SUPERSTORM SANDY RECOVERY IN NEW YORK STATE:

LEVERAGING WEB MAPS TO BECOME MORE RESILIENT AND MANAGE RETREAT IN FLOOD-PRONE AREAS

NY GEOCON 2017
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NYS GOVERNOR'S OFFICE OF STORM RECOVERY
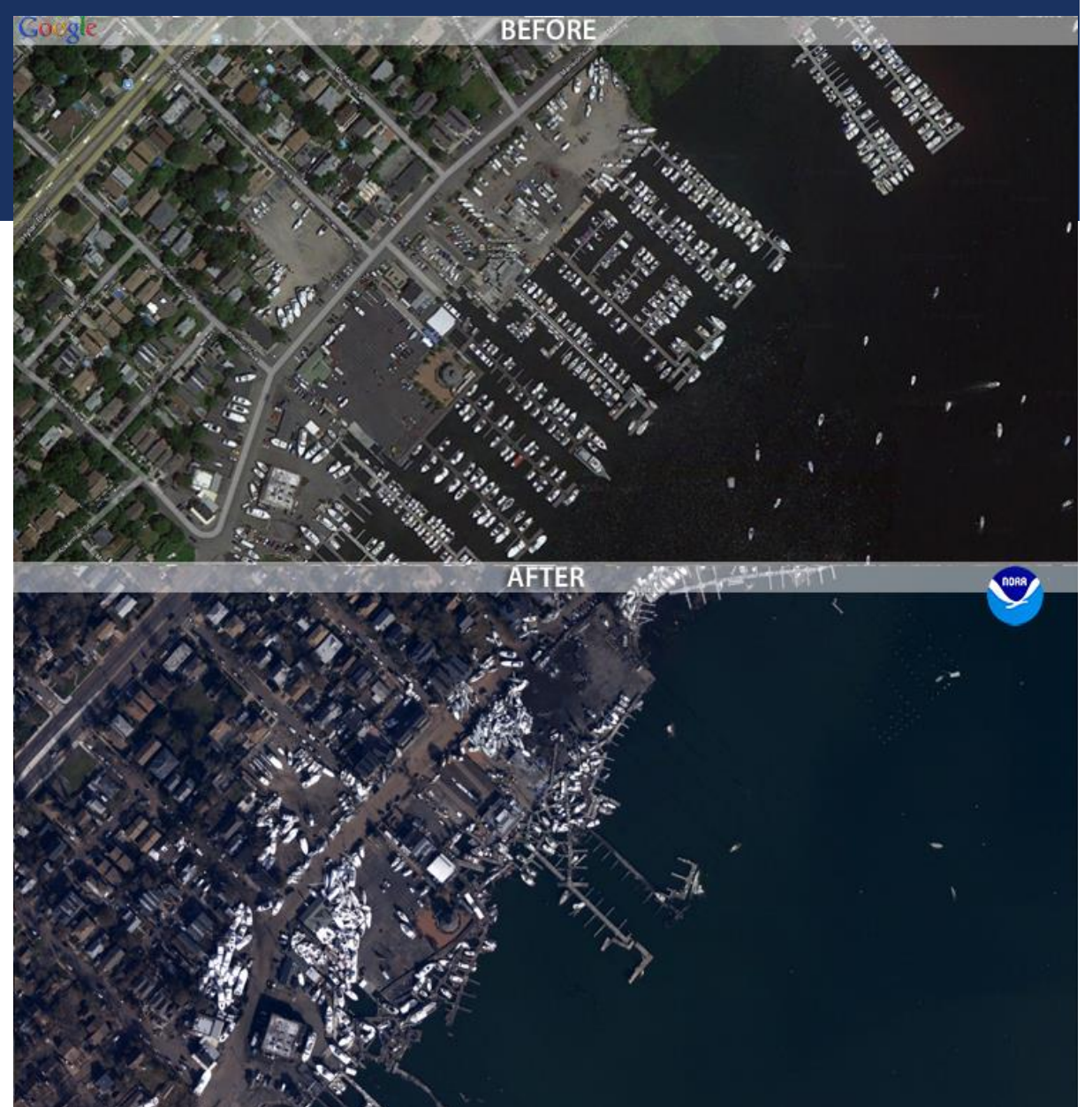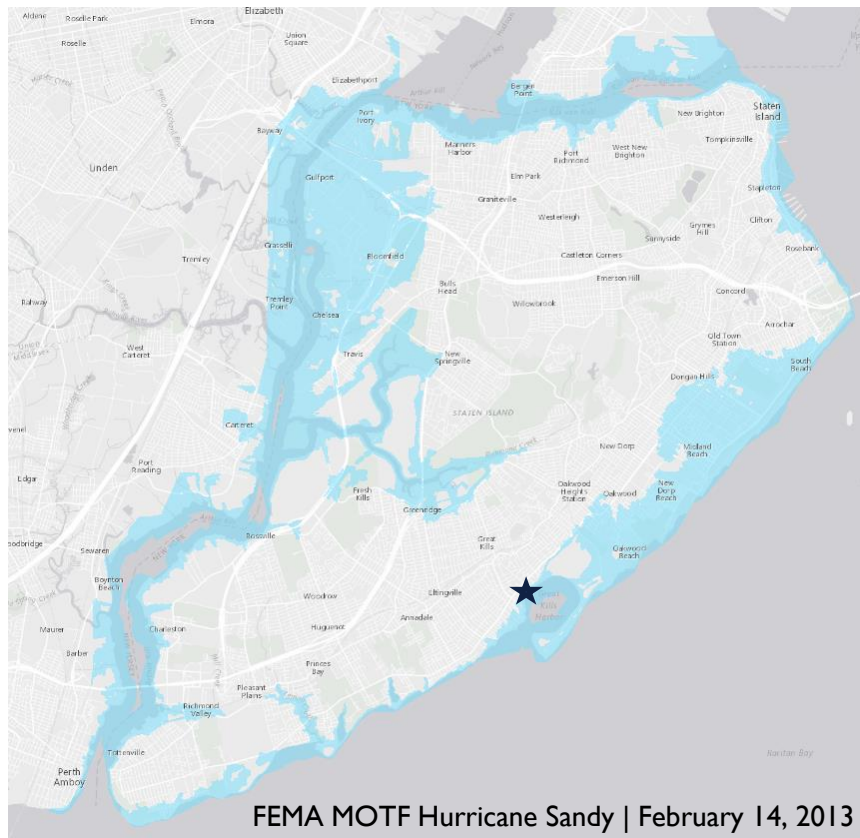
Governor's Office of Storm Recovery

SUPERSTORM SANDY

- Struck the New York metropolitan region on October 29, 2012

- Most destructive hurricane of the 2012 Atlantic hurricane season.

- Second-costliest hurricane in United States history (in 2015, the damage was assessed to be approximately $75 billion by NOAA's National Weather Service).

- Caused unprecedented damage:
  - As many as 300,000 housing units were damaged or destroyed.
  - 2 million utility customers lost power.
  - More than 2,000 miles of roads affected or closed.
  - Crippled public transportation.
  - 60 New Yorkers died as a result of the storm.
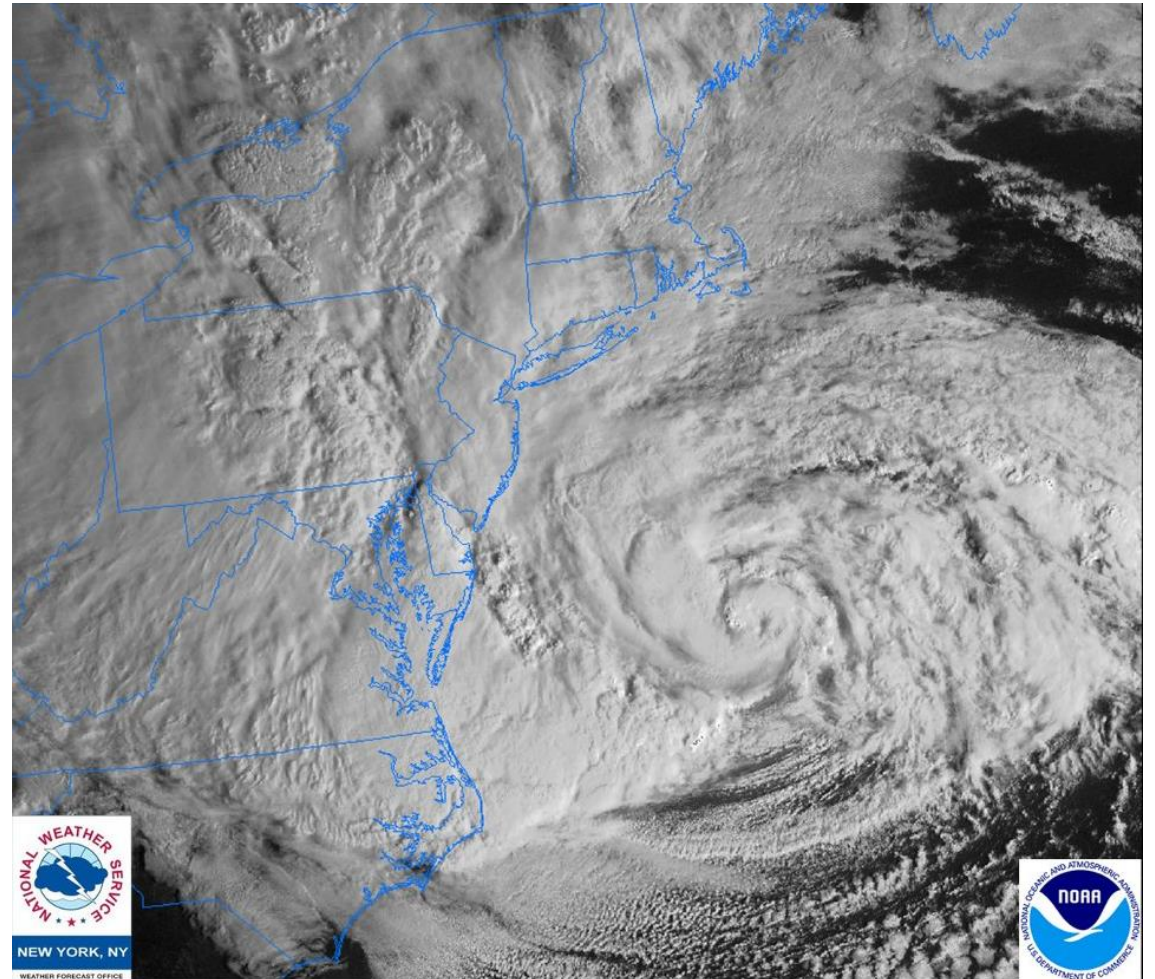
STATEN ISLAND: BEFORE & AFTER

- As seen by these images of Staten Island's coastal vulnerability, rebuilding may not always be the best recovery option. This is why the NY Rising Buyout program offered managed retreat as an alternative solution.

FEMA MOTF Hurricane Sandy | February 14, 2013

Staten Island, New York. "Before" image captured by Google; "After" image captured by NOAA's National Geodetic Survey

THE GOVERNOR'S OFFICE OF STORM RECOVERY (GOSR)

- Established in June of 2013 following Superstorm Sandy, Hurricane Irene, and Tropical Storm Lee.

- Utilizes approximately $4.5 billion in flexible funding made available by the U.S. Department of Housing & Urban Development's (HUD) Community Development Block Grant Disaster Recovery (CDBG-DR) program

- Concentrate aid to four main program areas. Paired with additional federal funding that has been awarded to other State agencies, the CDBG-DR program enables homeowners, small businesses and entire communities to build back even better than before.

Programs

Housing Recovery
-Single Family
-Co-Op/Condo/Rental
-Buyout & Acquisition Program
-Manufactured Home Program

Small Business
-Business Mentor Program
-Recovery Program

Community Reconstruction
-Resiliency and Recovery Projects
- 124 Participating Communities

Infrastructure
-Rebuild By Design
-FEMA Public Assistance Program
-Hazard Mitigation Grant Program

BUYOUT & ACQUISITION PROGRAM

- The NY Rising Buyout and Acquisition Program is designed to help New Yorkers whose homes were damaged by Superstorm Sandy, Hurricane Irene, and/or Tropical Storm Lee.

- The "Buyout" component includes the voluntary purchase of eligible properties within designated areas that experience frequent flooding that will be returned to open space and act as a buffer between waterbodies and built areas.

- In this context, managed retreat is the strategy that most effectively eliminates this risk by restoring land to its natural floodplain functions. This strategy becomes all the more important in the face of imminent sea level rise and the new reality of increasingly frequent storms.

FEMA - Staten Island, New York on November 9, 2012

PROGRAM PROCESS

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┌──────────────────────────┐      ┌──────────────────────────┐      ┌──────────────────────────┐
│  Enhanced Buyout Areas/   │ ───> │   Application Intake      │ ───> │ Eligibility Determination │
│  Community Participation   │      │                           │      │                           │
│        Identified          │      │                           │      │                           │
└──────────────────────────┘      └──────────────────────────┘      └──────────────────────────┘
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┌──────────────────────────┐      ┌──────────────────────────┐      ┌──────────────────────────┐
│         Award             │ ───> │        Closing            │ ───> │ After acquiring the Property │
│                           │      │                           │      │      GOSR conducts:          │
│                           │      │                           │      │  - property maintenance      │
│                           │      │                           │      │  -demolition [when appropriate] │
│                           │      │                           │      │  - disposition of the Property │
└──────────────────────────┘      └──────────────────────────┘      └──────────────────────────┘
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NEW YORK STATE RECOVERY TIMELINE

- **January 29, 2013** Congress appropriated Community Development Block Grant Disaster Recovery (CDBG-DR) funds through Public Law 113-2 to the Department of Housing and Urban Development (HUD).

- **March 5, 2013** Federal Register Notice for the initial allocation of $5.4 billion of Community Development Block Grant disaster recovery (CDBG–DR) funds appropriated by the Disaster Relief Appropriations Act, 2013 (Pub. L. 113–2).

- **April 2013** New York State's Sandy recovery action plan is accepted by HUD. The NY Rising Buyout Program, the part of the Housing Recovery program that implements a managed retreat strategy from the coast, begins with Oakwood Beach, Staten Island in New York City.

- **June 2013** Governor Cuomo establishes the Governor's Office of Storm Recovery (GOSR), a division of the Housing Trust Fund Corporation under the New York State Homes and Community Renewal agency (HCR).

- **November 2013** The NY Rising Buyouts program is extended to the neighborhood of Ocean Breeze in Staten Island, NY.

- **April 2014** Program is extended to Graham Beach and later Suffolk County in Long Island.

WHAT IS MANAGED RETREAT?

- *Managed retreat is the strategy that most effectively eliminates risk. It allows residents to forge new beginnings on safer ground and helps create public amenities by acquiring homes in the flood-prone areas and restoring the land to natural floodplain functions. And, unlike other adaptation measures, retreat is a one-time investment that requires no further action beyond helping participants to relocate and protecting the natural landscape. Managed retreat also has the potential to create synergies with other resilience and adaptation strategies. Since development is not permitted on acquired land, this strategy can be used to implement projects such as seawall construction, wetlands restoration, and many other engineered and nature-based solutions. (Lincoln Institute, 2016)*
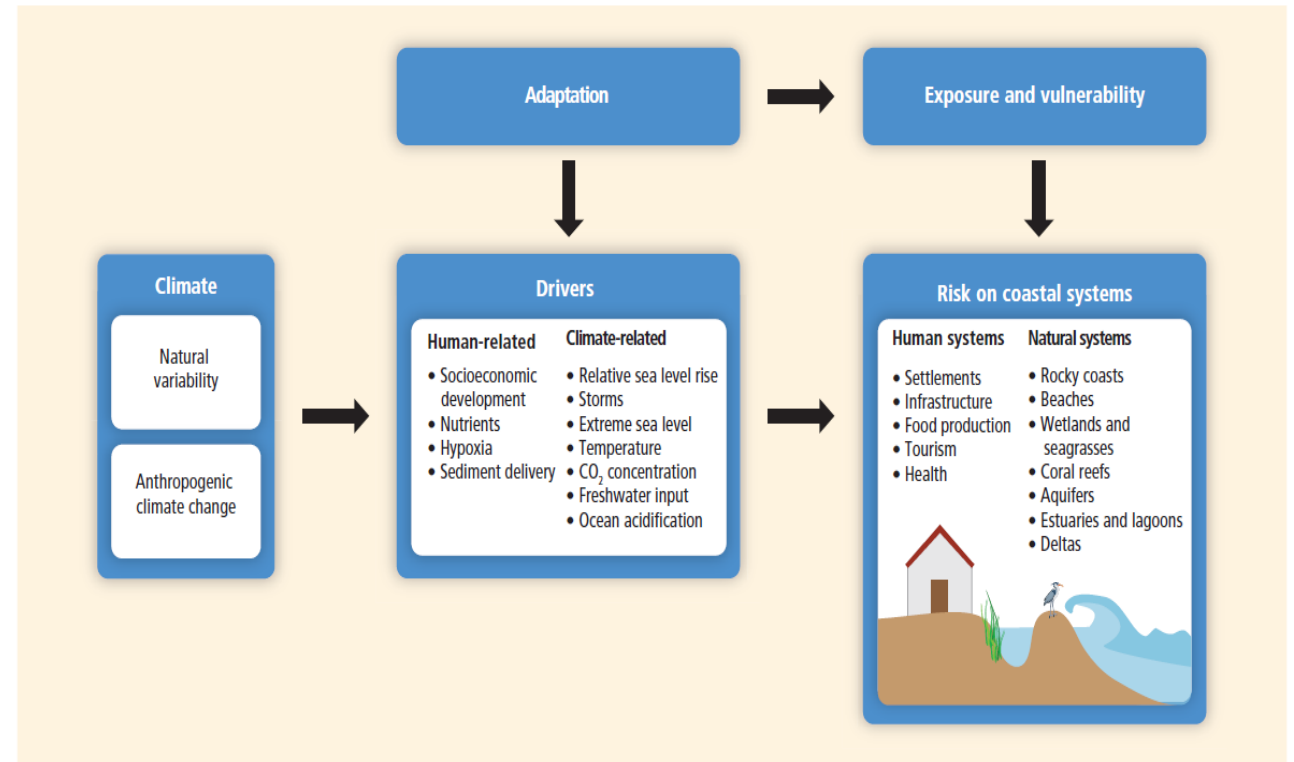
Figure 5-1 | Climate, just as anthropogenic or natural variability, affects both climate and human related drivers. Risk on coastal systems is the outcome of integrating drivers' associated hazards, exposure, and vulnerability. Adaptation options can be implemented either to modify the hazards or exposure and vulnerability, or both.

HOW GIS CAN CONNECT OUR STAFF IN THE OFFICE TO OUR TEAM IN THE FIELD

Program staff want to:

- Identify where applicants/properties are located.

- Highlight properties owned/ maintained by GOSR.

- See the progress of an applicant's status.

- Understand where other potential applicants could be located.

- Provide insight on land use and land ownership.

Field staff want to:

- Know the location of properties that need to be maintained.

- Document when activities are occurring at a location.

- Have foresight when a property be demolished or dispositioned.

- Report a problem or update at a property location.

GOSR'S PROPERTY MAINTENANCE APPLICATION

GOSR's Property Maintenance Application for Demo

LAUNCHING THE APP

- Once the app is launched read the information on the splash page, check the check box certifying you have read it and click continue.

- You will then enter a map view of the application and can then explore the data.

- The bottom navigation bar allows you to zoom in and out, return to the opening home view, and find you location when using GPS enabled mobile devices

Splash Page
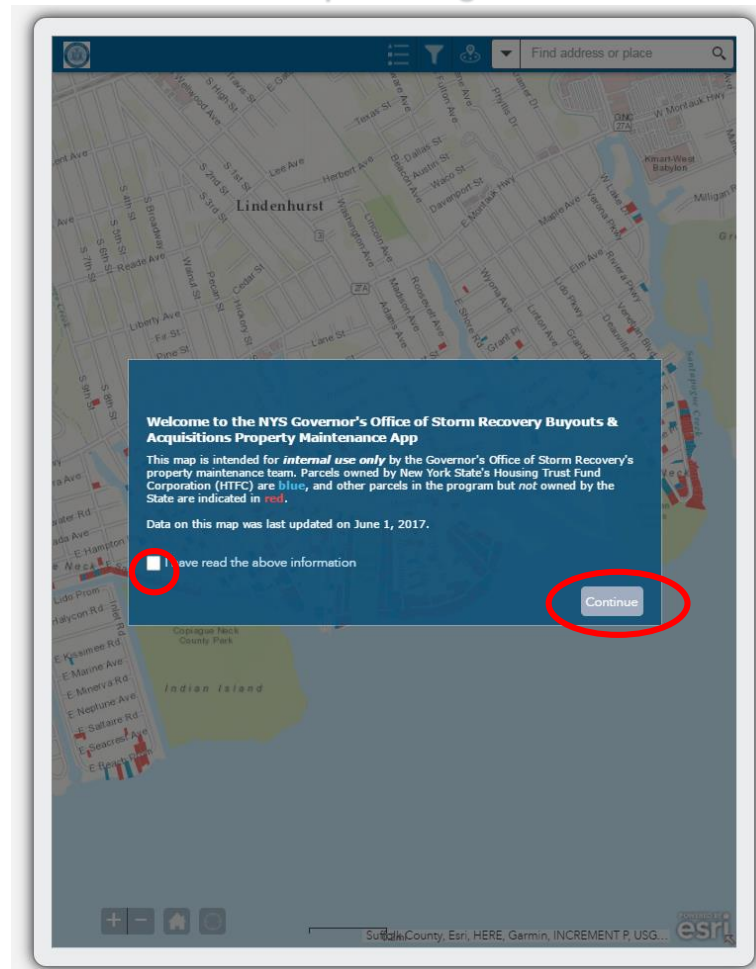
Opening Home View
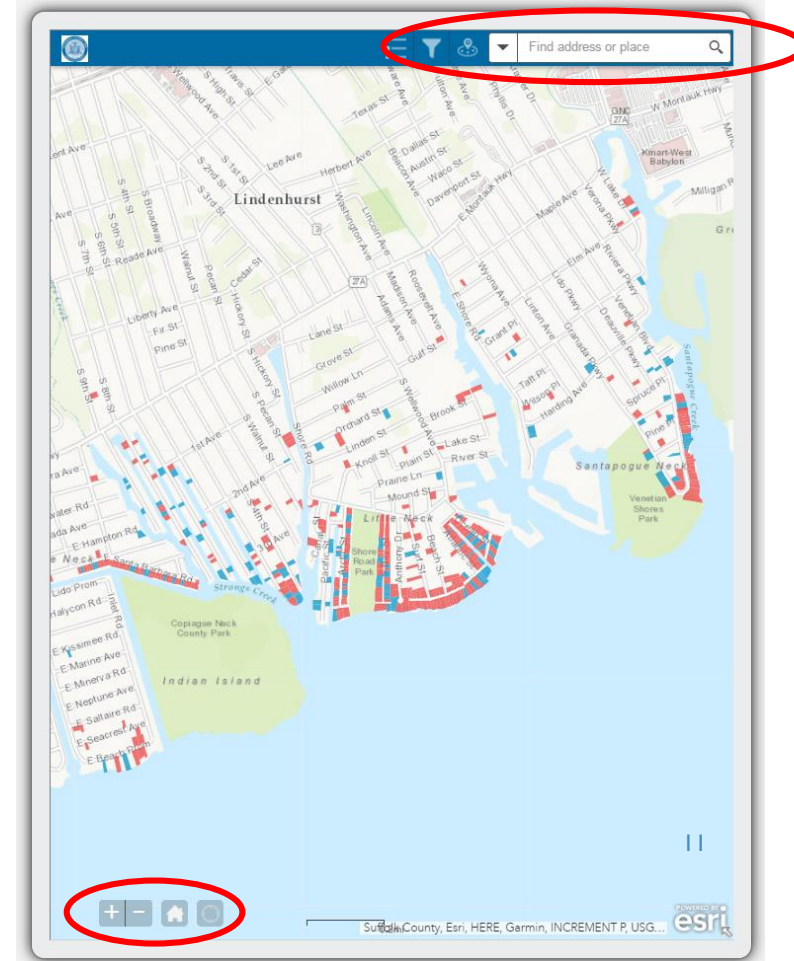
SEARCH & LOCATE ADDRESSES

- To find specific locations users can type in the address, municipality or other geographic identifier to zoom to that location.

- Users may also pan to a specific location using a mouse on desktops or finger on mobile devices.
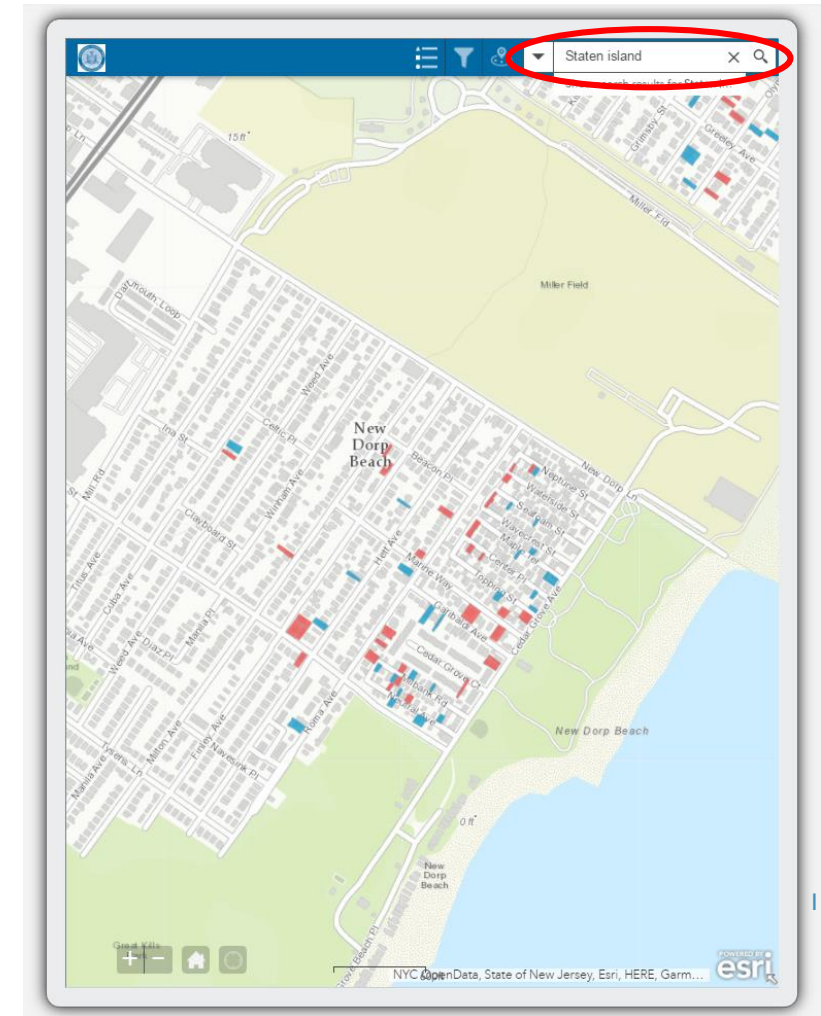
UNDERSTANDING THE SYMBOLS

- The features (properties) on the map are set to change color as their ownership changes to State (HTFC) and then again once sold/transferred by the state.

- State owned properties are identified in BLUE.

- Non-State owned properties (but expected to be acquired) are in RED.

- Previously State owned parcels that have been auctioned are in GREEN or conveyed are in PURPLE.

- Users can click on a property to get more detailed information about it.
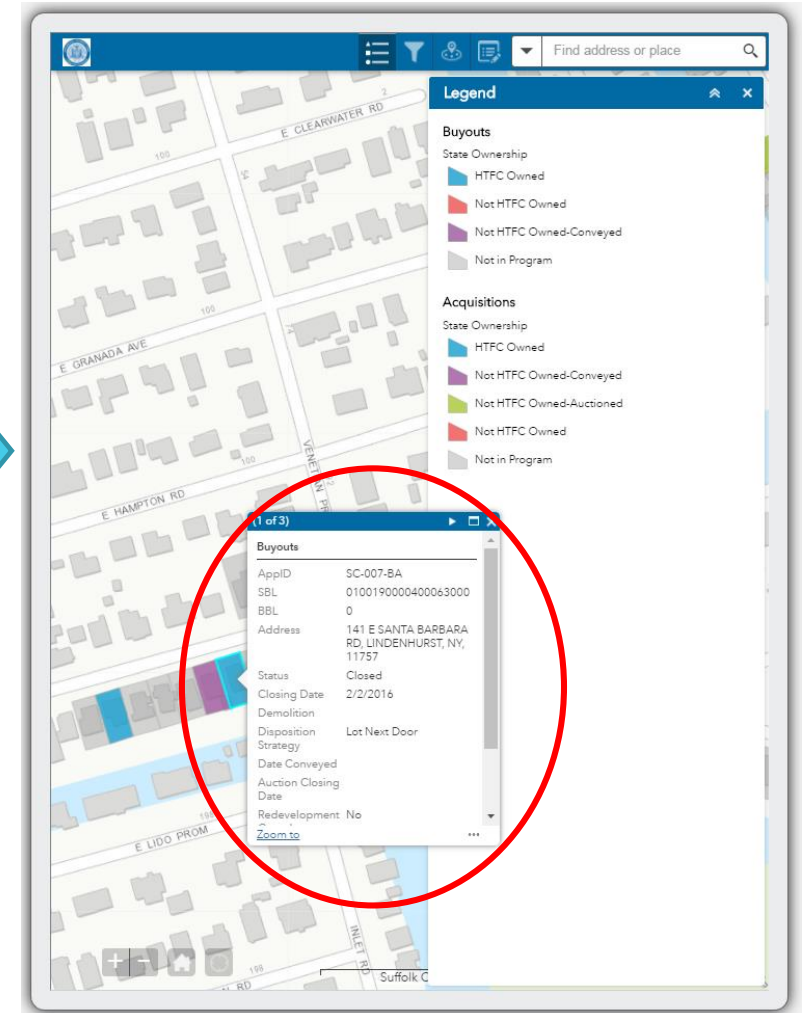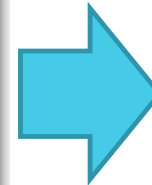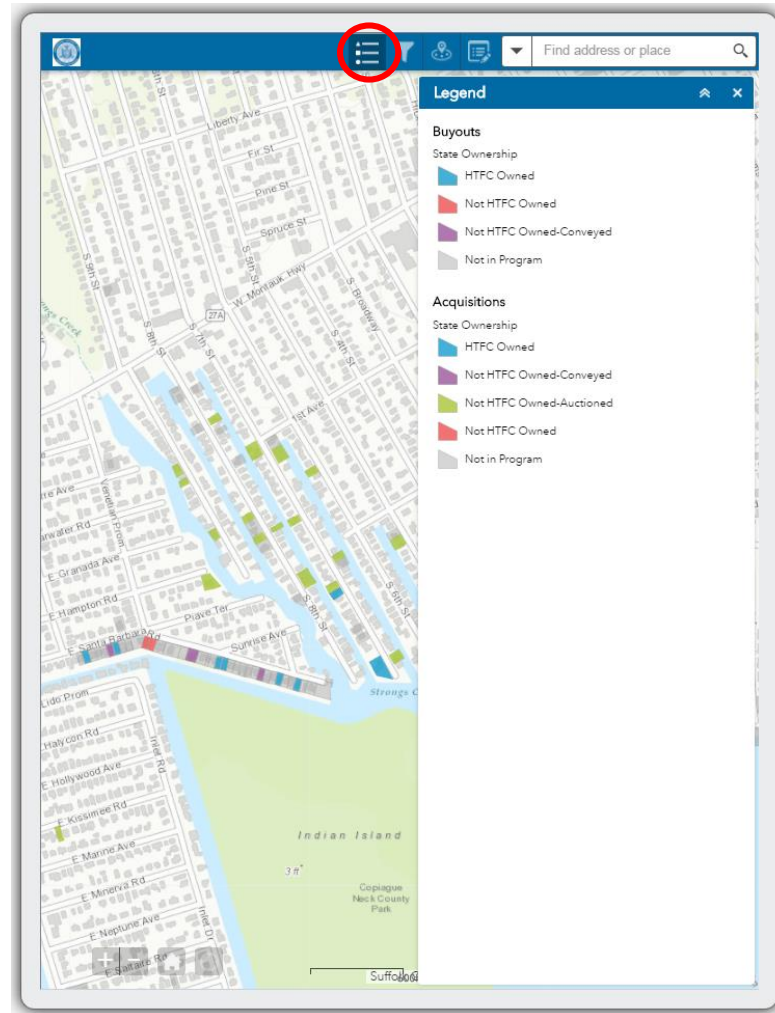
FILTERING FOR STATE OWNED ONLY

- Users can filter to view only HTFC (State) owned properties using the filter buttons in the top navigation.

- Other filters are also available to help users see (or hide) a variety of information.

- Users may also search for nearby properties (with or without the filters on) from any point on the map by dropping a pin or typing in an address.

- After dropping a pin or typing in an address, selecting a search radius using the slider (between 1 and 15 miles).
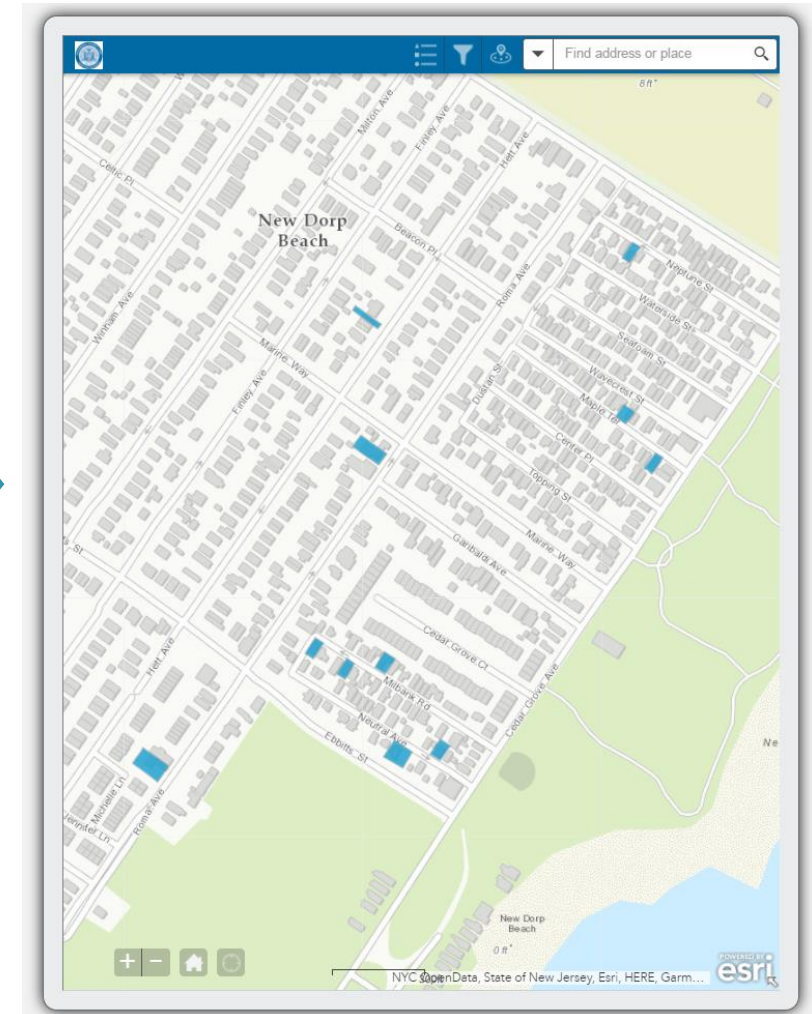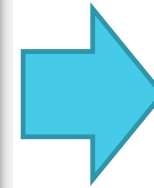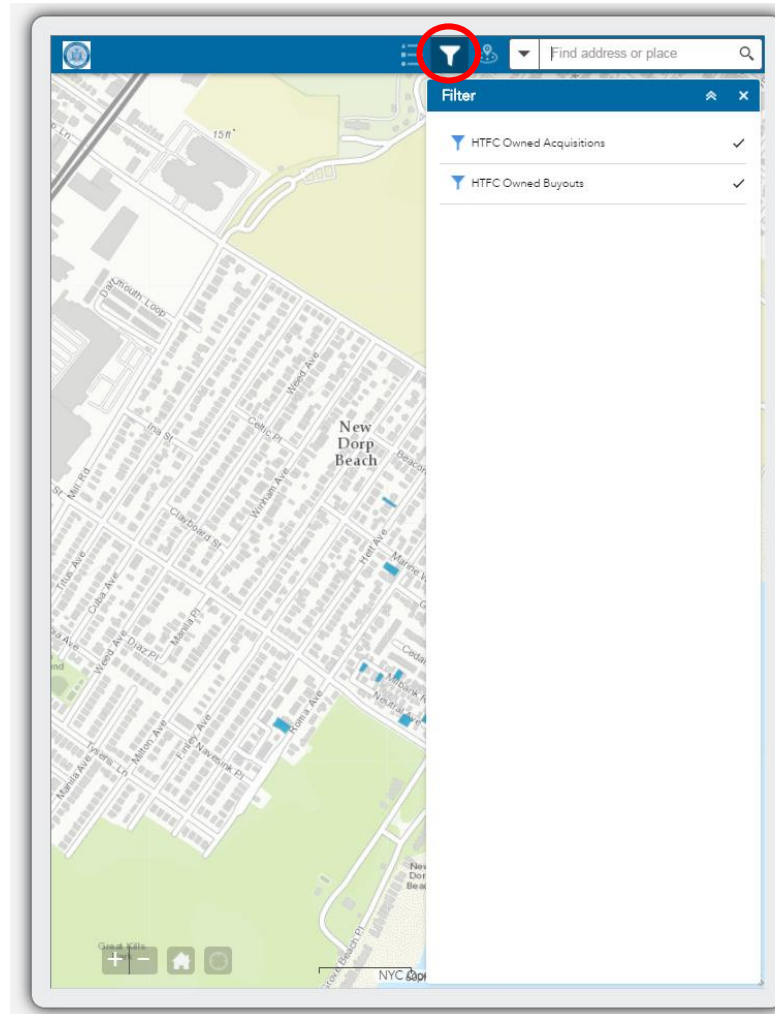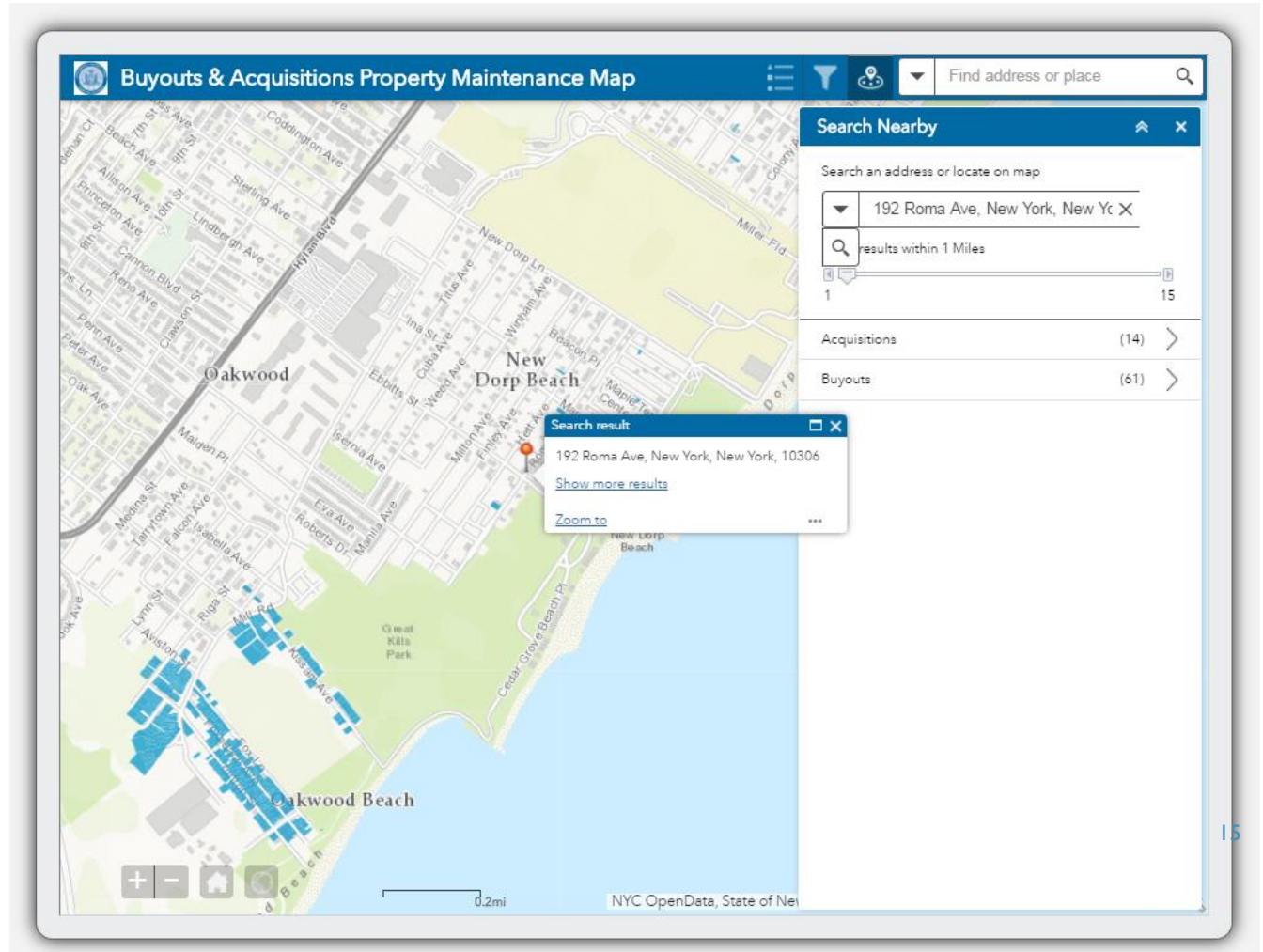
FINDING WHAT IS NEARBY

- Users can then select Buyouts or Acquisitions and find all of them within the search radius and their distance from the point you selected.
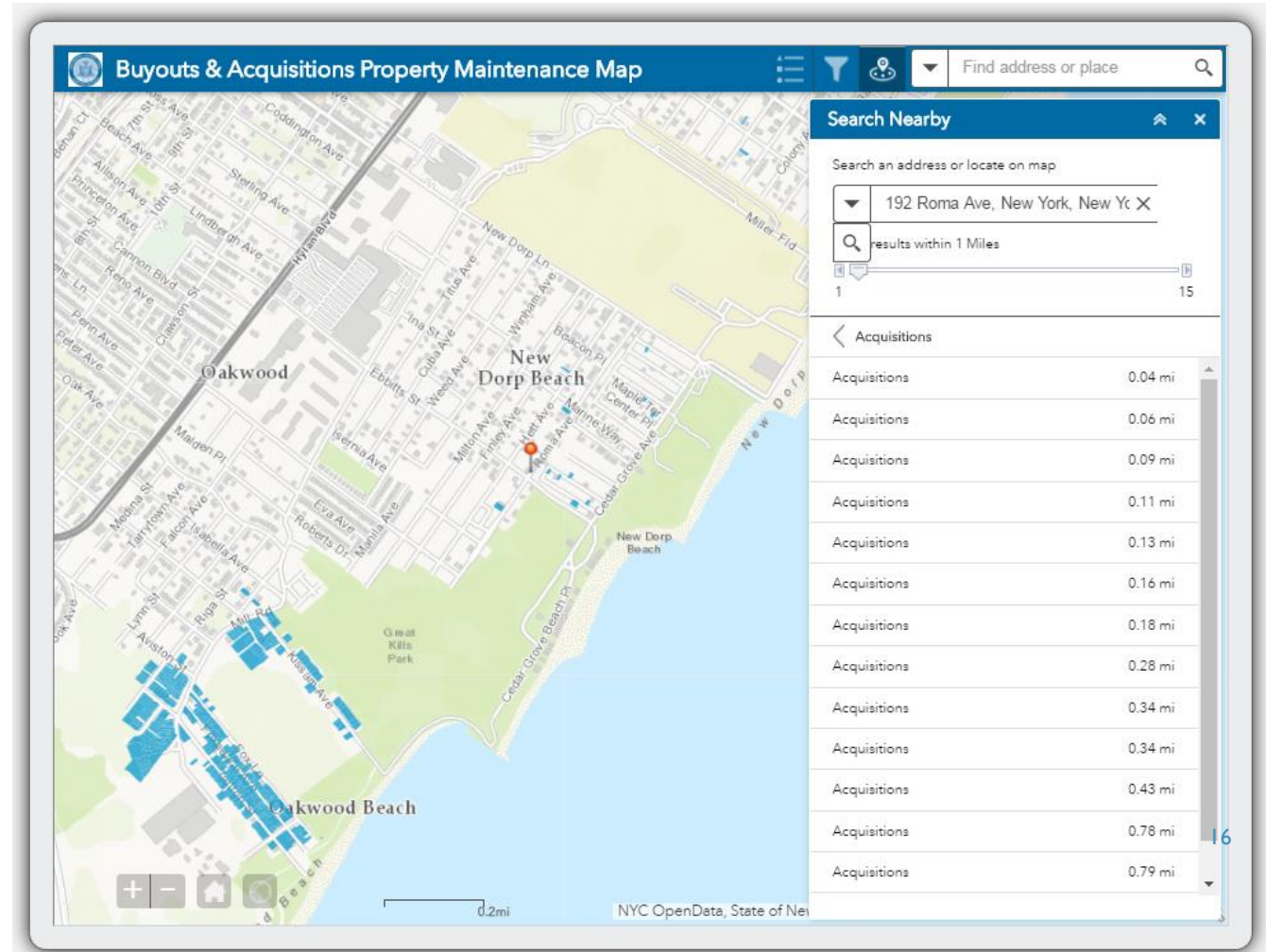
ADDING PROPERTY NOTES

- Users can also add notices & property notes directly from the app. These notes will appear at the bottom of each properties description pop-up window.

- Select the "Edit Property Notes" widget in the top toolbar of the app to add or remove property notes.
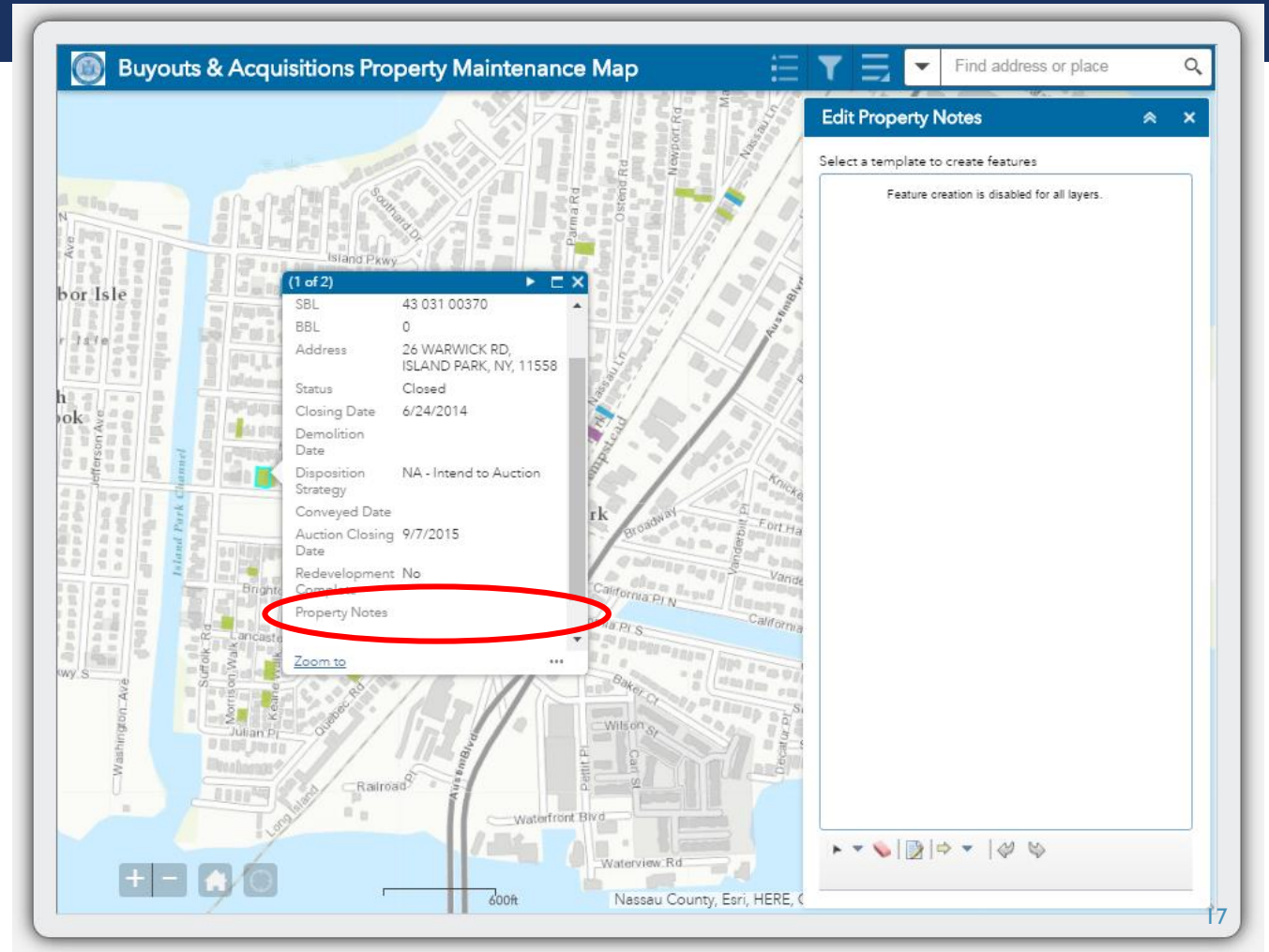
ADDING PROPERTY NOTES

- Once "Edit Property Notes" is selected, users can then choose the property they want to add notes to and type them in.

- Once complete press the close button and exit the "Edit Property Notes" widget.

- You can then view the notes you added for that property in the pop-up window.
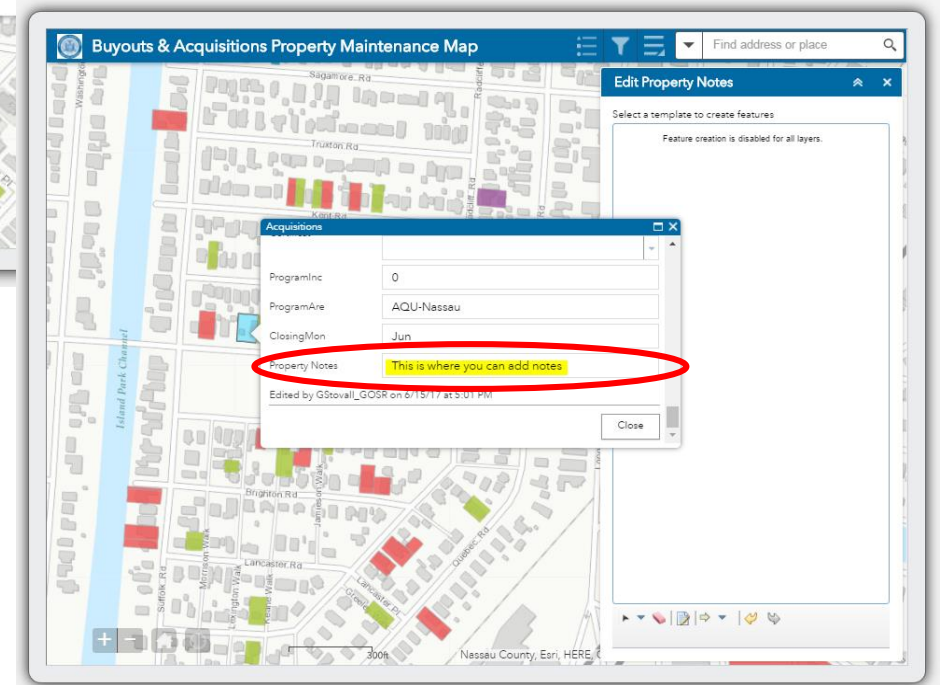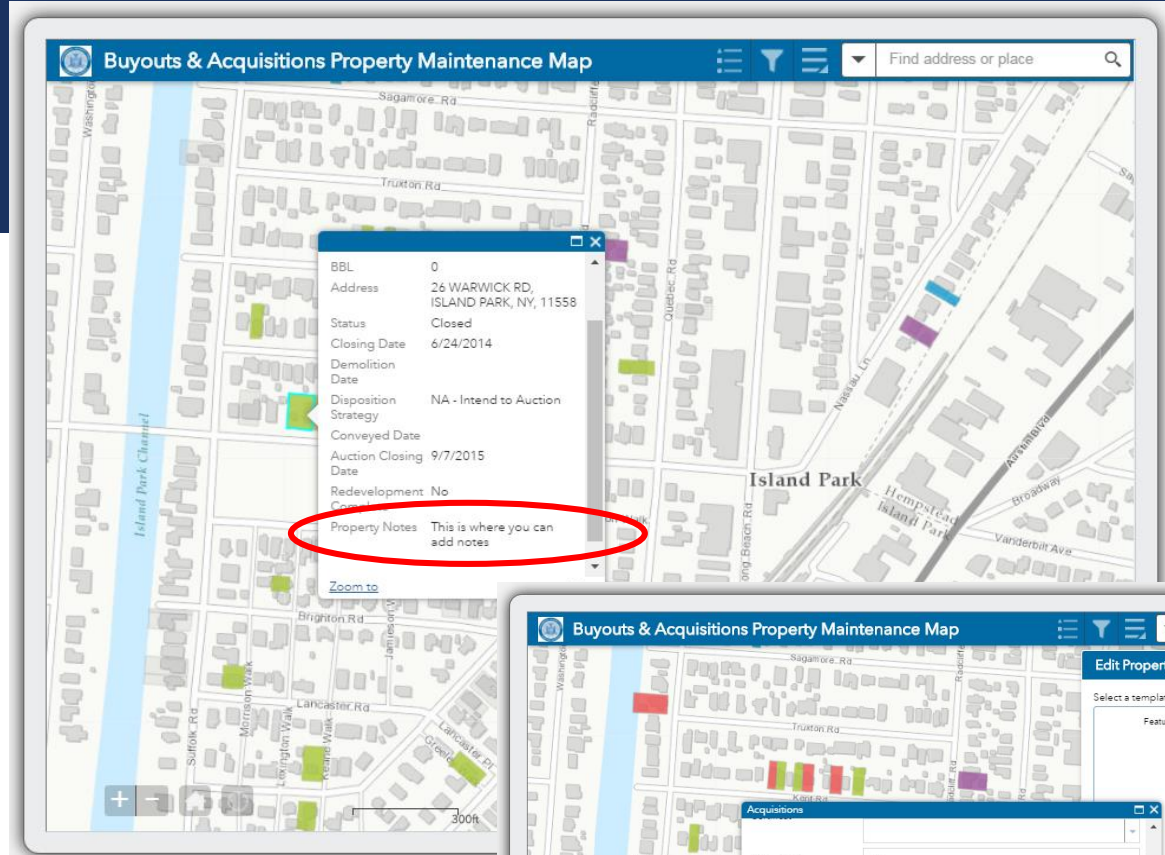
DATA LAYERS FOR PROGRAM ANALYSIS & WEB MAP

- Federal Datasets:

FEMA Floodplain Layer

FEMA MOTF Hurricane Sandy Inundation Layer

- State Datasets:

NY GIS Program Office Statewide Tax Parcel Data Layer
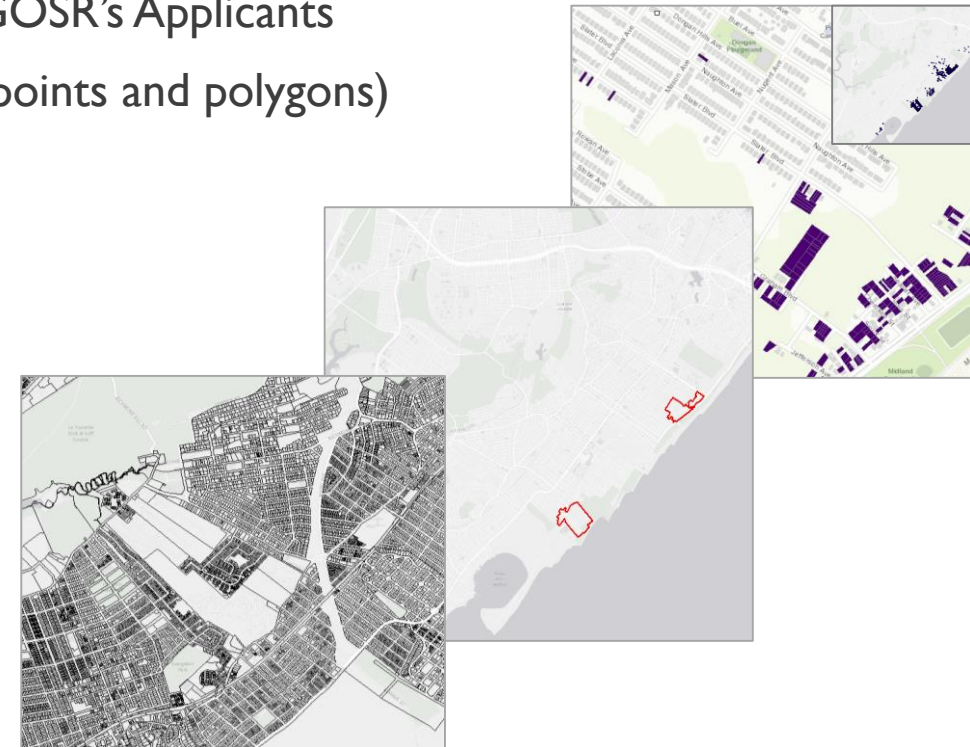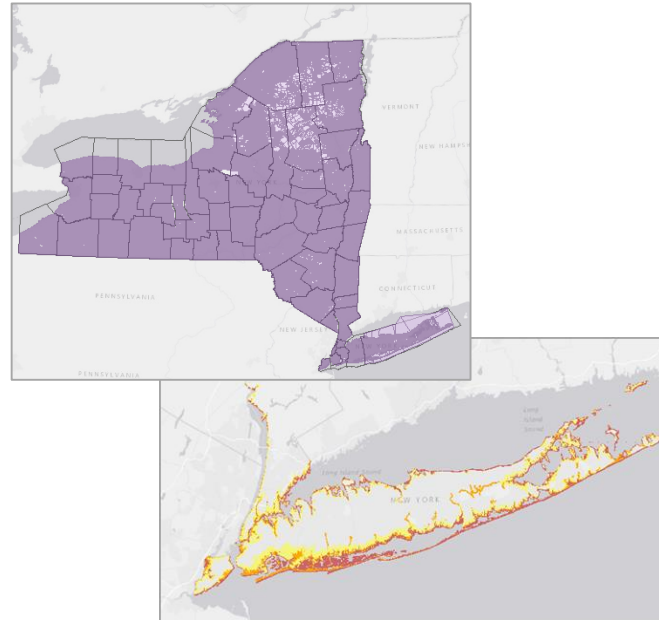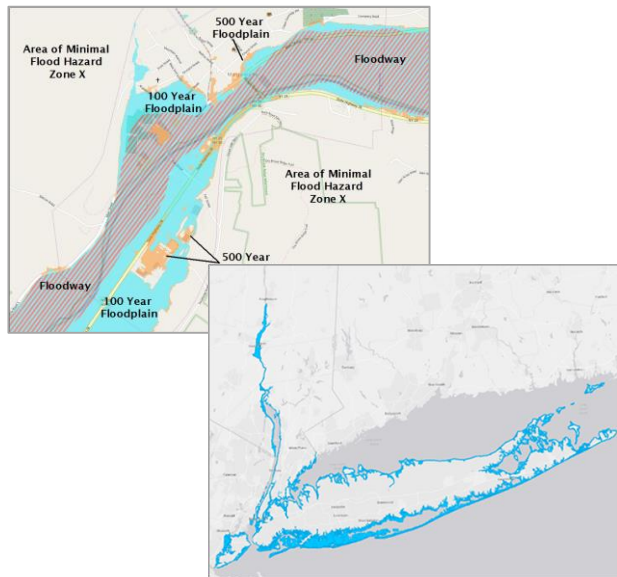
NYS DOS/NOAA Coastal Risk Layer

- Local Datasets:

NYC MapPLUTO

GOSR's Enhanced Buyout Areas

GOSR's Applicants

(points and polygons)

STEPS TO CREATE GIS WEB MAP APPLICATION

Step 1:
Identify the universe of applicants. Create and format data

Step 2:
Select and configure platform, widgets, and/or application.

Step 3:
Add appropriate GIS data layers. Create map symbology and layout.

Step 4:
Manage program updates: applicant status change, property disposition, demolition status, property maintenance, etc.

Step 5:
User acceptance testing, maintenance, and distribution to users.

-Create users guide.

CHALLENGES

- Keeping data updated.

- Educating non-technical users on how to use these web maps and applications.

- Empowering users to take initiative to use the platforms that have been developed.

- Providing up to date solutions and staying current with technology.

NEXT PHASES

- Incorporating short survey forms that are used in the field into the editable fields in the attribute table.

- Create an external web map that can help us relay information to public officials and the community. This map could answer the following questions for external constituents:

  - What areas are eligible? / Where are the Enhanced Buyout Areas?

  - What is happening in my community?

  - Am I in a floodplain?

  - What will happen to the land bought by NY Rising (GOSR)?

Governor's Office of Storm Recovery — **Property Inspection Sheet**

Date:
Inspector:
Address:
Lot Open: Y   N
Lot ID:
Lot Status: B/O   ACQ
Board Up: Y   N   Repair   Qty.:   Signage: OK   Missing
Pest Control: Y   N   Land Status: Locks in Place: Y   N   N/A
Mowing Status: Ok   N/A   Mow   Snow Removal: Y   N
Security Button: Y   N   Security Button Location:
Notes:
Previous Note(s):
Immediate Action Required:

QUESTIONS ?

Managed Retreat Story Map:
http://nystormrecovery.maps.arcgis.com/apps/Cascade/index.html?appid=a74da8538aa84f9dbc7e7ee0785da37e

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