



MA CZM Coastal Conference

Wednesday June 6, 2018

OWNERS AND PARTNERS

LOCAL EXPERTISE, WORLD WIDE EXPERIENCE, TECHNICAL + FINANCIAL CAPABILITY



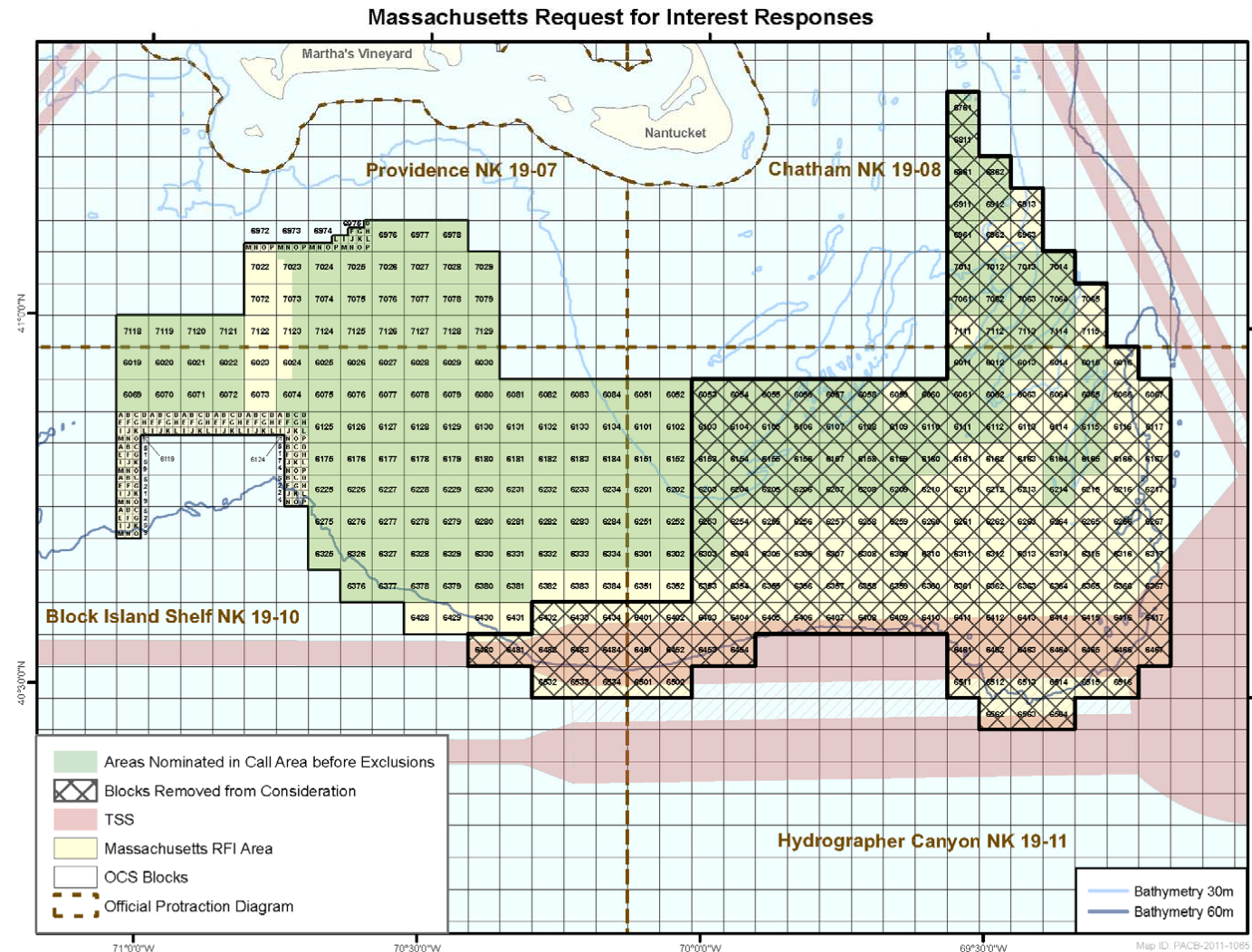
COPENHAGEN INFRASTRUCTURE PARTNERS



- **Leading provider of renewable power in the United States**
 - More than **6,500 MW** of owned and operated facilities in 22 states.
- Part of Iberdrola, the **world leader in the renewable energy industry** (30+ GW in operation)
 - 10 GW of offshore wind under development, construction, or operations.
- **Long-term, clean energy investment** focus with 6,000+ MW offshore development portfolio in North America, Europe, Asia and Australia
- **Executive team has extensive offshore wind experience:** First projects, largest projects, most recent projects
- **Local, non-profit partner:** mission of more, community oriented renewable energy projects
- **Provides real community participation in project:**
 - Closely involved in day-to-day development activities
 - Provides guidance regarding important local issues
 - Identifies opportunities to benefit local communities

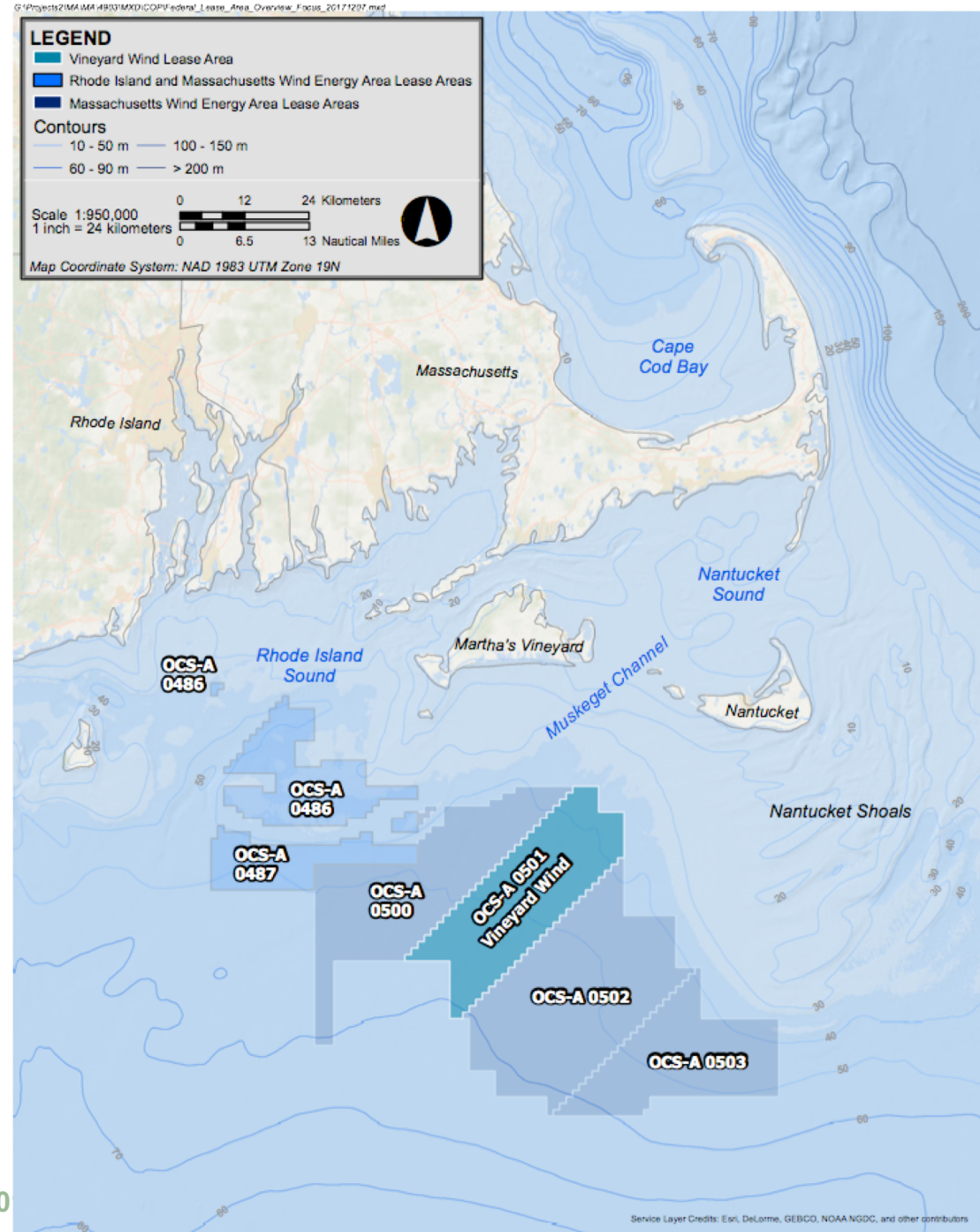
Turbine Site Identified by Multi-Year Stakeholder Process

- BOEM – Federal Process
 - 2010 BOEM Task Force
 - Local government representatives
 - Multiple stakeholder meetings
 - Habitat and fisheries working groups
 - 2011: Request for Interest
 - 2012: Environmental Assessment & Call for Information
 - 2014: Lease Sale Notices
 - 2015: Auction and Lease issuance
 - 2015 – Present: Task Force & Working Groups on-going guidance and consultation
- Massachusetts Policy
 - Energy Diversity Act of 2016
 - Utilities procure total of 1600MW of offshore wind



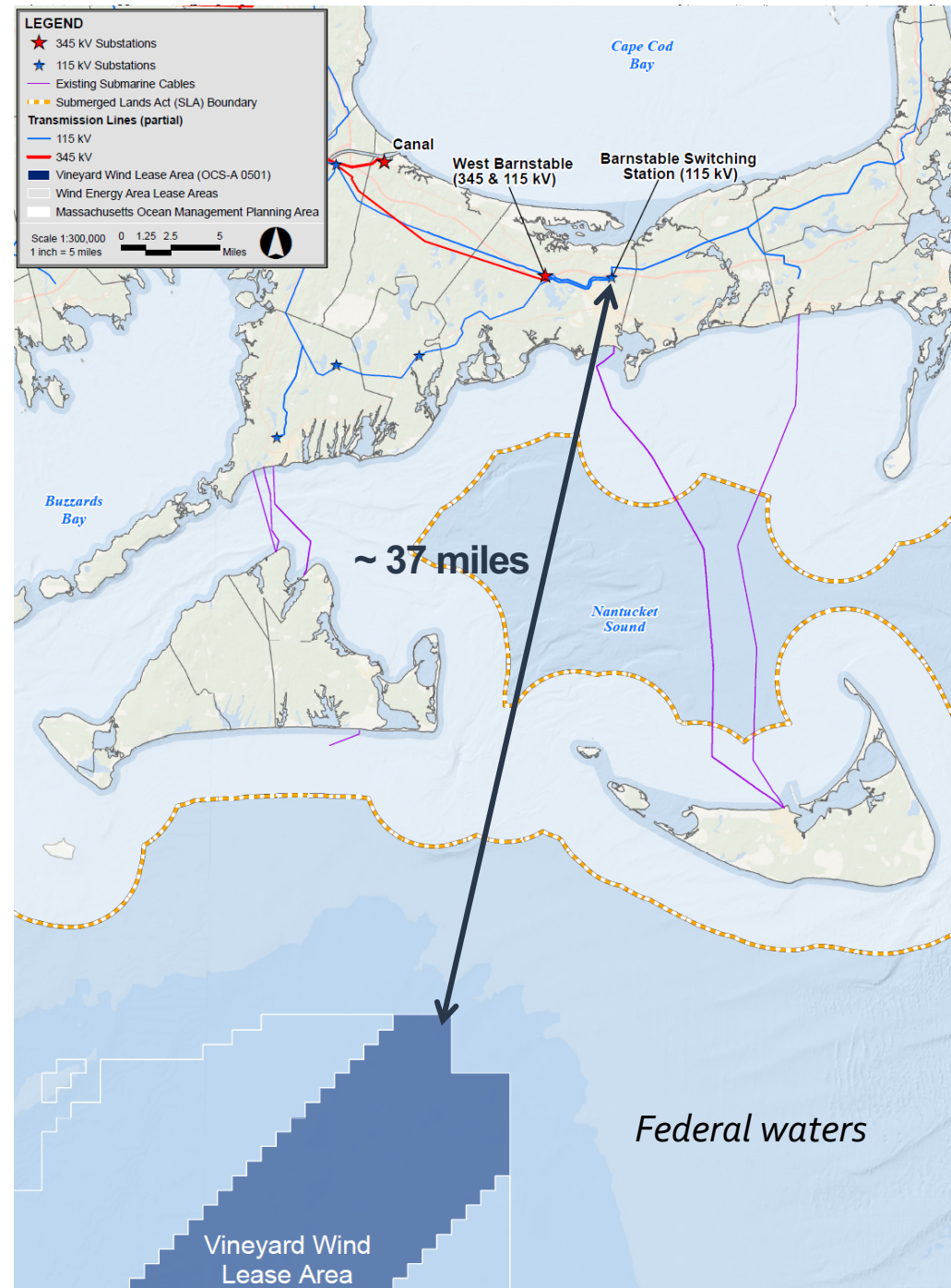
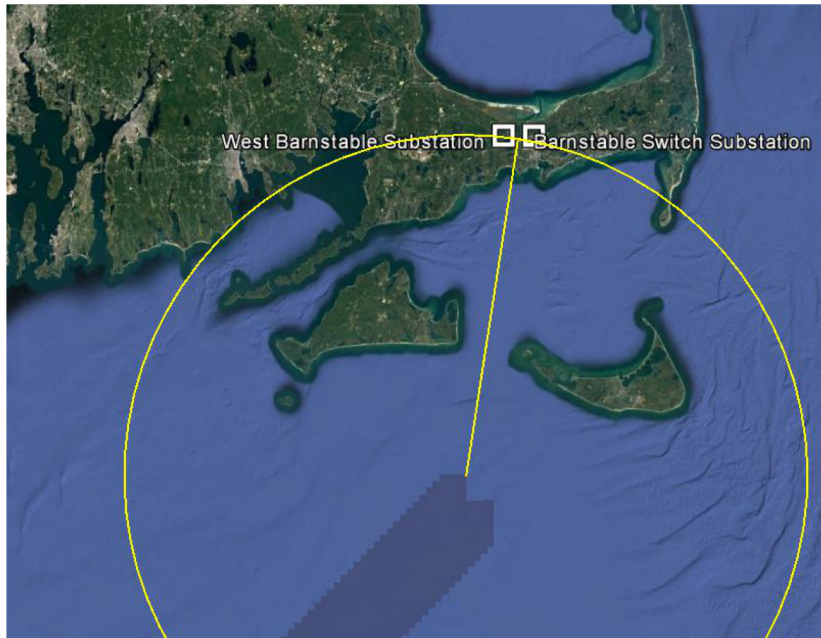
Project Context and Background

- Vineyard Wind Lease area OCS-A 0501
- ~261 square miles
- Northern tip of Lease Area is ~35 miles offshore from Cape Cod, and ~14 miles south of Martha's Vineyard and Nantucket
- Study and analysis began as soon as lease acquired in 2015
 - Building on earlier consultations by project and Vineyard Power
 - Offshore environmental geological surveys in 2016 and 2017 and summer 2018
 - Meteorological buoy deployed in May 2018



GRID CONNECTION

- Nearest suitable existing substations are in Barnstable
- Minimizes amount of cable installed
- No changes to existing transmission system will be required
- Connection location enhances grid reliability by providing power at edge of grid system



SCHEDULE AND CONSTRUCTION



- **On-shore construction scheduled start:** Late 2019
- **Construction finished (“COD”):** End of 2022 - 800 MW
- **Minimize anchoring:** Installation primarily with dynamic positioning and/or jack-up barges

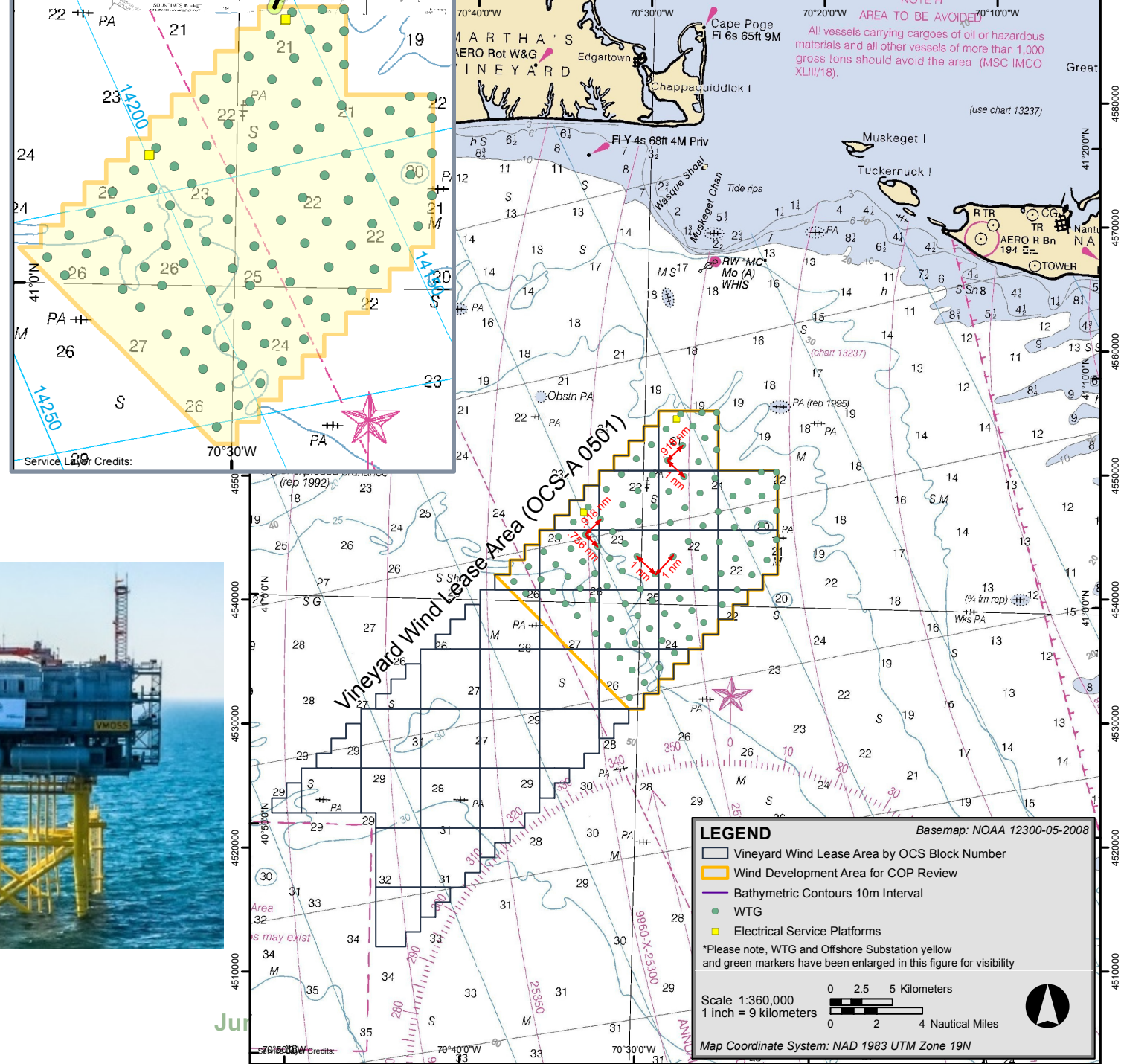
PROJECT LAYOUT

Turbines

- Fixed locations
- Spare locations
- Micro-siting expected
- 106 total (including spares)

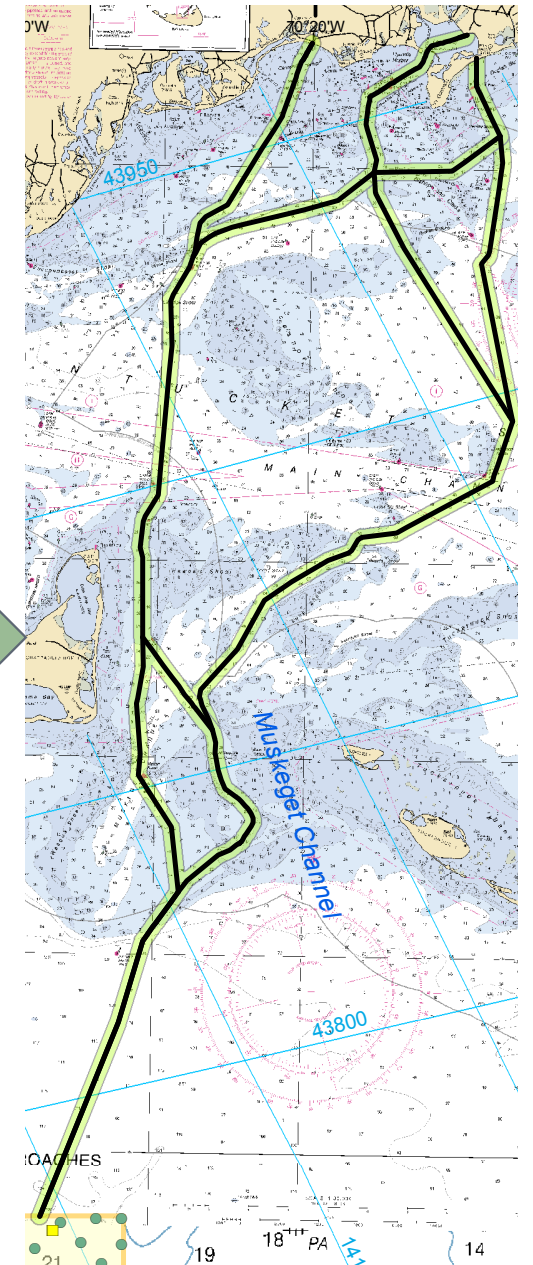
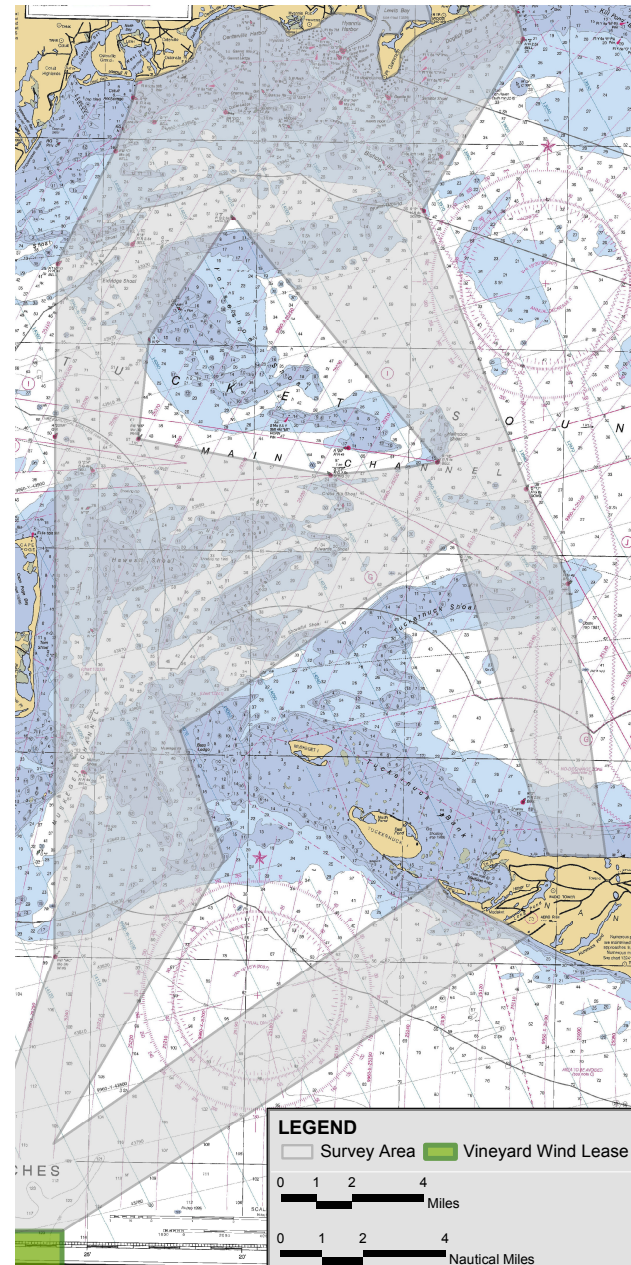
Electric Service Platforms (ESP)

- Per 400 MW:
 - 1 traditional ESP
 - Or two lightweight ESPs
- 2 locations total
- Lightweight ESPs will be co-located



OFFSHORE CABLE CORRIDORS

- Two possible corridors: only one will be used
 - Multiple options through Muskeget Channel
 - Landfall location
 - 2017 & 2018 offshore studies inform selection
- Routing
 - Considerations include water depth, bathymetry, sensitive habitat areas, etc.
 - Avoidance of mapped eelgrass beds
 - Minimization of potential impacts to hard/complex bottom areas
- Installation via jet-plow, plow, or mechanical trenching
 - Up to three cables in single 810m corridor
 - Target burial depth = 5 to 8 feet (1.5 to 2.5 m)
 - 6-foot-wide swath affected by trenching
 - Where sand waves are present, dredging will be used to achieve target burial depth



PERMITTING PROCESS: General Overview)

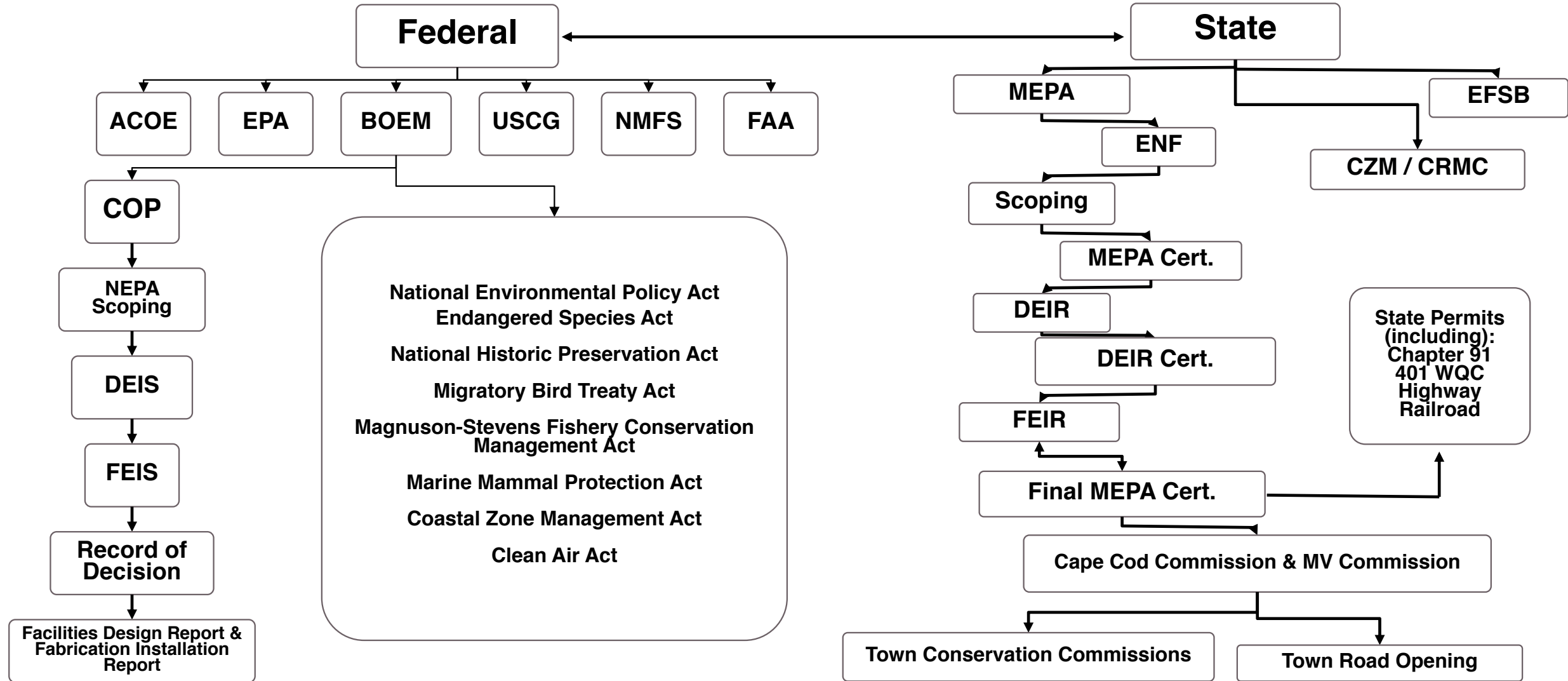
Review universe of technical options and locations



Define project envelope



Submit federal and state applications



PERMITTING PROCESS: High Level Status

Begun

Complete

Federal

State

- ACOE
- EPA
- BOEM**
- USCG
- NMFS
- FAA

MEPA

EFSB

COP

ENF

CZM / CRMC

NEPA Scoping

Scoping

MEPA Cert.

DEIS

DEIR

DEIR Cert.

- National Environmental Policy Act
- Endangered Species Act
- National Historic Preservation Act
- Migratory Bird Treaty Act
- Magnuson-Stevens Fishery Conservation Management Act
- Marine Mammal Protection Act
- Coastal Zone Management Act
- Clean Air Act

FEIR

State Permits (including):
Chapter 91
401 WQC
Highway
Railroad

FEIS

Final MEPA Cert.

Cape Cod Commission & MV Commission

Record of Decision

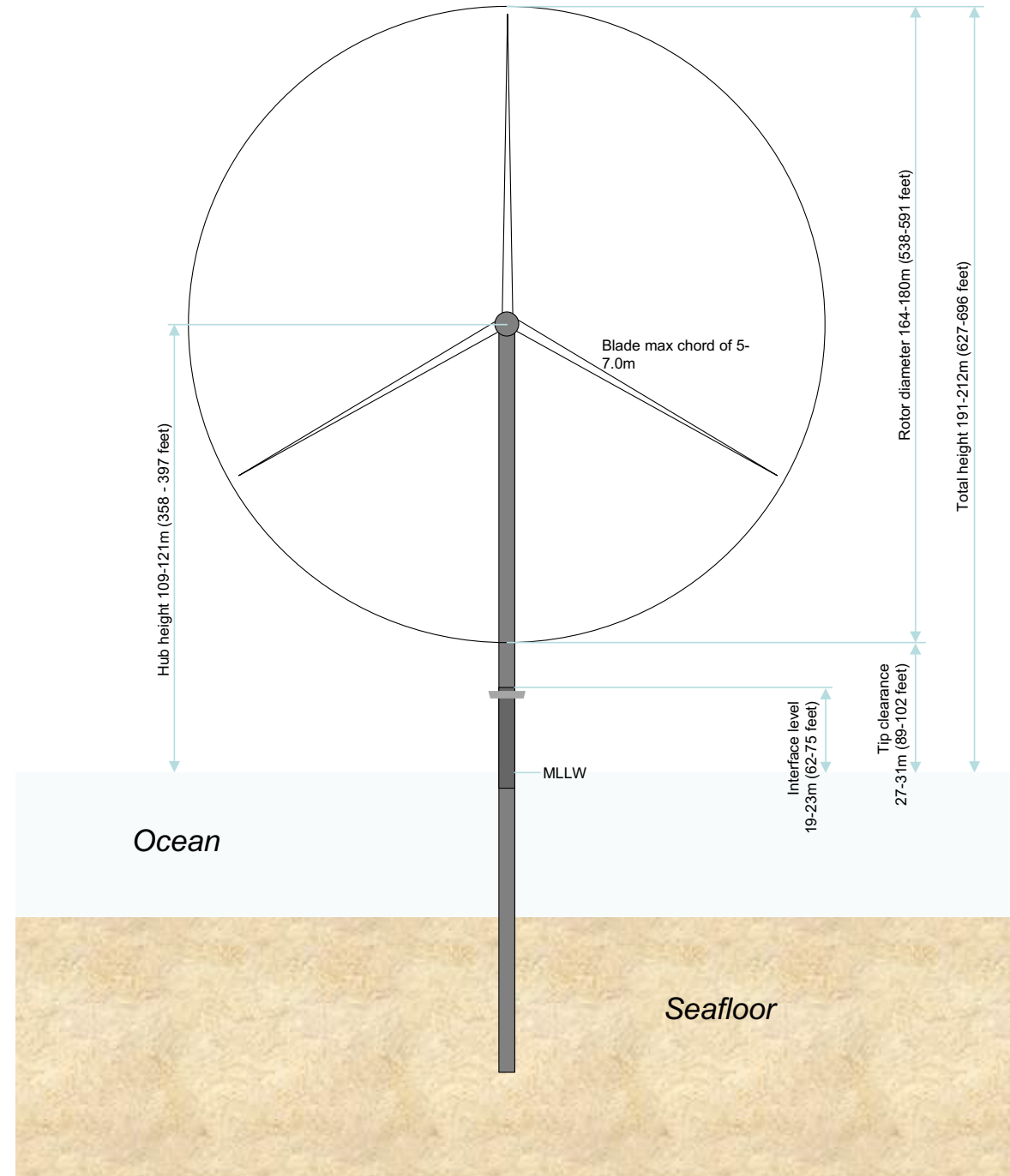
Town Conservation Commissions

Town Road Opening

Facilities Design Report & Fabrication Installation Report

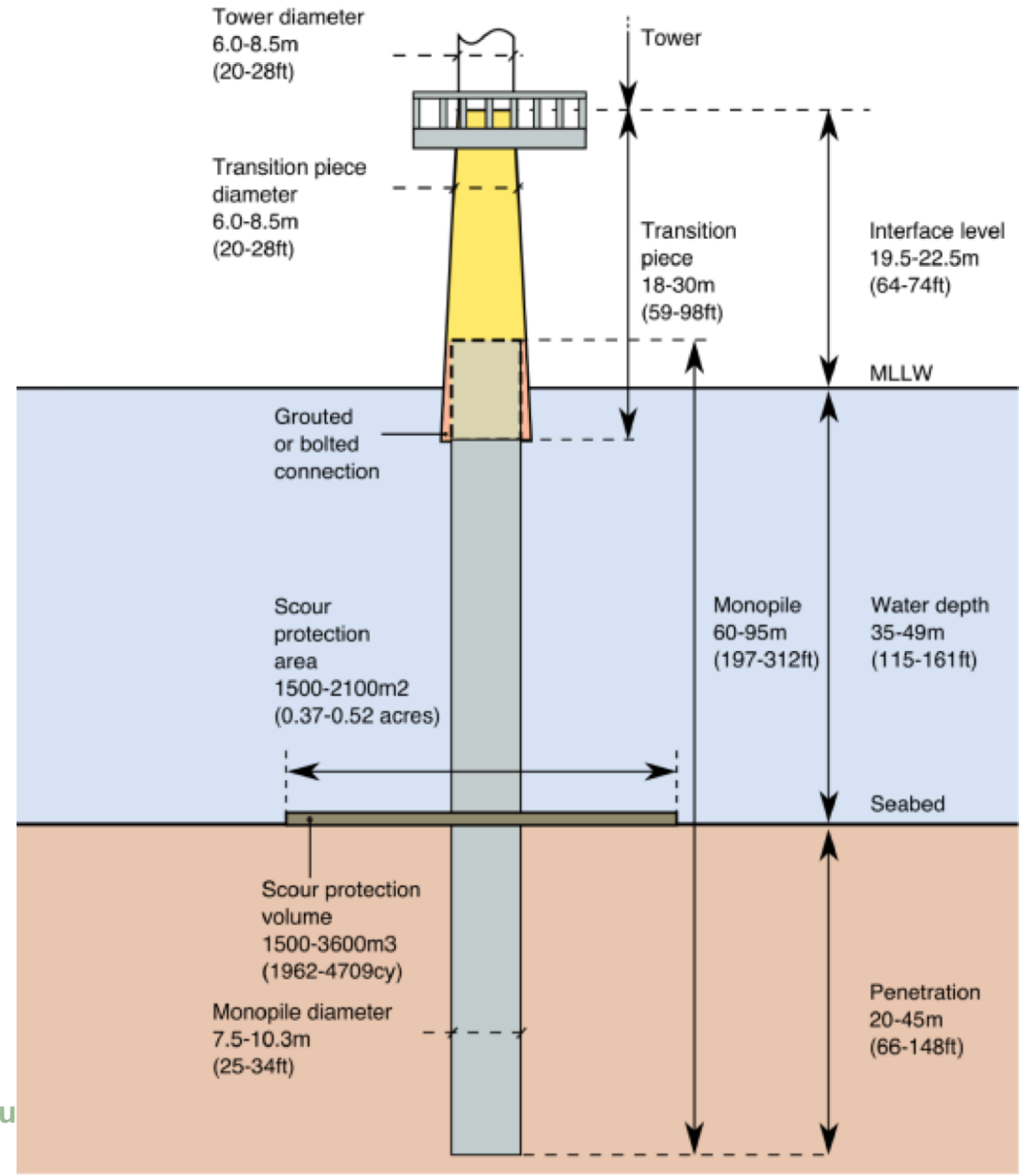
WIND TURBINE GENERATORS

- 8 – 10MW WTG
- Rotor size of 164-180 m (538-591 ft)
- Hub height of 109-121 m (358-397 ft)

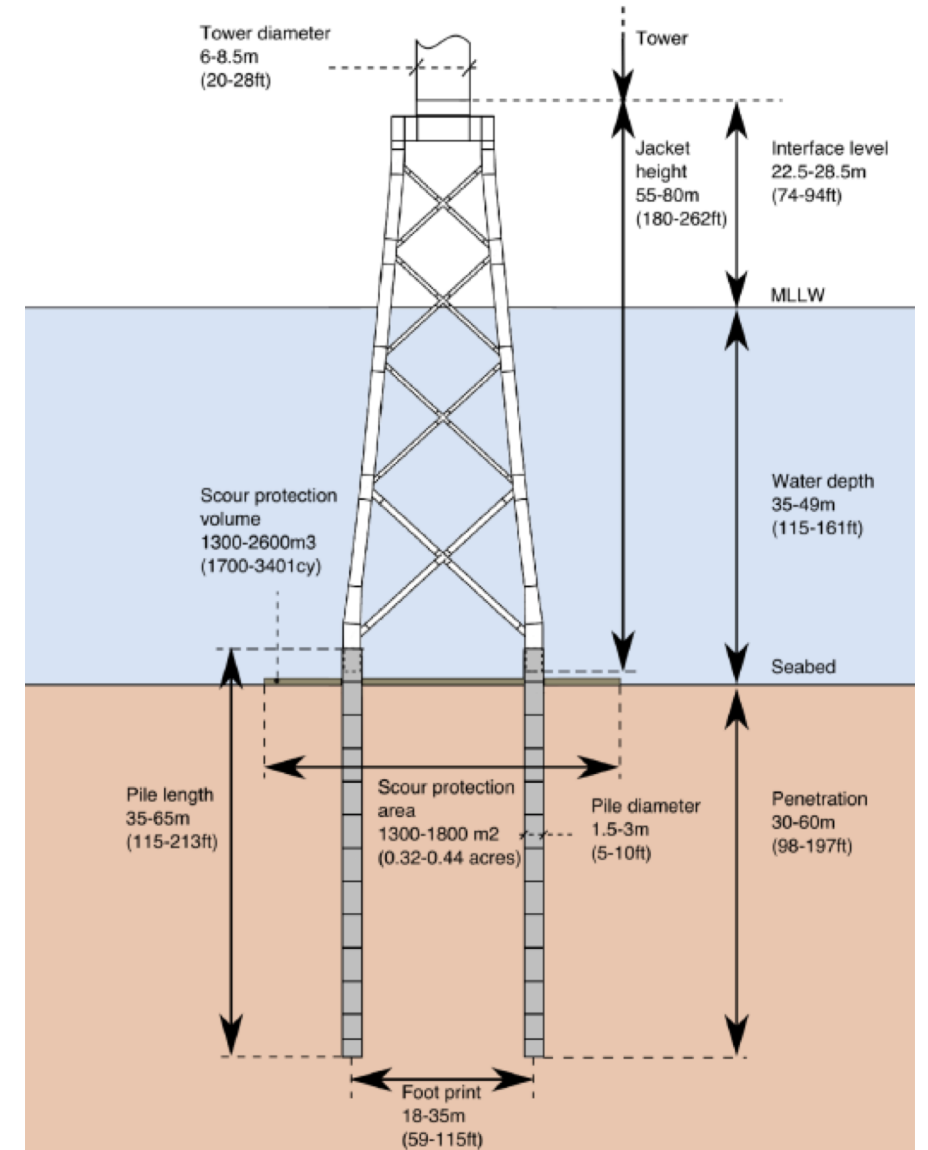


FOUNDATIONS

- 100% Monopiles or 50% Monopiles & 50% Jacket
- Scour protection at each location
 - Total footprint in wind farm area 0.4%
- Noise mitigation during pile driving
- Protected marine species (marine mammals & sea turtles)
 - Clear exclusion zone before initiation of pile driving



FOUNDATIONS (continued)



Contact Details

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For the latest project information please visit

www.vineyardwind.com

ACTIVE CONSULTATION WITH FISHERMEN

Early and on-going engagement with fishing community

- **Most important:** On-going participation in working groups and individual/small group meetings
 - Detailed and candid conversations
 - Logistically easier to arrange (more of them, less difficult to participate)
- **Construction studies:** Agreement with SMAST for pre- and post-construction fishery studies
 - SMAST will consult with fishing industry, regulators and academia - on what should be studied
 - Data will be publicly available
- **Transparent plan:** Active and continuously updated fisheries communication plan reviewed by regulators, fishermen and fishing organizations (and on website)
- **People facilitate communication:** Fishery Liaison (FL) and Fishery Representatives (FR)
 - First Fisheries Representative in the nation for offshore wind (2010)
 - Full-time Fisheries Liaison (May 2018)
 - Always seeking to expand FR network
- **Taking communication into action - Continuous Improvement:**
 - Changes to project design already made, and more under consideration
 - Ready to participate, e.g. central clearinghouses for fisheries information and gear loss/damage compensation

Outreach Ongoing

Includes over 100 meetings with fishermen and fishing organizations to date

- Alliance to Protect Nantucket Sound
- Association to Preserve Cape Cod;
- Cape and Islands Self-Reliance;
- Cape and Vineyard Electrical Cooperative;
- Cape Cod Fishermen's Alliance;
- Cape Light Compact;
- Climate Action Business Association;
- Coalition for Social Justice;
- Conservation Law Foundation;
- Coonamessett Farm Foundation;
- Eastern Fisheries;
- Environment Massachusetts;
- Environmental Business Council of New England;
- Environmental League of Massachusetts;
- Hercules SLR;
- Long Island Commercial Fishing Association;
- Martha's Vineyard Fishermen Preservation Trust;
- Massachusetts Audubon Society;
- Massachusetts Clean Energy Center;
- Massachusetts Fisheries Institute;
- Massachusetts Fisheries Working Group;
- Massachusetts Fishermen's Partnership and Support Services;
- Massachusetts Habitat Working Group;
- Massachusetts Lobstermen's Association;
- Nantucket Rotary Club;
- National Academies of Sciences, Offshore Renewable Energy Development and Fisheries Conference;
- National Wildlife Federation;
- Natural Resources Defense Council;
- New Bedford Harbor Development Commission;
- New England Aquarium;
- New England Energy and Commerce Association;
- New England Fishery Management Council
- Northeast Fisheries Sciences Center;
- Northeast Fishery Management Council;
- Northeast Fishery Sector Managers X, XI, XIII, VII, VIII;
- Port of New Bedford;
- Recreational Fishing Alliance;
- Rhode Island Fishermen's Advisory Board;
- Rhode Island Habitat Advisory Board;
- Scallop Industry Advisors Meeting;
- Sierra Club;
- Stoveboat - Saving Seafood;
- The Nature Conservancy;
- Town Dock;
- University of Massachusetts (various campuses); and
- Woods Hole Oceanographic Institute.