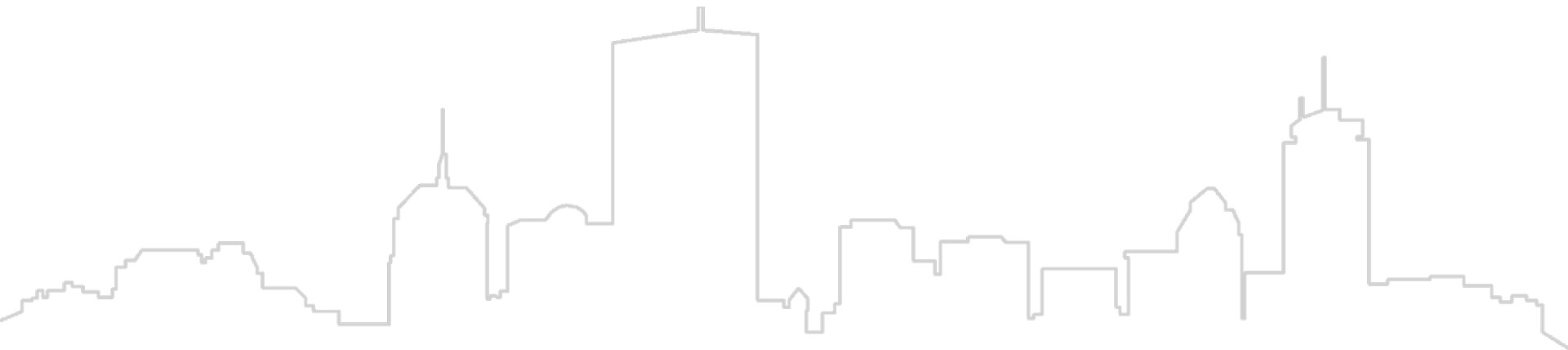


2024/25 Collaborative Climate Action Planning Cohort



May 23, 2024



Speakers & Panelists



Joshua Meyer

Curator of Horticulture and
Sustainability,
Zoo New England



Tim Scarpa

Senior Portfolio
Maintenance Director,
AvalonBay



Dallase Scott

Founder and Principal,
Trust for Change

Presentation Objectives

By the end of this presentation, you will learn about the:

- GRC/City of Boston Relationship
- Development & Overview of Collaborative CAP
- Cohort Members Experience and Reflection
- Behavior Theory Behind the Program Design



Strategies for fighting climate change in coordination with the City of Boston's Climate Action Plan

Boston's Carbon Reduction Goals



MITIGATION

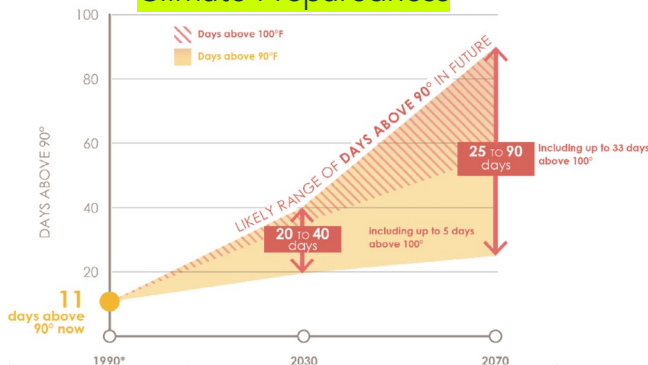
Reduce community-wide carbon emissions by

50% in 2030 & **100%** in 2050

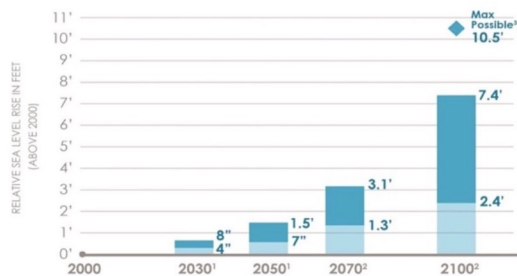
Reduce municipal emissions by

60% in 2030 & **100%** in 2050

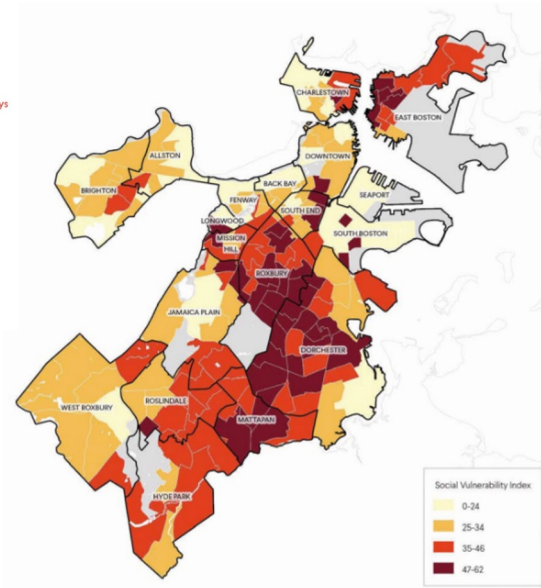
Climate Preparedness



Projected Sea Level Rise



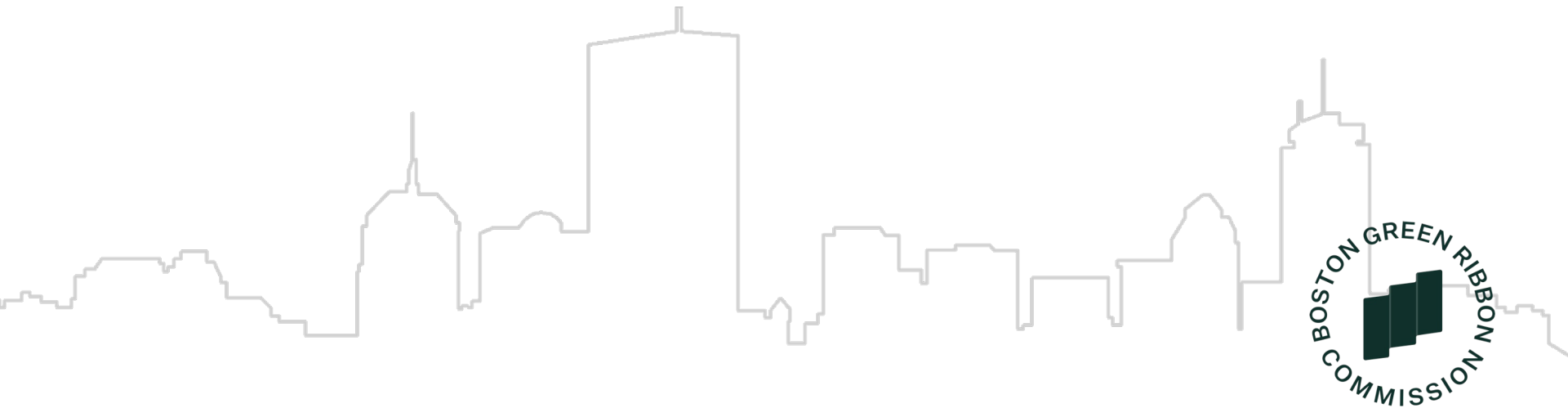
Need for Equitable Transition



The mission of the **Green Ribbon Commission** is to accelerate the implementation of the City's Climate Action Plan by convening, organizing, and enabling leaders from Boston's key sectors.



PROGRAM OVERVIEW





If you are trying to encourage climate action at your organization and do not know where to start, the GRC will be your guide to take climate action.”

Collaborative CAP Participants:



Boston
Green Ribbon
Commission



BOSTON
CENTER
FOR THE
ARTS



Museum of Science.



The Paul Revere Memorial Association



HUNTINGTON
THEATRE
COMPANY



SUFFOLK
UNIVERSITY
BOSTON



JOHN F. KENNEDY
PRESIDENTIAL LIBRARY AND MUSEUM



ISABELLA
STEWART GARDNER
MUSEUM



Emerson
COLLEGE



COHORT COMMITMENT

BY THE NUMBERS

9

Commitment to a 9-month collaborative planning process

2

We encourage each organization to appoint at least 2 staff members to act as climate action leads

8

Appointed staff member(s) will attend 8-cohort work sessions + lead weekly/bi-weekly meeting at their respective organization

3

Attend 3 planning checkpoints : Kick-off, Summit, and Green Ribbon Cutting celebration. Open to organization leadership and additional staff.

The Boston Green Ribbon Commission's successful Collaborative Climate Action Planning approach **reduces barriers to taking organizational climate action and will result in a Climate Action Plan framework.** If you own any buildings of 20,000 square feet or more, this cohort can help you understand and make adjustments to your carbon footprint, your future trajectory, and your CapEx plan.



Invaluable Learning through a Low-Cost Approach

Program Cost: \$5,000 for-profit;

\$3,000 nonprofit

- The Green Ribbon Commission's approach **supports organizational competency.**
- You will have a **strategic understanding of your opportunities** and requirements *through this highly subsidized program.*
- The program's coaching, resources, and peer learning cohort **avoids thousands of dollars in consulting expense** to develop a coherent enterprise climate action plan.



Climate Action Planning Cohort

PLAN DEVELOPMENT

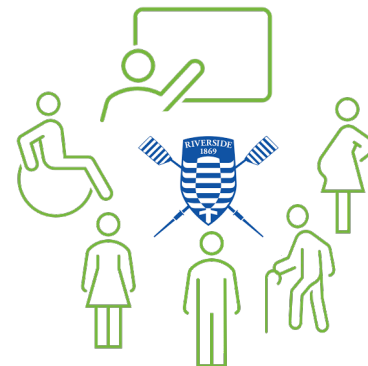
Carbon Mitigation
Climate Resilience
Climate Justice



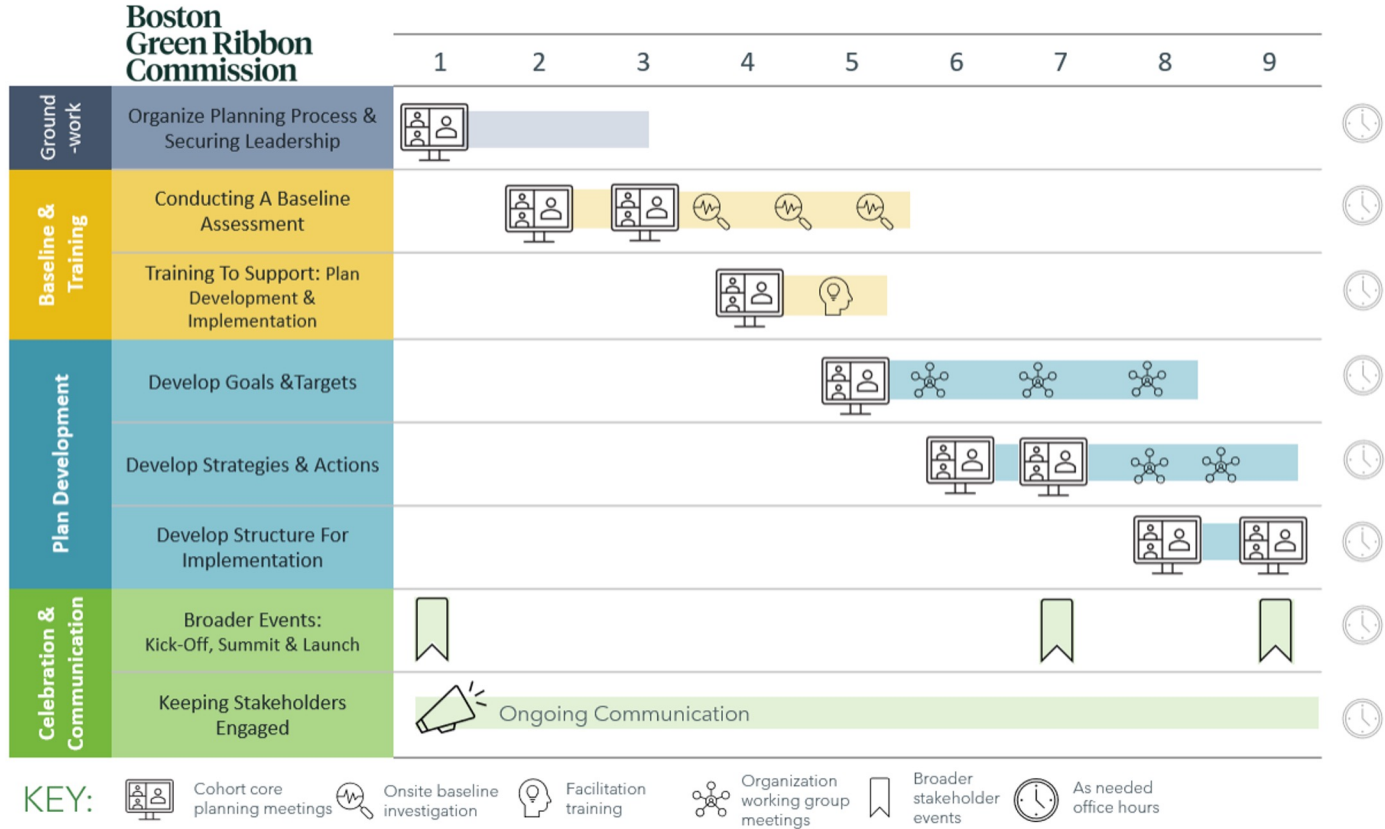
Climate Action Planning Cohort

PLAN DEVELOPMENT

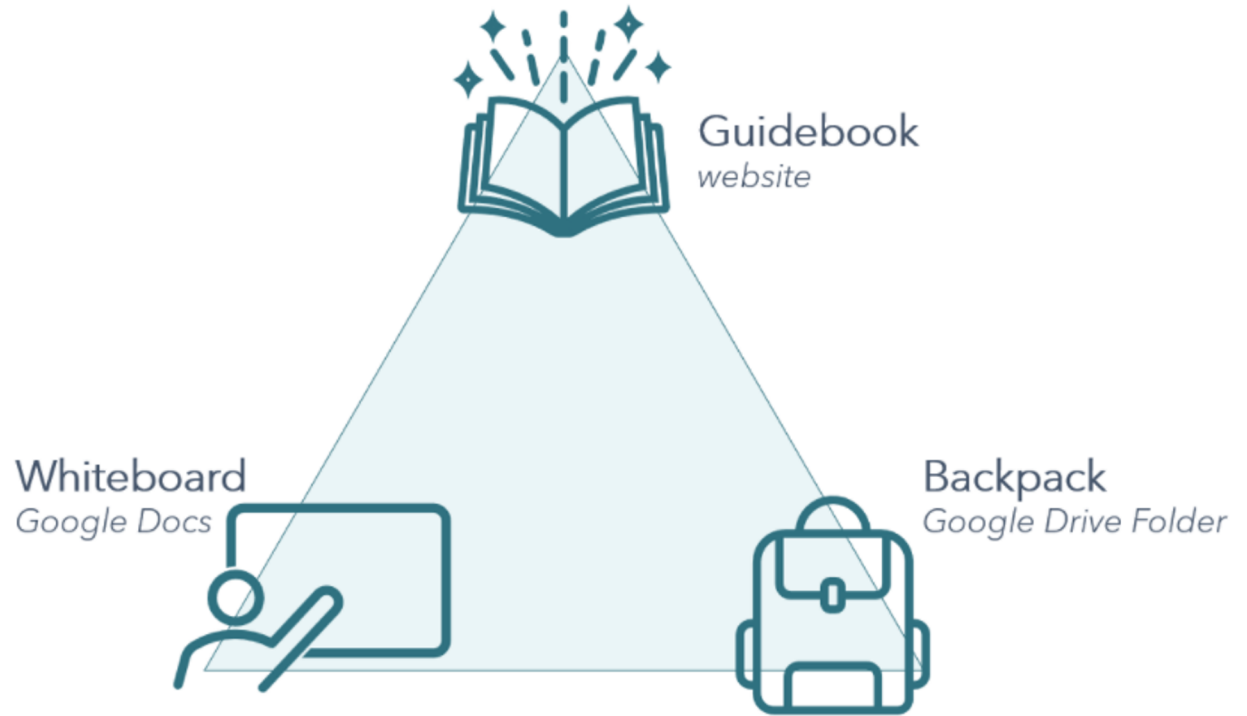
Carbon Mitigation
Climate Resilience
Climate Justice



Timeline & Process



Participant Resources



Participant Resources

COLLABORATIVE CAP GUIDEBOOK

Welcome to your Collaborative Climate Action Guidebook. Your resource hub for everything you will need throughout the Collaborative Climate Action Planning Process.



Homework:

- Begin working on your KISS Baseline Worksheet

Cohort Meeting 2 | Oct 12, 2023

Conducting A Baseline Assessment | PART 1

MEETING GOALS

- Understand the foundation of a Climate Action Plan
 - Mitigation - GHG emission baseline + Tools
 - Resilience - Climate risks baseline + Tools
 - Climate Justice - Climate justice as the center of climate action + Tools
- Understand the first set of steps to begin baselining
- Review timeline and work plan to complete your baseline assessments

MEETING AGENDA

- Welcome
- Check-in + Intros - small groups
- Review Meeting Goals + Agenda
- Presentation -
 - High-Level Context Setting - Dallase Scott
 - Madeline Rawson and Jen Haugh - GreenerU - Mitigation Baseline
 - Liz Hanson - Climate Risk Assessment
 - Claudia Diezmartinez, BU - Climate Justice Frameworks
- Q&A with Presenters
 - Deeper Dive Questions with Presenters in Small Groups
- Report out with key answers to questions
- Next steps
 - Homework overview



SECTION OVERVIEW

An overview of potential deliverables, key sub-steps, online resources, and best practices



Potential Documents

- Stakeholder map with an assignment of members to the planning team.
- A written team charter.
- Assignment of key staff responsibilities.
- A budget for the planning effort.
- A timeline for the planning effort.
- A list of consulting resources to use in developing the plan.
- Define the climate action plan deliverable.



Key Sub Steps

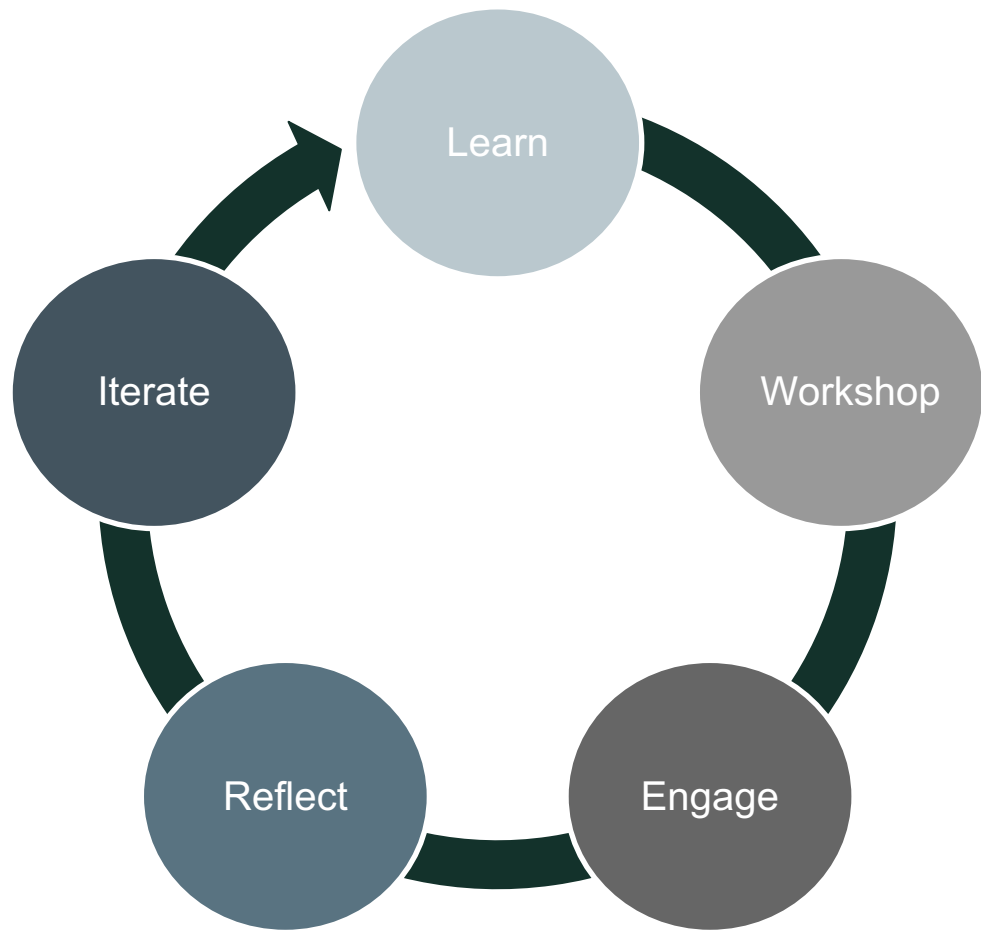
- Create a cross-functional CAP team.
- Define the team's mandate and develop a written team charter.
- Identify the budget and other support resources, including consultants.
- Establish the schedule.
- Define CAP deliverables.



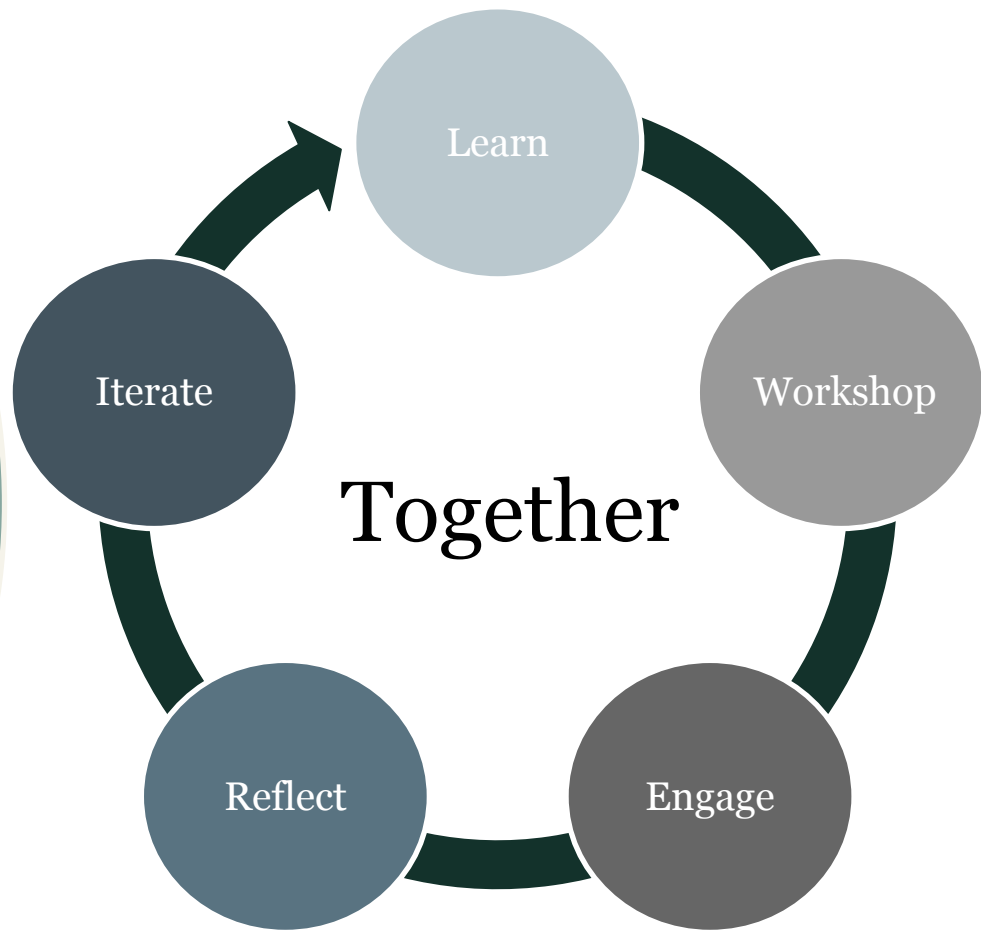
Online Resources

- Examples of public-facing planning process overviews:

COHORT PLANNING PROCESS



**AMPLIFY
IMPACT**





AvalonBay Communities GRC Cohort Plan

Ryan Younis
Tim Scarpa
Olivia Larson



Buildings in Boston + Cambridge

Avalon Exeter (187 Units/28-story high rise in Back Bay)

AVA Back Bay/Avalon at Prudential (780 Unit, 3 - 27 Story high rise buildings connected to the Prudential Center Complex)

AVA Theater District (398 Unit, 30 Story high rise in the Theater District)

Avalon North Station (503 Unit, 37 story high rise abutting TD garden)

Avalon Brighton (180 unit, 6 story mid rise by St. Elizebeth's hospital)

AVA North Point (250 unit, 5 story mid rise building by Lechmere Station)



AvalonBay COMMUNITIES

Science Based Targets (SBTs)

Scope 1 & 2*

Reduce 53% of greenhouse gas emissions by 2030

Scope 3*

Reduce 47% of Scope 3 greenhouse gas emissions by 2030

BERDO and Emissions Analysis

- ▶ **Engineering Partner**
 - ▶ This partner will be an engineering resource and a process advocate as BERDO regulation evolves.
- ▶ **Baseline and Benchmark Boston Portfolio**
 - ▶ 2021 third-party verification by consultant partner. Confirm accurate data through utility providers and outside firms
 - ▶ Plan approach for third-party verification looking forward.
- ▶ **Leadership Engagement**
 - ▶ Compare and incorporate BERDO target with AVB targets.
 - ▶ Create Decarbonization plans

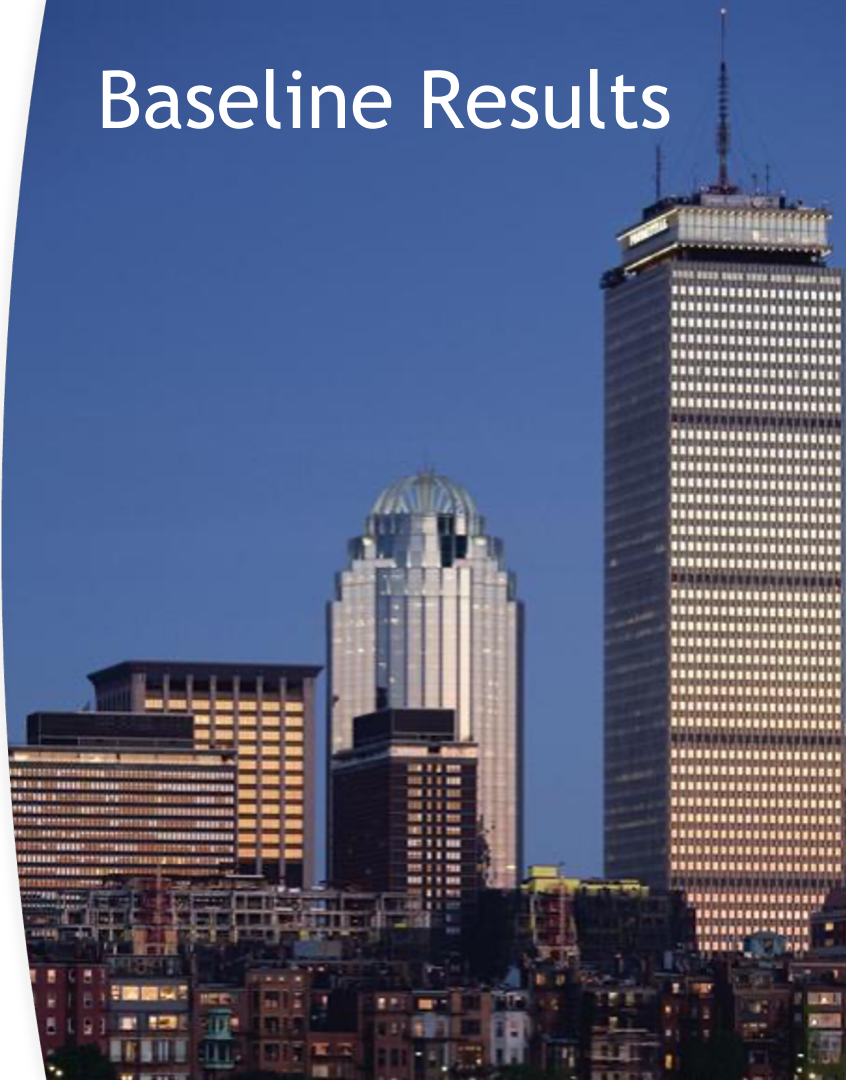


What We Know Today About Our Buildings for BERDO/Emissions Factors

- ▶ Currently at baseline and benchmarking phase. Utility data has been difficult, especially for aggregate resident data.
- ▶ Our oldest buildings, AVA Back Bay and Avalon at Prudential Center (Built in 1967-68) produce the most carbon emissions and do not meet the 2025 BERDO guideline of 4.1 CO₂/per sq ft. Currently, our reporting shows a 4.24 average for the 3 buildings.
- ▶ The Portfolio Approach for reporting with BERDO help to remain under BERDO targets until 2030.

	Year Reference for Calcs -	2025	2030	2035	2040	2045	2050
Building Info		BERDO					
#	Community Name	2022 Baseline Extrapolation BERDO Score w/o RECs					
		[kg CO2e/sqft] w/o RECs					
1	Avalon at Prudential Center I, 770 Boylston Street	4.87	4.55	4.23	3.90	3.58	3.26
2	Avalon at Prudential Center II, 780 Boylston Street	4.68	4.32	3.97	3.61	3.25	2.90
3	AVA Back Bay, 790 Boylston Street	3.72	3.53	3.34	3.15	2.96	2.77
4	Avalon Exeter, 77 Exeter Street	2.63	2.32	2.00	1.68	1.37	1.05
5	Avalon North Station, 1 Nashua Street	3.29	3.02	2.75	2.47	2.20	1.93
6	AVA Theatre District, 24 58 Lagrange St, 45 Stuart	3.49	3.16	2.84	2.50	2.17	1.85
10	Portfolio Approach >	3.73	3.44	3.14	2.84	2.55	2.25

Baseline Results



Next Steps

► Data Driven

- Working to finalize and organize meter management for each property and be the 1 source of data.
- Aggregate and retail data refinement.
- Whole Building Metering - Pilot to be implemented in Prudential buildings and possibly more markets.

► Leadership Engagement - Connect the Dots

- Incorporate this data and impact into decision making regarding the Solar portfolio in MA. Create resultant model with MA Solar capacity included.
- Include BERDO targets in consideration with AVB Sustainability target planning.
- Create a decarbonization process.

► Project Planning

- Start discussion and planning of retrofit projects needed for electrification with the community and leaders in each department. Investment-level energy audits and decarbonization planning.
- Goal: Emissions target planning should be a topic of discussion for ongoing activities in all buildings, but specifically the Boston portfolio. BERDO committee to be a resource and data source for this conversation to all departments.



Resiliency in Boston

Coastal Resilience:

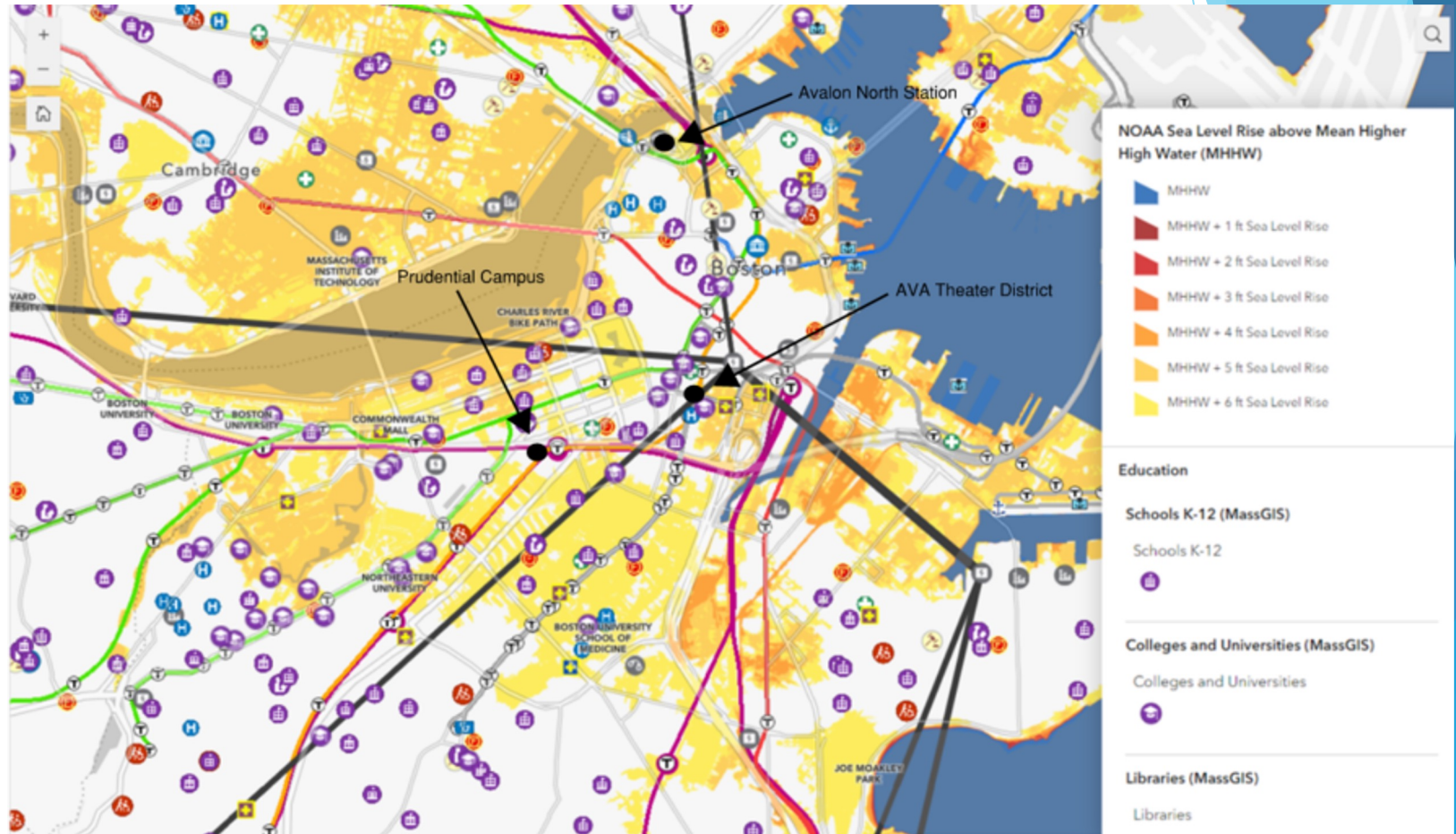
- Risk assessments for the effects of coastal flooding and sea level rise
- Support and engage city-wide projects
- Plan projects for affected Boston buildings
 - Adjustment of critical utility infrastructure
 - Electrical equipment resilience, plumbing and drainage assessments, storefront and ground level adjustments.

Heat Resilience:

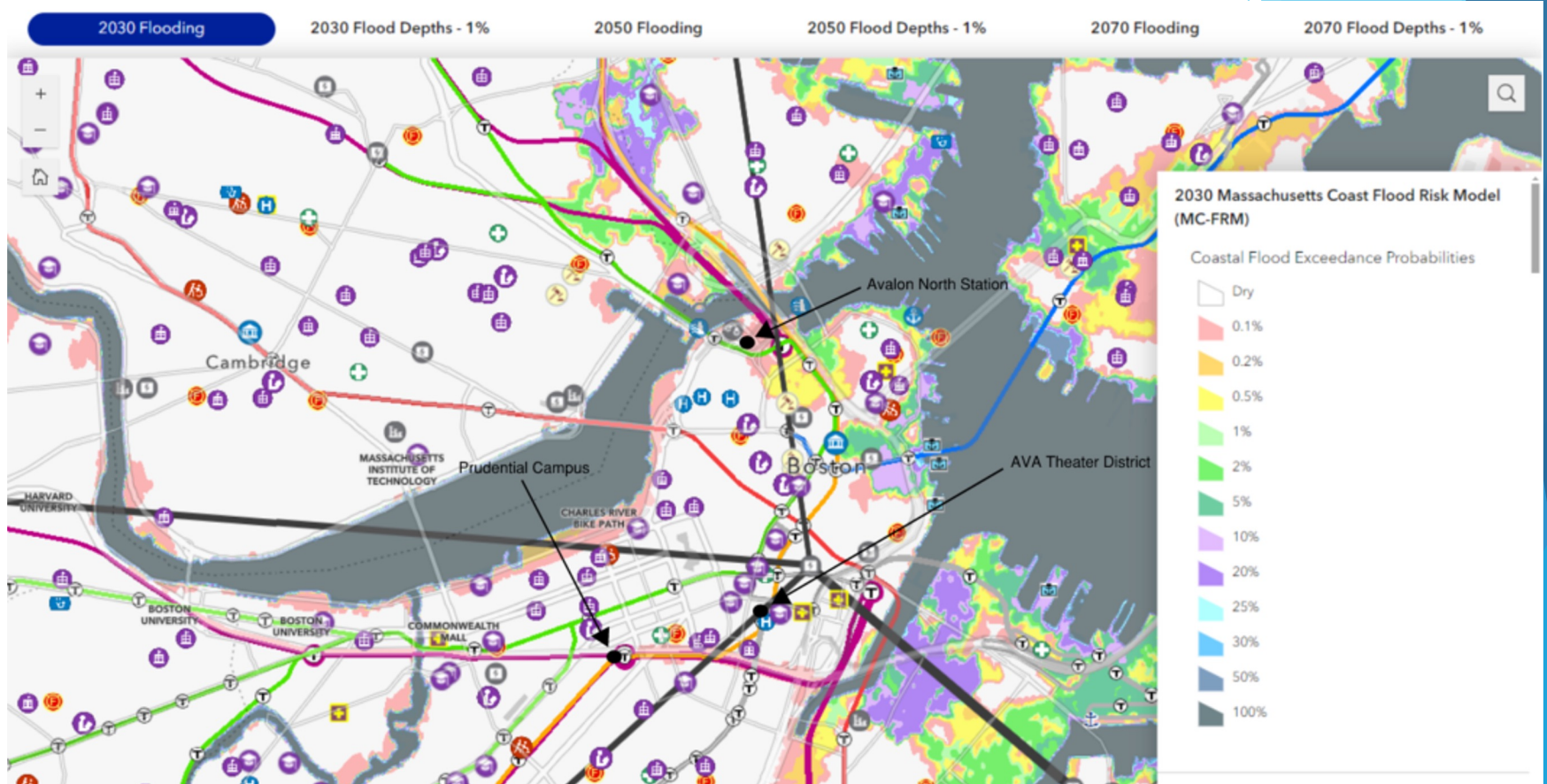
- Risk assessments for the effects of heat map predictions.
- Onsite adjustments that are needed for façade or MEP upgrades.
- Landscaping or greenspace improvements



Sea Level Rise Risk



Coastal Flooding Risk



Climate Justice/Philanthropy

Current Philanthropy:

- ▶ As of year-end in 2022, we totaled \$76 mil as a company to over 8,200 residents taking advantage of our affordable housing programs.
- ▶ Our staff volunteered for over 65,000 hours at local organizations and community events.
- ▶ As a company we donated \$12 mil to charitable organizations (locally Rosies Place, Cradles to Crayons, Pine St Inn, Bruins Foundation, Hospitality homes and more)
- ▶ 8000 pints of blood were donated to the Red Cross through AVB hosted events
- ▶ Through these efforts the direct AVB impact to our local Boston community has provided 3000 children in need clothing, donations for school supplies for up to 70,000 students and filled 916, 13 gal totes with various children's household supplies.
- ▶ We also donate apartments for temp housing at North Station and AVA Back Bay that are used for families/children who need to be close to medical facilities for cancer treatments and other critical disease treatments and complications. The rent amount donated for these units in 2022 alone was \$104k.

Goals:

- ▶ Generate philanthropy projects that have an origin from sustainability committees in 2024.
 - ▶ Work with Charles River Conservancy to plant and maintaining garden beds, mulching, removing litter and debris.
- ▶ Socialize these projects internally for support and inclusion with sustainability and climate justice focus with the cooperation of the AVB Building Strong Communities.
- ▶ Continue to emphasize as a cultural norm of ours and we hope to find new ways through this cohort to help with Climate Justice for now and in the future.



A spirit of caring

Have genuine kindness and concern for others

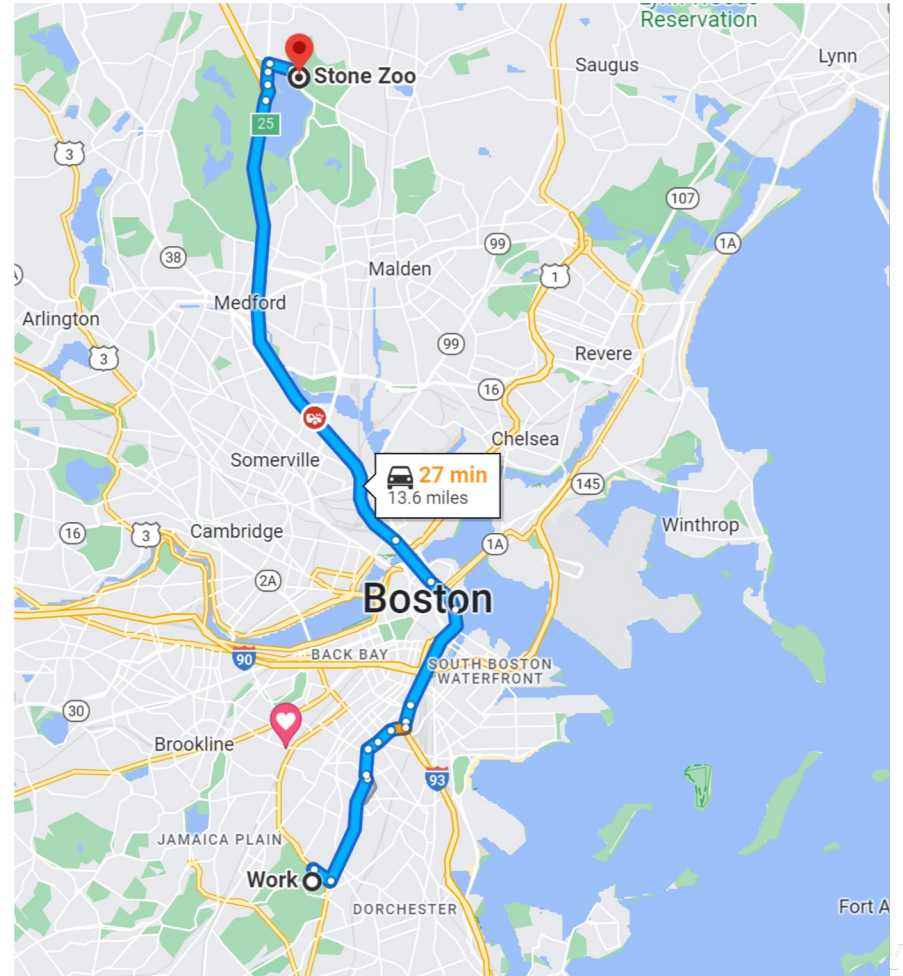
Collaborative Climate Action Planning at Zoo New England



Josh Meyer
**Curator of Horticulture &
Sustainability**
Zoo New England
Jmeyer@zoonewengland.org

Context/History

Our mission is to inspire people to protect and sustain the natural world for future generations by creating fun and engaging experiences that integrate wildlife and conservation programs, research, and education.



GORILLA GROVE

Gorilla

TROPICAL FOREST

Baird's Tapir
Giant Anteater
Gorilla
Green Anaconda
Pygmy Hippopotamus
Ring-Tailed Lemur
Spotted Hyena
Two-Toed Sloth

BIRD'S WORLD

Kea
Kookaburra
White-Naped Crane
EXHIBITS INSIDE BUILDING
• Swamp • Rainforest
• Scrubland • Riverbank
RAPTOR RIDGE
Andean Condor
Stellar's Sea Eagle

Franklin Park Zoo

Visitor Guide



FRANKLIN FARM

Barn Owl
Chicken
Contact Corral
(weather permitting)
Goat
Guinea Hog
Mini Donkey
Poitou Donkey

KALAHARI KINGDOM/ TIGER TALES

Bactrian Camel
Lion
Red River Hog
Tiger

BUTTERFLY HOLLOW

(seasonal)

OUTBACK TRAIL

Aussie Aviary (seasonal)
Emu
Kiwi
Red Kangaroo

SERENGETI CROSSING

Cape Porcupine
Hartmann's Mountain
Zebra
Ostrich
Warthog
Wildebeest

CHILDREN'S ZOO

Blanding's Turtle
Hooded Crane
Muntjac
Prairie Dog
Red-Breasted Goose
Red Panda
Spotted Turtle

GIRAFFE SAVANNAH

Grevy's Zebra
Masai Giraffe

UNIVERSITY

TREETOPS AND RIVERBEDS

Colobus Monkey
North American River Otter
White-Cheeked Gibbon

BARNYARD

Goat
Pygmy Zebu
Sheep

HIMALAYAN HIGHLANDS

Black-Necked Crane
Markhor
Snow Leopard
Yak

MEXICAN GRAY WOLVES

Stone Zoo Visitor Guide



CARIBBEAN COAST

Bush Dog
Caribbean Flamingo
Jamaican Iguana
Macaws

YUKON CREEK

Arctic Fox
Bald Eagle
Black Bear
Lynx
North American Porcupine
Reindeer

TREASURES OF THE SIERRA MADRE

Chacoan Peccary
Coati
Cougar
Gila Monster
Jaguar
Peregrine Falcon
Seba's Short-Tailed Bat

WINDOWS TO THE WILD

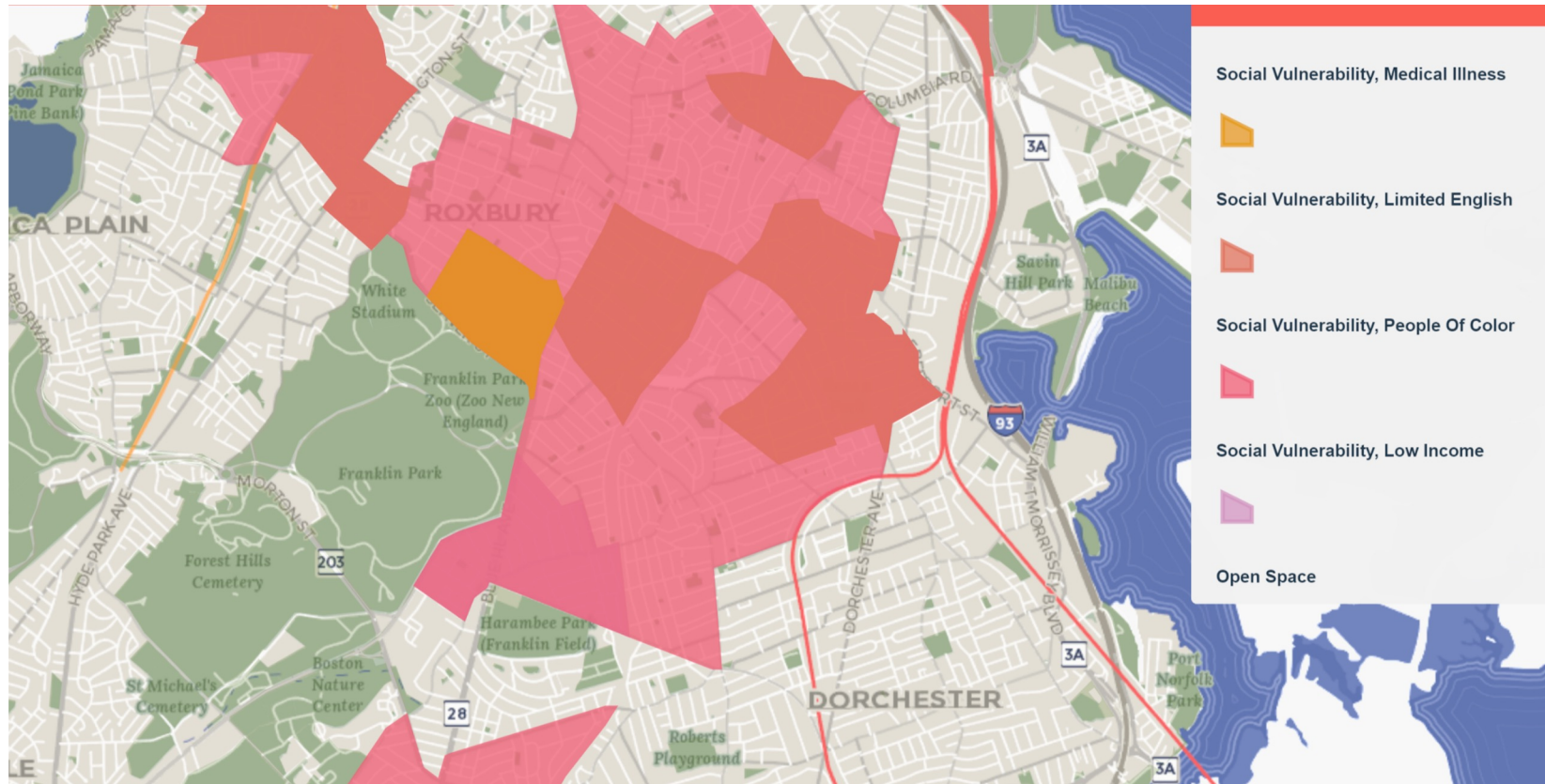
African Spurred Tortoise
Central American Agouti
Cotton-Top Tamarin
Rock Hyrax
Inca Tern
Prehensile-Tailed Porcupine
Rock Hyrax
Two-Toed Sloth

ANIMAL DISCOVERY CENTER

Box Turtle
California Kingsnake
Leopard Gecko
Panamanian Golden Frog
Poison Dart Frog
Rosy Boa

Social Vulnerability:

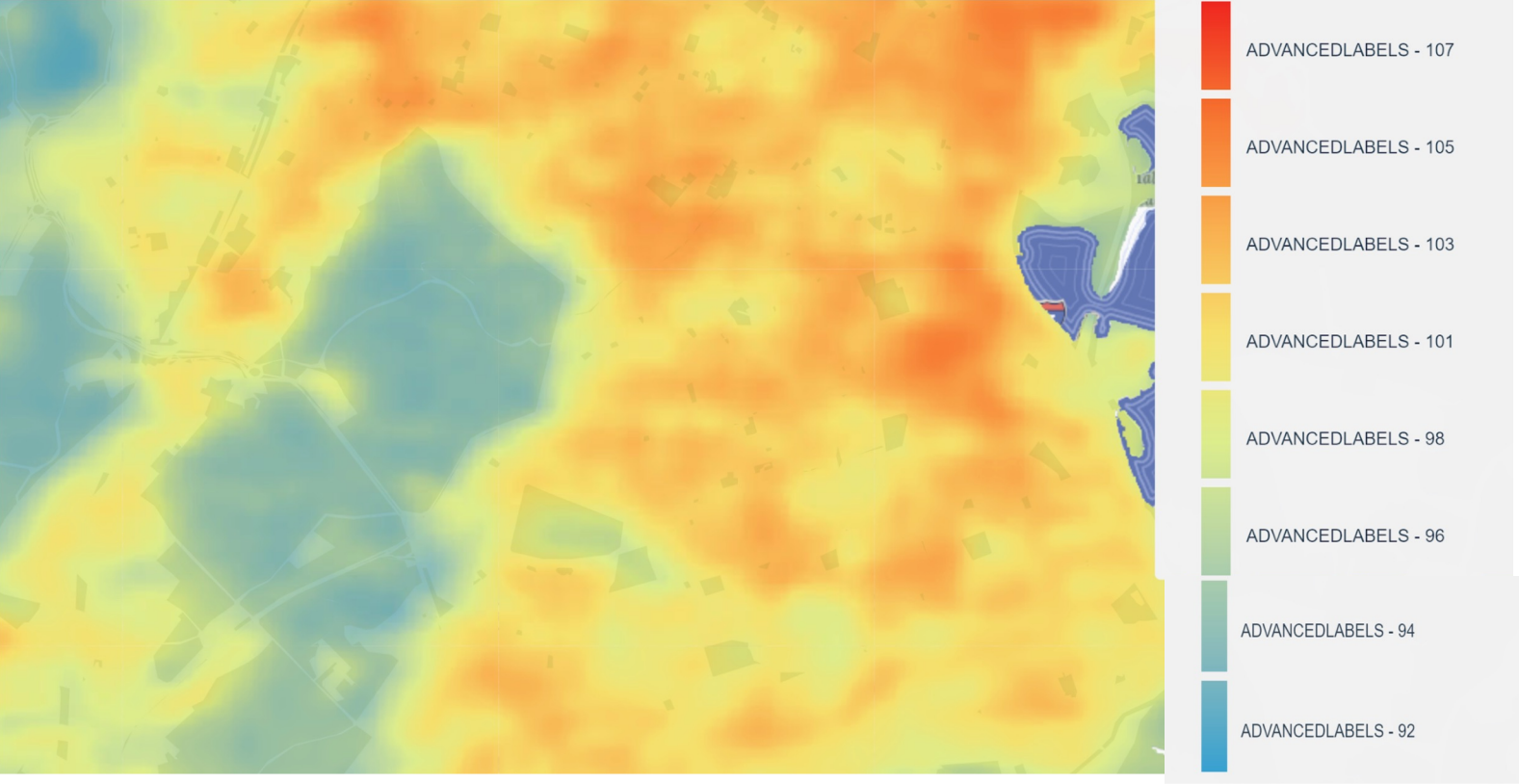
Census tracts where the concentration of vulnerable populations falls in the top quartile (25 percent) of Boston tracts. Social vulnerability is defined as the disproportionate susceptibility of some social groups to the impacts of hazards, including death, injury, loss, or disruption of livelihood. Groups identified as being more vulnerable are older adults, children, people of color, people with limited English proficiency, people with low or no incomes, people with disabilities, and people with medical illness.



A weeklong analysis period during July 18th-24th, 2019 was selected to produce heat characteristics maps for the Study (one of the hottest weeks in Boston that year). The data array represents the modelled, average hourly urban meteorological condition at 100m spatial resolution. This dataset is further processed into urban heat indices and delivered as georeferenced image layers (geotiff rasters). The data layers have been resampled to 10m resolution for visualization purposes.

Daytime Air Temperature | Daytime Air Temperature (3PM) CRB Heat Resilience Study

This map shows the modeled daytime air temperature at 3pm. Daytime temperatures are higher in dense areas and large paved spaces and lower in well



Call to Action (why this plan, why now?)

- **Living collections are greatly impacted by climate change.**
- **We have a lot of acreage and responsibility to our community**
- **We reach over 1 million visitors a year / have a great opportunity to educate.**
- **ZNE is connected to many local government initiatives that prioritize climate action (Boston's climate goals, Franklin Park Action Plan, etc)**
- **Embarking on many new building / deferred maintenance projects.**
- **We need a plan to tackle sustainability initiatives efficiently and effectively.**



Education, Communication and Climate Literacy

Climate Policy

Visitor and Community Engagement

Mitigation

Resilience

Climate Justice

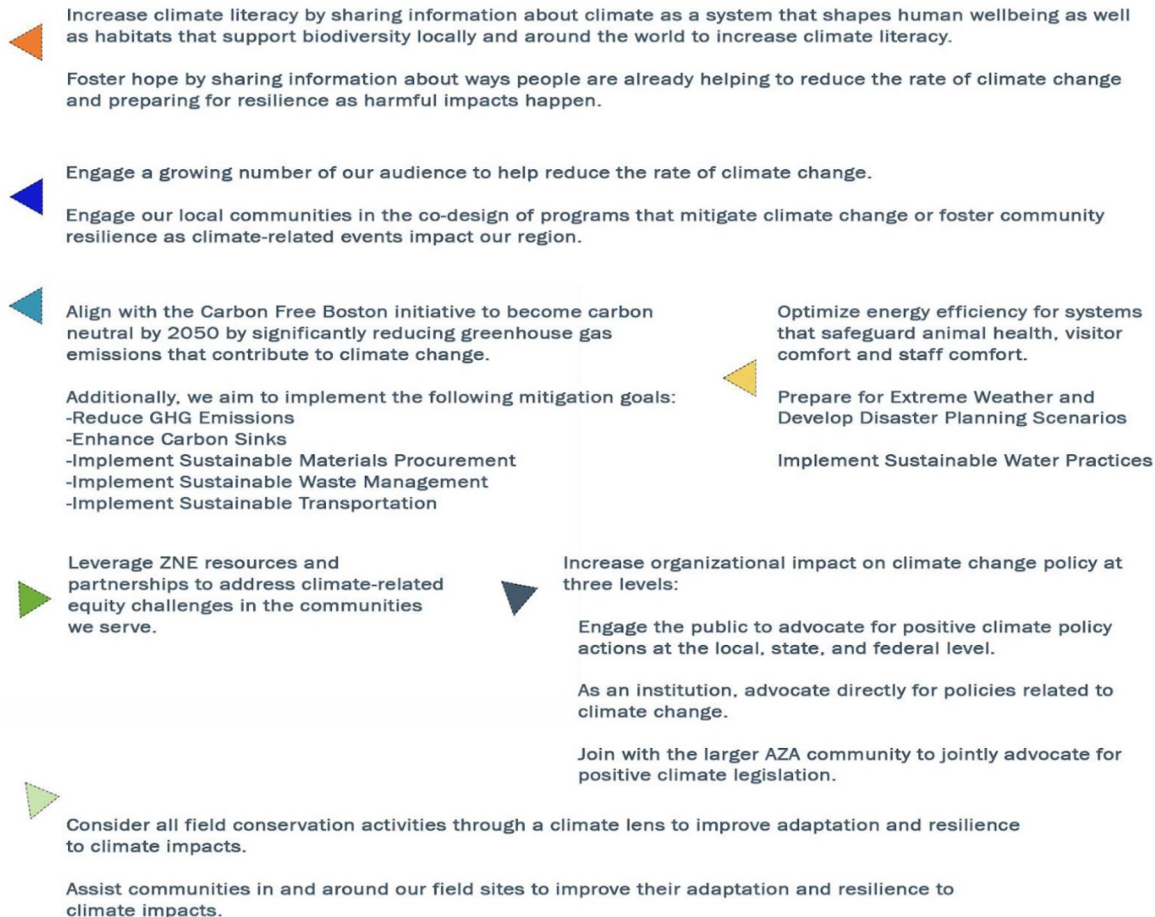
Wildlife Conservation



NEW ENGLAND

Franklin Park Zoo ♦ Stone Zoo

Climate Action

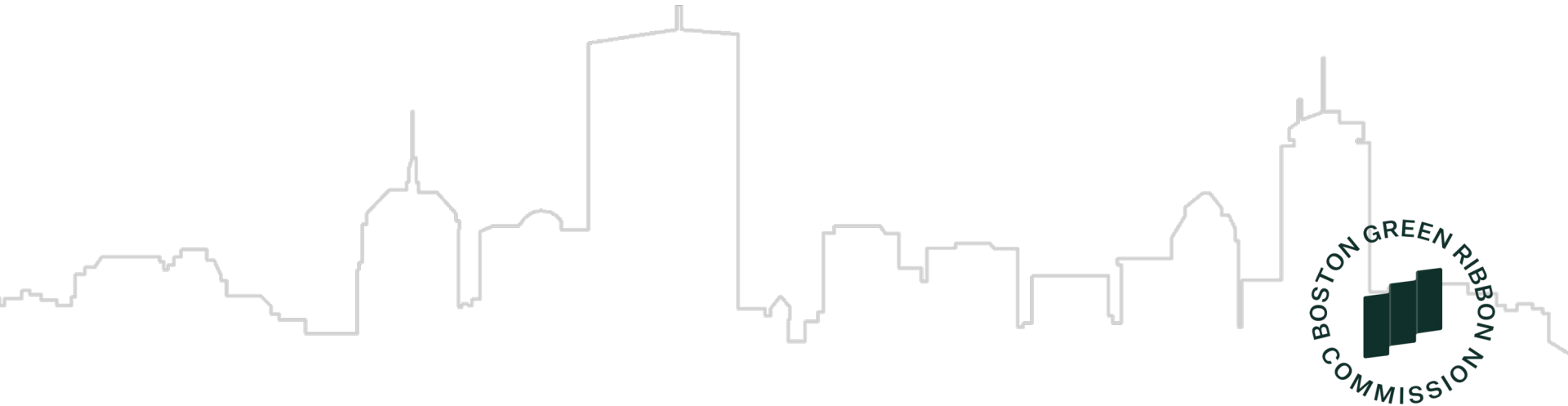


Collaborative Climate Action Planning at Zoo New England



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THEORY BEHIND PROGRAM DESIGN



BEHAVIOR THEORY + ORGANIZATIONAL CHANGE

BEHAVIOR ELEMENTS



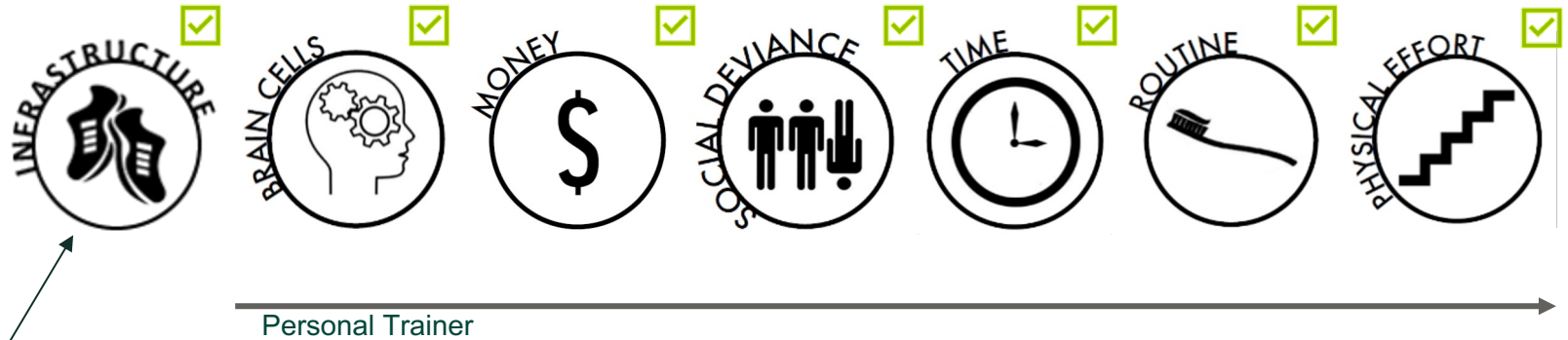
Adapted by BJ
Fogg

BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



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BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



How to
create a
CAP

Adapted by BJ
Fogg

BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



The Collaborative Planning Process was created with behavior theory and organizational change management as its framework.

User-Friendly Framework:

Meetings are designed to **focus on the task at hand** - giving organization leads baseline knowledge, tools, templates, and peer-support they can bring back to their organization. GRC will **provide the guidance, framework, and accountability** that is key to keep the momentum going in any change work.

BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



The Collaborative Planning Process was created with behavior theory and organizational change management as its framework.

Curation of Best Practices and Tools:

Important tools and best practices already exist, but it can be hard to know where to start or what resources to use. The collaborative **planning workbook is a curated and focused list of resources** that will be used throughout the plan development.

BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



The Collaborative Planning Process was created with behavior theory and organizational change management as its framework.

Capacity Building:

Core to this work will be educating and training participants with the goal to **build the knowledge base and skill** set for each organization that takes part. Participants will walk away with a deeper understanding of the impacts of climate change and have the tools to facilitate organizational change that will be used during the development of the plan and beyond.

BEHAVIOR THEORY + ORGANIZATIONAL CHANGE



The Collaborative Planning Process was created with behavior theory and organizational change management as its framework.

Engagement Focused:

Engagement starts with the development of a climate action plan. An engagement focused planning process will educate staff and customers, provide clarity and **build trust, and create the buy-in needed for the successful implementation of the plan** once complete.

KEY TAKEAWAYS FROM THE PROGRAM

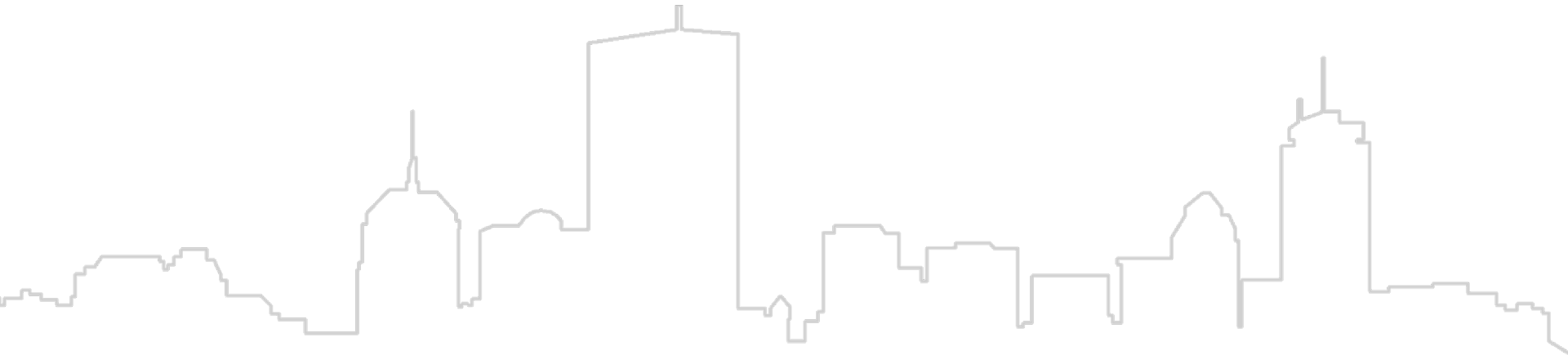


WE CAN'T
DO THIS
ALONE



Climate change is bigger than any person, institution, or city. But by taking action together, we can make a real difference for our loved ones, our city, and our world.

Moderated Discussion and Q&A



Thank You



Questions? Reach out to Azanta Thakur
azanta@greenribboncommission.org

