



WSCAC Meeting

May 12, 2015 - 10:30 A.M.

Location: MWRA Facilities in Southborough

Members in Bold in Attendance:

Whitney Beals, WSCAC Chair, NE Forestry
Elie Saroufim, Boston Water & Sewer
Martha Morgan, Nashua River Watershed
Dona Motts, MA League of Women Voters
Kurt Tramosch, Wayland Wells
Terry Connolly, Town of Ware & Trout Unlimited

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

Non –Members in Attendance:

Lexi Dewey, WSCAC staff
Heidi Waugh, WSCAC staff
Clif Read, DCR-Quabbin
Victor Contreras Tacilla, ITD

Andreae Downs, WAC
Stephen Estes-Smargiassi, MWRA
Ester Elizabeth Loyola Salvador, ITD
Ambarish Karmalkar, UMASS Amherst

WSCAC Business

Whitney Beals made a motion to approve the March and April meeting summaries as distributed. The meeting summaries were approved, however, Bill Fadden abstained from voting on the April meeting summary as he did not attend the meeting.

Whit provided the committee with an update regarding the transportation of hazardous materials by rail over the Wachusett Reservoir. Whit informed the committee that he, Michael, and Lexi met with Fred Laskey, Joe Favaloro, Michael Hornbrook, and Matt Horan on April 21st. Whit stated that the purpose of the meeting was to voice WSCAC's concerns about the vulnerability of the Wachusett Reservoir to a potential rail accident and contaminant spill. Whit termed the meeting constructive; the MWRA is working hard with Pan Am Railways and is making progress towards reducing the risk factor for a major accident. Depending on the availability of funding, a portion of the rail line may be upgraded in the future.

Michael Baram added that the meeting was positive. He acknowledged that work is being done in regard to emergency response but said that a better job must be done regarding accident prevention. He stated that some options like rerouting are foreclosed because of federal regulations. Michael believes the MWRA would benefit from getting public and political support. Michael believes that political clout in Massachusetts, consisting of Governor Baker, Senators Markey and Warren and Congressman Michael Capuano, could be mobilized to deal with the rail safety issues. He pointed to political involvement in the State of New York where Governor Cuomo commissioned a report on the transport of hazardous materials by rail. State agencies are involved and NY Senators are taking these concerns to Washington. With the exception of Senator Markey's report on gas leaks in Massachusetts, the state

has not focussed on the movement of hazardous materials by rail and the risks to essential infrastructure. He said that he stated these views during the April 21st meeting.

"Michael also expressed his personal view that attention should be given to developing a timeline of the self-improvement actions to be taken by Pan Am when key contingencies have been resolved."

Paul Lauenstein asked what WSCAC's next steps will be. Lexi said that the group asked MWRA to keep WSCAC updated. Paul then asked about the bridge over the Wachusett and Whit replied that examinations have determined that the bridge is structurally sound.

Michael asked to briefly discuss what the next steps should be as a group. Lexi suggested that she and Heidi could put an informational packet together to be discussed at the June 9th meeting. Also updates from MWRA would be requested. Members agreed this would be beneficial and look forward to opportunities for updates in the future.

Kurt asked, in terms of clarification, if the line is a pass-through line or does it dead-end in Leominster/Fitchburg. Whit and Stephen Estes-Smargiassi replied that both scenarios occur regularly. Kurt asked Steve if they have considered moving rail traffic out of the Wachusett all together. Steve replied that the option has been raised. Whit added that at this point, Bakken oil and ethanol are not included in risk assessments as highly hazardous cargo; he believes that will change with new federal regulations.

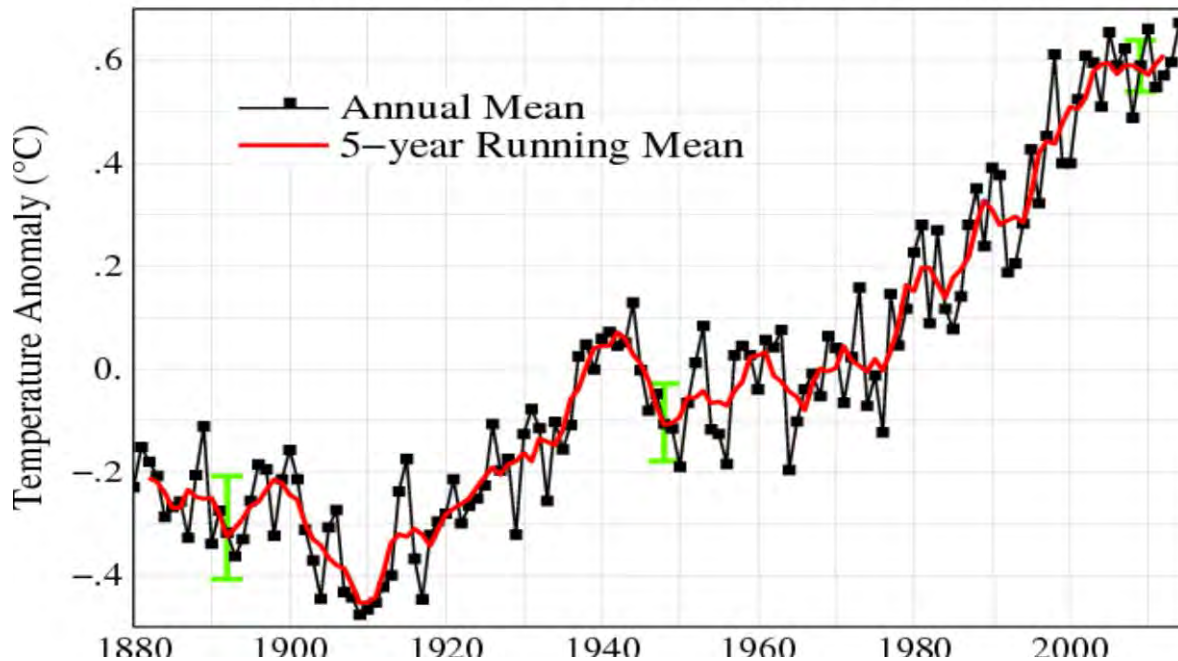
Steve concurred that keeping the issue as an open item is a good idea. He stated that it is a high priority item with the MWRA and lots of activities are going on. He informed the committee that the effort is extremely cooperative and DCR is also involved.

Climate Change Presentation: What Happened to Global Warming?

Ambarish Karmalkar, a DOI Postdoctoral Fellow at the Northeast Climate Science Center, University of Massachusetts, Amherst, began his presentation titled, "What Happened to Global Warming?" Ambarish asked the committee to recall how cold the temperatures were in February 2015; he said that the harsh winter led many to ask what has happened to global warming. Temperatures in Amherst were in fact extremely and unusually low. Based upon data from the Amherst weather station, however, the average temperature in Amherst during the month of February reveals a slow increasing trend from 1836 to 2015. Furthermore, it was the second warmest February globally in the last 136 years. Ambarish stated that when the global picture is considered, global warming is alive and well.

Ambarish continued to address recent claims in the media that global warming has ceased. He stated that in some sense, that is true: global temperatures have not increased dramatically in the last fifteen years. He noted that in regards to global warming, we must look at long term trends rather than year to year temperature changes. Ambarish shared the plot pictured on the following page to illustrate his point. Whereas there is little change in the specific period of the 1970 for instance, there is a significant change from the 1980s to the present; long term trends must be considered in the context of global warming.

Global Land–Ocean Temperature Index



Paul asked if the global land-ocean temperature index is a composite between land and ocean temperatures. Ambarish replied that yes, it is. Paul then asked if it is a weighted average on account of the fact that a lot of the energy being trapped by greenhouse gases is ending up in the ocean. Ambarish replied that in respect to this plot, the temperature being referred to is surface air temperature. The air temperature is taken from just above the surface of the land and the ocean.

Ambarish informed the committee that The Inter-Governmental Panel on Climate Change has expressed increase confidence that human influence is the dominant cause of the observed warming since the mid-20th century. In 2013, they reported that it is extremely likely, whereas in 2007, they termed it very likely.

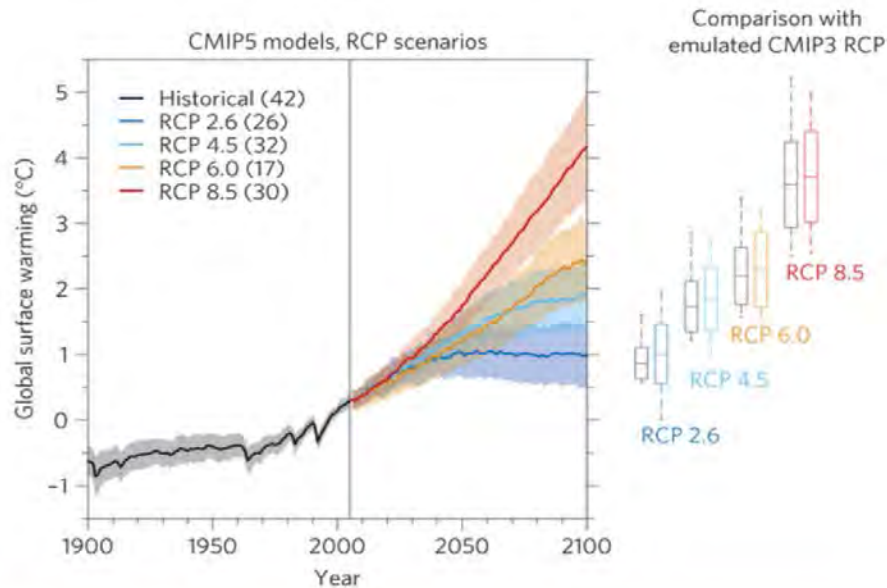
Ambarish then addressed atmospheric CO₂. In 1958 it was measured around 300 parts per million. It is now measured at over 400 parts per million. Ambarish stated that there is nothing magical about the number of 400, but the scientific community has identified 350 parts per million as the number we should aim for. Paul commented that it is incredible how quickly this measurement is rising.

Kurt Trampusch questioned if there is a temperature increase that accompanies the increase in CO₂. Ambarish stated that it is unknown if temperature follows CO₂ or vice versa- it is a feedback mechanism, he said. Nonetheless, they do follow one another, as indicated by the ice-core records for the last 800,000 years. Ambarish said the important point to remember is that these changes occur over hundreds of thousands of years.

Ambarish discussed climate modeling and explained how models are tested for accuracy. He continued to state that models can be used to project what may happen in the future. In order to do so, you must make assumptions about future social and economic development. Furthermore, as one set of assumptions cannot be relied upon with certainty to predict the future, the people that develop climate models often come up with several scenarios/sets of assumptions and make several different models.

The models can then be compared and contrasted in order to determine our next best steps in respect to climate change. Ambarish cautioned, however, that there is a large degree of uncertainty in this process. In order to make informed decisions moving forward, we must understand those uncertainties and consider those uncertainties as we plan for the years to come.

The model represented below depicts four different scenarios for global surface warming by the year 2100. Ambarish explained that the RCP 2.6 line represents a significant curbing in emissions; the RCP 8.5 represents the worst case scenario in which emissions are not curbed. The solid lines within the shades of color are actually the averages of all of the different models- the shading represents the diversity between all of the different models.



Ambarish continued to state that the models predict an increase in temperature between 1.5°C and 4.5°C. He stated that once again, it is important to consider long-term implications and remember that changes happen over a period of many years. In the year 2050, for instance, the worst case scenario in red is not yet distinct from the more favorable scenarios. The stark difference becomes much clearer over time.

Ambarish then highlighted several extreme weather related events. The European Heat Wave of 2003, for example, resulted in the death of 30,000 people. It was the hottest summer on record in Europe since at least 1540. On average, the temperatures were 6°C to 7°C warmer throughout the summer. Ambarish compared those temperatures to temperatures predicted by models. In 2040, those could be average temperatures for Europe and by 2060, those temperatures could be considered cool.

After discussing other events, such as Hurricane Sandy and the current drought in California, Ambarish concluded that although we cannot determine with certainty that these extreme events were caused by global warming, we can discern that global warming has increased the likelihood of such events.

Ambarish then focused his discussion on events occurring in the Northeast of the United States. There is a slight increase in the amount of rainfall the Northeast receives. Ambarish, however, finds the variation in the distribution of the rainfall to be more significant. Findings indicate that the amount of rain received during heavy rainfalls is increasing.

Paul commented that while the Quabbin Reservoir can harvest and hold precipitation from intense rainfall, some aquifers cannot capture that water on account of impervious cover which prevents recharge to groundwater. Paul reasoned that that may be a reason for communities that are currently dependent on local wells to purchase MWRA water.

The committee thanked Ambarish upon the conclusion of his presentation.

MWRA Updates

Steve began by addressing climate change mitigation in the context of the MWRA. He said they are continuing to focus on increasing their production of green energy and efficiency so that they can reduce the amount of energy they buy from the grid. Over the last six years, their net electric energy use has dropped by more than ten percent. Additionally, the MWRA has added sea level and climate change to their list of criteria when evaluating existing and potential future infrastructure. They look closely at each facility to determine the possibility of flooding.

Whit asked, in terms of electrical energy use, is the figure provided a net figure, or indicative of actual use. He also asked if there is a separate figure for how much energy the MWRA generates. Steve said that when he looks at efficiency changes, he looks at how much a facility generated/used on site and how much a facility purchased from the grid. Steve explained that the sum of the energy generated and the energy purchased is the use, and that number is going down. He said that overtime, the amount of green energy used on site and the amount sold back to the grid is rising.

Paul asked if the MWRA is anticipating the use of batteries. Steve replied that no, not now, but they do pay attention to the development and dialogue around batteries.

Kurt referenced the extreme weather events discussed earlier during the meeting and questioned if the MWRA has plans in place to address the effects of such events, such as emergency connection plans and agreements with surrounding communities? Steve replied that that is a policy level discussion that the MWRA continues to have with state water agencies; they strive to plan for their current situation with the long term horizon in mind. Steve added that they are cognizant of the importance of emergency connections and they continue to work with surrounding communities to determine how these connections could be affected in the future. MWRA's reduction in demand allows it to be helpful to surrounding communities in both emergency and long term situations.

Steve informed the committee that on April 29th, the MWRA lowered the fluoride dose to 0.7 mg/l, per recommendation of the Centers for Disease Control (CDC).

Steve updated the committee on interconnections and system expansions, based on the recent staff summary by Pam Heidell to the Board of Directors:

- Hudson is in their third six month emergency authorization. They are doing planned improvements to their treatment facility to meet DEP requirements.
- Ashland asked for an emergency connection last summer but did not use the water. As their supply is inadequate for their demand, Ashland is still considering joining the MWRA. They have not yet secured town approval.
- Dedham-Westwood has increased the amount of water they buy from the MWRA.
- Tri-Town is still determining which course of action they want to take; one or more may come to the MWRA as a partial water customer.

Andreae Downs asked Steve if the Governor's Executive Order 562 affects SWMI. Steve replied that it surely would as it is a set of regulations. Michael Baram asked if the MWRA has a list of regulations they are reviewing in relation to EO 562. Steve replied that if a stakeholder process is initiated for various state regulations, the MWRA has a list of things they would discuss. The MWRA is also looking at its own regulations.

Whit asked what happened to the authorization in the Water Infrastructure Bill that would have earmarked a grant for a plant for Tri-Town. Steve replied that that was funds are contingent on appropriation, which has not happened. Given the budget, it seems unlikely.

Steve then discussed a staff summary presented to the Board of Directors in April regarding financing for water and wastewater ratepaying communities to rehab their pipes. Since 1998, the MWRA has funded 436 miles of replacement for community-owned cast-iron water mains.

Kurt asked if there would be an MWRA presence at the upcoming FERC meetings regarding natural gas pipelines in Massachusetts. The intersection of water and natural gas pipelines has been an issue in other parts of the country. Steve replied that MWRA has a review and permitting process they go through when anything is constructed next to their facilities. If the natural gas pipeline will run adjacent to MWRA facilities, the Authority will initiate those processes.

Looking forward, Steve said the MWRA remains focused on redundancy. Construction will begin soon on the Wachusett Aqueduct Pump Station, which will provide redundancy to the Cosgrove Tunnel.

Steve concluded his update by addressing progress at Spot Pond. After experiencing a delay over the winter, the project is nearing completion and will likely be online by the end of the summer.

The committee thanked Steve.

Lexi announced that the June meeting will be held on the 9th at the Quabbin Reservoir. A tour of the Brutsch Treatment Facility in Ware and a walk-through of several forestry sites will be available.

Andreae announced that the next WAC meeting will be held on June 5th. The committee will be discussing what they have accomplished in the past year and planning for the coming fiscal year.

The meeting was adjourned.