

Northampton SDAT- 2015

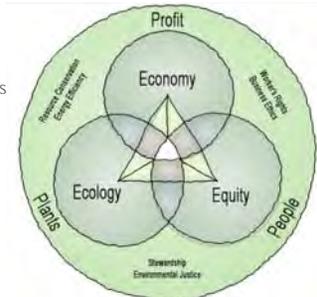


Where It All Begins...

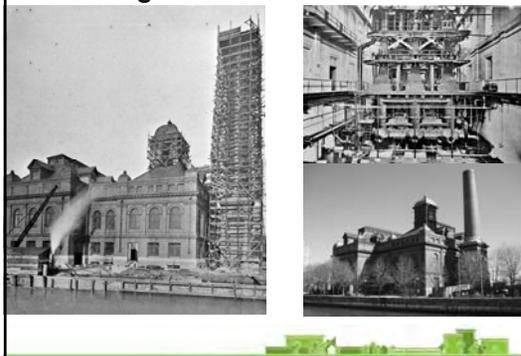


Sustainability

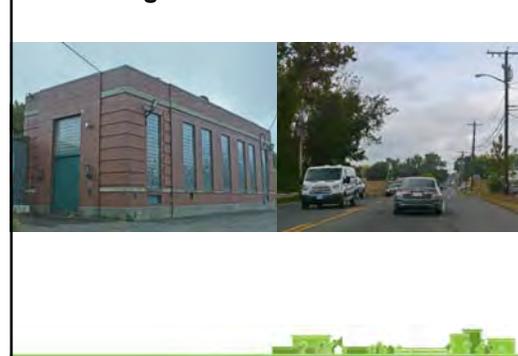
Meeting society's current needs without compromising the ability of future generations to meet their needs



Celebrating Infrastructure



Celebrating Infrastructure



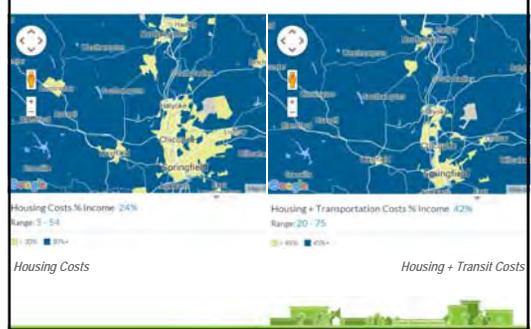
Northampton Floods



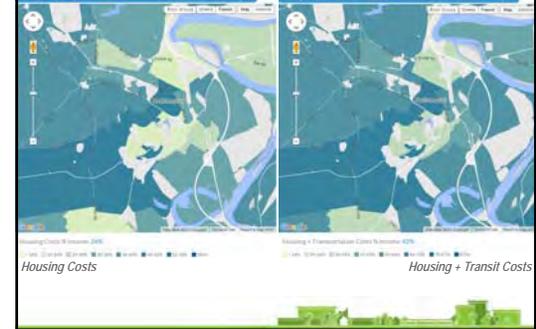
Northampton Floods



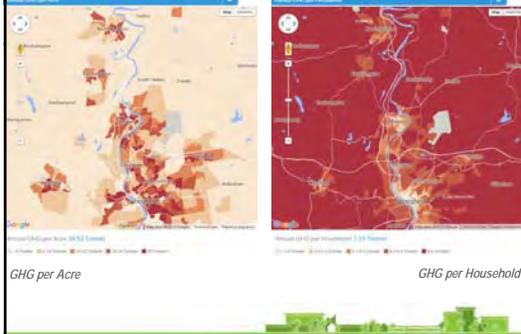
Northampton Metrics



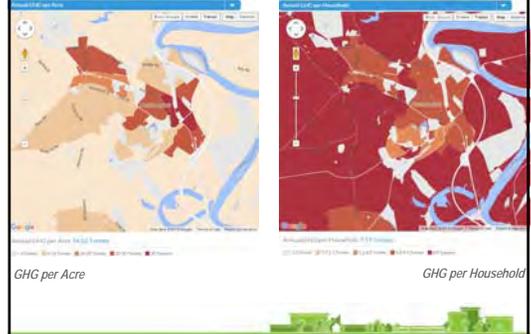
Northampton Metrics



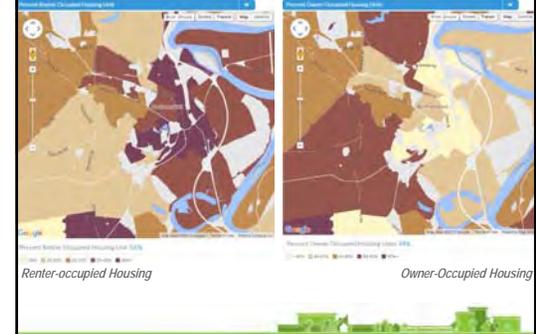
Northampton Metrics

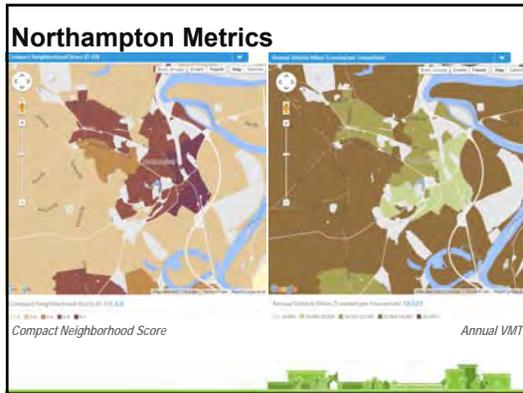


Northampton Metrics



Northampton Metrics





Alternative Transportation

zipcar
wheels when you want them

UBER
Autonomous Vehicles

Car Sharing

Alternative Transportation

Future Technologies

Robot Overlords

Walkscore

39 Northampton is a **Car-Dependent city**
Most errands require a car

Most errands require a car in Northampton

Walkscore

69 Northampton is **Bikeable**
Some bike infrastructure.

Walkscore

210 Main Street

Northampton, Massachusetts, 01060

Commute to Downtown Northampton

Walk Score: **94** Walker's Paradise
Daily errands do not require a car.

Bike Score: **97** Biker's Paradise
Flat as a pancake, excellent bike lanes.

Scores for 210 Main Street

Walk Score: **94** Transit Score: **97**

Score Details

Walkscore

6 Service Center Road

Northampton, Massachusetts, 01060

Commute to Downtown Northampton

Walk Score: **80** Very Walkable
Most errands can be accomplished on foot.

Bike Score: **79** Very Bikeable
Flat as a pancake, some bike lanes.

Scores for 6 Service Center Road

Walk Score: **80** Transit Score: **79**

Score Details

Walkscore

Main Street

Northampton, Massachusetts, 01062

Commute to Downtown Northampton 61 91

5 min 19 min 10 min 38 min

Favorite Map Nearby Apartments Walk Score Transit Score Bike Score

Walk Score 61 Somewhat Walkable
Some errands can be accomplished on foot.

Biker's Paradise 91
Flat, few hills, excellent bike lanes.

About your score
Add scores to your site

Scores for Main Street

Score Details What is Walk Score

The Walk Score for Main Street is based on the following categories:

Walkscore

95 Reservoir Road

Northampton, Massachusetts, 01053

Commute to Downtown Northampton 6 41

15 min 28 min 50+ min

Favorite Map Nearby Apartments Walk Score Transit Score Bike Score

Walk Score 6 Car-Dependent
Almost all errands require a car.

Somewhat Bikeable 41
Some bump hills, good bike lanes.

About your score
Add scores to your site

Scores for 95 Reservoir Road

Score Details What is Walk Score

The Walk Score for 95 Reservoir Road is based on the following categories:

Alternative Work

Incubation

Graduation

Alternative Work

Acceleration

Maker Spaces

climate adaptation

THE FUTURE
AIN'T WHAT IT
USED TO BE

Yogi Berra

Δ Temperatures

Causing:

- ↑ Heat waves
- ↑ fitness for some species (e.g. many insects, both beneficial and harmful)
- Altered range of plants and timing of blooms and pollen production

Δ Precipitation

Causing:

- ↑ Flood risk
- ↑ Damage to property and infrastructure
- ↑ Drought & fire risk
- ↑ Waterborne diseases, threats to H₂O quality

Community Context: Challenges & Strengths

- Climate change isn't the only challenge (e.g., limited resources; budgetary constraints; political, economic, social, institutional issues)
- Understanding climate risks and identifying specific responses
- Alleviating disproportionate effects on the most vulnerable citizens
- Generating/sustaining public interest and will over time, especially in relation to other pressing issues and priorities
- Coordinating efforts throughout the city and the Pioneer Valley region and communicating to/engaging the public
- Opportunities
 - Passionate and engaged community and agents of change
 - Working with, sharing, and learning from others
 - Context matters: **YOU** are an expert on your neighborhood/community

Northampton's Sectors

Built Environment	Natural Environment	Social Environment
Buildings/ Development	Wetlands/Riparian Areas	Economy
Transportation Infrastructure	Parks and Open Space	Governance
Water Resources Infrastructure	Groundwater and Surface Water	Education & Public Knowledge
Energy Systems	Agriculture/Food Supply	Public Health
		Emergency Services

Responding to Climate Change

Mitigation is what we do to decrease the potential of climate change itself.

Adaptation is how we prepare for and respond to the changes that we are already experiencing/expected to experience

- Decreasing negative effects
- Taking advantage of potential opportunities



Climate Adaptation Planning



Build and maintain support for action

- ID Climate Response Champion/Stakeholder Advisory Committee

– Sign the Compact of Mayors

- Register commitment
 - Inventory GHG emissions & climate hazards/risks
 - Create vulnerability reduction targets
 - Create action plan with mitigation and adaptation measures
- Include community members

- Scope climate impacts on major sectors & inventory assets

- How has it changed already and with what consequences?
- How is climate expected to change?



www.compactofmayors.org/



Conduct community vulnerability assessment

Climate vulnerability: extent to which a resource, community, or ecosystem process is susceptible to harm from climate change impacts.

- **What** things are most vulnerable
- **Why** they are vulnerable

Tool that **can help**:

- Prioritize resources and systems for management actions
- Develop management strategies to address climate change
- Efficiently allocate resources



Conduct community vulnerability assessment

Vulnerability =

exposure + sensitivity - adaptive capacity

↓ Exposure

- What climate impacts is Northampton already experiencing/expected to experience?
- Are there non-climate stresses that may affect response to climate change?



↓ Sensitivity

- What aspects of Northampton (people, structures, functions) will be affected and how?

↑ Adaptive capacity

- What resources exist that could be used to address climate change?

Prioritize impacts to address

Results of the VA

• What assets are most vulnerable? Are there issues that are more urgent than others to address?

No-regrets/win-win strategies

• Are there current problems that need to be addressed *and* are expected to get worse with climate change? How can we prioritize actions that benefit the city regardless of how climate change plays out?

- Look for mitigation-adaptation combined win (e.g., open space conservation, green infrastructure).

“Low-hanging fruit”

• Are there actions that are particularly low cost and/or quick to implement?

Budget

• How much funding is required for adaptation actions? What actions can be integrated into existing program funds?

Develop and implement climate response plan

Create the plan

- Actions
- Timelines
- Responsible parties & public involvement
- Available and needed resources



Evaluate and implement the plan

- Community ground-truthing
- Feasibility, equity, effectiveness of proposed actions
- Avoiding maladaptation/negative effects on other sectors or communities
- Monitoring over time to adjust activities as needed

Natural systems recommendations

- Targeted land acquisition
 - Include climate change (e.g., include vulnerable lands)
 - Consider amount and type of land cover (healthy intact forest ≠ soccer field)
 - Protect and maintain wetland/riparian buffers
 - Plant flood-tolerant species
- Encourage climate-friendly gardening (e.g., pollinator-friendly species, recycling yard waste)
- Monitor invasive plants, pests, and diseases

Public health recommendations

- Use “buddy system” to check on elderly and other vulnerable residents
- Public utilities voluntarily refrain from shutting off service during extreme heat events
- Encourage mass transit use – free rides on low air quality days
- Limit/avoid outdoor burning
- Research feasibility of hypoallergenic trees



Agriculture/Food supply recommendations

- Develop a food security plan
- Review crop planting to accommodate potential extended growing season
- Facilitate research on crop survivability and diversity under changing conditions
- Increase access to places to purchase fresh, local food



community process

Climate Adaptation and Environmental Quality Planning

- Create a Shared Understanding of the Issues
- Identify and Rank Our Vulnerabilities
- Create a Strategic Action Plan for Climate Adaptation that can be a model for the region
- Pride of Place and Sense of Accomplishment

Shared Understanding of the Issues: Small Group Discussions



Identify and Rank Our Vulnerabilities: Vulnerability Assessment Exercise



Local Tours of Key Resources



**Create a Strategic Action Plan for Climate Adaptation that can be a model for the region:
Climate Adaptability Discussion Sessions**



**General Sessions with the Larger
Community**



Subcommittees or small group meetings



Ongoing Strategic Planning Meetings



Pride of Place and Sense of Accomplishment: Competition and Recognition



Next Steps

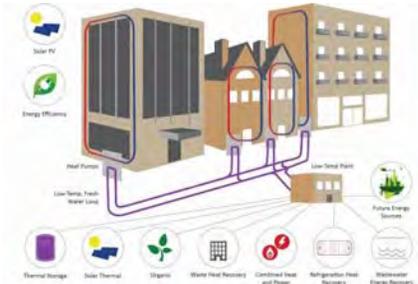
- See this presentation on the AIA website under the SDAT link – and through Northampton Planning & Sustainability
- Consider the following illustrations to address climate planning, urban design, green infrastructure and energy
- Sign up to be part of the ongoing leadership and conversation for the Strategic Plan for Climate Adaptation!!

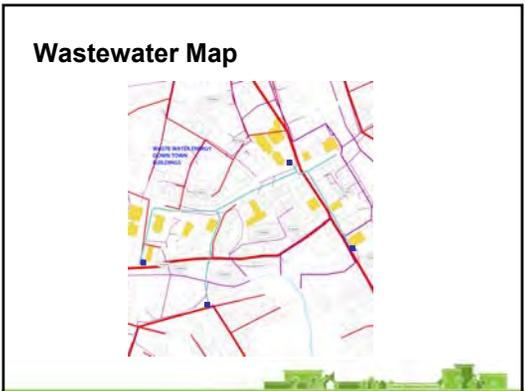
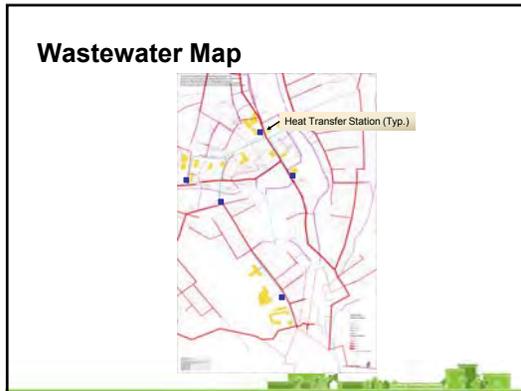
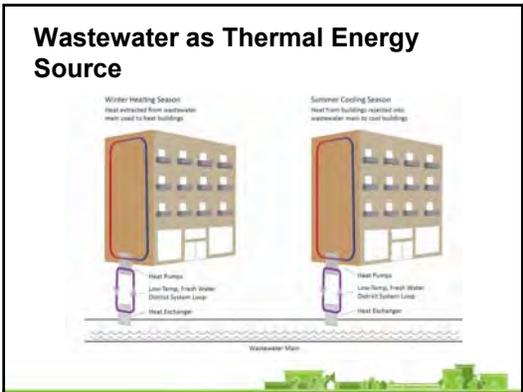
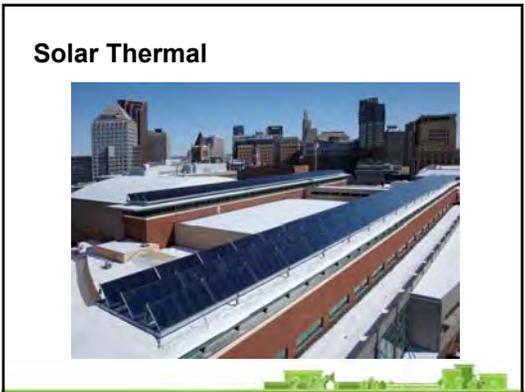
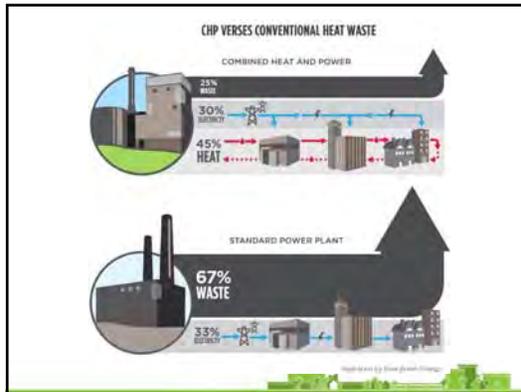
energy adaptation

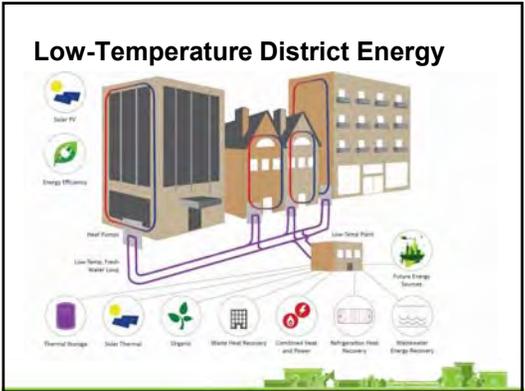
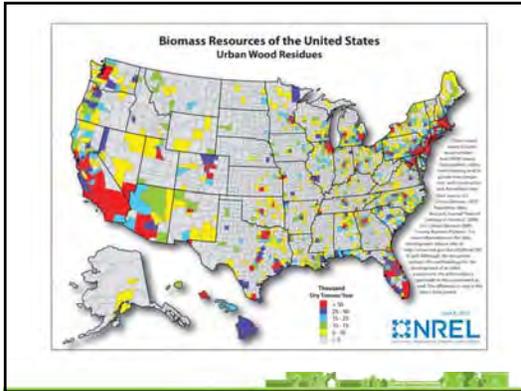
Energy adaptation

- A vision for future energy needs
- Analysis of current energy supply
- Potential local resources

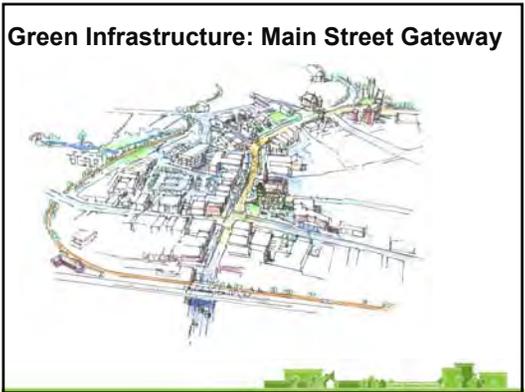
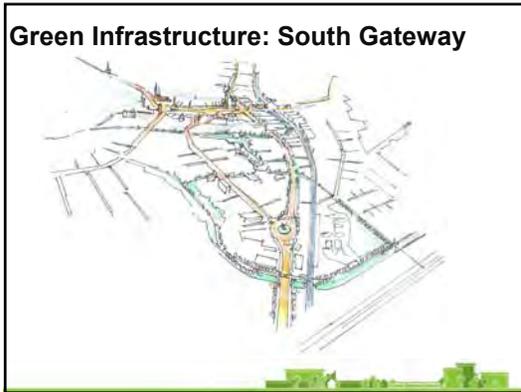
Low-Temperature District Energy







green infrastructure



Green Infrastructure: Farmers Market



Green Infrastructure: Farmers Market



Green Infrastructure: Mill River



Green Infrastructure: Mill River



Green Infrastructure: Mill River



Green Infrastructure: Parks Precedents *Function with Form*



Source: h4wp.com



Historic
Fourth Ward Park
Atlanta, GA

Source: better.org

**Green Infrastructure: Parks
Precedents**
Function with Form



The Dell SW Pond, UVA
Charlottesville, VA

Source: asla.org

Green Infrastructure: Mill River



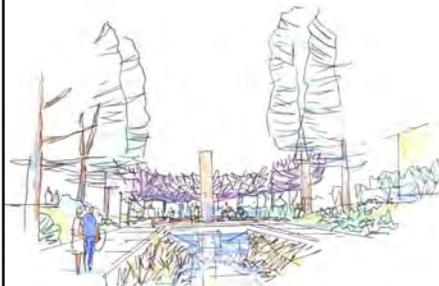
Green Infrastructure: Mill River



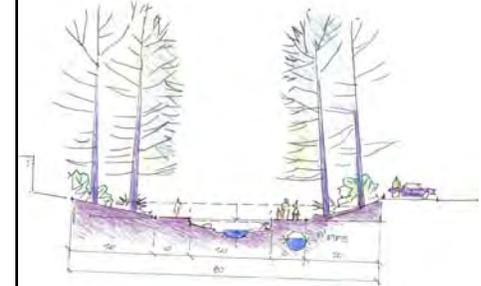
Green Infrastructure: Mill River



Green Infrastructure: Mill River



Green Infrastructure: Mill River



Green Infrastructure Adaptation Response

Concern	Response	Action
Increasing frequency of storm events	Expand stormwater management and flood controls	Increase water storage capacity of watershed. Reinforce/reinvest in existing infrastructures
Increasing storm intensity	Prepare more rigorous and contemporary design response	Adopt updated design criteria that promote green infrastructure
Climate effects on natural systems	Provide resilient species for expected conditions and promote biodiversity for redundancy	Research species adaptability to create preferred plant palette.

Adaptation Strategy: Frequency of storm events

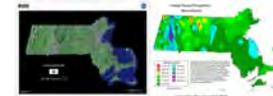
- Use green infrastructure to increase “water storage” capacity of watershed (creates less runoff!)
- Distribute GI solutions throughout watershed to reduce overall burden in system
- Optimize existing infrastructure investment
- Make strategic investments in system upgrades (bang for the buck)



Source: <http://www.nae.usace.army.mil/>

Adaptation Strategy: Increasing storm intensity

- Stormwater design today uses rainfall criteria that was developed in 1961 and derived from 25 years of records. The “100-year storm” was extrapolated from these data!*
- Research, evaluate and adopt “rolling” rainwater design criteria that captures most recent time period
 - Adopt new volumetric sustainable rainwater design criteria (per LEED® and SITES™)



Adaptation Strategy: Natural systems

- Research, evaluate and adopt urban tree plant species that are adaptable to future conditions
- Assess vulnerability of current tree inventories and create a priority list for replacement.
- Identify and manage invasive species, including current and future species migration threats



Source: mass.gov

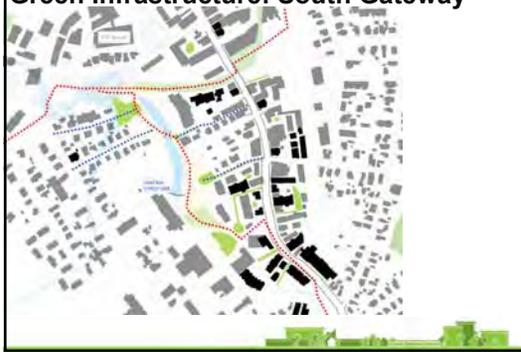
Green Infrastructure: South Gateway



Green Infrastructure: South Gateway



Green Infrastructure: South Gateway



Green Infrastructure: South Gateway



Green Infrastructure: Preservation



now what?

Recommendations

- What Are We Doing Here?
- Talk Amongst Yourselves
- Waste = Food
- Celebrate Green Infrastructure
- Go To Zero
- Those Who Cannot Remember the Past are Condemned to Repeat It
- Long Life, Loose Fit
- Double Duty/Triple Duty/Infinite Duty

Many thanks to the City of Northampton and to all of the volunteers who worked with the team!



www.aia.org/liv_sdat