Sunrise Wind - Appendix P: USACE 404(b)(1) Analysis

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APPENDIX P: USACE 404(B)(1) ANALYSIS

Table P-1. Summary of the Applicant-preferred Route

Assessment Criteria	Applicant-preferred Route-Smith Point County Park Landfall 1	Notes
Submarine Export Cable (Outside 3 nm)		
Length of SRWEC from Offshore Converter Station to New York Boundary (3nm)	99.4 mi	
Cable corridor width	98 ft	This is the *disturbance* corridor, not the *survey* corridor
Acreage of cable w/o secondary cable protection	15.7 ac	52.7 ac (total maximum permanent footprint of the SRWEC-OCS with cable protection) - 23.7 ac (secondary protection, Table 3.3.3-5 in the COP) - 13.3 ac (crossing protection, table 3.3.3-5 in the COP) = 15.7 ac.
Acreage of cable w/ secondary cable protection	52.7 ac	
Wrecks and obstructions within cable corridor	0	
Significant Coastal Fish and Wildlife Habitat w/in cable corridor route	N/A	SCFWH does not extend beyond 3 nm
Submarine Export Cable (w/in 3 nm)		
Length of SRWEC from New York Boundary (3nm) to HDD Exit Pit	4.8 mi	
Cable corridor width	98 ft	This is the *disturbance* corridor, not the *survey* corridor
Acreage of cable without secondary cable protection	0.8 ac	2.3 ac (Total maximum permanent footprint of the SRWEC-NYS with cable protection) - 1.5 ac (secondary protection, Table 3.3.3-5 in the COP) - 0 ac (crossing protection, Table 3.3.3-5 in the COP) = 0.8 ac
Acreage of cable with secondary cable protection	2.3 ac	
Volume of secondary cable protection	2,346 cy	

Assessment Criteria	Applicant-preferred Route-Smith Point County Park Landfall 1	Notes
Proximity to USACE Borrow Areas	No civil works borrow areas are within the vicinity of the cable corridor	
Wrecks and obstructions within cable corridor	0	
Significant Coastal Fish and Wildlife Habitat w/in cable corridor route	SRWEC-NYS w/in 3 nm: Great South Bay - East, Smith Point County Park, Moriches Bay; Onshore Transmission Cable: Carmans River	No impact to Smith Point County Park or Carmans River
Cable Installation		
Note: Shortly after cable installation is completed, the trench will naturally backfill due to settlement of fluidized sediments, collapse of the trench walls, and/or by natural infill. Sunrise Wind does not anticipate any activities to actively backfill the trench. Cable installation requires excavation for utility construction and displaced material is incidental fallback. Thus, the cable installation is not subject to Section 404 review.		
Mechanical Plowing Method		
Volume of discharged material	N/A	N/A, method not intended to be used
Area of discharged material	N/A	N/A, method not intended to be used
Jet Plowing Method		
Volume of discharged material	0 cy	
Area of discharged material	0 sq ft	
Mechanical Cutting Method		
Volume of discharged material	N/A	N/A, method not intended to be used
Area of discharged material	N/A	N/A, method not intended to be used

Assessment Criteria	Applicant-preferred Route-Smith Point County Park Landfall 1	Notes
Controlled Flow Excavation Method		
Volume of discharged material	0 cy	
Area of discharged material	0 sq ft	
Pre-Cut Mechanical Plowing Method		
Volume of discharged material	N/A	N/A, method not intended to be used
Area of discharged material	N/A	N/A, method not intended to be used
Pre-Cut Dredging Method		
Volume of discharged material	N/A	N/A, method not intended to be used
Area of discharged material	N/A	N/A, method not intended to be used
HDD Offshore (Atlantic Ocean)		
Length	3,290 ft	
Excavated material from HDD exit pit	4,300 cy	
Excavated area at HDD exit pit	8,036 sq ft	
Temporary trench box area	1,000 sq ft	
Volume of temporary rock bags	0 CY	No temporary rock bags planned, just the temporary trench box.
HDD Intracoastal Waterway		
Length	2,640 ft	
Excavated material from HDD exit pit	N/A	N/A; exit pit is onshore
Excavated area at HDD exit pit	N/A	N/A; exit pit is onshore
Temporary trench box area	N/A	N/A; exit pit is onshore
HDD Carmans River		
Length	36 ft	
Excavated material from HDD exit pit	N/A	N/A; exit pit is onshore
Excavated area at HDD exit pit	N/A	N/A; exit pit is onshore
Temporary trench box area	N/A	N/A; exit pit is onshore

Assessment Criteria	Applicant-preferred Route-Smith Point County Park Landfall 1	Notes
Onshore Transmission Cable		
Length	17.5 mi	
Impacts to special aquatic sites (wetlands, mudflats, vegetated shallows etc.)	None	
Temporary Landing		
Dimensions	16' x 242'	
Number of piles	21	
Diameter of piles	16 in	
Volume of fill material	4.35 cy	Volume of water column filled
Area of fill material	150 sq ft	
Impacts to submerged aquatic vegetation	0 ac	

ac = acre(s), COP = Construction and Operations Plan, cy = cubic yard(s), ft = feet, HDD = horizontal directional drilling, , in = inch(es), mi = mile(s), N/A = not applicable, nm = nautical mile(s), NYS = New York State, OCS = Offshore Converter Station, SCFWH = Significant Coastal Fish and Wildlife Habitat, sq ft = square feet, SRWEC = Sunrise Wind Export Cable, USACE = United States Army Corps of Engineers

Table P-2. Summary of Other Landfall Options Screened by the Applicant and Reasonings for Exclusion

Location	Assessment Criteria				
	Logistics	Cost	Impacts to Aquatic Environment	Impacts to USACE Civil Works Projects	Impacts to Special Aquatic Sites
Excluded Smith Point County Park Landfall HDD B	Landfall HDD route excluded due to onshore crossing of existing telecommunications cable. SRW prefers to cross the existing telecommunications cable with the HDD drill path.	Similar costs to the preferred landfall HDD route.	Similar impacts as preferred Landfall HDD.	Similar proximity to Fire Island Inlet to Montauk Point (FIMP) Project as preferred Landfall HDD.	Similar impacts as preferred Landfall HDD.
Excluded Smith Point County Park Landfall HDD C	Landfall HDD route excluded due to offshore crossing of existing telecommunications cable.	Would have required additional logistics, secondary cable protection, and a longer route to cross the existing telecommunications cable, which would have cost more than the preferred Landfall HDD route. The additional cable protection at the location of the cable crossing would have also required a more costly solution due to the shallow water and high energy at the location.	The additional length of export cable and additional cable protection measures would have resulted in increased impacts to the aquatic environment.	Similar proximity to FIMP Project as preferred Landfall HDD.	Similar impacts as preferred Landfall HDD.

Village of Quogue Beach	Site excluded from further consideration based on limited space available for temporary work areas, the presence of floodplain and significant coastal and fish wildlife habitat, and the fact that the onshore portion of the cable would be longer than the preferred alternative. Quogue Beach would have approximately 30 mi (48 km) of onshore cable route to the Holbrook Station which is approximately 76% longer than the preferred route between Smith Point County Park and the Holbrook Station.	This landfall option would result in a longer onshore transmission cable route when compared to the preferred alternative; therefore, would result in higher overall costs. Given the cable is 76% longer than the route associated with the proposed landfall from Smith Point County Park, the costs would also be approximately 76% higher. It is unknown if a barge would be required at this site.	Site excluded due to the fact this route would result in greater terrestrial disturbance due to the increased length of the transmission route and/or potential conflicts with existing aquatic resources and anthropogenic uses. It is unknown if a barge would be required at this site.	The proposed landfall at Quogue Beach would potentially impact civil works beach renourishment projects such as FIMP Project. There are designated sand borrow areas spanning the length of approximately 4.7 mi (7.5 km), located 0.6 mi (1 km) offshore of the Quogue Beach, in order to access the potential landfall location cable routes would need to either traverse the borrow areas, which would not be permitted, or run parallel to shore for a significant length (1 to 1.5 mi [1.5 to 2.5 km]) in the nearshore area. Installation of a cable parallel to the shoreline in the nearshore, shallow, high-energy area would be extremely difficult and would have an increased likelihood of exposure over the life of the project.	Similar impacts as preferred Landfall HDD. Route would potentially have higher impacts to floodplains and have significant coastal fish and wildlife habitat impacts in comparison to the preferred route.

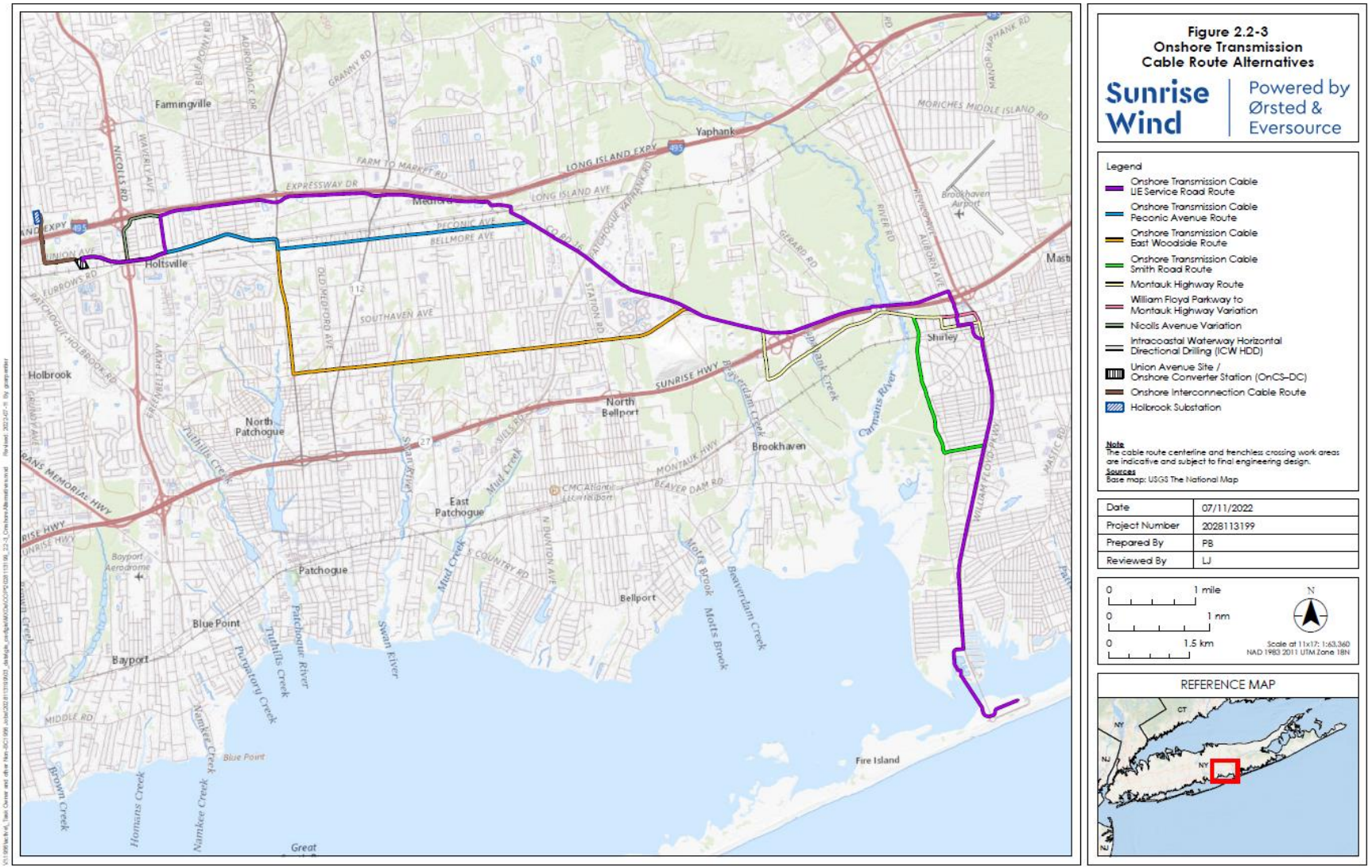
Coopers Beach	Site excluded from further consideration based on limited space available for temporary work areas, extended requirements for discretionary real estate approvals, and the fact that the onshore portion of the transmission cable would be longer than the preferred alternative. Holbrook. Coopers Beach would have approximately 38 mi (61 km) of onshore cable route to the Holbrook Station, which is approximately 124% longer than the preferred route between Smith Point County Park and the Holbrook Station.	This landfall option would result in a longer onshore transmission cable route when compared to the preferred alternative; therefore, would result in higher overall costs. Given the cable is 124% longer than the route associated with the proposed landfall from Smith Point County Park, the costs would also be approximately 76% higher. No barge would be required at this site.	Site excluded due to the fact this route would result in greater terrestrial disturbance due to the increased length of the transmission route and/or potential conflicts with existing aquatic resources and anthropogenic uses. No barge would be required at this site.	The proposed landfall at Coopers Beach would potentially impact civil works beach renourishment projects such as FIMP Project. There are designated sand borrow areas spanning the length of approximately 3.9 mi (6.3 km), located 0.5 mi (0.8 km) offshore of Coopers Beach, in order to access the potential landfall location cable routes would need to either traverse the borrow areas, which would not be permitted, or run parallel to shore for a significant length (1 to 1.5 mi [1.5 to 2.5 km]) in the nearshore area. Installation of a cable parallel to the shoreline. In the nearshore, shallow, high-energy area would be extremely difficult and would have an increased likelihood of exposure over the life of the project.	Similar impacts as preferred Landfall HDD. In the offshore vicinity of Cooper's Beach there are constraints that limit potential cable placement including mapped shipwrecks and a scuba-diving area.

Rogers Beach	Site excluded from further consideration based on limited space available for temporary work areas, close proximity to recreational areas, and the fact that the onshore portion of the transmission cable would be longer than the preferred alternative. Rogers Beach would have approximately 25 mi (40 km) of onshore cable route to the Holbrook Station, which is approximately 47% longer than the preferred route between Smith Point County Park and the Holbrook Station.	This landfall option would result in a longer onshore transmission cable route when compared to the preferred alternative; therefore, would result in higher overall costs. Given the cable is 47% longer than the route associated with the proposed landfall from Smith Point County Park, the costs would also be approximately 76% higher. It is unknown if a barge would be required at this site.	Site excluded due to the fact this route would result in greater terrestrial disturbance due to the increased length of the transmission route and/or potential conflicts with existing aquatic resources and anthropogenic uses. It is unknown if a barge would be required at this site.	The proposed landfall at Rogers Beach would potentially impact civil works beach renourishment projects such as FIMP Project. There are designated sand borrow areas spanning the length of approximately 4.7 mi (7.5 km), located 0.6 mi (1 km) offshore of Rogers Beach, in order to access the potential landfall location cable routes would need to either traverse the borrow areas, which would not be permitted, or run parallel to shore for a significant length (1 to 1.5 mi [1.5 to 2.5 km]) in the nearshore area. Installation of a cable parallel to the shoreline in the nearshore, shallow, high-energy area would be extremely difficult and would have an increased likelihood of exposure over the life of the project.	Similar impacts as preferred Landfall HDD.

Location	Assessment Criteria				
	Logistics	Cost	Impacts to Aquatic Environment	Impacts to USACE Civil Works Projects	Impacts to Special Aquatic Sites
Bellport Bay	Site excluded from further consideration because access to this site would require crossing of Fire Island through the Otis Pike Fire Island High Dunes Wilderness Area. Legislation prohibits the placement of utility lines here (or within any federally designated wilderness area). Additionally, this site was excluded due to private ownership and limited space available for temporary work areas as well as federal navigation channels. Stakeholder and regulatory communication also identified that selecting this area as a landfall site could negatively impact recreational and commercial fishing within Great South Bay.	Due to federal law and policy prohibiting NPS from granting permission for installation of a marine utility cable at any location within the Otis Pike Fire Island High Dune Wilderness Area, this landing was deemed infeasible; therefore, costs for this alternative landing were not evaluated.	Site excluded due to the fact this route would result in greater seabed disturbance due to the increased length of the export cable in NYS waters and the OCS and due to conflicts with existing anthropogenic constraints and uses including several additional existing cable crossings and recreational boating activity in Great South Bay. Crossing of the Great South Bay would likely exceed feasible HDD length and would require trenching, and crossing of the barrier island in NPS lands.	The proposed landfall at Bellport Bay would likely require trenching across the ICW and would also potentially impact civil works beach renourishment projects such as FIMP Project.	Similar impacts as preferred Landfall HDD. Site proximal to federally designated wilderness area and in Great South Bay East where there is increased concentration of submerged aquatic vegetation in the SE portion of the bay.

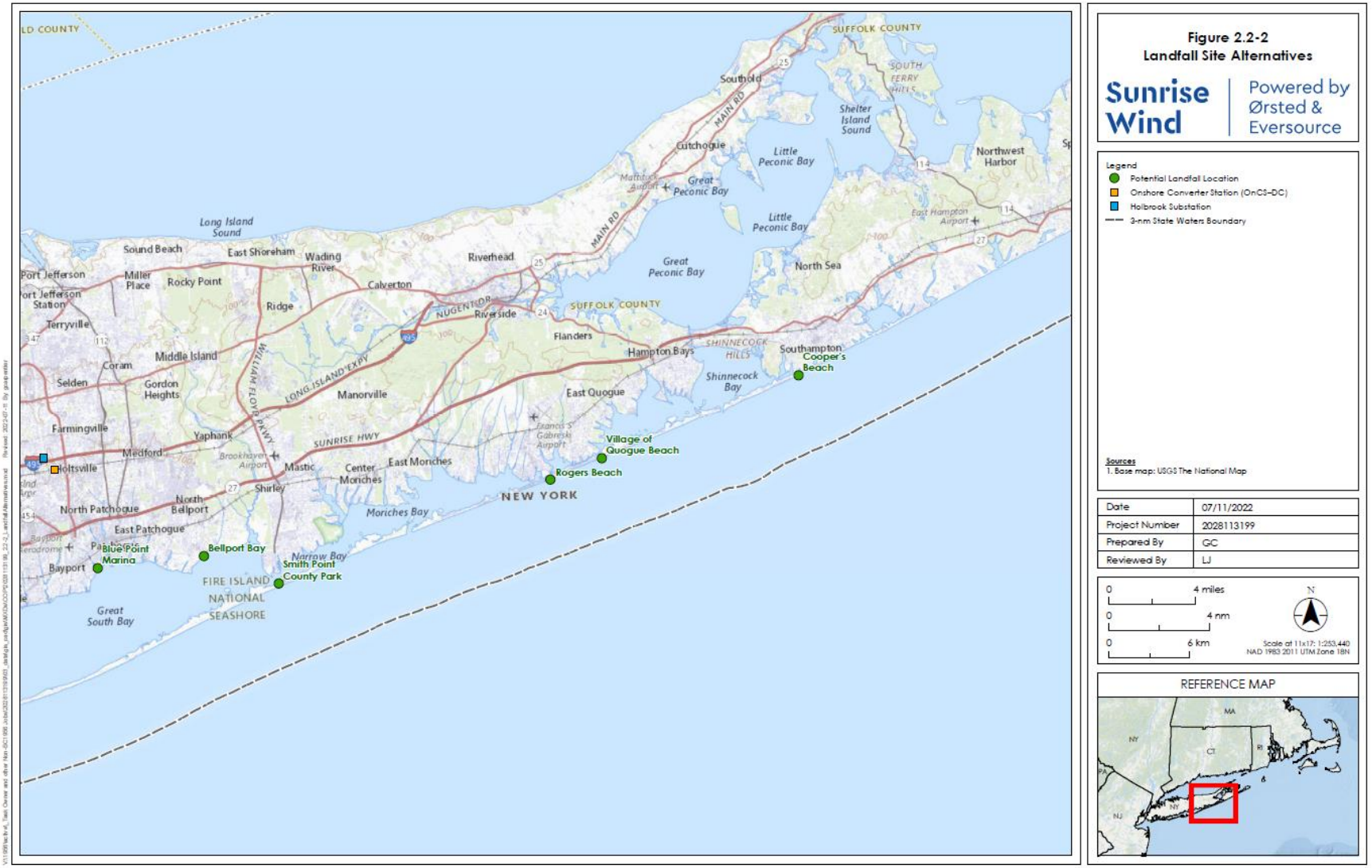
Location	Assessment Criteria				
	Logistics	Cost	Impacts to Aquatic Environment	Impacts to USACE Civil Works Projects	Impacts to Special Aquatic Sites
Bluepoint Marina/Corey Beach	Site excluded from further consideration because access to this site would require crossing of Fire Island through the Otis Pike Fire Island High Dunes Wilderness Area. Legislation prohibit the placement of utility lines here (or within any federally designated wilderness area). Additionally, this site was excluded due to limited space available for temporary work areas, as well as proximity to federal navigation channels. Stakeholder and regulatory communication also identified that selecting this area as a landfall site could negatively impact recreational and commercial fishing within Great South Bay.	Due to federal law and policy prohibiting NPS from granting permission for installation of a marine utility cable at any location within the Otis Pike Fire Island High Dune Wilderness Area, this landing was deemed infeasible; therefore, costs for this alternative landing were not evaluated.	Site excluded due to the fact this route would result in greater seabed disturbance due to the increased length of the export cable in NYS waters and the OCS due to conflicts with existing anthropogenic constraints and uses including several additional existing cable crossings and commercial recreational boating activity in Great South Bay. Crossing of the Great South Bay would likely exceed feasible HDD length and would require trenching, and crossing of the barrier island in NPS lands.	The proposed landfall at Bluepoint Marina/Corey Beach would likely require trenching across the ICW, and would also potentially impact civil works beach renourishment projects such as FIMP Project.	Site in close proximity to federally designated wilderness area and mapped submerged aquatic vegetation.

FIMP = Fire Island Inlet to Montauk Point NY Project, HDD = horizontal directional drilling, ICW = intracoastal waterway, NPS = National Park Service, NYS = New York State, OCS = Offshore Converter Station



Source: COP Figure 2.2-3; Sunrise Wind 2023

Figure P-1. Alternative Onshore Transmission Cable Routes



Source: COP Figure 2.2-2; Sunrise Wind 2023

Figure P-2. Alternative Landfall Sites