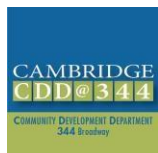




**City of Cambridge
Community Development Department**

Climate Resilience Zoning Task Force

**Report Briefing for the Health and Environment Committee
March 29, 2022**





CRZTF Purpose

Recommend **development standards** for climate resilience to incorporate into the Cambridge Zoning Ordinance

Specific Climate Change Impacts to Discuss:

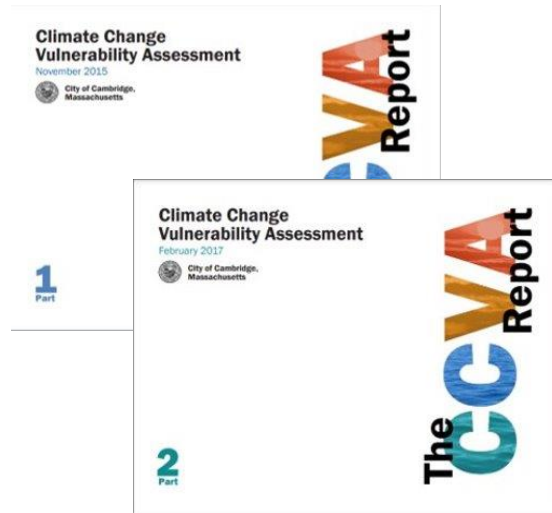
- Impacts of flooding from sea level rise, storm surge, and precipitation
- Rise in temperatures exacerbated by the urban heat island effect

Scope of Zoning Recommendations:

- Major new development subject to project review procedures
- Smaller-scale new development subject to as-of-right zoning
- Additions/alterations to existing buildings and uses

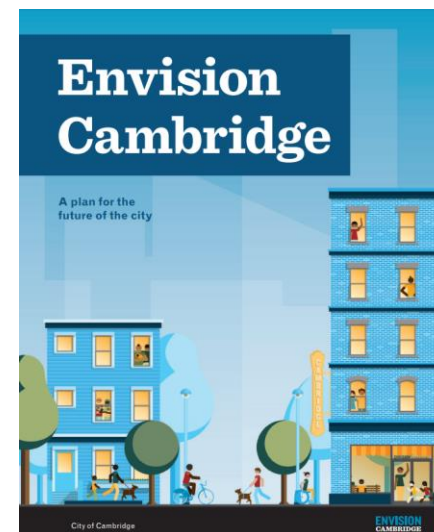
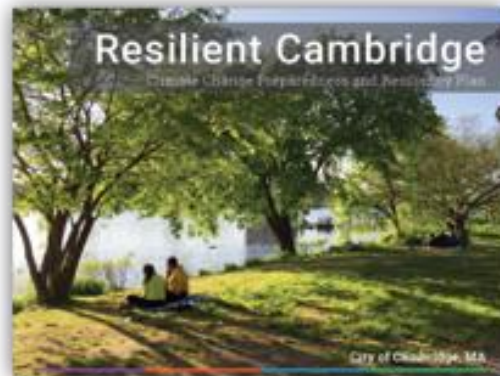
Contributing Work

Climate
Change
Vulnerability
Assessment



Urban Forest
Master Plan

Resilient
Cambridge
Plan



Envision
Cambridge



20 CRZTF Members

Residents

- Doug Brown – co-chair
- Ted Cohen (*Planning Board*)
- Conrad Crawford (*CRA Board*)
- Mike Nakagawa

Union/Trades Representative

- Louis Bacci, Jr. (*Laborers Local 151, Planning Board*)

Institutional/Non-Profit Representatives

- Brian Goldberg (*MIT*)
- Tom Lucey (*Harvard*)
- Margaret Moran (*Cambridge Housing Authority*)
- Craig Nicholson (*Just-a-Start*)

Business Representatives/Property Owners

- Jason Alves (*East Cambridge Business Association*)
- Nancy Donohue (*Cambridge Chamber of Commerce*)
- Mark Johnson/Tom Sullivan (*Divco West*)
- Joe Maguire/Rick Malmstrom (*Alexandria*)
- Mike Owu (*MITIMCo*)

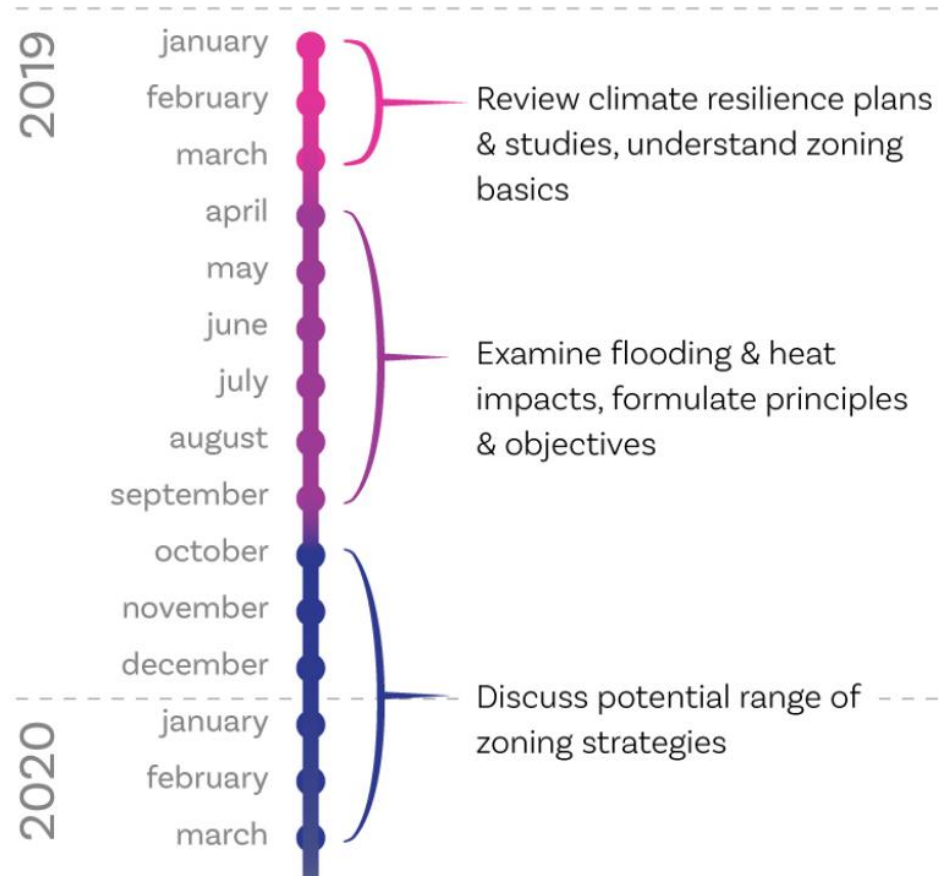
Subject Matter Experts

- Tom Chase (*New Ecology*)
- Lauren Miller (*CDM Smith*)
- Jim Newman (*Linnaean Solutions*)

City Staff

- John Bolduc
- Iram Farooq – co-chair
- Kathy Watkins

Two-Year Process



Guiding Ideas

Overarching goal: provide flexibility and choice to property owners while advancing the City's climate resilience adaptation and mitigation goals

8 principles and 13 objectives





Principles to Guide Zoning Strategies

1. Focus on **people, communities, & equity**
2. Account for **differentiation & choice**
3. Balance strategies to address **new construction & existing development**
4. Use **performance-based standards** as well as **prescriptive standards**
5. **Allow flexibility** in changing circumstances
6. Support actions with **co-benefits**
7. Seek **effectiveness**
8. Make decisions based on **best available data & science**



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Principles to Guide Zoning Strategies

4. Use **performance-based standards** as well as **prescriptive standards**
 - Balances benefits and drawbacks of both types of standards
 - Provides flexibility while focusing on interventions that have the most impact



Land Use & Development Objectives

- 1. Elevate & floodproof
- 2. Design to recover

- 3. Use green infrastructure
- 4. Preserve vegetation
- 5. Create vegetation
- 6. Limit paved areas
- 7. Provide shading

- 8. Use reflective surfaces
- 9. Promote passive resilience
- 10. Shelter in emergencies
- 11. Create emergency plans

- 12. Implement area-wide strategies
- 13. Produce co-benefits



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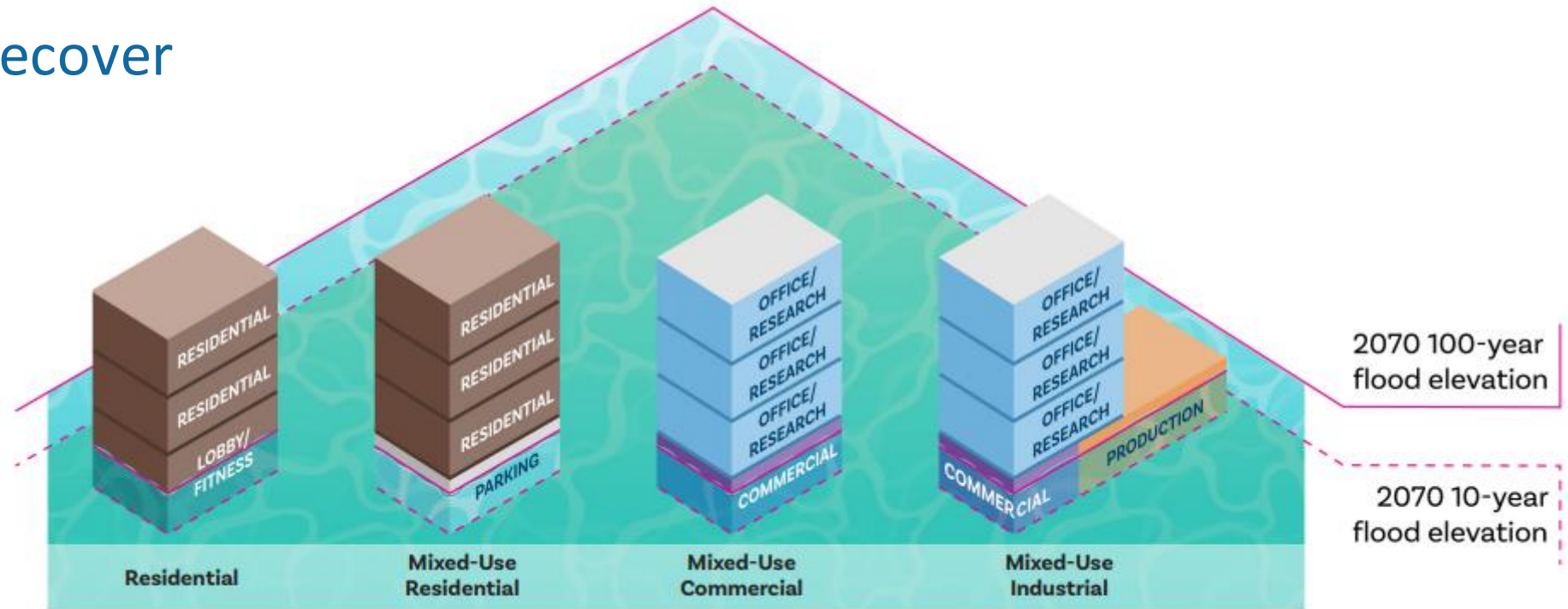
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Land Use & Development Objectives

2. Design to recover





CRZTF Zoning Recommendations

Five categories of recommendations:

1. Flood resilience standards
2. Heat resilience standards
3. Current zoning standards
4. Planning Board review
5. Future study



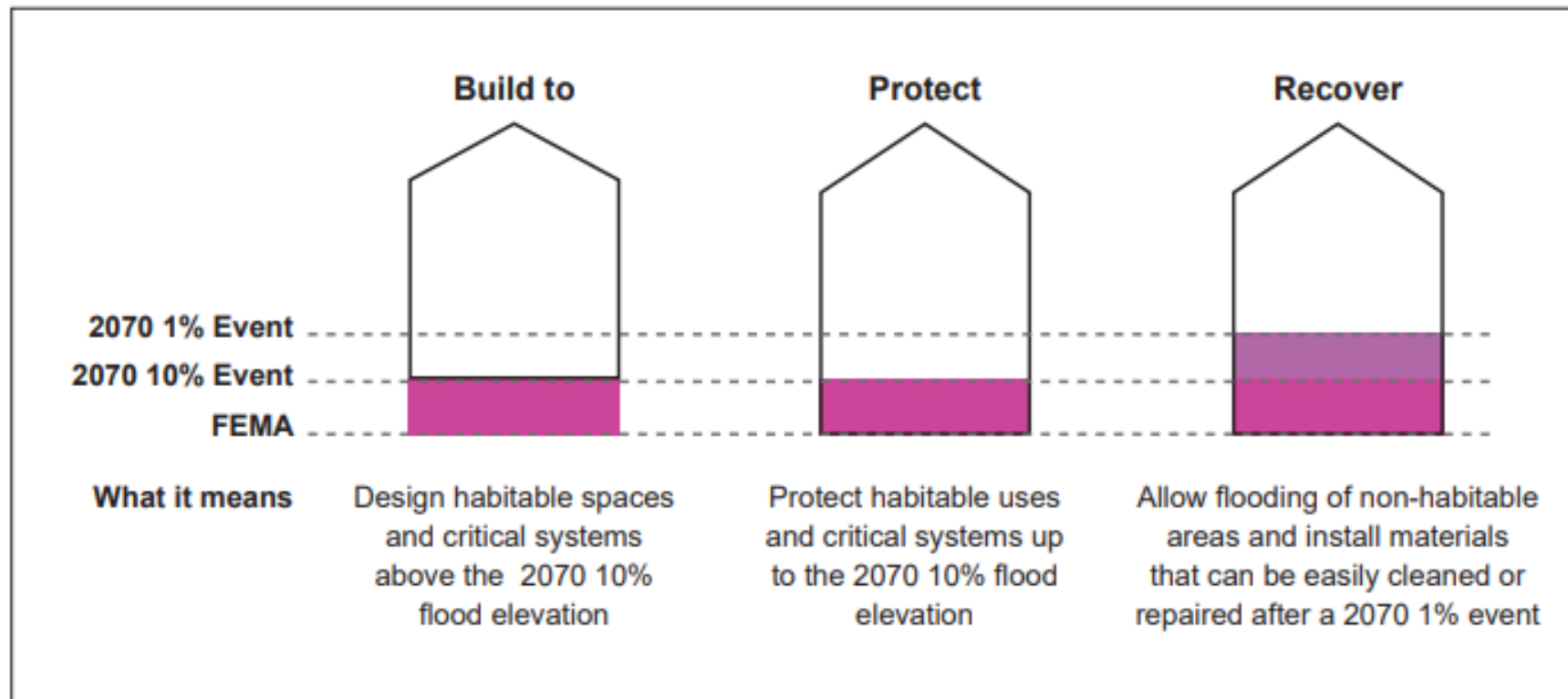
Why These Recommendations?

Ensure that new buildings are resilient throughout their lifetime

- Set flood resilience standards that are based on the future, not the past
- Promote high-impact cooling strategies that provide co-benefits
- Remove small zoning obstacles so property owners can make their properties more resilient
- Encourage developers to think holistically about resilience
- Adapt and change zoning, as needed

1. Flood Resilience Standards

Add new standards based on **2070 projected flooding elevations** that are **consistent with current practices**



2. Heat Resilience Standards

Add new standards tailored to achieve City policy goals based on best available science





Why “Cool” Factor, Not “Green” Factor?

- There is **no one “Green Factor” approach** – precedents are tailored to community needs
- Cool Factor includes most elements of Green Factor precedents, but strategies & weighting are based on **scientifically-proven cooling benefits**
- Some Green Factor strategies are duplicative of existing stormwater standards – keeping them could **lead to less overall site cooling**

Factor Comparison

STRATEGIES	Somerville Green Score	Seattle Green Factor	Brown, et al. Green Factor	Proposed Cool Factor
Landscaped area	✓	✓	✓	✓
Vegetation	✓	✓	✓	✓
New trees	✓	✓	✓	✓
Preserved trees	✓	✓	✓	✓
Green roofs	✓	✓	✓	✓
Rain gardens & bioswales	✓	✗	✓	✓
Bioretention facilities	✗	✓	✓	✓
Water features	✗	✓	✗	✗
Vegetated walls	✓	✓	✓	✓
Turfgrass & mulch	✓	✓	✓	✓
Pervious paving	✓	✓	✓	✗
Structural soil systems	✓	✓	✓	✓
High-SRI paving	✗	✗	✗	✓
High-SRI shade structure	✗	✗	✗	✓

3. Current Zoning Standards

Remove impediments to resilient **building and site design** that currently exist in base zoning



Shade structures



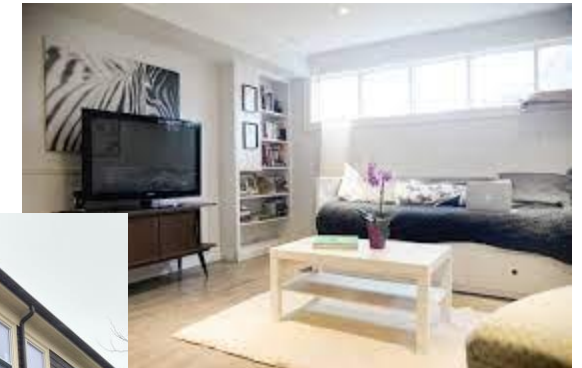
Stairs & ramps



Green roofs



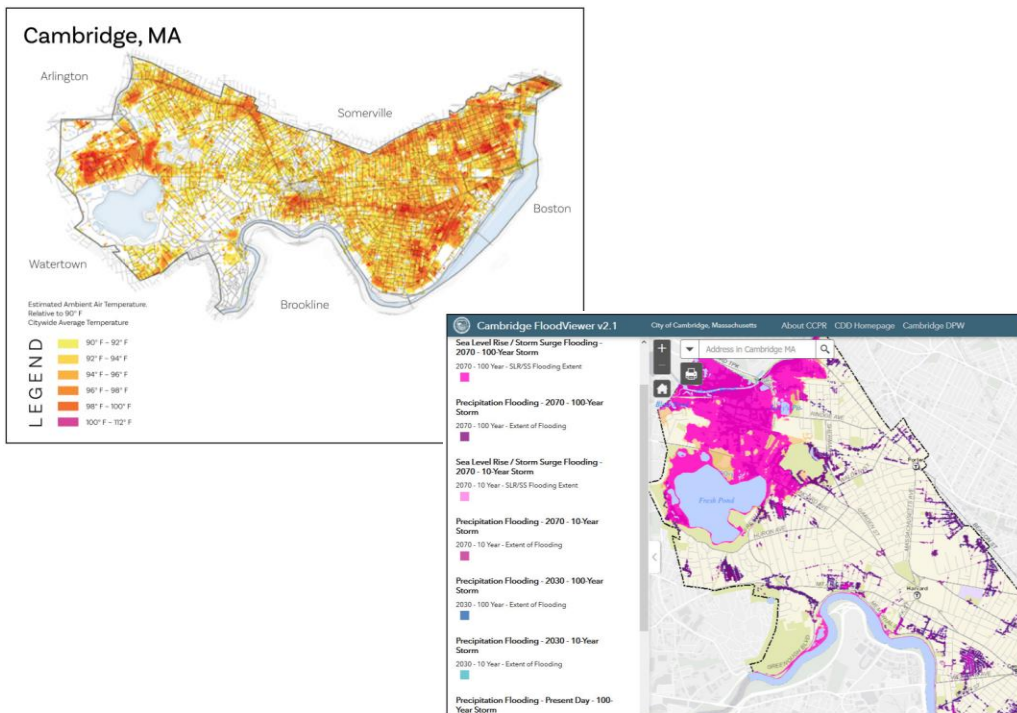
Height



Basements

4. Planning Board Review

Require large development projects to submit a resilience narrative and meet resilience objectives





5. Future Study

Evaluate the effectiveness of these zoning amendments and **revise them** as climate science evolves

Incorporate climate resilience principles when updating **urban design guidelines**

Study eliminating minimum **parking requirements**, lowering maximum parking requirements, and reducing **parking ratios** to promote multiple environmental goals



Next Steps

Discuss report and recommendations with **Planning Board**

Draft a **zoning petition** that reflects the Task Force's recommendations