

Mystic Science Subcommittee meeting
May 11, 2011

Todd:

- Report card grade to be released Sunday
- WQ over past year not good—was a wet year
- Most surprising was that bacteria counts at saltwater locations were high, especially in the later part of the year
- Many enforcement efforts in place: bacteria, low cost field kits and pharmaceutical
- Print out of two maps discussed—color represents bac level on one and arbitrary threshold of pharmaceuticals on the other

EPA update on problem locations FY2010:

- A lot of hits in Stoneham, some issues in Woburn. A lot of sampling in Mill Brook (Arlington). Some sampling in Mill Creek and in the lower Mystic area including some Boston outfalls.
- Stoneham is under an AO from EPA. They have identified sources for several problems. They've found that there are leaking under drains into Sweetwater Brook causing a high volume discharge at Lindenwood Ave. They are trying to take it out sometime by now. It is a few 1,000 gallons/day removed. Removed some additional connections. Some vandalism issues in Montvale Ave – rocks down the manholes. They have cleared them out. Upper portion of the watershed – north Woburn area – always been somewhat of a mystery. Began looking up here from the MyRWA baseline monitoring. The monthly sampling point had elevated concentrations often enough. From the RARE sampling, there is no clear source. A lot of municipal and MWRA trunklines run along the river in the area. Found a few smaller pipes or building floor drain into brook that could be problem source.
- North of 128 the Aberjona splits in many different branches. EPA looked into very northern reaches of the watershed and couldn't find any smoking guns. Looking more into knocking out larger sources at this point and then go back there to use pharmaceuticals.
- In Woburn have been working with the town north of Horn Pond. Woburn is under a CO by DEP for SSO issues. Near the police station there are a few pipes that are tributary to Horn Pond where there might be illicit connections. Saw SSO in one and then pharma data in the other. Woburn has corrected one, but is still looking. There is a large outfall north of Horn Pond, it seems there is still an illicit connection. They are still looking into it. We
- Other in stream sampling – tried to break the Aberjona into smaller segments to try to source track the pharma data. In the Winchester area, there is an old landfill on the banks of the Aberjona. We saw hits just downstream of the old landfill. There doesn't seem to be direct illicit. Seems to depend on groundwater conditions.
- In the Arlington area – spent a lot of time sampling in Mill Brook and have provided the data to MassDEP. It didn't meet standards in dry weather for the 2009 calendar year, which is 11 times/year. There were some successes early on. A sewer pipe leaking under Mystic Street that was fixed. There do appear to be a number of point sources and large pipes. You can easily walk up the stream and take in stream and end-of-pipe samples. They are working on a few of the pipes. Question about Grove S Street area, go upstream there are two pipes: one of the pipes has regular flow. EPA got a really high entero/acetaminophen hit -- likely illicit. Not clear whether DEP has required the Town to investigate.
- Distinct pharmaceutical illustrates point sources, which would indicate high counts in only certain parameters. Multiple contributors is illustrated by high hits across the board.

- Ryder Mill Building – construction yard, grass swale, discharges sewage on occasion. Again, not clear if source has been investigated.
- EPA is trying to track the number of illicit discharges identified and removed and # gallons/day of sewage removed for documentation and reporting. Can the DEP orders track these data for Arlington and Belmont and Somerville? Between the 2009 and 2010 report card we gained 2,000 gal/day removed from storm system.
- In Arlington area saw consistent pharma levels in stream up thru Arlington/Lexington line and then it is clean up beyond there.
- Wellington Brook is being addressed through a DEP order to Belmont. They are doing sewer work right upstream of the pipe. EPA sampled early 2010. There was a hot spot visit 5 months ago and it was about the same as it has been. Visibly gray, but does not stink as much. Need to monitor for improvement.
- Medford just submitted a compliance report at the end of January 2011 and what they found was significant in number and volume. They sent some contract staff out to GPS manholes and catch basins. They had a long list of places where there were sewer odors. They have ID'd 16-19 catchbasins tied directly into sewer. Found a number of illicit cxns in the Gravelly Creek watershed. Hard to get samples at this area. It is a large watershed in the central Medford area. There are roughly 9 illicit in this area. There are more illicit down by the river that they are investigating. There is hope that Medford will have good removal numbers in the coming year.
- In the lower part of the watershed, we know MWRA 205 had high hits. It is a CSO discharge point, but it also brings dry weather flow from the Somerville MS4. IN the dry weather flow, very high bacteria and clear sewage signal. When we provided the data to MWRA, they followed up with Somerville and the corrected a discharge near Stop & Shop near Route 128. Upstream of the MWRA facility under route 128, flows from Somerville comes in from multiple directions and there are still high bacteria levels. MWRA took data and gave it to Somerville and the state. DEP has an AO with them. MyRWA would like Somerville to continue to sample on a regular basis at MWRA 205. MWRA does end-of-pipe testing, but it is random. They can try to target it for dead-low-tide. EPA had to hit it between 20 minutes before to predicted dead-low-tide. If you miss low-tide there you miss it. People have been seen fishing in this area on a regular basis.
- Behind the Schrafft's building there are two outfalls – one is stormdrain and one is BWSC 017. EPA saw hits in both pipes. Saw hits in pharma samples in both. Data have been brought up with CLF and EPA joined in a lawsuit with BWSC along with Constitution beach area. Actively trying to get those two areas addressed.
- Mill Creek – base flow from Revere, downtown Everett, and Chelsea. Everett is a question mark, they don't have direct outfalls. Revere fixed many and samples on a regular basis. Chelsea fixed some direct discharges, but there are still a number of pipes discharging with problems, particularly near the Broadway Bridge area. There is a private pipe that we are trying to get answers on.
- Sales Creek/Suffolk Downs – EPA has an AO. We have them sampling all the discharge points on a regular basis and the numbers are very high. Manure and hay discharged; remedy in works to eliminate discharge from facility. Sales Creek daylight through the middle of the race track, but it is contaminated from Revere before it gets there.
- Everett has an ACO with DEP and they have taken money out of the SRF to fix part of a collapsed pipe near the Whole Foods area. Water is contaminated in Revere before it reached the track.

- Chelsea and Revere discharge to the head of Island End. There is a produce depot and then an open ditch. Everett flows into the ditch and then it forms the giant culverts at Island End and they are all very dirty. They aren't sure what is connected into the culverted portions of the pipes. At the Chelsea pump stations there was a collapse or direct discharge in. There is talk of Chelsea and Everett getting together to tear up and repair the pipe.
- Patrick: Industrial sites on septic systems on Chelsea Creek. Global Oil- can Title IV be used? How are they not contributing to Chelsea Creek? EPA investigated one building in this area in the recent past. Dye study completed, but no documented problem. BWSC had no info about the infrastructure.
- Looking at the data and points where there is poor water quality, we can explain some. We can say we have illicit upstream and the communities are working to address them, but others we can't really explain. The saltwater locations are really the most surprising.
- MyRWA is considering adding baseline sites on a temporary basis for the next few years. If you wanted a better set of data, where would you want to see another site added for nutrients or bacteria? Thinking about somewhere in the mainstem Mystic or in Island End. Marine locations are timed for low-tide. They are taken in the last quarter of the outgoing tide. We know there is a large amount of sewage coming out of Island End.
- What parameters does MyRWA need? It depends on the question; do not need a complete sweep.

MWRA will try to sample MWRA205 at lower tide

Patrick wants ideas for new baseline locations

Todd will follow up with Nihar on Somerville

- Chelsea Creek baseline point there is a CSO right upstream from the pipe that is always flowing. Will take a second look.
- Belle Isle inlet far up into Sales Creek-- Suffolk Downs and SSO that Revere removed recently. What are the operating procedures of the DCR pump station near Sales Creek? We should discuss it.
- Draw Seven Park - Sample location is 50 yds downstream. MWRA has chased elevated bacteria levels up the MWRA 205 piping and Somerville needs to take over and do some more work. DCR is putting money into Draw Seven Park and Assembly Sq. park. There are oil docks and piping.

MWRA:

In 2011, planning on same program. No additional locations, method or equipment changes. Still wrestling with E. coli methods and hopefully will figure it out this year. Going to go back to doing fecal coliform. Switched to IDEXX and previously had been doing membrane filtration. At the time that there was a switch (2006), there was a significant drop (a log drop) in E. coli concentrations. Drop is only seen in places where there had been really high concentrations in the past. In areas where concentrations were pretty low, there is no drop. In enteric tests saw a slight increase with the switch. Going to continue with extra coliform testing to see which is consistent and to see if there is a real improvement. Correspondence between two labs and splits with IDEXX is very difficult. Correlation with private labs is not very good. There has been an improvement in Alewife Brook.

Would MWRA add a site in the Island End River? The Mystic rotation is hard to do the whole river in a whole day. If they did add it, it might have to be added on another day. Or they could evaluate the sites to see if there are ones that could be removed or swapped out.

MyRWA:

Baseline is otherwise continuing. They are hoping to add a site or two. Hotspot sampling is happening on a monthly basis. Could use guidance that EPA or DEP are interested in finding additional data. Roger has recently done Winchester and Arlington, Malden and Chelsea/Chelsea Creek very soon. We have hit a lot of the big ones in the last year and could use some ideas. Would like to look into private outfalls in Chelsea Creek to provide assurance that there isn't much else going on there.

EPA:

Limited capacity for pharmaceuticals this year, but hoping to increase capacity for next year. Hoping to talk with Patrick and MyRWA to try to add to the QAPP to add the pharma samples and co-locate pharma samples with baseline monitoring. Or pick some more places to go out and investigate. Any sampling at this point will likely be enforcement/compliance inspection type. Going to do some work with some communities to go and pop manholes and run field kits and pharma to identify points in the system that are discharging sewage. Turn over to community to let them go from there.

DEP:

Going to follow up on the ACOs. There is an intern this summer to help with sampling.

Roger:

Lab is giving him some to use in the Charles, this year they are for urban stormwater in general. Will use 12-20 bacteria samples in the Mystic. Thinking of going in wet weather to upper reaches of the Aberjona to see if there is bacteria coming from any one branch. Roger and Todd will talk. Woburn is looking into finding out which septic could be contributing to Halls Brook/Pond. There seem to be very low levels of pharma hits there.

USGS:

Not a lot of WQ activity in the basin. After January, looking into developing a more fixed water monitoring program with MWRA. What to do and what existing data might be helpful. Will be continuing that process.

Steering Committee and Open Space Group Update

- Next meeting May 18, 2011. Last meeting in February 2011.
- 4 Priorities: (1) Reduce and eliminate overflow SSO. Add SSO reporting form to include improvement. Better communication and distribution of information. Thinking web-base form, or open word document, not PDF; (2) Munc technical assistance program. Reinvigorate subcommittee. Want collaboration NOT enforcement; (3) Reduce P loading in watershed thru munic subcommittee. Reduce/eliminate fertilizer containing phosphorus; (4) Legacy pollution. Pull together reports to find gaps in knowledge.

Cyanobacteria

Where should we put the buoy?

Last year we put it in Wedge Pond and it was treated twice (copper sulfate) – in April and then in August.

Potential sites:

- Wedge Pond- no bloom 2010
- Horn Pond – backup drinking water. Last year counts got up to 60,000
- Ell Pond – less a recreational pond
 - Very small
- Spy Pond – most reliable bloom we have. A different species each year. Posted for three of four years in a row bc of large scale blooms
 - Doesn't have swimming, but does have regular boating
 - Reliable for three years
- Main Stem of the River – Blessing of the Bay Boathouse
 - The building is going to be re-habbed under Somerville's control. The Boy's and Girl's Club has moved out of the building
 - We've seen it pile up near the Wellington Yacht Club and Blessing of the Bay Boathouse
 - Thick blooms as far up as the Condon Shell
- Malden River – a little too close to the dam, somehow it keeps it flushed down into the Mystic
- Upper Mystic Lake by Shannon Beach – haven't really seen a bloom there

Group consensus is **Spy Pond** is the best place.

- What are we doing with the data? We share it with MDPH. EPA will be doing cell counts this year. Idea is to compare it and see where toxicity lies. EPA won't be collecting data on toxicity this year. MassDEP has GC/MC instruments that can test toxicity on these in a mobile lab. They haven't committed to doing any of this work for cyanobacteria yet. Are using it for emergency response only at this point. There is some talk of using it for cyanobacteria and toxin analysis.