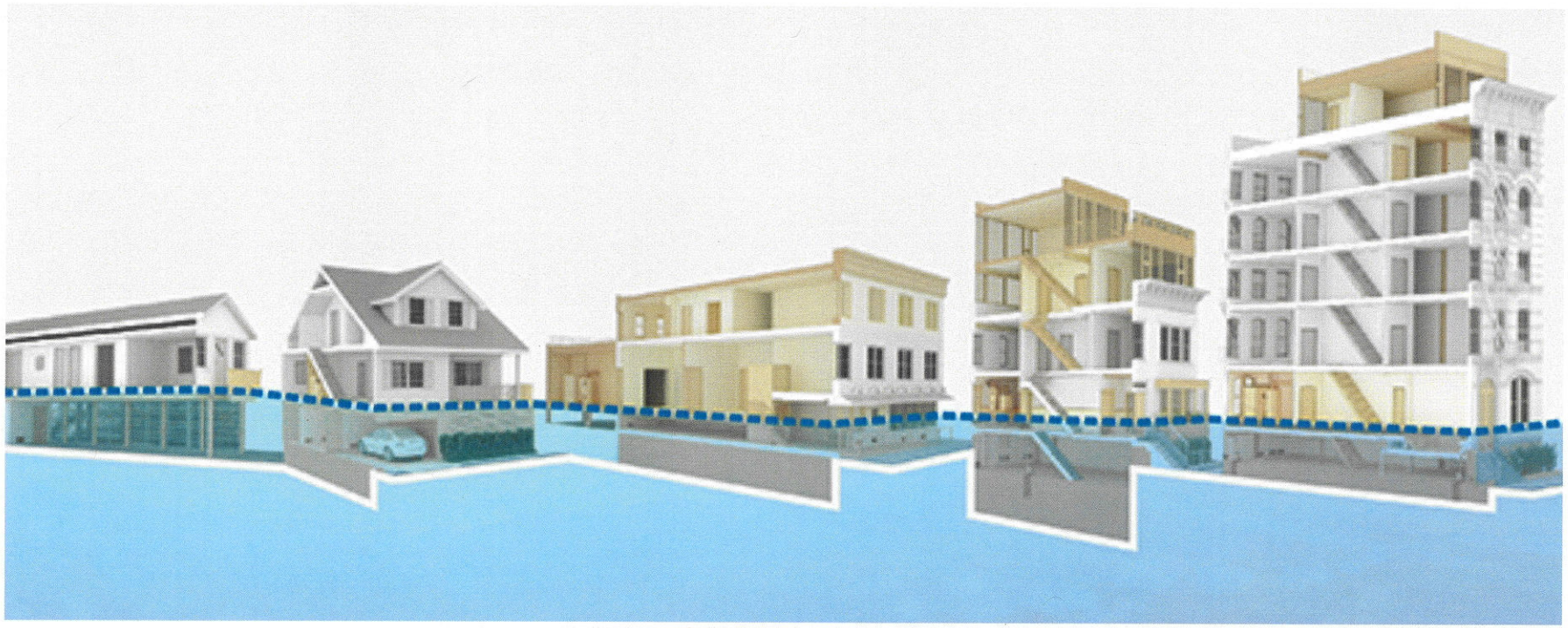
Flood Walls Assessment

Flood Design Manual



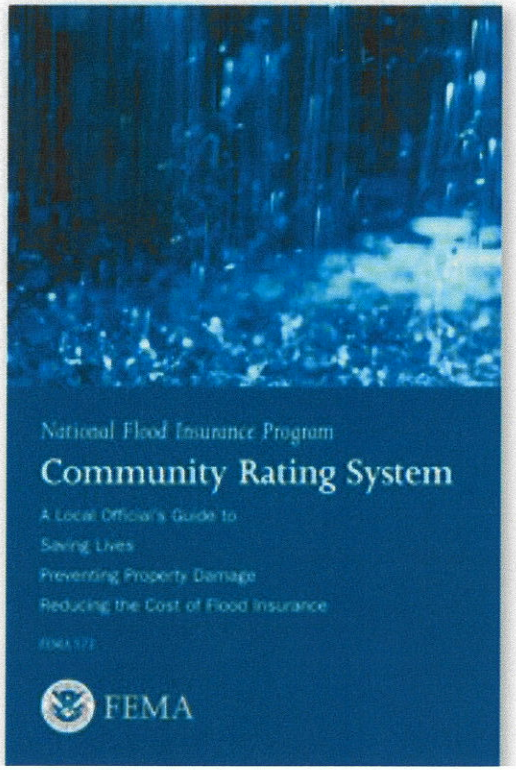
- Flood Elevation
- Zoning and Access
- Critical and Structural Systems (Category IV buildings)

Community Rating System

Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements.

By regulating to these higher standards, the City of Baltimore helps support safe and smart development.

Moreover, meeting and exceeding the NFIP standards allows the City of Baltimore to help policy holders receive discounts on their insurance rates.

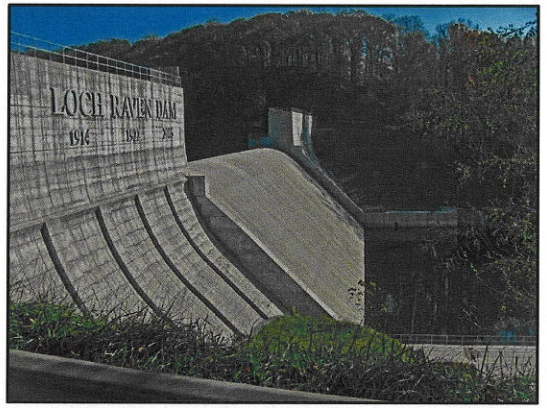


NFIP/CRS

Stormwater Management

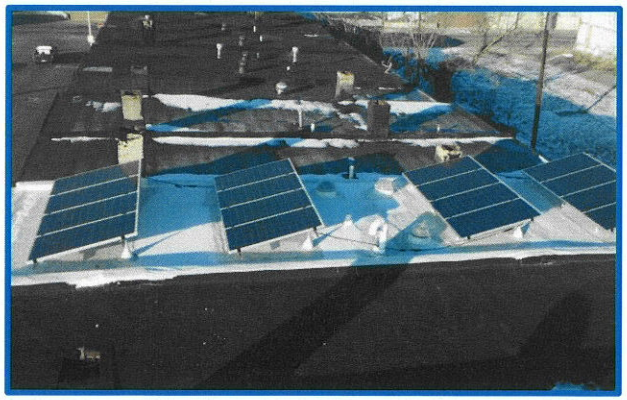
Resiliency & Restoration

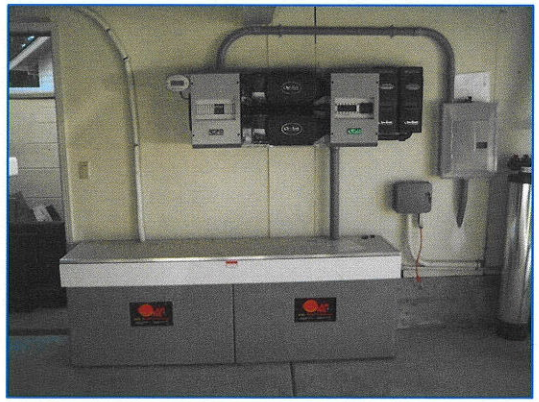
- Stream Restoration
- Stormwater Capture Systems
- Impervious Surface Removal
- Erosion Control
- DAMS
- Wastewater Treatment Plants
- Blue Alley Projects
- Replace and upgrade pipes

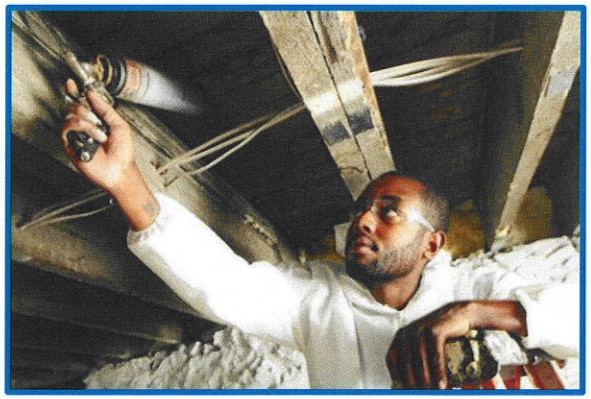


Energy: Residential Pilot

- Identify neighborhoods most vulnerable to impacts from climate change
- Pilot project: solar on row houses in low income area
- Include weatherization and cool roof installation
- Community Resiliency Hub with battery backup







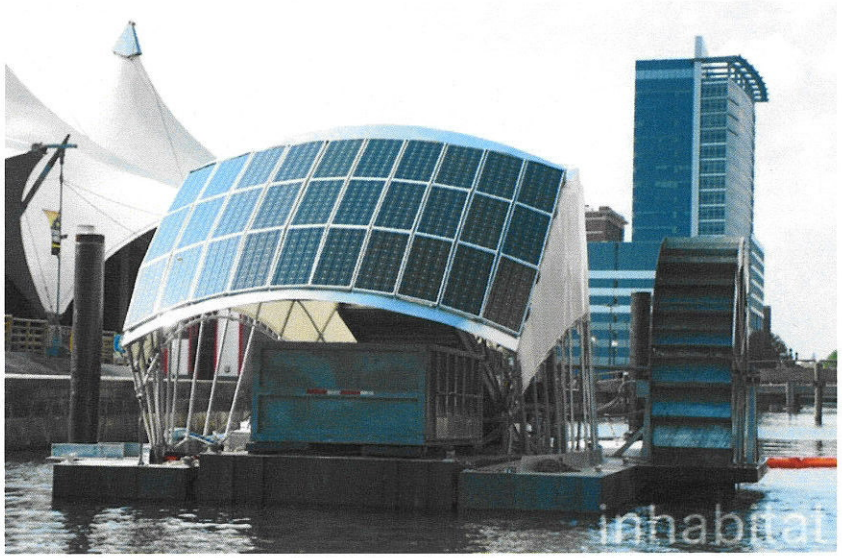
Energy: Private Partners

Domino Sugar

76 blue solar panels producing 41,000 kilowatt- hours of electricity per year

Inner Harbor Waterwheel

On a sunny day, the water wheel can produce 2500 watts of electricity a day which keeps the wheel lifting trash and debris from the water



Critical Facilities

Back River Wastewater Treatment Plan

4200 panels on five acres

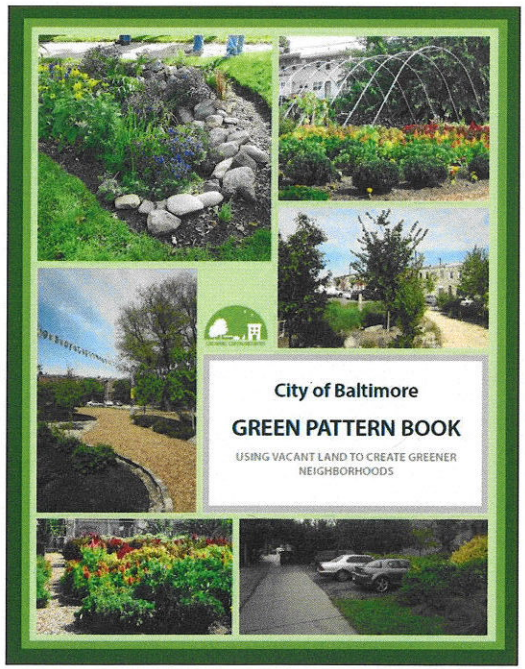
City Initiatives

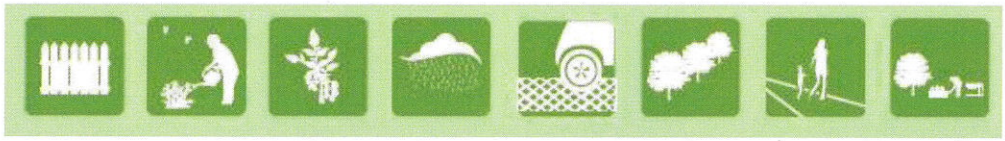
Using Green Infrastructure as part of a comprehensive strategy for rebuilding Baltimore

- Provides economic, environmental, and social benefits
- Capacity to support the missions and goals of multiple agencies by addressing issues including stormwater management, health issues, and economic development.

Growing Green

Effort focused on re-using vacant land to green neighborhoods, reduce stormwater runoff, grow food, and create community spaces that mitigate the negative impacts of vacant properties





Tree Canopy

TreeBaltimore

- Goal of 40% tree canopy cover by 2030
- Partner with individual homeowners as well as communities, schools, and businesses
- Over half of the environmental values are provided by seven species (based on tree structure and abundance): red maple, linden, Norway maple, London plane, green ash, sugar & silver maple

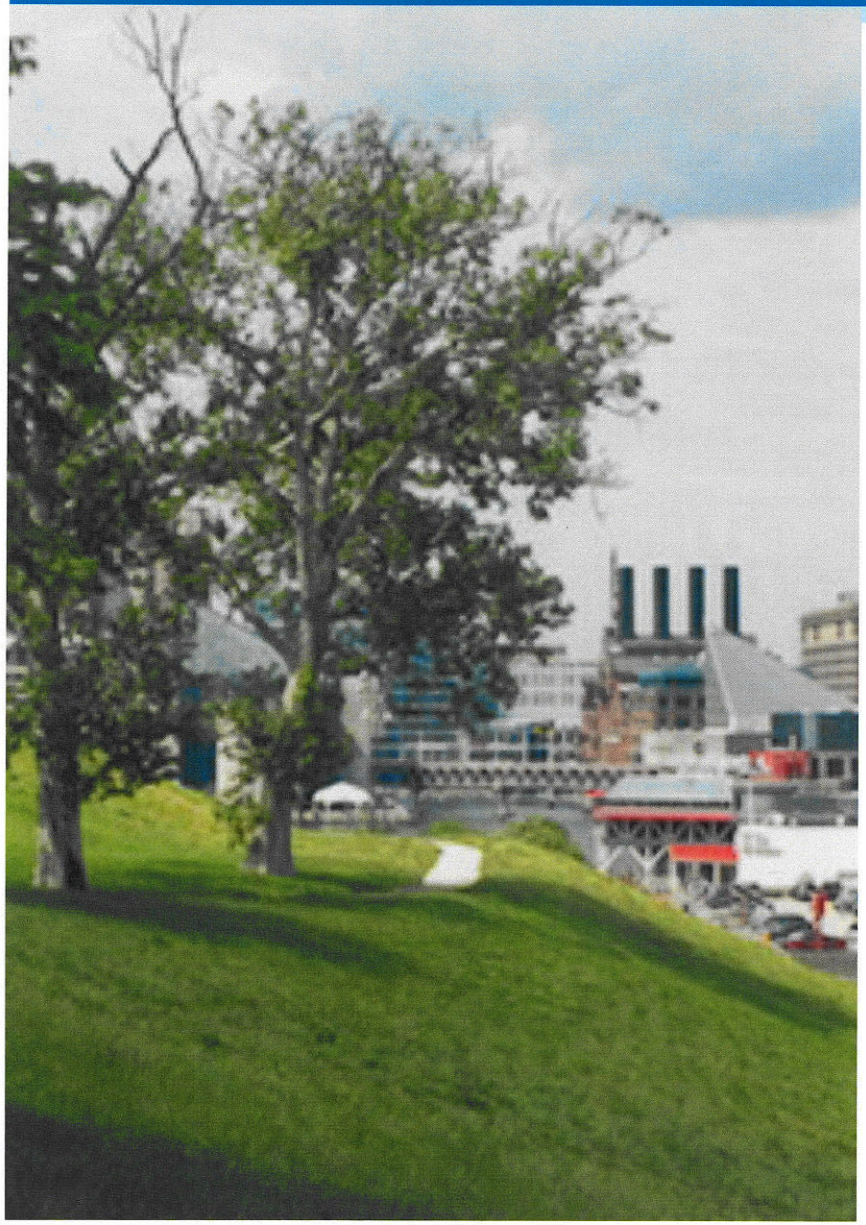
TreeKeepers

- Several levels and types of classes that teach citizens to care for their trees and environment

Weed Warriors

- Removal of invasive species by trained environmental stewards

Tree Species Database



Database of Trees

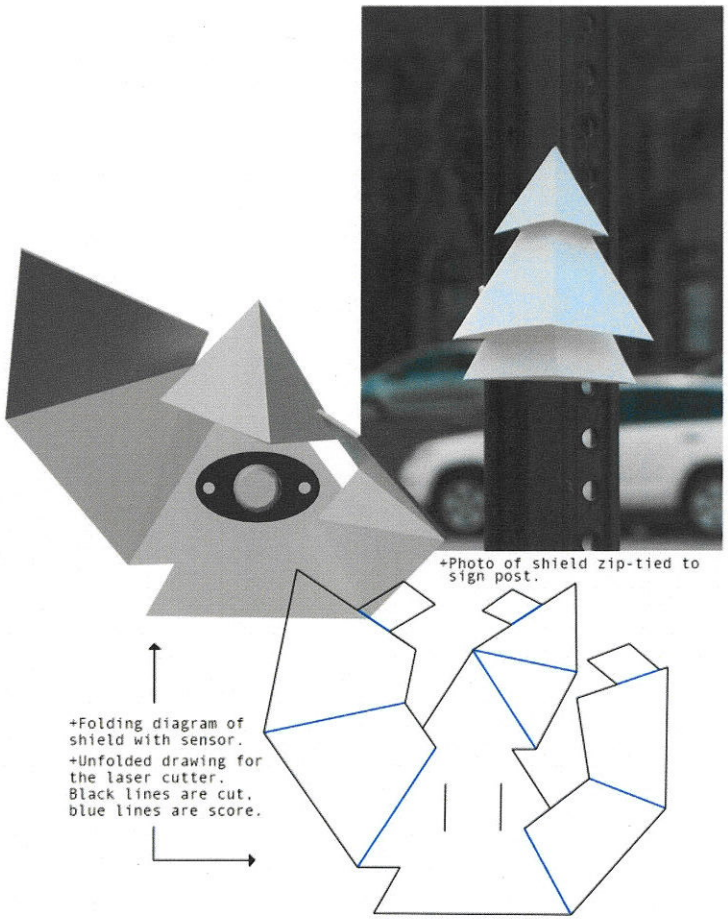
- Predicted climate conditions
- Species that thrive
- Maintenance and soil requirements
- Planting specifications

Spatial Analysis Tool

- Overlay areas at risk
- Overlay soils, demographic information, water/salt water info
- Develop list of trees best for those conditions

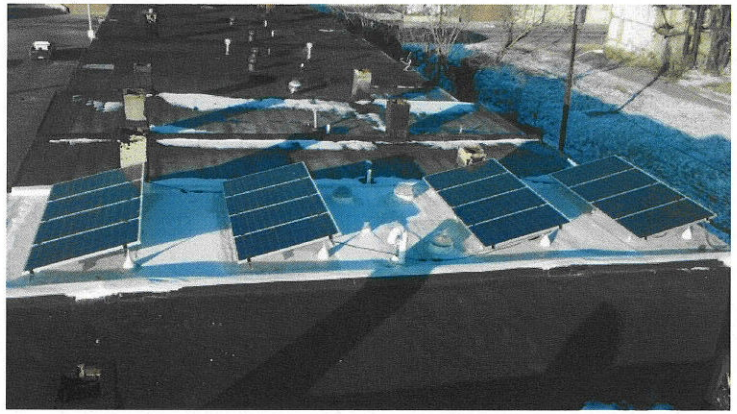
Heat Islands and Sensors

Minimum Temperature (^{O}C)



Resiliency Hubs

Building upon our energy work, develop a pilot project to integrate solar into critical facilities in lower income areas



Focus on creating "Resilience Hubs" in neighborhoods

Not always City-owned buildings

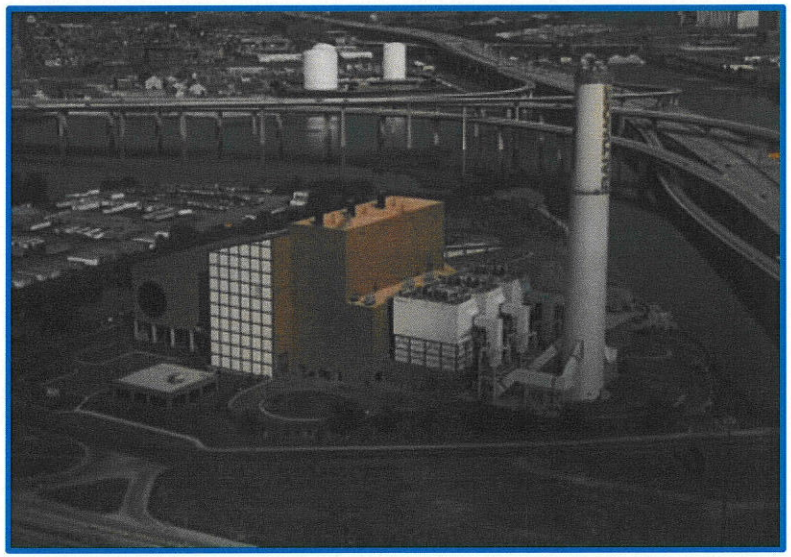
Regional Collaboration

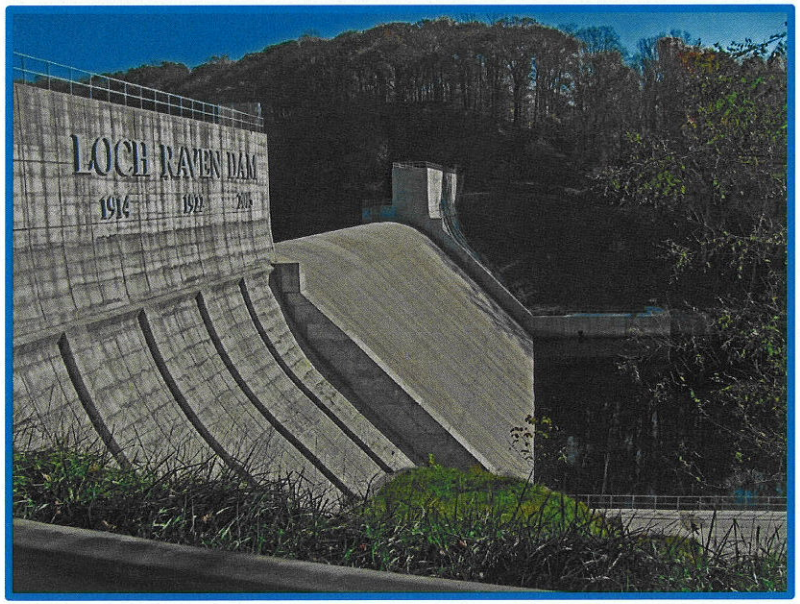
Surrounding Counties:

- Dams
- Stormwater Management
- Emergency Management
- Critical Facilities
- Energy and Transportation

Regional Partnerships:

- Other Cities (DC, Philly, NYC)
- Baltimore Wilderness Coalition
- Baltimore Urban Waters Partnership
- USDN Preparedness Group

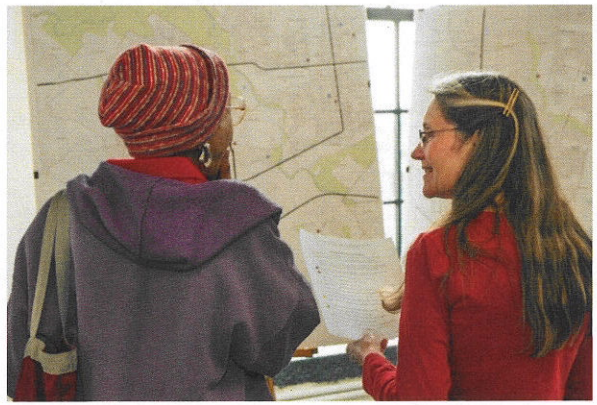
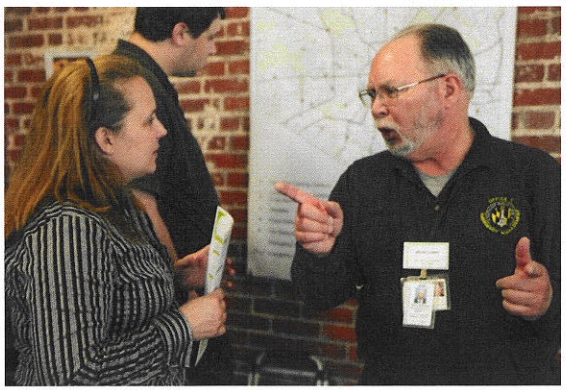




Communications

Preparedness: Make a Plan, Build a Kit, Help Each Other



Equity

- Prioritize neighborhoods with highest vulnerability to impacts from climate change
- Provide job training and green job opportunities
- Improve water and air quality (health)
- Economic benefit- lower electricity costs


Integration
FOUNDED 1826

Integration: CIP

- Department of Planning manages process
- Developed a Resiliency Checklist for projects
- Identify how each project will help reduce risk and improve the City's ability to adapt and respond to natural hazards
- Projects must take into account anticipated impacts from climate change
- Include extreme weather events, adaptation, SLR, floodplain considerations, and mitigation

Build into new initiatives

- Continue to build resiliency into all new plans and projects
- Regional collaboration
- Reach out to new partners and identify new opportunities for relationship building

GROWING GREEN INITIATIVE

BALTIMORE ENERGY INITIATIVE

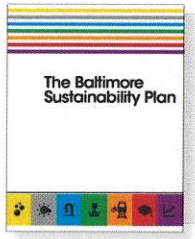
VACANTS TO VALUE

City Action

The City of Baltimore is working hard to prepared for, adapt to, and mitigate climate change.

Four Plans guiding this process

The Baltimore Sustainability Plan | 2009

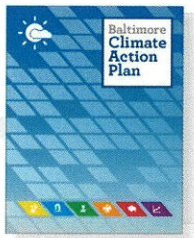


7 CHAPTERS

- Cleanliness
- Pollution Prevention
- Resource Conservation
- Greening
- Transportation
- Education + Awareness
- Green Economy

29 GOALS
131 STRATEGIES

Climate Action Plan (CAP) | 2012

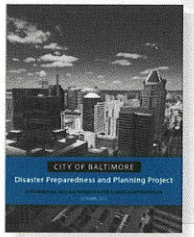


3 SECTORS

- Energy Savings + Supply
- Land Use + Transportation
- Growing a Green City

14 STRATEGIES
37 MEASURES
7 ADDITIONAL ACTIONS

Disaster Preparedness Project and Plan (DP3) | 2013

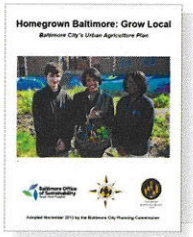


4 SECTORS

- Infrastructure
- Buildings
- Natural Systems
- Public Services

50 STRATEGIES
230 ACTIONS

Homegrown Baltimore (HGB) | 2013



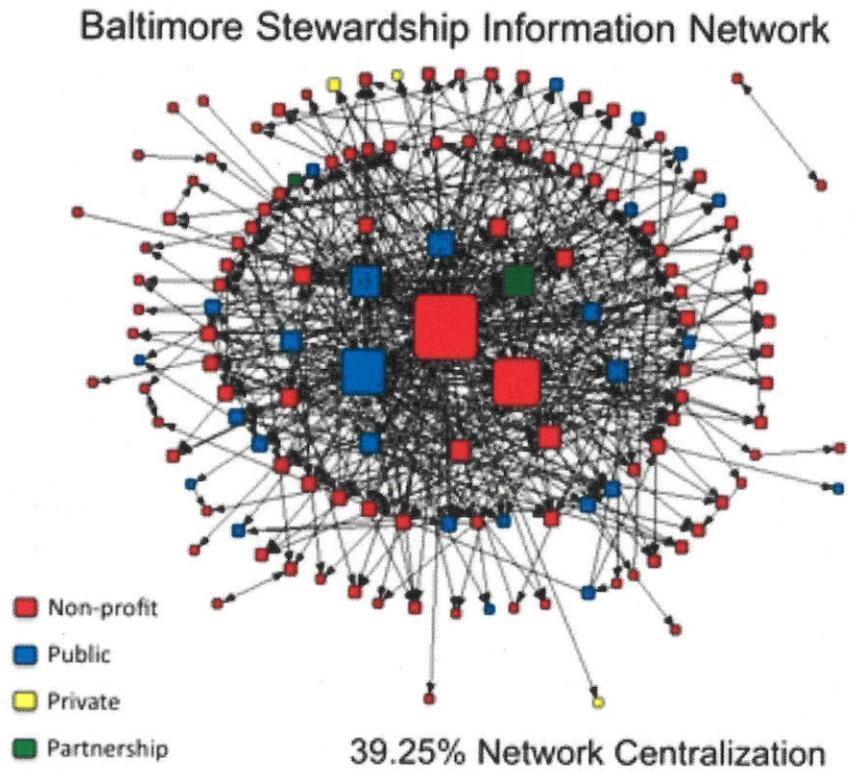
5 SECTIONS

- Land
- Water
- Soil
- Capital
- Support

5 CATEGORIES
28 RECOMMENDATIONS

Regional and National

- Climate Consortium of Maryland
- American Society of Adaptation Planners
- Urban Sustainability Directors Network
- Association of State Floodplain Managers
- STAR Community Rating System



Questions?

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Baltimore Office of Sustainability
People · Planet · Prosperity