

Maryland Offshore  
Wind Energy Research  
Challenge  
Grant Program

*28 February 2013*

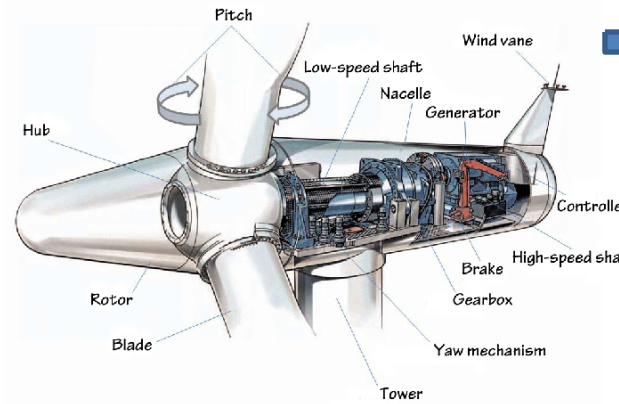


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➔ Lifetime

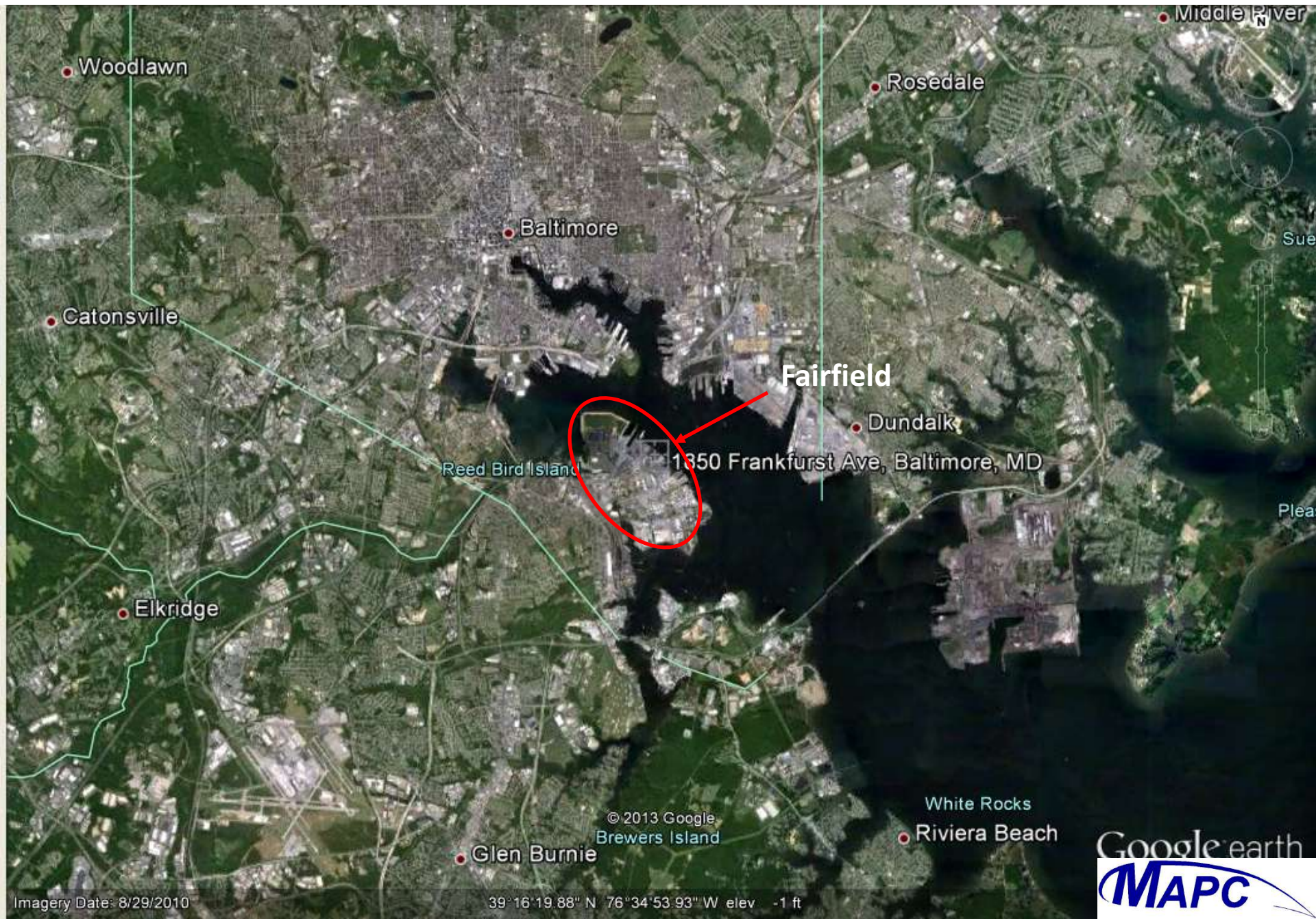


SOURCE: Center on Globalization, Governance, and Competitiveness, Duke University





# Baltimore Harbor



Woodlawn

Middle River

Rosedale

Baltimore

Catonsville

Fairfield

Dundalk

Reed Bird Island

1350 Frankfurst Ave, Baltimore, MD

Elkridge

Glen Burnie

© 2013 Google  
Brewers Island

White Rocks

Riviera Beach

Google earth  
**MAPC**

Imagery Date: 8/29/2010

39°16'19.88" N 76°34'53.93" W elev -1 ft

# Fairfield

- The site of Bethlehem-Fairfield Shipyard
  - 13 slip ways
  - 384 Liberty ships and 45 LSTs built during WWII
  - 44,653 workers in 1943
- Zoned M-3
- HUD Empowerment Zone
- Currently serviced by RO-RO ships
- Adjacent to 895
- Rail Service
- Electric power infrastructure
- “Brown Field” restricted for industrial use keeps prices low
- Property generally commercially owned
- Integrated with manufacturing workforce development initiatives



# MAPC



1350 Frankfurst Ave, Baltimore, MD

Fairfield



Imagery Date: 8/29/2010 1994

39° 14' 53.33" N 76° 34' 23.59" W elev -1 ft

# *Maritime Applied Physics Corporation*

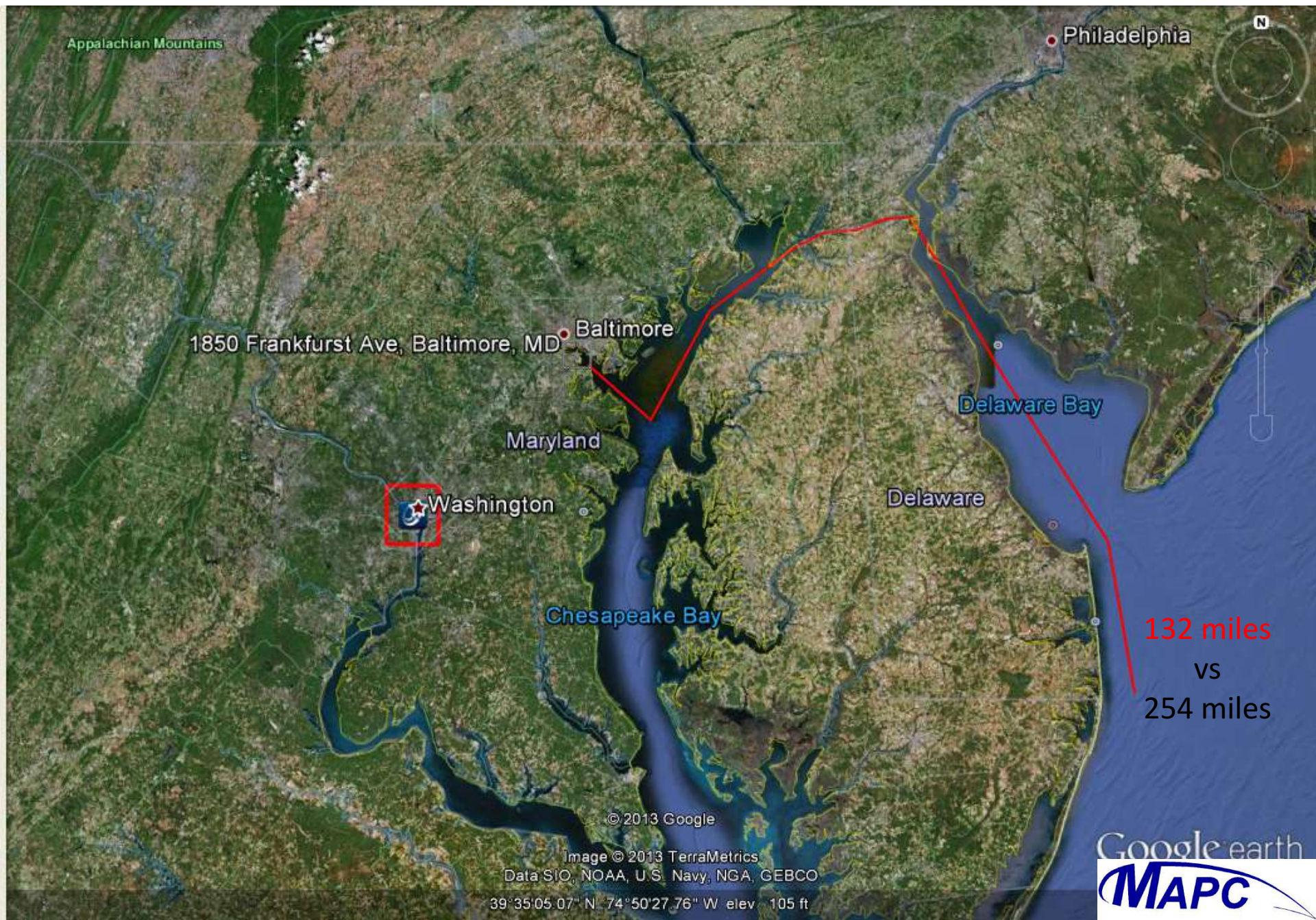


Baltimore, Maryland  
- Bldg - 57,000 sq-ft  
- Property 5 acres  
- Owned

- Riparian Rights
- 20ft at bulkhead
- 25ft to channel
- 760 ft WWII era Pier



# Baltimore to Ocean City, MD Wind Farm Site



Appalachian Mountains

Philadelphia

1850 Frankfurst Ave, Baltimore, MD

Baltimore

Maryland

Delaware Bay

Washington

Delaware

Chesapeake Bay

**132 miles**  
VS  
**254 miles**

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Image © 2013 TerraMetrics  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

39°35'05.07" N, 74°50'27.76" W elev. 105 ft





# Chesapeake and Delaware Canal

- 14 miles long, 450 ft wide X 35 ft deep
- Minimum overhead clearance 136 ft
- Carries 40% of the Baltimore ship traffic

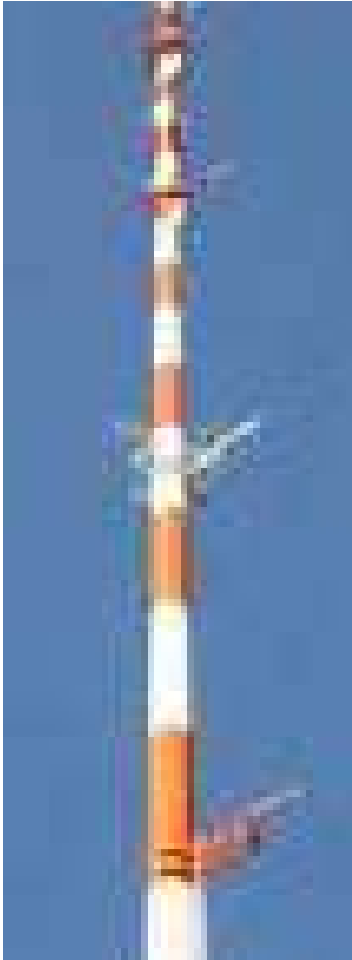




# Wind Surveys

- Needed to determine
  - Economic viability
  - Arrangement of wind turbines
  - Optimal configuration
- Long term measurements needed before installation
- Meteorological tower or LIDAR
- Measurements used after installation to optimize pitch of blade

# Ocean Wind Measurement System Platforms



Tower Mounted  
in Seabed  
\$\$\$\$\$



Spar Buoy  
\$\$\$



Surface Buoy  
\$