Preparing Chelsea Massachusetts to Better Adapt to Climate Change

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WPI

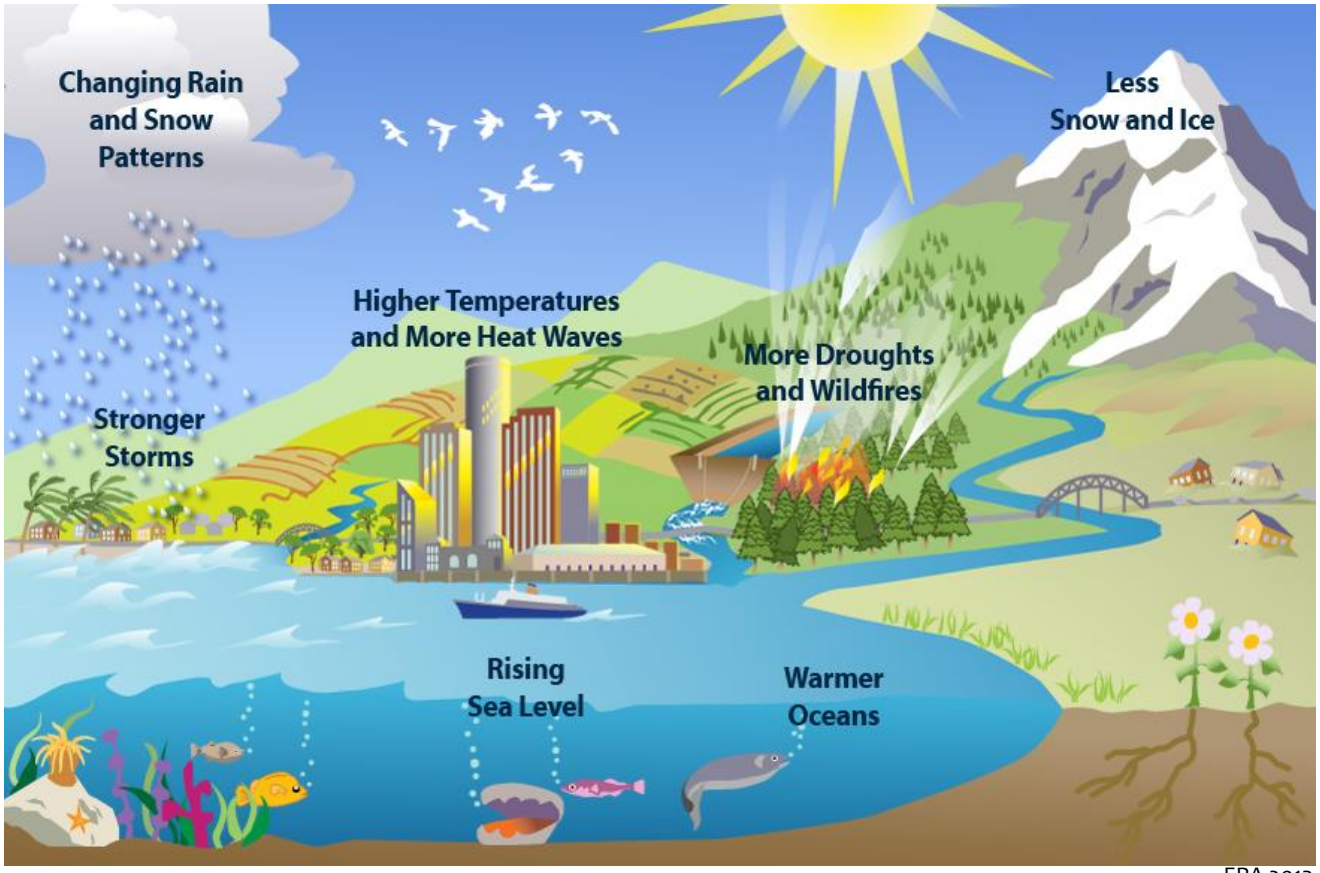
Sea Grant
Massachusetts Insutute of Technology

Goals

- Provide guidelines to address climate change and vulnerabilities in the Everett Ave. area of Chelsea

- Supports city's Zoning Board, Planning Board, and Conservation Commission

Climate Change

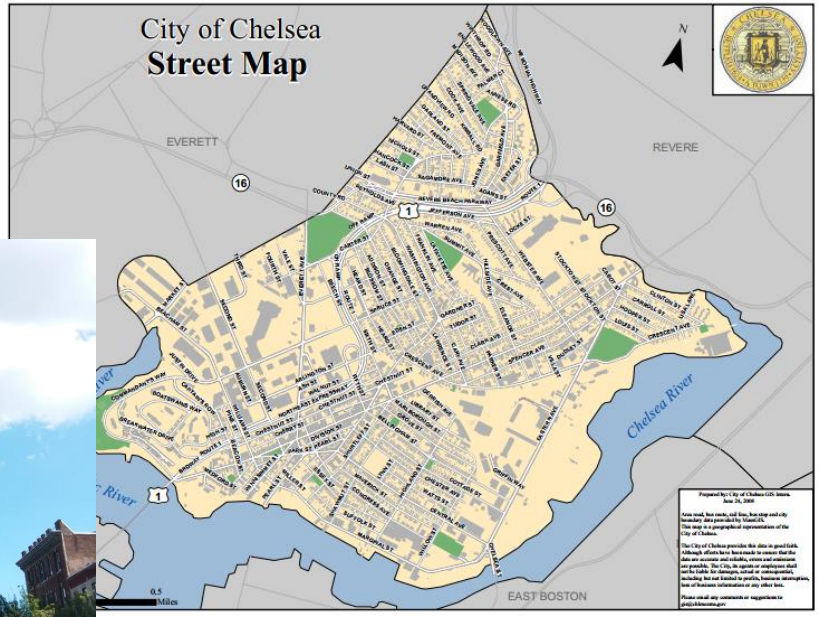


EPA 2013

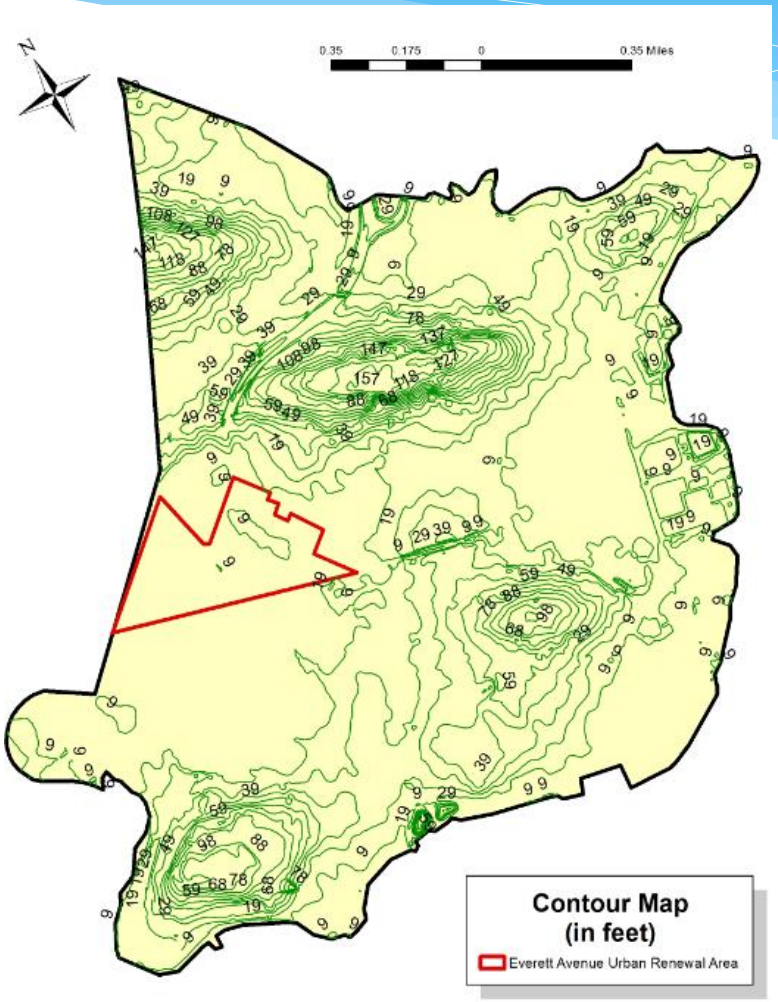
Why Should We Care?

- Property Damage
- Safety Risks
- Sewer Overflow
- Increased Health Risk

Chelsea, Massachusetts



Is Chelsea prepared to address the effects of climate change?



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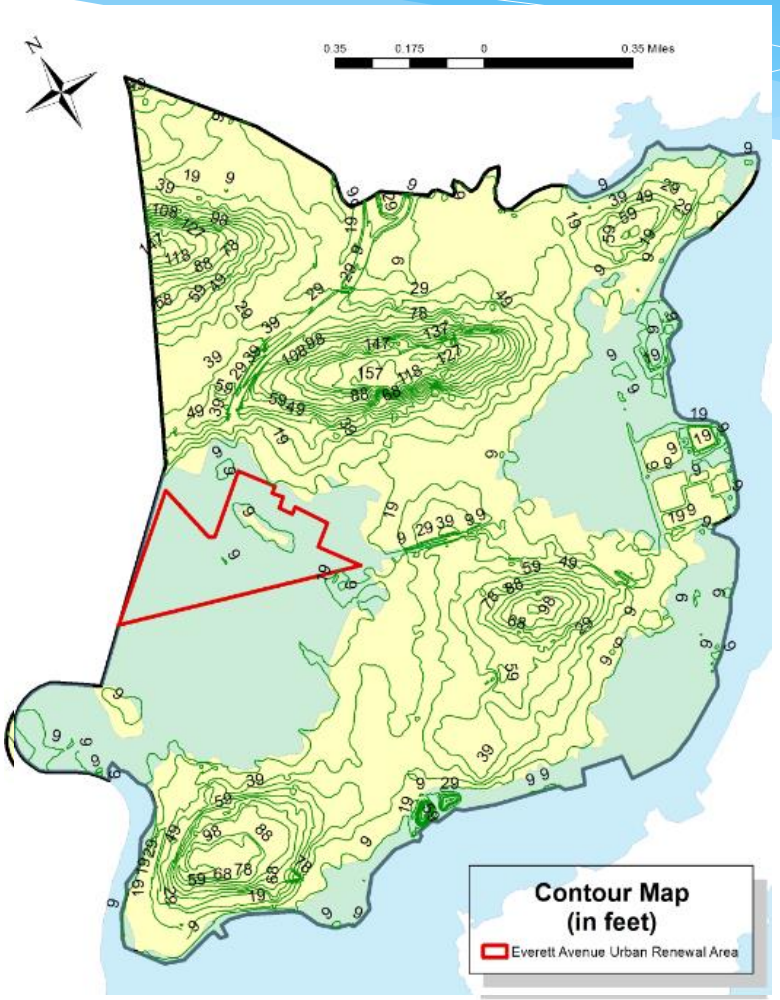
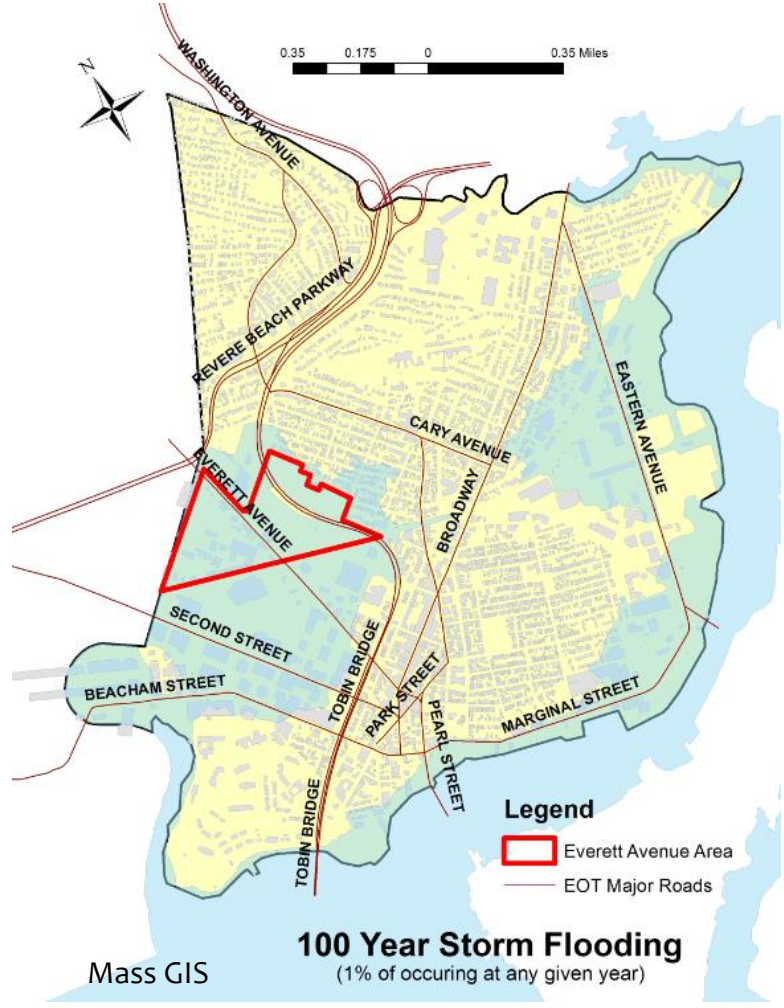


Our Objectives

1. Identified climate change vulnerabilities and risks in the Everett Ave. area of Chelsea, MA
2. Determined the informational needs of the Zoning Board, Planning Board, and Conservation Commission
3. Created a usable document to provide the boards with information

Physical Vulnerability



- Infrastructure
  - Electrical systems
  - Stormwater management
- Roads

Socioeconomic Vulnerability

Socioeconomic Characteristic
Level of Income
Language Barrier
Age
Disabilities
Education
Ethnicity

Information needs: Views of board members

- Some do not see climate change as a concern
- Information not always consistent between boards
- Limited time to review guidelines
- The guidelines must be short and easy to read
- Recommendations are preferred over regulations

Information needs: Views of developers

- Willing to discuss climate change and offer perspective
- Some developers are not concerned about climate change

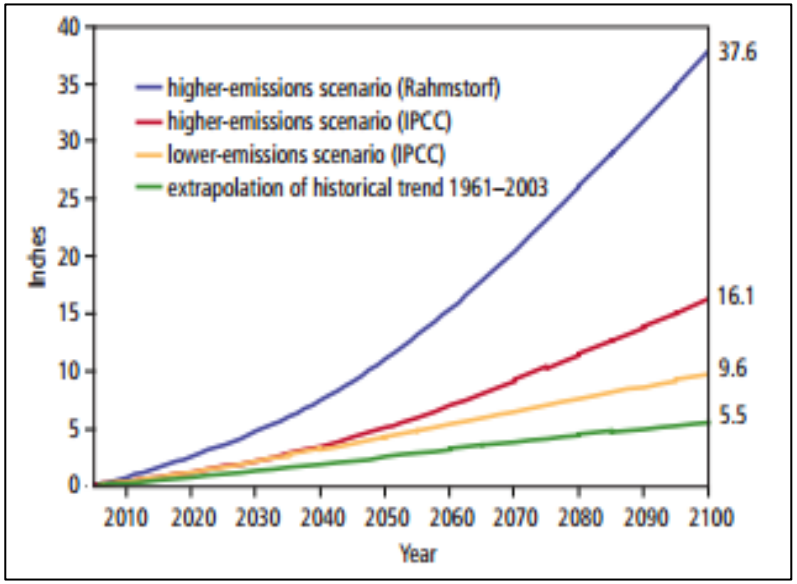
  "I'm not convinced the conditions are going to be that much worse… I mean I could be very not well informed, I'm open to that"

- Developers were concerned about cost
- Recommendations are preferred and incentives would add initiative

Guidelines

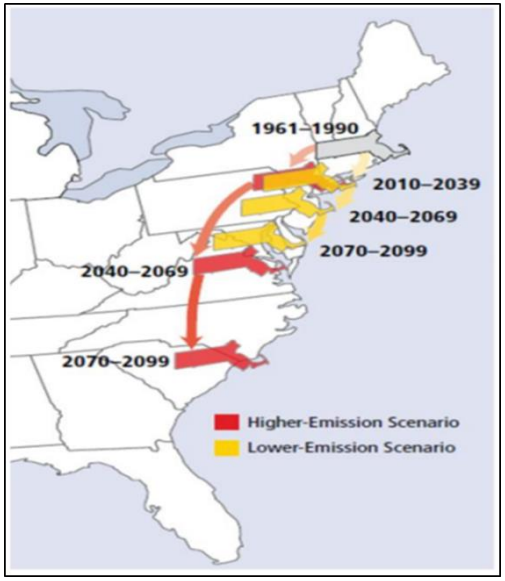

CLIMATE CHANGE
SOCIAL VU
Socioeconomic Characteristic
How it can affe
Level of Income
Language Barrier
Ethnicity
Age
Education
Gender
Disabilities
Vulnerabilities
EPA public health
CLIMATE CHANGE A
FIGUR
SEA LEVEL T
HEAT TREN
Temperature Change (°F)
Decade
National Climate Assessment
Sea Level Trends
City of Chelsea 2014 Hazard Mitigation Plan
Climate Change in The Northeast
Human Health Effects
CLIMATE CHANGE
THE F
WHY CARE?
CURRENT CLIMATE OBSERVATI
FUTURE PREDICTIONS
Climate Change and its Effects
An informational guide to adapting to climate change in Chelsea, Massachusetts
Worcester Polytechnic Institute IQP

Why Is Climate Change Important?



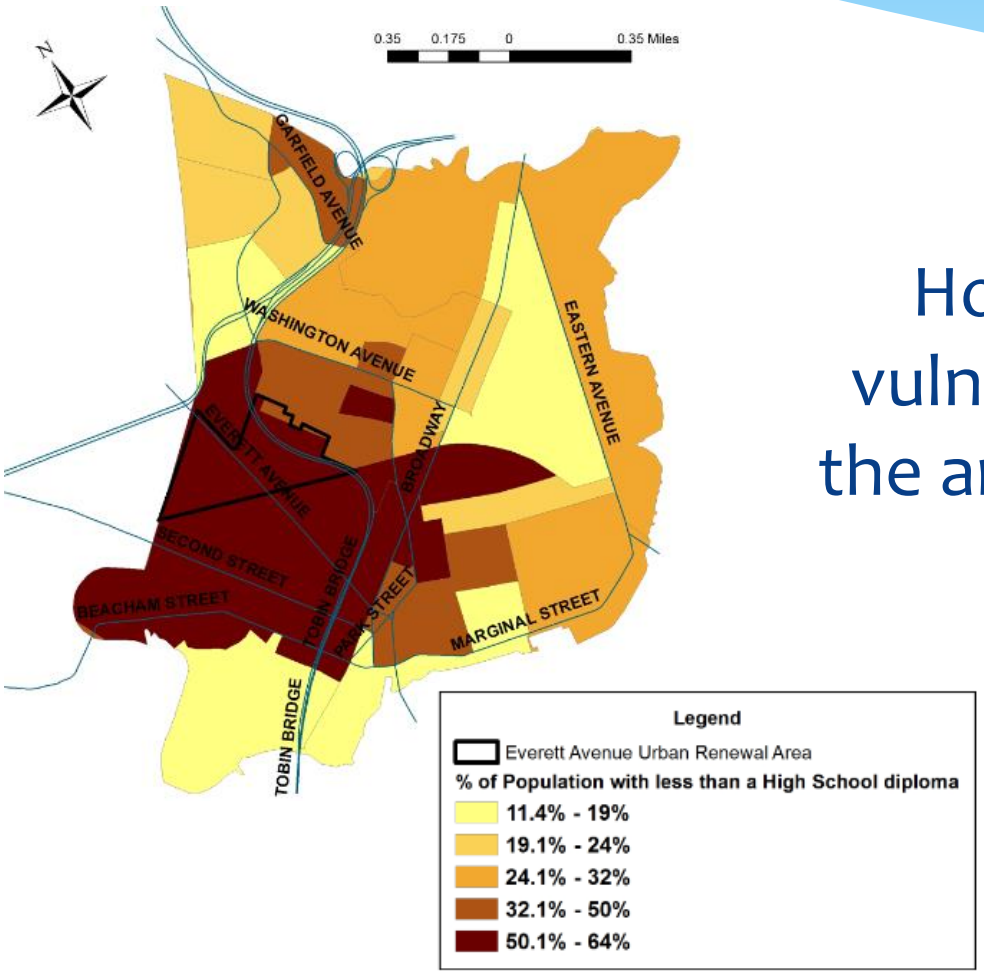
Sea level predictions

- Facts on Climate Change
- Why Care?



The Future Climate of Massachusetts

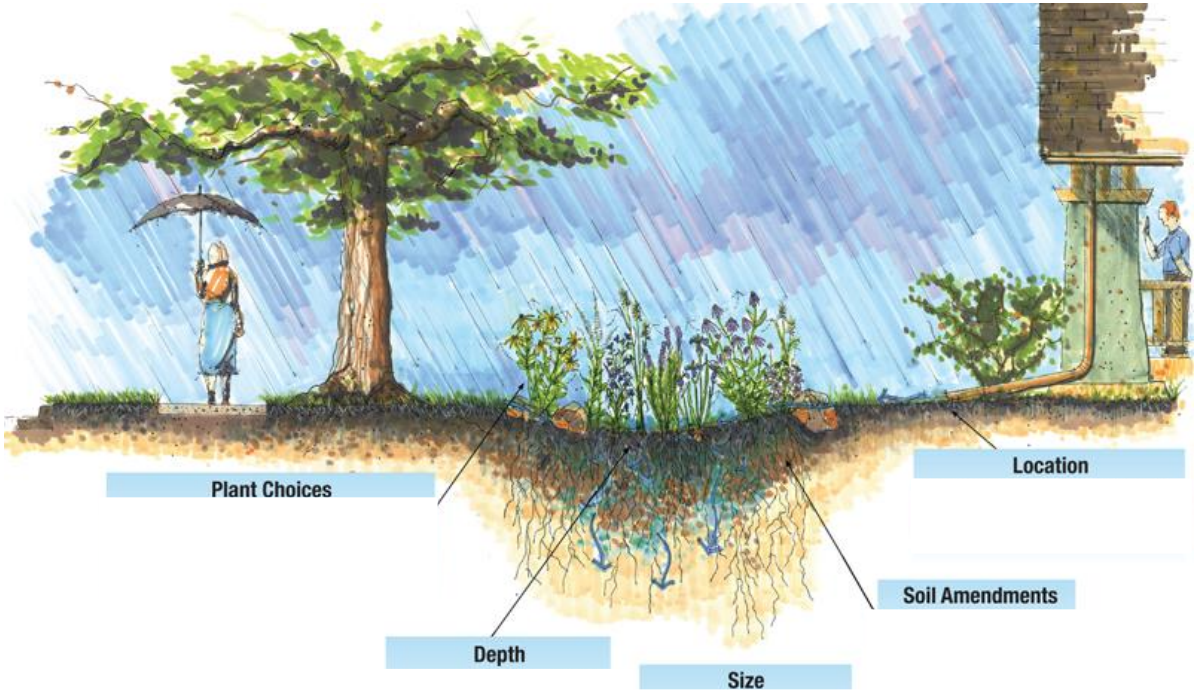
What Are The Main Vulnerabilities To Climate Change In Chelsea, MA?



How can socioeconomic vulnerabilities affect risks to the area from climate change?

What Adaptations Are Possible?

- Install green roofs
- Raise buildings above flood levels
- Install a rain garden
- Elevate electrical systems



Short Term Recommendations

- Present a tutorial of the guidelines
- Send sections of the guidelines to developers
- Use the guidelines when meeting with developers

Long Term Recommendations

- Continue to consider climate change in planning and development
- Adopt this guideline to be used throughout the city
- Update guidelines as necessary

Any Questions?

Acknowledgements

Advisors

- Paul Mathisen
- Seth Tuler

Sponsors from MIT

- Judith Pederson
- Julie Simpson

Sponsors in Chelsea

- John DePriest
- John Gelcich

ID2050 Professor

- Stephen McCauley

Interviewees

- Leonard Albano
- Erica Blonde
- Andy DeSantis
- Richard Latini
- Catherine Maas
- Mark Robinson
- Madeleine Scammell
- Patricia Simboli
- John Stebbins
- William Willis

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