

City of Cambridge
Climate Protection Action Committee

Minutes
March 11, 2011
By Zoom

Attending: Melissa Chan (Chair), Steven Nutter (Vice Chair), Trisha Montalbo, Rosalie Anders, Paula Phipps, Jerrad Pierce, Fred Hewett, Keith Giamportone, Julie Wormser, David Rabkin, Peter Crawley, Lauren Miller, Ted Live, Nicole Morrell, *Staff:* Seth Federspiel, Bronwyn Cooke, John Bolduc

Guests: Andrew Putnam (DPW Superintendent of Urban Forestry), Ethan Bryson, Guido Cuperus, Melissa Ludtke, Michael Brandon, Rhett Nichols, Wendy McCluskey, Maya Dutta, Buck McNamara, Peggy Barnes Lenart, Sue Butler

Minutes:

Minutes of February 11, 2021 unanimously accepted, with request from David R. to clarify renewable energy credit/power generation description in the notes. John will follow up.

Director's Report: (John B, for Susanne)

- State Climate Roadmap legislation—no agreement between Governor and Legislature yet.
Differences:
 - 2030 goal (45-50% decarbonization goal)
 - Interim goals
 - Net Zero building standards for building code
 - Senate not expected to budge on their version
- State MEPA office has draft language on how they will update their regulations to include climate adaptation. Comments due by end of March.
- Zoning petition to require green roofs—being considered by City Council. Planning board issued negative recommendation.
- Climate resilience zoning taskforce hopefully only a few meetings away from passing recommendations
- 2030 decarbonization roadmap also open for comments.

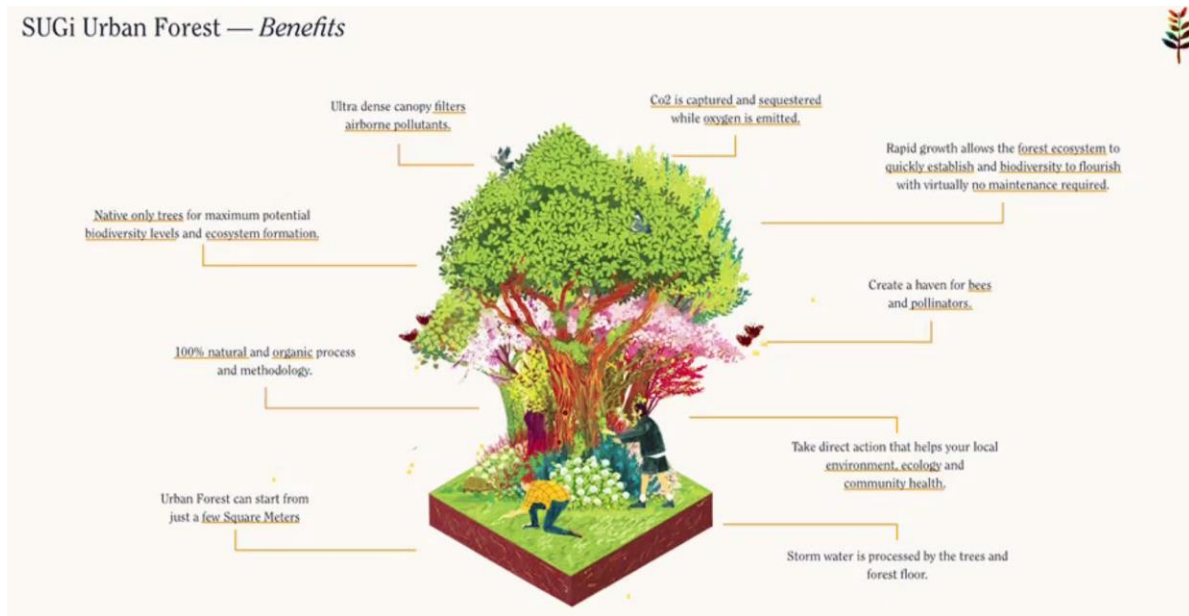
Presentation on the Miyawaki method of establishing micro-forests (Ethan Bryson)

Afforestation method and history

- Why rewild urban areas:
 - Traditionally build cities to distinguish human space vs. natural space, with little biodiversity (similar to Manifest Destiny)
 - Goal—bring back nature with same creative intention as built architecture
- TED Talk—Toyota had brought in a botanist named Akira Miyawaki to mimic native species and ecological processes around their factories. Seek to reverse soil compaction/sterilization. He has planted over 40 million trees globally in an effort to bring back native forests.
- Steps involved in Miyawaki method

- Look at tree species and soil species diversity
 - Look at soil samples—quality and biology—take baseline of fungi and bacteria compared to goals (e.g., mimic old growth soil biota)
 - Source conservation-quality compost (organic if possible), plant materials to allow biology to thrive
- Trees planted close together in four layers (16" apart) in somewhat random pattern
- Need upfront maintenance, watering, weeding, but less so over time. Looking for 30+ species in these forest patches.

SUGi Urban Forest — *Benefits*



- Benefits: much higher survival rate (95-98% survival)
- 30x denser, 10x growth of average monoculture reforestation projects
- Many examples of successful urban Miyawaki forests—esp. in Japan. Ideal to be at least 1000 sq ft in size, no less than 13-14' wide.
- Questions: are these designed to walk in or walk past?
 - Best to design them with pathways so people can experience
- Biological systems approach—Cambridge has many parks spaced out. How do you think about a city/region as a large area with fragmented parks—how close do they have to be to have meaningful relationships to each other?
 - Connectivity conservation—we segment large conservation areas with roads and developed areas. Could we allocate space for natural habitat as we allocate utilities? Larger conversation—would be great to have continuous corridor. In the meantime, pockets are better than nothing
- Do they work at higher planting densities because they have light on all sides?
 - The proximity provides collaboration plus competition for light and resources. Soil quality really important. It's like pioneer species after a disturbance.
- We're seeing major climate changes re: heat and precipitation—how do you manage those changes?

- Plant 350 shrubs and trees in four layers in 1,000 sq ft—allows roots to penetrate deeper with soil preparation, better at drought survival
- We have no truly natural forests left. Do we need to rethink “natural” forests to restore them to their former biodiversity?
 - Yes. Look at biodiversity pre-European colonization.

Update on the Net Zero Action Plan 5-Year Review (Peter Crawley)

- So broad and so many initiatives! Thought would be useful to remind people of three big categories, discuss CPAC’s role, and invite us to send him ideas to support plan
- Categories in Net Zero Action Plan (relate to subgroups for this review)
 - Energy efficiency and existing buildings
 - Custom retrofits
 - Much better data (e.g. wegowise tracking and managing for multifamilies)
 - BEUDO—make it apply to smaller-than-25k sqft buildings (still some confusion re: energy efficiency requirement)—could this requirement become more stringent re: offsetting emissions and energy efficiency? NYC local law 97—penalties for not meeting thresholds (carrots and sticks; Cambridge only carrots)
 - Move to electrify existing buildings big topic—depends on availability of renewable energy. Biogen, e.g., talked about how they wanted to electrify all fossil fuel systems. Need good ideas.
 - New construction
 - Smaller percentage of building stock—Tom Chase’s work proving economic viability of net zero buildings was very helpful—need to educate developers/construction workers re: latest technology
 - Accelerate net zero timelines, especially with labs (slowest timeline w/2030)
 - Low carbon energy supply
 - If going to electrify buildings, need access to utility-scale clean energy
 - City is exploring how to make large amounts of renewable energy available for city buildings and Cambridge community—beyond residential aggregation.
 - Many questions re: renewable energy buying—what kind of RECs/offsets would qualify

A lot of working group discussion re: getting data, timely data tracking, science-based framework of interim goals and targets, sharing data across building owners, city departments (can’t manage what you don’t measure). What goals will we follow? State? City-level goals?

CPAC discussion:

- What has the discussion been regarding science-based interim targets? We’re falling further behind—interim check ins are likely helpful. Without this, too fuzzy.
 - Response: One of the city reports (DNGVL wrote) discusses need to increase emissions reductions by 20x over next five-year period to meet Paris goals. We’re way behind and it’s a heavy lift. Group talked about the need to be clear about what it’ll take to hit

those interim targets. City/CPAC hasn't done this—only focused on carbon neutrality by 2050, not planning guidance in much shorter timeframe.

- Has the group talked about the rules setting/policy changes needed to force the changes needed over the next 30 years? Need to get natural gas out of buildings. Going to have to have either really powerful economic incentives or draconian policies (and no state-level roadblocks) to get there.
- Seth: Net zero code discussions—will need to know what we can and can't control at the city level, and where Cambridge needs to put its effort to complement activity at the state level to hit these goals. Task force is looking at priorities for Net Zero Action Plan that doesn't require state action.
- Next steps: follow up with Peter and Seth via email over next few week.

Follow up discussion from the February meeting about climate change goals and metrics (Bronwyn).

- Looking to tie together past/present/future work and how we're working to gather and use data metrics. E.g., community wide/sector-specific plans/GHG emissions. Wanted to leave time for follow-up questions and discussions from last month
- Do we have science-based targets and goals on an interim basis? What tools would be helpful for city/staff/board to have to have big picture re: carbon reduction decisions? Sustainability dashboard has good information on discrete actions, but doesn't have a top-level framework broken down by sector to give the big picture. If we don't have a framework with annual tracking mechanism for important metrics, very difficult to be more rigorous with policy if we don't know where we are. Things get delayed, easier for people to push back. Need accurate, compelling, and timely tools and data.
- On the other hand, we can have simpler goals like all internal combustion machines gone from Cambridge by 2050 without complexity of data gathering.
- Need to back up policies with funding, incentives, and equity concerns, and tie these also to BEUDO performance requirements.
- Net Zero Action Plan has metrics and hyperfocused looks at different policies and how much can be achieved without getting lost in community-wide metrics. Amendment of this plan is right process for setting sector-specific interim goals tied to policies and programs needed to get to those goals. Challenge is now to figure out how to do that with transportation, and how much carbon reduction can come from each sector.
- Would it be helpful to have detailed data on each building to help convert existing building stock? Gets pretty complex pretty quickly (e.g., space heating vs. water heating vs. stoves)
- What does it mean for equity if city is focused on getting commercial sector off gas? Residents will be stuck with higher gas prices when they can afford it less.
- As we move into implementation, these policies are getting more sector specific—how do we avoid all of this being stove piped? We still need to roll this up into a community-wide inventory every few years to make sure we still see the big picture. The carbon inventory has gotten quite a bit more sophisticated.
- Super helpful framing—there are a lot of groups diving into this problem. If there's a group focused on a deep dive on GHG emissions, just give us updates on what they're doing.
- CPAC is good at big theory, not deep dives—let us know how we can best help—e.g., adaptation. Think of us as your high level thought partners.

- What's next: transportation, and retrofitting smaller building stock. What are other issues— financing, contractors, supply. Have talked re: limits of the inventory, that doesn't take into account our consumption—another area that needs work.
- Smart Grid in Greater Boston—does that affect Cambridge? Would that help us in our electrification goals long term? It's under the state DPU—they've issued orders to utilities re: smart meters. In next 5-10 years, will replace existing meters with smart meters that help electrification.
- Will need CPAC reflection on Net Zero transportation plan and electrification plans.

Notes by Julie Wormser