PIE Rivers Partnership Annual Meeting

Thursday, December 1st
9am to 12pm

WHEN: Thursday December 1st 9:00 AM to 12:00 PM
WHERE: Parker River Wildlife Refuge Headquarters, *6 Plum Island Turnpike Newburyport, MA 01950*

AGENDA:

8:45 - 9 **Arrival at Parker River Wildlife Refuge Headquarters**

9:00
Ross Povenmire: **Welcome and Introductions**
Erin Bonney Casey: **Partnership Updates**

Professor Rob Stevenson, UMass Boston: **Drought in the Parker River Basin**

Cece Gerstenbacher: **Making Land Use Decisions: Bylaw Review and Revisions**

10:30 Break

George Comisky and Ann Witzig: **Expanding Water Quality Monitoring in the PIE-Rivers Basins**

Peter Phippin: **Apple Street Roadbed Elevation & Culvert Replacement Project**

GROUP BRAINSTORMING
What do you think the PIE-Rivers Partnership should focus on over the next 2 to 3 years?

Hello, NETU chapter members! I attended this meeting, and was delighted to find our President, Ben Meade, our recent president, Josh Rownd (who also succeeded me as Vice Chair of the MA State TU Council), and our new NETU board member, the recently retired Dr. Carl Soderland, also in attendance. It was so nice to see them in three dimensions instead of just on my computer screen through our many Zoom meetings, though that's always a pleasure too…

I took some fairly careful notes at this meeting, as NETU representative to the PIE Rivers Partnership Steering Committee, because I thought it would be helpful for NETU Newsletter readers to become more aware of these efforts. I have to start with a confession: when I read the above presentation titles, my reaction was that these talks didn't sound very interesting, but I attended anyway. I've been at most of these Annual Meetings during the last 5 years or so, and they've always been fascinating and very informative. I'm happy to tell you all that – despite my initial misgivings – this year was excellent too!!! And well worth taking notes for you…

Introduction – Ross Povenmire, Chair of PIE Rivers Steering Committee

Ross gave us an informative overview of the PIE Rivers Partnership and our efforts to protect the Parker – Ipswich – Essex River watersheds by joining up a wide cross-section of interested and concerned local conservation organizations.

PIE Rivers Partnership Update – Erin Bonney Casey, IRWA Staff Member

Erin is the primary administrator of the PIE Rivers Partnership, and she gave us an overview of the structure and purpose of this collaborative effort, which is divided into *four working groups* designated and described below:

1. *River and Stream Continuity*: This working group prioritizes aquatic barriers and stream crossings, and works to remove barriers to migration of species and riverine or tidal flows;
2. *Water Conservation*: This working group works to incentivize water conservation through regulatory changes and public outreach, and to provide tools for proper stewardship of environmental resources;
3. *Water Quality Management*: This working group identifies water quality problems in our regional area, addresses estuarine sources of pollution, and works to upgrade stormwater systems by various means;
4. *Land Use*: This working group promotes low impact development (LID) efforts, works to improve land use bylaws in local communities, and to provide stewardship tools to them as well.

Water Flow and Drought in the Parker River – Rob Stevenson, Parker River Clean Water Association (PRCWA)

Rob Stevenson offered a plethora of detailed research findings on the flow rates over time in the Parker River, as a means for us to understand the situation for this river, showing highly variable flow rates over time in this river, ranging from lows of well below 0.1 cubic feet per second (cfps) to as high as 116 cfps. Interestingly, drought conditions in the Parker River have become much more frequent and longer lasting over time. Interestingly, to provide perspective on what these flow rates mean, 1 cfps = 7.5 gallons/second ➔ enough to provide for the needs of 12,000 – 13,000 people per day. The point is that the town of Georgetown draws all of its water needs from the Parker River; when flow rates are high, for example during the wintertime, this is no problem. However, when flow rates are very low, such as during summer drought conditions, there is simply not enough water to

provide for the needs of its citizenry without imposing stringent conservation measures, as Rob Stevenson's data made clear.

Municipal Codes: Conduits for Stormwater Management and Climate Resiliency – Cece Gerstenbacher, Merrimack Valley Planning Commission (MVPC)

Cece Gerstenbacher provided an enlightening and informative review of efforts underway to prepare our municipal systems for stormwater runoff issues in an age of increasingly virulent storms and violent weather events of various kinds. She began by distinguishing "natural" vs. "developed" landscapes in terms of their water retention capacities. *Natural landscapes* have 50% infiltration, 10% runoff, and 40% evapotranspiration through plants, while *developed landscapes* have only 15% infiltration, with 55% runoff, and 30% evapotranspiration. As a result, during periods of high intensity precipitation, stormwater runoff issues become of great concern. These can be usefully managed with the installation of rain barrels, rain gardens, green roofs, permeable pavers and bioswales.

She then turned to the Mass. DEP MS4 Municipal Assistance 2021-2022 Grant Program Award process, which involves a statewide effort to require towns to review their bylaws to make them more responsive and resilient to climate change and environmental concerns. The Bylaws Review Process involves a number of discrete stages: (a) the identification of liaison people to work with local communities; (b) the identification of local codes and bylaws then to be reviewed; (c) the review of those codes and bylaws; (d) the preparation of reports on each community examined; (e) liaison meetings with community members; and (f) the sharing of findings with the public once all these other stages are completed.

She discussed the use of the Massachusetts Audubon Bylaw Review Tool, which has five major goals. She then summarized the reports supporting proposed bylaw changes in the towns of Boxford, West Newbury, Groveland, Ipswich and Essex, followed by a review of regional findings with respect to Open Space Preservation and Development. She discussed the frequency of inconsistencies that they found in local bylaws and regulations where, for example, low impact development (LID) issues are mentioned but without any imposition of explicit standards to guide actual efforts, and instances where general qualitative proposals were not clearly tied to explicit quantifiable measurement standards. More information about this effort can be found at: **https://pie-rivers.org/portfolio-item/municipal-stormwater-codes-a-regional-review-for-northeast-massachusetts/**

She also addressed local efforts to use EEA Climate Resiliency Funds to work more specifically with four local communities: Andover, Boxford, Georgetown and North Andover, with the purpose of reviewing their town codes and bylaws to propose and implement needed changes. She went through lists of prioritized changes and implementation plans for each of these four towns.

Expanding Water Quality Monitoring in the PIE River Basins – Ann Witzig and George Comiskey of the Parker River Clean Water Association (PRCWA) and Ryan O'Donnell of the Ipswich River Watershed Association (IRWA)

Ann Witzig started with the question: WHY? What is the purpose of monitoring water quality? There were a number of answers based on how these collected data are used: (a) the creation of these water quality data; (b) uploading these data to the Environmental Protection Agency (EPA) website; (c) sharing these data with the general public, such as via EPA sites such as one for the Ipswich zip code:

www.mywaterway.epa.gov/community/01938/overview, which is typical of the information collected for other local communities in Northeastern Massachusetts.

She then discussed the Mass. State program called AquaQAPP (where QAPP stands for Quality Assurance Project Plans) which is aimed to assist ongoing efforts to improve water quality throughout this state. More can be learned about this program at: **https://www.mass.gov/how-to/use-aquaqapp-to-plan-your-monitoring-project**. They presented this as a Citizen Science process to assure proper and accurate data collection and management to assure quality throughout every stage of such efforts.

George Comiskey then described PRCWA's Summer Program of water quality monitoring, where they currently have 17 stations (with 4 of them new ones) to measure dissolved oxygen (DO), conductivity and water temperature. They are also hoping to get some new equipment next year so they can also monitor phosphates and other aquatic chemicals in these watersheds. They used to collect these data on a monthly basis, but have recently increased the frequency of their summertime water quality data collection efforts to every two weeks. They described how they enter real-time data and site photos onto a map to be found on the PRCWA website (cf. **http://www.parker-river.org/**) which has a wealth of other relevant information available.

In this context, he talked about Story Maps which are addressed to answering questions about "How Is My Waterway?" For example, dissolved oxygen (DO) is absolutely critical to the survival of living aquatic organisms needed for the maintenance of ecological health, under MA State standards that call for DO measures above 60% to pass this threshold. They indicated that their recent efforts on 14 August 2022 showed 6 sites passed and 11 other sites failed to meet this standard. The water quality information that they collect is posted on their PRCWA website, their Facebook page, and sent to the Ipswich Local News for reportage and public consumption. They have also recently installed some new water quality monitoring equipment (including HOBO sensors) in the Mill River, about which very little has previously been known.

Ryan O'Donnell next reported briefly on the water quality monitoring by IRWA on the Ipswich River, where they have 24 sites for their monthly monitoring for conductivity and chlorides; 18 sites for their biweekly monitoring for bacteria and other nutrients; 4 sites for continuous monitoring for DO and 5 sites for continuous

monitoring for water temperature. All of their results from this research can be found on the IRWA website: **https://www.ipswichriver.org/**.

Apple Street Culvert Replacement and Roadway Elevation Project – Peter Phippen, Merrimack Valley Planning Commission (MVPC)

Peter Phippen finished up this series of presentations by talking about this project on Apple Street that was initiated due to a flooding event in 2018. First, the 30" culvert there was undersized and therefore unable to handle the water flows during that storm, so Apple Street flooded in a low section near Southern Avenue a short distance south of the center of town and the causeway in Essex. What this project is meant to achieve is to raise the roadway 15" to 30" in an 800-foot-long section and replace this inadequate pipe culvert with an installed three-sided box culvert of significantly larger dimensions with a naturalized streambed under it. They also want to widen this section of road by two feet. The permitting process for this project is extremely complex because it takes place in an environmentally sensitive area on a scenic public roadway. The cost of these improvements are estimated at $4.5 million and a successful outcome might take as long as 7-8 years to be reached. The discussion turned to the relevance of the Essex Causeway, which also needs eventually to be raised to prevent its flooding at extremely high "spring tides" and storm surges, and to cope with the prospects of local sea level rise, but the Apple Street project will not have any effect on causeway issues. In 2018, there were apparently two big storms only two weeks apart that flooded the causeway and some of the local businesses there, and Apple Street is the most convenient substitute route from one side of Essex to the other when the causeway is too flooded for traffic use, so these improvements to Apple Street are needed to keep that alternative open. There are some local neighborhood objections to this project, due to resistance against widening the road in this section because it might increase traffic speeds or hinder local residents' ability to walk safely in this section of roadway.

All in all, this was a valuable meeting with very informative presentations. I'd recommend that everyone give some consideration to attending this Annual Meeting of the PIE Rivers Partnership when it takes place in December 2023!

Thanks for reading this!

Fred Jennings, NETU past president, current NETU Board member, and NETU Representative on the PIE Rivers Partnership Steering Committee.