CREATING A GREENZONE/ECODISTRICT
IN BOSTON'S NEIGHBORHOODS OF COLOUR

A PRESENTATION BY

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Greater Grove Hall Main Streets

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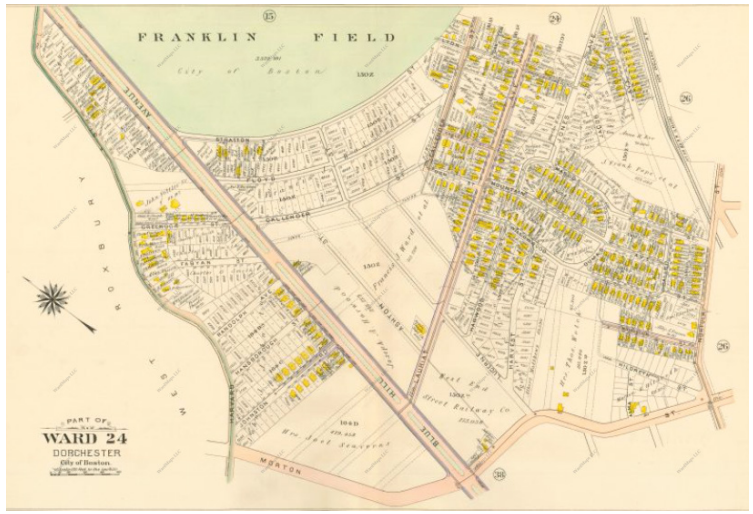
INTRODUCTION NEIGHBORHOOD

HISTORICAL SNAPSHOT



From a scarcely populated region primarily composed of farms and estates to one densely packed with multi-family dwellings, Blue Hill Avenue in Dorchester has undergone radical change from the late 19th

Between 19th and 20thC: Blue Hill Avenue went from being a rural country thoroughfare connecting farmland to downtown Boston to a busy strip of apartment buildings and businesses and a prime destination in Boston.

With affordable, newly-constructed real estate, a plethora of commercial resources and beautiful Franklin Park providing residents with a great place for recreation, Dorchester was now seen as a very nice place to live

1940s: the streetcars that had served Dorchester began to be replaced with trackless trolleys as the beginning of a series of changes that would come in order to accommodate the growing number of cars passing through the area paving the way for development as a prime area.

http://www.bostonstreetcars.com/dorchesters-blue-hill-avenue.html


One planet living, meaning we don't consume more resources than the earth can generate.

We are failing at dealing with climate change, let alone single planet living.

“You must unite behind the science. You must take action. You must do the impossible. Because giving up can never ever be an option.

- Greta Thunberg

How can we design, fund, build, maintain, and program a transformative, welcoming, and resilient waterfront and islands to protect and enhance our region? How can we ensure that parks and public spaces along Boston Harbor are truly for everyone?

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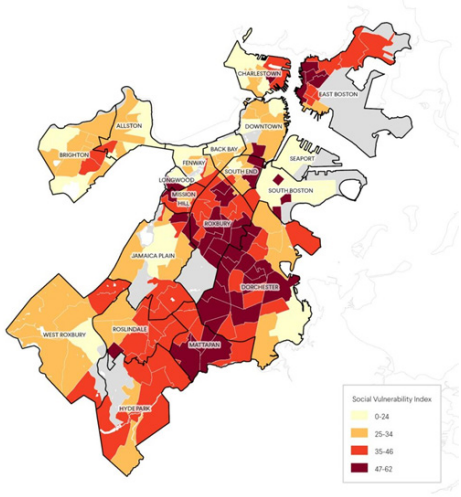
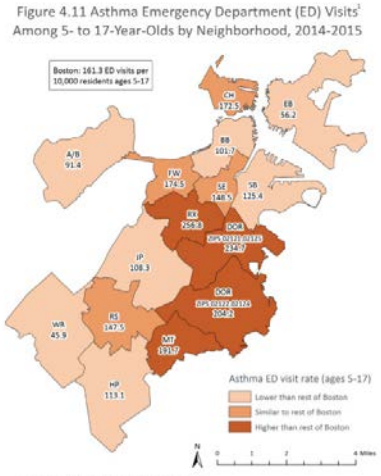
ENVIRONMENTAL CONCERNS

How bad is the air pollution in Boston?



The health effects of that level of exposure



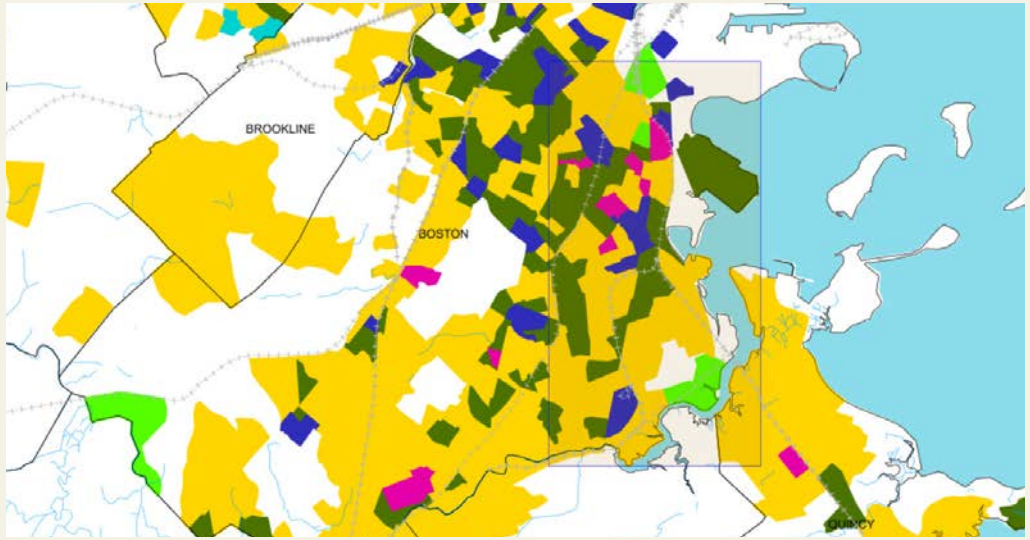
http://maps.massgis.state.ma.us/map_ol/ej.php
http://www.bu.edu/articles/2020/in-boston-covid-19-and-climate-change-are-hitting-the-same-communities-the-hardest/
https://www.bphc.org/healthdata/health-of-boston-report/Documents/7_C4_Env%20Health_16-17_HOB_final-7.pdf

ENVIRONMENTAL INJUSTICE

Contributing less but inhaling more.

whites experience about 17 percent less air pollution than they produce, through consumption, while blacks and Hispanics bear 56 and 63 percent more air pollution
Source: Proceedings of the National Academy of Sciences of the United States of America (PNAS)

What communities were exposed to pollution?



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Generations have been facing environmental hazards, it is time to take action.

- Rising levels of pollution and emissions in public areas
- A number of vacant and distressed plots with lead contamination in the soil
- Communities of color tend to be exposed to higher exposure levels making them socially vulnerable
- Poor air quality is the reason behind increased asthma cases

CLIMATE

MANAGED RETREAT: CLIMIGRATION

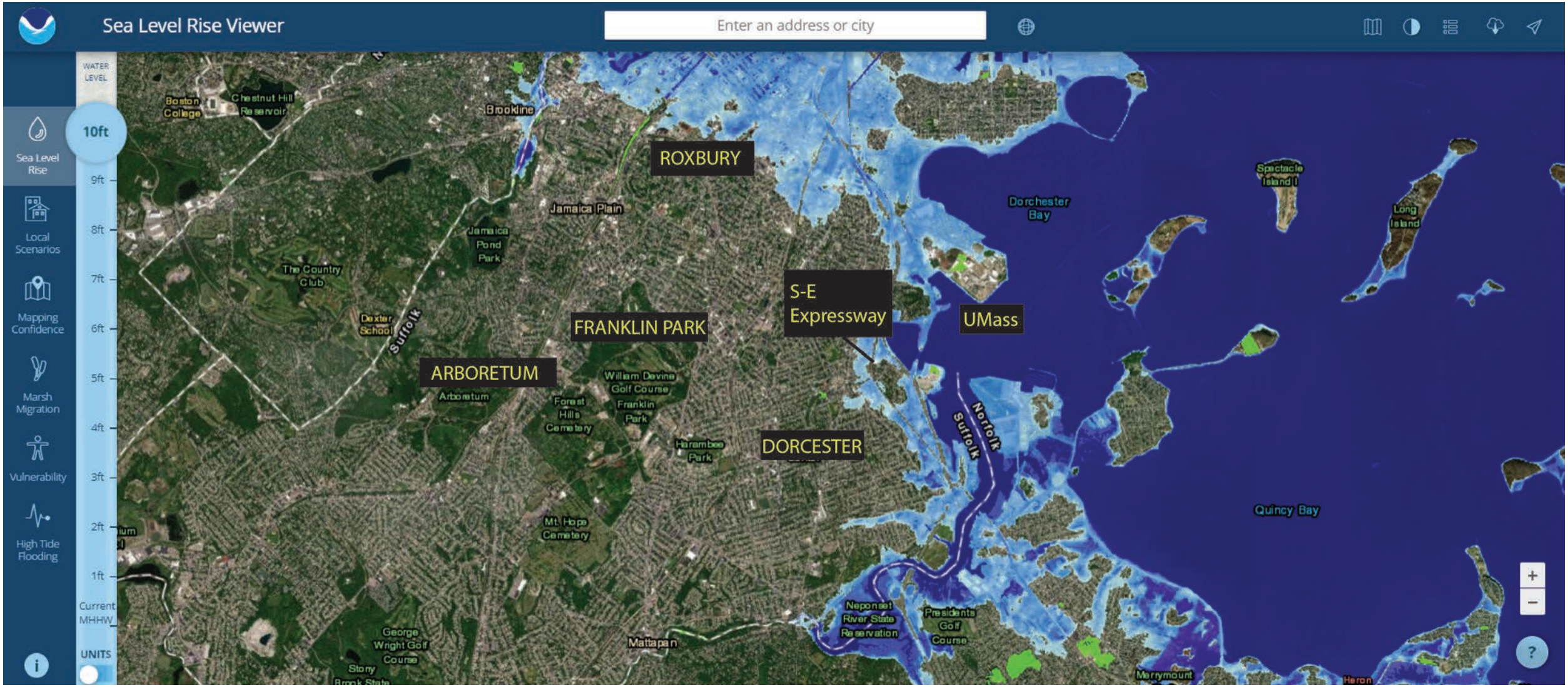
managed retreat is the coordinated process of voluntarily and equitably relocating people, structures, and infrastructure away from vulnerable coastal areas in response to episodic or chronic threats in order to facilitate the transition of individual people, communities, and ecosystems (both species and habitats) inland.

THE CLIMATE IS CHANGING.
NOW IS THE TIME FOR ACTION.

Together, we can make our communities, ecosystems and economies safer and more resilient.

A DRAMATIC SEA LEVEL RISE OVER THE NEXT HUNDRED YEARS

We have to prepare for a very different Boston, to prevent the 309,220 individuals that are anticipated to be displaced from homes that might be submerged.

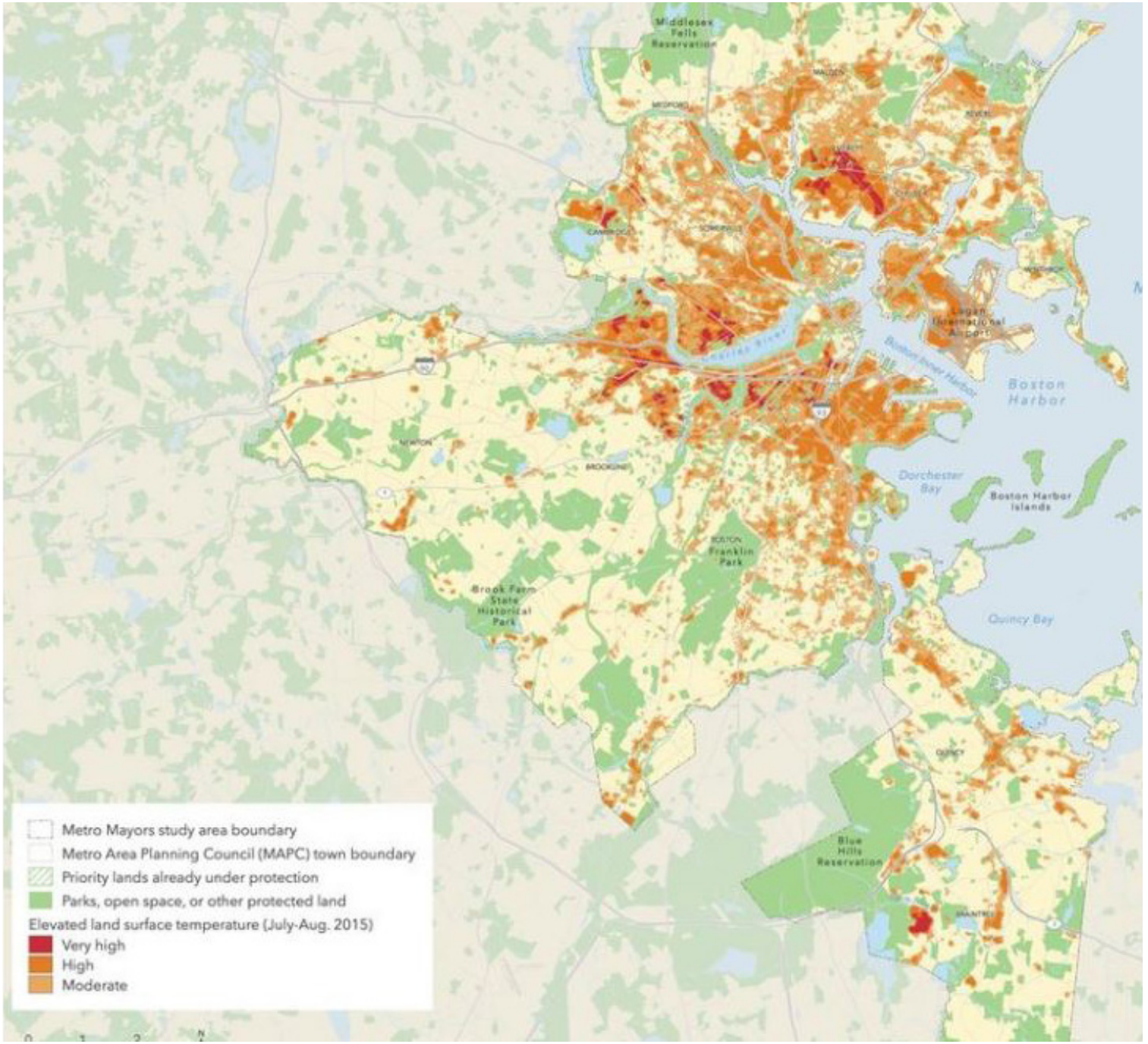


URBAN HEAT ISLAND EFFECT

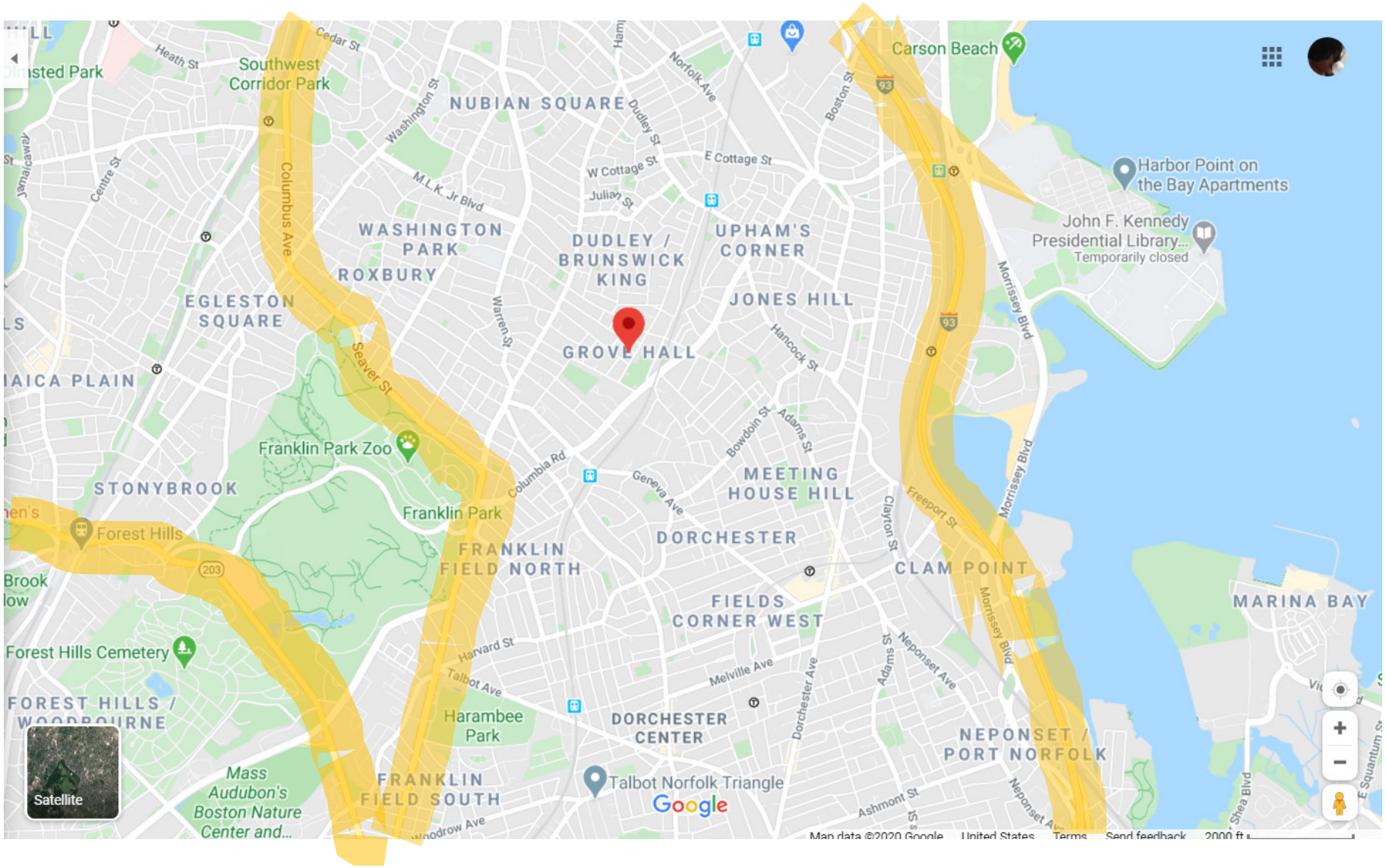
"heat island" describes built up areas that are hotter than nearby rural areas.

How is it affecting Boston communities?

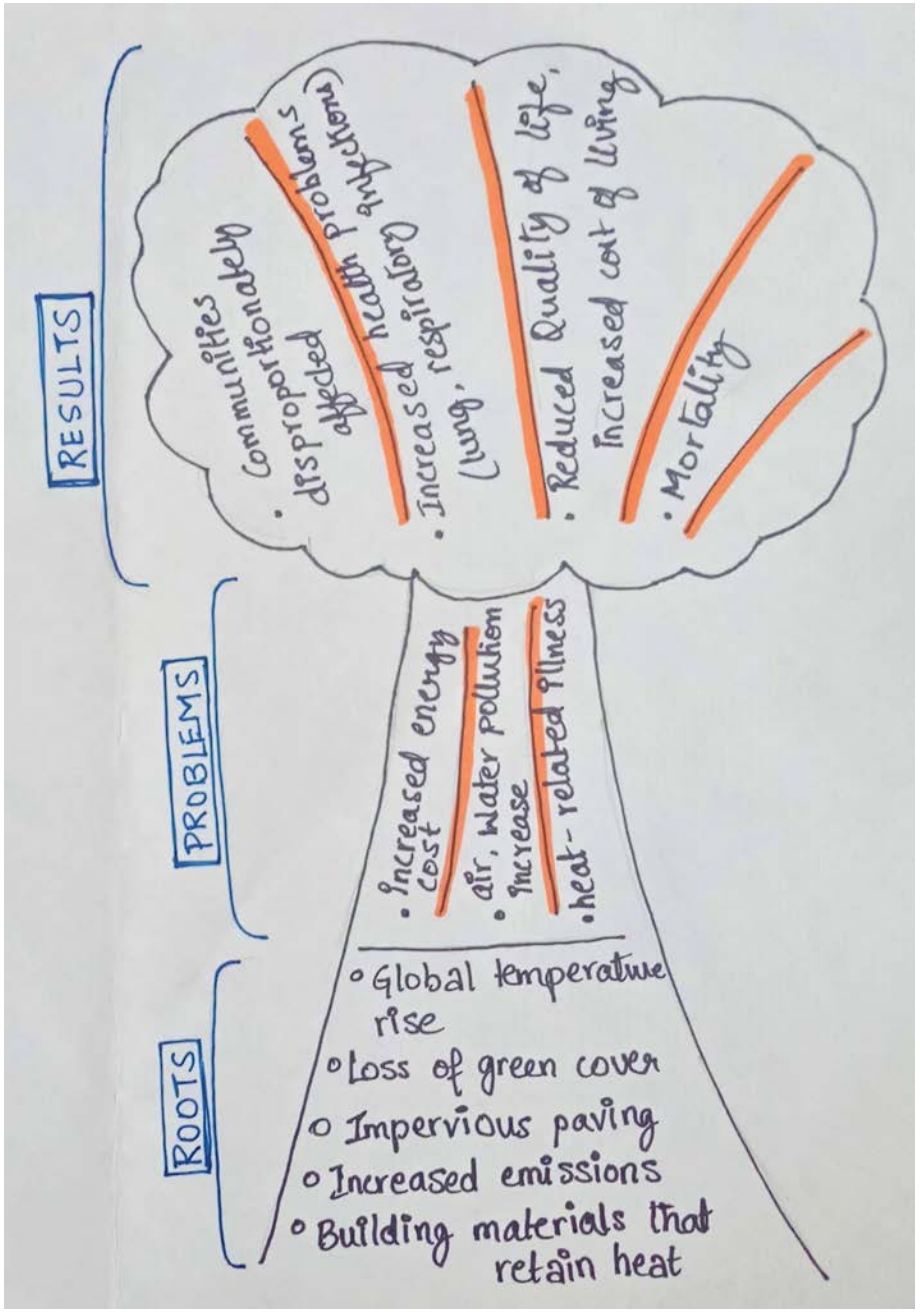
By:
increasing summertime peak energy demand
air conditioning costs
air pollution and greenhouse gas emissions
heat-related illness and mortality, and water pollution.



The orange area identifies exposure areas of concern with respect to air pollution within 200 meters.



PROBLEM ANALYSIS



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A warmer climate, diminished quality of life

What we see

What remains hidden/less obvious

Increased frequency of extreme weather events

Loss of food security and food access to all remote areas

A failure to address equity

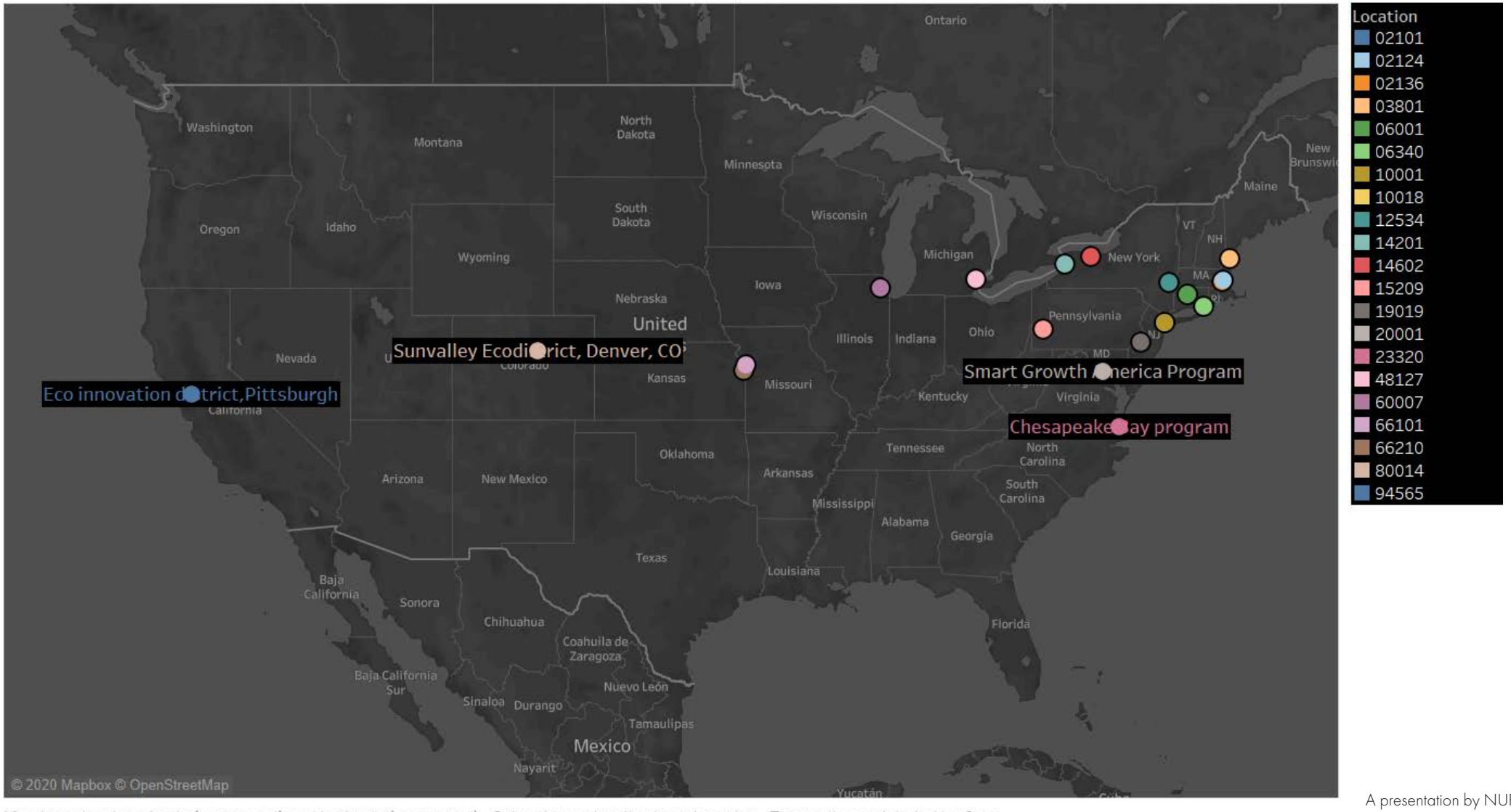
Disproportionate effects of environmental hazard faced by communities

Increased risk of chronic diseases

Migration and Gentrification observed in cities

ECO DISTRICTS CASE STUDIES

Vizualising data on the map of USA



Map based on Longitude (generated) and Latitude (generated). Color shows details about Location. The marks are labeled by Case.

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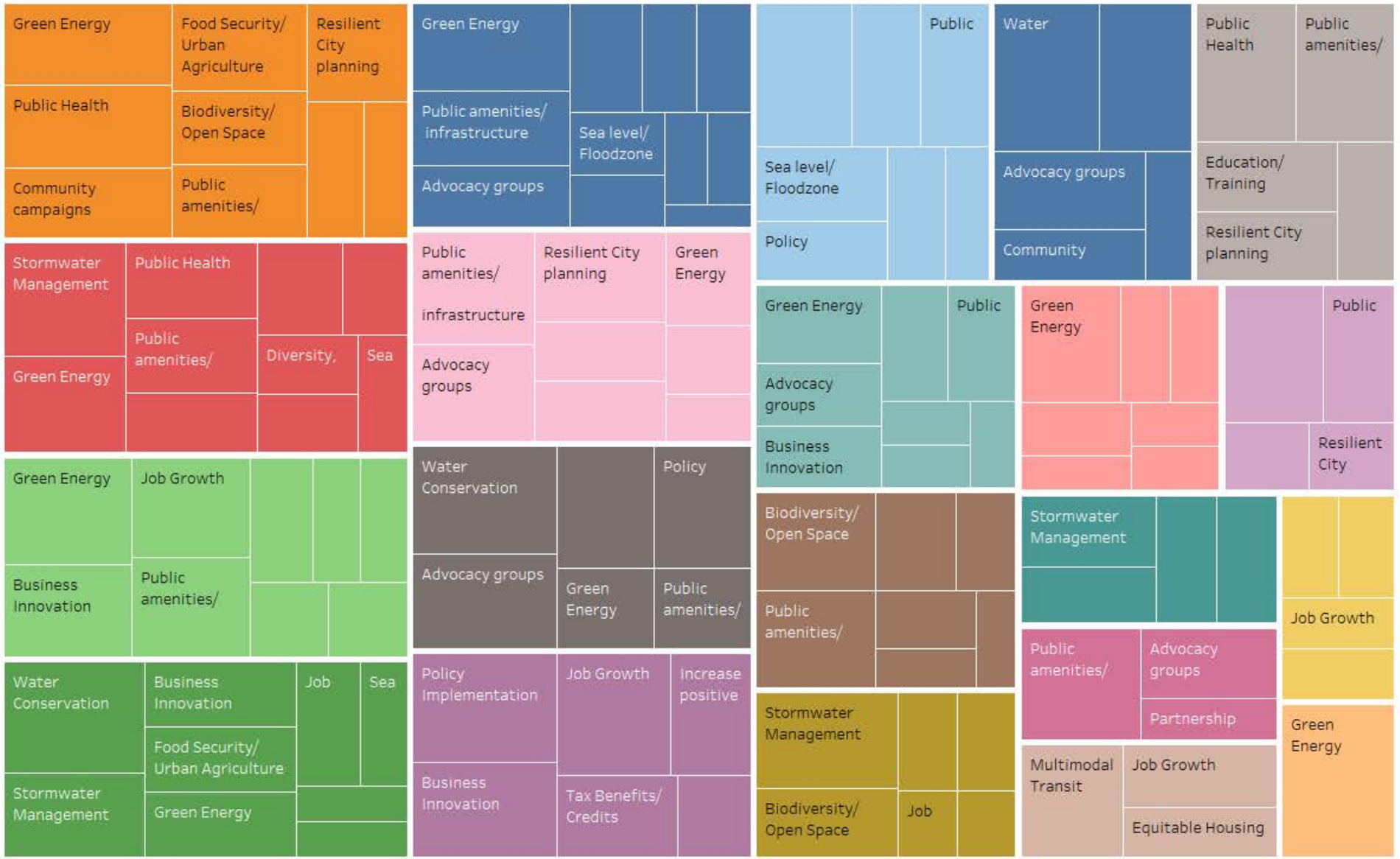
ECO DISTRICTS CASE STUDIES

Study-wise matrix representation



Category. Color shows details about Case. Size shows sum of Score. The marks are labeled by Category.

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ECO DISTRICTS CASE STUDIES

Visualizing studies by category and sub-category

Sum of Score for each Category broken down by Case. Color shows details about Category. Size shows sum of Score.

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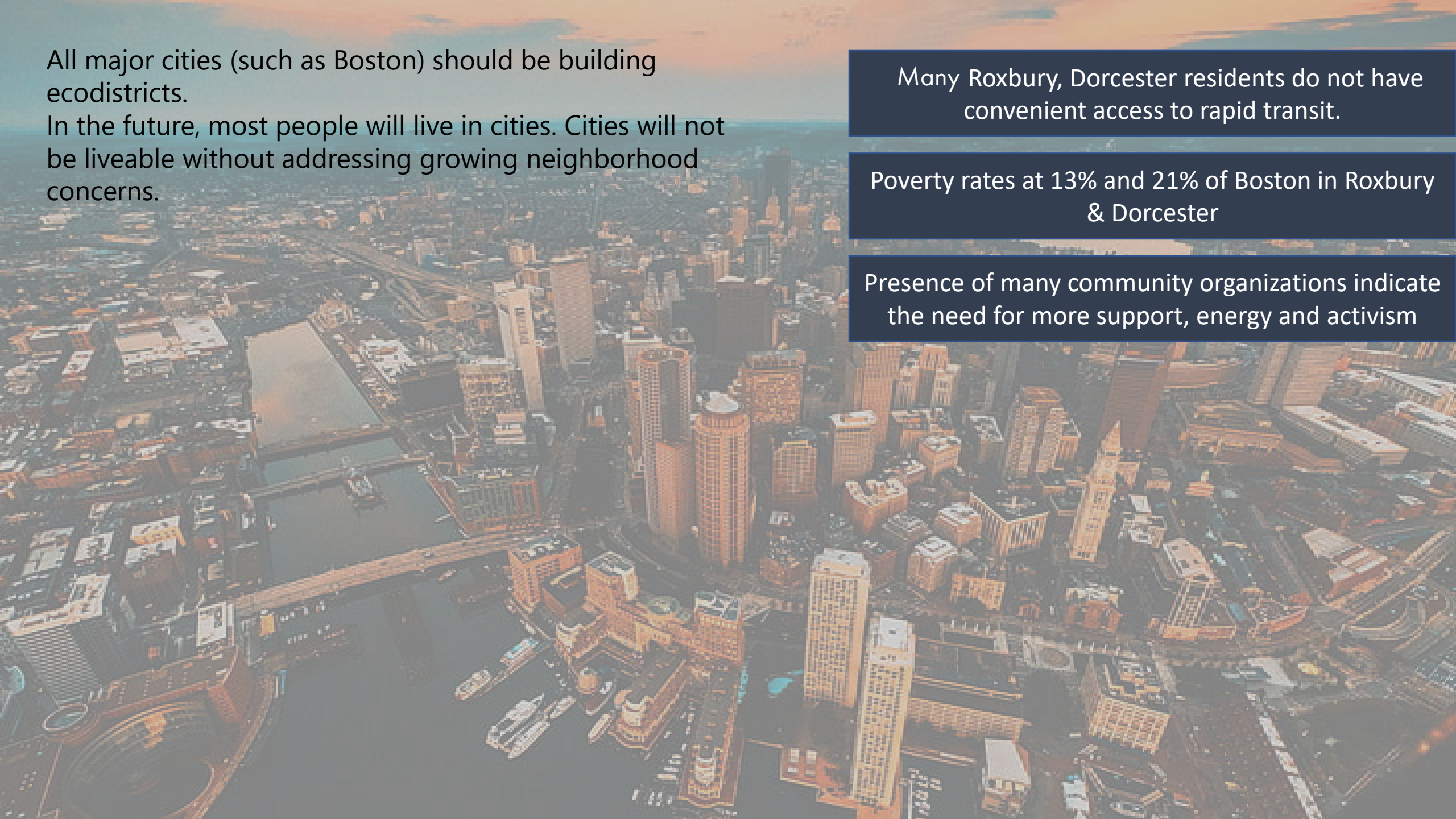


All major cities (such as Boston) should be building ecodistricts.
In the future, most people will live in cities. Cities will not be liveable without addressing growing neighborhood concerns.

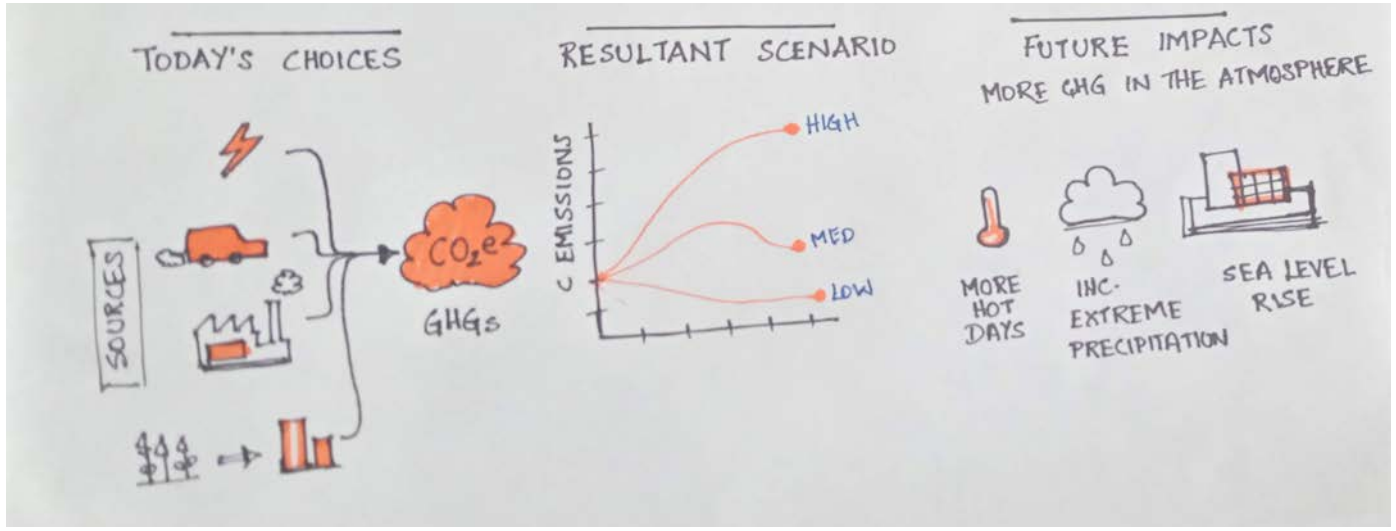
Many Roxbury, Dorcester residents do not have convenient access to rapid transit.

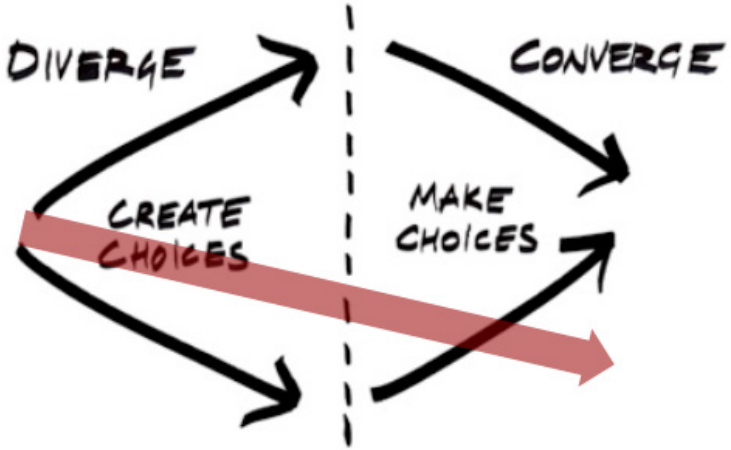
Poverty rates at 13% and 21% of Boston in Roxbury & Dorcester

Presence of many community organizations indicate the need for more support, energy and activism

LESSONS LEARNED

WHAT CONTRIBUTES TO SUCCESS?
WHAT CHALLENGES TO BE AWARE OF?





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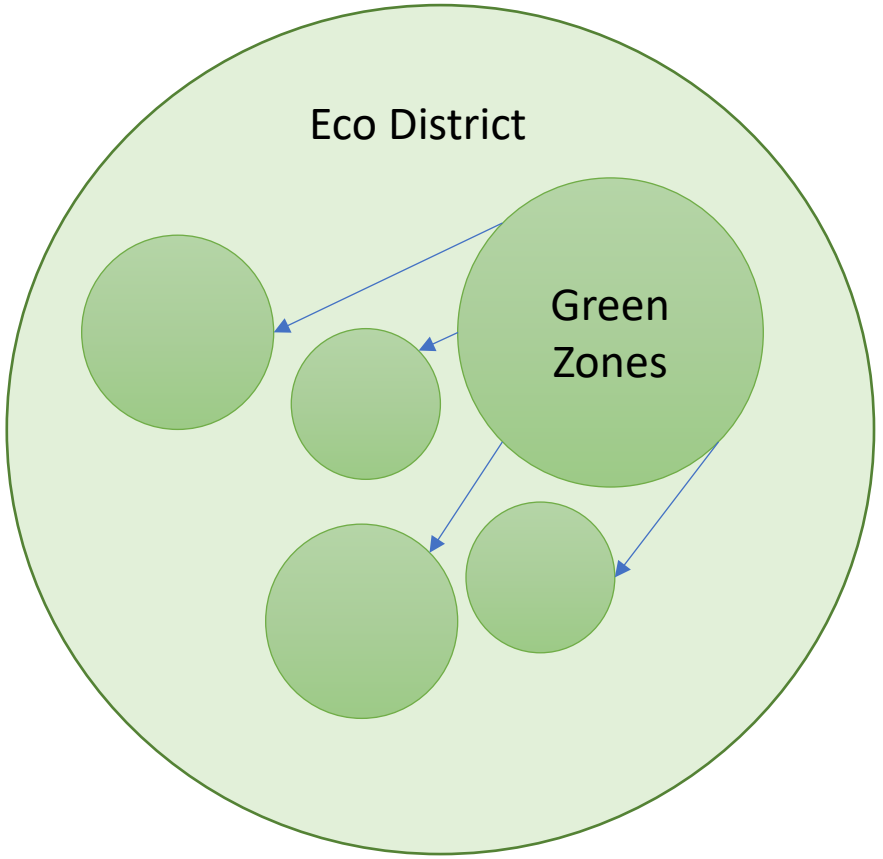
GREENZONE

Green Zones are areas that have experienced historic disinvestment and neglect where residents have been organizing for decades to reduce industrial pollution and implement solutions that address the unhealthy (and often discriminatory) land use patterns that have shaped how our communities look today.

ECODISTRICT

The value of the EcoDistrict model is that it allows large-scale development to attain high performance through long-term investments, greatly reducing operation costs, resource consumption and environmental impacts over time at both the building and district scale.



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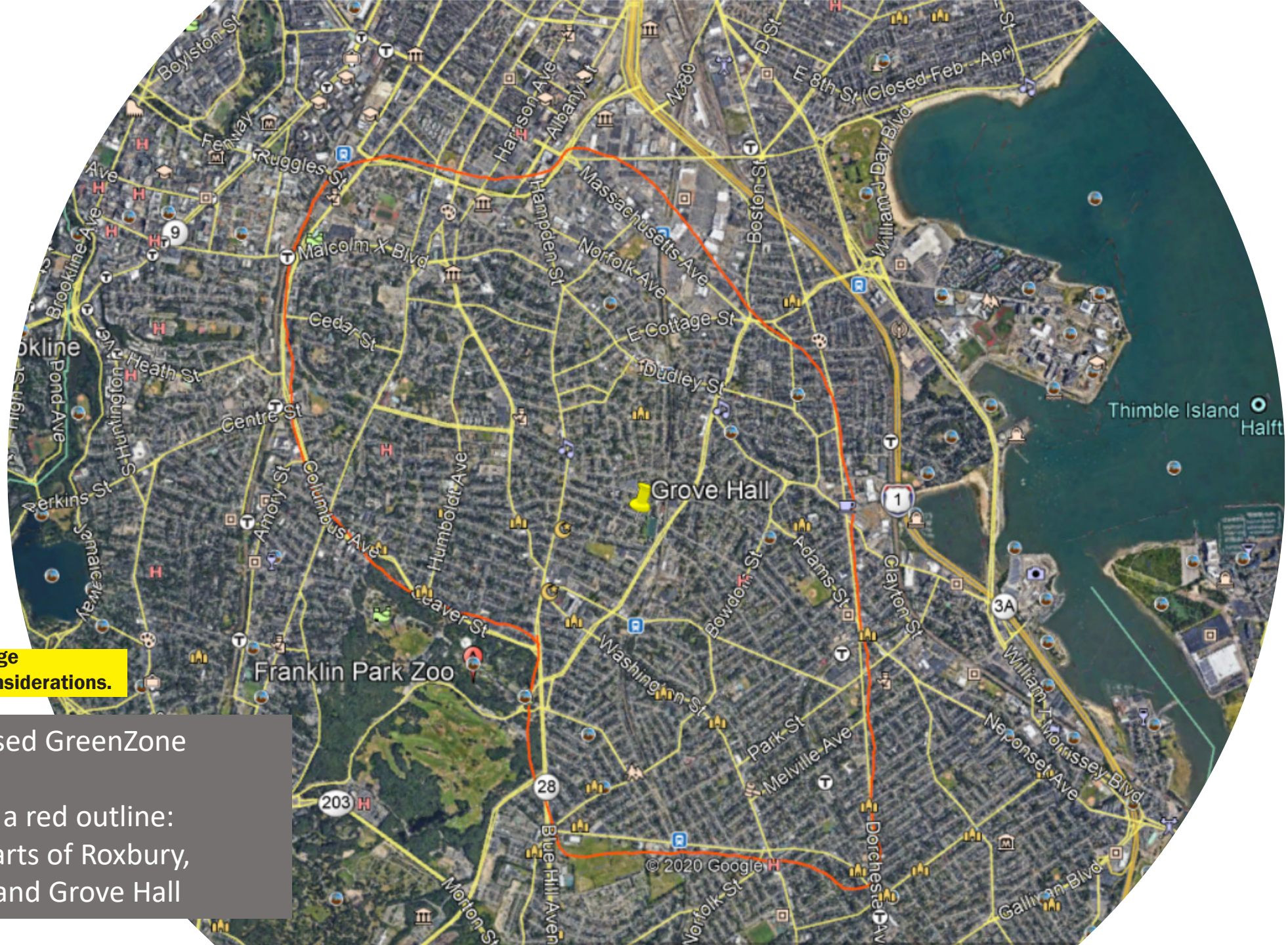
ECODISTRICT

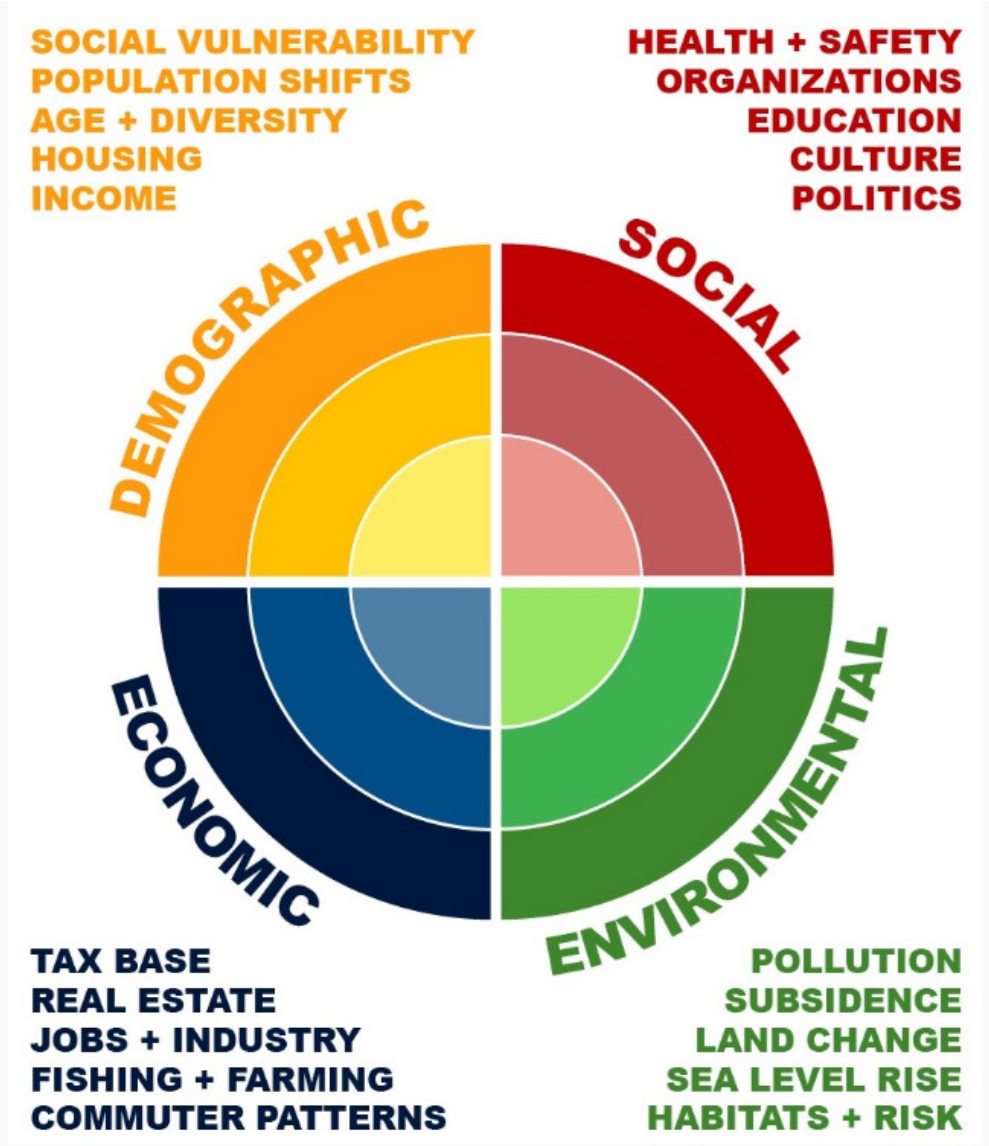


Subject to change upon further considerations.

The proposed GreenZone boundary
marked by a red outline:
includes parts of Roxbury, Dorcester and Grove Hall

IDENTIFYING OPPORTUNITIES

The Vision of the EcoDistrict is to for every project to satisfy an economic development and job creation threshold along with rendering a sustanable environment and improved quality of environment and public health. We are developing a plan to growing Boston, growing the neighborhoods and know that creating an EcoDistrict will provide a huge advantage to do so.

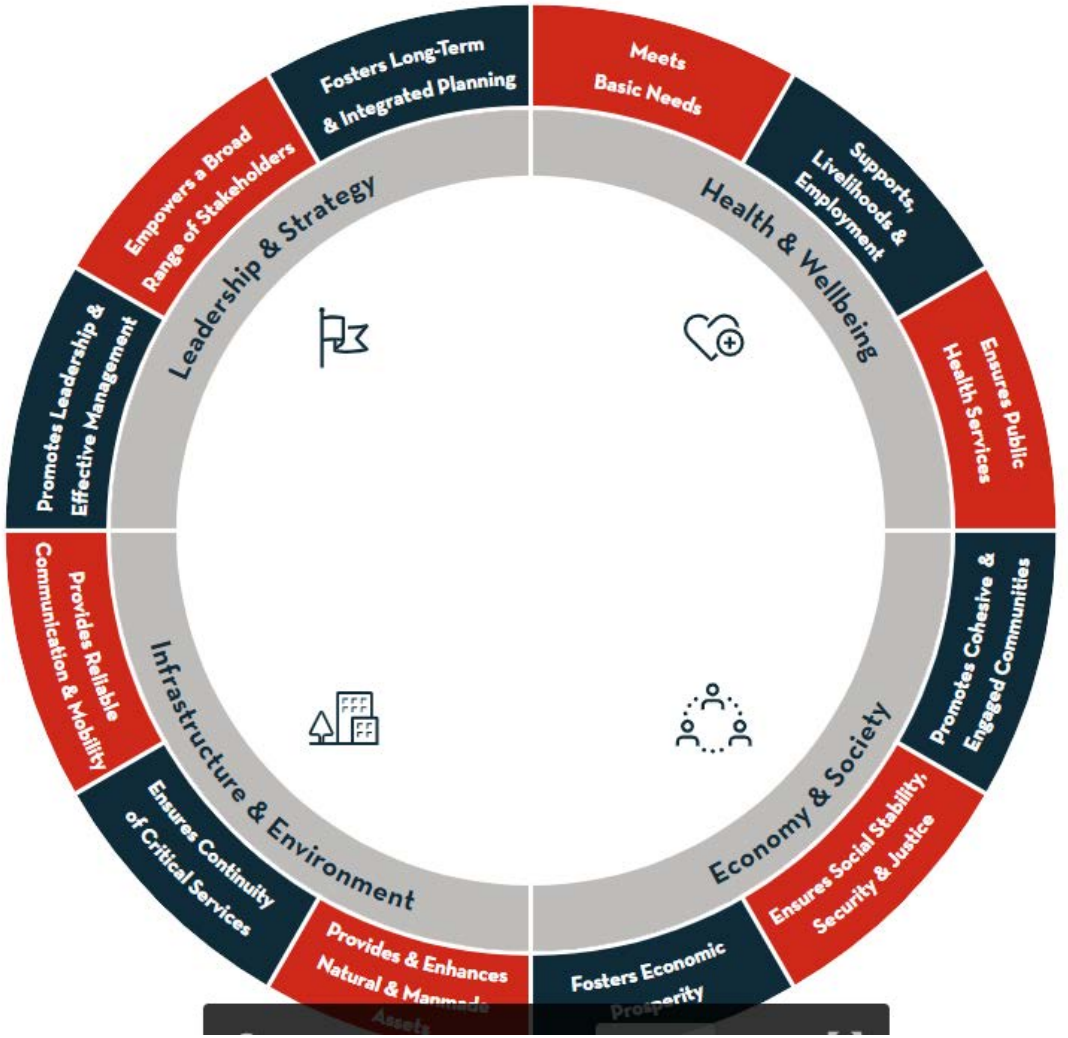


Five essential dimensions of the GreenZone

SEA LEVEL RISE
HEAT ISLAND EFFECT
GREEN ENERGY
and alternate renewable sources
ECONOMIC ENHANCEMENT
and social inclusivity
FOOD/HEALTH SECURITY

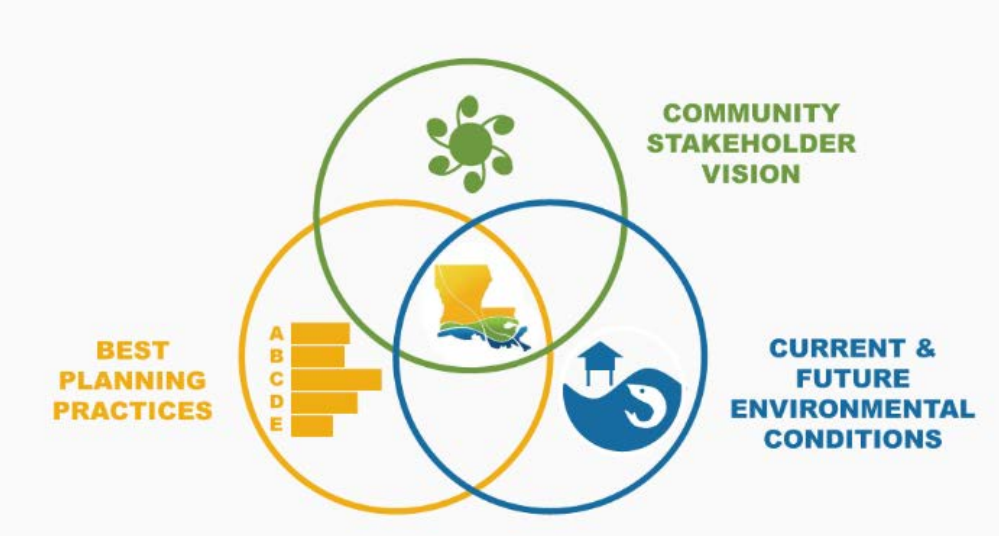
CIRCULARITY IN THINKING
Circular Economy and Circular design

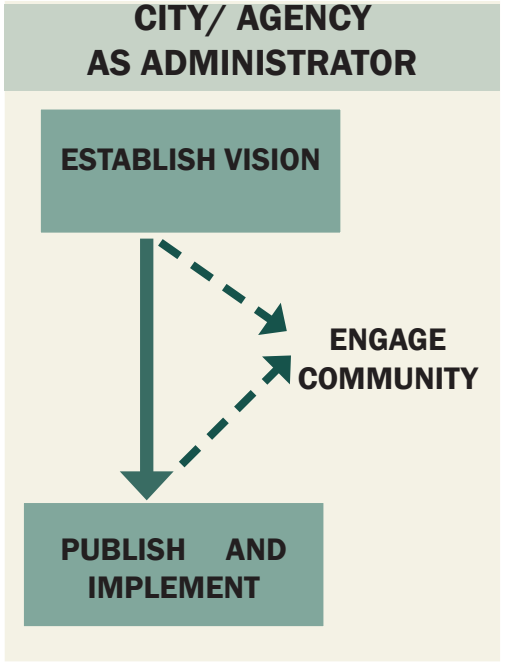
Each dimension contains three “drivers,” which reflect the actions cities can take to improve their resilience.



TOOLS NECESSARY TO BUILD A STRATEGY

COMMUNITY LEADERSHIP
FINANCE
GOVERNANCE
COLLABORATIONS
RESOURCES / MANPOWER
COMMUNITY SUPPORT





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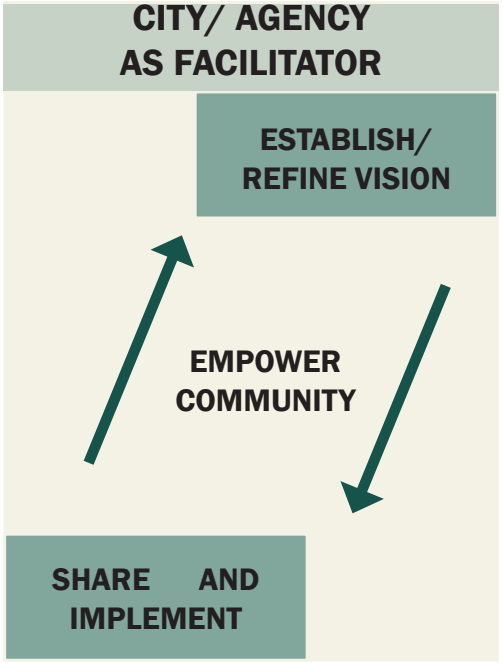

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ANALYSIS AND ASSESSMENT TOOLS

STEEP

Sociological, Technological, Economical, Environmental and Political

to prompt discussion and flesh out various societal factors in our future scenario.

How do those factors influence as external entities?

How do these strategies work within these categories?

http://www.utsdesignindex.com/researchmethod/steep-analysis/

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ECO- DISTRICT MODEL

INTEGRATIVE SYSTEM

An interconnected web with elements
that are inter-dependent for sustenance

ADAPTIVE SYSTEM

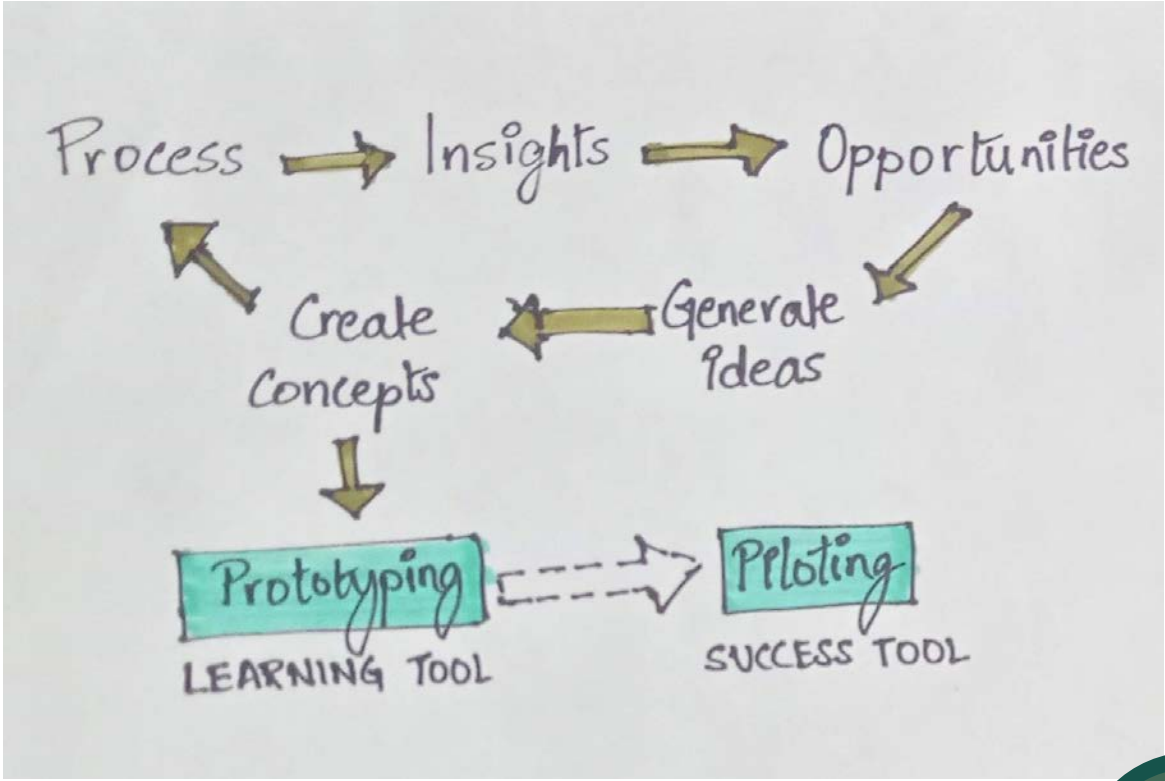
A system that considers external
influencers and change drivers

EMBEDDED SYSTEM

A system that has micro and macro
influencing factors

ECO-SYSTEM

A systems that binds it all



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RETHINKING THE POLICY PARADIGM

DESIGN THINKING FOR PUBLIC SERVICE ..... **DESIGN THINKING IN POLICY MAKING**

A shift in Policy Paradigm
A paradigm that addresses ineq-uity and uneven development, environmental injustice; communi-ty- centred and direct investments

Ethnographic research
On-field understanding of communities

Participatory approach

Scenario building

Visioning

POLICY DESIGN

Bridge the gap

POLICY DELIVERY

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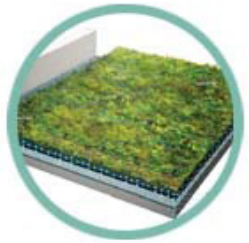
FLAT ROOFED HOUSES
BOSTON

GREEN ROOFS





GREEN ENERGY

OFFSHORE WIND ENERGY FARM
(Case study: Rhode Island)

Construction activity related to the deployment of 1,600 MW of OSW is estimated to create between 2,279 and 3,171 direct jobyears.

Potential case study: Solar farm being planned for installation in Providence Port.

ENERGY EFFICIENCY

Summer months
Dehumidification + Natural ventilation

Winter months
Solar energy heating system

Developing State Policies to Ensure Robust Energy Efficiency Practices

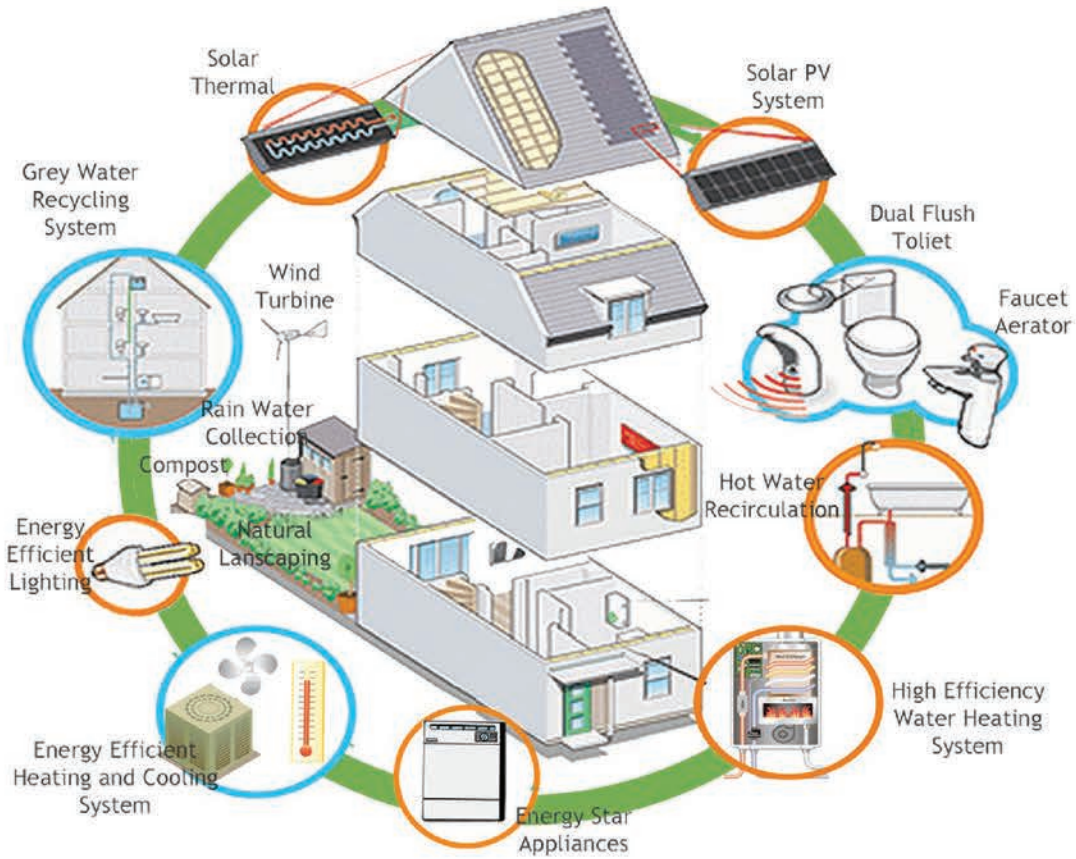
Establishing Evaluation, Measuremen and Verifi cation Mechanisms

Establishing Effective Energy Efficiency Delivery Mechanisms
Funding, customer coverage, proper administration

Establishing State of the Art Billing Systems

Aligning Customer Pricing and Incentives to Encourage Investment in Energy Efficiency

Implementing Advanced Technologie



POLICY DECISIONS

Limit emissions of greenhouse gases.
Encourage the use of clean, effi cient distributed generation.
Promote clean energy supply, such as renewable energy.
Promote load reductions at critical peak times through demand response.
Modernize and maintain the nation's electric transmission
and distribution system, including "smart grid" and advanced meter infrastructure.
Maintain a suffi cient reserve margin for reliable electricity supply.

FOOD SECURITY

-Introduce mobile food trucks selling fresh, organic produce
-Organize mobile (increase food access) and seasonal markets & employ locally
-Propogate vegetarianism to minimize environmental impact
-Minimize food waste
-Convert unused lands to Urban farms
-Find alternate markets for excess food through gleaning services & food banks
-Encourage to grow plants on rooftops
-Provide adequate public or local funding

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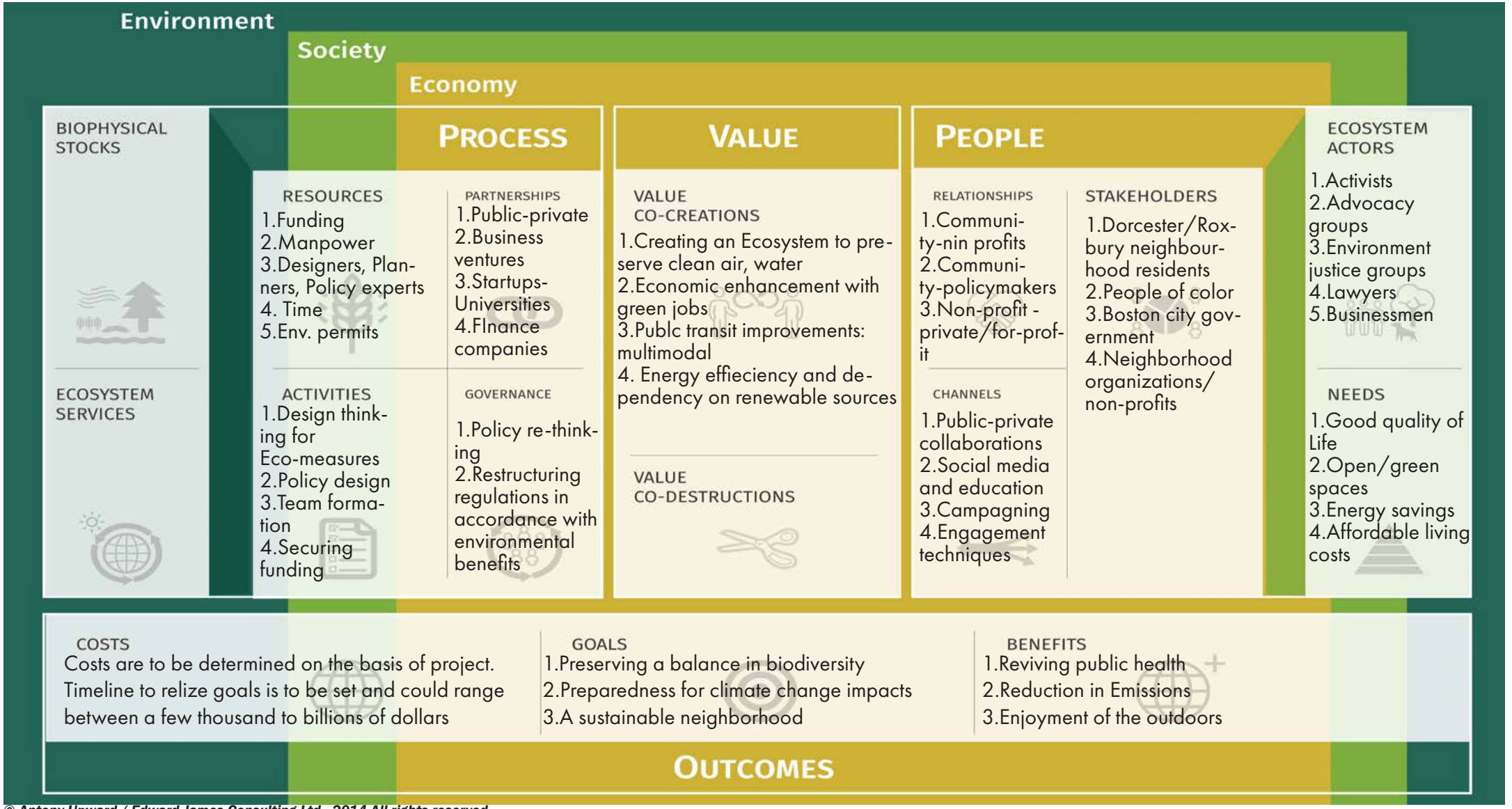
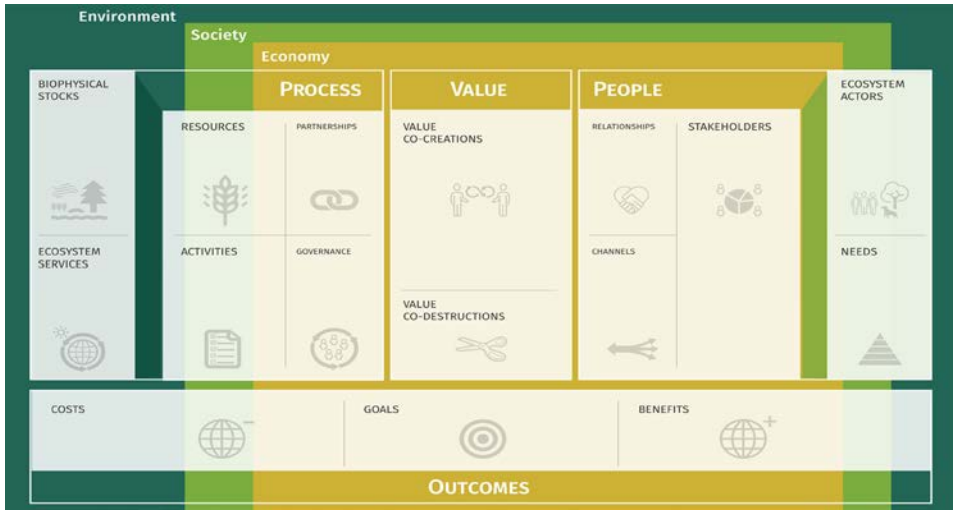
INTEGRATIVE SYSTEM



ADAPTIVE SYSTEM

INFLUENCES

RESOURCES



FINANCE

ENGAGEMENT

EMBEDDED SYSTEM

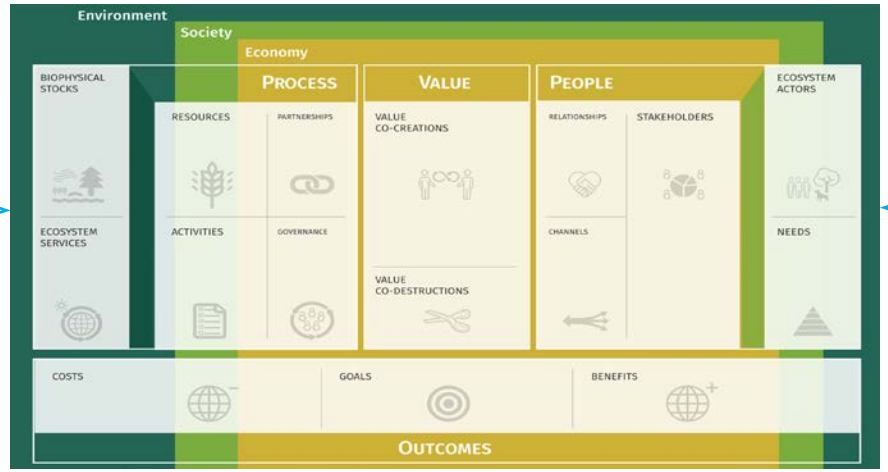
Focusing on issues related to public transit, public spaces.

Community concerns related to air and water quaity

Strategize plans based on available data

Ideate and realize smaller project goals related to green infrastructure

MICRO



MACRO

Integrated systems thinking connecting infrastructure ideas together

Draw the expected impacts from interventions

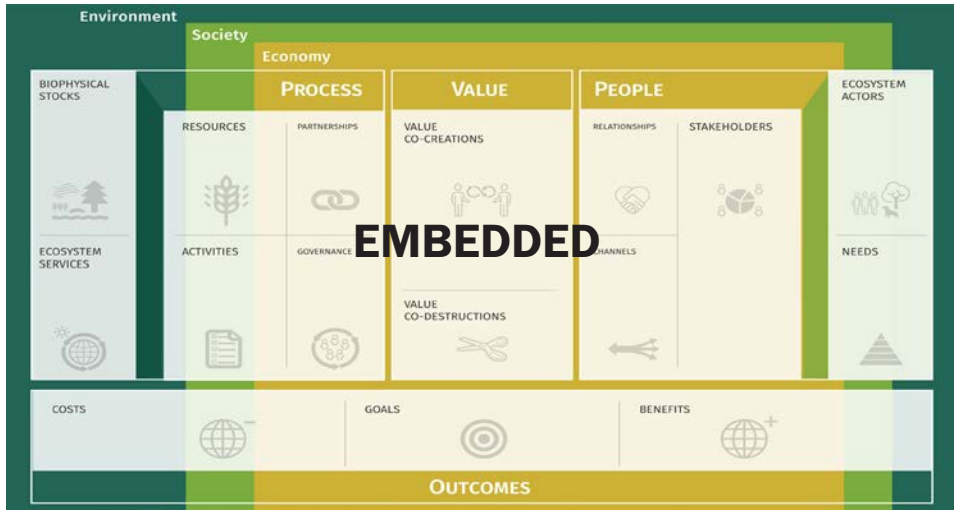
Work out design recommendations alongside policy and financial desicion-making

Macro-level planning and translation of ideas into micro visions

ECO-SYSTEM

GLOBAL

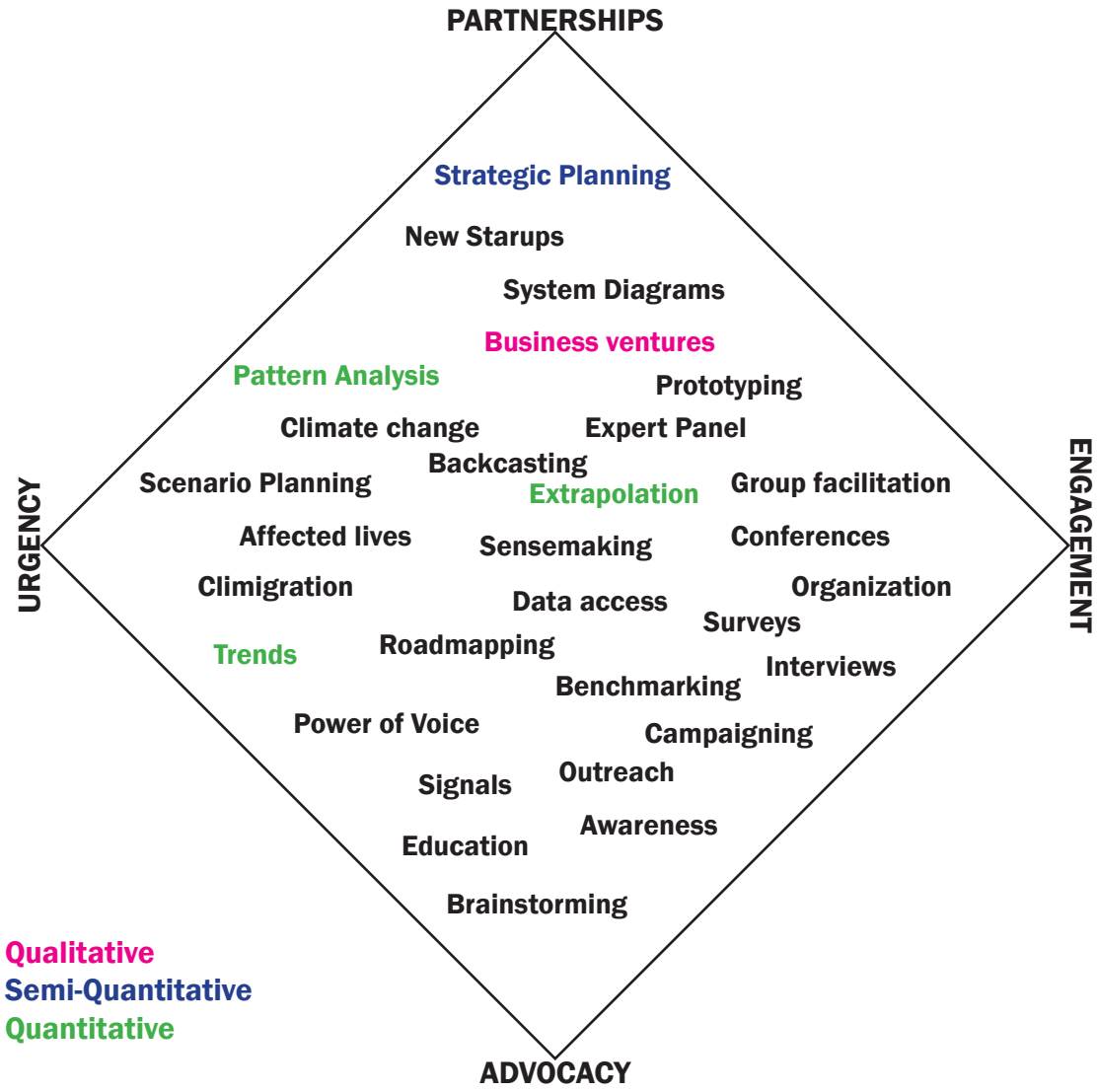
NATIONAL



EMBEDDED

LEVERAGE POINTS

ENERGY AND ACTIVISM IN THE NEIGHBORHOOD
VARIOUS PUBLIC AND PRIVATE ORGANIZATIONS
BUSINESS COLLABORATIONS AND BUDDING STARTUPS
COMMUNITY ADVOCACY GROUPS
GREEN NEW DEAL AND BOSTON CLIMATE ACTION PLAN



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COMMUNITY ADVOCACY

Advocacy groups to conduct programs for community support outreach, enhance value of green innovation in the neighborhoods to bring awareness to broader societal problems with its possible future repercussions.

Green collaborative conference | Community associations to create awareness for green initiatives

COMMUNITY ENGAGEMENT

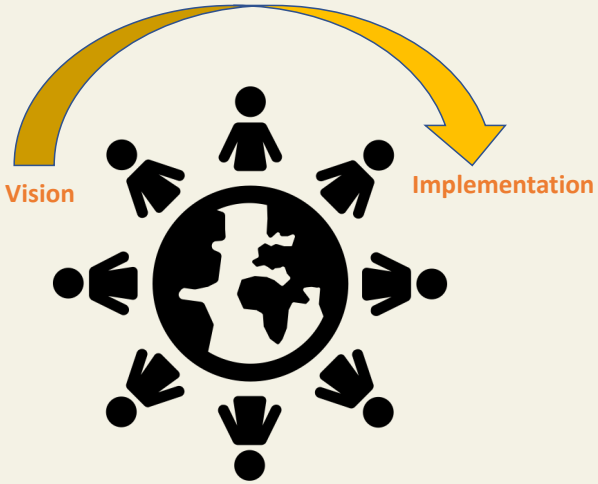
Organized, interactive partnership between government and it's citizens, essential to the effective implementation of government-initiated sustainability programs

Proactive and relationship-driven approach to identify roadblocks to implementation

An inclusive approach to policy making accounting for diverse population perspectives

Our project is more community driven and depends on our goal to move it forward and how we co-create it.

Starting with stories is a good way to present and engage the communities. A chart of the range of communities? Low income, people of color, mid-income, high-income etc.



Involve residents in all stages of the process to maintain trust and accountability to the people.

- Share Power
- Prioritize Relationships
- Include all Points of View
- Use all Kinds of Knowledge
- Test Solutions Early & Often

Minority groups
People from underrepresented communities
People affected by the disproportionate impacts of pollution and climate change
Communities who may benefit from the project's implementation

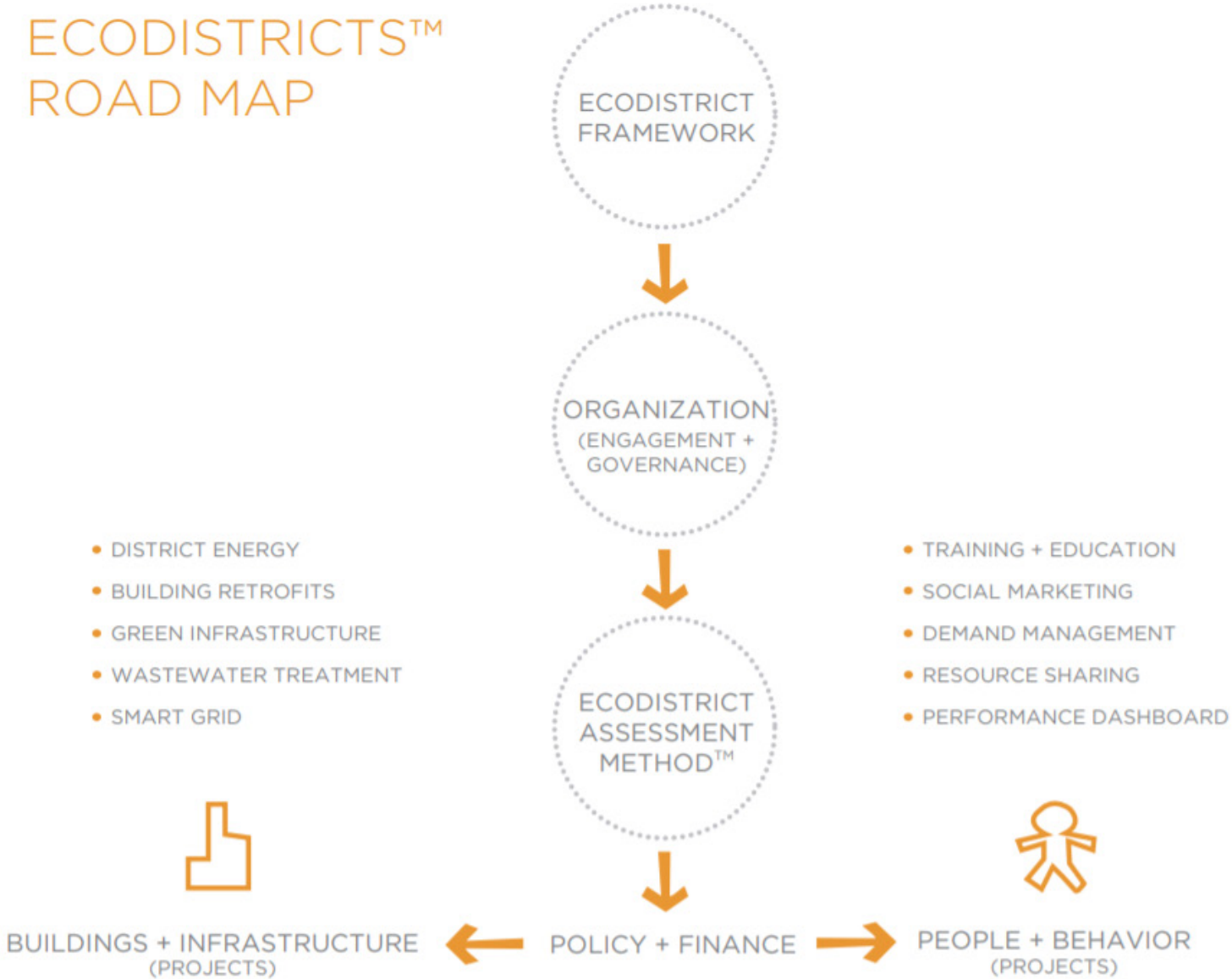
- Relevant city Departments
- Elected officials
- Local government partners
- Legislative policymakers

- Representatives from private and business sectors

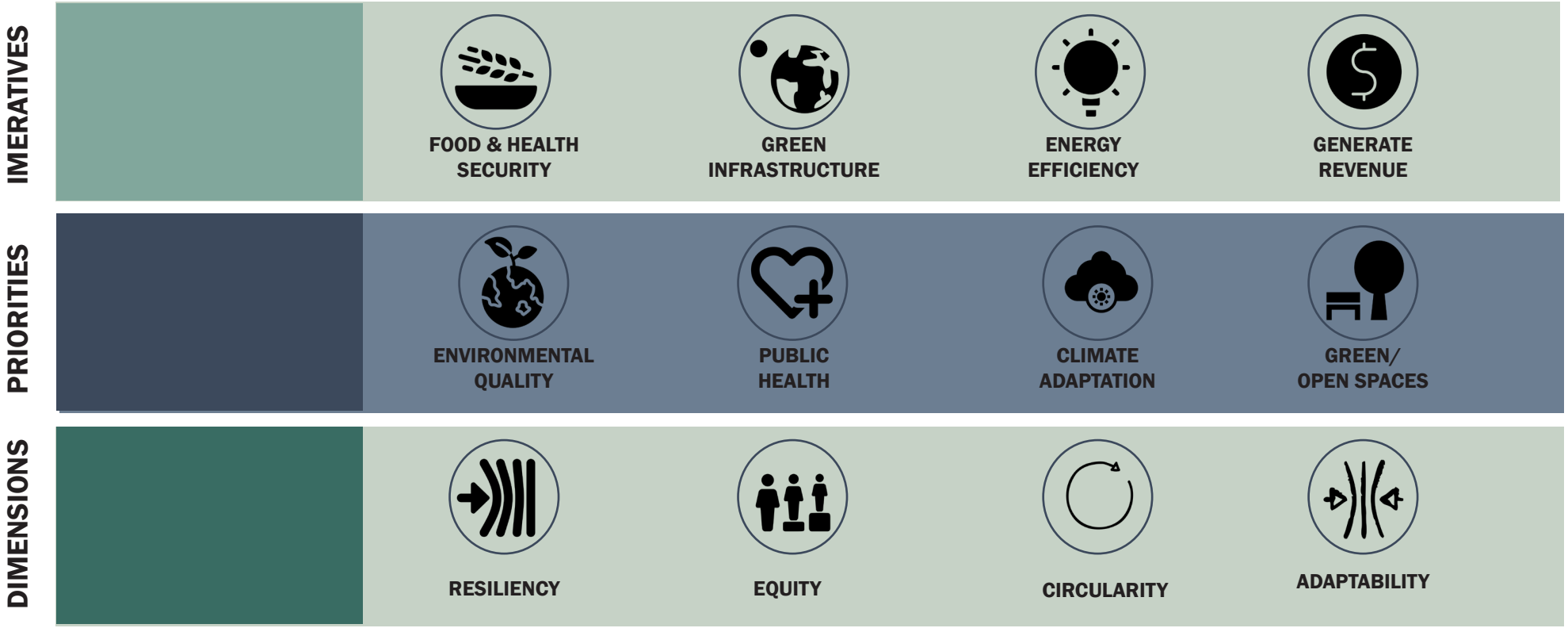
COMMUNITY ADVISORY GROUPS

Organization	Role
City Departments BPDA and Boston Redevelopment Authority (BRA), Public Works, etc.	Critical to review plans and development process, economic growth, jobs and resources related to green zones
Local Government Partners Boston Parks and Recreation, Schools, Mayor's office, waste management	Expansion of green spaces and amenities, managing and funding and resources related to environmental education, waste reduction
Community Partners Community associations, neighborhood organizations, Advocacy groups	Non-profit organizations working on issues related to poverty, climate change, unemployment, environmental justice and so on.
Private / Quasi-govt / Business Partners MASSCO, Mass development, Local business to partner with green initiative efforts	Large, small, corporate or semi-private organization may provide necessary resources, and funding support, access to data ad staff force.

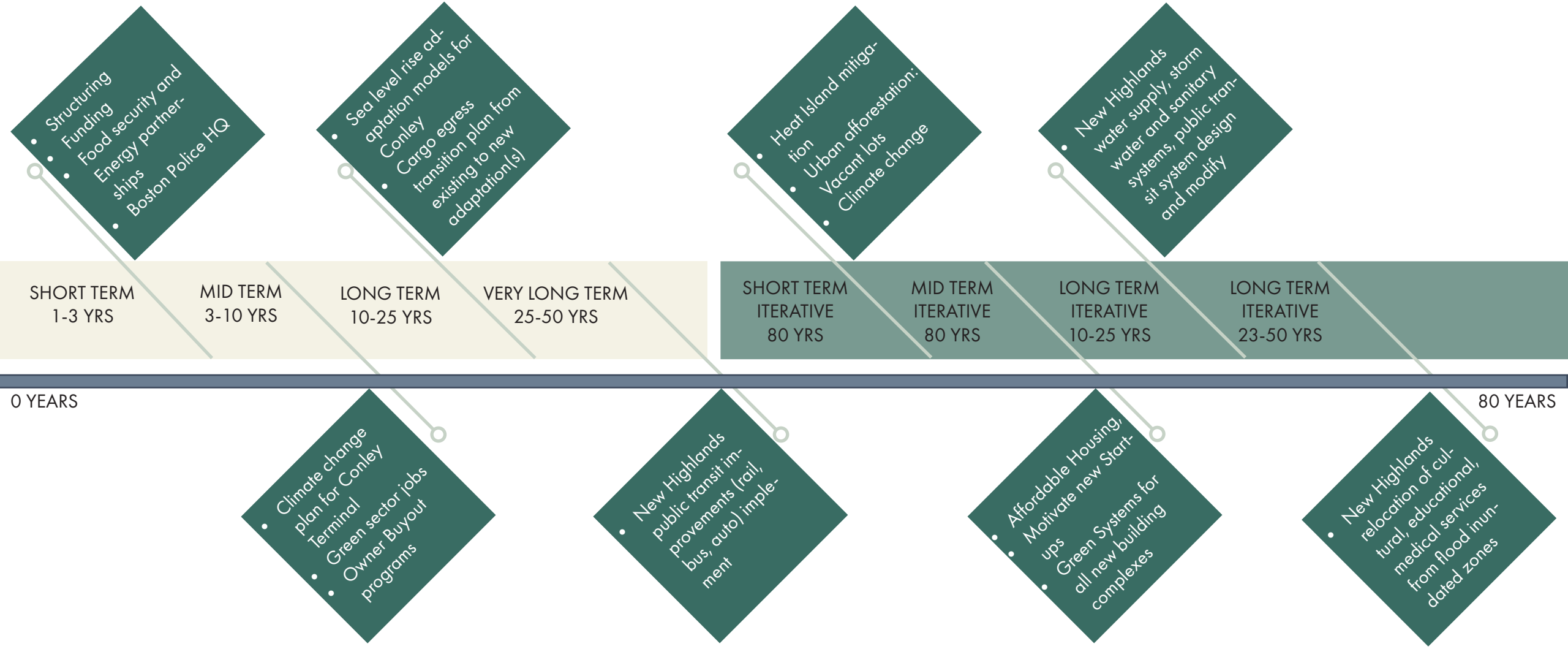
ECODISTRICTS™ ROAD MAP



ECODISTRICTS PROTOCOL



A PROPOSED TIMELINE
FOR THE ECO-DISTRICT



BUILDING SCENARIO

Short Term (1-3 years)

Structuring, Funding, Fleshing out Green Eco-Innovation District Concept Partnerships: Food/Health Security, Green Energy Consumers Alliance

Possible Police HQ robotic parking with commercial/retail.

Mid-term(3-10 yr)one time

Develop Climate Change Plan for Conley Terminal and land cargo transit route w/support industries to benefit Highlands, include Green Energy partnerships.

Plan for clean, research based, high tech employment and production jobs; partner with manufacturers and medical teaching and research entities.

Establish Owner Buy Out Program for homes and businesses flooded out (example Blue Acres Program in NJ.

Long term (10-25yr) one time

Begin sea level rise/climate mods at Conley Marine Terminal and cargo egress transition plan from existing to new adaptation(s).

BUILDING SCENARIO

Short term/ iterative over next 80 years

Heat Island Mitigation, Sponge City/North Roxbury, Dense Forest Planting for Vacant Lots, Complete Streets & Planting, Climate Change Leadership Training in Highlands (LA-Safe model), Green Energy Plan& Implementation for District, example models (LA-Safe) program in Louisiana after Katrina and the Providence Social Justice Program
Case study example: Louisiana: Addressing Sea-Level Rise

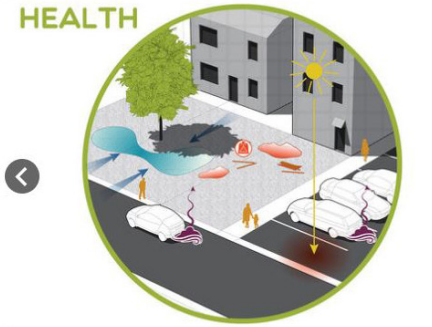
https://www.georgetownclimate.org/files/report/GCC-LA_SeaLevel%20Rise-August2015_1.pdf

Mid-term(3-10yr) iterative efforts over next 80 years

Affordable Housing, New Employment Sector Startups, Green Systems for all new building complexes (thermal he
at pumps, green roofs, robotic parking, permeable paving, etc.)
Case study: Pittsburgh Eco-Innovation District

ECO INNOVATION DISTRICT UPTOWN OAKLAND

We worked closely with residents, community partners and other stakeholders to develop the plan. We reused a former garage for a zero-waste community event, organized a block party and met with residents in their backyards and living rooms. We sourced all of our public meeting materials from t-shirts to food, from local businesses.



BOSTON POLICE HEADQUARTERS

A MULTILEVEL AUTOMATED CAR PARKING FACILITY IN A GREEN EF-

Multi-level automated car parking

Rented out for commercial purposes

Green roof with solar panels

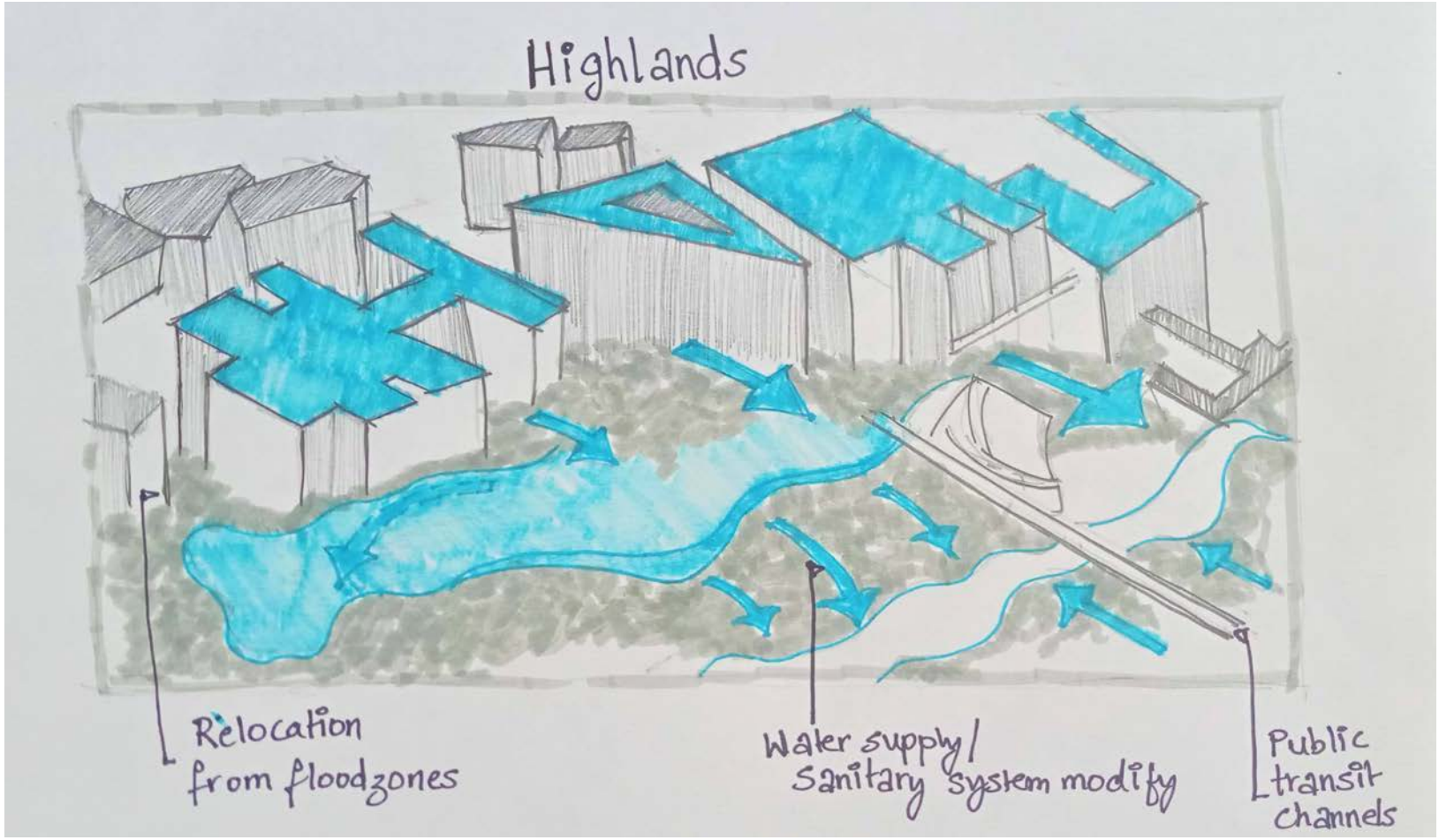
Green wall facade

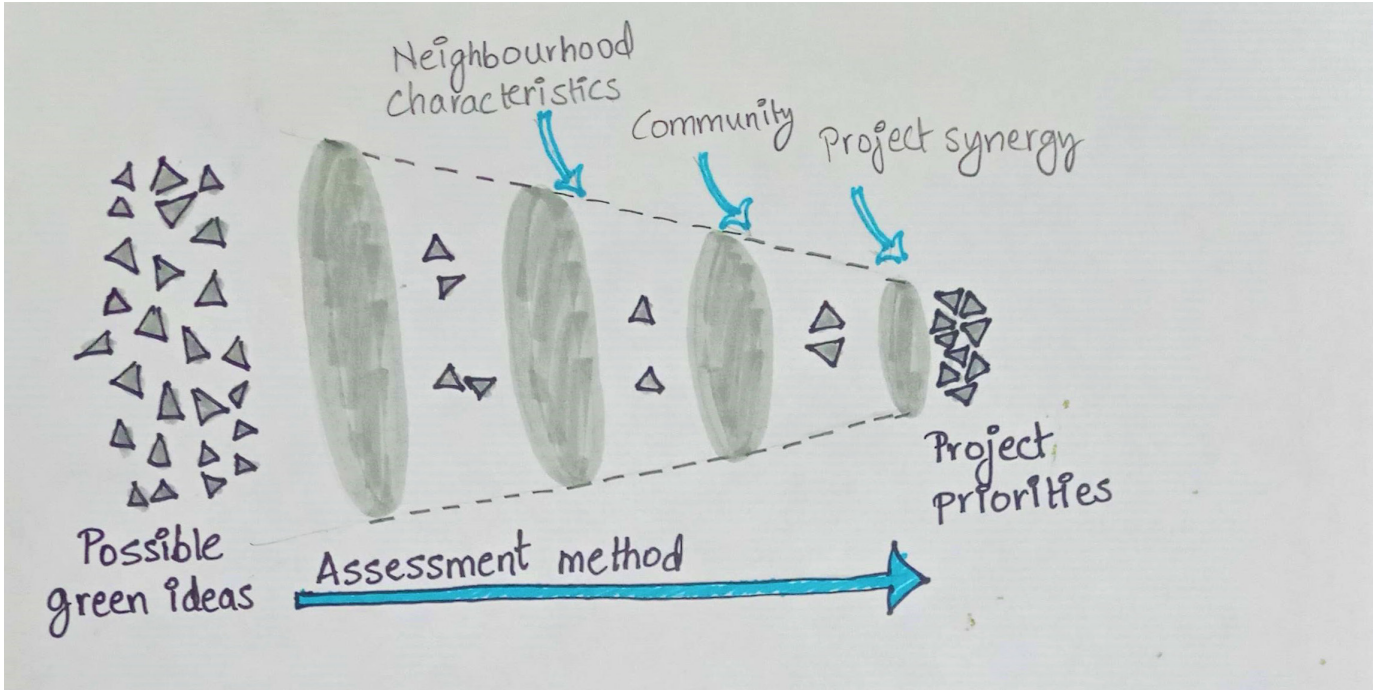
A presentation by NUPUR GURJAR
Harvard Graduate School of Design

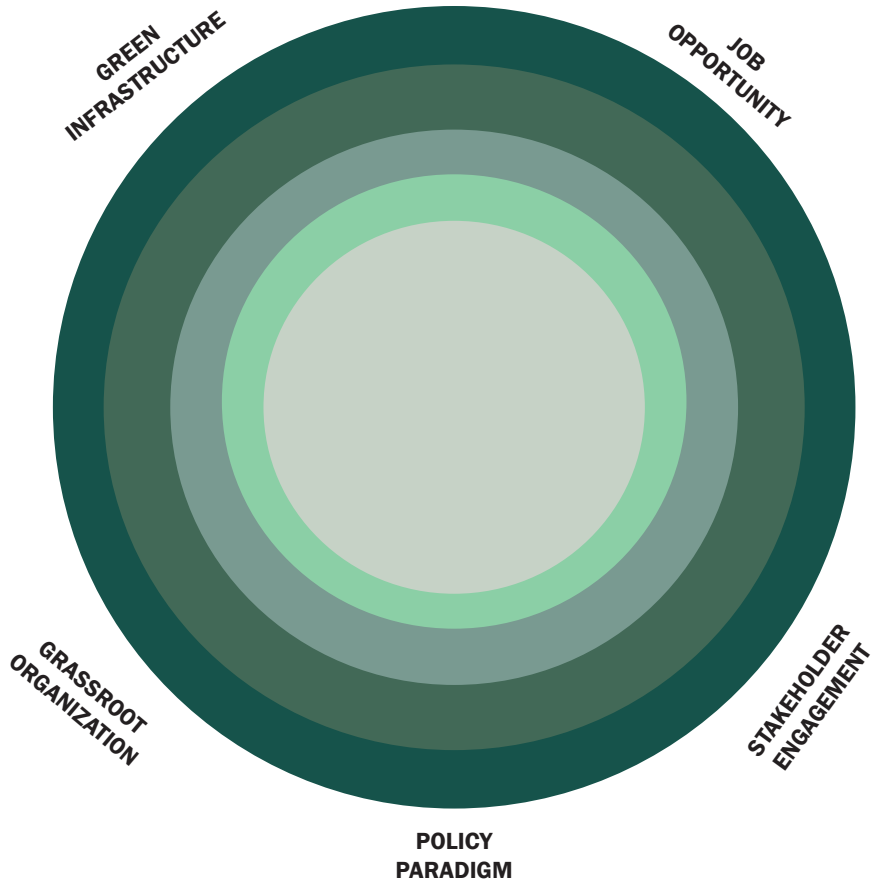
BOSTON ECODISTRICT

BUILDING SCENARIO

Long term(10-25yr) iterative	Very long term (25-50yr)infrastructure one time	Long, Long term (23-50 year)infrastructure, iterative
New Highlands water supply, storm water and sanitary systems design and modify. New Highlands public transit system plan and design.	New Highlands public transit (rail, bus, and auto) implement.	New cultural, educational and medical services institutions relocated to the Highlands from prior flooded locations in

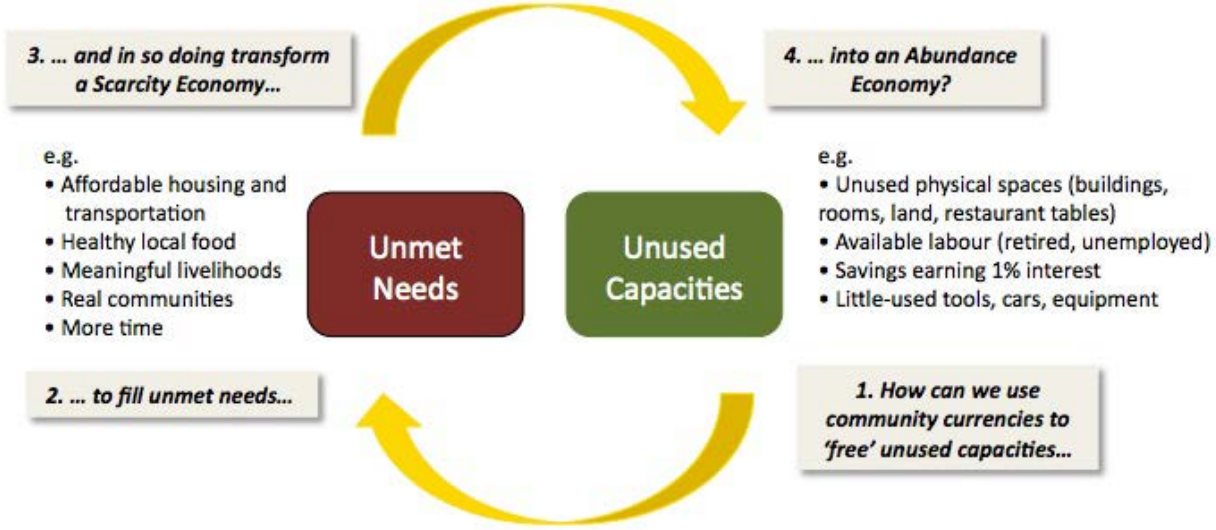



Neighbourhood characteristics
Community
Project synergy
Possible green ideas
Assessment method
Project priorities


GREEN INFRASTRUCTURE
JOB OPPORTUNITY
GRASSROOT ORGANIZATION
STAKEHOLDER ENGAGEMENT
POLICY PARADIGM

ECONOMIC ENHANCEMENT OPPORTUNITIES

1. COMMUNITY CURRENCY
2. An Economic change ASSESSMENT TOOL to be a part of the process.
(IMPLAN model)



ECONOMIC GROWTH

Partnership model
Partners with non-profits
Partners with Quasi-public entities
Partners with local government

Cooperative agreements
with goals to reduce pollution, promote sound land-use, flood resiliency

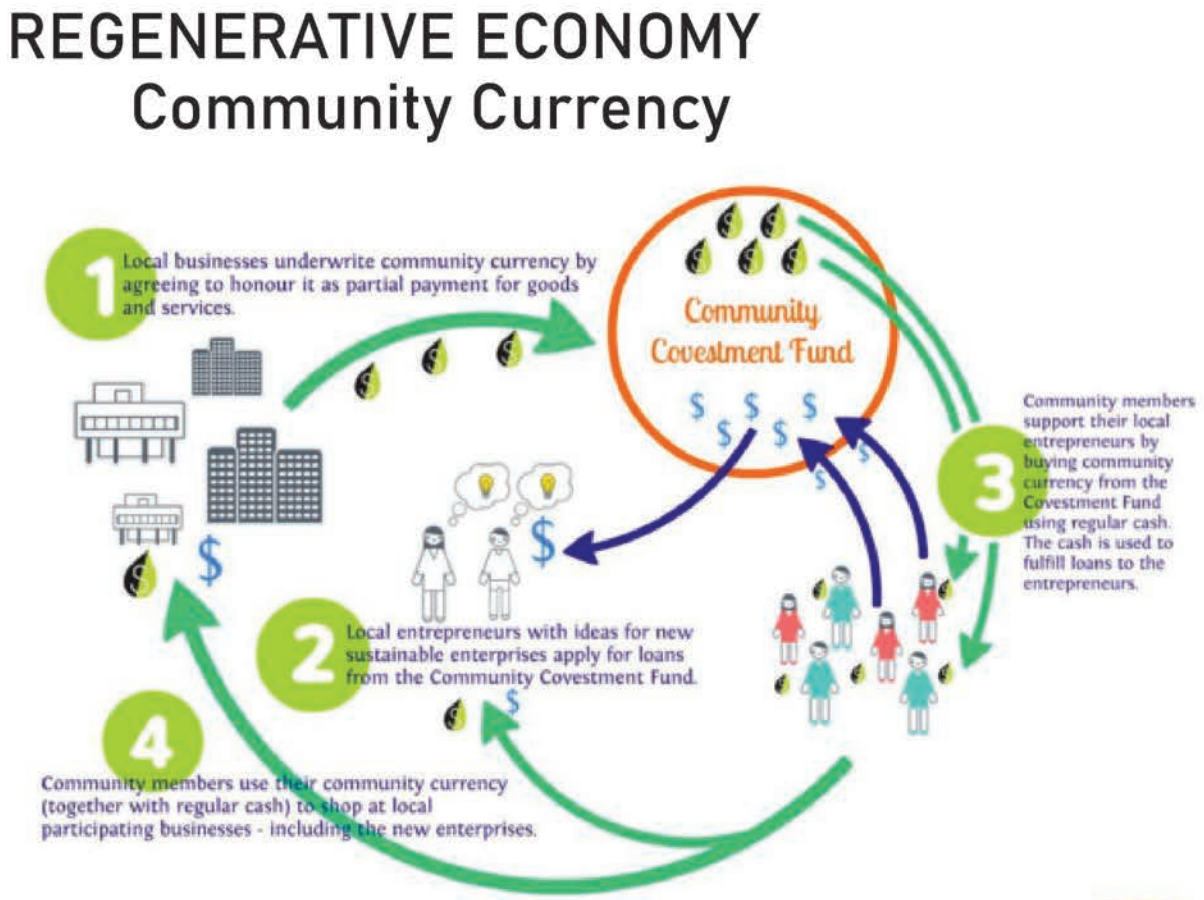
Investors / Project collaborators
MASCO
MassDevelopment
Mass Technology Council

Innovation Funds
To boost business growth

If an investment is made here how many people benefit as opposed to somewhere else, accessibility, security, quality of life, beyond monetary benefits.

Community currency is an alternate form of complementary currency or Look for alternate currencies used as socio-economic development.
Community currencies fill avoid, but they need active leadership to carry-on being effective.
They demonstrate the kind of re-imagining of the economy needed for rapid transition, and show how people and communities can reveal

Main goal is to
grow community networks
support social or environmental goals
connect unused resources with needs that remain unfulfilled after transactions with conventional money have taken place.



REGENERATIVE ECONOMY

Supporting the growth of competitive business clusters

1 Strong support of data & technology

2 Educational Institutions support

3 Tap into Crowdfunding
Patronicity

4 Build a diverse Entrepreneurship strategy
Incorporate people of color
Advance state policy

POLICY STRUCTURE

Infrastructure investments that prioritize strong public transit systems
Tough regulations on "alternative" energies like nuclear and hydraulic fracturing
Programs to assist low-income folks during the economic transition (like Oakland's CARE or Smart-Solar program)
Measures to make sure vulnerable people aren't displaced or otherwise harmed during infrastructure policies

FINANCE STRUCTURES AND COLLABORATIONS

MARKET-BASED TOOLS

REVOLVING FUNDS

STATE GRANTS/ PUBLIC FUNDS

Linkages (from donations or private businesses)

Public-private partnerships as revenue streams

Fundraising

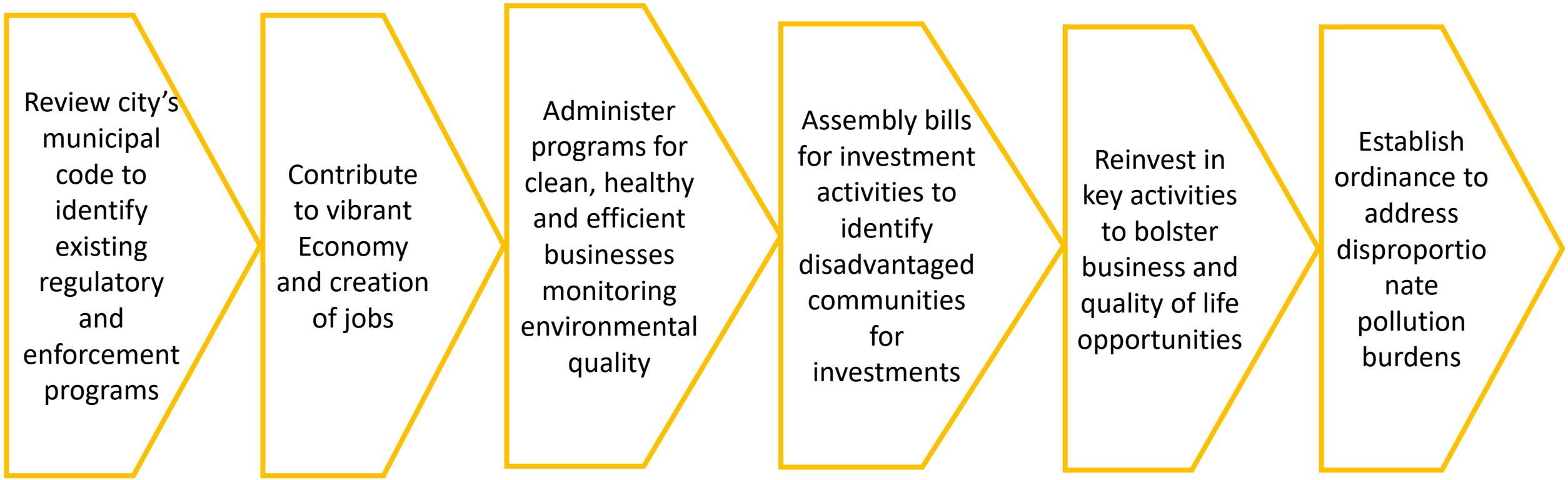
Support from Research and Academia

Partnerships (Financial and other resources) with upcoming business ventures

HOUSING BUYOUT PROGRAM
The Blue Acres Program uses federal and state funding to voluntarily purchase privately owned properties that are routinely threatened and flooded.

COMMUNITY APPROACH
We don't need experts to help them dream, we need experts to help implement.

GOVERNANCE STRUCTURES



FUTURE VISION FOR OUR ECO-DISTRICT

https://worldlandscapearchitect.com/big-reimagine-a-sustainable-furniture-factory-tucked-in-the-heart-of-the-norwegian-forest/#.XytsGihKhPZ

IMPACT VISION FOR OUR ECO-DISTRICT

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THANK YOU

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