

Natural Systems Working Group Meeting

December 7, 2017

Attendance

- Vanessa Boukili, City of Somerville
- Julie Wood, Commission on Energy Use and Climate Change
- Amber Christoffersen, Mystic River Watershed Association
- Karl Thidemann
- Tori Antonino
- Micah Davison
- Arn Franzen, City of Somerville
- Hannah Payne, City of Somerville

Solutions the group is most interested in seeing implemented

- Increase tree canopy
 - Education and support for residents
 - Establish best practices (for City, developers, and residents)
 - Focus on areas that lack trees
- Sea level rise and storm surge protection along Mystic River (berm and dam improvements)
- Stormwater management with green infrastructure
 - Establish storage requirements
 - Stormwater utility
 - Depaving

Individual feedback

- Amber
 - Berms along Mystic River. Flood protection at Draw 7 requires a lot of coordination with MA Department of Conservation and Recreation. Concerned about a 7 foot berm that is 1.5 miles long – it would make sense to be more site specific. Don't want to wall off the river. The river needs to be a resource that people can connect with. Park land should be first line of defense. Could berm be at the back side of Draw 7 to protect Orange Line? This would allow the park to flood but would protect assets behind the park.
 - Tree canopy: community tree planting – implementation details matter. Tree canopy is so critical for active transportation. Trees also reduce energy use, provide stormwater benefits, and increase biodiversity. Heat island doesn't get as much attention as flooding but it should. Mystic is most paved watershed. Increasing tree canopy can help with all of these issues.
- Julie: many solutions are site specific/focused on individual properties. Adaptation should happen at that scale and it's good to encourage property owners to do what they can do, but the City does need to look at City scale or neighborhood scale instead of just armoring individual

properties. Not everyone is going to take action on their own. The berm is an example of a city wide strategy. Don't love the sound of a 7ft high berm. Can park be flooded? Inundation is okay in some areas. Where are the critical nodes that need hardscaping? Are there areas where we can use storage in one area to protect a larger surrounding area? Stormwater management – what are the requirements for new development and redevelopment. Should push property owners to do as much as they can. Need to have system level view. Having an understanding of how water moves through city is helpful.

- Amber: concept of a stormwater utility could help with this.
- Stormwater plan would be helpful and having a stormwater model is good. Will see differences between models and analysis once we have more detailed model.
- There is a limit to what gray infrastructure can do. It is so expensive and disruptive. Will have to do surface retaining. Stormwater utility could be mechanism to increase stormwater detention on private property.
- Micah: Stormwater utility – seems like a sensible idea. How would revenue be captured? Can it be revenue neutral? Set up so most people don't have to pay, properties that store a lot of water get a rebate, and properties that have a lot of runoff have to pay a lot. Revenue neutral is better for residents but then City doesn't have dedicated funding. Which properties have more impervious surface and which have less? Is there any correlation with income? Will "tax" get passed on and what does that mean for affordability? How do you measure pervious surface? If using satellite imagery – would need an appeal process. Is detention equal to retention on a property? Fees work best in concert with other initiatives like education and programs to help properties improve performance. Incentives would be needed.
 - DC has a stormwater credit trading program—look at this for example.
- Vanessa: Tree canopy – promote free street tree program – this is what the City already does. Mapping priority areas and target vegetation intervention with volunteer tree planting—is this intended for private or public land or both? Thinking about both private and public: need good data on where there is tree canopy and where there isn't. Hoping to finish mapping of public trees next year. No data on private trees. Vanessa has a plan to do that analysis if grant money comes through. Taking aerial view of Somerville to map tree cover. Planting: not sure how feasible volunteer tree planting is for extensive planting projects. Currently working with Mystic River Watershed Association to plant trees with volunteers along streets. Volunteer planting takes a lot of work. Need other equipment besides trees (soil, DPW workers to cut sidewalk if in public right-of-way, shovels, etc.). Dig safe permits are needed for street trees. Long term maintenance plan needs to be identified. Long term – pruning needs to keep trees structurally sound. Takes a lot of money and people power to plant and maintain trees. For private property, there are liability issues with city employees going on private property, but could do a giveaway program with information on how to plant and maintain trees on private property.
 - Question: Any tree planting at the schools? A: There are prioritized school yard projects for whole park redesign, which include new trees, but because school yards are such active spaces, they aren't good for planting lots of trees.
- Karl: struck by height and length of berm – seems like it would cost a lot.

- Tori: Should focus on regenerating the ecosystem. Can we regenerate the Mystic River ecosystem? Would that help with flooding and compliment the berm? Idea to create a “Wild Space” type for civic spaces – places that don’t get developed and provide ecosystem services.
 - Question: what would access be? Tori: doesn’t need to be for people but could have a trail through it. Could the space along train tracks be suitable wild space and serve as a pollinator corridor? Plant trees to interact with each other. Think of tree canopy top to bottom – will help with stormwater management.

Discussion

- Green roofs
 - More familiar with green roofs using succulents. Is there a way to bring in more habitat? Maintenance of green roofs is hard. Don’t always have a successful trajectory.
 - It’s possible to have different species on roofs and urban agriculture? Meadow species and smaller trees also can be on green roofs.
 - Can green roofs be used as a civic space?
 - Incentivizing the development of green roofs is key.
 - Proposed new zoning does have a Green Factor requirement– properties are required to have certain green space value. Green roofs qualify. Properties are scored based on features and have to have various scores. What to do if you exceed GAR? Are there any incentives for going above and beyond?
 - Using roof space is an opportunity – we have a lot of it. Rooftops should be viewed in context – some roofs might be more suitable for other uses: blue roofs (hold water), white roofs, or solar panels.
- Tree canopy solutions - equity
 - Issue with so many rental units. Incentives have to come back to the landlords. How do you target them? Landscaping does increase property values.
 - Instead of thinking in terms of fines, have payments go towards getting something that improves your property: instead of \$50 fine, \$50 gets you a rain barrel and help installing it.
 - Difficult to educate renters and have them comply.
 - Cultural competency with trees varies. Different communities view trees very differently. Not everyone likes trees. Some view trees as a security issue or are worried about a tree causing damage to property. Not everyone understands the benefits that trees provide. Create outreach materials that explain how great trees are and what to do if you see an issue with a city tree. Tree Committee could get involved with outreach.
 - City can’t get involved on private land issues. Would property owners be less likely to cut down a tree if they had more information?
 - Tree ambassadors for planting: labor intensive.
- Does the city keep track of when property owners pave? There is a minimum green space requirement, is this enforced?

- Rain barrels – Can we have a project to have high school students install rain barrels? Base on existing snow shoveling program, but extend to year-round opportunities (leaf raking, snow shoveling, rain barrel install, etc.).
- Berm at Draw 7
 - Arn: park is so windy – berm would block wind and make the park more inviting and usable.
 - Would berm just push water somewhere else? Would it come out on Ten Hills?
 - What is capacity to capture and absorb water in park?
 - There are challenges with raising Draw 7 due to pedestrian bridge plans that would connect Wynn Casino to Assembly area.
 - The berm should feel like an amenity, not a barrier.
 - Don't think it should be 7 ft. tall at the river. River should have some natural flood plain. Can we move it back?
 - We do need some livability if we are still living here. That should include having a connection to river.
 - When you get into design of hardscape solution, how can we minimize the hardscape? Draw 7 Park should be floodable. Can we hardscape further from the river?
 - Flood protection should also improve the natural riparian environment.
 - Don't cut people off from the Mystic. This is an environmental justice legacy issue.
 - Don't over engineer the berm and prepare only for the low probability future storm at the expense of other benefits (access to river, design, ecosystem, etc.).