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ENSURING RELIABILITY IN THE MONTAUK AREA: MONTAUK SUBSTATION

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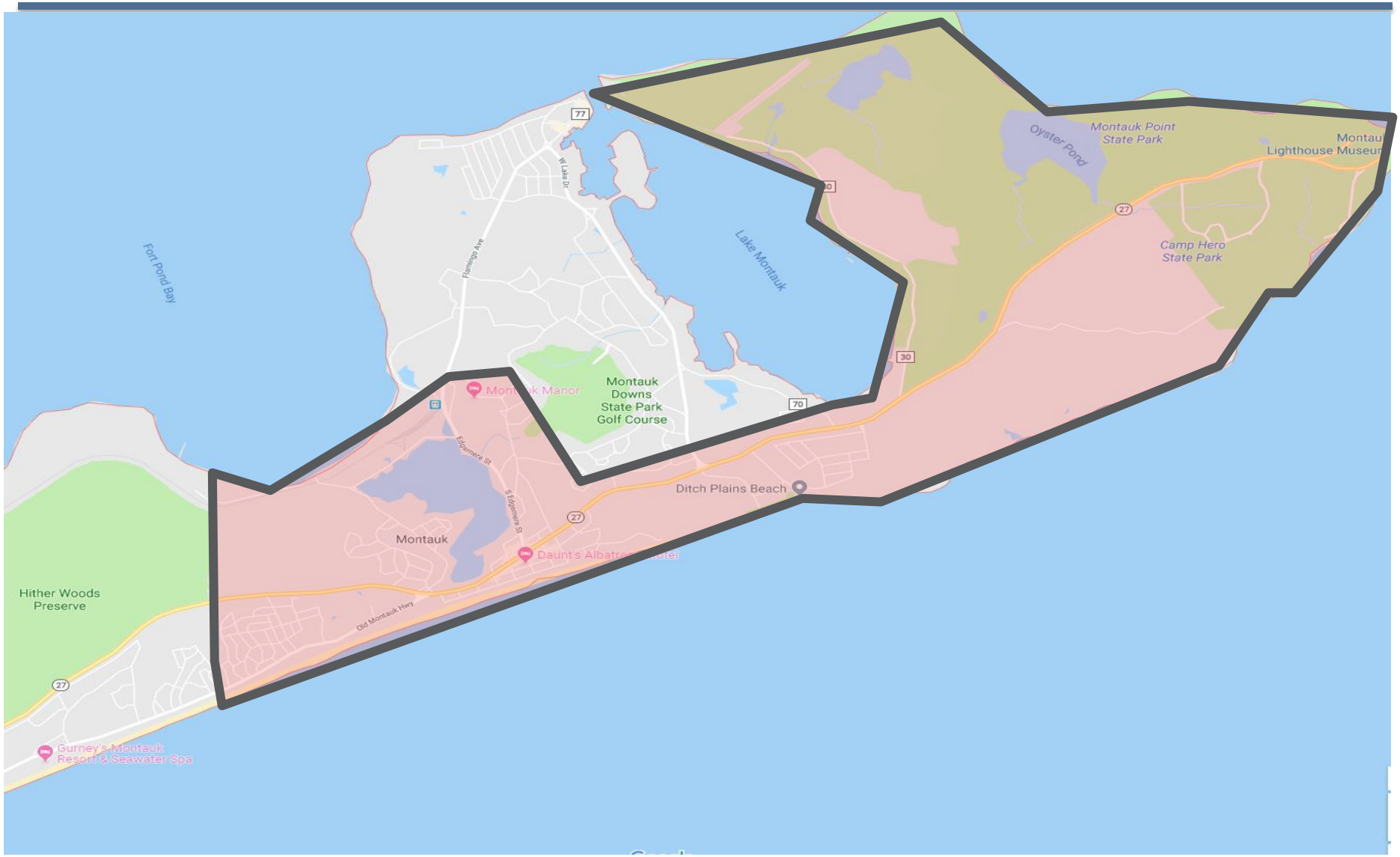
We make things work for you.

Background

- PSEG Long Island is responsible to ensure reliable electric service for the communities we serve.
- There is a recognized need to support existing customer load, increase customer reliability, and plan for future load growth in the Town of East Hampton.
- Distribution substations are located throughout Long Island. Substations convert high-voltage transmission-line electricity to distribution voltage to bring power to homes and businesses.
- The distribution substation in Montauk is currently at capacity and cannot support additional load. Without modernization or replacement, emergency generation will be required throughout the community in 2020 and beyond.

Area overview

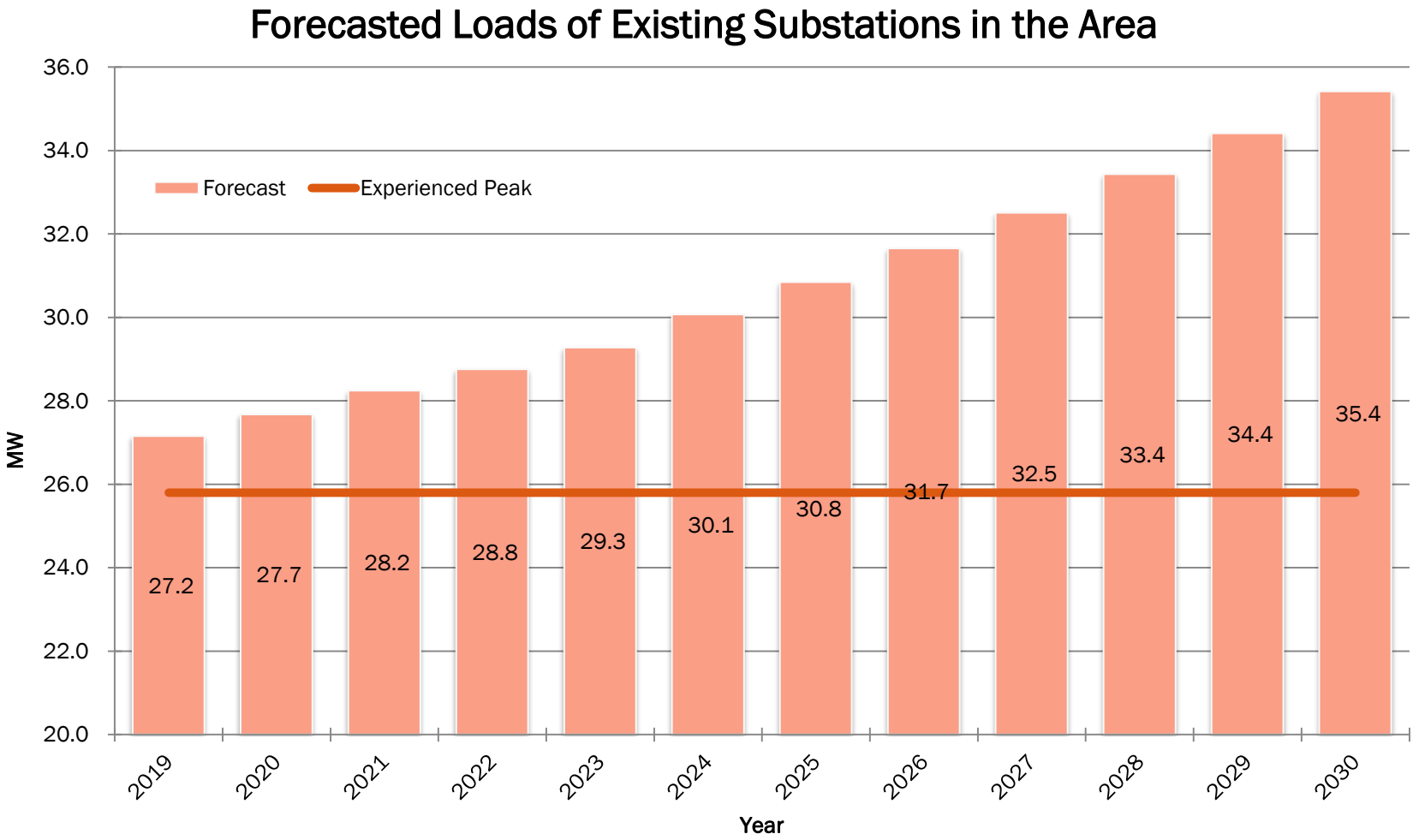
Montauk Substation Distribution Area



System needs in Montauk

- The existing infrastructure is at its capacity and new substation equipment is required to reliably serve 6,600 customers in the area.
- The South Fork electric load is projected to grow at an annual rate of 2.4%.
- Old Montauk diesels have been retired. Battery installation, proposed substation modernizations, and electric infrastructure enhancements in the area are consistent with clean energy goals.
- Innovative solutions, such as battery storage and load reduction, have been exhausted.
- Some of the existing Montauk substation equipment is nearly 100 years old and designed to obsolete standards.
- A modern substation will feature state-of-the-art equipment built to new design, environmental, and safety standards.
- Increased system automation with new technology and network monitoring will help restore customers' electricity more quickly.

Montauk Area Load Growth



What if we do nothing?

- Load growth in the Montauk area has reached a point where the existing substation and the distribution feeders that serve homes and businesses are at their maximum capacity.
- Electrical demand continues to grow.
- Adding additional generators at substations, which has been done at East Hampton and Montauk over the past several summers, is no longer sufficient alone to address this load growth.
- Without needed system enhancements, load demand during the hot and humid summer days could result in blackouts to customers in the area.
- To avoid blackouts, the need for stop-gap measures, such as additional emergency generation, will continue to grow throughout the community.

Visual impact of emergency generation

- Mounted on flatbed trailers.
- Located along the relevant distribution (neighborhood level) line.
- Often placed in parking lots and tied into an adjacent utility pole.
- Generators will run during periods of peak demand under normal conditions when all other equipment is in service.

Visual impact of a modern substation

- Barrier walls and shrubs are options that can be used to provide visual screening around substations.

How we build substations today

- Equipment can be installed on elevated foundations to keep electrical components above projected storm surge flood levels.
- Substations can be buffered and screened to reduce visual impacts.

How we evaluated potential sites

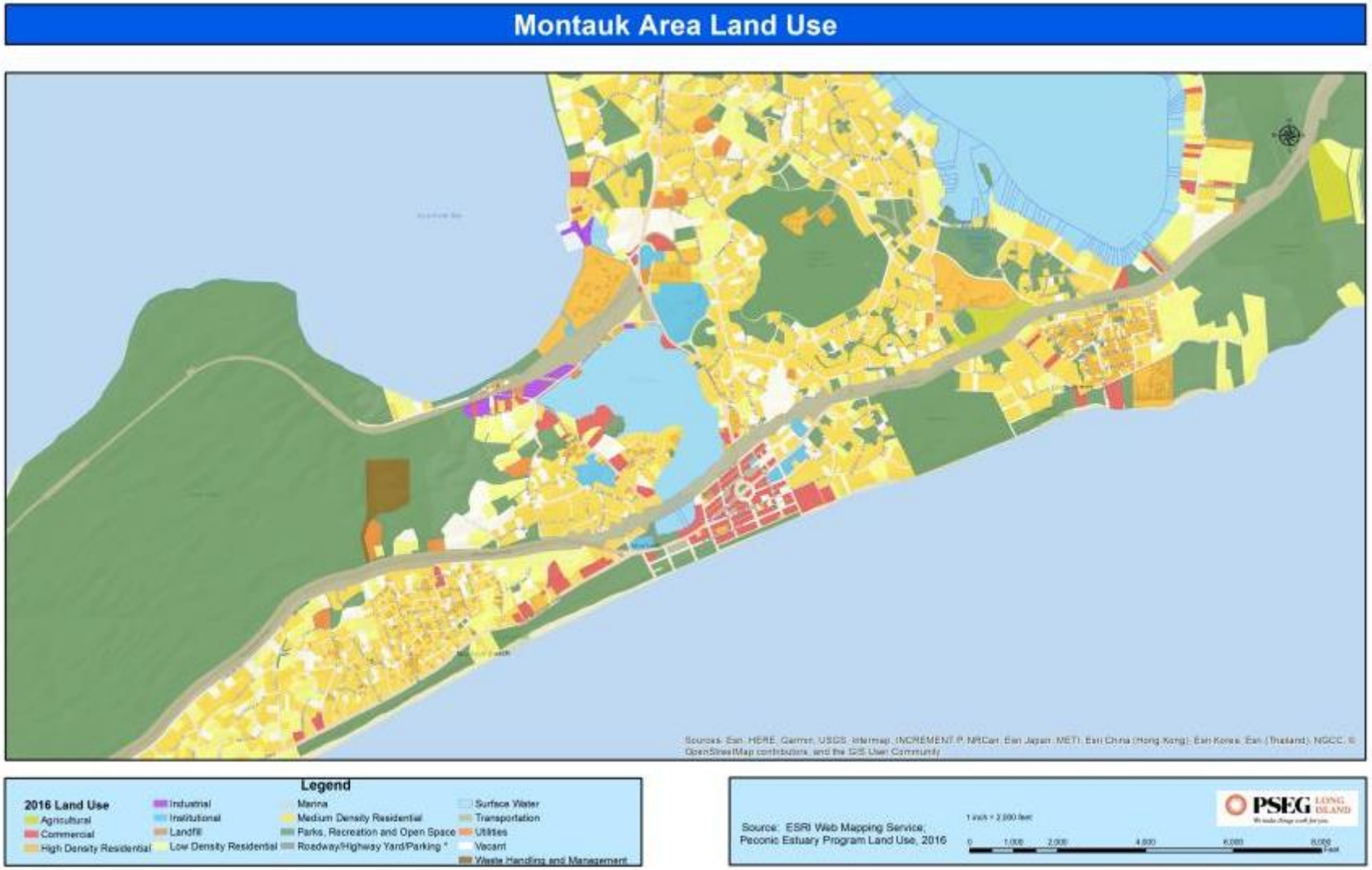
Each parcel was evaluated based on these criteria:

- Is substation construction feasible on the parcel?
- Is it located in proximity and accessible to existing transmission lines?
- Is it located in proximity and accessible to the electric load that needs to be served?
- Is it supported by the local community?
- Is it possible to obtain the necessary approvals?

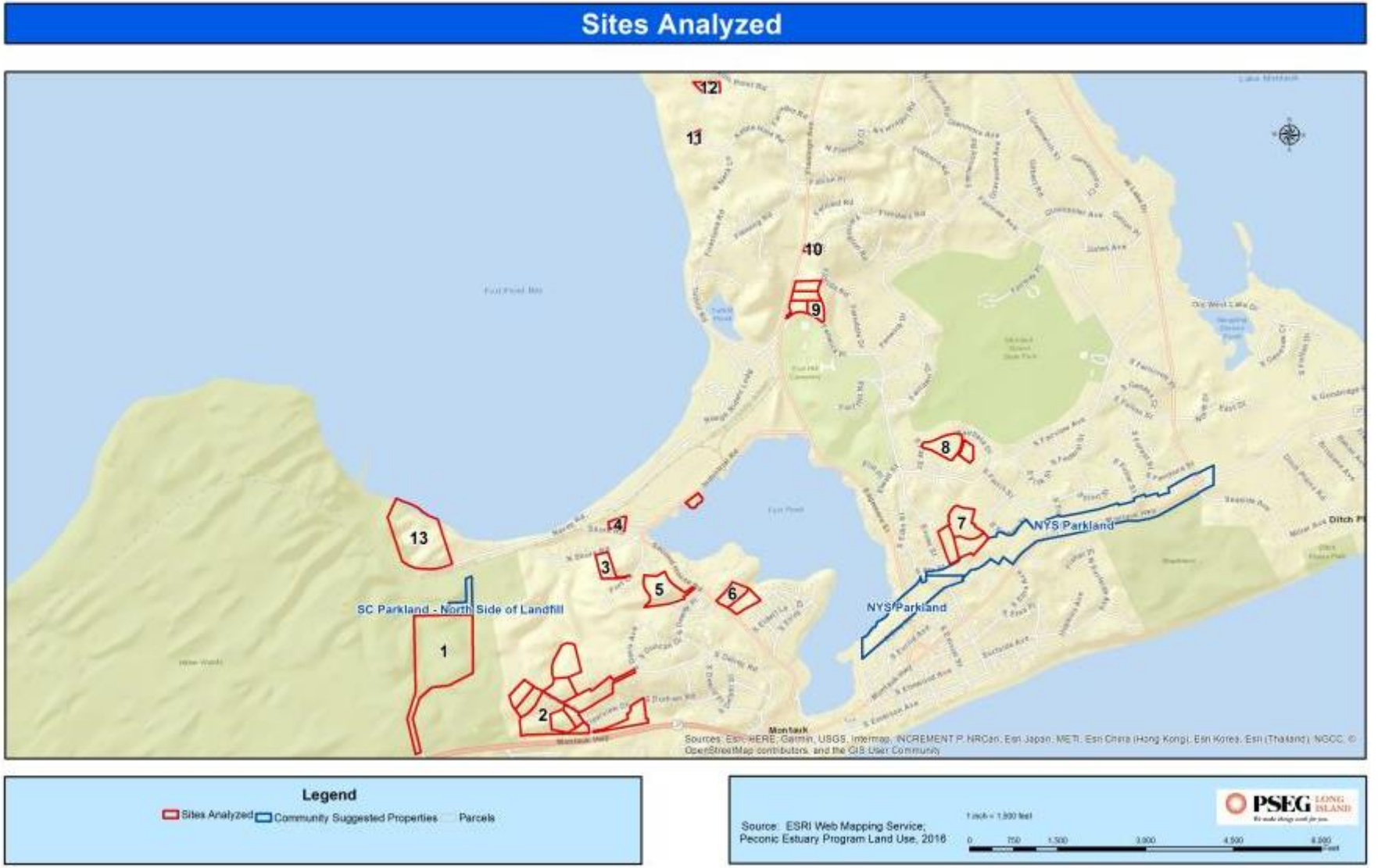
We rated each criterion with this scoring system:

- Significant challenges that may not be overcome.
- Significant challenges that may be overcome.
- No significant challenges.

Challenges to siting a new substation – land use



Sites evaluated



Sites found not feasible

- **Site 1** - No suitable building location on the property – uncapped portion is too small and elevation changes are too great to allow for a substation; parcel is far from electric load. Significant clearing of vegetation required for transmission lines. Alienation of parkland required.
- **Site 2** – Site contains a wetland, significant natural communities/plants, far from existing transmission line. Property is partially preserved.
- **Site 3** –Site is within 75' of a wetland; clearing of vegetation not permitted within 100' of a wetland under current NYSDEC regulations.
- **Site 5** – Nature Conservancy owned property.
- **Site 6** – Far from existing transmission line, within 75' of a wetland; clearing of vegetation not permitted within 100' of a wetland under current NYSDEC regulations.
- **Site 7** – Contains a wetland. Filling of wetlands not permitted under current NYSDEC regulations.
- **Site 8** – Town-owned property, far from existing transmission line, contains a wetland.
- **Site 10** – Too small.
- **Site 11** – Too small, far from existing transmission line.
- **Site 12** - Too small, far from existing transmission line, within 300' of a wetland.
- **NYS Parkland –** Majority of parcel is wetlands, inadequate space for substation.

Edward V. Ecker, Sr. County Park (Town suggested)

Substation construction feasibility on property.	Substation construction is feasible.
Located in proximity and accessible to existing transmission supply.	Access to transmission line is restricted due to a narrow band of surrounding parkland, requiring two 100’ wide vegetation clearances through parkland. Underground connection to the transmission line at the railroad crossing is not feasible due to changes in elevation; will require overhead crossings with 70’ - 80’ steel poles. Access to the transmission line requires a new permanent access road through parkland along the transmission right-of-way.
Located in proximity and accessible to the load that needs to be served.	Narrow roadway presents challenges to undergrounding distribution feeders to serve local electric demand.
Supported by the local community.	Located on parkland, which is likely to raise concerns from civic and environmental groups.
Ability to obtain necessary approvals.	Requires parkland alienation legislation for substation property and transmission, which may not be granted. Total disturbance required is ±5.1 Acres. Railroad easements would also be required.

Ecker County Park - Conceptual Disturbance Area

Legend

- Transmission Line
- **Distribution Feeders - Installation Method**
- HDD
- Open Trench
- 20' Access Road
- Transmission Line Disturbance Area
- Substation Disturbance Area

Source: NYS Orthoimagery Program, 2016; Peconic Estuary Program Land Use, 2016

1 inch = 300 feet

0 600 1,200 Feet

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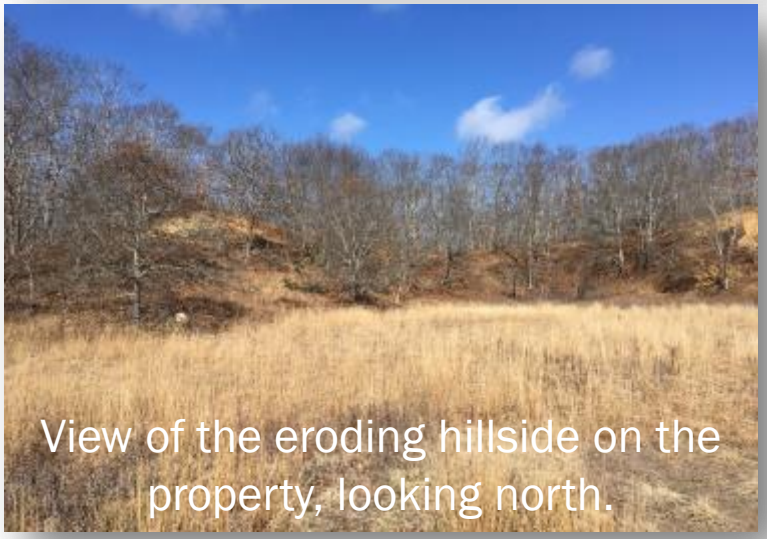
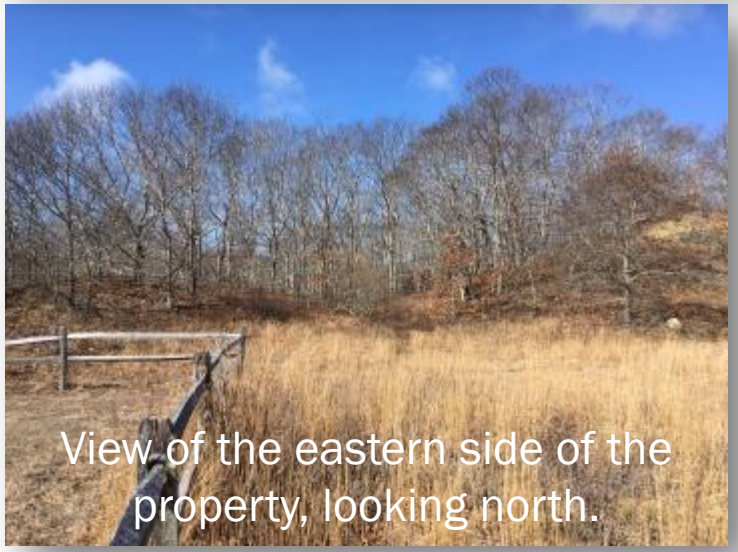
Ecker Park site photos

View from Navy Road looking north at the west side of the property.

View from the west side of the property looking east.



View of the eroding hillside on the property, looking north.



View of the eastern side of the property, looking north.

Property at north end of landfill (Community suggested)

Substation construction feasibility on property.	🔴 Access to the parcel would require creation of a permanent access road through parkland along the transmission right-of-way and south into the parcel and would require widening of North Shore Road.
Located in proximity and accessible to existing transmission supply.	🟡 Access to transmission line is restricted due to surrounding parkland, requiring one 100'-wide vegetation clearance through parkland.
Located in proximity and accessible to the load that needs to be served.	🔴 Not located in proximity to the electric load that needs to be served. Access to distribution lines would require a 40' by 1200' clearance through parkland.
Supported by the local community.	🟡 Transmission route would require disturbance of parkland, which is expected to raise concerns from civic and environmental groups.
Ability to obtain necessary approvals.	🔴 Requires parkland alienation legislation for substation property, transmission, distribution, and access road, which may not be granted. Total disturbance required is ±5.4 acres.

North Side of Landfill - Conceptual Disturbance Area

Legend

- 35' Wide Substation Access Road
- SC Parkland - North Side of Landfill
- Transmission Line
- **Distribution Feeders Installation Method**
  - HDD
  - Open Trench
- Transmission Line Disturbance Area
- Distribution Feeders Disturbance Area

Source: NYS Orthoimagery Program, 2016; Peconic Estuary Program Land Use, 2016

1 inch = 300 feet

0 600 1,200 Feet

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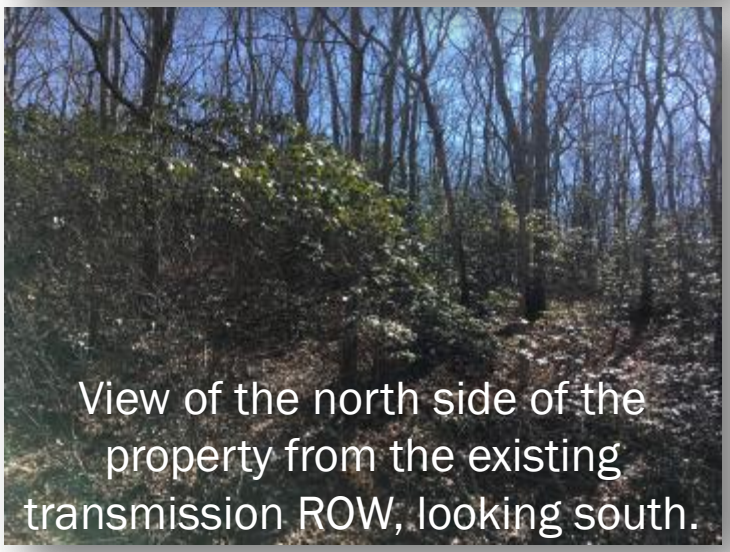
North side of landfill photos

View from the west side of the property looking east.

View from the southwest side of the property looking south.

View from the west side of the property looking south.



View of the north side of the property from the existing transmission ROW, looking south.

LIPA Industrial Road Property (Navy Road)

Substation construction feasibility on property.	Construction is feasible; would include elevation above flood plain within existing property boundaries.
Located in proximity and accessible to existing transmission supply.	Located in proximity to existing transmission supply.
Located in proximity and accessible to the load that needs to be served.	Located in proximity to the load that needs to be served.
Supported by the local community.	Located within an industrial area. Some community concern regarding location.
Ability to obtain necessary approvals.	Town indicates use is inconsistent with its Department of State-approved Local Waterfront Revitalization Plan. Disturbance in the parcel is ±1.2 acres.

LIPA Industrial Road Property - Conceptual Disturbance Area

Legend

- Distribution Feeder
- Transmission Line
- Substation Disturbance Area

Source: NYS Orthoimagery Program, 2016; Peconic Estuary Program Land Use, 2016

1 inch = 150 feet

0 75 150 300 450 600 Feet

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Industrial Road photos

View of battery storage facility adjacent to LIPA-owned property

Looking north towards battery storage facility from LIPA-owned property

Looking east into LIPA-owned property from Industrial Road

View of battery storage facility and associated equipment from Industrial Road

Flamingo Avenue

Substation construction feasibility on property.	Parcel has constructability and access challenges.
Located in proximity and accessible to existing transmission supply.	Limited access to transmission lines.
Located in proximity and accessible to the load that needs to be served.	Located in proximity to the electric load that needs to be served but limited access to distribution lines.
Supported by the local community.	Community opposed to proposed location.
Ability to obtain necessary approvals.	Easement required for use of adjacent land. Disturbance area of ±2.3 acres.

Flamingo Avenue Property - Conceptual Disturbance Area

Legend
- Distribution Feeders
- Transmission Lines
- Substation Disturbance Area

Source: NYS Orthoimagery Program, 2016; Peconic Estuary Program Land Use, 2016

1 inch = 500 feet

0 250 500 1,000 1,500 2,000 Feet

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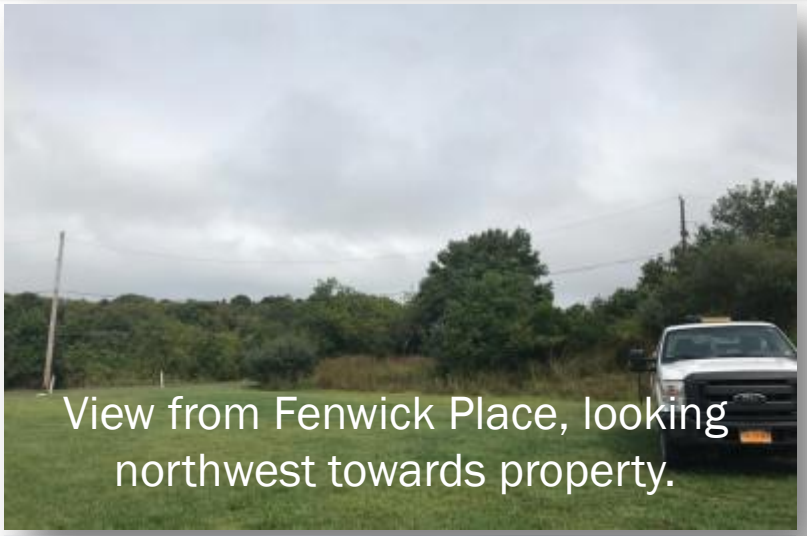
Flamingo Avenue photos


View of eastern portion of the property, looking towards the water tower


View of the eastern portion of the property


View from Fenwick Place, looking northwest towards property.


View from Flamingo Ave. looking northeast

Storm harden & modernize existing site

Substation construction feasibility on property.	Parcel is already a substation; modernization would include elevating equipment above flood plain.
Located in proximity and accessible to existing transmission supply.	Located in proximity to existing transmission supply
Located in proximity and accessible to the load that needs to be served.	Located in proximity to the electric load that needs to be served.
Supported by the local community.	Some community concern regarding location.
Ability to obtain necessary approvals.	Limited approvals required. Disturbance area of ± 0.9 acres.

Existing Montauk Substation - Conceptual Disturbance Area

Legend
Substation Disturbance Area

Source: NYS Orthoimagery Program, 2016; Peconic Estuary Program Land Use, 2016

1 inch = 100 feet
0 200 400 Feet

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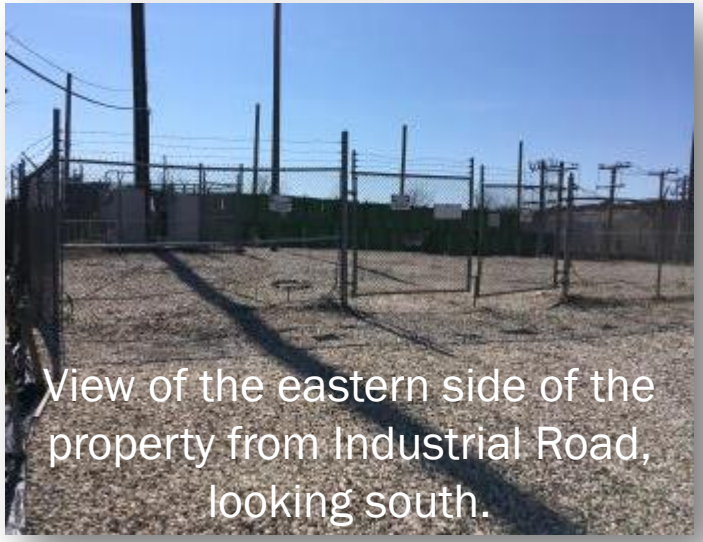
Existing site photo



View of the eastern side of the property from Industrial Road, looking south.

View from Industrial Road looking west towards substation.

View from north side of Industrial Road looking southwest towards substation.

View from north side of Industrial Road looking south towards substation.

EMF of household appliances vs. substation EMF

Electric Shaver	15,000 mG
Upright Vacuum	9,000 mG
¼” Electric Drill	9,000 mG
Florescent Desk Lamp	2,900 mG
Microwave Oven	2,000 mG
Box Fan	250 mG
Hair Dryer	150 mG
Typical Substation Property Line	35 mG
Cellular Telephone	20 mG
50’ from Typical Substation	5 mG

What comes next?

- Address questions and concerns raised at today's forum.
- Provide a 30-day public comment on the PSEG Long Island website, http://www.psegliny.com/reliability
- Evaluate public comments.
- Continue to evaluate potential sites.
- Inform community stakeholder of plans to proceed.