

City of Cambridge
Climate Protection Action Committee
Meeting Notes
February 11, 2016

Attendance: Lauren Miller (chair); Johanna Jobin (vice chair), Lyn Huckabee (secretary), Amber Clifton, Betsy Boyle, Christopher Nielson, David Rabkin, Keith Giamportone, Keren Schlomy, Kris Locke, Melissa Chan, Olga Faktorovich Allen, Peter Crawley, Sarah Mandlebaum, Ted Live, Thomas Chase, Quinton Zondervan (QZ), Tom Page, Paula Phipps; *staff*: Bronwyn Cooke, John Bolduc (JB)

1. Motion passes to approve January 2016 minutes

2. ETP Director's Report - John Bolduc

Seth Federspiel has been hired as net zero planner (already on staff at CEA, that position now needs to be filled).

Net Zero Action Plan Update: Green Building Standard Zoning ordinance to increase LEED standard is going through internal review, then will go through stakeholder review, expected to be submitted by March to Planning Board and City Council.

New municipal electricity supply had to be in place in December, no longer by TransCanada. from Susanne by email:

- The brown power supply is being provided by two vendors: ConEdison and Constellation Energy. One is for the demand-responsive accounts (fewer) and one is for all the other fixed price per kWh accounts (most). The bid went out with two options to get the best possible price and that's how we ended up with two vendors.
- The City is very focused right now on procuring virtual net metering credits, to start saving money right away, and there is competition for them in the marketplace, so we haven't gotten to a deal yet. But, this can hopefully happen soon.
- The City's consultant (energy broker) has started looking around for projects in the region that need additional investment commitment(s) before they become a reality – that's how to meet the additionality criteria, i.e. the project is not going to happen 'but for' the City's investment. That is why the City doesn't expect to be able to buy bundled energy/RECs until 2-3 years from now.

Community aggregation preliminary paperwork being filed now, still figuring out the exact details with consultant.

Net metering and SREC issues at the state level are going to influence procurement options, may need to be discussed in the future.

City doing feasibility study on community shared solar at First Str. garage, need to get property appraisal, to transfer property rights to the solar provider, also developing RFP language, hoping to resolve in about 6 months.

City is submitting comments to MBTA about proposed fare hikes, reasonable to raise fares in predictable and equitable manner, up to 5%/year, but the bigger issue is that additional revenue sources have to be identified to maintain the T.

3. CPAC Work Plan Priorities

[Project drawdown](#)

Peter Crawley reviewed the Project Drawdown Top 20 list of actions; Cambridge already doing many of them, maybe raise priority on some: renewable energy, particularly solar, mass transit, walkable city, forestation, urban tree canopy, green spaces, parks, low carbon diet, reduced food waste, EVs, reduced truck emissions, building efficiencies, living buildings, net zero, green roofs, etc.

Many items have non-traditional metrics, that we don't use on a regular basis to inform policy or economic decisions. e.g. No value to green space heat island mitigation, carbon sequestration, etc. There is a need for broader set of sustainability metrics to baseline, track and set goals, and integrate them into the planning process, social services provision, etc. Olga has some excitement and interest in this area.

Also putting a price on carbon and using life cycle assessments for projects to quantify the environmental impacts, also using social cost of carbon into the project analysis.

Envision Cambridge (citywide planning) is a huge opportunity to include some of these concepts. Proposal is that CPAC would have a member/observer to the Envision Cambridge advisory committee (QZ has applied to be on the committee). JB: Climate and Energy workgroup would likely have CPAC involvement.

JB: Funding (Massachusetts) for transportation projects does take GHG reductions into account.

Olga: Food waste and diet. Community engagement opportunity. GHG emissions from food waste is high, mostly from consumers, health impacts, people are passionate about their health so linkage opportunity in messaging. Could empower people to take action. Examples: meatless Monday resolution (DC, LA, Annapolis, etc. have done this). Social media campaign, Cambridge schools do meatless Mondays but got burned by public outcry in 2010? Boston is big on MM in their schools. Partnering with restaurants? Stickers. Expand residential composting, waste to energy opportunities.

JB: Curbside composting is being rolled out citywide over time. Some logistical issues.

JB: Recycling Advisory Committee, Bike, Ped, Transit comms, so CPAC tries not to overlap. EVs doesn't get covered much there, so we have covered that some.

JB: Health link has been made on transportation, but haven't tried so much on food waste health link.

David: EVs important topic, started doing research on EV benefits and barriers to adoption. Need to compare notes with Bronwyn to think about possible policy directions. Tow trucks was an interesting issue.

Ted Live: towing cars (street cleaning) causes a lot of emissions (also police cars, etc.). Trying to find out from cities that don't tow (CA bay area) to find someone who can explain how they reached their decision. Why not just give a higher ticket in case of street cleaning.

Keith: [Architecture 2030](#): reduce GHG emissions from new buildings to 0 by 2030 (and equivalent amount of building renovation). This is a norm, not a law.

Keith: Heat Island effect. Roofs and sites. 50% shaded, solar reflective index of 29 or higher. Underground parking. Could add heat island points to LEED requirement. Roofs: 75% should meet highly reflective criteria, or could do a green roof (50%). Could require white roofs?

JB: There is a "cool roof" requirement in our zoning. Also will look at heat vulnerability in the preparedness plan. No clear evidence that green roofs reduce street-level ambient temperature. Also unclear how much green roofing you have to do to make a difference? How much and where. Also vegetative requirements can be included in landscape requirement. Paula: water retentive landscapes also is a potential cooling factor.

Lauren: Adding metrics to our goals and objectives.

Other Comments:

Keren: Other committees (bike, ped, waste), BUT it's important to all use the same metrics! They may not even be measuring. (Discussion around measurement difficulties, data acquisition, etc.).

4. Decarbonizing the City

Christopher Nielson (CN), Tom Chase (TC), Keith

Keith: The main objective is to replace combustion with electricity, and to switch electricity to 100% renewable. Load reduction is super important in this process to avoid unnecessary expenses from excess capacity creation.

CN: Powerpoint presentation (REF) on implications of going all electric in new construction; has been working on the Kern Center project at Hampshire College for the last 3 years. Definitely a feasible proposition. [Living building challenge](#). Only 8 projects so far in the world! Smith College in western Mass. Also several other projects in the works in Mass.

Discussion: Materials embodied energy not considered but distance and materials content are considered.

TC: Existing building electrification. Cambridgeport conversion, extreme renovation of triple decker, 6 units. Third floor fire provided the impetus for the renovation. Will be finished in July 2016. 1" zoning variance to add external insulation. Historical building so limits options. 70% reduction! Cost: \$200/sf. Moisture control layer significant expense.

5. Member Reports

QZ: Net zero, Paris, speaking in neighboring communities with Henrietta Davis, happy to speak in your community.

Paula: April 30 biodiversity conference at Harvard Peabody Museum

Notes by: Quinton Zondervan

February 11 CPAC meeting

Re: Informal Drawdown Working Group

Peter Crawley, David Rabkin, Olga Faktorovich, Ted Live, Keith Giamportone, Johanna Jobin

Comments/Recommendations by Peter Crawley:

Project Drawdown (<http://www.drawdown.org>), founded by Paul Hawken, uses evidence-based analysis to create a list of the 100 most impactful global initiatives to reduce carbon in the atmosphere. The top 20 are:

1. Solar PV
2. Concentrated Solar
3. Wind Turbines
4. Energy Storage (renewable energy is a function of this, despite it being a net emitter independently...)
5. Family Planning / Educating Girls
6. Low Carbon Diet
7. Reduced Food Waste
8. Afforestation
9. Tropical Reforestation
10. Silvopasture
11. Avoided Deforestation
12. Peatland Protection
13. Carbon Farming
14. Multistrata Agroforestry
15. Building Efficiency (Living Buildings/Net-Zero Buildings/clumping all building solutions together)
16. LED Lighting
17. Electric Automobiles
18. Truck Fuel Efficiency
19. Oceanic Freight Efficiency
20. Mass Transit, Urban Form + Walkable Cities

After working group meeting, we decided the following topics deserved further consideration by CPAC, either via re-doubling efforts already being made, re-thinking current approaches and/or adding new initiatives.

The topics identified were:

1. Renewable Energy, Solar in particular for Cambridge (Peter)
2. Mass Transit & Walkable Cities (Peter)
3. Forestation – focusing on Urban Tree Canopy and Green Spaces/Parks (Peter)
4. Low Carbon Diet/Reduced Food Waste (Olga)
5. EV Vehicles (David)
6. Truck Emissions – with focus on Cambridge Tow Trucks (Ted)

7. Building Efficiency/Living Buildings/Net Zero Buildings and Green Roofs/Heat Island Mitigation (Keith)
8. Though not on the Drawdown List, the Working Group agreed that a more comprehensive set of sustainability metrics, measuring aspects such as Heat Island Effects, Air Quality, Carbon Sequestration and Cooling Impacts of Green Spaces, Walkability Scores, Mass Transit Effectiveness, Resilience to Flooding and Heat Waves, etc. is very important to develop and use to baseline, set goals, track performance and integrate into various City decision and policy-making processes, such as capital allocation processes, real estate permitting and urban planning processes, public education programs, etc. Imputing a price for Carbon and using a Life Cycle Costing (and Life Cycle Assessment) approach for analyses would clarify and advance climate protection goals. (The Group concluded that many of these issues should also be considered during the Envision Cambridge planning process.)

Peter's Topics/Recommendations:

1. Increase Renewable Energy, Solar in particular for Cambridge
 - Fast track a Community Solar pilot using a municipal property. (First St Garage?)
 - Cambridge already pursuing 100% renewable energy for municipal energy demand. Phase 2 would be to work with the utilities and State to green the grid serving all of Cambridge. Perhaps direct the off-sets purchased to comply with Net Zero regulations to help fund transition of the Cambridge grid to green energy.
 - Aggressively advance and promote community choice renewable energy aggregation. (Realize this is in process.)
 - Consider other renewable energy technologies, such as expanding the waste to energy program and rapidly increasing curbside compost collection. (Partner with neighboring cities, institutions and businesses to support development of a large scale anaerobic digestion energy facility.)
2. Mass Transit & Walkable Cities
 - Partner more aggressively with State and large property owners to increase investment in public transit infrastructure in Cambridge. Fast-track value-add assessments on large properties that benefit from improved public transit. Explore via Envision Cambridge planning process.
 - Prioritize "walkability" as urban planning goal and requirement (to reduce car usage). Integrate into Envision Cambridge planning process. Advance best practices, such as comprehensive mix of uses and walkable distances between them, when planning. (Work with Planning Board to advance.)
3. Forestation – focusing on Urban Tree Canopy and Green Spaces/Parks
 - Measure more accurately the heat island mitigation and carbon sequestration and health & wellness benefits of the urban canopy and green spaces. Impute a higher value to them due to these traditionally "non-economic" benefits and

promote their protection and expansion more aggressively both via City planning process/regulations and pro-active City investments.

Other Related Recommendations:

1. CPAC seat on Envision Cambridge planning initiative
2. Form a CPAC subcommittee to advance development/organization of comprehensive Sustainability Metrics for City to create baselines, set goals and track progress. Metrics such as air quality measures, heat island ratings, flood risk/permeable surface measures, tree canopy tracking, open space to population/building density ratios, etc. Tie into Envision Cambridge process and Climate Preparedness and Resiliency Plan.
3. Form a CPAC subcommittee to recommend targeted Public Education/Awareness/Behavior Change programs (for example around Food Waste/Diet, in terms of climate impacts).
4. Calculate Science-based carbon reduction targets for Cambridge.

Comments/Recommendations by Olga Factorovich re: Food Waste and Diet

Food Waste

- **Context:**
 - o If food waste were a country, it would be the 3rd largest GHG emitter, after US and China
 - o 1/3 occurs at the consumer level
- **Recommendations:**
 - o Expand residential composting
 - o Engage, incentivize small to medium size business around composting
 - o Expand dialogue regarding waste to energy projects (not sure what the status of this in Cambridge is, would need to do more research on current state)
 - o Develop communication / engagement campaign about impacts of food waste, how to compost, and how to buy what you need

Diet

- **Context:**
 - o Livestock emissions represent 15% of anthropogenic GHG emissions
 - o Consumption of meat is linked with diabetes, obesity, heart disease, etc.
- **Recommendations:**
 - o Explicitly link health and climate change via communication campaign. Focus on diet presents opportunity to engage Cambridge resident community in a broader, more comprehensive narrative about climate change. If emphasized, the power of an individual's choice to make a difference can be empowering and serve as a "gateway" sustainable behavior towards other sustainable behaviors. Though a resident's food choices will not make a effect the magnitude of Cambridge's municipal or community emissions, this behavior will surely contribute to global efforts towards sustainable lifestyle choices (and since Cambridge is a global city, attracting students from all over the world, an effective campaign may even make a larger difference than in other towns).

- o Consider recommending a resolution to implement Meatless Mondays in Cambridge (at the government level). Cities like LA, Manhattan, DC, Annapolis, etc. have passed similar resolutions. Meatless Mondays, was launched in 2003 by John Hopkins Bloomberg School of Public Health.
- o Engage local businesses in promoting Meatless Mondays. Can develop a pledge for local restaurants to take and could develop a sticker for front door of restaurants to display that they serve meat-free menus on Mondays. This would create buzz, can strengthen it with social media campaign, posters at bus stops, etc.
- o Engage with Cambridge schools and institutions to explicitly promote Meatless Mondays.

Comments/Recommendations by David Rabkin re: Electric Vehicles

- Electric vehicles seem to be less polluting overall and have lower GHG emissions than conventional passenger cars. They have a range of other benefits, too.
- However, there are barriers to their adoption, including:
 - o Price, although it appears that overall cost of ownership may well be lower
 - o Consumer lack of familiarity as well as concerns about range and availability of charging stations.
 - o It's not clear if there are organizational or regulatory barriers relating to organizations that are considering the use of EVs in their fleets.
 - o Beyond passenger cars, it's not clear what options are available for other vehicles – tow trucks, garbage trucks, delivery trucks, etc. – or the degree of benefit and cost associated with switching any of these types of vehicles to electric.
- Cambridge has already taken steps to learn about and encourage the use of EVs, including:
 - o Supporting the installation of electric charging stations
- Other items Cambridge might consider include:
 - o Further research into what other cities have done successfully
 - o Develop a rationale for focusing on individually-owned cars, municipal vehicles, fleets, taxis, zip car, and/or trucks (delivery, tow trucks, garbage trucks)
 - o City subsidies or tax credits for individuals and organizations to use electric cars, transition their fleets, etc.
 - o City incentives for the installation of electric car chargers installation or publicly accessible charging stations
 - o Modifying regulations relating to parking for electric cars, the location of charging stations
 - o A plan to help ensure that the availability of charging stations keeps pace with demand
 - o Work with utilities to address any barriers to the provision electricity to charging stations.
 - o Create a coordinated city-wide plan for charging stations and EV parking

- o Explore barriers to *fast* charging stations, which may relate to electricity supply, billing policies and availability/effectiveness/cost of energy storage technologies.
- o More public education about EVs – to individuals and/or organizations.
- o Note: It seems like product evolution and the marketplace are taking care of:
 - § EV prices
 - § Consumer awareness
 - § Information about the availability of charging stations

Comments/Recommendations by Ted Live re: Avoiding GHG emissions from City towing practices:

From April through December, there are ~180 days when multiple tow trucks spend several hours each, idling and/or towing vehicles to facilitate residential street cleaning. Needless to say, these are not particularly fuel-efficient vehicles. Other cities (including, now, Somerville) carry out street cleaning without towing parked vehicles, relying on (high-priced) ticketing alone to dissuade drivers from parking on designated days. Why can't Cambridge do the same?

Pro's:

- Eliminate pollution from tow trucks
- Increase City revenues
- Eliminate residents' inconvenience, wasted time, and lost income resulting from retrieving towed cars
- Create better balance between the penalty and the severity of the crime
- Street cleaning isn't permanent: on heavy-debris months, cleaned curbs quickly become filled again (and on light-debris months, there's little benefit anyway)

Con's:

- Illegally-parked cars would prevent complete sweeping
- Tow companies would lose revenue

When asked by the City Council for a report on whether modifying the City's towing policy would have a negative impact on the City's ability to maintain clean streets, DPW Commissioner O'Riordan reported (9/21/15) "While this operation [towing] can be inconvenient, discontinuing the policy of towing would have a negative impact on the city's ability to maintain clean streets." However, there is no analysis provided to support or quantify this conclusion.

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For impacting GHG emissions, a further proposal would be to require that City-sponsored towing (whether for street cleaning or for other purpose) be carried out by fuel-efficient (or electric?) tow trucks.

(Keith Giamportone submitted slide deck presented at the Feb 11 meeting on Building Efficiency/Living Buildings/Net Zero Buildings and Green Roofs/Heat Island Mitigation.)