

## **Urban Forest Climate Resiliency Master Plan Public Forum**

Monday, December 14, 2020, 6:00 PM

Zoom Virtual Meeting

**Committee Present:** Nancy Heller (Chair), Elizabeth Erdman, Roberta Schnoor, Richard Murphy, Clara Batchelor, Ken Goldstein

**Staff/Project Team Present:** Erin Gallentine, Tom Brady, Katie Weatherseed, Kyle Zick, Darya Barar, Indrani Ghosh

**Guests:** See attached.

### **Welcome/Call Meeting to Order**

N. Heller called the meeting to order and welcomed everyone to the third public forum for the Urban Forest Climate Resiliency Master Plan.

The Committee reviewed the minutes from September 14, 2020. A roll call was taken. All in favor.

### **Project Review and Status Update**

Erin Gallentine, Commissioner of Public Works, welcomed everyone to the meeting and introduced herself. She described the work accomplished to date on the Master Plan, including the assessment of the urban canopy in Brookline, and noted that the Project Team has gained a great amount of insight into the priorities and concerns of the community. She thanked everyone for their participation. She noted that the goals of the project are outlined in every presentation and are available on the project's webpage. She stated that the project is in part funded through a Commonwealth of Massachusetts MVP Action Grant, and communicated her gratitude for their support. N. Heller asked if the presentation could be made available to the Committee and others. E. Gallentine responded that all of the presentations are shared on the project's webpage.

She outlined the overall goal of the project: to proactively and equitably prepare for and protect against the impacts of climate change on public and private trees. E. Gallentine reviewed the agenda for the evening, and provided a general project update. She thanked Mothers Out Front for their assistance in encouraging broad participation in the community survey, and noted that K. Weatherseed would provide some more information on these results this evening. She provided an overview of the project timeline and spoke briefly to the upcoming public meetings.

### **Community Engagement: What We've Heard From the Public to Date**

K. Weatherseed, Project Manager, stated that a community survey was developed to hear directly from Brookline residents about their priorities and concerns regarding the urban forest. The survey was open for just over three months, and received 408 responses. She thanked everyone who helped to circulate the survey, including Mothers Out Front.

K. Weatherseed stated that a majority of respondents were not active participants in Parks and Open Space Division projects and were not members of Environmental Advocacy groups, meaning that the Project Team received input from residents that they do not typically hear from. She noted that while most respondents were residential property owners, the Project Team also received input from renters, and

tenants from public housing and assisted living facilities. People from all precincts and all age groups were represented, however very few respondents were 34 years or younger.

K. Weatherseed reviewed general perceptions of the urban forest: while most respondents believe the health and quality of Brookline's canopy to be either good, very good, or excellent, a majority of respondents do not believe that Brookline's canopy is consistent in its health and overall quality. She reviewed the issues shown to be of greatest concern to the respondents, the top three being climate change, natural gas leaks and budget limitations. She then reviewed the respondents' priorities in bettering the urban forest, and explained that the results indicated that the chief priority was planting more trees. She reviewed several repeated written responses, including proactive care of newly planted street trees, the need to interplant new trees amongst older trees to prepare for the next generation of canopy, and to continue to work with national grid to identify and address gas leaks.

She then discussed the responses respondents gave regarding private trees. The survey inquired if respondents encountered particular obstacles regarding private tree planting and maintenance, and survey takers most commonly stated that they don't understand what regular maintenance needs to be done, there is a lack of available land and there are prohibitive costs. Most respondents were strongly in support of private tree protection and management measures, particularly regulatory measures, incentives, and education.

In regards to the Back of Sidewalk Planting program, few respondents were familiar with the program, but a majority were interested in participating in the future. K. Weatherseed outlined the main takeaways from the survey, including the need for enhanced outreach and communication, including educational opportunities, community engagement, and the need to build partnerships with organizations and environmental advocacy groups.

K. Weatherseed stated that the team organized several socially distanced site visits at four Brookline Housing Authority properties where she talked about the project with people who were passing by and answered any questions they may have. The main takeaways were that many residents did not feel that the health and quality of the canopy on these properties were consistent with the canopy seen throughout Town, and several of the residents relayed that they feel that tree planting care and maintenance is largely done on a volunteer basis by residents.

#### **Discussion of Best Management Practices, Regulations and Policy**

K. Zick of Kyle Zick Landscape Architecture, Inc. introduced himself and briefly described his firm. Darya Bara of Bartlett Tree Experts and Indrani Ghosh of Weston & Sampson also introduced themselves.

K. Zick reviewed all the different manners in which trees exist on "Public Land", including state land, federal land, and Town land. He noted the regulations that apply to public trees, including Massachusetts General Law Chapter 87, MEPA, Brookline Wetlands Bylaw, the Wetlands Protection Act, and Rivers Protection Act. K. Zick proceeded to give a brief overview of all of these regulations. He noted which public lands are impacted by which regulations.

K. Zick then noted what constitutes private land and the corresponding regulations. He mentioned the Stormwater Bylaw, and noted the Wetlands Protection Act, Rivers Protection Act, and Brookline Wetlands Bylaw, which also impact private land. He described the local tree protection regulation precedents, including those belonging to the municipalities of Arlington, Cambridge, and Newton.

He noted that, since the year 2000, two Committees have been established to study the possible benefits of a tree protection ordinance. The Select Board's Committee on Tree Protection envisioned a two-step process: 1) to revise the Stormwater Management Bylaw to include protocols for removal of private trees

greater than 32” diameter at breast height (DBH) or multiple trees totaling 32” DBH, and 2) to develop a Site Plan Review model that incorporates measures for tree protection.

### **Review of Brookline Operations, Budget & Staff**

D. Barar reviewed the breadth of responsibilities of the Forestry Sector. D. Barar noted that the Town has three full time forestry employees, including a half-time Town Arborist/Tree Warden (whose time is split as the Conservation Administrator), a Forestry Supervisor, and a Forestry Zone Manager/Groundsperson. She stated that all three persons are Certified Arborists and have a Massachusetts Pesticide license. She noted that the Town has contracted tree maintenance crews who are responsible for pruning, tree removal, stump removal and emergency work. D. Barar outlined the benefits and challenges of contracted tree services. She then described services provided by the in-house crews, including pruning, planting, tree removal, assessments/inspections, emergency work, and installation of holiday lights, and noted the benefits and challenges of in-house tree services.

She stated that the Town of Brookline plants 350 to 400 trees annually, and noted that the Town abides by the slogan “Right Tree, Right Place, Right Time”. She relayed the importance of choosing locations that will sustain a tree for the long term. D. Barar described several tree planting and watering techniques which can be utilized to improve establishment and survivability of new trees, such as Silva Cells. She also described the Town’s follow-up care following planting, including the distribution of door hangers intended to educate abutters and encourage stewardship. D. Barar noted that Brookline’s residents are the Town’s eyes and ears and are integral to helping maintain a healthy canopy.

D. Barar stated that the Town oversees more than 50,000 shade trees, and described the ongoing management and maintenance of public trees, including a 7-year pruning cycle, and listed areas that require additional or more frequent attention. She noted that the Town utilizes an Integrated Pest Management program, and stated that Brookline most often utilizes cultural practices to address pests and diseases. D. Barar described the Town’s tree risk identification and mitigation programs, which are woven into everyday activities and documented in the Town’s maintenance management system. She then discussed the Town’s emergency response protocols, noting that all calls are directed to the Town Arborist and that it is the Town Arborist’s responsibility to assess the emergency and determine whether to utilize in-house crews or mobilize contracted crews. D. Barar reviewed a case study of Russett Road tree failures and the corresponding Town response.

K. Zick gave an overview of the Forestry budget for Fiscal Year 2020, outlining the operating budget and capital budget. He noted the impressive amount of work that the forestry element accomplishes each year, and outlined several performance indicators as set forth in the 2019 budget book. He showed a graph depicting a generally unchanged forestry landscape services budget over approximately 12 years, and the rapidly increasing services contractual cost. He explained that the stagnant forestry landscape services budget and rising cost of contractual pruning hours ultimately affords fewer contractual hours of pruning. K. Zick showed the street tree removal contractual cost for trees of different sizes, which has also increased steadily over time.

K. Zick stated that emergency response costs for snow events come out of a snow-specific budget which is flexible and can be exceeded, if necessary. All other emergency responses (storm events, high wind events, or other tree emergencies) come out of the limited forestry budget and impacts the ability to adhere to pruning cycles. He added that climate change projections predict that the frequency and severity of storm events will increase over the coming years, placing an even greater strain on the Town’s forestry budget. K. Zick stated that D. Barar has reached out to various benchmark communities, such as Cambridge, Boston, and Newton, to see what they do different and how Brookline might compare.

## **Regional & National Responses to Climate Change**

I. Ghosh provided a glimpse of the different scales of climate change intervention, noting that a multi-scale approach is necessary. In regards to international efforts, she noted the work that the Intergovernmental Panel on Climate Change (IPCC) does to provide regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation. The United Nations Framework Convention on Climate Change constitutes a parallel effort, and has tied 189 parties out of 197 to the Paris Climate Agreement. In terms of national efforts, the USDA and U. S. Forestry Service have developed a sustainability scorecard to ensure that the Forestry Service is moving towards more sustainable outcomes supported by the Forest Service's Sustainability Action Plan for land stewardship. She described the statewide efforts being undertaken by the Commonwealth, including the Climate Resilience Design Standards Tool developed by the Executive Office of Energy and Environmental Affairs and the Massachusetts Emergency Management Agency.

She also mentioned several ongoing regional efforts such as the Somerville Green Factor Zoning which has recently been adopted by the City of Somerville. The goal of the initiative is to prioritize landscape elements as part of site design that would contribute to the reduction of stormwater runoff, the improvement of urban air quality, mitigation of the urban heat island effect, and improved well-being of residents and visitors. She then gave a brief overview of a similar effort undertaken by the City of Cambridge, Cool Factor Zoning, which came about as a citizen's petition and requested that the city look at ways to encourage the use of resilient zoning practices. Through that petition, a resilient zoning task force was created and there have been several meetings and a draft cool factor has been proposed.

## **Discussion of Preliminary Recommendations**

K. Zick noted that there is still plenty of time to provide comment and feedback on these recommendations and a great deal more content will be shared for public comment later in the spring. He identified preliminary recommendations in the following categories: policy/regulation, operations, and regional/national. In regards to policy/regulation recommendations, he noted the need to continue to educate the public and landscaping/tree companies on the Stormwater Bylaw's recent amendment regarding tree protection, collaboration with public partners that own land within Brookline to manage land in a manner consistent with Town goals, and the continuation of the development of the Site Plan Review model. Regarding operations, he listed a number of recommendations including the need for increased funds for the care and maintenance of existing trees, the importance of considering additional in-house staff, the need to increase planning on public property where appropriate, and the need to enhance record keeping protocols. Lastly he outlined several regional/national tree canopy recommendations, including the need to develop and maintain an ongoing dialogue with regional stakeholders on urban forestry goals, objectives, and projects to increase tree canopy Town-wide (particularly in areas most susceptible to climate change), to continue to work with the EEA and apply for additional grants to implement action items, and to continue to attend seminars, webinars, etc. to ensure sufficiency in forestry best practices.

## **Open Discussion/Questions/Feedback**

E. Gallentine thanked K. Zick and the presenters for their work. K. Goldstein thanked the project team, and suggested several additional federal properties for K. Zick to consider, including the J.F.K. birthplace, and also noted that the Erosion and Sediment Control Bylaw was intended to serve as an interim measure. K. Goldstein then proceeded to inquire how Brookline's budget compares with similar communities, and noted how valuable it would be to look at a budget comparison on a population basis or a square miles basis. K. Goldstein voiced his interest in the cool zoning initiative being undertaken by Cambridge. E. Gallentine stated that while other communities may be of a similar size, it is unlikely that they have the same number of trees as Brookline, and suggested that the project team should look at the assets that the Town has and assess if Brookline is adequately staffed to maintain them. T. Brady agreed and added that the

consultant should not only consider the number of trees, but also where the trees are located (street trees as opposed to open space trees, etc.).

C. Batchelor asked how heavy forestry equipment, such as cherry pickers and chippers, factor into the limited forestry budget. E. Gallentine replied that for the purposes of the presentation only the operating budget and capital budget were discussed. Existing assets, such as the number of saws and other supplies, were not included in the numbers presented tonight, but added that those supplies definitely have value and are maintained throughout the year. She added that the entire Town fleet, with the exception of the Fire Department, are all managed by fleet services and Public Works. C. Batchelor inquired about the process when a piece of heavy equipment needs to be replaced and where those expenditures come from. E. Gallentine replied that the Department of Public Works has an annual line item to systematically replace vehicles in the entire Public Works fleet, and there is a plan that looks at all of the equipment and the rotation cycles for replacement. She stated that the project team can include this information in the report if the Committee thinks it would be clarifying.

N. Heller inquired about the Russett Road case study and whether any analysis was done to learn about potential gas leaks that may have contributed to tree failures. T. Brady responded that soil samples were pulled from multiple locations across Russett Road as part of the investigation. He added that before the Town made the decision to remove the trees and as part of the overall work on Russett Road, the entire gas line was completely replaced and the new trees were installed following the completion of that work. N. Heller asked if the project team could verify the date listed for the U.S. withdrawal from the Paris Climate Agreement. I. Ghosh responded that she would confirm the date that the U.S. officially left and would correct that slide before publishing online. N. Heller noted her interest in the zoning efforts undertaken by Cambridge and Somerville.

R. Murphy noted the rising temperatures accompanying climate change, and asked whether the Master Plan would identify the trees that are currently in the Town's inventory and susceptible to warmer temperatures, and provide recommendations of trees that are more adaptive. E. Gallentine responded that this is something the Town is already thinking about, and is a factor when considering what trees are planted in Brookline's parks and public ways. K. Zick commented on the changing plant palette for the region, noting that over the span of his career, there are now trees that he can plant in New England that he couldn't plant at the beginning of his career. T. Brady agreed with Kyle, and added that Brookline was very forward thinking decades ago and that he is continuing to build on their work, and planning ahead for the changes that we know are coming.

R. Schnoor noted that the Town was looking into instituting an expanded site plan review program. She inquired about the possibility of this site plan review program in tandem with zoning bylaw changes. E. Gallentine stated that the matter is something that should be discussed with the Director of Planning and Community Engagement.

E. Gallentine opened the hearing to public comment. She noted that Marilyn Ray Smith stated in the chat box that the United States filed its intent to withdraw from the Paris Agreement on November 4, 2019, and on November 4, 2020 officially withdrew. Cathy Corman thanked the project team, and inquired about the recommendation to increase the number of staff in terms of tree maintenance and pruning. She asked if there has been any thought to job descriptions and redefining the positions in a way that is forward looking, and perhaps relies less on outsourcing for specific jobs and labor. E. Gallentine replied that this is something the Town is evaluating internally – particularly the capacity of what could be accomplished with an additional in-house crew. She stated that the contractor does have some equipment that the Town does not own, so an analysis on equipment competencies and overall value is required. She asked that C. Corman reach out to her with any thoughts on specific job descriptions.

Arlene Mattison stated that K. Zick referred to the fact that Brookline's in-house crew conducts street tree planting. She noted that she has seen many of these young trees not receiving enough water and ultimately needing replacement. She asked if the project team could speak to the size of trees selected for planting. T. Brady responded that the Town prefers to plant 2.5 to 3 caliper inch trees that are balled-and-burlapped. He discussed the preferred stock of neighboring communities, which tend to be smaller and not as hardy. A. Mattison inquired about how selecting these larger trees impacts the budget. T. Brady responded that he will order the trees for the following season very early on so that the nursery has cost certainty. A. Mattison asked K. Zick whether this strategy is particularly unique. K. Zick responded that this is an exception to the norm. He stated that he more typically sees a contracted approach, with balled-and-burlapped trees that are 2.5 to 3 inches in size. E. Gallentine added that over time, the Town brought tree planting in-house as a cost effective measure. She noted that the in-house crew takes pride in the trees they plant and do a phenomenal job.

Elizabeth Erdman thanked the presenters for their work and stated that in regards to climate resiliency, there were neighborhoods that were identified as more susceptible to climate change and needing more trees, but have high rates of tree mortality. K. Zick responded that E. Erdman is correct that the commercial districts are the most vulnerable areas, but also present some of the most challenging conditions for tree survival. To address this, there are several techniques that can be utilized. He noted that there has been success with structural soil in these areas, raised planters with protective fencing, and limiting pedestrian and dog use. He also noted that Silva Cells could be useful in these environments, but noted that sometimes Silva Cells do not work well in places with too many utilities. He stated that a Complete Streets approach needs to be taken.

E. Gallentine stated that there was a comment in the chat box about ameliorating existing tree heaves in sidewalks and preventing future heaves with particular species and location choices. She stated that one of the Division's goals is to prevent those heaving sidewalks in the future. She asked if K. Zick had any solutions that he might suggest aside from Silva Cells. K. Zick stated that there is no blanket answer, and it is entirely dependent on the species and adjacent land use. He noted that this goes back to the mantra of "Right Tree, Right Place, Right Time".

R. Murphy noted that there is a "Cool Roofs" program in New York City where reflective material is used on flat roofs to reduce heat. He inquired if this is something that could be utilized in particularly hot areas to minimize the stress on trees. K. Zick stated that it is a great program which would certainly mitigate heat and benefit surrounding trees.

N. Heller inquired about the implementation of the Master Plan's recommendations and goals. E. Gallentine stated that the goal of this Master Plan is to develop actionable items and to identify priorities. She added that these would be Public Works initiatives, and would be implemented over time in the Public Works budget or with grant funding. She stated that the Plan and recommendations should provide a clear pathway forward.

Sarah Tyo inquired whether there are any tree ordinances in Brookline in regards to construction. E. Gallentine stated that there are projects where the Town has a good amount of influence on tree protection, and smaller projects where it has little to no influence on tree protection. T. Brady stated that this matter goes back to the Erosion and Sediment Control Bylaw, and whether a construction project is deemed a minor or a major project. He added that he hopes this Plan will give the Town more tools to protect those trees on private properties.

**Next Steps**

N. Heller suggested that the Committee meet to discuss the content of the plan, and make any recommendations and changes before the fourth public forum. It was decided that a meeting would be scheduled sometime in February or March.

E. Gallentine wished everyone happy holidays and thanked everyone for their time and their input. She stated that people should contact K. Weatherseed with any additional comments or questions.

**Adjourn**