

**Summary Cambridge City Council Health and Environment Committee  
and Cambridge Climate Resilience Zoning Task Force  
Joint Meeting (Task Force Meeting #8)  
Wednesday, September 11, 2019  
5:30 PM to 7:30 PM  
City Hall, Cambridge, MA**

**Task Force Members Present**

1. John Bolduc, Environmental Planner
2. Doug Brown, West Cambridge
3. Ted Cohen, North Cambridge/Planning Board
4. Conrad Crawford, East Cambridge/Cambridge Redevelopment Authority
5. Nancy Donohue, Cambridge Chamber of Commerce
6. Iram Farooq, Assistant City Manager for Community Development
7. Brian Goldberg, MIT Office of Sustainability
8. Lauren Miller, Climate Consultant, CDM Smith
9. Mike Nakagawa, North Cambridge
10. Jim Newman, Resilience Consultant, Linnaean Solutions
11. Mike Owu, MITIMCo
12. Kathy Watkins, City Engineer/Assistant Commissioner

**Project staff and facilitation team members present**

1. Jeff Roberts, Director of Zoning and Development, City of Cambridge
2. Pat Field, Consensus Building Institute facilitator
3. Elizabeth Cooper, Consensus Building Institute facilitator
4. Nathalie Beauvais, Kleinfelder
5. Indrani Ghosh, Weston & Sampson

**Next steps**

The next task force meeting will take place October 10, 2019 at the City Hall Annex at 344 Broadway.

**Meeting Overview**

In this joint meeting of the Cambridge City Council Health and Environment Committee and the Cambridge Climate Resilience Zoning Task Force, participants reviewed the analytical work and deliberations by the Task Force since the last joint meeting, including:

- an analysis of heat impacts on the City;
- principles and objectives task force members developed to guide the development of zoning strategies;
- considerations for implementing zoning strategies.

See presentation slides and meeting materials online:

<https://www.cambridgema.gov/CDD/Projects/Zoning/climateresiliencezoning>.

## Meeting Summary

### Progress Update on Task Force Work

Jeff Roberts, Director of Zoning and Development, reviewed the progress of the task force and outlined future discussions that will focus on developing zoning recommendations. The task force aims to make final recommendations by December after another joint meeting with the Health and Environment Committee in November.

Kathy Watkins, City Engineer, summarized prior analysis of climate impacts on urban heat in Cambridge.<sup>1</sup>

Mr. Roberts shared a set of eight principles and factors that the Task Force developed to guide zoning recommendations. He also presented a table of 13 land use and development objectives to mitigate flooding and heat impacts that the Task Force developed following the principles and factors. A draft table had been prepared for the July 21<sup>st</sup> Task Force meeting and was revised to include the goal of achieving resilience through implementing measures across larger areas (e.g. through pooled open space, neighborhood preparedness plans, larger-scale green infrastructure, and others) and to promote objectives with other environmental benefits, such as reduced energy demand, greenhouse gas emissions, and auto trip generation.

### Health and Environment Committee Comments

City Councillors made comments and asked the following questions (*direct responses from city staff are in italics*):

- Consider explicit recommendations about optimizing the amount and placement of windows in buildings to maximize energy efficiency.
- What plans currently exist for more shade structures in the City?
  - *The City is focusing on increasing shade in some parks. There are no specific proposals for shading of streets at this point, though that will be considered in the future. Additional awnings on buildings will be considered as well.*
- What is the City's responsibility to help ensure safety for the community, especially on hot days, e.g. through cooling centers?
  - *The focus of this group is on zoning, however other City strategies including the Alewife Adaptation Plan and the Port Preparedness Plan include examples of cooling centers.*
- New York City has examples of row houses that are very efficient. What makes them efficient, and are they being considered more in the City?
  - *City staff will come back with more information on the studies that show the efficiency of this type of building. The preparedness plan includes modeling of superblocks, which includes some useful examples of highly resilient and efficient houses.*
- Regarding the impact of setback requirements on tree health: this should be clearly communicated, since, for example, this was not discussed during the affordable housing overlay discussion the Council recently had.

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<sup>1</sup> See slides from this meeting and the meeting #6 summary for more detail on urban heat impacts.

- Could some of the options under discussion here be piloted in some upcoming projects? For example, there was recently a request to rezone the Alewife Quadrangle, where some of these measures could be piloted.
- Reducing impervious area can improve tree health because it helps adjacent trees have better access to water and improved soil health.
- External shade structures can be an effective and relatively inexpensive tool to make outdoor areas more habitable.
- Is Green Factor under discussion as a tool in potential zoning recommendations? Could it include building requirements for heat retention and cooling?
  - *Green Factor focuses a lot on quality and quantity of green space, which is very valuable. However, we are concerned that it does not address stormwater management, and we are therefore looking into whether a hybrid that encompasses stormwater management and green space would be appropriate. Building requirements may not be captured in a Green Factor-like requirement, but they could be articulated in another way.*
- Some of these objectives being discussed highlight the challenges of making changes that are expensive, especially in a relatively crowded city. Incentives are needed for people to adopt new tools or ideas.

### Continued Discussion of Zoning Considerations

Mr. Roberts presented information on how zoning functions and effects change, reviewing concepts presented at Meeting 7.<sup>2</sup> He emphasized that, because Cambridge is already largely developed, zoning is regulating changes from one thing to another, rather than making something happen directly. In most cases, change must be incentivized for zoning to have an impact. Mr. Roberts presented data showing that most new construction housing units are built in developments of more than 100 units, though most housing units in the city are in smaller buildings. He explained that zoning does some things better than others, and that various scales and locations lend themselves to different types of requirements. In general, more specific, quantifiable standards for relatively “permanent” changes are easiest to require. Performance-based or qualitative standards, or those requiring ongoing maintenance or enforcement, are more challenging. These more challenging types of requirements are typically applied in more limited circumstances – most often larger projects subject to higher levels of review (i.e. special permits.) Some existing standards complement the goals of the Task Force, whereas others may be in tension with the goals that the Task Force seeks to achieve.

### Committee and Task Force Discussion

Committee and Task Force members made comments and asked the following questions (*direct responses from city staff are in italics*):

#### Zoning considerations and tensions

- Does the data presented on housing suggest that zoning requirements to effect real change should be focused on large-scale development?
  - *The change in zoning rules regarding basements is an example of how zoning can create substantial change, if there is value to be gained by adopting that change. To avoid*

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<sup>2</sup> For further detail, see Meeting 7 summary. You could also reference the Zoning Considerations Preview Presentation on the website.

*unintended consequences, careful consideration needs to be given to understand what kinds of choices property owners will make in the context of zoning changes.*

- How are zoning changes to increase resilience in tension with urban design goals, including being pedestrian- and bike-friendly?
  - *It is not an irresolvable tension, but the paving requirements for bike access and the urban design guidelines to have buildings engage directly with the street are in tension with goals to decrease impervious area and increase setbacks from the street. We do have standards for permeable paving. In Alewife, there is a higher permeability requirement than an open space requirement, which can be met by providing permeable walkways, driveways, and parking areas in addition to green open space.*
- We will have to conceptualize a new urban design paradigm in the context of flooding regimes and building in the future.
- Zoning creates change on a parcel level. It is important to keep in mind that we are trying to achieve a larger effect. For example, green and white roofs won't matter unless we get enough to affect a larger area. We have to think about how the city will function in a hotter, wetter future. We can look to concepts like sponge cities in China, which are designed to be more absorbent of stormwater, and design of "soft cities" to mitigate heat.
- The City should take a more active role in protecting shared open spaces rather than just requiring small squares of trees and open space.

#### Energy

- Energy resilience could be an objective. Would green relief be needed to accommodate battery storage?
- Consider solar panels over parking lots.
- State law prevents removing trees as a result of development, but this is not adequately enforced.
  - *The tree that was shown in the presentation was removed after a tree removal hearing.*

#### Innovative approaches to resilience

- People need resilient spaces to help them function: the ability to charge a cell phone, refrigerate medicine and necessary food, etc. A "resilient room" can be open to the neighborhood in an emergency.
- Consider green shade structures, such as moss on a matrix, with fans powered by solar power.
- Look into road coating that helps lower temperature.
- Historically, hot cities were built with arcades for people to find shade.
- We should consider treating the Quad, where a new zoning petition is asking for more height, as a climate district. This could include elevating to the appropriate height, daylighting water on its way elsewhere, microgrids, or other approaches. This bold approach could be considered for other areas undergoing large-scale development.

#### Other

- Consider tax relief as an incentive to adopt greener practices, rather than typical "green relief."
- Maintenance and landscaping requirements may be hard to monitor, but if we do not set aside open space now, there will be no space to monitor. Preserving open space gives us more flexibility for the future.

- Incentives could push for a move towards something great that leapfrogs an intermediate step and gets to what we want to achieve for the long term.
- The City does a lot of small-scale zoning. Larger goals for some of the issues would be valuable, e.g. passive resilience and building envelopes. We have to show that ambitious goals can be met.
- Without a minimum required tree canopy, our dwindling canopy coverage is further at risk.
- Playgrounds should have trees around them, not just structural shade.

### Public Comment

One member of the public commented that the Council should strive to work in harmony with nature.

Another asked: what changes in zoning would be required to create the level of activation necessary to change over 50% of targeted areas by 2030-2035? By 2070, the better part of 100% has to be changed. What will it take to activate the community to accomplish this task?

The meeting was adjourned at 7:40 PM.