



Joint WAC/WSCAC Meeting

February 16, 2016 - 10:30 A.M.
Location: The Waterworks Museum
2450 Beacon Street, Chestnut Hill

Members in Bold in Attendance:

Whitney Beals, WSCAC Chair, NE Forestry
Elie Saroufim, Boston Water & Sewer
Martha Morgan, Nashua River Watershed
Paul Lauenstein, NepRWA
Kurt Tramposch, Wayland Wells
Terry Connolly, Town of Ware & Trout Unlimited

Andrea Donlon, CRWC
Gerald Eves, Trout Unlimited
Michael Baram, BU & CLF
Bill Fadden, OARS
Martin Pillsbury, MAPC

Non -Members in Attendance:

Lexi Dewey, WSCAC staff
Heidi Waugh, WSCAC staff
Mary Adelstein, WAC
Jim Pappas, WAC
Julie Wood, CRWA
Katie Ronan, MWRA
Kristen Hall, MWRA
Maret Smolow, MWRA
David Wu, MWRA
Paul Keohan, BWSC

Andreae Downs, WAC staff
Taber Keally, WAC
Beth Miller, WAC
Craig Allen, WAC
Karen Golmer, NEWIN
Adriana Cillo, BWSC
Daniel Nvule, MWRA
Nicole Johnson, MWRA
Lou Taverna, Newton DPW
Tom Daly, BWSC

WAC/WSCAC Business

WAC approved their December Meeting Summary. WAC also approved a comment letter written on the pharmaceutical take-back provision in the State's opioid legislation.

The following directions were provided to Andreae Downs, the Executive Director of WAC:

- Research food waste/co-digestion situation for future discussion
- Draft a letter on proposed regulatory changes related to biosolids (Molybdenum limits, Phosphorus)
- Work with WSCAC ED to research and draft a joint comment letter on the historic and actual level of DEP funding from the state for water-quality related work. And losing

WSCAC was unable to vote on the Draft January Meeting Summary, as the committee did not have the required quorum present.

Lexi provided several updates for WSCAC members. She informed members that she attended North Reading's meeting regarding their Draft Environmental Impact Report. North Reading is preparing to join MWRA as a full user. Lexi will email the committee with more information regarding the report. Lexi noted that she would update the committee on watershed mountain biking issues in a written summary.

The Secretary's Certificate for the Brice Lemon 111-unit development in Rutland has been issued and Lexi reminded committee members that the report had been distributed it via email. She noted that town officials in Rutland are reportedly taking issue with the potential impacts and demands of the development.

Kurt Tramosch asked a clarifying question regarding the use of municipal sewer versus on-site septic. Lexi confirmed that the developer is proposing the use of municipal sewer.

Lexi informed the committee that MassDEP has proposed to raise the Molybdenum limit for biosolids applied to land. MassDEP will bring this proposal to the Water Resources Commission in April.

Andreae Downs commented on the phosphorous in fertilizer regulation. She informed the committees that the North East Biosolids & Residuals Association (NEBRA) met with MassDEP and the Department of Agriculture. NEBRA is proposing that testing on biosolids be done only on water-soluble phosphorus, rather than total phosphorous. Such a change would restrict some biosolids from being used on agricultural lands. WAC members said they would like to comment on the issue.

Andreae then reviewed proposed changes to the MS4 permit process. WAC agreed not to comment.

Andreae also addressed the topic of co-digestion. After several minutes of discussion, WAC members concluded that they want to explore more options, such as outside funding.

Lastly, the matter of wastewater regulation delegation was raised. Members commented that the water section of MassDEP's budget has become smaller over the last several years. Members suggested that WSCAC and WAC draft a joint comment letter in order to address the issue. Budget cuts over the years have significantly impacted efforts to maintain and increase water quality efforts in MA.

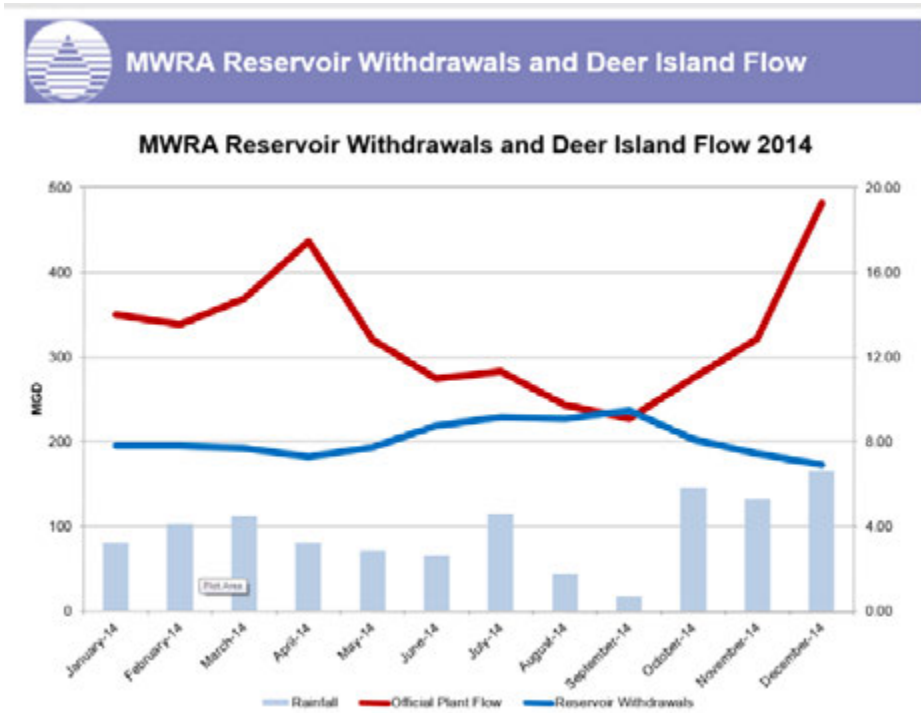
MWRA Reservoir Water Withdrawals vs. Deer Island Wastewater Flows: Comparison of 2014 Flows

Carl Leone, a Senior Program Manager at MWRA, began his portion of the presentation by providing an overview of the MWRA Service Area. The MWRA provides wholesale water and wastewater services to sixty-one communities in the Commonwealth. The Authority delivers an average of 200 million gallons per day (mgd) to its water customers. Peak demand is reported to be 350 mgd. Carl continued to state that MWRA collects and treats an average of 350 mgd of wastewater. The system has a peak capacity of 1.2 billion gallons.

Carl explained that this presentation should answer the following question: why does Deer Island treat more water than the Carroll Water Treatment Plant sends to the MWRA service area?

Carl explained that there is a difference between reservoir withdrawals and water sales. On average, the MWRA sells 11 mgd less than it withdraws. This difference can be attributed in part to MWRA water use for maintenance and construction. Examples of such use include pipeline

dewatering/disinfection and tank draining/disinfection. Leaks in the MWRA distribution system also contribute to this difference (.3 mgd). Finally, the potential for metering differences exists between the Carroll Water Treatment Plant, CVA transmission, and the 175 community water rates meters.



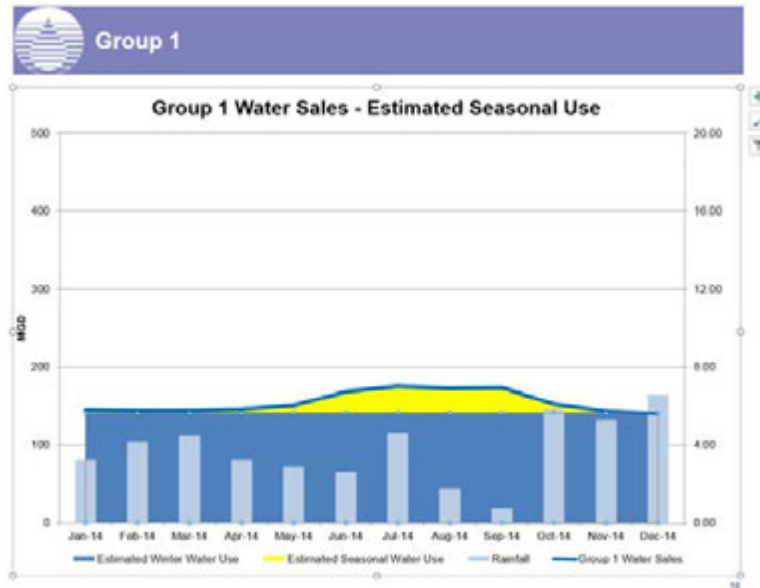
Similarly, there is a difference between Deer Island flow and metered community flow. On average, the MWRA treats 17 mgd more than it meters from communities. This difference can also be attributed to potential metering differences, as well as the subtraction of infiltration into MWRA inceptors.

Carl continued to explain that there are five customer community groupings. Group 1 is comprised of fully supplied water and full sewer communities. Communities in this group include Belmont, Framingham, and Winthrop. Most MWRA communities belong to Group 1. A smaller number of communities belong to the following groups:

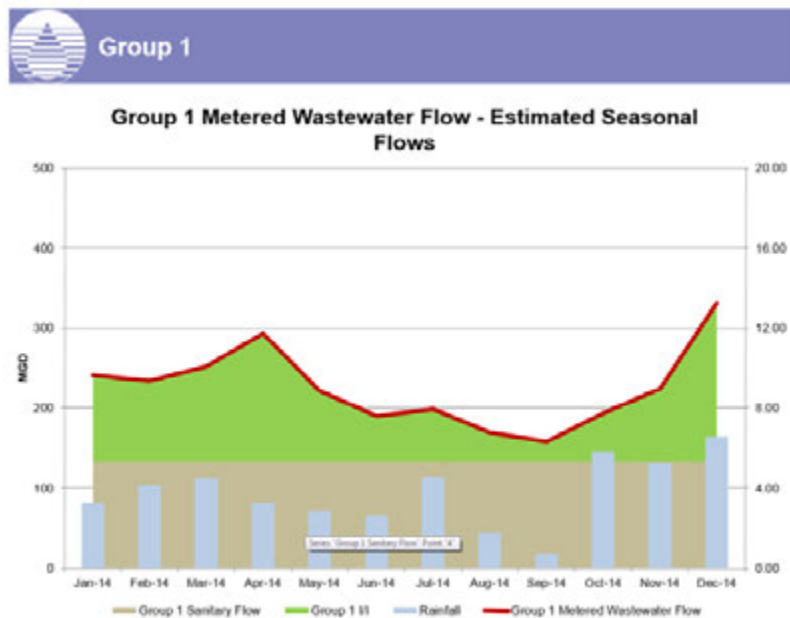
- Group 2: Partially/Emergency Supplied MWRA Water (and locally supplied water) and Full Sewer Communities
- Group 3: Full Sewer Only Communities (locally supplied water)
- Group 4: Fully Supplied Water Only Communities
- Group 5: Partially Emergency Supplied MWRA Water Only Communities and Other Water Revenue Customers

For each of the customer community groups, Carl provided a series of graphs that depicted water sales and metered wastewater flow, water sales/estimated seasonal use, metered wastewater flow/estimated seasonal flows, and estimated winter water use vs. sanitary flow. The graph below illustrates Group 1

Water Sales – Estimated Seasonal Use. This group accounts for about 80% of MWRA water usage. The yellow ‘delta’ on the graph represents the estimated summer – or outdoor water use:



Carl continued to explain that Group 1 accounts for 73% of MWRA sewer flows. The green delta pictured in the graph below is the estimated inflow and infiltration (I/I): water from sump-pumps and down spouts and leaks into the pipes, respectively. I/I is typically greater when it rains, but after dry periods, the ground will absorb more water. Additionally, I/I may increase when rain occurs with snow cover.



Carl explained that most of the water sold in the MWRA system returns to the sewer. Some of the water may not return due to leaks, bottling, or green cooling systems that lead to the evaporation.

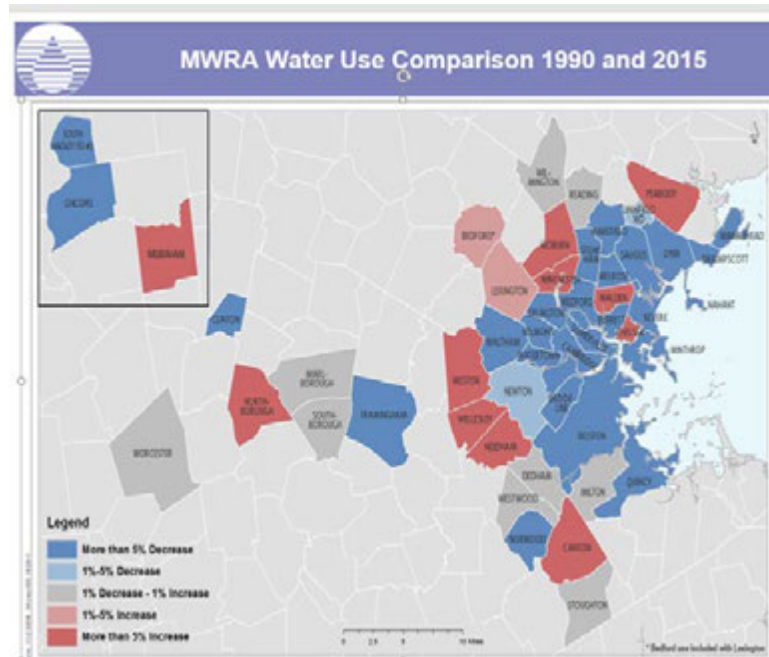
Collectively, the graphs show that rainfall has diminished in the last four years. This has led to a decrease in I/I numbers. Carl explained that there has been a reduction in sewer use overtime. The reduction can be attributed to I/I reduction, leak detection and repair, and more efficient appliances. Carl explained that water use per capita is down, but the population has grown.

MWRA Water Use Trends 2015 by Daniel Nvule

Daniel Nvule, a Senior Program Manager at MWRA, began his portion of the presentation by reflecting on the historic demand for water in the service system. Data dates back to the year 1840. Daniel displayed a graph that showed an increase in demand up until 1985. In 1985, water use was 350 mgd. Water demand was projected to continue to increase to 450 mgd. It was at this time that talk began of diverting water from the Connecticut River.

WSCAC actively crosschecked projections and offered alternatives to the diversion. Rather than divert the Connecticut River, the MWRA instituted policies of ‘trigger planning,’ demand management, and leak detection and repair. As a result, despite constant growth, the service system is using less water.

Daniel then displayed a graph that depicted MWRA water use comparisons to answer the question: which communities consumed more and which consumed less?

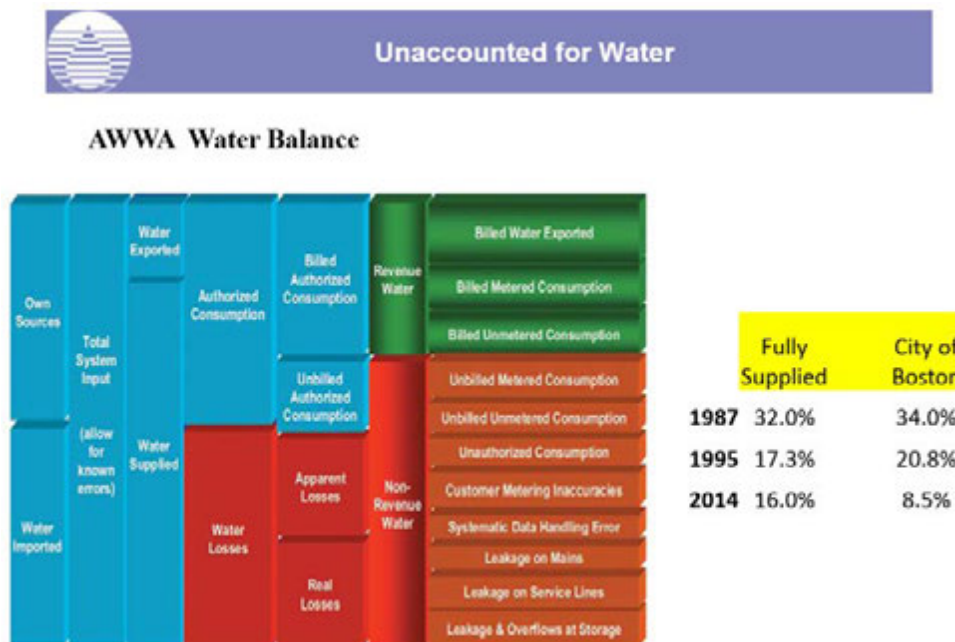


He continued to explain that some reductions in use are attributable to water-dependent industries relocating. Daniel cited the Kraft factory moving from Stoneham as an example. Daniel also highlighted Boston’s decreased levels of water use. The city’s water use is at a 110 year low.

Daniel then showed several graphs that depict seasonal water use in the system by month. Overall, there is a declining trend. During the period of recession from 2007-2010, there is a sharper decline in the data. Daniel explained that there are two forces involved in determining this trend. Whereas efficiencies work to drive demand down, factors such as new development, employment, and population increases lead to an increase in demand. Daniel explained that indoor use may now be on the rise, but more data is required to determine the direction of the trend.

Kurt Tramosch asked if the economic downturn of 2008 led to any water shutoffs from communities not being able to pay their bills – and how did that impact the water use trend? Daniel said it is difficult to determine from the graphs if that contributed significantly, but it may have been a factor. Similarly, slight upticks on the graph may be due in part to an uptick in the economy.

Daniel then discussed unaccounted for water within the MWRA system. Overall, unaccounted for water has been on the decline. The depiction below illustrates where the water may be going and the trend in MWRA communities:



Daniel discussed how weather influences water consumption. He asked committee members and guests to raise their hands if they let their faucets run overnight during the extreme cold temperatures last weekend. A number of people raised their hands – the result correlates with the trend of water consumption increasing during very cold weather. Pipe bursts in the cold weather also contribute to an increase in ‘consumption.’ Extremely dry weather also contributes to an increase in use; customers irrigate their lawns and their gardens.

In 2015, therefore, water use consumption may have increased, after many years of decline, due to the freezing temperatures in February 2015 and the dry periods experienced during the spring and summer. The economy, however, also impacts water use. Daniel said they are trying to tease out what happened

in 2015 and compare it to previous years. The possibility exists that water use may continue to increase. The MWRA will continue to monitor and track the data.

Daniel continued to state that despite the addition of new communities to the MWRA, demand has dropped dramatically. Even with the addition of Bedford, Stoughton, Dedham/Westwood, and Reading, the demand has decreased. Worcester may be looking to purchase water (due to low reservoir levels), and North Reading is in the process of joining MWRA as a full user.

Kurt Tramposch asked if the average decline in demand has anything to do with the development of local alternative water sources, such as the Birch Road permit renewal in Framingham. Daniel replied that it may have a part in the decline, but he attributes it more to an increase in efficient appliances.

Lexi Dewey commented that there are a number of contracted communities that are taking less water than they are contracted to take. The difference is relatively small, so Lexi was unsure if it would be a contributing factor to the data in question.

Daniel then addressed the amount of water in the Quabbin Reservoir. Despite several dry years, the Quabbin is still in the normal operations range. Furthermore, the Quabbin is still spilling and making the mandated releases. Daniel stated that the Quabbin has five years worth of storage.

Lastly, Daniel addressed the potential impacts of climate change on the water supply system. MWRA has assessed the system for vulnerabilities. Climate change may cause the Northeast to get more rain than it used to, but it may rain at different times. The MWRA system has a very large reservoir, so the safe yield should increase. A number of surrounding communities, however, have surface water supplies, and may need MWRA to get through the challenging seasons. It was added that groundwater might also become depleted in years with less participation.

Michael Baram asked if the MWRA has considered the implications of the Sustainable Water Management Initiative (SWMI) on water withdrawals. Michael noted that communities no longer go through a stringent safe yield analysis. He wondered how changes in the regulatory regime have influenced the MWRA's analyses.

Daniel said he has not run into that, but would be willing to do some research in that area.

The committees thanked both Carl and Daniel for their presentations.

The meeting was adjourned.

Click [here](#) to see the presentation on the WSCAC website.

The next WSCAC meeting will be held on March 2nd at 10 AM at the Carroll Water Treatment Plant.