

Empire Wind Project (EW1 and EW2)

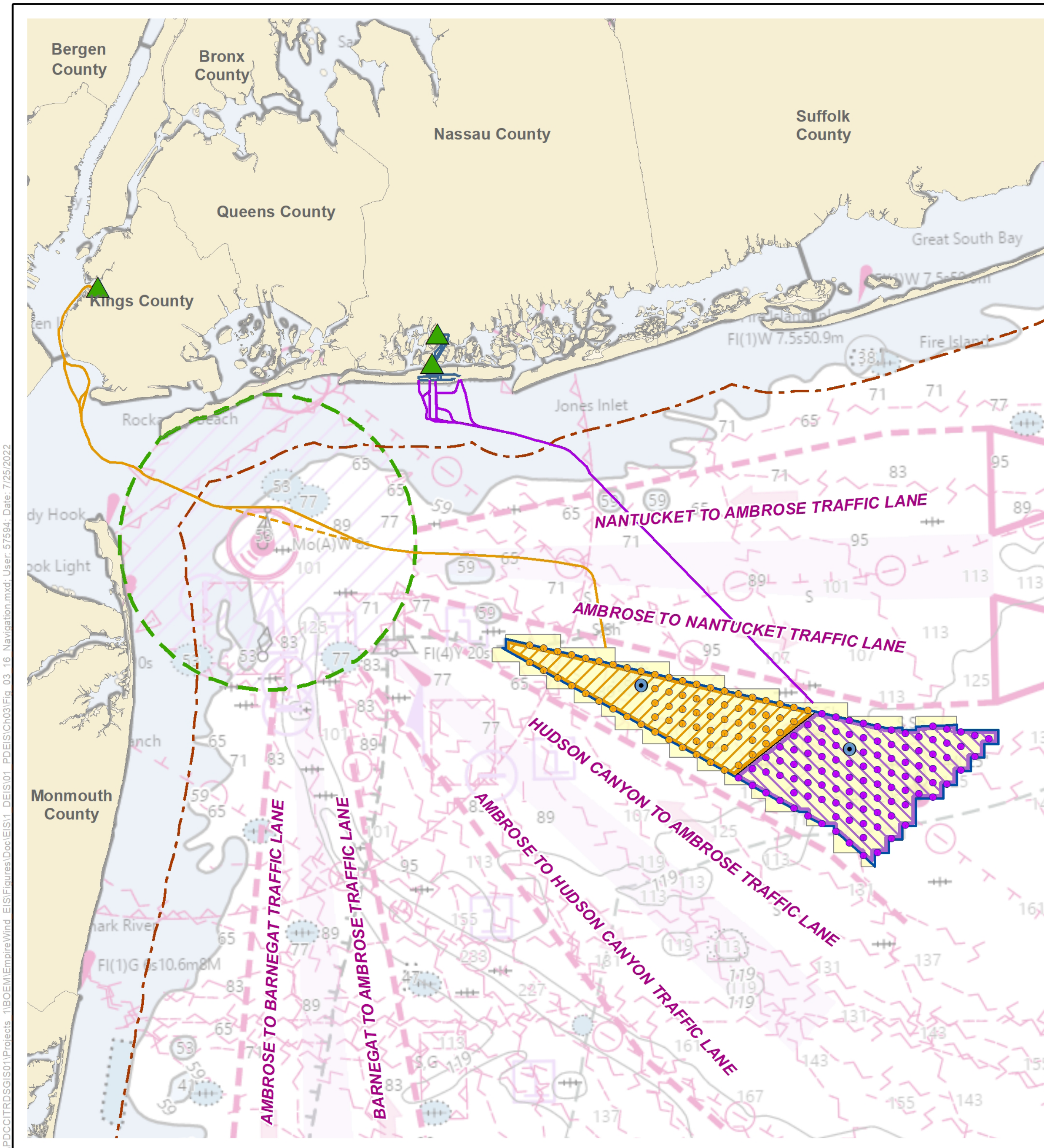
Alternatives

No Action Alternative

Under the No Action Alternative, BOEM would not approve the COP. Construction and installation, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project would not occur, and no additional permits or authorizations for the Projects would be required.

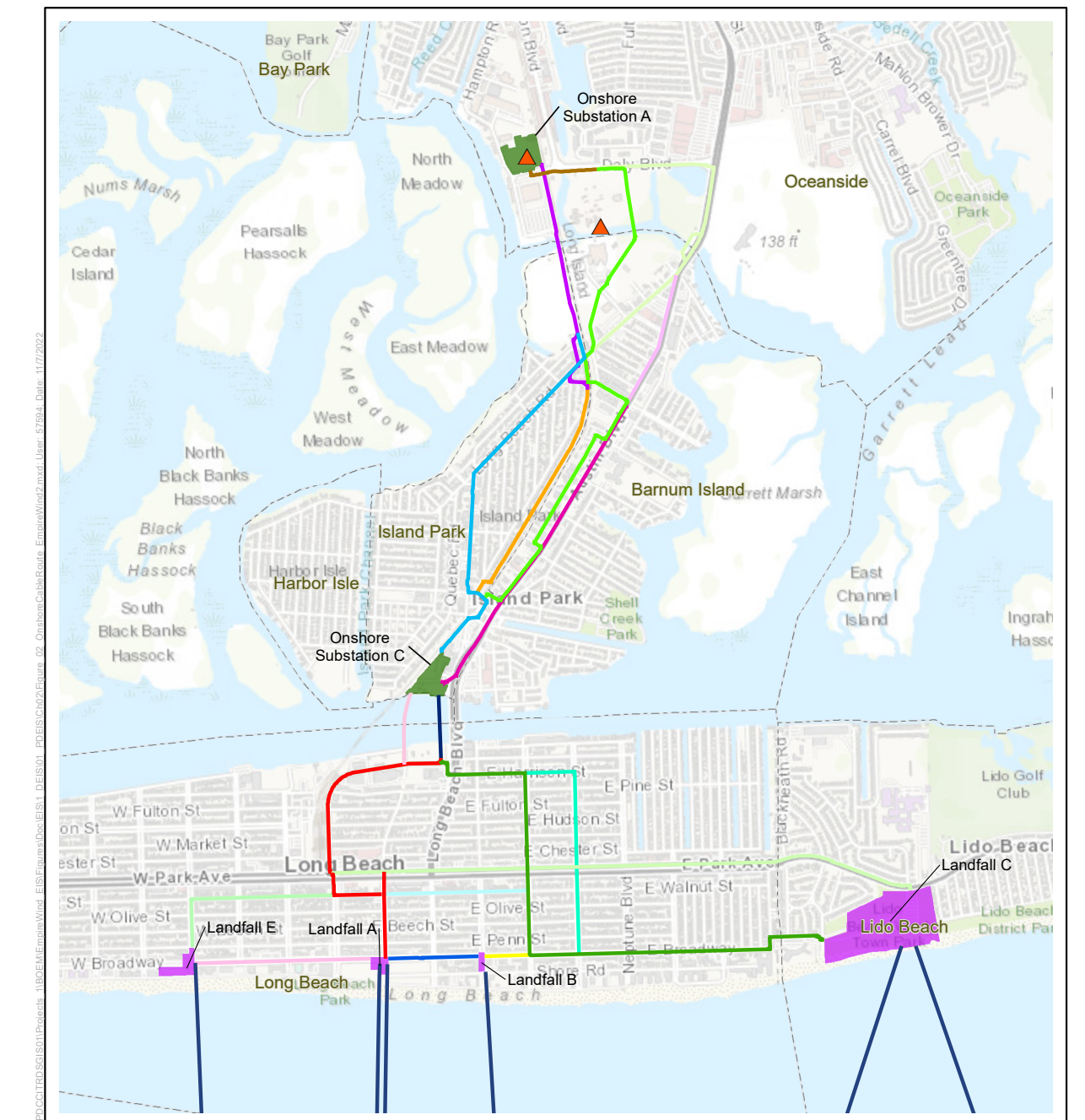
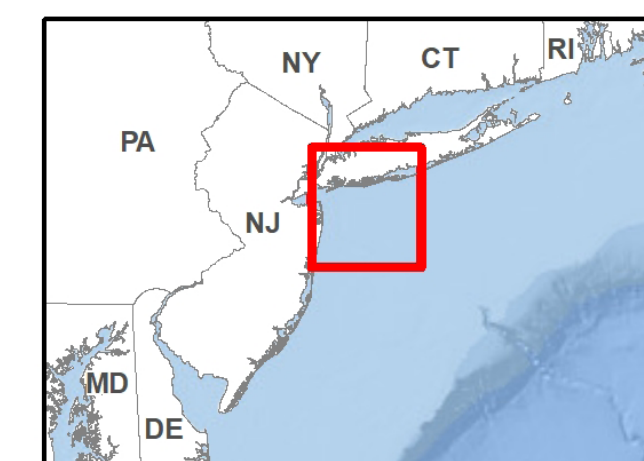
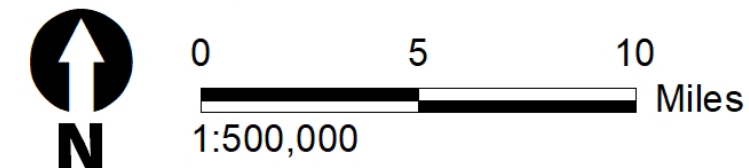
Alternative A: Proposed Action

Under Alternative A, the Proposed Action, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. EW 1 would consist of up to 57 WTGs, one OSS, interarray cable, submarine export cable, a cable landfall at SBMT, one onshore substation, and interconnection cable to the POI at Gowanus Substation in Brooklyn, New York. EW 2 would consist of up to 90 WTGs, one OSS, interarray cable, submarine export cable, up to two out of four proposed cable landfalls in Long Beach or Lido Beach, New York, onshore cable route options, one of the two proposed



- Wind Development Area
- Empire Wind 1 (EW 1)
- Empire Wind 2 (EW 2)
- EW 1 WTG (71)
- EW 2 WTG (103)
- Offshore Substation
- Onshore Substation
- EW 1 Submarine Export Cable
- EW 1 Submarine Export Cable (Variant)
- EW 2 Onshore Export Cable
- EW 2 Submarine Export Cable
- Empire Wind Lease Area (OCS-A 0512)
- State Seaward Boundary
- Precautionary Area

Source: Empire 2022.



- Potential Onshore Substation Parcel
- Point of Interconnection
- Cable Landfall
- Offshore Export Cable
- Interconnection Cable
- Municipal Boundary
- Cable Routes
- IP-E
- IP-F
- IP-G
- IP-H
- IP-A
- IP-B
- IP-C
- IP-D
- LB-E
- LB-F
- LB-G
- LB-H
- LB-A
- LB-B
- LB-C
- LB-D
- Reynolds Channel Crossing Feature

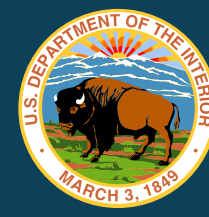
Source: Empire 2022.



- Potential Onshore Substation Parcel
- Point of Interconnection
- Cable Landfall
- Offshore Export Cable
- Interconnection Cable
- Municipal Boundary

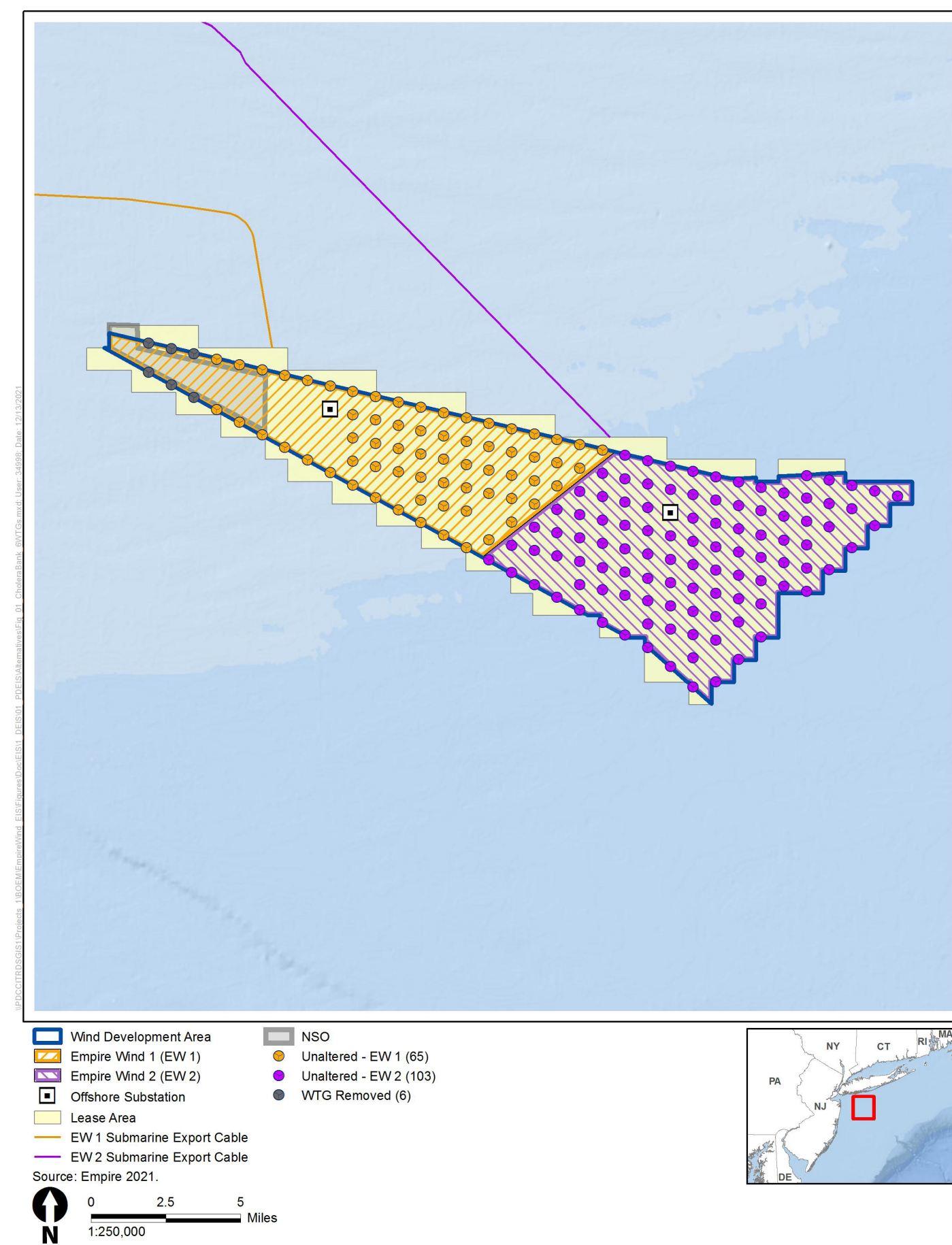
Source: Empire 2022.



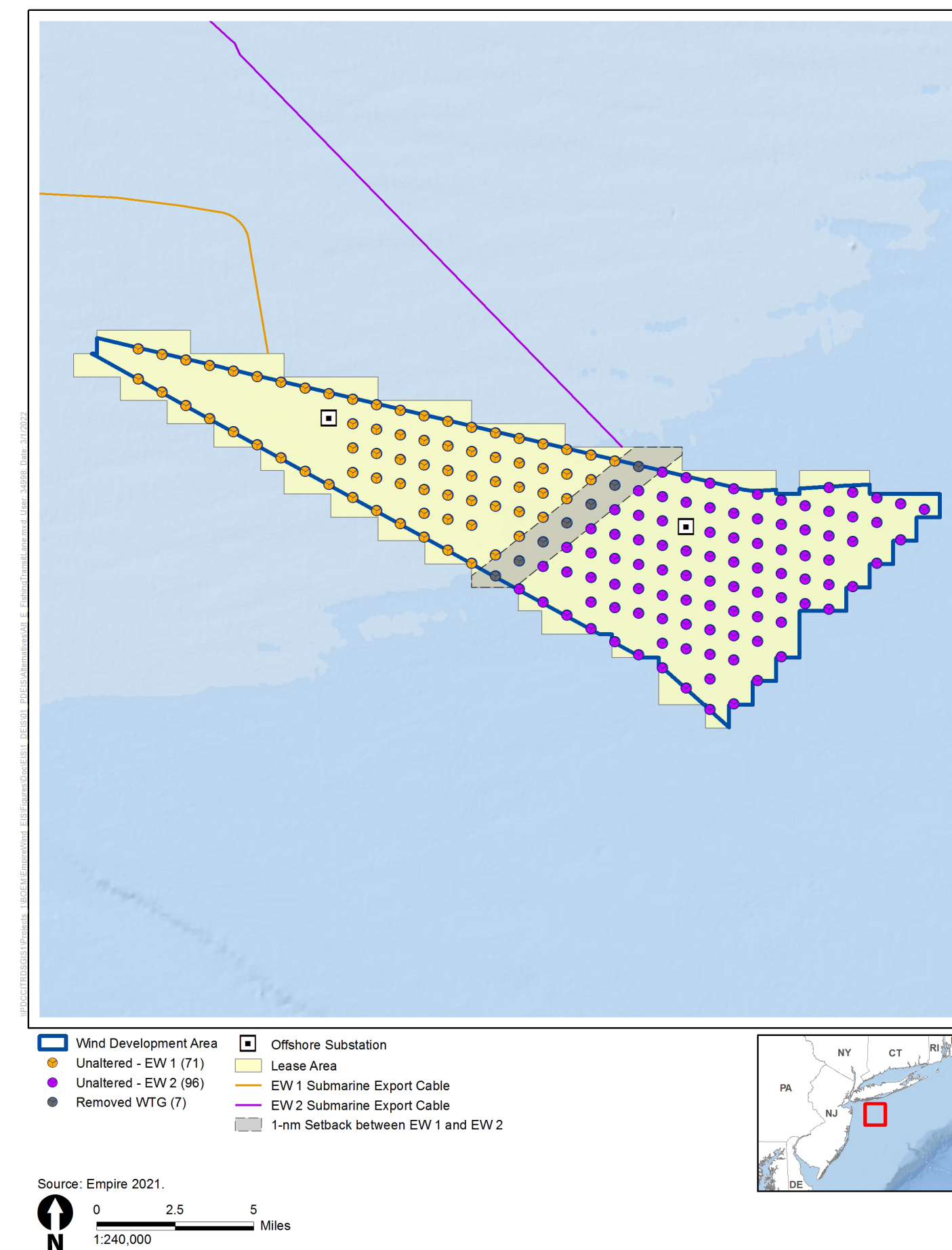


Empire Wind Project (EW1 and EW2)

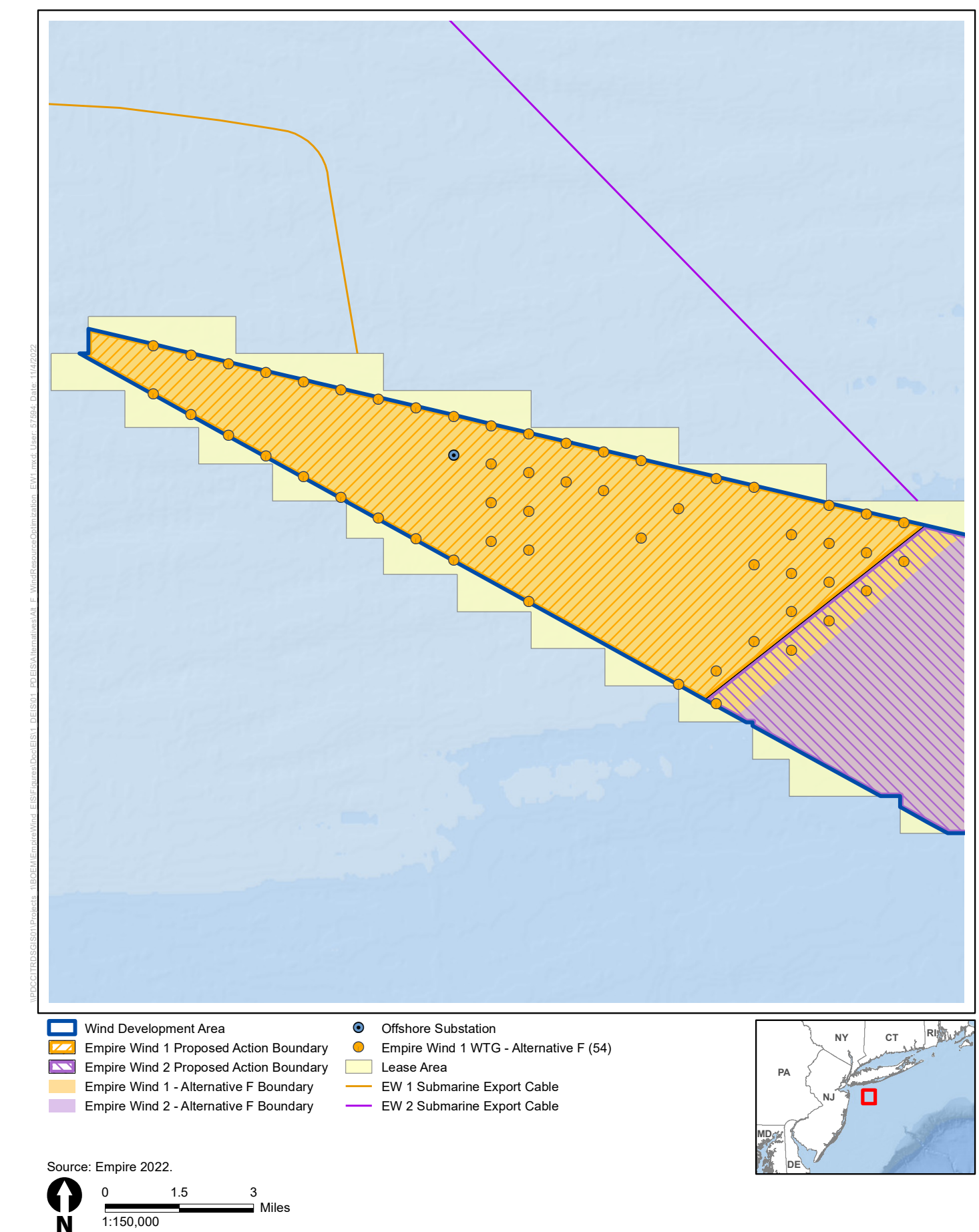
Alternative B



Alternative E



Alternative F



Under Alternative B, Remove Up to Six WTG Positions from the Northwest End of EW 1, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, the EW 1 turbine layout would be modified to remove up to six WTG positions from the northwestern end of EW 1 to reduce potential impacts at the edge of Cholera Bank, on scenic resources, and on navigation safety. Alternative B would also establish a No Surface Occupancy area where WTG positions would be excluded.

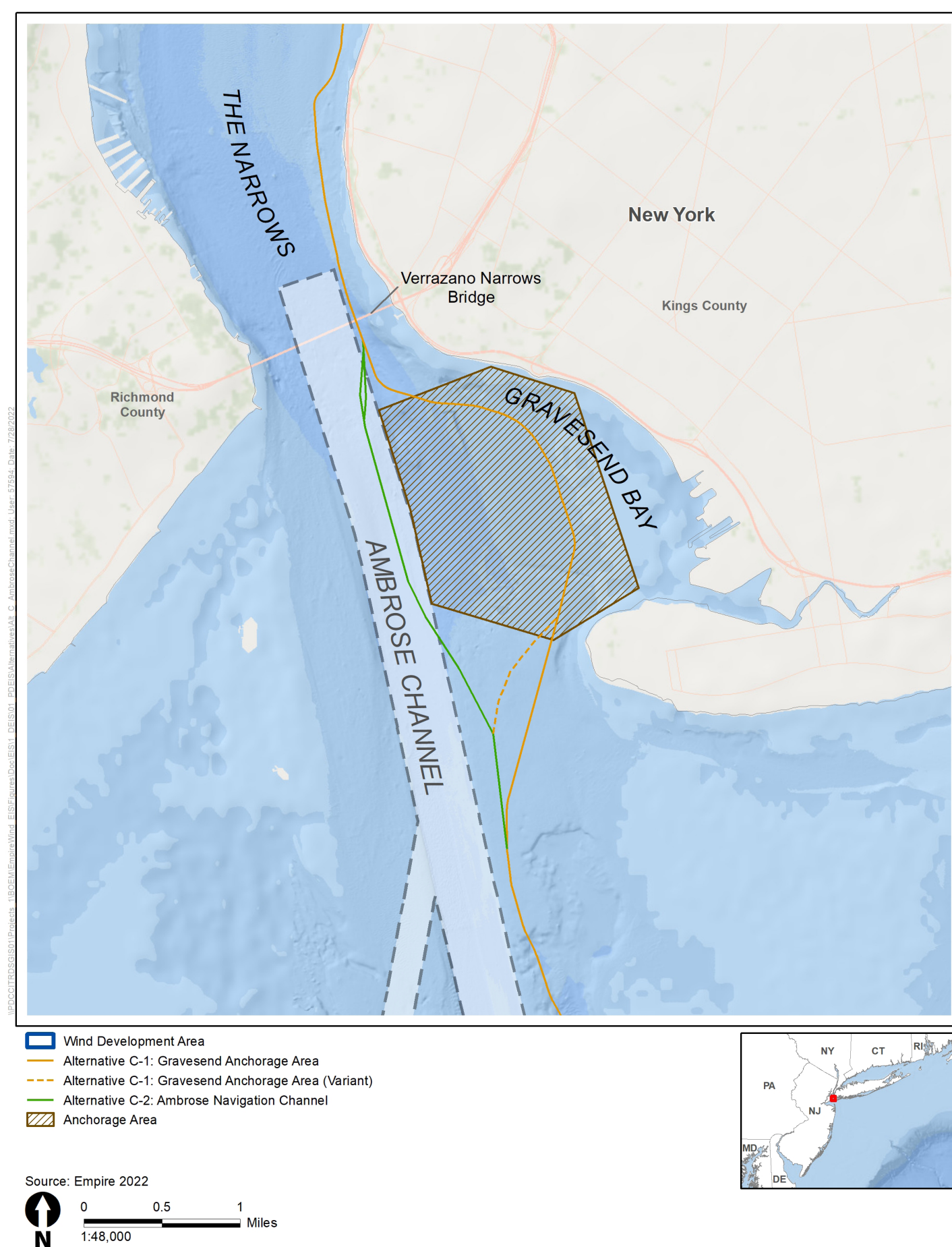
Under Alternative E, Setback between EW 1 and EW 2, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. Alternative E would remove seven WTG positions from EW 2 to create a 1-nm setback between the EW 1 and EW 2 Projects.

Under Alternative F, Wind Resource Optimization with Modifications for Environmental and Technical Considerations, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, the wind turbine layout would be optimized to maximize annual energy production and minimize wake loss while addressing geotechnical considerations.



Empire Wind Project (EW1 and EW2)

Alternative C

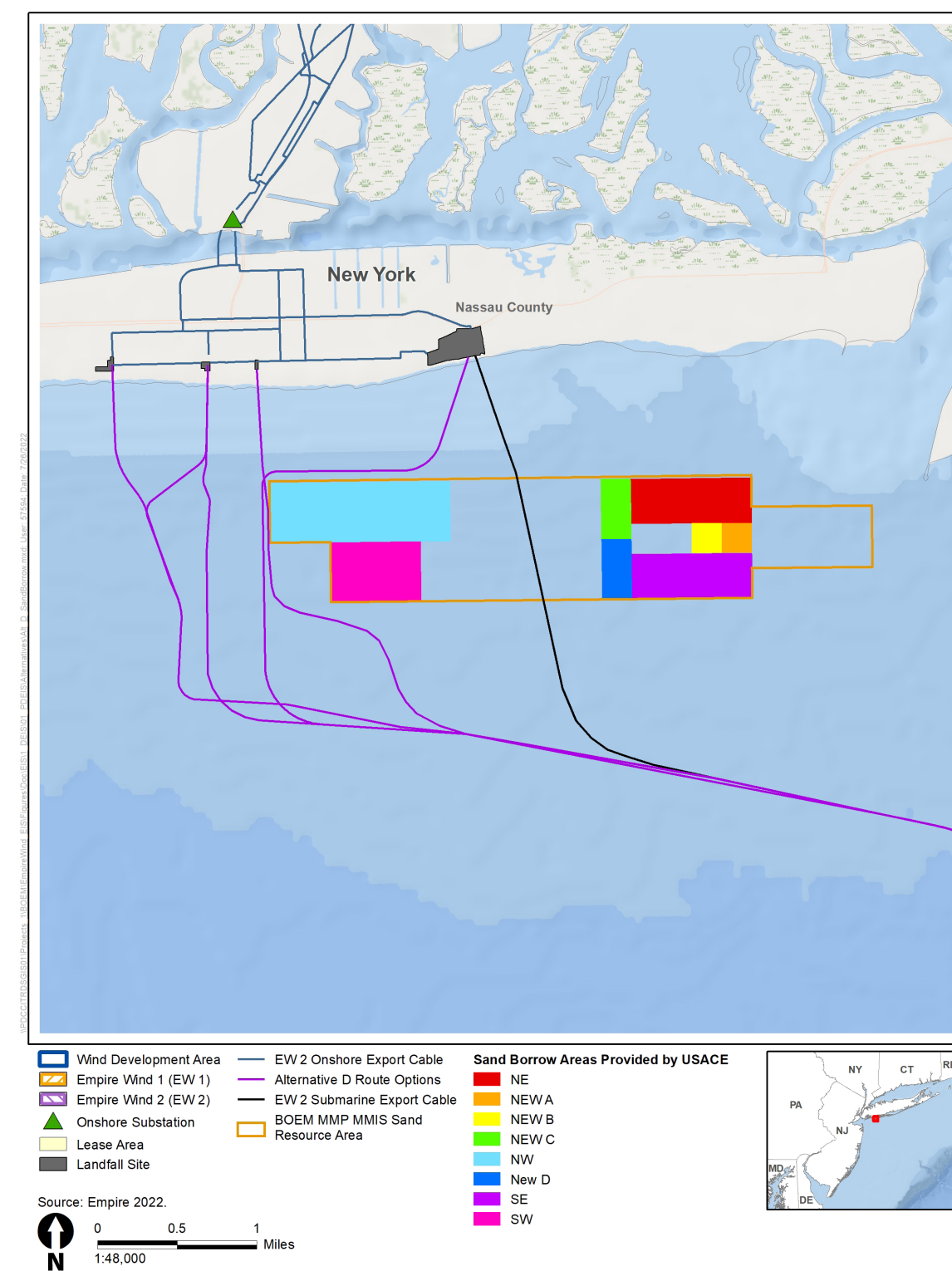


Under Alternative C, EW 1 Submarine Export Cable Route, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, BOEM would approve only one of the two EW 1 submarine export cable route options that would traverse either the Gravesend Anchorage Area (Alternative C-1) or the Ambrose Navigation Channel (Alternative C-2) on the approach to South Brooklyn Marine Terminal.

Alternative H

Under Alternative H, Dredging for EW 1 Export Cable Landfall, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, construction of the EW 1 export cable landfall would use a method of dredge or fill activities that would reduce the discharge of dredged material compared to other dredging options considered in the Empire Wind Project Design Envelope (i.e., open cut trenching/jetting, suction hopper dredging, hydraulic dredging).

Alternative D



Under Alternative D, EW 2 Submarine Export Cable Route Options to Minimize Impacts on the Sand Borrow Area, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, BOEM would only approve submarine export cable route options for EW 2 that minimize impacts on the sand borrow area offshore Long Island.

Alternative G



Under Alternative G, Cable Bridge Crossing of Barnums Channel Adjacent to Long Island Railroad Bridge, the construction, O&M, and conceptual decommissioning of the 816-MW EW 1 Project and the 1,260-MW EW 2 Project within Lease Area OCS-A 0512 and associated export cables would occur within the range of design parameters outlined in the COP, subject to applicable mitigation measures. However, EW 2 would use an above-water cable bridge to construct the onshore export cable crossing at Barnums Channel.