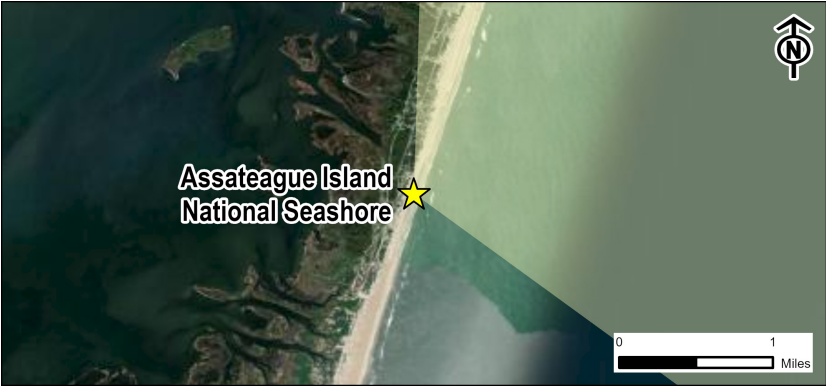


SCENARIO 3 INTERVISIBILITY ASSESSMENT FROM KEY OBSERVATION POINT			
Maryland Offshore Wind Project, OCS-A 0490	18.6	938	Visible
Skipjack, OCS-A 0519	35	853	Visible
Garden State Offshore Wind, OCS-A 0482	36.7	853	Visible
Ocean Wind 2, OCS-A 0532	63	906	Developed But Beyond Visible Distance
Ocean Wind 1, OCS-A 0498	74.5	906	Developed But Beyond Visible Distance
Atlantic Shores South, OCS-A 0499	87.1	1049	Developed But Beyond Visible Distance
Atlantic Shores North, OCS-A 0549	100.1	1049	Developed But Beyond Visible Distance
Coastal Virginia Offshore Wind (C-Lease), OCS-A 0483	82.8	869	Developed But Beyond Visible Distance
Coastal Virginia Offshore Wind (Research Lease), OCS-A 0497	91.2	607	Developed But Beyond Visible Distance
Atlantic Shores Offshore Wind Bight (NY Bight), OCS-A 0541	107.3	853	Developed But Beyond Visible Distance
Invenergy Wind Offshore (NY Bight), OCS-A 0542	108.1	853	Developed But Beyond Visible Distance

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



¹ “The Best Paper Format and Viewing Distance to Represent the Scope and Scale of Visual Impacts”, Journal of Landscape Architecture, 4-2019, pp. 142-151, J. Palmer

² Sheppard, S. 1989. Visual Simulation: A User's Guide for Architects, Engineers, and Planners. New York: Van Nostrand Reinhold.

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 INFORMATION

Site Name:

Assateague Island National Seashore

Location:

Assateague, MD

Date:

3/22/2023

Time:

8:55 AM (*5:35 PM)

Coordinates (Lat/Lon WGS84):

38.192, -75.156

Landscape Zone:

Barren Land (Rock/Sand/Clay) - Beach

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

In addition to the project conditions from Scenarios 1 and 2 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, Atlantic Shores South OCS-A 0499, and Maryland Offshore Wind Project OCS-A 0490, Scenario 3 depicts all projects scheduled for construction after the Maryland Offshore Wind Project through 2030 with the addition of Atlantic Shores North OCS-A 0549, Ocean Wind 2 OCS-A 0532, Garden State Offshore Wind OCS-A 0482, Skipjack OCS-A 0519, Atlantic Shores Offshore Wind Bight (NY Bight) OCS-A 0541, and Invenergy Wind Offshore (NY Bight) OCS-A 0542. The simulations produced for Scenario 3 visualize all such projects that are determined by the intervisibility assessment to be visible from KOP 3, Assateague Island National Seashore.

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 48.5 statute miles from a 5.1’ tall viewer at this KOP.

- 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 – Panorama View (124°) with Nighttime Simulations and Project Extents
- Sheet 7 – Single Frame (50-mm Lens) Simulation, Left View and Project Extents
- Sheet 8 – Single Frame (50-mm Lens) Simulation, Right View and Project Extents
- Sheet 9 – Supplemental High Contrast Single Frame (40°) View (5:35 PM)*

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 away¹. 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 contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations

Scenario 3, Project Construction by 2030

SHEET 1 - SIMULATION CONTEXT AND INTERVISIBILITY ASSESSMENT





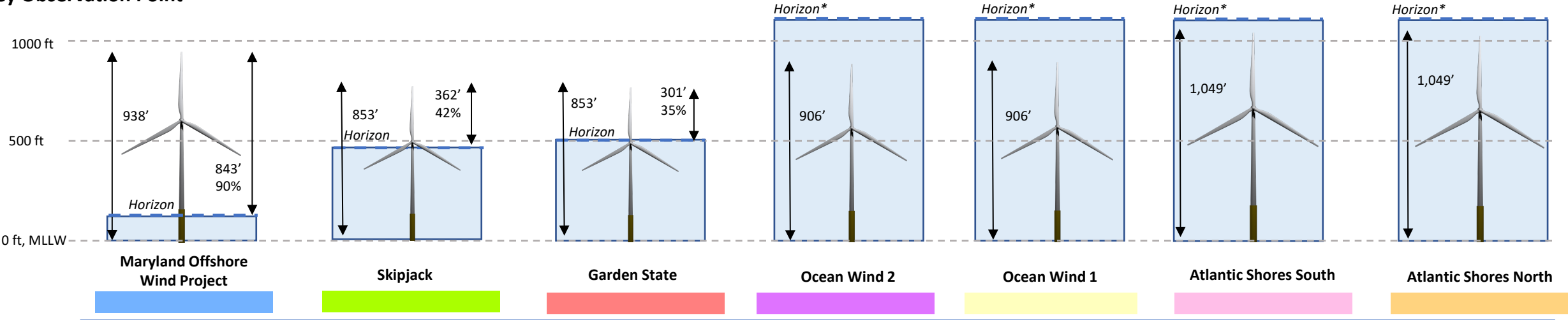
Project Extents Visible from this KOP in the Current Scenario

Scenario 3 Visibility of Nearest Turbine to Key Observation Point



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

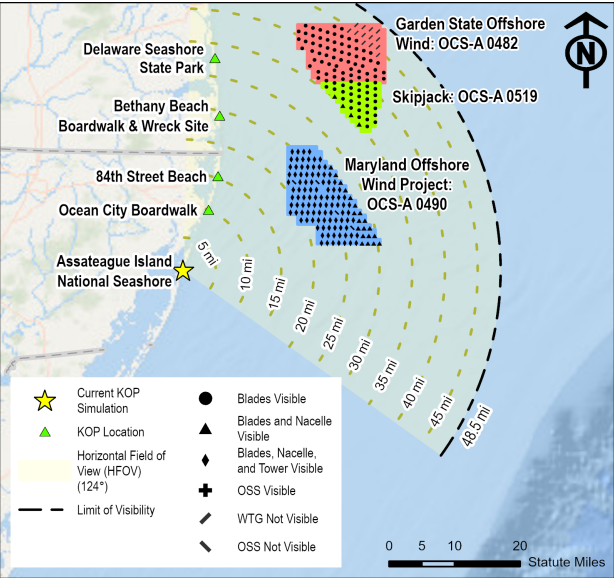


	Visible	Visible	Visible	Developed But Beyond Visible Distance	Developed But Beyond Visible Distance	Developed But Beyond Visible Distance	Developed But Beyond Visible Distance
# Turbines	121	33	80	111	108	201	147
# Turbines Visible	121	33	67	0	0	0	0
# Nacelle FAA Lights Visible	121	4	0	0	0	0	0
# Mid-Tower FAA Lights Visible	101	0	0	0	0	0	0
# Substations**	4	0	0	0	3	4	0
# Substations Visible	0	0	0	0	0	0	0
Minimum Distance from KOP to Turbines (mi)	18.6	35.0	36.7	63.0	74.5	87.1	100.1
Maximum Distance from KOP to Turbines (mi)	30.2	43.0	47.1	87.8	87.3	101.5	121.3
Nearest Turbine – Vertical Extent of Turbine Visible (ft)	843	362	301	N/A	N/A	N/A	N/A
Farthest Turbine – Vertical Extent of Turbine Visible (ft)	594	55	3.4	N/A	N/A	N/A	N/A
Nearest Turbine – Vertical Extent of Turbine Visible (%)	90%	42%	35%	N/A	N/A	N/A	N/A
Farthest Turbine – Vertical Extent of Turbine Visible (%)	63%	6%	0.4%	N/A	N/A	N/A	N/A
Mid-Tower FAA Light Height (ft)	271	253	253	263	263	304	304
Hub Height (ft)	528	492	492	512	512	590	590
Nacelle Top FAA Light Height (ft)	542	506	506	525	525	608	608
Blade Tip Height (ft)	938	853	853	906	906	1049	1049
Rotor Diameter (ft)	820	722	722	788	788	918.6	918.6

*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.





ENVIRONMENT	
Weather Conditions:	Cloudy
Temperature:	46° F
Humidity:	90%
Lighting Conditions:	Overcast
Visibility:	10 Miles
VIEW AND CAMERA DETAILS	
Ground Elevation (ft msl):	13.3
Camera/Viewing Elevation (ft msl):	18.3
Camera Used for Simulation Photography:	Nikon D850
Camera Lens Brand, Type, Focal Length:	Nikon fixed 50 mm
Photo Resolution:	1200 DPI
Horizontal Field of View (Panoramas):	124°
Horizontal Field of View (Single Frame 50 mm Lens):	39.6°
Atmospheric Refraction Coefficient (k):	0.143

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 16.5” panorama simulation, it should be printed on an 11” x 17” sheet of paper and viewed from 8 inches away¹. 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:

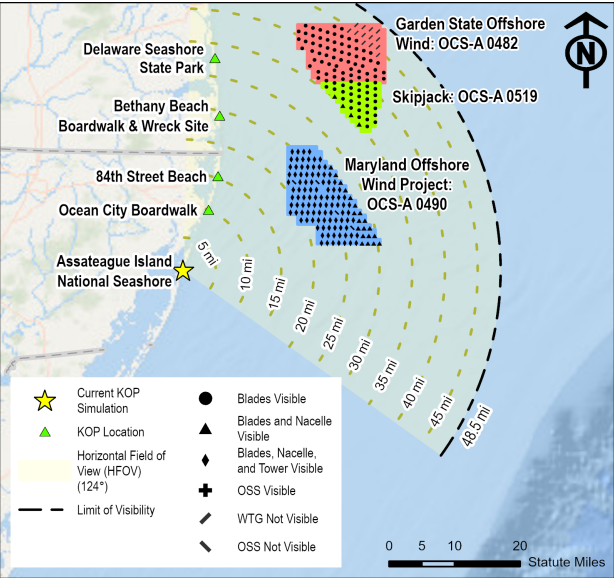
 1” Measured On Screen – View from 20” Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

SHEET 3 - EXISTING CONDITIONS PANORAMA VIEW (124°)





ENVIRONMENT	
Weather Conditions:	Cloudy
Temperature:	46° F
Humidity:	90%
Lighting Conditions:	Overcast
Visibility:	10 Miles
VIEW AND CAMERA DETAILS	
Ground Elevation (ft msl):	13.3
Camera/Viewing Elevation (ft msl):	18.3
Camera Used for Simulation Photography:	Nikon D850
Camera Lens Brand, Type, Focal Length:	Nikon fixed 50 mm
Photo Resolution:	1200 DPI
Horizontal Field of View (Panoramas):	124°
Horizontal Field of View (Single Frame 50 mm Lens):	39.6°
Atmospheric Refraction Coefficient (k):	0.143

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 16.5” panorama simulation, it should be printed on an 11” x 17” sheet of paper and viewed from 8 inches away¹. 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:

1” Measured On Screen – View from 20” Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

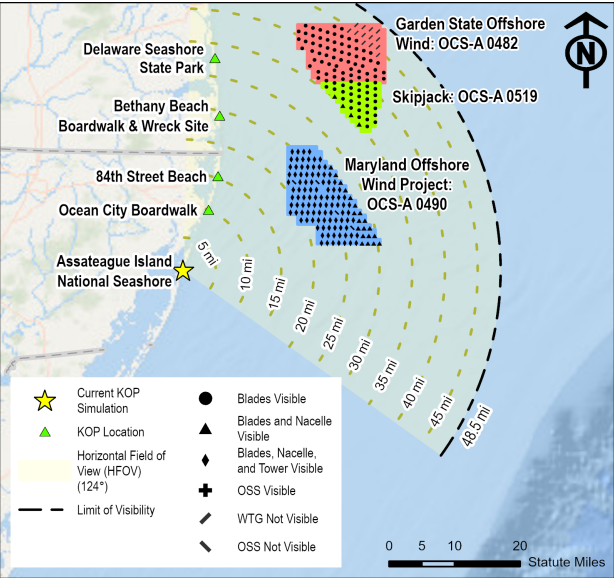
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations

Scenario 3, Project Construction by 2030

SHEET 4 - PANORAMA VIEW (124°) WITH SIMULATIONS WITHOUT


PROJECT EXTENTS





ENVIRONMENT	
Weather Conditions:	Cloudy
Temperature:	46° F
Humidity:	90%
Lighting Conditions:	Overcast
Visibility:	10 Miles
VIEW AND CAMERA DETAILS	
Ground Elevation (ft msl):	13.3
Camera/Viewing Elevation (ft msl):	18.3
Camera Used for Simulation Photography:	Nikon D850
Camera Lens Brand, Type, Focal Length:	Nikon fixed 50 mm
Photo Resolution:	1200 DPI
Horizontal Field of View (Panoramas):	124°
Horizontal Field of View (Single Frame 50 mm Lens):	39.6°
Atmospheric Refraction Coefficient (k):	0.143

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 16.5” panorama simulation, it should be printed on an 11” x 17” sheet of paper and viewed from 8 inches away¹. 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:

 1” Measured On Screen – View from 20” Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

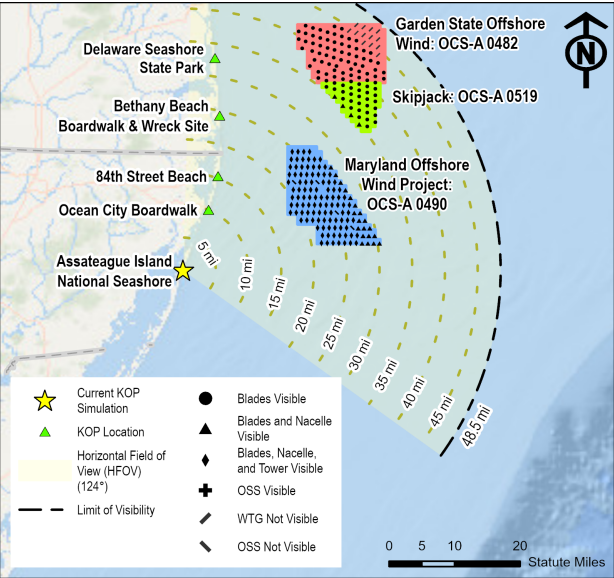
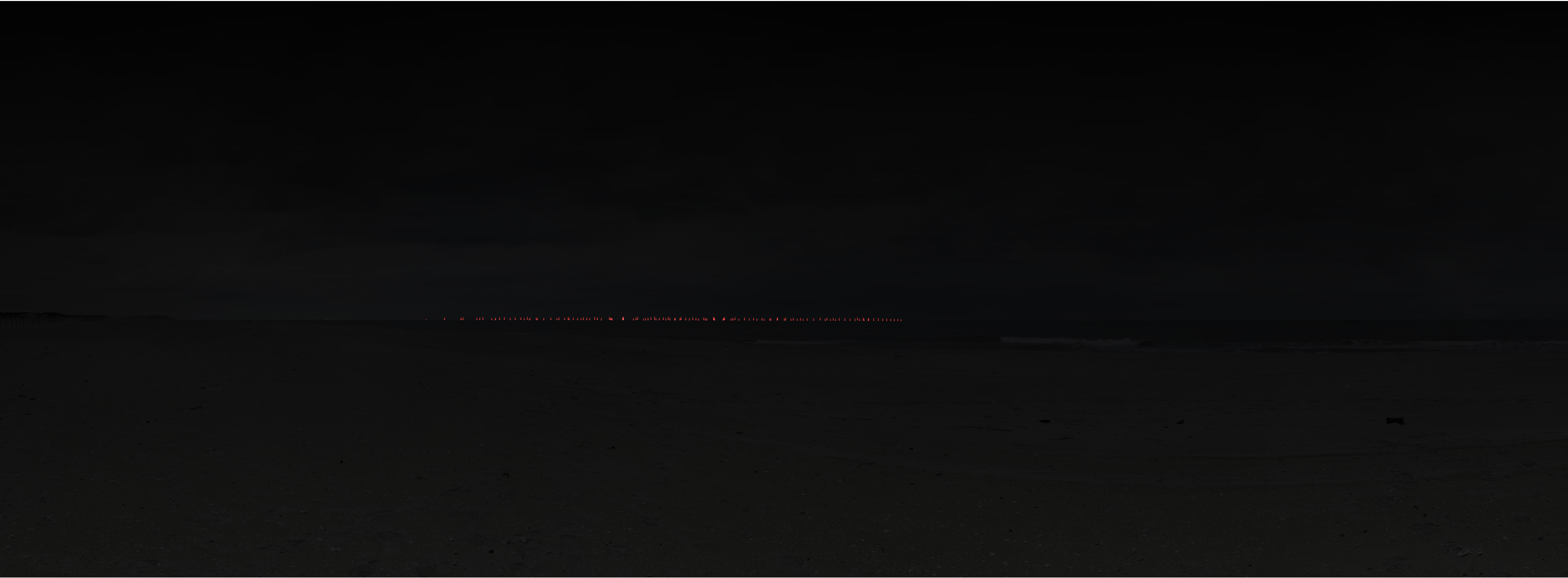
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations

Scenario 3, Project Construction by 2030

SHEET 5 - PANORAMA VIEW (124°) WITH SIMULATIONS AND

PROJECT EXTENTS





An Aircraft Detection Lighting System (ADLS) Efficacy Report, included with the Visual Impact Assessment, indicated that use of an ADLS would reduce aviation obstruction lighting by 99% and that lights of the Maryland Offshore Wind Project would be illuminated less than 6 hours each year. Multiple projects employing ADLS would be illuminated a small fraction of 1% of the year, if at all.

Nighttime conditions are simulated from daytime photography. The height of the nighttime panorama has been reduced slightly to accommodate the project extents panel above.

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 16.5” panorama simulation, it should be printed on an 11” x 17” sheet of paper and viewed from 8 inches away¹. 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:

1” Measured On Screen – View from 20” Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

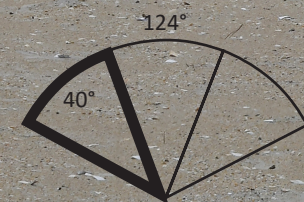
**SHEET 6 – PANORAMA VIEW (124°) WITH NIGHTTIME
SIMULATIONS AND PROJECT EXTENTS**



Garden State Offshore Wind

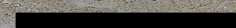
Skipjack

Maryland Offshore Wind Project



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 away¹. 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:



1" Measured On Screen – View from 20" Away

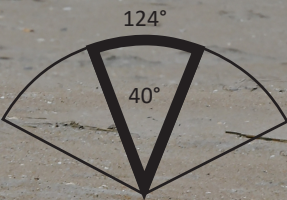
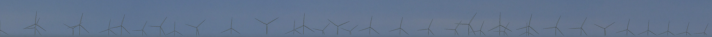
In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP-3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

SHEET 7 - SINGLE FRAME (50-mm LENS) SIMULATION, LEFT VIEW AND PROJECT EXTENTS





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 away¹. 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:



1” Measured On Screen – View from 20” Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND
Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

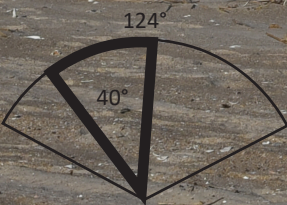
SHEET 8 - SINGLE FRAME (50-mm LENS) SIMULATION, RIGHT VIEW AND PROJECT EXTENTS



Garden State Offshore Wind

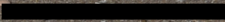
Skipjack

Maryland Offshore Wind Project



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 away¹. 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:



1" Measured On Screen – View from 20" Away

In all cases care must be taken to not over or underrepresent the visual contrasts². Typical binocular human field of view is assumed to be 124-degrees horizontal and 55-degrees vertical. See Sheet 1 for citations.

KOP 3 ASSATEAGUE ISLAND NATIONAL SEASHORE, MARYLAND

Maryland Offshore Wind Project Cumulative Visual Effects Assessment Simulations
Scenario 3, Project Construction by 2030

SHEET 9 – SUPPLEMENTAL HIGH CONTRAST SINGLE FRAME (40°) VIEW (5:35 PM)

