Presentation to

Mystic Steering Committee

MWRA Sampling Update 2019

June 4, 2020

COVID-19 Update

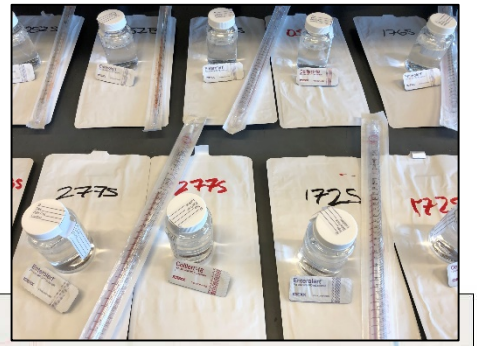
- Safety is paramount
- MWRA field staff working on split shifts – less staff available
  - No “storm chasing” or sonde readings
  - Field sampling done by single person
  - For bacteria monitoring, currently sampling the Alewife/Mystic twice a week at our “shoreline” sites
  - Biweekly nutrient sampling is continuing on its normal schedule
- MyRWA – no April or May samples delivered to MWRA
  - Sampling to resume in June?

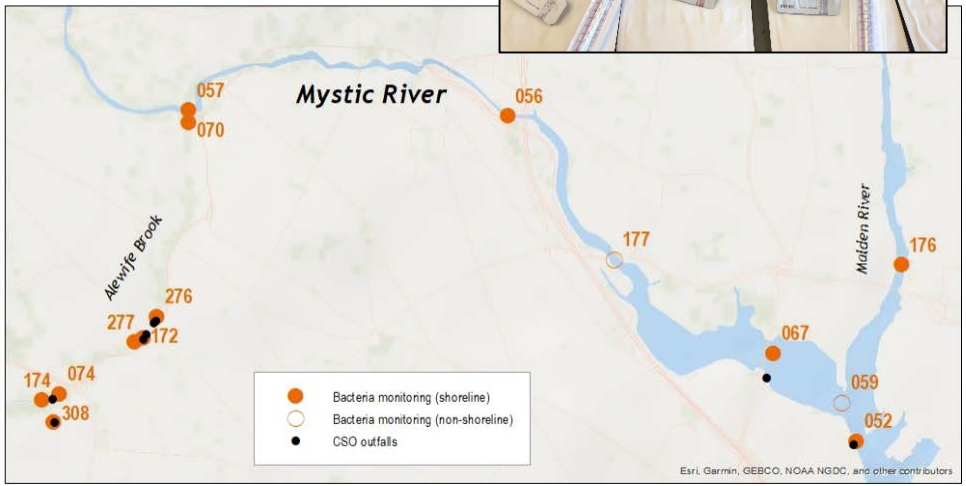
MWRA Routine Monitoring Projects

- Bacteria (“CSO-RW”)
  - Ongoing since 1989
  - Focused on potential impacts of CSOs, as many stations are located near CSO outfalls
- Nutrients (“BHWQMR”)
  - Ongoing since late 1995
  - Focused on collection of phosphorus and nitrogen data
  - Data sent to MyRWA annually, used to develop the alternative TMDL

Bacteria Monitoring

- Locations throughout the Alewife Brook and Mystic River
  - Many stations, frequently sampled (April-October)
- *Enterococcus* and *E. coli*, WQ sonde data
- Over 1,500 bacteria samples in 2019
- Data will be used to calibrate the receiving water model





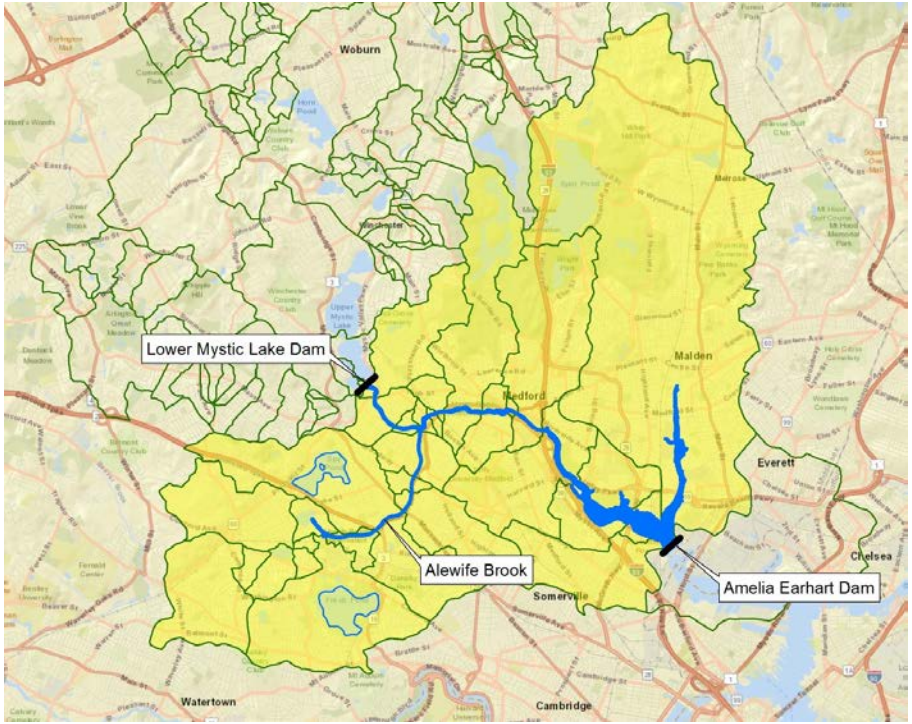
Nutrient Monitoring

- Locations at the extreme upstream and downstream ends of the Mystic, as well as downstream of the confluence with the Alewife
  - Sampled biweekly, year round (~24/year)

- Total nitrogen, nitrate/nitrite, ammonia
- Total phosphorus, orthophosphate
- Chlorophyll *a*
- Total suspended solids
- Bacteria

Receiving Water Modeling

- The model will allow for the assessment of remaining CSO (vs. non-CSO) impacts on bacterial water quality
- Update with current information on stormwater and CSO sources and loads
- Calibrate with current MWRA in-stream WQ data
- Perform model simulations
- Provide WQ Assessment Report (September 2021)

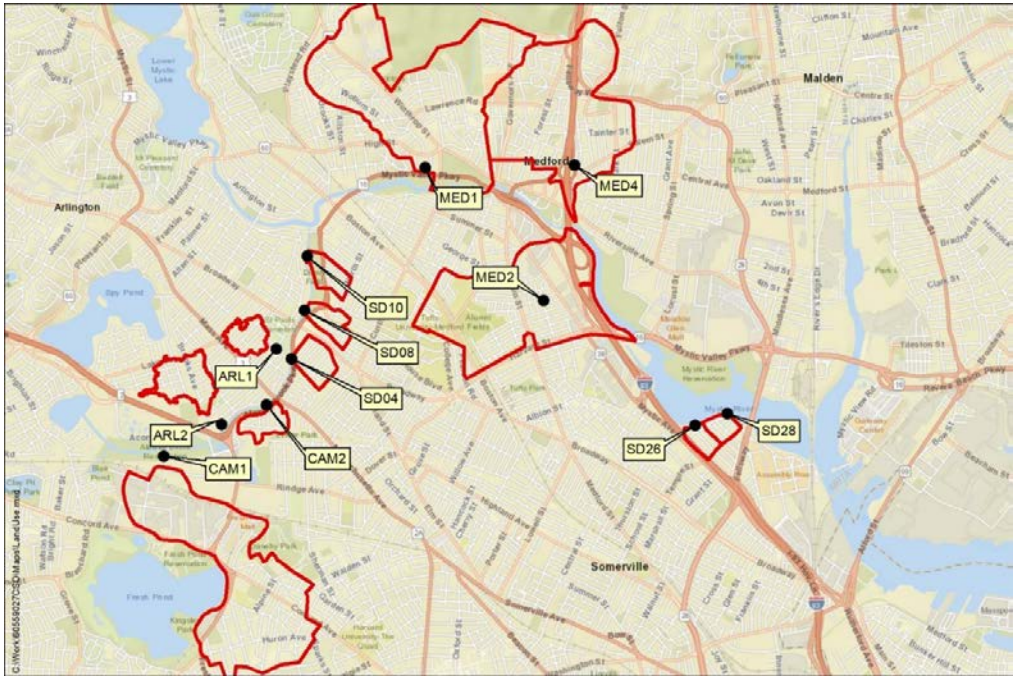


The Alewife/Mystic model will use InfoWorks ICM in 1-dimensional mode

Model Update: Stormwater Sampling

- MWRA sampling storm drains in Arlington (2) and Medford (3)
- Cambridge sampling 2 drains
- Somerville sampling 5 drains

- MWRA and Cambridge have sampled 4 events each
- Somerville has sampled 1 event



Model Update: CSO Sampling

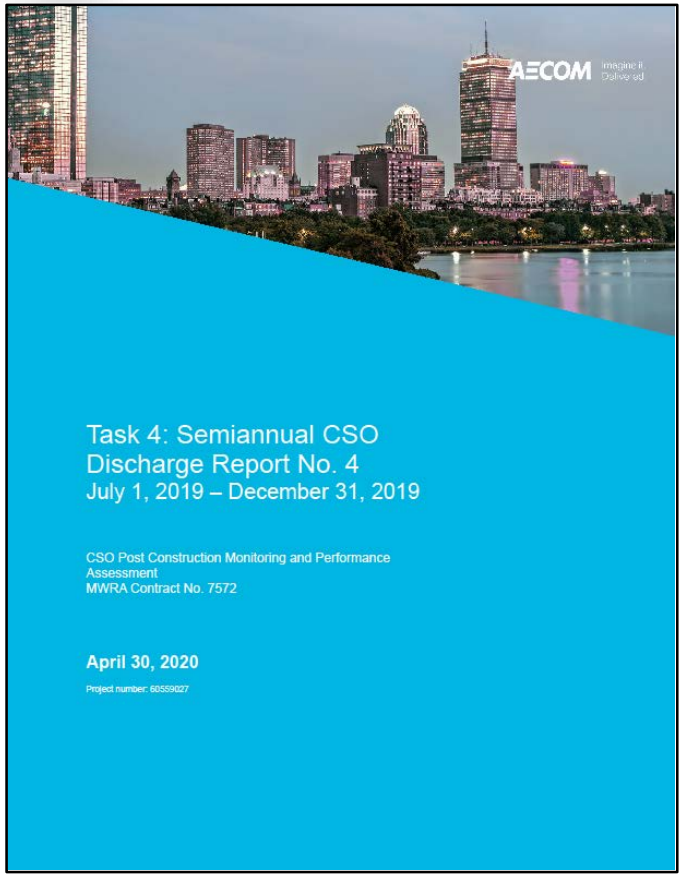
- Sample locations on Alewife Brook
  - SOM001A – behind weir, just before discharge
  - CAM401A – at CSO regulator on Sherman St., not at outfall
- Two discharges have been sampled
- Treated discharges from the Somerville Marginal CSO Facility represented by bacteria sampling required by MWRA's NPDES permit

Progress on the Receiving Water Model

- General model development is progressing
- AECOM is in the process of calibrating the model using MWRA's bacteria monitoring data

- Key dates in the future
  - October 2020: Model development and calibration report
  - September 2021: Water quality assessment report
  - December 2021: Alternative simulations report

Semi-Annual Report #4



- The CSO Assessment's Semi-Annual Report #4, issued on April 30, 2020, provides a detailed update on both the hydraulic and receiving water models
- Available on mwra.com
  - http://www.mwra.com/cso/pcmpa-reports/04_070119-123119.pdf

Public Notification of CSO Discharges

- CSO Variance requires rapid notification about CSOs upstream of the Amelia Earhart dam
  - MWRA will expand existing web site
    - http://www.mwra.com/harbor/html/cso_reporting.htm
    - Currently includes Somerville Marginal CSO facility activations
    - Will add untreated MWR003 in the Alewife Brook
    - Links to Cambridge and Somerville web sites
- Both Cambridge and Somerville are separately working on a system for notifications about their CSO(s)
- Subscriber based alerts - Not "live" yet - plan to start this summer
  - Further information on how to sign up for MWRA's Everbridge system forthcoming

Questions?

- Thanks to:
  - MWRA Lab and TRAC staff for in-stream, stormwater, and CSO samples and sample analysis
  - Cities of Cambridge and Somerville for cooperation involving stormwater sampling