



COMMUNITY ENERGY PLANNING IN BOSTON IDEA – CITIES AND MICROGRIDS - 6 NOV 2017

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development agency**



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ADAPTING TO CLIMATE CHANGE



PROTECTED SHORES



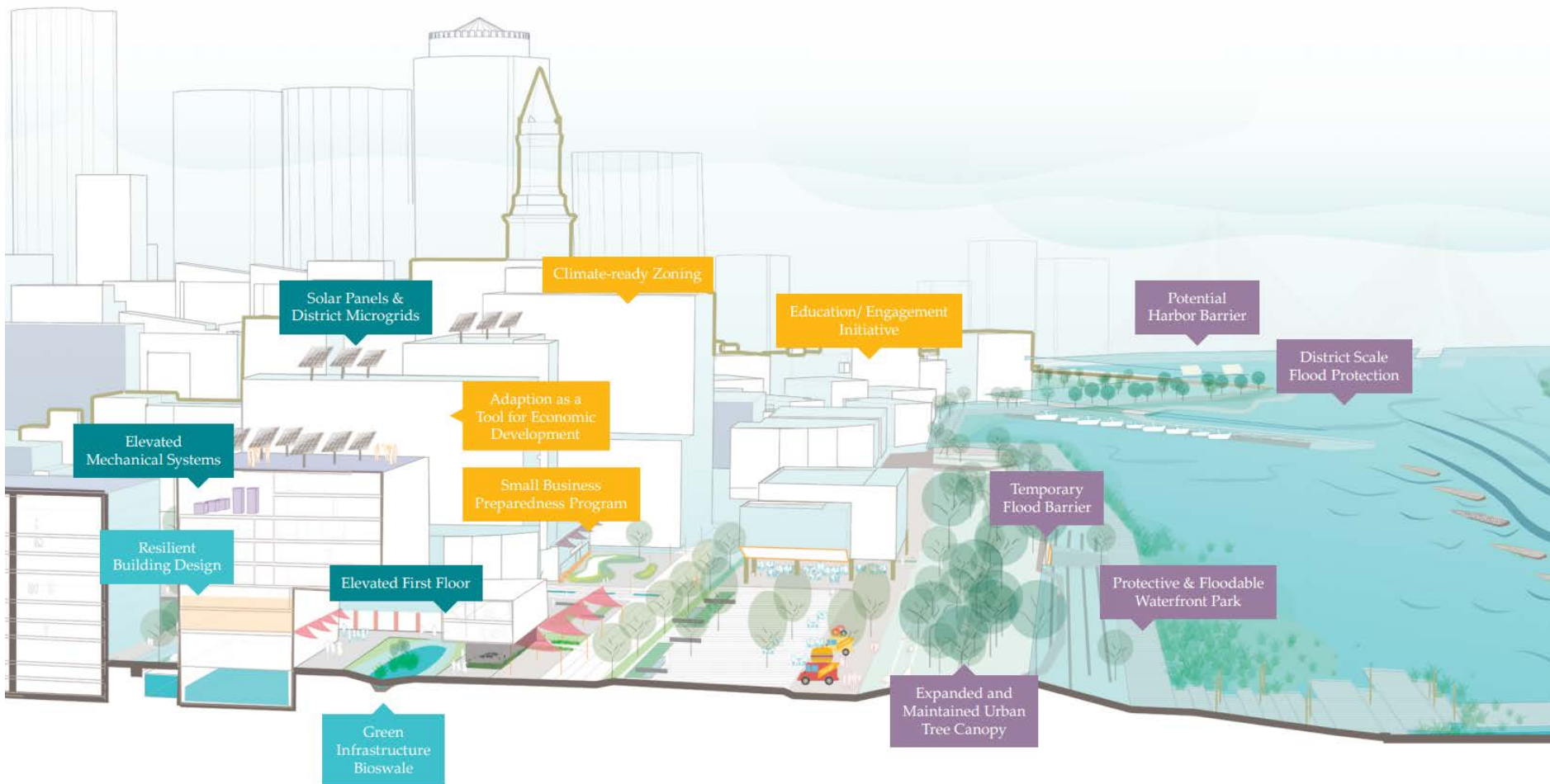
PREPARED AND CONNECTED COMMUNITIES



RESILIENT INFRASTRUCTURE



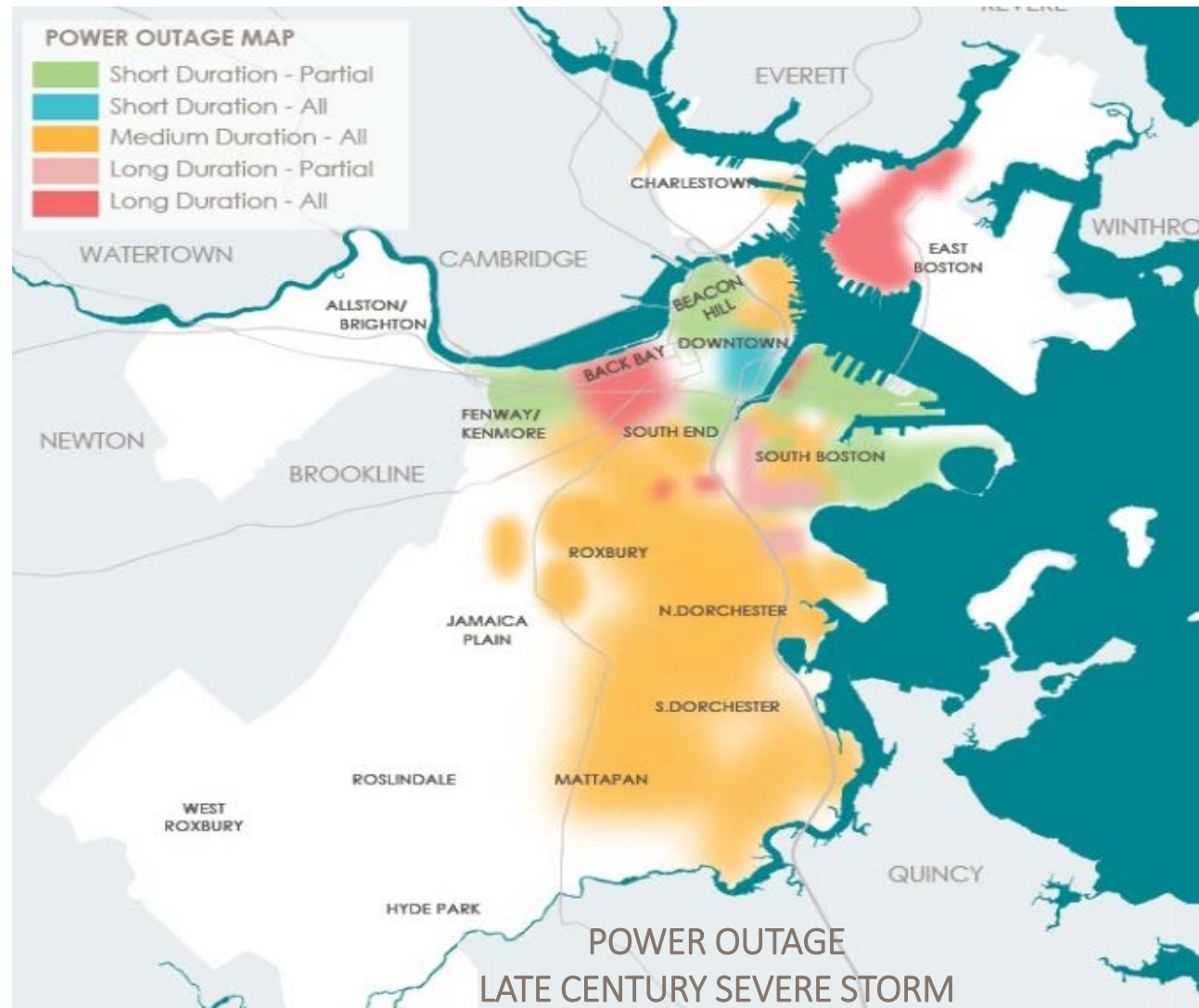
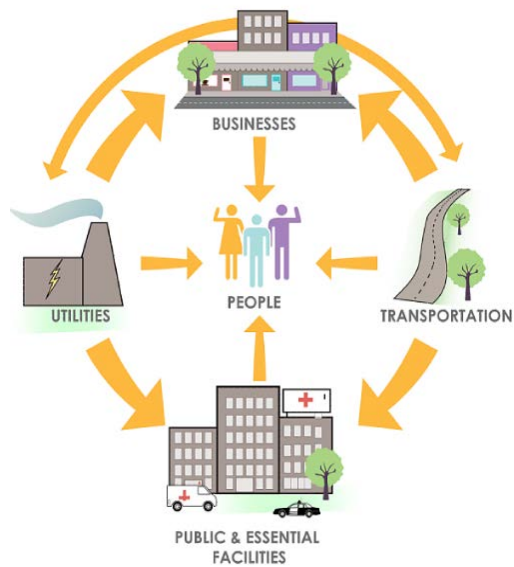
ADAPTED BUILDINGS

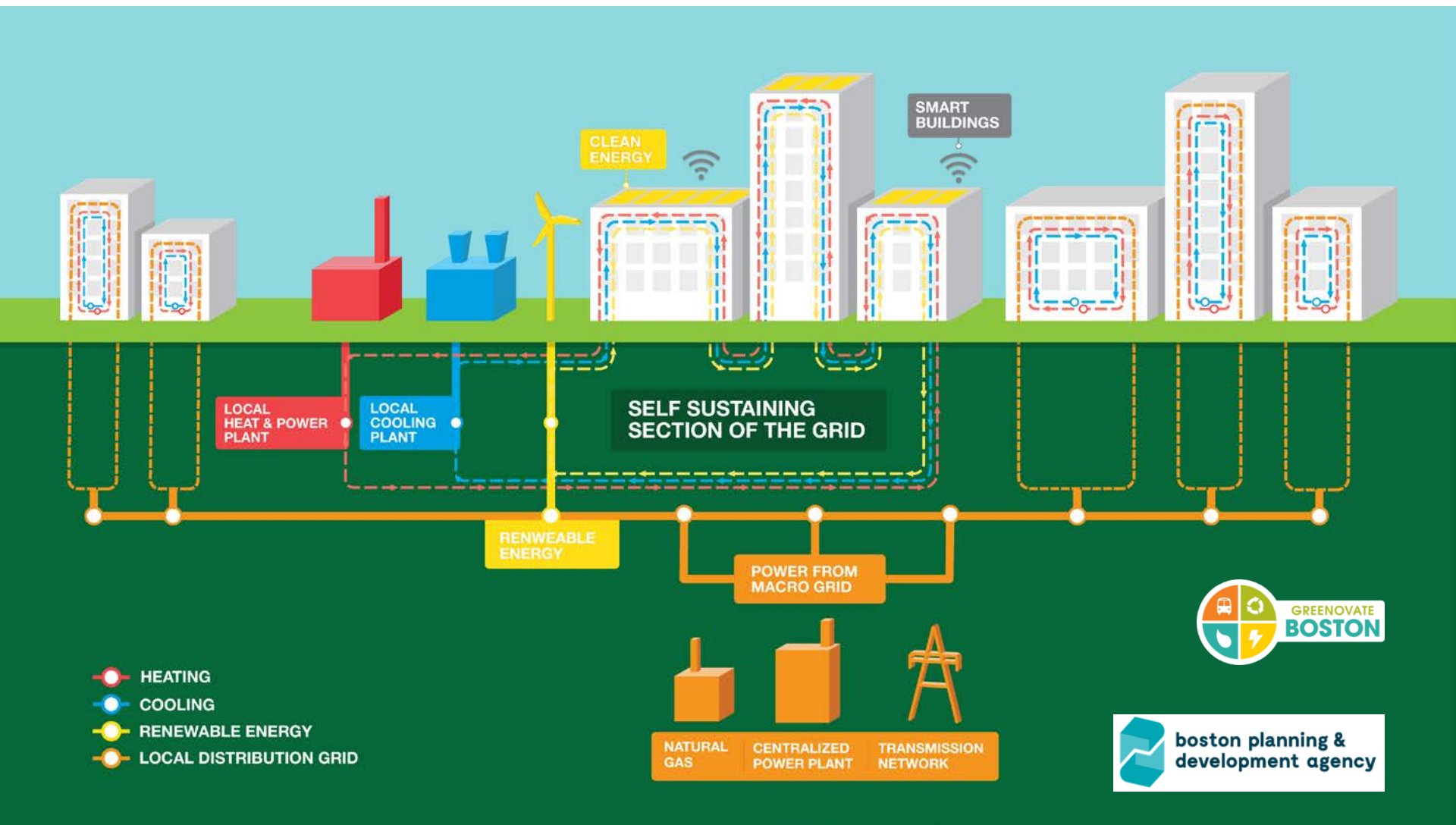


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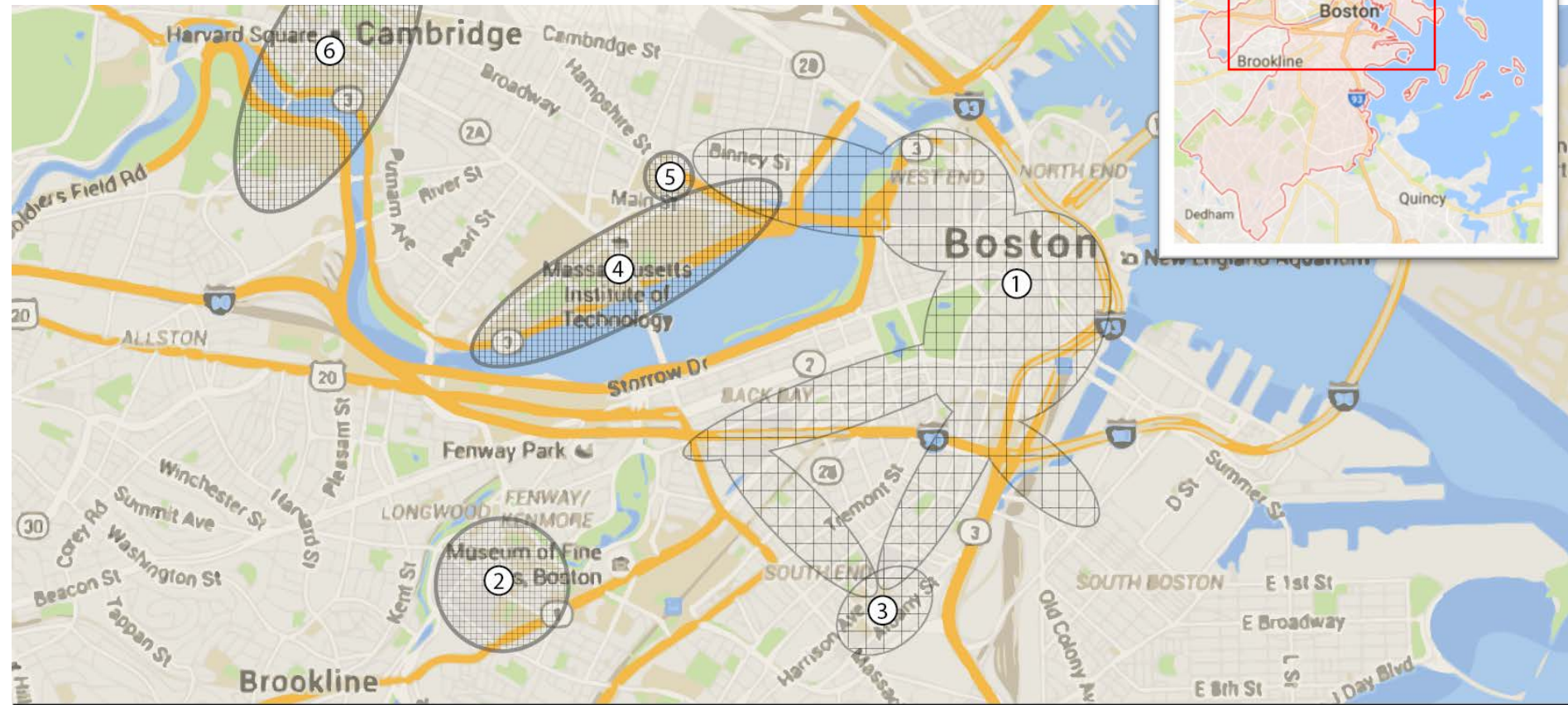
INFRASTRUCTURE

INTERDEPENDENCE AND POWER OUTAGE VULNERABILITY






Existing District Energy Microgrids



1) Veolia Steam System
2) MATEP

3) Boston Medical Center
4) MIT

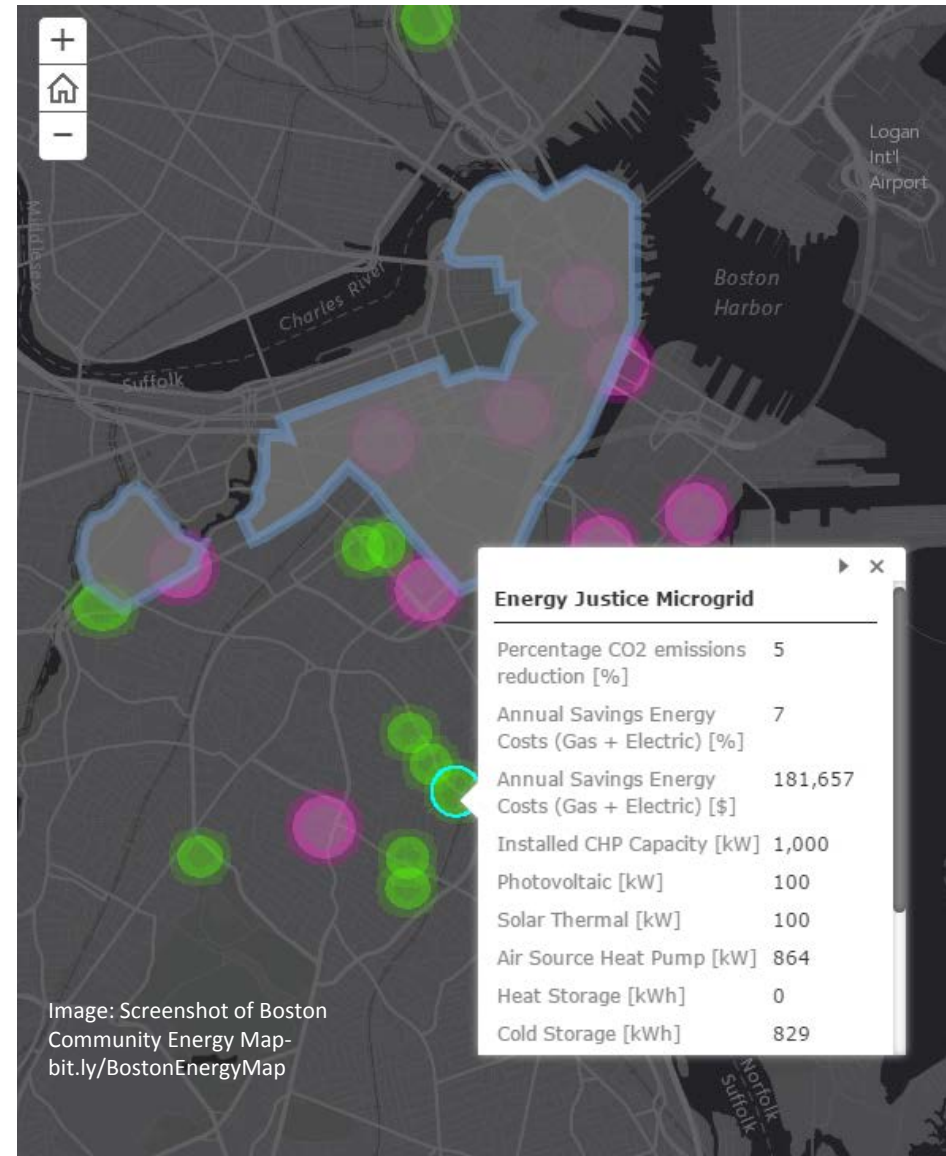
5) Biogen
6) Harvard

 indicates electrical microgrid

BCES *Planning*

Boston Community Energy Study (2016)

- Study identified 42 potential CES
- Conducted with MIT, Lincoln Labs, and Funding from DOE and DHS
- \$1.7B USD in End User and Environmental Savings
- Community Engagement: Online Video, Interactive Map, Report
- U.S. Department of Energy TA - Feasibility Screening of 8 sites



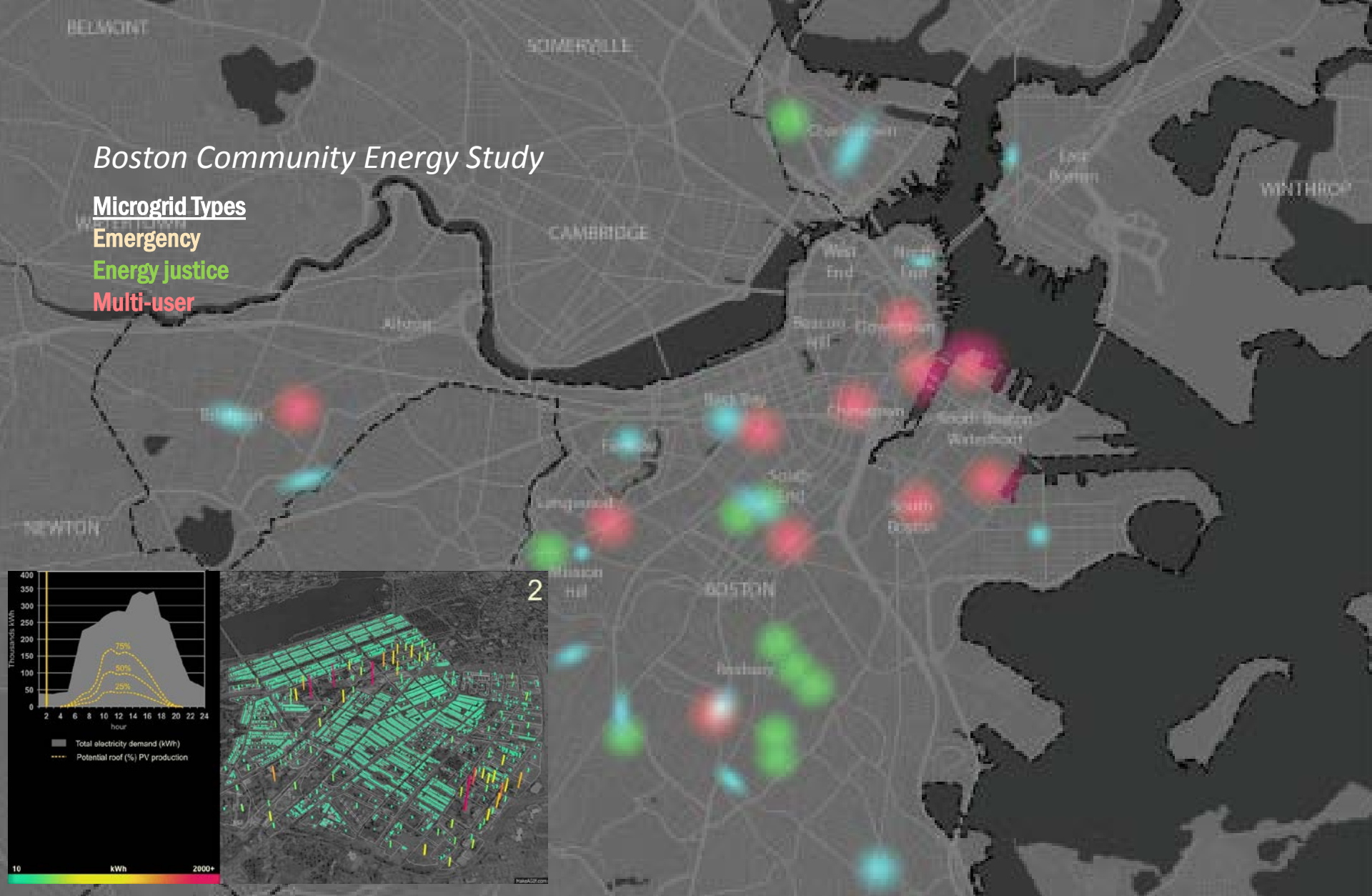
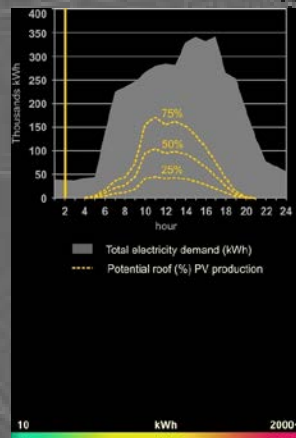
Boston Community Energy Study

Microgrid Types

Emergency

Energy justice

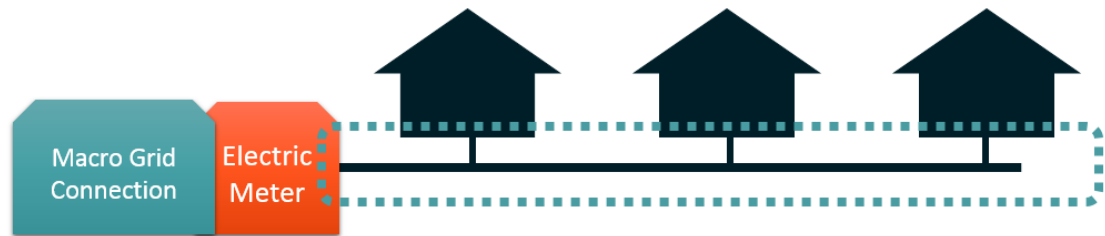
Multi-user



Resilient Energy Services for Commercial Properties

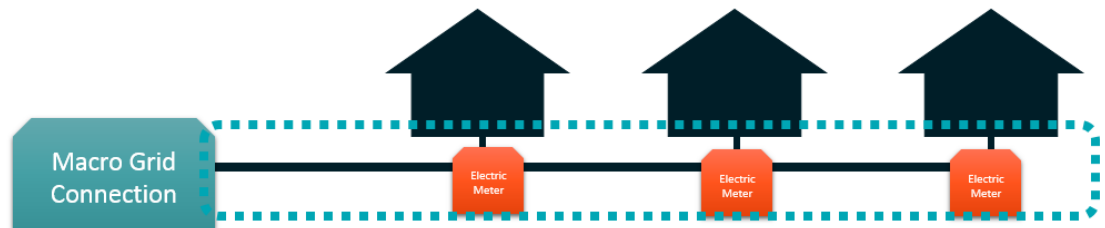
Campus “MUSH Market”

- easy to generate power,
- distribute benefits to one meter,
- simple to finance



Multi User Microgrid

- not easy to distribute benefits,
- hard to develop user base,
- difficult to finance,
- no business model



Microgrid Workshops *Engagement*

Developed 3-part microgrid workshop

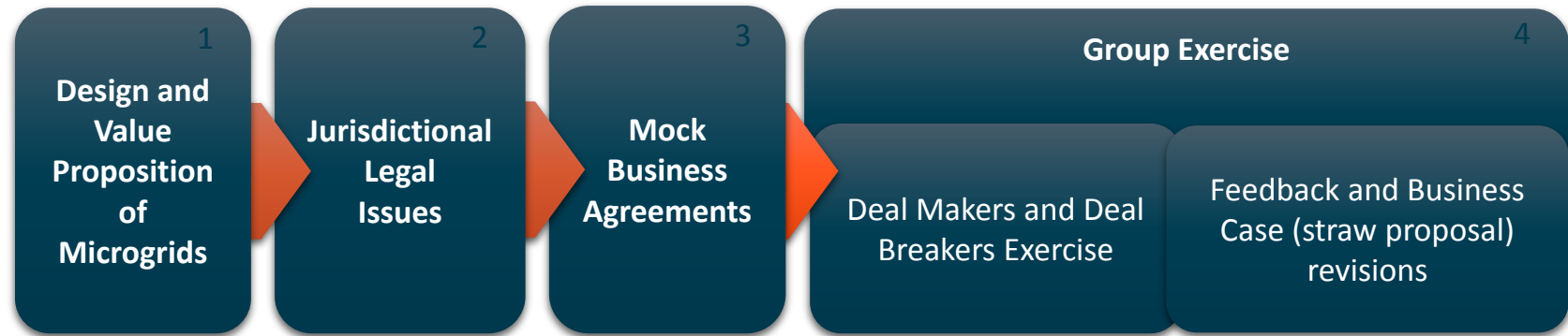
- 12 hours of scenario planning to align interests of key stakeholder
- Chief Regulators of State, Chief Strategy and Distribution Planners from Utilities, Technology providers, Real estate community

Convened Urban Sustainability Directors Network workshop 2015

- New York City, Washington DC , MA Communities : Somerville, Cambridge, Northampton
- Housed by International District Energy Association Conference with 950+ Attendees
- Technology and Policy innovations replicable



Microgrid Workshops Engagement



1) A session which describes the microgrid including engineering market interactions.

2) A session which analyzes legal context, opportunities, and challenges for microgrids each jurisdiction.

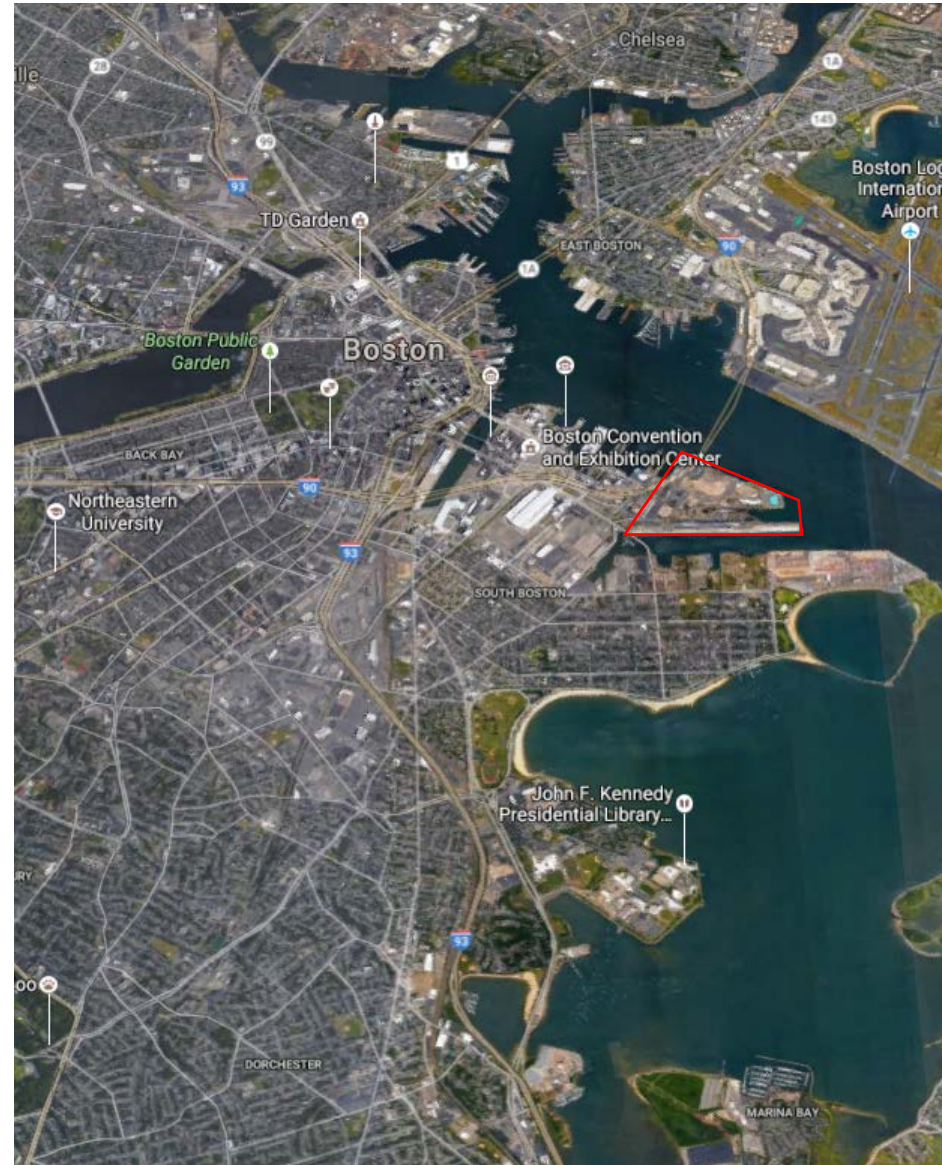
3) A session which describes the USDN microgrids whitepaper and 'straw proposal' business case for multi user microgrids.

4) A scenario planning exercise allows each stakeholder to identify merits and challenges to project deployment. This exercise will conclude with a revision of the straw proposal.

Pilot Project *Coordination*

2014-2016

- Engaging 50 businesses and property owners
- DOE CHP TAP Feasibility Study
- MOU with Eversource Energy
- Procurement & Legislative Action
- Public-Private Partnerships



Challenge

Developing a procurement, or a multi-party agreement, to develop a single ESCO relationship for multiple building owners- public and private.

Aggregating small structures in an Energy Performance Contract to reduce fixed ESCO costs.

