





***Deer Island
Wind Turbine Generator 1 Failure
May 29, 2023***

June 21, 2023



Deer Island Wind Turbines

- Deer Island has 2 wind turbines
 - Manufacturer/Model: Vestas RRB/Lumis
 - Tower Height: 110 feet
 - Blade length: 77 feet
 - Generator Size, each: 600 kW

 - Startup: April 2010
 - Total Generation since startup: 23,676 M





Deer Island WTG-1 Main Bearing

- April 11, 2022
 - WTG-1 experienced a main bearing failure
 - The nacelle was locked into position
 - WTG-1 placed into Emergency mode
 - Blades allowed to feather/rotate
- Repair plan formulated
- Main Bearing ordered with expected return to operation – July 2023





Deer Island WTG-1 Failure

- Morning, May 29, 2023 (Memorial Day), ~10 am
- Command Center Activated on Deer Island
- Surrounding area secured to protect the public and staff
- Baldwin Energy (maintenance contractor) brought in to secure turbine
- Local news coverage ([link to video](#))

WTG-1 apparent failures:

- Hydraulic Breaking System failure
- Control system failure (PLC)

Secondary Failures:

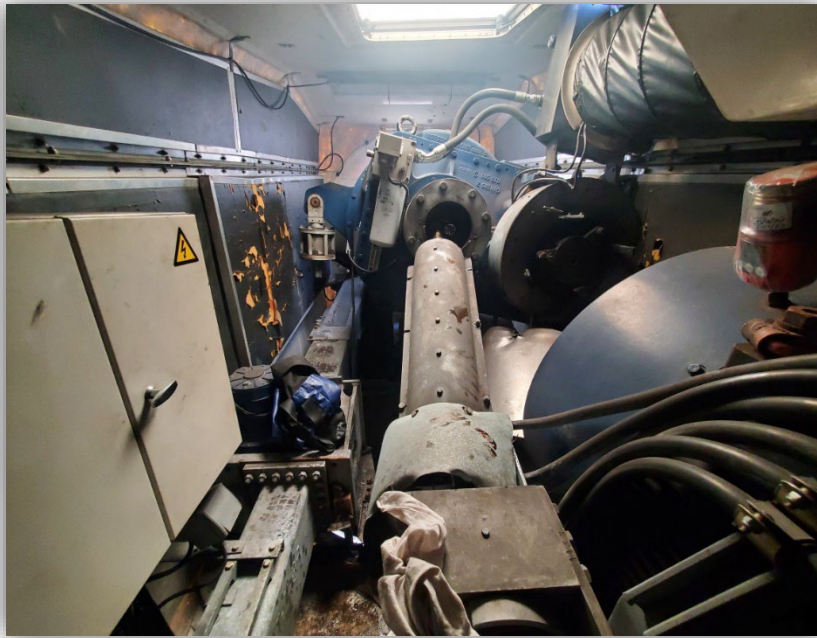
- Significant blade damage
 - 4 sections of blades thrown from turbine, approx. 10-11 ft
- Internal equipment damaged in nacelle (see next slide)

- No one injured
- WTG-2 kept offline since incident





Deer Island WTG-1 Failure





Deer Island WTG-1 Dismantling

- MWRA received DCAMM waiver
- 2 quotes received to make turbine safe
- June 1-2, 2023
 - O'Connor mobilized, on site with crane
 - Stabilized unit in prep for blade removal
 - Removed rotor/blades
 - Removed damaged equipment from nacelle
 - Secured parts for later investigation
- Re-opened public access after turbine made safe





Deer Island WTG-1 Follow Up

- Evaluate Deer Island WTG-2 for operability
 - 2 independent opinions
- Evaluate Charlestown Turbine
- Failure Analysis on WTG-1 will be performed





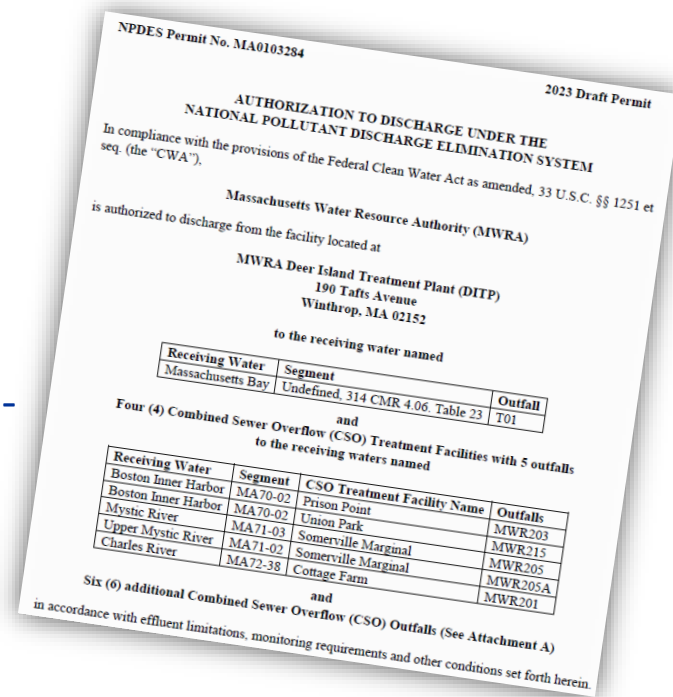
***Deer Island Wastewater Treatment Plant
Draft National Pollutant Discharge
Elimination System (NPDES) Permit***

June 21, 2023



Draft Deer Island NPDES Permit Issued

- On May 31 EPA issued a draft Deer Island NPDES Permit
- This permit also authorizes discharges from CSOs
- 43 MWRA wastewater communities named as co-permittees. The 4 CSO communities listed as “CSO-responsible” co-permittees





Process

- Public comment period through August 30
- Staff reviewing impacts to MWRA operations, compliance, and budget
- MWRA will submit comments on the draft permit:
 - Request certain elements to be changed
 - Preserve right to appeal





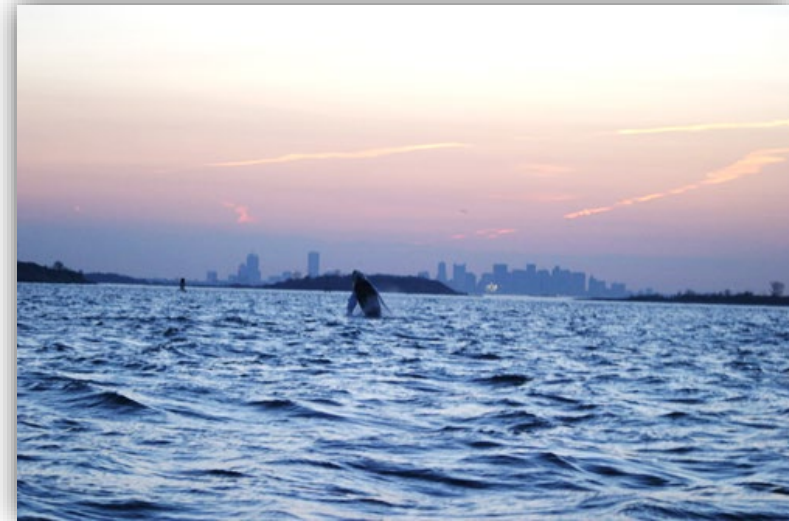
Important Elements of the Draft Permit for Co-Permittees

- Reporting requirements for unauthorized discharges (which include Sanitary Sewer Overflows)
- Requirements for backup power
- Operations and Maintenance (O&M) requirements, including infiltration/inflow (I/I) reduction programs, updating existing O&M plans, and annual reporting ; and
- Development of “Major Storm Event Plan” and reporting on implementation



Important Elements of the Draft Permit for Deer Island

- Seasonal Enterococcus limit
- No Nitrogen Limit
- Additional Limits for TSS and cBOD
- No Contingency Plan
- Modified Ambient Monitoring
- Stricter acute toxicity limit





Other Elements of the DRAFT Permit

- PFAS Monitoring
 - Influent, effluent, biosolids, industries
- Combined Sewer Overflows
 - Monitoring requirements, only minor changes in limits
 - Need to ensure consistency with evolving CSO program
- Blending - no acknowledgement of 700 MGD secondary process limit
- Environmental Justice



Cost Implications

- Major Storm Event Planning
- Monitoring for Harmful Algal Blooms
- Expanded PFAS Monitoring
- Disinfection and dechlorination for seasonal Enterococcus
- Dye Studies for CSO Outfalls (1x)
- Video Inspection of Deer Island Outfall (every 5 yrs)
- Costs for Co-permittees (x43)



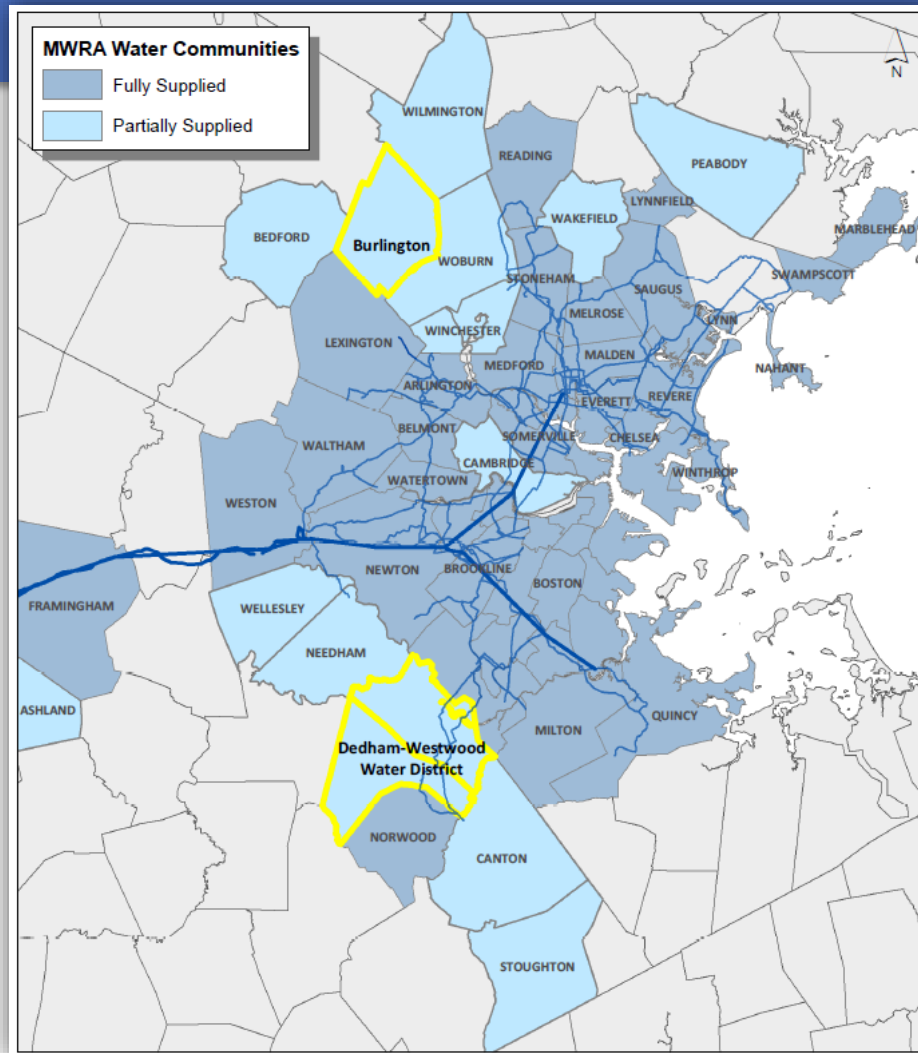
Next Steps

- Advisory Board Operations Committee briefing
- EPA will hold a Public Briefing and Public Hearing July 12th
- Staff to prepare and submit comments by August 30
- EPA must develop a response to every comment received
- No set time period to finalize permit



*Town of Burlington and
Dedham-Westwood Water District
Water Supply Agreement Amendments*

June 21, 2023





Background

- Burlington and Dedham Westwood Water District
 - Currently receive partial water supply from MWRA
 - Admitted under OP.10
 - “Contract Communities”
- Water Supply Agreements
 - Withdrawal Volume Limits – Maximum Annual and Maximum Day
 - Entrance Fee
- Entrance Fee Wavier approved September 2022
 - Water Quality/Public Health
 - Stressed Basin
 - Economic Development



Town of Burlington

- Admitted to MWRA Water System in December 2020
- Two-phased connection approach:
- Existing Water Supply Agreement (Phase 1)
 - 324 mg annually; 0.886 mgd average, up to 1.5 mgd max
 - \$4.4 million Entrance Fee
- Proposed Amendment (Phase 2)
 - 1,278 mg annually; 3.5 mgd average, up to 6.5 mgd max
 - Requesting Entrance Fee Wavier
 - Water Quality/Public Health - 1,4 Dioxane, PFAS



Dedham Westwood Water District

- Admitted to MWRA Water System in 2005
- Existing Water Supply Agreement
 - 73 mg annually; 0.2 mgd average, up to 2 mgd max
 - Total of \$1.1 million Entrance Fee paid
- Proposed Amendment
 - 565.75 mg annually; 1.55 mgd average, up to 3.1 mgd max
 - Requesting Entrance Fee Wavier
 - Water Quality/Public Health – TTHMs, Chloride
 - Stressed basin – Neponset Watershed