Philadel	phia		
	New Jersey		ic Shores North: OCS-A 0549
Dover			tic Shores South: OCS-A 0549 Atl
Delaware Delaware Cape May Lighthouse		Ocean Wind 1: OC	Coa
Delaware Seashore State Park	Wind: OC	ate Offshore S-A 0482	Coa Wi OC Atl Wi A C Inv (NY
Bethany Beach Boardwalk & Wreck Site S <sup>mi</sup> 84th Street Beach 10 <sup>mi</sup> Ocean City Boardwalk △ 15 <sup>m</sup>		e	Inf the an
Assateague Island National Seashore	25 mi 30 mi 35 mi 40 mi		
	47.8 mi-	0 5	10 20 Statute Miles Blades Visible
		Current KOP Simulation	Blades and Nacelle

OCS-A 0483, OCS-A 0497, OCS-A 0541, and OCS-A 0542 are located beyond the extent of this map. These lease areas are determined by the Intervisibility Assessment to be beyond visible distance from the KOP. See the Intervisibility Assessment table on this sheet for more details.

	0 5 1	0 20 Statute Miles
All and	<ul> <li>Current KOP Simulation</li> <li>KOP Location</li> <li>Horizontal Field of View (HFOV) (124°)</li> <li>Limit of Visibility</li> </ul>	<ul> <li>Blades Visible</li> <li>Blades and Nacelle Visible</li> <li>Blades, Nacelle, and Tower Visible</li> <li>OSS Visible</li> <li>WTG Not Visible</li> <li>OSS Not Visible</li> </ul>

## SCENARIO 2 INTERVISIBILITY ASSESSMENT FROM KEY OBSERVATION POINT

Development	Minimum Distance from KOP to Turbines (mi)	Maximum Blade Height of Nearest Turbine (Feet)	Visibility Status This Scenario
Maryland Offshore Wind Project, OCS-A 0490	12.4	938	Visible
Skipjack, OCS-A 0519	16.1	853	Not Developed
Garden State Offshore Wind, OCS-A 0482	15.7	853	Not Developed
Ocean Wind 2, OCS-A 0532	42.1	906	Not Developed
Ocean Wind 1, OCS-A 0498	53.5	906	Developed But Beyond Visible Distance
Atlantic Shores South, OCS- A 0499	65.9	1049	Developed But Beyond Visible Distance
Atlantic Shores North, OCS- A 0549	77.8	1049	Not Developed
Coastal Virginia Offshore Wind (C-Lease), OCS-A 0483	106.8	869	Developed But Beyond Visible Distance
Coastal Virginia Offshore Wind (Research Lease), OCS-A 0497	115.6	607	Developed But Beyond Visible Distance
Atlantic Shores Offshore Wind Bight (NY Bight), OCS- A 0541	88.8	853	Not Developed
Invenergy Wind Offshore (NY Bight), OCS-A 0542	89.8	853	Not Developed

prmation on the neighboring offshore development projects is based on most current information available.



"The Best Paper Format and Viewing Distance to Represent he Scope and Scale of Visual Impacts", Journal of Landscape rchitecture, 4-2019, pp. 142-151, J. Palmer Sheppard, S. 1989. Visual Simulation: A User's Guide for rchitects. Engineers, and Planners, New York: Van Nostrand heinhold.

The Maryland Offshore Wind Project will either use two large OSSs only at interior locations within the array or four small OSSs throughout the array. For the purpose of the simulations, the largest OSS that may be used at a particular location has been simulated.

Site Name: Location: Date: Time: Landscape Zone:

# CUMULATIVE VISUAL EFFECTS SCENARIOS (CURRENT IS BOLD)

Scenario 1, Pre-Buildout of Maryland Offshore Wind Project Scenario 2, Maryland Offshore Wind Project and Projects Already or Considered Constructed Scenario 3, Project Construction by 2030 Scenario 4, Project Construction by 2030 Without Maryland Offshore Wind Project Scenario 5, Maryland Wind Without Other Foreseeable Future Changes

Scenario 2 depicts the same project conditions as those represented in Scenario 1 for Coastal Virginia Offshore Wind (Research Lease) OCS-A 0497, Coastal Virginia Offshore Wind (C-Lease) OCS-A 0483, Ocean Wind 1 OCS-A 0498, and Atlantic Shores South OCS-A 0499, but with the addition of the proposed construction of the Maryland Offshore Wind Project OCS-A 0490. Simulations produced for this scenario include the Maryland Offshore Wind Project and those Scenario 1 developments determined by the intervisibility assessment to be visible from KOP 16, Bethany Beach Boardwalk and Wreck Site.

All simulated WTGs use monopile foundation structures, and all are oriented in the same direction with the centermost WTG facing directly towards the camera. The simulated WTGs use RAL 9010 Pure White paint color and the same lighting scheme that was outlined in US Wind's Visual Impact Assessment. As a point of reference, a 1049' tall structure drops completely below the horizon at a distance of 47.8 statute miles from a 5.1' tall viewer at this KOP.

# SHEET INDEX AND VIEWING INSTRUCTIONS

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To approximate the field of view represented by a 16.5" panorama it should be printed on an 11" x 17" sheet of paper and viewed from 8 inches away<sup>1</sup>. For the most realistic experience when viewing in a digital format, position your computer screen 20" away and adjust the PDF viewing software's zoom so that the calibration bar matches what's instructed on the simulation sheet.

In all cases care must be taken to not over or underrepresent the visual contrasts<sup>2</sup>. Typical binocular human field of view is assumed to be 124-degrees horizontal and 55degrees vertical.

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations Scenario 2, Maryland Offshore Wind Project and Projects Already or Considered Constructed

## SITE INFORMATION

Bethany Beach Boardwalk & Wreck Site Bethany Beach, DE 3/23/2023 9:30 AM Coordinates (Lat/Lon WGS84): 38.536, -75.053 Barren Land (Rock/Sand/Clay) - Beach

## SCENARIO DESCRIPTION AND ASSUMPTIONS

- Sheet 1 Simulation Context and Intervisibility Assessment
- Sheet 2 Project Development and Visibility Summary
- Sheet 3 Existing Conditions Panorama View (124°)
- Sheet 4 Panorama View (124°) with Simulations without Project Extents
- Sheet 5 Panorama View (124°) with Simulations and Project Extents
- Sheet 6 Single Frame (50-mm Lens) Simulation and Project Extents

# KOP 16 BETHANY BEACH, DELAWARE

# SHEET 1 - SIMULATION CONTEXT AND INTERVISIBILITY ASSESSMENT

Horizon\*

# 2 Charles Mar

### Based Intervis followiı from th distanc point: Соа Leas Соа (Res Atla Bigł Inve • Bigł

Closer to Maryland Offshore Wind Project Scenario 2 Visibility of Nearest Turbine to Key Observation Point

1000 ft         Based on findings from the         Intervisibility Assessment the         following developments are excluded         from this visibility matrix due to their         distance from the key observation         point:         • Coastal Virginia Offshore Wind (C-         Lease) OCS-A 0483         • Coastal Virginia Offshore Wind         (Research Lease) OCS-A 0497         • Atlantic Shores Offshore Wind         Bight (NY Bight) OCS-A 0541         • Invenergy Wind Offshore (NY         Bight) OCS-A 0542	938' 907' 907' 97% Horizon Maryland Offshore Wind Project	853' Skipjack	853' Garden State	906' 906' Ocean Wind 2	906' 906' Ocean Wind
	Visible	Not Developed	Not Developed	Not Developed	Developed But Be Visible Distanc
# Turbines	121				108
# Turbines Visible	121				0
# Nacelle FAA Lights Visible	121				0
# Mid-Tower FAA Lights Visible	105				0
# Substations**	4				3
# Substations Visible	2				0
Minimum Distance from KOP to Turbines (mi)	12.4				53.5
Maximum Distance from KOP to Turbines (mi)	31.3				65.8
Nearest Turbine – Vertical Extent of Turbine Visible (ft)	907				N/A
Farthest Turbine – Vertical Extent of Turbine Visible (ft)	543				N/A
Nearest Turbine – Vertical Extent of Turbine Visible (%)	97%				N/A
Farthest Turbine – Vertical Extent of Turbine Visible (%)	58%				N/A
Mid-Tower FAA Light Height (ft)	271				263
Hub Height (ft)	528				512
Nacelle Top FAA Light Height (ft)	542				525
Blade Tip Height (ft)	938				906
Rotor Diameter (ft)	820				788

\*All turbines for this development are below the horizon.

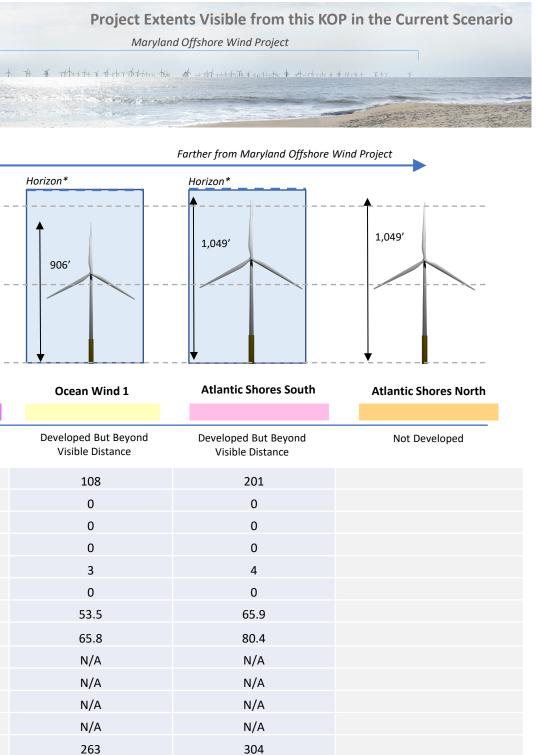
\*\*The Maryland Offshore Wind Project will either use two large OSSs only at interior locations within the array or four small OSSs throughout the array. For the purpose of the simulations, the largest OSS that may be used at a particular location has been simulated.

Information on the neighboring offshore development projects is based on the most current information available.

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations Scenario 2, Maryland Offshore Wind Project and Projects Already or Considered Constructed

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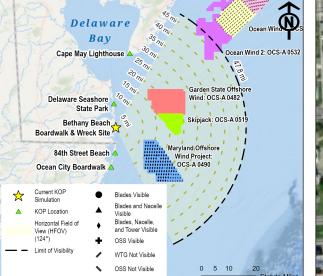
918.6



# KOP 16 BETHANY BEACH, DELAWARE

# SHEET 2 - PROJECT DEVELOPMENT AND VISIBILITY SUMMARY TRC







•	ENVIRONMENT		VIEWING INSTRUCTIONS: To
	Weather Conditions:	Partly Sunny	printed on an 11" x 17" sheet
	Temperature:	54° F	viewing in a digital format, po that the calibration bar is 1 ir
	Humidity:	79%	
	Lighting Conditions:	Sunny/Clear	
	Visibility:	10 Miles	In all cases care must be take
	VIEW AND CAMERA DETAILS		view is assumed to be 124-de
	Ground Elevation (ft msl):	11.5	
	Camera/Viewing Elevation (ft msl):	16.5	
	Camera Used for Simulation Photography:	Nikon D850	
	Camera Lens Brand, Type, Focal Length:	Nikon Fixed 50 mm	
	Photo Resolution:	1200 DPI	Ma
	Horizontal Field of View (Panoramas):	124°	Scenario 2, N
	Horizontal Field of View (Single Frame 50 mm		
	Lens):	39.6°	SHEET 3
	Atmospheric Refraction Coefficient (k):	0.143	SHEET 5
st.			

To approximate the field of view represented by a 16.5" panorama simulation, it should be eet of paper and viewed from 8 inches away<sup>1</sup>. For the most realistic experience when position your computer screen 20" away and adjust the PDF viewing software's zoom so inch long:

1" Measured On Screen – View from 20" Away

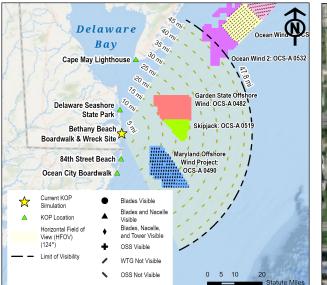
ken to not over or underrepresent the visual contrasts<sup>2</sup>. Typical binocular human field of degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

## KOP 16 BETHANY BEACH, DELAWARE

Aaryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations Maryland Offshore Wind Project and Projects Already or Considered Constructed

# 3 - EXISTING CONDITIONS PANORAMA VIEW (124°)







	ENVIRONMENT		VIEWING INSTRUCTIONS: T
)	Weather Conditions:	Partly Sunny	printed on an 11" x 17" she
<b>,</b>	Temperature:	54° F	viewing in a digital format, that the calibration bar is 1
	Humidity:	79%	
	Lighting Conditions:	Sunny/Clear	
	Visibility:	10 Miles	In all cases care must be tal
	VIEW AND CAMERA DETAILS		view is assumed to be 124-
	Ground Elevation (ft msl):	11.5	
	Camera/Viewing Elevation (ft msl):	16.5	
	Camera Used for Simulation Photography:	Nikon D850	ľ
	Camera Lens Brand, Type, Focal Length:	Nikon Fixed 50 mm	Scenario 2
	Photo Resolution:	1200 DPI	
	Horizontal Field of View (Panoramas):	124°	SHEET 4 - PAN
	Horizontal Field of View (Single Frame 50 mm		
	Lens):	39.6°	
	Atmospheric Refraction Coefficient (k):	0.143	
t			

To approximate the field of view represented by a 16.5" panorama simulation, it should be neet of paper and viewed from 8 inches away<sup>1</sup>. For the most realistic experience when t, position your computer screen 20" away and adjust the PDF viewing software's zoom so 1 inch long:

1" Measured On Screen – View from 20" Away

aken to not over or underrepresent the visual contrasts<sup>2</sup>. Typical binocular human field of 4-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

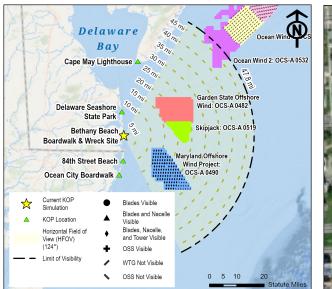
# **KOP 16 BETHANY BEACH, DELAWARE**

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations 2, Maryland Offshore Wind Project and Projects Already or Considered Constructed

# NORAMA VIEW (124°) WITH SIMULATIONS WITHOUT PROJECT EXTENTS









	ENVIRONMENT		VIEWING INSTRUCTIONS: To
)	Weather Conditions:	Partly Sunny	printed on an 11" x 17" shee
·	Temperature:	54° F	viewing in a digital format, p that the calibration bar is 1 i
	Humidity:	79%	
	Lighting Conditions:	Sunny/Clear	
	Visibility:	10 Miles	In all cases care must be tak
	VIEW AND CAMERA DETAILS		view is assumed to be 124-d
	Ground Elevation (ft msl):	11.5	
	Camera/Viewing Elevation (ft msl):	16.5	
	Camera Used for Simulation Photography:	Nikon D850	Ма
	Camera Lens Brand, Type, Focal Length:	Nikon Fixed 50 mm	Scenario 2, N
	Photo Resolution:	1200 DPI	
	Horizontal Field of View (Panoramas):	124°	SHEET 5 - F
	Horizontal Field of View (Single Frame 50 mm		511221 5 1
	Lens):	39.6°	
	Atmospheric Refraction Coefficient (k):	0.143	
E			

To approximate the field of view represented by a 16.5" panorama simulation, it should be eet of paper and viewed from 8 inches away<sup>1</sup>. For the most realistic experience when , position your computer screen 20" away and adjust the PDF viewing software's zoom so Linch long:

1" Measured On Screen – View from 20" Away

aken to not over or underrepresent the visual contrasts<sup>2</sup>. Typical binocular human field of -degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

# **KOP 16 BETHANY BEACH, DELAWARE**

1aryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations Maryland Offshore Wind Project and Projects Already or Considered Constructed

# PANORAMA VIEW (124°) WITH SIMULATIONS AND **PROJECT EXTENTS**



Maryland Offshore Wind Project

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Graphic shows which specific portion of the human field of view (124°) is visible in this single frame (40°) photo.

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 15.7" single frame simulation captured with a 50-mm lens it should be printed on an 11" x 17" sheet of paper and viewed from 22 inches away<sup>1</sup>. For the most realistic experience when viewing in a digital format, position your computer screen 20" away and adjust the PDF viewing software's zoom so that the calibration bar is 1 inch long:

A STATE OF A

124°

n all cases care must be taken to not over or underrepresent the visual contrasts<sup>2</sup>. Typical binocular human field o iew is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

1" Measured On Screen - View from 20" Away

