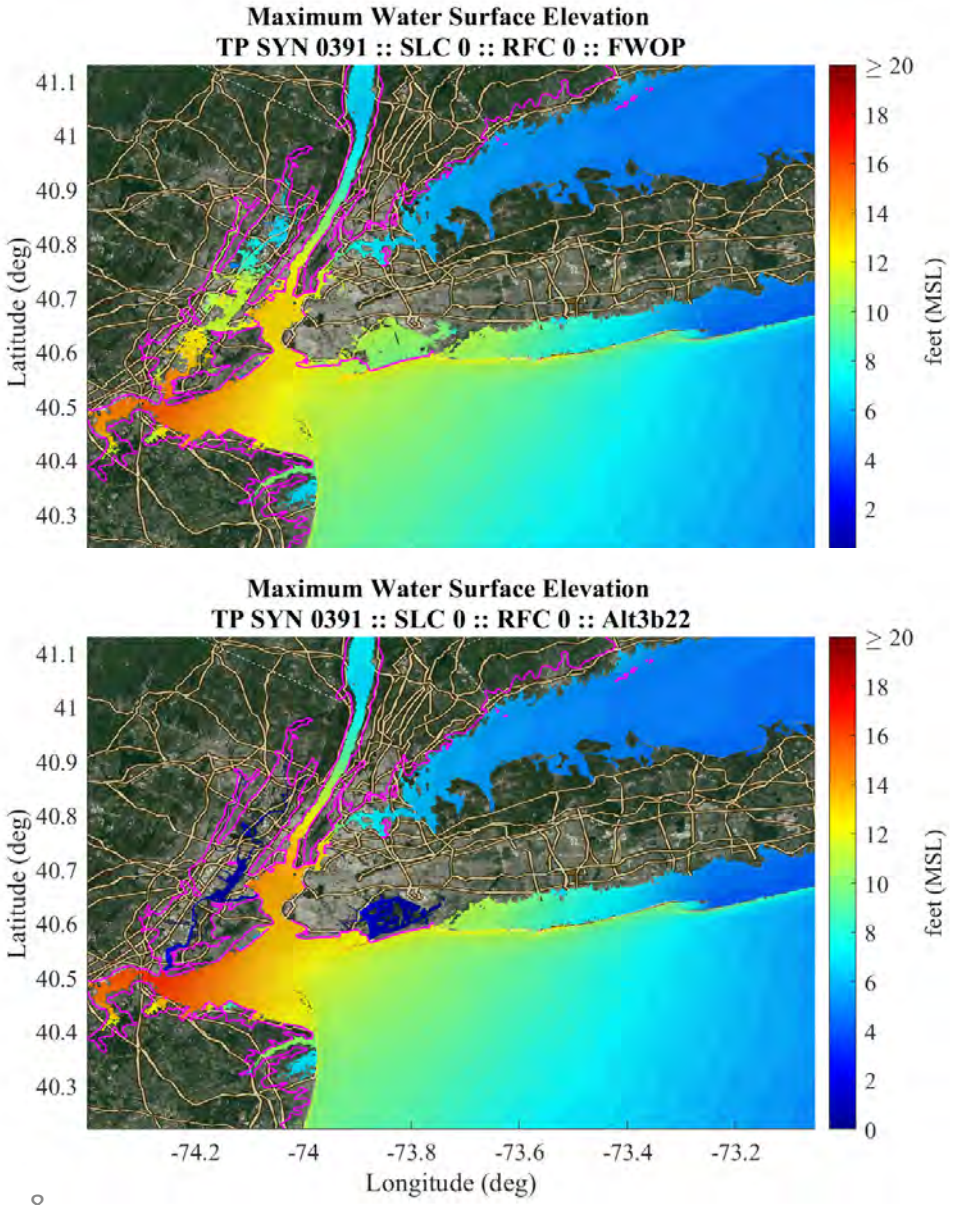


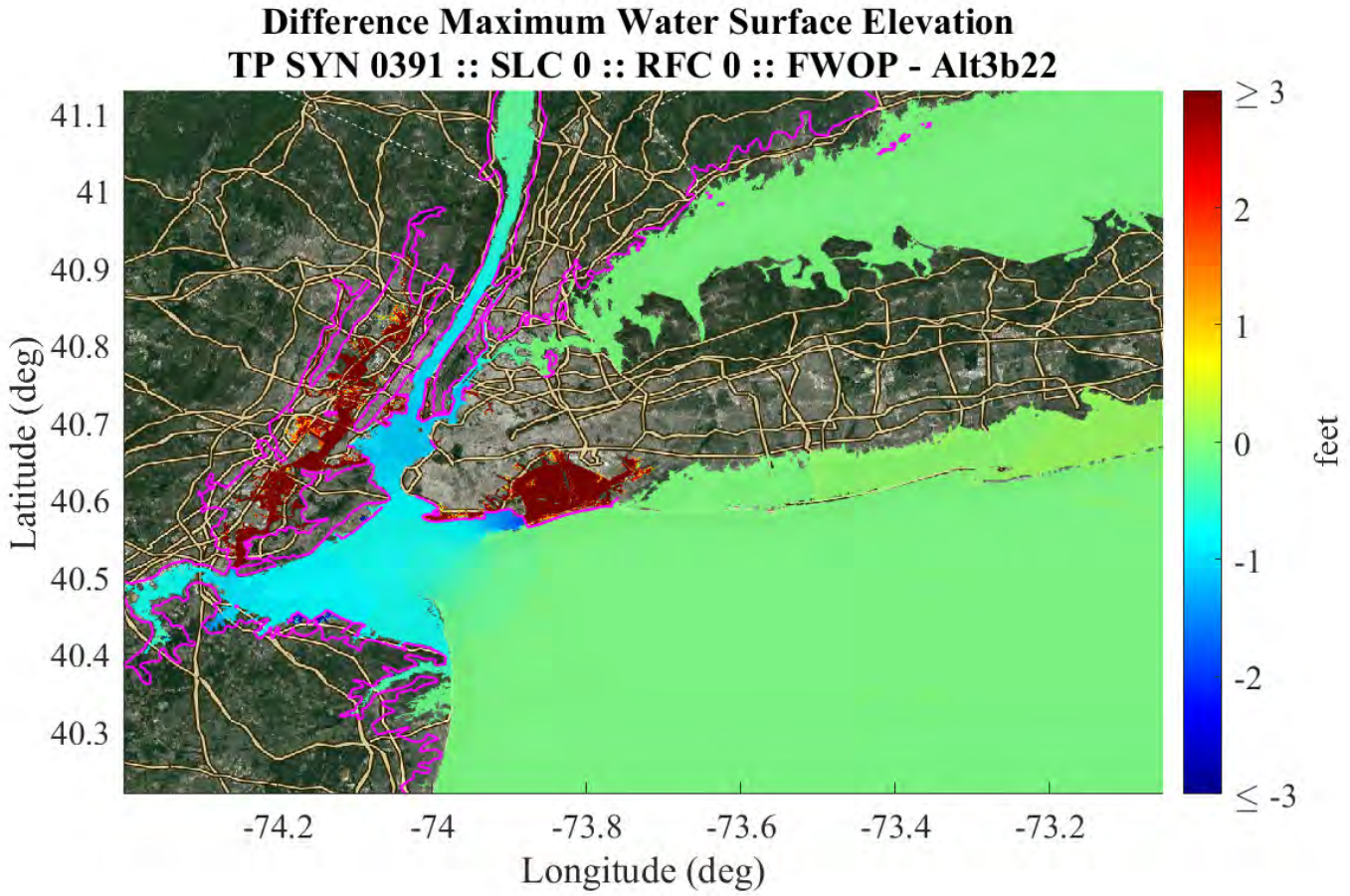
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 363



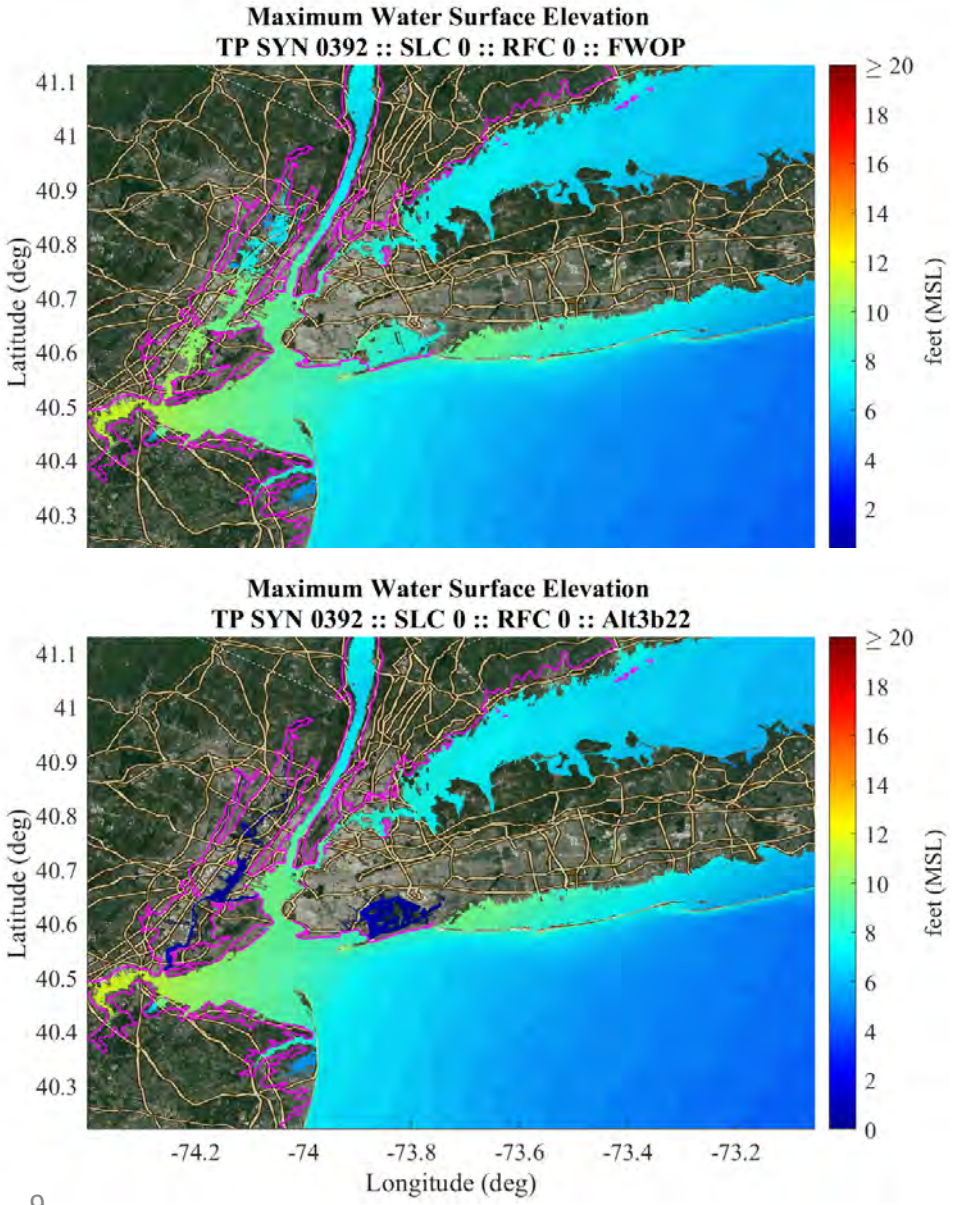


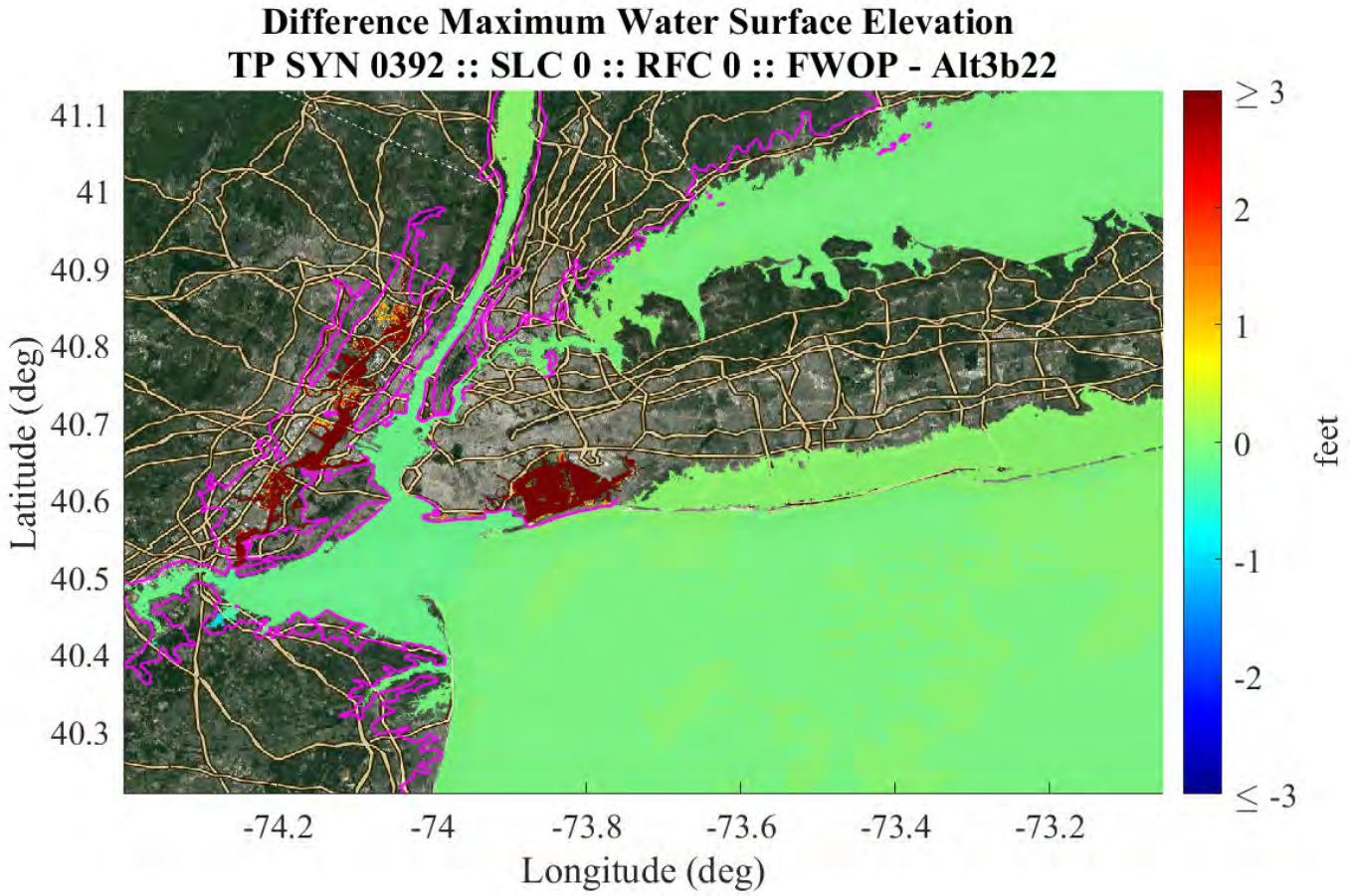
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 391



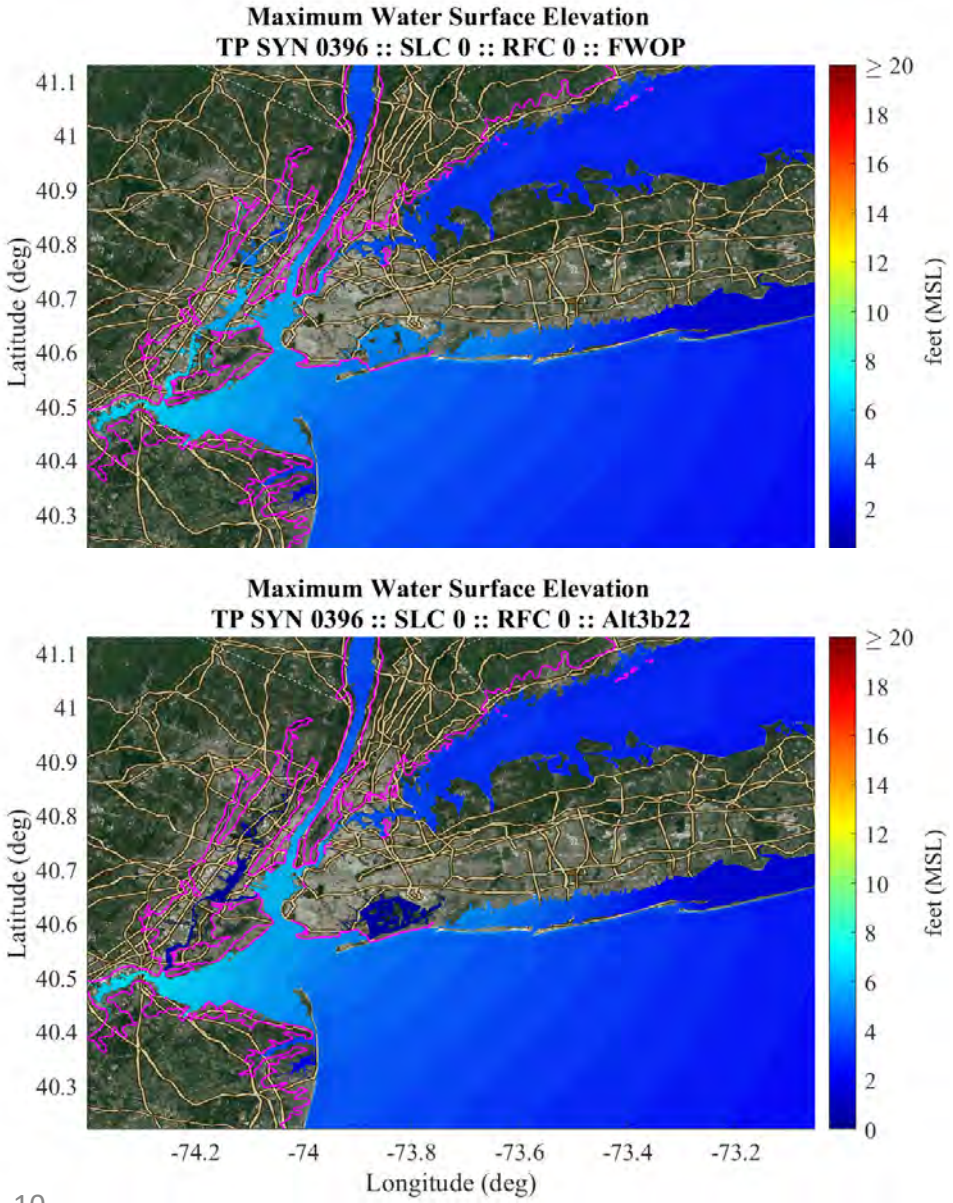


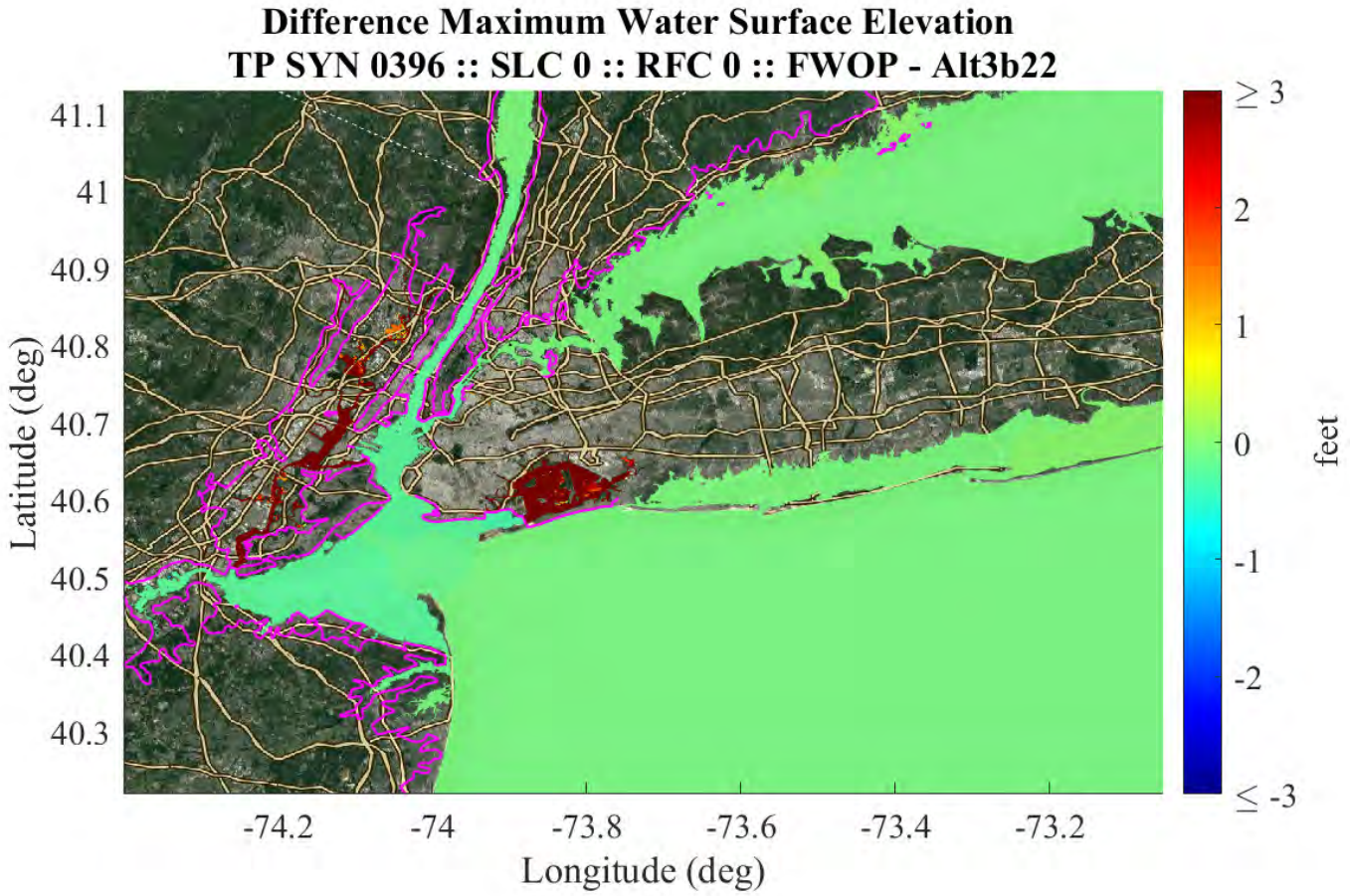
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 392



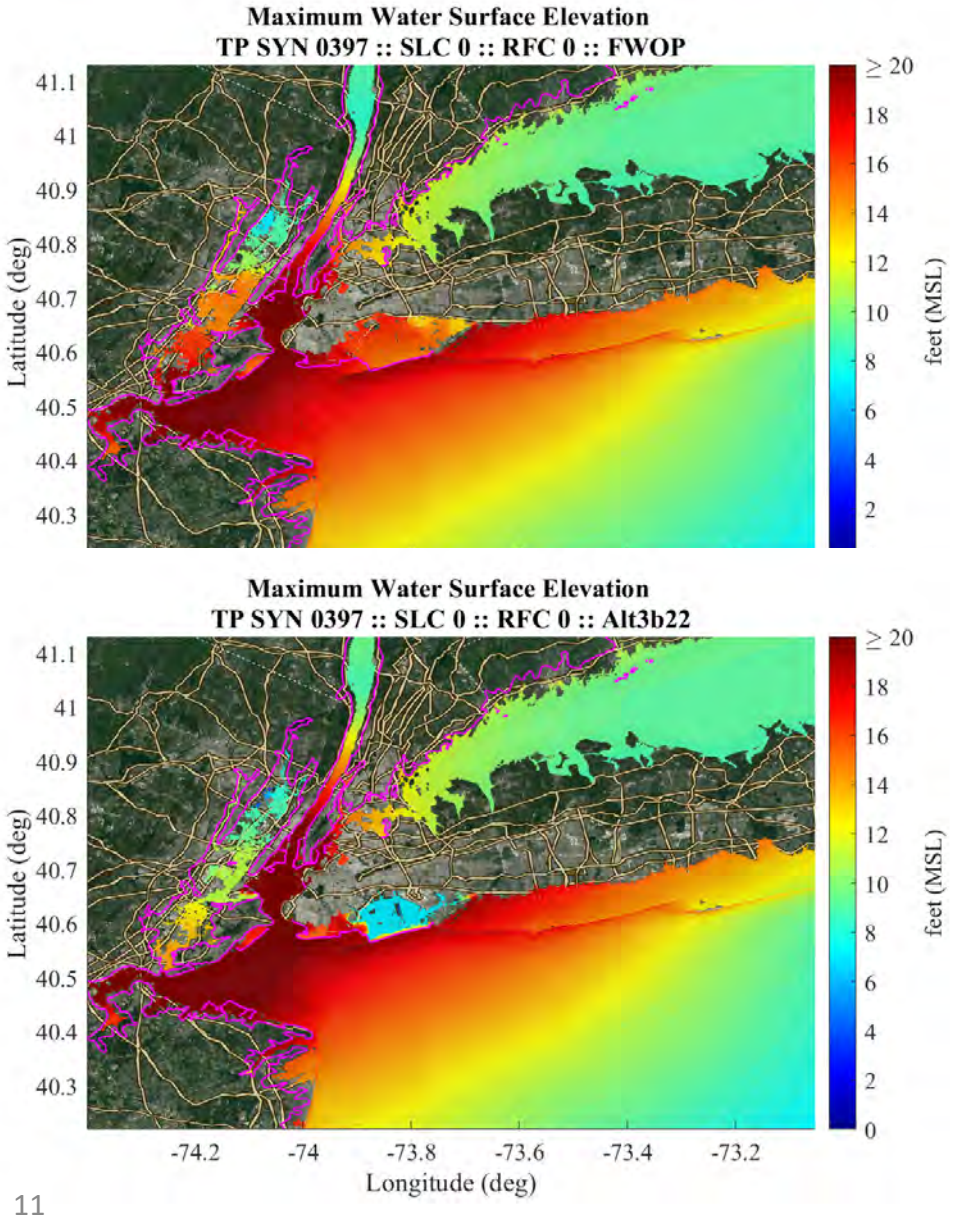


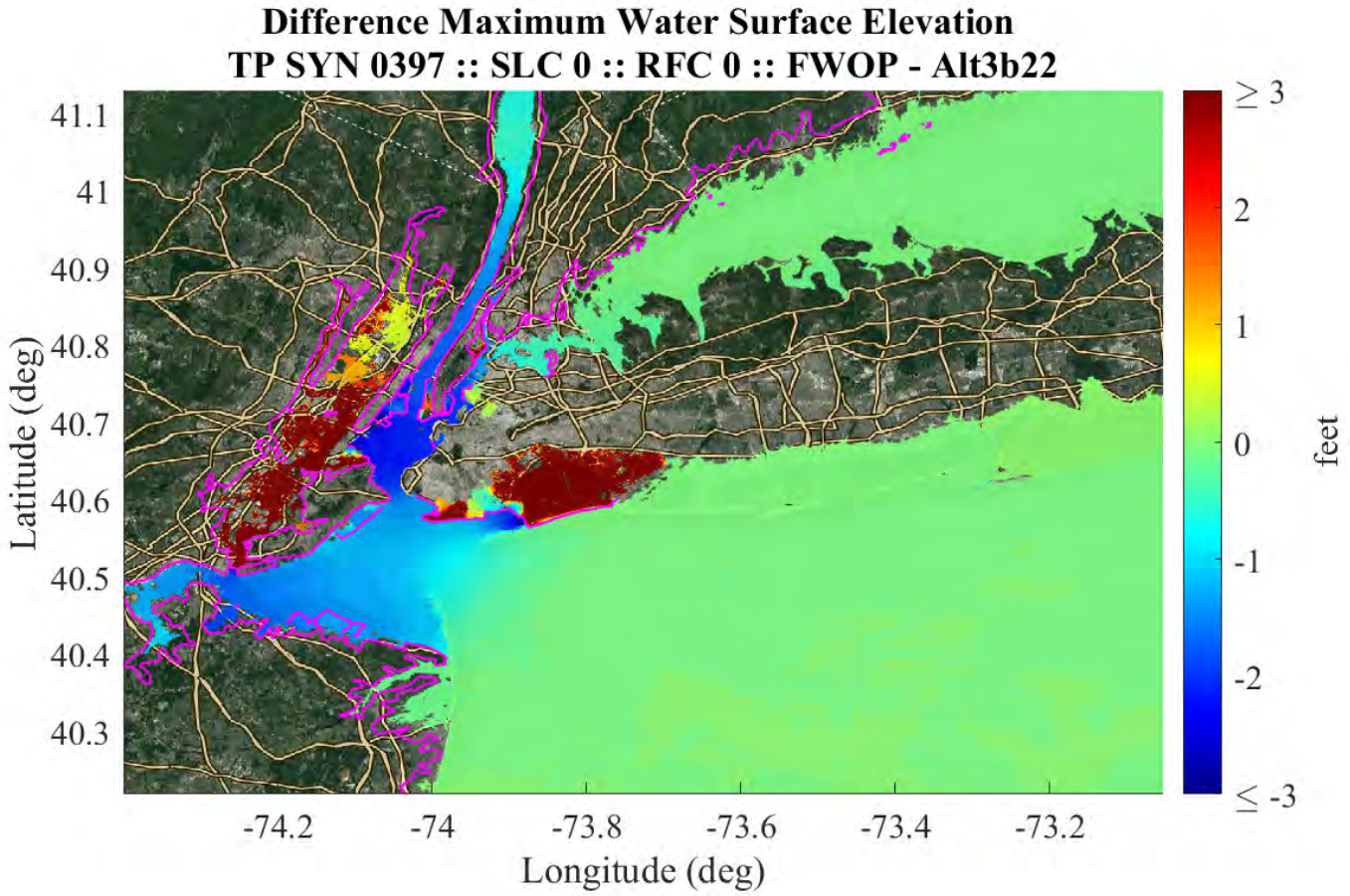
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 396



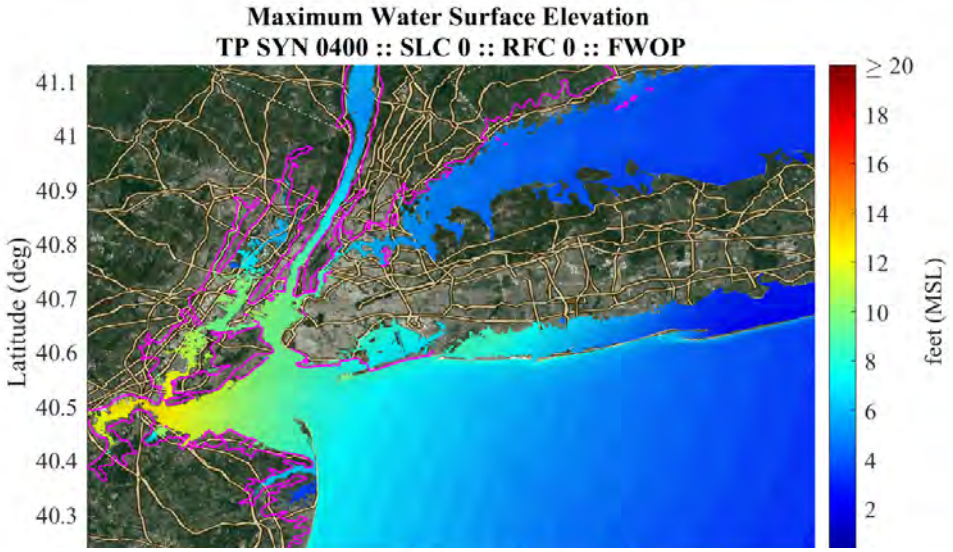


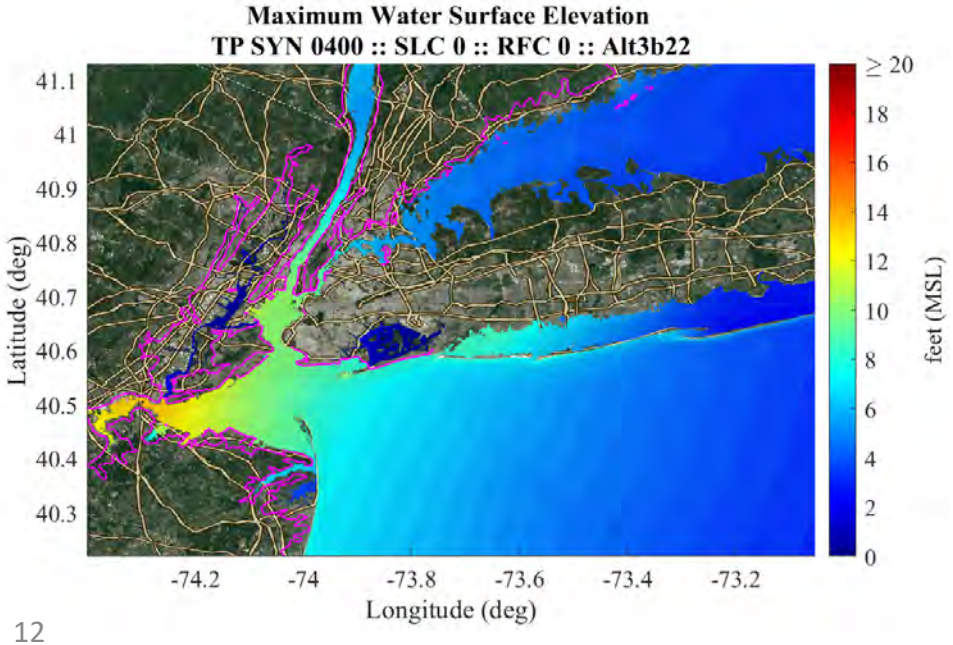
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 397

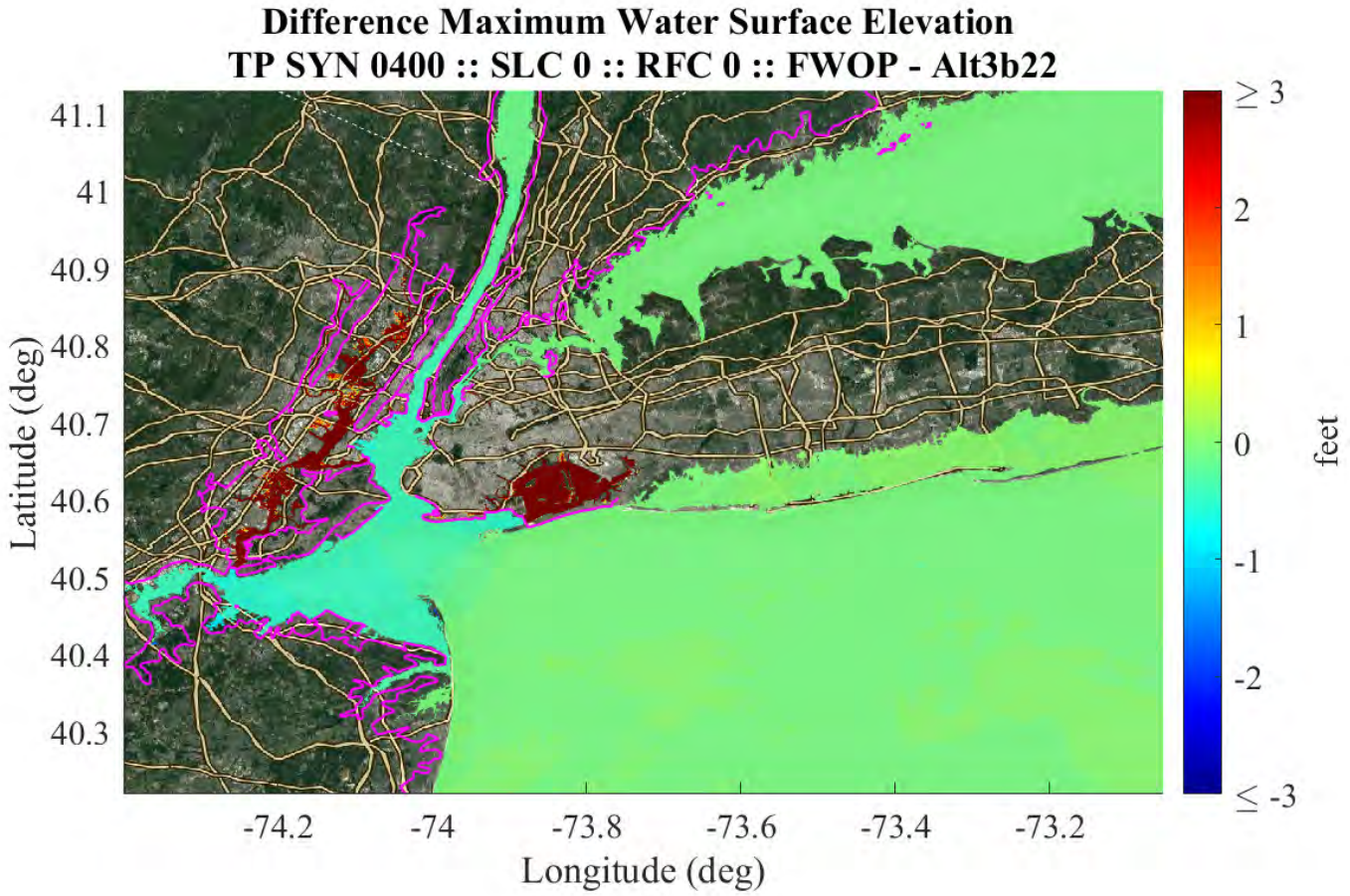




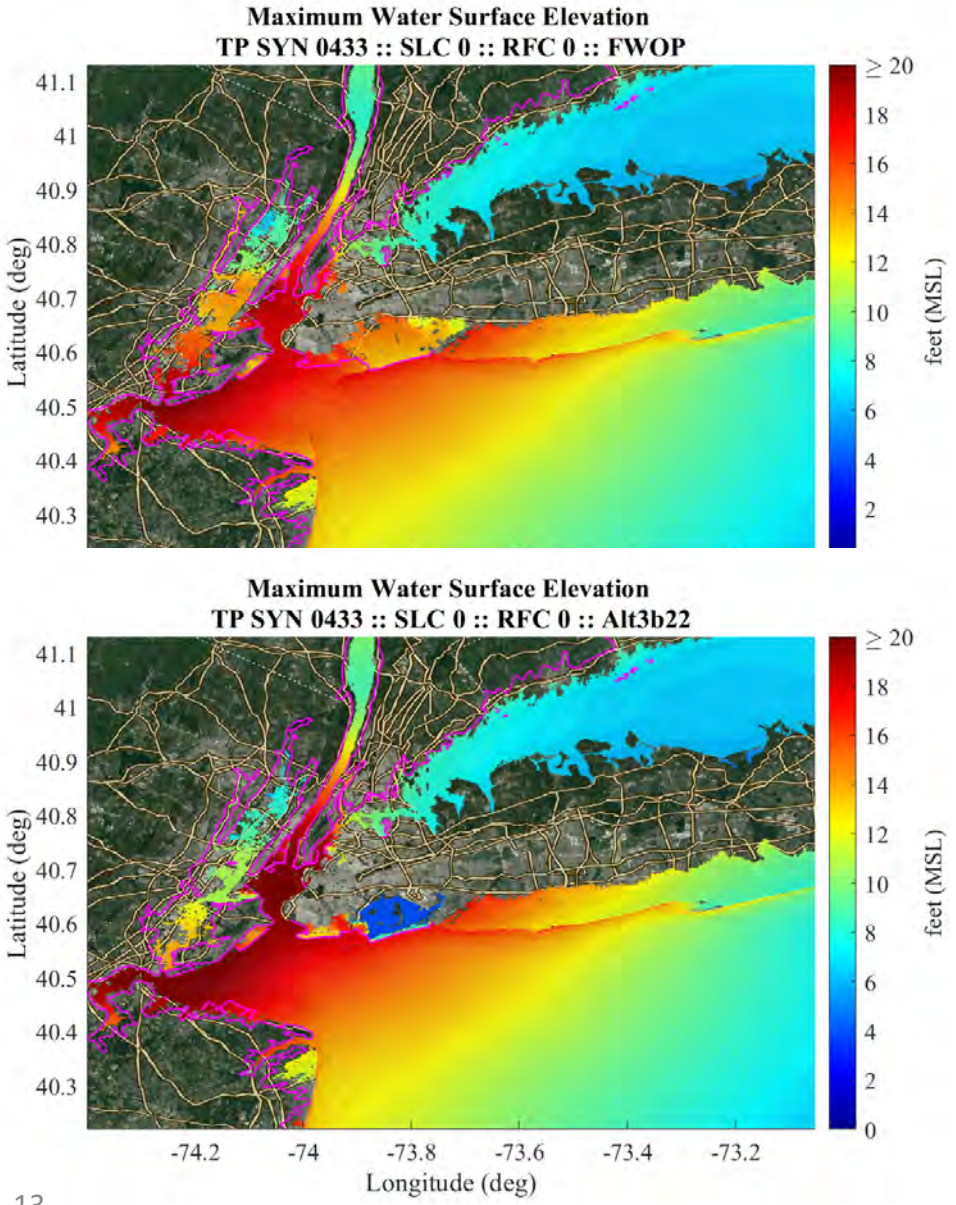
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 400

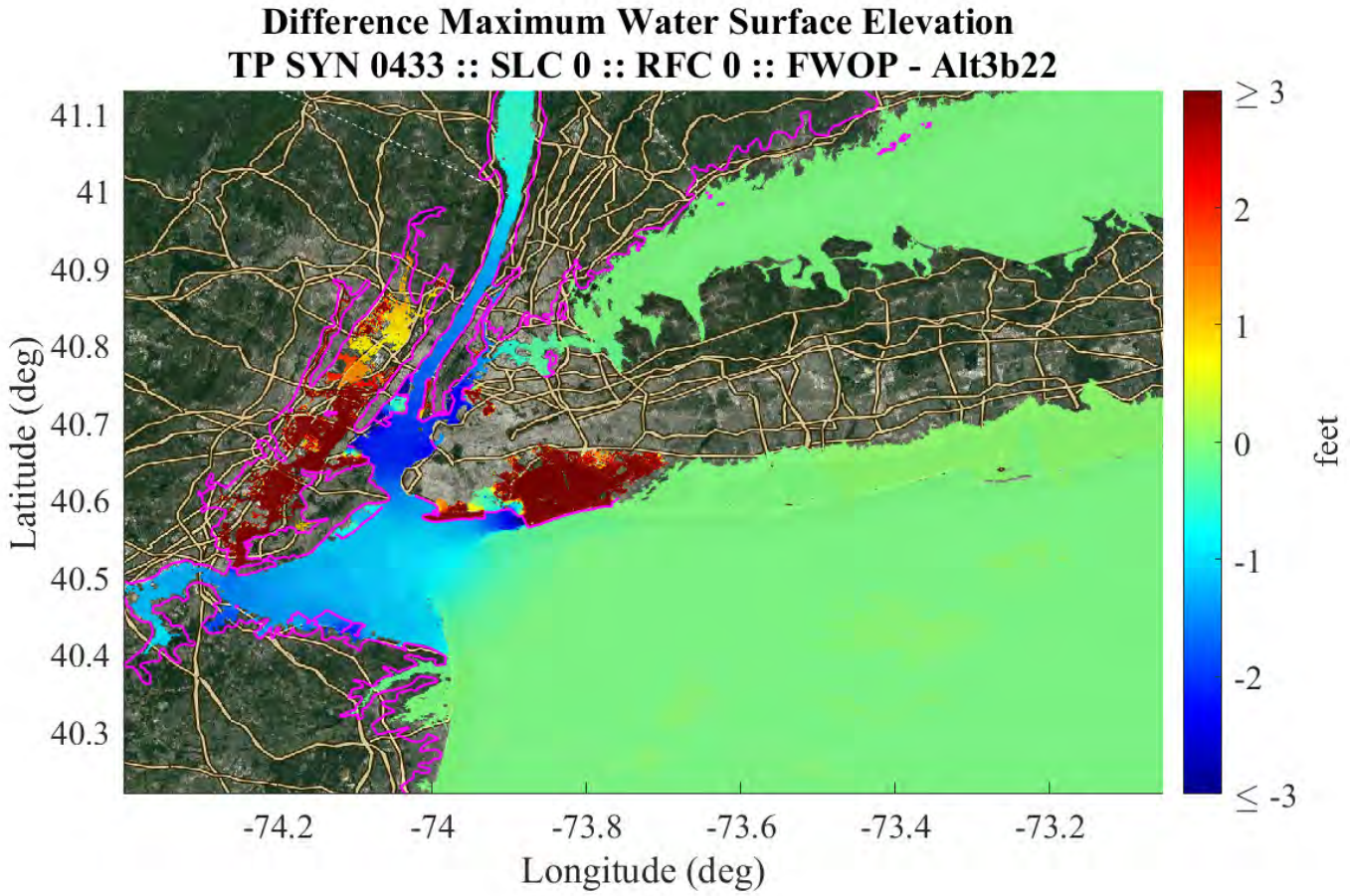




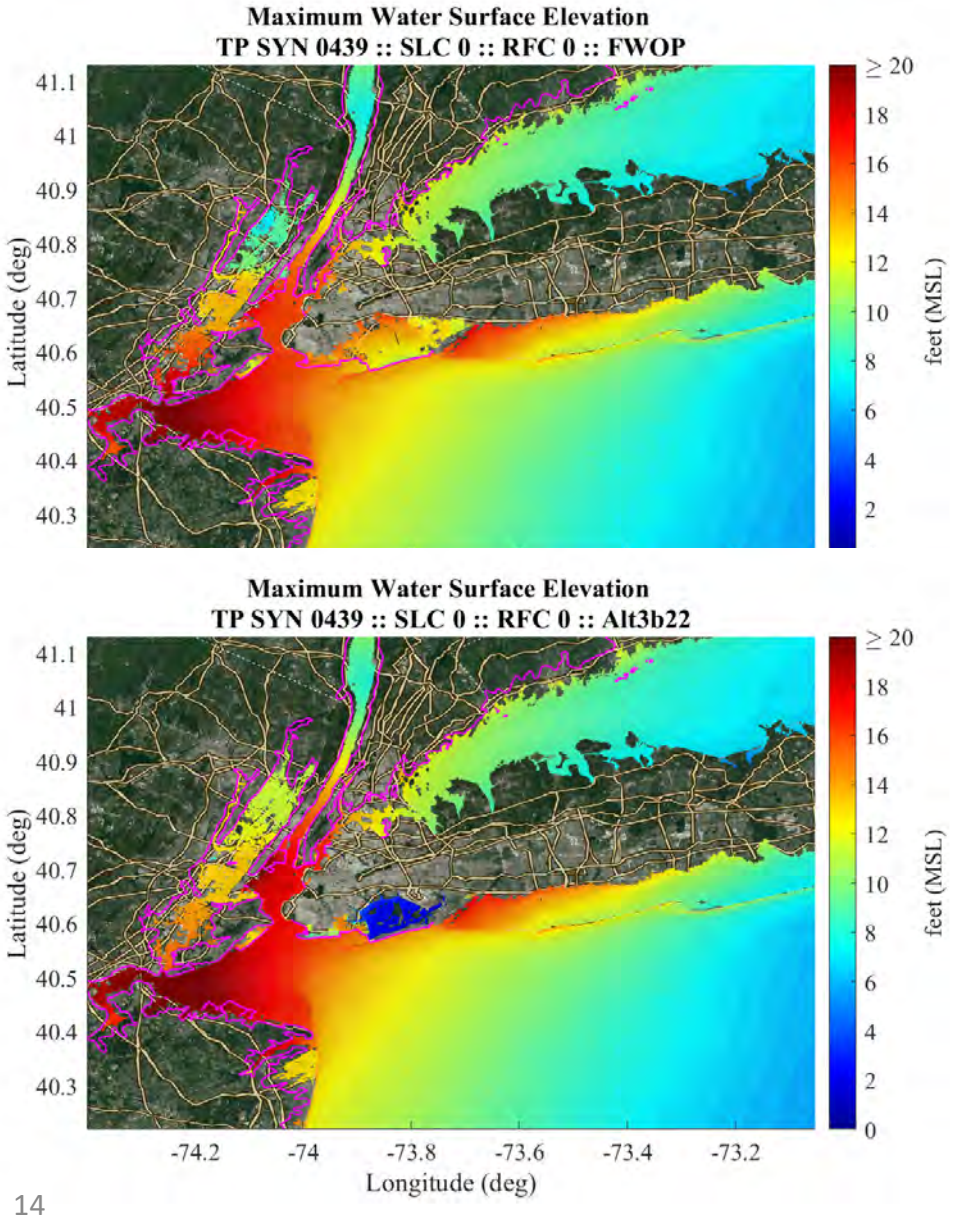


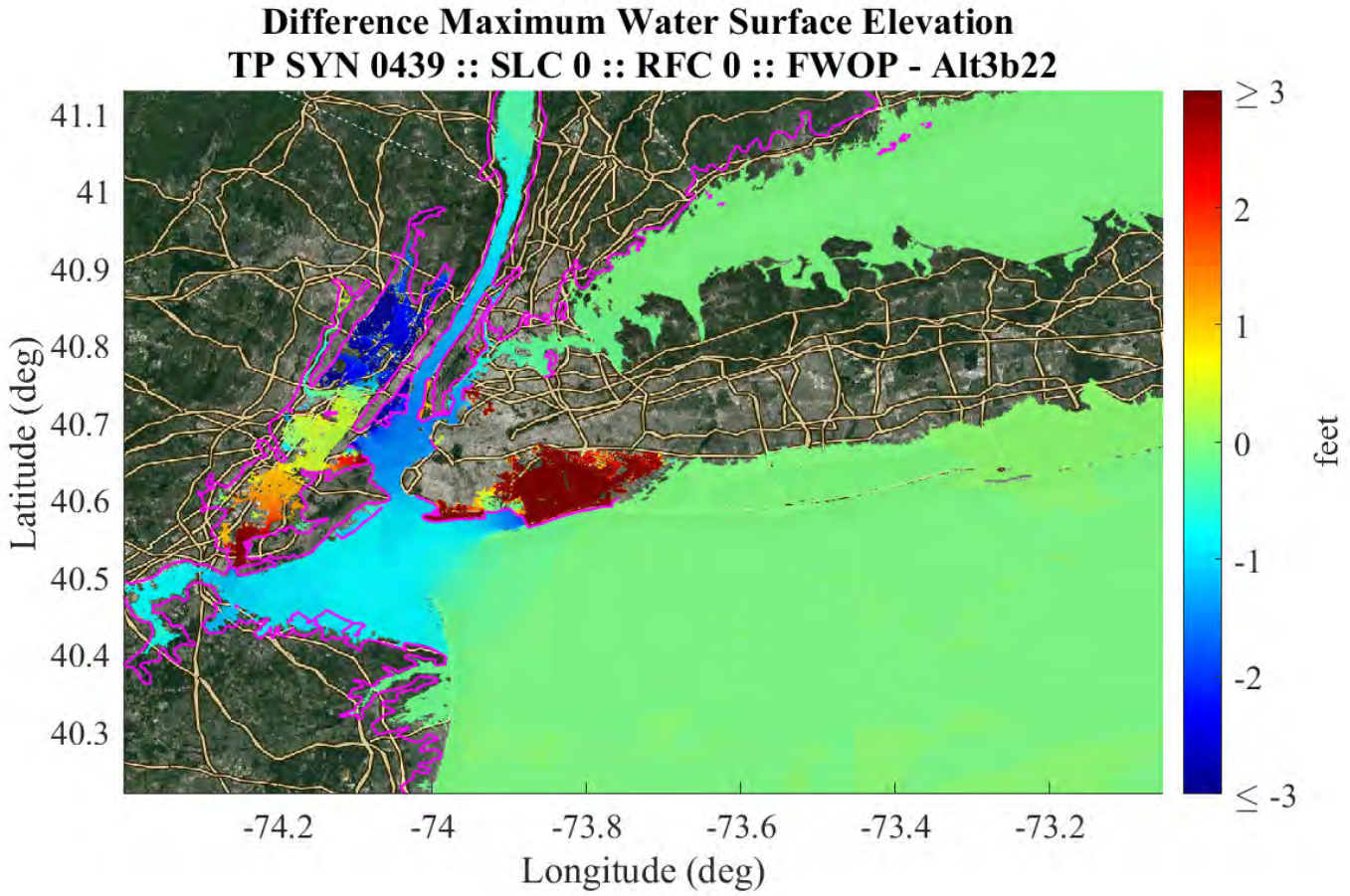
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 433



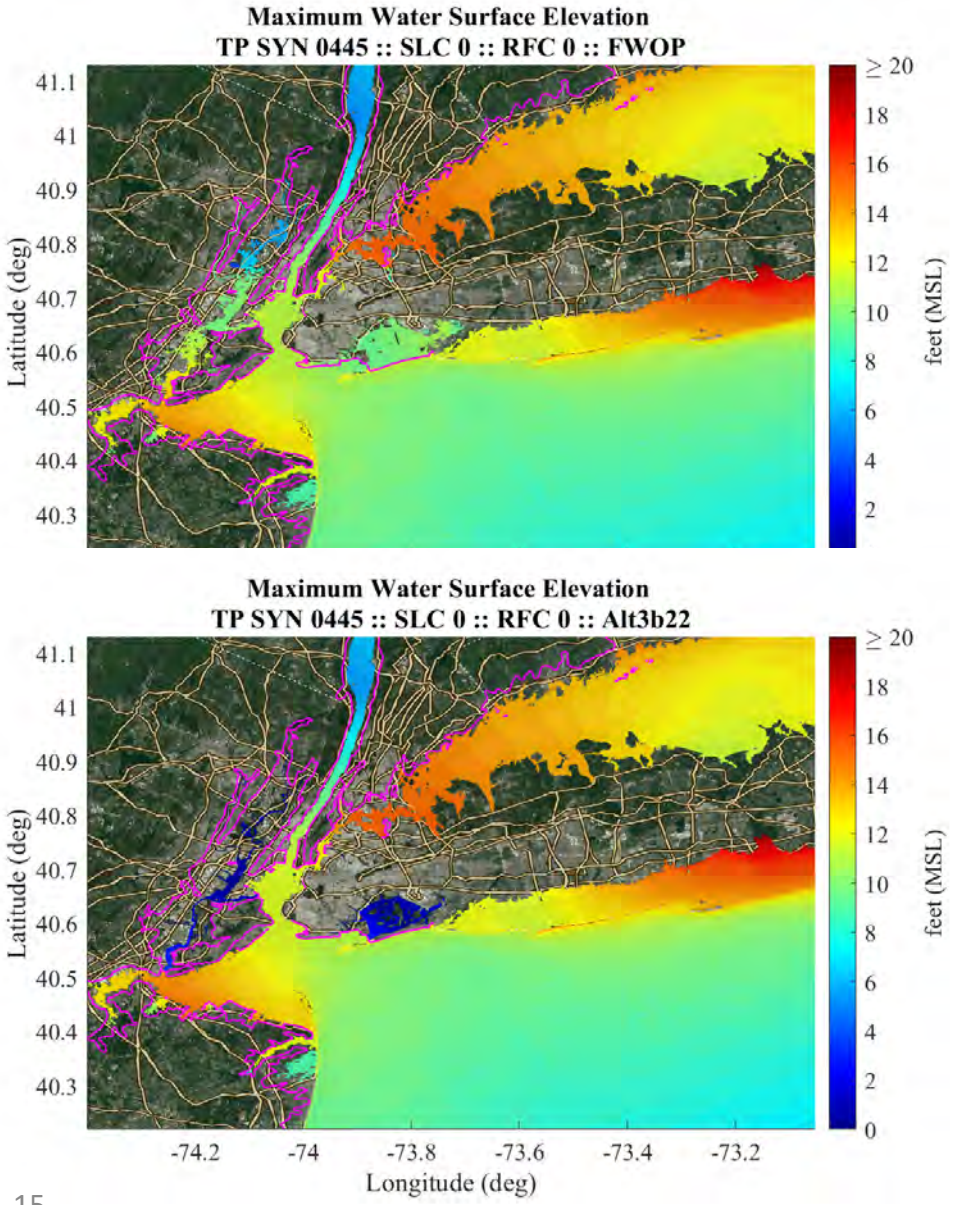


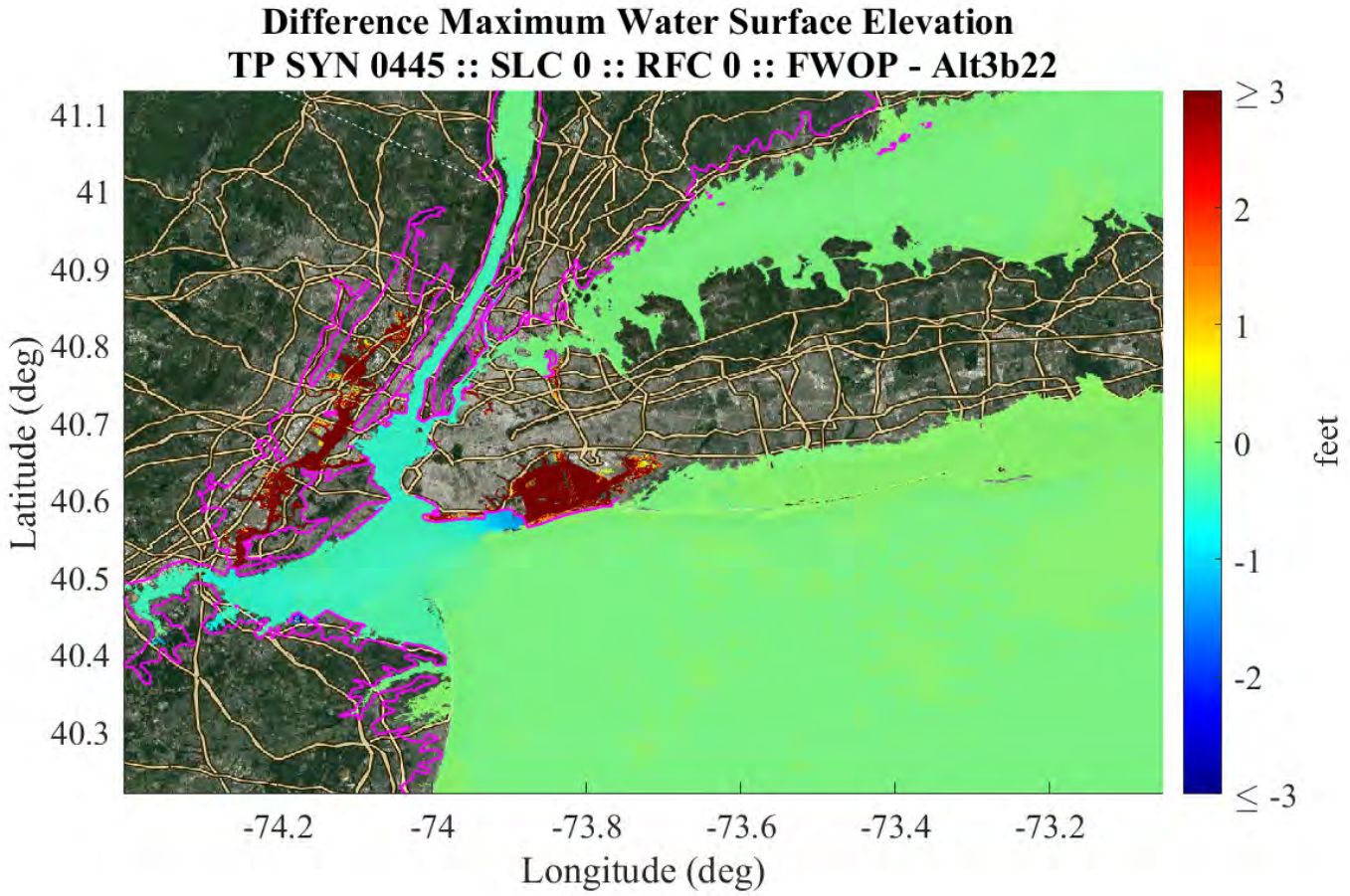
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439



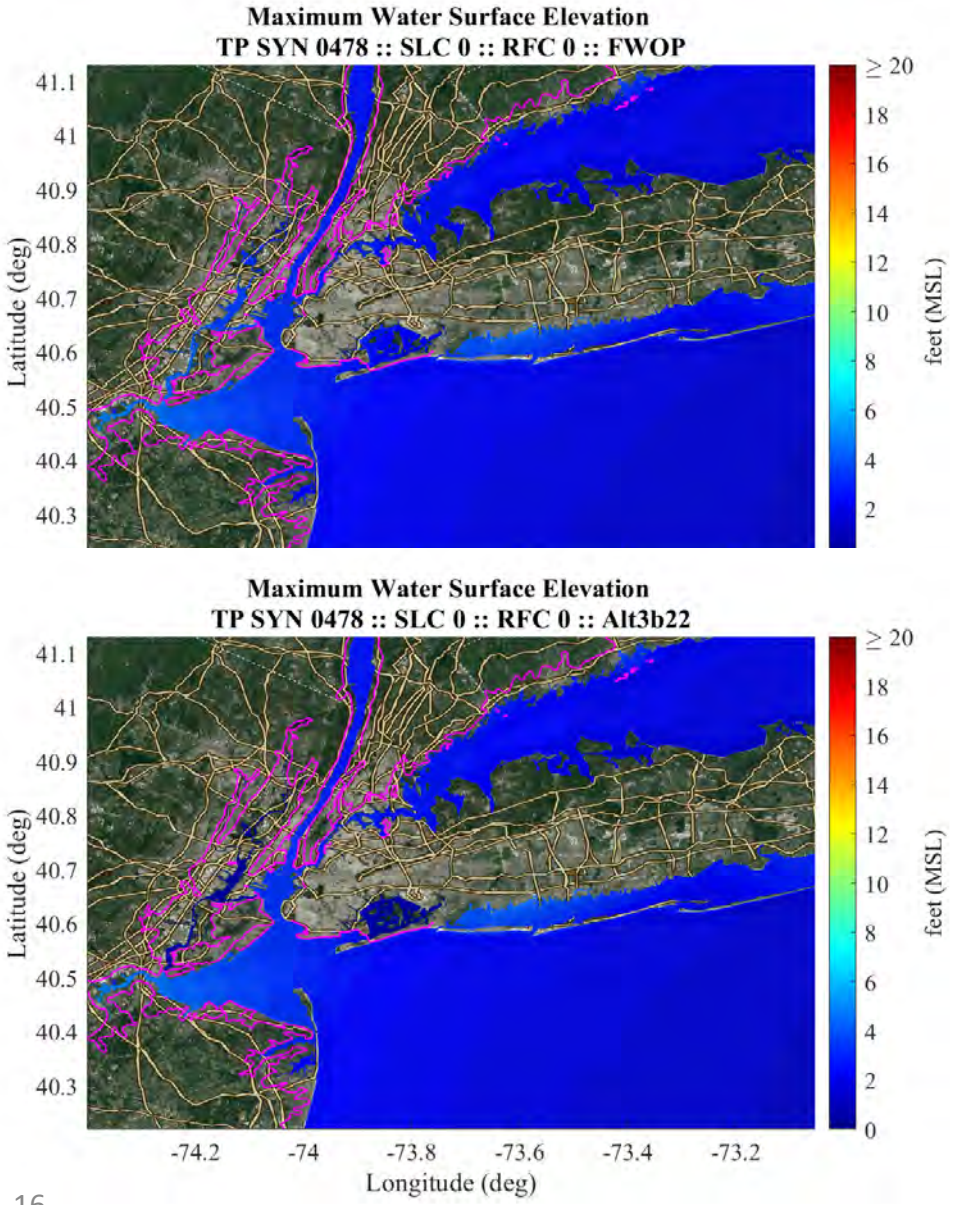


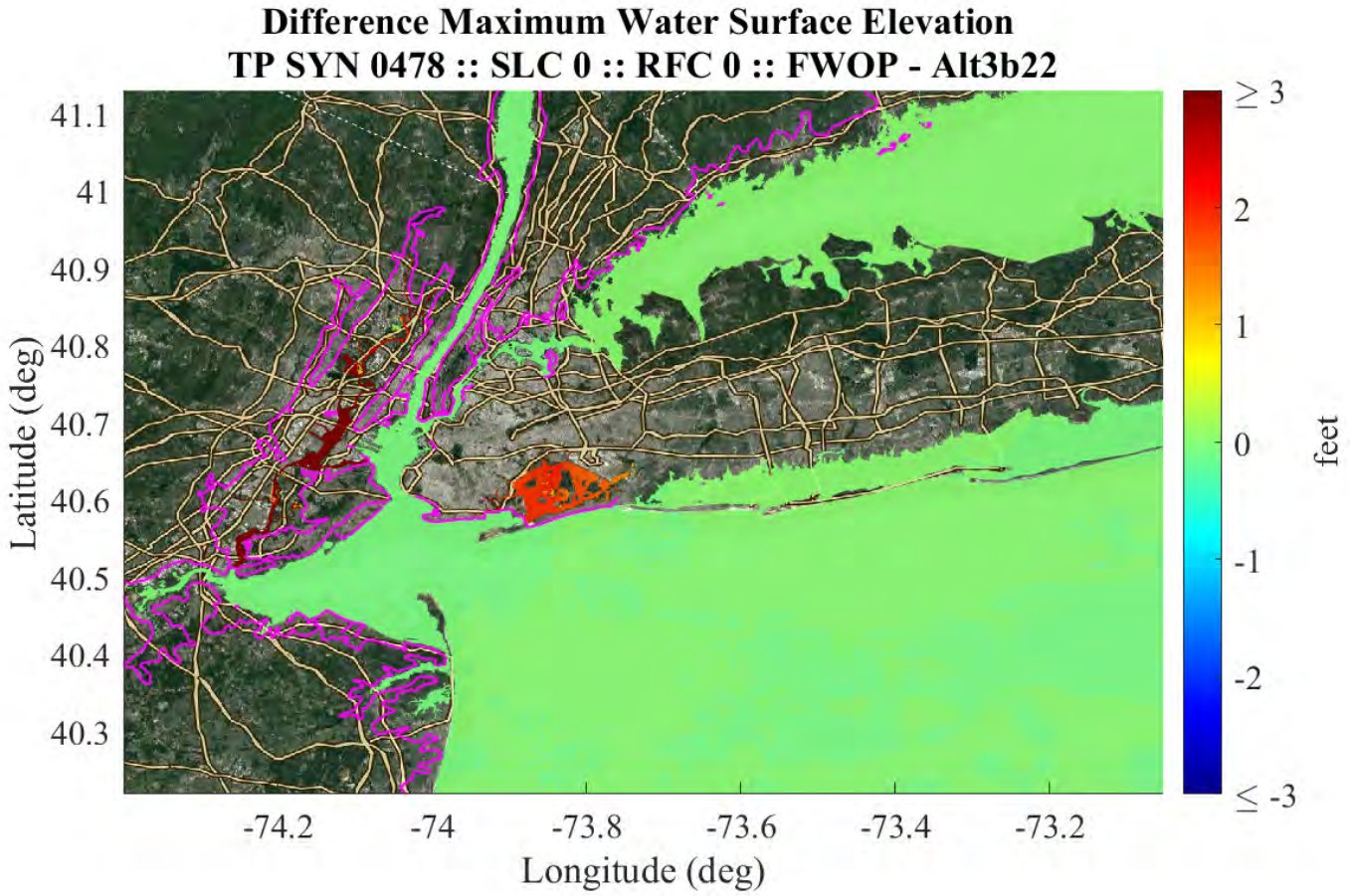
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 445



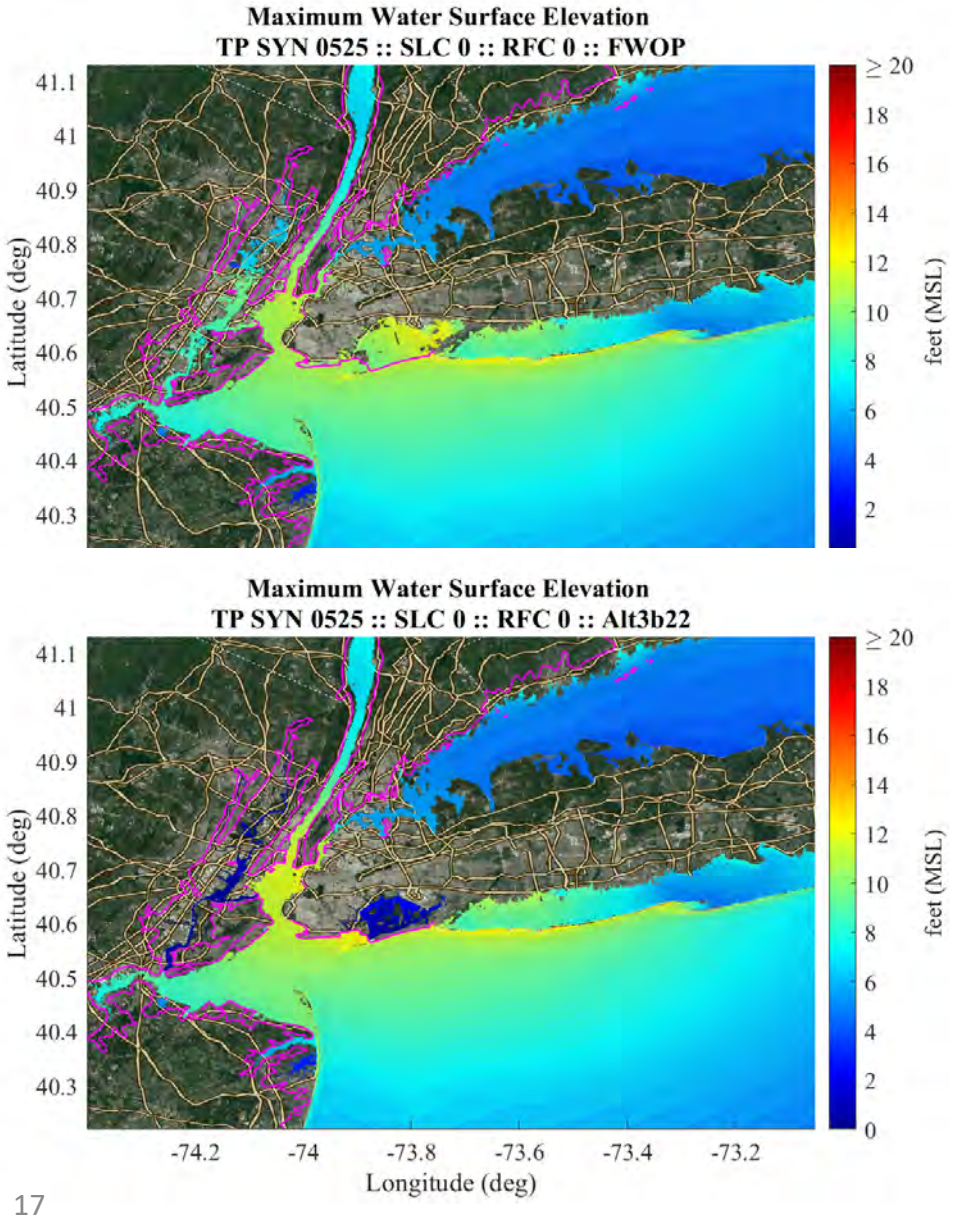


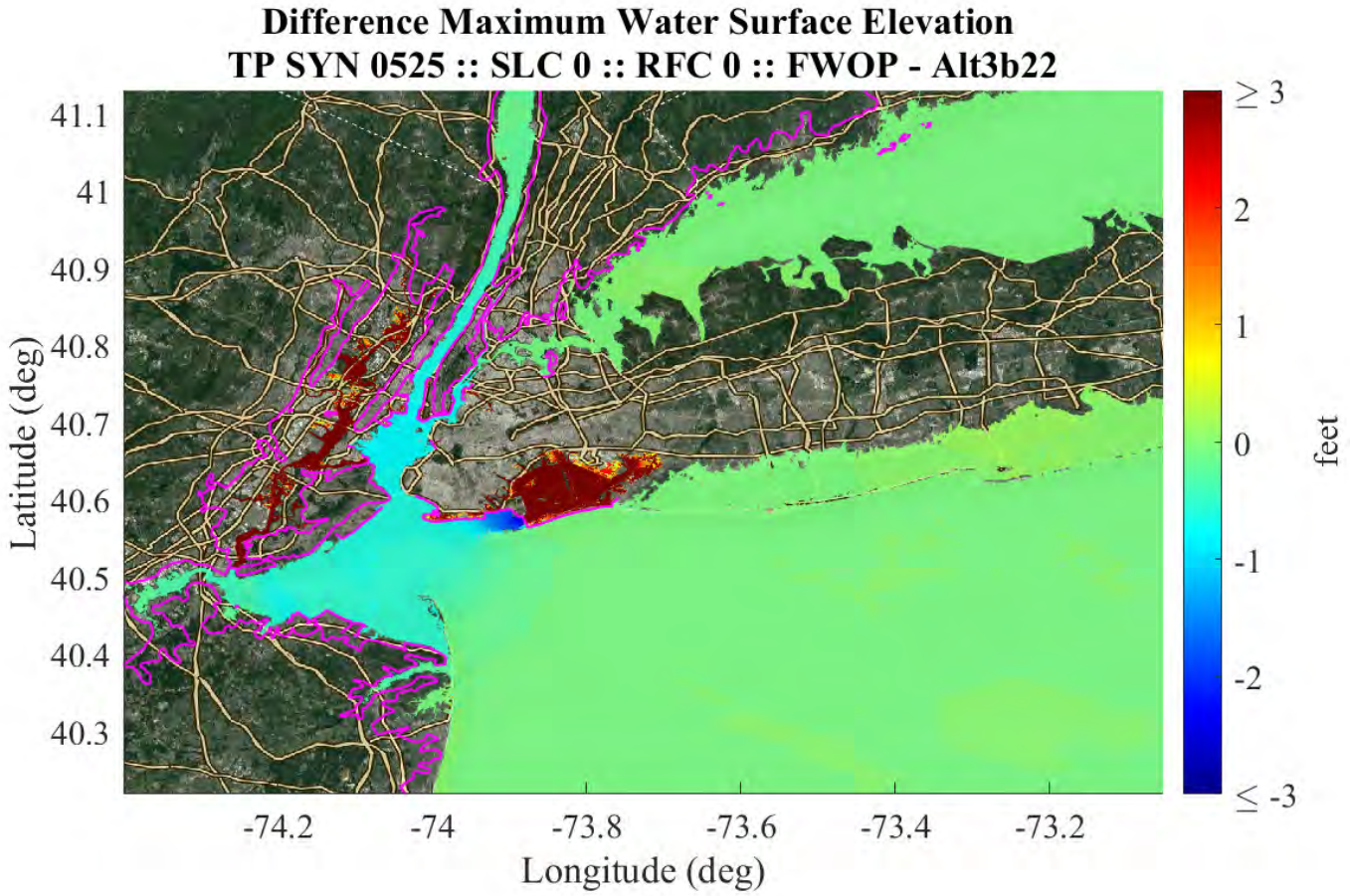
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 478



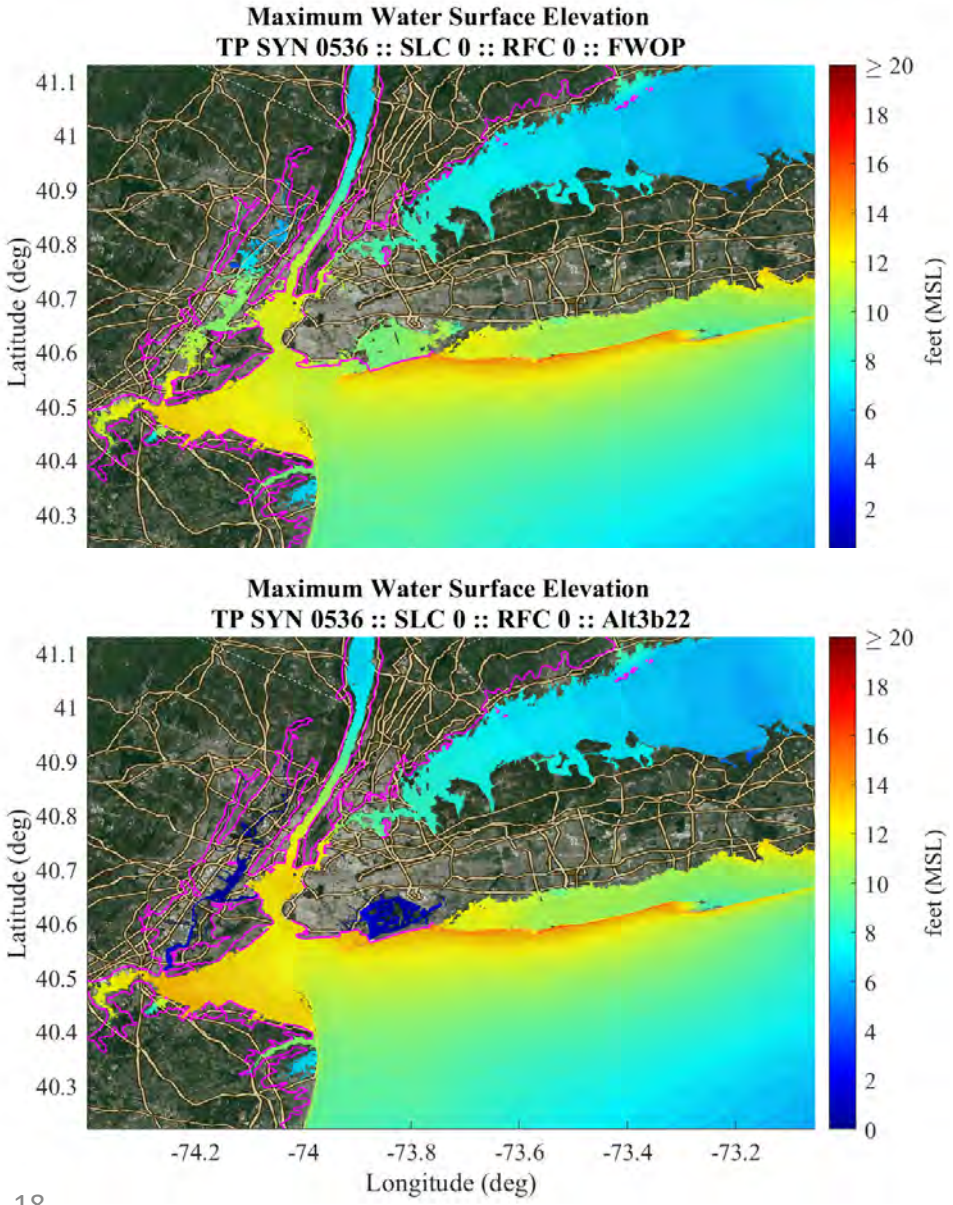


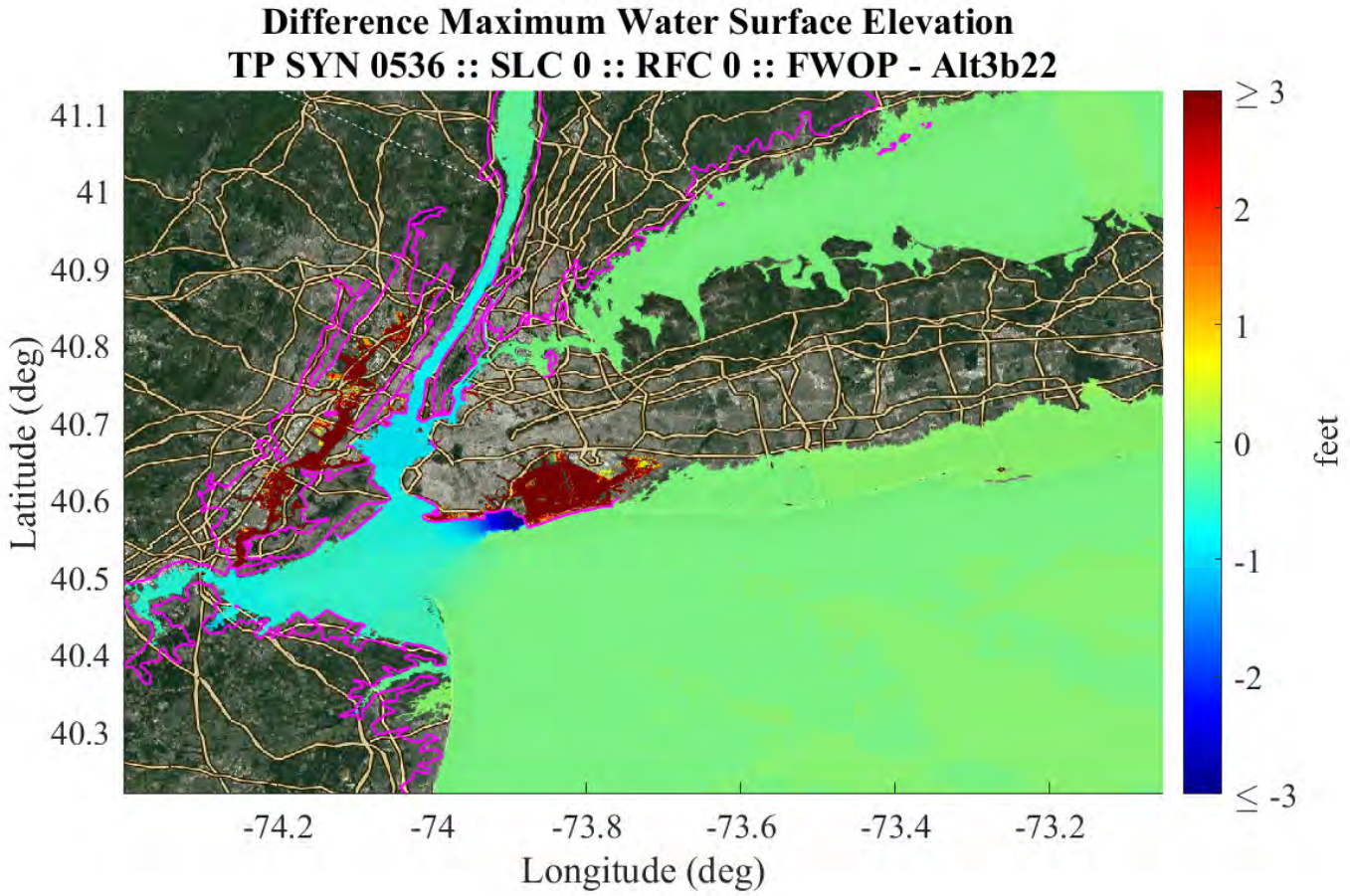
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 525



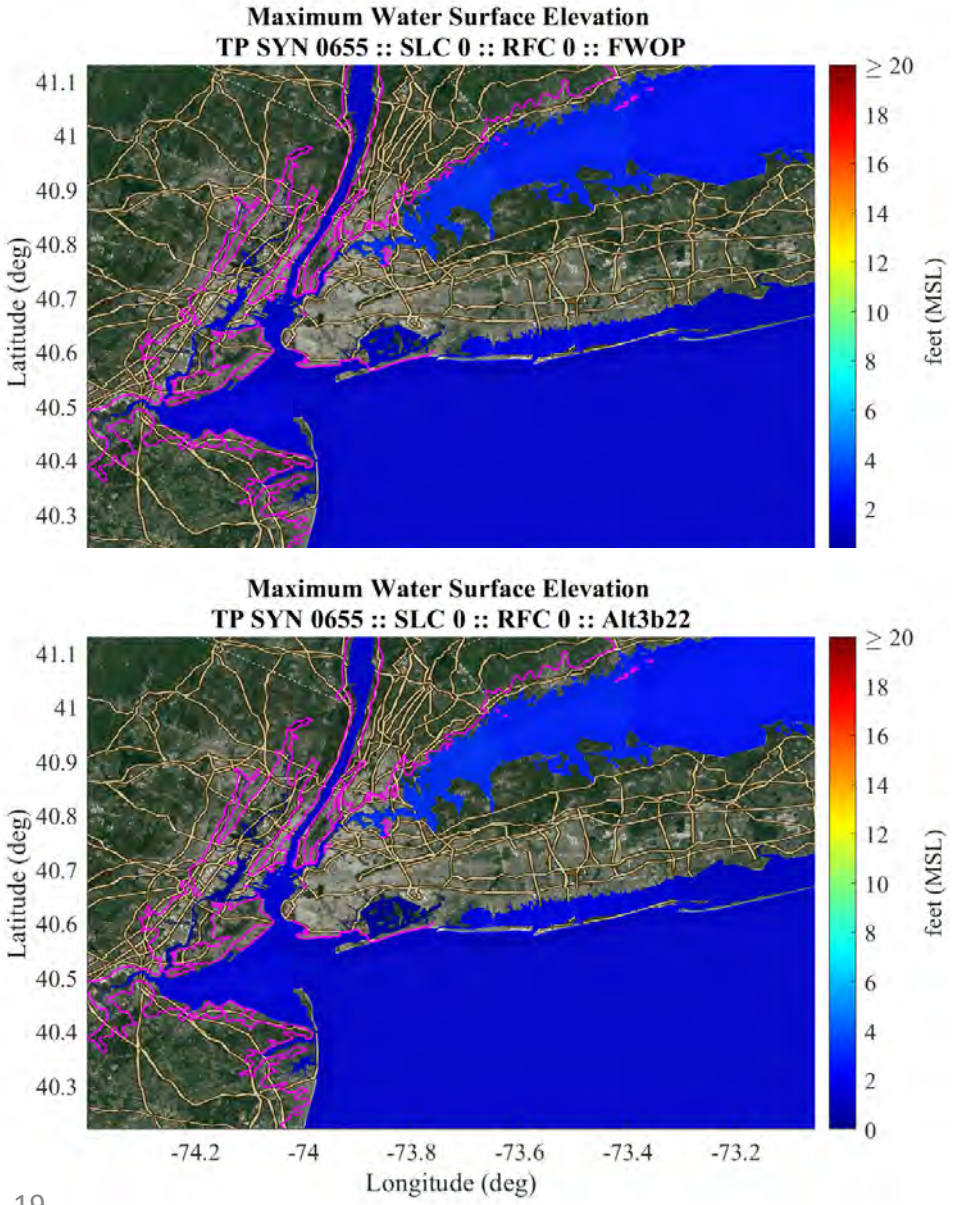


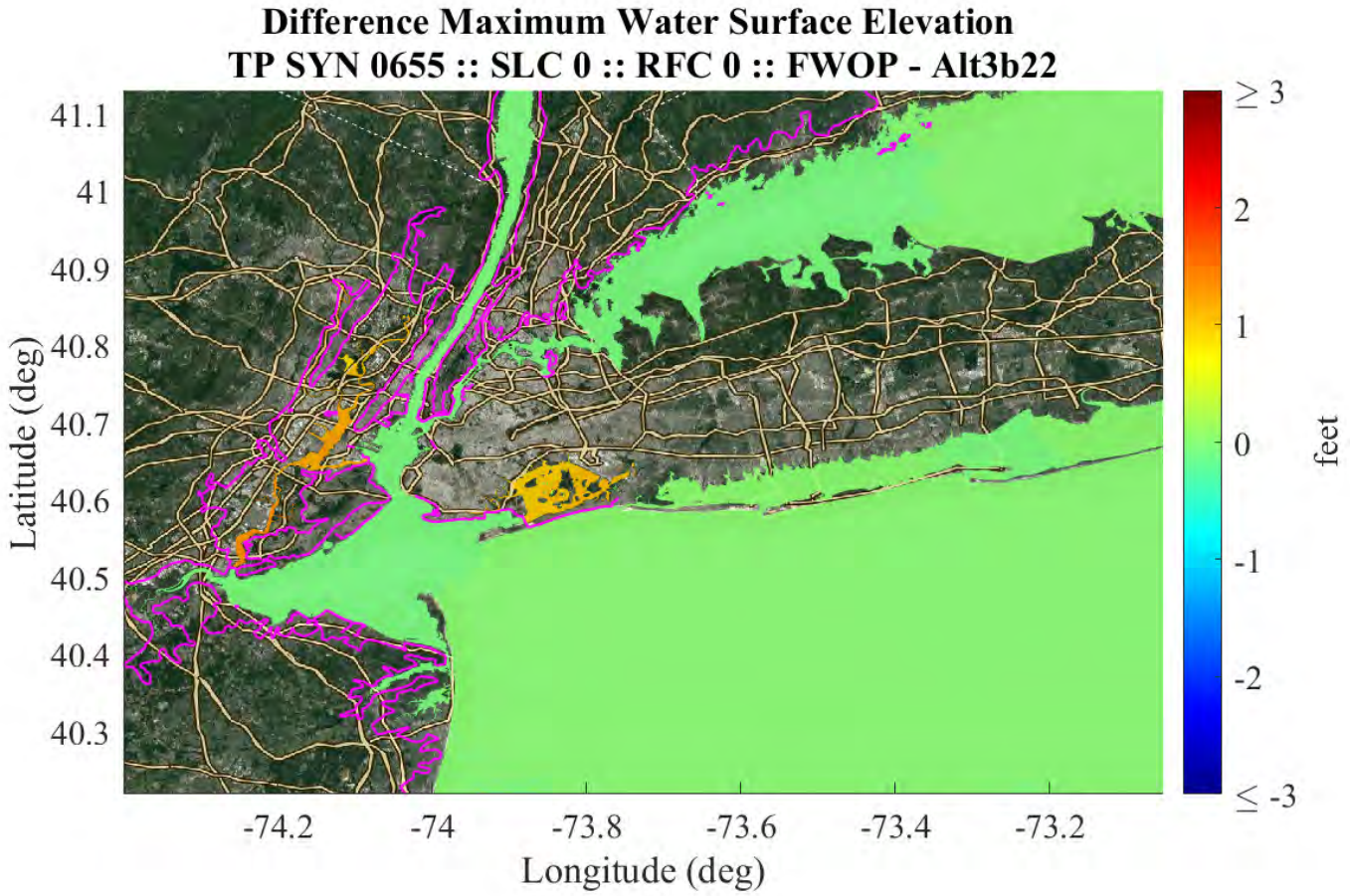
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 536





Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 655

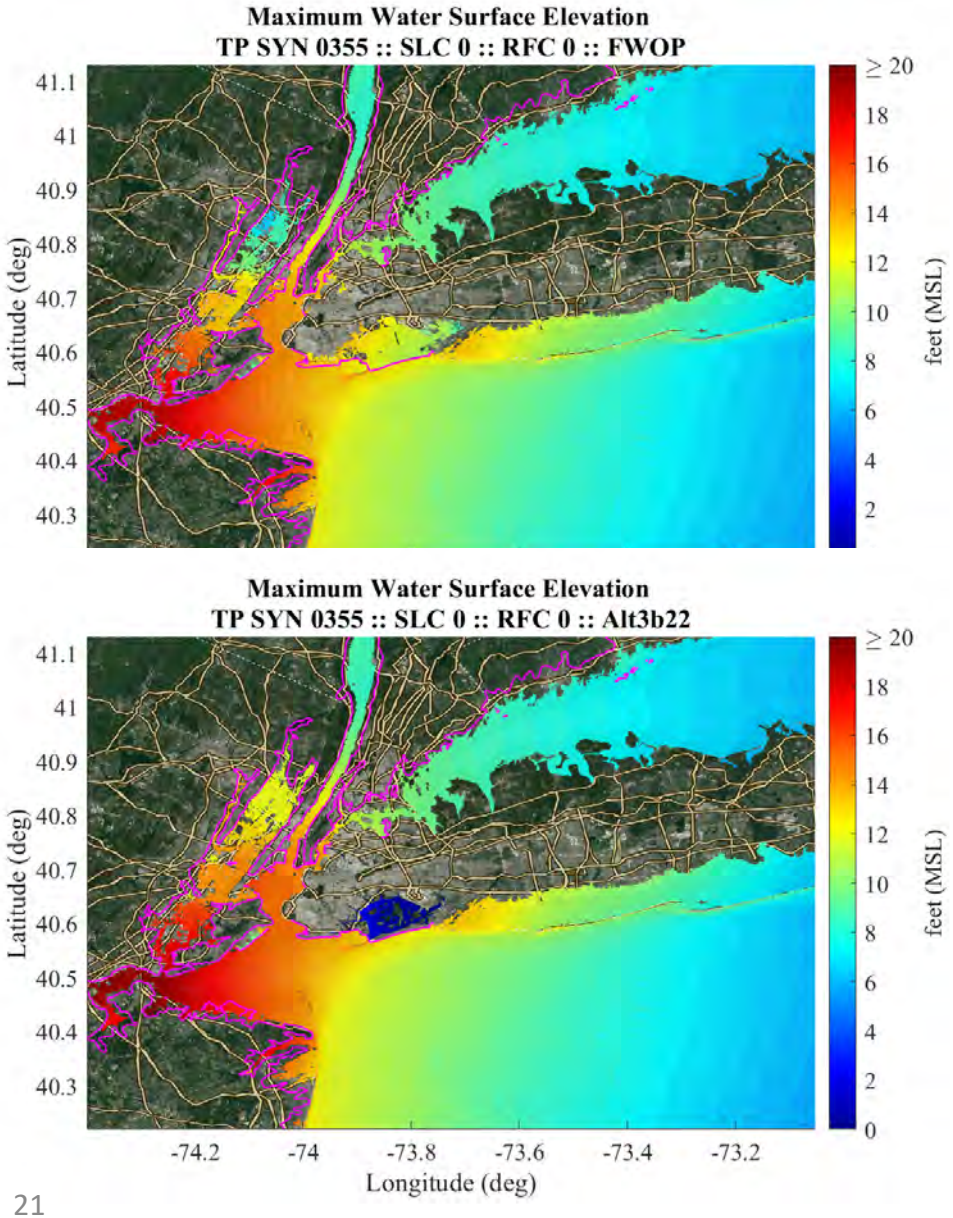


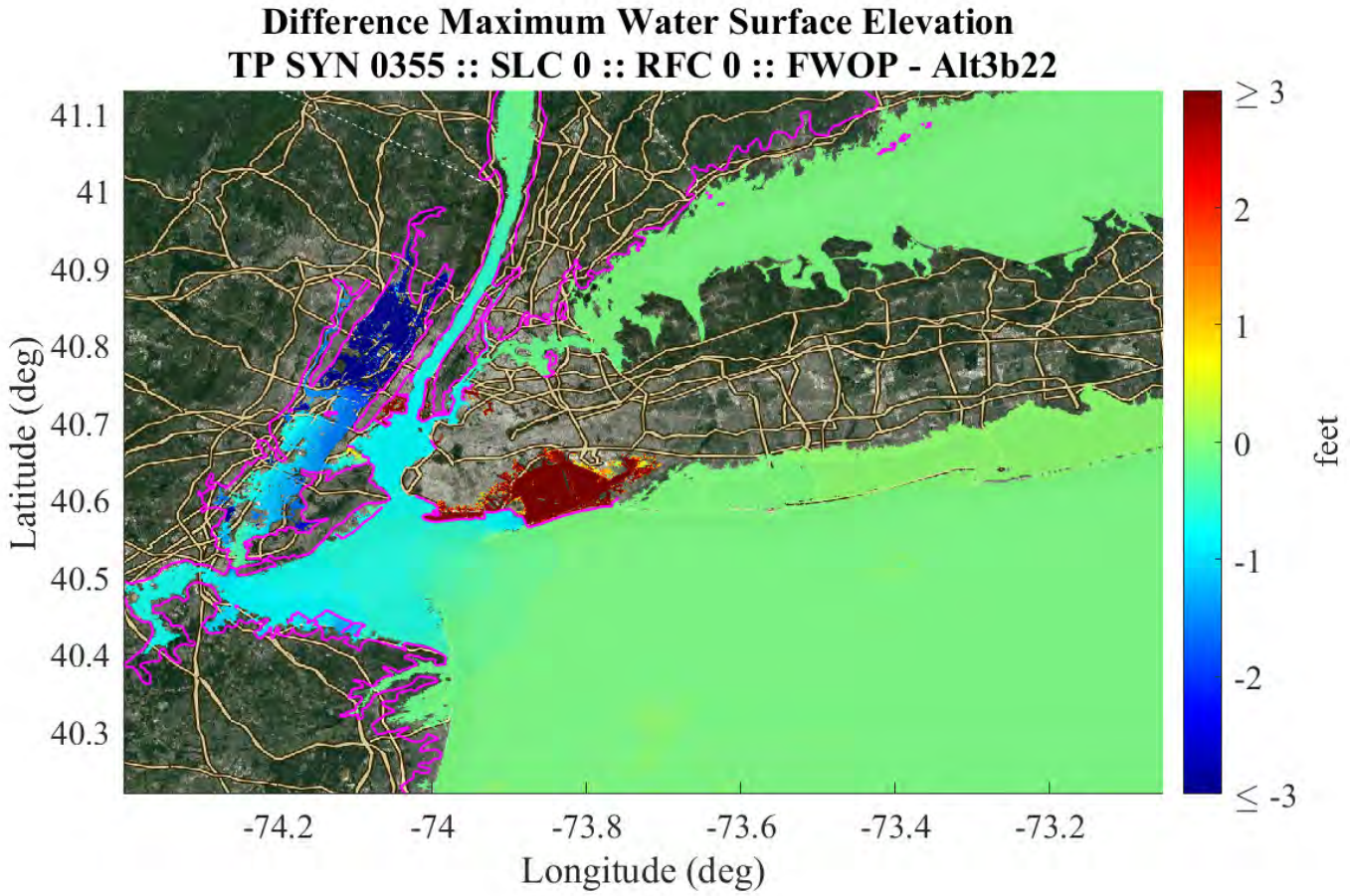


Maximum Water Surface Elevation Comparisons Closer Views Along Arthur Kill

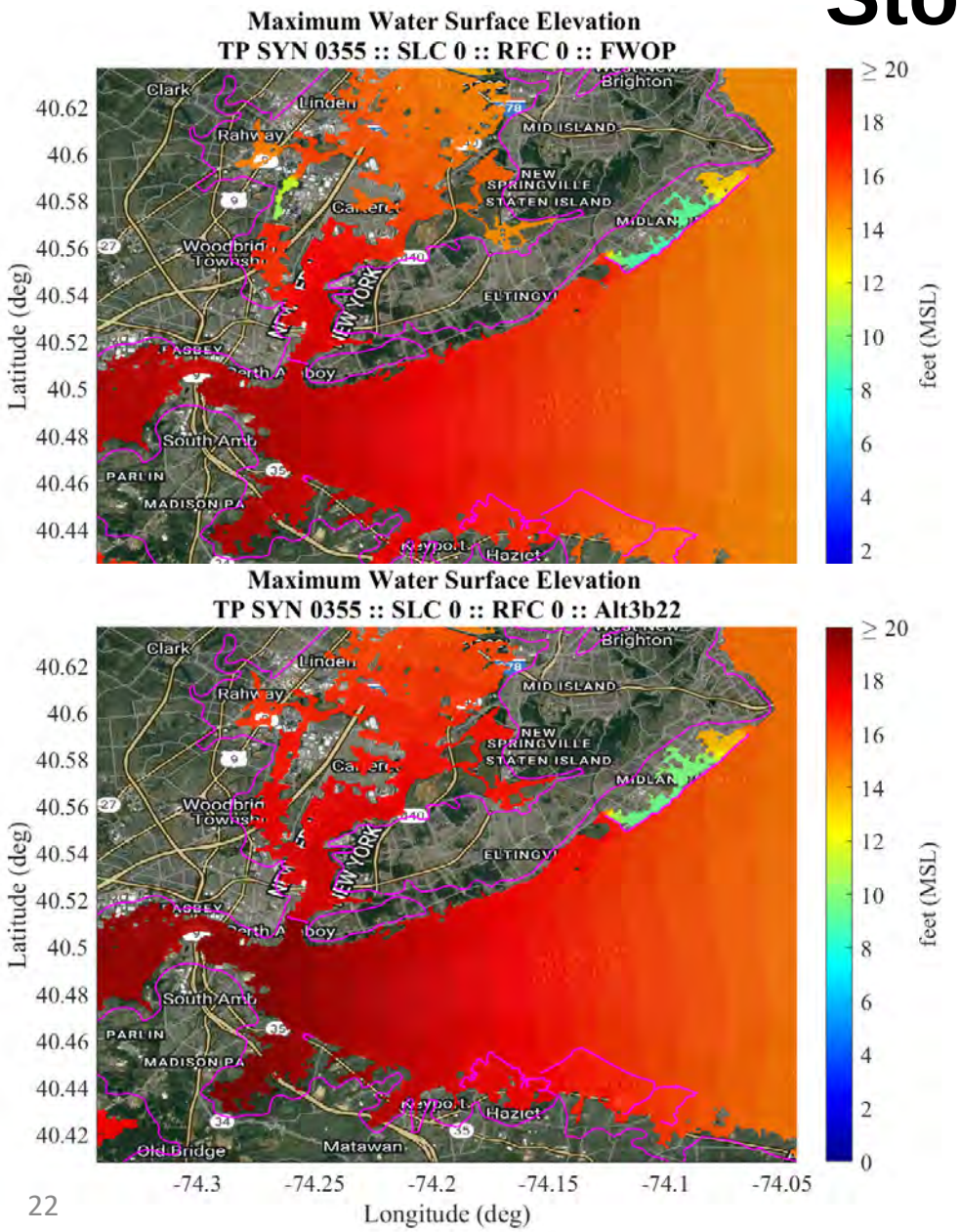
These next slides provide different views of maximum water surface elevation results from storms 355 and 439 showing FWOP and Alt3b and then the difference between them. Both storms produce large storm surge results. Both storms have higher water levels for Alt3b than FWOP along the Arthur Kill. Storm 355 has larger storm surge results behind the Arthur Kill gate northward through the East Rutherford area. Storm 439 has larger storm surge results in the East Rutherford area under Alt3b. Both storms appear to have overtopped the Arthur Kill gate. With the gate closed it is likely that if winds shifted southward, that the water would be trapped behind the gate, causing higher levels than if the gate was open. Additional analysis of these two storms is likely warranted.

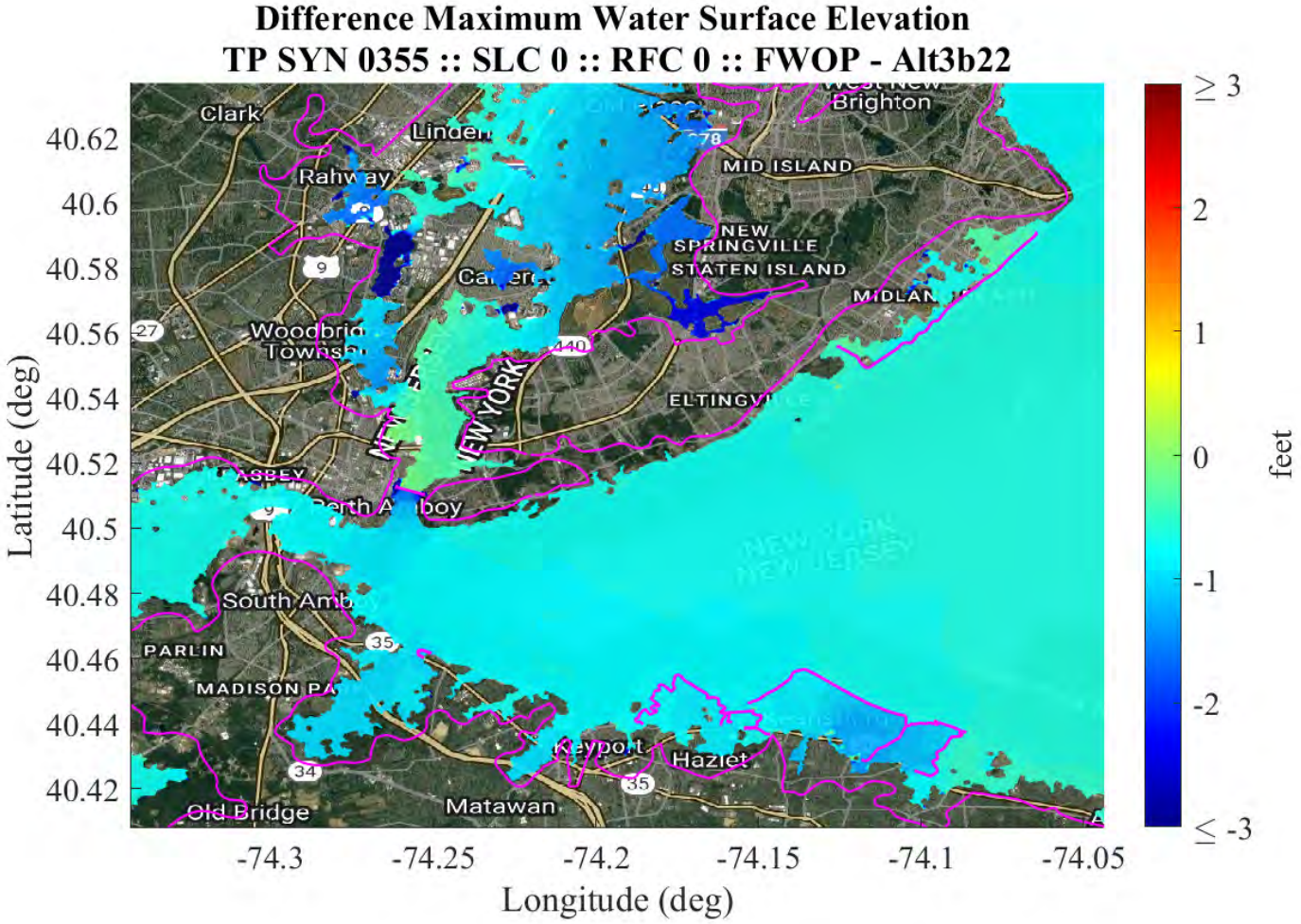
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



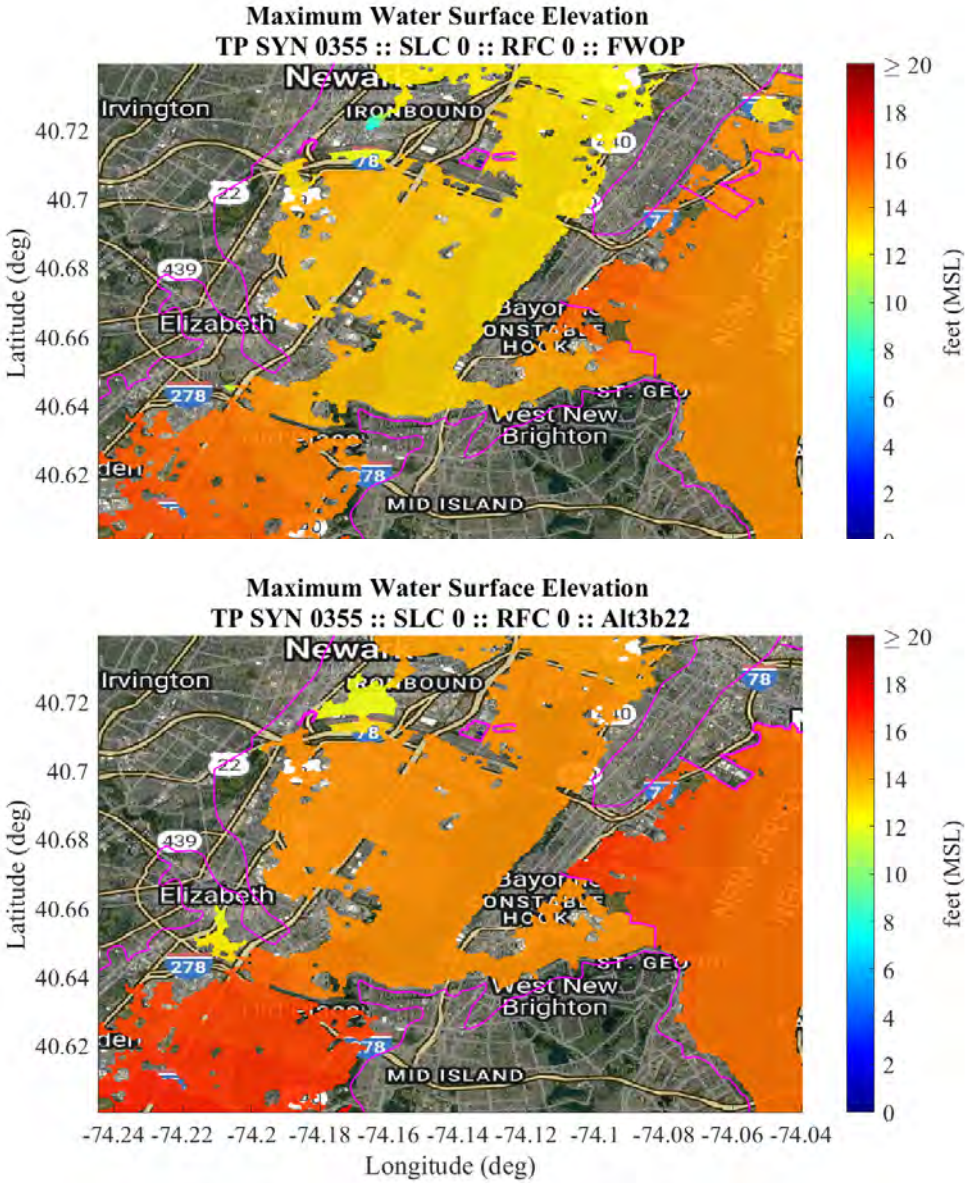


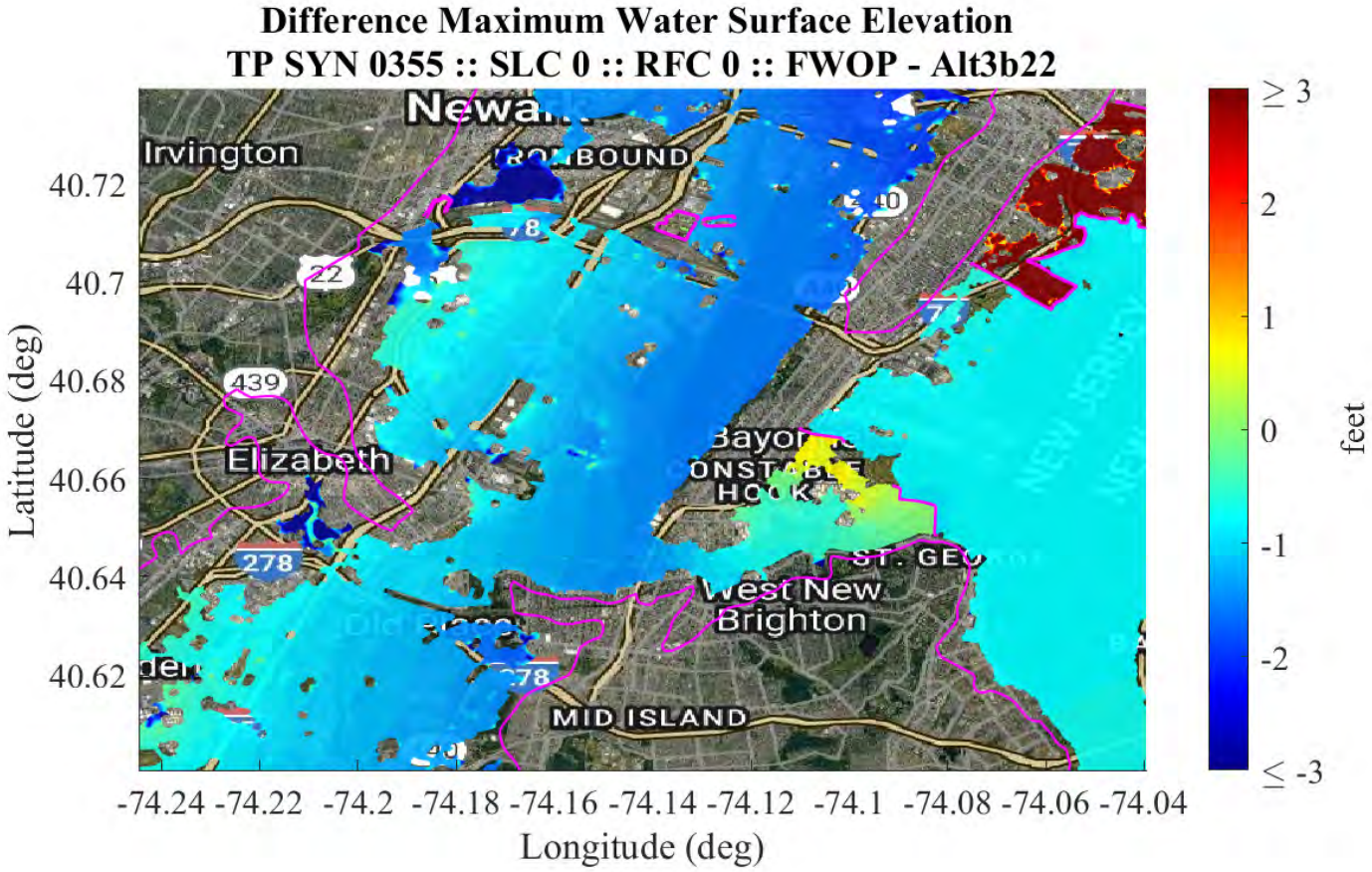
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



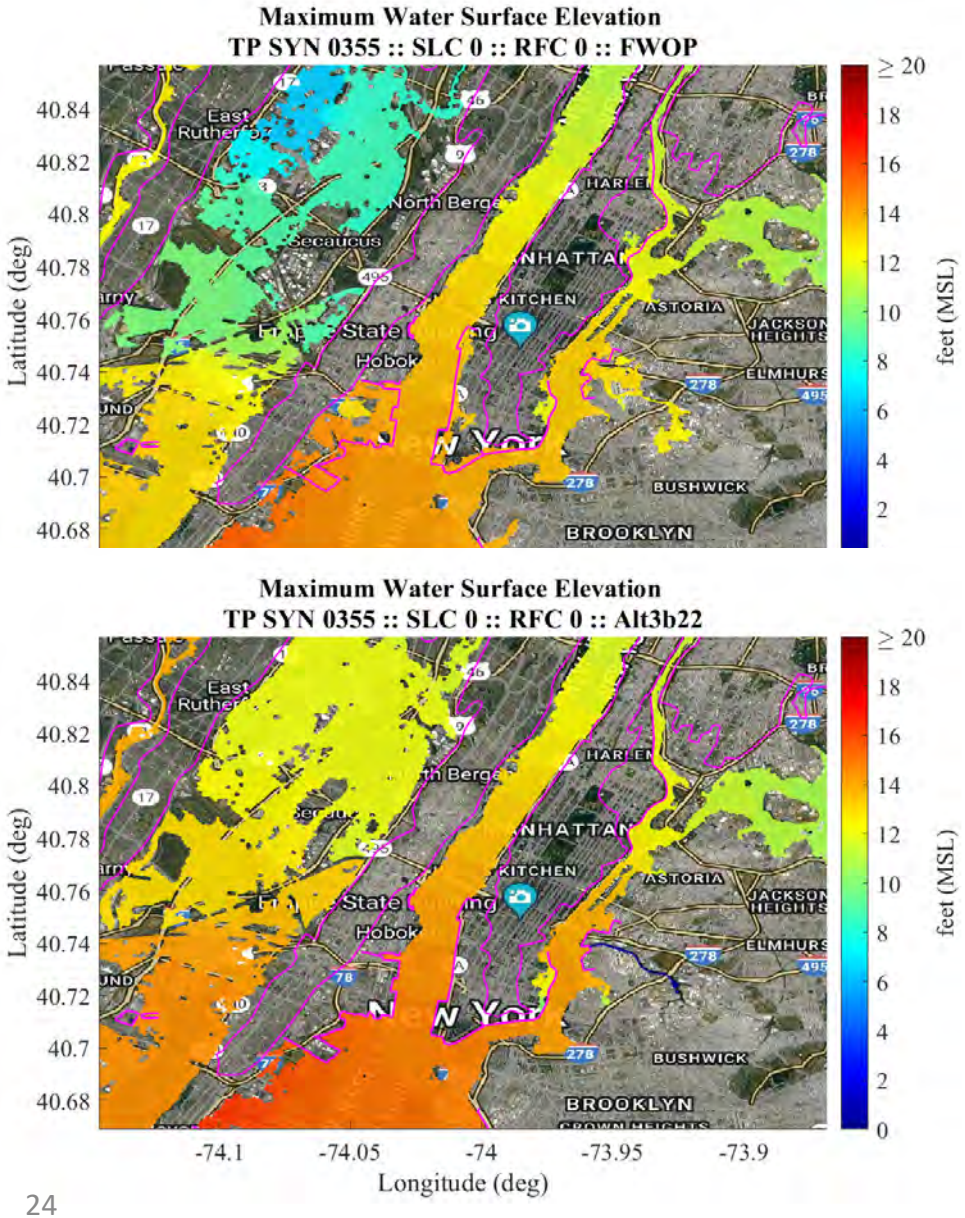


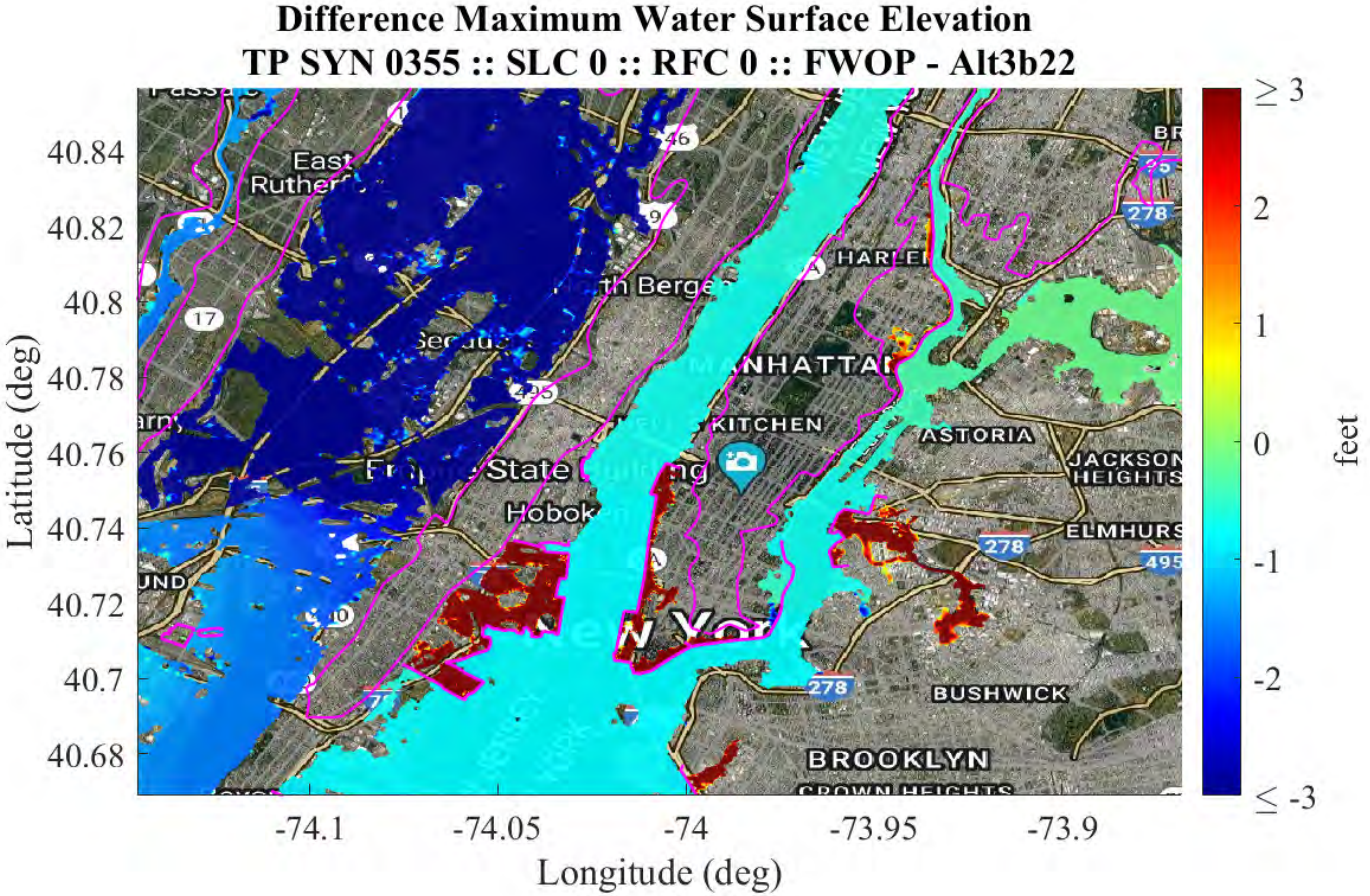
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



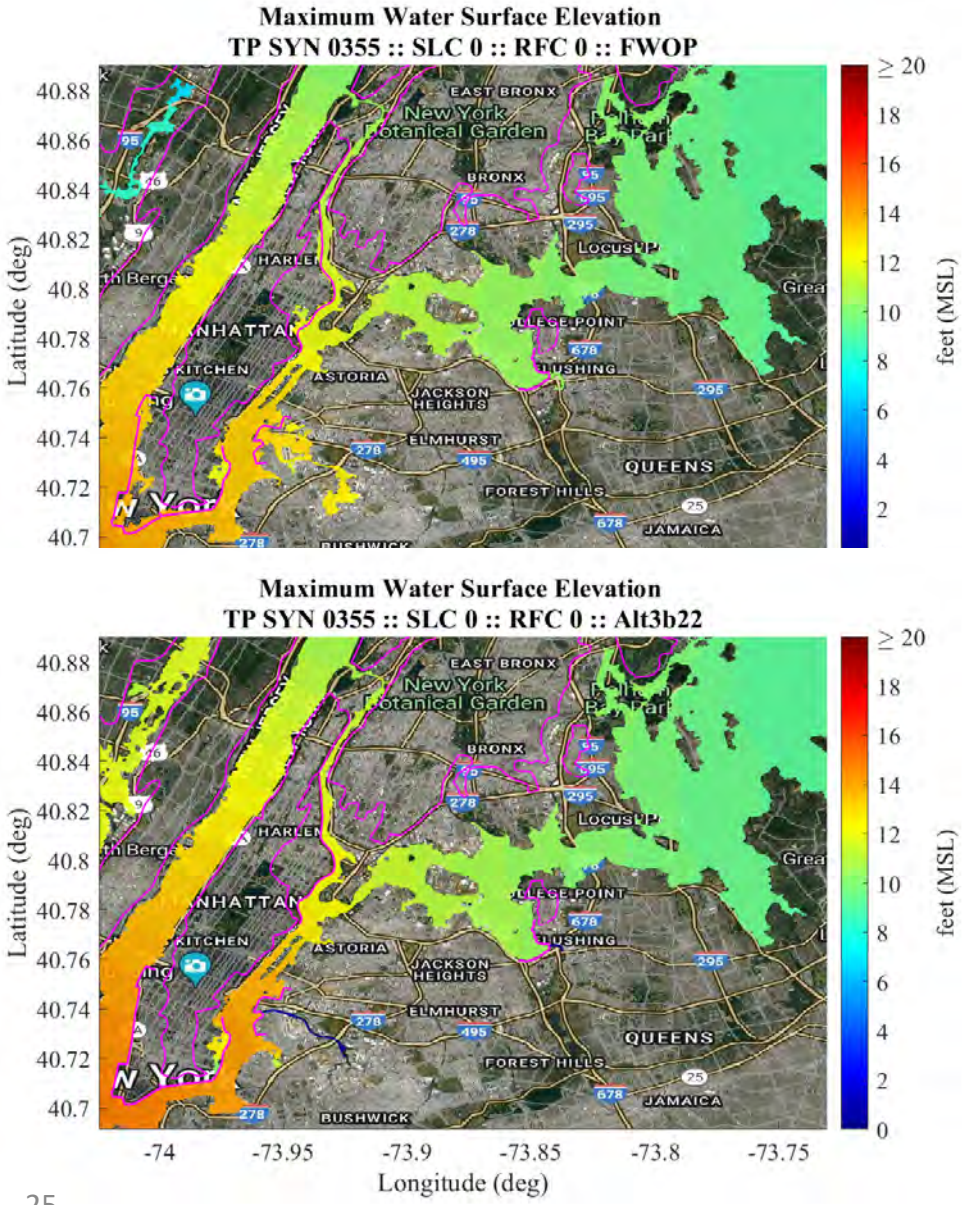


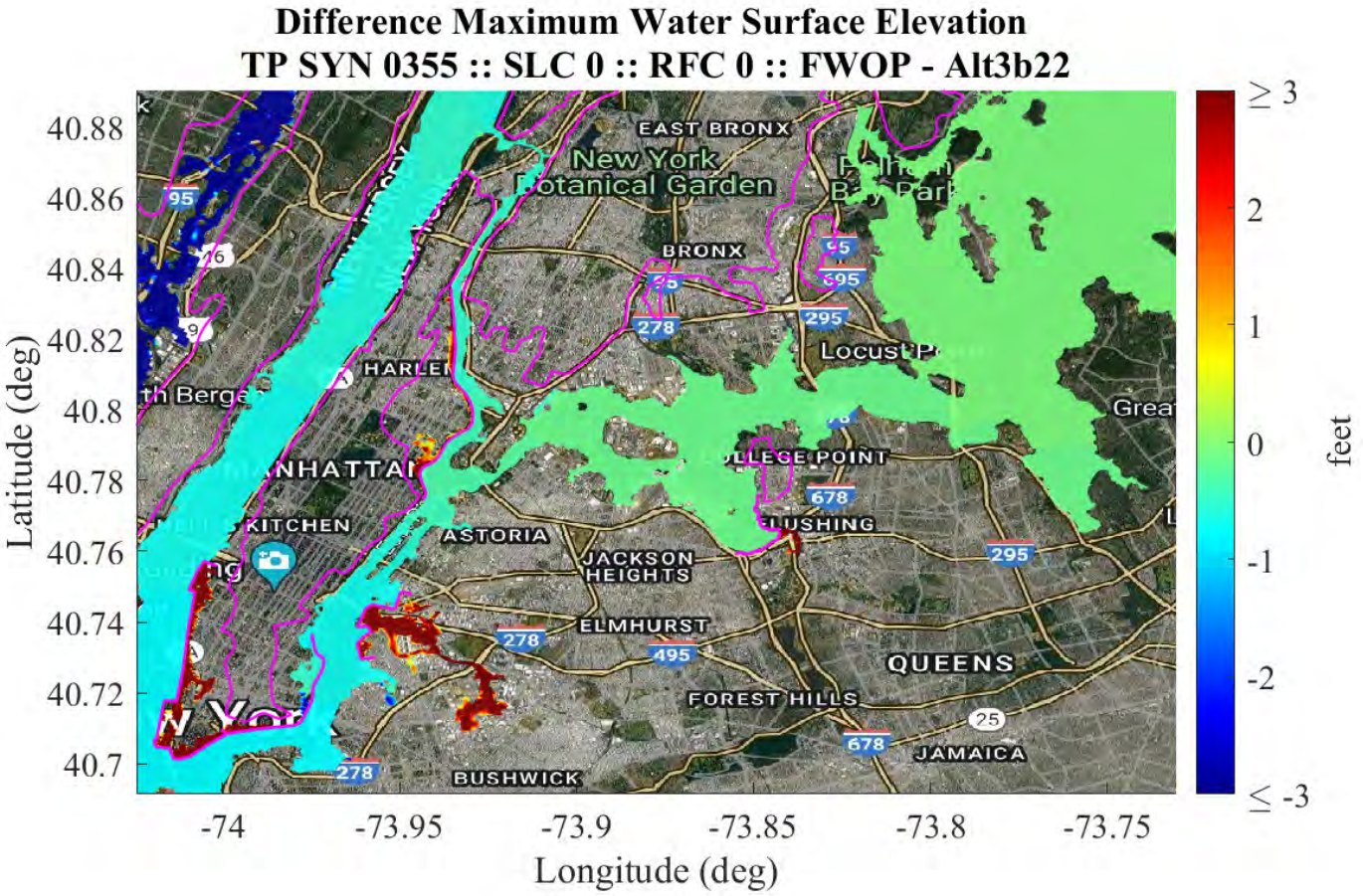
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



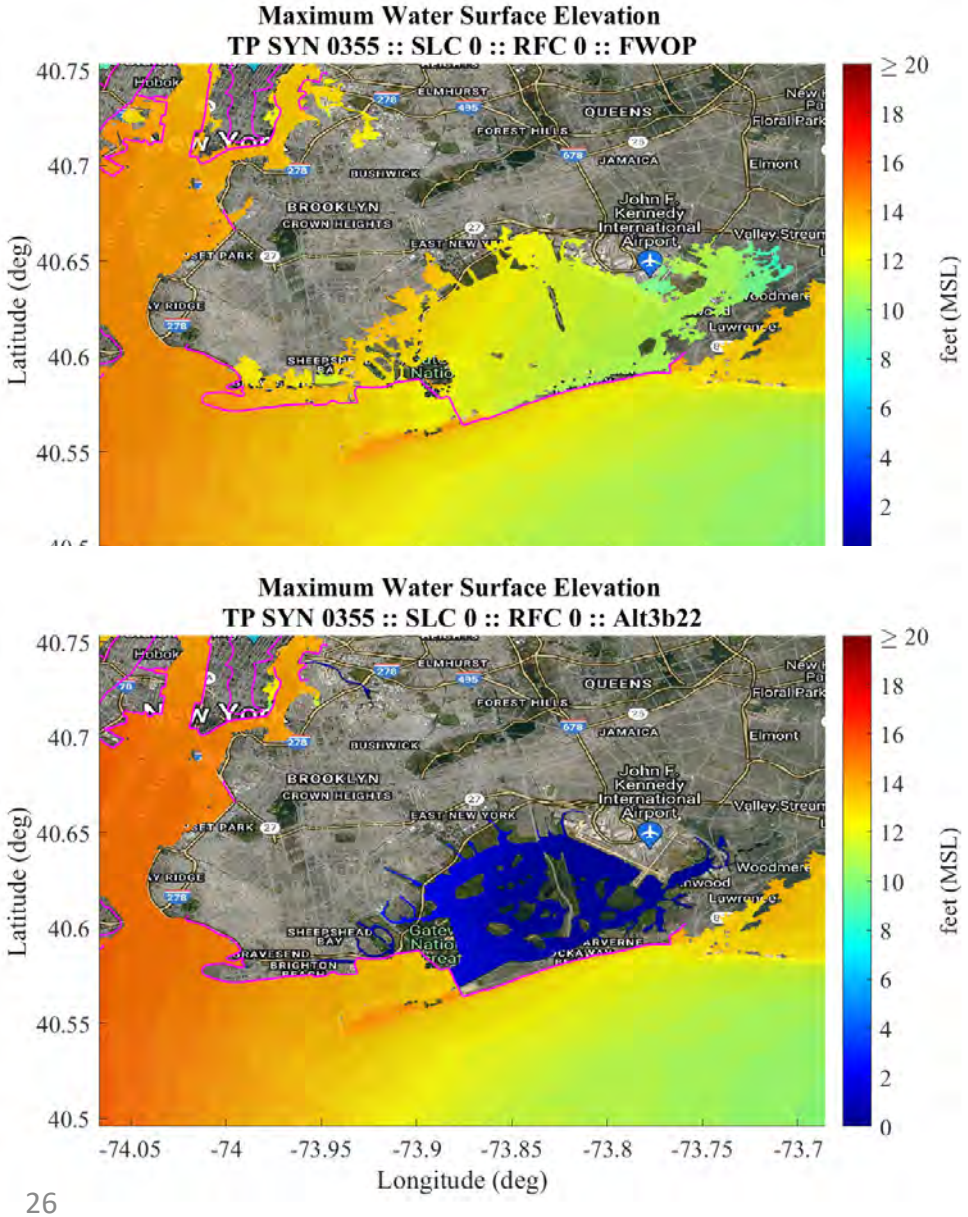


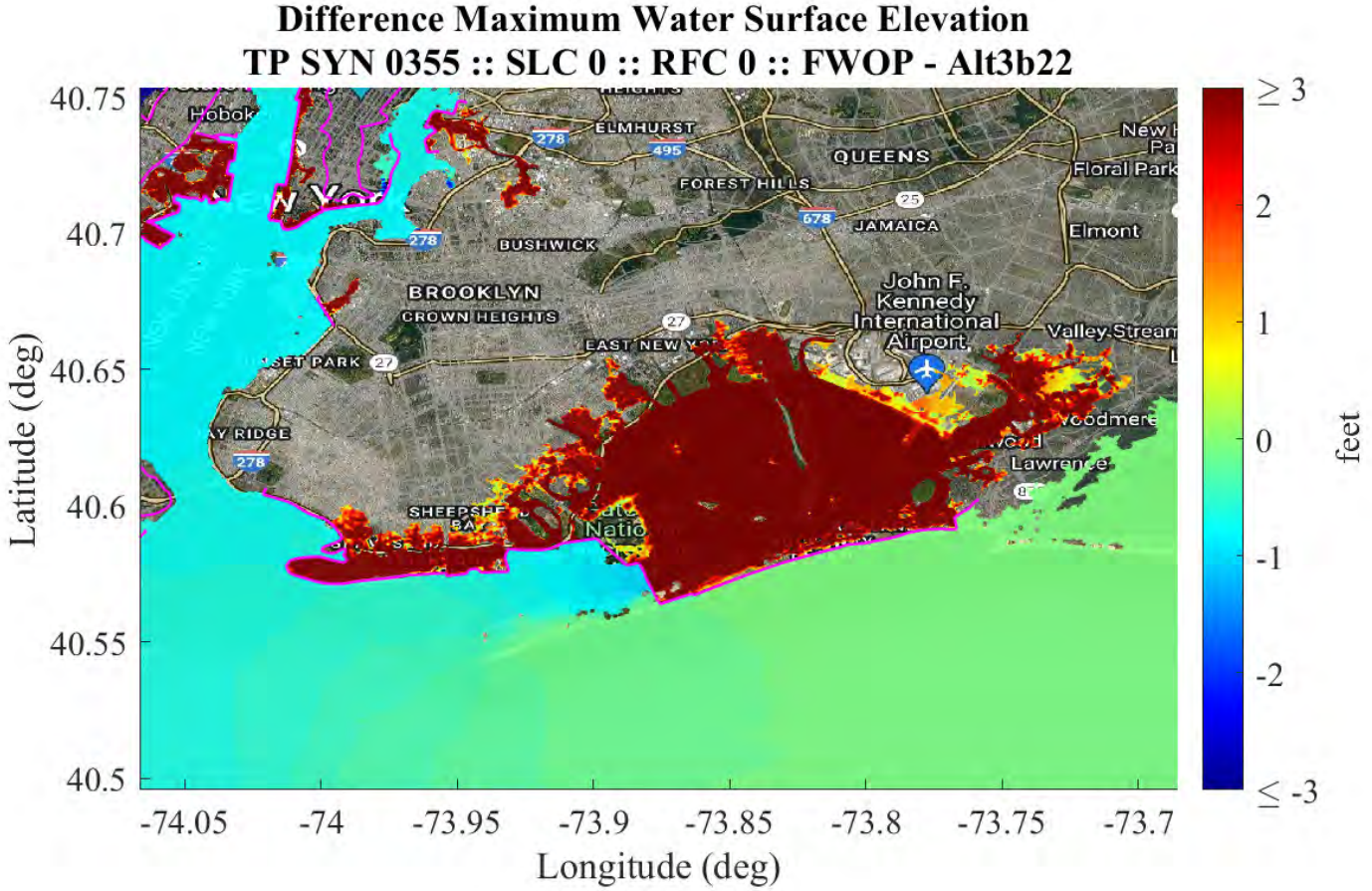
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



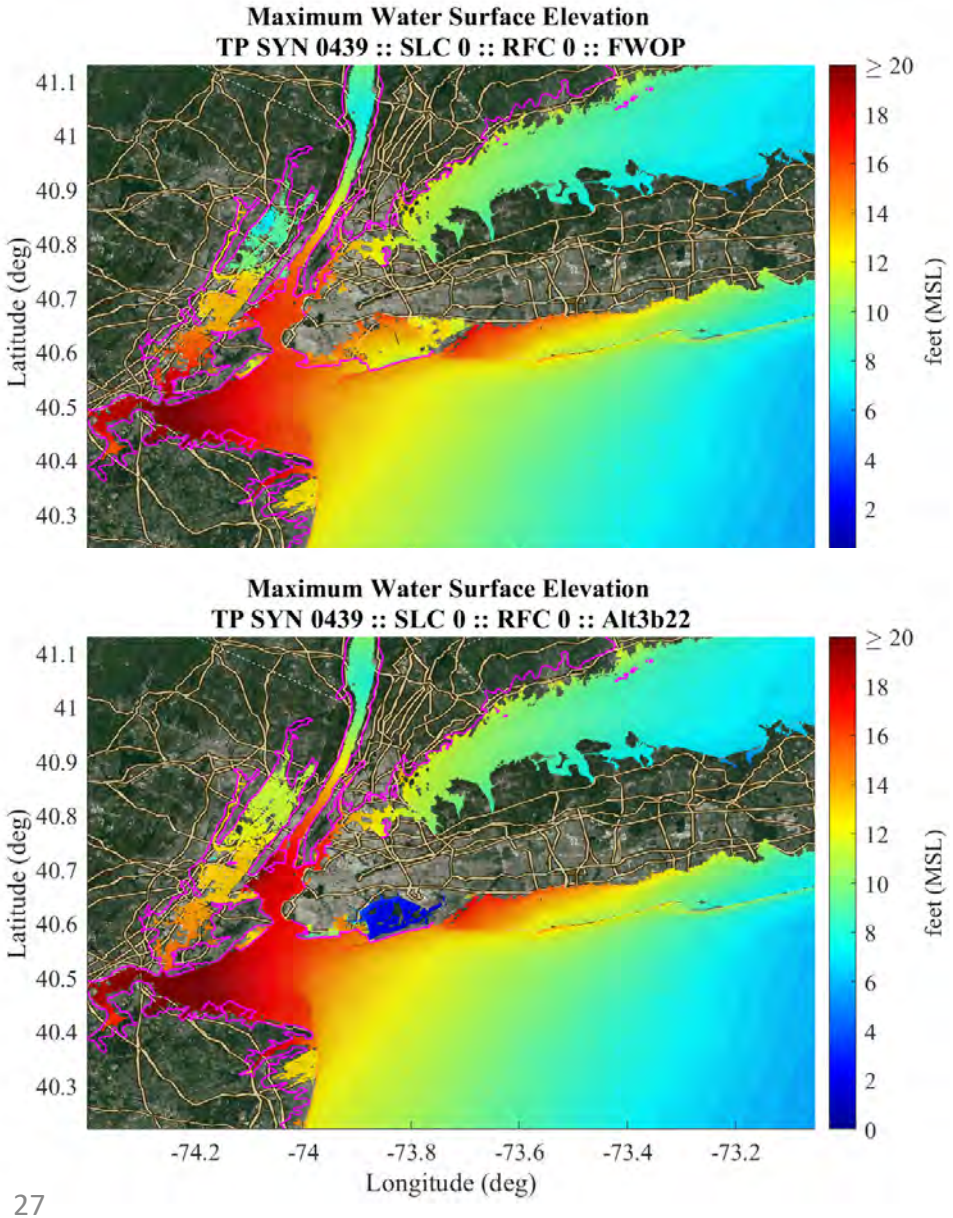


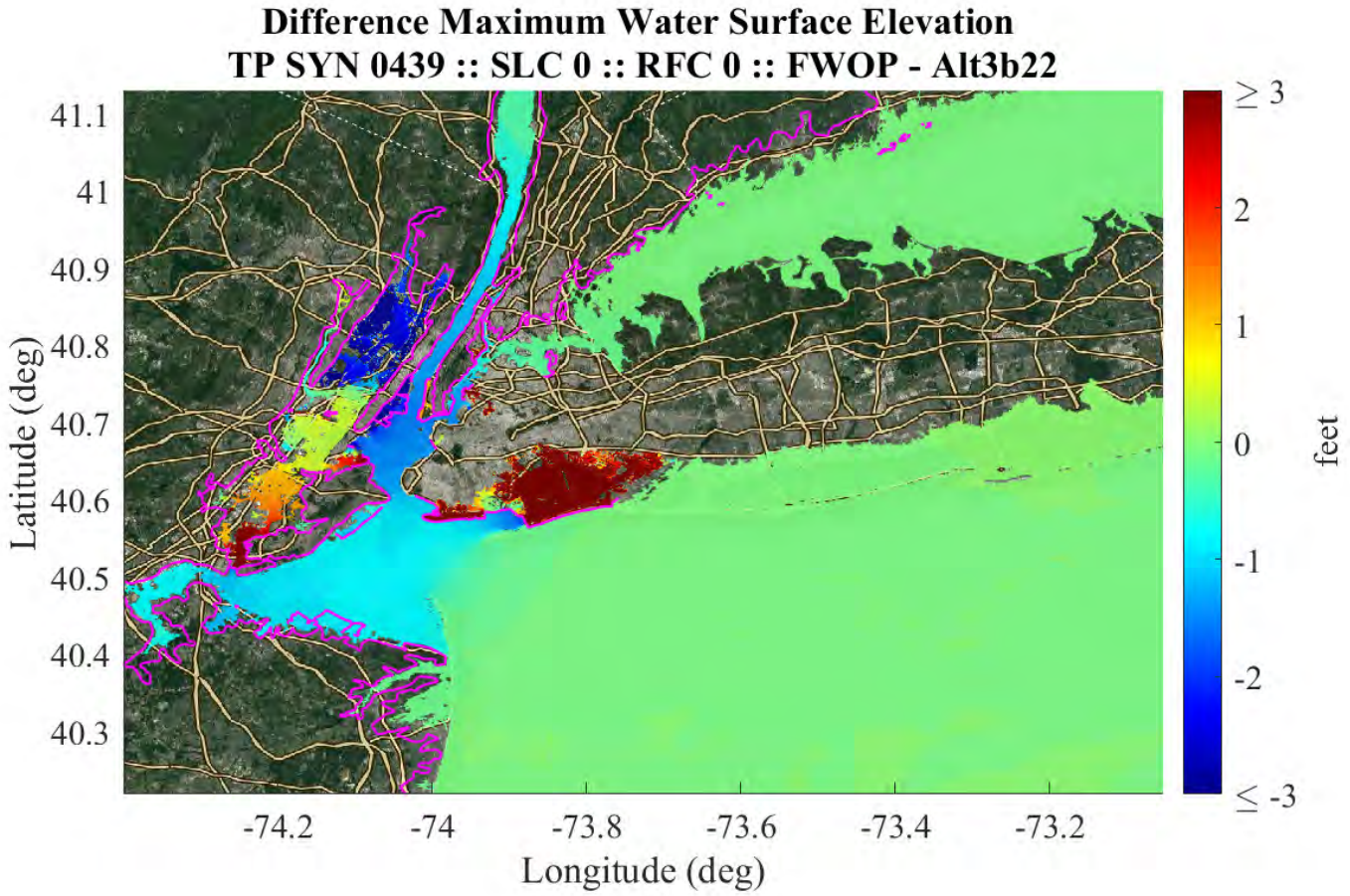
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 355



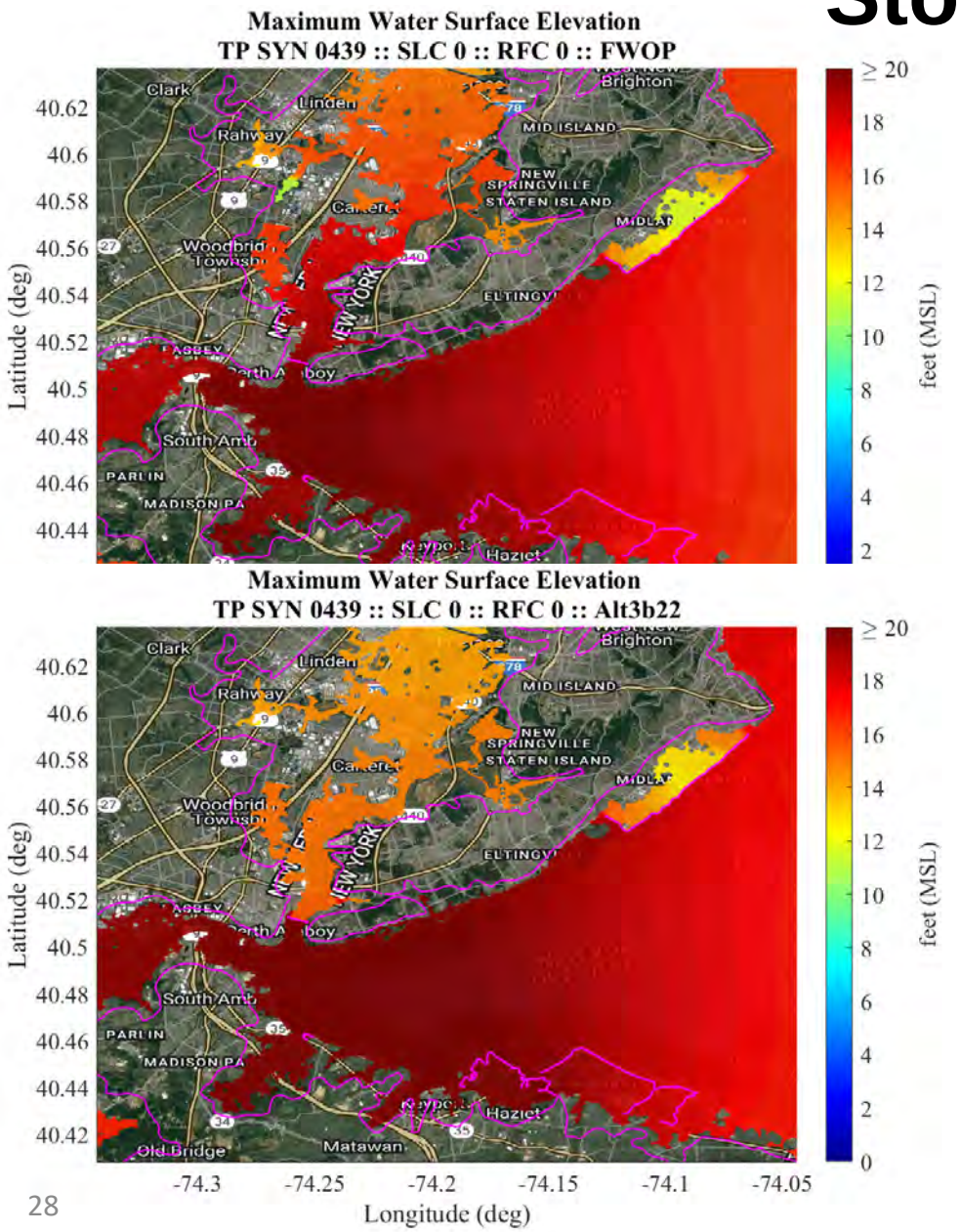


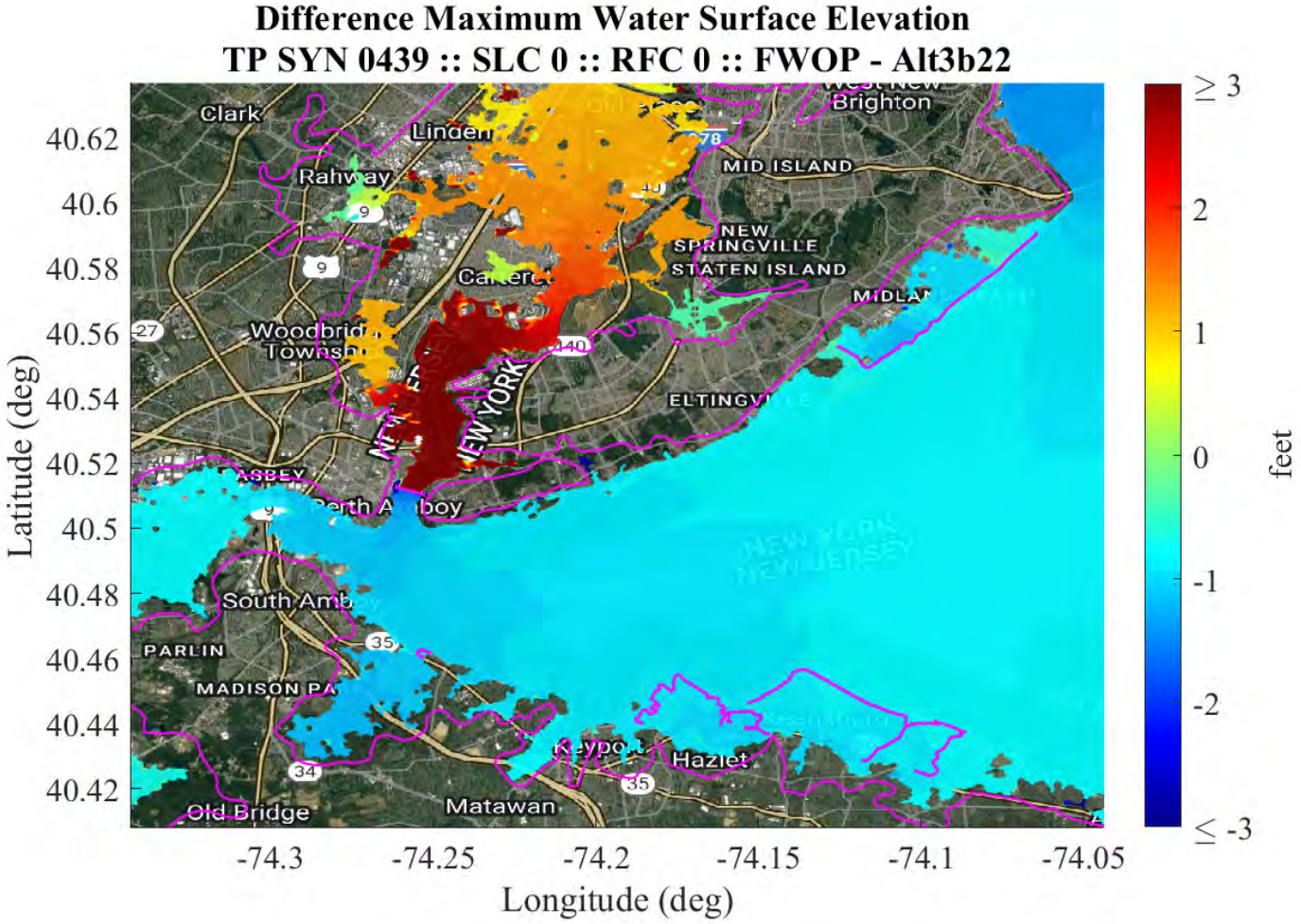
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439



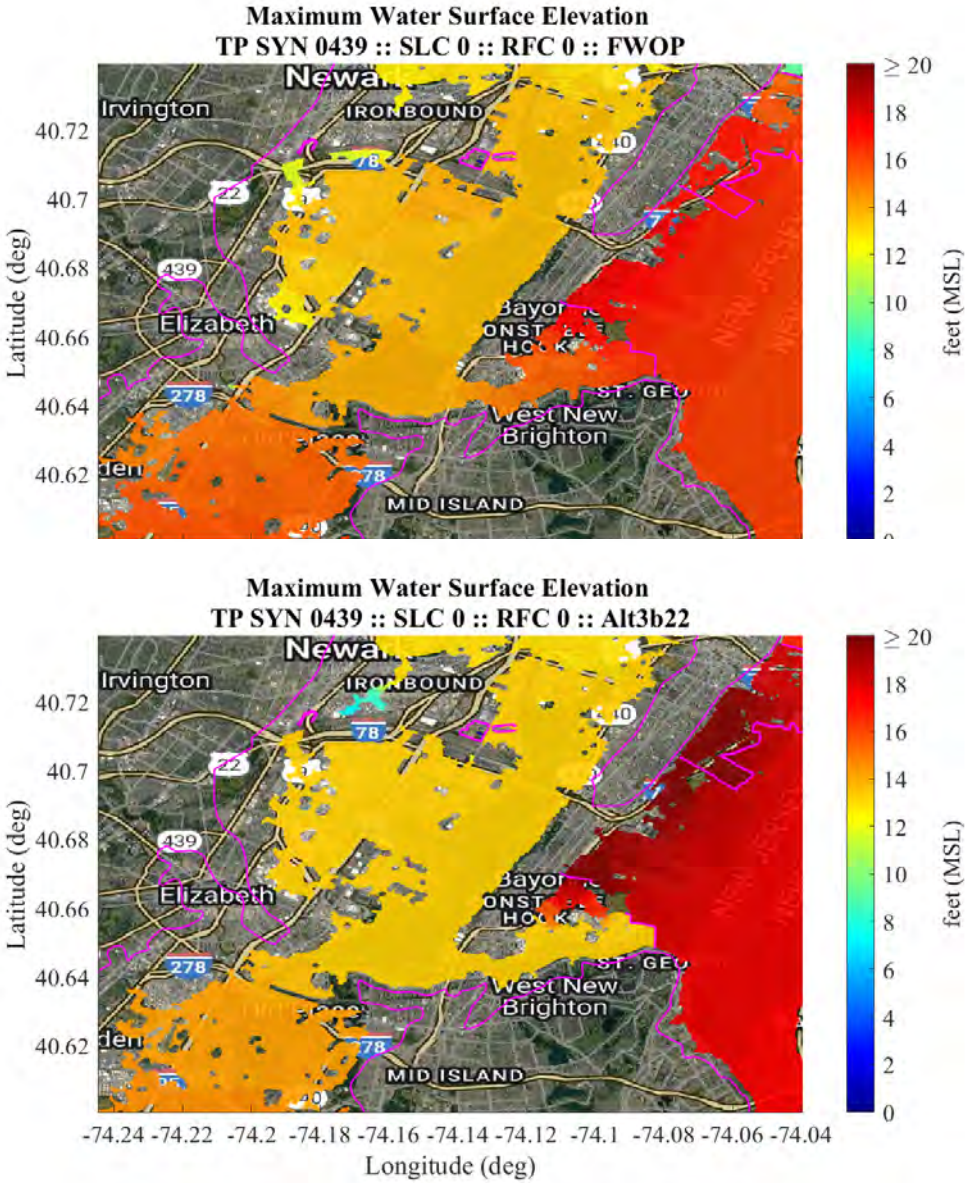


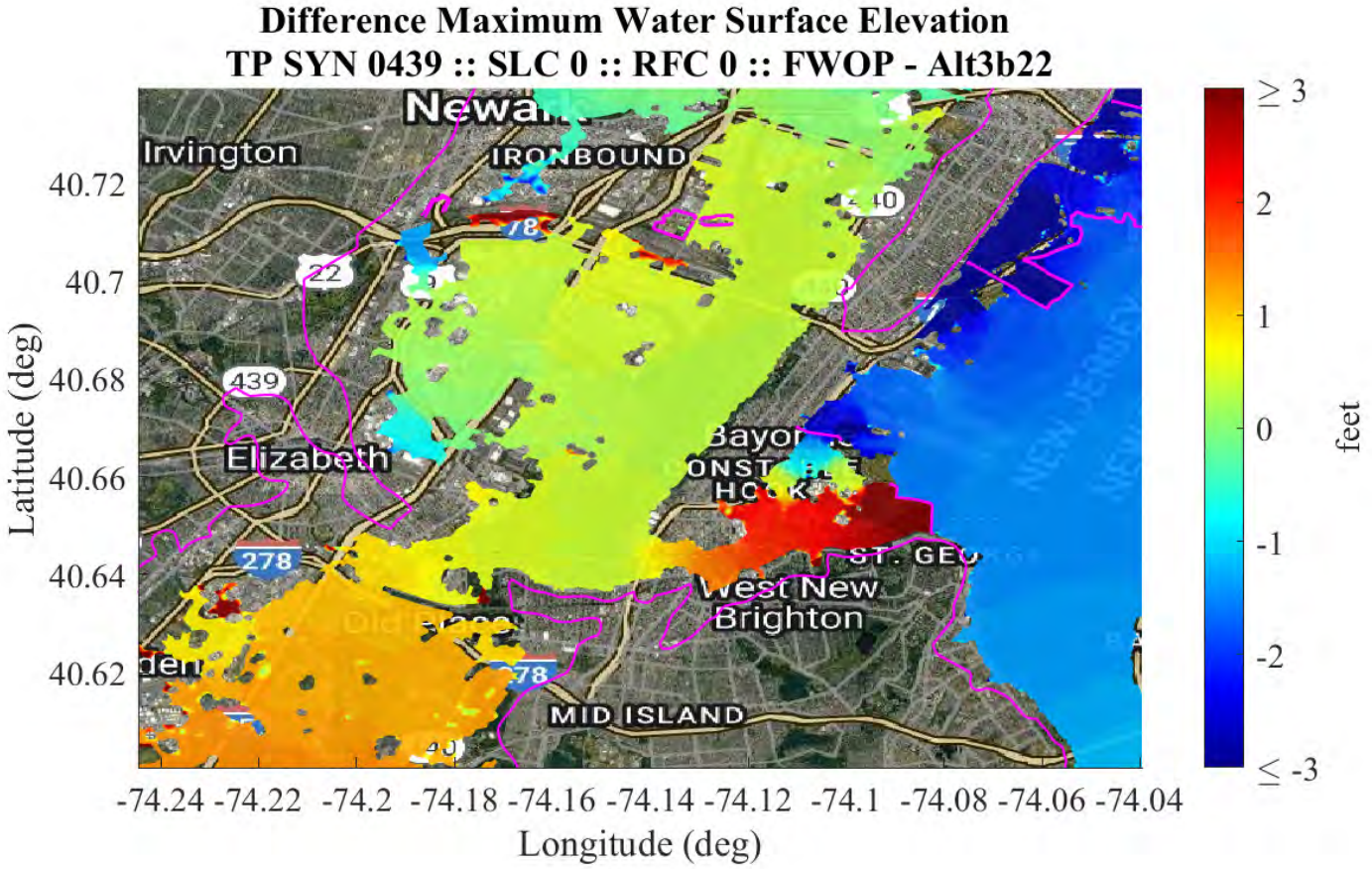
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439



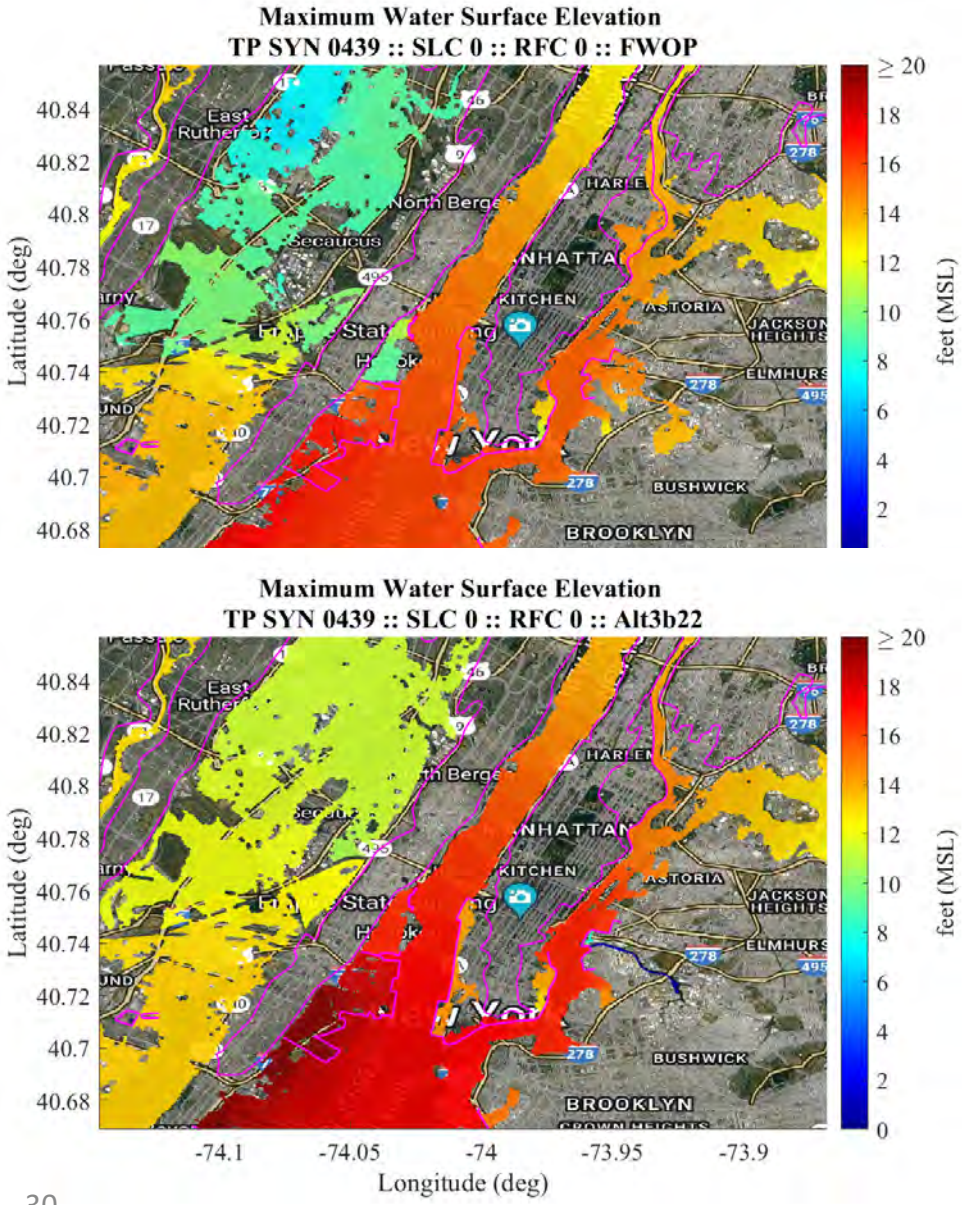


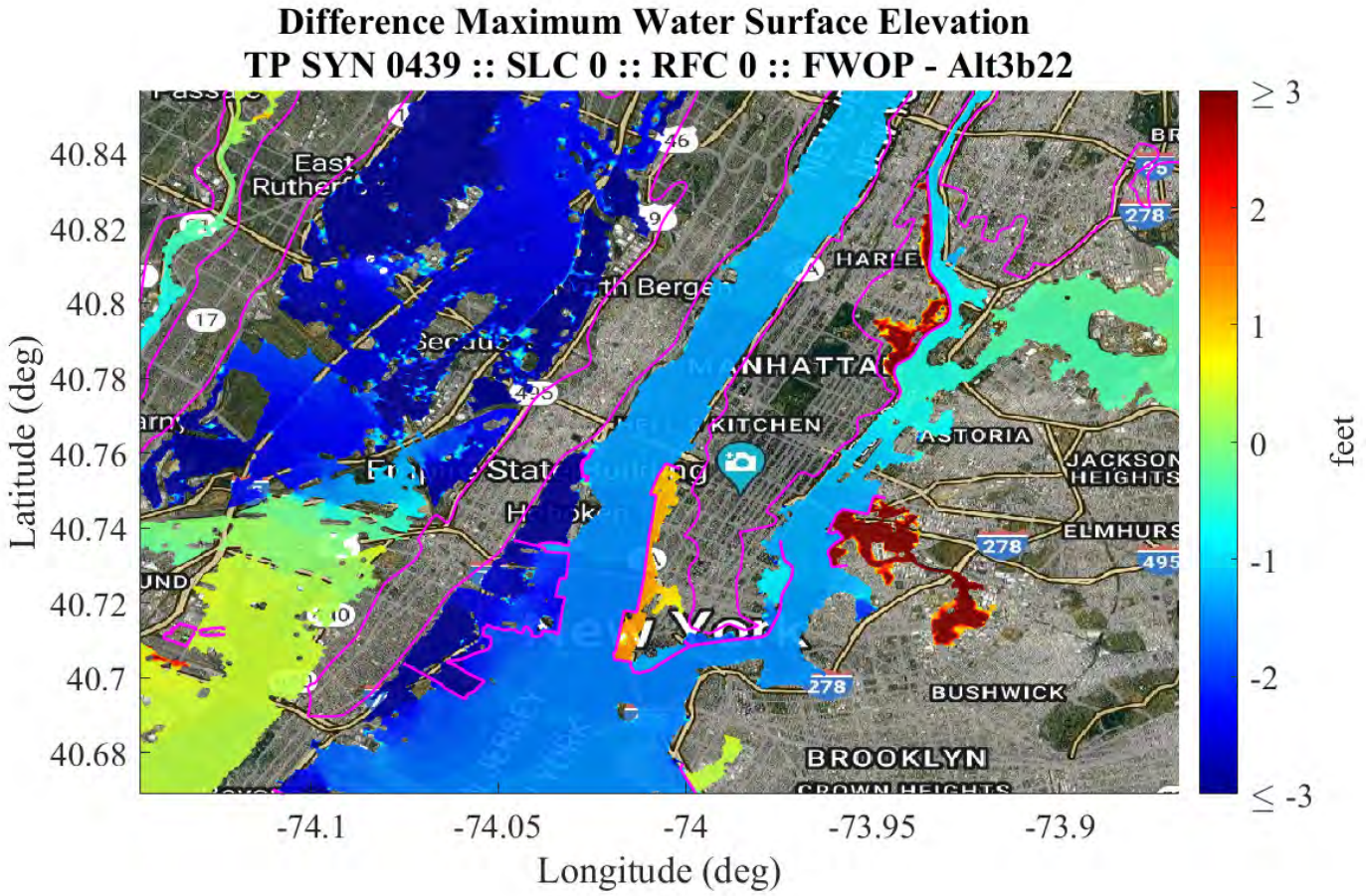
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439



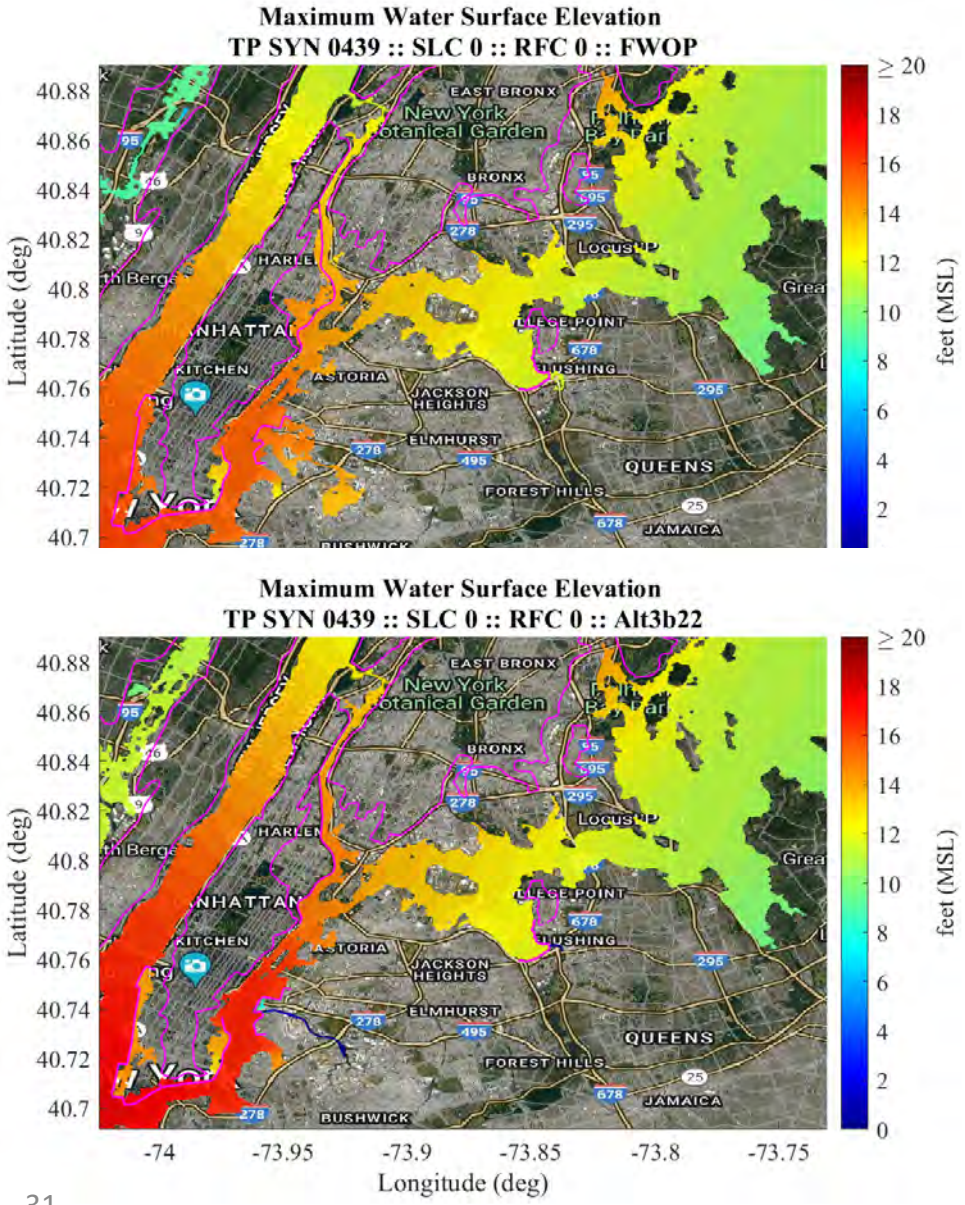


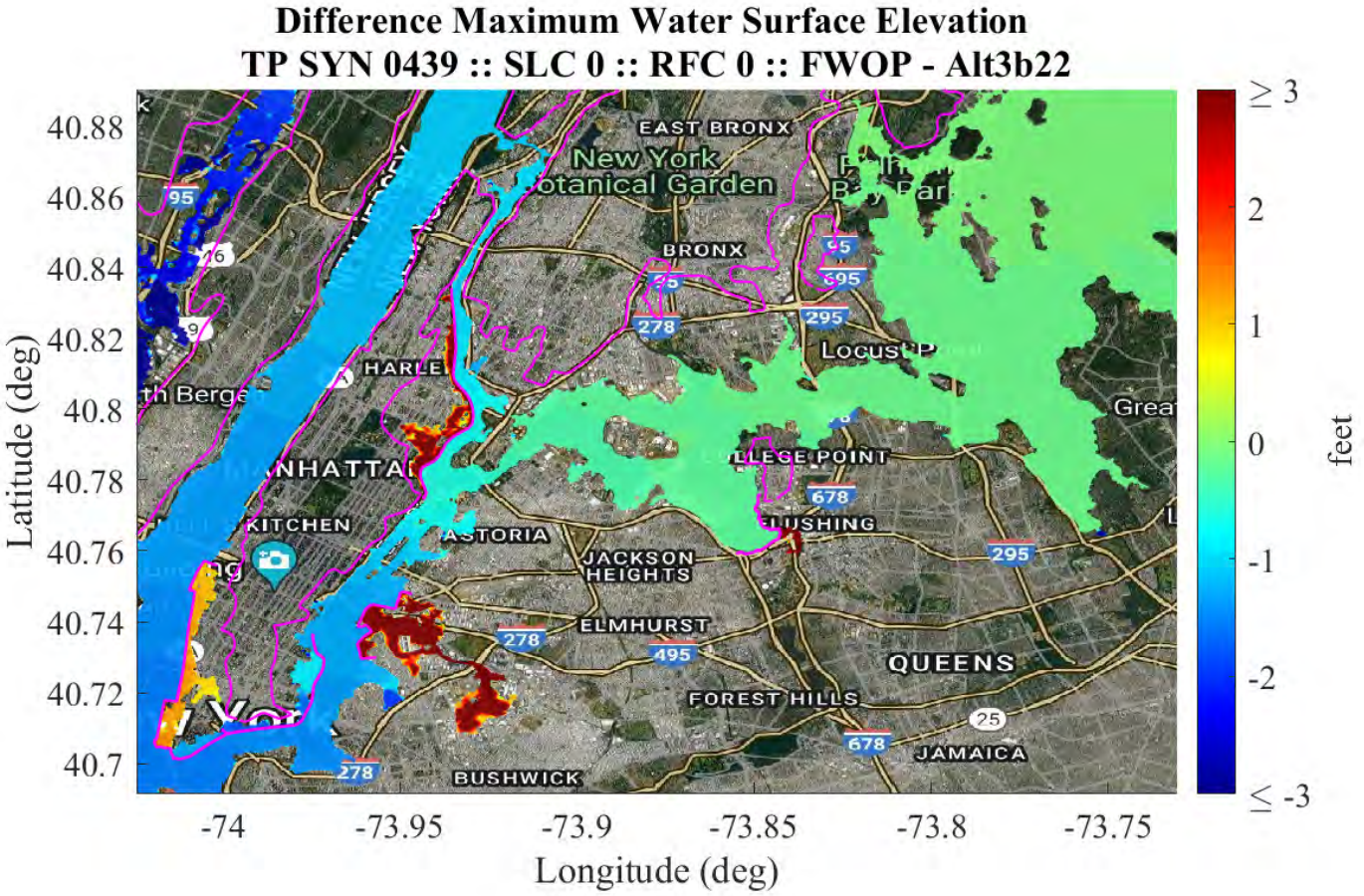
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439



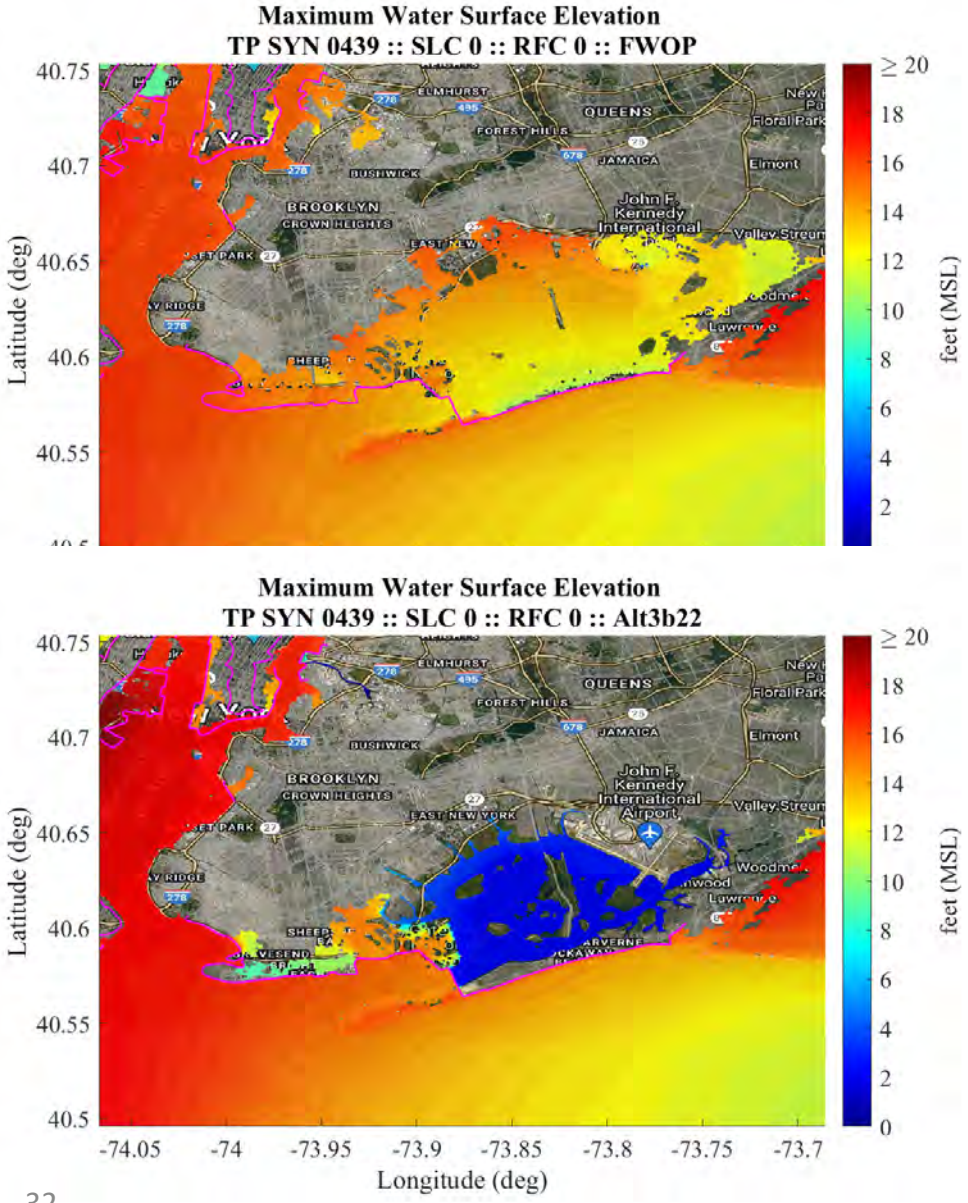


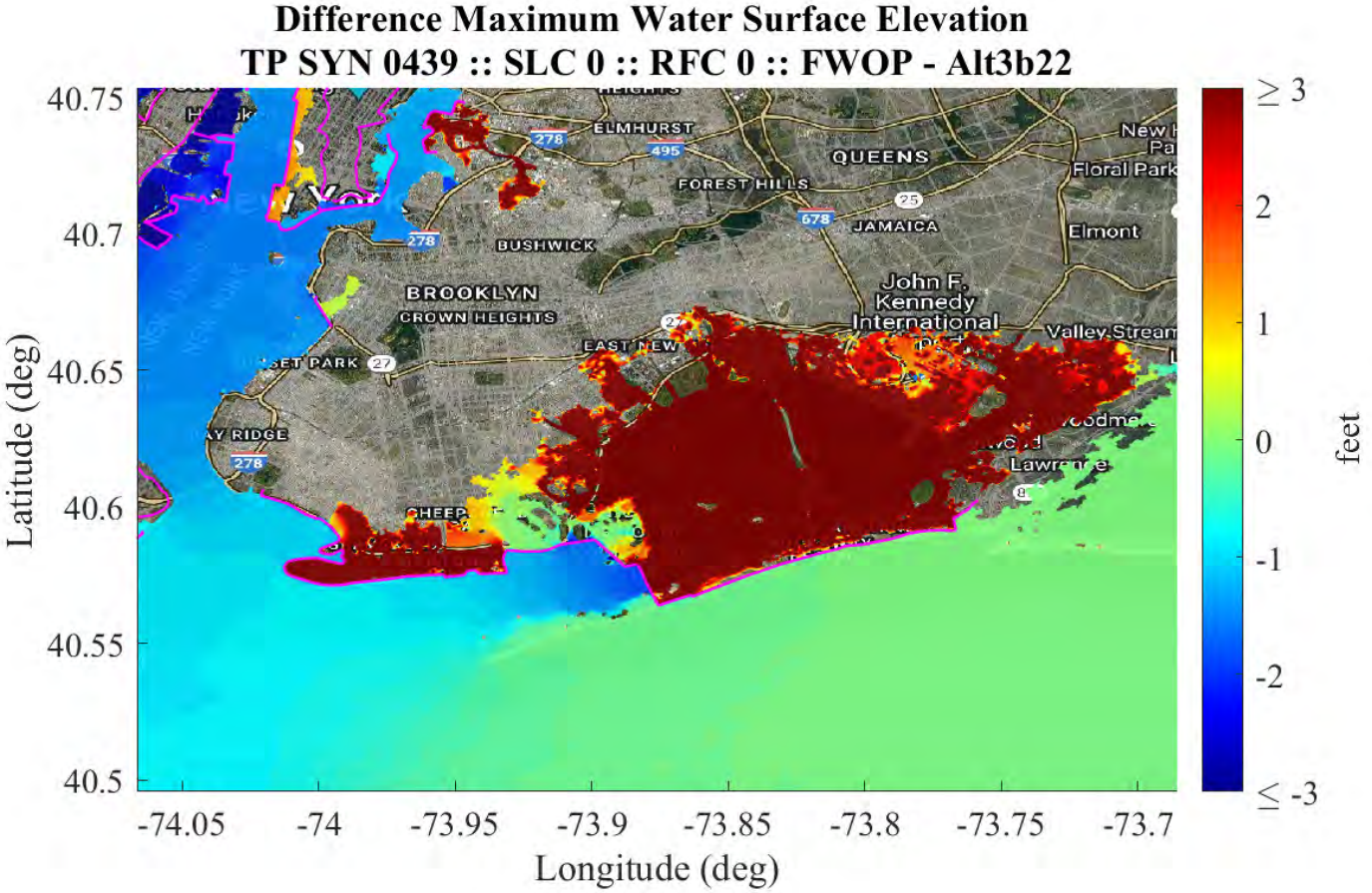
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439





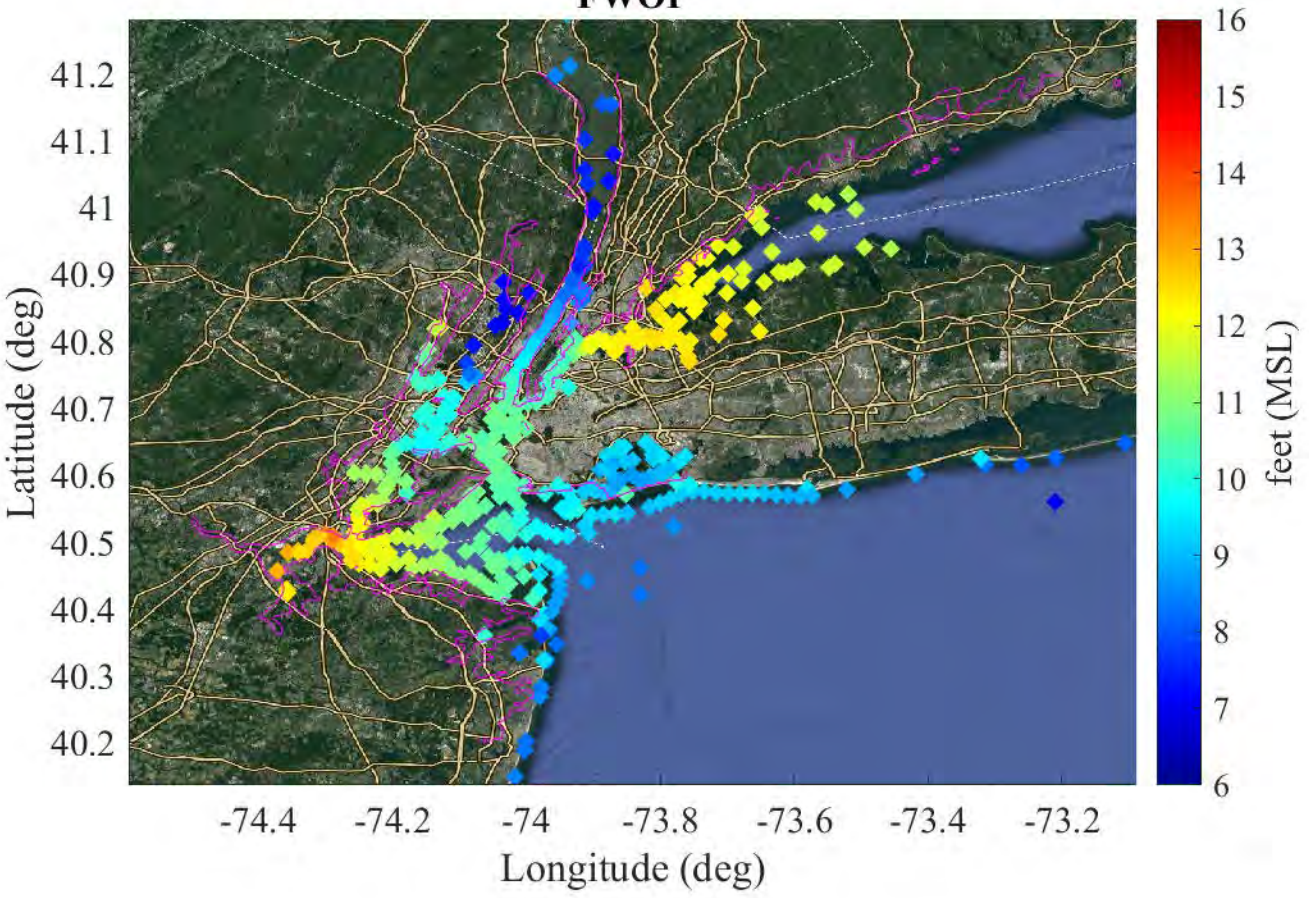
Maximum Water Surface Elevation Comparisons
Storm :: TP SYN 439

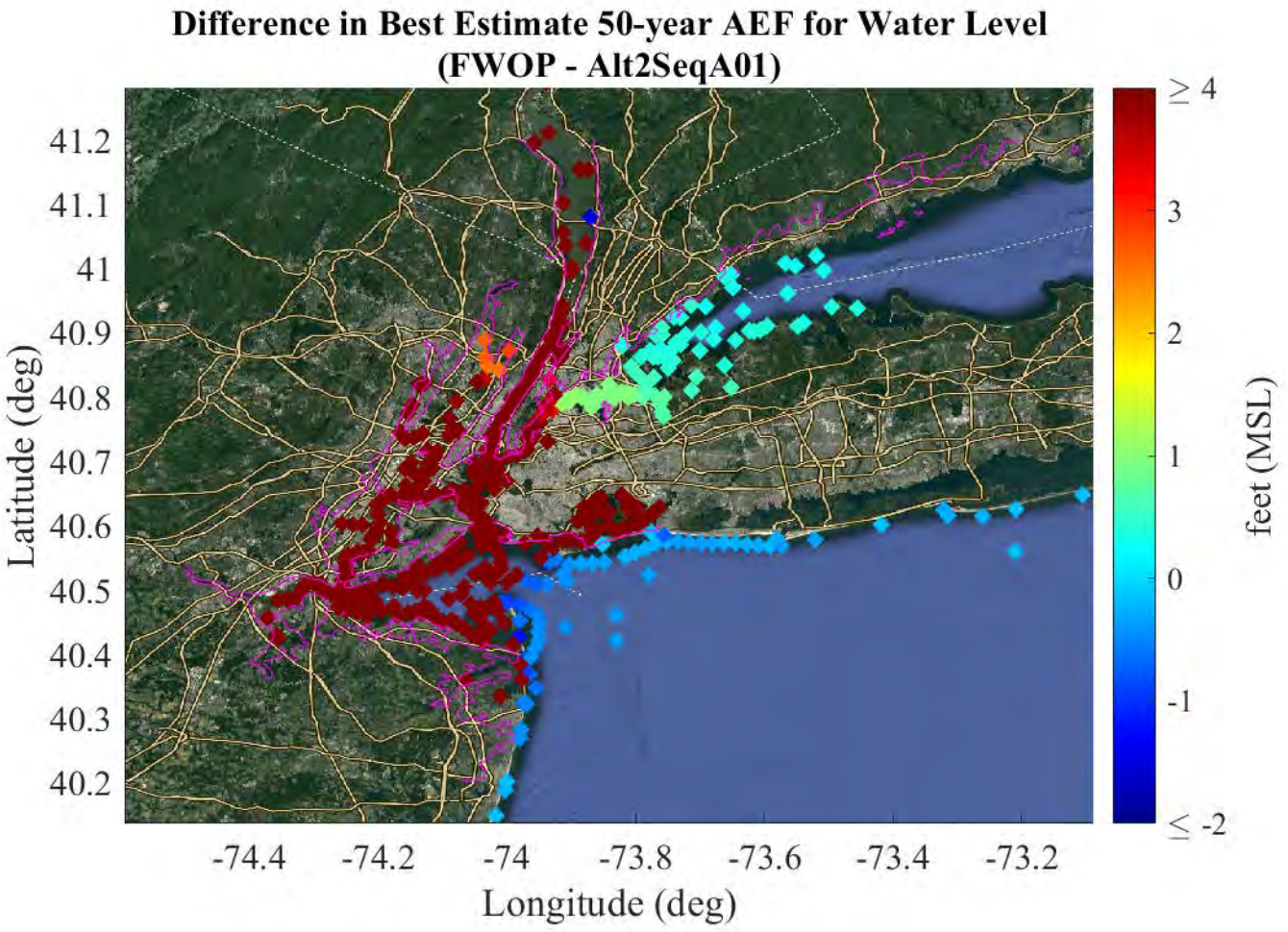


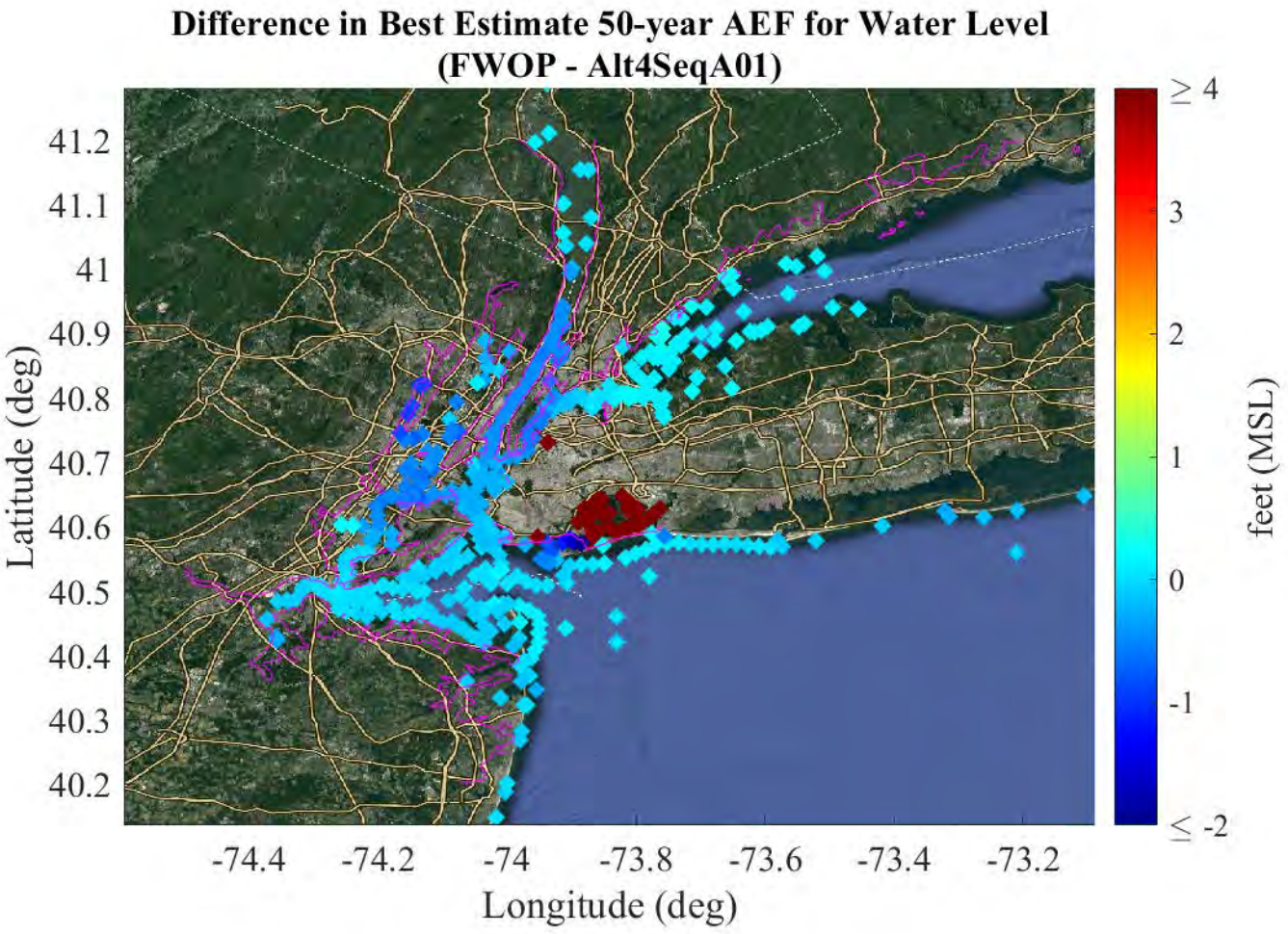


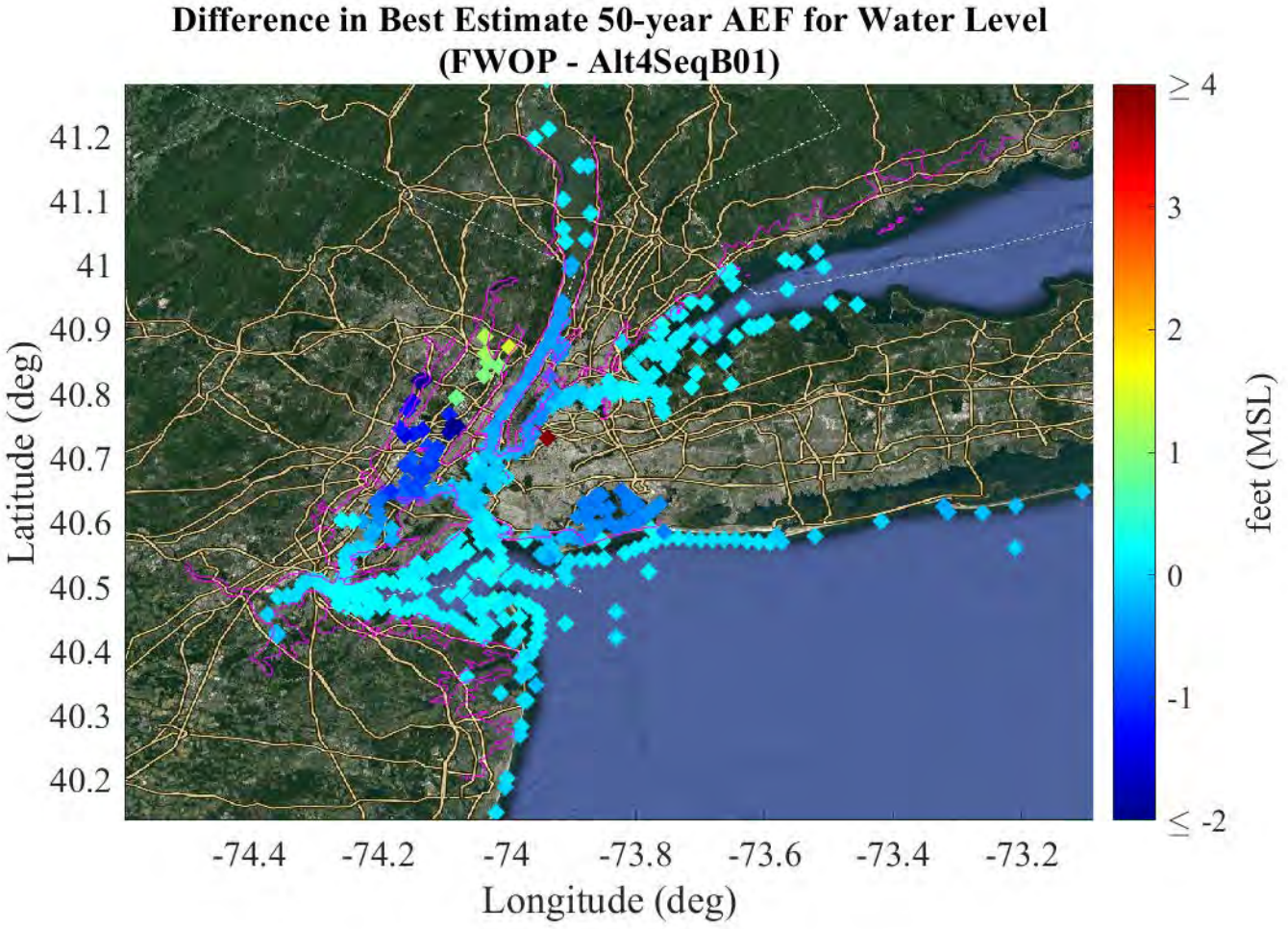
Appendix VII
Two-Dimensional Color Plots of the Best Estimate AEF Values for Water Levels
FWOP vs Alt. Sequences

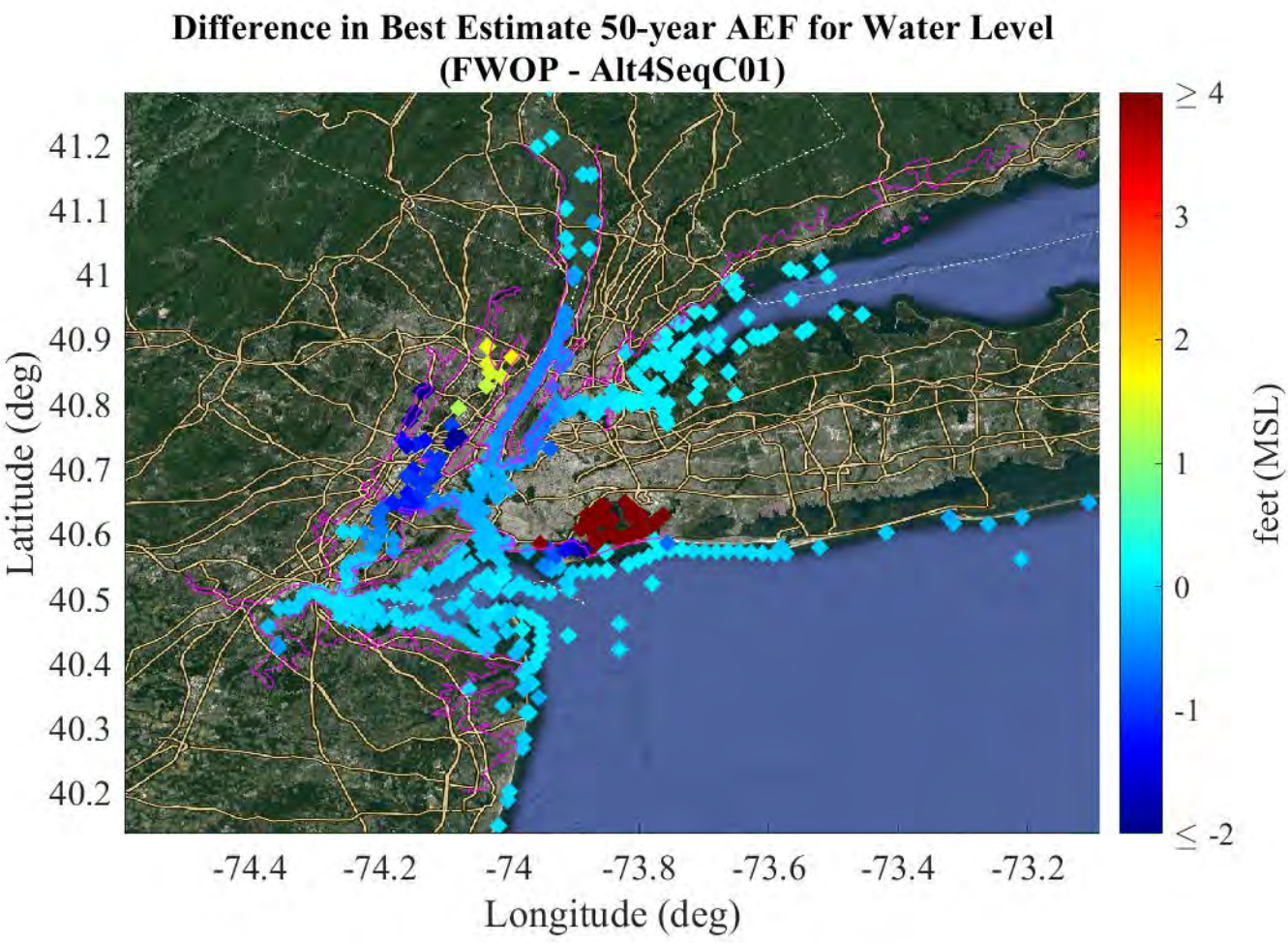
Best Estimate 50-year AEF for Water Level
FWOP

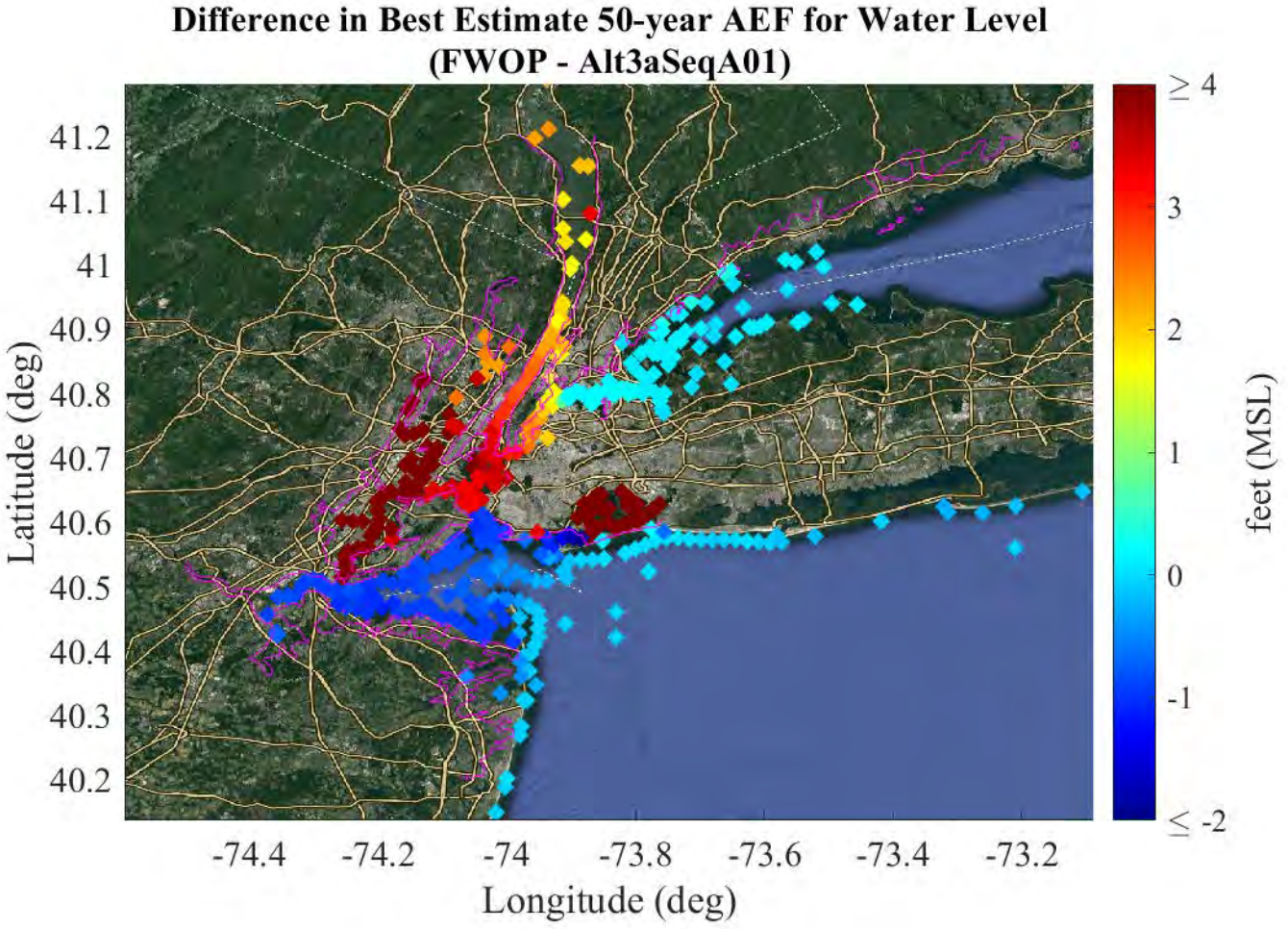


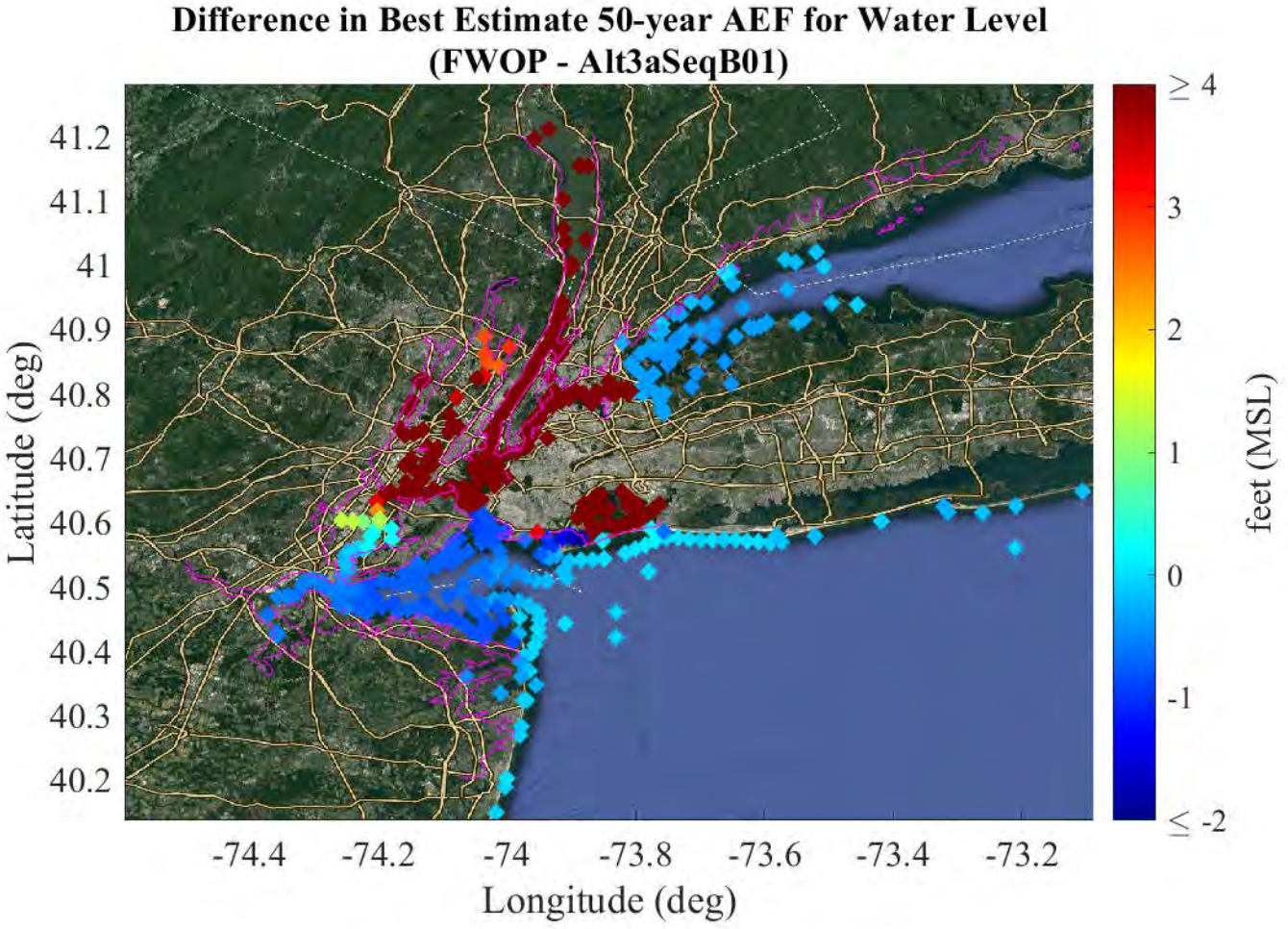

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt2SeqA01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

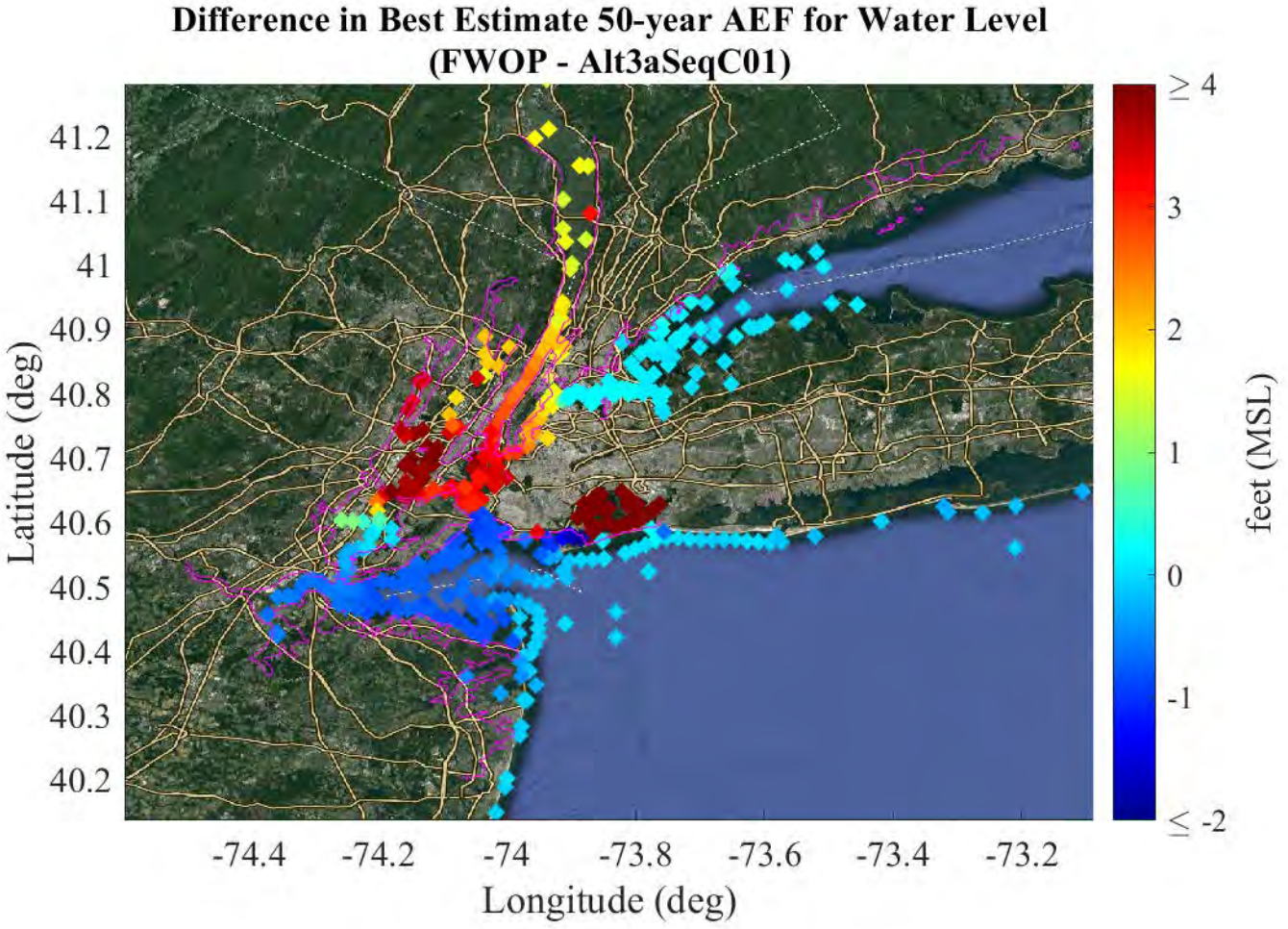

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt4SeqA01)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
Latitude (deg)
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

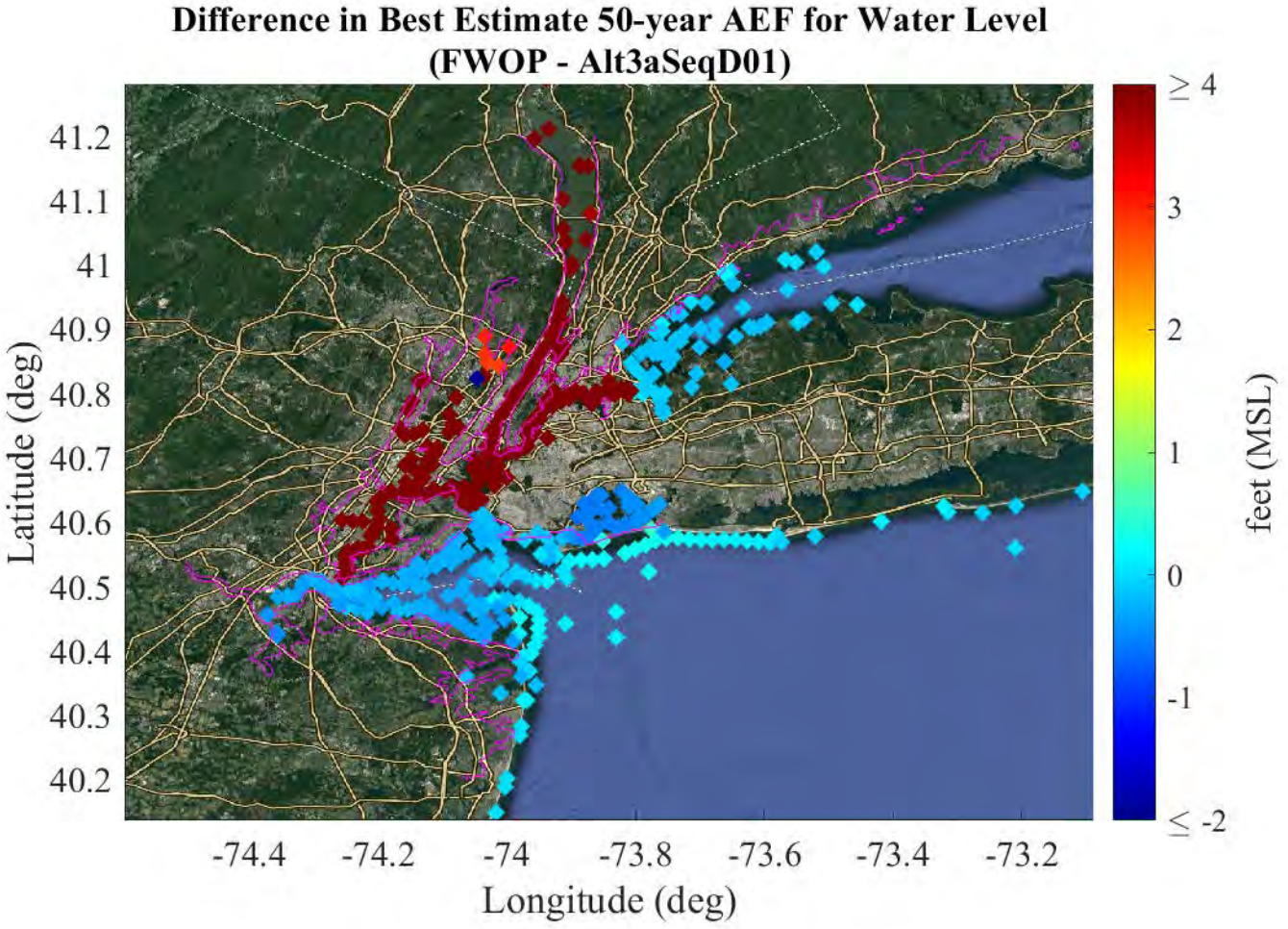

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt4SeqB01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

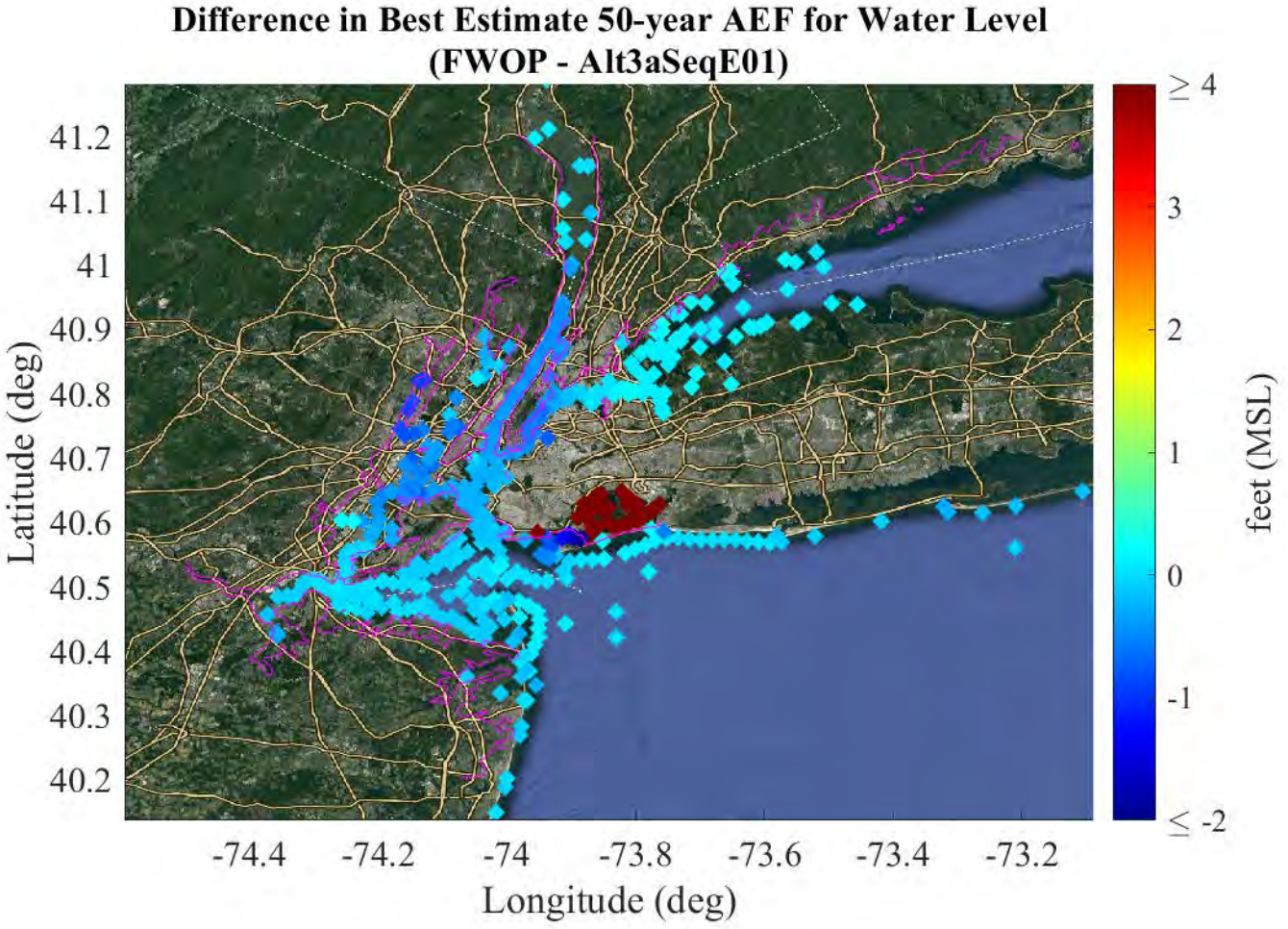

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt4SeqC01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

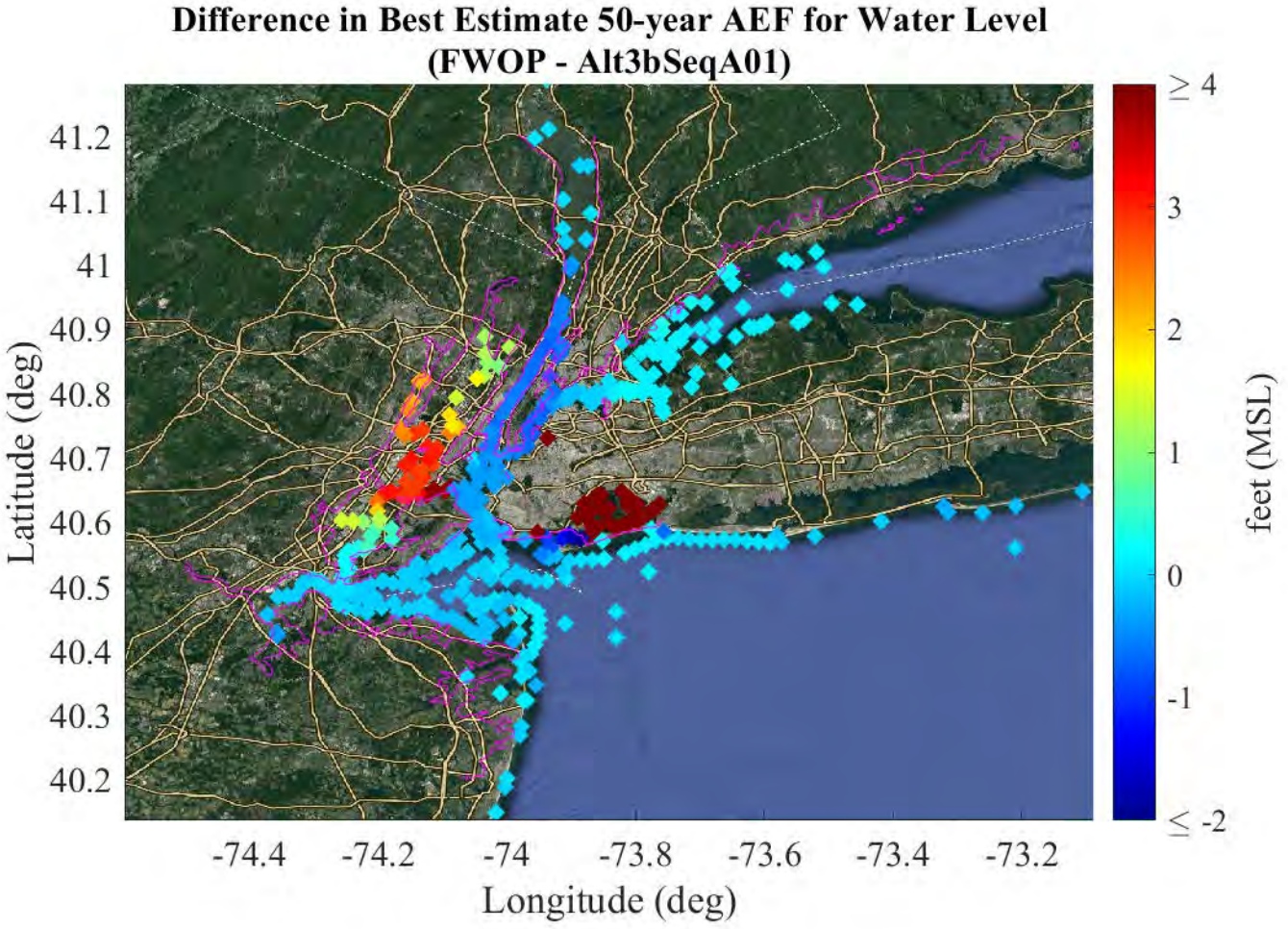

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3aSeqA01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

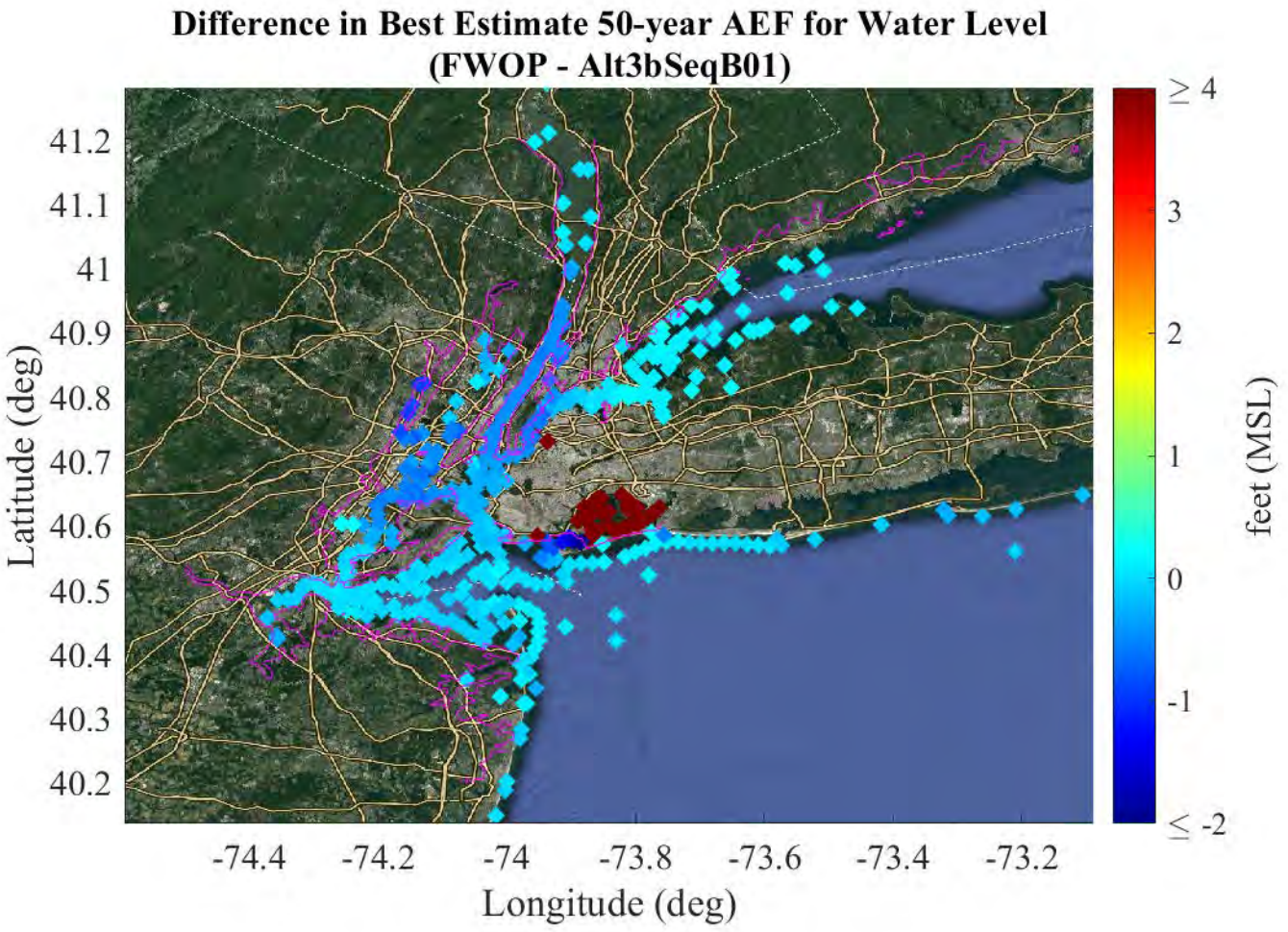

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3aSeqB01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

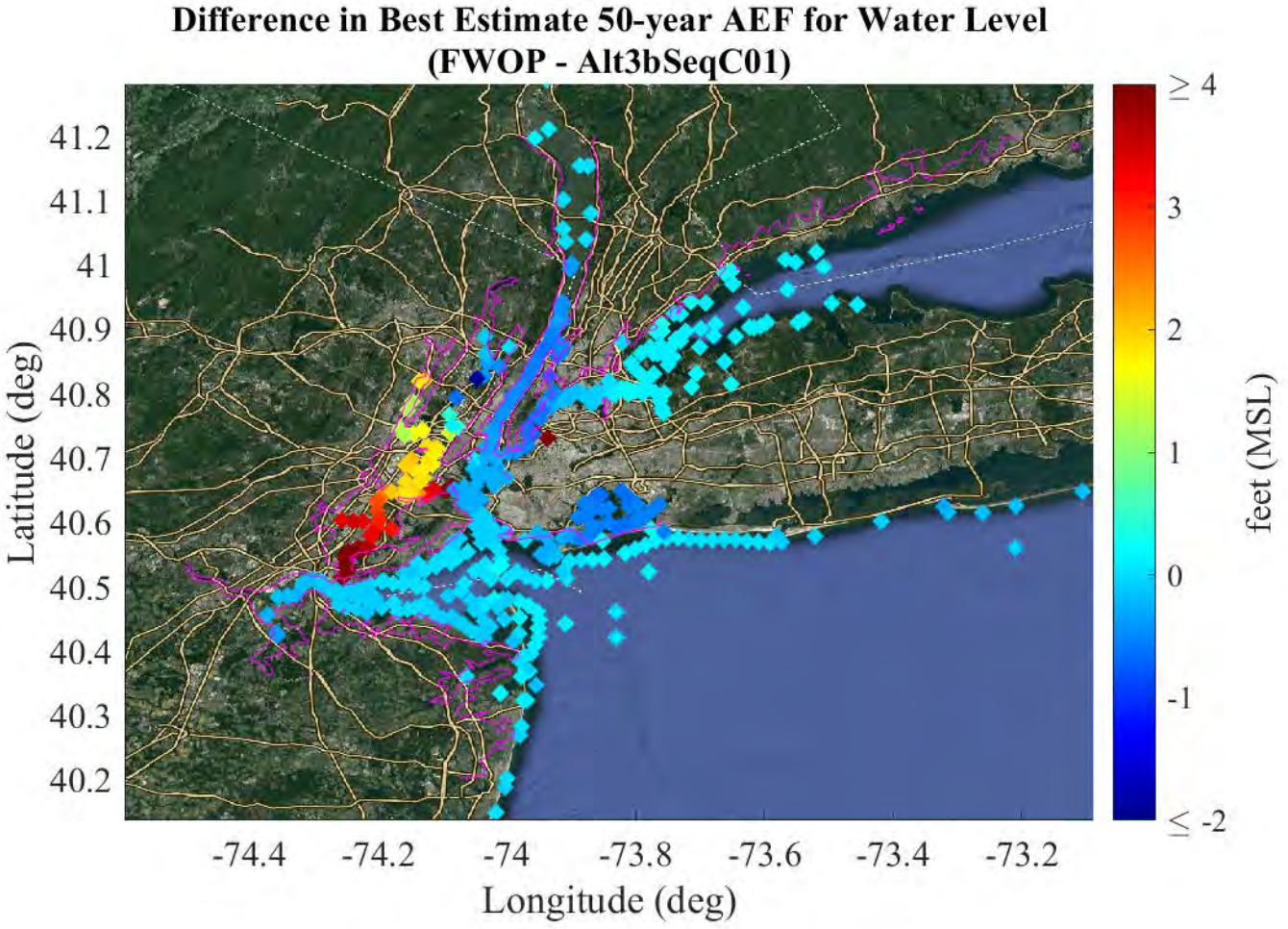

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3aSeqC01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

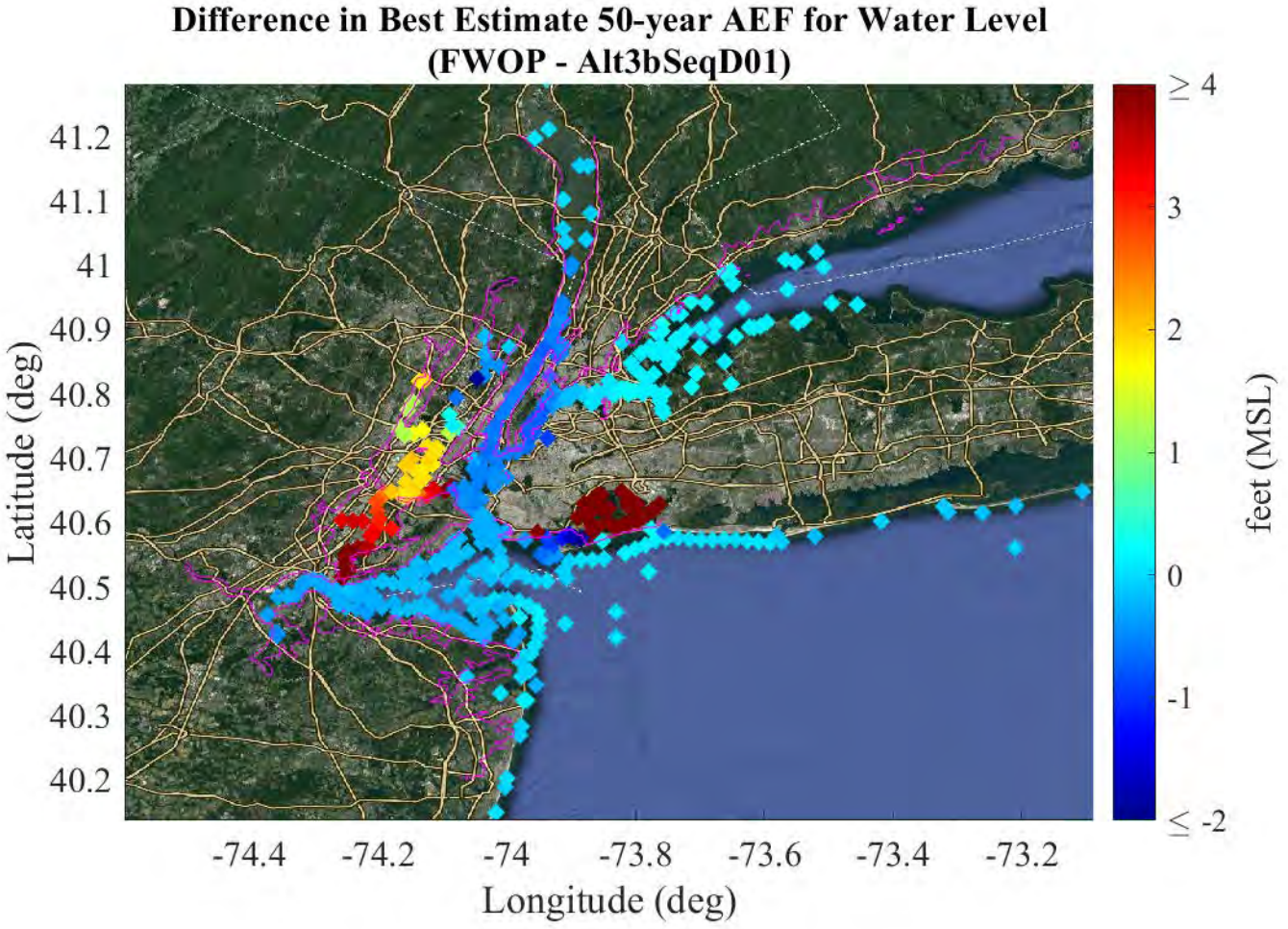

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3aSeqD01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3aSeqE01)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
Latitude (deg)
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

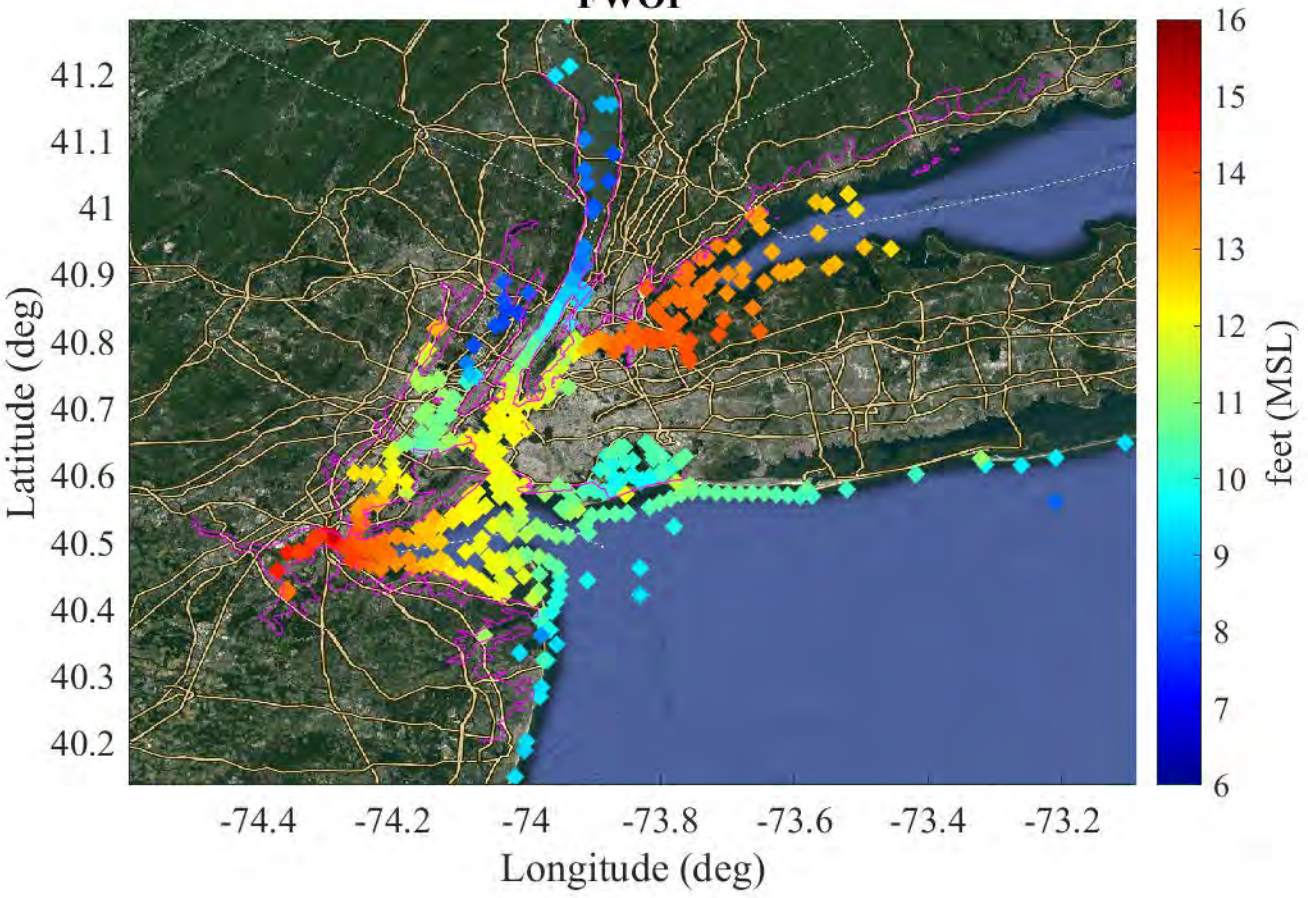

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3bSeqA01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

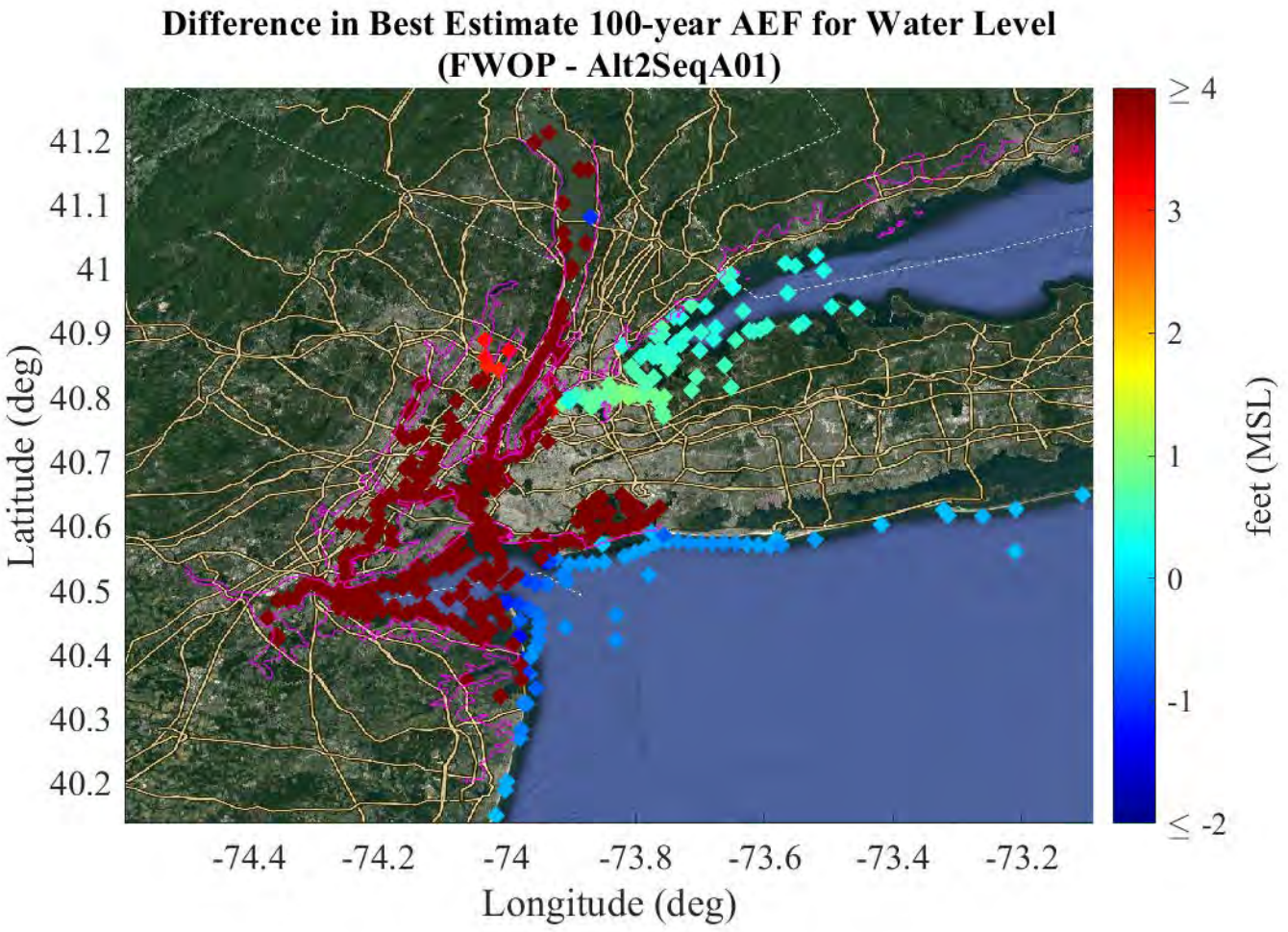

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3bSeqB01)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
Latitude (deg)
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

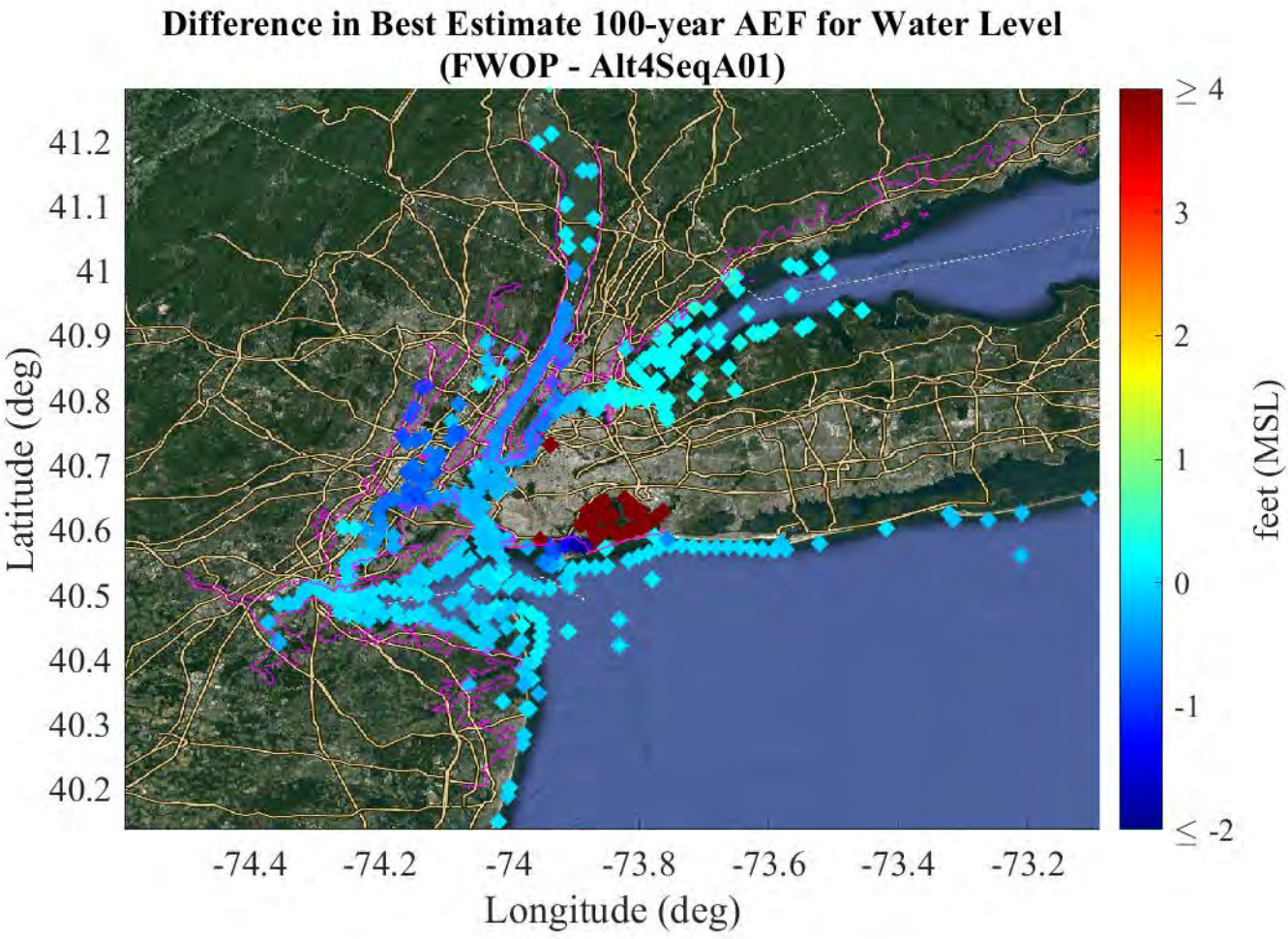

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3bSeqC01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

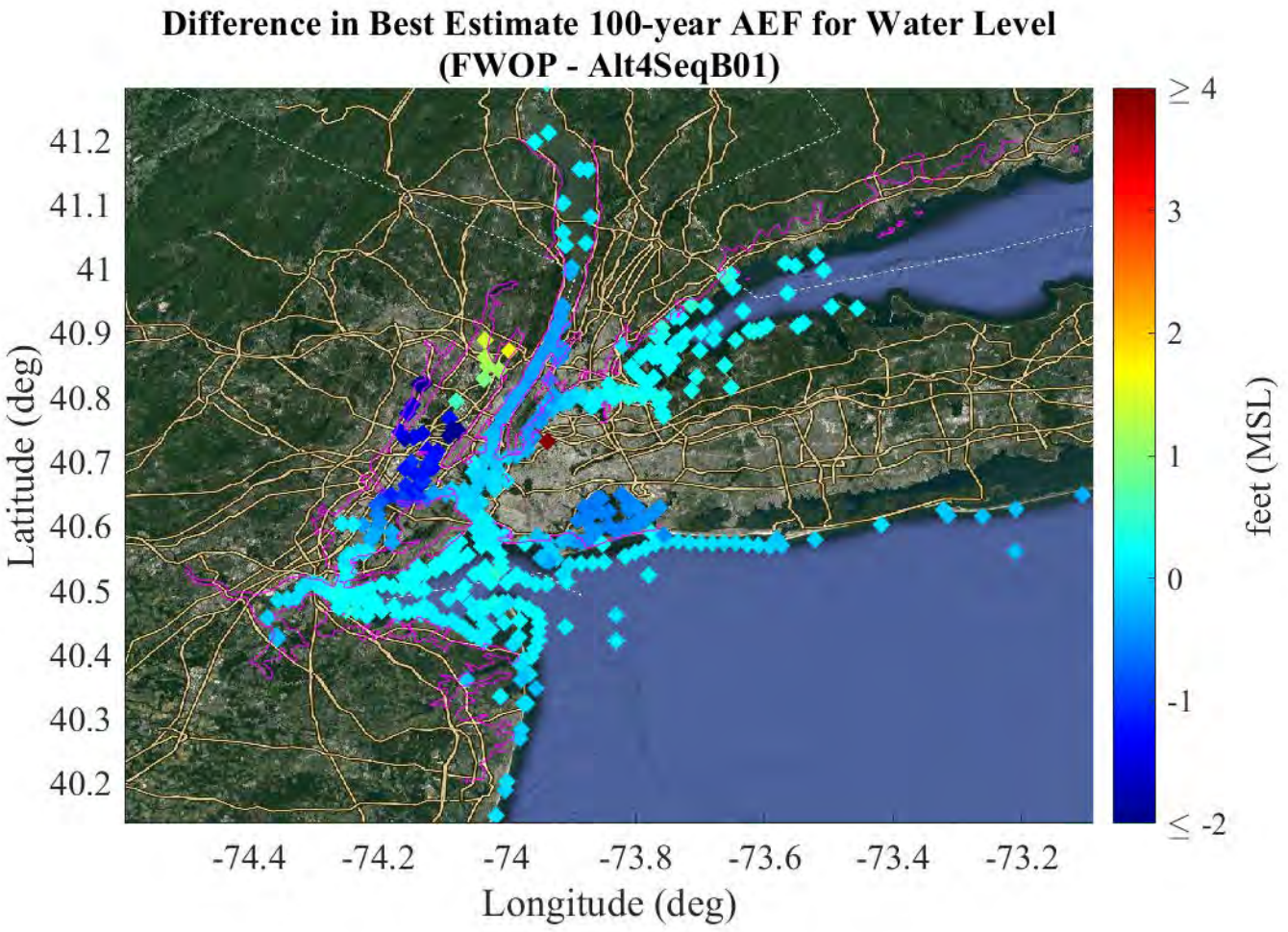

Difference in Best Estimate 50-year AEF for Water Level
(FWOP - Alt3bSeqD01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

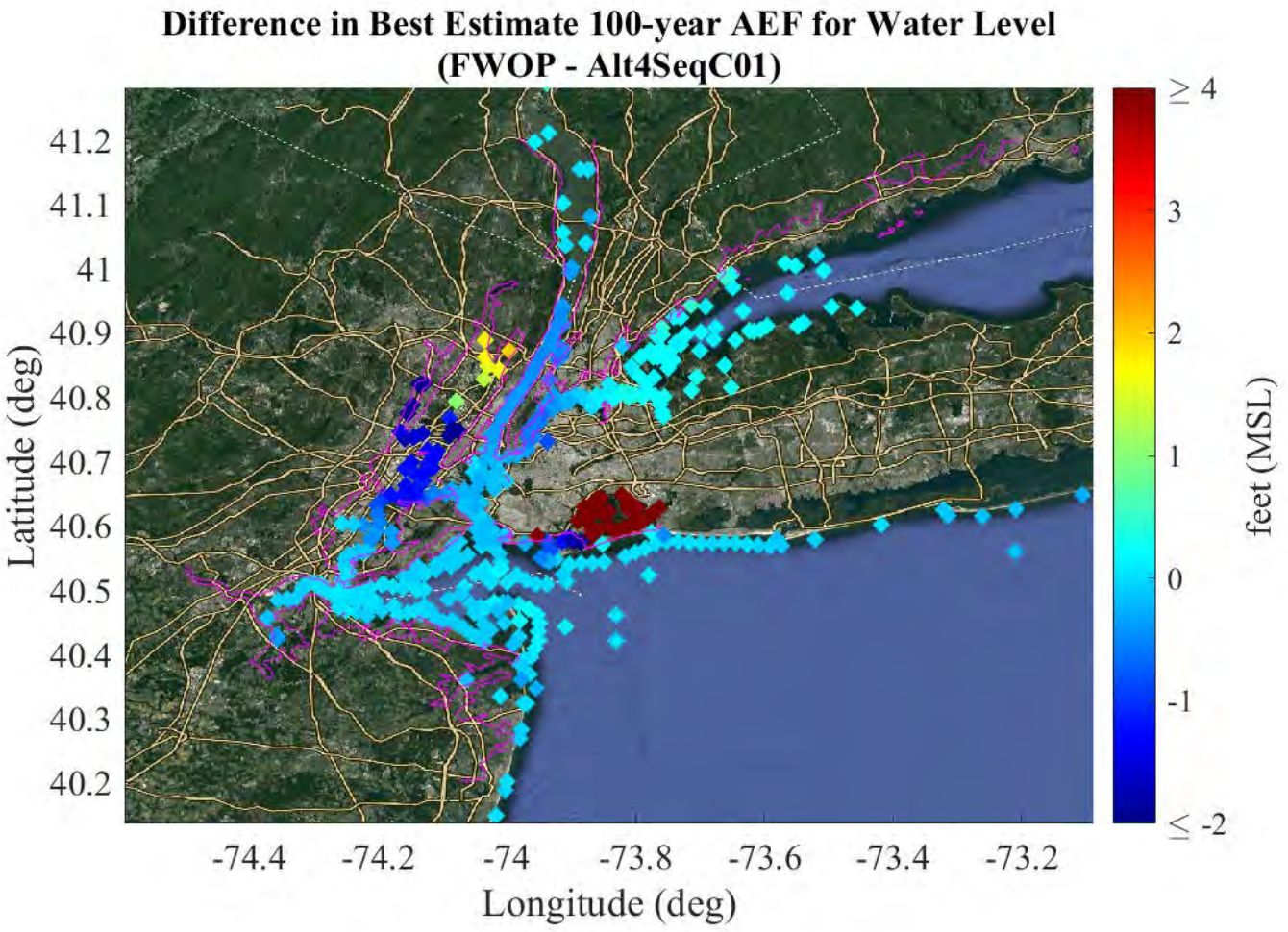
Best Estimate 100-year AEF for Water Level
FWOP




Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt2SeqA01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt4SeqA01)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
Latitude (deg)
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt4SeqB01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt4SeqC01)
Latitude (deg)
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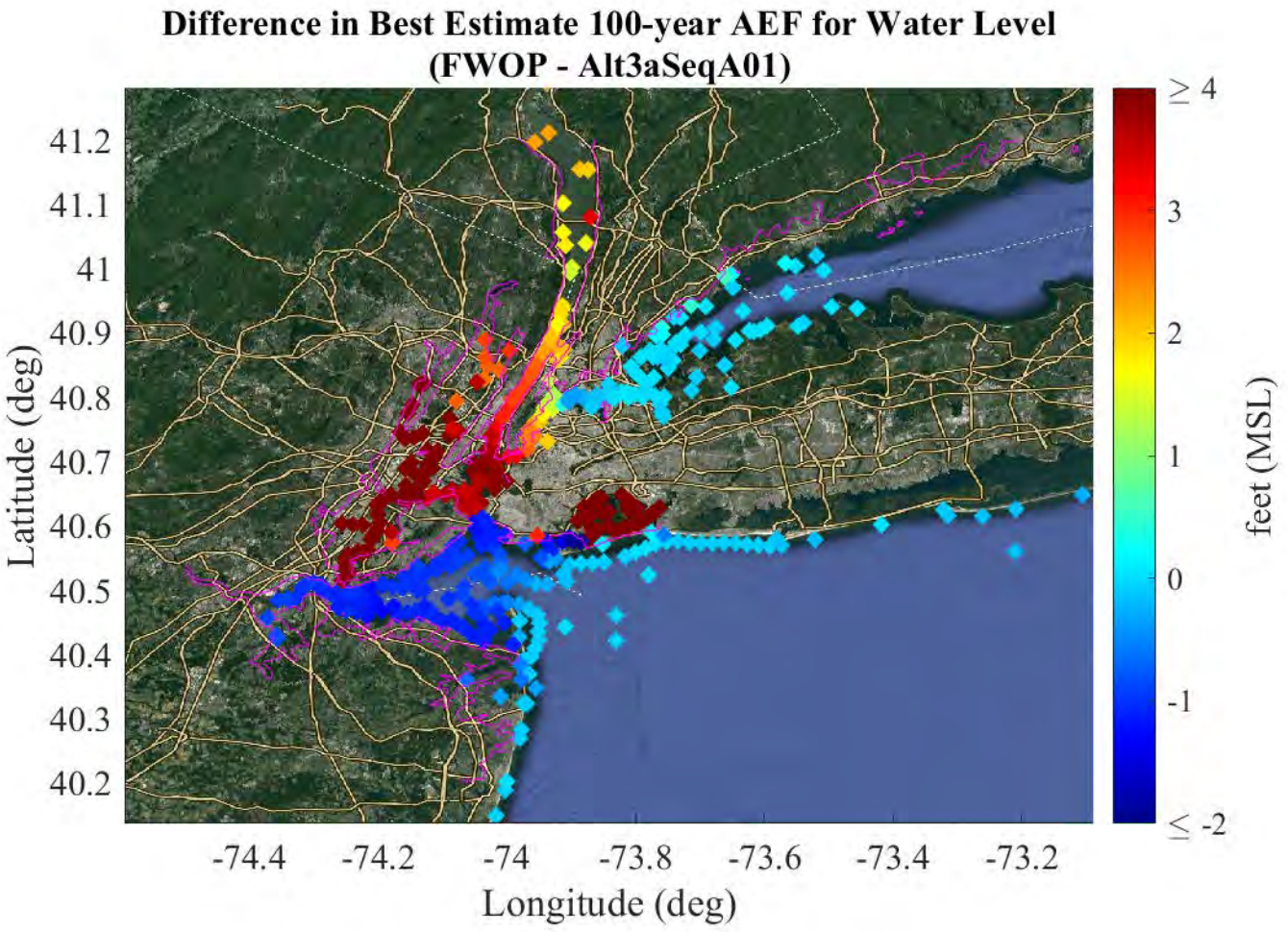
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3aSeqA01)
Latitude (deg)
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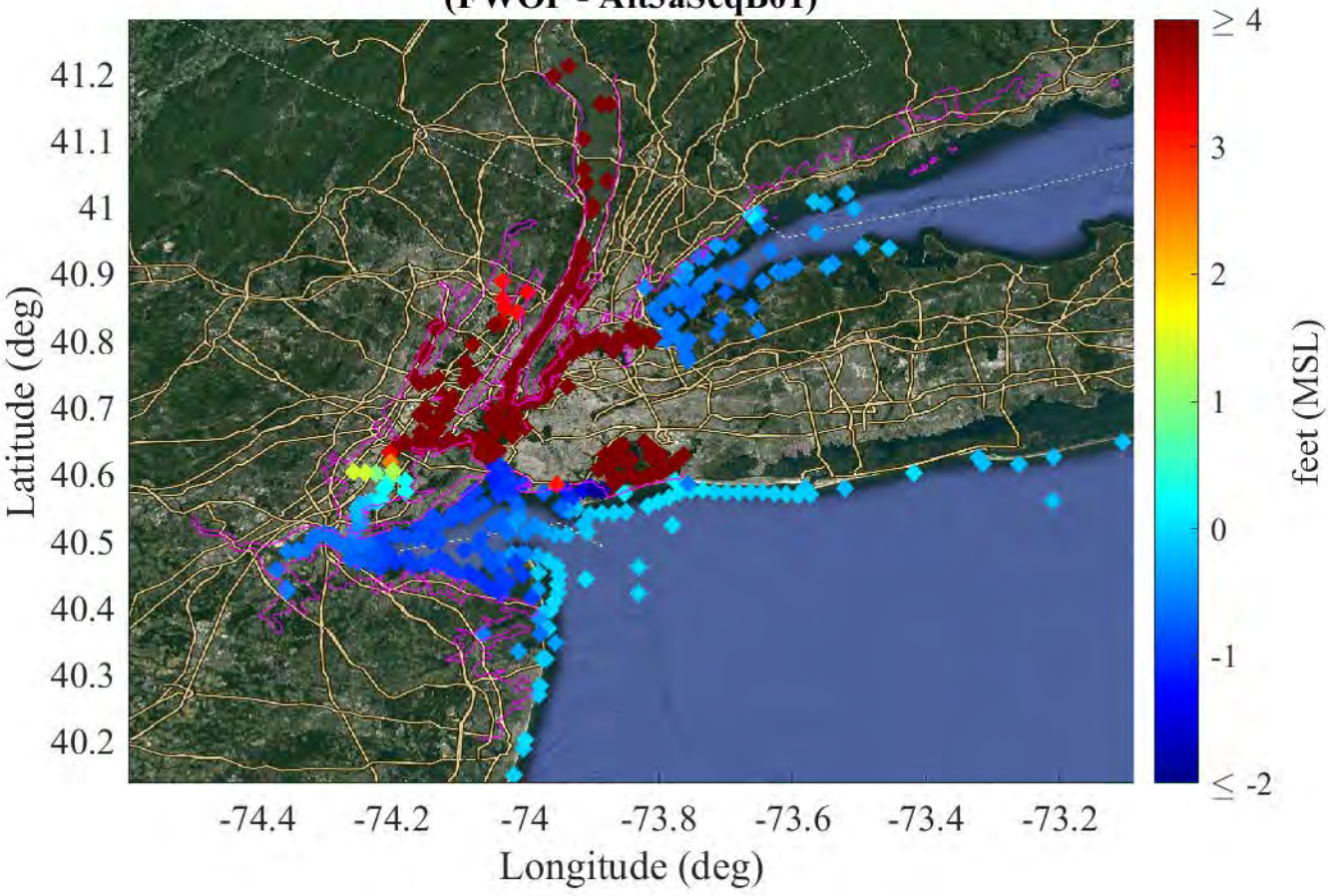
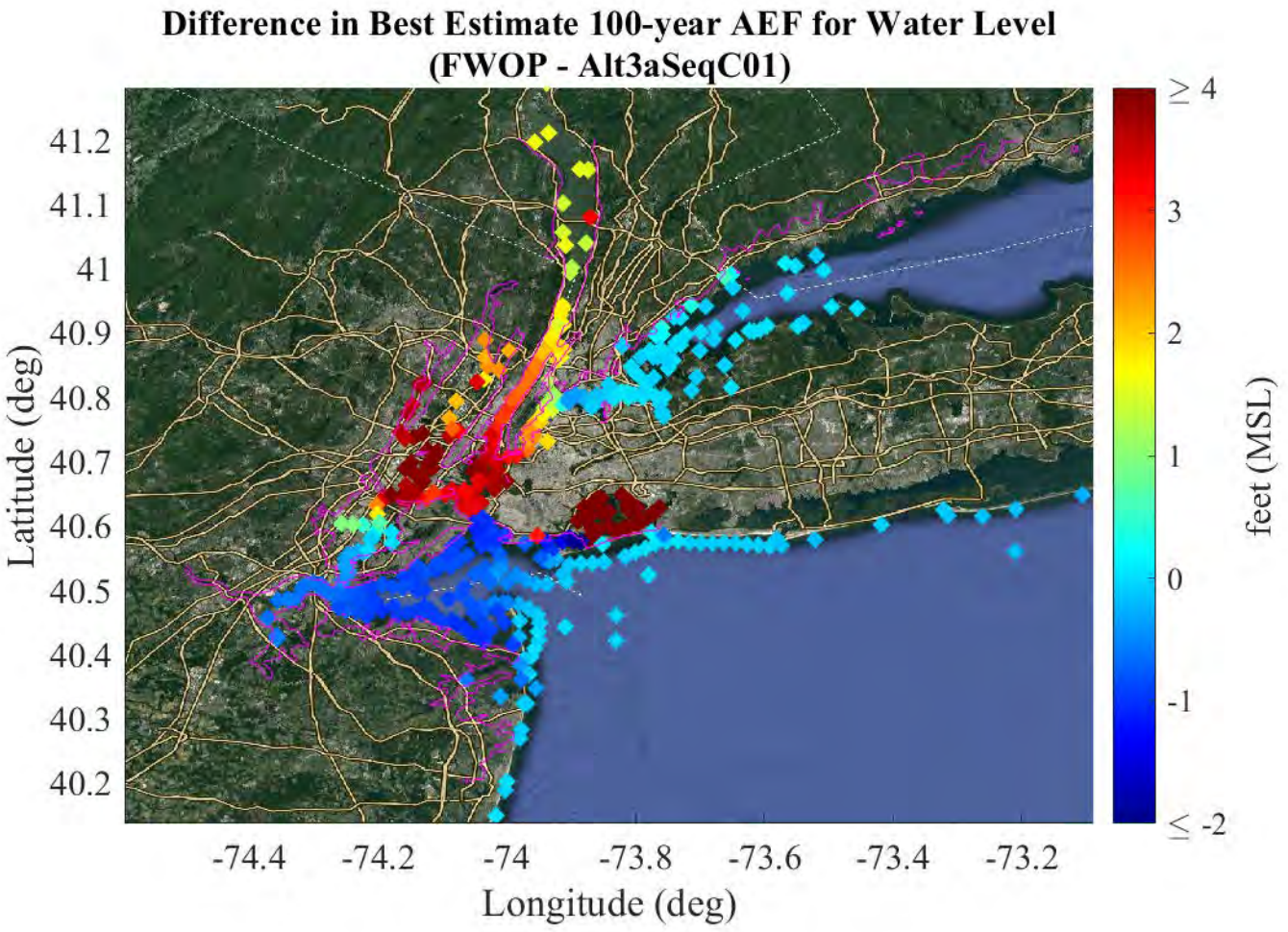
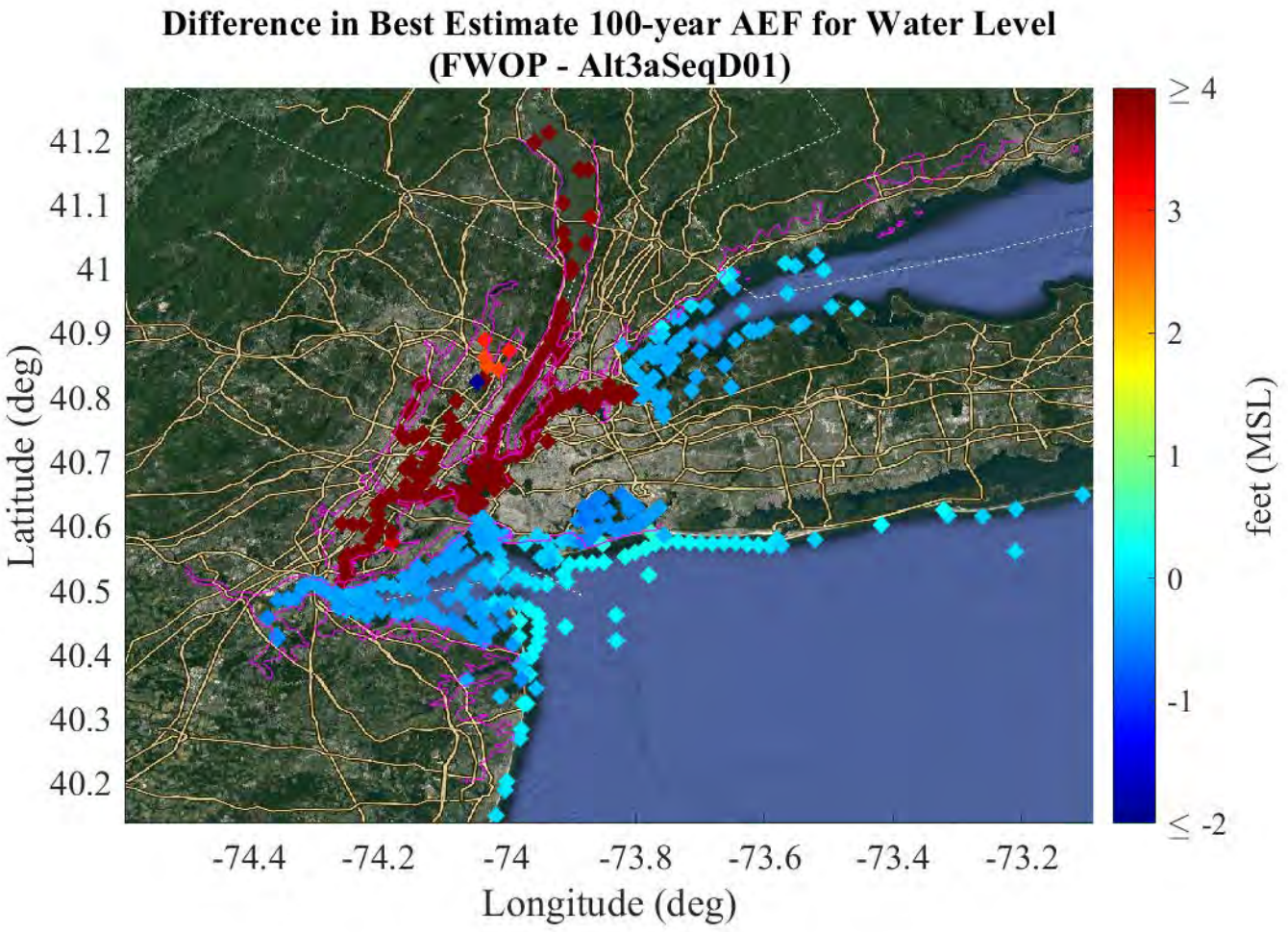
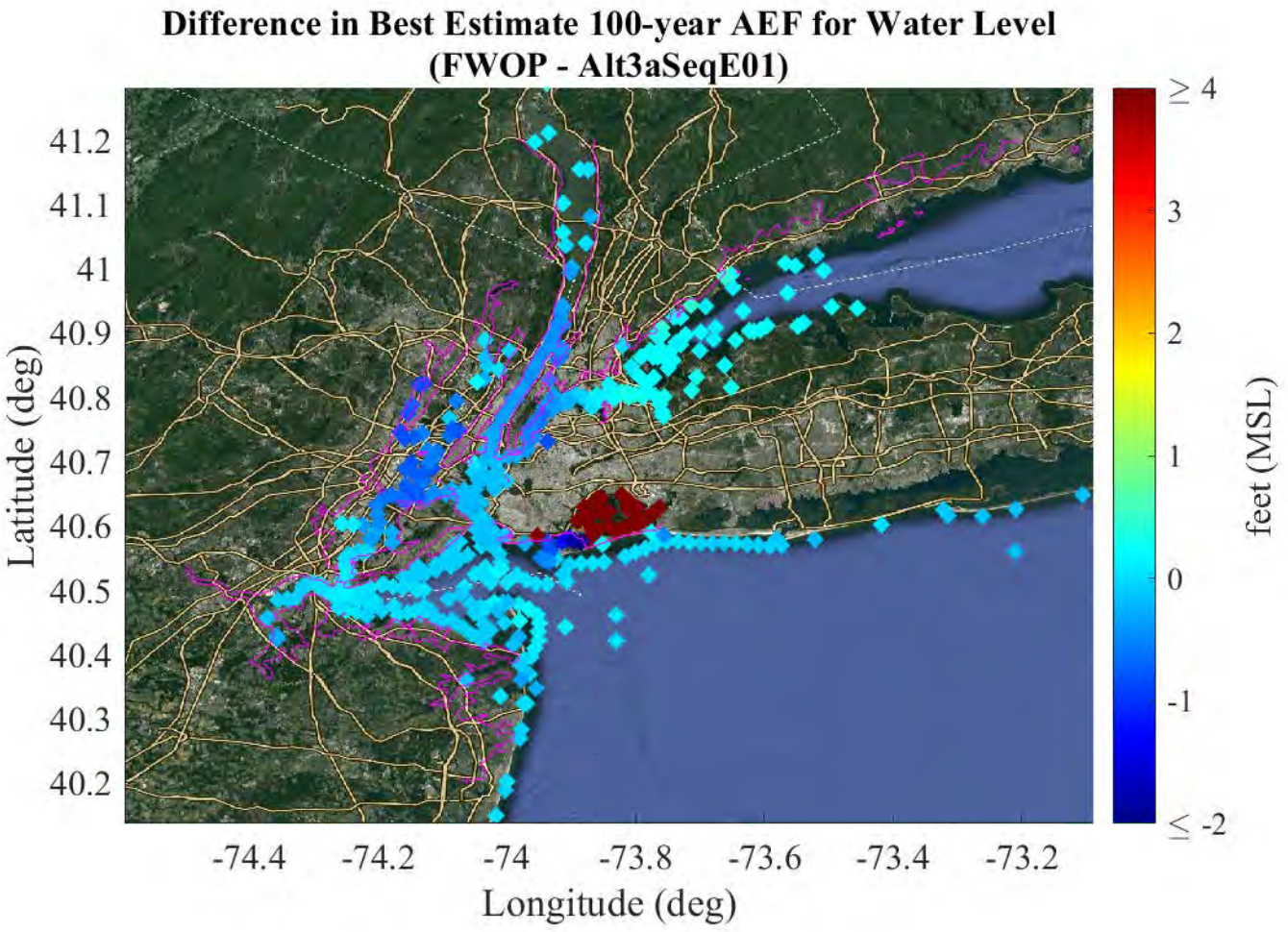
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

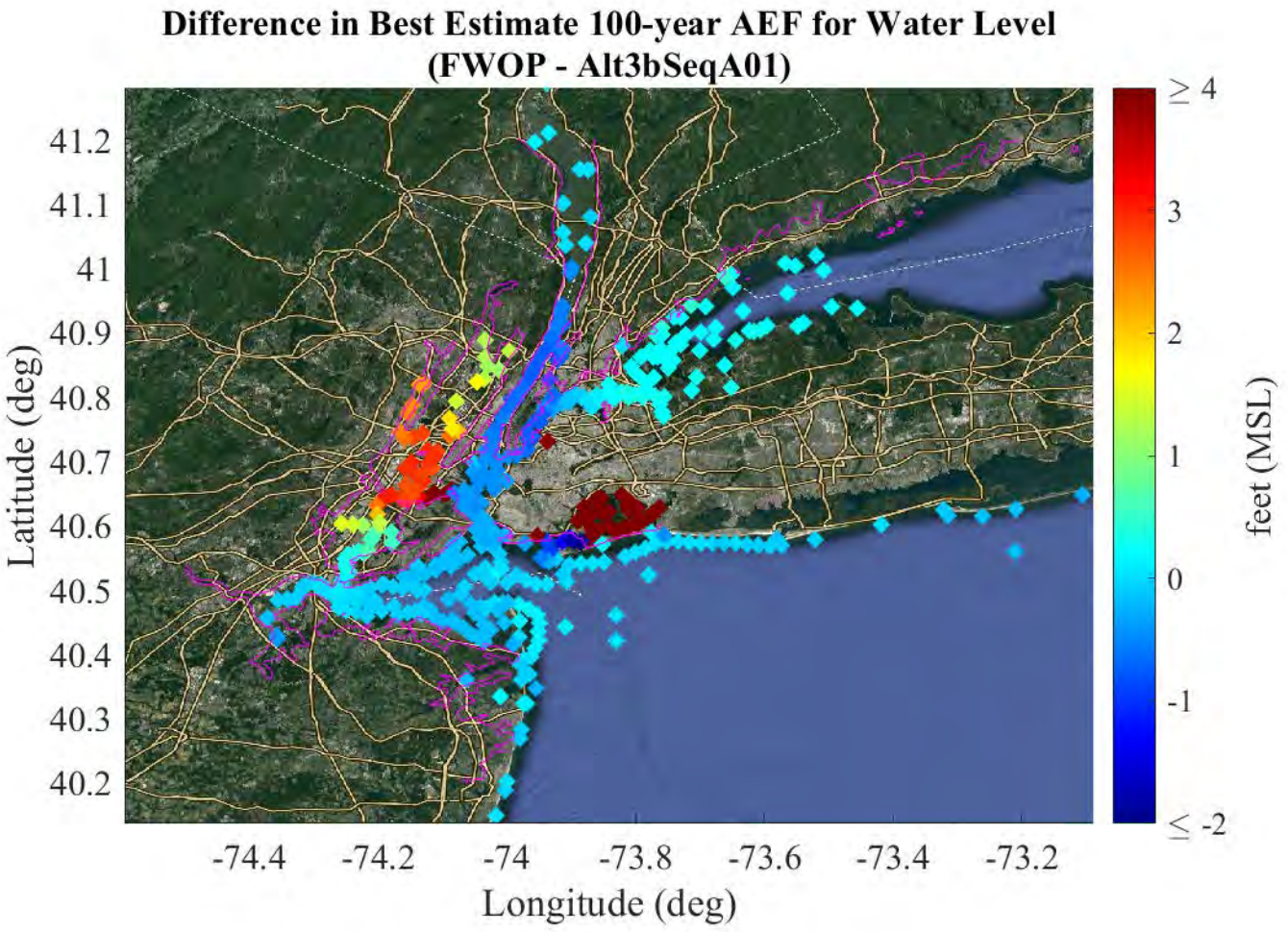
Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3aSeqB01)

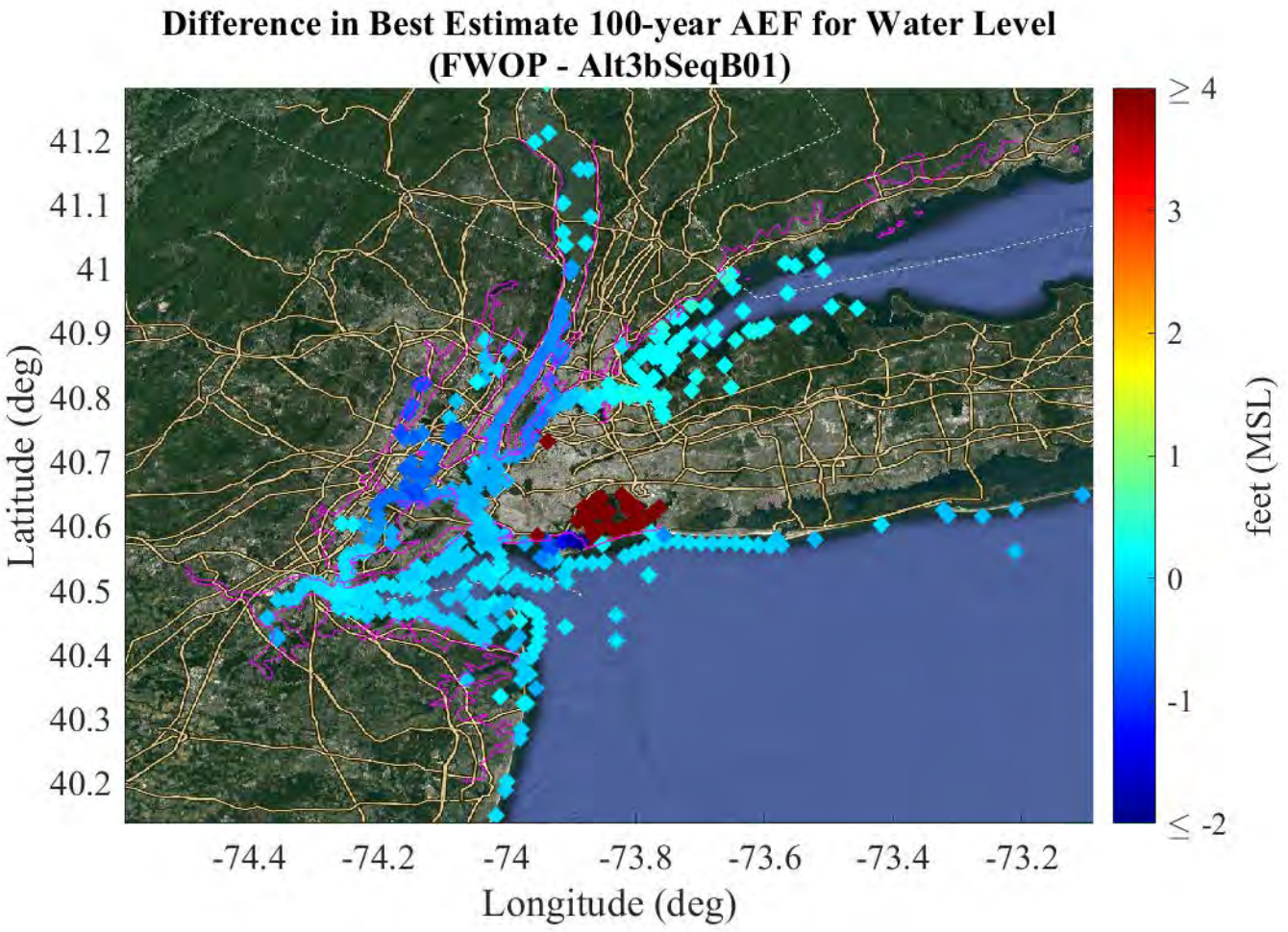


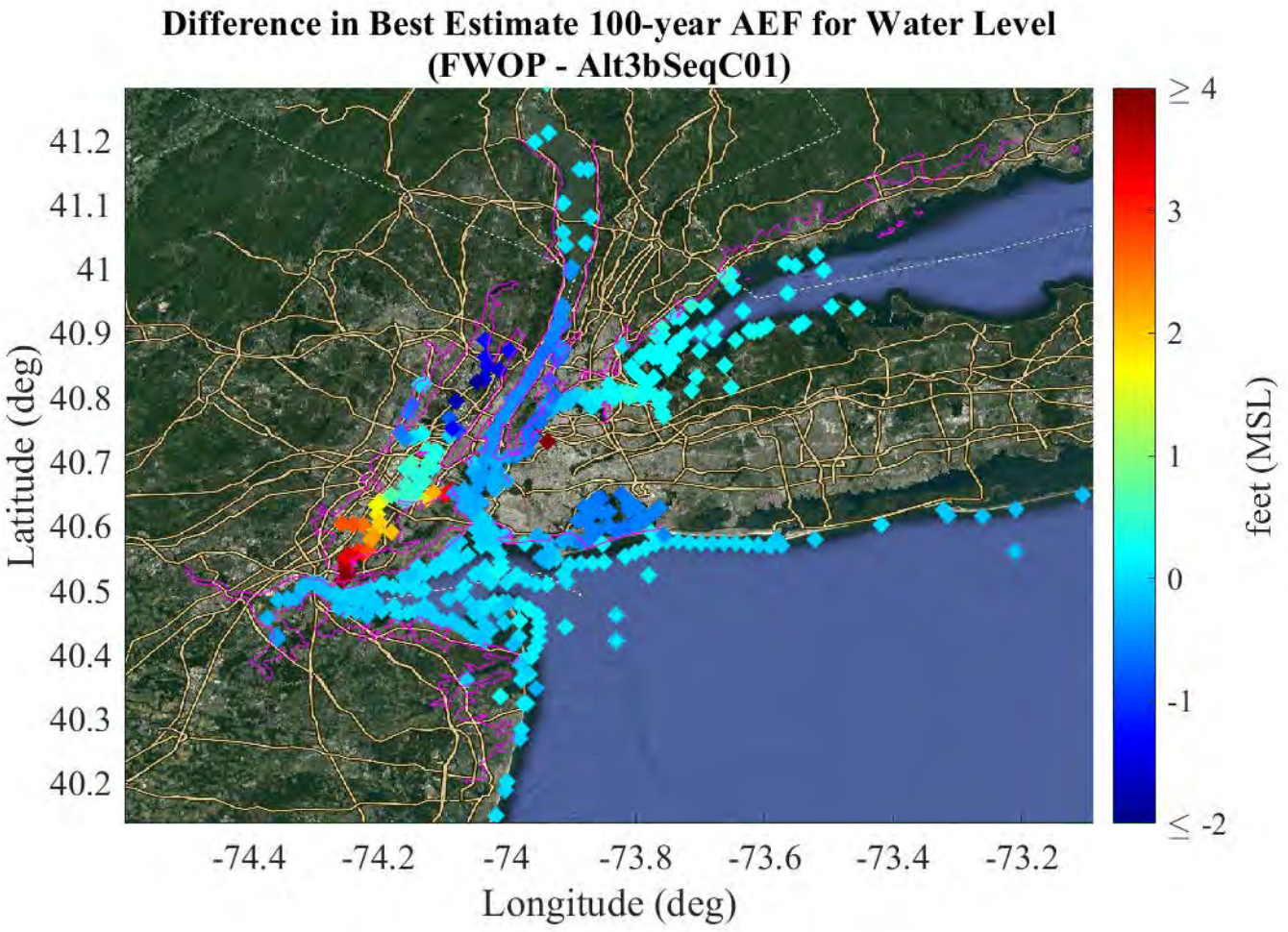

Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3aSeqC01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

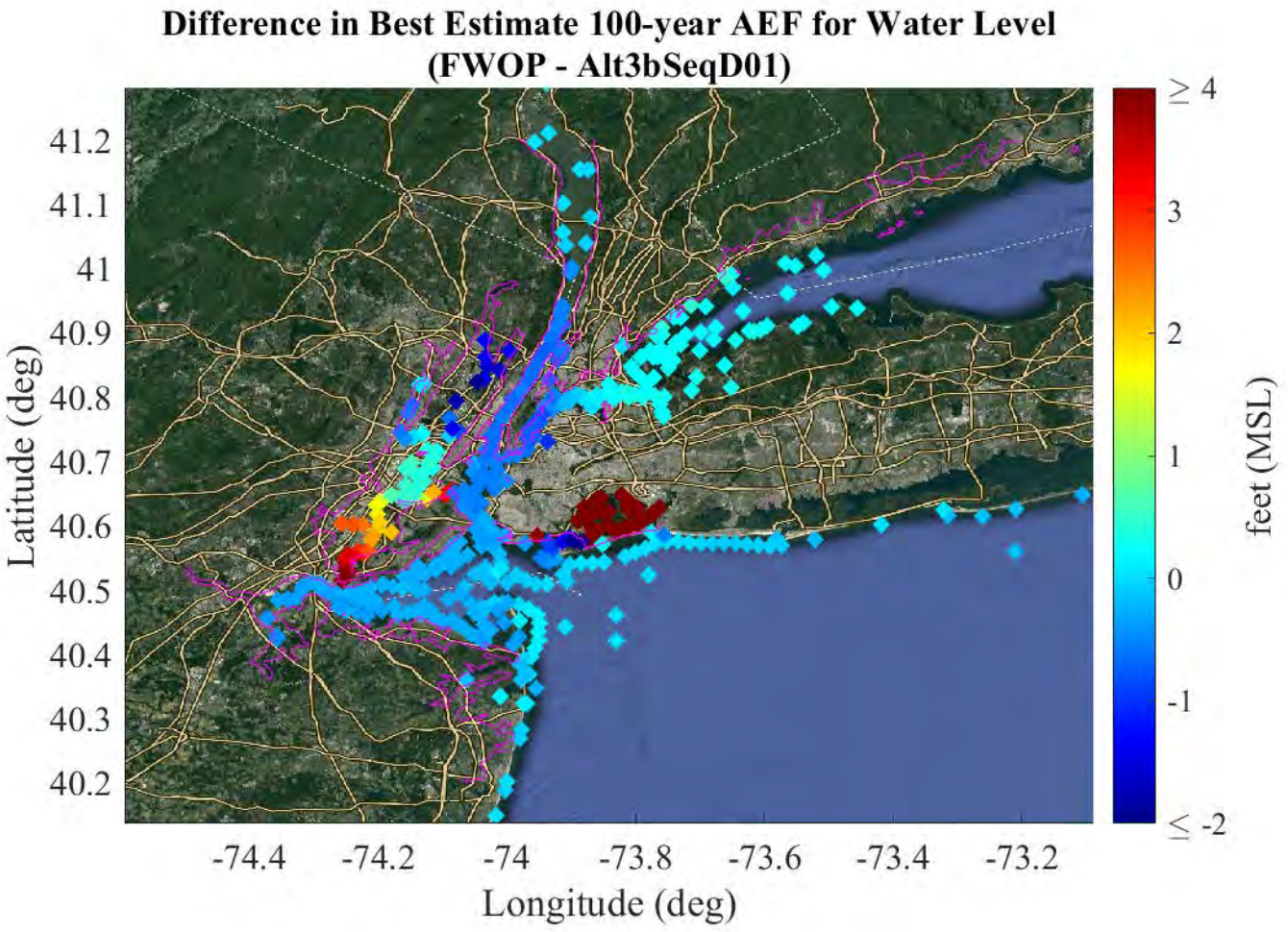

Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3aSeqD01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3aSeqE01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3bSeqA01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3bSeqB01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3bSeqC01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)


Difference in Best Estimate 100-year AEF for Water Level
(FWOP - Alt3bSeqD01)
Latitude (deg)
41.2
41.1
41
40.9
40.8
40.7
40.6
40.5
40.4
40.3
40.2
-74.4
-74.2
-74
-73.8
-73.6
-73.4
-73.2
Longitude (deg)
≥ 4
3
2
1
0
-1
≤ -2
feet (MSL)

Appendix VIII
Table of Best Estimate AEF Values for Water Levels at 483 Save Point Locations
FWOP Condition

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
1	350	41.0025	-73.5513	1.82	2.13	2.56	2.85	3.12	3.50	3.86	4.29	4.80	5.11	5.37	5.66	5.86
2	3486	40.4558	-74.3716	1.65	1.96	2.41	2.82	3.32	3.95	4.37	4.76	5.21	5.51	5.80	6.21	6.60
3	3493	40.4917	-74.2624	1.53	1.84	2.26	2.65	3.14	3.81	4.30	4.75	5.25	5.57	5.85	6.19	6.46
4	3503	40.6439	-74.1899	1.47	1.74	2.05	2.33	2.67	3.16	3.48	3.76	4.08	4.31	4.53	4.83	5.09
5	3538	40.4183	-74.0350	1.46	1.74	2.11	2.40	2.71	3.20	3.61	3.98	4.36	4.60	4.81	5.06	5.23
6	3544	40.6992	-74.0214	1.29	1.61	1.95	2.28	2.66	3.25	3.69	4.08	4.50	4.77	5.01	5.29	5.48
7	3561	40.4509	-73.9802	1.31	1.57	1.91	2.17	2.44	2.85	3.24	3.60	4.00	4.25	4.47	4.74	4.92
8	3575	41.7833	-73.9500	1.02	1.25	1.47	1.65	1.89	2.24	2.52	2.80	3.17	3.42	3.65	3.90	4.06
9	3584	40.5471	-73.9231	1.35	1.63	1.94	2.31	2.62	3.04	3.50	3.88	4.30	4.57	4.82	5.11	5.30
10	3592	40.5735	-73.8849	1.36	1.64	1.92	2.15	2.40	2.78	3.10	3.40	3.77	4.01	4.23	4.48	4.64
11	3594	41.0783	-73.8700	1.20	1.39	1.60	1.78	1.98	2.25	2.44	2.62	2.84	3.00	3.16	3.36	3.51
12	3600	42.2531	-73.8018	1.31	1.69	1.97	2.16	2.37	2.76	3.14	3.53	4.05	4.41	4.71	5.04	5.25
13	3612	40.9229	-73.7400	1.86	2.22	2.66	2.97	3.28	3.69	4.08	4.58	5.17	5.51	5.78	6.08	6.28
14	3625	40.5783	-73.5802	1.26	1.50	1.82	2.07	2.35	2.85	3.28	3.65	4.06	4.33	4.58	4.87	5.08
15	3725	40.1074	-74.0268	1.29	1.54	1.80	2.01	2.22	2.56	2.86	3.14	3.50	3.79	4.08	4.42	4.65
16	3731	40.1478	-74.0166	1.30	1.53	1.81	2.01	2.22	2.55	2.85	3.13	3.47	3.74	4.02	4.35	4.57
17	3737	40.1876	-74.0026	1.29	1.53	1.80	1.99	2.20	2.53	2.83	3.11	3.44	3.70	3.95	4.27	4.47
18	3739	40.2011	-73.9997	1.30	1.53	1.81	2.01	2.21	2.54	2.85	3.12	3.46	3.71	3.97	4.29	4.51
19	3749	40.2681	-73.9800	1.28	1.53	1.78	1.98	2.21	2.59	2.89	3.16	3.48	3.72	3.95	4.25	4.45
20	3751	40.2817	-73.9773	1.30	1.53	1.81	2.01	2.22	2.55	2.86	3.15	3.48	3.72	3.95	4.24	4.44
21	3757	40.3223	-73.9689	1.30	1.53	1.79	1.99	2.22	2.58	2.89	3.19	3.54	3.79	4.02	4.31	4.50
22	3758	40.3224	-73.9735	1.33	1.59	1.89	2.14	2.42	2.83	3.15	3.44	3.78	4.03	4.26	4.54	4.74
23	3761	40.3457	-73.9544	1.26	1.49	1.77	1.98	2.20	2.53	2.85	3.16	3.51	3.76	4.00	4.30	4.49
24	3765	40.3675	-73.9649	1.29	1.54	1.79	2.00	2.24	2.63	2.95	3.26	3.63	3.88	4.12	4.42	4.62
25	3768	40.3909	-73.9730	1.31	1.58	1.90	2.16	2.46	2.93	3.29	3.61	4.00	4.26	4.51	4.83	5.05
26	3769	40.3948	-73.9620	1.29	1.54	1.79	1.98	2.23	2.67	3.02	3.33	3.69	3.95	4.19	4.48	4.68
27	3771	40.4078	-73.9563	1.30	1.54	1.80	1.99	2.24	2.68	3.04	3.36	3.73	3.99	4.23	4.52	4.72
28	3775	40.4205	-73.9502	1.30	1.55	1.80	1.98	2.23	2.67	3.03	3.35	3.73	3.98	4.23	4.52	4.73
29	3777	40.4263	-74.0461	1.43	1.72	2.06	2.36	2.71	3.25	3.66	4.01	4.39	4.64	4.86	5.11	5.28
30	3779	40.4342	-73.9512	1.32	1.56	1.85	2.07	2.29	2.66	3.05	3.39	3.77	4.03	4.27	4.57	4.76
31	3788	40.4478	-73.9493	1.31	1.55	1.81	2.00	2.25	2.71	3.09	3.43	3.81	4.07	4.31	4.60	4.80
32	3789	40.4478	-74.0039	1.42	1.71	2.03	2.31	2.65	3.19	3.60	3.95	4.33	4.57	4.78	5.04	5.21
33	3790	40.4515	-74.0850	1.43	1.73	2.06	2.38	2.76	3.33	3.75	4.12	4.54	4.81	5.05	5.34	5.56
34	3793	40.4569	-74.1117	1.44	1.73	2.10	2.42	2.80	3.36	3.79	4.18	4.60	4.88	5.11	5.39	5.57
35	3797	40.4605	-73.9527	1.31	1.57	1.85	2.09	2.38	2.84	3.22	3.55	3.93	4.19	4.42	4.71	4.91
36	3799	40.4608	-74.0435	1.41	1.70	2.04	2.34	2.70	3.25	3.66	4.01	4.40	4.66	4.88	5.16	5.35
37	3800	40.4637	-74.1541	1.47	1.78	2.09	2.41	2.81	3.46	3.94	4.35	4.81	5.09	5.34	5.63	5.82
38	3801	40.4663	-74.1941	1.51	1.80	2.22	2.57	2.97	3.56	4.03	4.45	4.92	5.21	5.45	5.74	5.93
39	3802	40.4677	-74.1191	1.45	1.73	2.12	2.44	2.80	3.35	3.78	4.17	4.61	4.89	5.13	5.41	5.60
40	3804	40.4695	-73.9662	1.32	1.58	1.89	2.15	2.43	2.88	3.25	3.60	3.99	4.24	4.46	4.73	4.91
41	3807	40.4709	-74.0317	1.40	1.69	2.02	2.32	2.68	3.23	3.64	4.00	4.39	4.64	4.87	5.15	5.34

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
42	3808	40.4714	-74.2107	1.54	1.83	2.26	2.62	3.03	3.62	4.08	4.51	4.98	5.26	5.51	5.80	5.99
43	3810	40.4724	-74.0406	1.40	1.69	2.02	2.33	2.69	3.24	3.65	4.01	4.40	4.66	4.89	5.16	5.35
44	3814	40.4767	-73.9813	1.32	1.60	1.89	2.15	2.48	2.99	3.38	3.72	4.10	4.36	4.59	4.88	5.10
45	3815	40.4771	-74.0559	1.41	1.70	2.03	2.34	2.70	3.25	3.66	4.02	4.42	4.68	4.92	5.20	5.40
46	3822	40.4795	-74.0064	1.37	1.65	2.01	2.28	2.56	3.00	3.38	3.73	4.12	4.36	4.58	4.84	5.03
47	3823	40.4796	-73.9986	1.33	1.58	1.91	2.18	2.47	2.92	3.30	3.64	4.01	4.25	4.46	4.71	4.88
48	3827	40.4838	-74.2589	1.54	1.85	2.22	2.59	3.06	3.74	4.24	4.70	5.20	5.51	5.78	6.10	6.31
49	3829	40.4847	-74.0905	1.42	1.71	2.07	2.38	2.75	3.30	3.72	4.10	4.52	4.79	5.03	5.31	5.50
50	3830	40.4856	-74.3409	1.64	1.92	2.37	2.78	3.27	3.90	4.33	4.72	5.17	5.47	5.73	6.05	6.29
51	3853	40.4975	-74.2220	1.51	1.81	2.22	2.59	3.04	3.69	4.17	4.61	5.10	5.41	5.68	5.99	6.20
52	3854	40.4981	-74.1388	1.45	1.74	2.11	2.44	2.84	3.44	3.88	4.28	4.73	5.02	5.27	5.56	5.77
53	3860	40.5027	-74.2114	1.49	1.80	2.19	2.56	3.01	3.65	4.13	4.57	5.06	5.37	5.65	5.97	6.20
54	3864	40.5040	-74.1767	1.47	1.79	2.11	2.44	2.86	3.50	3.99	4.42	4.90	5.20	5.47	5.77	5.98
55	3871	40.5066	-74.1943	1.48	1.79	2.15	2.50	2.93	3.58	4.06	4.50	4.99	5.30	5.57	5.88	6.11
56	3872	40.5077	-73.9378	1.32	1.59	1.85	2.09	2.39	2.88	3.27	3.61	4.01	4.27	4.52	4.82	5.03
57	3873	40.5081	-73.9545	1.32	1.59	1.88	2.14	2.46	2.96	3.35	3.70	4.10	4.36	4.60	4.89	5.10
58	3874	40.5081	-74.1910	1.48	1.79	2.14	2.48	2.92	3.56	4.05	4.48	4.97	5.28	5.55	5.86	6.08
59	3877	40.5102	-74.3003	1.56	1.89	2.39	2.87	3.40	4.06	4.50	4.90	5.37	5.69	5.99	6.41	6.81
60	3879	40.5119	-73.9072	1.32	1.57	1.82	2.05	2.34	2.81	3.19	3.53	3.91	4.18	4.43	4.72	4.92
61	3880	40.5142	-73.9704	1.35	1.61	1.94	2.21	2.49	2.94	3.33	3.70	4.11	4.36	4.59	4.86	5.04
62	3882	40.5149	-74.1482	1.44	1.73	2.09	2.43	2.84	3.44	3.89	4.30	4.76	5.05	5.32	5.62	5.83
63	3887	40.5191	-74.1598	1.45	1.75	2.08	2.38	2.79	3.41	3.89	4.31	4.78	5.08	5.35	5.65	5.86
64	3889	40.5206	-74.1379	1.44	1.73	2.09	2.42	2.82	3.42	3.87	4.28	4.74	5.03	5.30	5.62	5.85
65	3890	40.5227	-73.9845	1.35	1.61	1.96	2.23	2.52	2.97	3.36	3.73	4.14	4.40	4.62	4.89	5.07
66	3891	40.5230	-74.0495	1.40	1.69	2.01	2.31	2.67	3.23	3.65	4.02	4.43	4.71	4.96	5.26	5.49
67	3892	40.5238	-73.9126	1.33	1.57	1.88	2.12	2.37	2.81	3.22	3.58	3.99	4.26	4.51	4.81	5.00
68	3894	40.5278	-74.2449	1.50	1.82	2.20	2.58	3.05	3.69	4.14	4.56	5.04	5.34	5.61	5.93	6.16
69	3896	40.5300	-74.1099	1.42	1.71	2.03	2.34	2.73	3.32	3.76	4.15	4.60	4.89	5.15	5.46	5.69
70	3902	40.5351	-74.0872	1.42	1.70	2.05	2.36	2.73	3.29	3.71	4.10	4.53	4.81	5.06	5.36	5.57
71	3903	40.5384	-73.9022	1.33	1.58	1.89	2.13	2.39	2.84	3.25	3.62	4.02	4.30	4.55	4.85	5.04
72	3904	40.5400	-74.2495	1.50	1.82	2.20	2.57	3.04	3.67	4.11	4.52	5.00	5.30	5.57	5.89	6.11
73	3905	40.5401	-73.8846	1.34	1.58	1.88	2.11	2.36	2.81	3.23	3.59	3.99	4.26	4.51	4.80	5.00
74	3906	40.5407	-73.8668	1.33	1.58	1.83	2.07	2.36	2.84	3.23	3.57	3.95	4.21	4.46	4.74	4.94
75	3907	40.5415	-74.1018	1.42	1.70	2.05	2.37	2.74	3.31	3.74	4.13	4.57	4.86	5.12	5.41	5.62
76	3908	40.5421	-74.0092	1.37	1.64	1.99	2.27	2.57	3.05	3.46	3.84	4.26	4.52	4.76	5.04	5.22
77	3910	40.5423	-73.8490	1.34	1.57	1.86	2.08	2.32	2.78	3.20	3.55	3.95	4.21	4.45	4.73	4.93
78	3912	40.5448	-74.0745	1.42	1.70	2.02	2.33	2.70	3.27	3.70	4.08	4.51	4.80	5.06	5.38	5.61
79	3917	40.5507	-73.8161	1.33	1.57	1.85	2.07	2.30	2.77	3.20	3.57	3.96	4.22	4.46	4.73	4.92
80	3918	40.5518	-74.0915	1.42	1.70	2.03	2.34	2.72	3.30	3.73	4.12	4.56	4.86	5.13	5.44	5.68
81	3919	40.5531	-74.0605	1.41	1.69	2.01	2.31	2.68	3.24	3.68	4.06	4.49	4.78	5.04	5.35	5.58
82	3920	40.5538	-74.2468	1.50	1.81	2.20	2.56	3.01	3.61	4.05	4.45	4.92	5.22	5.50	5.82	6.07

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
83	3921	40.5546	-74.2364	1.50	1.81	2.18	2.54	2.99	3.59	4.02	4.41	4.88	5.18	5.45	5.77	6.02
84	3922	40.5554	-74.0117	1.38	1.67	1.99	2.28	2.63	3.18	3.60	3.97	4.39	4.66	4.91	5.21	5.43
85	3926	40.5574	-73.8005	1.33	1.57	1.85	2.07	2.31	2.79	3.23	3.60	4.01	4.27	4.50	4.77	4.96
86	3927	40.5589	-74.2308	1.49	1.80	2.15	2.44	2.86	3.49	3.92	4.32	4.78	5.07	5.33	5.62	5.82
87	3928	40.5604	-73.9310	1.36	1.63	1.97	2.22	2.49	2.88	3.26	3.63	4.03	4.29	4.51	4.77	4.95
88	3930	40.5613	-74.0837	1.41	1.69	2.01	2.32	2.70	3.27	3.71	4.10	4.55	4.84	5.11	5.42	5.65
89	3931	40.5634	-73.7843	1.33	1.56	1.85	2.07	2.31	2.80	3.24	3.62	4.03	4.29	4.52	4.80	4.98
90	3934	40.5660	-74.0220	1.37	1.66	1.96	2.25	2.61	3.17	3.60	3.98	4.41	4.69	4.94	5.24	5.45
91	3937	40.5666	-74.0391	1.37	1.67	1.97	2.26	2.62	3.19	3.62	4.00	4.43	4.72	4.97	5.27	5.48
92	3938	40.5667	-73.5909	1.29	1.50	1.76	1.96	2.18	2.69	3.13	3.50	3.91	4.18	4.42	4.70	4.89
93	3940	40.5679	-73.5731	1.28	1.49	1.75	1.95	2.18	2.70	3.14	3.51	3.91	4.17	4.41	4.69	4.89
94	3941	40.5685	-73.6087	1.30	1.52	1.79	1.99	2.22	2.72	3.17	3.55	3.96	4.23	4.47	4.74	4.93
95	3943	40.5697	-73.6266	1.31	1.52	1.79	2.00	2.24	2.76	3.21	3.58	4.00	4.26	4.50	4.77	4.95
96	3946	40.5705	-73.7689	1.33	1.56	1.85	2.07	2.31	2.81	3.26	3.64	4.06	4.32	4.56	4.83	5.01
97	3948	40.5712	-73.6803	1.32	1.53	1.80	2.01	2.26	2.79	3.23	3.60	4.02	4.28	4.52	4.79	4.97
98	3949	40.5713	-73.9721	1.39	1.66	2.01	2.28	2.57	3.02	3.42	3.81	4.25	4.53	4.78	5.06	5.25
99	3950	40.5717	-73.6982	1.32	1.53	1.81	2.02	2.27	2.79	3.24	3.62	4.03	4.30	4.53	4.80	4.98
100	3951	40.5717	-73.6444	1.31	1.53	1.80	2.01	2.25	2.77	3.21	3.59	4.00	4.27	4.50	4.77	4.95
101	3953	40.5721	-73.6623	1.30	1.54	1.76	1.99	2.30	2.84	3.26	3.62	4.04	4.30	4.53	4.81	4.99
102	3954	40.5724	-73.7162	1.32	1.54	1.82	2.03	2.27	2.79	3.23	3.61	4.03	4.29	4.53	4.79	4.97
103	3957	40.5736	-74.0735	1.39	1.68	1.99	2.30	2.69	3.26	3.70	4.09	4.53	4.83	5.10	5.41	5.64
104	3958	40.5741	-73.9135	1.37	1.65	1.98	2.22	2.45	2.80	3.17	3.53	3.93	4.18	4.40	4.65	4.82
105	3960	40.5742	-73.7518	1.33	1.56	1.84	2.06	2.30	2.81	3.26	3.64	4.06	4.32	4.56	4.83	5.01
106	3961	40.5745	-73.7339	1.33	1.55	1.83	2.05	2.30	2.80	3.25	3.64	4.06	4.32	4.55	4.82	5.00
107	3963	40.5761	-73.8957	1.35	1.63	1.92	2.16	2.42	2.79	3.11	3.42	3.80	4.05	4.27	4.52	4.68
108	3966	40.5774	-73.5209	1.28	1.49	1.76	1.95	2.18	2.69	3.14	3.53	3.94	4.21	4.45	4.74	4.92
109	3967	40.5776	-74.2114	1.49	1.79	2.15	2.48	2.88	3.43	3.80	4.14	4.55	4.82	5.07	5.40	5.65
110	3971	40.5793	-74.0204	1.35	1.66	1.96	2.26	2.63	3.19	3.63	4.00	4.43	4.71	4.96	5.26	5.47
111	3972	40.5801	-74.0424	1.36	1.66	1.97	2.27	2.64	3.21	3.64	4.02	4.45	4.74	4.99	5.29	5.51
112	3990	40.5848	-74.0021	1.36	1.67	1.98	2.28	2.65	3.21	3.64	4.02	4.44	4.72	4.97	5.27	5.48
113	3998	40.5883	-73.7756	1.35	1.60	1.93	2.20	2.51	3.06	3.53	3.94	4.38	4.66	4.90	5.18	5.36
114	3999	40.5889	-73.8296	1.38	1.61	1.90	2.11	2.32	2.64	2.94	3.28	3.67	3.92	4.13	4.37	4.54
115	4004	40.5915	-74.2025	1.53	1.81	2.15	2.44	2.81	3.34	3.71	4.03	4.41	4.65	4.88	5.16	5.36
116	4008	40.5926	-74.0237	1.36	1.66	1.97	2.27	2.64	3.21	3.65	4.04	4.47	4.75	5.00	5.29	5.50
117	4010	40.5931	-74.0478	1.34	1.64	1.97	2.29	2.68	3.25	3.69	4.07	4.49	4.77	5.03	5.34	5.57
118	4019	40.5970	-73.8152	1.38	1.64	1.86	2.05	2.30	2.72	3.06	3.39	3.76	4.00	4.22	4.48	4.65
119	4024	40.6005	-73.4177	1.26	1.46	1.71	1.92	2.16	2.65	3.12	3.53	3.96	4.24	4.49	4.80	5.02
120	4028	40.6029	-73.7991	1.39	1.63	1.87	2.08	2.34	2.77	3.12	3.45	3.82	4.06	4.28	4.55	4.73
121	4051	40.6134	-73.2605	1.22	1.41	1.63	1.82	2.03	2.44	2.88	3.28	3.72	4.01	4.30	4.69	4.94
122	4054	40.6144	-73.3142	1.24	1.44	1.68	1.87	2.08	2.52	3.00	3.41	3.86	4.15	4.42	4.78	5.03
123	4062	40.6176	-73.7745	1.41	1.63	1.92	2.13	2.37	2.76	3.13	3.47	3.85	4.08	4.30	4.56	4.74

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
124	4079	40.6245	-73.2087	1.21	1.40	1.60	1.80	2.05	2.49	2.89	3.26	3.70	4.00	4.29	4.64	4.89
125	4084	40.6282	-73.8046	1.41	1.65	1.90	2.12	2.39	2.85	3.22	3.55	3.93	4.18	4.41	4.69	4.88
126	4089	40.6311	-74.0680	1.33	1.64	1.97	2.30	2.69	3.28	3.71	4.09	4.52	4.80	5.05	5.36	5.59
127	4098	40.6372	-73.8603	1.40	1.66	1.92	2.14	2.41	2.83	3.17	3.51	3.91	4.17	4.40	4.66	4.83
128	4101	40.6384	-74.1930	1.46	1.74	2.05	2.32	2.65	3.15	3.49	3.77	4.10	4.32	4.53	4.79	4.99
129	4104	40.6403	-73.8602	1.40	1.66	1.91	2.12	2.39	2.84	3.20	3.54	3.95	4.21	4.44	4.71	4.89
130	4107	40.6413	-74.1241	1.35	1.63	1.98	2.28	2.62	3.07	3.38	3.66	3.99	4.21	4.41	4.64	4.80
131	4110	40.6419	-74.1665	1.47	1.72	2.04	2.30	2.59	3.01	3.30	3.56	3.85	4.05	4.22	4.43	4.57
132	4116	40.6438	-74.1377	1.41	1.68	1.99	2.26	2.58	3.02	3.32	3.58	3.89	4.09	4.29	4.54	4.74
133	4122	40.6471	-73.1050	1.18	1.37	1.56	1.75	2.00	2.47	2.86	3.24	3.71	4.03	4.33	4.69	4.92
134	4124	40.6472	-74.0756	1.32	1.63	1.97	2.30	2.71	3.30	3.74	4.12	4.55	4.83	5.09	5.39	5.62
135	4135	40.6544	-74.0660	1.33	1.64	1.97	2.23	2.60	3.21	3.68	4.07	4.50	4.78	5.02	5.30	5.49
136	4176	40.6958	-74.0502	1.40	1.72	2.03	2.31	2.69	3.32	3.78	4.17	4.58	4.85	5.08	5.34	5.53
137	4179	40.6971	-74.1482	1.47	1.72	2.04	2.31	2.62	3.08	3.39	3.65	3.95	4.15	4.33	4.55	4.70
138	4181	40.6997	-74.0342	1.28	1.60	1.93	2.23	2.62	3.22	3.68	4.07	4.49	4.77	5.01	5.30	5.50
139	4194	40.7060	-73.9979	1.27	1.57	1.98	2.30	2.65	3.18	3.62	4.01	4.43	4.69	4.92	5.18	5.35
140	4205	40.7143	-74.1080	1.45	1.70	2.03	2.29	2.58	3.01	3.30	3.56	3.85	4.04	4.20	4.41	4.54
141	4206	40.7144	-74.1211	1.46	1.72	1.98	2.23	2.54	3.03	3.35	3.61	3.90	4.10	4.28	4.50	4.66
142	4210	40.7167	-74.1229	1.46	1.73	1.98	2.23	2.54	3.04	3.36	3.62	3.91	4.11	4.29	4.51	4.67
143	4211	40.7171	-73.9684	1.25	1.55	1.93	2.26	2.61	3.15	3.57	3.94	4.33	4.58	4.79	5.05	5.22
144	4227	40.7301	-73.9640	1.26	1.57	1.92	2.24	2.62	3.18	3.60	3.97	4.37	4.63	4.86	5.15	5.37
145	4241	40.7385	-74.0892	1.41	1.66	1.90	2.10	2.38	2.82	3.11	3.36	3.63	3.81	3.97	4.17	4.31
146	4244	40.7400	-74.0234	1.24	1.55	1.86	2.17	2.56	3.12	3.54	3.90	4.30	4.56	4.79	5.08	5.28
147	4255	40.7461	-74.0749	1.39	1.60	1.84	2.05	2.30	2.65	2.88	3.08	3.31	3.46	3.60	3.77	3.90
148	4260	40.7487	-73.9660	1.25	1.56	1.93	2.25	2.62	3.18	3.59	3.96	4.36	4.62	4.85	5.13	5.33
149	4278	40.7601	-73.9561	1.23	1.52	1.93	2.26	2.62	3.13	3.53	3.89	4.30	4.57	4.80	5.07	5.25
150	4281	40.7655	-74.0892	1.33	1.50	1.69	1.87	2.08	2.37	2.58	2.77	2.99	3.14	3.29	3.49	3.67
151	4304	40.7796	-73.9287	1.48	1.77	2.14	2.46	2.83	3.32	3.69	4.07	4.61	4.98	5.32	5.74	6.09
152	4321	40.7880	-73.9145	1.61	2.00	2.41	2.73	3.05	3.50	3.88	4.33	4.93	5.28	5.57	5.87	6.06
153	4323	40.7889	-73.8678	1.84	2.23	2.70	3.03	3.33	3.76	4.17	4.71	5.33	5.67	5.94	6.24	6.43
154	4344	40.7964	-73.9006	1.77	2.16	2.62	2.94	3.25	3.66	4.03	4.53	5.18	5.53	5.80	6.10	6.30
155	4349	40.7979	-73.8111	1.87	2.25	2.71	3.04	3.36	3.80	4.24	4.78	5.38	5.71	5.97	6.26	6.45
156	4350	40.7981	-73.8839	1.81	2.20	2.66	2.98	3.29	3.70	4.09	4.62	5.26	5.60	5.88	6.19	6.39
157	4352	40.7990	-73.8369	1.85	2.24	2.70	3.02	3.33	3.76	4.17	4.72	5.33	5.67	5.94	6.23	6.43
158	4359	40.8014	-73.9851	1.16	1.41	1.72	2.00	2.34	2.83	3.17	3.47	3.81	4.03	4.22	4.47	4.65
159	4370	40.8047	-73.8395	1.85	2.24	2.70	3.02	3.33	3.75	4.17	4.71	5.33	5.67	5.94	6.24	6.43
160	4382	40.8065	-73.8216	1.87	2.26	2.72	3.04	3.35	3.79	4.23	4.77	5.38	5.72	5.99	6.28	6.48
161	4397	40.8130	-73.9754	1.14	1.37	1.68	1.95	2.28	2.75	3.08	3.37	3.69	3.90	4.09	4.32	4.48
162	4408	40.8199	-74.1279	1.68	1.90	2.21	2.52	2.93	3.56	3.95	4.27	4.62	4.85	5.06	5.32	5.49
163	4416	40.8249	-73.9666	1.12	1.36	1.68	1.97	2.31	2.74	3.05	3.32	3.63	3.85	4.05	4.33	4.58
164	4435	40.8376	-73.9599	1.12	1.34	1.66	1.94	2.26	2.68	2.96	3.21	3.51	3.70	3.89	4.12	4.31

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
165	4450	40.8439	-73.7491	1.87	2.23	2.70	3.02	3.32	3.72	4.14	4.68	5.27	5.61	5.88	6.17	6.36
166	4459	40.8504	-73.9535	1.10	1.33	1.64	1.92	2.24	2.65	2.93	3.18	3.48	3.68	3.89	4.18	4.47
167	4469	40.8559	-73.7413	1.86	2.25	2.67	2.98	3.29	3.75	4.16	4.65	5.24	5.57	5.84	6.13	6.32
168	4470	40.8562	-73.9213	1.18	1.43	1.73	1.98	2.26	2.64	2.92	3.19	3.50	3.71	3.90	4.14	4.32
169	4478	40.8608	-73.7655	1.87	2.22	2.70	3.02	3.32	3.71	4.11	4.63	5.23	5.57	5.83	6.12	6.32
170	4479	40.8611	-73.9159	1.19	1.41	1.69	1.87	2.12	2.52	2.82	3.08	3.38	3.58	3.76	3.97	4.10
171	4480	40.8612	-73.7913	1.88	2.25	2.71	3.02	3.33	3.74	4.14	4.65	5.26	5.59	5.86	6.15	6.34
172	4481	40.8627	-73.9454	1.07	1.29	1.59	1.85	2.15	2.55	2.82	3.05	3.33	3.53	3.71	3.98	4.22
173	4498	40.8709	-73.7001	1.85	2.20	2.67	2.98	3.27	3.66	4.05	4.55	5.13	5.46	5.73	6.02	6.21
174	4505	40.8747	-73.9367	1.06	1.27	1.58	1.85	2.14	2.51	2.76	2.98	3.24	3.42	3.61	3.86	4.09
175	4526	40.8871	-73.9290	1.06	1.27	1.57	1.83	2.12	2.48	2.72	2.93	3.19	3.38	3.56	3.84	4.10
176	4537	40.8951	-73.7686	1.88	2.25	2.70	3.01	3.32	3.75	4.14	4.65	5.24	5.58	5.84	6.14	6.33
177	4546	40.9002	-73.9236	1.05	1.26	1.56	1.82	2.10	2.44	2.66	2.86	3.10	3.28	3.44	3.67	3.87
178	4549	40.9018	-73.6230	1.84	2.21	2.61	2.90	3.20	3.63	4.01	4.45	4.99	5.31	5.58	5.87	6.05
179	4573	40.9117	-73.9122	1.04	1.24	1.54	1.78	2.05	2.39	2.61	2.81	3.04	3.22	3.39	3.65	3.87
180	4579	40.9144	-73.5386	1.82	2.15	2.56	2.85	3.14	3.56	3.92	4.32	4.82	5.13	5.39	5.67	5.86
181	4606	40.9224	-73.7298	1.86	2.22	2.66	2.97	3.27	3.68	4.07	4.56	5.15	5.48	5.75	6.05	6.25
182	4620	40.9272	-73.9170	1.03	1.25	1.53	1.77	2.03	2.35	2.57	2.76	3.00	3.18	3.37	3.67	3.94
183	4653	40.9390	-73.4948	1.82	2.14	2.53	2.82	3.12	3.53	3.89	4.29	4.77	5.07	5.33	5.61	5.79
184	4654	40.9407	-73.9136	1.04	1.24	1.52	1.76	2.02	2.33	2.54	2.74	2.99	3.19	3.42	3.79	4.11
185	4723	40.9687	-73.6486	1.83	2.19	2.62	2.91	3.19	3.57	3.95	4.41	4.97	5.30	5.57	5.87	6.07
186	4816	41.0005	-73.8990	1.05	1.26	1.53	1.74	1.96	2.24	2.43	2.61	2.84	3.01	3.18	3.40	3.59
187	4893	41.0380	-73.8768	1.12	1.30	1.55	1.73	1.94	2.23	2.44	2.63	2.85	3.01	3.18	3.41	3.61
188	5082	41.1529	-73.8864	1.17	1.35	1.62	1.85	2.11	2.47	2.72	2.95	3.22	3.42	3.61	3.87	4.07
189	5109	41.2095	-73.9349	1.19	1.37	1.66	1.91	2.20	2.61	2.89	3.14	3.44	3.66	3.89	4.19	4.46
190	5831	40.0971	-74.0273	1.27	1.52	1.77	1.97	2.19	2.55	2.82	3.07	3.42	3.70	3.98	4.31	4.53
191	6906	40.4200	-73.8300	1.30	1.52	1.79	1.98	2.17	2.50	2.85	3.18	3.55	3.81	4.04	4.32	4.51
192	7099	40.8800	-73.7300	1.86	2.23	2.68	2.99	3.28	3.68	4.08	4.59	5.17	5.50	5.77	6.06	6.26
193	7395	40.9350	-74.0300	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
194	7401	40.8300	-74.0767	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	0.57	1.83	2.14	2.38	2.51
195	7412	40.7867	-74.1467	1.60	1.85	2.12	2.37	2.74	3.32	3.67	3.95	4.26	4.47	4.65	4.88	5.04
196	7417	40.7167	-74.0317	1.26	1.58	1.91	2.24	2.64	3.23	3.67	4.04	4.46	4.73	4.97	5.27	5.48
197	3527	40.6550	-74.0850	1.35	1.65	2.00	2.33	2.73	3.32	3.76	4.14	4.57	4.85	5.10	5.41	5.63
198	7655	40.4600	-73.8300	1.31	1.53	1.80	2.00	2.20	2.53	2.90	3.24	3.63	3.89	4.14	4.42	4.62
199	7668	40.7767	-73.9417	1.43	1.72	2.14	2.47	2.81	3.28	3.62	3.97	4.43	4.77	5.07	5.41	5.64
200	7673	40.7000	-74.0150	1.30	1.62	1.94	2.23	2.62	3.22	3.68	4.07	4.49	4.76	5.00	5.28	5.47
201	7680	40.5567	-74.2233	1.49	1.80	2.18	2.55	3.00	3.58	3.99	4.37	4.82	5.12	5.39	5.73	6.02
202	7868	41.3311	-73.9774	1.10	1.29	1.48	1.65	1.90	2.31	2.60	2.85	3.14	3.34	3.54	3.78	3.95
203	7870	41.3744	-73.9565	1.05	1.23	1.48	1.70	1.93	2.25	2.48	2.70	2.99	3.19	3.39	3.61	3.77
204	7872	41.4132	-73.9644	1.08	1.24	1.40	1.57	1.79	2.12	2.36	2.59	2.89	3.10	3.29	3.51	3.66
205	7875	41.4652	-74.0010	1.06	1.23	1.43	1.60	1.82	2.13	2.38	2.61	2.91	3.12	3.32	3.54	3.70

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
206	7876	41.4945	-73.9985	1.06	1.26	1.49	1.70	1.92	2.22	2.45	2.68	2.98	3.20	3.41	3.65	3.80
207	7965	41.2872	-73.9384	1.20	1.39	1.69	1.96	2.26	2.70	2.99	3.25	3.57	3.79	4.01	4.31	4.55
208	7975	41.0548	-73.9124	1.14	1.32	1.58	1.76	1.98	2.28	2.50	2.69	2.92	3.08	3.25	3.48	3.69
209	7976	41.0346	-73.9085	1.12	1.31	1.55	1.77	2.00	2.32	2.54	2.74	2.99	3.19	3.40	3.75	4.07
210	7979	41.1003	-73.9126	1.15	1.34	1.59	1.77	1.99	2.33	2.56	2.77	3.01	3.17	3.33	3.52	3.68
211	9813	41.1522	-73.8735	1.17	1.34	1.62	1.86	2.11	2.46	2.70	2.92	3.19	3.37	3.55	3.76	3.92
212	9816	41.1952	-73.9565	1.19	1.38	1.65	1.90	2.19	2.59	2.86	3.11	3.40	3.61	3.82	4.11	4.35
213	9838	41.0070	-73.5669	1.83	2.15	2.55	2.85	3.14	3.55	3.91	4.33	4.85	5.17	5.44	5.74	5.93
214	9842	41.0186	-73.5188	1.81	2.11	2.54	2.83	3.10	3.46	3.82	4.24	4.74	5.05	5.31	5.60	5.79
215	11330	40.4414	-73.9087	1.31	1.55	1.83	2.04	2.25	2.60	2.98	3.32	3.70	3.96	4.21	4.50	4.70
216	11331	40.5220	-73.7791	1.33	1.55	1.82	2.02	2.23	2.63	3.02	3.37	3.76	4.03	4.27	4.55	4.74
217	11334	40.5588	-73.2096	1.20	1.38	1.60	1.75	1.90	2.15	2.48	2.80	3.18	3.47	3.82	4.32	4.63
218	11519	40.3706	-73.9705	1.29	1.55	1.83	2.06	2.32	2.73	3.06	3.38	3.75	4.01	4.25	4.55	4.74
219	11521	40.4260	-73.9809	1.33	1.61	1.95	2.22	2.53	3.02	3.38	3.71	4.10	4.36	4.60	4.90	5.11
220	11527	40.4138	-73.9902	1.41	1.69	2.01	2.28	2.61	3.13	3.54	3.89	4.26	4.50	4.70	4.95	5.11
221	11528	40.3835	-73.9794	1.14	1.48	1.85	2.14	2.43	2.84	3.16	3.45	3.79	4.01	4.21	4.43	4.59
222	11531	40.3334	-74.0101	0.85	1.22	1.58	1.85	2.14	2.53	2.84	3.14	3.54	3.86	4.19	4.67	5.05
223	11538	40.3596	-74.0628	1.16	1.52	1.97	2.32	2.66	3.11	3.45	3.76	4.14	4.40	4.63	4.90	5.10
224	11547	40.4239	-74.0402	1.44	1.73	2.06	2.36	2.71	3.24	3.65	4.00	4.38	4.62	4.84	5.10	5.27
225	11548	40.4301	-74.0557	1.43	1.72	2.06	2.37	2.72	3.27	3.67	4.03	4.42	4.67	4.89	5.15	5.33
226	11549	40.4403	-74.0674	1.43	1.73	2.06	2.37	2.74	3.30	3.72	4.08	4.47	4.73	4.96	5.25	5.45
227	11550	40.4462	-74.0775	1.43	1.73	2.06	2.38	2.75	3.32	3.73	4.10	4.50	4.76	5.00	5.29	5.49
228	11551	40.4498	-74.0988	1.44	1.72	2.11	2.42	2.77	3.31	3.73	4.11	4.54	4.81	5.05	5.32	5.50
229	11553	40.4740	-74.1283	1.44	1.75	2.10	2.44	2.83	3.41	3.84	4.23	4.66	4.94	5.18	5.46	5.65
230	11554	40.4656	-74.1421	1.46	1.75	2.15	2.48	2.85	3.42	3.87	4.28	4.73	5.02	5.26	5.54	5.72
231	11556	40.4595	-74.1696	1.49	1.78	2.13	2.42	2.82	3.48	3.97	4.40	4.86	5.15	5.39	5.67	5.87
232	11557	40.4738	-74.1753	1.48	1.78	2.17	2.52	2.94	3.55	4.02	4.44	4.90	5.19	5.44	5.73	5.92
233	11562	40.4581	-74.2174	1.56	1.84	2.22	2.54	2.95	3.59	4.09	4.53	5.00	5.29	5.54	5.83	6.03
234	11563	40.4649	-74.2337	1.54	1.82	2.22	2.56	3.00	3.67	4.16	4.61	5.10	5.40	5.66	5.96	6.18
235	11564	40.4667	-74.2499	1.57	1.88	2.24	2.61	3.07	3.74	4.23	4.69	5.17	5.47	5.74	6.04	6.27
236	11565	40.4762	-74.2580	1.54	1.84	2.26	2.65	3.12	3.78	4.27	4.72	5.21	5.52	5.79	6.11	6.33
237	11566	40.4859	-74.2619	1.54	1.84	2.25	2.65	3.13	3.80	4.29	4.75	5.24	5.56	5.84	6.17	6.44
238	11567	40.4919	-74.2713	1.54	1.85	2.24	2.59	3.07	3.76	4.26	4.72	5.22	5.53	5.80	6.12	6.32
239	11568	40.4968	-74.2811	1.55	1.87	2.34	2.75	3.23	3.86	4.32	4.77	5.26	5.56	5.82	6.11	6.30
240	11573	40.4618	-74.1330	1.45	1.76	2.08	2.39	2.79	3.41	3.87	4.27	4.71	4.99	5.24	5.53	5.73
241	11580	40.4713	-74.2617	1.57	1.86	2.28	2.66	3.13	3.78	4.27	4.72	5.21	5.52	5.78	6.09	6.31
242	11605	40.4999	-74.2890	1.55	1.87	2.32	2.76	3.27	3.93	4.39	4.82	5.31	5.62	5.89	6.20	6.42
243	11608	40.5078	-74.2886	1.55	1.87	2.35	2.83	3.38	4.11	4.61	5.04	5.52	5.85	6.17	6.58	6.92
244	11610	40.5085	-74.3093	1.57	1.90	2.30	2.68	3.18	3.83	4.27	4.67	5.13	5.42	5.68	5.97	6.18
245	11611	40.5040	-74.3169	1.56	1.86	2.32	2.75	3.24	3.88	4.31	4.71	5.17	5.47	5.74	6.08	6.36
246	11613	40.4855	-74.3410	1.64	1.92	2.37	2.78	3.27	3.90	4.33	4.72	5.17	5.47	5.73	6.05	6.28

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
247	11614	40.4829	-74.3557	1.77	2.04	2.43	2.83	3.31	3.94	4.37	4.76	5.21	5.50	5.77	6.10	6.34
248	11639	40.4282	-74.3576	1.62	1.94	2.39	2.78	3.23	3.78	4.14	4.45	4.83	5.09	5.34	5.68	5.95
249	11640	40.4233	-74.3565	1.68	1.97	2.42	2.81	3.24	3.77	4.12	4.43	4.81	5.08	5.34	5.65	5.90
250	11647	40.4946	-74.2626	1.53	1.85	2.25	2.64	3.13	3.80	4.29	4.74	5.24	5.56	5.84	6.17	6.42
251	11649	40.5006	-74.2585	1.53	1.84	2.29	2.68	3.14	3.78	4.26	4.70	5.19	5.50	5.76	6.05	6.24
252	11650	40.5127	-74.2555	1.50	1.83	2.30	2.69	3.13	3.73	4.19	4.61	5.10	5.40	5.65	5.94	6.12
253	11651	40.5225	-74.2479	1.51	1.82	2.21	2.59	3.07	3.71	4.16	4.58	5.06	5.36	5.63	5.94	6.18
254	11652	40.5338	-74.2502	1.50	1.82	2.20	2.58	3.05	3.69	4.14	4.56	5.03	5.34	5.60	5.93	6.15
255	11653	40.5477	-74.2510	1.50	1.81	2.18	2.50	2.94	3.57	4.02	4.43	4.90	5.20	5.46	5.75	5.96
256	11656	40.5605	-74.2159	1.48	1.79	2.13	2.42	2.84	3.47	3.89	4.26	4.70	4.98	5.22	5.50	5.69
257	11658	40.5831	-74.2080	1.51	1.81	2.15	2.48	2.88	3.43	3.79	4.13	4.52	4.79	5.04	5.35	5.61
258	11663	40.6309	-74.2024	1.49	1.78	2.09	2.38	2.73	3.25	3.59	3.89	4.24	4.47	4.69	4.98	5.22
259	11665	40.6464	-74.1794	1.48	1.72	2.06	2.33	2.63	3.05	3.34	3.60	3.89	4.09	4.27	4.48	4.62
260	11672	40.5999	-74.2239	1.50	1.77	2.14	2.47	2.87	3.41	3.77	4.08	4.45	4.70	4.94	5.24	5.48
261	11673	40.6007	-74.2392	1.38	1.67	2.05	2.40	2.83	3.43	3.82	4.15	4.54	4.81	5.07	5.45	5.81
262	11674	40.6020	-74.2565	1.39	1.67	2.08	2.44	2.86	3.44	3.82	4.15	4.52	4.76	4.99	5.27	5.46
263	11677	40.4806	-74.2339	1.52	1.82	2.23	2.61	3.07	3.73	4.22	4.67	5.16	5.47	5.74	6.06	6.29
264	11678	40.4811	-74.2194	1.52	1.82	2.24	2.61	3.03	3.64	4.12	4.56	5.04	5.34	5.60	5.89	6.08
265	11679	40.4826	-74.2053	1.51	1.80	2.20	2.57	3.01	3.64	4.12	4.55	5.03	5.33	5.59	5.89	6.10
266	11685	40.4991	-74.1286	1.44	1.74	2.09	2.43	2.82	3.40	3.84	4.23	4.67	4.95	5.20	5.49	5.69
267	11690	40.5039	-74.0660	1.41	1.70	2.03	2.34	2.70	3.23	3.65	4.02	4.43	4.69	4.93	5.21	5.41
268	11693	40.5107	-74.0252	1.37	1.66	1.97	2.26	2.61	3.15	3.56	3.92	4.32	4.58	4.82	5.13	5.35
269	11695	40.5102	-73.9995	1.34	1.62	1.92	2.20	2.54	3.06	3.46	3.81	4.20	4.46	4.70	5.00	5.22
270	11698	40.4365	-74.0252	1.42	1.72	2.04	2.33	2.69	3.25	3.66	4.01	4.39	4.64	4.86	5.13	5.32
271	11699	40.4452	-74.0354	1.42	1.71	2.05	2.35	2.69	3.22	3.62	3.98	4.36	4.61	4.82	5.08	5.25
272	11701	40.4632	-74.0504	1.41	1.70	2.04	2.34	2.71	3.27	3.68	4.03	4.42	4.68	4.91	5.19	5.39
273	11704	40.4928	-74.0703	1.41	1.71	2.01	2.29	2.66	3.24	3.67	4.05	4.46	4.73	4.97	5.27	5.48
274	11718	40.4940	-74.2335	1.51	1.82	2.18	2.50	2.95	3.64	4.15	4.61	5.12	5.43	5.70	6.00	6.19
275	11728	40.5248	-74.1262	1.42	1.71	2.07	2.39	2.78	3.36	3.81	4.20	4.65	4.95	5.20	5.50	5.71
276	11729	40.5380	-74.1101	1.42	1.72	2.04	2.34	2.73	3.31	3.76	4.16	4.60	4.90	5.16	5.47	5.69
277	11731	40.5681	-74.0833	1.41	1.69	2.02	2.33	2.72	3.29	3.73	4.12	4.57	4.87	5.14	5.46	5.70
278	11740	40.4943	-74.2453	1.52	1.83	2.20	2.53	3.00	3.69	4.20	4.66	5.16	5.47	5.74	6.04	6.24
279	11754	40.6772	-74.1407	1.45	1.71	2.01	2.28	2.59	3.03	3.32	3.57	3.86	4.06	4.24	4.46	4.61
280	11756	40.6874	-74.1577	1.47	1.72	2.04	2.32	2.63	3.07	3.37	3.63	3.93	4.12	4.30	4.51	4.65
281	11765	40.6476	-74.0951	1.30	1.60	1.97	2.32	2.71	3.24	3.62	3.96	4.35	4.61	4.85	5.13	5.32
282	11774	40.5195	-74.0330	1.39	1.67	1.99	2.29	2.64	3.17	3.59	3.95	4.35	4.61	4.85	5.14	5.35
283	11775	40.5340	-74.0334	1.39	1.67	1.99	2.28	2.64	3.17	3.59	3.95	4.36	4.63	4.87	5.16	5.36
284	11779	40.5966	-74.0427	1.34	1.64	1.96	2.28	2.66	3.24	3.68	4.06	4.48	4.76	5.01	5.32	5.54
285	11780	40.6136	-74.0485	1.31	1.61	1.96	2.29	2.69	3.28	3.71	4.09	4.51	4.79	5.03	5.33	5.56
286	11781	40.6277	-74.0548	1.32	1.62	1.95	2.26	2.65	3.25	3.69	4.07	4.49	4.76	5.01	5.31	5.51
287	11782	40.6423	-74.0548	1.33	1.63	1.97	2.29	2.69	3.28	3.72	4.10	4.52	4.80	5.05	5.36	5.59

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
288	11783	40.6559	-74.0480	1.32	1.63	1.97	2.29	2.69	3.28	3.72	4.11	4.53	4.81	5.07	5.38	5.59
289	11784	40.6675	-74.0417	1.32	1.63	1.95	2.24	2.62	3.22	3.68	4.07	4.50	4.78	5.02	5.30	5.50
290	11785	40.6806	-74.0373	1.31	1.63	1.96	2.28	2.68	3.27	3.72	4.11	4.54	4.81	5.07	5.37	5.58
291	11787	40.7073	-74.0281	1.28	1.59	1.92	2.22	2.61	3.21	3.67	4.05	4.48	4.75	4.99	5.27	5.47
292	11788	40.6884	-74.1156	1.46	1.70	2.03	2.29	2.58	2.99	3.29	3.54	3.83	4.02	4.19	4.39	4.53
293	11792	40.7421	-74.1309	1.51	1.77	2.06	2.25	2.53	3.05	3.37	3.63	3.91	4.09	4.25	4.45	4.57
294	11793	40.7364	-74.1446	1.52	1.76	2.07	2.34	2.65	3.11	3.41	3.66	3.93	4.11	4.28	4.47	4.61
295	11794	40.7341	-74.1585	1.54	1.77	2.08	2.34	2.66	3.12	3.42	3.67	3.94	4.13	4.29	4.49	4.63
296	11795	40.7447	-74.1655	1.55	1.79	2.09	2.36	2.69	3.16	3.47	3.72	4.01	4.19	4.36	4.57	4.71
297	11797	40.7733	-74.1538	1.58	1.81	2.10	2.37	2.71	3.23	3.56	3.83	4.12	4.32	4.50	4.72	4.87
298	11800	40.8180	-74.1359	1.67	1.89	2.20	2.50	2.90	3.52	3.90	4.21	4.56	4.79	5.00	5.25	5.43
299	11821	40.7927	-74.0786	1.22	1.37	1.57	1.75	1.95	2.23	2.42	2.60	2.82	2.97	3.12	3.31	3.47
300	11825	40.8267	-74.0354	1.17	1.29	1.45	1.60	1.80	2.13	2.36	2.57	2.81	2.96	3.11	3.29	3.41
301	11826	40.8471	-74.0300	1.15	1.28	1.43	1.57	1.76	2.13	2.38	2.60	2.84	3.01	3.16	3.35	3.48
302	11827	40.8606	-74.0331	1.16	1.28	1.45	1.61	1.82	2.17	2.42	2.64	2.89	3.07	3.23	3.43	3.58
303	11829	40.8874	-74.0338	1.16	1.29	1.44	1.57	1.78	2.17	2.45	2.68	2.96	3.15	3.32	3.53	3.68
304	11832	40.8224	-74.0461	NaN	1.03	1.39	1.62	1.87	2.19	2.42	2.62	2.86	3.04	3.21	3.44	3.64
305	11834	40.8362	-74.0651	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1.20	1.59	1.75	1.88	2.01	2.10
306	11837	40.8409	-74.0117	1.15	1.28	1.43	1.55	1.74	2.12	2.38	2.60	2.84	3.00	3.14	3.31	3.43
307	11840	40.8705	-73.9959	1.15	1.27	1.45	1.62	1.84	2.21	2.48	2.70	2.95	3.12	3.28	3.48	3.62
308	11851	40.6821	-74.0519	1.32	1.63	1.98	2.31	2.70	3.30	3.75	4.14	4.57	4.84	5.08	5.36	5.55
309	11863	40.6627	-74.0213	1.33	1.64	1.96	2.24	2.62	3.22	3.68	4.07	4.50	4.77	5.01	5.30	5.49
310	11867	40.6850	-74.0140	1.30	1.62	1.94	2.27	2.66	3.26	3.71	4.09	4.51	4.79	5.03	5.32	5.53
311	11871	40.7078	-73.9849	1.24	1.55	1.91	2.25	2.63	3.21	3.64	4.01	4.40	4.65	4.87	5.14	5.32
312	11875	40.7511	-73.9632	1.24	1.55	1.92	2.24	2.62	3.17	3.58	3.94	4.34	4.60	4.83	5.10	5.30
313	11877	40.7767	-73.9398	1.41	1.70	2.13	2.46	2.80	3.25	3.60	3.95	4.41	4.74	5.03	5.37	5.59
314	11878	40.7597	-73.9485	1.26	1.55	1.96	2.27	2.64	3.16	3.55	3.89	4.27	4.53	4.75	5.02	5.21
315	11882	40.8262	-73.9336	1.31	1.56	1.88	2.13	2.40	2.77	3.06	3.35	3.75	4.05	4.33	4.65	4.85
316	11888	40.8787	-73.9262	1.10	1.31	1.60	1.86	2.15	2.53	2.78	3.00	3.26	3.45	3.65	3.95	4.25
317	11895	40.7389	-73.9572	1.27	1.57	1.94	2.26	2.61	3.15	3.55	3.91	4.31	4.56	4.78	5.04	5.21
318	11897	40.7296	-73.9368	1.30	1.58	1.94	2.24	2.55	3.02	3.40	3.75	4.14	4.39	4.61	4.86	5.04
319	11901	40.7185	-74.0228	1.26	1.58	1.89	2.21	2.60	3.19	3.63	4.00	4.42	4.68	4.92	5.21	5.42
320	11902	40.7345	-74.0194	1.25	1.54	1.87	2.16	2.53	3.11	3.53	3.90	4.30	4.56	4.80	5.07	5.26
321	11903	40.7500	-74.0165	1.23	1.51	1.90	2.21	2.55	3.04	3.43	3.78	4.17	4.42	4.64	4.90	5.08
322	11904	40.7670	-74.0067	1.21	1.49	1.87	2.17	2.50	2.96	3.33	3.67	4.04	4.28	4.49	4.74	4.91
323	11905	40.7821	-73.9966	1.19	1.45	1.78	2.06	2.42	2.92	3.29	3.61	3.97	4.20	4.41	4.66	4.86
324	11906	40.7957	-73.9844	1.17	1.41	1.72	1.98	2.32	2.82	3.17	3.48	3.82	4.04	4.23	4.47	4.62
325	11908	40.8291	-73.9640	1.12	1.35	1.66	1.95	2.28	2.72	3.02	3.28	3.60	3.81	4.02	4.32	4.61
326	11909	40.8471	-73.9538	1.11	1.34	1.64	1.92	2.24	2.66	2.94	3.19	3.49	3.69	3.89	4.19	4.46
327	11910	40.8694	-73.9417	1.06	1.28	1.58	1.84	2.14	2.52	2.78	3.01	3.29	3.48	3.67	3.95	4.22
328	11911	40.8903	-73.9315	1.06	1.27	1.57	1.83	2.12	2.47	2.70	2.91	3.16	3.33	3.50	3.73	3.93

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
329	11912	40.9117	-73.9218	1.04	1.25	1.58	1.74	1.94	2.28	2.51	2.71	2.93	3.08	3.22	3.38	3.49
330	11913	40.9359	-73.9136	1.04	1.23	1.52	1.76	2.02	2.34	2.56	2.75	3.01	3.21	3.43	3.80	4.13
331	11930	40.6557	-74.0189	1.34	1.64	1.98	2.29	2.68	3.26	3.70	4.09	4.51	4.78	5.02	5.31	5.51
332	11933	40.6344	-74.0399	1.32	1.63	1.97	2.29	2.68	3.27	3.71	4.09	4.50	4.78	5.02	5.32	5.53
333	11935	40.6114	-74.0384	1.32	1.63	1.97	2.29	2.69	3.28	3.72	4.11	4.53	4.81	5.07	5.37	5.60
334	11936	40.6036	-74.0291	1.36	1.67	1.98	2.29	2.66	3.24	3.67	4.06	4.49	4.77	5.03	5.33	5.55
335	11949	40.5746	-73.9384	1.37	1.63	1.91	2.12	2.41	2.90	3.30	3.66	4.06	4.31	4.54	4.80	4.98
336	11953	40.5828	-73.9524	1.37	1.65	2.01	2.29	2.58	2.99	3.34	3.70	4.12	4.39	4.63	4.91	5.09
337	11968	40.5804	-73.9037	1.38	1.64	1.90	2.22	2.47	2.75	3.14	3.50	3.90	4.15	4.37	4.62	4.79
338	11974	40.5760	-73.8752	1.36	1.62	1.93	2.16	2.37	2.69	2.99	3.32	3.70	3.95	4.17	4.42	4.60
339	11978	40.6277	-73.8796	1.40	1.65	1.96	2.19	2.43	2.78	3.11	3.47	3.88	4.14	4.37	4.63	4.80
340	11982	40.6362	-73.8091	1.40	1.65	1.89	2.08	2.34	2.81	3.19	3.53	3.92	4.17	4.40	4.68	4.87
341	11984	40.6224	-73.8096	1.40	1.65	1.88	2.13	2.40	2.79	3.13	3.47	3.86	4.11	4.33	4.60	4.78
342	11987	40.5943	-73.8118	1.39	1.62	1.90	2.12	2.35	2.69	3.01	3.34	3.72	3.96	4.18	4.43	4.59
343	11996	40.5938	-73.8680	1.38	1.63	1.93	2.15	2.37	2.69	2.99	3.33	3.72	3.97	4.19	4.44	4.61
344	11997	40.5907	-73.8591	1.38	1.63	1.92	2.14	2.36	2.67	2.97	3.31	3.70	3.95	4.17	4.42	4.59
345	12001	40.6188	-73.8520	1.39	1.65	1.89	2.10	2.37	2.79	3.13	3.46	3.85	4.11	4.34	4.61	4.79
346	12002	40.6210	-73.8408	1.39	1.64	1.87	2.12	2.37	2.75	3.07	3.41	3.82	4.07	4.30	4.56	4.74
347	12014	40.6408	-73.8534	1.40	1.66	1.91	2.14	2.41	2.84	3.19	3.53	3.93	4.19	4.42	4.69	4.86
348	12025	40.6068	-73.8895	1.38	1.67	1.89	2.19	2.44	2.72	3.05	3.40	3.81	4.06	4.29	4.55	4.72
349	12031	40.6285	-73.8727	1.40	1.67	1.92	2.14	2.41	2.83	3.17	3.51	3.90	4.16	4.39	4.65	4.83
350	12033	40.5989	-73.8416	1.38	1.62	1.91	2.12	2.34	2.66	2.97	3.32	3.72	3.97	4.19	4.43	4.60
351	12042	40.6054	-73.7904	1.40	1.64	1.88	2.09	2.35	2.78	3.14	3.46	3.83	4.07	4.28	4.55	4.74
352	12043	40.6103	-73.7828	1.40	1.64	1.87	2.11	2.37	2.77	3.11	3.44	3.82	4.06	4.27	4.53	4.70
353	12044	40.6268	-73.7623	1.42	1.66	1.89	2.10	2.36	2.85	3.23	3.55	3.91	4.14	4.35	4.61	4.80
354	12058	40.5442	-73.9413	1.31	1.58	1.92	2.18	2.45	2.86	3.22	3.57	3.96	4.22	4.44	4.70	4.87
355	12071	40.5840	-73.7552	1.25	1.48	1.79	2.04	2.35	2.88	3.34	3.71	4.10	4.34	4.55	4.80	4.97
356	12324	40.6236	-73.3209	1.31	1.53	1.85	2.23	2.53	2.87	3.36	3.79	4.24	4.53	4.80	5.10	5.32
357	12860	40.9369	-73.4551	1.81	2.10	2.52	2.81	3.09	3.47	3.81	4.21	4.67	4.96	5.21	5.48	5.67
358	12888	40.9088	-73.5477	1.83	2.18	2.58	2.87	3.16	3.57	3.93	4.35	4.86	5.16	5.42	5.70	5.89
359	12893	40.9034	-73.6056	1.84	2.17	2.62	2.92	3.20	3.59	3.97	4.43	4.96	5.28	5.54	5.83	6.02
360	12894	40.9008	-73.6156	1.84	2.17	2.62	2.92	3.21	3.59	3.98	4.45	4.99	5.31	5.57	5.86	6.05
361	12898	40.8870	-73.6445	1.85	2.19	2.65	2.95	3.24	3.62	4.03	4.52	5.08	5.40	5.67	5.96	6.15
362	12908	40.8482	-73.6613	1.85	2.21	2.65	2.96	3.26	3.67	4.08	4.57	5.14	5.47	5.74	6.03	6.22
363	12950	40.7690	-73.7565	1.87	2.26	2.72	3.04	3.35	3.79	4.24	4.79	5.42	5.77	6.05	6.35	6.55
364	12951	40.7758	-73.7585	1.87	2.25	2.72	3.04	3.34	3.78	4.22	4.77	5.40	5.75	6.02	6.33	6.52
365	12965	40.9891	-73.6508	1.83	2.20	2.63	2.92	3.20	3.58	3.98	4.46	5.04	5.39	5.69	6.01	6.22
366	12966	40.9856	-73.6613	1.85	2.22	2.66	2.96	3.24	3.62	4.01	4.51	5.10	5.46	5.75	6.07	6.28
367	12976	40.9396	-73.6906	1.84	2.21	2.64	2.94	3.22	3.61	4.01	4.49	5.06	5.39	5.66	5.96	6.16
368	12981	40.9068	-73.7589	1.89	2.25	2.70	3.02	3.33	3.75	4.16	4.66	5.25	5.58	5.85	6.14	6.34
369	12994	40.8787	-73.8206	1.88	2.28	2.75	3.07	3.37	3.79	4.20	4.73	5.34	5.67	5.95	6.25	6.44

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
370	13007	40.8065	-73.7896	1.88	2.25	2.70	3.02	3.33	3.76	4.17	4.70	5.32	5.65	5.92	6.21	6.41
371	13013	40.8181	-73.8412	1.86	2.24	2.70	3.02	3.33	3.76	4.18	4.72	5.34	5.68	5.95	6.25	6.45
372	13014	40.8068	-73.8420	1.86	2.24	2.70	3.02	3.33	3.76	4.17	4.71	5.33	5.66	5.94	6.23	6.43
373	13021	40.9415	-73.7136	1.85	2.23	2.67	2.97	3.25	3.66	4.07	4.58	5.16	5.50	5.78	6.08	6.28
374	13023	40.8611	-73.7725	1.86	2.24	2.69	3.00	3.31	3.73	4.14	4.65	5.25	5.58	5.85	6.14	6.34
375	13038	40.7991	-73.8810	1.81	2.20	2.66	2.99	3.30	3.72	4.11	4.64	5.27	5.62	5.90	6.20	6.39
376	13039	40.8026	-73.8924	1.80	2.19	2.65	2.97	3.27	3.68	4.06	4.58	5.22	5.57	5.85	6.15	6.35
377	13041	40.7971	-73.9056	1.76	2.16	2.62	2.94	3.25	3.65	4.02	4.51	5.16	5.51	5.79	6.09	6.29
378	13048	40.7959	-73.8670	1.84	2.22	2.69	3.01	3.32	3.75	4.16	4.70	5.33	5.67	5.94	6.24	6.43
379	13049	40.7983	-73.8568	1.84	2.23	2.69	3.01	3.32	3.74	4.15	4.70	5.32	5.66	5.93	6.23	6.42
380	13050	40.8014	-73.8436	1.85	2.24	2.70	3.02	3.33	3.75	4.16	4.70	5.32	5.66	5.93	6.22	6.41
381	13051	40.8037	-73.8268	1.87	2.26	2.71	3.03	3.34	3.78	4.20	4.74	5.35	5.68	5.95	6.24	6.44
382	13052	40.8061	-73.8131	1.87	2.25	2.72	3.04	3.35	3.80	4.24	4.78	5.39	5.73	5.99	6.29	6.48
383	13053	40.8026	-73.8014	1.88	2.25	2.72	3.04	3.35	3.78	4.21	4.75	5.35	5.69	5.95	6.25	6.44
384	13054	40.7983	-73.7885	1.88	2.25	2.72	3.04	3.35	3.78	4.21	4.76	5.36	5.70	5.97	6.27	6.46
385	13055	40.8069	-73.7803	1.88	2.26	2.72	3.03	3.34	3.77	4.20	4.74	5.35	5.68	5.95	6.25	6.44
386	13056	40.7873	-73.8631	1.84	2.23	2.70	3.02	3.33	3.76	4.17	4.71	5.33	5.67	5.94	6.24	6.43
387	13068	40.7877	-73.7620	1.88	2.25	2.72	3.03	3.34	3.77	4.21	4.76	5.38	5.72	6.00	6.30	6.49
388	13069	40.8010	-73.7694	1.88	2.25	2.72	3.03	3.34	3.77	4.21	4.76	5.37	5.71	5.98	6.28	6.47
389	13070	40.8463	-73.8065	1.89	2.27	2.72	3.04	3.35	3.79	4.21	4.73	5.33	5.66	5.93	6.22	6.42
390	13071	40.8369	-73.8010	1.89	2.26	2.72	3.04	3.35	3.78	4.20	4.73	5.33	5.66	5.93	6.22	6.41
391	13072	40.8295	-73.7924	1.88	2.26	2.72	3.04	3.34	3.78	4.19	4.73	5.33	5.66	5.93	6.22	6.41
392	13073	40.8197	-73.7823	1.88	2.25	2.70	3.02	3.33	3.78	4.20	4.72	5.33	5.66	5.93	6.22	6.41
393	13074	40.8295	-73.7714	1.88	2.25	2.70	3.02	3.33	3.76	4.18	4.71	5.31	5.64	5.91	6.20	6.39
394	13076	40.8564	-73.7522	1.86	2.22	2.70	3.02	3.31	3.71	4.12	4.65	5.24	5.57	5.84	6.13	6.32
395	13077	40.8685	-73.7472	1.86	2.22	2.69	3.01	3.30	3.70	4.10	4.62	5.21	5.54	5.81	6.10	6.29
396	13078	40.8834	-73.7370	1.86	2.25	2.66	2.97	3.28	3.72	4.12	4.59	5.17	5.50	5.77	6.07	6.26
397	13079	40.8955	-73.7218	1.86	2.22	2.67	2.98	3.27	3.68	4.07	4.57	5.15	5.48	5.75	6.04	6.23
398	13080	40.8955	-73.7585	1.87	2.24	2.69	3.00	3.30	3.72	4.12	4.62	5.21	5.55	5.81	6.11	6.30
399	13085	40.8713	-73.7768	1.87	2.24	2.69	3.00	3.31	3.74	4.14	4.65	5.24	5.58	5.84	6.13	6.33
400	13086	40.8740	-73.7608	1.87	2.23	2.69	3.00	3.30	3.72	4.12	4.63	5.22	5.56	5.82	6.12	6.31
401	13087	40.8998	-73.6984	1.85	2.22	2.66	2.96	3.25	3.66	4.05	4.54	5.11	5.44	5.71	6.00	6.19
402	13088	40.9068	-73.6750	1.84	2.21	2.64	2.95	3.23	3.63	4.02	4.50	5.06	5.39	5.66	5.95	6.14
403	13090	40.9325	-73.6328	1.84	2.15	2.63	2.93	3.21	3.57	3.96	4.43	4.98	5.30	5.57	5.86	6.05
404	13093	40.9606	-73.5637	1.83	2.14	2.56	2.85	3.14	3.55	3.91	4.33	4.84	5.15	5.41	5.70	5.89
405	13096	40.9954	-73.5075	1.81	2.10	2.53	2.82	3.10	3.46	3.82	4.25	4.73	5.03	5.29	5.57	5.75
406	13097	40.8888	-73.6785	1.84	2.21	2.66	2.96	3.24	3.64	4.03	4.52	5.09	5.42	5.68	5.98	6.17
407	13732	40.3595	-73.9774	0.88	1.25	1.58	1.85	2.10	2.40	2.61	2.81	3.05	3.22	3.38	3.57	3.71
408	13751	40.5004	-74.3170	1.55	1.86	2.34	2.76	3.24	3.85	4.28	4.67	5.11	5.40	5.65	5.94	6.14
409	13754	40.4860	-74.3276	1.58	1.88	2.31	2.73	3.23	3.87	4.31	4.71	5.17	5.47	5.75	6.11	6.43
410	13755	40.4820	-74.3386	1.59	1.91	2.29	2.66	3.16	3.82	4.27	4.67	5.12	5.41	5.67	5.97	6.18

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
411	13761	40.5503	-74.2402	1.49	1.81	2.18	2.54	3.00	3.62	4.05	4.45	4.91	5.22	5.48	5.80	6.02
412	13767	40.5720	-74.1790	1.10	1.77	2.08	2.30	2.61	3.13	3.50	3.82	4.18	4.41	4.61	4.86	5.02
413	13768	40.5889	-74.1793	1.51	1.79	2.14	2.45	2.83	3.35	3.70	4.02	4.39	4.64	4.88	5.19	5.45
414	13772	40.6165	-74.2011	1.51	1.80	2.11	2.40	2.76	3.28	3.64	3.94	4.29	4.53	4.75	5.03	5.25
415	13775	40.6035	-74.1974	1.53	1.80	2.16	2.47	2.83	3.34	3.69	3.99	4.34	4.58	4.80	5.09	5.29
416	13780	40.6612	-74.1570	1.47	1.71	2.04	2.31	2.59	2.99	3.28	3.53	3.82	4.02	4.19	4.39	4.53
417	13785	40.6606	-74.1357	1.45	1.70	2.03	2.30	2.59	2.99	3.28	3.53	3.82	4.01	4.18	4.38	4.52
418	13786	40.6681	-74.1295	1.45	1.71	2.00	2.26	2.57	3.02	3.32	3.58	3.88	4.09	4.29	4.56	4.80
419	13788	40.6384	-74.1537	1.47	1.72	2.01	2.26	2.56	3.00	3.29	3.55	3.85	4.06	4.25	4.48	4.66
420	13792	40.6956	-74.1218	1.45	1.72	2.00	2.26	2.58	3.04	3.35	3.60	3.90	4.10	4.29	4.53	4.73
421	13809	40.5361	-74.1386	1.48	1.78	2.14	2.48	2.90	3.51	3.97	4.39	4.86	5.16	5.44	5.75	5.97
422	13810	40.5234	-74.1451	1.44	1.73	2.09	2.43	2.84	3.43	3.88	4.29	4.75	5.05	5.31	5.62	5.83
423	13818	40.6504	-74.1139	1.33	1.62	2.01	2.32	2.65	3.10	3.44	3.75	4.12	4.37	4.60	4.86	5.05
424	13819	40.6456	-74.1464	1.44	1.69	2.03	2.30	2.58	2.98	3.26	3.51	3.80	3.99	4.16	4.37	4.51
425	13837	40.6720	-74.0185	1.33	1.64	1.98	2.30	2.68	3.25	3.69	4.07	4.50	4.77	5.01	5.28	5.48
426	13859	40.7394	-74.0250	1.25	1.55	1.87	2.18	2.57	3.13	3.55	3.91	4.31	4.57	4.80	5.09	5.29
427	13862	40.7954	-73.9927	1.18	1.43	1.74	2.01	2.36	2.86	3.21	3.52	3.86	4.08	4.28	4.52	4.70
428	13872	40.9922	-73.9016	1.05	1.26	1.53	1.75	1.98	2.26	2.45	2.63	2.85	3.02	3.18	3.40	3.58
429	13874	40.8750	-73.9156	1.13	1.35	1.66	1.89	2.18	2.55	2.80	3.03	3.30	3.48	3.66	3.90	4.12
430	13883	40.8728	-73.9114	1.13	1.36	1.66	1.90	2.18	2.55	2.81	3.04	3.31	3.50	3.68	3.91	4.12
431	13888	40.8019	-73.9265	1.43	1.69	2.11	2.43	2.76	3.19	3.50	3.82	4.26	4.58	4.87	5.19	5.40
432	13891	40.7904	-73.9354	1.41	1.69	2.12	2.45	2.79	3.24	3.58	3.93	4.40	4.73	5.02	5.34	5.56
433	13893	40.7821	-73.9415	1.43	1.71	2.14	2.47	2.82	3.27	3.62	3.96	4.43	4.76	5.05	5.37	5.58
434	13899	40.7346	-73.9677	1.26	1.56	1.93	2.20	2.54	3.11	3.55	3.92	4.33	4.59	4.82	5.09	5.27
435	13908	40.7721	-73.9439	1.39	1.67	2.05	2.35	2.68	3.13	3.47	3.81	4.24	4.54	4.81	5.13	5.35
436	13919	40.7912	-73.9034	1.76	2.16	2.62	2.94	3.25	3.65	4.01	4.50	5.14	5.50	5.77	6.07	6.27
437	13927	40.8022	-73.8600	1.84	2.23	2.70	3.02	3.32	3.74	4.15	4.70	5.32	5.66	5.94	6.23	6.42
438	13931	40.7976	-73.8320	1.86	2.26	2.70	3.02	3.33	3.78	4.20	4.74	5.35	5.68	5.95	6.25	6.45
439	13936	40.7996	-73.7551	1.87	2.25	2.71	3.03	3.34	3.77	4.21	4.76	5.38	5.72	6.00	6.30	6.49
440	13942	40.8091	-73.7129	1.87	2.27	2.68	2.99	3.31	3.79	4.23	4.74	5.36	5.71	5.98	6.29	6.49
441	13945	40.8299	-73.7050	1.87	2.24	2.69	3.00	3.31	3.74	4.19	4.72	5.33	5.68	5.96	6.26	6.45
442	13960	40.8136	-73.6511	1.86	2.24	2.66	2.96	3.27	3.75	4.17	4.64	5.22	5.56	5.84	6.14	6.34
443	13966	40.9095	-73.5951	1.83	2.16	2.60	2.90	3.18	3.56	3.95	4.41	4.94	5.26	5.53	5.82	6.01
444	14070	40.5784	-74.0134	1.35	1.65	1.96	2.27	2.64	3.21	3.64	4.02	4.44	4.72	4.97	5.28	5.50
445	14088	40.5766	-73.8985	1.37	1.64	1.93	2.16	2.42	2.81	3.13	3.46	3.84	4.09	4.31	4.55	4.71
446	14093	40.6094	-73.8790	1.38	1.66	1.91	2.13	2.39	2.79	3.12	3.44	3.82	4.07	4.30	4.55	4.73
447	14117	40.6469	-73.8212	1.39	1.65	1.91	2.13	2.40	2.83	3.20	3.53	3.92	4.18	4.41	4.68	4.88
448	14122	40.6295	-73.8109	1.40	1.65	1.89	2.13	2.40	2.82	3.18	3.51	3.89	4.15	4.37	4.65	4.83
449	14126	40.6265	-73.7969	1.41	1.65	1.90	2.12	2.39	2.83	3.20	3.53	3.90	4.15	4.38	4.66	4.85
450	14135	40.5918	-73.8262	1.38	1.61	1.90	2.11	2.33	2.65	2.95	3.30	3.69	3.93	4.14	4.39	4.55
451	14144	40.6204	-73.7695	1.41	1.65	1.89	2.10	2.37	2.84	3.21	3.53	3.89	4.13	4.35	4.62	4.82

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
452	14156	40.5813	-73.8675	1.37	1.62	1.93	2.15	2.37	2.68	2.98	3.31	3.70	3.95	4.17	4.42	4.58
453	14158	40.6150	-73.8695	1.39	1.64	1.94	2.17	2.40	2.73	3.05	3.40	3.80	4.06	4.29	4.54	4.71
454	14173	40.6014	-73.7964	1.39	1.64	1.87	2.07	2.32	2.76	3.12	3.44	3.81	4.05	4.27	4.54	4.73
455	14190	40.5430	-73.9342	1.31	1.59	1.89	2.15	2.49	3.00	3.40	3.77	4.18	4.45	4.69	4.97	5.17
456	14196	40.5703	-73.8513	1.40	1.68	2.04	2.33	2.65	3.18	3.64	4.03	4.44	4.71	4.95	5.24	5.42
457	3817	40.4798	-74.0196	NaN	NaN	NaN	NaN	1.24	3.00	3.49	3.86	4.24	4.48	4.69	4.94	5.11
458	3900	40.5281	-74.0137	1.41	1.68	2.03	2.31	2.61	3.07	3.48	3.86	4.28	4.55	4.78	5.07	5.25
459	3900	40.5323	-74.0077	1.40	1.66	2.02	2.30	2.60	3.06	3.47	3.85	4.26	4.53	4.76	5.04	5.22
460	3915	40.5491	-73.9468	1.36	1.63	1.90	2.12	2.40	2.89	3.28	3.64	4.03	4.29	4.51	4.77	4.95
461	3592	40.5736	-73.8834	1.34	1.62	1.90	2.13	2.38	2.76	3.07	3.38	3.74	3.99	4.20	4.45	4.62
462	13053	40.8033	-73.8071	1.88	2.26	2.73	3.05	3.36	3.79	4.21	4.75	5.36	5.69	5.96	6.25	6.45
463	3856	40.5019	-74.1620	1.46	1.76	2.14	2.49	2.90	3.50	3.97	4.38	4.84	5.14	5.39	5.69	5.89
464	11778	40.5761	-74.0340	1.35	1.66	1.96	2.26	2.63	3.20	3.63	4.01	4.44	4.72	4.98	5.28	5.49
465	11650	40.5139	-74.2559	1.50	1.83	2.30	2.69	3.12	3.73	4.18	4.61	5.09	5.39	5.64	5.93	6.11
466	11781	40.6251	-74.0581	1.32	1.62	1.95	2.26	2.65	3.25	3.69	4.07	4.49	4.76	5.01	5.31	5.51
467	11781	40.6279	-74.0490	1.31	1.62	1.94	2.26	2.65	3.24	3.69	4.06	4.48	4.76	5.00	5.30	5.50
468	11861	40.6684	-74.0003	1.34	1.64	1.97	2.26	2.65	3.25	3.71	4.10	4.53	4.80	5.04	5.32	5.52
469	11895	40.7378	-73.9595	1.26	1.57	1.94	2.25	2.61	3.15	3.56	3.93	4.32	4.57	4.80	5.06	5.23
470	11784	40.6702	-74.0444	1.32	1.63	1.95	2.24	2.62	3.22	3.68	4.08	4.51	4.78	5.03	5.31	5.51
471	11766	40.6501	-74.0817	1.32	1.63	1.98	2.31	2.72	3.30	3.74	4.12	4.54	4.82	5.08	5.39	5.62
472	11741	40.6448	-74.1522	1.46	1.71	2.04	2.29	2.57	2.96	3.24	3.50	3.79	3.98	4.15	4.36	4.50
473	4157	40.6800	-74.1306	1.45	1.71	1.99	2.23	2.53	2.99	3.30	3.56	3.86	4.06	4.24	4.47	4.65
474	4261	40.7494	-74.0844	1.37	1.56	1.80	2.00	2.22	2.53	2.74	2.93	3.14	3.28	3.40	3.56	3.67
475	3967	40.5778	-74.2097	1.49	1.78	2.15	2.48	2.88	3.42	3.80	4.14	4.54	4.81	5.06	5.39	5.64
476	3551	40.4670	-74.0144	1.41	1.69	2.02	2.31	2.64	3.17	3.58	3.93	4.31	4.56	4.78	5.04	5.22
477	11982	40.6385	-73.8130	1.40	1.65	1.89	2.08	2.34	2.81	3.19	3.53	3.92	4.17	4.40	4.68	4.86
478	4135	40.6533	-74.0645	1.33	1.64	1.96	2.23	2.60	3.21	3.67	4.07	4.50	4.77	5.01	5.30	5.49
479	7673	40.6992	-74.0154	1.30	1.62	1.94	2.23	2.62	3.22	3.68	4.07	4.49	4.76	5.00	5.28	5.47
480	13067	40.7829	-73.8682	1.85	2.27	2.70	3.01	3.33	3.78	4.19	4.71	5.33	5.67	5.94	6.23	6.42
481	4103	40.6394	-74.1606	1.47	1.72	2.00	2.21	2.49	2.95	3.26	3.52	3.82	4.03	4.21	4.43	4.59
482	11749	40.7050	-74.1123	1.45	1.72	1.98	2.23	2.54	3.01	3.33	3.59	3.88	4.08	4.26	4.49	4.67
483	11907	40.8100	-73.9758	1.14	1.38	1.69	1.95	2.29	2.76	3.09	3.38	3.70	3.91	4.11	4.34	4.50

Appendix IX
Table of Best Estimate AEF Values for Water Levels at 483 Save Point Locations
Alt2 Condition

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
1	350	41.0025	-73.5513	1.82	2.14	2.57	2.87	3.16	3.55	3.93	4.38	4.89	5.21	5.47	5.77	5.96
2	3486	40.4558	-74.3716	0.82	0.98	1.17	1.35	1.57	1.84	2.05	2.26	2.52	2.69	2.84	3.01	3.13
3	3493	40.4917	-74.2624	0.46	0.58	0.73	0.87	1.03	1.24	1.42	1.59	1.76	1.88	1.98	2.11	2.21
4	3503	40.6439	-74.1899	0.24	0.29	0.37	0.44	0.54	0.72	0.85	0.99	1.16	1.27	1.36	1.46	1.52
5	3538	40.4183	-74.0350	0.27	0.35	0.44	0.51	0.60	0.74	0.86	0.97	1.10	1.18	1.25	1.33	1.39
6	3544	40.6992	-74.0214	0.16	0.24	0.33	0.40	0.50	0.66	0.78	0.90	1.03	1.11	1.18	1.25	1.30
7	3561	40.4509	-73.9802	1.39	1.68	2.05	2.33	2.62	3.07	3.49	3.87	4.29	4.57	4.81	5.11	5.30
8	3575	41.7833	-73.9500	0.46	0.60	0.71	0.78	0.85	0.97	1.07	1.17	1.30	1.39	1.47	1.57	1.64
9	3584	40.5471	-73.9231	1.42	1.71	2.05	2.36	2.75	3.34	3.77	4.14	4.57	4.85	5.11	5.41	5.63
10	3592	40.5735	-73.8849	0.29	0.34	0.40	0.46	0.56	0.73	0.85	0.97	1.17	1.31	1.42	1.53	1.61
11	3594	41.0783	-73.8700	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
12	3600	42.2531	-73.8018	0.50	0.66	0.99	1.22	1.48	1.84	2.14	2.47	2.92	3.23	3.53	3.97	4.38
13	3612	40.9229	-73.7400	1.87	2.24	2.69	3.01	3.33	3.78	4.22	4.72	5.30	5.64	5.92	6.23	6.44
14	3625	40.5783	-73.5802	1.27	1.52	1.85	2.10	2.38	2.86	3.31	3.70	4.12	4.38	4.62	4.91	5.09
15	3725	40.1074	-74.0268	1.29	1.56	1.83	2.05	2.29	2.65	2.95	3.24	3.63	3.93	4.23	4.56	4.77
16	3731	40.1478	-74.0166	1.33	1.56	1.85	2.07	2.29	2.63	2.93	3.22	3.57	3.84	4.12	4.45	4.66
17	3737	40.1876	-74.0026	1.31	1.57	1.85	2.06	2.28	2.62	2.92	3.21	3.55	3.81	4.07	4.39	4.59
18	3739	40.2011	-73.9997	1.32	1.57	1.86	2.08	2.29	2.63	2.94	3.23	3.57	3.82	4.07	4.38	4.58
19	3749	40.2681	-73.9800	1.32	1.58	1.85	2.06	2.31	2.73	3.05	3.34	3.70	3.96	4.21	4.51	4.70
20	3751	40.2817	-73.9773	1.32	1.57	1.87	2.08	2.31	2.66	2.99	3.31	3.69	3.96	4.22	4.53	4.74
21	3757	40.3223	-73.9689	1.33	1.59	1.87	2.09	2.33	2.72	3.05	3.37	3.74	4.00	4.24	4.54	4.73
22	3758	40.3224	-73.9735	1.35	1.64	1.97	2.24	2.54	2.98	3.32	3.62	3.99	4.26	4.50	4.81	5.02
23	3761	40.3457	-73.9544	1.34	1.58	1.87	2.09	2.32	2.68	3.02	3.36	3.75	4.03	4.29	4.61	4.82
24	3765	40.3675	-73.9649	1.35	1.61	1.88	2.11	2.36	2.77	3.12	3.45	3.84	4.11	4.37	4.68	4.89
25	3768	40.3909	-73.9730	1.37	1.65	2.00	2.28	2.61	3.11	3.49	3.84	4.25	4.53	4.80	5.13	5.37
26	3769	40.3948	-73.9620	1.35	1.61	1.88	2.09	2.36	2.82	3.20	3.54	3.93	4.21	4.46	4.77	4.98
27	3771	40.4078	-73.9563	1.35	1.61	1.88	2.09	2.36	2.83	3.22	3.56	3.96	4.23	4.48	4.79	4.99
28	3775	40.4205	-73.9502	1.35	1.62	1.89	2.09	2.35	2.82	3.21	3.56	3.96	4.23	4.48	4.78	4.98
29	3777	40.4263	-74.0461	0.24	0.33	0.42	0.49	0.58	0.72	0.83	0.93	1.05	1.13	1.21	1.30	1.36
30	3779	40.4342	-73.9512	1.36	1.62	1.94	2.18	2.42	2.82	3.24	3.61	4.02	4.30	4.56	4.86	5.06
31	3788	40.4478	-73.9493	1.35	1.62	1.90	2.10	2.38	2.88	3.29	3.65	4.05	4.33	4.58	4.88	5.07
32	3789	40.4478	-74.0039	0.21	0.31	0.40	0.47	0.54	0.65	0.74	0.84	0.97	1.05	1.13	1.22	1.28
33	3790	40.4515	-74.0850	0.25	0.32	0.41	0.48	0.55	0.68	0.79	0.89	1.01	1.08	1.15	1.24	1.30
34	3793	40.4569	-74.1117	0.27	0.33	0.41	0.48	0.56	0.69	0.80	0.91	1.03	1.11	1.18	1.26	1.32
35	3797	40.4605	-73.9527	1.37	1.65	1.95	2.22	2.53	3.03	3.43	3.78	4.18	4.46	4.71	5.00	5.20
36	3799	40.4608	-74.0435	0.21	0.31	0.40	0.46	0.53	0.64	0.73	0.82	0.94	1.02	1.09	1.18	1.25
37	3800	40.4637	-74.1541	0.29	0.36	0.45	0.54	0.65	0.80	0.94	1.06	1.19	1.27	1.34	1.43	1.48
38	3801	40.4663	-74.1941	0.34	0.43	0.55	0.66	0.78	0.96	1.10	1.23	1.37	1.45	1.53	1.62	1.68
39	3802	40.4677	-74.1191	0.26	0.32	0.40	0.46	0.54	0.67	0.78	0.88	0.99	1.06	1.13	1.21	1.26
40	3804	40.4695	-73.9662	1.39	1.68	2.02	2.31	2.62	3.10	3.50	3.87	4.29	4.56	4.81	5.10	5.29
41	3807	40.4709	-74.0317	0.19	0.30	0.38	0.44	0.51	0.62	0.71	0.80	0.91	0.99	1.07	1.16	1.22

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
42	3808	40.4714	-74.2107	0.37	0.46	0.59	0.71	0.84	1.02	1.16	1.30	1.44	1.54	1.62	1.73	1.79
43	3810	40.4724	-74.0406	0.20	0.30	0.39	0.44	0.51	0.62	0.72	0.81	0.92	0.99	1.07	1.16	1.22
44	3814	40.4767	-73.9813	1.39	1.71	2.02	2.32	2.67	3.23	3.66	4.03	4.46	4.74	5.00	5.33	5.56
45	3815	40.4771	-74.0559	0.21	0.30	0.38	0.44	0.51	0.62	0.71	0.80	0.92	1.00	1.07	1.16	1.21
46	3822	40.4795	-74.0064	1.45	1.76	2.18	2.49	2.82	3.32	3.76	4.17	4.61	4.90	5.15	5.45	5.64
47	3823	40.4796	-73.9986	1.44	1.73	2.10	2.40	2.72	3.21	3.64	4.03	4.47	4.75	4.99	5.28	5.48
48	3827	40.4838	-74.2589	0.46	0.57	0.71	0.84	0.99	1.19	1.36	1.52	1.70	1.81	1.90	2.02	2.11
49	3829	40.4847	-74.0905	0.23	0.30	0.38	0.44	0.51	0.63	0.72	0.81	0.92	0.99	1.06	1.14	1.19
50	3830	40.4856	-74.3409	0.71	0.86	1.07	1.24	1.43	1.69	1.89	2.10	2.38	2.57	2.72	2.90	3.02
51	3853	40.4975	-74.2220	0.39	0.48	0.61	0.73	0.86	1.04	1.20	1.33	1.48	1.58	1.66	1.76	1.83
52	3854	40.4981	-74.1388	0.22	0.28	0.35	0.42	0.50	0.63	0.72	0.80	0.89	0.96	1.01	1.08	1.13
53	3860	40.5027	-74.2114	0.37	0.46	0.58	0.69	0.81	0.99	1.14	1.27	1.42	1.51	1.59	1.70	1.78
54	3864	40.5040	-74.1767	0.29	0.37	0.46	0.54	0.64	0.80	0.92	1.03	1.16	1.24	1.31	1.40	1.46
55	3871	40.5066	-74.1943	0.33	0.42	0.52	0.62	0.73	0.89	1.03	1.15	1.28	1.37	1.44	1.54	1.61
56	3872	40.5077	-73.9378	1.38	1.66	1.95	2.22	2.56	3.09	3.51	3.88	4.30	4.58	4.83	5.13	5.35
57	3873	40.5081	-73.9545	1.40	1.70	2.00	2.30	2.65	3.20	3.62	4.00	4.43	4.71	4.97	5.28	5.51
58	3874	40.5081	-74.1910	0.32	0.40	0.50	0.60	0.71	0.87	1.00	1.12	1.25	1.33	1.41	1.50	1.57
59	3877	40.5102	-74.3003	0.57	0.72	0.92	1.10	1.32	1.63	1.87	2.08	2.32	2.48	2.62	2.80	2.93
60	3879	40.5119	-73.9072	1.36	1.63	1.90	2.15	2.47	2.98	3.38	3.73	4.14	4.42	4.67	4.96	5.17
61	3880	40.5142	-73.9704	1.42	1.70	2.08	2.38	2.70	3.20	3.64	4.04	4.47	4.75	5.00	5.29	5.47
62	3882	40.5149	-74.1482	0.23	0.29	0.37	0.44	0.53	0.65	0.75	0.84	0.95	1.02	1.08	1.15	1.20
63	3887	40.5191	-74.1598	0.26	0.33	0.41	0.48	0.57	0.71	0.82	0.92	1.04	1.11	1.18	1.26	1.31
64	3889	40.5206	-74.1379	0.22	0.27	0.35	0.41	0.49	0.61	0.71	0.80	0.91	0.98	1.03	1.10	1.15
65	3890	40.5227	-73.9845	0.19	0.30	0.39	0.45	0.51	0.61	0.69	0.78	0.90	0.98	1.05	1.14	1.19
66	3891	40.5230	-74.0495	0.17	0.26	0.35	0.41	0.47	0.57	0.65	0.73	0.83	0.91	0.99	1.09	1.14
67	3892	40.5238	-73.9126	1.38	1.64	1.97	2.23	2.52	3.00	3.43	3.80	4.22	4.50	4.75	5.04	5.24
68	3894	40.5278	-74.2449	0.60	0.66	0.74	0.80	0.92	1.16	1.35	1.52	1.69	1.79	1.88	1.98	2.04
69	3896	40.5300	-74.1099	0.25	0.27	0.31	0.35	0.40	0.51	0.61	0.69	0.78	0.84	0.90	0.98	1.02
70	3902	40.5351	-74.0872	0.17	0.23	0.31	0.36	0.41	0.50	0.59	0.66	0.74	0.79	0.83	0.88	0.91
71	3903	40.5384	-73.9022	1.38	1.64	1.97	2.23	2.52	3.02	3.46	3.84	4.25	4.53	4.77	5.06	5.26
72	3904	40.5400	-74.2495	0.60	0.66	0.74	0.82	0.94	1.18	1.37	1.54	1.72	1.83	1.91	2.02	2.08
73	3905	40.5401	-73.8846	1.37	1.62	1.94	2.20	2.48	2.98	3.42	3.79	4.20	4.47	4.71	5.00	5.19
74	3906	40.5407	-73.8668	1.36	1.62	1.89	2.14	2.46	2.99	3.41	3.76	4.16	4.43	4.67	4.96	5.14
75	3907	40.5415	-74.1018	0.19	0.24	0.32	0.37	0.43	0.53	0.62	0.70	0.78	0.85	0.91	0.98	1.02
76	3908	40.5421	-74.0092	0.18	0.27	0.36	0.42	0.48	0.57	0.64	0.72	0.81	0.89	0.99	1.09	1.15
77	3910	40.5423	-73.8490	1.35	1.60	1.90	2.14	2.41	2.91	3.36	3.73	4.14	4.41	4.65	4.93	5.12
78	3912	40.5448	-74.0745	0.15	0.21	0.29	0.35	0.40	0.51	0.60	0.68	0.75	0.80	0.85	0.90	0.94
79	3917	40.5507	-73.8161	1.34	1.58	1.89	2.12	2.37	2.90	3.36	3.74	4.15	4.42	4.65	4.93	5.11
80	3918	40.5518	-74.0915	0.25	0.27	0.31	0.36	0.41	0.53	0.64	0.74	0.85	0.93	0.99	1.06	1.10
81	3919	40.5531	-74.0605	0.14	0.19	0.27	0.33	0.39	0.51	0.61	0.69	0.78	0.83	0.88	0.94	0.98
82	3920	40.5538	-74.2468	0.58	0.64	0.72	0.79	0.90	1.14	1.35	1.54	1.72	1.83	1.92	2.02	2.09

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
83	3921	40.5546	-74.2364	0.57	0.64	0.72	0.80	0.92	1.16	1.36	1.53	1.70	1.80	1.89	1.99	2.06
84	3922	40.5554	-74.0117	0.15	0.21	0.30	0.36	0.43	0.52	0.60	0.68	0.76	0.82	0.87	0.93	0.97
85	3926	40.5574	-73.8005	1.33	1.58	1.88	2.12	2.38	2.91	3.39	3.78	4.20	4.47	4.70	4.97	5.15
86	3927	40.5589	-74.2308	0.56	0.63	0.71	0.78	0.90	1.15	1.35	1.52	1.69	1.79	1.88	1.97	2.04
87	3928	40.5604	-73.9310	0.19	0.27	0.37	0.44	0.52	0.63	0.72	0.82	0.96	1.05	1.14	1.25	1.32
88	3930	40.5613	-74.0837	0.25	0.27	0.31	0.35	0.41	0.53	0.66	0.75	0.87	0.95	1.01	1.07	1.12
89	3931	40.5634	-73.7843	1.33	1.58	1.88	2.11	2.38	2.91	3.39	3.79	4.22	4.49	4.73	5.00	5.18
90	3934	40.5660	-74.0220	0.14	0.20	0.27	0.33	0.40	0.53	0.62	0.70	0.78	0.84	0.88	0.94	0.97
91	3937	40.5666	-74.0391	0.14	0.20	0.26	0.32	0.39	0.52	0.62	0.69	0.78	0.84	0.89	0.96	1.01
92	3938	40.5667	-73.5909	1.29	1.51	1.78	1.99	2.23	2.77	3.24	3.63	4.07	4.35	4.60	4.90	5.10
93	3940	40.5679	-73.5731	1.29	1.50	1.78	1.99	2.23	2.74	3.20	3.60	4.03	4.31	4.57	4.88	5.10
94	3941	40.5685	-73.6087	1.30	1.52	1.81	2.03	2.28	2.83	3.31	3.70	4.13	4.41	4.66	4.95	5.15
95	3943	40.5697	-73.6266	1.30	1.53	1.81	2.03	2.30	2.87	3.34	3.74	4.17	4.45	4.69	4.98	5.17
96	3946	40.5705	-73.7689	1.33	1.58	1.88	2.11	2.38	2.93	3.42	3.82	4.25	4.52	4.76	5.03	5.21
97	3948	40.5712	-73.6803	1.32	1.55	1.83	2.06	2.33	2.89	3.35	3.75	4.19	4.47	4.71	4.99	5.17
98	3949	40.5713	-73.9721	0.15	0.22	0.31	0.37	0.45	0.59	0.70	0.80	0.93	1.01	1.08	1.16	1.21
99	3950	40.5717	-73.6982	1.34	1.57	1.85	2.08	2.36	2.92	3.37	3.76	4.20	4.47	4.71	4.98	5.16
100	3951	40.5717	-73.6444	1.31	1.54	1.82	2.05	2.30	2.87	3.35	3.74	4.18	4.45	4.69	4.97	5.16
101	3953	40.5721	-73.6623	1.30	1.55	1.79	2.03	2.36	2.94	3.39	3.78	4.21	4.49	4.73	5.01	5.20
102	3954	40.5724	-73.7162	1.33	1.56	1.85	2.08	2.35	2.90	3.37	3.76	4.20	4.48	4.72	5.00	5.17
103	3957	40.5736	-74.0735	0.25	0.28	0.31	0.35	0.41	0.55	0.67	0.78	0.89	0.96	1.02	1.08	1.13
104	3958	40.5741	-73.9135	0.19	0.27	0.37	0.44	0.53	0.67	0.78	0.89	1.06	1.20	1.31	1.44	1.53
105	3960	40.5742	-73.7518	1.34	1.57	1.87	2.10	2.37	2.92	3.40	3.80	4.24	4.51	4.75	5.02	5.20
106	3961	40.5745	-73.7339	1.33	1.57	1.87	2.10	2.37	2.92	3.39	3.80	4.23	4.51	4.75	5.02	5.21
107	3963	40.5761	-73.8957	0.24	0.33	0.43	0.52	0.62	0.76	0.86	0.96	1.09	1.21	1.32	1.45	1.54
108	3966	40.5774	-73.5209	1.28	1.50	1.77	1.99	2.24	2.78	3.25	3.65	4.08	4.38	4.65	4.97	5.19
109	3967	40.5776	-74.2114	0.48	0.55	0.63	0.71	0.81	1.00	1.16	1.31	1.48	1.58	1.67	1.77	1.84
110	3971	40.5793	-74.0204	0.14	0.20	0.27	0.33	0.40	0.54	0.63	0.71	0.80	0.86	0.91	0.97	1.02
111	3972	40.5801	-74.0424	0.13	0.20	0.26	0.32	0.39	0.54	0.64	0.73	0.83	0.89	0.94	1.00	1.04
112	3990	40.5848	-74.0021	0.14	0.21	0.28	0.34	0.41	0.55	0.65	0.74	0.84	0.89	0.94	1.00	1.04
113	3998	40.5883	-73.7756	1.34	1.60	1.95	2.24	2.58	3.20	3.71	4.13	4.56	4.83	5.07	5.33	5.51
114	3999	40.5889	-73.8296	0.36	0.60	0.90	1.09	1.26	1.49	1.68	1.87	2.09	2.23	2.34	2.48	2.57
115	4004	40.5915	-74.2025	0.44	0.52	0.59	0.67	0.78	0.98	1.14	1.29	1.45	1.56	1.64	1.74	1.80
116	4008	40.5926	-74.0237	0.13	0.20	0.27	0.33	0.40	0.55	0.66	0.76	0.86	0.92	0.97	1.03	1.07
117	4010	40.5931	-74.0478	0.13	0.20	0.27	0.33	0.40	0.55	0.66	0.76	0.86	0.92	0.97	1.03	1.07
118	4019	40.5970	-73.8152	0.48	0.58	0.74	1.02	1.24	1.48	1.64	1.80	2.02	2.20	2.37	2.57	2.70
119	4024	40.6005	-73.4177	1.25	1.47	1.73	1.95	2.21	2.73	3.19	3.58	4.05	4.38	4.68	5.04	5.28
120	4028	40.6029	-73.7991	0.49	0.59	0.77	1.10	1.35	1.62	1.80	1.98	2.22	2.43	2.67	2.95	3.11
121	4051	40.6134	-73.2605	1.22	1.41	1.65	1.85	2.07	2.51	2.94	3.33	3.79	4.12	4.44	4.82	5.08
122	4054	40.6144	-73.3142	1.24	1.44	1.70	1.90	2.13	2.61	3.07	3.47	3.95	4.29	4.61	4.97	5.22
123	4062	40.6176	-73.7745	0.47	0.55	0.74	1.05	1.35	1.67	1.87	2.06	2.33	2.62	2.97	3.30	3.49

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
124	4079	40.6245	-73.2087	1.20	1.40	1.62	1.82	2.09	2.56	2.95	3.32	3.79	4.13	4.47	4.90	5.18
125	4084	40.6282	-73.8046	0.45	0.53	0.64	0.89	1.22	1.53	1.73	1.91	2.13	2.29	2.44	2.62	2.73
126	4089	40.6311	-74.0680	0.26	0.29	0.33	0.36	0.42	0.56	0.68	0.79	0.91	0.98	1.04	1.12	1.16
127	4098	40.6372	-73.8603	0.40	0.48	0.57	0.71	0.91	1.15	1.34	1.53	1.77	1.96	2.15	2.37	2.51
128	4101	40.6384	-74.1930	0.25	0.31	0.38	0.45	0.54	0.72	0.86	0.99	1.13	1.22	1.30	1.40	1.47
129	4104	40.6403	-73.8602	0.41	0.49	0.57	0.70	0.92	1.17	1.36	1.55	1.81	2.00	2.19	2.41	2.56
130	4107	40.6413	-74.1241	0.22	0.26	0.32	0.37	0.45	0.60	0.70	0.79	0.89	0.94	0.99	1.05	1.09
131	4110	40.6419	-74.1665	0.16	0.20	0.27	0.35	0.48	0.67	0.79	0.89	1.07	1.23	1.34	1.45	1.52
132	4116	40.6438	-74.1377	0.16	0.20	0.27	0.34	0.44	0.61	0.73	0.82	0.93	1.00	1.06	1.13	1.18
133	4122	40.6471	-73.1050	1.18	1.38	1.57	1.77	2.03	2.53	2.92	3.28	3.74	4.11	4.48	4.92	5.19
134	4124	40.6472	-74.0756	0.28	0.31	0.35	0.38	0.44	0.59	0.70	0.81	0.93	1.01	1.08	1.16	1.21
135	4135	40.6544	-74.0660	0.27	0.31	0.34	0.37	0.43	0.59	0.71	0.82	0.95	1.02	1.09	1.17	1.22
136	4176	40.6958	-74.0502	0.45	0.53	0.62	0.70	0.80	1.00	1.16	1.30	1.46	1.56	1.65	1.76	1.83
137	4179	40.6971	-74.1482	0.14	0.18	0.25	0.37	0.55	0.75	0.90	1.06	1.26	1.41	1.54	1.67	1.76
138	4181	40.6997	-74.0342	0.17	0.24	0.32	0.39	0.48	0.65	0.77	0.88	1.01	1.09	1.16	1.24	1.29
139	4194	40.7060	-73.9979	0.16	0.24	0.33	0.40	0.49	0.65	0.78	0.90	1.02	1.10	1.16	1.23	1.27
140	4205	40.7143	-74.1080	0.14	0.18	0.24	0.36	0.59	0.83	1.00	1.15	1.31	1.44	1.56	1.70	1.78
141	4206	40.7144	-74.1211	0.14	0.18	0.24	0.37	0.60	0.86	1.02	1.17	1.34	1.47	1.59	1.73	1.82
142	4210	40.7167	-74.1229	0.14	0.18	0.24	0.37	0.61	0.87	1.04	1.19	1.36	1.50	1.62	1.76	1.85
143	4211	40.7171	-73.9684	0.17	0.24	0.33	0.40	0.49	0.66	0.79	0.90	1.02	1.09	1.15	1.22	1.26
144	4227	40.7301	-73.9640	0.18	0.26	0.34	0.41	0.51	0.71	0.85	0.97	1.09	1.17	1.23	1.30	1.35
145	4241	40.7385	-74.0892	0.15	0.19	0.27	0.40	0.59	0.82	0.98	1.12	1.30	1.42	1.53	1.65	1.73
146	4244	40.7400	-74.0234	0.28	0.32	0.35	0.39	0.45	0.62	0.73	0.83	0.95	1.03	1.09	1.17	1.21
147	4255	40.7461	-74.0749	0.18	0.24	0.32	0.42	0.56	0.77	0.94	1.07	1.23	1.33	1.41	1.50	1.57
148	4260	40.7487	-73.9660	0.19	0.27	0.35	0.43	0.53	0.72	0.87	1.00	1.13	1.21	1.27	1.35	1.40
149	4278	40.7601	-73.9561	0.21	0.28	0.38	0.45	0.54	0.71	0.87	1.00	1.13	1.21	1.28	1.35	1.40
150	4281	40.7655	-74.0892	0.06	0.30	0.37	0.46	0.60	0.74	0.84	0.92	1.03	1.11	1.19	1.29	1.35
151	4304	40.7796	-73.9287	0.33	0.38	0.45	0.52	0.60	0.73	0.85	0.98	1.12	1.20	1.28	1.37	1.44
152	4321	40.7880	-73.9145	0.40	0.49	0.60	0.69	0.78	0.94	1.11	1.26	1.42	1.51	1.59	1.69	1.76
153	4323	40.7889	-73.8678	0.52	0.63	0.75	0.84	0.93	1.19	1.44	1.64	1.84	1.98	2.11	2.25	2.34
154	4344	40.7964	-73.9006	0.46	0.57	0.69	0.77	0.86	1.02	1.22	1.41	1.61	1.74	1.84	1.96	2.03
155	4349	40.7979	-73.8111	0.58	0.69	0.81	0.90	1.01	1.32	1.58	1.79	2.01	2.16	2.28	2.43	2.52
156	4350	40.7981	-73.8839	0.50	0.61	0.73	0.82	0.91	1.12	1.34	1.55	1.81	1.98	2.12	2.27	2.37
157	4352	40.7990	-73.8369	0.56	0.66	0.78	0.87	0.98	1.25	1.52	1.73	1.95	2.10	2.23	2.38	2.47
158	4359	40.8014	-73.9851	0.25	0.28	0.31	0.35	0.40	0.55	0.65	0.75	0.85	0.91	0.96	1.02	1.06
159	4370	40.8047	-73.8395	0.56	0.66	0.79	0.88	0.98	1.28	1.55	1.75	1.97	2.11	2.24	2.38	2.48
160	4382	40.8065	-73.8216	0.57	0.67	0.80	0.89	1.00	1.29	1.55	1.75	1.97	2.12	2.24	2.38	2.48
161	4397	40.8130	-73.9754	0.23	0.26	0.30	0.34	0.40	0.53	0.62	0.71	0.82	0.88	0.93	0.98	1.02
162	4408	40.8199	-74.1279	0.20	0.25	0.37	0.57	0.99	1.44	1.80	2.09	2.39	2.59	2.77	2.98	3.14
163	4416	40.8249	-73.9666	0.22	0.25	0.29	0.33	0.38	0.50	0.59	0.67	0.77	0.83	0.88	0.94	0.98
164	4435	40.8376	-73.9599	0.22	0.24	0.28	0.32	0.38	0.50	0.59	0.67	0.76	0.82	0.87	0.93	0.97

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
165	4450	40.8439	-73.7491	1.91	2.26	2.74	3.07	3.38	3.83	4.31	4.84	5.42	5.75	6.03	6.33	6.53
166	4459	40.8504	-73.9535	0.22	0.25	0.28	0.31	0.36	0.48	0.58	0.66	0.75	0.81	0.86	0.92	0.95
167	4469	40.8559	-73.7413	1.91	2.31	2.71	3.03	3.36	3.86	4.31	4.81	5.40	5.73	6.00	6.31	6.50
168	4470	40.8562	-73.9213	0.22	0.25	0.29	0.33	0.38	0.51	0.62	0.71	0.82	0.88	0.93	0.99	1.03
169	4478	40.8608	-73.7655	1.91	2.26	2.74	3.07	3.38	3.81	4.28	4.80	5.39	5.72	6.00	6.30	6.50
170	4479	40.8611	-73.9159	0.22	0.25	0.28	0.32	0.38	0.50	0.61	0.70	0.80	0.85	0.90	0.96	0.99
171	4480	40.8612	-73.7913	1.91	2.28	2.74	3.07	3.39	3.85	4.30	4.82	5.41	5.75	6.02	6.32	6.52
172	4481	40.8627	-73.9454	0.17	0.21	0.27	0.31	0.37	0.47	0.54	0.61	0.69	0.73	0.78	0.83	0.86
173	4498	40.8709	-73.7001	1.90	2.24	2.72	3.04	3.34	3.77	4.23	4.73	5.30	5.63	5.91	6.21	6.41
174	4505	40.8747	-73.9367	0.18	0.22	0.28	0.33	0.39	0.49	0.56	0.62	0.68	0.73	0.77	0.82	0.85
175	4526	40.8871	-73.9290	0.23	0.26	0.29	0.32	0.38	0.48	0.56	0.62	0.70	0.74	0.78	0.83	0.86
176	4537	40.8951	-73.7686	1.91	2.27	2.72	3.04	3.36	3.81	4.24	4.76	5.36	5.70	5.97	6.28	6.48
177	4546	40.9002	-73.9236	0.23	0.26	0.30	0.34	0.39	0.48	0.56	0.63	0.71	0.75	0.79	0.84	0.87
178	4549	40.9018	-73.6230	1.87	2.24	2.65	2.95	3.27	3.73	4.14	4.59	5.13	5.45	5.72	6.02	6.21
179	4573	40.9117	-73.9122	0.24	0.27	0.31	0.35	0.41	0.50	0.57	0.64	0.72	0.77	0.81	0.86	0.89
180	4579	40.9144	-73.5386	1.85	2.17	2.58	2.89	3.20	3.64	4.02	4.45	4.96	5.26	5.52	5.80	5.99
181	4606	40.9224	-73.7298	1.87	2.24	2.69	3.01	3.32	3.77	4.21	4.71	5.28	5.62	5.90	6.21	6.41
182	4620	40.9272	-73.9170	0.25	0.28	0.32	0.36	0.42	0.52	0.58	0.65	0.71	0.76	0.80	0.85	0.88
183	4653	40.9390	-73.4948	1.82	2.14	2.54	2.84	3.14	3.58	3.96	4.37	4.86	5.16	5.41	5.69	5.87
184	4654	40.9407	-73.9136	0.26	0.29	0.34	0.39	0.45	0.55	0.62	0.69	0.76	0.81	0.85	0.90	0.94
185	4723	40.9687	-73.6486	1.84	2.21	2.64	2.95	3.24	3.65	4.07	4.55	5.10	5.43	5.71	6.02	6.22
186	4816	41.0005	-73.8990	0.28	0.33	0.39	0.44	0.50	0.59	0.67	0.76	0.87	0.93	0.99	1.06	1.11
187	4893	41.0380	-73.8768	0.30	0.36	0.43	0.47	0.51	0.60	0.70	0.80	0.96	1.08	1.17	1.26	1.32
188	5082	41.1529	-73.8864	0.31	0.36	0.43	0.51	0.60	0.75	0.90	1.08	1.30	1.49	1.65	1.82	1.93
189	5109	41.2095	-73.9349	0.33	0.39	0.46	0.52	0.61	0.77	0.93	1.12	1.38	1.56	1.70	1.85	1.95
190	5831	40.0971	-74.0273	1.30	1.56	1.82	2.03	2.27	2.64	2.93	3.21	3.59	3.89	4.17	4.49	4.69
191	6906	40.4200	-73.8300	1.33	1.57	1.86	2.06	2.27	2.61	2.99	3.34	3.75	4.02	4.27	4.56	4.75
192	7099	40.8800	-73.7300	1.88	2.26	2.72	3.03	3.34	3.79	4.24	4.75	5.33	5.66	5.94	6.24	6.44
193	7395	40.9350	-74.0300	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
194	7401	40.8300	-74.0767	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
195	7412	40.7867	-74.1467	0.20	0.27	0.38	0.53	0.84	1.22	1.50	1.73	1.97	2.12	2.25	2.41	2.52
196	7417	40.7167	-74.0317	0.19	0.25	0.33	0.40	0.48	0.64	0.74	0.84	0.97	1.05	1.12	1.21	1.27
197	3527	40.6550	-74.0850	0.28	0.32	0.36	0.40	0.46	0.62	0.75	0.86	1.00	1.08	1.16	1.24	1.30
198	7655	40.4600	-73.8300	1.34	1.58	1.87	2.08	2.29	2.66	3.04	3.40	3.82	4.10	4.36	4.65	4.84
199	7668	40.7767	-73.9417	0.30	0.35	0.42	0.47	0.54	0.66	0.79	0.94	1.07	1.14	1.21	1.29	1.35
200	7673	40.7000	-74.0150	0.17	0.25	0.33	0.39	0.49	0.68	0.80	0.92	1.06	1.13	1.20	1.28	1.32
201	7680	40.5567	-74.2233	0.56	0.62	0.70	0.77	0.89	1.11	1.29	1.46	1.64	1.74	1.82	1.92	1.98
202	7868	41.3311	-73.9774	0.27	0.33	0.40	0.48	0.60	0.79	0.95	1.13	1.37	1.51	1.63	1.76	1.85
203	7870	41.3744	-73.9565	0.29	0.35	0.44	0.51	0.59	0.70	0.79	0.88	1.03	1.15	1.25	1.35	1.42
204	7872	41.4132	-73.9644	0.28	0.34	0.40	0.45	0.52	0.61	0.68	0.75	0.84	0.94	1.03	1.14	1.21
205	7875	41.4652	-74.0010	0.30	0.38	0.44	0.49	0.54	0.62	0.68	0.76	0.85	0.92	0.99	1.08	1.14

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
206	7876	41.4945	-73.9985	0.32	0.39	0.45	0.51	0.56	0.64	0.71	0.80	0.91	0.98	1.05	1.12	1.17
207	7965	41.2872	-73.9384	0.32	0.38	0.46	0.55	0.69	0.93	1.13	1.37	1.70	1.89	2.04	2.20	2.31
208	7975	41.0548	-73.9124	0.29	0.35	0.42	0.47	0.52	0.60	0.69	0.79	0.93	1.03	1.12	1.20	1.25
209	7976	41.0346	-73.9085	0.29	0.34	0.41	0.46	0.51	0.60	0.67	0.75	0.86	0.94	1.01	1.09	1.14
210	7979	41.1003	-73.9126	0.30	0.36	0.41	0.46	0.52	0.63	0.73	0.85	1.03	1.15	1.25	1.36	1.43
211	9813	41.1522	-73.8735	0.30	0.36	0.43	0.51	0.61	0.76	0.90	1.09	1.36	1.58	1.75	1.93	2.04
212	9816	41.1952	-73.9565	0.33	0.39	0.46	0.52	0.60	0.73	0.86	1.02	1.27	1.44	1.57	1.70	1.79
213	9838	41.0070	-73.5669	1.83	2.15	2.57	2.87	3.17	3.60	3.98	4.41	4.93	5.26	5.53	5.83	6.03
214	9842	41.0186	-73.5188	1.81	2.11	2.54	2.84	3.12	3.49	3.88	4.31	4.81	5.12	5.38	5.67	5.87
215	11330	40.4414	-73.9087	1.35	1.60	1.91	2.13	2.36	2.74	3.14	3.51	3.92	4.20	4.46	4.76	4.95
216	11331	40.5220	-73.7791	1.33	1.57	1.86	2.07	2.30	2.75	3.17	3.54	3.96	4.24	4.48	4.77	4.97
217	11334	40.5588	-73.2096	1.20	1.39	1.61	1.78	1.94	2.21	2.54	2.86	3.25	3.57	3.99	4.56	4.88
218	11519	40.3706	-73.9705	1.37	1.65	1.95	2.20	2.49	2.93	3.29	3.62	4.01	4.27	4.53	4.82	5.02
219	11521	40.4260	-73.9809	1.40	1.71	2.08	2.38	2.72	3.24	3.64	3.99	4.38	4.65	4.89	5.18	5.38
220	11527	40.4138	-73.9902	0.22	0.34	0.43	0.50	0.58	0.72	0.85	0.96	1.09	1.17	1.25	1.34	1.40
221	11528	40.3835	-73.9794	0.09	0.13	0.39	0.52	0.64	0.86	1.04	1.21	1.38	1.48	1.57	1.68	1.74
222	11531	40.3334	-74.0101	0.29	0.34	0.40	0.47	0.57	0.72	0.82	0.92	1.11	1.26	1.39	1.52	1.60
223	11538	40.3596	-74.0628	0.46	0.51	0.59	0.66	0.76	0.97	1.14	1.29	1.48	1.62	1.74	1.88	1.97
224	11547	40.4239	-74.0402	0.23	0.33	0.42	0.49	0.58	0.71	0.82	0.93	1.05	1.13	1.21	1.30	1.36
225	11548	40.4301	-74.0557	0.25	0.33	0.42	0.50	0.58	0.71	0.83	0.94	1.06	1.14	1.21	1.30	1.36
226	11549	40.4403	-74.0674	0.24	0.32	0.41	0.48	0.56	0.69	0.80	0.91	1.03	1.10	1.18	1.26	1.32
227	11550	40.4462	-74.0775	0.25	0.33	0.41	0.48	0.56	0.69	0.80	0.91	1.02	1.10	1.17	1.26	1.32
228	11551	40.4498	-74.0988	0.27	0.34	0.42	0.49	0.57	0.71	0.82	0.94	1.06	1.14	1.21	1.29	1.35
229	11553	40.4740	-74.1283	0.25	0.31	0.39	0.46	0.53	0.65	0.76	0.86	0.97	1.04	1.10	1.18	1.23
230	11554	40.4656	-74.1421	0.27	0.34	0.43	0.51	0.60	0.74	0.86	0.97	1.10	1.18	1.25	1.33	1.39
231	11556	40.4595	-74.1696	0.31	0.40	0.49	0.59	0.71	0.89	1.03	1.16	1.30	1.39	1.47	1.56	1.63
232	11557	40.4738	-74.1753	0.29	0.36	0.46	0.56	0.67	0.84	0.96	1.07	1.19	1.27	1.34	1.42	1.47
233	11562	40.4581	-74.2174	0.39	0.48	0.60	0.72	0.88	1.09	1.25	1.39	1.54	1.64	1.73	1.84	1.92
234	11563	40.4649	-74.2337	0.41	0.51	0.65	0.77	0.92	1.13	1.30	1.45	1.61	1.72	1.81	1.93	2.01
235	11564	40.4667	-74.2499	0.45	0.56	0.69	0.83	0.98	1.19	1.35	1.51	1.67	1.77	1.86	1.98	2.06
236	11565	40.4762	-74.2580	0.46	0.57	0.72	0.86	1.01	1.21	1.37	1.53	1.70	1.81	1.90	2.03	2.12
237	11566	40.4859	-74.2619	0.47	0.58	0.73	0.88	1.03	1.24	1.41	1.58	1.75	1.86	1.97	2.10	2.20
238	11567	40.4919	-74.2713	0.48	0.60	0.75	0.88	1.04	1.27	1.46	1.64	1.83	1.94	2.04	2.15	2.23
239	11568	40.4968	-74.2811	0.50	0.63	0.82	0.97	1.13	1.37	1.57	1.75	1.95	2.07	2.16	2.28	2.35
240	11573	40.4618	-74.1330	0.27	0.34	0.43	0.51	0.60	0.75	0.88	0.99	1.12	1.20	1.28	1.37	1.44
241	11580	40.4713	-74.2617	0.49	0.60	0.76	0.91	1.07	1.28	1.45	1.61	1.79	1.90	2.00	2.12	2.21
242	11605	40.4999	-74.2890	0.51	0.65	0.84	1.00	1.18	1.45	1.67	1.86	2.06	2.18	2.29	2.42	2.51
243	11608	40.5078	-74.2886	0.54	0.68	0.86	1.04	1.25	1.55	1.78	1.98	2.22	2.38	2.53	2.72	2.86
244	11610	40.5085	-74.3093	0.60	0.75	0.93	1.08	1.29	1.61	1.85	2.06	2.28	2.43	2.56	2.71	2.81
245	11611	40.5040	-74.3169	0.62	0.76	0.96	1.14	1.35	1.67	1.91	2.11	2.35	2.50	2.64	2.81	2.93
246	11613	40.4855	-74.3410	0.71	0.86	1.07	1.24	1.43	1.69	1.89	2.10	2.38	2.57	2.72	2.90	3.02

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
247	11614	40.4829	-74.3557	0.76	0.92	1.16	1.32	1.50	1.74	1.92	2.13	2.42	2.61	2.78	2.96	3.09
248	11639	40.4282	-74.3576	0.81	0.99	1.20	1.38	1.61	1.92	2.16	2.39	2.65	2.83	2.99	3.20	3.35
249	11640	40.4233	-74.3565	0.82	1.01	1.21	1.39	1.61	1.92	2.17	2.40	2.68	2.89	3.08	3.32	3.48
250	11647	40.4946	-74.2626	0.46	0.58	0.73	0.87	1.03	1.24	1.43	1.59	1.77	1.88	1.98	2.11	2.21
251	11649	40.5006	-74.2585	0.46	0.57	0.74	0.88	1.03	1.24	1.42	1.59	1.77	1.88	1.98	2.10	2.18
252	11650	40.5127	-74.2555	0.45	0.57	0.75	0.88	1.02	1.22	1.39	1.56	1.75	1.86	1.95	2.07	2.14
253	11651	40.5225	-74.2479	0.44	0.56	0.70	0.84	0.99	1.21	1.38	1.54	1.71	1.81	1.90	2.02	2.11
254	11652	40.5338	-74.2502	0.60	0.66	0.74	0.82	0.95	1.18	1.37	1.54	1.71	1.82	1.90	2.00	2.07
255	11653	40.5477	-74.2510	0.58	0.65	0.73	0.81	0.93	1.18	1.37	1.55	1.72	1.83	1.92	2.02	2.08
256	11656	40.5605	-74.2159	0.54	0.60	0.68	0.76	0.87	1.08	1.25	1.42	1.59	1.69	1.77	1.87	1.93
257	11658	40.5831	-74.2080	0.46	0.53	0.61	0.69	0.80	0.99	1.15	1.29	1.46	1.56	1.65	1.75	1.81
258	11663	40.6309	-74.2024	0.28	0.34	0.42	0.50	0.61	0.81	0.98	1.13	1.28	1.38	1.46	1.55	1.62
259	11665	40.6464	-74.1794	0.18	0.23	0.31	0.39	0.50	0.70	0.83	0.96	1.15	1.28	1.38	1.49	1.55
260	11672	40.5999	-74.2239	0.53	0.59	0.68	0.77	0.88	1.08	1.23	1.38	1.59	1.74	1.86	1.99	2.07
261	11673	40.6007	-74.2392	0.04	0.05	0.08	0.48	1.07	1.51	1.83	2.20	2.61	2.86	3.08	3.32	3.48
262	11674	40.6020	-74.2565	0.05	0.06	0.09	0.45	1.12	1.51	1.79	2.16	2.58	2.85	3.08	3.34	3.50
263	11677	40.4806	-74.2339	0.41	0.51	0.65	0.77	0.91	1.10	1.26	1.41	1.57	1.67	1.77	1.88	1.97
264	11678	40.4811	-74.2194	0.38	0.48	0.62	0.73	0.86	1.03	1.18	1.32	1.47	1.56	1.65	1.75	1.82
265	11679	40.4826	-74.2053	0.36	0.44	0.57	0.68	0.81	0.98	1.12	1.24	1.39	1.48	1.56	1.67	1.74
266	11685	40.4991	-74.1286	0.21	0.27	0.34	0.41	0.48	0.60	0.67	0.74	0.83	0.89	0.94	1.00	1.04
267	11690	40.5039	-74.0660	0.19	0.28	0.36	0.42	0.48	0.58	0.66	0.75	0.87	0.95	1.02	1.10	1.15
268	11693	40.5107	-74.0252	0.18	0.28	0.37	0.43	0.50	0.59	0.67	0.77	0.89	0.97	1.04	1.13	1.18
269	11695	40.5102	-73.9995	0.18	0.29	0.39	0.45	0.52	0.62	0.70	0.80	0.93	1.01	1.09	1.18	1.23
270	11698	40.4365	-74.0252	0.21	0.31	0.41	0.47	0.55	0.67	0.76	0.87	1.00	1.09	1.16	1.25	1.32
271	11699	40.4452	-74.0354	0.21	0.31	0.40	0.47	0.54	0.66	0.75	0.85	0.98	1.07	1.14	1.23	1.29
272	11701	40.4632	-74.0504	0.21	0.31	0.39	0.46	0.53	0.64	0.72	0.82	0.94	1.02	1.09	1.18	1.24
273	11704	40.4928	-74.0703	0.21	0.29	0.38	0.43	0.50	0.61	0.69	0.78	0.89	0.98	1.05	1.13	1.18
274	11718	40.4940	-74.2335	0.40	0.50	0.62	0.72	0.85	1.05	1.22	1.37	1.54	1.64	1.73	1.84	1.91
275	11728	40.5248	-74.1262	0.27	0.30	0.34	0.37	0.43	0.54	0.66	0.76	0.87	0.94	0.99	1.05	1.09
276	11729	40.5380	-74.1101	0.27	0.29	0.33	0.37	0.42	0.54	0.65	0.73	0.83	0.91	0.98	1.07	1.12
277	11731	40.5681	-74.0833	0.26	0.29	0.33	0.37	0.42	0.55	0.67	0.78	0.91	0.99	1.06	1.14	1.19
278	11740	40.4943	-74.2453	0.43	0.54	0.67	0.78	0.93	1.13	1.30	1.46	1.63	1.74	1.83	1.94	2.02
279	11754	40.6772	-74.1407	0.14	0.18	0.25	0.36	0.53	0.72	0.86	0.99	1.18	1.31	1.43	1.56	1.64
280	11756	40.6874	-74.1577	0.15	0.19	0.26	0.38	0.54	0.74	0.88	1.02	1.21	1.37	1.50	1.63	1.71
281	11765	40.6476	-74.0951	0.28	0.31	0.35	0.39	0.45	0.59	0.70	0.79	0.90	0.98	1.05	1.12	1.17
282	11774	40.5195	-74.0330	0.17	0.27	0.36	0.42	0.48	0.58	0.66	0.75	0.86	0.94	1.02	1.10	1.16
283	11775	40.5340	-74.0334	0.15	0.22	0.33	0.40	0.47	0.57	0.64	0.71	0.81	0.89	0.98	1.08	1.14
284	11779	40.5966	-74.0427	0.13	0.20	0.27	0.33	0.41	0.55	0.66	0.77	0.87	0.93	0.98	1.04	1.08
285	11780	40.6136	-74.0485	0.14	0.21	0.28	0.34	0.42	0.56	0.67	0.77	0.89	0.95	1.01	1.08	1.12
286	11781	40.6277	-74.0548	0.14	0.21	0.29	0.35	0.42	0.56	0.67	0.78	0.89	0.97	1.03	1.10	1.14
287	11782	40.6423	-74.0548	0.26	0.30	0.33	0.37	0.42	0.57	0.68	0.79	0.91	0.98	1.05	1.12	1.17

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
288	11783	40.6559	-74.0480	0.15	0.23	0.31	0.37	0.46	0.61	0.71	0.82	0.94	1.02	1.09	1.17	1.22
289	11784	40.6675	-74.0417	0.16	0.23	0.31	0.37	0.46	0.62	0.73	0.84	0.97	1.05	1.12	1.19	1.24
290	11785	40.6806	-74.0373	0.17	0.25	0.33	0.40	0.49	0.65	0.77	0.88	1.01	1.09	1.16	1.24	1.29
291	11787	40.7073	-74.0281	0.17	0.24	0.32	0.39	0.48	0.65	0.75	0.86	0.99	1.07	1.14	1.22	1.27
292	11788	40.6884	-74.1156	0.14	0.17	0.24	0.36	0.55	0.76	0.90	1.03	1.18	1.31	1.45	1.60	1.68
293	11792	40.7421	-74.1309	0.15	0.19	0.26	0.39	0.67	0.94	1.13	1.32	1.56	1.71	1.84	1.97	2.06
294	11793	40.7364	-74.1446	0.16	0.21	0.29	0.41	0.67	0.95	1.15	1.34	1.55	1.68	1.81	1.94	2.03
295	11794	40.7341	-74.1585	0.17	0.22	0.31	0.45	0.70	0.99	1.20	1.40	1.61	1.74	1.86	1.99	2.08
296	11795	40.7447	-74.1655	0.19	0.24	0.34	0.49	0.74	1.05	1.28	1.47	1.67	1.81	1.93	2.07	2.16
297	11797	40.7733	-74.1538	0.20	0.25	0.36	0.51	0.81	1.17	1.42	1.63	1.85	2.00	2.14	2.29	2.40
298	11800	40.8180	-74.1359	0.21	0.27	0.40	0.59	0.97	1.41	1.75	2.03	2.32	2.51	2.69	2.91	3.06
299	11821	40.7927	-74.0786	0.27	0.34	0.42	0.50	0.60	0.75	0.87	0.99	1.16	1.26	1.35	1.44	1.51
300	11825	40.8267	-74.0354	0.31	0.38	0.46	0.53	0.63	0.78	0.92	1.08	1.33	1.46	1.57	1.69	1.77
301	11826	40.8471	-74.0300	0.10	0.14	0.19	0.35	0.83	1.21	1.47	1.67	1.89	2.02	2.14	2.28	2.38
302	11827	40.8606	-74.0331	0.10	0.14	0.20	0.36	0.85	1.23	1.51	1.72	1.95	2.10	2.24	2.40	2.52
303	11829	40.8874	-74.0338	0.11	0.14	0.20	0.35	0.87	1.27	1.61	1.85	2.12	2.31	2.50	2.76	2.92
304	11832	40.8224	-74.0461	NaN	NaN	NaN	0.31	0.47	0.61	0.70	0.81	0.93	1.04	1.18	1.36	1.45
305	11834	40.8362	-74.0651	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
306	11837	40.8409	-74.0117	0.10	0.13	0.19	0.35	0.83	1.23	1.50	1.72	1.95	2.09	2.22	2.38	2.48
307	11840	40.8705	-73.9959	0.10	0.13	0.19	0.35	0.87	1.28	1.61	1.86	2.12	2.30	2.49	2.73	2.90
308	11851	40.6821	-74.0519	0.21	0.28	0.36	0.43	0.52	0.68	0.79	0.90	1.03	1.12	1.19	1.28	1.34
309	11863	40.6627	-74.0213	0.16	0.23	0.31	0.37	0.46	0.63	0.75	0.86	0.99	1.07	1.13	1.21	1.25
310	11867	40.6850	-74.0140	0.17	0.24	0.32	0.39	0.49	0.66	0.77	0.89	1.02	1.09	1.16	1.23	1.28
311	11871	40.7078	-73.9849	0.17	0.24	0.31	0.38	0.47	0.64	0.76	0.87	0.98	1.05	1.11	1.17	1.21
312	11875	40.7511	-73.9632	0.19	0.27	0.36	0.43	0.53	0.72	0.87	0.99	1.11	1.19	1.26	1.33	1.38
313	11877	40.7767	-73.9398	0.30	0.35	0.41	0.47	0.54	0.67	0.81	0.94	1.07	1.15	1.22	1.31	1.37
314	11878	40.7597	-73.9485	0.21	0.28	0.38	0.45	0.55	0.72	0.89	1.03	1.16	1.24	1.31	1.39	1.44
315	11882	40.8262	-73.9336	0.24	0.28	0.33	0.37	0.44	0.56	0.66	0.74	0.85	0.91	0.97	1.03	1.08
316	11888	40.8787	-73.9262	0.22	0.25	0.28	0.32	0.37	0.48	0.56	0.63	0.70	0.75	0.79	0.84	0.87
317	11895	40.7389	-73.9572	0.18	0.26	0.36	0.43	0.53	0.73	0.89	1.03	1.16	1.24	1.31	1.38	1.43
318	11897	40.7296	-73.9368	0.19	0.28	0.38	0.46	0.56	0.77	0.95	1.10	1.25	1.34	1.41	1.49	1.54
319	11901	40.7185	-74.0228	0.17	0.24	0.32	0.39	0.47	0.64	0.75	0.85	0.98	1.05	1.12	1.20	1.25
320	11902	40.7345	-74.0194	0.28	0.32	0.36	0.39	0.45	0.61	0.73	0.83	0.95	1.03	1.09	1.17	1.21
321	11903	40.7500	-74.0165	0.28	0.31	0.35	0.38	0.44	0.60	0.71	0.81	0.93	1.00	1.06	1.13	1.18
322	11904	40.7670	-74.0067	0.27	0.30	0.34	0.39	0.44	0.59	0.70	0.80	0.92	0.99	1.05	1.11	1.15
323	11905	40.7821	-73.9966	0.26	0.29	0.33	0.36	0.42	0.57	0.68	0.77	0.89	0.95	1.01	1.07	1.11
324	11906	40.7957	-73.9844	0.25	0.28	0.32	0.35	0.41	0.55	0.66	0.75	0.86	0.92	0.97	1.03	1.07
325	11908	40.8291	-73.9640	0.22	0.25	0.29	0.32	0.38	0.50	0.58	0.67	0.77	0.83	0.88	0.93	0.97
326	11909	40.8471	-73.9538	0.22	0.25	0.28	0.31	0.36	0.48	0.58	0.66	0.76	0.81	0.86	0.92	0.95
327	11910	40.8694	-73.9417	0.18	0.22	0.27	0.32	0.38	0.48	0.55	0.61	0.68	0.73	0.77	0.82	0.86
328	11911	40.8903	-73.9315	0.23	0.26	0.29	0.33	0.38	0.48	0.56	0.62	0.70	0.74	0.78	0.83	0.86

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
329	11912	40.9117	-73.9218	0.24	0.27	0.31	0.34	0.38	0.48	0.56	0.63	0.70	0.75	0.79	0.84	0.87
330	11913	40.9359	-73.9136	0.25	0.29	0.33	0.37	0.43	0.53	0.60	0.67	0.74	0.78	0.83	0.87	0.91
331	11930	40.6557	-74.0189	0.17	0.25	0.32	0.39	0.47	0.62	0.74	0.85	0.97	1.05	1.11	1.18	1.23
332	11933	40.6344	-74.0399	0.15	0.23	0.30	0.36	0.44	0.57	0.68	0.78	0.90	0.97	1.03	1.10	1.15
333	11935	40.6114	-74.0384	0.15	0.22	0.28	0.34	0.42	0.56	0.67	0.77	0.88	0.95	1.00	1.07	1.11
334	11936	40.6036	-74.0291	0.14	0.21	0.28	0.34	0.41	0.56	0.67	0.77	0.88	0.94	1.00	1.05	1.10
335	11949	40.5746	-73.9384	0.19	0.27	0.34	0.40	0.49	0.64	0.74	0.83	0.97	1.06	1.16	1.27	1.35
336	11953	40.5828	-73.9524	0.31	0.34	0.40	0.45	0.51	0.66	0.80	0.94	1.12	1.22	1.30	1.39	1.45
337	11968	40.5804	-73.9037	0.19	0.28	0.38	0.48	0.56	0.73	0.85	0.97	1.17	1.33	1.47	1.61	1.70
338	11974	40.5760	-73.8752	0.29	0.34	0.41	0.47	0.56	0.75	0.88	0.99	1.15	1.30	1.44	1.58	1.66
339	11978	40.6277	-73.8796	0.37	0.43	0.54	0.64	0.79	1.03	1.22	1.40	1.62	1.77	1.92	2.12	2.25
340	11982	40.6362	-73.8091	0.46	0.54	0.64	0.90	1.23	1.54	1.74	1.92	2.15	2.32	2.48	2.66	2.78
341	11984	40.6224	-73.8096	0.44	0.52	0.65	0.90	1.20	1.50	1.69	1.86	2.08	2.24	2.39	2.56	2.67
342	11987	40.5943	-73.8118	0.49	0.59	0.80	1.05	1.27	1.52	1.68	1.85	2.06	2.23	2.40	2.61	2.74
343	11996	40.5938	-73.8680	0.29	0.35	0.43	0.50	0.63	0.86	1.05	1.21	1.37	1.48	1.59	1.71	1.79
344	11997	40.5907	-73.8591	0.31	0.37	0.44	0.56	0.70	0.93	1.08	1.21	1.37	1.53	1.68	1.83	1.93
345	12001	40.6188	-73.8520	0.35	0.42	0.50	0.61	0.83	1.12	1.32	1.48	1.67	1.80	1.94	2.12	2.24
346	12002	40.6210	-73.8408	0.37	0.43	0.52	0.68	0.91	1.22	1.41	1.57	1.76	1.90	2.04	2.22	2.34
347	12014	40.6408	-73.8534	0.42	0.49	0.59	0.74	0.96	1.22	1.42	1.62	1.87	2.05	2.24	2.45	2.60
348	12025	40.6068	-73.8895	0.32	0.38	0.47	0.55	0.68	0.89	1.06	1.22	1.40	1.54	1.68	1.85	1.97
349	12031	40.6285	-73.8727	0.38	0.45	0.53	0.64	0.82	1.05	1.25	1.44	1.66	1.82	1.97	2.18	2.31
350	12033	40.5989	-73.8416	0.34	0.40	0.49	0.60	0.83	1.09	1.24	1.36	1.51	1.62	1.73	1.88	1.98
351	12042	40.6054	-73.7904	0.48	0.58	0.76	1.08	1.34	1.64	1.82	2.00	2.24	2.48	2.78	3.08	3.26
352	12043	40.6103	-73.7828	0.49	0.59	0.79	1.12	1.39	1.69	1.88	2.06	2.30	2.55	2.86	3.18	3.35
353	12044	40.6268	-73.7623	0.47	0.56	0.71	1.12	1.45	1.80	2.02	2.23	2.50	2.73	2.99	3.29	3.47
354	12058	40.5442	-73.9413	1.57	1.86	2.24	2.53	2.83	3.29	3.71	4.13	4.60	4.90	5.14	5.42	5.61
355	12071	40.5840	-73.7552	1.34	1.57	1.87	2.12	2.41	2.93	3.38	3.76	4.16	4.40	4.62	4.87	5.03
356	12324	40.6236	-73.3209	1.30	1.52	1.82	2.11	2.46	3.03	3.48	3.89	4.37	4.70	5.01	5.36	5.59
357	12860	40.9369	-73.4551	1.80	2.10	2.52	2.81	3.10	3.49	3.84	4.25	4.72	5.01	5.26	5.54	5.72
358	12888	40.9088	-73.5477	1.85	2.21	2.61	2.91	3.21	3.64	4.03	4.46	4.97	5.28	5.54	5.82	6.01
359	12893	40.9034	-73.6056	1.87	2.21	2.65	2.96	3.26	3.68	4.10	4.57	5.10	5.42	5.69	5.98	6.17
360	12894	40.9008	-73.6156	1.87	2.21	2.66	2.97	3.27	3.69	4.12	4.59	5.13	5.45	5.72	6.01	6.21
361	12898	40.8870	-73.6445	1.89	2.23	2.69	3.01	3.30	3.73	4.19	4.68	5.23	5.56	5.83	6.13	6.32
362	12908	40.8482	-73.6613	1.90	2.26	2.71	3.03	3.35	3.80	4.25	4.75	5.32	5.65	5.92	6.22	6.42
363	12950	40.7690	-73.7565	1.88	2.28	2.76	3.09	3.41	3.90	4.41	4.96	5.56	5.91	6.19	6.50	6.70
364	12951	40.7758	-73.7585	1.88	2.27	2.75	3.08	3.40	3.89	4.39	4.93	5.53	5.88	6.16	6.47	6.67
365	12965	40.9891	-73.6508	1.83	2.20	2.65	2.95	3.24	3.64	4.05	4.54	5.12	5.48	5.78	6.10	6.32
366	12966	40.9856	-73.6613	1.83	2.22	2.67	2.98	3.26	3.64	4.02	4.53	5.16	5.54	5.84	6.17	6.39
367	12976	40.9396	-73.6906	1.86	2.23	2.67	2.98	3.27	3.70	4.14	4.63	5.19	5.52	5.80	6.10	6.31
368	12981	40.9068	-73.7589	1.88	2.25	2.70	3.02	3.33	3.78	4.20	4.73	5.34	5.68	5.96	6.27	6.47
369	12994	40.8787	-73.8206	1.88	2.27	2.75	3.08	3.41	3.88	4.36	4.88	5.44	5.76	6.02	6.32	6.52

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
370	13007	40.8065	-73.7896	1.90	2.26	2.72	3.05	3.38	3.87	4.35	4.88	5.47	5.80	6.08	6.39	6.60
371	13013	40.8181	-73.8412	0.59	0.70	0.83	0.92	1.03	1.31	1.60	1.84	2.09	2.26	2.40	2.55	2.66
372	13014	40.8068	-73.8420	0.56	0.67	0.79	0.88	0.98	1.25	1.52	1.73	1.96	2.11	2.25	2.39	2.49
373	13021	40.9415	-73.7136	1.85	2.23	2.69	3.01	3.30	3.72	4.15	4.67	5.26	5.61	5.89	6.20	6.42
374	13023	40.8611	-73.7725	1.91	2.27	2.73	3.06	3.38	3.85	4.30	4.82	5.41	5.74	6.01	6.32	6.52
375	13038	40.7991	-73.8810	0.51	0.62	0.74	0.82	0.92	1.13	1.36	1.56	1.81	1.98	2.13	2.28	2.38
376	13039	40.8026	-73.8924	0.49	0.60	0.72	0.81	0.90	1.06	1.27	1.47	1.70	1.85	1.98	2.11	2.20
377	13041	40.7971	-73.9056	0.45	0.56	0.69	0.77	0.86	1.01	1.21	1.39	1.58	1.70	1.81	1.92	2.00
378	13048	40.7959	-73.8670	0.53	0.63	0.75	0.84	0.94	1.19	1.45	1.64	1.85	2.00	2.13	2.27	2.37
379	13049	40.7983	-73.8568	0.54	0.64	0.77	0.86	0.95	1.22	1.49	1.69	1.91	2.06	2.18	2.33	2.42
380	13050	40.8014	-73.8436	0.55	0.66	0.78	0.87	0.98	1.26	1.54	1.74	1.96	2.10	2.23	2.37	2.46
381	13051	40.8037	-73.8268	0.57	0.67	0.80	0.89	0.99	1.28	1.53	1.74	1.96	2.11	2.23	2.38	2.47
382	13052	40.8061	-73.8131	0.58	0.69	0.81	0.90	1.01	1.31	1.57	1.78	2.00	2.15	2.27	2.42	2.51
383	13053	40.8026	-73.8014	1.87	2.23	2.70	3.02	3.35	3.83	4.32	4.86	5.44	5.78	6.05	6.35	6.56
384	13054	40.7983	-73.7885	1.88	2.25	2.71	3.04	3.37	3.85	4.33	4.88	5.47	5.81	6.09	6.39	6.59
385	13055	40.8069	-73.7803	1.89	2.26	2.72	3.05	3.38	3.86	4.35	4.88	5.48	5.81	6.09	6.40	6.60
386	13056	40.7873	-73.8631	0.52	0.63	0.75	0.84	0.94	1.20	1.46	1.65	1.87	2.01	2.13	2.27	2.36
387	13068	40.7877	-73.7620	1.88	2.26	2.74	3.07	3.39	3.87	4.37	4.91	5.51	5.85	6.13	6.44	6.64
388	13069	40.8010	-73.7694	1.89	2.25	2.72	3.05	3.38	3.86	4.36	4.90	5.49	5.83	6.11	6.41	6.62
389	13070	40.8463	-73.8065	1.92	2.29	2.75	3.08	3.40	3.89	4.36	4.87	5.44	5.77	6.04	6.34	6.53
390	13071	40.8369	-73.8010	1.92	2.28	2.75	3.08	3.40	3.89	4.35	4.88	5.45	5.79	6.06	6.36	6.56
391	13072	40.8295	-73.7924	1.91	2.28	2.74	3.07	3.40	3.87	4.34	4.87	5.46	5.79	6.07	6.37	6.57
392	13073	40.8197	-73.7823	1.90	2.27	2.72	3.05	3.38	3.87	4.34	4.87	5.46	5.79	6.07	6.37	6.57
393	13074	40.8295	-73.7714	1.91	2.27	2.73	3.05	3.38	3.87	4.34	4.87	5.45	5.79	6.06	6.37	6.57
394	13076	40.8564	-73.7522	1.91	2.26	2.74	3.06	3.37	3.82	4.29	4.81	5.40	5.73	6.01	6.31	6.51
395	13077	40.8685	-73.7472	1.91	2.25	2.73	3.06	3.37	3.81	4.27	4.79	5.37	5.71	5.98	6.28	6.48
396	13078	40.8834	-73.7370	1.90	2.29	2.70	3.01	3.34	3.83	4.27	4.76	5.34	5.67	5.94	6.25	6.45
397	13079	40.8955	-73.7218	1.88	2.25	2.70	3.02	3.33	3.78	4.22	4.73	5.30	5.63	5.91	6.21	6.41
398	13080	40.8955	-73.7585	1.89	2.26	2.71	3.02	3.34	3.79	4.22	4.74	5.33	5.66	5.94	6.25	6.45
399	13085	40.8713	-73.7768	1.91	2.28	2.73	3.05	3.37	3.85	4.29	4.81	5.39	5.72	6.00	6.30	6.50
400	13086	40.8740	-73.7608	1.91	2.26	2.72	3.04	3.36	3.82	4.27	4.79	5.37	5.71	5.98	6.28	6.48
401	13087	40.8998	-73.6984	1.88	2.25	2.70	3.01	3.32	3.76	4.21	4.70	5.27	5.60	5.87	6.18	6.37
402	13088	40.9068	-73.6750	1.88	2.24	2.69	3.00	3.30	3.74	4.18	4.67	5.22	5.55	5.83	6.13	6.33
403	13090	40.9325	-73.6328	1.86	2.18	2.66	2.97	3.26	3.66	4.10	4.57	5.11	5.44	5.71	6.00	6.21
404	13093	40.9606	-73.5637	1.83	2.17	2.58	2.88	3.18	3.61	3.99	4.43	4.94	5.26	5.52	5.81	6.00
405	13096	40.9954	-73.5075	1.81	2.11	2.54	2.84	3.12	3.50	3.88	4.31	4.80	5.10	5.36	5.64	5.83
406	13097	40.8888	-73.6785	1.88	2.25	2.70	3.01	3.31	3.76	4.20	4.70	5.26	5.59	5.86	6.16	6.36
407	13732	40.3595	-73.9774	0.17	0.22	0.34	0.43	0.56	0.73	0.84	0.98	1.20	1.33	1.43	1.53	1.59
408	13751	40.5004	-74.3170	0.63	0.77	0.98	1.15	1.36	1.66	1.89	2.10	2.34	2.49	2.62	2.78	2.88
409	13754	40.4860	-74.3276	0.67	0.82	1.01	1.18	1.38	1.66	1.87	2.08	2.34	2.51	2.66	2.84	2.97
410	13755	40.4820	-74.3386	0.69	0.85	1.02	1.18	1.38	1.65	1.86	2.06	2.34	2.52	2.68	2.86	2.97

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
411	13761	40.5503	-74.2402	0.58	0.64	0.72	0.78	0.90	1.16	1.36	1.53	1.71	1.81	1.89	1.99	2.06
412	13767	40.5720	-74.1790	NaN	NaN	0.35	0.60	0.81	1.01	1.13	1.23	1.34	1.42	1.49	1.57	1.62
413	13768	40.5889	-74.1793	0.45	0.52	0.59	0.64	0.73	0.94	1.10	1.23	1.36	1.45	1.52	1.59	1.65
414	13772	40.6165	-74.2011	0.33	0.40	0.48	0.56	0.67	0.89	1.07	1.20	1.35	1.45	1.53	1.64	1.70
415	13775	40.6035	-74.1974	0.42	0.48	0.57	0.65	0.76	0.96	1.12	1.26	1.42	1.52	1.60	1.70	1.76
416	13780	40.6612	-74.1570	0.15	0.19	0.26	0.36	0.52	0.71	0.85	0.97	1.15	1.29	1.41	1.53	1.60
417	13785	40.6606	-74.1357	0.14	0.17	0.24	0.34	0.50	0.69	0.83	0.95	1.12	1.25	1.36	1.49	1.56
418	13786	40.6681	-74.1295	0.14	0.17	0.24	0.35	0.52	0.71	0.85	0.99	1.16	1.28	1.39	1.51	1.59
419	13788	40.6384	-74.1537	0.15	0.18	0.25	0.34	0.46	0.65	0.77	0.88	1.05	1.20	1.31	1.42	1.49
420	13792	40.6956	-74.1218	0.14	0.17	0.24	0.35	0.55	0.78	0.93	1.06	1.21	1.35	1.49	1.63	1.72
421	13809	40.5361	-74.1386	0.34	0.37	0.41	0.45	0.51	0.65	0.77	0.89	1.02	1.10	1.17	1.25	1.30
422	13810	40.5234	-74.1451	0.33	0.36	0.40	0.45	0.51	0.63	0.73	0.83	0.94	1.01	1.07	1.14	1.18
423	13818	40.6504	-74.1139	0.25	0.29	0.35	0.41	0.48	0.61	0.72	0.82	0.93	1.01	1.07	1.14	1.19
424	13819	40.6456	-74.1464	0.15	0.19	0.26	0.35	0.47	0.65	0.78	0.91	1.08	1.19	1.30	1.40	1.47
425	13837	40.6720	-74.0185	0.17	0.24	0.33	0.40	0.49	0.65	0.77	0.89	1.02	1.10	1.16	1.23	1.28
426	13859	40.7394	-74.0250	0.29	0.32	0.36	0.40	0.45	0.62	0.73	0.83	0.96	1.04	1.10	1.18	1.22
427	13862	40.7954	-73.9927	0.25	0.28	0.32	0.36	0.42	0.56	0.67	0.76	0.87	0.93	0.99	1.05	1.09
428	13872	40.9922	-73.9016	0.28	0.33	0.39	0.44	0.51	0.60	0.68	0.76	0.86	0.93	0.98	1.05	1.10
429	13874	40.8750	-73.9156	0.23	0.26	0.30	0.33	0.39	0.50	0.58	0.66	0.74	0.79	0.83	0.88	0.91
430	13883	40.8728	-73.9114	0.19	0.23	0.29	0.34	0.41	0.52	0.60	0.67	0.76	0.81	0.85	0.91	0.94
431	13888	40.8019	-73.9265	0.30	0.35	0.42	0.49	0.57	0.73	0.87	1.01	1.17	1.26	1.34	1.44	1.51
432	13891	40.7904	-73.9354	0.31	0.35	0.43	0.50	0.58	0.73	0.88	1.01	1.14	1.23	1.31	1.41	1.47
433	13893	40.7821	-73.9415	0.30	0.35	0.42	0.49	0.57	0.71	0.85	0.97	1.11	1.19	1.26	1.35	1.41
434	13899	40.7346	-73.9677	0.18	0.25	0.34	0.41	0.49	0.70	0.84	0.97	1.10	1.17	1.23	1.31	1.35
435	13908	40.7721	-73.9439	0.30	0.34	0.40	0.46	0.52	0.64	0.77	0.92	1.08	1.16	1.24	1.32	1.39
436	13919	40.7912	-73.9034	0.45	0.56	0.69	0.77	0.86	1.02	1.22	1.41	1.61	1.74	1.84	1.96	2.04
437	13927	40.8022	-73.8600	0.54	0.64	0.77	0.86	0.96	1.22	1.48	1.68	1.90	2.05	2.18	2.32	2.42
438	13931	40.7976	-73.8320	0.56	0.66	0.79	0.88	0.98	1.27	1.53	1.73	1.96	2.10	2.23	2.37	2.47
439	13936	40.7996	-73.7551	1.88	2.25	2.72	3.05	3.37	3.86	4.36	4.90	5.50	5.84	6.12	6.43	6.63
440	13942	40.8091	-73.7129	1.90	2.31	2.73	3.04	3.38	3.90	4.37	4.89	5.49	5.84	6.11	6.42	6.62
441	13945	40.8299	-73.7050	1.91	2.27	2.73	3.05	3.38	3.86	4.35	4.88	5.47	5.81	6.09	6.40	6.60
442	13960	40.8136	-73.6511	1.91	2.30	2.72	3.03	3.37	3.89	4.33	4.81	5.39	5.73	6.01	6.31	6.51
443	13966	40.9095	-73.5951	1.85	2.18	2.63	2.94	3.23	3.64	4.06	4.53	5.06	5.37	5.64	5.93	6.13
444	14070	40.5784	-74.0134	0.15	0.21	0.28	0.34	0.41	0.53	0.61	0.69	0.77	0.83	0.87	0.92	0.96
445	14088	40.5766	-73.8985	0.21	0.29	0.39	0.48	0.58	0.73	0.84	0.95	1.11	1.25	1.37	1.51	1.60
446	14093	40.6094	-73.8790	0.32	0.38	0.45	0.53	0.67	0.89	1.07	1.22	1.40	1.54	1.68	1.85	1.96
447	14117	40.6469	-73.8212	0.47	0.55	0.68	0.92	1.22	1.54	1.74	1.93	2.18	2.38	2.57	2.78	2.91
448	14122	40.6295	-73.8109	0.45	0.53	0.63	0.88	1.21	1.53	1.72	1.90	2.12	2.28	2.44	2.62	2.74
449	14126	40.6265	-73.7969	0.45	0.53	0.65	0.92	1.24	1.56	1.76	1.95	2.17	2.33	2.47	2.64	2.76
450	14135	40.5918	-73.8262	0.52	0.63	0.84	1.04	1.22	1.46	1.65	1.84	2.06	2.20	2.31	2.45	2.54
451	14144	40.6204	-73.7695	0.46	0.55	0.68	1.03	1.36	1.69	1.90	2.11	2.38	2.60	2.82	3.08	3.25

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
452	14156	40.5813	-73.8675	0.31	0.36	0.43	0.51	0.62	0.82	0.96	1.07	1.23	1.40	1.55	1.69	1.78
453	14158	40.6150	-73.8695	0.35	0.41	0.50	0.59	0.72	0.96	1.16	1.32	1.52	1.67	1.81	1.98	2.09
454	14173	40.6014	-73.7964	0.48	0.59	0.79	1.11	1.35	1.63	1.81	1.99	2.23	2.45	2.71	3.00	3.17
455	14190	40.5430	-73.9342	1.48	1.77	2.10	2.47	2.79	3.24	3.69	4.09	4.54	4.82	5.07	5.35	5.55
456	14196	40.5703	-73.8513	1.37	1.66	2.03	2.33	2.66	3.22	3.70	4.10	4.52	4.79	5.02	5.29	5.47
457	3817	40.4798	-74.0196	NaN	NaN	NaN	NaN	NaN	0.43	0.62	0.76	0.89	0.97	1.04	1.13	1.19
458	3900	40.5281	-74.0137	0.17	0.27	0.35	0.41	0.47	0.56	0.64	0.71	0.82	0.89	0.97	1.05	1.11
459	3900	40.5323	-74.0077	0.17	0.27	0.36	0.41	0.48	0.57	0.64	0.72	0.83	0.91	0.98	1.06	1.12
460	3915	40.5491	-73.9468	0.23	0.30	0.38	0.44	0.51	0.61	0.69	0.78	0.89	0.96	1.03	1.11	1.16
461	3592	40.5736	-73.8834	0.30	0.35	0.40	0.48	0.58	0.74	0.86	0.99	1.18	1.32	1.43	1.55	1.62
462	13053	40.8033	-73.8071	0.58	0.69	0.81	0.91	1.02	1.33	1.59	1.80	2.02	2.17	2.29	2.44	2.53
463	3856	40.5019	-74.1620	0.26	0.33	0.42	0.50	0.59	0.73	0.83	0.93	1.05	1.13	1.20	1.28	1.33
464	11778	40.5761	-74.0340	0.13	0.20	0.26	0.33	0.40	0.54	0.63	0.72	0.81	0.87	0.92	0.98	1.02
465	11650	40.5139	-74.2559	0.45	0.57	0.75	0.88	1.02	1.21	1.38	1.54	1.72	1.82	1.91	2.02	2.08
466	11781	40.6251	-74.0581	0.14	0.21	0.29	0.35	0.42	0.56	0.67	0.78	0.89	0.96	1.03	1.09	1.14
467	11781	40.6279	-74.0490	0.15	0.22	0.29	0.35	0.42	0.57	0.67	0.78	0.90	0.97	1.03	1.10	1.14
468	11861	40.6684	-74.0003	0.19	0.27	0.34	0.41	0.50	0.68	0.81	0.94	1.06	1.14	1.20	1.28	1.33
469	11895	40.7378	-73.9595	0.18	0.26	0.35	0.43	0.52	0.71	0.87	1.01	1.14	1.22	1.28	1.36	1.40
470	11784	40.6702	-74.0444	0.16	0.23	0.31	0.38	0.46	0.63	0.73	0.84	0.97	1.05	1.12	1.20	1.26
471	11766	40.6501	-74.0817	0.28	0.31	0.35	0.39	0.45	0.60	0.72	0.83	0.96	1.05	1.12	1.20	1.25
472	11741	40.6448	-74.1522	0.15	0.18	0.25	0.35	0.47	0.66	0.79	0.91	1.08	1.21	1.32	1.43	1.50
473	4157	40.6800	-74.1306	0.14	0.17	0.24	0.35	0.53	0.72	0.85	0.98	1.16	1.30	1.43	1.57	1.65
474	4261	40.7494	-74.0844	0.19	0.24	0.33	0.43	0.57	0.81	0.98	1.11	1.25	1.34	1.41	1.50	1.56
475	3967	40.5778	-74.2097	0.48	0.55	0.63	0.70	0.81	1.00	1.16	1.30	1.47	1.57	1.66	1.76	1.83
476	3551	40.4670	-74.0144	0.20	0.28	0.38	0.44	0.51	0.62	0.70	0.80	0.92	1.00	1.08	1.17	1.24
477	11982	40.6385	-73.8130	0.46	0.54	0.64	0.90	1.23	1.54	1.74	1.92	2.15	2.33	2.49	2.68	2.81
478	4135	40.6533	-74.0645	0.27	0.31	0.34	0.37	0.42	0.59	0.70	0.81	0.94	1.02	1.09	1.16	1.22
479	7673	40.6992	-74.0154	0.17	0.24	0.32	0.39	0.49	0.67	0.80	0.91	1.05	1.13	1.19	1.27	1.31
480	13067	40.7829	-73.8682	0.52	0.62	0.74	0.83	0.93	1.19	1.45	1.64	1.84	1.98	2.11	2.24	2.33
481	4103	40.6394	-74.1606	0.15	0.19	0.26	0.35	0.47	0.66	0.77	0.88	1.05	1.20	1.32	1.43	1.50
482	11749	40.7050	-74.1123	0.14	0.18	0.25	0.38	0.58	0.82	0.97	1.10	1.27	1.40	1.53	1.66	1.75
483	11907	40.8100	-73.9758	0.23	0.26	0.30	0.34	0.40	0.53	0.62	0.71	0.82	0.88	0.93	0.98	1.02

Appendix X
Table of Best Estimate AEF Values for Water Levels at 483 Save Point Locations
Alt4 Condition

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
1	350	41.0025	-73.5513	1.82	2.13	2.56	2.85	3.12	3.49	3.85	4.28	4.80	5.11	5.38	5.67	5.87
2	3486	40.4558	-74.3716	1.74	2.04	2.49	2.90	3.39	4.03	4.45	4.83	5.28	5.60	5.90	6.31	6.69
3	3493	40.4917	-74.2624	1.55	1.86	2.28	2.68	3.16	3.82	4.30	4.74	5.23	5.55	5.83	6.17	6.43
4	3503	40.6439	-74.1899	1.48	1.79	2.16	2.49	2.86	3.35	3.68	3.99	4.37	4.64	4.91	5.30	5.66
5	3538	40.4183	-74.0350	1.46	1.75	2.13	2.42	2.74	3.25	3.67	4.04	4.43	4.67	4.89	5.14	5.31
6	3544	40.6992	-74.0214	1.40	1.70	2.04	2.37	2.75	3.31	3.74	4.12	4.55	4.83	5.08	5.36	5.57
7	3561	40.4509	-73.9802	1.34	1.60	1.94	2.19	2.45	2.86	3.24	3.59	3.97	4.22	4.44	4.71	4.88
8	3575	41.7833	-73.9500	1.05	1.25	1.47	1.67	1.89	2.19	2.42	2.65	2.96	3.19	3.40	3.67	3.88
9	3584	40.5471	-73.9231	1.39	1.67	1.98	2.34	2.65	3.05	3.50	3.87	4.29	4.56	4.81	5.10	5.29
10	3592	40.5735	-73.8849	1.61	1.92	2.26	2.52	2.81	3.22	3.56	3.90	4.31	4.59	4.82	5.10	5.28
11	3594	41.0783	-73.8700	1.13	1.32	1.58	1.80	2.04	2.34	2.55	2.73	2.96	3.13	3.30	3.54	3.74
12	3600	42.2531	-73.8018	1.35	1.61	1.93	2.23	2.51	2.83	3.05	3.34	3.79	4.12	4.40	4.72	4.94
13	3612	40.9229	-73.7400	1.86	2.22	2.66	2.97	3.27	3.68	4.07	4.56	5.16	5.50	5.78	6.08	6.29
14	3625	40.5783	-73.5802	1.26	1.50	1.82	2.07	2.34	2.82	3.25	3.63	4.04	4.31	4.56	4.85	5.05
15	3725	40.1074	-74.0268	1.29	1.54	1.81	2.02	2.24	2.59	2.89	3.17	3.53	3.82	4.10	4.44	4.66
16	3731	40.1478	-74.0166	1.30	1.53	1.81	2.02	2.23	2.58	2.88	3.16	3.51	3.78	4.05	4.38	4.60
17	3737	40.1876	-74.0026	1.29	1.53	1.80	2.01	2.22	2.56	2.86	3.14	3.48	3.73	3.99	4.30	4.50
18	3739	40.2011	-73.9997	1.30	1.53	1.81	2.02	2.23	2.56	2.88	3.16	3.50	3.75	4.01	4.32	4.53
19	3749	40.2681	-73.9800	1.29	1.54	1.79	1.99	2.23	2.63	2.93	3.20	3.53	3.77	4.01	4.31	4.51
20	3751	40.2817	-73.9773	1.29	1.52	1.81	2.02	2.23	2.56	2.88	3.17	3.51	3.76	4.00	4.30	4.49
21	3757	40.3223	-73.9689	1.30	1.54	1.80	2.01	2.24	2.61	2.92	3.21	3.55	3.80	4.03	4.32	4.51
22	3758	40.3224	-73.9735	1.33	1.60	1.90	2.16	2.44	2.86	3.17	3.46	3.81	4.05	4.29	4.57	4.77
23	3761	40.3457	-73.9544	1.30	1.52	1.80	2.01	2.22	2.57	2.89	3.20	3.55	3.80	4.04	4.33	4.52
24	3765	40.3675	-73.9649	1.31	1.56	1.81	2.02	2.26	2.65	2.98	3.29	3.64	3.89	4.13	4.43	4.62
25	3768	40.3909	-73.9730	1.33	1.59	1.92	2.18	2.49	2.96	3.32	3.64	4.02	4.28	4.53	4.84	5.07
26	3769	40.3948	-73.9620	1.31	1.56	1.81	2.00	2.26	2.69	3.04	3.36	3.72	3.97	4.20	4.50	4.70
27	3771	40.4078	-73.9563	1.31	1.56	1.81	2.01	2.26	2.70	3.06	3.37	3.74	3.99	4.23	4.52	4.71
28	3775	40.4205	-73.9502	1.32	1.57	1.82	2.00	2.25	2.69	3.05	3.37	3.74	3.99	4.23	4.52	4.72
29	3777	40.4263	-74.0461	1.45	1.75	2.09	2.40	2.76	3.31	3.72	4.08	4.46	4.71	4.93	5.18	5.35
30	3779	40.4342	-73.9512	1.33	1.57	1.87	2.08	2.31	2.68	3.06	3.40	3.77	4.03	4.26	4.55	4.75
31	3788	40.4478	-73.9493	1.32	1.57	1.83	2.02	2.27	2.72	3.11	3.44	3.81	4.07	4.30	4.58	4.78
32	3789	40.4478	-74.0039	1.43	1.72	2.05	2.35	2.70	3.24	3.66	4.02	4.40	4.63	4.85	5.10	5.27
33	3790	40.4515	-74.0850	1.46	1.76	2.10	2.42	2.80	3.38	3.81	4.18	4.60	4.87	5.11	5.41	5.63
34	3793	40.4569	-74.1117	1.47	1.76	2.13	2.46	2.83	3.40	3.83	4.22	4.64	4.91	5.14	5.42	5.60
35	3797	40.4605	-73.9527	1.33	1.59	1.86	2.11	2.39	2.84	3.21	3.54	3.91	4.15	4.38	4.66	4.84
36	3799	40.4608	-74.0435	1.44	1.73	2.07	2.37	2.73	3.29	3.70	4.06	4.45	4.71	4.93	5.20	5.40
37	3800	40.4637	-74.1541	1.50	1.81	2.13	2.44	2.84	3.48	3.96	4.37	4.82	5.11	5.35	5.64	5.84
38	3801	40.4663	-74.1941	1.53	1.82	2.25	2.61	3.01	3.60	4.07	4.50	4.97	5.25	5.50	5.78	5.97
39	3802	40.4677	-74.1191	1.47	1.76	2.15	2.48	2.83	3.38	3.82	4.21	4.65	4.93	5.16	5.44	5.64
40	3804	40.4695	-73.9662	1.34	1.60	1.91	2.17	2.44	2.87	3.24	3.58	3.95	4.20	4.42	4.68	4.86
41	3807	40.4709	-74.0317	1.42	1.72	2.05	2.35	2.70	3.23	3.64	4.00	4.38	4.63	4.86	5.12	5.32

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
42	3808	40.4714	-74.2107	1.53	1.83	2.26	2.63	3.04	3.65	4.12	4.55	5.02	5.31	5.56	5.84	6.03
43	3810	40.4724	-74.0406	1.43	1.72	2.05	2.36	2.71	3.25	3.67	4.02	4.42	4.67	4.90	5.17	5.36
44	3814	40.4767	-73.9813	1.35	1.63	1.91	2.17	2.48	2.98	3.36	3.70	4.07	4.32	4.54	4.84	5.06
45	3815	40.4771	-74.0559	1.44	1.73	2.06	2.37	2.73	3.28	3.70	4.06	4.46	4.72	4.96	5.24	5.43
46	3822	40.4795	-74.0064	1.39	1.66	2.02	2.30	2.58	3.02	3.40	3.76	4.15	4.40	4.62	4.88	5.06
47	3823	40.4796	-73.9986	1.36	1.60	1.93	2.19	2.47	2.90	3.28	3.62	4.00	4.23	4.44	4.69	4.86
48	3827	40.4838	-74.2589	1.55	1.87	2.24	2.62	3.09	3.77	4.26	4.71	5.20	5.51	5.78	6.10	6.31
49	3829	40.4847	-74.0905	1.45	1.74	2.10	2.42	2.78	3.33	3.77	4.14	4.56	4.83	5.07	5.35	5.54
50	3830	40.4856	-74.3409	1.69	1.97	2.42	2.84	3.32	3.95	4.38	4.76	5.21	5.51	5.78	6.11	6.36
51	3853	40.4975	-74.2220	1.53	1.83	2.24	2.62	3.07	3.71	4.19	4.62	5.10	5.40	5.66	5.97	6.17
52	3854	40.4981	-74.1388	1.47	1.77	2.14	2.47	2.87	3.46	3.91	4.31	4.76	5.04	5.30	5.59	5.80
53	3860	40.5027	-74.2114	1.52	1.83	2.22	2.60	3.05	3.68	4.16	4.60	5.08	5.38	5.66	5.98	6.22
54	3864	40.5040	-74.1767	1.49	1.81	2.14	2.47	2.89	3.53	4.01	4.44	4.91	5.21	5.47	5.77	5.98
55	3871	40.5066	-74.1943	1.51	1.82	2.18	2.53	2.96	3.60	4.08	4.52	5.00	5.30	5.57	5.88	6.11
56	3872	40.5077	-73.9378	1.35	1.62	1.88	2.12	2.42	2.89	3.28	3.62	4.00	4.26	4.50	4.79	5.00
57	3873	40.5081	-73.9545	1.36	1.63	1.91	2.16	2.47	2.95	3.34	3.68	4.07	4.32	4.56	4.84	5.06
58	3874	40.5081	-74.1910	1.50	1.82	2.17	2.52	2.95	3.58	4.07	4.50	4.98	5.28	5.55	5.86	6.08
59	3877	40.5102	-74.3003	1.60	1.92	2.41	2.88	3.40	4.06	4.50	4.88	5.34	5.66	5.97	6.40	6.77
60	3879	40.5119	-73.9072	1.34	1.59	1.84	2.07	2.36	2.82	3.19	3.53	3.92	4.18	4.43	4.72	4.93
61	3880	40.5142	-73.9704	1.38	1.64	1.97	2.24	2.51	2.94	3.33	3.69	4.09	4.34	4.57	4.84	5.02
62	3882	40.5149	-74.1482	1.46	1.76	2.12	2.46	2.86	3.46	3.92	4.33	4.78	5.08	5.34	5.64	5.84
63	3887	40.5191	-74.1598	1.47	1.78	2.11	2.42	2.82	3.45	3.93	4.35	4.82	5.12	5.38	5.68	5.88
64	3889	40.5206	-74.1379	1.46	1.76	2.11	2.45	2.85	3.45	3.91	4.31	4.76	5.06	5.32	5.64	5.86
65	3890	40.5227	-73.9845	1.38	1.64	1.99	2.26	2.54	2.98	3.37	3.74	4.14	4.39	4.62	4.89	5.08
66	3891	40.5230	-74.0495	1.42	1.71	2.04	2.34	2.70	3.26	3.68	4.05	4.46	4.74	4.99	5.30	5.52
67	3892	40.5238	-73.9126	1.36	1.60	1.91	2.15	2.40	2.83	3.23	3.59	3.99	4.26	4.51	4.80	4.99
68	3894	40.5278	-74.2449	1.55	1.86	2.24	2.60	3.06	3.68	4.12	4.53	4.99	5.29	5.56	5.88	6.11
69	3896	40.5300	-74.1099	1.44	1.74	2.06	2.38	2.76	3.35	3.80	4.19	4.63	4.92	5.18	5.49	5.71
70	3902	40.5351	-74.0872	1.44	1.73	2.07	2.39	2.76	3.32	3.75	4.14	4.56	4.84	5.09	5.39	5.59
71	3903	40.5384	-73.9022	1.36	1.60	1.92	2.16	2.42	2.86	3.28	3.64	4.04	4.31	4.55	4.84	5.04
72	3904	40.5400	-74.2495	1.55	1.86	2.24	2.60	3.05	3.66	4.09	4.49	4.95	5.25	5.52	5.83	6.07
73	3905	40.5401	-73.8846	1.35	1.59	1.90	2.13	2.38	2.83	3.25	3.60	4.01	4.28	4.52	4.81	5.01
74	3906	40.5407	-73.8668	1.34	1.59	1.85	2.08	2.37	2.86	3.25	3.59	3.98	4.25	4.50	4.78	4.99
75	3907	40.5415	-74.1018	1.44	1.73	2.08	2.40	2.77	3.34	3.78	4.17	4.60	4.89	5.14	5.43	5.64
76	3908	40.5421	-74.0092	1.40	1.67	2.02	2.30	2.60	3.06	3.47	3.85	4.27	4.53	4.77	5.04	5.23
77	3910	40.5423	-73.8490	1.34	1.58	1.87	2.09	2.33	2.79	3.22	3.57	3.97	4.24	4.49	4.77	4.96
78	3912	40.5448	-74.0745	1.44	1.72	2.05	2.36	2.73	3.30	3.74	4.12	4.55	4.84	5.10	5.41	5.65
79	3917	40.5507	-73.8161	1.33	1.57	1.86	2.07	2.31	2.79	3.23	3.59	3.99	4.25	4.49	4.76	4.95
80	3918	40.5518	-74.0915	1.44	1.72	2.05	2.37	2.75	3.33	3.77	4.16	4.60	4.90	5.16	5.48	5.71
81	3919	40.5531	-74.0605	1.43	1.72	2.04	2.35	2.71	3.28	3.71	4.10	4.53	4.81	5.07	5.39	5.61
82	3920	40.5538	-74.2468	1.55	1.86	2.25	2.62	3.06	3.66	4.08	4.47	4.92	5.22	5.49	5.82	6.07

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
83	3921	40.5546	-74.2364	1.55	1.86	2.24	2.60	3.03	3.63	4.04	4.42	4.87	5.16	5.43	5.75	6.00
84	3922	40.5554	-74.0117	1.41	1.70	2.02	2.31	2.66	3.20	3.62	3.99	4.41	4.68	4.93	5.23	5.44
85	3926	40.5574	-73.8005	1.33	1.57	1.86	2.08	2.32	2.82	3.27	3.64	4.04	4.30	4.53	4.80	4.99
86	3927	40.5589	-74.2308	1.55	1.86	2.21	2.50	2.92	3.53	3.96	4.34	4.78	5.07	5.32	5.61	5.80
87	3928	40.5604	-73.9310	1.51	1.79	2.14	2.40	2.66	3.07	3.45	3.82	4.24	4.51	4.75	5.03	5.21
88	3930	40.5613	-74.0837	1.44	1.72	2.04	2.35	2.73	3.31	3.75	4.14	4.59	4.88	5.14	5.46	5.68
89	3931	40.5634	-73.7843	1.33	1.56	1.85	2.07	2.32	2.83	3.28	3.66	4.06	4.32	4.55	4.82	5.01
90	3934	40.5660	-74.0220	1.41	1.71	2.01	2.29	2.65	3.20	3.62	4.00	4.42	4.70	4.95	5.25	5.46
91	3937	40.5666	-74.0391	1.42	1.71	2.01	2.30	2.66	3.22	3.65	4.03	4.46	4.74	4.99	5.29	5.50
92	3938	40.5667	-73.5909	1.29	1.50	1.77	1.97	2.20	2.72	3.16	3.54	3.95	4.22	4.46	4.75	4.95
93	3940	40.5679	-73.5731	1.29	1.50	1.76	1.97	2.20	2.71	3.15	3.52	3.93	4.20	4.45	4.75	4.96
94	3941	40.5685	-73.6087	1.30	1.52	1.79	2.00	2.25	2.77	3.22	3.60	4.01	4.28	4.52	4.80	4.98
95	3943	40.5697	-73.6266	1.30	1.52	1.79	2.01	2.26	2.80	3.25	3.63	4.04	4.31	4.54	4.82	5.01
96	3946	40.5705	-73.7689	1.33	1.56	1.85	2.08	2.33	2.85	3.31	3.68	4.09	4.36	4.59	4.85	5.04
97	3948	40.5712	-73.6803	1.32	1.53	1.81	2.02	2.28	2.82	3.27	3.64	4.05	4.32	4.55	4.82	5.00
98	3949	40.5713	-73.9721	1.41	1.68	2.04	2.33	2.62	3.08	3.48	3.87	4.31	4.60	4.84	5.13	5.32
99	3950	40.5717	-73.6982	1.31	1.53	1.81	2.03	2.28	2.83	3.27	3.65	4.06	4.33	4.56	4.83	5.00
100	3951	40.5717	-73.6444	1.31	1.53	1.80	2.02	2.26	2.80	3.25	3.63	4.04	4.30	4.54	4.81	5.00
101	3953	40.5721	-73.6623	1.30	1.54	1.77	2.00	2.32	2.86	3.29	3.66	4.07	4.33	4.57	4.84	5.03
102	3954	40.5724	-73.7162	1.32	1.54	1.82	2.03	2.29	2.82	3.27	3.65	4.06	4.32	4.55	4.82	4.99
103	3957	40.5736	-74.0735	1.42	1.72	2.03	2.35	2.73	3.30	3.74	4.13	4.57	4.86	5.13	5.45	5.67
104	3958	40.5741	-73.9135	1.53	1.83	2.19	2.44	2.69	3.06	3.45	3.83	4.26	4.54	4.78	5.07	5.25
105	3960	40.5742	-73.7518	1.33	1.56	1.84	2.06	2.32	2.84	3.30	3.68	4.09	4.35	4.58	4.85	5.02
106	3961	40.5745	-73.7339	1.32	1.55	1.83	2.06	2.31	2.84	3.30	3.68	4.09	4.35	4.58	4.84	5.02
107	3963	40.5761	-73.8957	1.68	1.97	2.31	2.57	2.85	3.28	3.65	4.01	4.42	4.68	4.91	5.17	5.36
108	3966	40.5774	-73.5209	1.28	1.49	1.76	1.97	2.22	2.74	3.21	3.59	4.01	4.29	4.54	4.84	5.05
109	3967	40.5776	-74.2114	1.55	1.85	2.23	2.58	2.98	3.51	3.89	4.23	4.64	4.91	5.17	5.51	5.78
110	3971	40.5793	-74.0204	1.42	1.71	2.02	2.31	2.67	3.22	3.65	4.02	4.45	4.73	4.98	5.28	5.50
111	3972	40.5801	-74.0424	1.41	1.71	2.02	2.32	2.68	3.24	3.67	4.05	4.48	4.76	5.01	5.31	5.54
112	3990	40.5848	-74.0021	1.42	1.72	2.03	2.33	2.68	3.23	3.66	4.03	4.46	4.74	4.99	5.29	5.51
113	3998	40.5883	-73.7756	1.34	1.60	1.93	2.21	2.53	3.11	3.59	3.99	4.42	4.69	4.93	5.20	5.37
114	3999	40.5889	-73.8296	0.05	0.07	0.75	1.02	1.19	1.39	1.57	1.85	2.29	2.53	2.71	2.90	3.03
115	4004	40.5915	-74.2025	1.55	1.85	2.21	2.53	2.91	3.44	3.80	4.13	4.52	4.78	5.02	5.31	5.53
116	4008	40.5926	-74.0237	1.42	1.72	2.02	2.32	2.68	3.24	3.67	4.05	4.48	4.76	5.01	5.31	5.53
117	4010	40.5931	-74.0478	1.41	1.71	2.03	2.34	2.71	3.27	3.69	4.06	4.49	4.77	5.02	5.33	5.58
118	4019	40.5970	-73.8152	0.04	0.05	0.73	1.01	1.19	1.40	1.58	1.88	2.31	2.54	2.72	2.91	3.03
119	4024	40.6005	-73.4177	1.26	1.47	1.73	1.95	2.21	2.73	3.19	3.59	4.04	4.35	4.63	4.97	5.20
120	4028	40.6029	-73.7991	0.04	0.05	0.77	1.05	1.22	1.42	1.59	1.89	2.33	2.56	2.74	2.93	3.05
121	4051	40.6134	-73.2605	1.23	1.42	1.66	1.85	2.08	2.52	2.95	3.35	3.81	4.14	4.46	4.88	5.15
122	4054	40.6144	-73.3142	1.24	1.45	1.70	1.90	2.13	2.61	3.08	3.49	3.97	4.30	4.62	5.00	5.25
123	4062	40.6176	-73.7745	0.04	0.06	0.77	1.05	1.22	1.42	1.59	1.88	2.34	2.58	2.75	2.94	3.06

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
124	4079	40.6245	-73.2087	1.21	1.41	1.63	1.84	2.11	2.58	2.98	3.36	3.82	4.15	4.47	4.87	5.14
125	4084	40.6282	-73.8046	0.05	0.06	0.69	0.97	1.15	1.34	1.50	1.76	2.23	2.46	2.64	2.83	2.95
126	4089	40.6311	-74.0680	1.42	1.72	2.05	2.37	2.76	3.32	3.76	4.13	4.57	4.85	5.10	5.42	5.66
127	4098	40.6372	-73.8603	0.07	0.09	0.63	0.92	1.10	1.32	1.52	1.81	2.18	2.39	2.56	2.75	2.87
128	4101	40.6384	-74.1930	1.48	1.79	2.16	2.46	2.82	3.31	3.66	3.97	4.33	4.59	4.83	5.14	5.38
129	4104	40.6403	-73.8602	0.07	0.09	0.61	0.92	1.10	1.31	1.52	1.81	2.17	2.38	2.55	2.75	2.87
130	4107	40.6413	-74.1241	1.43	1.73	2.11	2.42	2.76	3.22	3.55	3.84	4.18	4.41	4.62	4.87	5.04
131	4110	40.6419	-74.1665	1.46	1.76	2.15	2.47	2.81	3.24	3.54	3.82	4.14	4.36	4.57	4.81	4.98
132	4116	40.6438	-74.1377	1.45	1.75	2.10	2.41	2.75	3.21	3.52	3.80	4.14	4.38	4.61	4.92	5.18
133	4122	40.6471	-73.1050	1.20	1.38	1.58	1.78	2.05	2.54	2.94	3.30	3.78	4.12	4.46	4.86	5.12
134	4124	40.6472	-74.0756	1.43	1.73	2.07	2.39	2.77	3.35	3.78	4.16	4.59	4.87	5.13	5.44	5.68
135	4135	40.6544	-74.0660	1.42	1.73	2.05	2.31	2.68	3.27	3.73	4.12	4.56	4.85	5.09	5.38	5.58
136	4176	40.6958	-74.0502	1.36	1.67	2.00	2.29	2.67	3.26	3.72	4.13	4.58	4.87	5.12	5.41	5.61
137	4179	40.6971	-74.1482	1.47	1.78	2.16	2.48	2.84	3.31	3.64	3.93	4.27	4.51	4.72	4.98	5.16
138	4181	40.6997	-74.0342	1.39	1.69	2.01	2.32	2.70	3.28	3.72	4.10	4.54	4.82	5.08	5.37	5.58
139	4194	40.7060	-73.9979	1.37	1.66	2.07	2.39	2.72	3.23	3.65	4.04	4.47	4.75	4.99	5.27	5.46
140	4205	40.7143	-74.1080	1.48	1.78	2.18	2.51	2.85	3.30	3.61	3.90	4.23	4.45	4.65	4.88	5.04
141	4206	40.7144	-74.1211	1.48	1.80	2.12	2.42	2.79	3.29	3.64	3.94	4.29	4.52	4.74	5.02	5.24
142	4210	40.7167	-74.1229	1.48	1.80	2.12	2.41	2.78	3.30	3.64	3.95	4.29	4.53	4.74	5.02	5.23
143	4211	40.7171	-73.9684	1.36	1.66	2.04	2.36	2.72	3.24	3.63	3.99	4.40	4.67	4.91	5.18	5.36
144	4227	40.7301	-73.9640	1.38	1.68	2.04	2.36	2.74	3.30	3.71	4.07	4.49	4.77	5.02	5.32	5.55
145	4241	40.7385	-74.0892	1.50	1.84	2.17	2.42	2.75	3.26	3.62	3.94	4.30	4.53	4.74	4.99	5.18
146	4244	40.7400	-74.0234	1.34	1.64	1.94	2.24	2.61	3.16	3.56	3.91	4.32	4.59	4.83	5.13	5.33
147	4255	40.7461	-74.0749	1.55	1.94	2.30	2.63	2.98	3.47	3.81	4.12	4.47	4.71	4.93	5.21	5.45
148	4260	40.7487	-73.9660	1.37	1.67	2.05	2.37	2.75	3.31	3.70	4.06	4.48	4.75	5.00	5.29	5.49
149	4278	40.7601	-73.9561	1.36	1.63	2.05	2.38	2.74	3.26	3.63	3.98	4.40	4.67	4.92	5.20	5.39
150	4281	40.7655	-74.0892	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
151	4304	40.7796	-73.9287	1.47	1.77	2.15	2.49	2.86	3.37	3.75	4.14	4.68	5.05	5.39	5.81	6.17
152	4321	40.7880	-73.9145	1.62	2.00	2.42	2.75	3.08	3.53	3.92	4.38	4.99	5.35	5.63	5.94	6.13
153	4323	40.7889	-73.8678	1.86	2.25	2.73	3.06	3.37	3.78	4.18	4.71	5.33	5.67	5.95	6.24	6.44
154	4344	40.7964	-73.9006	1.78	2.18	2.65	2.98	3.29	3.71	4.09	4.60	5.24	5.59	5.87	6.17	6.37
155	4349	40.7979	-73.8111	1.87	2.26	2.73	3.05	3.35	3.77	4.17	4.69	5.31	5.65	5.92	6.22	6.41
156	4350	40.7981	-73.8839	1.82	2.21	2.68	3.01	3.32	3.74	4.13	4.65	5.29	5.63	5.91	6.22	6.41
157	4352	40.7990	-73.8369	1.85	2.25	2.71	3.03	3.34	3.75	4.14	4.68	5.29	5.63	5.90	6.20	6.40
158	4359	40.8014	-73.9851	1.26	1.50	1.81	2.07	2.39	2.86	3.20	3.49	3.83	4.06	4.27	4.53	4.72
159	4370	40.8047	-73.8395	1.86	2.25	2.72	3.04	3.34	3.75	4.14	4.66	5.28	5.62	5.89	6.19	6.38
160	4382	40.8065	-73.8216	1.87	2.27	2.73	3.04	3.35	3.77	4.18	4.71	5.33	5.66	5.94	6.24	6.43
161	4397	40.8130	-73.9754	1.24	1.47	1.76	2.01	2.32	2.77	3.09	3.38	3.70	3.91	4.11	4.35	4.52
162	4408	40.8199	-74.1279	1.65	1.95	2.39	2.82	3.31	3.90	4.27	4.58	4.95	5.19	5.43	5.74	6.01
163	4416	40.8249	-73.9666	1.23	1.45	1.76	2.04	2.35	2.77	3.07	3.34	3.65	3.86	4.07	4.34	4.58
164	4435	40.8376	-73.9599	1.21	1.43	1.74	2.01	2.31	2.72	3.00	3.26	3.55	3.75	3.94	4.18	4.36

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
165	4450	40.8439	-73.7491	1.87	2.23	2.71	3.02	3.32	3.71	4.12	4.65	5.25	5.59	5.86	6.16	6.36
166	4459	40.8504	-73.9535	1.20	1.42	1.72	1.99	2.29	2.69	2.97	3.22	3.51	3.72	3.93	4.23	4.51
167	4469	40.8559	-73.7413	1.86	2.26	2.67	2.98	3.29	3.74	4.14	4.63	5.22	5.56	5.83	6.13	6.32
168	4470	40.8562	-73.9213	1.25	1.50	1.82	2.08	2.37	2.77	3.06	3.34	3.69	3.93	4.15	4.42	4.61
169	4478	40.8608	-73.7655	1.87	2.23	2.71	3.03	3.32	3.71	4.10	4.63	5.23	5.57	5.85	6.14	6.34
170	4479	40.8611	-73.9159	1.24	1.48	1.77	1.97	2.23	2.64	2.93	3.21	3.54	3.76	3.96	4.18	4.34
171	4480	40.8612	-73.7913	1.87	2.25	2.71	3.02	3.33	3.75	4.14	4.66	5.27	5.61	5.89	6.18	6.38
172	4481	40.8627	-73.9454	1.17	1.39	1.68	1.92	2.21	2.59	2.85	3.08	3.36	3.55	3.73	4.00	4.23
173	4498	40.8709	-73.7001	1.85	2.20	2.67	2.98	3.27	3.65	4.04	4.54	5.13	5.46	5.73	6.03	6.23
174	4505	40.8747	-73.9367	1.17	1.37	1.67	1.92	2.20	2.56	2.80	3.01	3.27	3.46	3.64	3.90	4.12
175	4526	40.8871	-73.9290	1.15	1.35	1.65	1.90	2.17	2.52	2.76	2.97	3.22	3.41	3.60	3.88	4.13
176	4537	40.8951	-73.7686	1.86	2.24	2.68	2.99	3.30	3.71	4.10	4.60	5.21	5.55	5.83	6.13	6.32
177	4546	40.9002	-73.9236	1.14	1.34	1.63	1.88	2.14	2.48	2.70	2.89	3.13	3.30	3.47	3.70	3.89
178	4549	40.9018	-73.6230	1.84	2.20	2.61	2.90	3.20	3.62	3.99	4.43	4.98	5.30	5.57	5.87	6.06
179	4573	40.9117	-73.9122	1.14	1.33	1.62	1.87	2.13	2.46	2.68	2.88	3.12	3.30	3.48	3.74	3.97
180	4579	40.9144	-73.5386	1.82	2.15	2.56	2.85	3.14	3.55	3.91	4.32	4.82	5.14	5.40	5.68	5.87
181	4606	40.9224	-73.7298	1.85	2.22	2.66	2.97	3.26	3.66	4.04	4.54	5.13	5.47	5.75	6.05	6.26
182	4620	40.9272	-73.9170	1.11	1.32	1.59	1.83	2.08	2.39	2.60	2.78	3.02	3.19	3.38	3.68	3.94
183	4653	40.9390	-73.4948	1.82	2.13	2.53	2.82	3.11	3.52	3.87	4.26	4.74	5.04	5.30	5.58	5.76
184	4654	40.9407	-73.9136	1.11	1.31	1.58	1.81	2.06	2.37	2.58	2.77	3.01	3.21	3.44	3.80	4.12
185	4723	40.9687	-73.6486	1.83	2.19	2.62	2.91	3.19	3.57	3.94	4.41	4.97	5.31	5.58	5.89	6.10
186	4816	41.0005	-73.8990	1.10	1.29	1.55	1.77	1.98	2.26	2.45	2.62	2.84	3.00	3.17	3.40	3.59
187	4893	41.0380	-73.8768	1.12	1.31	1.56	1.75	1.96	2.25	2.45	2.63	2.86	3.02	3.20	3.46	3.72
188	5082	41.1529	-73.8864	1.16	1.34	1.62	1.86	2.13	2.49	2.73	2.95	3.21	3.41	3.61	3.89	4.14
189	5109	41.2095	-73.9349	1.17	1.36	1.65	1.91	2.21	2.61	2.88	3.13	3.43	3.65	3.88	4.22	4.53
190	5831	40.0971	-74.0273	1.28	1.53	1.78	1.98	2.22	2.58	2.86	3.12	3.47	3.76	4.04	4.37	4.58
191	6906	40.4200	-73.8300	1.31	1.53	1.80	2.00	2.19	2.52	2.88	3.20	3.57	3.83	4.06	4.34	4.52
192	7099	40.8800	-73.7300	1.85	2.23	2.68	2.99	3.28	3.67	4.06	4.57	5.16	5.50	5.77	6.07	6.26
193	7395	40.9350	-74.0300	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
194	7401	40.8300	-74.0767	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
195	7412	40.7867	-74.1467	1.58	1.90	2.29	2.65	3.10	3.65	3.99	4.29	4.63	4.87	5.10	5.42	5.68
196	7417	40.7167	-74.0317	1.36	1.67	1.99	2.31	2.69	3.25	3.67	4.04	4.46	4.74	4.99	5.30	5.51
197	3527	40.6550	-74.0850	1.43	1.73	2.08	2.41	2.80	3.38	3.82	4.21	4.65	4.94	5.19	5.50	5.73
198	7655	40.4600	-73.8300	1.32	1.54	1.82	2.01	2.21	2.56	2.93	3.26	3.65	3.91	4.15	4.44	4.63
199	7668	40.7767	-73.9417	1.43	1.73	2.17	2.50	2.86	3.33	3.68	4.04	4.52	4.85	5.15	5.48	5.71
200	7673	40.7000	-74.0150	1.40	1.70	2.03	2.31	2.69	3.27	3.71	4.10	4.53	4.82	5.07	5.36	5.56
201	7680	40.5567	-74.2233	1.56	1.86	2.24	2.61	3.04	3.61	4.01	4.38	4.81	5.10	5.37	5.71	5.98
202	7868	41.3311	-73.9774	1.09	1.30	1.50	1.68	1.94	2.34	2.61	2.84	3.10	3.29	3.48	3.71	3.87
203	7870	41.3744	-73.9565	1.02	1.22	1.51	1.74	1.98	2.30	2.52	2.72	2.98	3.17	3.34	3.57	3.74
204	7872	41.4132	-73.9644	0.99	1.22	1.37	1.51	1.70	2.02	2.24	2.44	2.68	2.86	3.02	3.22	3.35
205	7875	41.4652	-74.0010	1.01	1.23	1.40	1.57	1.77	2.07	2.28	2.48	2.73	2.91	3.09	3.30	3.44

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
206	7876	41.4945	-73.9985	1.01	1.20	1.48	1.71	1.94	2.24	2.46	2.66	2.92	3.12	3.30	3.52	3.68
207	7965	41.2872	-73.9384	1.16	1.36	1.68	1.96	2.28	2.70	2.99	3.25	3.58	3.83	4.07	4.39	4.66
208	7975	41.0548	-73.9124	1.13	1.32	1.59	1.78	2.00	2.30	2.51	2.70	2.92	3.09	3.27	3.56	3.83
209	7976	41.0346	-73.9085	1.12	1.31	1.56	1.78	2.02	2.32	2.54	2.74	3.00	3.21	3.47	3.88	4.22
210	7979	41.1003	-73.9126	1.14	1.34	1.60	1.78	2.01	2.34	2.56	2.76	2.99	3.15	3.30	3.51	3.69
211	9813	41.1522	-73.8735	1.16	1.34	1.63	1.87	2.13	2.48	2.71	2.92	3.17	3.35	3.53	3.74	3.91
212	9816	41.1952	-73.9565	1.17	1.37	1.65	1.90	2.20	2.59	2.86	3.10	3.38	3.60	3.81	4.13	4.42
213	9838	41.0070	-73.5669	1.82	2.14	2.55	2.84	3.14	3.54	3.90	4.31	4.84	5.16	5.44	5.73	5.93
214	9842	41.0186	-73.5188	1.81	2.10	2.53	2.82	3.09	3.45	3.80	4.23	4.73	5.03	5.29	5.59	5.78
215	11330	40.4414	-73.9087	1.33	1.56	1.85	2.06	2.27	2.62	3.00	3.34	3.72	3.97	4.22	4.50	4.70
216	11331	40.5220	-73.7791	1.32	1.55	1.82	2.02	2.24	2.65	3.05	3.40	3.80	4.06	4.30	4.58	4.76
217	11334	40.5588	-73.2096	1.21	1.40	1.62	1.78	1.95	2.22	2.55	2.88	3.27	3.59	3.99	4.53	4.84
218	11519	40.3706	-73.9705	1.32	1.58	1.86	2.09	2.36	2.77	3.11	3.41	3.77	4.03	4.26	4.55	4.75
219	11521	40.4260	-73.9809	1.35	1.62	1.97	2.24	2.56	3.05	3.42	3.75	4.12	4.38	4.62	4.91	5.12
220	11527	40.4138	-73.9902	1.44	1.72	2.06	2.35	2.69	3.22	3.63	3.98	4.34	4.58	4.78	5.02	5.18
221	11528	40.3835	-73.9794	1.24	1.54	1.86	2.12	2.38	2.77	3.09	3.40	3.75	3.97	4.16	4.39	4.53
222	11531	40.3334	-74.0101	0.99	1.28	1.57	1.81	2.07	2.41	2.66	2.89	3.18	3.39	3.60	3.92	4.20
223	11538	40.3596	-74.0628	1.32	1.62	1.98	2.27	2.58	3.01	3.33	3.63	3.97	4.19	4.39	4.62	4.78
224	11547	40.4239	-74.0402	1.45	1.74	2.09	2.40	2.75	3.30	3.72	4.07	4.45	4.69	4.91	5.16	5.33
225	11548	40.4301	-74.0557	1.46	1.75	2.10	2.41	2.77	3.32	3.74	4.10	4.48	4.73	4.95	5.21	5.38
226	11549	40.4403	-74.0674	1.46	1.75	2.09	2.41	2.78	3.35	3.78	4.14	4.54	4.80	5.03	5.31	5.51
227	11550	40.4462	-74.0775	1.46	1.76	2.10	2.42	2.79	3.37	3.79	4.16	4.57	4.83	5.07	5.35	5.55
228	11551	40.4498	-74.0988	1.47	1.75	2.15	2.46	2.81	3.35	3.78	4.16	4.59	4.86	5.09	5.36	5.54
229	11553	40.4740	-74.1283	1.47	1.77	2.13	2.47	2.86	3.44	3.88	4.27	4.70	4.98	5.22	5.50	5.68
230	11554	40.4656	-74.1421	1.49	1.78	2.18	2.51	2.88	3.44	3.89	4.30	4.75	5.03	5.27	5.55	5.74
231	11556	40.4595	-74.1696	1.51	1.81	2.16	2.45	2.85	3.50	3.99	4.42	4.88	5.17	5.41	5.69	5.89
232	11557	40.4738	-74.1753	1.51	1.80	2.20	2.55	2.97	3.58	4.04	4.46	4.92	5.20	5.45	5.74	5.93
233	11562	40.4581	-74.2174	1.54	1.83	2.21	2.54	2.97	3.64	4.14	4.58	5.05	5.34	5.59	5.88	6.08
234	11563	40.4649	-74.2337	1.55	1.83	2.24	2.59	3.04	3.70	4.20	4.64	5.11	5.41	5.67	5.96	6.17
235	11564	40.4667	-74.2499	1.55	1.87	2.24	2.61	3.07	3.75	4.24	4.69	5.17	5.47	5.74	6.05	6.25
236	11565	40.4762	-74.2580	1.55	1.86	2.28	2.68	3.15	3.80	4.29	4.74	5.22	5.53	5.80	6.11	6.34
237	11566	40.4859	-74.2619	1.55	1.86	2.27	2.67	3.15	3.82	4.30	4.75	5.24	5.55	5.83	6.17	6.43
238	11567	40.4919	-74.2713	1.56	1.87	2.26	2.62	3.09	3.78	4.27	4.72	5.21	5.52	5.79	6.10	6.30
239	11568	40.4968	-74.2811	1.57	1.89	2.36	2.77	3.24	3.87	4.32	4.75	5.24	5.54	5.80	6.09	6.27
240	11573	40.4618	-74.1330	1.48	1.79	2.10	2.42	2.81	3.43	3.89	4.29	4.73	5.01	5.25	5.55	5.75
241	11580	40.4713	-74.2617	1.56	1.86	2.29	2.69	3.16	3.82	4.30	4.75	5.23	5.54	5.81	6.12	6.34
242	11605	40.4999	-74.2890	1.58	1.89	2.35	2.78	3.30	3.96	4.41	4.83	5.31	5.62	5.89	6.21	6.42
243	11608	40.5078	-74.2886	1.58	1.90	2.38	2.84	3.38	4.10	4.61	5.03	5.51	5.85	6.17	6.60	6.93
244	11610	40.5085	-74.3093	1.61	1.94	2.33	2.71	3.20	3.84	4.28	4.67	5.13	5.42	5.68	5.98	6.20
245	11611	40.5040	-74.3169	1.61	1.91	2.36	2.79	3.28	3.91	4.34	4.73	5.19	5.49	5.78	6.12	6.40
246	11613	40.4855	-74.3410	1.69	1.97	2.42	2.84	3.32	3.95	4.38	4.76	5.21	5.51	5.78	6.11	6.36

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
247	11614	40.4829	-74.3557	1.83	2.10	2.49	2.88	3.36	3.99	4.41	4.80	5.25	5.55	5.82	6.16	6.42
248	11639	40.4282	-74.3576	1.74	2.04	2.49	2.89	3.34	3.89	4.24	4.56	4.94	5.21	5.48	5.83	6.11
249	11640	40.4233	-74.3565	1.75	2.05	2.50	2.89	3.33	3.87	4.21	4.52	4.90	5.17	5.42	5.76	6.02
250	11647	40.4946	-74.2626	1.55	1.86	2.27	2.67	3.14	3.81	4.29	4.73	5.22	5.54	5.82	6.15	6.40
251	11649	40.5006	-74.2585	1.56	1.86	2.31	2.70	3.15	3.77	4.24	4.67	5.16	5.46	5.72	6.02	6.20
252	11650	40.5127	-74.2555	1.54	1.86	2.33	2.70	3.11	3.69	4.13	4.55	5.02	5.32	5.57	5.86	6.05
253	11651	40.5225	-74.2479	1.54	1.86	2.24	2.61	3.06	3.68	4.12	4.53	5.00	5.30	5.57	5.89	6.13
254	11652	40.5338	-74.2502	1.55	1.86	2.24	2.60	3.05	3.67	4.11	4.52	4.98	5.28	5.55	5.86	6.10
255	11653	40.5477	-74.2510	1.55	1.86	2.22	2.55	2.98	3.60	4.03	4.43	4.88	5.17	5.43	5.73	5.93
256	11656	40.5605	-74.2159	1.55	1.86	2.19	2.47	2.86	3.46	3.87	4.23	4.65	4.92	5.16	5.44	5.62
257	11658	40.5831	-74.2080	1.55	1.86	2.22	2.57	2.97	3.50	3.87	4.20	4.60	4.88	5.13	5.47	5.76
258	11663	40.6309	-74.2024	1.50	1.82	2.17	2.51	2.89	3.41	3.77	4.09	4.47	4.74	5.00	5.34	5.63
259	11665	40.6464	-74.1794	1.47	1.77	2.18	2.50	2.84	3.27	3.57	3.84	4.16	4.38	4.58	4.83	4.99
260	11672	40.5999	-74.2239	1.54	1.83	2.23	2.59	2.99	3.53	3.89	4.22	4.62	4.89	5.15	5.48	5.75
261	11673	40.6007	-74.2392	1.56	1.85	2.24	2.61	3.03	3.58	3.95	4.30	4.70	4.99	5.27	5.68	6.05
262	11674	40.6020	-74.2565	1.57	1.86	2.28	2.66	3.06	3.60	3.97	4.30	4.68	4.94	5.18	5.48	5.69
263	11677	40.4806	-74.2339	1.54	1.84	2.25	2.64	3.10	3.75	4.23	4.67	5.14	5.45	5.71	6.03	6.26
264	11678	40.4811	-74.2194	1.53	1.83	2.27	2.64	3.06	3.67	4.14	4.57	5.05	5.34	5.59	5.88	6.07
265	11679	40.4826	-74.2053	1.53	1.83	2.23	2.60	3.04	3.67	4.15	4.58	5.04	5.34	5.59	5.90	6.11
266	11685	40.4991	-74.1286	1.46	1.77	2.12	2.46	2.85	3.42	3.87	4.26	4.70	4.98	5.23	5.52	5.72
267	11690	40.5039	-74.0660	1.43	1.73	2.06	2.37	2.73	3.26	3.68	4.05	4.46	4.72	4.96	5.24	5.43
268	11693	40.5107	-74.0252	1.40	1.69	2.00	2.29	2.63	3.17	3.58	3.94	4.34	4.60	4.85	5.15	5.38
269	11695	40.5102	-73.9995	1.37	1.65	1.95	2.23	2.56	3.08	3.48	3.83	4.22	4.48	4.72	5.03	5.26
270	11698	40.4365	-74.0252	1.44	1.74	2.07	2.37	2.73	3.30	3.72	4.07	4.45	4.70	4.93	5.19	5.39
271	11699	40.4452	-74.0354	1.44	1.73	2.08	2.38	2.73	3.27	3.68	4.04	4.43	4.67	4.89	5.15	5.32
272	11701	40.4632	-74.0504	1.44	1.73	2.07	2.38	2.74	3.30	3.72	4.08	4.47	4.73	4.96	5.24	5.44
273	11704	40.4928	-74.0703	1.44	1.74	2.04	2.33	2.69	3.27	3.70	4.08	4.50	4.77	5.01	5.30	5.52
274	11718	40.4940	-74.2335	1.53	1.84	2.20	2.53	2.98	3.66	4.16	4.61	5.09	5.40	5.66	5.95	6.15
275	11728	40.5248	-74.1262	1.44	1.73	2.09	2.42	2.81	3.39	3.83	4.23	4.67	4.96	5.21	5.51	5.72
276	11729	40.5380	-74.1101	1.44	1.74	2.06	2.37	2.76	3.35	3.80	4.20	4.64	4.93	5.19	5.50	5.71
277	11731	40.5681	-74.0833	1.43	1.72	2.05	2.37	2.76	3.33	3.77	4.16	4.61	4.91	5.18	5.50	5.73
278	11740	40.4943	-74.2453	1.54	1.85	2.22	2.55	3.01	3.69	4.18	4.63	5.12	5.42	5.69	5.99	6.18
279	11754	40.6772	-74.1407	1.47	1.77	2.14	2.46	2.81	3.27	3.59	3.87	4.20	4.43	4.65	4.92	5.13
280	11756	40.6874	-74.1577	1.47	1.77	2.17	2.50	2.85	3.31	3.63	3.91	4.25	4.47	4.68	4.93	5.11
281	11765	40.6476	-74.0951	1.43	1.72	2.08	2.40	2.76	3.27	3.64	3.97	4.35	4.61	4.83	5.11	5.30
282	11774	40.5195	-74.0330	1.41	1.70	2.02	2.31	2.66	3.20	3.61	3.97	4.37	4.64	4.87	5.16	5.37
283	11775	40.5340	-74.0334	1.41	1.70	2.02	2.31	2.66	3.20	3.61	3.98	4.38	4.65	4.89	5.18	5.39
284	11779	40.5966	-74.0427	1.41	1.71	2.03	2.33	2.70	3.26	3.68	4.06	4.48	4.76	5.01	5.32	5.55
285	11780	40.6136	-74.0485	1.41	1.70	2.04	2.35	2.72	3.27	3.69	4.05	4.47	4.74	4.99	5.29	5.52
286	11781	40.6277	-74.0548	1.41	1.71	2.03	2.34	2.71	3.27	3.70	4.08	4.50	4.78	5.03	5.33	5.54
287	11782	40.6423	-74.0548	1.42	1.72	2.05	2.37	2.76	3.33	3.76	4.14	4.57	4.86	5.11	5.43	5.66

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
288	11783	40.6559	-74.0480	1.42	1.72	2.05	2.38	2.76	3.34	3.78	4.16	4.60	4.89	5.14	5.46	5.69
289	11784	40.6675	-74.0417	1.42	1.72	2.04	2.32	2.69	3.28	3.74	4.13	4.57	4.86	5.11	5.39	5.59
290	11785	40.6806	-74.0373	1.41	1.71	2.04	2.37	2.76	3.34	3.78	4.16	4.61	4.89	5.15	5.46	5.69
291	11787	40.7073	-74.0281	1.38	1.68	2.00	2.30	2.68	3.25	3.69	4.07	4.50	4.78	5.03	5.33	5.54
292	11788	40.6884	-74.1156	1.48	1.77	2.17	2.49	2.82	3.25	3.55	3.83	4.15	4.37	4.56	4.79	4.96
293	11792	40.7421	-74.1309	1.50	1.83	2.22	2.46	2.82	3.34	3.69	3.99	4.32	4.55	4.75	4.99	5.15
294	11793	40.7364	-74.1446	1.51	1.83	2.24	2.60	2.98	3.46	3.77	4.05	4.37	4.60	4.81	5.08	5.28
295	11794	40.7341	-74.1585	1.53	1.84	2.26	2.62	3.01	3.48	3.79	4.06	4.39	4.62	4.84	5.13	5.35
296	11795	40.7447	-74.1655	1.54	1.85	2.28	2.65	3.05	3.52	3.83	4.11	4.45	4.68	4.90	5.19	5.41
297	11797	40.7733	-74.1538	1.56	1.87	2.28	2.66	3.09	3.59	3.92	4.22	4.56	4.80	5.03	5.34	5.60
298	11800	40.8180	-74.1359	1.64	1.94	2.37	2.80	3.28	3.86	4.22	4.54	4.90	5.16	5.40	5.72	5.99
299	11821	40.7927	-74.0786	0.12	0.22	0.27	0.30	0.33	0.37	0.40	0.43	0.47	0.51	0.54	0.58	0.60
300	11825	40.8267	-74.0354	0.17	0.23	0.28	0.31	0.35	0.41	0.47	0.52	0.58	0.61	0.65	0.68	0.71
301	11826	40.8471	-74.0300	0.17	0.81	1.03	1.14	1.23	1.33	1.40	1.48	1.61	1.74	1.91	2.12	2.25
302	11827	40.8606	-74.0331	0.16	0.73	0.99	1.11	1.20	1.30	1.38	1.46	1.59	1.72	1.89	2.11	2.24
303	11829	40.8874	-74.0338	0.13	0.16	0.67	0.91	1.05	1.19	1.27	1.34	1.43	1.50	1.57	1.68	1.76
304	11832	40.8224	-74.0461	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
305	11834	40.8362	-74.0651	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
306	11837	40.8409	-74.0117	0.15	0.84	1.05	1.16	1.25	1.35	1.44	1.53	1.67	1.81	1.96	2.16	2.28
307	11840	40.8705	-73.9959	0.15	0.85	1.06	1.17	1.26	1.37	1.46	1.56	1.70	1.81	1.91	2.03	2.12
308	11851	40.6821	-74.0519	1.41	1.71	2.06	2.39	2.77	3.34	3.77	4.16	4.60	4.88	5.13	5.42	5.63
309	11863	40.6627	-74.0213	1.42	1.72	2.04	2.33	2.70	3.28	3.74	4.13	4.57	4.85	5.10	5.39	5.59
310	11867	40.6850	-74.0140	1.40	1.71	2.03	2.35	2.73	3.31	3.75	4.13	4.56	4.85	5.10	5.41	5.62
311	11871	40.7078	-73.9849	1.34	1.64	2.00	2.33	2.71	3.26	3.67	4.03	4.44	4.71	4.96	5.24	5.43
312	11875	40.7511	-73.9632	1.36	1.66	2.04	2.36	2.74	3.29	3.68	4.03	4.44	4.72	4.97	5.26	5.46
313	11877	40.7767	-73.9398	1.44	1.74	2.17	2.51	2.87	3.34	3.69	4.05	4.50	4.82	5.10	5.43	5.65
314	11878	40.7597	-73.9485	1.36	1.63	2.05	2.37	2.73	3.27	3.64	3.98	4.37	4.64	4.88	5.17	5.38
315	11882	40.8262	-73.9336	1.32	1.59	1.95	2.23	2.51	2.91	3.22	3.53	3.97	4.30	4.61	4.95	5.17
316	11888	40.8787	-73.9262	1.17	1.39	1.67	1.92	2.20	2.57	2.82	3.04	3.31	3.51	3.72	4.03	4.33
317	11895	40.7389	-73.9572	0.04	0.08	0.63	0.91	1.15	1.61	2.10	2.58	3.04	3.29	3.50	3.72	3.88
318	11897	40.7296	-73.9368	0.02	0.04	0.64	0.92	1.16	1.64	2.11	2.58	3.03	3.27	3.47	3.69	3.83
319	11901	40.7185	-74.0228	1.37	1.67	1.98	2.29	2.66	3.22	3.64	4.01	4.43	4.71	4.96	5.26	5.46
320	11902	40.7345	-74.0194	1.35	1.64	1.95	2.23	2.59	3.14	3.56	3.92	4.33	4.60	4.84	5.13	5.32
321	11903	40.7500	-74.0165	1.33	1.60	1.98	2.28	2.60	3.07	3.44	3.79	4.18	4.44	4.67	4.94	5.14
322	11904	40.7670	-74.0067	1.31	1.58	1.95	2.25	2.56	3.00	3.36	3.69	4.08	4.33	4.56	4.82	5.01
323	11905	40.7821	-73.9966	1.29	1.55	1.86	2.13	2.47	2.95	3.31	3.63	3.99	4.23	4.45	4.72	4.91
324	11906	40.7957	-73.9844	1.27	1.51	1.81	2.05	2.37	2.84	3.19	3.49	3.84	4.06	4.27	4.51	4.69
325	11908	40.8291	-73.9640	1.22	1.44	1.74	2.02	2.33	2.75	3.04	3.30	3.61	3.82	4.04	4.34	4.61
326	11909	40.8471	-73.9538	1.20	1.42	1.72	1.99	2.30	2.70	2.98	3.24	3.53	3.74	3.94	4.24	4.50
327	11910	40.8694	-73.9417	1.17	1.38	1.67	1.91	2.20	2.57	2.82	3.05	3.32	3.51	3.70	3.98	4.24
328	11911	40.8903	-73.9315	1.15	1.35	1.65	1.90	2.17	2.51	2.74	2.95	3.19	3.37	3.54	3.77	3.97

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
329	11912	40.9117	-73.9218	1.12	1.33	1.64	1.80	1.99	2.32	2.54	2.74	2.96	3.11	3.24	3.40	3.51
330	11913	40.9359	-73.9136	1.11	1.32	1.58	1.82	2.07	2.38	2.59	2.78	3.03	3.23	3.46	3.83	4.15
331	11930	40.6557	-74.0189	1.43	1.73	2.06	2.38	2.76	3.33	3.77	4.15	4.58	4.86	5.11	5.41	5.62
332	11933	40.6344	-74.0399	1.42	1.72	2.05	2.37	2.74	3.30	3.73	4.11	4.53	4.81	5.05	5.35	5.57
333	11935	40.6114	-74.0384	1.41	1.71	2.04	2.35	2.72	3.27	3.69	4.06	4.48	4.76	5.01	5.32	5.56
334	11936	40.6036	-74.0291	1.42	1.72	2.04	2.34	2.71	3.27	3.70	4.08	4.52	4.80	5.05	5.36	5.58
335	11949	40.5746	-73.9384	1.51	1.79	2.08	2.30	2.59	3.09	3.49	3.85	4.27	4.55	4.79	5.07	5.26
336	11953	40.5828	-73.9524	0.08	0.11	0.27	0.95	1.24	1.69	2.12	2.53	3.05	3.35	3.60	3.87	4.04
337	11968	40.5804	-73.9037	1.51	1.82	2.12	2.46	2.73	3.04	3.46	3.84	4.29	4.57	4.82	5.11	5.30
338	11974	40.5760	-73.8752	0.11	0.15	0.72	0.96	1.13	1.33	1.52	1.78	2.18	2.41	2.60	2.80	2.93
339	11978	40.6277	-73.8796	0.14	0.19	0.65	0.93	1.11	1.33	1.53	1.80	2.18	2.39	2.57	2.76	2.88
340	11982	40.6362	-73.8091	0.05	0.07	0.68	0.96	1.14	1.33	1.49	1.75	2.21	2.44	2.62	2.81	2.93
341	11984	40.6224	-73.8096	0.04	0.06	0.72	0.99	1.17	1.37	1.54	1.80	2.25	2.48	2.66	2.85	2.97
342	11987	40.5943	-73.8118	0.04	0.06	0.73	1.02	1.20	1.40	1.59	1.89	2.32	2.56	2.73	2.92	3.05
343	11996	40.5938	-73.8680	0.09	0.13	0.73	0.98	1.15	1.35	1.53	1.79	2.21	2.45	2.63	2.83	2.96
344	11997	40.5907	-73.8591	0.07	0.10	0.73	0.99	1.15	1.35	1.53	1.80	2.23	2.46	2.65	2.84	2.97
345	12001	40.6188	-73.8520	0.05	0.08	0.70	0.96	1.13	1.33	1.50	1.75	2.18	2.42	2.60	2.79	2.92
346	12002	40.6210	-73.8408	0.04	0.05	0.70	0.96	1.13	1.32	1.48	1.73	2.19	2.42	2.60	2.79	2.92
347	12014	40.6408	-73.8534	0.06	0.08	0.61	0.91	1.09	1.31	1.51	1.79	2.15	2.37	2.55	2.74	2.87
348	12025	40.6068	-73.8895	0.16	0.22	0.70	0.95	1.13	1.34	1.53	1.79	2.19	2.42	2.60	2.79	2.92
349	12031	40.6285	-73.8727	0.12	0.17	0.66	0.93	1.11	1.33	1.52	1.79	2.18	2.39	2.57	2.76	2.89
350	12033	40.5989	-73.8416	0.04	0.05	0.72	0.99	1.16	1.36	1.53	1.79	2.24	2.48	2.66	2.85	2.97
351	12042	40.6054	-73.7904	0.04	0.05	0.77	1.05	1.22	1.42	1.59	1.89	2.34	2.58	2.76	2.95	3.07
352	12043	40.6103	-73.7828	0.04	0.05	0.77	1.05	1.22	1.42	1.59	1.89	2.35	2.58	2.76	2.95	3.07
353	12044	40.6268	-73.7623	0.04	0.05	0.79	1.07	1.24	1.45	1.62	1.90	2.36	2.60	2.78	2.96	3.09
354	12058	40.5442	-73.9413	1.49	1.75	2.08	2.33	2.58	2.97	3.33	3.70	4.11	4.37	4.60	4.87	5.05
355	12071	40.5840	-73.7552	1.29	1.52	1.82	2.06	2.36	2.86	3.30	3.67	4.06	4.30	4.51	4.76	4.93
356	12324	40.6236	-73.3209	1.30	1.52	1.82	2.11	2.46	3.02	3.48	3.90	4.38	4.70	4.99	5.34	5.57
357	12860	40.9369	-73.4551	1.80	2.10	2.51	2.80	3.08	3.45	3.79	4.18	4.64	4.93	5.18	5.45	5.64
358	12888	40.9088	-73.5477	1.82	2.17	2.57	2.87	3.16	3.56	3.91	4.33	4.84	5.15	5.41	5.70	5.88
359	12893	40.9034	-73.6056	1.84	2.17	2.61	2.92	3.20	3.57	3.94	4.40	4.94	5.27	5.53	5.83	6.02
360	12894	40.9008	-73.6156	1.84	2.17	2.62	2.92	3.20	3.58	3.95	4.42	4.97	5.30	5.56	5.86	6.05
361	12898	40.8870	-73.6445	1.85	2.18	2.65	2.95	3.23	3.61	4.00	4.49	5.06	5.39	5.66	5.96	6.15
362	12908	40.8482	-73.6613	1.85	2.21	2.66	2.96	3.26	3.66	4.05	4.54	5.12	5.45	5.73	6.02	6.22
363	12950	40.7690	-73.7565	1.88	2.28	2.75	3.07	3.37	3.80	4.22	4.77	5.40	5.75	6.02	6.32	6.52
364	12951	40.7758	-73.7585	1.88	2.27	2.74	3.06	3.36	3.79	4.21	4.75	5.37	5.72	5.99	6.30	6.49
365	12965	40.9891	-73.6508	1.83	2.19	2.63	2.92	3.20	3.57	3.95	4.42	5.01	5.36	5.66	5.98	6.19
366	12966	40.9856	-73.6613	1.84	2.22	2.66	2.96	3.24	3.61	3.98	4.47	5.08	5.45	5.74	6.06	6.28
367	12976	40.9396	-73.6906	1.84	2.21	2.64	2.94	3.22	3.61	3.99	4.47	5.05	5.38	5.66	5.96	6.17
368	12981	40.9068	-73.7589	1.86	2.23	2.67	2.98	3.28	3.70	4.08	4.58	5.18	5.52	5.80	6.11	6.31
369	12994	40.8787	-73.8206	1.89	2.29	2.76	3.08	3.39	3.81	4.23	4.76	5.36	5.70	5.97	6.27	6.46

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
370	13007	40.8065	-73.7896	1.87	2.25	2.71	3.02	3.33	3.75	4.14	4.66	5.28	5.62	5.90	6.20	6.39
371	13013	40.8181	-73.8412	1.86	2.26	2.72	3.04	3.34	3.76	4.15	4.68	5.30	5.64	5.92	6.21	6.41
372	13014	40.8068	-73.8420	1.86	2.25	2.71	3.03	3.34	3.76	4.15	4.67	5.28	5.62	5.90	6.19	6.38
373	13021	40.9415	-73.7136	1.85	2.23	2.67	2.98	3.26	3.65	4.04	4.54	5.14	5.49	5.77	6.07	6.28
374	13023	40.8611	-73.7725	1.86	2.24	2.69	3.01	3.31	3.73	4.12	4.63	5.24	5.58	5.85	6.15	6.35
375	13038	40.7991	-73.8810	1.82	2.22	2.69	3.02	3.33	3.75	4.13	4.66	5.29	5.64	5.92	6.22	6.42
376	13039	40.8026	-73.8924	1.81	2.21	2.69	3.01	3.32	3.73	4.10	4.62	5.26	5.61	5.89	6.20	6.40
377	13041	40.7971	-73.9056	1.78	2.18	2.66	2.99	3.30	3.72	4.09	4.59	5.24	5.59	5.87	6.18	6.37
378	13048	40.7959	-73.8670	1.85	2.24	2.72	3.04	3.35	3.77	4.16	4.70	5.33	5.67	5.94	6.24	6.44
379	13049	40.7983	-73.8568	1.85	2.25	2.72	3.04	3.35	3.76	4.15	4.68	5.31	5.65	5.92	6.22	6.42
380	13050	40.8014	-73.8436	1.85	2.25	2.72	3.04	3.34	3.75	4.14	4.67	5.29	5.62	5.90	6.19	6.38
381	13051	40.8037	-73.8268	1.86	2.27	2.72	3.03	3.34	3.77	4.17	4.69	5.31	5.65	5.92	6.22	6.41
382	13052	40.8061	-73.8131	1.87	2.26	2.72	3.04	3.35	3.77	4.17	4.70	5.31	5.65	5.92	6.22	6.41
383	13053	40.8026	-73.8014	1.87	2.25	2.72	3.04	3.34	3.76	4.16	4.69	5.30	5.64	5.91	6.21	6.40
384	13054	40.7983	-73.7885	1.88	2.26	2.73	3.05	3.35	3.77	4.18	4.72	5.33	5.67	5.94	6.24	6.43
385	13055	40.8069	-73.7803	1.88	2.26	2.72	3.04	3.35	3.76	4.17	4.70	5.32	5.66	5.93	6.23	6.42
386	13056	40.7873	-73.8631	1.86	2.25	2.73	3.05	3.36	3.78	4.18	4.71	5.33	5.67	5.94	6.24	6.44
387	13068	40.7877	-73.7620	1.88	2.26	2.73	3.05	3.35	3.77	4.19	4.73	5.35	5.69	5.97	6.27	6.46
388	13069	40.8010	-73.7694	1.88	2.26	2.73	3.04	3.35	3.77	4.18	4.72	5.33	5.67	5.95	6.25	6.44
389	13070	40.8463	-73.8065	1.89	2.27	2.72	3.04	3.35	3.78	4.18	4.70	5.30	5.64	5.91	6.21	6.40
390	13071	40.8369	-73.8010	1.88	2.27	2.73	3.05	3.35	3.78	4.18	4.70	5.31	5.64	5.91	6.21	6.41
391	13072	40.8295	-73.7924	1.88	2.26	2.72	3.04	3.35	3.77	4.17	4.69	5.30	5.64	5.91	6.21	6.40
392	13073	40.8197	-73.7823	1.88	2.26	2.71	3.03	3.34	3.77	4.17	4.69	5.31	5.64	5.92	6.22	6.41
393	13074	40.8295	-73.7714	1.87	2.25	2.71	3.02	3.33	3.75	4.16	4.68	5.29	5.62	5.90	6.20	6.39
394	13076	40.8564	-73.7522	1.86	2.22	2.70	3.02	3.31	3.70	4.10	4.63	5.23	5.57	5.84	6.14	6.33
395	13077	40.8685	-73.7472	1.86	2.22	2.69	3.01	3.30	3.69	4.09	4.61	5.20	5.54	5.81	6.11	6.31
396	13078	40.8834	-73.7370	1.85	2.25	2.66	2.96	3.27	3.71	4.11	4.58	5.17	5.51	5.78	6.08	6.28
397	13079	40.8955	-73.7218	1.85	2.22	2.67	2.97	3.26	3.67	4.05	4.55	5.14	5.47	5.75	6.05	6.24
398	13080	40.8955	-73.7585	1.86	2.23	2.67	2.98	3.28	3.69	4.07	4.57	5.17	5.52	5.79	6.10	6.29
399	13085	40.8713	-73.7768	1.87	2.25	2.69	3.00	3.31	3.73	4.12	4.63	5.24	5.58	5.85	6.15	6.35
400	13086	40.8740	-73.7608	1.86	2.23	2.68	3.00	3.30	3.71	4.10	4.61	5.21	5.55	5.82	6.12	6.31
401	13087	40.8998	-73.6984	1.85	2.21	2.66	2.96	3.25	3.65	4.03	4.52	5.10	5.44	5.71	6.01	6.21
402	13088	40.9068	-73.6750	1.84	2.21	2.64	2.95	3.23	3.62	4.00	4.49	5.06	5.40	5.67	5.97	6.17
403	13090	40.9325	-73.6328	1.84	2.15	2.63	2.93	3.21	3.56	3.94	4.42	4.97	5.30	5.57	5.87	6.06
404	13093	40.9606	-73.5637	1.82	2.14	2.56	2.85	3.14	3.54	3.90	4.31	4.83	5.15	5.41	5.70	5.90
405	13096	40.9954	-73.5075	1.81	2.10	2.53	2.82	3.09	3.45	3.80	4.22	4.71	5.02	5.27	5.56	5.74
406	13097	40.8888	-73.6785	1.84	2.22	2.66	2.96	3.24	3.63	4.02	4.51	5.09	5.42	5.69	5.99	6.19
407	13732	40.3595	-73.9774	0.97	1.27	1.55	1.79	2.02	2.31	2.51	2.72	2.98	3.16	3.32	3.51	3.63
408	13751	40.5004	-74.3170	1.60	1.91	2.38	2.80	3.28	3.89	4.32	4.70	5.14	5.43	5.68	5.98	6.19
409	13754	40.4860	-74.3276	1.63	1.93	2.36	2.78	3.28	3.92	4.36	4.75	5.21	5.52	5.81	6.18	6.50
410	13755	40.4820	-74.3386	1.64	1.97	2.34	2.72	3.21	3.87	4.31	4.71	5.16	5.46	5.72	6.03	6.25

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
411	13761	40.5503	-74.2402	1.55	1.86	2.23	2.59	3.03	3.63	4.05	4.43	4.89	5.18	5.44	5.76	5.99
412	13767	40.5720	-74.1790	1.15	1.80	2.13	2.37	2.71	3.24	3.60	3.92	4.29	4.53	4.76	5.02	5.20
413	13768	40.5889	-74.1793	1.52	1.83	2.18	2.52	2.91	3.42	3.78	4.11	4.51	4.79	5.05	5.40	5.69
414	13772	40.6165	-74.2011	1.52	1.84	2.19	2.52	2.90	3.42	3.78	4.11	4.49	4.76	5.01	5.33	5.60
415	13775	40.6035	-74.1974	1.54	1.84	2.23	2.58	2.96	3.47	3.82	4.14	4.52	4.79	5.03	5.34	5.57
416	13780	40.6612	-74.1570	1.47	1.76	2.16	2.48	2.81	3.23	3.53	3.79	4.11	4.33	4.53	4.77	4.93
417	13785	40.6606	-74.1357	1.47	1.76	2.16	2.48	2.80	3.22	3.51	3.77	4.09	4.30	4.50	4.73	4.89
418	13786	40.6681	-74.1295	1.47	1.77	2.12	2.43	2.79	3.26	3.58	3.88	4.22	4.48	4.72	5.09	5.43
419	13788	40.6384	-74.1537	1.46	1.77	2.12	2.43	2.78	3.24	3.55	3.84	4.18	4.42	4.66	4.97	5.23
420	13792	40.6956	-74.1218	1.48	1.79	2.14	2.45	2.82	3.30	3.63	3.93	4.27	4.52	4.75	5.07	5.34
421	13809	40.5361	-74.1386	1.51	1.80	2.17	2.52	2.94	3.54	4.00	4.42	4.88	5.18	5.44	5.75	5.98
422	13810	40.5234	-74.1451	1.46	1.76	2.12	2.46	2.87	3.46	3.92	4.32	4.78	5.07	5.33	5.64	5.85
423	13818	40.6504	-74.1139	1.43	1.72	2.13	2.45	2.78	3.24	3.58	3.90	4.27	4.52	4.74	5.01	5.18
424	13819	40.6456	-74.1464	1.46	1.76	2.16	2.47	2.79	3.20	3.48	3.75	4.06	4.27	4.46	4.69	4.85
425	13837	40.6720	-74.0185	1.42	1.72	2.06	2.38	2.75	3.31	3.75	4.13	4.57	4.85	5.10	5.38	5.57
426	13859	40.7394	-74.0250	1.34	1.64	1.95	2.25	2.62	3.17	3.57	3.92	4.32	4.59	4.84	5.14	5.34
427	13862	40.7954	-73.9927	1.28	1.52	1.82	2.08	2.40	2.88	3.22	3.52	3.87	4.10	4.30	4.56	4.75
428	13872	40.9922	-73.9016	1.10	1.29	1.56	1.78	2.00	2.28	2.47	2.64	2.85	3.01	3.17	3.39	3.57
429	13874	40.8750	-73.9156	1.21	1.42	1.73	1.96	2.24	2.61	2.87	3.10	3.37	3.56	3.75	4.00	4.22
430	13883	40.8728	-73.9114	1.22	1.43	1.74	1.98	2.25	2.63	2.88	3.12	3.39	3.58	3.77	4.01	4.22
431	13888	40.8019	-73.9265	1.42	1.71	2.17	2.52	2.87	3.32	3.65	3.98	4.44	4.77	5.07	5.40	5.61
432	13891	40.7904	-73.9354	1.44	1.74	2.19	2.54	2.90	3.38	3.73	4.09	4.55	4.87	5.15	5.47	5.68
433	13893	40.7821	-73.9415	1.45	1.75	2.20	2.54	2.90	3.37	3.73	4.08	4.54	4.85	5.12	5.43	5.64
434	13899	40.7346	-73.9677	1.37	1.67	2.05	2.32	2.67	3.23	3.65	4.03	4.45	4.72	4.97	5.25	5.44
435	13908	40.7721	-73.9439	1.41	1.69	2.09	2.39	2.73	3.20	3.55	3.88	4.30	4.59	4.85	5.17	5.39
436	13919	40.7912	-73.9034	1.77	2.18	2.66	2.98	3.30	3.71	4.08	4.59	5.23	5.58	5.86	6.16	6.36
437	13927	40.8022	-73.8600	1.85	2.25	2.72	3.04	3.35	3.76	4.16	4.69	5.32	5.66	5.93	6.24	6.43
438	13931	40.7976	-73.8320	1.86	2.27	2.72	3.03	3.34	3.77	4.17	4.69	5.31	5.65	5.92	6.22	6.41
439	13936	40.7996	-73.7551	1.88	2.26	2.73	3.04	3.35	3.77	4.18	4.73	5.34	5.69	5.96	6.26	6.46
440	13942	40.8091	-73.7129	1.88	2.26	2.69	3.00	3.31	3.78	4.20	4.70	5.32	5.66	5.94	6.24	6.44
441	13945	40.8299	-73.7050	1.88	2.25	2.70	3.01	3.31	3.74	4.16	4.69	5.30	5.64	5.92	6.22	6.41
442	13960	40.8136	-73.6511	1.86	2.23	2.66	2.96	3.27	3.74	4.15	4.60	5.18	5.52	5.80	6.10	6.29
443	13966	40.9095	-73.5951	1.83	2.16	2.60	2.90	3.18	3.55	3.92	4.38	4.92	5.24	5.51	5.80	5.99
444	14070	40.5784	-74.0134	1.41	1.70	2.02	2.32	2.68	3.24	3.66	4.04	4.46	4.74	4.99	5.30	5.53
445	14088	40.5766	-73.8985	1.61	1.90	2.23	2.50	2.78	3.21	3.57	3.92	4.33	4.60	4.84	5.12	5.31
446	14093	40.6094	-73.8790	0.13	0.18	0.70	0.96	1.13	1.34	1.52	1.78	2.19	2.42	2.60	2.79	2.92
447	14117	40.6469	-73.8212	0.07	0.09	0.67	0.95	1.12	1.32	1.48	1.75	2.18	2.42	2.59	2.79	2.91
448	14122	40.6295	-73.8109	0.05	0.07	0.69	0.97	1.14	1.34	1.50	1.75	2.22	2.46	2.63	2.82	2.94
449	14126	40.6265	-73.7969	0.05	0.07	0.71	0.97	1.15	1.35	1.51	1.77	2.24	2.48	2.65	2.84	2.96
450	14135	40.5918	-73.8262	0.04	0.06	0.75	1.02	1.19	1.39	1.57	1.85	2.29	2.53	2.71	2.90	3.03
451	14144	40.6204	-73.7695	0.04	0.06	0.78	1.05	1.23	1.43	1.59	1.89	2.35	2.58	2.76	2.95	3.07

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
452	14156	40.5813	-73.8675	0.09	0.13	0.72	0.97	1.14	1.34	1.53	1.80	2.20	2.44	2.62	2.82	2.95
453	14158	40.6150	-73.8695	0.11	0.15	0.66	0.95	1.12	1.34	1.52	1.79	2.19	2.41	2.59	2.79	2.91
454	14173	40.6014	-73.7964	0.04	0.05	0.77	1.05	1.23	1.43	1.60	1.90	2.34	2.58	2.76	2.94	3.07
455	14190	40.5430	-73.9342	1.41	1.68	1.97	2.30	2.58	2.94	3.34	3.71	4.12	4.39	4.63	4.91	5.09
456	14196	40.5703	-73.8513	1.39	1.67	2.04	2.32	2.64	3.16	3.62	4.01	4.43	4.70	4.94	5.23	5.41
457	3817	40.4798	-74.0196	NaN	NaN	NaN	NaN	1.25	2.99	3.47	3.84	4.23	4.47	4.69	4.95	5.13
458	3900	40.5281	-74.0137	1.39	1.66	2.01	2.29	2.58	3.03	3.43	3.80	4.21	4.47	4.70	4.98	5.17
459	3900	40.5323	-74.0077	1.39	1.66	2.01	2.29	2.58	3.03	3.43	3.80	4.21	4.47	4.71	4.98	5.17
460	3915	40.5491	-73.9468	1.48	1.74	2.01	2.22	2.49	2.96	3.35	3.71	4.11	4.38	4.61	4.89	5.08
461	3592	40.5736	-73.8834	1.65	1.96	2.29	2.56	2.85	3.27	3.62	3.96	4.37	4.64	4.88	5.15	5.33
462	13053	40.8033	-73.8071	1.87	2.25	2.72	3.04	3.34	3.76	4.16	4.69	5.30	5.64	5.91	6.20	6.40
463	3856	40.5019	-74.1620	1.48	1.78	2.16	2.51	2.91	3.52	3.98	4.39	4.85	5.14	5.39	5.69	5.90
464	11778	40.5761	-74.0340	1.41	1.71	2.02	2.32	2.68	3.24	3.67	4.05	4.48	4.76	5.01	5.31	5.53
465	11650	40.5139	-74.2559	1.54	1.86	2.33	2.70	3.11	3.69	4.13	4.55	5.02	5.32	5.57	5.86	6.05
466	11781	40.6251	-74.0581	1.41	1.71	2.03	2.34	2.71	3.27	3.70	4.08	4.50	4.78	5.02	5.32	5.54
467	11781	40.6279	-74.0490	1.42	1.71	2.03	2.34	2.71	3.27	3.70	4.08	4.50	4.78	5.03	5.33	5.54
468	11861	40.6684	-74.0003	1.43	1.72	2.05	2.35	2.73	3.31	3.76	4.15	4.59	4.87	5.12	5.42	5.62
469	11895	40.7378	-73.9595	1.44	1.74	2.12	2.45	2.82	3.40	3.81	4.17	4.57	4.83	5.07	5.34	5.52
470	11784	40.6702	-74.0444	1.42	1.72	2.04	2.32	2.69	3.28	3.73	4.13	4.57	4.86	5.10	5.39	5.59
471	11766	40.6501	-74.0817	1.43	1.73	2.08	2.41	2.80	3.37	3.80	4.18	4.61	4.90	5.15	5.46	5.70
472	11741	40.6448	-74.1522	1.46	1.75	2.16	2.47	2.79	3.21	3.50	3.76	4.08	4.29	4.49	4.72	4.88
473	4157	40.6800	-74.1306	1.47	1.78	2.11	2.40	2.75	3.23	3.56	3.85	4.19	4.42	4.64	4.93	5.17
474	4261	40.7494	-74.0844	1.57	1.96	2.38	2.71	3.06	3.52	3.85	4.14	4.47	4.69	4.90	5.16	5.35
475	3967	40.5778	-74.2097	1.55	1.85	2.23	2.58	2.98	3.52	3.89	4.23	4.64	4.91	5.17	5.51	5.78
476	3551	40.4670	-74.0144	1.42	1.71	2.05	2.34	2.69	3.22	3.65	4.01	4.39	4.63	4.85	5.11	5.28
477	11982	40.6385	-73.8130	0.05	0.07	0.68	0.96	1.13	1.33	1.49	1.74	2.21	2.44	2.62	2.80	2.93
478	4135	40.6533	-74.0645	1.42	1.73	2.05	2.32	2.68	3.27	3.73	4.12	4.56	4.85	5.09	5.38	5.58
479	7673	40.6992	-74.0154	1.40	1.70	2.03	2.31	2.69	3.27	3.71	4.10	4.53	4.82	5.07	5.36	5.56
480	13067	40.7829	-73.8682	1.86	2.29	2.73	3.04	3.36	3.80	4.21	4.72	5.34	5.68	5.95	6.25	6.44
481	4103	40.6394	-74.1606	1.46	1.76	2.11	2.37	2.70	3.16	3.49	3.77	4.11	4.34	4.56	4.82	5.03
482	11749	40.7050	-74.1123	1.48	1.79	2.12	2.42	2.78	3.28	3.62	3.92	4.26	4.50	4.72	5.01	5.25
483	11907	40.8100	-73.9758	1.24	1.47	1.77	2.01	2.32	2.77	3.10	3.38	3.70	3.92	4.11	4.35	4.53

Appendix XI
Table of Best Estimate AEF Values for Water Levels at 483 Save Point Locations
Alt3a Condition

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
1	350	41.0025	-73.5513	1.82	2.13	2.56	2.86	3.15	3.54	3.93	4.37	4.88	5.19	5.46	5.75	5.95
2	3486	40.4558	-74.3716	1.81	2.15	2.63	3.07	3.59	4.24	4.69	5.10	5.60	5.94	6.28	6.76	7.22
3	3493	40.4917	-74.2624	1.65	1.99	2.45	2.88	3.39	4.11	4.65	5.14	5.71	6.08	6.41	6.80	7.12
4	3503	40.6439	-74.1899	0.17	0.24	0.33	0.64	1.31	1.99	2.49	2.89	3.34	3.65	3.95	4.35	4.62
5	3538	40.4183	-74.0350	1.55	1.88	2.29	2.62	2.96	3.50	3.97	4.37	4.80	5.06	5.29	5.55	5.73
6	3544	40.6992	-74.0214	0.19	0.28	0.41	0.50	0.60	0.73	0.83	0.94	1.08	1.18	1.25	1.34	1.39
7	3561	40.4509	-73.9802	1.35	1.62	1.98	2.24	2.50	2.89	3.26	3.62	4.02	4.29	4.53	4.82	5.01
8	3575	41.7833	-73.9500	0.34	0.46	0.61	0.71	0.78	0.89	0.98	1.10	1.26	1.38	1.50	1.63	1.72
9	3584	40.5471	-73.9231	1.41	1.70	2.02	2.40	2.71	3.11	3.56	3.95	4.38	4.66	4.92	5.21	5.40
10	3592	40.5735	-73.8849	1.65	2.01	2.35	2.63	2.92	3.34	3.68	4.05	4.54	4.85	5.12	5.41	5.60
11	3594	41.0783	-73.8700	0.03	0.47	0.56	0.62	0.70	1.00	1.18	1.31	1.46	1.55	1.63	1.72	1.78
12	3600	42.2531	-73.8018	0.55	0.78	1.07	1.27	1.50	1.83	2.12	2.42	2.80	3.08	3.39	3.88	4.32
13	3612	40.9229	-73.7400	1.87	2.23	2.68	3.01	3.32	3.79	4.23	4.73	5.30	5.64	5.92	6.23	6.44
14	3625	40.5783	-73.5802	1.28	1.53	1.84	2.09	2.37	2.87	3.30	3.67	4.07	4.34	4.58	4.86	5.06
15	3725	40.1074	-74.0268	1.26	1.52	1.79	2.00	2.23	2.57	2.86	3.14	3.49	3.77	4.04	4.37	4.58
16	3731	40.1478	-74.0166	1.29	1.52	1.80	2.01	2.22	2.56	2.87	3.14	3.48	3.74	4.01	4.32	4.53
17	3737	40.1876	-74.0026	1.27	1.52	1.80	2.00	2.21	2.55	2.85	3.12	3.46	3.71	3.96	4.27	4.48
18	3739	40.2011	-73.9997	1.28	1.52	1.80	2.01	2.22	2.55	2.86	3.14	3.47	3.71	3.95	4.25	4.45
19	3749	40.2681	-73.9800	1.28	1.53	1.79	1.99	2.23	2.62	2.92	3.18	3.51	3.74	3.97	4.26	4.46
20	3751	40.2817	-73.9773	1.29	1.52	1.81	2.02	2.23	2.56	2.87	3.16	3.50	3.74	3.98	4.27	4.46
21	3757	40.3223	-73.9689	1.28	1.53	1.79	2.00	2.23	2.59	2.90	3.18	3.52	3.76	3.98	4.26	4.45
22	3758	40.3224	-73.9735	1.31	1.58	1.89	2.15	2.43	2.84	3.15	3.44	3.77	4.01	4.23	4.51	4.70
23	3761	40.3457	-73.9544	1.30	1.53	1.81	2.02	2.23	2.58	2.91	3.21	3.56	3.81	4.05	4.35	4.55
24	3765	40.3675	-73.9649	1.31	1.56	1.82	2.03	2.27	2.66	2.98	3.29	3.64	3.89	4.13	4.43	4.62
25	3768	40.3909	-73.9730	1.33	1.60	1.93	2.18	2.49	2.96	3.32	3.64	4.02	4.29	4.54	4.86	5.10
26	3769	40.3948	-73.9620	1.31	1.56	1.82	2.01	2.26	2.70	3.05	3.36	3.72	3.97	4.21	4.50	4.71
27	3771	40.4078	-73.9563	1.31	1.57	1.82	2.02	2.27	2.70	3.06	3.38	3.75	4.00	4.24	4.53	4.73
28	3775	40.4205	-73.9502	1.32	1.57	1.83	2.02	2.26	2.70	3.06	3.39	3.76	4.02	4.26	4.55	4.75
29	3777	40.4263	-74.0461	1.54	1.88	2.25	2.58	2.97	3.57	4.02	4.42	4.84	5.11	5.34	5.62	5.81
30	3779	40.4342	-73.9512	1.33	1.57	1.88	2.11	2.33	2.69	3.07	3.41	3.79	4.05	4.30	4.59	4.79
31	3788	40.4478	-73.9493	1.33	1.59	1.85	2.04	2.29	2.74	3.13	3.47	3.85	4.11	4.35	4.64	4.83
32	3789	40.4478	-74.0039	1.52	1.85	2.21	2.53	2.90	3.49	3.95	4.34	4.76	5.02	5.26	5.53	5.71
33	3790	40.4515	-74.0850	1.54	1.88	2.25	2.59	3.01	3.64	4.12	4.53	4.98	5.28	5.55	5.89	6.14
34	3793	40.4569	-74.1117	1.55	1.87	2.28	2.64	3.05	3.66	4.14	4.55	5.01	5.31	5.57	5.88	6.08
35	3797	40.4605	-73.9527	1.35	1.61	1.90	2.15	2.43	2.88	3.25	3.58	3.97	4.23	4.47	4.76	4.96
36	3799	40.4608	-74.0435	1.51	1.85	2.21	2.54	2.93	3.53	3.98	4.38	4.82	5.10	5.36	5.67	5.87
37	3800	40.4637	-74.1541	1.59	1.94	2.29	2.62	3.06	3.74	4.28	4.74	5.24	5.56	5.85	6.18	6.41
38	3801	40.4663	-74.1941	1.63	1.96	2.43	2.83	3.26	3.91	4.42	4.89	5.40	5.72	6.00	6.31	6.52
39	3802	40.4677	-74.1191	1.55	1.87	2.31	2.66	3.05	3.63	4.11	4.54	5.02	5.33	5.60	5.91	6.12
40	3804	40.4695	-73.9662	1.37	1.65	1.97	2.24	2.51	2.94	3.31	3.66	4.05	4.32	4.56	4.84	5.04
41	3807	40.4709	-74.0317	1.50	1.83	2.19	2.51	2.89	3.46	3.91	4.30	4.73	5.01	5.27	5.58	5.79

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
42	3808	40.4714	-74.2107	1.64	1.97	2.44	2.85	3.29	3.94	4.46	4.93	5.45	5.78	6.07	6.38	6.59
43	3810	40.4724	-74.0406	1.50	1.83	2.19	2.52	2.90	3.48	3.93	4.32	4.76	5.05	5.31	5.62	5.84
44	3814	40.4767	-73.9813	1.40	1.70	2.00	2.27	2.59	3.09	3.48	3.84	4.24	4.52	4.78	5.10	5.34
45	3815	40.4771	-74.0559	1.50	1.83	2.20	2.53	2.92	3.51	3.97	4.37	4.82	5.12	5.38	5.70	5.91
46	3822	40.4795	-74.0064	1.46	1.76	2.16	2.45	2.76	3.21	3.61	3.99	4.43	4.72	4.97	5.27	5.46
47	3823	40.4796	-73.9986	1.44	1.71	2.07	2.35	2.64	3.08	3.47	3.84	4.26	4.54	4.79	5.08	5.28
48	3827	40.4838	-74.2589	1.65	2.00	2.42	2.82	3.31	4.03	4.58	5.08	5.64	6.00	6.31	6.68	6.92
49	3829	40.4847	-74.0905	1.51	1.85	2.24	2.58	2.98	3.58	4.05	4.46	4.93	5.23	5.50	5.81	6.01
50	3830	40.4856	-74.3409	1.76	2.06	2.56	3.00	3.51	4.17	4.62	5.04	5.54	5.88	6.18	6.54	6.82
51	3853	40.4975	-74.2220	1.63	1.96	2.41	2.83	3.31	4.00	4.53	5.01	5.54	5.88	6.18	6.51	6.75
52	3854	40.4981	-74.1388	1.54	1.88	2.28	2.65	3.08	3.71	4.21	4.65	5.15	5.48	5.77	6.10	6.32
53	3860	40.5027	-74.2114	1.62	1.95	2.39	2.80	3.28	3.98	4.51	4.98	5.52	5.87	6.18	6.54	6.80
54	3864	40.5040	-74.1767	1.58	1.93	2.29	2.65	3.09	3.78	4.32	4.79	5.32	5.67	5.97	6.31	6.54
55	3871	40.5066	-74.1943	1.60	1.95	2.34	2.72	3.18	3.87	4.41	4.89	5.42	5.77	6.08	6.43	6.68
56	3872	40.5077	-73.9378	1.38	1.65	1.92	2.18	2.48	2.95	3.34	3.69	4.10	4.38	4.64	4.94	5.15
57	3873	40.5081	-73.9545	1.41	1.69	1.98	2.25	2.56	3.05	3.45	3.81	4.23	4.52	4.78	5.09	5.31
58	3874	40.5081	-74.1910	1.59	1.94	2.33	2.70	3.16	3.85	4.39	4.87	5.40	5.75	6.05	6.41	6.65
59	3877	40.5102	-74.3003	1.66	2.03	2.55	3.05	3.61	4.31	4.78	5.22	5.74	6.09	6.43	6.91	7.39
60	3879	40.5119	-73.9072	1.36	1.62	1.87	2.11	2.40	2.86	3.24	3.58	3.98	4.26	4.51	4.81	5.01
61	3880	40.5142	-73.9704	1.43	1.70	2.06	2.34	2.63	3.07	3.46	3.84	4.28	4.57	4.83	5.13	5.32
62	3882	40.5149	-74.1482	1.53	1.87	2.26	2.63	3.07	3.71	4.22	4.67	5.18	5.52	5.82	6.16	6.39
63	3887	40.5191	-74.1598	1.54	1.90	2.25	2.58	3.01	3.68	4.22	4.69	5.21	5.56	5.85	6.19	6.42
64	3889	40.5206	-74.1379	1.53	1.86	2.25	2.62	3.05	3.70	4.20	4.65	5.16	5.49	5.79	6.14	6.39
65	3890	40.5227	-73.9845	1.44	1.72	2.09	2.38	2.68	3.13	3.53	3.92	4.37	4.67	4.93	5.23	5.43
66	3891	40.5230	-74.0495	1.48	1.82	2.16	2.49	2.88	3.47	3.93	4.34	4.81	5.12	5.41	5.75	5.99
67	3892	40.5238	-73.9126	1.38	1.62	1.94	2.19	2.45	2.88	3.29	3.65	4.06	4.34	4.59	4.88	5.07
68	3894	40.5278	-74.2449	0.40	0.50	0.69	1.26	1.79	2.71	3.33	3.92	4.72	5.36	5.87	6.33	6.59
69	3896	40.5300	-74.1099	1.50	1.84	2.19	2.53	2.94	3.58	4.07	4.51	5.00	5.33	5.62	5.97	6.20
70	3902	40.5351	-74.0872	1.50	1.82	2.20	2.55	2.94	3.55	4.02	4.44	4.93	5.25	5.53	5.85	6.07
71	3903	40.5384	-73.9022	1.37	1.62	1.94	2.19	2.45	2.90	3.32	3.68	4.09	4.36	4.62	4.91	5.10
72	3904	40.5400	-74.2495	0.40	0.51	0.67	1.24	1.78	2.69	3.32	3.91	4.69	5.33	5.83	6.28	6.54
73	3905	40.5401	-73.8846	1.35	1.60	1.91	2.15	2.41	2.85	3.28	3.64	4.04	4.32	4.57	4.86	5.05
74	3906	40.5407	-73.8668	1.33	1.59	1.85	2.09	2.38	2.87	3.27	3.61	4.01	4.28	4.53	4.82	5.01
75	3907	40.5415	-74.1018	1.50	1.82	2.21	2.56	2.96	3.57	4.05	4.48	4.97	5.30	5.58	5.91	6.12
76	3908	40.5421	-74.0092	1.46	1.75	2.15	2.45	2.77	3.25	3.69	4.10	4.58	4.90	5.17	5.48	5.68
77	3910	40.5423	-73.8490	1.33	1.57	1.87	2.09	2.34	2.79	3.23	3.59	4.00	4.27	4.51	4.80	4.99
78	3912	40.5448	-74.0745	1.49	1.82	2.17	2.51	2.91	3.53	4.00	4.43	4.92	5.25	5.55	5.90	6.14
79	3917	40.5507	-73.8161	1.31	1.55	1.85	2.07	2.31	2.78	3.23	3.60	4.00	4.27	4.50	4.77	4.95
80	3918	40.5518	-74.0915	1.49	1.82	2.18	2.53	2.94	3.56	4.04	4.48	4.99	5.32	5.62	5.97	6.22
81	3919	40.5531	-74.0605	1.49	1.82	2.17	2.50	2.89	3.51	3.98	4.40	4.90	5.23	5.52	5.87	6.11
82	3920	40.5538	-74.2468	0.38	0.48	0.65	1.21	1.75	2.66	3.27	3.84	4.61	5.25	5.75	6.19	6.45

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
83	3921	40.5546	-74.2364	0.38	0.48	0.64	1.22	1.76	2.67	3.27	3.85	4.60	5.22	5.71	6.15	6.41
84	3922	40.5554	-74.0117	1.47	1.80	2.14	2.46	2.83	3.41	3.86	4.27	4.75	5.07	5.35	5.69	5.91
85	3926	40.5574	-73.8005	1.30	1.54	1.84	2.07	2.31	2.79	3.26	3.63	4.04	4.30	4.53	4.80	4.98
86	3927	40.5589	-74.2308	0.37	0.47	0.64	1.21	1.77	2.66	3.27	3.84	4.59	5.20	5.69	6.13	6.38
87	3928	40.5604	-73.9310	1.54	1.84	2.22	2.50	2.77	3.17	3.54	3.96	4.46	4.79	5.06	5.36	5.56
88	3930	40.5613	-74.0837	1.49	1.82	2.17	2.51	2.91	3.54	4.03	4.46	4.98	5.31	5.61	5.95	6.19
89	3931	40.5634	-73.7843	1.30	1.54	1.84	2.06	2.30	2.80	3.27	3.65	4.06	4.32	4.55	4.81	4.99
90	3934	40.5660	-74.0220	1.48	1.82	2.14	2.45	2.83	3.43	3.90	4.32	4.82	5.15	5.44	5.78	6.00
91	3937	40.5666	-74.0391	1.48	1.83	2.15	2.46	2.85	3.46	3.93	4.36	4.87	5.20	5.49	5.82	6.04
92	3938	40.5667	-73.5909	1.29	1.50	1.76	1.96	2.19	2.71	3.16	3.54	3.95	4.22	4.46	4.76	4.96
93	3940	40.5679	-73.5731	1.30	1.51	1.78	1.98	2.22	2.73	3.17	3.54	3.95	4.21	4.45	4.75	4.95
94	3941	40.5685	-73.6087	1.28	1.50	1.78	1.99	2.23	2.75	3.21	3.59	4.00	4.27	4.51	4.80	4.99
95	3943	40.5697	-73.6266	1.28	1.50	1.78	2.00	2.24	2.78	3.24	3.62	4.03	4.30	4.54	4.82	5.01
96	3946	40.5705	-73.7689	1.30	1.54	1.84	2.06	2.30	2.81	3.29	3.67	4.09	4.35	4.58	4.84	5.01
97	3948	40.5712	-73.6803	1.30	1.52	1.80	2.01	2.27	2.81	3.26	3.64	4.05	4.31	4.54	4.81	5.00
98	3949	40.5713	-73.9721	1.46	1.75	2.14	2.44	2.75	3.22	3.65	4.06	4.56	4.88	5.15	5.46	5.66
99	3950	40.5717	-73.6982	1.30	1.52	1.80	2.02	2.27	2.81	3.26	3.64	4.06	4.32	4.55	4.82	5.00
100	3951	40.5717	-73.6444	1.29	1.52	1.80	2.01	2.26	2.79	3.25	3.62	4.04	4.30	4.54	4.81	4.99
101	3953	40.5721	-73.6623	1.29	1.53	1.76	1.99	2.31	2.86	3.28	3.66	4.07	4.33	4.56	4.84	5.02
102	3954	40.5724	-73.7162	1.30	1.53	1.81	2.03	2.27	2.80	3.26	3.64	4.05	4.31	4.54	4.80	4.99
103	3957	40.5736	-74.0735	1.49	1.82	2.17	2.51	2.92	3.55	4.03	4.47	4.99	5.33	5.62	5.97	6.21
104	3958	40.5741	-73.9135	1.56	1.89	2.28	2.55	2.80	3.16	3.53	3.96	4.49	4.82	5.09	5.39	5.59
105	3960	40.5742	-73.7518	1.30	1.53	1.83	2.05	2.30	2.81	3.28	3.67	4.08	4.34	4.57	4.83	5.01
106	3961	40.5745	-73.7339	1.30	1.53	1.82	2.04	2.29	2.81	3.28	3.67	4.08	4.34	4.57	4.83	5.01
107	3963	40.5761	-73.8957	1.70	2.06	2.40	2.68	2.97	3.38	3.73	4.10	4.58	4.88	5.14	5.43	5.63
108	3966	40.5774	-73.5209	1.27	1.48	1.75	1.96	2.21	2.73	3.20	3.58	4.00	4.29	4.54	4.85	5.07
109	3967	40.5776	-74.2114	0.25	0.32	0.45	0.96	1.75	2.67	3.22	3.71	4.37	4.90	5.35	5.77	6.02
110	3971	40.5793	-74.0204	1.49	1.84	2.17	2.49	2.88	3.50	3.97	4.40	4.92	5.25	5.54	5.88	6.10
111	3972	40.5801	-74.0424	1.49	1.84	2.17	2.50	2.89	3.51	3.99	4.43	4.95	5.28	5.57	5.91	6.14
112	3990	40.5848	-74.0021	1.49	1.84	2.18	2.50	2.89	3.51	3.98	4.42	4.92	5.25	5.54	5.87	6.11
113	3998	40.5883	-73.7756	1.29	1.55	1.89	2.17	2.48	3.05	3.55	3.96	4.39	4.65	4.88	5.15	5.32
114	3999	40.5889	-73.8296	0.07	0.09	0.14	0.77	1.14	1.44	1.72	2.04	2.40	2.63	2.81	3.00	3.13
115	4004	40.5915	-74.2025	0.23	0.29	0.41	0.91	1.69	2.60	3.10	3.54	4.17	4.70	5.16	5.58	5.83
116	4008	40.5926	-74.0237	1.49	1.84	2.17	2.49	2.88	3.51	4.00	4.43	4.95	5.28	5.57	5.90	6.12
117	4010	40.5931	-74.0478	1.50	1.85	2.21	2.55	2.95	3.58	4.06	4.50	5.02	5.36	5.65	5.99	6.25
118	4019	40.5970	-73.8152	0.05	0.07	0.11	0.67	1.11	1.44	1.74	2.08	2.43	2.64	2.82	3.01	3.14
119	4024	40.6005	-73.4177	1.24	1.46	1.71	1.93	2.19	2.70	3.16	3.56	4.02	4.33	4.62	4.97	5.20
120	4028	40.6029	-73.7991	0.05	0.07	0.13	0.86	1.19	1.50	1.80	2.13	2.48	2.68	2.85	3.04	3.16
121	4051	40.6134	-73.2605	1.23	1.43	1.66	1.86	2.09	2.53	2.97	3.38	3.85	4.17	4.47	4.86	5.12
122	4054	40.6144	-73.3142	1.23	1.44	1.69	1.89	2.12	2.60	3.07	3.49	3.97	4.31	4.63	5.02	5.28
123	4062	40.6176	-73.7745	0.05	0.07	0.16	0.92	1.22	1.51	1.82	2.17	2.52	2.71	2.87	3.06	3.17

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
124	4079	40.6245	-73.2087	1.21	1.41	1.62	1.83	2.10	2.57	2.97	3.35	3.81	4.15	4.48	4.89	5.16
125	4084	40.6282	-73.8046	0.06	0.08	0.15	0.88	1.16	1.43	1.74	2.09	2.42	2.61	2.77	2.94	3.06
126	4089	40.6311	-74.0680	0.27	0.37	0.48	0.56	0.64	0.79	0.92	1.06	1.23	1.32	1.40	1.49	1.55
127	4098	40.6372	-73.8603	0.09	0.11	0.18	0.77	1.08	1.35	1.65	1.98	2.29	2.48	2.65	2.85	2.97
128	4101	40.6384	-74.1930	0.18	0.24	0.34	0.68	1.37	2.12	2.59	3.00	3.48	3.83	4.17	4.58	4.86
129	4104	40.6403	-73.8602	0.09	0.11	0.17	0.71	1.04	1.33	1.64	1.98	2.30	2.49	2.66	2.85	2.98
130	4107	40.6413	-74.1241	0.26	0.33	0.45	0.67	0.92	1.24	1.46	1.65	1.93	2.20	2.43	2.71	2.90
131	4110	40.6419	-74.1665	0.11	0.16	0.23	0.54	1.15	1.72	2.21	2.60	3.01	3.26	3.51	3.86	4.11
132	4116	40.6438	-74.1377	0.14	0.19	0.27	0.52	0.93	1.52	1.92	2.29	2.66	2.88	3.10	3.39	3.61
133	4122	40.6471	-73.1050	1.19	1.38	1.58	1.78	2.05	2.54	2.94	3.32	3.81	4.15	4.48	4.86	5.11
134	4124	40.6472	-74.0756	0.29	0.38	0.48	0.56	0.65	0.80	0.94	1.08	1.24	1.34	1.41	1.50	1.56
135	4135	40.6544	-74.0660	0.25	0.35	0.45	0.53	0.61	0.76	0.88	1.01	1.17	1.26	1.34	1.42	1.48
136	4176	40.6958	-74.0502	0.62	0.81	1.07	1.24	1.42	1.71	1.96	2.20	2.49	2.68	2.84	3.03	3.16
137	4179	40.6971	-74.1482	0.13	0.20	0.28	0.50	1.05	1.70	2.20	2.61	2.99	3.23	3.47	3.80	4.05
138	4181	40.6997	-74.0342	0.20	0.29	0.41	0.49	0.59	0.72	0.82	0.94	1.09	1.19	1.26	1.35	1.40
139	4194	40.7060	-73.9979	0.15	0.25	0.39	0.48	0.58	0.73	0.83	0.94	1.07	1.15	1.21	1.29	1.34
140	4205	40.7143	-74.1080	0.13	0.19	0.27	0.56	1.22	1.81	2.31	2.72	3.13	3.39	3.61	3.88	4.07
141	4206	40.7144	-74.1211	0.14	0.20	0.28	0.56	1.20	1.79	2.30	2.70	3.11	3.36	3.58	3.86	4.07
142	4210	40.7167	-74.1229	0.14	0.20	0.29	0.56	1.20	1.79	2.30	2.70	3.10	3.35	3.57	3.86	4.07
143	4211	40.7171	-73.9684	0.12	0.21	0.36	0.46	0.56	0.73	0.85	0.96	1.07	1.15	1.21	1.29	1.34
144	4227	40.7301	-73.9640	0.12	0.21	0.36	0.46	0.57	0.74	0.86	0.97	1.09	1.18	1.25	1.34	1.39
145	4241	40.7385	-74.0892	0.14	0.19	0.26	0.53	1.22	1.80	2.27	2.67	3.09	3.34	3.56	3.81	3.99
146	4244	40.7400	-74.0234	0.16	0.25	0.37	0.46	0.55	0.69	0.80	0.90	1.03	1.12	1.19	1.26	1.31
147	4255	40.7461	-74.0749	0.15	0.20	0.27	0.52	1.27	1.85	2.29	2.65	3.05	3.30	3.52	3.77	3.95
148	4260	40.7487	-73.9660	0.11	0.20	0.35	0.46	0.56	0.74	0.86	0.96	1.08	1.16	1.23	1.32	1.37
149	4278	40.7601	-73.9561	0.12	0.21	0.36	0.46	0.56	0.74	0.87	0.98	1.10	1.19	1.26	1.35	1.41
150	4281	40.7655	-74.0892	0.18	0.31	0.40	0.56	1.21	1.78	2.15	2.43	2.74	2.96	3.18	3.49	3.73
151	4304	40.7796	-73.9287	0.20	0.24	0.35	0.49	0.63	0.82	0.95	1.07	1.22	1.35	1.49	1.67	1.77
152	4321	40.7880	-73.9145	0.24	0.31	0.44	0.59	0.72	0.88	0.99	1.10	1.28	1.46	1.68	1.91	2.04
153	4323	40.7889	-73.8678	0.30	0.43	0.61	0.73	0.85	1.03	1.15	1.27	1.45	1.63	1.82	2.02	2.14
154	4344	40.7964	-73.9006	0.24	0.38	0.55	0.67	0.79	0.95	1.07	1.18	1.35	1.56	1.82	2.07	2.20
155	4349	40.7979	-73.8111	0.35	0.49	0.66	0.79	0.91	1.09	1.21	1.33	1.50	1.68	1.87	2.08	2.20
156	4350	40.7981	-73.8839	0.28	0.41	0.58	0.70	0.81	0.98	1.11	1.22	1.39	1.58	1.81	2.04	2.17
157	4352	40.7990	-73.8369	0.33	0.46	0.64	0.76	0.88	1.05	1.17	1.29	1.46	1.65	1.85	2.05	2.18
158	4359	40.8014	-73.9851	0.15	0.23	0.38	0.47	0.56	0.70	0.80	0.89	1.00	1.07	1.14	1.21	1.26
159	4370	40.8047	-73.8395	0.33	0.46	0.64	0.76	0.88	1.05	1.18	1.29	1.47	1.64	1.84	2.04	2.16
160	4382	40.8065	-73.8216	0.35	0.49	0.65	0.78	0.90	1.07	1.20	1.31	1.49	1.69	1.90	2.12	2.24
161	4397	40.8130	-73.9754	0.15	0.24	0.39	0.48	0.58	0.71	0.81	0.90	1.01	1.09	1.15	1.22	1.27
162	4408	40.8199	-74.1279	0.20	0.25	0.35	0.60	1.44	2.26	2.81	3.20	3.59	3.85	4.11	4.46	4.72
163	4416	40.8249	-73.9666	0.16	0.25	0.40	0.49	0.60	0.73	0.82	0.91	1.01	1.09	1.15	1.22	1.27
164	4435	40.8376	-73.9599	0.15	0.25	0.41	0.50	0.60	0.73	0.82	0.91	1.02	1.09	1.16	1.24	1.28

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
165	4450	40.8439	-73.7491	1.91	2.26	2.74	3.06	3.37	3.83	4.31	4.84	5.41	5.75	6.02	6.32	6.52
166	4459	40.8504	-73.9535	0.15	0.25	0.41	0.50	0.60	0.73	0.82	0.91	1.03	1.11	1.18	1.25	1.30
167	4469	40.8559	-73.7413	1.90	2.30	2.70	3.02	3.35	3.86	4.31	4.81	5.39	5.72	6.00	6.30	6.49
168	4470	40.8562	-73.9213	0.20	0.24	0.36	0.48	0.60	0.76	0.86	0.95	1.06	1.13	1.19	1.27	1.32
169	4478	40.8608	-73.7655	1.90	2.25	2.73	3.06	3.37	3.81	4.29	4.81	5.38	5.71	5.98	6.28	6.48
170	4479	40.8611	-73.9159	0.20	0.24	0.35	0.47	0.60	0.77	0.87	0.96	1.06	1.14	1.20	1.28	1.33
171	4480	40.8612	-73.7913	1.91	2.27	2.73	3.06	3.38	3.86	4.31	4.83	5.41	5.74	6.01	6.31	6.51
172	4481	40.8627	-73.9454	0.16	0.27	0.42	0.51	0.62	0.75	0.84	0.93	1.05	1.12	1.18	1.25	1.30
173	4498	40.8709	-73.7001	1.90	2.24	2.71	3.03	3.34	3.77	4.23	4.73	5.30	5.62	5.90	6.20	6.40
174	4505	40.8747	-73.9367	0.15	0.25	0.41	0.50	0.61	0.75	0.84	0.92	1.02	1.09	1.15	1.22	1.27
175	4526	40.8871	-73.9290	0.14	0.22	0.39	0.49	0.60	0.74	0.83	0.92	1.02	1.09	1.15	1.22	1.27
176	4537	40.8951	-73.7686	1.90	2.26	2.71	3.03	3.35	3.81	4.24	4.76	5.35	5.69	5.96	6.26	6.46
177	4546	40.9002	-73.9236	0.13	0.20	0.36	0.47	0.59	0.74	0.83	0.92	1.03	1.09	1.16	1.23	1.28
178	4549	40.9018	-73.6230	1.87	2.23	2.64	2.95	3.26	3.72	4.14	4.59	5.13	5.45	5.72	6.02	6.21
179	4573	40.9117	-73.9122	0.19	0.22	0.32	0.44	0.56	0.74	0.85	0.95	1.07	1.14	1.21	1.28	1.33
180	4579	40.9144	-73.5386	1.84	2.17	2.58	2.88	3.19	3.63	4.02	4.45	4.95	5.26	5.52	5.80	5.99
181	4606	40.9224	-73.7298	1.87	2.24	2.69	3.00	3.32	3.77	4.21	4.71	5.28	5.62	5.90	6.20	6.41
182	4620	40.9272	-73.9170	0.18	0.22	0.30	0.43	0.56	0.73	0.84	0.93	1.04	1.11	1.17	1.25	1.29
183	4653	40.9390	-73.4948	1.82	2.13	2.54	2.83	3.14	3.57	3.95	4.36	4.84	5.14	5.39	5.67	5.86
184	4654	40.9407	-73.9136	0.17	0.20	0.29	0.42	0.54	0.70	0.81	0.91	1.03	1.10	1.17	1.24	1.29
185	4723	40.9687	-73.6486	1.84	2.20	2.64	2.94	3.23	3.64	4.07	4.54	5.09	5.42	5.70	6.01	6.22
186	4816	41.0005	-73.8990	0.13	0.18	0.27	0.40	0.53	0.70	0.82	0.93	1.08	1.16	1.24	1.32	1.38
187	4893	41.0380	-73.8768	0.15	0.21	0.29	0.44	0.59	0.77	0.91	1.03	1.22	1.37	1.49	1.61	1.69
188	5082	41.1529	-73.8864	0.22	0.27	0.39	0.51	0.62	0.78	0.91	1.05	1.22	1.33	1.43	1.55	1.62
189	5109	41.2095	-73.9349	0.28	0.34	0.42	0.52	0.67	0.85	0.97	1.10	1.26	1.36	1.46	1.57	1.65
190	5831	40.0971	-74.0273	1.28	1.53	1.78	1.98	2.22	2.58	2.86	3.12	3.47	3.75	4.04	4.36	4.58
191	6906	40.4200	-73.8300	1.30	1.53	1.81	2.00	2.20	2.52	2.87	3.20	3.56	3.82	4.05	4.32	4.51
192	7099	40.8800	-73.7300	1.88	2.26	2.71	3.03	3.33	3.78	4.25	4.75	5.32	5.65	5.92	6.22	6.42
193	7395	40.9350	-74.0300	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
194	7401	40.8300	-74.0767	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	2.72	3.51	3.89	4.23	4.44
195	7412	40.7867	-74.1467	0.17	0.23	0.32	0.56	1.39	2.23	2.77	3.14	3.50	3.74	3.96	4.26	4.50
196	7417	40.7167	-74.0317	0.20	0.29	0.40	0.49	0.58	0.71	0.81	0.92	1.07	1.16	1.24	1.32	1.38
197	3527	40.6550	-74.0850	0.28	0.37	0.47	0.55	0.63	0.78	0.90	1.04	1.23	1.33	1.41	1.50	1.56
198	7655	40.4600	-73.8300	1.31	1.54	1.82	2.02	2.22	2.56	2.92	3.26	3.65	3.91	4.15	4.44	4.62
199	7668	40.7767	-73.9417	0.19	0.24	0.35	0.47	0.60	0.77	0.90	1.02	1.17	1.28	1.41	1.57	1.67
200	7673	40.7000	-74.0150	0.19	0.29	0.41	0.50	0.60	0.74	0.85	0.96	1.09	1.18	1.25	1.34	1.39
201	7680	40.5567	-74.2233	0.36	0.46	0.63	1.23	1.79	2.68	3.28	3.85	4.59	5.17	5.63	6.06	6.32
202	7868	41.3311	-73.9774	0.27	0.34	0.45	0.59	0.73	0.92	1.06	1.22	1.42	1.56	1.70	1.86	1.96
203	7870	41.3744	-73.9565	0.19	0.24	0.35	0.47	0.57	0.70	0.80	0.91	1.10	1.24	1.34	1.45	1.52
204	7872	41.4132	-73.9644	0.20	0.26	0.38	0.49	0.59	0.72	0.82	0.93	1.10	1.23	1.33	1.45	1.54
205	7875	41.4652	-74.0010	0.22	0.29	0.35	0.42	0.53	0.66	0.76	0.84	0.96	1.08	1.21	1.33	1.41

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
206	7876	41.4945	-73.9985	0.24	0.31	0.37	0.47	0.58	0.71	0.80	0.88	1.02	1.14	1.24	1.35	1.42
207	7965	41.2872	-73.9384	0.34	0.41	0.53	0.67	0.85	1.06	1.23	1.45	1.69	1.83	1.95	2.09	2.18
208	7975	41.0548	-73.9124	0.12	0.16	0.26	0.39	0.53	0.70	0.82	0.93	1.13	1.28	1.38	1.48	1.55
209	7976	41.0346	-73.9085	0.14	0.19	0.31	0.48	0.60	0.74	0.85	0.98	1.17	1.27	1.36	1.45	1.51
210	7979	41.1003	-73.9126	0.16	0.21	0.29	0.42	0.53	0.68	0.79	0.90	1.13	1.28	1.39	1.51	1.58
211	9813	41.1522	-73.8735	0.23	0.28	0.40	0.52	0.63	0.79	0.92	1.05	1.24	1.36	1.46	1.57	1.65
212	9816	41.1952	-73.9565	0.26	0.32	0.41	0.50	0.64	0.82	0.95	1.07	1.22	1.33	1.43	1.54	1.62
213	9838	41.0070	-73.5669	1.82	2.14	2.55	2.85	3.16	3.58	3.95	4.38	4.91	5.24	5.51	5.81	6.02
214	9842	41.0186	-73.5188	1.81	2.11	2.54	2.84	3.11	3.49	3.88	4.31	4.81	5.11	5.37	5.66	5.86
215	11330	40.4414	-73.9087	1.32	1.56	1.86	2.07	2.28	2.63	3.00	3.34	3.72	3.98	4.23	4.52	4.72
216	11331	40.5220	-73.7791	1.30	1.53	1.82	2.02	2.23	2.63	3.04	3.39	3.79	4.06	4.30	4.58	4.76
217	11334	40.5588	-73.2096	1.20	1.39	1.61	1.78	1.94	2.21	2.53	2.86	3.25	3.59	4.00	4.54	4.85
218	11519	40.3706	-73.9705	1.31	1.58	1.86	2.10	2.36	2.78	3.11	3.42	3.77	4.02	4.25	4.54	4.73
219	11521	40.4260	-73.9809	1.34	1.63	1.98	2.26	2.58	3.07	3.44	3.77	4.15	4.40	4.64	4.94	5.13
220	11527	40.4138	-73.9902	1.55	1.87	2.22	2.54	2.89	3.45	3.89	4.27	4.66	4.90	5.11	5.35	5.52
221	11528	40.3835	-73.9794	1.40	1.69	2.03	2.28	2.56	2.99	3.35	3.69	4.06	4.29	4.50	4.73	4.89
222	11531	40.3334	-74.0101	1.18	1.45	1.77	2.03	2.33	2.78	3.11	3.40	3.73	3.96	4.17	4.43	4.63
223	11538	40.3596	-74.0628	1.52	1.82	2.19	2.49	2.81	3.29	3.68	4.03	4.43	4.68	4.90	5.16	5.33
224	11547	40.4239	-74.0402	1.54	1.88	2.25	2.58	2.96	3.56	4.02	4.41	4.82	5.09	5.32	5.59	5.77
225	11548	40.4301	-74.0557	1.54	1.87	2.26	2.59	2.98	3.58	4.04	4.43	4.86	5.13	5.37	5.66	5.85
226	11549	40.4403	-74.0674	1.54	1.88	2.24	2.58	2.99	3.61	4.08	4.48	4.92	5.20	5.46	5.77	6.00
227	11550	40.4462	-74.0775	1.54	1.88	2.25	2.59	3.00	3.63	4.10	4.50	4.95	5.24	5.50	5.82	6.04
228	11551	40.4498	-74.0988	1.55	1.87	2.30	2.65	3.03	3.61	4.08	4.50	4.96	5.25	5.51	5.81	6.00
229	11553	40.4740	-74.1283	1.55	1.90	2.28	2.65	3.07	3.69	4.18	4.61	5.09	5.40	5.68	5.99	6.21
230	11554	40.4656	-74.1421	1.58	1.90	2.34	2.71	3.11	3.71	4.20	4.65	5.14	5.46	5.74	6.06	6.26
231	11556	40.4595	-74.1696	1.61	1.96	2.33	2.64	3.07	3.78	4.33	4.80	5.31	5.64	5.93	6.24	6.46
232	11557	40.4738	-74.1753	1.60	1.93	2.37	2.75	3.20	3.87	4.39	4.84	5.35	5.68	5.97	6.29	6.51
233	11562	40.4581	-74.2174	1.65	1.99	2.40	2.75	3.20	3.92	4.48	4.96	5.48	5.81	6.10	6.42	6.65
234	11563	40.4649	-74.2337	1.65	1.99	2.42	2.80	3.26	3.97	4.51	4.99	5.53	5.87	6.16	6.51	6.75
235	11564	40.4667	-74.2499	1.66	2.01	2.42	2.82	3.31	4.02	4.57	5.05	5.60	5.94	6.24	6.60	6.84
236	11565	40.4762	-74.2580	1.65	1.99	2.46	2.89	3.38	4.08	4.62	5.11	5.66	6.01	6.32	6.68	6.93
237	11566	40.4859	-74.2619	1.65	1.99	2.45	2.88	3.38	4.10	4.64	5.13	5.70	6.06	6.39	6.78	7.09
238	11567	40.4919	-74.2713	1.65	1.98	2.42	2.81	3.30	4.03	4.58	5.08	5.65	6.02	6.33	6.69	6.92
239	11568	40.4968	-74.2811	1.65	2.00	2.53	2.98	3.46	4.13	4.64	5.10	5.64	5.99	6.28	6.61	6.83
240	11573	40.4618	-74.1330	1.57	1.91	2.26	2.60	3.02	3.68	4.20	4.64	5.13	5.44	5.73	6.06	6.29
241	11580	40.4713	-74.2617	1.66	1.99	2.46	2.90	3.39	4.10	4.63	5.11	5.66	6.02	6.33	6.68	6.93
242	11605	40.4999	-74.2890	1.65	2.01	2.51	2.98	3.52	4.22	4.72	5.17	5.71	6.05	6.36	6.71	6.97
243	11608	40.5078	-74.2886	1.65	2.01	2.53	3.02	3.60	4.38	4.90	5.35	5.87	6.23	6.56	6.99	7.38
244	11610	40.5085	-74.3093	1.67	2.04	2.47	2.86	3.37	4.05	4.52	4.95	5.46	5.81	6.10	6.45	6.68
245	11611	40.5040	-74.3169	1.67	2.00	2.49	2.95	3.47	4.14	4.60	5.02	5.54	5.89	6.21	6.60	6.92
246	11613	40.4855	-74.3410	1.76	2.06	2.56	3.00	3.51	4.17	4.62	5.04	5.54	5.88	6.18	6.54	6.81

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
247	11614	40.4829	-74.3557	1.89	2.18	2.62	3.05	3.56	4.21	4.66	5.07	5.57	5.91	6.21	6.58	6.86
248	11639	40.4282	-74.3576	1.81	2.14	2.62	3.04	3.51	4.08	4.45	4.79	5.20	5.49	5.78	6.17	6.50
249	11640	40.4233	-74.3565	1.82	2.14	2.62	3.04	3.50	4.05	4.42	4.75	5.15	5.43	5.71	6.08	6.38
250	11647	40.4946	-74.2626	1.65	2.00	2.44	2.87	3.38	4.10	4.64	5.13	5.70	6.07	6.40	6.79	7.08
251	11649	40.5006	-74.2585	1.65	2.00	2.50	2.93	3.40	4.08	4.60	5.08	5.65	6.01	6.33	6.67	6.90
252	11650	40.5127	-74.2555	0.44	0.53	0.73	1.26	1.80	2.71	3.36	3.97	4.80	5.46	5.98	6.44	6.71
253	11651	40.5225	-74.2479	0.42	0.52	0.70	1.27	1.80	2.72	3.35	3.93	4.72	5.37	5.89	6.35	6.62
254	11652	40.5338	-74.2502	0.40	0.51	0.68	1.24	1.78	2.69	3.32	3.90	4.69	5.34	5.85	6.31	6.57
255	11653	40.5477	-74.2510	0.39	0.49	0.66	1.22	1.76	2.66	3.27	3.85	4.63	5.27	5.77	6.21	6.47
256	11656	40.5605	-74.2159	0.34	0.44	0.59	1.21	1.80	2.68	3.28	3.84	4.56	5.12	5.56	5.99	6.24
257	11658	40.5831	-74.2080	0.24	0.31	0.43	0.94	1.73	2.65	3.18	3.66	4.30	4.83	5.28	5.70	5.94
258	11663	40.6309	-74.2024	0.19	0.25	0.36	0.73	1.46	2.32	2.80	3.21	3.74	4.17	4.60	5.04	5.30
259	11665	40.6464	-74.1794	0.15	0.21	0.30	0.58	1.20	1.79	2.29	2.68	3.09	3.35	3.61	3.96	4.21
260	11672	40.5999	-74.2239	0.24	0.31	0.43	0.91	1.60	2.41	2.92	3.36	3.95	4.53	5.04	5.49	5.74
261	11673	40.6007	-74.2392	0.05	0.07	0.11	0.80	1.64	2.34	2.86	3.32	3.95	4.53	5.04	5.49	5.74
262	11674	40.6020	-74.2565	0.06	0.09	0.14	0.71	1.67	2.33	2.86	3.35	3.96	4.53	5.03	5.48	5.74
263	11677	40.4806	-74.2339	1.64	1.98	2.43	2.85	3.34	4.03	4.57	5.04	5.58	5.93	6.24	6.60	6.86
264	11678	40.4811	-74.2194	1.63	1.97	2.45	2.86	3.30	3.96	4.47	4.95	5.47	5.81	6.10	6.42	6.64
265	11679	40.4826	-74.2053	1.63	1.96	2.40	2.81	3.28	3.97	4.50	4.96	5.49	5.83	6.12	6.46	6.70
266	11685	40.4991	-74.1286	1.53	1.89	2.26	2.63	3.05	3.67	4.16	4.59	5.09	5.41	5.69	6.01	6.22
267	11690	40.5039	-74.0660	1.49	1.83	2.19	2.53	2.91	3.49	3.94	4.35	4.81	5.11	5.38	5.69	5.89
268	11693	40.5107	-74.0252	1.47	1.79	2.12	2.43	2.80	3.37	3.81	4.20	4.66	4.96	5.24	5.58	5.82
269	11695	40.5102	-73.9995	1.43	1.74	2.06	2.36	2.71	3.25	3.67	4.05	4.49	4.79	5.07	5.41	5.65
270	11698	40.4365	-74.0252	1.53	1.87	2.22	2.55	2.94	3.56	4.02	4.41	4.83	5.10	5.34	5.64	5.84
271	11699	40.4452	-74.0354	1.52	1.85	2.23	2.56	2.93	3.51	3.97	4.37	4.79	5.06	5.30	5.59	5.77
272	11701	40.4632	-74.0504	1.51	1.85	2.21	2.54	2.93	3.54	4.00	4.39	4.84	5.13	5.39	5.70	5.92
273	11704	40.4928	-74.0703	1.50	1.84	2.17	2.48	2.87	3.49	3.97	4.39	4.85	5.16	5.44	5.76	5.99
274	11718	40.4940	-74.2335	1.63	1.97	2.38	2.72	3.18	3.92	4.48	4.97	5.52	5.87	6.16	6.50	6.73
275	11728	40.5248	-74.1262	1.51	1.83	2.23	2.59	3.00	3.63	4.11	4.55	5.05	5.37	5.66	5.98	6.20
276	11729	40.5380	-74.1101	1.50	1.84	2.19	2.53	2.94	3.57	4.07	4.51	5.01	5.34	5.63	5.97	6.20
277	11731	40.5681	-74.0833	1.49	1.82	2.18	2.53	2.94	3.57	4.06	4.49	5.01	5.35	5.65	6.00	6.25
278	11740	40.4943	-74.2453	1.64	1.98	2.39	2.75	3.21	3.94	4.50	5.00	5.56	5.92	6.22	6.57	6.79
279	11754	40.6772	-74.1407	0.10	0.15	0.21	0.47	1.16	1.76	2.29	2.68	3.06	3.30	3.53	3.83	4.06
280	11756	40.6874	-74.1577	0.12	0.19	0.27	0.49	1.09	1.74	2.26	2.66	3.04	3.28	3.51	3.83	4.07
281	11765	40.6476	-74.0951	0.22	0.40	0.60	0.72	0.87	1.05	1.20	1.34	1.51	1.62	1.72	1.83	1.91
282	11774	40.5195	-74.0330	1.48	1.80	2.15	2.46	2.84	3.40	3.85	4.24	4.70	5.01	5.28	5.60	5.82
283	11775	40.5340	-74.0334	1.47	1.79	2.14	2.46	2.84	3.41	3.86	4.26	4.73	5.04	5.32	5.64	5.86
284	11779	40.5966	-74.0427	1.50	1.85	2.20	2.53	2.94	3.56	4.05	4.49	5.01	5.35	5.64	5.97	6.22
285	11780	40.6136	-74.0485	1.52	1.88	2.25	2.59	3.00	3.61	4.10	4.55	5.07	5.40	5.69	6.03	6.27
286	11781	40.6277	-74.0548	0.26	0.37	0.48	0.56	0.65	0.80	0.93	1.07	1.22	1.32	1.39	1.48	1.54
287	11782	40.6423	-74.0548	0.25	0.36	0.47	0.55	0.64	0.78	0.91	1.04	1.19	1.29	1.36	1.45	1.51

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
288	11783	40.6559	-74.0480	0.24	0.35	0.45	0.53	0.62	0.76	0.88	1.01	1.16	1.25	1.33	1.41	1.47
289	11784	40.6675	-74.0417	0.24	0.33	0.45	0.52	0.61	0.76	0.87	1.00	1.15	1.24	1.32	1.40	1.45
290	11785	40.6806	-74.0373	0.24	0.33	0.44	0.52	0.61	0.76	0.87	0.99	1.14	1.24	1.31	1.39	1.45
291	11787	40.7073	-74.0281	0.19	0.28	0.40	0.49	0.59	0.72	0.82	0.93	1.08	1.17	1.25	1.34	1.39
292	11788	40.6884	-74.1156	0.11	0.17	0.24	0.52	1.19	1.79	2.33	2.72	3.11	3.36	3.58	3.87	4.06
293	11792	40.7421	-74.1309	0.15	0.22	0.30	0.52	1.18	1.87	2.35	2.71	3.08	3.32	3.54	3.86	4.08
294	11793	40.7364	-74.1446	0.15	0.22	0.30	0.53	1.23	1.95	2.42	2.78	3.13	3.36	3.58	3.90	4.12
295	11794	40.7341	-74.1585	0.16	0.22	0.31	0.56	1.30	2.05	2.53	2.87	3.23	3.46	3.68	3.98	4.21
296	11795	40.7447	-74.1655	0.17	0.23	0.31	0.56	1.34	2.10	2.59	2.94	3.29	3.52	3.75	4.05	4.27
297	11797	40.7733	-74.1538	0.16	0.22	0.31	0.53	1.36	2.16	2.67	3.02	3.37	3.60	3.83	4.14	4.38
298	11800	40.8180	-74.1359	0.20	0.26	0.38	0.66	1.44	2.26	2.80	3.18	3.55	3.80	4.04	4.40	4.66
299	11821	40.7927	-74.0786	0.19	0.26	0.36	0.62	1.26	1.79	2.13	2.41	2.71	2.92	3.12	3.39	3.59
300	11825	40.8267	-74.0354	0.23	0.28	0.40	0.69	1.24	1.73	2.06	2.35	2.69	2.92	3.12	3.36	3.54
301	11826	40.8471	-74.0300	0.08	0.11	0.16	0.60	1.25	1.67	2.01	2.34	2.74	2.98	3.19	3.42	3.57
302	11827	40.8606	-74.0331	0.08	0.11	0.17	0.61	1.25	1.67	2.00	2.32	2.73	2.97	3.18	3.41	3.57
303	11829	40.8874	-74.0338	0.10	0.13	0.20	0.59	1.23	1.65	1.99	2.30	2.70	2.93	3.13	3.36	3.51
304	11832	40.8224	-74.0461	NaN	NaN	NaN	0.51	0.79	1.52	1.96	2.28	2.63	2.86	3.07	3.35	3.53
305	11834	40.8362	-74.0651	NaN	NaN	NaN	NaN	NaN	NaN	1.48	1.79	2.33	3.23	3.59	3.90	4.10
306	11837	40.8409	-74.0117	0.07	0.10	0.15	0.59	1.24	1.68	2.03	2.37	2.76	2.99	3.18	3.40	3.55
307	11840	40.8705	-73.9959	0.09	0.14	0.22	0.60	1.23	1.66	2.03	2.38	2.77	2.99	3.18	3.39	3.54
308	11851	40.6821	-74.0519	0.27	0.35	0.45	0.53	0.61	0.76	0.90	1.03	1.16	1.24	1.31	1.39	1.45
309	11863	40.6627	-74.0213	0.23	0.33	0.45	0.53	0.62	0.77	0.89	1.01	1.15	1.24	1.32	1.40	1.45
310	11867	40.6850	-74.0140	0.20	0.30	0.43	0.51	0.61	0.75	0.87	0.98	1.13	1.21	1.29	1.37	1.42
311	11871	40.7078	-73.9849	0.14	0.23	0.37	0.47	0.58	0.73	0.83	0.93	1.05	1.12	1.18	1.25	1.30
312	11875	40.7511	-73.9632	0.11	0.21	0.35	0.46	0.56	0.74	0.86	0.96	1.08	1.16	1.23	1.31	1.37
313	11877	40.7767	-73.9398	0.19	0.24	0.34	0.46	0.60	0.78	0.91	1.03	1.18	1.29	1.41	1.57	1.67
314	11878	40.7597	-73.9485	0.12	0.22	0.36	0.46	0.57	0.76	0.88	0.98	1.11	1.21	1.30	1.40	1.47
315	11882	40.8262	-73.9336	0.18	0.22	0.34	0.46	0.58	0.74	0.84	0.92	1.01	1.07	1.13	1.20	1.25
316	11888	40.8787	-73.9262	0.14	0.21	0.38	0.49	0.60	0.74	0.83	0.92	1.02	1.10	1.16	1.24	1.29
317	11895	40.7389	-73.9572	0.12	0.21	0.36	0.46	0.57	0.75	0.87	0.97	1.10	1.19	1.28	1.37	1.44
318	11897	40.7296	-73.9368	0.13	0.22	0.36	0.47	0.60	0.83	0.97	1.09	1.23	1.32	1.40	1.49	1.55
319	11901	40.7185	-74.0228	0.17	0.26	0.39	0.48	0.58	0.71	0.82	0.92	1.07	1.16	1.23	1.31	1.37
320	11902	40.7345	-74.0194	0.16	0.25	0.37	0.46	0.56	0.70	0.80	0.91	1.04	1.12	1.19	1.27	1.32
321	11903	40.7500	-74.0165	0.15	0.25	0.38	0.46	0.56	0.69	0.80	0.90	1.03	1.11	1.17	1.25	1.29
322	11904	40.7670	-74.0067	0.14	0.24	0.37	0.46	0.55	0.69	0.79	0.89	1.01	1.08	1.14	1.21	1.26
323	11905	40.7821	-73.9966	0.14	0.23	0.36	0.46	0.55	0.69	0.79	0.88	1.00	1.07	1.13	1.19	1.24
324	11906	40.7957	-73.9844	0.15	0.23	0.37	0.47	0.56	0.70	0.80	0.89	1.01	1.08	1.14	1.21	1.26
325	11908	40.8291	-73.9640	0.16	0.26	0.41	0.50	0.60	0.73	0.81	0.90	1.01	1.09	1.15	1.23	1.28
326	11909	40.8471	-73.9538	0.15	0.25	0.41	0.50	0.60	0.73	0.82	0.91	1.03	1.11	1.18	1.25	1.30
327	11910	40.8694	-73.9417	0.15	0.26	0.42	0.51	0.61	0.75	0.84	0.93	1.04	1.11	1.17	1.25	1.29
328	11911	40.8903	-73.9315	0.14	0.22	0.39	0.49	0.60	0.74	0.83	0.92	1.02	1.08	1.15	1.22	1.27

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
329	11912	40.9117	-73.9218	0.20	0.23	0.33	0.44	0.57	0.73	0.84	0.93	1.04	1.10	1.17	1.24	1.29
330	11913	40.9359	-73.9136	0.17	0.21	0.29	0.42	0.54	0.70	0.81	0.91	1.03	1.10	1.17	1.24	1.29
331	11930	40.6557	-74.0189	0.25	0.35	0.47	0.55	0.64	0.79	0.92	1.03	1.17	1.26	1.33	1.41	1.47
332	11933	40.6344	-74.0399	0.26	0.37	0.47	0.55	0.65	0.79	0.92	1.05	1.20	1.29	1.37	1.45	1.51
333	11935	40.6114	-74.0384	1.51	1.87	2.23	2.57	2.97	3.59	4.08	4.53	5.05	5.39	5.68	6.02	6.27
334	11936	40.6036	-74.0291	1.48	1.83	2.18	2.51	2.92	3.55	4.03	4.48	5.00	5.33	5.63	5.96	6.19
335	11949	40.5746	-73.9384	1.53	1.86	2.16	2.38	2.67	3.16	3.59	4.00	4.49	4.82	5.09	5.40	5.60
336	11953	40.5828	-73.9524	0.08	0.10	0.17	0.82	1.43	1.96	2.44	2.90	3.43	3.74	4.00	4.29	4.48
337	11968	40.5804	-73.9037	1.56	1.91	2.20	2.58	2.86	3.16	3.55	4.00	4.53	4.86	5.14	5.44	5.64
338	11974	40.5760	-73.8752	0.13	0.18	0.32	0.85	1.11	1.38	1.63	1.93	2.29	2.51	2.69	2.90	3.03
339	11978	40.6277	-73.8796	0.16	0.19	0.30	0.81	1.09	1.36	1.63	1.93	2.26	2.47	2.65	2.85	2.99
340	11982	40.6362	-73.8091	0.06	0.09	0.14	0.88	1.16	1.42	1.73	2.08	2.41	2.59	2.75	2.93	3.05
341	11984	40.6224	-73.8096	0.06	0.08	0.15	0.84	1.15	1.43	1.74	2.09	2.42	2.61	2.77	2.95	3.07
342	11987	40.5943	-73.8118	0.06	0.07	0.12	0.66	1.11	1.45	1.75	2.08	2.44	2.66	2.83	3.03	3.15
343	11996	40.5938	-73.8680	0.11	0.15	0.27	0.86	1.13	1.41	1.67	1.97	2.33	2.54	2.73	2.93	3.06
344	11997	40.5907	-73.8591	0.09	0.12	0.24	0.85	1.14	1.42	1.69	1.99	2.35	2.56	2.74	2.94	3.07
345	12001	40.6188	-73.8520	0.07	0.09	0.14	0.77	1.09	1.37	1.65	1.98	2.32	2.52	2.70	2.89	3.02
346	12002	40.6210	-73.8408	0.05	0.07	0.12	0.74	1.07	1.35	1.65	1.99	2.34	2.54	2.70	2.89	3.02
347	12014	40.6408	-73.8534	0.08	0.10	0.15	0.69	1.04	1.33	1.63	1.98	2.30	2.49	2.65	2.84	2.97
348	12025	40.6068	-73.8895	0.17	0.22	0.37	0.87	1.13	1.39	1.64	1.92	2.28	2.50	2.69	2.89	3.02
349	12031	40.6285	-73.8727	0.13	0.17	0.26	0.80	1.09	1.36	1.64	1.95	2.27	2.48	2.65	2.86	2.99
350	12033	40.5989	-73.8416	0.05	0.08	0.11	0.78	1.12	1.40	1.68	2.00	2.36	2.58	2.75	2.95	3.08
351	12042	40.6054	-73.7904	0.05	0.07	0.14	0.90	1.21	1.51	1.80	2.15	2.50	2.70	2.87	3.06	3.18
352	12043	40.6103	-73.7828	0.05	0.07	0.13	0.91	1.22	1.51	1.81	2.16	2.51	2.71	2.87	3.06	3.18
353	12044	40.6268	-73.7623	0.05	0.08	0.19	0.96	1.25	1.54	1.86	2.23	2.57	2.76	2.92	3.09	3.21
354	12058	40.5442	-73.9413	1.55	1.83	2.19	2.46	2.72	3.12	3.48	3.87	4.33	4.63	4.89	5.19	5.37
355	12071	40.5840	-73.7552	1.34	1.57	1.88	2.13	2.44	2.97	3.40	3.76	4.15	4.41	4.64	4.92	5.12
356	12324	40.6236	-73.3209	1.28	1.50	1.79	2.08	2.43	3.00	3.46	3.87	4.36	4.69	5.00	5.35	5.59
357	12860	40.9369	-73.4551	1.79	2.09	2.51	2.80	3.09	3.48	3.83	4.23	4.70	5.00	5.24	5.52	5.70
358	12888	40.9088	-73.5477	1.85	2.20	2.60	2.90	3.20	3.64	4.03	4.46	4.97	5.27	5.53	5.82	6.00
359	12893	40.9034	-73.6056	1.86	2.20	2.65	2.95	3.25	3.67	4.10	4.57	5.10	5.41	5.68	5.97	6.17
360	12894	40.9008	-73.6156	1.87	2.20	2.65	2.96	3.26	3.69	4.12	4.59	5.13	5.45	5.71	6.01	6.20
361	12898	40.8870	-73.6445	1.88	2.22	2.68	3.00	3.30	3.73	4.19	4.67	5.23	5.55	5.82	6.12	6.32
362	12908	40.8482	-73.6613	1.90	2.26	2.71	3.02	3.34	3.80	4.25	4.75	5.31	5.65	5.92	6.22	6.42
363	12950	40.7690	-73.7565	1.88	2.27	2.75	3.08	3.40	3.89	4.40	4.95	5.55	5.89	6.18	6.49	6.69
364	12951	40.7758	-73.7585	1.87	2.27	2.74	3.07	3.39	3.88	4.38	4.92	5.52	5.86	6.14	6.45	6.66
365	12965	40.9891	-73.6508	1.83	2.19	2.63	2.94	3.22	3.62	4.03	4.52	5.11	5.47	5.76	6.10	6.31
366	12966	40.9856	-73.6613	1.82	2.20	2.66	2.96	3.24	3.61	3.98	4.48	5.11	5.49	5.81	6.15	6.37
367	12976	40.9396	-73.6906	1.85	2.22	2.67	2.97	3.27	3.71	4.15	4.64	5.19	5.52	5.80	6.11	6.31
368	12981	40.9068	-73.7589	1.87	2.24	2.69	3.01	3.32	3.77	4.21	4.74	5.33	5.66	5.94	6.25	6.45
369	12994	40.8787	-73.8206	1.87	2.26	2.74	3.07	3.40	3.87	4.34	4.85	5.40	5.72	5.99	6.28	6.47

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
370	13007	40.8065	-73.7896	1.90	2.26	2.72	3.04	3.37	3.87	4.35	4.88	5.46	5.80	6.07	6.38	6.59
371	13013	40.8181	-73.8412	0.35	0.48	0.63	0.73	0.83	0.99	1.15	1.29	1.46	1.64	1.89	2.14	2.28
372	13014	40.8068	-73.8420	0.33	0.46	0.63	0.75	0.87	1.05	1.17	1.29	1.46	1.64	1.84	2.05	2.17
373	13021	40.9415	-73.7136	1.86	2.23	2.69	3.00	3.30	3.74	4.20	4.70	5.27	5.62	5.90	6.22	6.43
374	13023	40.8611	-73.7725	1.91	2.27	2.73	3.05	3.37	3.85	4.31	4.82	5.39	5.72	5.99	6.28	6.48
375	13038	40.7991	-73.8810	0.28	0.42	0.59	0.70	0.82	0.99	1.11	1.23	1.39	1.58	1.81	2.03	2.16
376	13039	40.8026	-73.8924	0.26	0.40	0.57	0.69	0.80	0.97	1.09	1.20	1.37	1.57	1.86	2.13	2.26
377	13041	40.7971	-73.9056	0.24	0.38	0.55	0.67	0.78	0.95	1.07	1.18	1.35	1.55	1.82	2.06	2.20
378	13048	40.7959	-73.8670	0.30	0.43	0.60	0.72	0.84	1.02	1.14	1.26	1.43	1.61	1.83	2.05	2.17
379	13049	40.7983	-73.8568	0.31	0.44	0.62	0.74	0.86	1.03	1.15	1.27	1.45	1.63	1.83	2.04	2.16
380	13050	40.8014	-73.8436	0.32	0.46	0.63	0.75	0.87	1.05	1.17	1.29	1.47	1.65	1.84	2.04	2.16
381	13051	40.8037	-73.8268	0.34	0.48	0.65	0.77	0.89	1.06	1.19	1.30	1.48	1.67	1.88	2.09	2.21
382	13052	40.8061	-73.8131	0.35	0.49	0.66	0.78	0.91	1.08	1.21	1.33	1.50	1.68	1.87	2.08	2.21
383	13053	40.8026	-73.8014	1.87	2.23	2.69	3.02	3.34	3.83	4.32	4.86	5.44	5.77	6.04	6.35	6.55
384	13054	40.7983	-73.7885	1.88	2.24	2.71	3.04	3.36	3.84	4.33	4.87	5.47	5.80	6.08	6.38	6.59
385	13055	40.8069	-73.7803	1.89	2.26	2.72	3.05	3.37	3.86	4.35	4.88	5.47	5.81	6.08	6.39	6.59
386	13056	40.7873	-73.8631	0.30	0.44	0.61	0.73	0.86	1.04	1.16	1.28	1.46	1.64	1.83	2.02	2.14
387	13068	40.7877	-73.7620	1.88	2.26	2.73	3.06	3.38	3.87	4.37	4.90	5.49	5.84	6.11	6.42	6.63
388	13069	40.8010	-73.7694	1.89	2.25	2.72	3.05	3.37	3.86	4.35	4.89	5.48	5.82	6.10	6.40	6.61
389	13070	40.8463	-73.8065	1.91	2.28	2.74	3.07	3.40	3.89	4.36	4.87	5.42	5.74	6.01	6.30	6.49
390	13071	40.8369	-73.8010	1.91	2.28	2.74	3.07	3.40	3.88	4.36	4.87	5.44	5.76	6.03	6.33	6.52
391	13072	40.8295	-73.7924	1.91	2.27	2.74	3.06	3.39	3.87	4.34	4.87	5.45	5.78	6.05	6.35	6.55
392	13073	40.8197	-73.7823	1.90	2.26	2.72	3.05	3.38	3.87	4.34	4.87	5.45	5.79	6.06	6.37	6.57
393	13074	40.8295	-73.7714	1.90	2.27	2.72	3.05	3.38	3.87	4.34	4.86	5.45	5.78	6.06	6.36	6.57
394	13076	40.8564	-73.7522	1.90	2.25	2.73	3.06	3.37	3.81	4.29	4.81	5.39	5.72	5.99	6.29	6.50
395	13077	40.8685	-73.7472	1.90	2.25	2.72	3.05	3.36	3.80	4.27	4.79	5.37	5.70	5.97	6.27	6.47
396	13078	40.8834	-73.7370	1.90	2.28	2.69	3.01	3.34	3.83	4.27	4.76	5.33	5.66	5.93	6.23	6.42
397	13079	40.8955	-73.7218	1.88	2.25	2.70	3.01	3.32	3.77	4.22	4.73	5.29	5.62	5.89	6.19	6.39
398	13080	40.8955	-73.7585	1.88	2.25	2.70	3.01	3.33	3.78	4.22	4.74	5.33	5.66	5.94	6.24	6.44
399	13085	40.8713	-73.7768	1.91	2.27	2.72	3.04	3.37	3.85	4.30	4.81	5.38	5.71	5.97	6.27	6.46
400	13086	40.8740	-73.7608	1.90	2.26	2.71	3.04	3.35	3.82	4.27	4.79	5.36	5.69	5.96	6.26	6.46
401	13087	40.8998	-73.6984	1.88	2.25	2.69	3.00	3.31	3.76	4.21	4.70	5.26	5.59	5.86	6.16	6.36
402	13088	40.9068	-73.6750	1.87	2.24	2.68	2.99	3.29	3.74	4.18	4.67	5.22	5.55	5.82	6.13	6.32
403	13090	40.9325	-73.6328	1.85	2.17	2.65	2.97	3.25	3.65	4.10	4.57	5.10	5.43	5.70	5.99	6.20
404	13093	40.9606	-73.5637	1.83	2.16	2.57	2.87	3.17	3.60	3.98	4.42	4.93	5.24	5.51	5.80	5.99
405	13096	40.9954	-73.5075	1.81	2.10	2.53	2.83	3.11	3.49	3.86	4.30	4.79	5.09	5.34	5.63	5.81
406	13097	40.8888	-73.6785	1.88	2.25	2.70	3.01	3.31	3.75	4.21	4.70	5.26	5.59	5.86	6.16	6.36
407	13732	40.3595	-73.9774	1.13	1.41	1.74	1.99	2.25	2.65	2.98	3.29	3.64	3.87	4.08	4.34	4.51
408	13751	40.5004	-74.3170	1.67	2.00	2.52	2.97	3.47	4.12	4.57	4.98	5.47	5.80	6.08	6.41	6.63
409	13754	40.4860	-74.3276	1.69	2.02	2.49	2.95	3.47	4.15	4.61	5.03	5.55	5.90	6.23	6.65	7.02
410	13755	40.4820	-74.3386	1.71	2.06	2.47	2.87	3.38	4.07	4.54	4.96	5.46	5.80	6.10	6.44	6.67

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
411	13761	40.5503	-74.2402	0.38	0.48	0.65	1.22	1.77	2.68	3.29	3.87	4.63	5.26	5.75	6.19	6.45
412	13767	40.5720	-74.1790	NaN	NaN	0.47	0.72	1.59	2.52	3.16	3.69	4.39	4.91	5.34	5.75	6.00
413	13768	40.5889	-74.1793	0.23	0.30	0.43	0.93	1.74	2.64	3.19	3.67	4.31	4.84	5.30	5.72	5.97
414	13772	40.6165	-74.2011	0.20	0.26	0.36	0.80	1.56	2.46	2.94	3.34	3.90	4.38	4.83	5.26	5.52
415	13775	40.6035	-74.1974	0.21	0.26	0.37	0.86	1.64	2.55	3.03	3.45	4.05	4.56	5.01	5.43	5.68
416	13780	40.6612	-74.1570	0.12	0.18	0.25	0.48	1.11	1.71	2.23	2.63	3.02	3.26	3.49	3.82	4.06
417	13785	40.6606	-74.1357	0.10	0.15	0.21	0.47	1.18	1.77	2.29	2.69	3.07	3.31	3.54	3.84	4.06
418	13786	40.6681	-74.1295	0.10	0.15	0.21	0.47	1.18	1.78	2.31	2.70	3.08	3.32	3.55	3.84	4.05
419	13788	40.6384	-74.1537	0.10	0.16	0.23	0.54	1.16	1.73	2.22	2.62	3.02	3.27	3.52	3.85	4.08
420	13792	40.6956	-74.1218	0.12	0.18	0.25	0.50	1.18	1.78	2.31	2.71	3.10	3.34	3.57	3.85	4.05
421	13809	40.5361	-74.1386	1.56	1.90	2.30	2.68	3.11	3.77	4.28	4.73	5.24	5.58	5.87	6.22	6.46
422	13810	40.5234	-74.1451	1.53	1.86	2.26	2.63	3.06	3.71	4.21	4.66	5.17	5.51	5.80	6.14	6.38
423	13818	40.6504	-74.1139	0.32	0.39	0.53	0.69	0.89	1.19	1.38	1.58	1.85	2.03	2.19	2.38	2.52
424	13819	40.6456	-74.1464	0.10	0.15	0.22	0.53	1.16	1.73	2.23	2.63	3.02	3.27	3.50	3.82	4.06
425	13837	40.6720	-74.0185	0.24	0.34	0.45	0.53	0.63	0.78	0.89	1.01	1.15	1.24	1.31	1.39	1.45
426	13859	40.7394	-74.0250	0.16	0.25	0.37	0.46	0.55	0.69	0.79	0.90	1.03	1.12	1.19	1.27	1.32
427	13862	40.7954	-73.9927	0.14	0.23	0.36	0.46	0.56	0.70	0.79	0.88	0.99	1.06	1.12	1.19	1.24
428	13872	40.9922	-73.9016	0.13	0.18	0.27	0.41	0.53	0.69	0.82	0.94	1.07	1.15	1.21	1.28	1.33
429	13874	40.8750	-73.9156	0.14	0.22	0.38	0.49	0.62	0.78	0.88	0.97	1.07	1.14	1.21	1.28	1.33
430	13883	40.8728	-73.9114	0.13	0.22	0.37	0.49	0.62	0.78	0.88	0.97	1.08	1.15	1.21	1.28	1.33
431	13888	40.8019	-73.9265	0.19	0.23	0.35	0.47	0.61	0.81	0.95	1.08	1.25	1.37	1.50	1.68	1.79
432	13891	40.7904	-73.9354	0.19	0.23	0.35	0.47	0.61	0.79	0.92	1.05	1.21	1.32	1.47	1.65	1.76
433	13893	40.7821	-73.9415	0.19	0.23	0.35	0.48	0.61	0.79	0.92	1.04	1.19	1.31	1.45	1.63	1.73
434	13899	40.7346	-73.9677	0.11	0.21	0.34	0.45	0.56	0.74	0.86	0.96	1.08	1.16	1.23	1.31	1.37
435	13908	40.7721	-73.9439	0.20	0.24	0.35	0.45	0.57	0.75	0.87	0.98	1.10	1.18	1.24	1.31	1.36
436	13919	40.7912	-73.9034	0.24	0.38	0.55	0.67	0.78	0.94	1.06	1.18	1.34	1.55	1.80	2.03	2.16
437	13927	40.8022	-73.8600	0.31	0.44	0.61	0.73	0.85	1.01	1.14	1.26	1.43	1.61	1.83	2.06	2.18
438	13931	40.7976	-73.8320	0.33	0.47	0.64	0.76	0.89	1.06	1.18	1.30	1.47	1.66	1.86	2.07	2.20
439	13936	40.7996	-73.7551	1.88	2.25	2.71	3.04	3.37	3.86	4.36	4.90	5.49	5.83	6.11	6.41	6.62
440	13942	40.8091	-73.7129	1.90	2.31	2.72	3.04	3.38	3.90	4.37	4.89	5.49	5.83	6.11	6.41	6.62
441	13945	40.8299	-73.7050	1.91	2.27	2.72	3.05	3.37	3.86	4.35	4.88	5.47	5.81	6.09	6.39	6.59
442	13960	40.8136	-73.6511	1.91	2.30	2.71	3.02	3.36	3.88	4.33	4.81	5.38	5.73	6.00	6.31	6.50
443	13966	40.9095	-73.5951	1.85	2.18	2.62	2.93	3.22	3.64	4.06	4.53	5.05	5.37	5.63	5.93	6.12
444	14070	40.5784	-74.0134	1.49	1.83	2.18	2.51	2.90	3.51	3.99	4.42	4.93	5.27	5.56	5.90	6.14
445	14088	40.5766	-73.8985	1.62	1.97	2.31	2.59	2.88	3.30	3.65	4.04	4.53	4.86	5.13	5.42	5.62
446	14093	40.6094	-73.8790	0.15	0.19	0.30	0.85	1.12	1.39	1.64	1.95	2.30	2.51	2.69	2.89	3.02
447	14117	40.6469	-73.8212	0.08	0.10	0.17	0.88	1.15	1.41	1.69	2.06	2.39	2.58	2.73	2.91	3.03
448	14122	40.6295	-73.8109	0.06	0.09	0.15	0.87	1.16	1.43	1.74	2.08	2.41	2.60	2.76	2.94	3.05
449	14126	40.6265	-73.7969	0.06	0.08	0.17	0.89	1.17	1.44	1.75	2.10	2.44	2.62	2.78	2.96	3.08
450	14135	40.5918	-73.8262	0.06	0.09	0.16	0.73	1.12	1.42	1.72	2.04	2.41	2.63	2.81	3.00	3.13
451	14144	40.6204	-73.7695	0.05	0.08	0.17	0.93	1.23	1.52	1.83	2.19	2.53	2.72	2.88	3.07	3.18

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
452	14156	40.5813	-73.8675	0.11	0.16	0.30	0.86	1.13	1.40	1.66	1.97	2.32	2.54	2.72	2.92	3.05
453	14158	40.6150	-73.8695	0.12	0.16	0.25	0.80	1.10	1.38	1.65	1.96	2.30	2.51	2.69	2.89	3.01
454	14173	40.6014	-73.7964	0.05	0.07	0.15	0.88	1.20	1.51	1.80	2.14	2.49	2.69	2.86	3.05	3.18
455	14190	40.5430	-73.9342	1.49	1.77	2.06	2.41	2.70	3.07	3.47	3.86	4.30	4.60	4.87	5.17	5.37
456	14196	40.5703	-73.8513	1.37	1.65	2.03	2.32	2.63	3.15	3.62	4.02	4.44	4.71	4.95	5.23	5.42
457	3817	40.4798	-74.0196	NaN	NaN	NaN	NaN	1.30	3.15	3.68	4.09	4.52	4.80	5.05	5.34	5.54
458	3900	40.5281	-74.0137	1.45	1.74	2.13	2.43	2.74	3.21	3.63	4.03	4.50	4.80	5.07	5.38	5.57
459	3900	40.5323	-74.0077	1.46	1.74	2.13	2.43	2.74	3.21	3.63	4.04	4.51	4.82	5.09	5.40	5.60
460	3915	40.5491	-73.9468	1.51	1.81	2.11	2.32	2.59	3.07	3.48	3.87	4.34	4.65	4.92	5.22	5.43
461	3592	40.5736	-73.8834	1.67	2.04	2.38	2.65	2.95	3.37	3.72	4.09	4.57	4.89	5.15	5.45	5.64
462	13053	40.8033	-73.8071	0.36	0.49	0.67	0.79	0.91	1.09	1.21	1.33	1.51	1.68	1.88	2.09	2.22
463	3856	40.5019	-74.1620	1.56	1.90	2.31	2.69	3.13	3.78	4.28	4.74	5.25	5.59	5.88	6.21	6.43
464	11778	40.5761	-74.0340	1.49	1.84	2.17	2.49	2.89	3.51	3.99	4.42	4.93	5.27	5.56	5.90	6.12
465	11650	40.5139	-74.2559	0.44	0.53	0.73	1.26	1.79	2.71	3.36	3.97	4.79	5.45	5.97	6.44	6.70
466	11781	40.6251	-74.0581	0.27	0.37	0.48	0.56	0.65	0.80	0.93	1.07	1.23	1.32	1.40	1.49	1.55
467	11781	40.6279	-74.0490	0.26	0.37	0.48	0.56	0.66	0.81	0.94	1.07	1.22	1.31	1.39	1.48	1.53
468	11861	40.6684	-74.0003	0.21	0.31	0.43	0.52	0.62	0.77	0.89	1.00	1.14	1.24	1.32	1.40	1.46
469	11895	40.7378	-73.9595	0.12	0.21	0.36	0.46	0.57	0.75	0.87	0.98	1.11	1.20	1.28	1.37	1.43
470	11784	40.6702	-74.0444	0.23	0.33	0.44	0.52	0.61	0.75	0.87	0.99	1.15	1.24	1.32	1.40	1.45
471	11766	40.6501	-74.0817	0.29	0.38	0.48	0.56	0.65	0.80	0.93	1.07	1.24	1.34	1.42	1.51	1.56
472	11741	40.6448	-74.1522	0.11	0.15	0.22	0.53	1.15	1.72	2.23	2.62	3.02	3.27	3.51	3.84	4.07
473	4157	40.6800	-74.1306	0.10	0.15	0.21	0.46	1.17	1.77	2.30	2.69	3.07	3.31	3.54	3.84	4.05
474	4261	40.7494	-74.0844	0.16	0.21	0.28	0.53	1.30	1.90	2.32	2.65	3.03	3.27	3.48	3.73	3.91
475	3967	40.5778	-74.2097	0.25	0.32	0.45	0.96	1.75	2.67	3.22	3.71	4.37	4.91	5.36	5.77	6.02
476	3551	40.4670	-74.0144	1.50	1.83	2.19	2.51	2.88	3.46	3.91	4.31	4.74	5.01	5.25	5.54	5.73
477	11982	40.6385	-73.8130	0.07	0.09	0.14	0.87	1.15	1.42	1.72	2.07	2.40	2.59	2.74	2.92	3.04
478	4135	40.6533	-74.0645	0.25	0.35	0.45	0.53	0.61	0.76	0.88	1.02	1.17	1.27	1.34	1.43	1.48
479	7673	40.6992	-74.0154	0.19	0.28	0.41	0.50	0.60	0.74	0.85	0.95	1.09	1.17	1.25	1.33	1.39
480	13067	40.7829	-73.8682	0.30	0.44	0.60	0.73	0.86	1.04	1.16	1.28	1.46	1.63	1.82	2.01	2.13
481	4103	40.6394	-74.1606	0.11	0.16	0.22	0.54	1.15	1.73	2.21	2.61	3.01	3.26	3.50	3.83	4.07
482	11749	40.7050	-74.1123	0.12	0.18	0.26	0.55	1.22	1.80	2.32	2.72	3.13	3.38	3.60	3.87	4.06
483	11907	40.8100	-73.9758	0.15	0.24	0.39	0.48	0.58	0.71	0.81	0.90	1.01	1.09	1.15	1.22	1.27

Appendix XII
Table of Best Estimate AEF Values for Water Levels at 483 Save Point Locations
Alt3b Condition

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
1	350	41.0025	-73.5513	1.82	2.13	2.56	2.85	3.12	3.49	3.85	4.28	4.80	5.11	5.38	5.67	5.87
2	3486	40.4558	-74.3716	1.75	2.07	2.52	2.95	3.45	4.09	4.53	4.92	5.39	5.71	6.02	6.45	6.86
3	3493	40.4917	-74.2624	1.57	1.89	2.32	2.73	3.23	3.91	4.42	4.88	5.40	5.73	6.03	6.38	6.66
4	3503	40.6439	-74.1899	0.06	0.10	0.14	0.36	1.37	2.16	2.79	3.34	3.90	4.25	4.55	4.89	5.11
5	3538	40.4183	-74.0350	1.48	1.77	2.16	2.46	2.79	3.30	3.73	4.11	4.50	4.75	4.97	5.22	5.40
6	3544	40.6992	-74.0214	1.41	1.72	2.08	2.40	2.79	3.36	3.81	4.21	4.66	4.95	5.21	5.50	5.71
7	3561	40.4509	-73.9802	1.35	1.61	1.94	2.20	2.46	2.87	3.25	3.60	4.00	4.25	4.47	4.74	4.92
8	3575	41.7833	-73.9500	1.04	1.25	1.47	1.68	1.90	2.20	2.44	2.67	2.98	3.22	3.44	3.71	3.93
9	3584	40.5471	-73.9231	1.39	1.68	1.99	2.35	2.66	3.06	3.50	3.88	4.30	4.58	4.82	5.11	5.30
10	3592	40.5735	-73.8849	1.62	1.95	2.28	2.55	2.84	3.25	3.60	3.95	4.37	4.65	4.89	5.17	5.35
11	3594	41.0783	-73.8700	1.12	1.31	1.59	1.81	2.05	2.36	2.57	2.76	2.99	3.16	3.34	3.59	3.81
12	3600	42.2531	-73.8018	1.34	1.60	1.93	2.24	2.52	2.83	3.06	3.34	3.79	4.10	4.39	4.70	4.91
13	3612	40.9229	-73.7400	1.86	2.22	2.66	2.97	3.27	3.68	4.06	4.55	5.15	5.50	5.78	6.08	6.29
14	3625	40.5783	-73.5802	1.26	1.51	1.83	2.07	2.34	2.83	3.26	3.63	4.04	4.31	4.56	4.84	5.04
15	3725	40.1074	-74.0268	1.29	1.54	1.81	2.02	2.24	2.59	2.89	3.17	3.53	3.81	4.10	4.43	4.65
16	3731	40.1478	-74.0166	1.30	1.53	1.81	2.02	2.23	2.58	2.88	3.16	3.51	3.78	4.05	4.38	4.60
17	3737	40.1876	-74.0026	1.29	1.53	1.80	2.01	2.22	2.56	2.86	3.14	3.48	3.73	3.99	4.30	4.50
18	3739	40.2011	-73.9997	1.30	1.53	1.82	2.02	2.23	2.57	2.88	3.16	3.50	3.75	4.00	4.32	4.53
19	3749	40.2681	-73.9800	1.29	1.54	1.79	1.99	2.23	2.63	2.93	3.20	3.53	3.78	4.02	4.32	4.51
20	3751	40.2817	-73.9773	1.28	1.51	1.80	2.01	2.22	2.55	2.86	3.15	3.50	3.75	4.00	4.31	4.50
21	3757	40.3223	-73.9689	1.30	1.54	1.80	2.01	2.24	2.61	2.92	3.21	3.55	3.80	4.03	4.32	4.51
22	3758	40.3224	-73.9735	1.31	1.59	1.90	2.15	2.43	2.85	3.16	3.45	3.80	4.04	4.28	4.57	4.77
23	3761	40.3457	-73.9544	1.30	1.52	1.80	2.01	2.22	2.57	2.90	3.20	3.55	3.80	4.04	4.33	4.53
24	3765	40.3675	-73.9649	1.31	1.56	1.81	2.02	2.26	2.65	2.98	3.28	3.64	3.89	4.13	4.43	4.63
25	3768	40.3909	-73.9730	1.32	1.59	1.92	2.17	2.48	2.95	3.31	3.64	4.02	4.29	4.54	4.85	5.08
26	3769	40.3948	-73.9620	1.31	1.56	1.81	2.01	2.26	2.69	3.05	3.36	3.72	3.97	4.21	4.51	4.71
27	3771	40.4078	-73.9563	1.31	1.56	1.81	2.01	2.26	2.70	3.06	3.38	3.75	4.00	4.24	4.53	4.73
28	3775	40.4205	-73.9502	1.32	1.57	1.82	2.00	2.25	2.69	3.05	3.37	3.74	4.00	4.24	4.54	4.74
29	3777	40.4263	-74.0461	1.47	1.77	2.12	2.44	2.80	3.36	3.79	4.15	4.55	4.80	5.02	5.28	5.46
30	3779	40.4342	-73.9512	1.33	1.57	1.87	2.09	2.31	2.68	3.06	3.40	3.78	4.04	4.28	4.57	4.77
31	3788	40.4478	-73.9493	1.33	1.58	1.83	2.02	2.27	2.72	3.11	3.45	3.82	4.08	4.32	4.60	4.80
32	3789	40.4478	-74.0039	1.45	1.75	2.09	2.39	2.74	3.29	3.72	4.08	4.47	4.72	4.94	5.20	5.37
33	3790	40.4515	-74.0850	1.47	1.78	2.13	2.45	2.84	3.43	3.87	4.25	4.68	4.95	5.21	5.51	5.74
34	3793	40.4569	-74.1117	1.48	1.78	2.16	2.49	2.87	3.45	3.90	4.29	4.72	5.00	5.24	5.52	5.71
35	3797	40.4605	-73.9527	1.33	1.59	1.87	2.11	2.39	2.85	3.22	3.55	3.92	4.17	4.41	4.68	4.87
36	3799	40.4608	-74.0435	1.45	1.75	2.10	2.41	2.78	3.34	3.76	4.13	4.53	4.79	5.03	5.31	5.51
37	3800	40.4637	-74.1541	1.51	1.83	2.15	2.47	2.89	3.54	4.03	4.46	4.92	5.21	5.46	5.76	5.96
38	3801	40.4663	-74.1941	1.54	1.85	2.29	2.65	3.07	3.69	4.17	4.61	5.09	5.39	5.64	5.93	6.12
39	3802	40.4677	-74.1191	1.48	1.78	2.18	2.51	2.88	3.43	3.88	4.28	4.73	5.01	5.26	5.54	5.73
40	3804	40.4695	-73.9662	1.35	1.61	1.92	2.18	2.45	2.88	3.25	3.59	3.98	4.22	4.45	4.71	4.90
41	3807	40.4709	-74.0317	1.44	1.74	2.08	2.38	2.74	3.28	3.70	4.06	4.46	4.71	4.95	5.22	5.42

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
42	3808	40.4714	-74.2107	1.55	1.86	2.30	2.68	3.10	3.73	4.21	4.66	5.15	5.45	5.71	6.00	6.20
43	3810	40.4724	-74.0406	1.44	1.74	2.08	2.39	2.75	3.30	3.72	4.09	4.49	4.75	4.99	5.27	5.46
44	3814	40.4767	-73.9813	1.36	1.65	1.93	2.19	2.50	2.99	3.38	3.72	4.10	4.35	4.59	4.89	5.11
45	3815	40.4771	-74.0559	1.45	1.75	2.09	2.40	2.77	3.33	3.76	4.13	4.54	4.81	5.05	5.34	5.54
46	3822	40.4795	-74.0064	1.41	1.69	2.05	2.33	2.62	3.05	3.44	3.81	4.21	4.47	4.69	4.96	5.15
47	3823	40.4796	-73.9986	1.38	1.63	1.96	2.22	2.50	2.93	3.31	3.66	4.05	4.29	4.51	4.76	4.94
48	3827	40.4838	-74.2589	1.57	1.90	2.29	2.67	3.16	3.85	4.37	4.84	5.35	5.68	5.96	6.28	6.51
49	3829	40.4847	-74.0905	1.46	1.76	2.13	2.45	2.82	3.38	3.82	4.21	4.64	4.92	5.16	5.45	5.64
50	3830	40.4856	-74.3409	1.71	1.99	2.46	2.88	3.38	4.02	4.46	4.86	5.33	5.64	5.92	6.25	6.50
51	3853	40.4975	-74.2220	1.55	1.85	2.28	2.67	3.13	3.78	4.27	4.73	5.23	5.54	5.81	6.13	6.34
52	3854	40.4981	-74.1388	1.48	1.79	2.16	2.51	2.91	3.51	3.97	4.39	4.84	5.14	5.39	5.70	5.90
53	3860	40.5027	-74.2114	1.54	1.85	2.25	2.64	3.10	3.75	4.25	4.70	5.20	5.52	5.80	6.14	6.38
54	3864	40.5040	-74.1767	1.50	1.83	2.17	2.50	2.93	3.58	4.08	4.53	5.01	5.32	5.59	5.90	6.11
55	3871	40.5066	-74.1943	1.52	1.84	2.21	2.57	3.01	3.67	4.16	4.61	5.11	5.43	5.71	6.03	6.26
56	3872	40.5077	-73.9378	1.36	1.62	1.89	2.13	2.43	2.90	3.29	3.63	4.02	4.28	4.53	4.82	5.03
57	3873	40.5081	-73.9545	1.37	1.64	1.92	2.18	2.48	2.97	3.35	3.70	4.09	4.35	4.59	4.89	5.10
58	3874	40.5081	-74.1910	1.51	1.84	2.20	2.55	2.99	3.65	4.14	4.59	5.09	5.40	5.68	6.01	6.23
59	3877	40.5102	-74.3003	1.61	1.95	2.45	2.93	3.46	4.13	4.58	4.99	5.46	5.79	6.11	6.53	6.95
60	3879	40.5119	-73.9072	1.34	1.60	1.84	2.08	2.36	2.82	3.19	3.53	3.92	4.19	4.44	4.74	4.94
61	3880	40.5142	-73.9704	1.39	1.65	1.99	2.26	2.54	2.96	3.35	3.72	4.12	4.39	4.62	4.90	5.08
62	3882	40.5149	-74.1482	1.47	1.77	2.15	2.49	2.90	3.51	3.98	4.40	4.87	5.17	5.44	5.75	5.96
63	3887	40.5191	-74.1598	1.48	1.79	2.13	2.45	2.86	3.50	3.99	4.43	4.91	5.22	5.49	5.79	6.00
64	3889	40.5206	-74.1379	1.47	1.77	2.14	2.48	2.89	3.50	3.97	4.38	4.84	5.15	5.42	5.74	5.96
65	3890	40.5227	-73.9845	1.40	1.66	2.01	2.28	2.57	3.00	3.40	3.77	4.18	4.45	4.68	4.97	5.15
66	3891	40.5230	-74.0495	1.43	1.73	2.06	2.37	2.73	3.30	3.73	4.11	4.53	4.82	5.07	5.39	5.62
67	3892	40.5238	-73.9126	1.36	1.60	1.91	2.15	2.41	2.83	3.24	3.60	4.00	4.27	4.52	4.81	5.01
68	3894	40.5278	-74.2449	0.14	0.17	0.23	0.42	1.05	1.70	2.34	2.92	3.57	4.00	4.35	4.70	4.92
69	3896	40.5300	-74.1099	1.45	1.76	2.08	2.40	2.79	3.39	3.85	4.26	4.71	5.00	5.27	5.59	5.81
70	3902	40.5351	-74.0872	1.45	1.74	2.10	2.42	2.79	3.36	3.81	4.20	4.64	4.93	5.18	5.49	5.68
71	3903	40.5384	-73.9022	1.36	1.61	1.92	2.16	2.42	2.87	3.28	3.64	4.04	4.32	4.56	4.86	5.05
72	3904	40.5400	-74.2495	0.14	0.18	0.24	0.43	1.06	1.73	2.36	2.91	3.55	3.98	4.33	4.68	4.90
73	3905	40.5401	-73.8846	1.36	1.60	1.90	2.13	2.38	2.83	3.25	3.60	4.01	4.28	4.53	4.82	5.02
74	3906	40.5407	-73.8668	1.34	1.59	1.85	2.08	2.37	2.86	3.25	3.59	3.99	4.26	4.50	4.79	4.99
75	3907	40.5415	-74.1018	1.45	1.74	2.10	2.43	2.81	3.39	3.83	4.23	4.68	4.97	5.23	5.53	5.74
76	3908	40.5421	-74.0092	1.41	1.68	2.05	2.33	2.63	3.10	3.51	3.90	4.33	4.60	4.85	5.13	5.33
77	3910	40.5423	-73.8490	1.34	1.58	1.87	2.09	2.33	2.79	3.22	3.57	3.98	4.24	4.49	4.77	4.97
78	3912	40.5448	-74.0745	1.45	1.74	2.07	2.39	2.76	3.34	3.79	4.18	4.63	4.92	5.19	5.51	5.75
79	3917	40.5507	-73.8161	1.33	1.57	1.86	2.07	2.31	2.79	3.23	3.59	3.99	4.25	4.49	4.76	4.95
80	3918	40.5518	-74.0915	1.45	1.74	2.08	2.40	2.79	3.38	3.83	4.23	4.68	4.98	5.25	5.57	5.82
81	3919	40.5531	-74.0605	1.44	1.74	2.06	2.37	2.75	3.32	3.77	4.16	4.60	4.89	5.16	5.48	5.71
82	3920	40.5538	-74.2468	0.14	0.18	0.24	0.44	1.09	1.79	2.45	3.00	3.63	4.04	4.38	4.73	4.95

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
83	3921	40.5546	-74.2364	0.13	0.16	0.23	0.43	1.12	1.82	2.47	3.03	3.65	4.05	4.38	4.73	4.95
84	3922	40.5554	-74.0117	1.42	1.72	2.04	2.34	2.70	3.24	3.67	4.05	4.48	4.76	5.01	5.32	5.54
85	3926	40.5574	-73.8005	1.33	1.57	1.86	2.08	2.32	2.82	3.26	3.63	4.04	4.30	4.53	4.80	4.99
86	3927	40.5589	-74.2308	0.13	0.16	0.22	0.42	1.15	1.85	2.50	3.06	3.67	4.07	4.40	4.74	4.96
87	3928	40.5604	-73.9310	1.53	1.81	2.16	2.42	2.69	3.09	3.48	3.86	4.29	4.57	4.81	5.09	5.28
88	3930	40.5613	-74.0837	1.45	1.74	2.07	2.38	2.77	3.35	3.80	4.20	4.66	4.96	5.23	5.55	5.78
89	3931	40.5634	-73.7843	1.33	1.56	1.85	2.08	2.32	2.83	3.28	3.65	4.06	4.32	4.56	4.83	5.01
90	3934	40.5660	-74.0220	1.42	1.73	2.03	2.32	2.68	3.24	3.68	4.06	4.50	4.79	5.04	5.35	5.57
91	3937	40.5666	-74.0391	1.43	1.74	2.04	2.33	2.69	3.26	3.70	4.09	4.53	4.82	5.08	5.39	5.61
92	3938	40.5667	-73.5909	1.29	1.50	1.76	1.96	2.20	2.71	3.15	3.53	3.94	4.21	4.45	4.74	4.94
93	3940	40.5679	-73.5731	1.28	1.50	1.76	1.97	2.20	2.70	3.15	3.52	3.93	4.19	4.44	4.74	4.94
94	3941	40.5685	-73.6087	1.30	1.52	1.79	2.00	2.24	2.77	3.22	3.60	4.01	4.27	4.51	4.79	4.98
95	3943	40.5697	-73.6266	1.30	1.52	1.79	2.01	2.26	2.80	3.25	3.62	4.04	4.30	4.54	4.81	5.00
96	3946	40.5705	-73.7689	1.33	1.56	1.85	2.08	2.33	2.85	3.31	3.69	4.09	4.36	4.59	4.86	5.04
97	3948	40.5712	-73.6803	1.32	1.53	1.81	2.02	2.28	2.82	3.26	3.64	4.05	4.31	4.55	4.81	4.99
98	3949	40.5713	-73.9721	1.42	1.70	2.06	2.35	2.65	3.10	3.51	3.91	4.36	4.65	4.90	5.19	5.38
99	3950	40.5717	-73.6982	1.32	1.54	1.81	2.03	2.28	2.82	3.27	3.65	4.06	4.33	4.56	4.82	5.00
100	3951	40.5717	-73.6444	1.30	1.52	1.80	2.01	2.26	2.80	3.25	3.62	4.04	4.30	4.54	4.81	5.00
101	3953	40.5721	-73.6623	1.30	1.54	1.77	2.00	2.32	2.86	3.29	3.66	4.07	4.33	4.56	4.84	5.02
102	3954	40.5724	-73.7162	1.32	1.54	1.82	2.04	2.29	2.82	3.27	3.65	4.06	4.32	4.55	4.81	4.99
103	3957	40.5736	-74.0735	1.44	1.74	2.06	2.38	2.76	3.34	3.79	4.19	4.65	4.95	5.22	5.54	5.78
104	3958	40.5741	-73.9135	1.55	1.86	2.22	2.47	2.72	3.10	3.48	3.87	4.32	4.60	4.85	5.13	5.32
105	3960	40.5742	-73.7518	1.33	1.56	1.84	2.06	2.32	2.84	3.30	3.68	4.09	4.35	4.58	4.85	5.03
106	3961	40.5745	-73.7339	1.32	1.55	1.83	2.06	2.31	2.84	3.30	3.68	4.09	4.35	4.58	4.84	5.02
107	3963	40.5761	-73.8957	1.70	2.00	2.34	2.60	2.89	3.32	3.69	4.06	4.48	4.75	4.98	5.24	5.42
108	3966	40.5774	-73.5209	1.27	1.49	1.76	1.97	2.21	2.74	3.20	3.59	4.01	4.29	4.54	4.84	5.05
109	3967	40.5776	-74.2114	0.08	0.12	0.17	0.37	1.34	2.11	2.71	3.27	3.86	4.23	4.54	4.87	5.09
110	3971	40.5793	-74.0204	1.43	1.74	2.05	2.35	2.71	3.27	3.71	4.09	4.53	4.82	5.08	5.39	5.62
111	3972	40.5801	-74.0424	1.43	1.74	2.05	2.35	2.72	3.29	3.73	4.12	4.57	4.86	5.12	5.42	5.66
112	3990	40.5848	-74.0021	1.43	1.75	2.06	2.36	2.72	3.28	3.72	4.11	4.55	4.84	5.09	5.41	5.62
113	3998	40.5883	-73.7756	1.34	1.59	1.93	2.21	2.53	3.11	3.59	3.99	4.42	4.69	4.93	5.20	5.37
114	3999	40.5889	-73.8296	0.06	0.09	0.17	0.89	1.16	1.43	1.68	1.98	2.33	2.54	2.72	2.91	3.03
115	4004	40.5915	-74.2025	0.07	0.11	0.16	0.36	1.37	2.16	2.74	3.30	3.89	4.26	4.57	4.90	5.12
116	4008	40.5926	-74.0237	1.43	1.74	2.05	2.35	2.72	3.29	3.73	4.12	4.57	4.86	5.12	5.42	5.64
117	4010	40.5931	-74.0478	1.43	1.74	2.07	2.39	2.76	3.33	3.76	4.15	4.59	4.88	5.14	5.47	5.70
118	4019	40.5970	-73.8152	0.05	0.07	0.11	0.90	1.17	1.44	1.71	2.03	2.36	2.56	2.73	2.92	3.04
119	4024	40.6005	-73.4177	1.26	1.47	1.73	1.94	2.21	2.72	3.18	3.58	4.04	4.34	4.63	4.97	5.19
120	4028	40.6029	-73.7991	0.05	0.06	0.17	0.94	1.20	1.46	1.74	2.06	2.40	2.60	2.76	2.94	3.06
121	4051	40.6134	-73.2605	1.23	1.42	1.66	1.85	2.08	2.52	2.95	3.36	3.82	4.15	4.47	4.88	5.15
122	4054	40.6144	-73.3142	1.24	1.44	1.70	1.90	2.13	2.61	3.07	3.49	3.97	4.30	4.62	5.01	5.26
123	4062	40.6176	-73.7745	0.05	0.07	0.27	0.96	1.20	1.47	1.76	2.10	2.44	2.63	2.78	2.96	3.07

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
124	4079	40.6245	-73.2087	1.21	1.41	1.63	1.84	2.11	2.58	2.98	3.36	3.82	4.16	4.48	4.89	5.16
125	4084	40.6282	-73.8046	0.06	0.08	0.24	0.92	1.14	1.39	1.63	2.01	2.35	2.53	2.68	2.85	2.97
126	4089	40.6311	-74.0680	1.44	1.75	2.09	2.42	2.81	3.40	3.85	4.24	4.69	4.99	5.26	5.58	5.82
127	4098	40.6372	-73.8603	0.08	0.10	0.21	0.86	1.08	1.32	1.57	1.87	2.20	2.40	2.57	2.76	2.88
128	4101	40.6384	-74.1930	0.06	0.10	0.14	0.38	1.36	2.14	2.78	3.33	3.90	4.26	4.56	4.89	5.12
129	4104	40.6403	-73.8602	0.08	0.11	0.19	0.84	1.08	1.33	1.57	1.87	2.19	2.39	2.56	2.75	2.88
130	4107	40.6413	-74.1241	0.07	0.10	0.15	0.29	1.18	1.81	2.44	2.96	3.46	3.77	4.04	4.35	4.54
131	4110	40.6419	-74.1665	0.03	0.06	0.09	0.32	1.38	2.15	2.79	3.36	3.92	4.26	4.55	4.89	5.12
132	4116	40.6438	-74.1377	0.04	0.05	0.07	0.26	1.34	2.02	2.65	3.19	3.73	4.06	4.35	4.68	4.90
133	4122	40.6471	-73.1050	1.20	1.39	1.58	1.79	2.06	2.56	2.96	3.33	3.81	4.17	4.51	4.92	5.18
134	4124	40.6472	-74.0756	1.45	1.77	2.11	2.44	2.84	3.42	3.87	4.27	4.73	5.03	5.30	5.63	5.86
135	4135	40.6544	-74.0660	1.43	1.75	2.08	2.35	2.72	3.33	3.80	4.21	4.67	4.97	5.23	5.52	5.72
136	4176	40.6958	-74.0502	1.38	1.70	2.04	2.34	2.72	3.34	3.81	4.23	4.69	5.00	5.25	5.55	5.75
137	4179	40.6971	-74.1482	0.04	0.06	0.09	0.30	1.37	2.15	2.86	3.39	3.90	4.22	4.49	4.80	5.01
138	4181	40.6997	-74.0342	1.40	1.71	2.05	2.35	2.74	3.33	3.79	4.20	4.65	4.95	5.21	5.51	5.73
139	4194	40.7060	-73.9979	1.38	1.68	2.10	2.43	2.77	3.29	3.72	4.13	4.58	4.87	5.12	5.40	5.59
140	4205	40.7143	-74.1080	0.04	0.07	0.10	0.29	1.40	2.17	2.89	3.38	3.87	4.18	4.46	4.77	4.99
141	4206	40.7144	-74.1211	0.04	0.07	0.11	0.30	1.41	2.19	2.91	3.40	3.90	4.21	4.48	4.80	5.01
142	4210	40.7167	-74.1229	0.04	0.07	0.10	0.30	1.40	2.18	2.91	3.40	3.90	4.20	4.47	4.79	4.99
143	4211	40.7171	-73.9684	1.38	1.68	2.07	2.40	2.76	3.30	3.71	4.08	4.51	4.79	5.03	5.30	5.49
144	4227	40.7301	-73.9640	1.39	1.70	2.07	2.40	2.79	3.36	3.78	4.16	4.60	4.89	5.14	5.45	5.66
145	4241	40.7385	-74.0892	0.05	0.08	0.11	0.34	1.38	2.11	2.78	3.23	3.67	3.95	4.20	4.50	4.69
146	4244	40.7400	-74.0234	1.35	1.66	1.98	2.28	2.66	3.21	3.63	4.01	4.43	4.72	4.97	5.28	5.49
147	4255	40.7461	-74.0749	0.05	0.09	0.12	0.34	1.45	2.20	2.82	3.26	3.69	3.97	4.21	4.51	4.71
148	4260	40.7487	-73.9660	1.38	1.69	2.07	2.41	2.79	3.36	3.77	4.14	4.58	4.86	5.11	5.40	5.61
149	4278	40.7601	-73.9561	1.37	1.65	2.08	2.41	2.78	3.31	3.69	4.04	4.48	4.77	5.01	5.30	5.49
150	4281	40.7655	-74.0892	0.17	0.29	0.38	0.56	1.26	1.93	2.44	2.89	3.32	3.60	3.86	4.15	4.35
151	4304	40.7796	-73.9287	1.48	1.79	2.17	2.51	2.89	3.41	3.79	4.20	4.74	5.11	5.44	5.87	6.25
152	4321	40.7880	-73.9145	1.62	2.01	2.44	2.76	3.09	3.55	3.93	4.39	5.01	5.37	5.65	5.96	6.16
153	4323	40.7889	-73.8678	1.86	2.26	2.74	3.06	3.37	3.79	4.18	4.71	5.33	5.67	5.94	6.24	6.44
154	4344	40.7964	-73.9006	1.78	2.19	2.67	3.00	3.31	3.73	4.10	4.60	5.25	5.60	5.88	6.18	6.37
155	4349	40.7979	-73.8111	1.87	2.26	2.73	3.05	3.36	3.77	4.16	4.69	5.30	5.64	5.91	6.21	6.40
156	4350	40.7981	-73.8839	1.82	2.22	2.69	3.02	3.33	3.75	4.13	4.64	5.28	5.63	5.91	6.21	6.41
157	4352	40.7990	-73.8369	1.85	2.25	2.72	3.04	3.34	3.75	4.14	4.67	5.28	5.62	5.90	6.19	6.38
158	4359	40.8014	-73.9851	1.28	1.53	1.84	2.10	2.43	2.91	3.26	3.57	3.93	4.17	4.39	4.66	4.86
159	4370	40.8047	-73.8395	1.86	2.25	2.72	3.04	3.34	3.75	4.13	4.66	5.27	5.61	5.88	6.18	6.37
160	4382	40.8065	-73.8216	1.87	2.27	2.73	3.05	3.35	3.78	4.18	4.71	5.32	5.66	5.93	6.23	6.43
161	4397	40.8130	-73.9754	1.26	1.49	1.80	2.05	2.36	2.82	3.16	3.45	3.79	4.02	4.22	4.47	4.65
162	4408	40.8199	-74.1279	0.09	0.13	0.18	0.48	1.78	2.72	3.60	4.21	4.80	5.16	5.46	5.80	6.02
163	4416	40.8249	-73.9666	1.24	1.47	1.79	2.07	2.39	2.82	3.13	3.41	3.74	3.96	4.18	4.46	4.71
164	4435	40.8376	-73.9599	1.22	1.45	1.77	2.05	2.36	2.77	3.07	3.33	3.64	3.85	4.04	4.30	4.49

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
165	4450	40.8439	-73.7491	1.87	2.23	2.71	3.03	3.32	3.72	4.12	4.65	5.25	5.59	5.86	6.16	6.36
166	4459	40.8504	-73.9535	1.21	1.44	1.75	2.02	2.33	2.75	3.03	3.29	3.60	3.82	4.03	4.34	4.63
167	4469	40.8559	-73.7413	1.86	2.26	2.68	2.98	3.29	3.74	4.14	4.63	5.22	5.56	5.83	6.13	6.32
168	4470	40.8562	-73.9213	1.27	1.53	1.86	2.13	2.43	2.83	3.13	3.43	3.80	4.05	4.27	4.54	4.73
169	4478	40.8608	-73.7655	1.87	2.23	2.71	3.03	3.32	3.71	4.11	4.63	5.24	5.57	5.85	6.15	6.34
170	4479	40.8611	-73.9159	1.27	1.51	1.81	2.02	2.30	2.71	3.02	3.31	3.65	3.88	4.09	4.32	4.48
171	4480	40.8612	-73.7913	1.87	2.26	2.71	3.03	3.33	3.75	4.14	4.66	5.27	5.61	5.88	6.18	6.38
172	4481	40.8627	-73.9454	1.19	1.41	1.71	1.96	2.25	2.64	2.91	3.15	3.44	3.63	3.83	4.10	4.35
173	4498	40.8709	-73.7001	1.85	2.20	2.67	2.99	3.27	3.65	4.03	4.54	5.12	5.46	5.73	6.02	6.22
174	4505	40.8747	-73.9367	1.18	1.40	1.70	1.96	2.24	2.61	2.86	3.08	3.36	3.55	3.74	4.01	4.24
175	4526	40.8871	-73.9290	1.17	1.38	1.68	1.93	2.21	2.57	2.81	3.03	3.30	3.49	3.69	3.98	4.24
176	4537	40.8951	-73.7686	1.86	2.24	2.68	3.00	3.30	3.72	4.10	4.60	5.21	5.55	5.83	6.13	6.32
177	4546	40.9002	-73.9236	1.15	1.36	1.66	1.92	2.19	2.53	2.75	2.96	3.20	3.38	3.56	3.80	4.00
178	4549	40.9018	-73.6230	1.84	2.20	2.61	2.90	3.20	3.62	3.98	4.42	4.97	5.30	5.56	5.86	6.05
179	4573	40.9117	-73.9122	1.15	1.35	1.65	1.91	2.18	2.53	2.76	2.97	3.22	3.41	3.60	3.87	4.11
180	4579	40.9144	-73.5386	1.82	2.15	2.56	2.85	3.15	3.55	3.91	4.31	4.82	5.13	5.39	5.68	5.87
181	4606	40.9224	-73.7298	1.85	2.22	2.66	2.97	3.26	3.67	4.04	4.54	5.13	5.47	5.75	6.06	6.26
182	4620	40.9272	-73.9170	1.13	1.34	1.62	1.86	2.12	2.44	2.65	2.84	3.09	3.27	3.47	3.78	4.06
183	4653	40.9390	-73.4948	1.82	2.13	2.53	2.82	3.11	3.52	3.87	4.26	4.74	5.04	5.29	5.58	5.76
184	4654	40.9407	-73.9136	1.13	1.33	1.61	1.85	2.10	2.42	2.63	2.82	3.08	3.29	3.53	3.91	4.24
185	4723	40.9687	-73.6486	1.83	2.19	2.62	2.91	3.19	3.57	3.94	4.41	4.97	5.30	5.58	5.88	6.09
186	4816	41.0005	-73.8990	1.10	1.30	1.57	1.79	2.01	2.29	2.48	2.66	2.88	3.05	3.22	3.46	3.67
187	4893	41.0380	-73.8768	1.11	1.31	1.57	1.76	1.97	2.25	2.45	2.64	2.86	3.04	3.22	3.51	3.78
188	5082	41.1529	-73.8864	1.15	1.35	1.63	1.87	2.15	2.50	2.75	2.96	3.23	3.43	3.64	3.93	4.19
189	5109	41.2095	-73.9349	1.17	1.37	1.66	1.93	2.23	2.63	2.90	3.15	3.45	3.68	3.91	4.26	4.59
190	5831	40.0971	-74.0273	1.28	1.53	1.78	1.98	2.21	2.58	2.85	3.12	3.47	3.76	4.04	4.37	4.58
191	6906	40.4200	-73.8300	1.31	1.53	1.81	2.00	2.19	2.52	2.88	3.20	3.57	3.83	4.06	4.34	4.53
192	7099	40.8800	-73.7300	1.85	2.23	2.68	2.99	3.28	3.67	4.06	4.57	5.16	5.50	5.77	6.07	6.26
193	7395	40.9350	-74.0300	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
194	7401	40.8300	-74.0767	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	2.69	3.46	3.82	4.16	4.35
195	7412	40.7867	-74.1467	0.07	0.10	0.14	0.46	1.71	2.67	3.51	4.08	4.62	4.95	5.23	5.54	5.74
196	7417	40.7167	-74.0317	1.37	1.69	2.02	2.34	2.73	3.31	3.74	4.13	4.57	4.86	5.12	5.44	5.66
197	3527	40.6550	-74.0850	0.13	0.16	0.21	0.29	0.89	1.43	2.13	2.65	3.09	3.34	3.54	3.76	3.90
198	7655	40.4600	-73.8300	1.32	1.54	1.82	2.02	2.22	2.56	2.93	3.26	3.65	3.91	4.16	4.44	4.63
199	7668	40.7767	-73.9417	1.44	1.74	2.19	2.53	2.89	3.37	3.72	4.09	4.58	4.91	5.21	5.55	5.77
200	7673	40.7000	-74.0150	1.41	1.73	2.06	2.35	2.73	3.33	3.79	4.19	4.65	4.94	5.20	5.50	5.70
201	7680	40.5567	-74.2233	0.11	0.14	0.20	0.43	1.19	1.90	2.54	3.10	3.70	4.09	4.41	4.75	4.97
202	7868	41.3311	-73.9774	1.10	1.31	1.52	1.70	1.96	2.35	2.62	2.84	3.11	3.29	3.47	3.69	3.85
203	7870	41.3744	-73.9565	1.03	1.23	1.53	1.77	2.01	2.34	2.57	2.79	3.06	3.25	3.43	3.66	3.83
204	7872	41.4132	-73.9644	1.00	1.22	1.39	1.52	1.71	2.02	2.24	2.44	2.68	2.85	3.01	3.20	3.33
205	7875	41.4652	-74.0010	1.00	1.23	1.41	1.58	1.78	2.07	2.29	2.48	2.73	2.91	3.08	3.29	3.43

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
206	7876	41.4945	-73.9985	1.00	1.20	1.48	1.72	1.96	2.26	2.48	2.68	2.95	3.14	3.32	3.55	3.71
207	7965	41.2872	-73.9384	1.17	1.37	1.69	1.97	2.30	2.72	3.01	3.28	3.61	3.86	4.10	4.44	4.71
208	7975	41.0548	-73.9124	1.13	1.33	1.60	1.79	2.01	2.31	2.52	2.71	2.94	3.11	3.30	3.60	3.88
209	7976	41.0346	-73.9085	1.12	1.32	1.57	1.79	2.03	2.34	2.55	2.75	3.02	3.25	3.52	3.94	4.30
210	7979	41.1003	-73.9126	1.14	1.34	1.61	1.80	2.02	2.35	2.57	2.77	3.00	3.16	3.32	3.53	3.72
211	9813	41.1522	-73.8735	1.15	1.34	1.64	1.88	2.15	2.50	2.73	2.94	3.19	3.37	3.55	3.77	3.95
212	9816	41.1952	-73.9565	1.17	1.37	1.66	1.92	2.21	2.61	2.88	3.11	3.40	3.62	3.84	4.17	4.48
213	9838	41.0070	-73.5669	1.82	2.14	2.55	2.84	3.13	3.54	3.89	4.30	4.83	5.16	5.43	5.73	5.92
214	9842	41.0186	-73.5188	1.81	2.10	2.53	2.82	3.09	3.45	3.80	4.23	4.72	5.03	5.29	5.58	5.78
215	11330	40.4414	-73.9087	1.33	1.56	1.85	2.06	2.27	2.62	3.00	3.34	3.72	3.98	4.22	4.51	4.71
216	11331	40.5220	-73.7791	1.32	1.55	1.82	2.03	2.24	2.65	3.04	3.40	3.80	4.06	4.30	4.58	4.76
217	11334	40.5588	-73.2096	1.21	1.39	1.62	1.78	1.94	2.22	2.55	2.87	3.27	3.59	4.00	4.53	4.83
218	11519	40.3706	-73.9705	1.31	1.57	1.85	2.09	2.35	2.77	3.10	3.41	3.77	4.03	4.27	4.56	4.75
219	11521	40.4260	-73.9809	1.35	1.62	1.97	2.24	2.56	3.04	3.41	3.74	4.13	4.39	4.63	4.92	5.13
220	11527	40.4138	-73.9902	1.46	1.76	2.10	2.39	2.73	3.27	3.68	4.04	4.41	4.65	4.86	5.10	5.27
221	11528	40.3835	-73.9794	1.27	1.57	1.89	2.15	2.42	2.81	3.13	3.44	3.79	4.01	4.20	4.42	4.57
222	11531	40.3334	-74.0101	0.97	1.27	1.56	1.79	2.04	2.38	2.63	2.87	3.16	3.37	3.58	3.91	4.19
223	11538	40.3596	-74.0628	1.35	1.65	2.01	2.30	2.61	3.04	3.36	3.66	4.01	4.23	4.43	4.66	4.82
224	11547	40.4239	-74.0402	1.47	1.77	2.12	2.43	2.80	3.35	3.77	4.14	4.53	4.78	5.00	5.26	5.44
225	11548	40.4301	-74.0557	1.47	1.77	2.13	2.44	2.81	3.38	3.80	4.17	4.57	4.82	5.05	5.31	5.49
226	11549	40.4403	-74.0674	1.47	1.78	2.12	2.44	2.82	3.40	3.84	4.21	4.62	4.88	5.12	5.41	5.62
227	11550	40.4462	-74.0775	1.47	1.78	2.13	2.45	2.83	3.42	3.85	4.23	4.65	4.92	5.16	5.45	5.66
228	11551	40.4498	-74.0988	1.48	1.77	2.18	2.50	2.86	3.40	3.84	4.23	4.67	4.94	5.18	5.46	5.64
229	11553	40.4740	-74.1283	1.48	1.80	2.15	2.50	2.90	3.49	3.94	4.34	4.78	5.07	5.32	5.60	5.79
230	11554	40.4656	-74.1421	1.50	1.80	2.21	2.55	2.93	3.50	3.96	4.38	4.84	5.12	5.37	5.66	5.85
231	11556	40.4595	-74.1696	1.53	1.84	2.19	2.49	2.90	3.57	4.07	4.51	4.99	5.28	5.53	5.82	6.02
232	11557	40.4738	-74.1753	1.52	1.83	2.23	2.59	3.02	3.65	4.13	4.56	5.03	5.32	5.58	5.87	6.08
233	11562	40.4581	-74.2174	1.56	1.86	2.25	2.59	3.03	3.72	4.23	4.69	5.18	5.48	5.74	6.04	6.25
234	11563	40.4649	-74.2337	1.57	1.86	2.28	2.64	3.09	3.78	4.29	4.75	5.25	5.56	5.83	6.13	6.34
235	11564	40.4667	-74.2499	1.57	1.89	2.28	2.65	3.13	3.82	4.34	4.81	5.31	5.63	5.90	6.21	6.43
236	11565	40.4762	-74.2580	1.57	1.88	2.32	2.73	3.21	3.89	4.40	4.86	5.37	5.69	5.97	6.30	6.53
237	11566	40.4859	-74.2619	1.58	1.89	2.32	2.73	3.22	3.91	4.43	4.89	5.41	5.73	6.02	6.37	6.64
238	11567	40.4919	-74.2713	1.58	1.90	2.30	2.67	3.16	3.86	4.38	4.85	5.37	5.70	5.98	6.29	6.51
239	11568	40.4968	-74.2811	1.58	1.91	2.40	2.83	3.30	3.94	4.42	4.87	5.38	5.69	5.96	6.27	6.45
240	11573	40.4618	-74.1330	1.49	1.81	2.13	2.45	2.86	3.48	3.96	4.37	4.82	5.10	5.35	5.65	5.87
241	11580	40.4713	-74.2617	1.58	1.89	2.33	2.74	3.23	3.90	4.41	4.88	5.39	5.70	5.98	6.31	6.53
242	11605	40.4999	-74.2890	1.59	1.92	2.39	2.84	3.36	4.03	4.50	4.94	5.45	5.77	6.04	6.36	6.59
243	11608	40.5078	-74.2886	1.60	1.93	2.41	2.89	3.44	4.18	4.69	5.13	5.61	5.95	6.28	6.70	7.05
244	11610	40.5085	-74.3093	1.62	1.96	2.37	2.75	3.25	3.90	4.35	4.76	5.24	5.54	5.81	6.12	6.32
245	11611	40.5040	-74.3169	1.62	1.93	2.39	2.83	3.33	3.98	4.42	4.83	5.31	5.62	5.91	6.27	6.56
246	11613	40.4855	-74.3410	1.71	2.00	2.46	2.88	3.38	4.02	4.46	4.86	5.33	5.64	5.92	6.25	6.50

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
247	11614	40.4829	-74.3557	1.84	2.12	2.52	2.93	3.42	4.06	4.49	4.89	5.36	5.67	5.95	6.30	6.55
248	11639	40.4282	-74.3576	1.76	2.07	2.53	2.93	3.39	3.94	4.30	4.62	5.02	5.30	5.57	5.94	6.23
249	11640	40.4233	-74.3565	1.77	2.07	2.53	2.93	3.38	3.92	4.27	4.58	4.97	5.24	5.51	5.86	6.13
250	11647	40.4946	-74.2626	1.57	1.90	2.32	2.72	3.22	3.90	4.41	4.88	5.40	5.73	6.02	6.36	6.62
251	11649	40.5006	-74.2585	1.58	1.90	2.37	2.77	3.24	3.88	4.37	4.83	5.34	5.66	5.94	6.25	6.45
252	11650	40.5127	-74.2555	0.15	0.19	0.26	0.44	1.05	1.68	2.35	2.96	3.63	4.06	4.40	4.75	4.97
253	11651	40.5225	-74.2479	0.14	0.18	0.23	0.40	1.05	1.69	2.34	2.92	3.57	4.01	4.35	4.71	4.93
254	11652	40.5338	-74.2502	0.14	0.18	0.24	0.44	1.05	1.71	2.34	2.91	3.55	3.99	4.33	4.69	4.91
255	11653	40.5477	-74.2510	0.14	0.18	0.25	0.45	1.08	1.76	2.42	2.97	3.60	4.02	4.36	4.71	4.93
256	11656	40.5605	-74.2159	0.10	0.13	0.18	0.41	1.25	1.96	2.59	3.16	3.74	4.12	4.43	4.77	4.99
257	11658	40.5831	-74.2080	0.08	0.12	0.16	0.36	1.35	2.13	2.72	3.28	3.87	4.23	4.55	4.88	5.10
258	11663	40.6309	-74.2024	0.06	0.11	0.16	0.35	1.37	2.16	2.79	3.33	3.91	4.27	4.59	4.92	5.14
259	11665	40.6464	-74.1794	0.05	0.08	0.11	0.36	1.38	2.17	2.81	3.37	3.92	4.26	4.56	4.90	5.12
260	11672	40.5999	-74.2239	0.09	0.15	0.21	0.45	1.38	2.12	2.75	3.29	3.89	4.27	4.59	4.93	5.14
261	11673	40.6007	-74.2392	0.02	0.04	0.05	0.30	1.45	2.14	2.70	3.26	3.90	4.29	4.61	4.94	5.15
262	11674	40.6020	-74.2565	0.03	0.05	0.07	0.33	1.46	2.17	2.73	3.28	3.92	4.31	4.63	4.97	5.18
263	11677	40.4806	-74.2339	1.56	1.87	2.29	2.69	3.16	3.83	4.33	4.78	5.29	5.60	5.88	6.21	6.45
264	11678	40.4811	-74.2194	1.55	1.86	2.30	2.69	3.12	3.74	4.23	4.68	5.18	5.49	5.75	6.05	6.24
265	11679	40.4826	-74.2053	1.55	1.85	2.26	2.64	3.10	3.75	4.24	4.68	5.17	5.48	5.74	6.05	6.27
266	11685	40.4991	-74.1286	1.47	1.79	2.15	2.49	2.89	3.47	3.92	4.33	4.78	5.07	5.33	5.62	5.83
267	11690	40.5039	-74.0660	1.44	1.75	2.08	2.40	2.76	3.31	3.73	4.11	4.53	4.81	5.05	5.33	5.53
268	11693	40.5107	-74.0252	1.41	1.71	2.02	2.32	2.67	3.21	3.63	4.00	4.40	4.68	4.93	5.24	5.47
269	11695	40.5102	-73.9995	1.38	1.67	1.97	2.26	2.59	3.11	3.52	3.87	4.27	4.54	4.79	5.10	5.34
270	11698	40.4365	-74.0252	1.46	1.77	2.10	2.41	2.78	3.35	3.78	4.14	4.53	4.79	5.01	5.29	5.49
271	11699	40.4452	-74.0354	1.46	1.76	2.11	2.42	2.77	3.32	3.74	4.11	4.51	4.76	4.98	5.24	5.42
272	11701	40.4632	-74.0504	1.45	1.75	2.10	2.41	2.78	3.35	3.78	4.15	4.55	4.82	5.06	5.34	5.55
273	11704	40.4928	-74.0703	1.45	1.76	2.06	2.36	2.72	3.31	3.76	4.15	4.57	4.85	5.10	5.40	5.62
274	11718	40.4940	-74.2335	1.55	1.86	2.24	2.57	3.03	3.73	4.25	4.72	5.23	5.55	5.82	6.13	6.34
275	11728	40.5248	-74.1262	1.45	1.75	2.12	2.45	2.85	3.43	3.89	4.29	4.75	5.04	5.30	5.60	5.81
276	11729	40.5380	-74.1101	1.45	1.76	2.09	2.40	2.79	3.39	3.85	4.26	4.71	5.01	5.28	5.59	5.81
277	11731	40.5681	-74.0833	1.44	1.74	2.08	2.40	2.79	3.38	3.82	4.23	4.69	4.99	5.27	5.59	5.83
278	11740	40.4943	-74.2453	1.56	1.88	2.26	2.60	3.07	3.77	4.29	4.76	5.28	5.60	5.87	6.19	6.40
279	11754	40.6772	-74.1407	0.03	0.05	0.08	0.18	1.41	2.17	2.84	3.39	3.92	4.24	4.52	4.85	5.06
280	11756	40.6874	-74.1577	0.04	0.06	0.09	0.27	1.39	2.18	2.87	3.41	3.94	4.26	4.54	4.86	5.07
281	11765	40.6476	-74.0951	0.13	0.17	0.22	0.32	0.90	1.47	2.07	2.56	3.04	3.31	3.53	3.78	3.93
282	11774	40.5195	-74.0330	1.42	1.72	2.04	2.34	2.70	3.24	3.66	4.03	4.44	4.71	4.96	5.25	5.45
283	11775	40.5340	-74.0334	1.42	1.71	2.04	2.34	2.69	3.24	3.66	4.03	4.45	4.73	4.98	5.28	5.48
284	11779	40.5966	-74.0427	1.43	1.74	2.07	2.38	2.75	3.32	3.75	4.14	4.58	4.87	5.13	5.45	5.68
285	11780	40.6136	-74.0485	1.43	1.74	2.08	2.40	2.78	3.34	3.77	4.16	4.60	4.88	5.14	5.46	5.68
286	11781	40.6277	-74.0548	1.43	1.75	2.08	2.39	2.76	3.35	3.79	4.19	4.63	4.93	5.18	5.49	5.72
287	11782	40.6423	-74.0548	1.44	1.75	2.09	2.42	2.81	3.40	3.85	4.24	4.70	5.00	5.26	5.58	5.81

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
288	11783	40.6559	-74.0480	1.43	1.75	2.09	2.42	2.81	3.40	3.86	4.26	4.71	5.01	5.28	5.60	5.83
289	11784	40.6675	-74.0417	1.43	1.74	2.07	2.36	2.74	3.34	3.81	4.22	4.68	4.98	5.24	5.54	5.74
290	11785	40.6806	-74.0373	1.42	1.74	2.08	2.41	2.80	3.40	3.86	4.26	4.72	5.02	5.29	5.61	5.83
291	11787	40.7073	-74.0281	1.39	1.71	2.04	2.34	2.73	3.31	3.77	4.16	4.61	4.91	5.16	5.47	5.68
292	11788	40.6884	-74.1156	0.03	0.05	0.08	0.22	1.41	2.18	2.87	3.39	3.92	4.24	4.52	4.85	5.06
293	11792	40.7421	-74.1309	0.05	0.08	0.11	0.37	1.46	2.26	2.98	3.48	3.97	4.27	4.53	4.82	5.02
294	11793	40.7364	-74.1446	0.05	0.08	0.11	0.36	1.51	2.35	3.07	3.58	4.09	4.40	4.67	4.97	5.17
295	11794	40.7341	-74.1585	0.05	0.08	0.12	0.39	1.57	2.46	3.18	3.71	4.23	4.56	4.83	5.14	5.34
296	11795	40.7447	-74.1655	0.05	0.08	0.12	0.41	1.61	2.52	3.26	3.80	4.34	4.67	4.95	5.26	5.46
297	11797	40.7733	-74.1538	0.06	0.09	0.13	0.48	1.65	2.58	3.37	3.92	4.46	4.80	5.08	5.39	5.60
298	11800	40.8180	-74.1359	0.10	0.13	0.19	0.47	1.78	2.71	3.58	4.17	4.76	5.13	5.43	5.77	5.99
299	11821	40.7927	-74.0786	0.07	0.12	0.16	0.34	1.55	2.24	2.74	3.17	3.63	3.93	4.20	4.49	4.69
300	11825	40.8267	-74.0354	0.08	0.13	0.17	0.37	1.43	2.04	2.54	3.04	3.56	3.89	4.18	4.50	4.71
301	11826	40.8471	-74.0300	0.04	0.07	0.09	0.30	1.41	2.00	2.55	3.07	3.60	3.93	4.22	4.55	4.77
302	11827	40.8606	-74.0331	0.05	0.07	0.10	0.27	1.40	1.99	2.54	3.06	3.59	3.92	4.22	4.56	4.79
303	11829	40.8874	-74.0338	0.05	0.08	0.11	0.31	1.40	1.97	2.53	3.07	3.62	3.97	4.27	4.62	4.86
304	11832	40.8224	-74.0461	NaN	NaN	0.35	1.42	1.84	2.33	2.66	2.99	3.41	3.70	3.97	4.28	4.49
305	11834	40.8362	-74.0651	NaN	NaN	NaN	NaN	NaN	NaN	1.71	2.08	2.86	3.67	4.24	4.72	4.99
306	11837	40.8409	-74.0117	0.04	0.06	0.09	0.26	1.42	2.02	2.58	3.12	3.64	3.96	4.24	4.56	4.77
307	11840	40.8705	-73.9959	0.04	0.06	0.08	0.26	1.40	1.95	2.53	3.09	3.63	3.96	4.25	4.58	4.80
308	11851	40.6821	-74.0519	1.42	1.73	2.09	2.42	2.81	3.40	3.85	4.25	4.71	5.01	5.27	5.57	5.77
309	11863	40.6627	-74.0213	1.44	1.75	2.08	2.37	2.74	3.35	3.82	4.22	4.68	4.98	5.24	5.54	5.73
310	11867	40.6850	-74.0140	1.41	1.73	2.06	2.38	2.78	3.37	3.82	4.22	4.68	4.97	5.23	5.55	5.76
311	11871	40.7078	-73.9849	1.35	1.66	2.03	2.37	2.75	3.32	3.75	4.12	4.56	4.84	5.09	5.37	5.57
312	11875	40.7511	-73.9632	1.37	1.68	2.07	2.40	2.79	3.34	3.74	4.11	4.54	4.83	5.08	5.37	5.58
313	11877	40.7767	-73.9398	1.45	1.75	2.20	2.54	2.90	3.38	3.74	4.10	4.57	4.88	5.16	5.49	5.71
314	11878	40.7597	-73.9485	1.37	1.64	2.08	2.41	2.78	3.32	3.71	4.05	4.46	4.74	4.99	5.28	5.48
315	11882	40.8262	-73.9336	1.33	1.61	1.98	2.26	2.55	2.96	3.27	3.59	4.04	4.38	4.68	5.01	5.23
316	11888	40.8787	-73.9262	1.19	1.41	1.70	1.96	2.24	2.62	2.87	3.11	3.40	3.62	3.83	4.15	4.46
317	11895	40.7389	-73.9572	0.04	0.08	0.66	0.95	1.19	1.66	2.14	2.66	3.14	3.38	3.58	3.80	3.95
318	11897	40.7296	-73.9368	0.02	0.04	0.64	0.93	1.18	1.63	2.10	2.61	3.09	3.33	3.52	3.73	3.87
319	11901	40.7185	-74.0228	1.38	1.70	2.01	2.32	2.71	3.28	3.72	4.11	4.54	4.83	5.09	5.40	5.61
320	11902	40.7345	-74.0194	1.36	1.66	1.99	2.27	2.64	3.20	3.63	4.01	4.44	4.73	4.98	5.27	5.48
321	11903	40.7500	-74.0165	1.35	1.63	2.02	2.33	2.65	3.13	3.52	3.88	4.29	4.57	4.81	5.09	5.28
322	11904	40.7670	-74.0067	1.33	1.60	1.99	2.29	2.60	3.06	3.43	3.78	4.18	4.45	4.69	4.97	5.16
323	11905	40.7821	-73.9966	1.30	1.57	1.89	2.17	2.51	3.00	3.38	3.71	4.09	4.35	4.58	4.87	5.07
324	11906	40.7957	-73.9844	1.28	1.54	1.84	2.09	2.41	2.89	3.25	3.57	3.93	4.17	4.39	4.65	4.83
325	11908	40.8291	-73.9640	1.23	1.47	1.77	2.05	2.37	2.80	3.10	3.38	3.70	3.92	4.14	4.45	4.73
326	11909	40.8471	-73.9538	1.22	1.45	1.75	2.03	2.34	2.76	3.05	3.31	3.62	3.84	4.05	4.36	4.63
327	11910	40.8694	-73.9417	1.18	1.40	1.70	1.95	2.24	2.62	2.88	3.12	3.40	3.60	3.80	4.09	4.36
328	11911	40.8903	-73.9315	1.17	1.37	1.68	1.93	2.21	2.56	2.80	3.01	3.26	3.44	3.62	3.87	4.07

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
329	11912	40.9117	-73.9218	1.14	1.35	1.67	1.84	2.03	2.36	2.59	2.79	3.01	3.16	3.30	3.47	3.58
330	11913	40.9359	-73.9136	1.13	1.33	1.62	1.85	2.11	2.43	2.64	2.84	3.10	3.31	3.55	3.94	4.27
331	11930	40.6557	-74.0189	1.44	1.75	2.09	2.42	2.80	3.39	3.84	4.24	4.69	4.98	5.24	5.55	5.76
332	11933	40.6344	-74.0399	1.44	1.75	2.09	2.42	2.80	3.38	3.82	4.21	4.65	4.95	5.20	5.52	5.73
333	11935	40.6114	-74.0384	1.43	1.74	2.08	2.39	2.77	3.34	3.77	4.16	4.60	4.89	5.15	5.47	5.71
334	11936	40.6036	-74.0291	1.44	1.75	2.07	2.38	2.75	3.32	3.77	4.16	4.61	4.90	5.17	5.48	5.71
335	11949	40.5746	-73.9384	1.52	1.81	2.10	2.32	2.61	3.11	3.52	3.89	4.32	4.60	4.85	5.13	5.32
336	11953	40.5828	-73.9524	0.08	0.11	0.22	0.99	1.32	1.77	2.20	2.61	3.12	3.43	3.68	3.95	4.13
337	11968	40.5804	-73.9037	1.53	1.84	2.15	2.50	2.77	3.08	3.50	3.89	4.35	4.64	4.90	5.18	5.37
338	11974	40.5760	-73.8752	0.13	0.17	0.46	0.88	1.08	1.33	1.55	1.81	2.20	2.43	2.61	2.81	2.93
339	11978	40.6277	-73.8796	0.15	0.19	0.39	0.87	1.09	1.33	1.55	1.84	2.19	2.39	2.57	2.76	2.89
340	11982	40.6362	-73.8091	0.06	0.08	0.25	0.91	1.13	1.37	1.61	2.00	2.33	2.51	2.67	2.84	2.95
341	11984	40.6224	-73.8096	0.05	0.07	0.24	0.92	1.15	1.40	1.65	2.01	2.34	2.53	2.69	2.86	2.98
342	11987	40.5943	-73.8118	0.05	0.07	0.13	0.89	1.17	1.45	1.72	2.04	2.37	2.58	2.74	2.93	3.06
343	11996	40.5938	-73.8680	0.11	0.14	0.36	0.90	1.11	1.36	1.59	1.88	2.24	2.46	2.64	2.84	2.97
344	11997	40.5907	-73.8591	0.09	0.12	0.33	0.91	1.12	1.37	1.61	1.92	2.28	2.48	2.66	2.85	2.98
345	12001	40.6188	-73.8520	0.06	0.08	0.16	0.87	1.11	1.34	1.58	1.91	2.25	2.45	2.61	2.80	2.93
346	12002	40.6210	-73.8408	0.05	0.06	0.13	0.86	1.11	1.34	1.57	1.92	2.26	2.46	2.62	2.80	2.93
347	12014	40.6408	-73.8534	0.07	0.10	0.18	0.84	1.08	1.33	1.57	1.87	2.20	2.40	2.56	2.75	2.88
348	12025	40.6068	-73.8895	0.17	0.22	0.47	0.89	1.10	1.34	1.57	1.82	2.19	2.42	2.60	2.80	2.93
349	12031	40.6285	-73.8727	0.13	0.17	0.33	0.87	1.09	1.33	1.56	1.85	2.19	2.40	2.57	2.77	2.90
350	12033	40.5989	-73.8416	0.05	0.07	0.12	0.88	1.13	1.40	1.64	1.94	2.29	2.50	2.67	2.86	2.98
351	12042	40.6054	-73.7904	0.05	0.06	0.19	0.95	1.20	1.47	1.75	2.08	2.42	2.62	2.78	2.96	3.08
352	12043	40.6103	-73.7828	0.05	0.06	0.24	0.96	1.20	1.47	1.76	2.09	2.43	2.62	2.78	2.96	3.08
353	12044	40.6268	-73.7623	0.05	0.07	0.43	0.99	1.22	1.49	1.79	2.15	2.49	2.67	2.83	3.00	3.11
354	12058	40.5442	-73.9413	1.51	1.78	2.11	2.36	2.61	3.00	3.37	3.74	4.16	4.42	4.66	4.93	5.11
355	12071	40.5840	-73.7552	1.29	1.52	1.81	2.06	2.35	2.86	3.30	3.67	4.06	4.30	4.51	4.77	4.94
356	12324	40.6236	-73.3209	1.30	1.52	1.82	2.11	2.46	3.03	3.48	3.90	4.38	4.71	5.00	5.35	5.58
357	12860	40.9369	-73.4551	1.80	2.10	2.51	2.80	3.08	3.45	3.78	4.17	4.63	4.93	5.17	5.45	5.63
358	12888	40.9088	-73.5477	1.82	2.17	2.57	2.87	3.16	3.56	3.91	4.32	4.83	5.15	5.41	5.69	5.88
359	12893	40.9034	-73.6056	1.84	2.17	2.62	2.92	3.20	3.57	3.94	4.40	4.94	5.26	5.53	5.82	6.01
360	12894	40.9008	-73.6156	1.84	2.17	2.62	2.92	3.20	3.58	3.95	4.42	4.96	5.29	5.56	5.85	6.04
361	12898	40.8870	-73.6445	1.85	2.18	2.65	2.95	3.24	3.61	3.99	4.48	5.05	5.38	5.65	5.95	6.14
362	12908	40.8482	-73.6613	1.85	2.21	2.66	2.96	3.26	3.66	4.05	4.53	5.12	5.45	5.72	6.02	6.21
363	12950	40.7690	-73.7565	1.88	2.28	2.75	3.07	3.38	3.80	4.22	4.76	5.39	5.74	6.01	6.32	6.51
364	12951	40.7758	-73.7585	1.88	2.28	2.74	3.06	3.37	3.79	4.21	4.75	5.38	5.72	6.00	6.30	6.49
365	12965	40.9891	-73.6508	1.83	2.19	2.63	2.92	3.20	3.57	3.95	4.42	5.01	5.36	5.65	5.97	6.18
366	12966	40.9856	-73.6613	1.84	2.22	2.66	2.96	3.24	3.61	3.98	4.47	5.08	5.45	5.74	6.07	6.28
367	12976	40.9396	-73.6906	1.84	2.21	2.64	2.94	3.22	3.60	3.99	4.47	5.04	5.38	5.66	5.96	6.16
368	12981	40.9068	-73.7589	1.86	2.23	2.67	2.98	3.28	3.70	4.08	4.57	5.17	5.52	5.79	6.10	6.30
369	12994	40.8787	-73.8206	1.90	2.29	2.76	3.08	3.39	3.81	4.23	4.76	5.36	5.70	5.97	6.27	6.47

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
370	13007	40.8065	-73.7896	1.87	2.26	2.71	3.03	3.33	3.75	4.14	4.66	5.28	5.62	5.90	6.19	6.39
371	13013	40.8181	-73.8412	1.86	2.26	2.72	3.04	3.35	3.77	4.16	4.68	5.30	5.64	5.92	6.21	6.41
372	13014	40.8068	-73.8420	1.86	2.25	2.72	3.04	3.34	3.76	4.14	4.66	5.28	5.62	5.89	6.18	6.38
373	13021	40.9415	-73.7136	1.85	2.23	2.68	2.98	3.26	3.65	4.04	4.54	5.14	5.49	5.77	6.07	6.27
374	13023	40.8611	-73.7725	1.87	2.24	2.70	3.01	3.32	3.73	4.12	4.64	5.24	5.58	5.85	6.15	6.35
375	13038	40.7991	-73.8810	1.82	2.22	2.70	3.02	3.34	3.75	4.13	4.65	5.29	5.64	5.92	6.22	6.41
376	13039	40.8026	-73.8924	1.82	2.22	2.70	3.02	3.33	3.74	4.11	4.62	5.27	5.62	5.90	6.21	6.40
377	13041	40.7971	-73.9056	1.79	2.19	2.67	3.00	3.32	3.73	4.10	4.60	5.25	5.60	5.88	6.18	6.38
378	13048	40.7959	-73.8670	1.85	2.25	2.73	3.05	3.36	3.77	4.16	4.69	5.33	5.67	5.94	6.24	6.44
379	13049	40.7983	-73.8568	1.85	2.25	2.72	3.05	3.35	3.76	4.15	4.68	5.30	5.65	5.92	6.22	6.41
380	13050	40.8014	-73.8436	1.85	2.25	2.72	3.04	3.35	3.75	4.14	4.66	5.28	5.62	5.89	6.19	6.38
381	13051	40.8037	-73.8268	1.86	2.27	2.72	3.04	3.35	3.77	4.17	4.69	5.30	5.64	5.92	6.21	6.41
382	13052	40.8061	-73.8131	1.87	2.26	2.73	3.05	3.35	3.77	4.17	4.69	5.31	5.64	5.92	6.21	6.40
383	13053	40.8026	-73.8014	1.87	2.26	2.72	3.04	3.35	3.76	4.15	4.68	5.29	5.63	5.90	6.20	6.40
384	13054	40.7983	-73.7885	1.88	2.27	2.73	3.05	3.36	3.78	4.18	4.71	5.33	5.67	5.94	6.24	6.43
385	13055	40.8069	-73.7803	1.88	2.27	2.73	3.05	3.35	3.77	4.17	4.70	5.32	5.66	5.93	6.23	6.42
386	13056	40.7873	-73.8631	1.86	2.26	2.74	3.06	3.37	3.79	4.18	4.71	5.33	5.67	5.94	6.24	6.43
387	13068	40.7877	-73.7620	1.89	2.27	2.74	3.06	3.36	3.78	4.19	4.74	5.36	5.70	5.97	6.27	6.47
388	13069	40.8010	-73.7694	1.88	2.26	2.73	3.05	3.35	3.77	4.18	4.72	5.33	5.67	5.95	6.25	6.44
389	13070	40.8463	-73.8065	1.89	2.27	2.73	3.05	3.36	3.79	4.19	4.70	5.31	5.64	5.91	6.22	6.41
390	13071	40.8369	-73.8010	1.89	2.27	2.73	3.05	3.36	3.78	4.18	4.70	5.31	5.64	5.92	6.21	6.41
391	13072	40.8295	-73.7924	1.88	2.27	2.73	3.05	3.35	3.77	4.17	4.70	5.31	5.64	5.91	6.21	6.40
392	13073	40.8197	-73.7823	1.88	2.26	2.72	3.03	3.34	3.77	4.18	4.70	5.31	5.64	5.92	6.22	6.41
393	13074	40.8295	-73.7714	1.88	2.26	2.71	3.03	3.33	3.76	4.16	4.68	5.29	5.63	5.90	6.20	6.39
394	13076	40.8564	-73.7522	1.87	2.23	2.70	3.02	3.32	3.71	4.10	4.63	5.23	5.57	5.84	6.14	6.34
395	13077	40.8685	-73.7472	1.86	2.22	2.70	3.01	3.30	3.69	4.08	4.61	5.20	5.54	5.81	6.11	6.31
396	13078	40.8834	-73.7370	1.86	2.25	2.66	2.97	3.27	3.71	4.11	4.58	5.17	5.51	5.78	6.08	6.28
397	13079	40.8955	-73.7218	1.85	2.22	2.67	2.97	3.27	3.67	4.05	4.55	5.14	5.47	5.75	6.05	6.24
398	13080	40.8955	-73.7585	1.86	2.23	2.67	2.98	3.28	3.69	4.07	4.57	5.17	5.51	5.79	6.09	6.29
399	13085	40.8713	-73.7768	1.87	2.25	2.69	3.01	3.31	3.74	4.13	4.63	5.24	5.58	5.85	6.15	6.34
400	13086	40.8740	-73.7608	1.86	2.24	2.69	3.00	3.30	3.71	4.10	4.61	5.21	5.55	5.82	6.12	6.32
401	13087	40.8998	-73.6984	1.85	2.22	2.66	2.96	3.25	3.65	4.03	4.52	5.10	5.44	5.71	6.01	6.21
402	13088	40.9068	-73.6750	1.84	2.21	2.65	2.95	3.23	3.62	4.00	4.49	5.06	5.39	5.67	5.97	6.17
403	13090	40.9325	-73.6328	1.84	2.16	2.63	2.94	3.21	3.56	3.94	4.42	4.97	5.30	5.57	5.86	6.06
404	13093	40.9606	-73.5637	1.82	2.14	2.56	2.85	3.14	3.54	3.89	4.31	4.83	5.15	5.41	5.70	5.89
405	13096	40.9954	-73.5075	1.81	2.10	2.53	2.82	3.09	3.45	3.80	4.22	4.71	5.01	5.27	5.55	5.74
406	13097	40.8888	-73.6785	1.84	2.22	2.66	2.96	3.25	3.63	4.02	4.51	5.08	5.42	5.69	5.99	6.18
407	13732	40.3595	-73.9774	0.97	1.27	1.55	1.79	2.01	2.28	2.49	2.69	2.96	3.15	3.32	3.51	3.64
408	13751	40.5004	-74.3170	1.61	1.93	2.42	2.85	3.33	3.96	4.39	4.79	5.25	5.55	5.81	6.12	6.32
409	13754	40.4860	-74.3276	1.64	1.95	2.40	2.83	3.34	3.99	4.44	4.85	5.33	5.65	5.95	6.33	6.65
410	13755	40.4820	-74.3386	1.66	1.99	2.38	2.76	3.26	3.93	4.39	4.80	5.27	5.58	5.85	6.16	6.39

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
411	13761	40.5503	-74.2402	0.13	0.16	0.23	0.42	1.10	1.79	2.45	3.01	3.63	4.04	4.38	4.72	4.94
412	13767	40.5720	-74.1790	NaN	NaN	1.02	1.58	2.11	2.67	3.04	3.39	3.85	4.16	4.45	4.76	4.97
413	13768	40.5889	-74.1793	0.05	0.07	0.10	0.28	1.35	2.09	2.71	3.29	3.87	4.24	4.55	4.89	5.11
414	13772	40.6165	-74.2011	0.06	0.11	0.16	0.35	1.37	2.18	2.79	3.33	3.92	4.28	4.59	4.93	5.15
415	13775	40.6035	-74.1974	0.06	0.11	0.15	0.34	1.38	2.17	2.76	3.31	3.90	4.27	4.58	4.92	5.14
416	13780	40.6612	-74.1570	0.03	0.05	0.08	0.22	1.38	2.15	2.81	3.36	3.91	4.24	4.53	4.86	5.08
417	13785	40.6606	-74.1357	0.03	0.05	0.07	0.18	1.41	2.16	2.82	3.37	3.91	4.24	4.53	4.86	5.08
418	13786	40.6681	-74.1295	0.03	0.05	0.07	0.17	1.41	2.17	2.83	3.38	3.91	4.24	4.53	4.86	5.07
419	13788	40.6384	-74.1537	0.03	0.05	0.08	0.28	1.38	2.13	2.78	3.35	3.91	4.25	4.55	4.88	5.11
420	13792	40.6956	-74.1218	0.03	0.06	0.08	0.21	1.40	2.18	2.87	3.39	3.91	4.23	4.51	4.84	5.05
421	13809	40.5361	-74.1386	1.51	1.82	2.19	2.55	2.97	3.58	4.06	4.48	4.96	5.26	5.54	5.86	6.08
422	13810	40.5234	-74.1451	1.47	1.77	2.14	2.49	2.90	3.51	3.98	4.40	4.86	5.16	5.43	5.75	5.96
423	13818	40.6504	-74.1139	0.09	0.13	0.18	0.27	1.11	1.67	2.32	2.83	3.33	3.63	3.90	4.19	4.38
424	13819	40.6456	-74.1464	0.03	0.05	0.07	0.27	1.38	2.13	2.78	3.34	3.89	4.22	4.52	4.86	5.08
425	13837	40.6720	-74.0185	1.43	1.74	2.09	2.42	2.80	3.37	3.82	4.23	4.68	4.98	5.23	5.53	5.72
426	13859	40.7394	-74.0250	1.36	1.67	1.98	2.29	2.67	3.23	3.65	4.02	4.44	4.73	4.98	5.29	5.50
427	13862	40.7954	-73.9927	1.30	1.55	1.86	2.12	2.44	2.93	3.28	3.60	3.97	4.21	4.43	4.70	4.89
428	13872	40.9922	-73.9016	1.11	1.31	1.58	1.80	2.03	2.31	2.50	2.68	2.90	3.06	3.23	3.46	3.65
429	13874	40.8750	-73.9156	1.22	1.44	1.76	2.00	2.29	2.67	2.93	3.17	3.46	3.66	3.86	4.11	4.33
430	13883	40.8728	-73.9114	1.23	1.45	1.77	2.01	2.29	2.68	2.95	3.19	3.48	3.69	3.89	4.14	4.36
431	13888	40.8019	-73.9265	1.43	1.73	2.19	2.55	2.91	3.36	3.70	4.04	4.51	4.84	5.13	5.46	5.66
432	13891	40.7904	-73.9354	1.45	1.76	2.22	2.57	2.94	3.42	3.78	4.15	4.62	4.93	5.21	5.53	5.74
433	13893	40.7821	-73.9415	1.46	1.76	2.22	2.57	2.94	3.42	3.77	4.13	4.60	4.91	5.18	5.49	5.70
434	13899	40.7346	-73.9677	1.39	1.69	2.08	2.35	2.71	3.29	3.73	4.12	4.56	4.84	5.09	5.37	5.57
435	13908	40.7721	-73.9439	1.41	1.70	2.10	2.41	2.76	3.23	3.59	3.93	4.36	4.65	4.92	5.25	5.47
436	13919	40.7912	-73.9034	1.78	2.19	2.67	3.00	3.31	3.73	4.09	4.59	5.23	5.58	5.86	6.17	6.36
437	13927	40.8022	-73.8600	1.85	2.25	2.73	3.05	3.35	3.76	4.15	4.68	5.31	5.65	5.93	6.22	6.42
438	13931	40.7976	-73.8320	1.86	2.27	2.72	3.04	3.35	3.77	4.17	4.69	5.30	5.64	5.91	6.21	6.40
439	13936	40.7996	-73.7551	1.88	2.26	2.73	3.05	3.35	3.77	4.19	4.73	5.35	5.69	5.96	6.26	6.46
440	13942	40.8091	-73.7129	1.88	2.27	2.70	3.00	3.32	3.78	4.21	4.71	5.32	5.67	5.94	6.24	6.44
441	13945	40.8299	-73.7050	1.88	2.25	2.70	3.02	3.32	3.74	4.16	4.69	5.30	5.64	5.92	6.22	6.41
442	13960	40.8136	-73.6511	1.86	2.23	2.66	2.96	3.27	3.73	4.14	4.60	5.17	5.52	5.79	6.09	6.28
443	13966	40.9095	-73.5951	1.83	2.16	2.60	2.90	3.18	3.55	3.92	4.38	4.92	5.24	5.50	5.79	5.99
444	14070	40.5784	-74.0134	1.42	1.73	2.05	2.36	2.72	3.29	3.72	4.11	4.55	4.84	5.10	5.42	5.64
445	14088	40.5766	-73.8985	1.63	1.92	2.26	2.53	2.82	3.25	3.61	3.96	4.39	4.67	4.91	5.18	5.37
446	14093	40.6094	-73.8790	0.15	0.19	0.42	0.89	1.10	1.34	1.57	1.84	2.20	2.43	2.61	2.80	2.93
447	14117	40.6469	-73.8212	0.07	0.10	0.30	0.91	1.12	1.34	1.59	1.96	2.29	2.48	2.63	2.81	2.93
448	14122	40.6295	-73.8109	0.06	0.08	0.24	0.91	1.14	1.38	1.62	2.00	2.34	2.52	2.67	2.85	2.96
449	14126	40.6265	-73.7969	0.06	0.08	0.26	0.92	1.15	1.39	1.64	2.02	2.36	2.54	2.69	2.86	2.98
450	14135	40.5918	-73.8262	0.06	0.08	0.19	0.90	1.16	1.43	1.68	1.99	2.33	2.55	2.72	2.91	3.04
451	14144	40.6204	-73.7695	0.05	0.07	0.34	0.97	1.21	1.48	1.76	2.11	2.45	2.64	2.79	2.97	3.08

HAT SvPt ID	NACCS SvPt ID	Latitude (deg)	Longitude (deg)	Best-Estimate Hazard Curves: Annual Exceedance Frequency, AEF (1/year) of Water Level (m, MSL)												
				1	2	5	10	20	50	100	200	500	1,000	2,000	5,000	10,000
452	14156	40.5813	-73.8675	0.11	0.15	0.42	0.90	1.11	1.35	1.59	1.86	2.23	2.45	2.63	2.83	2.96
453	14158	40.6150	-73.8695	0.12	0.16	0.30	0.87	1.10	1.35	1.60	1.89	2.22	2.43	2.60	2.80	2.92
454	14173	40.6014	-73.7964	0.05	0.06	0.20	0.95	1.20	1.47	1.75	2.07	2.41	2.61	2.77	2.95	3.08
455	14190	40.5430	-73.9342	1.43	1.70	1.99	2.32	2.60	2.96	3.36	3.74	4.15	4.42	4.66	4.94	5.13
456	14196	40.5703	-73.8513	1.39	1.67	2.04	2.32	2.64	3.16	3.62	4.01	4.43	4.70	4.95	5.23	5.41
457	3817	40.4798	-74.0196	NaN	NaN	NaN	NaN	1.27	3.02	3.51	3.89	4.29	4.54	4.77	5.02	5.21
458	3900	40.5281	-74.0137	1.41	1.68	2.03	2.31	2.61	3.06	3.47	3.85	4.27	4.53	4.77	5.06	5.25
459	3900	40.5323	-74.0077	1.41	1.68	2.04	2.32	2.61	3.07	3.47	3.85	4.27	4.54	4.78	5.06	5.26
460	3915	40.5491	-73.9468	1.49	1.77	2.04	2.24	2.52	2.99	3.39	3.75	4.16	4.43	4.67	4.95	5.14
461	3592	40.5736	-73.8834	1.66	1.98	2.32	2.59	2.88	3.31	3.66	4.01	4.43	4.71	4.95	5.22	5.41
462	13053	40.8033	-73.8071	1.87	2.26	2.72	3.04	3.35	3.76	4.15	4.68	5.29	5.63	5.90	6.20	6.39
463	3856	40.5019	-74.1620	1.49	1.80	2.19	2.54	2.96	3.57	4.04	4.47	4.94	5.24	5.50	5.81	6.00
464	11778	40.5761	-74.0340	1.43	1.74	2.05	2.35	2.72	3.29	3.73	4.12	4.56	4.86	5.11	5.42	5.65
465	11650	40.5139	-74.2559	0.15	0.19	0.26	0.44	1.06	1.69	2.36	2.96	3.63	4.06	4.40	4.75	4.97
466	11781	40.6251	-74.0581	1.43	1.75	2.08	2.39	2.76	3.35	3.79	4.19	4.63	4.92	5.18	5.49	5.72
467	11781	40.6279	-74.0490	1.43	1.75	2.08	2.39	2.76	3.35	3.79	4.19	4.63	4.93	5.18	5.49	5.72
468	11861	40.6684	-74.0003	1.43	1.73	2.07	2.38	2.76	3.37	3.83	4.24	4.70	5.00	5.26	5.57	5.77
469	11895	40.7378	-73.9595	1.44	1.75	2.14	2.47	2.84	3.40	3.81	4.19	4.62	4.91	5.15	5.43	5.62
470	11784	40.6702	-74.0444	1.43	1.74	2.07	2.36	2.74	3.34	3.81	4.22	4.68	4.98	5.24	5.54	5.74
471	11766	40.6501	-74.0817	1.47	1.78	2.13	2.47	2.87	3.46	3.90	4.31	4.77	5.07	5.34	5.67	5.90
472	11741	40.6448	-74.1522	0.03	0.05	0.07	0.27	1.38	2.13	2.78	3.35	3.90	4.24	4.54	4.87	5.10
473	4157	40.6800	-74.1306	0.03	0.05	0.08	0.20	1.41	2.17	2.84	3.38	3.91	4.23	4.52	4.85	5.06
474	4261	40.7494	-74.0844	0.05	0.09	0.13	0.30	1.50	2.27	2.88	3.31	3.73	3.99	4.22	4.50	4.70
475	3967	40.5778	-74.2097	0.08	0.12	0.17	0.37	1.34	2.11	2.71	3.28	3.86	4.23	4.54	4.88	5.10
476	3551	40.4670	-74.0144	1.43	1.74	2.08	2.38	2.73	3.27	3.70	4.07	4.47	4.72	4.94	5.20	5.39
477	11982	40.6385	-73.8130	0.06	0.08	0.25	0.91	1.13	1.37	1.61	1.99	2.33	2.51	2.66	2.83	2.95
478	4135	40.6533	-74.0645	1.44	1.75	2.08	2.35	2.72	3.33	3.80	4.21	4.67	4.97	5.22	5.52	5.72
479	7673	40.6992	-74.0154	1.41	1.73	2.06	2.35	2.73	3.33	3.79	4.19	4.65	4.94	5.20	5.50	5.70
480	13067	40.7829	-73.8682	1.86	2.30	2.73	3.05	3.36	3.81	4.21	4.72	5.34	5.68	5.95	6.25	6.44
481	4103	40.6394	-74.1606	0.03	0.05	0.08	0.31	1.38	2.13	2.78	3.35	3.90	4.24	4.54	4.88	5.10
482	11749	40.7050	-74.1123	0.03	0.06	0.08	0.27	1.41	2.18	2.89	3.39	3.90	4.22	4.50	4.82	5.03
483	11907	40.8100	-73.9758	1.26	1.49	1.80	2.05	2.36	2.82	3.16	3.46	3.79	4.02	4.22	4.47	4.65