Minutes
Feb. 26, 2025
Remote

Attendees:

WAC Members: Kannan Vembu (Chair), Dan Winograd (Vice Chair)**, Adriana Cillo** (BWSC)**, Craig Allen**, Wayne Chouinard (Belmont), George Atallah, **Dr. Karen Lachmayr, Martin Pillsbury** (MAPC), Taber Keally (NepRWA), **Alfredo Vargas** (Newton), **Christine Bennett (**Advisory Board), **Jonathan Smith** (Somerville), Felina Silver (LWV), **Zhenyu Tian** (Northeastern). **(**Members in attendance in **bold**).

MWRA Liaison: David Wu

Guests: Moussa Siri (WSCAC), Tom Durkin (MWRA)—*for a complete list, see the Advisory Board minutes of 2/26/26*

Presenters: Julie Wood, climate resilience director at Charles River Watershed, Andy Hrycyna, water quality program manager at Mystic River Watershed.

Staff: Andreae Downs

VOTE: January Minutes

UPDATES: Andreae welcomed everyone to the meeting & announced the next set of meetings: March 19—joint with AB on energy; April 21—joint with AB on the MWRA's 5-year Master Plan; and May 1 Deer Island Tour focusing on energy and maintenance vehicles.

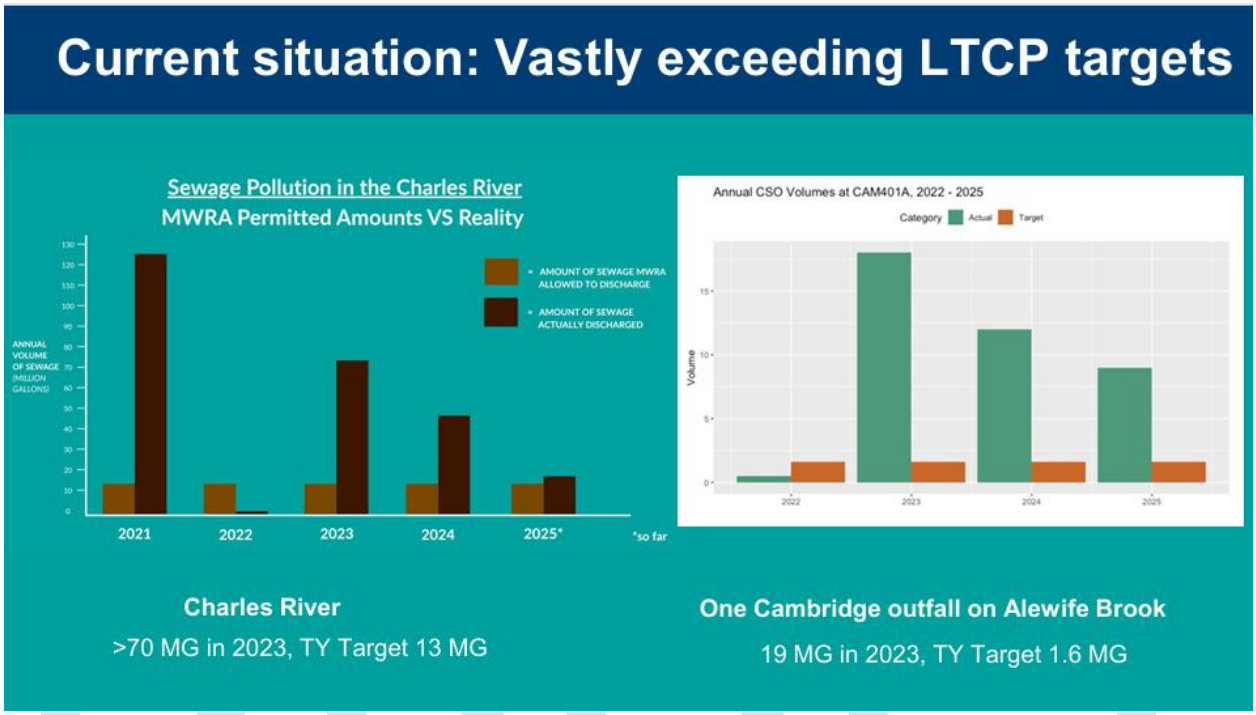
CSO LCTP Discussion, Watershed Organizations' Perspectives:

Complete set of slides here

Wood: Time to end the dumping of sewage into the rivers after decades of promises to do so; MWRA analysis shows it's possible.

--sewage makes people sick. Cites CSO research on the Merrimack.

Current CSO LCTP still not meeting goals[1]:



CRWA/MyRWA disappointed with the current proposal. Their goal is zero CSO in a 25-year storm in 2050 or complete sewer separation.

Hrycyna: Watershed orgs are concerned with MWRA water quality monitoring. Acknowledge the pollution from stormwater and land (dog/goose poop…). But they believe CSO contributes a higher concentration of human waste and household pollutants. Explained that stormwater pollution is being dealt with now via MS4 permits.

List of additional concerns:

[1] Note that "CSO" is combined (sewage & stormwater) sewage outfall/overflow

System Modeling Result Concerns and Omissions

- "Zero CSOs in the Typical Year" **does NOT mean zero CSOs**
- The teams themselves predict CSOs in "greater than typical" years. We need a clearer picture of volumes for all scenarios to know if we are making progress.
- Actual CSO activation frequency **is driven by the frequency of extreme storms**, which are expected to increase with climate change
- Charles River target of ~13 MG in a typical year has resulted in overflows of:
  - >120 MG in 2021, >70 MG in 2023, >40 MG in 2024
- CAM401A target of ~1.6 MG in a typical year has resulted in overflows of:
  - 19 MG in 2023, 11MG in 2024, and 9MG in 2025

Discuss the CSO frequency and volumes noted in MWRA slide for the Board meeting that decided the direction of the draft CSO LCTP.

Watersheds want more comprehensive modeling predictions for all three levels of control, 0 in TY, 5-yr and 25-yr. Don't understand the reasons why total sewer separation wasn't considered, nor what impact it would have on overflows. And want a better explanation of why MWRA wouldn't spend more on modernizing the CSO system.

Discuss the MWRA Board meeting slide on financial capability analysis.

Wood: Notes that the average increase in household sewer charges would amount to $125 at the 25-storm level of control.

Green Infrastructure—watersheds think more could be added to the plan and can be effective Cite NYC using GSI to remove water from their combined system.

Want an analysis of the "triple bottom line" of GSI in this system comparable to what Philadelphia has done. (environmental, public health, social—recreation, reduced heat-stress, green jobs, reduced energy use, etc.)

Goal of swimmable urban rivers.

Discussion:

Clarification that MWRA does major sewer projects, but WAC is just an advisory committee, made up of volunteers. Also that CSO is a mix of sewage and stormwater

Questions:

Would it be acceptable to CRWA and MyRWA if all the CSO released to the river were treated?

Wood: No, they would like no CSOs (both untreated AND treated) in a 25-year storm level of control (in 2050)

Are you aware of studies showing microbes in treated CSO having a negative human health effect?

Wood: no. The partial treatment at Cottage Farm doesn't kill the viruses or other harmful elements of wastewater, chemicals.

Please share any peer-reviewed information you have showing infectious agents post CSO treatment (similar to the treatment process at MWRA's Cottage Farm CSO Treatment facility) having adverse public health effects.

Agreement that there are other chemicals in wastewater that treatment, even say at a facility like Deer Island, is not designed to remove.

Question about using GSI to reduce CSO volumes—what is the benefit?

Wood: We heard space constraints were a driver of discounting GSI. NYC is using GSI to reduce CSO volume.

Exactly, what is the volume reduction in NYC?

Wood: Modeling showed GSI was effective at reducing CSO came from MWRA/Partners team. Using that modeling, we can see CSO reductions increase with more GSI, the maximum increase comes with the first 10% runoff capture. But their modeling shows it can still be effective with larger volumes—as shown by the Cambridge constructed wetlands.

The Charles River sees overflows with **.4"** of rain. Volume there should not be the issue, and GSI can be less expensive and pose less of a construction impact. Capping it at a set amount for this plan is concerning.

Andreae asked David Wu to address some of the water quality information on CSO vs stormwater as presented by the watersheds:

David: MWRA probably agrees with some of the information, but probably respectfully disagree with other parts. After we review the slides, we would like an opportunity to address any inaccuracies if we find them.

Andreae: We will set aside some time at the next meeting for that. WAC had asked the watersheds to come to us with data backing up their claim that the rivers' water quality would be meaningfully impacted by a reduction in CSO given the fecal bacteria concentrations upstream. Remind me where that was shown in this presentation?

David: I don't think Julie and Andy directly addressed that in this presentation. I know Andy did a lot of hotspot sampling of stormwater a few years ago. MWRA developed a model in 2018-19 and collected samples directly from CSO outfalls on the Mystic and influent at CSO facilities as a proxy for the Charles. We also collected stormwater samples in all three waterbodies. All of that is in one of our technical reports on our website.

Elena Proakis Ellis: Do you have data that shows the volume of stormwater right now during smaller events?

My understanding is, without sewer separation, that there's a large volume of stormwater in small storms that travels to Deer Island for treatment. And if sewer separation is completed, I totally get that green infrastructure can deal with a portion of that, 10%, whatever percent is realistic.

But I don't have a good sense of, how does the total volume of stormwater that is now treated at Deer Island that would now not be treated and go into the Charles and the Alewife and Mystic, what are those volumes and how do they compare to the annual volumes that you're talking about for CSO discharges?

A: My understanding is that the stormwater would be treated. But that would be a great question for the engineering team, but my understanding of their plan, that when they do separation, they wouldn't just dump untreated stormwater [into the rivers] and that's my understanding of where the green stormwater infrastructure focus is going.

Q: But that would be on the municipalities, right? And you noted NYC gets about 10% of stormwater treated—that isn't 100%

Yes, and I believe they do plan to address the stormwater pollution concerns that that would present, basically because of their MS4 requirements. I know in some cases that has been a concern with sewer separation as a technique, as one of the tools in the toolbox for this plan. But the 10% [figure] that New York City is using, that's the percent of runoff they are treating in their combined systems, not after separation.

Q: You know the MS4 requirements, they don't really have a standard for bacteria. And I think that would be a concern—and other pollutants, trash, oils, etc. in untreated stormwater.

A: That's an excellent point, but we have lots of evidence that the concentrations of bacteria in a routine storm, run-of-the-mill stormwater are lower than they are during CSO events. The other point is we can remove phosphorus in the first flush of stormwater by diverting some of it to Deer Island. I think a modern system might be creative in that way.

Proakis Ellis: My background originally was water and wastewater. And, you know, I think for those of us who got into this industry, especially wastewater, we're the people who are taking the wastewater and cleaning it to the, you know, highest best practical treatment and discharging it out cleaner to the environment. And I think I probably speak for the vast majority of people in this field that we come into this field as people who are trying to help the environment, we're here for common goals. And it's frustrating to me to see the sort of headbutting that occurs between environmental groups and environmental professionals working in the wastewater industry. I hope everybody can kind of keep that perspective in mind that we're all here for a common goal.

Andreae noted that the meeting was running over time, and that she would need to end soon to honor her volunteer members' time. But one more question: Why NOT 100% sewer separation and green infrastructure?

Richard Raiche: All of us on the Partnership team agree with [the watershed organizations] that this needs to be a part of a regional discussion. As soon as we submit our technical documentation on April 30th and for the remainder of 2026, this is exactly the continued conversation we need to be having.

The major tool that we used here was a hydrologic and hydraulic model that was developed for the last long-term control plan has been expanded upon since then with 30 years of data and calibration. While we were focusing on CSO solutions, this modeling clearly indicates that we've got a regional stormwater problem.

The model predicts that these climate change storms are going to overwhelm the local sewage and drainage systems, leading to sewer backups into homes, sanitary sewer overflows in neighborhoods, and widespread localized flooding. And that then gives rise to a uniquely Massachusetts problem. Whereas there are other entities that you can cite in the literature like New York City and Philadelphia and Minnesota there's one entity that deals with stormwater and the collection systems and the spine of the interceptors and the treatment plant.

But Massachusetts has a whole bunch of local municipalities. And what we've found here is that all these individual communities are going to have some big problems in 2050 conditions.

There's going to be widespread sewer collection problems for these cities and towns—lots of SSOs—and in a separated system, those find their way to the rivers.

The modeling clearly indicates that sewer separation does not eliminate discharges.

The terminology is confusing here because we're talking about pipes that MWRA inherited when it was invented in the 1980s, and which were built in the 1880s. They weren't called combined sewers back then. They were just sewers, and they had relief points.

And even for the separate systems, it's impossible to keep all stormwater out of the sanitary systems, right? There's infiltration and inflow. And these larger storms are going to increase that share of I/I. Anything larger than a 2-year storm, the I/I coming from the upstream communities, and the fact that these downstream pipes were built to have relief—you still have discharges.

So that's why the recommended plan, particularly for the larger storms, had to start relying on storage, rather than separation. which is not unique in the CSO world. If you look at long-term control plans everywhere, a lot of them rely on storage more than sewer separation.

So I just wanted to sort of set that table so that everyone has sort of an understanding of that limitation.

Julie: It's accurate to say that, thinking about the stormwater and separation, you are also thinking about stormwater treatment, correct?

Rich: There are technological limitations to stormwater treatment that all of the MS4 communities are [permitted for].

Andreae thanked the presenters and commentators and noted that answers to some of the questions raised today will come back at WAC's March 19th meeting. That meeting will start with a joint session with the Advisory Board and WSCAC on energy efficiency, self-generation and renewables.

Next meeting is THURSDAY, March 19, 10 am- noon.