

## **Mohawk Trail Woodlands Partnership (MTWP) Advisory Committee Meeting**

October 16, 2018

**Berkshire East Ski Lodge, 66 Thunder Mountain Road, Charlemont, MA**

Staff: Tom Matuszko, Bob O'Connor, Deirdre Rose, Peggy Sloan

Members Attending: Hank Art, Rick Chandler, Greg Cox, Dicken Crane, Larry Flaccus, Josh Fritz, Kyle Hanlon, Jay Healy, Stacy Kontrabecki, Ed Munch, Jim Perry, Walt Quist, Art Schwenger, Janet Sinclair, Bill Dornbusch, Wendy Ferris

Others Attending: Professor Paul Catanzaro (UMass Extension), Professor Rick Peltier (UMass Department of Environmental Health Science), Richard Stafursky (Species Forest, Inc. Land Trust), Melissa Patterson (Franklin Land Trust), Dwayne Breger (UMass Clean Energy Extension), Martha Thurber (Mohawk School Committee), Kate Albrecht (Plainfield, MA), Martha Taft-Ferguson (Buckland Board of Health), Phoebe Walker (FRCOG), Glen Ayers (Greenfield, MA), Helena Murray (UMass), Richard Warner (Buckland Board of Health), Bill Copeland (Masson Ridge)

### **1. Introductions**

P. Sloan commenced the meeting. A round of introductions followed. W. Ferris announced that she will be leaving the Franklin Land Trust, and that M. Patterson will take her place working on the project. B. O'Connor thanked Ferris for her work, and a round of applause followed. J. Sinclair announced she will be recording the meeting.

### **2. Review and Approval of July 17, 2018 Meeting Notes**

P. Sloan asked for a motion to approve the Meeting Notes from the July 17, 2018 Advisory Committee meeting. K. Hanlon motioned to approve the Meeting Notes of July 17, 2018. A. Schwenger seconded the motion. The motion passed unanimously. H. Art abstained.

### **3. Presentation on the Preliminary Findings of the UMass Wood Heat & Air Quality Study**

P. Sloan introduced Professor Rick Peltier from the UMass Amherst Department of Environmental Health Science, who presented preliminary findings from the air quality testing completed over the last two winters. R. Peltier provided a background on the project. His department was charged with looking at the air quality effects of commercial scale pellet boilers that fall between a small home boiler and a large industrial system, which are sometimes used in government buildings and schools. The project tested what is coming out of the stacks and how it affects the surrounding community. The testing resulted in a large amount of data, which will take time to fully analyze in the lab. A mobile truck was used to do the testing. The project was supported by MA Department of Energy Resources, the MA Clean Energy Center, and UMass Clean Energy Extension.

All primary sampling has been completed over the course of two winters, from March 2017 to May 2018. Six different sites were tested, all located in rural areas of western MA. All sites included a pellet boiler, and one site in Rowe included both a pellet boiler and a diesel oil boiler in opposing directions from the truck. The truck was set up for 2-4 weeks at each site, and sampled continuously and autonomously. The truck was running 24 hours a day during the testing period. The instruments used are the same that EPA uses at its air quality monitoring sites. A wide range of chemicals were measured in the truck, and even more can be measured in the lab.

Peltier presented an overview of the truck and how it was placed at a site. When the wind was blowing in the wrong direction, or when there was little wind, the truck was not measuring effects from the boiler, but this is clear in the data so it can be segregated out. Impacts from the boiler were measured during times that the wind was blowing stack emissions towards the truck. Peltier showed a series of polar plots and time series plots that help illustrate the data. Different patterns emerge for different chemicals. A challenge is that there are other combustion sources at the sites, like school buses. Peltier explained that pollution from fossil fuel combustion versus wood combustion can be teased apart in the data and his department is starting to work on this.

A limitation of the study is that it does not measure the impacts to downwind air quality. Analysis of metals in the data will also be done in the lab, as these can be dangerous to public health, and additional compounds will be looked at. Peltier emphasized that these measurements were done in a complex environment, with different combustion emissions mixing together which can cause greater or lesser toxicity depending on how components react with each other. Peltier concluded that preliminary results show that pellet boilers operations result in a relatively small amount of particulate matter, and in some locations carbon monoxide, but that they are on par with other heating appliances. He emphasized there is still work to be completed and the results are not final.

Peltier answered questions from Committee members. A question was asked about how topography was taken into consideration. Peltier said many hilltowns suffer from inversion where pollution stays at the surface. This data can be pulled out and analyzed. He noted he is happy to meet with Select Boards to discuss the study findings. Peltier clarified that a distillate boiler is one that burns #2 fuel oil. A question was asked why other fuels, like natural gas boilers, were not tested. Peltier noted there was limited time and that these types of boilers have been well studied. It was noted that pellet boilers have been tested in labs in order to meet compliance standards necessary to sell them. Peltier noted that this is not the same as measuring emissions in the field for an installed pellet boiler system. Peltier said that the measurements recorded with the mobile truck were within EPA levels for particulate matter. Peltier said data on ambient air quality was collected during the testing and could be analyzed separately, which would be a good project for the future.

Peltier answered questions from the public. Peltier answered a question about taking samples indoors. Peltier reported that no data is available for indoor air quality for different types of heating systems, and this was not included in his study. They did not test indoor air quality, which can be difficult due to so many potential sources of pollution, and it was not possible to park the truck inside. In response to a comment that emissions can have a greater air quality impact if the air is motionless, Peltier said they

will look at the data during low wind speeds, and will compare it to times when the wind was coming from the boiler's direction. Peltier noted that the mobile testing truck did not use cameras to see if there were vehicles nearby that could be impacting the data.

T. Matuszko thanked Peltier for his presentation and asked about next steps. Peltier answered that analysis will continue into next spring, and paper writing will be done in the spring and summer. Peltier offered to come back in the spring or summer to present final results.

#### **4. Understanding the Impact of Forest Management and Land Use Decisions on Carbon Storage in our Forests**

T. Matuszko introduced Paul Catanzaro, Extension Associate Professor at UMass Amherst. Catanzaro explained that his work is to help people make good decisions about their land, including family forest owners who own the majority of the landscape in the region, as well as municipalities, land trusts, and others. A question that has come up recently is how does carbon work in a forest, and how does managing or not managing a forest impact carbon storage in forests. To help inform decisions, Catanzaro is working on an outreach publication with a colleague at University of Vermont to show how carbon works in a forest, implications of forest management and land conversion, and to present recommendations and considerations for management. The numbers presented tonight are preliminary.

Catanzaro explained that there are different carbon pools in a forest, using a beach-birch-maple forest as a model. The two largest carbon pools in this forest type are soil and live aboveground trees. In addition, live below ground matter (roots), deadwood, and litter (leaves, twigs) store carbon. Catanzaro explained that half the weight of a tree is carbon, and that trees pull carbon out of the atmosphere, a process called sequestration. He noted that younger trees that are growing vigorously sequester carbon at a higher rate, while older trees store more carbon as they have had more years to accumulate carbon.

Catanzaro reviewed implications of forest management on forest carbon, based on research of peer reviewed articles. Under a selection harvest scenario where 1/3 of trees are removed, forest carbon is reduced by roughly 17%, with a period of about 5 years needed to return to pre-harvest carbon levels. In a more intensive harvest scenario where 2/3 of trees are removed, forest carbon may be reduced by roughly 30%, with a 10-year period to return to pre-harvest carbon levels. These scenarios assume best management practices are followed that protect soil. Catanzaro noted that while the "in forest" carbon is reduced with a harvest, some of the wood harvested continues to store carbon long term. Based on forest cutting plan data, Catanzaro estimated that approximately 53% of wood harvested in the past 12 years in Massachusetts has been turned into wood products such as building materials that will store carbon for the life of the product.

Catanzaro presented other considerations, including implications for carbon storage in forests elsewhere when wood is not sourced in Massachusetts as well as the resiliency of forests to disease, pests, fires and other natural disturbances that result in a loss of forest carbon. He presented implications of forest conversion on forest carbon, which reduces onsite carbon by at least 56%, with no return to pre-conversion carbon levels. Catanzaro emphasized conversion as the largest threat to carbon in forests, as 70% of Massachusetts forests are owned by private landowners who are making the

decisions on the future of the forests. Catanzaro presented management considerations to promote carbon sequestration and storage, including: working with a forester and using forestry BMPs to protect soil during harvests; maintaining a balance of large, old trees which store more carbon, and young, fast growing trees which sequester more carbon; and extending harvest cycles to 15-20 years.

Catanzaro answered questions from the Committee. There was discussion about how the overall carbon figures would change based on a life-cycle analysis of different scenarios such as forest conversion to solar PV or use of local wood for wood products. Catanzaro noted his analysis only looked at impacts to forest carbon and did not do a life-cycle analysis.

Public comment followed. It was noted that there is a gap in the literature for research on soil carbon and whether carbon is being lost with harvesting. This should be made clear in the presentation. A Committee Member commented that depending on the forest stand, lack of forest management can result in a decrease of forest carbon and that it should not be assumed that all unmanaged forests have the same ability to store carbon. T. Matuszko asked what the next steps are, and Catanzaro said that final outreach materials to landowners will likely be available in the spring.

#### **5. Update on Legislation for the Mohawk Trail Woodlands Partnership and Next Steps**

T. Matuszko explained that most of the legislation has passed. One paragraph is being revised based on suggestions by the Governor relating to the partnership board and how it functions, financial practices, open meeting law and finance law. The changes are moving through the House of Representatives and Matuszko is optimistic it will pass by the end of the year. The next steps are to work with communities on the opt-in provision. Communities need to “opt-in” for the MTWP to proceed. Staff will assist the MTWP Advisory Committee to prepare information materials about the project.

A recommendation was made to include a paragraph in the next quarterly update to get Select Boards thinking about the next step. It was noted that Select Board membership has changed since the project began and work will need to be done to bring them up to speed. D. Rose stated that the USFS was informed that the legislation passed, and staff will have a conference call with the new Chief of the USFS and the regional forester to talk about possible next steps.

A discussion followed about funding, which was cut out of the legislation. T. Matuszko said this is an important element and is being worked on. D. Rose said that the State would not need to commit funding first in order for the USFS to participate, but there does need to be an authorization for money to be put into the MTWP account. P. Sloan noted that at least 11 of the 21 towns need to opt-in to the Partnership in order to move forward. Several comments focused on inviting the broader public to meetings with Select Boards. It was noted that a draft Town Meeting article should be prepared to bring to Select Boards.

J. Sinclair asked about the status of the regional planning agencies contract to continue coordinating the project. T. Matuszko said there is an amendment in process and a new scope of work to go along with it, and that they anticipate getting another contract.

A question was asked about parts of the project that could move forward without funding, versus those that will need funding. A discussion followed about the draft budget and whether it is a directive or a recommendation of how the money will be spent. T. Matuszko said the budget will need to accomplish the purpose and goals of the legislation.

The next steps are for staff to work with Committee members on how to do outreach to their towns. The timeframe for opting in is expected to be next Spring or Summer, since it is anticipated that most towns will bring a vote to Town Meeting. However, Select Boards can also vote to opt-in.

**7. Committee Member Comment/Public Comment/ Other Topics not reasonably anticipated 48 hours in advance of the meeting /Adjourn**

Public comment and Committee Member comment was heard.

The next MTWP Advisory Committee meeting is tentatively scheduled for January 8, 2019, with a snow date of January 16, 2019.

The meeting was adjourned.