

Minutes
February 2, 2018

The Wastewater Advisory Committee to the MWRA met at MAPC, 60 Temple Pl., Boston, MA

Attendees/Contributors:

WAC: Craig Allen (chair), Karen Lachmayr & Stephen Greene (by phone), Zhanna Davidovitz, Wayne Chinouard, James Guiod (AB), Mary Adelstein, Philip Ashcroft, Taber Keally

Guests: Wendy Leo, Brian Kubaska, Jeremy Hall, David Wu, David Kubiak, Solomon Wondimu (MWRA), Charlie Jewell, Paul Keohan (BWSC), Belinda Stansbury, George Atallah (Triumvirate), Elisabeth Cianciola (CRWA), Max Rome, Bridget Morris, Ethan Duperre (CRC, NEU), Rachel Borgatti, Tessa Bono (Friends of Fort Point Channel), Ann Lowery (DEP), Vanessa Nason (CRC)

Staff: Andreae Downs

FUTURE MEETING DATES/TOPICS

NEXT: Friday, March. 2, 10:30am: CWERCs (local sewer/energy installations) with Bob Zimmerman, Charles River Watershed.

VOTES:

December 2017 minutes approved

CHAIRMAN'S REPORT: Next WAC meeting is on Community Water and Energy Resource Centers (CWERCs), local means of processing wastewater which reclaims resources and keeps water in the local watershed.

EXECUTIVE DIRECTOR'S REPORT:

See attached—highlights: Whit Beals is retiring as WSCAC chair. Interesting presentation about MWRA's carbon footprint. MWRA is updating SCADA. Beth Card is on board at the MWRA, and is overseeing the big water redundancy project. EPA/DEP is holding community workshops for engineers looking to sell the idea of a stormwater utility (and fees) to communities. Town of Milton was able to create one with the help of MAPC's Martin Pillsbury. The Metrowest Partnership held a joint committee meeting on climate change and how communities can adapt—grants and planning available.

MWRA UPDATES:

Mike Hornbrook (Chief Operating Officer for MWRA) is retiring.

The Outfall Monitoring Science Advisory Panel is meeting Feb. 28th. This panel of academic scientists advise DEP and EPA on the outfall. Will be talking about rejuvenating the membership, and new member nominations are welcome.

MassDAR has final form of its fertilizer regulations, which did not accept MWRA's and WAC's feedback on phosphorus in biosolids. Next step for MWRA will be to work with UMass Amherst

ADVISORY BOARD UPDATES:

Current focus is the budget review, particularly the CIP and the 5-year cap—highest in many years.

The AB will hold a climate change awareness workshop Friday, June 15 with stellar speakers. Save the date!

Advisory Board is now asking membership questions in a new meeting section called “Talk Back.” The last one was on water & sewer rate setting in the communities. Next meeting's question may be about stormwater.

PRESENTATIONS & DISCUSSION:

CSO Performance Objectives

David Kubiak: 35 projects are complete; plan is complete. For the past 20 years, MWRA has assessed improving CSO performance, and tracked discharge estimates vs. court ordered levels of control (discharge frequency and volume in MWRA's “Typical Year” approved by EPA in 1993 as the basis for CSO planning and performance).

Now will see a lot of evaluation of the system through the 3-year assessment period, where MWRA proves it has met the requirements of the court ordered CSO control plan.

184 CSO related milestones in the court order since 1985. Only 2 milestones left, and they are commencement and completion of the assessment. MWRA began that in Nov. 2017 (required to start in 1/18), and in December 2020 will need to file a report to EPA and the public.



Federal Court Requirements for CSO Control

Close 34 of the 84 CSO outfalls.

- ✓ All 34 outfalls – and 5 additional outfalls – are closed.

Provide 25-year storm control at the 5 outfalls along the South Boston beaches.

- ✓ The South Boston CSO storage tunnel provides 5-year storm control for separate stormwater and 25-year storm control for CSO.

Reduce annual (Typical Year) discharge frequency and volume to court-mandated levels at each of the 45 outfalls that remain active.

- ✓ MWRA's CSO plan is fully implemented. Ongoing 3-year performance assessment is intended to verify compliance through overflow metering and updated hydraulic modeling.

Most expensive project, at \$200 million, is the N. Dorchester Bay tunnel that removes all sewage discharge (up to 25-year storm) from the South Boston beaches. Working very well.

Remaining active outfalls—45—have to meet certain Typical Year frequency and volume, specific to each one, as mandated in the court order.

Example:

OUTFALL	TYPICAL YEAR	
	ACTIVATION FREQUENCY	VOLUME (MG)
ALEWIFE BROOK		
CAM001	5	0.19
CAM002	4	0.69
MWR003	5	0.98
CAM004	Closed	-

There are 4 treatment facilities, including Prison Point, that have higher—but treated--discharges.

Major CSO reduction was achieved, especially on the Charles, early in the Harbor Cleanup Project (by 1991), because upgraded pumping at Deer Island removed a lot of overflow.

Every year MWRA updates its models, adds projects completed and other system changes, verifies the model against updated meter data, and runs the model to estimate CSO discharges in storms of the previous calendar year and to update Typical Year performance against the court-mandated levels of control.

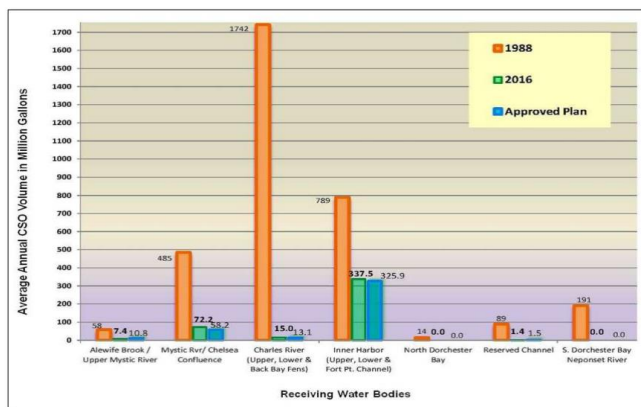
Q: Do you update the models against the changes in the 25-year storm level?

A: We reached an agreement that our obligations for CSO control, total capital cost of \$910 million, would be based on the “typical” year approved by EPA in 1993, and continues to be the basis for the obligations. At the same time, need to meet water quality standards. MWRA’s plan when proposed and approved, was intended for CSO NOT to contribute to water quality standards violations at least 98% of the time in each of the water segments where CSO would remain. MWRA will be looking at confirming this level of control with actual receiving water quality data collected during and immediately after wet weather events over the next 3 years. Rainfall changes may affect that, though 3 years is a short window.

Looking historically, the wettest period on record is in the 1950s.

The potential impacts of climate change on CSO control is also complicated by the size of the

CSO Reduction by Receiving Water



delivery system (community storm drains and sewers)—will the supplying pipes be able to handle additional flows from more intense storm events?

← Important bar is the green bar in the middle. It’s our estimated performance as of 2016. This level of control will be updated twice a year during the 3-year assessment.

To completely eliminate all the remaining CSOs would require an investment of at least \$12 billion, if technically feasible.

CSO Post-Construction Monitoring and Assessment
Jeremy Hall:

How is the MWRA going to verify that it is attaining the goals in the CSO control plan?

Using the EPA guidance document, MWRA created the May 2017 work plan—how MWRA would monitor and assess CSO performance and prepare for the Final Post Construction Monitoring Report to be issued to the DEP in December 2020. Presented to DEP, and received comments from MyRWA and CRWA, DEP and EPA. MWRA was able to incorporate those comments into the RFP for the consultant services.

AECOM won the \$2.92m contract, which was executed in November 17. Kick-off meeting with just about every division of MWRA present. The work touches on all the divisions of MWRA. Scheduled meetings with the CSO communities—share data, historic data, meters, maps of systems, etc. (Boston, Chelsea, Somerville, Cambridge).

Major portion of the effort to install meters—some meters at select locations will be installed this month. Collection of meter data will begin by April 15th. Not just level meters, but velocity sensors and inclinometers that let us know if the tide gates are open or closed.

The MWRA's wastewater hydraulic model's calibration will be improved with extensive meter data. With much more data, calibration should be even better than it is.

Each of the CSO communities plans to continue doing sewer separation work. Should result in even lower CSO impact to the receiving waters in future.

225 total CSO regulator inspection locations. Surface inspections (closed regulators) as well as confined space inspections (active regulators).

Closed outfalls are to be entirely closed to CSO discharge. There should be no CSO flows under any storm condition. But many of those outfalls still carry separate stormwater.

16 metered sites now, with existing MWRA and community meters. Through this contract, 32 additional meter (regulator) locations are expected. Meters will capture flow in, flow over the weirs, and tide gate information.

Over the next few years, the model will undergo some improvements based on inspections, incorporation of community sewer separation work, new system information and meter data, but it's main purpose is to track the attainment of the court ordered "typical year" flows. The "typical year" started with the storms of 1992, close to an average rainfall year based on a 50-year rainfall record, with some storms added in.

MWRA has been doing an annual CSO discharge report for the last 15 years. Now we will be doing a semi-annual report with a lot more meter data. Most important is "Table 10" in the annual reports, which lines up with the table of the court-ordered levels of control. This

compares the estimates with the actual storms in that calendar year. This is the basis for the required semi-annual reports during the monitoring period.

Receiving water quality data will continue to be collected by MWRA's Environmental Quality Department, and given to AECOM. AECOM has begun looking at historical information and starting to think about the best ways to analyze the WQ data to answer some of the questions we have to answer, such as the incremental wet weather impacts of CSO and the % time the CSO discharges contribute to WQ standards violations.

Analyzing the WQ data for CSO is different from the Harbor outfall analyses because MWRA has to tweeze out the impacts from CSOs versus non-CSO sources of bacteria pollution, including urban stormwater.

Q: Who does the lab analysis of receiving water samples?

A: The Deer Island lab.

Q: When does the court supervision stop?

A: Hopefully by December 2020. The AECOM contract goes to March 2021 so AECOM can help MWRA answer any questions from EPA, DEP or other court parties.

Q: Is this pioneering work?

A: We are using the same technologies and expertise that others across the country use. We are using one of the top metering companies for CSOs in the country (ADS). And metering technology is always evolving. It involves much more than measuring whether water is going over the weir, in order to produce accurate CSO overflow quantification. Also using what we believe is the best modeling available.

Q: Is MWRA using water quality data collected by watershed groups and universities in trying to tease out water quality impacts of CSOs?

A: MWRA's sampling is more time-intensive to capture storm impacts. However, the watershed area included isn't as extensive as the watershed organizations' sampling. One thing that might be interesting to consider would be watershed groups' data on upstream conditions.

Q: Is there adequate rain gauge coverage?

A: We have been using several rain gauges owned and operated by MWRA or the CSO communities. If you have a rain gauge, we'd love the data. MWRA is looking into supplementing the rain gauge data with other information, such as weather forecast information.

