



HEALTH & ENVIRONMENT COMMITTEE

COMMITTEE MEETING

~ MINUTES ~

Tuesday, November 12, 2019

5:00 PM

Sullivan Chamber

Call to Order

Attendee Name	Present	Absent	Late	Arrived
Jan Devereux	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quinton Zondervan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dennis J. Carlone	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Craig A. Kelley	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Alanna Mallon	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

The Health and Environment Committee will meet to discuss the findings of the Urban Forest Master Plan task force.

Present at the hearing were Councillor Zondervan, Co-Chair of the Committee, Vice Mayor Devereux, Co-Chair of the Committee, Lisa Peterson, Deputy City Manager, Owen O’Riordan, Commissioner of the Department of Public Works, Catherine Woodbury, Department of Public Works Project Manager, David Lefcourt, City Arborist, John Nardone, Deputy Commissioner of the Department of Public Works, Andrew Putnam, Superintendent of Urban Forestry and Landscape, Eric Kramer, Principal at Reed-Hilderbrand, Gary Hilderbrand, Principal at Reed Hilderbrand, Stephanie Hsia, Landscape Architect at Reed-Hilderbrand, Matthew Soule, Project Manager at Reed-Hilderbrand, and Dan Totten, Aide to Councillor Zondervan.

Also present were John Pitkin, 18 Fayette Street, Peter Cohen, 11 Donnell Street, Steven Nutter, Executive Director of Green Cambridge, Mike Nakagawa, 51 Madison Avenue, and Jeremy Kepner, 95 Richdale Avenue.

Councillor Zondervan convened the hearing at 5:07 PM and briefly reviewed the call of the meeting. He mentioned that the hearing will be recorded both publicly and privately and also televised. He mentioned that Councillor Carlone was feeling ill and would be unable to attend the hearing.

DPW Commissioner O’Riordan began the hearing with a brief update from the city. Commissioner O’Riordan noted that the city had hoped to have had the report in the public domain by mid-summer of 2019, and apologized for the delay. He said that the report had been posted on the city’s website earlier that afternoon, but the appendices had yet to go up. He said that the primary reason for the delay was that it was a much bigger project than anyone had anticipated at the outset. He said that the report is almost 300 pages long, with another 700 pages of appendices. He said that it is a comprehensive report due to the expertise that the consultants brought to the task, as well as the challenges and questions posed by the public and members of the task force throughout.

Commissioner O’Riordan said there would be at least two more meetings: one with the task force in early December, and then a public meeting. He noted that they anticipate only needing these two meetings, but they are willing to have an additional meeting of the task force if the need arises.

Commissioner O’Riordan said that this is a project that has been data-driven, based in science, and has incorporated a significant amount of community input. He noted that there is an enormous amount of information in the report. He said they have involved soil scientists, climate scientists, arborists, engineers, planners, and communication and graphic design teams on this report. The consultants used LiDAR data, GIS information, and ground-truthing from over 200 sites. He said that this is all being done in conjunction with Envision Cambridge, the Climate Vulnerability Assessment, and the Climate Resiliency Task Force. He said that they are proposing to do something slightly different once the current ordinance sunsets in March 2020. He said he thinks their proposal will encourage people

to replant if they do end up taking down trees. He said that regulations on private property are very challenging and more community engagement is needed.

Erik Kramer of Reed-Hilderbrand gave a presentation. **The presentation is attached to these minutes.** Erik reiterated that this report builds on the work of the vulnerability assessment and Envision Cambridge. The goal is to understand the risks to the urban forest and model and propose alternative ways of responding. There are a broad range of proposals: policies, practice, education, and outreach. He said the task force was an incredible part of the process. They met together 11 times over the course of a year and also had two public meetings. He said that other cities are looking to Cambridge as an example, and the city has made an unparalleled commitment.

Mr. Kramer noted that the task force was made up of many different groups, businesses, and institutions within the city.

Mr. Kramer began discussing the findings of the report. In 2009, based on UVM analysis, the city was 30% covered by canopy. In 2018 it has come down to 26%, an average loss of 16.5 acres of canopy per year. 2030 projections could be as low as 17-21% canopy if nothing changes.

Mr. Kramer said that there is not a consistent pattern throughout the city, and there is not an equitable distribution. He said that some neighborhoods have 37% cover, while others have just 13% cover. He said there are many reasons for this. He said it has to do with urban form, it has to do with how these blocks are constructed, and he emphasized that it is not equitable in terms of the population.

Mr. Kramer also said that as of 2015, 58% of the city's canopy is on private property. He noted that it is very challenging to engage with private property owners on this issue. He also said that 72% of the loss since 2009 has been on private property. So where loss is happening is disproportionately distributed among the land use types in the city.

Mr. Kramer also noted other interesting findings. He said that on average in the city, in places where property lines are built right up to the sidewalk (zero setback) those trees are in much worse condition than even just a setback of 0-5 feet or a 5+ foot setback.

Mr. Kramer noted that in a city like Cambridge, urban canopy tends to go through intentional cycles of boom and bust that are correlated with development booms throughout history.

Mr. Kramer said they studied a series of scenarios and made projections for 2030, 2050, and 2070. They factored in climate change, existing replanting and growth rates, loss rate, and they looked at the possibility of increased pests and diseases. They also looked at a flooding event and a drought event. They found a number of different possible scenarios. They found that the species composition in the forest will probably change. Flooding of the kind projected in Cambridge is not a huge impact overall, it is localized. But the risk of drought has a citywide, moderate impact potential.

Mr. Kramer began talking about findings vs approaches. He highlighted the values and core principles that underlie the suggested next steps. The first core principle is to understand the forest as a living system. There is no static steady state, it's always changing. He said it is important to zoom out from any individual tree and understand that the way to look at this problem is to look at it forest-wide. He said that another core principle is to value the forest as a public resource. The forest provides shade that isn't owned by any particular individual or property. They suggest looking at it as civic infrastructure with shared value. He says it is important to invest in the public realm: the impact of the canopy is felt most prominently in the places we share, like parks. He said that we all share a responsibility for maintaining a healthy forest. Since the city itself does not own most of the land or trees, everyone has to come together around the shared goal.

Mr. Kramer shared the breakdown of three different ways to think about the goals. He said there are equity goals, resilience goals, and shared responsibility goals. He noted that the DPW Commissioner asked them to look very hard at what is truly possible, and the consultants really believe that it would be possible to get back to that range of

30% canopy cover. He emphasized that this is not a single target because the forest should be viewed as a dynamic system.

Mr. Kramer spoke further about equity goals. He said we should set a goal of making sure every neighborhood has at least 25% canopy cover. He said that means some neighborhoods need planting, and others need retaining. He said we need to identify priority planting areas where people are at risk, especially around heat islands. He noted that it will be harder to address this in some neighborhoods because of limitations created by the urban form. He said we need to both curb the rate of loss and plant new trees. He said that without changing the rate of loss, the city would have to plant 4,000 new trees per year. If the city can curb loss by 50%, only 2,750 trees would need to be planted annually to reach the goal range.

Mr. Kramer spoke further about shared responsibility goals. He said that 10-15% increase in canopy cover in the public right of way is a good target. He said there is a lot of opportunity for planting more canopy in the residential areas.

Mr. Kramer spoke further about resilience goals. As a thought experiment, the consultants looked at what would happen if 12,000 new trees were planted along the right of way, and they all matured, and they all survived. In that scenario, which is unrealistic, canopy cover would still not get back to 30%. This problem cannot be addressed in the right of way by itself. He says that despite that, planting those 12,000 trees along the corridors changes the temperature by up to 4 degrees, and creates additional connectivity. 25% of the city would experience a change in temperature by half a degree. The consultants think that this is a very palpable change.

Mr. Kramer spoke about another resilience goal: to diversify the species in the forest. He pointed out that Cambridge's canopy has lots of Norway maples, honey locusts, and pin oaks- they make up 1/3 of the entire forest. Due to the lack of diversity, a disease in one of these species could be devastating, and we need to diversify to avoid these risks. He says that long term, the goal should be that no more than 10% of the canopy should be of any one species, no more than 15% should be of any one genus, and no more than 30% should be from any one family. That diversity will lead to resilience from pests and disease.

Mr. Kramer said that all of those large ideas led to a matrix of 47 strategies, all of which either curb loss, grow canopy, or both. He said that the biggest strategy is redefining a significant tree to be 6 inches at diameter breast height. He said they also looked at some zoning changes, to change setback requirements and open space requirements. These changes are being integrated into the work of the climate resilience task force. He mentioned design strategies including the need to look at planting bare-root trees in expanded and enhanced tree wells where possible. He said that in some cases the city may have to reduce the roadway or create additional planting areas in parking spots, but it is always important to create complete streets and balance other priorities like bike lanes. He highlighted some best practice strategies related to pruning and soil management programs and expanding the watering program. He suggested establishing a gravel-bed nursery that widens the range of time during which trees can be planted. He mentioned strategies around education and outreach and noted that this is an important area because the public is being asked to make big philosophical changes. So communicating the reasons behind those changes is important. He said it is important to help people understand how to prevent pests and diseases, engage residents more with the urban canopy, and publish annual reports to keep people updated on progress.

He said that there needs to be a comprehensive review every 5 years.

Mr. Kramer continued the presentation by discussing the city's Tree Protection Ordinance, specifically. He said the consultants recommend that everyone should be subject to the Tree Protection Ordinance. He said that voluntary removals should incur a fee that reflects the value of the lost shared resource. He said that mitigation requirements should be proportionally higher for larger trees. He said the city's oldest, largest trees should have special protection. He said the process should be simple and objective, especially for small projects. If something is already going through the special permit process, then the process can be more stringent. He noted that right now the fees are all equal, but all trees are not equal and fees ought to be computed based on the particulars of the tree-like species and health. He said the process needs to be equitable, and the costs cannot be borne by people who cannot afford it. He said it is important that we do not disincentivize new planting on private property, and it is important that we don't just make it about the money: on-site replanting is critical.

Mr. Kramer finished the presentation by summarizing the proposed revisions: all property types should be under the jurisdiction, the scope should be expanded, largest trees should be completely protected, trees should be appraised more accurately using the trunk valuation formula, there should be an equitable application, and it should encourage replanting on private property. Mitigation funds should not only go to planting on public property, but the city should also find some way to use that money to plant on private land.

Councillor Zondervan thanked Mr. Kramer for presenting and opened up the floor for clarifying questions.

Vice Mayor Devereux said she found the work impressive and asked about bare root trees.

Mr. Kramer explained that some species of trees acclimate better when transferred without any soil (i.e. with “bare roots”) because there can be an incompatibility between the soil in the root ball and the soil they are planted into. In these cases, planting directly into the soil medium without a dirtball can be more effective. He said that having a bare root nursery would allow the city to widen the planting window each season and plant more trees.

Vice Mayor Devereux asked how many bare-root trees the city’s new gravel nursery at Fresh Pond might be able to accommodate.

Andrew Putnam, Superintendent of Urban Forestry and Landscape, replied that the city has just begun clearing the space and they anticipate it will be able to hold 400 trees. He mentioned that a shipment of 180 trees has already come in.

Councillor Zondervan remarked that he was impressed by the presentation as well. He also said that he appreciates the complexity of the issue. He mentioned that in 2016 and 2017 he and other members of Green Cambridge had identified significant small tree deaths due to severe drought. He asked if the consultants had noticed any correlation between that drought period and tree deaths in their research.

Mr. Kramer said that based on the way they looked at the data, year to year conditions were hard to compare. He said he cannot say that they saw a specific signature of that drought period, but they recognize that water is the critical factor for new trees. They’ve also talked about building stronger soil resiliency through liquid biological amendments.

Stephanie Hsia, Landscape Architect at Reed-Hilderbrand said that while they didn’t look specifically at the impact of drought on young trees, they did see that the current species composition is quite vulnerable to drought. That’s why one of the recommendations is to plant more drought-tolerant species, particularly in areas close to impervious surfaces.

Councillor Zondervan asked if the city could provide any data on the impact of the current Tree Protection Ordinance.

Mr. Putnam said that since the “moratorium” was enacted, 349 permits have been applied for. Of those, 298 permits were granted. The majority of those were under the category of dead or dangerous, with around a dozen negatively impacting a structure and just a few canopy health scenarios.

Councillor Zondervan asked if the ordinance was being effective in slowing down the cutting of trees.

Mr. Putnam said he could not say for sure whether the ordinance has been effective.

Councillor Zondervan asked how many specific situations there were where people chose to just pay the fine in order to move ahead with cutting down the tree.

Mr. Putnam mentioned that there were two situations where people proactively applied for a permit to get rejected so that they could pay the mitigation fee. He said they have responded to two non-permitted removals in which the mitigation fee was sent to them.

Councillor Zondervan mentioned that he thinks the idea of annual reports on the canopy would be useful, including data on permits and the number of mitigation fees that were paid.

Councillor Zondervan opened public comment at 5:51 PM and noted that each person would have three minutes to speak.

Peter Cohen of 11 Donnell Street spoke. He said that he loves trees and he tries to be thoughtful about what he does with them. He has planted and taken down many trees over the last 25 years. He said he felt there was a tone-deafness on the part of the consultants, and he is unhappy with the existing ordinance because suddenly there is an expensive and burdensome protocol for removing dead trees. He said he left detailed messages with the arborist that were never returned. He said it is important to use education and incentives to get people to keep or replace trees, or plant new trees. He doesn't understand why he should have to pay \$300 to have a tree certified as dead, rather than spending that same money on a new tree. He urged the council to try to build consensus and invited everybody to come see his property to better understand his situation. He said don't use a stick, use encouragement.

Mike Nakagawa of 51 Madison Ave spoke. He said that we need to make substantial improvements to the Tree Protection Ordinance before buildings take up space that trees could in the future. He noted that if we only focus on cool corridors, the rich people will just buy up those plots so it is important to focus on the whole city. He said he is not a fan of compressing density because it will be harder to shade tall buildings with trees. He said we need to rethink how our streets are laid out. He said we need to change the view of trees as being merely "nice to have" into being "necessary". Overall he likes the recommendations but he has no faith that the city will translate them into effective law because developers always get their way.

Steven Nutter, Executive Director of Green Cambridge, spoke. He said he felt that this is an amazing day and he is very excited. He said the report and presentation were very well thought through. He said this report will be used as an example for other cities around the country. He said he is heartened to see the cyclical graph used, and that there is canopy loss all across New England but it can all bounce back. He felt we can really do this. He pointed out that combined with the net-zero action plan and the zoning resiliency task force, these are three ways to go forward in terms of climate change and sustainability as a city. He said that our collective relationship with the land and our use of energy will determine how we survive. He said that we are a farm, a forest, and a wetland, and we just happen to have buildings on top. He thanked everyone and said that a forest is not something that is outside the city- it is right there on the street. He mentioned that a change in city form may be required.

Jeremy Kepner of 95 Richdale Ave spoke. He said that he represents one of the special cases because he got caught up in the ordinance. He said he has a tree that is an invasive species (Chinese Tree of Heaven) and 39 inches in diameter. He said he highly recommends you plant this tree because it grows very rapidly, ten feet in ten years and it is apparently still a baby. He said he got a quote of \$50,000 to remove it. He said it is currently destroying their driveway. He said he had to go through much effort to assess the tree, and now he is being told he will need structural engineers. He said he would love resources to find a way to keep the tree. He said the city should provide more resources. He wondered if we should have some sort of exemption for invasive species. He said we either need to embrace the tree and the city needs to help him come up with a way to keep it without damaging his property, or he needs an exception.

Councillor Zondervan closed public comment at 6:06 PM.

Councillor Zondervan re-opened the floor for discussion.

Vice Mayor Devereux asked if there was any way we could start using public funds for planting on private property.

DPW Commissioner O'Riordan said that many communities have set up tree trusts. This would provide resources for people who want to plant, but it would get around the anti-aid amendment. He said there is potential to work with the non-profit community to make it happen, and discussions are ongoing. He said that there is no cost to remove a dead tree, other than the cost of the arborist. The city arborist cannot go onto private property.

Mr. Kramer said that the goal is to always encourage replanting first. He said it would not be good to make more hurdles to doing the right thing.

Councillor Zondervan asked more about establishing a tree trust and wondered why we haven't done it already.

Commissioner O'Riordan said that the trust would be financed by voluntary private funding, and there are still ongoing discussions about how to establish it. He said that the discussion is not far enough along yet to go into it further, but that he would like to come back to the council at a later date to discuss it more.

Councillor Zondervan welcomed City Manager Louis DePasquale to the hearing.

Councillor Zondervan said he did hear a legitimate concern about a resident having to hire an arborist just to certify that a tree is dead, and he wondered about the feasibility of reimbursing or finding some other way to provide that service without incurring a cost for the resident.

Commissioner O'Riordan replied that reimbursing people for private arborists could be upwards of \$100,000 annually.

Councillor Zondervan said that we could look at it as an investment if we truly view this as a shared resource.

Councillor Zondervan said he sees a real educational opportunity in our school system around this issue, and considering we need to invest in having more knowledgeable people, why not train more students to do this kind of work?

Councillor Zondervan asked about the timeline of the proposed amendments to the Tree Protection Ordinance. He asked if amendments would be proposed this term, or not until next term.

Commissioner O'Riordan reiterated that two meetings are coming up over the next few months- one more meeting of the task force, and a public meeting. He said he expects to have this conversation with the full council in January 2020.

Councillor Zondervan pointed out that the current "moratorium" expires in early March, and suggested that it may be better to have some specific amendments put in place sooner so that we aren't running up against that deadline as we have the larger conversation.

Commissioner O'Riordan said that they would look into that possibility, but that it will be important to include the task force, which will meet on December 5.

Vice Mayor Devereux suggested the possibility of implementing an urban forestry curriculum at Rindge School of Technical Arts (RSTA). She also emphasized the need to find a way to better educate homeowners on understanding the signs of when a tree is starting to fail.

Councillor Zondervan asked more about the possibility of doing an annual review or five-year comprehensive review, mentioning that it could be similar to the way in which the net-zero action plan is reviewed.

Commissioner O'Riordan said that the city is committed to doing data collection via LiDAR every 2-3 years, and that will form the backbone of the reporting. He mentioned that beyond that, arbor week may be appropriate timing for an annual review.

Councillor Zondervan said that with the net-zero action plan there is an annual report reviewed by the Climate Protection Action Committee, and then the council, in addition to a 5-year review process. He said it makes sense to him to do something similar here. He said there might need to be a policy statement that states this.

Councillor Zondervan reopened public comment at 6:24 PM

Peter Cohen of 11 Donnell Street spoke. He said that sometimes there are other priorities competing with trees, for instance, solar panels. He said he could install solar panels at his house if it weren't for the trees. He said that trees are always growing and never static. He said that another competing value is privacy. He said that he wants to take out some Norway maples and put in some shorter, wider trees for privacy's sake. He encouraged the council to use educational persuasion and technical skills rather than punitive measures. He said that more development next door killed healthy trees rather quickly.

Steven Nutter, Executive Director of Green Cambridge, spoke. He said that since the Spring, Green Cambridge has been working with various groups at the high school, at Lesley, and at MIT on tree planting. He said there is a really big appetite for this sort of opportunity at the high school. He said that there are 2,000 trees and 2,000 high school students so that could be one way to get to our goal. He said there is space on the high school campus for a gravel bed bare-root program. He said that in June, Green Cambridge kicked off a heritage tree program. He said it is important to coordinate between the technical need to plant trees and the people involved in that process.

Mike Nakagawa of 51 Madison Ave spoke. He said he had to push back on the bad reputation of Norway maple trees. He said that there is a benefit to having them too.

Jeremy Kepner of 95 Richdale Ave spoke. He reiterated that there needs to be some sort of accommodation for fast-growing invasive species. He said that a liability that was \$50,000 would increase to \$200,000 under the proposed system. He asked how he would work with that. He said the city needs to do this in a more positive way.

Councillor Zondervan closed public comment.

Vice Mayor Devereux said she wanted to end on a positive note. She thanked the staff, DPW, the consultants, and the task force members. She said that this work deserves a bigger audience. She said that the council hears about this issue all the time. She said that this is extraordinary work. She said she attended some of the task force meetings but never could have imagined how this data would be used to tell this story like it was. She said this is a tremendous resource, and she thanked everybody one more time.

Councillor Zondervan extended his thanks and appreciation to Vice Mayor Devereux. He said that back in 2016 when everybody was very worried about tree canopy decline, she stepped in and made this task force happen. He thanked everybody for an amazing report.

Councillor Zondervan adjourned the meeting at 6:34 PM.

1. A Report was received from the Department of Public Works entitled Cambridge Urban Forest Master Plan, Nov 12, 2019.

RESULT:	PLACED ON FILE
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