



Green Infrastructure for Resiliency

Climate Resilience Webinar Series

— THE —
CONSERVATION FUND

Kendra J. Briechle



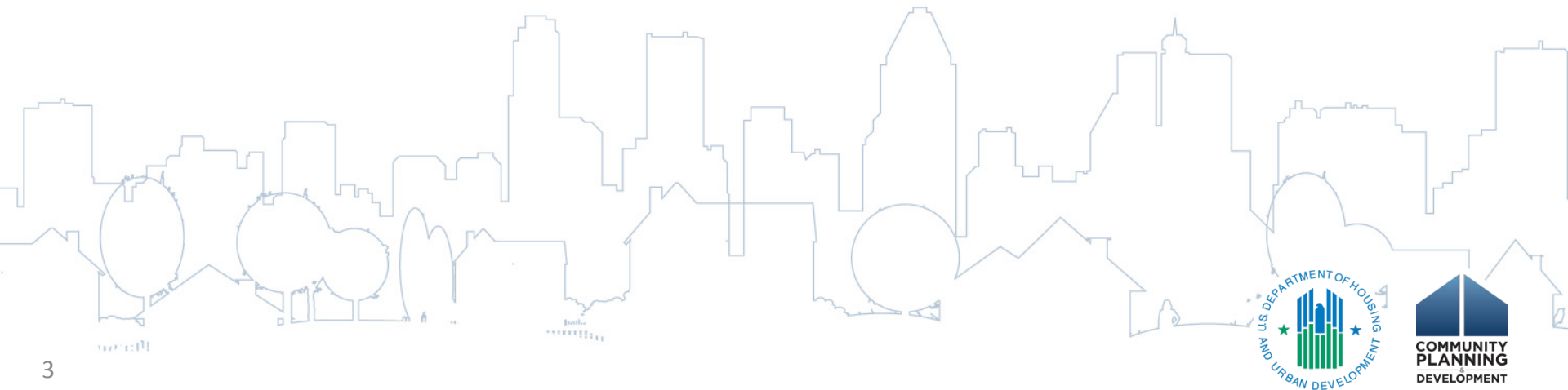
U.S. Department of Housing and Urban Development

Disclaimer

- This presentation is intended to provide communities and states with the tools and information to help in climate resilience planning and activities.
- Information presented in this webinar is independent of the Notice of Funding Availability (NOFA) for the National Disaster Resilience Competition (NDRC). While we expect that this information will be useful to interested communities and eligible applicants, *it should not be construed as the definitive word on any singular approach to resilience.*
- All NOFA NDRC questions should be sent to: resilientrecovery@hud.gov

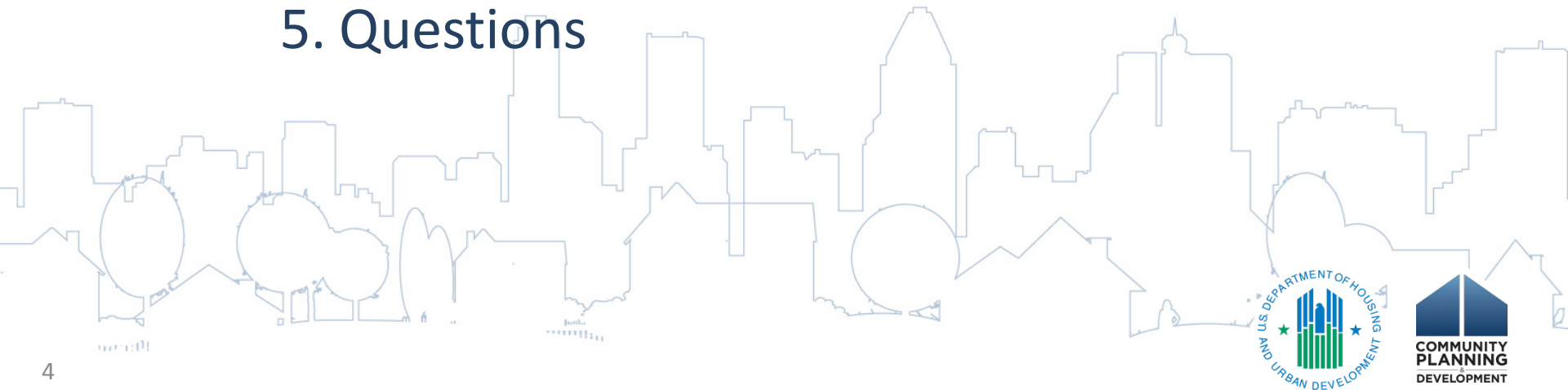
Presenter

- *The Conservation Fund*
 - *Kendra Briechele, Senior Training Associate,
Conservation Leadership Network*



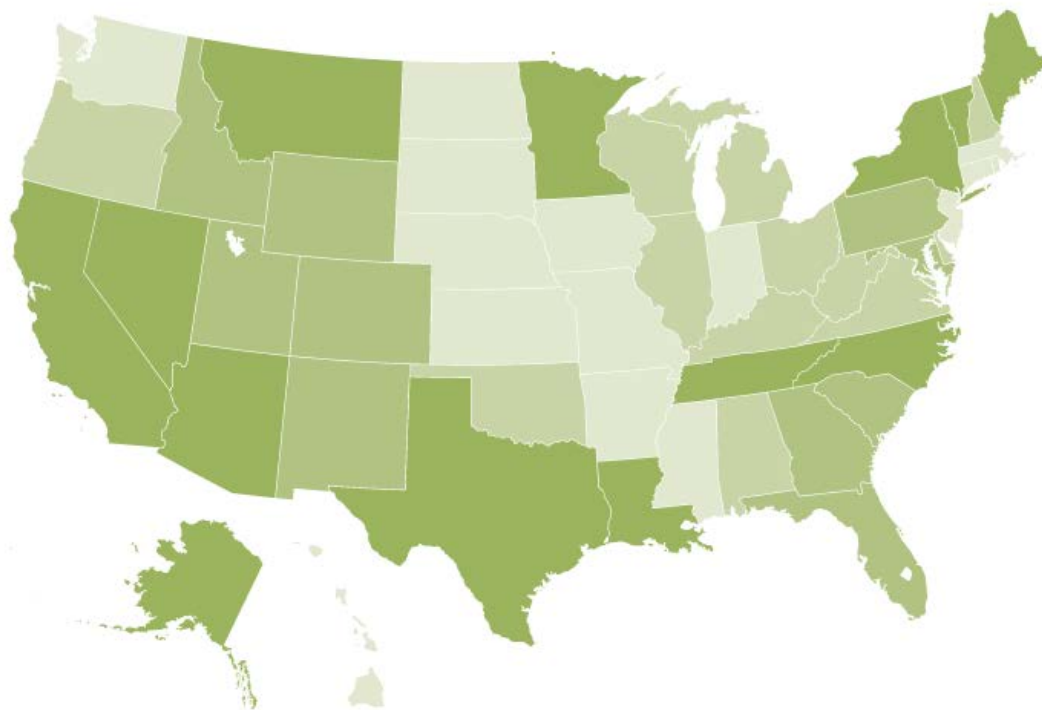
Agenda

1. Overview
2. Introduction to Green Infrastructure and its Connection to Resiliency
3. Methodology and Design Across Scales
4. Examples
5. Questions



THE CONSERVATION FUND

The Conservation Fund works at the intersection of conservation and community—we believe that environmental protection and economic vitality are inseparable.



Acres Saved

up to 10K

10K to 100K

100K to 200K

200K+



Conservation Acquisition
Land, Water & Wildlife Protection



Conservation Leadership Network
Collaborative Solutions



Freshwater Institute
Aquaculture & Water Quality



Go Zero
Carbon & Climate



Land Conservation Loans
Finance & Expertise



Mitigation Solutions
Infrastructure Mitigation



Natural Capital Investment Fund
Business Finance



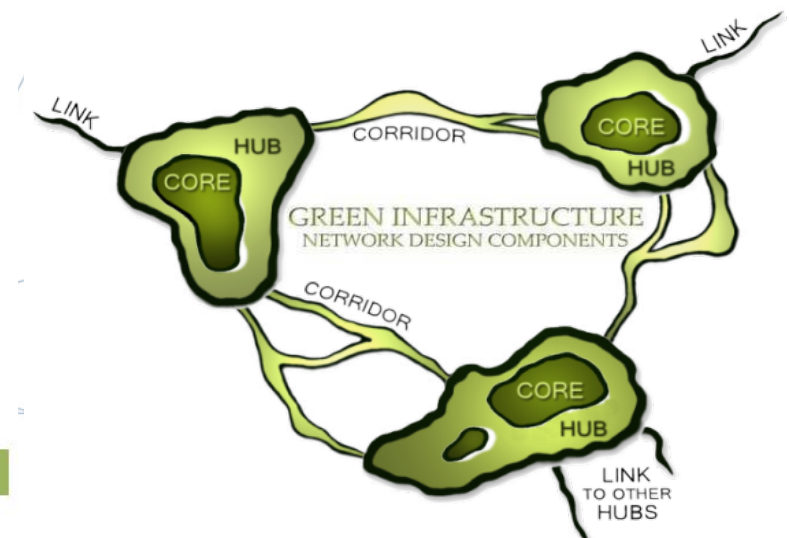
Resourceful Communities
People, Places, Opportunities



Strategic Conservation Planning
Green Infrastructure



Working Forest Fund
Forestry



Collaboration across the U.S.

- Cities and their regions as ecosystems
- Common vision
- Coalitions shape green infrastructure priorities
- Collaboration and collective action



Chicago
Wilderness



HOUSTON
WILDERNESS



THE
INTER
TWINE



SOUTHEASTERN
WISCONSIN
WATERSHEDS
TRUST, INC.

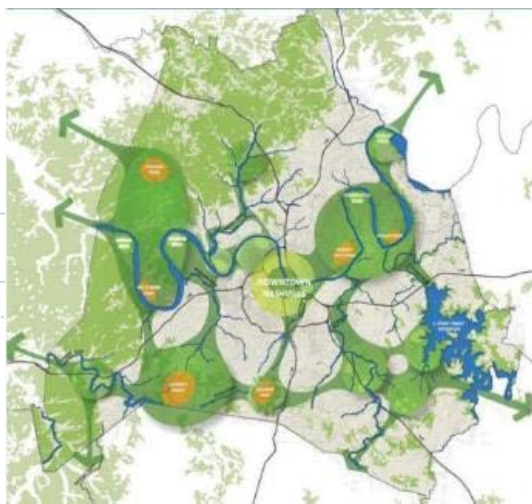
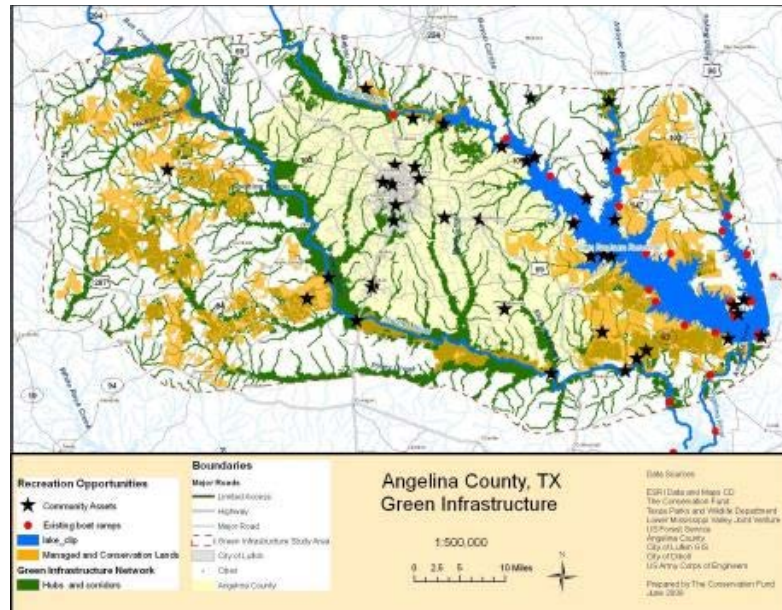


BAY AREA
OPEN SPACE COUNCIL

biodiverseCity
st. louis

HEARTLAND CONSERVATION ALLIANCE
Together protecting our region's natural resources for the benefit and enjoyment of all.

Other Collaborative Initiatives



Columbia MO | Angelina Cty TX | Central Indiana
Milwaukee WI | Nashville TN



An Agenda for Green Infrastructure

Health | Livability | Economic Vitality | Resiliency



Urban Green | Active Living | Local Food | Flood Control

THE
CONSERVATION FUND



Resiliency through Green Infrastructure

Opportunities

- Green Infrastructure Network Design
- Regional Green Infrastructure Vision
- Ecosystem Services
- Climate Change Adaptation / Resiliency
- Re-Use of Vacant and Underutilized Lands



The Green Infrastructure Approach

Green infrastructure helps us answer...

Which lands to conserve?

Where to permit
development?

Where to build roads and
utilities?

Where & how to select
mitigation projects?

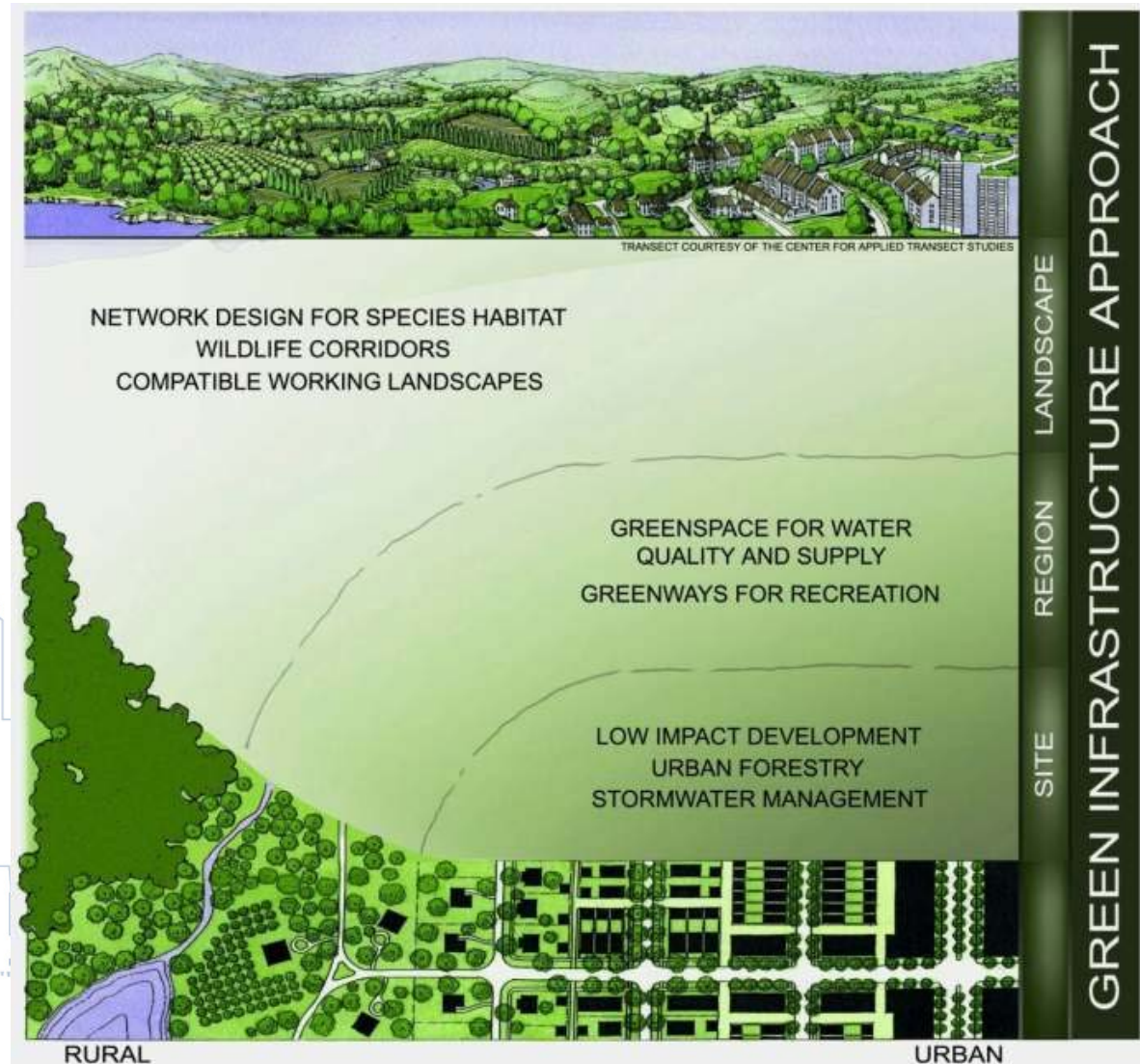


Green infrastructure benefits...

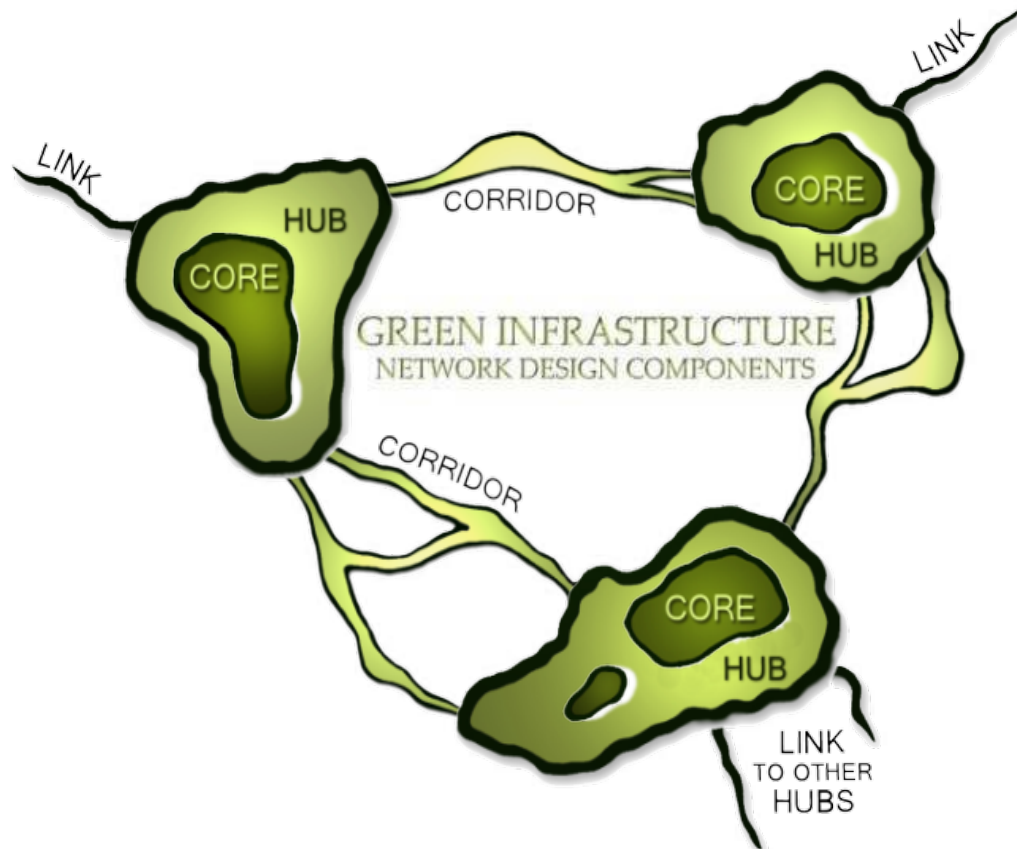
- **Proactive**
not reactive;
- **Systematic**
not haphazard;
- **Multi-functional**
not Single Purpose;
- **Multiple Scales**
not Single Scale, and
- **Scientifically defensible,**
transparent decision-making process

Green Infrastructure: Linking Regions and Landscapes

A strategically planned and managed network of natural lands, working landscapes, and other open spaces that conserves ecosystem values and functions and provides associated benefits to human populations



Green Infrastructure Network: Protect | Restore | Connect



Cores:

- Contain fully functional natural ecosystems
- Provide high-quality habitat for native plants and animals

Hubs:

- Slightly fragmented aggregations of core areas, plus contiguous natural cover

Corridors:

- Link core areas together
- Allow animal movement and seed and pollen transfer between core areas

Sites:

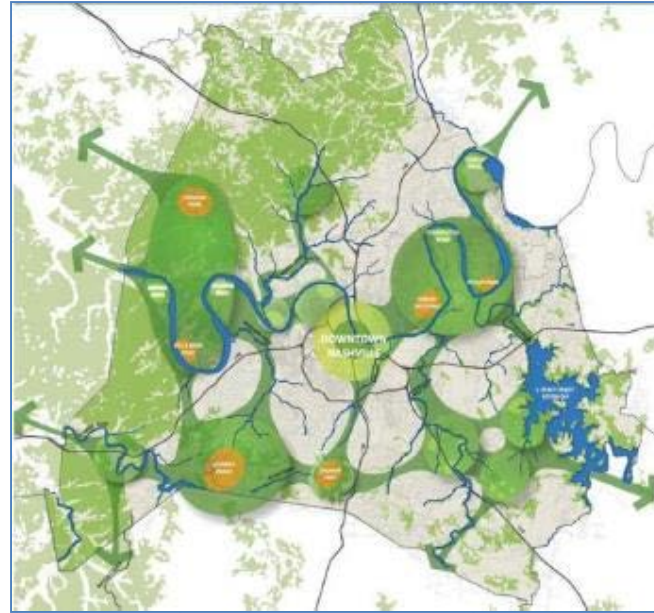
- Important microhabitats not captured by network thresholds and criteria

Scales of Green Infrastructure Planning

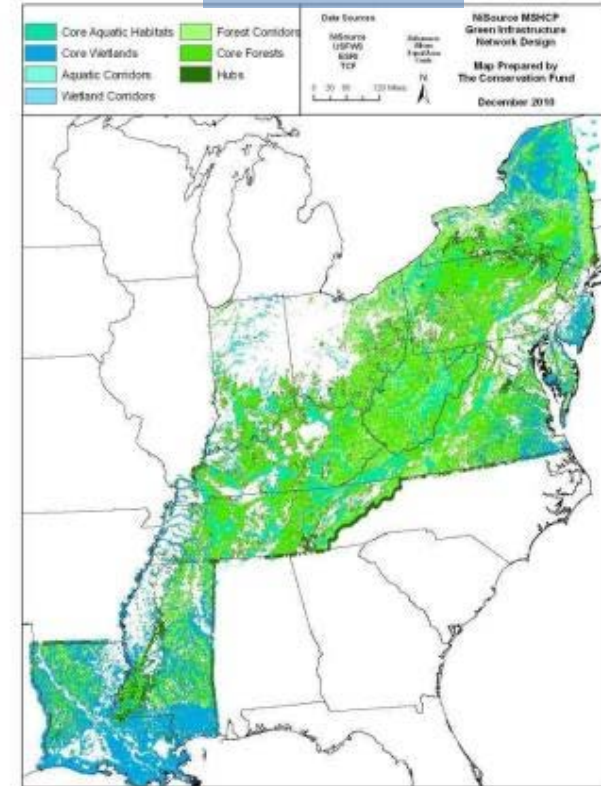
Downtown Nashville



Nashville-Davidson County TN

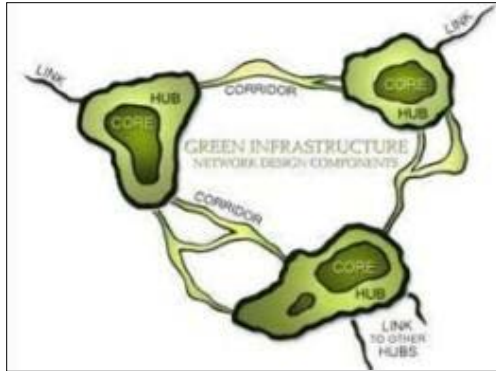


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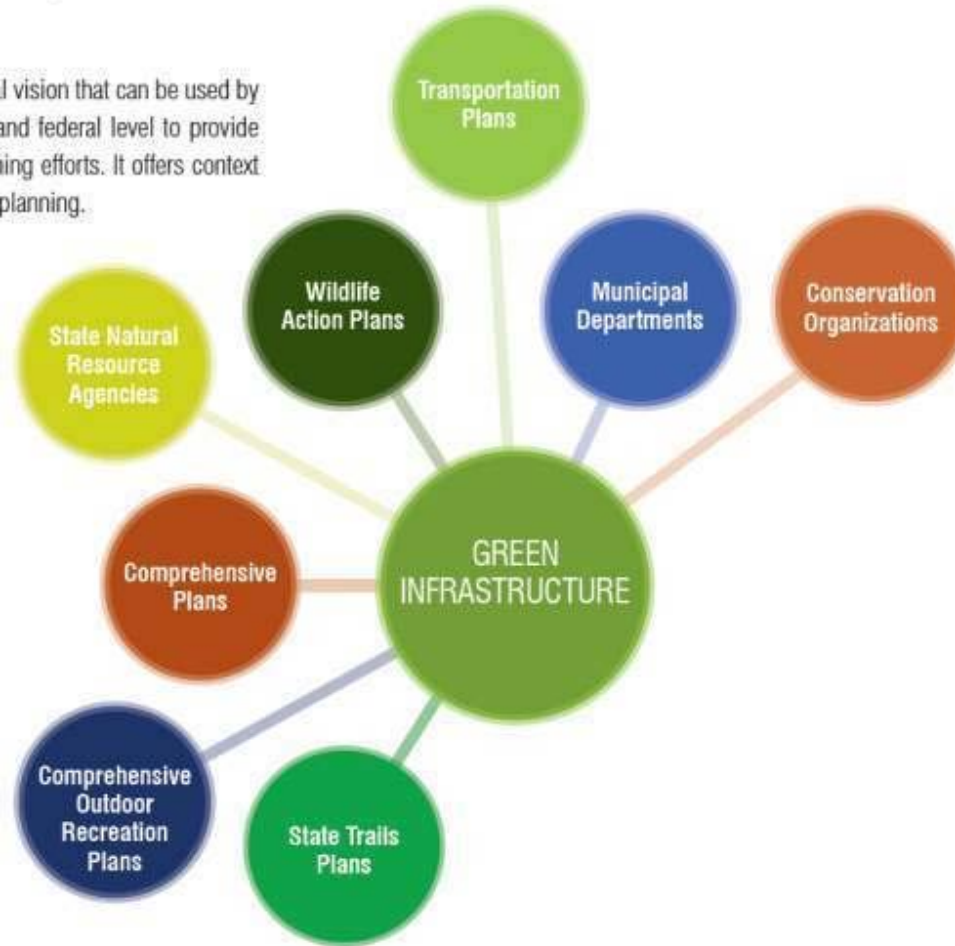


Regional Green Infrastructure Vision

ation (Amundsen, Allen and



A vision that can be used by state and federal level to provide planning efforts. It offers context planning.



PROTECT
RESTORE
CONNECT

MULTIPLE BENEFITS

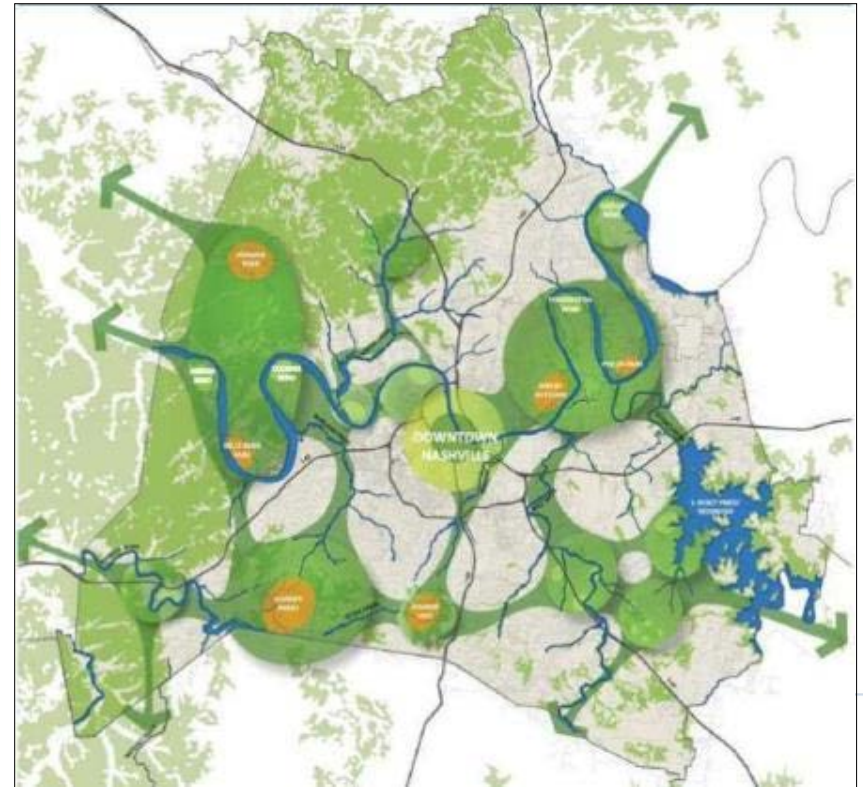


Nashville/Davidson County Green Infrastructure Plan

NASHVILLE OPEN SPACE PLAN



Creating, Enhancing and Preserving the Places that Matter



- County's first open space plan, framework for goal protecting 22,000 acres of green infrastructure by 2035



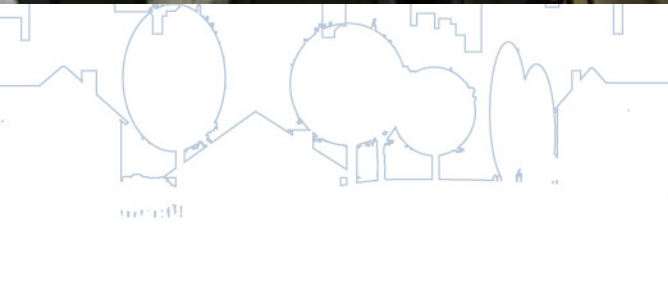
Need for Resilience



May 2010 Record
Floods in Nashville



June—One Month after the Flood



Green Infrastructure Vision: Nashville TN

NASHVILLE:
NATURALLY



CONNECT PEOPLE to GREEN INFRASTRUCTURE



CONNECT WILDLIFE and WATER NETWORKS

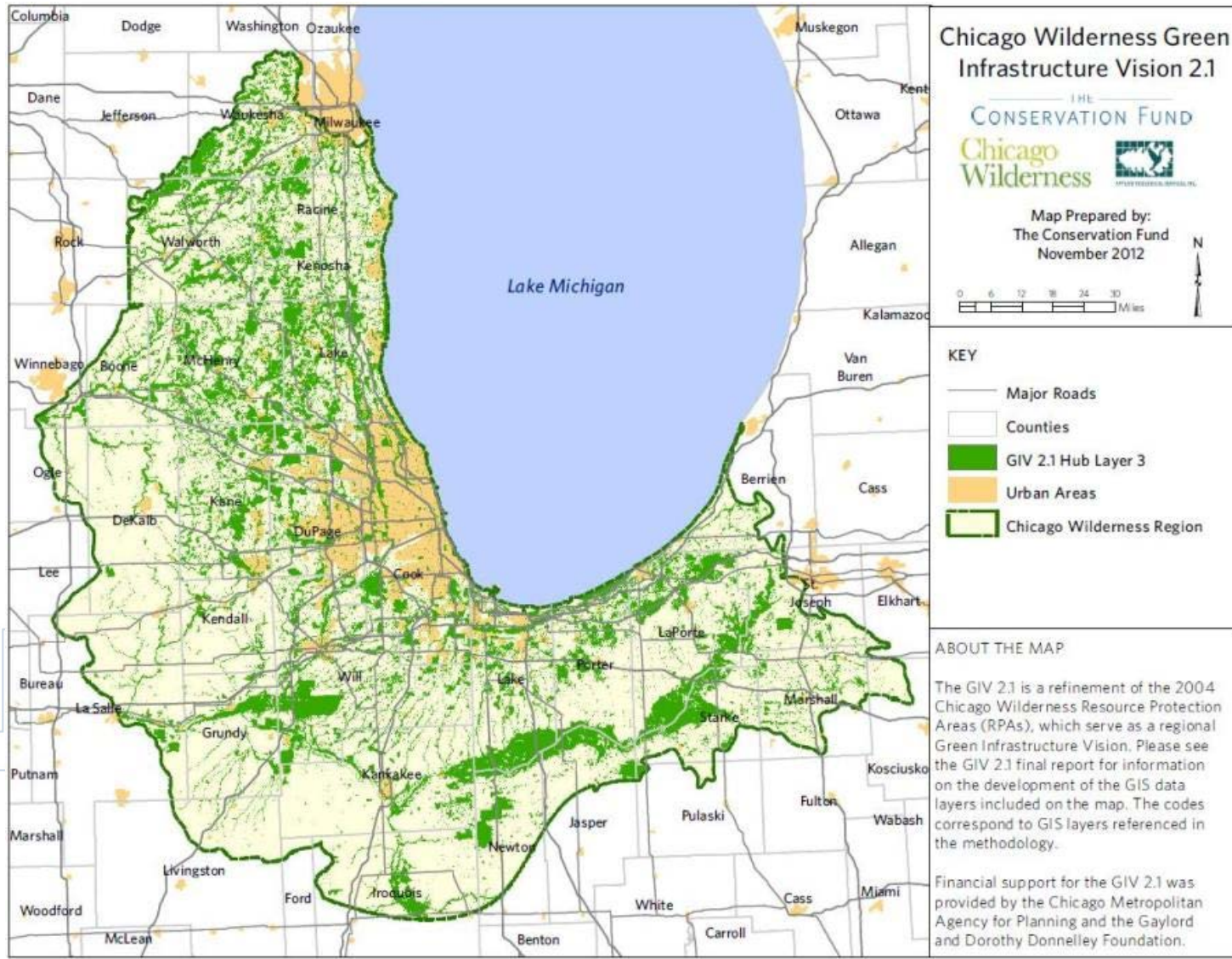


SUPPORT URBAN and RURAL FARMING



PRESERVE HISTORIC & ICONIC RESOURCES

Chicago Green Infrastructure Vision



GREEN INFRASTRUCTURE VISION

VERSION 2.3 ECOSYSTEM SERVICE VALUATION

✓ 6 services mapped within the CMAP 7-county region:

- Water flow regulation/flood control
- Water purification
- Groundwater recharge
- Carbon storage
- Native flora and fauna
- Recreation and ecotourism

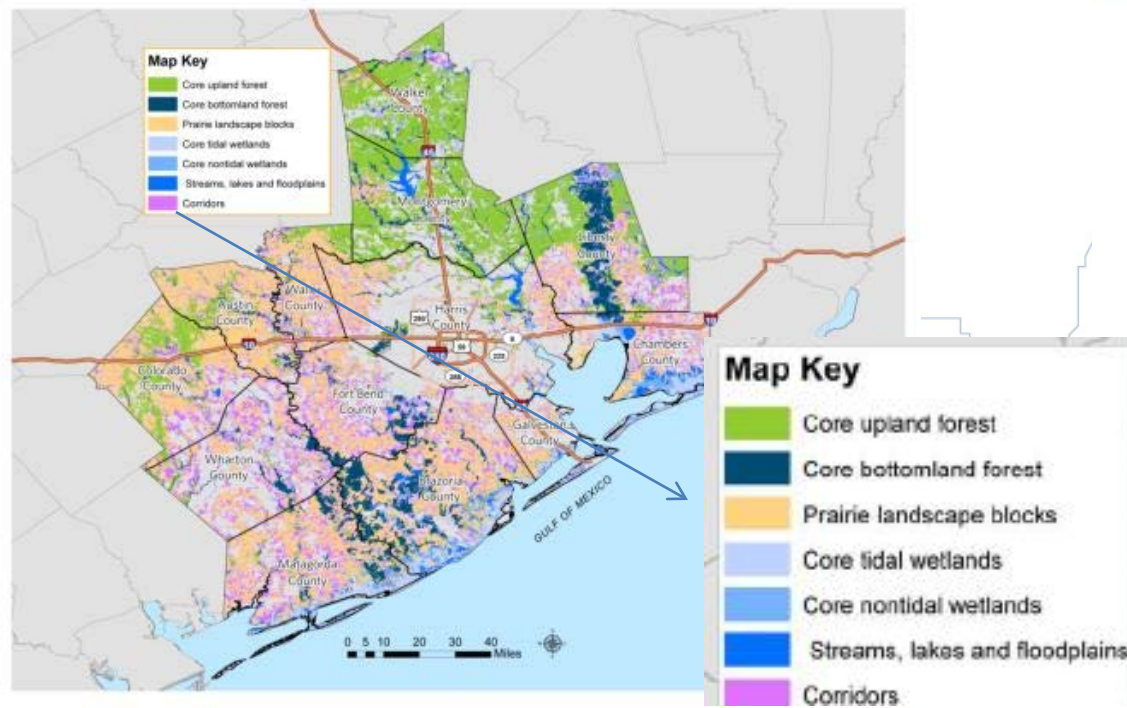
✓ Extensive literature review of 9 ecosystem services



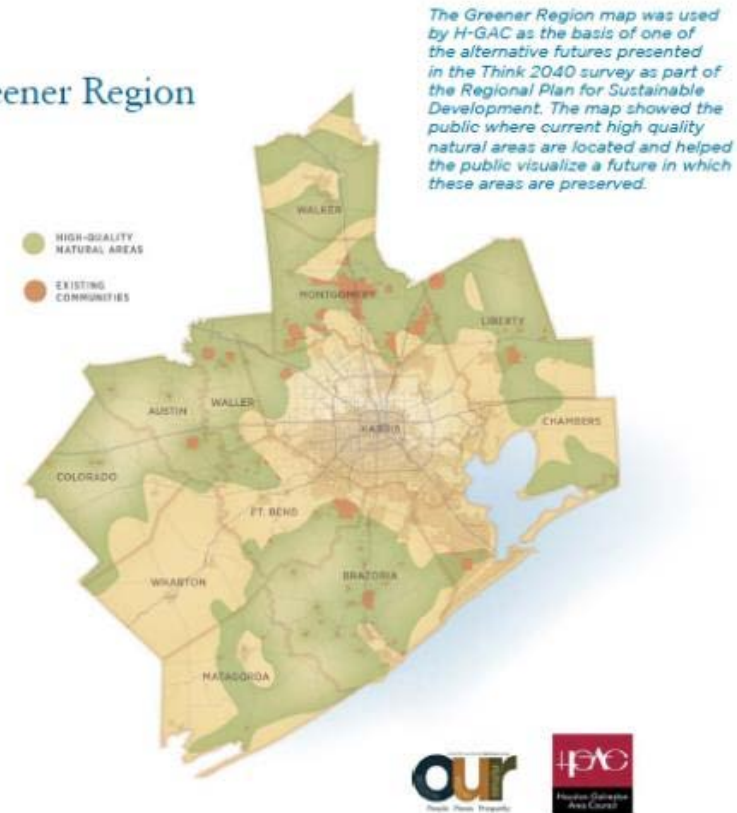
Green Infrastructure & Ecosystem Services : Houston-Galveston

GI Network=62% land base

- provides ~91% of benefits for water quality, air quality, water supply, flood protection, and carbon sequestration.

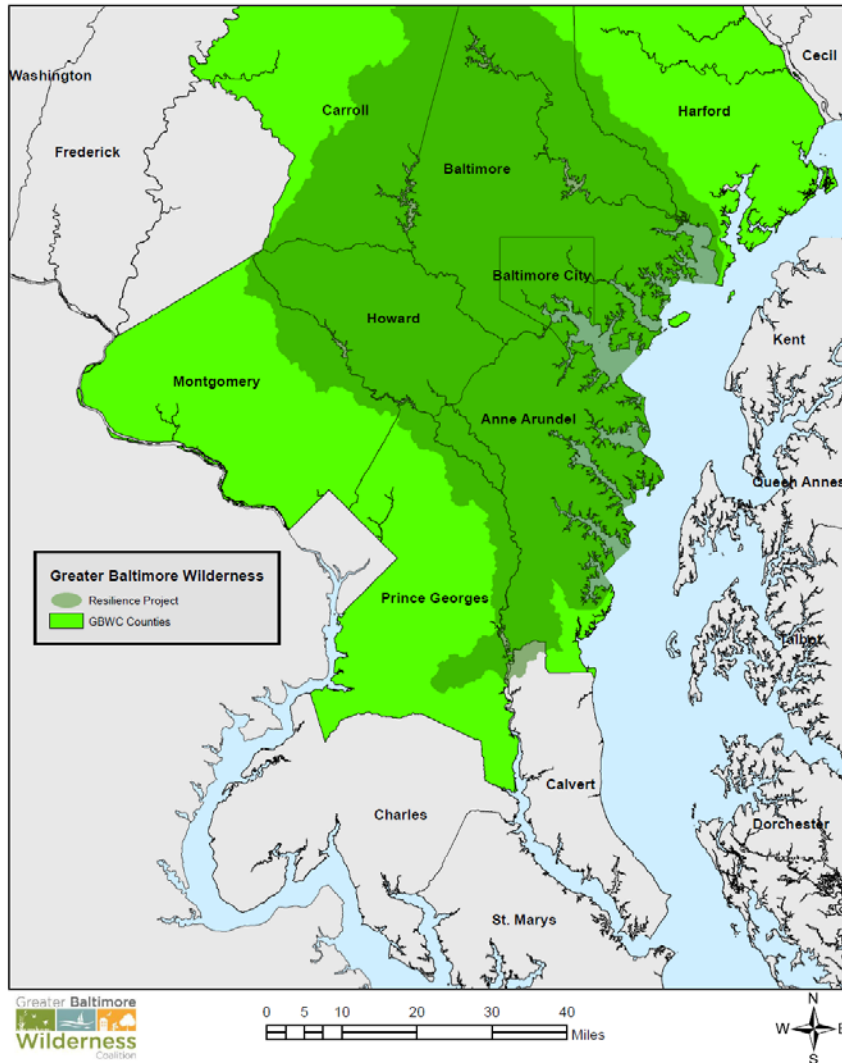


Greener Region



Greater Baltimore Wilderness

Greater Baltimore Wilderness Coalition & Coastal Resilience Project



Greater Baltimore

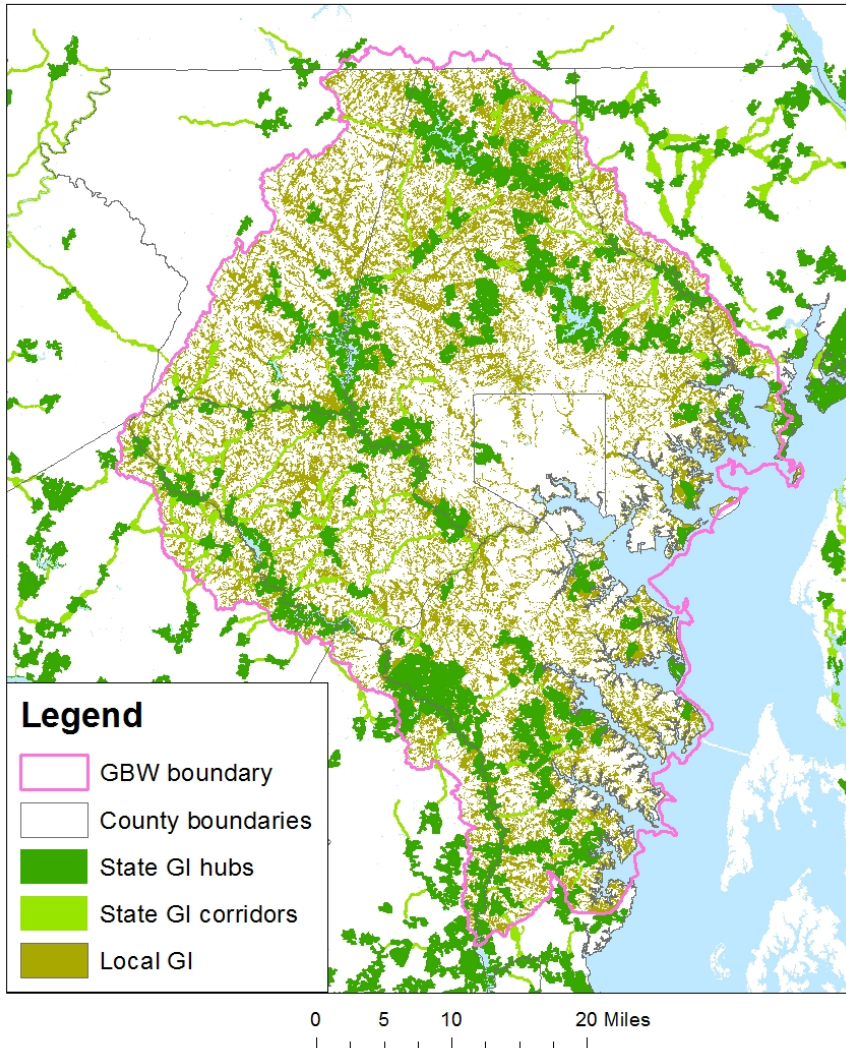
Wilderness
Coalition

*GBW Coalition &
Resilience Project
Area*



Combining State and Local Green Infrastructure

Greater Baltimore Wilderness Coastal Resiliency Project



Greater **Baltimore**

Wilderness
Coalition



Green Infrastructure for Climate Change Adaptation / Resiliency

Emerging Approach for Adaptation

- Building Resistance – Retain and expand high value ecosystems
- Building Resilience – Recover from extreme conditions (i.e. temp./rainfall)
- Building Realignment –Connectivity from current to new conditions (i.e. allow range shifts and transition to new areas)

Strategy: Regional green infrastructure network design

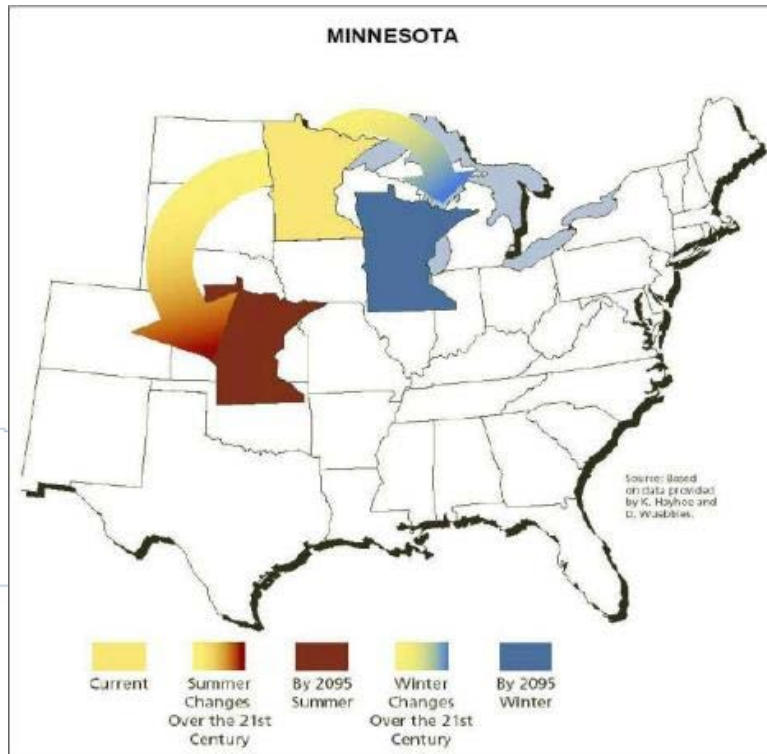
Lerner, J. and W. Allen. 2012. **Landscape-Scale Green Infrastructure Investments as a Climate Adaptation Strategy: A Case Example for the Midwest United States.** Environmental Practice 14 (1): 45-56.



Climate Change Adaptation / Resiliency

OPPORTUNITIES

- Focus on multiple benefits and 'no regrets'



IMPACTS

- More extremes – temperature and precipitation
- Range shifts
- Disturbances - Floods, Wildfire, Insects, Disease

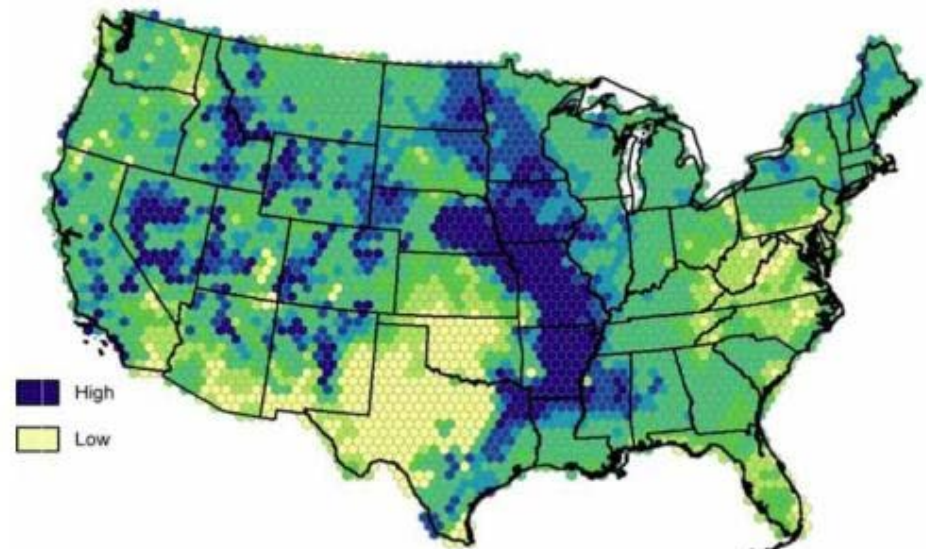


Figure 3.6 Climate Stress Index

(Source: U.S.D.A. Forest Service, Rocky Mountain Research Station, Wildlife Habitat Policy Research Program 2009)

Los Angeles County: From the Mountains to the Sea, Forest to Ocean

The Emerald Necklace Expanded Vision Plan – Towards a Common Vision

- Green infrastructure, access to nature, river corridors with natural vegetation, non-vehicular transportation



Vacant and Underutilized Lands

Example: Amigos de Los Rios

AMIGOS DE LOS RIOS - EMERALD NECKLACE GROUP

BEFORE



GIBSON MARIPOSA PARK



— THE —
CONSERVATION FUND

Conservation Leadership Network

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With the contributions of Will Allen and

[illegible]