



Offshore Wind Ports: Cumulative Impacts Study



OSW Ports Cumulative Impact Study

NYS Climate Leadership and Community Protection Act (NYS Climate Act) Goal:

- 9 GW (9,000 MW) of OSW Energy by 2035

According to *NYSERDA 9 GW OSW Port Uses and Navigational Assessment Report (2021)*:

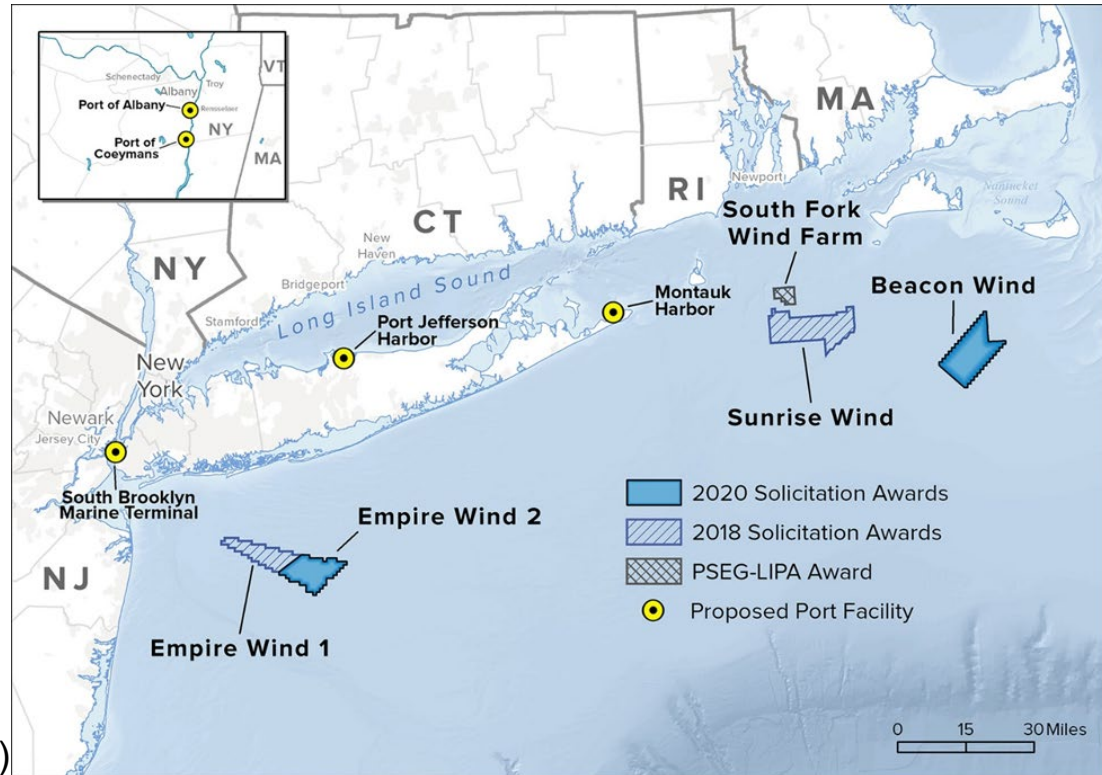
- *Collective output of **12 OSW Ports** would be expected to meet the 9 GW Target*

NYSERDA's Commitment to Responsible Development:

What would those ports' cumulative impacts be within NY State?

2022 OSW Status

- 5 OSW Lease Areas Awarded to produce 4.3 GW (4,300 MW)
- 5 OSW Ports in NYS supporting OSW Farm Construction
 - Port of Albany – Manufacturing Transition Towers (Empire Wind)
 - Port of Coeymans – Fabrication of Secondary Steel Components (Sunrise Wind)
 - South Brooklyn Marine Terminal – Staging & O&M (Empire Wind)
 - Port Jefferson – O&M (Sunrise Wind)
 - Port Montauk – O&M (South Fork Wind)



Alternatives Assumed for Study

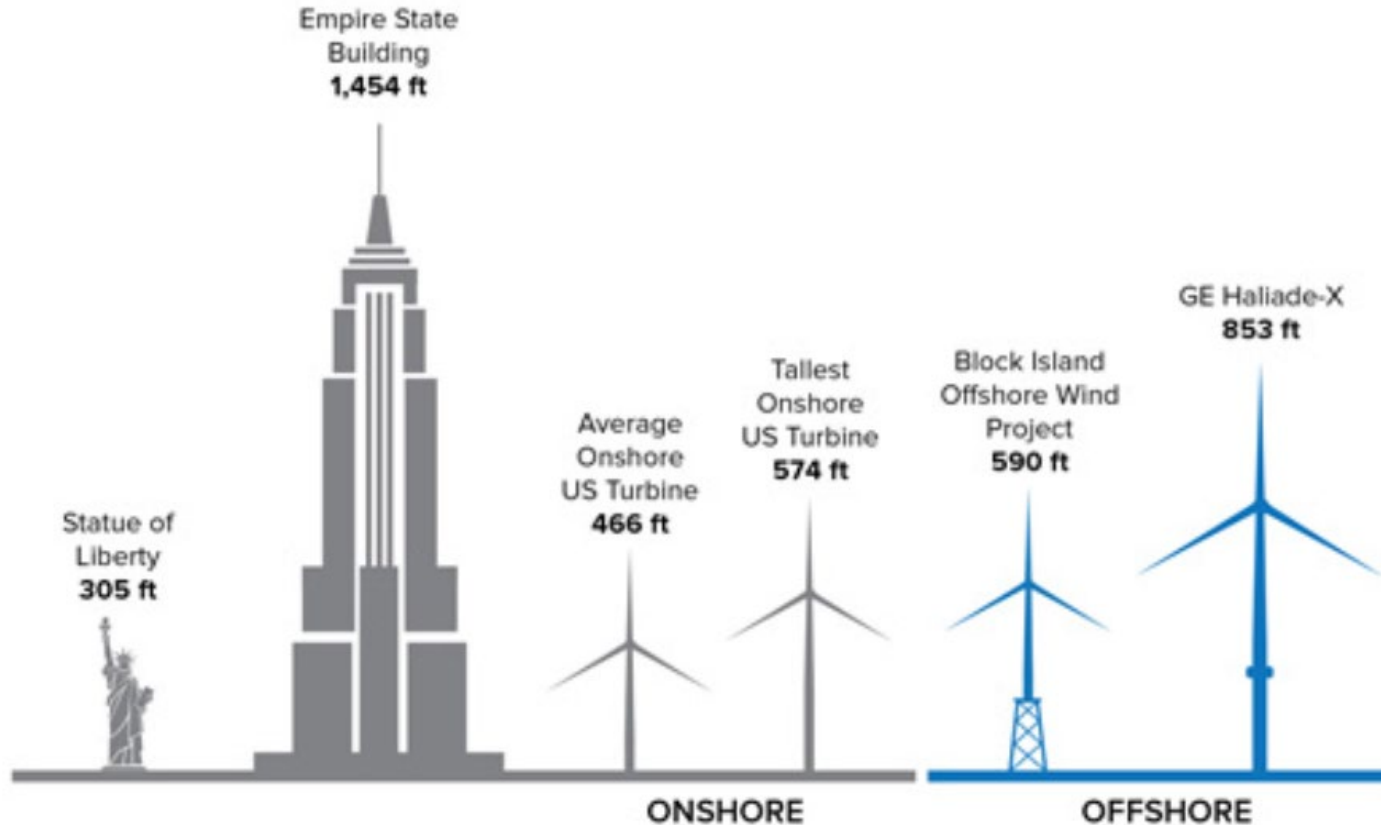
Alternatives		Location	Assumed Port Use
Full Build Alternative	Planned Alternative	Port of Albany	Fabrication (Towers/Foundation Components)
		Port of Coeymans	Fabrication (Towers/Foundation Components)
		SBMT	Staging (WTG and Foundation) and O&M
		Port Jefferson	O&M (SOVs)
		Port of Montauk	O&M (CTVs)
	[Future Ports]	Arthur Kill Terminal	Staging (WTG)
		Port Ivory	Fabrication (Offshore Substation components)
		Homeport Pier	O&M
		Brooklyn Navy Yard	O&M
		Port Authority Marine Terminal (PAMT)	O&M
		Hempstead Public Works	O&M
		NYS Wind Port	Component Manufacturing



Port Facility Parameters

Port Use	Upland Staging Area (acres)	Wharf Length (feet)	Navigable Channel Depth (feet at MLLW)
Manufacturing & Fabrication Foundations	25	165 to 650	38
Manufacturing & Fabrication Blades	25	165	38
Manufacturing & Fabrication Nacelles	25	165	38
Manufacturing & Fabrication Cables	30	410	38
Staging Wind Turbine Generator (WTG)	25	330 to 650	38
Operations & Maintenance (O&M)	10	65	16

How Large Are Offshore Wind Turbines?



Purpose of Study

- Identify project-related and cumulative environmental, socioeconomic, and navigational effects of the Study Alternatives
- Compare the potential impacts and benefits and of the Study Alternatives
- Assist with planning for the current and upcoming OSW projects
- Provide information and guidance for **responsible development** of offshore wind projects



Resource Areas

- Land Use
- Socioeconomic
- Transportation Access and Mobility
- Navigational Assessment
- Environmental Justice
- Biological Resources
- Cultural Resources
- Community Character
- Hazardous Materials
- Water Resources
- Floodplains
- Noise
- Air Quality and Greenhouse Gases



Effects of Port Projects

Resource Assessments

- Identify Resources Present
- Assess Potential Impacts and Benefits
- Identify Applicable Environmental Review and Regulatory Permitting Processes
- **Impact Avoidance, Minimization and Mitigation Measures**
 - **Best Management Practices**
 - **Responsible Development Recommendations**
 - **Expected Mitigation Measures**



Applicable Environmental Review & Permitting Processes

• Environmental Review

- NEPA
- SEQRA – NY State
- CEQR – New York City

• Permits/Approvals (various)

- USACE Section 10 and 404 Permit
- USCG LNM
- USEPA
- USFWS Section 7 ESA
- NMFS EFH
- State, Local Permits



Findings of Study

- Full Build Alternative necessary to meet State's 9 GW target by 2035
- Full Build Alternative would have similar types and proportionally more impacts as the Planned Alternative
 - Similar mix of Green Sites and Waterfront Industrial (Brownsfield) Sites
 - Similar impacts between urban NY Harbor and Hudson River sites
- Geographical distribution of ports across three New York State regions reduces impact overlap and cumulative impacts over time

Findings of Study: Vessel Traffic



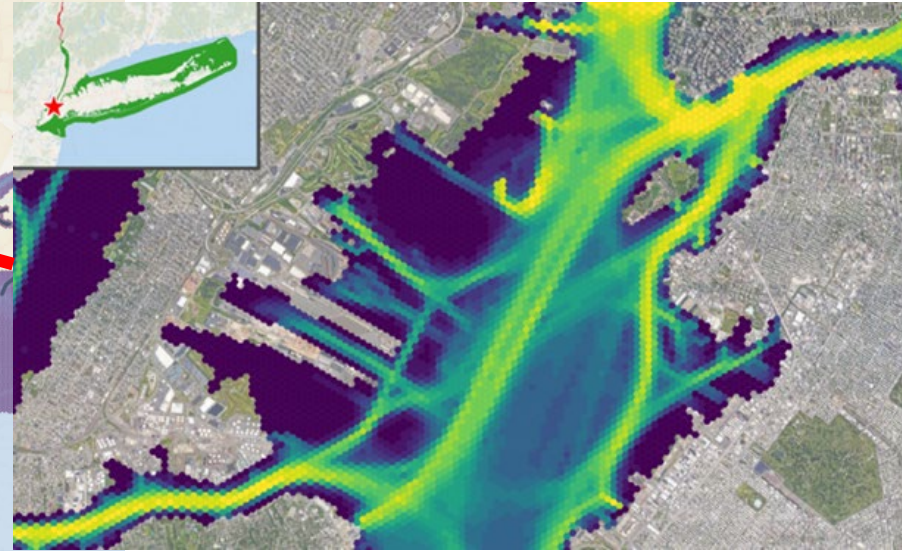
Findings of Study: Vessel Traffic

Compared to Drafts needed for Cargo and Tanker vessels, the Wind Turbine Installation Vessels (WTIVs) Drafts are well within Navigation Channel Depths

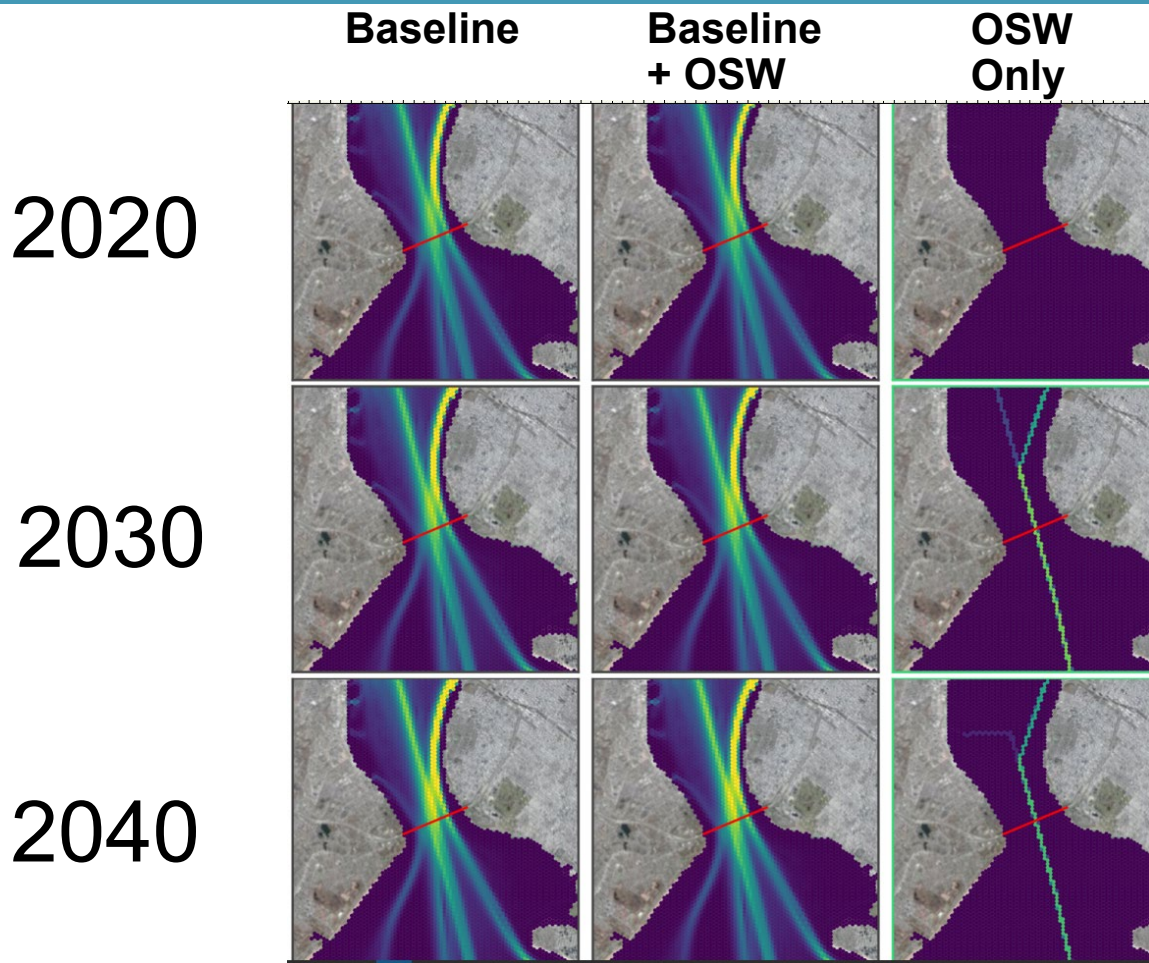
Table 6-6 OSW Vessel Dimensions Comparison

Vessel Type*	Representative Vessel	LOA	Beam	Draft
WTIV	Gusto NG-9800C-US	419 ft.	138 ft.	19 ft.
Heavy Transport Vessel (HTV)	Jumbo K3000	502 ft.	90 ft.	27 ft.
ABS Load-Line Barge	---	400 ft.	100 ft.	14 ft.
Jack-Up Feeder Barge	Gusto NG-3750C-FEEDER	231 ft.	125 ft.	19 ft.
Cable-Lay Vessel	Nexans Aurora	492 ft.	102 ft.	25 ft.
SOV	---	250-330 ft.	66 ft.	23 ft.
CTV	---	60-100 ft.	30-40 ft.	8 ft.
Tanker Vessel	Maersk Misumi	600 ft.	105 ft.	38 ft.
Cargo Vessel	Maersk Panamax	950 ft.	106 ft.	40 ft.

Findings of Study: Vessel Traffic



Findings of Study: Verrazano Narrows



Findings of Study: Vessel Traffic


- **Projected OSW vessel traffic would use existing navigational channels and would not introduce new navigation patterns**
- **Relative increase in vessel traffic projected from OSW is minor (<1%)** due to large amount of passenger traffic in New York Harbor.
- Concluded that the navigation channels in New York Bight and New York Harbor are well maintained with acceptable navigation depths

Findings of Study: Environmental Impacts

- Primary impacts of concern:
 - Wetlands and Open Waters
 - Threatened and Endangered species habitat (Sturgeon)
 - Archaeological Resources (Tribal Lands)
 - Traffic
 - Air Quality
 - Noise
 - Contaminated Soils/Sediment



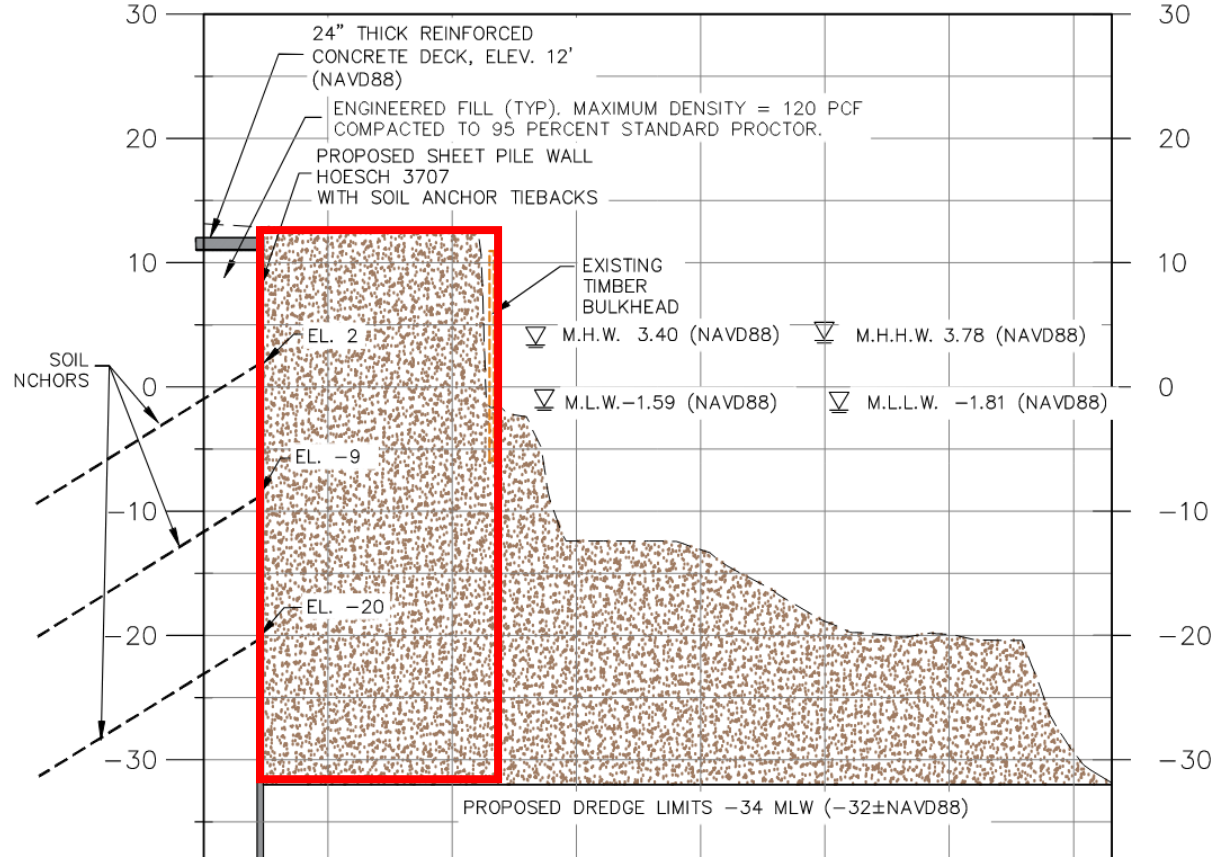
Findings of Study: NEPA/SEQRA & Permitting Results

- Each Port required to conduct Environmental review and regulatory permitting to authorize port development
 - These processes minimize and mitigate impacts to acceptable levels
 - Monitoring and Corrective Actions would also be implemented during construction
- 
- The background of the slide features a photograph of two sturgeon fish swimming in clear, blue water. The fish are elongated with bony scutes along their backs and heads. They are positioned horizontally, with one slightly above and to the right of the other. The lighting is natural, highlighting the texture of their scales and the clarity of the water.

Best Practices: Permitting

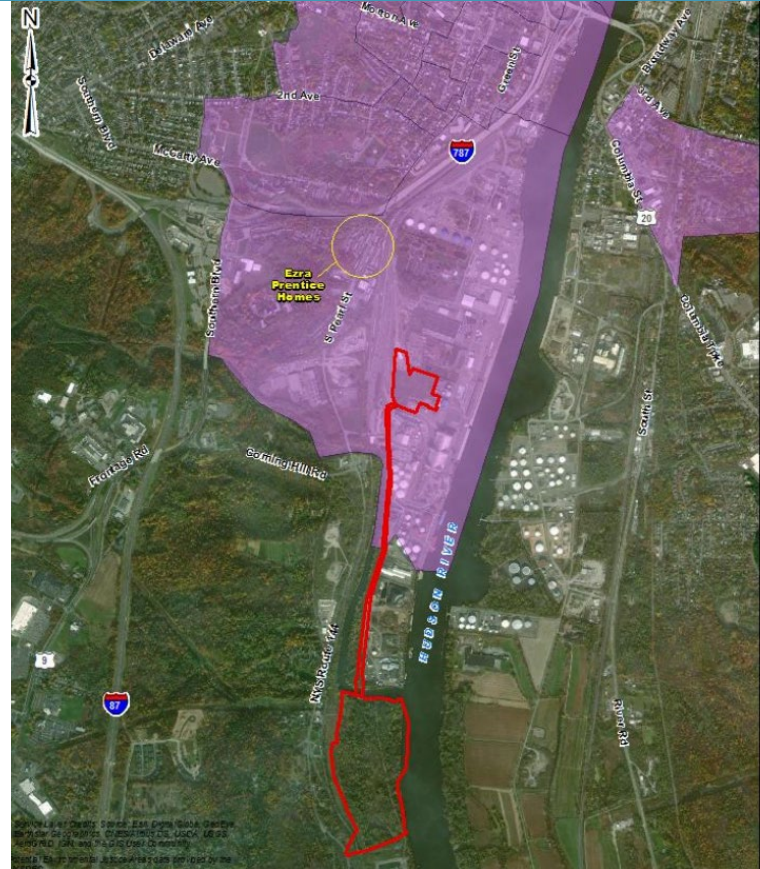
Excavating Uplands to Create Docking Area

- Wetland/Waters Impact Reduction
- Wetland/Waters Mitigation
 - On-Site Creation
- Agency Endorsements



Best Practices: Environmental Justice

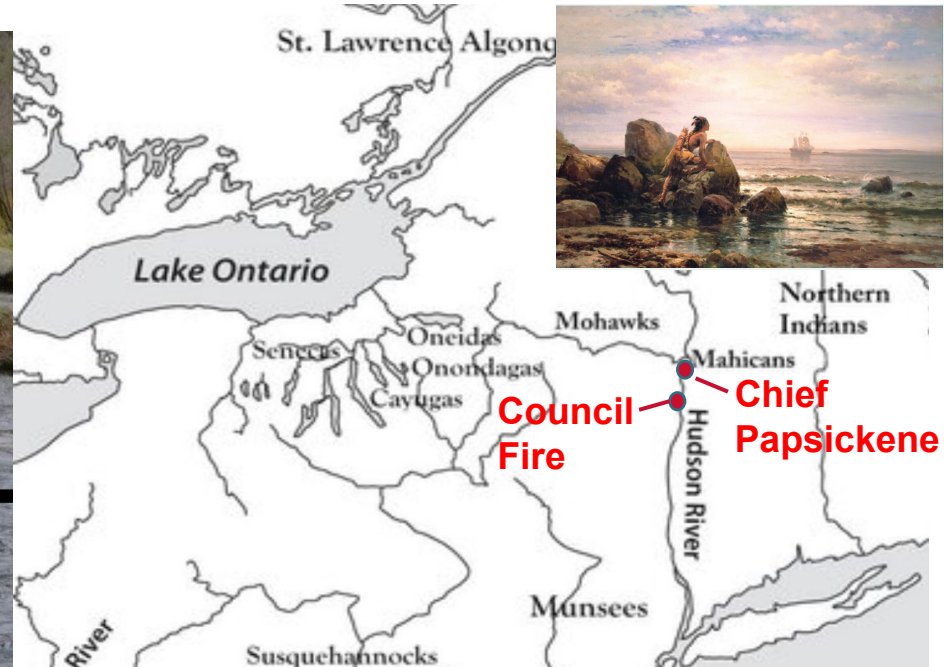
- Conduct Thorough Outreach to EJ Community and Community Leaders
- Keep Community Supportive and Informed
- Mitigation Examples
 - Divert Truck Routes to Avoid EJ Community
 - Community Air Monitoring Program
 - Communicate Construction Updates



Findings: Cumulative Benefits

Concurrent Permitting of Port of Albany & Port of Coeymans

Section 106 Consultation Memorandum of Agreements (MOAs)



Findings: Net Conservation Benefit

Concurrent Permitting of Port of Albany & Port of Coeymans

Schodack Island Benthic Mitigation for Sturgeon Foraging



Findings: Socioeconomics

- OSW Socioeconomic Benefits are Maximized by Full Build Alternative:
 - Greater Certainty of Economic Benefits will be realized in NYS
 - Creation of 10,000s of Construction and Operational Jobs close to Environmental Justice (EJ) and Disadvantaged Communities (DACs)
 - Spurs local and regional supply chain developments creating further economic development and employment opportunities
 - Increased tax revenues in NYS
 - Acceleration of affordable clean energy electric rates
 - Acceleration of Public Health Benefits through reduction in coal and gas-fired power emissions

Available on NYSERDA's Website: OSW Ports Cumulative Impact Study

NYSERDA Offshore Wind Impacts and Benefits

- www.nyserda.ny.gov/All-Programs/Offshore-Wind/Focus-Areas/Impacts-and-Benefits

Climate and Health

By replacing aging fossil fuel-burning generators, offshore wind energy avoids releasing harmful greenhouse gases that contribute to global climate change and harmful air pollutants, such as nitrogen oxides (NOx), sulfur dioxide (SO₂), and fine particulate matter (PM_{2.5}), that can cause serious localized health impacts, such as respiratory disease, cardiovascular disease, and premature death.

- [Health and Climate Benefits of Offshore Wind Facilities in the Mid-Atlantic United States](#) [\(PDF\)](#) [\(P\)](#)
(Environmental Research Letters, July 2016)

Cultural Resources

Offshore wind development must consider potential impacts to architectural and archaeological resources both onshore and offshore. Advanced studies of these resources help to avoid or minimize impacts.

- [Cultural Resources Study](#) (NYSERDA, December 2017)

Economic Growth and Workforce Development

The offshore wind industry will bring billions of dollars of investments and more than 10,000 jobs to New York State.

- [Offshore Wind Ports, Cumulative Impacts Study](#) (NYSERDA, May 2022) [\(PDF\)](#)
- [Overview of Offshore Wind Opportunities for Experienced Mariners](#) [\(PDF\)](#) (NYSERDA, February 2021)
- [U.S. Offshore Wind Power Economic Impact Assessment](#) [\(PDF\)](#) [\(P\)](#) (AWEA, March 2020)
- [Socio-Economic Assessment of Shipping and Navigation for Potential Offshore Wind Development Offshore New York State](#) [\(PDF\)](#) (NYSERDA, April 2018)
- [Offshore Wind Policy Options Paper](#) [\(PDF\)](#) (NYSERDA, January 2018)
- [The Workforce Opportunity of Offshore Wind in New York](#) [\(PDF\)](#) (NYSERDA, December 2017)
- [U.S. Job Creation in Offshore Wind](#) [\(PDF\)](#) (NYSERDA, October 2017)
- [New York State and the Jobs of Offshore Wind Energy](#) [\(PDF\)](#) [\(P\)](#) (WDI, Spring 2017)
- [An Assessment of the Economic Potential of Offshore Wind in the United States from 2015 to 2030](#) [\(P\)](#) (NREL, March 2017)
- [Socio-Economic Impact of Outer Continental Shelf Wind Energy Development on Fisheries in the U.S. Atlantic](#) [\(PDF\)](#) [\(P\)](#) (BOEM, February 2017)
- [New York Offshore Wind Cost Reduction Study](#) [\(PDF\)](#) (NYSERDA, February 2015)

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Questions

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HDR

Findings of Study

- NYSERDA is committed to the responsible development of OSW Ports
- Through regulatory permitting processes, the Full Build Alternative would be developed in a responsible manner and would ensure that viable OSW ports would implement the State's OSW program on schedule.

