

SITE INFORMATION

	Morning	Mid-Day	Late Afternoon
Site Name: Bethany Beach Boardwalk & Wreck Site			
Location: Bethany Beach, DE			
Date:	03/23/2023	3/24/2023	3/23/2016
Time:	9:30 AM	12:25 PM	3:51 PM
Coordinates (Lat/Lon WGS84), 03/23/2016: 38.536585, - 75.054096	Several factors may influence small differences in the location used for photography including site access restrictions between multiple visits and changes over time from coastal processes.		
Coordinates (Lat/Lon WGS84), 03/22/2023: 38.536387, -75.053786			
Landscape Zone: Barren Land (Rock/Sand/Clay) - Beach			

VIEW AND CAMERA DETAILS

	Morning	Mid-Day	Late Afternoon
Direction of View:	129.4°	129.4°	129.4°
Ground Elevation (ft msl):	11.5	11.5	11.5
Camera/Viewing Elevation (ft msl):	16.5	16.5	16.6
Camera Used for Simulation Photography:	Nikon D750	Nikon D750	Nikon D810
Camera Lens Focal Length:	50 mm	50 mm	50 mm
Photo Resolution (dpi):	1200	1200	1200
Horizontal Field of View (Panoramas):			124°
Horizontal Field of View (Single Frame 50 mm Lens):	39.6°	39.6°	

ENVIRONMENT

	Morning	Mid-Day	Late Afternoon
Weather Conditions:	Partly sunny	Overcast, light rain	Partly cloudy
Temperature:	54° F	52° F	53° F
Humidity:	79%	84%	92%
Lighting Conditions:	Sunny/clear	Overcast	Back lit from SE
Visibility:	10 Miles	10 Miles	10 miles

DEVELOPMENT DETAILS

Total Number of Turbines: 121
Total Number of Offshore Substations: 4
Number of Turbines Visible: 121
Number of Offshore Substations Visible: 2
Turbine Output: Approximately 18MW
Turbine Maximum Blade Height: 938 ft
Turbine Rotor Diameter: 820 ft
Distance to Nearest Turbine (Statute Miles): 12.4
Distance to Farthest Visible Turbine (Statute Miles): 31.3
Nearest Turbine Visible Height (ft, %): 906.7 ft, 97%
Farthest Turbine Visible Height (ft, %): 543.1 ft, 58%

SHEET INDEX AND VIEWING INSTRUCTIONS

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- Sheet 2 – Context Photography
- Sheet 3 – Existing Conditions Panorama View, Late Afternoon (3:51 PM)
- Sheet 4 – Panorama View With Simulation, Late Afternoon (3:51 PM)
- Sheet 5 – Single Frame (50-mm Lens) Simulation, Morning (9:30 AM)
- Sheet 6 – Single Frame (50-mm Lens) Simulation, Mid-Day (12:25 PM)
- Sheet 7 – Nighttime Panorama View (March 23rd, 2016)

Panorama Viewing Instructions:
To approximate the field of view represented by a 14.5” panorama it should be printed on an 11” x 17” sheet of paper and viewed from 7 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used.

Single Frame Viewing Instructions:
The viewing distance for a 14.5” single frame simulation captured with a 50-mm lens is 21 inches.

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.

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.

15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
SIMULATION CONTEXT INFORMATION

Maryland Offshore Wind Project Visual Impact Assessment Simulations

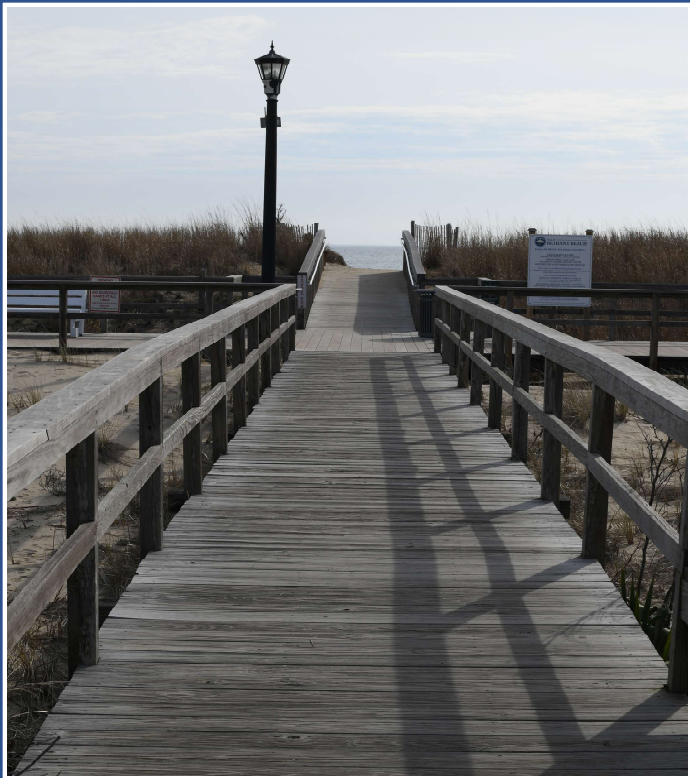


Bethany Beach

This view is from Bethany Beach near the boardwalk northwest of the nearest WTG location. It is a popular recreation area/tourist destination that receives high visitation throughout the summer and fall. Visitors use the beach to lounge, go swimming, surfing, boating, or fishing.



#1 Context Photo, 03/23/2023 9:45 AM
Taken from the boardwalk, viewing roughly north.



#2 Context Photo, 03/23/2023 9:45 AM
Taken from the parking lot access path, facing the ocean.



#3 Viewing North, 03/23/2023 9:30 AM



#4 Viewing East, 03/23/2023 9:30 AM



#5 Viewing South, 03/23/2023 9:30 AM



#6 Viewing West, 03/23/2023 9:30 AM



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” panorama it should be printed on an 11” x 17” sheet of paper and viewed from 7 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. 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.

**15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
EXISTING CONDITIONS PANORAMA VIEW, LATE AFTERNOON (3:51 PM)**

Maryland Offshore Wind Project Visual Impact Assessment Simulations

Detail



See Detail

VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” panorama it should be printed on an 11” x 17” sheet of paper and viewed from 7 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. 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.

15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
PANORAMA VIEW WITH SIMULATION, LATE AFTERNOON (3:51 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or underrepresent the visual contrasts². See Sheet 1 for citations.

15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MORNING (9:30 AM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations



VIEWING INSTRUCTIONS: To approximate the field of view represented by a 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts². See Sheet 1 for citations.

15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
SINGLE FRAME (50-mm LENS) SIMULATION, MID-DAY (12:25 PM)

Maryland Offshore Wind Project Visual Impact Assessment Simulations





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 14.5” single frame simulation captured with a 50-mm lens it should be printed on an 11” x 17” sheet of paper and viewed from 21 inches away¹. If viewed in a digital format (i.e. on screen) then similar size and distance should be used. In all cases care must be taken to not over or under represent the visual contrasts². See Sheet 1 for citations.

**15. BETHANY BEACH BOARDWALK & WRECK SITE, DELAWARE
NIGHTTIME PANORAMA VIEW (MARCH 23RD, 2016)**

Maryland Offshore Wind Project Visual Impact Assessment Simulations