New York State
Draft Offshore Wind Cable Corridor Constraints Assessment Report

Public Webinar Relating to the Request for Information (RFI 5166)
October 11, 2022

Meeting Procedures

Webinar recordings and presentation will be available at:

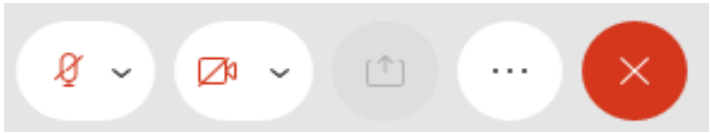
https://www.nyserda.ny.gov/funding-opportunities/current-funding-opportunities (RFI 5166)

Participation:

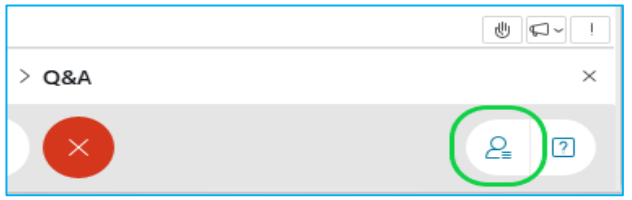
> All attendees are on mute.

> Questions and comments may be submitted in writing through the Q&A feature at any time. We will have about 15 minutes to address questions at the end.

> If technical problems arise, please contact Sal.Graven@nyserda.ny.gov



You'll see when your microphone is muted



Agenda

1. Overview of Assessment Goals
2. Roadmap to the Draft Assessment Report
3. Key Findings
4. How to Provide Input

Section 1: Introduction and Overview

Why Is It Needed?

- Climate Leadership and Community Protection Act commits NYS to:
  - A zero-emission electricity system by 2040
  - **A minimum of 9 GW of offshore wind by 2035**
  - A reduction in greenhouse gas emissions to 85% below 1990 levels by 2050
- NYS Climate Action Council included projections of a potential 20 GW of OSW by 2050 in their Draft Scoping Plan for the Climate Act

OSW Cable Corridor Constraints Assessment is needed to better understand the constraints of siting cables in NYS waters, at landfall, and along overland routes to pave the way to meet the 9 GW minimum mandate

Draft Assessment Goals

Overall Goal:

To inform what actions New York State may consider to ensure maximum benefits of renewable OSW energy while minimizing conflicts and impacts to activities and infrastructure.

- **Goal 1:** Document and increase the understanding of environmental, technical, and stakeholder constraints, as well as opportunities, concerns, impacts, and risks of potential undersea and overland cable corridors and associated landings.
- **Goal 2:** Inform potential future policy actions that maximize the benefits of OSW and minimize conflicts and impacts in a timeframe to support achieving the mandated 9 GW of OSW by 2035.

Comment period for Draft Assessment extended to **28 October 2022**.

The Draft Assessment Does Not:

- Address all aspects of potential cable corridors; focuses on issues most likely to present risks and opportunities relevant to achieving 9 GW of OSW by 2035;
- Identify complete routes or corridors;
- Rank or prioritize various routes, landfall, or POI options;
- Address whether the cables in State waters will connect to radial, meshed, or backbone transmission concepts;
- Substitute for or prescribe any analysis of alternative routes required as part of any regulatory review process; or
- Assess the capacity of POI substations or upgrades that may be necessary at any location.

Assessment Report Organization

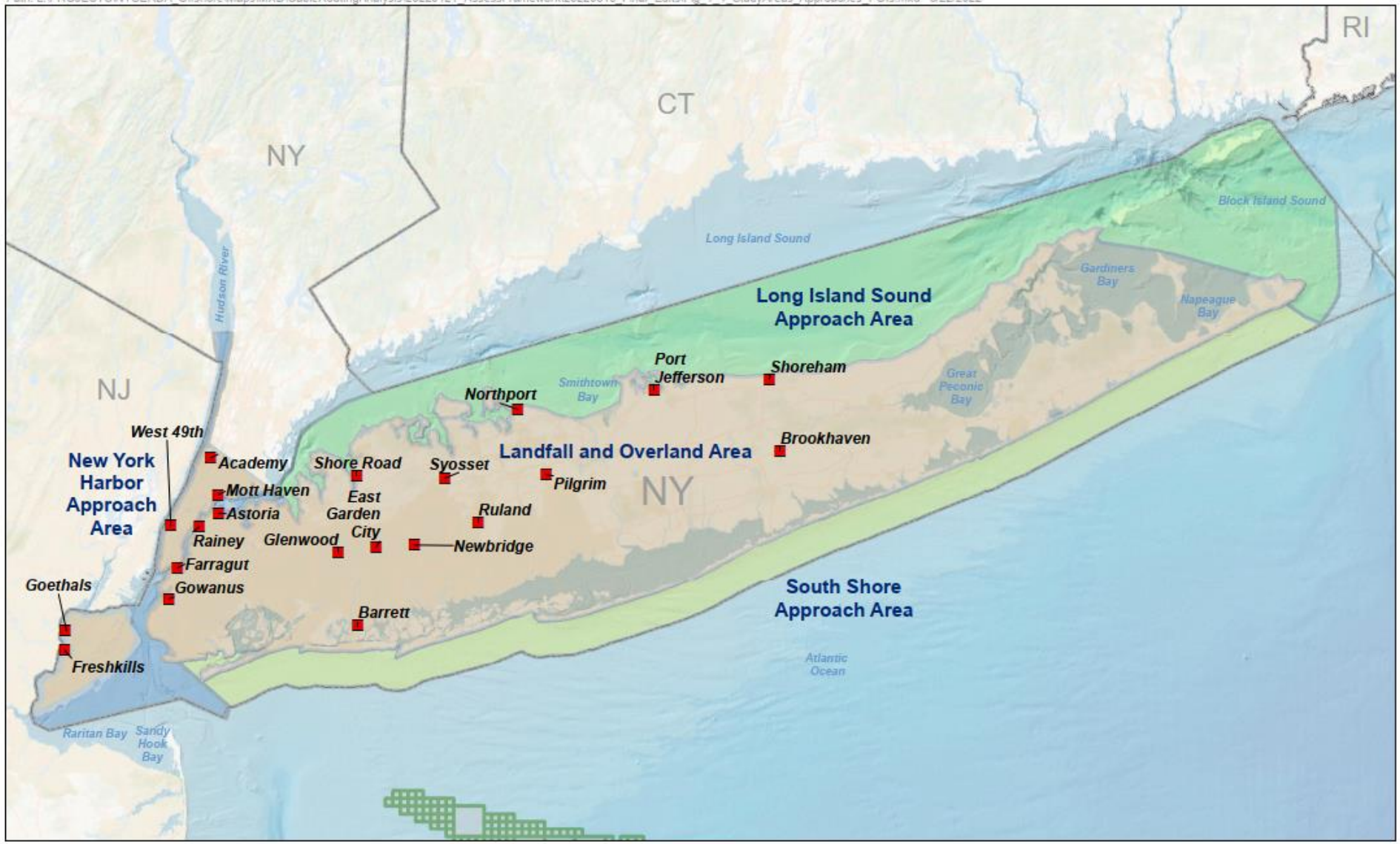
Section 1: Defines Study Area, Cable Working Group collaboration, major regulatory processes, stakeholder engagement, prior studies, and technical considerations

Section 2: Analyzes constraints and ranks constraints based on geospatial data and resource significance

Section 3: Summarizes existing conditions, discusses significant impacts in most constrained locations, identifies minimization and mitigation measures

Section 4: Summarizes key findings, opportunities to reduce impacts, and considerations of schedule and costs to ensure maximum benefits of renewable OSW energy

Study Area Map



- Substation
- State Line
- BOEM Lease Areas
- South Shore Approach Area
- Long Island Sound Approach Area
- New York Harbor Approach Area
- Landfall and Overland Area

Figure 1-1
Study Area and Approach Areas

N

0 5 10 15 20 Miles

Inputs to the Assessment - Cable Working Group

Cable Working Group

- Jurisdiction and regulatory authority covers major permitting requirements for OSW cables
- Met approximately monthly throughout the past year
- Guided systematic evaluation of opportunities, constraints, concerns, impacts, and risks of zones, subzones, and associated landings
- Evaluated methods and constraints analysis to ensure that results aligned with agency priorities
- Examined opportunities to avoid, minimize, and mitigate impacts, and balanced risks and opportunities of options to route multiple OSW cables

CWG Members:

NYSERDA
NYSDEC
NYSDOS
NYSDOT
NYSOGS
NYSDPS

Inputs to the Assessment – Stakeholders and Prior Studies

Stakeholder Feedback

- Request for Information on Draft Constraints Assessment Framework (12/21-2/22)
- Individual stakeholder meetings for knowledge sharing and feedback

Previous and Ongoing Studies

- Master Plan, Power Grid Study, Offshore Wind Ports: Vessel Traffic Risk Assessment Provided context, data and additional technical considerations

NYC and Long Island Substations

Academy	Newbridge Road
Astoria	Northport
Barrett	Pilgrim
Brookhaven	Port Jefferson
East Garden City	Rainey
Farragut	Ruland Road
Freshkills	Shoreham
Glenwood	Shore Road
Goethals	Syosset
Gowanus	West 49th Street
Mott Haven	

Inputs to the Assessment – Cable Design Parameters

High Voltage Alternating Current (HVAC) or High Voltage Direct Current (HVDC)

- Single HVAC up to 400 MW; single HVDC up to 1,400 MW
- Single trench per cable
- 50 m width typical for installation workspace for one trench
- Repair bight width for each cable
- Future cables all expected to be HVDC; requiring conversion to AC to match the operating parameters of electrical substations and the transmission grid

3-core HVAC cable

Section 2: Constraints Analysis

Constraints Analysis Process

1. Compilation of constraint layers
2. Delineation of zones
3. GIS analysis of spatial distribution of each constraint layer within a zone
4. Assignment of overall constraint ranking – Low, Medium, High based on spatial distribution and professional judgment

Delineation of Zones

Undersea

Zone: Areas with constraints of similar type and significance that may accommodate cable transit or landfall

Subzone: Portion of a zone with unique constraints warranting further evaluation

Why Use?

- To avoid certain resources to the extent practicable
- To reduce area of effect and fragmentation of resources

Onshore

Zone: Area which includes multiple existing ROWs that connects a landfall point to one or more POIs

Why Use?

- To provide continuity from the identified offshore landing zones
- To optimize use of ROWs
- To avoid certain resources to the extent practicable

Undersea Zones

Multiple zones for each approach area reflecting:

- Transit or landing
- Avoidance of certain constraints
- Similar characteristics

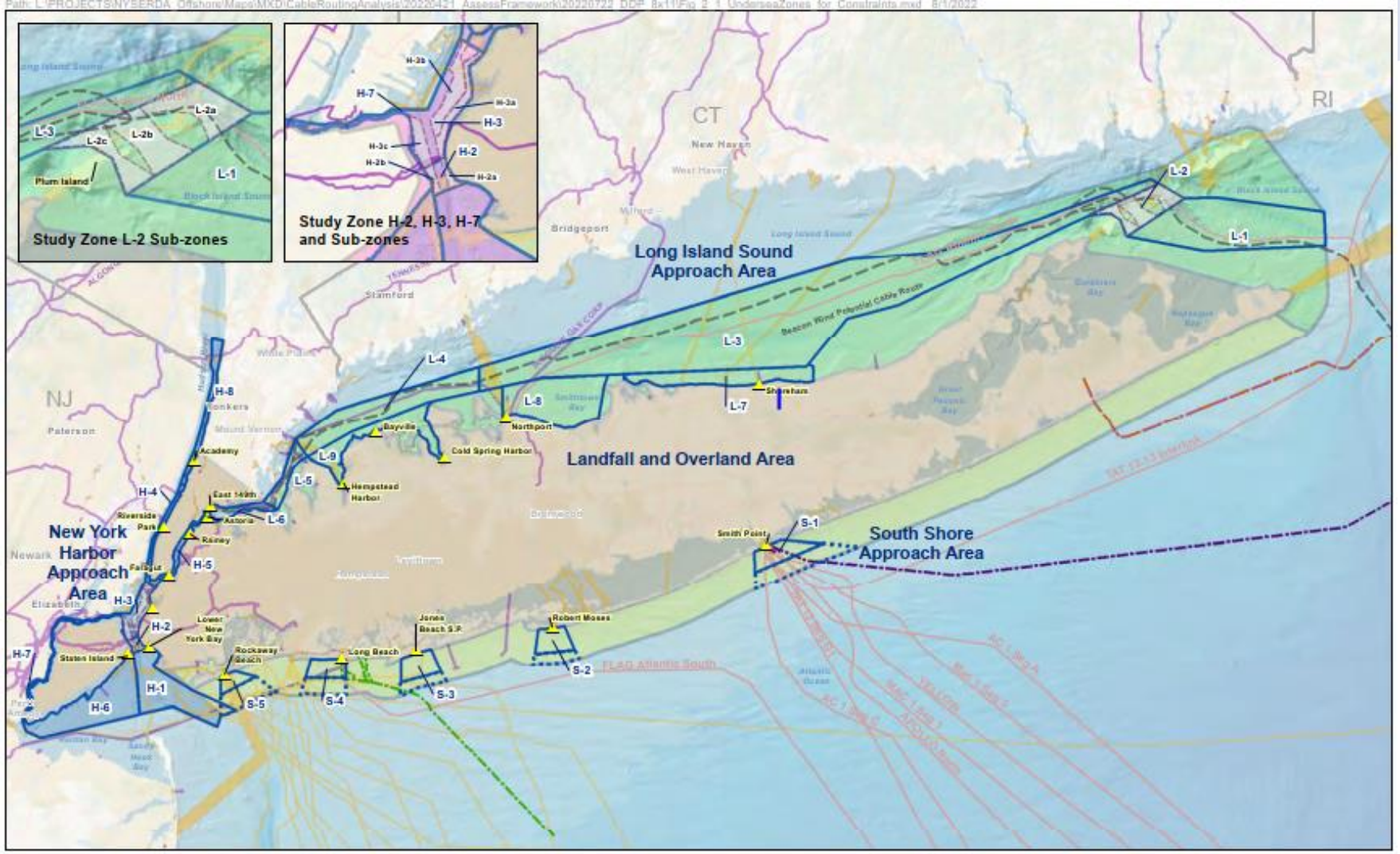
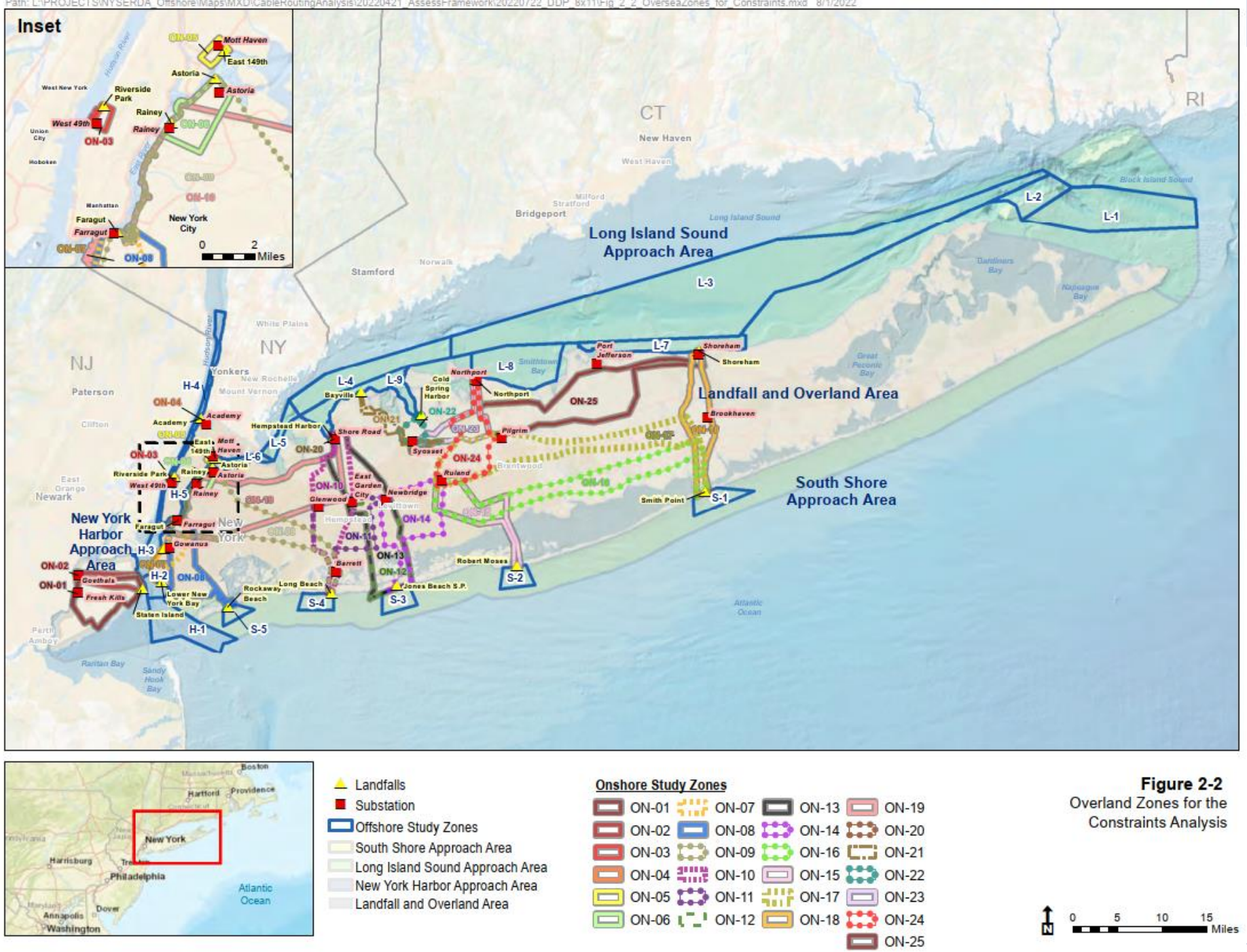


Figure 2-1
Undersea Zones for the Constraints Assessment

Overland Zones



Landfalls
Substation
Offshore Study Zones
South Shore Approach Area
Long Island Sound Approach Area
New York Harbor Approach Area
Landfall and Overland Area

Onshore Study Zones

ON-01	ON-07	ON-13	ON-19
ON-02	ON-08	ON-14	ON-20
ON-03	ON-09	ON-16	ON-21
ON-04	ON-10	ON-15	ON-22
ON-05	ON-11	ON-17	ON-23
ON-06	ON-12	ON-18	ON-24
			ON-25

N 0 5 10 15 Miles

Figure 2-2
Overland Zones for the Constraints Analysis

Four categories of ROWs:

- Electric transmission lines
- Arterial roadways
- MTA passenger lines
- Natural gas pipelines

Section 3: Impacts, Avoidance, Minimization, and Mitigation

Section 3 Overview

Existing Conditions

- Overview of the resources present within a zone/subzone
- Level of detail reflects the High, Medium, and Low ranking of constraints
  - High: Described in more detail to address options for avoidance, minimization, and mitigation
  - Low: Not described or minimally described because OSW cable siting and best practices are expected to avoid or minimize impacts

Impacts

- Cable installation, maintenance, operation, and decommissioning of OSW cables
- Focus on the locations where resources ranked High or for consideration of cumulative potential constraints, where multiple resources are ranked Medium

Section 3 Overview

Minimization and Mitigation Measures

- Minimization = An action taken that reduces the severity of the effect of an unavoidable impact on a resource.
- Mitigation = An action that compensates for (replaces or offsets) loss of resource or resource function, such as: purchase of wetland mitigation bank credits; contribution to a mitigation fund; or replacement.
- Compiled from CWG's experience, previously issued Article VII certificates, and pending applications
- Expanded measures or innovative concepts to avoid, minimize, and mitigate impacts identified for constraints of most concern

Before M&M measures can be applied, opportunities to avoid impacts must be fully applied and vetted

Key Findings: South Shore Approach Area

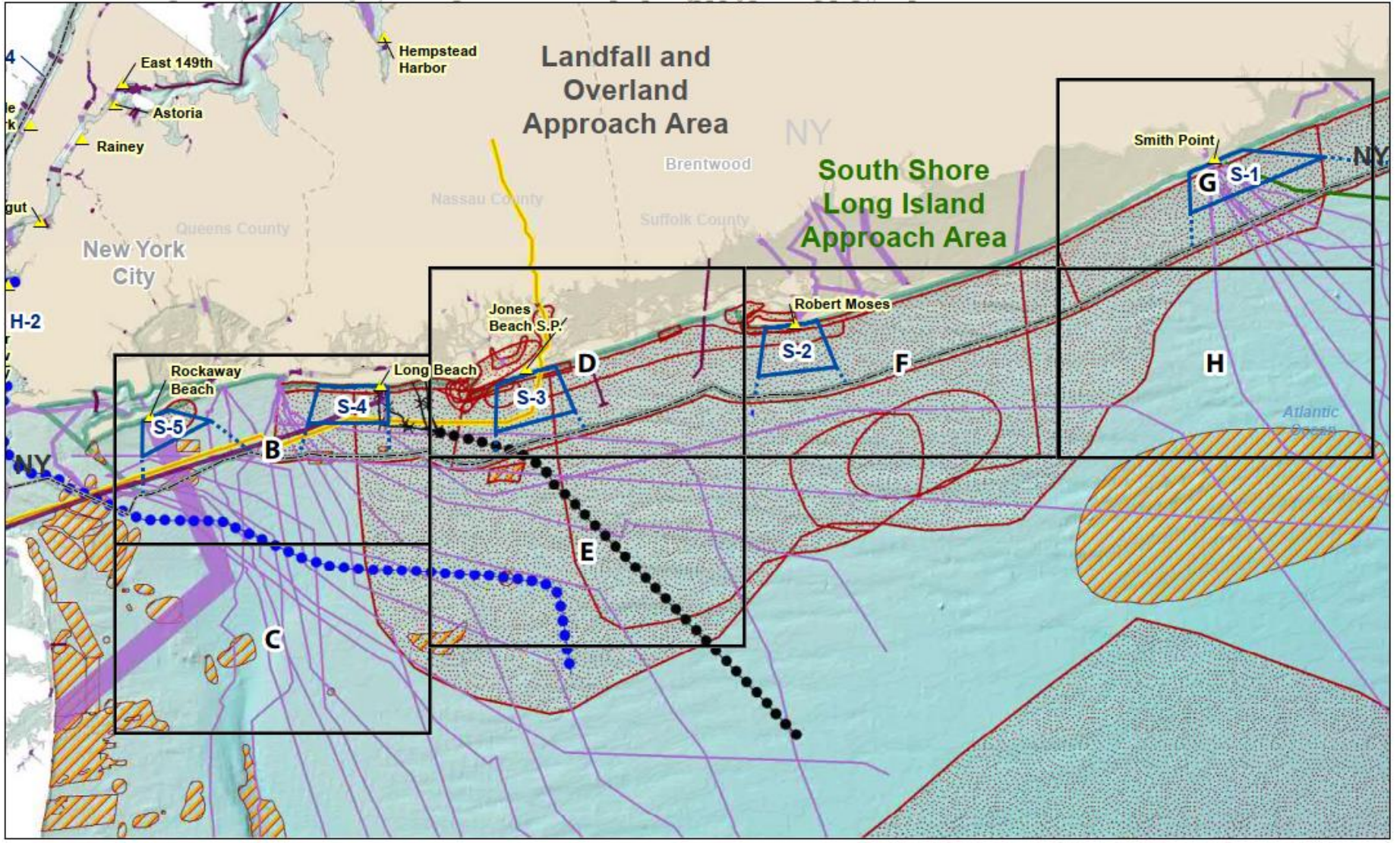
Most Significant Constraints:

- ***Commercial and recreational fishing:*** Recreational fishing in all zones, charter fishing in most zones, and commercial fishing in three of the five zones

- ***Existing linear utilities:*** Multiple NOAA-charted cables and gas pipelines and proposed OSW cable landing routes traverse S-1 and S-4

High Constraints: South Shore

- Parallel routing of cables would help limit resource fragmentation
- Overall not constrained
- Multiple potential cable landing opportunities



Map Extent

Landing
State Line
Empire Wind- EW1 Potential Export Cable Route
Empire Wind- EW2 Potential Export Cable Route (Line with x's for shore landing alternatives)
ENC Pipeline (Submarine/on land)
Sunrise Wind- Potential Export Cable Route
NeptuneSubmarineCable
ENC Cable/ NASCA Cable

ENC Cable Area
NY Recreational Fishing
NJ Prime Fishing Grounds
Approach Area Boundary
Landfall and Overland Area
Study Zones
Zone Extensions to State Boundary

Figure 3-2A
Index Map
Resources Considered High Constraints in the South Shore Approach Area

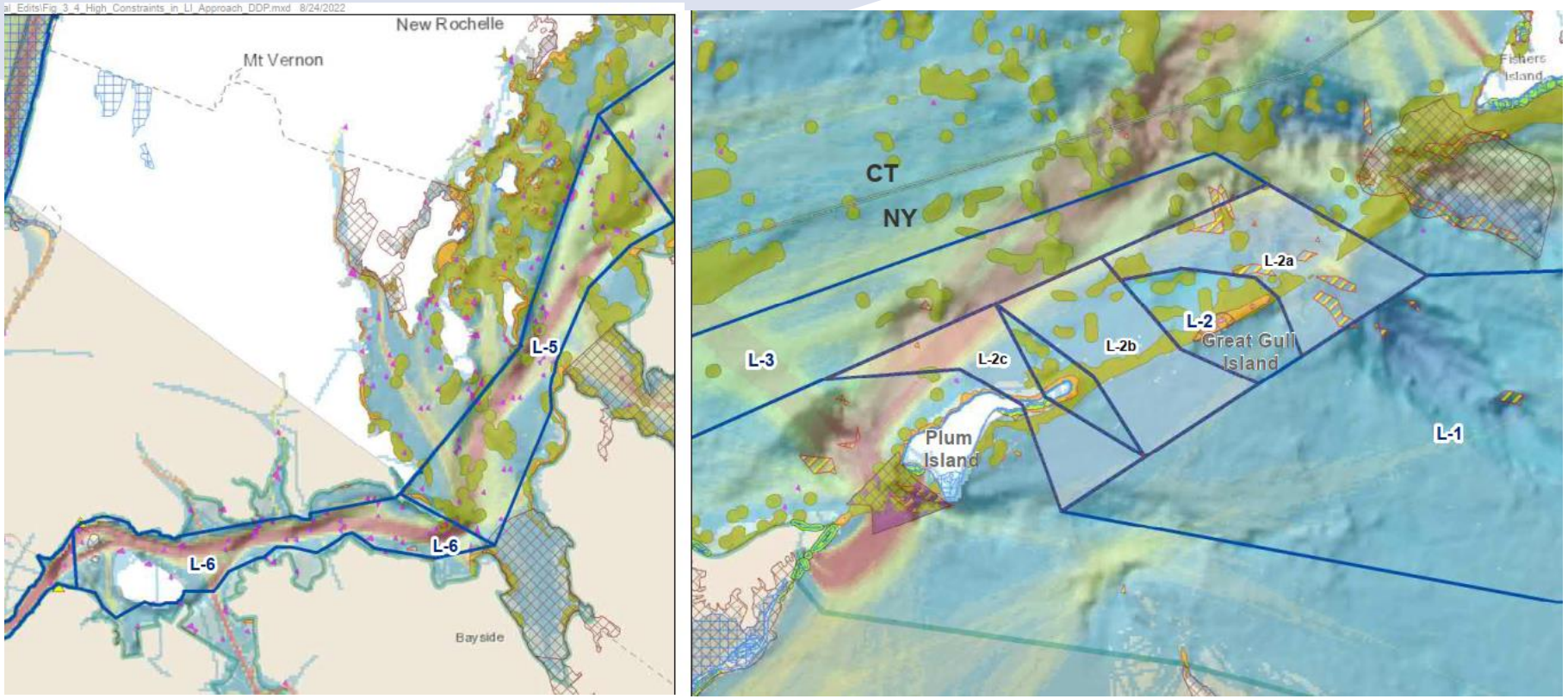
N
0 2 4 6 8 Miles

Key Findings: Long Island Sound Approach Area

Most Significant Constraints:

- ***Marine geology:*** Hardbottom and slope greater than 10 percent, shallows, areas of scour, rocky areas, and boulder fields
- ***Marine commercial and recreational uses:*** Occur throughout the Approach Area
- ***Navigation areas:*** Two major navigation channels occupy Zone L-6 with anchorage areas present in other zones
- ***Aquatic and biological resources:*** Unique and sensitive habitats throughout Long Island Sound, including cold-water corals, EFH, SAV, and T/E species
- ***Marine cultural resources:*** Presence of obstructions throughout the zones and high percentage cover area for wrecks in L-5

High Constraint Areas: Long Island Sound



State Line
Study Zones
Sub-Zones
Approach Area Boundary
Landfall and Overland Area

Natural Heritage Communities 2018
NCEI Bathymetric Data Derived Slope
NYS Submerged Aquatic Vegetation
LIS BP Hard Bottom Sea Floor
Obstruction Areas
Pinnipeds (LIS Blue Plan ESA)
Significant Coastal Fish and Wildlife Habitat
Wreck

2017 Vessel Transit Counts
1 - 25
26 - 50
51 - 75
76 - 100
101 - 250
251 - 500
501 - 750
751 - 1,500
1501+

- Routing principles vital for minimizing impacts
- Close agency and stakeholder coordination necessary
- Further research to establish biological baselines in areas such as the Harbor Hill Moraine and Stratford Shoal

Key Findings: New York Harbor Approach Area

Most Significant Constraint:

- ***Navigation areas:*** Spatial limitations associated with numerous federal navigation channels and designated anchorage areas
- ***Vessel traffic:*** High levels of vessel activity into and through New York Harbor.
- Other constraints including ***Waterbody Dimensions***, ***Waterfront Infrastructure*** and ***Marine Geology*** also ranked High in some zones, but navigation and vessel traffic considered most critical to siting future cables.

High Constraints: New York Harbor

- Apply parallel routing and co-location principles through highly-constrained zones
- Coordination with USACE, USCG, and maritime stakeholders is essential to establishing feasibility of routing through designated navigation areas

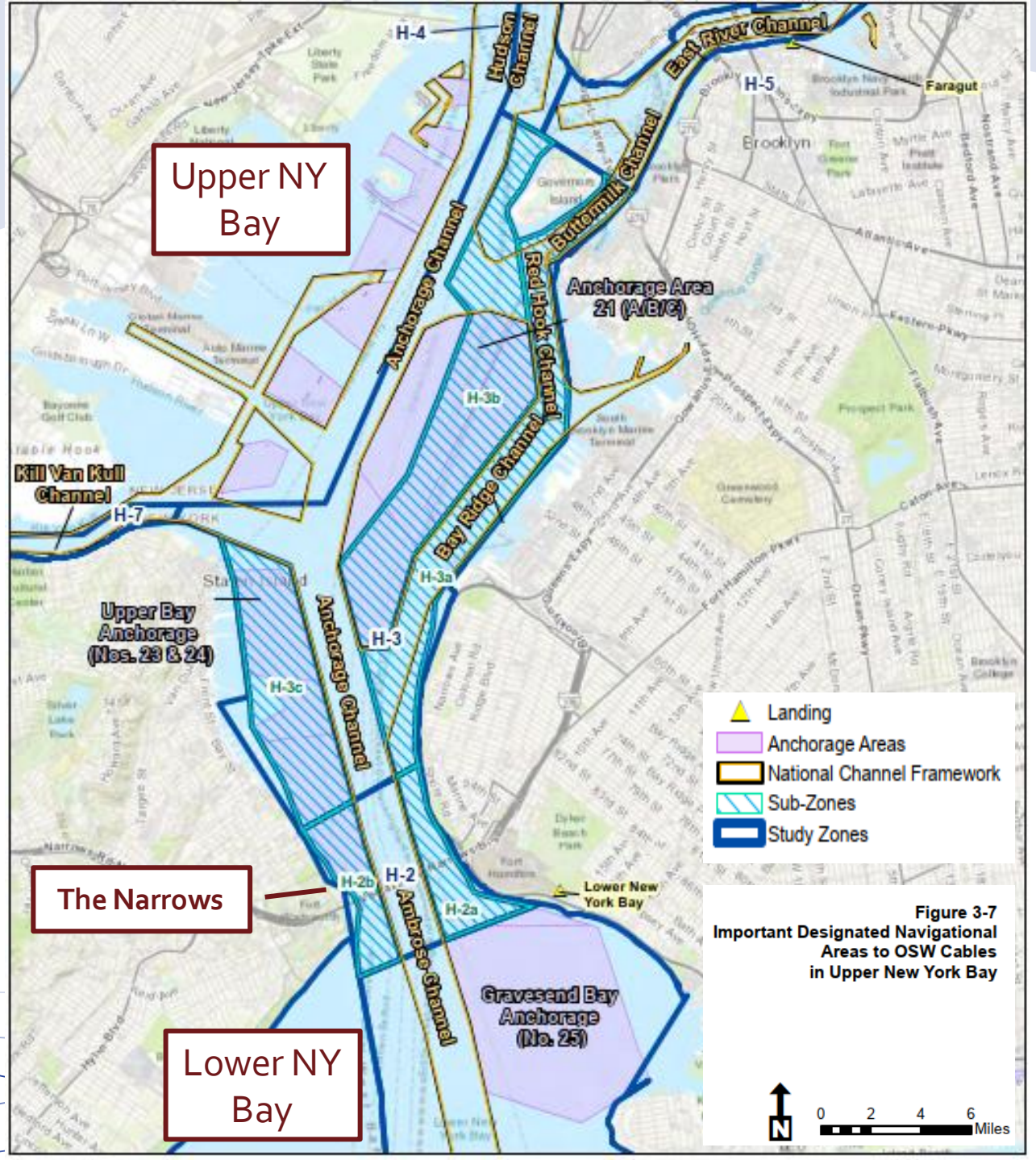


Figure 3-7
Important Designated Navigational Areas to OSW Cables in Upper New York Bay

Key Findings: Overland and Landfall Area

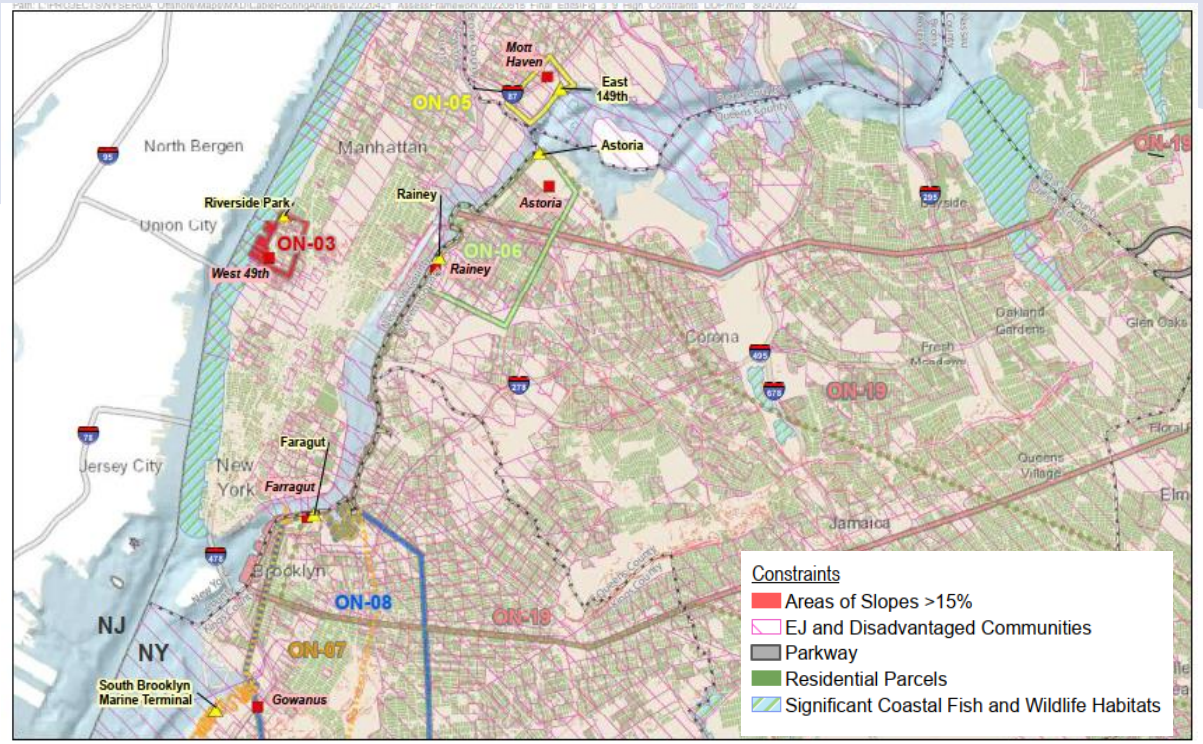
Most Significant Constraints:

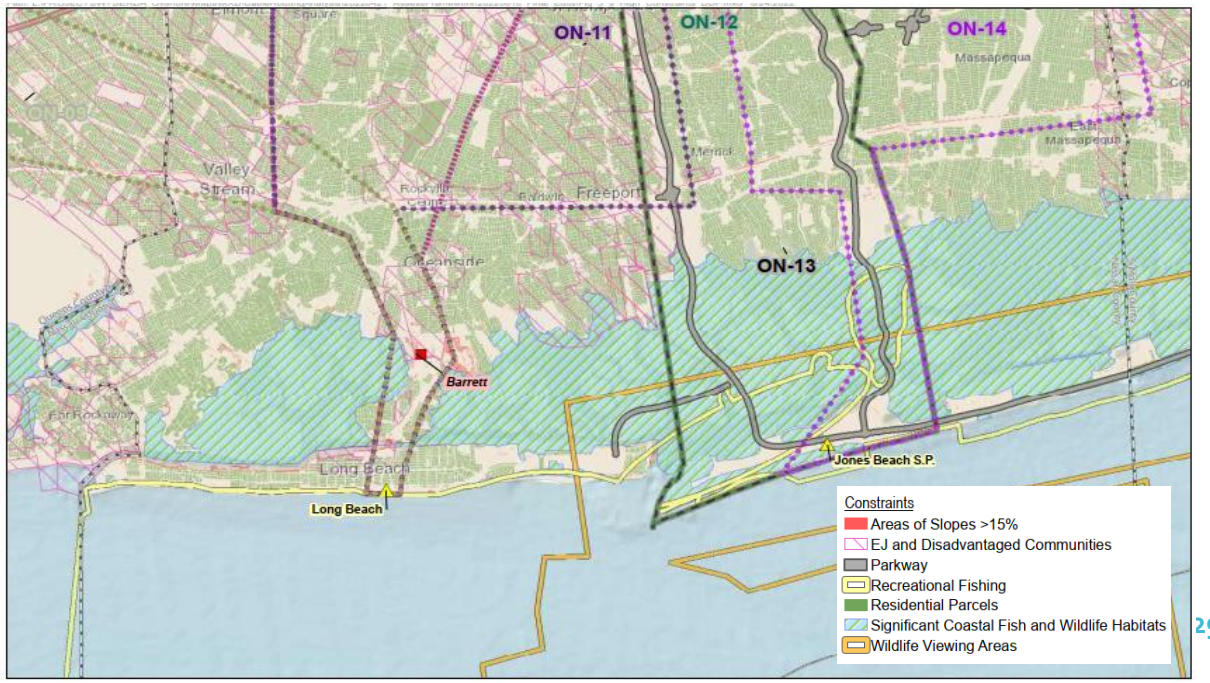
- ***Topography:*** Slopes >15% most prevalent in zones that traverse northern Long Island
- ***Environmental justice and disadvantaged communities:*** Potential EJ areas occur in 23 of the 25 onshore zones; disadvantaged communities occur in 22 of 25 onshore zones
- ***Transportation:*** Installation of an OSW cable along controlled access parkways and highways is a non-transportation use of the ROW
- ***Coastal resources:*** Critical species and sensitive habitats and other recreation most prevalent along South Shore Approach Area and include SCFWH and EFH associated with intercoastal bays

High Constraint Areas: Overland and Landfall

- HDD at landfall because of dense urban areas, presence of existing shoreline protection, and to protect sensitive resource areas

- Existing electric transmission ROWs present greatest opportunity to co-locate new OSW cables compared to other public ROWs





Section 4: Key Findings Overall

Key Findings Overall: Options for Routing of Multiple OSW Cables in NY Waters

1. **Incorporate accepted siting principles based on CWG and OSW industry experience to support installation of multiple cables, while minimizing use of space and impacts on environmental, cultural, and social resources, such as:**
   - Limit footprint
   - Apply parallel routing
   - Bundle cables
   - Limit crossings and cross at right angles.
   - Avoid anchorage areas and navigation channels
2. **Innovation in design, construction, operation, and maintenance techniques will be required beyond prior projects to address the site-specific and unique constraints, opportunities, schedule, and costs for siting OSW cables.**

Key Findings: Options for Routing of Multiple OSW Cables in NY Waters

Table 4-1. Potential Combination of Current, Potential, and Future OSW Cables Using Each of the Undersea Approach Areas to Achieve NYS Climate Act Targets

Approach Area	Current, Potential, and Future OSW Projects	Type of Cable	Approximate Contribution to Climate Act, GW
New York Harbor	Empire Wind	HVAC	0.816
	Future	HVDC	4
		Subtotal	**~5**
Long Island Sound	Beacon Wind	HVDC	1.23
	Future	HVDC	1
		Subtotal	**~2**
South Shore	Sunrise Wind	HVDC	0.88
	South Fork Wind	HVAC	0.132
	Empire Wind 2	HVAC	1.26
	Future	HVDC	1
		Subtotal	**~3**
		TOTAL	**~10**

- Per Power Grid Study: 6 GW in NYC and 3 to LI
- Assumes HVDC per state policy for future cables
- 1000 MW each

How to Provide Input: Respond to the RFI

Respond to the RFI Questions

Respond via email to **OSWCablesAssessment@nyserda.ny.gov** with subject line RFI 5166 by 3:00 pm on **October 28, 2022**

1. Does the Draft Assessment accurately capture and describe the constraints and opportunities in a manner that is efficient and complete?
2. Do the minimization and mitigation measures address the range of conditions and issues? Are there standard measures that may be applicable to all projects? Are there additional innovative concepts/developmental technologies that should be considered?
3. Are there specific stakeholders that may benefit from an opportunity to discuss the results and findings of the Draft Assessment?
3. Consider the design and layout of the Draft Assessment, particularly the figures and key findings and recommendations. Are these user-friendly tools for information transfer? What additional presentation formats might be helpful?
4. Do the siting principles reflect applicable and useful principles to allow multiple future cables?
5. Do the innovative concepts help to reduce impacts and are there other innovative approaches to reduce impacts?

Next Steps

Comment period for Draft Assessment extended to **28 October 2022**.

- NYSERDA will collect, review, and summarize all responses received on the draft, then prepare a Final Offshore Wind Cable Corridor Constraints Assessment.
- Final Offshore Wind Cable Corridor Constraints Assessment anticipated to be released December 2022.
- Questions and comments: **OSWCablesAssessment@nyserda.ny.gov**

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