Green InfrastructureVision:
Opportunities for Land Owners, Local Governments, and Developers

Wild Things
March 5, 2011

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What is Green Infrastructure?
(The Conservation Fund, 2006)

• Interconnected network of natural areas and open spaces that:
  – Conserves natural ecosystem functions
  – Sustains clean air and water
  – Provides trails and other benefits to people and wildlife
Green Infrastructure – A Technology Focus

• Products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services

• Green vs. grey infrastructure
  – E.g., a swale vs. a storm sewer

• Purpose
  – Develop a *tangible, green infrastructure vision* that reflects the goals of the Biodiversity Recovery Plan
  – Develop a *map* that identifies on-the-ground, regional scale opportunities for biodiversity protection
  – Identify specific *protection techniques* for identified “resource protection areas”
“Make no small plans. They have no magic to stir men's blood.”
Daniel Burnham, 1909
Definition: Green

• Interconnected network of land and water that supports biodiversity and provides habitat for diverse communities of native flora and fauna at a regional scale.

• Includes large complexes of remnant woodlands, savannas, prairies, wetlands, lakes, stream corridors and related natural communities.

• May also include areas adjacent to and connecting these remnant natural communities that provide both buffers and opportunities for restoration.
Project Approach

• Held a series of workshops with CW members and resource agencies – over 90 participants
  – Initial workshop in NE Illinois
  – Workshop in SE Wisconsin
  – Workshop in NW Indiana
  – Input from City of Chicago green infrastructure process
Baseline Mapping Data

- Streams and rivers
- Floodplains
- Wetlands and lakes
- Woodlands
- Grasslands
- Designated Natural areas
- Publicly owned natural lands
- Watershed boundaries
Chicago Wilderness
Green Infrastructure Vision

Green infrastructure is defined as the interconnected network of land and water that supports biodiversity and provides habitats for diverse communities of native flora and fauna at the regional scale. It includes large complexes of remnant woodlands, wet savannas, prairies, wetlands, lakes, stream corridors and the related natural communities that have been identified in the Biodiversity Recovery Plan. Green infrastructure may also include areas adjacent to and connecting these remnant natural communities that provide both buffers and opportunities for ecosystem restoration.

Chicago Wilderness member organizations are undertaking an effort to identify and prioritize sites for biodiversity protection and recovery along the Lake Michigan shoreline. This work will be proposed as an addendum to the Biodiversity Recovery Plan and is scheduled to be considered for adoption in 2004. Results should be integrated with a future version of the Green Infrastructure Vision.

The City of Chicago and invited Chicago Wilderness member organizations undertook an effort to identify sites for biodiversity protection and recovery in the city. This work was completed in 2004. Appropriate regionally significant biodiversity conservation sites identified by the City have been integrated into the Green Infrastructure Vision.
Summary

• Over 140 resource protection areas identified, totaling over 1.8 million acres

• Compares to:
  – 360,000+ acres of protected public natural open space in Chicago Wilderness
  – over 6 million total acres within the 3-state assessment area
Regional Green Infrastructure Protection Recommendations

- Continuing land acquisition
- Expanded ecosystem restoration
- Greenway connections
- Private conservation easements
- Conservation development
- Urban/suburban retrofitting
- Farmland preservation
Green Infrastructure Should Be Implemented at Varying Spatial
At the Regional Scale…

• CW is working to:
  – Encourage sustainable regional land use and transportation plans
  – Protect sensitive lands at the landscape scale
  – Encourage connection of protected landscapes between individual open space jurisdictions
The Regional Greenways Plan – Connecting Communities and Open Space
CMAP GoTo 2040 Plan
Goal: Increase Conservation Open Space from 250,000 to 400,000 acres
Expanding Forest Preserve Acquisition
At the community

- Incorporate GI principles of biodiversity and sustainability into master plans and ordinances
- Protect interconnected greenways and wildlife corridors
- Plan walking trails and bike paths linking subdivisions and regional trails
St. Charles Park District Comprehensive Master Plan

- Identifies natural area goals and objectives
- Uses the goals, objectives and green infrastructure maps to generate land preservation and acquisition strategy
Existing Open Space
Existing Natural Features
Proposed Greenways
Land Acquisition Strategy
At the neighborhood scale...

- Incorporate “conservation design” into new developments
- Find creative ways to:
  - infiltrate runoff
  - protect natural areas
  - create greenway & trail connections
Huntley Commercial Center

170 acre natural area being donated to Village of
Conservation Design Approach:

Stormwater “Treatment Train”
At the site/lot scale...

- Incorporate natural landscaping and stormwater best management practices in parks, school grounds, residences
  - Applicable to both new projects and retrofits
- Protect, restore, and manage natural areas
Natural Landscaping
Permeable Paving
Green Roofs: Stormwater and Energy Savings Benefits
Swales and Bio-swales
Naturalized Detention Basins

- More effective at removing stormwater pollutants
- Can enhance site aesthetics and habitat
- Discourages nuisance goose populations
Some Example Resource Protection Areas

• North Branch Chicago River Cluster – a representative urban/suburban preserve
• Blackberry Creek Corridor – a suburban large-scale greenway opportunity
• Boone Creek Watershed – a watershed-scale, mostly private landscape
North Branch Chicago River Resource Protection Area
Typical Preserve Setting: Harms Woods
Remnant Woodland, Prairie, and Aquatic Systems
Resource Protection Recommendations

• Expand ongoing restoration work
• Retrofit existing landscapes
• Coordinate with adjacent landowners (e.g., golf courses) to expand habitat protection and make remaining greenway connections
A Long-standing Restoration Program
The Pioneers of Volunteer
Retrofit Existing Landscapes

- Burnsville, MN: Retrofitted rain gardens reduced stormwater volume by almost 90 percent
“Green Streets” – Bio-swales and Infiltration Planters
Rain Gardens
Blackberry Creek Resource Protection Area
Resource Protection Priorities

• Stream greenway protection
• Open space acquisition
• Conservation development
Conservation Development as an Opportunity to Achieve the Vision
Settlers Ridge Conservation Development

- Over 40% open space
- Natural landscaping throughout
- Enhancement of farmed wetlands
- Innovative stormwater BMPs (where allowed)
Integrated Trail and Greenway System
Linking People and Nature
Boone Creek Resource Protection Area
FIGURE 5: Boone Creek Watershed
Natural Resource Map

Legend
- Major Roads
- Streams
- Floodplain and Stream Buffers
- Illinois Nature Preserves
- Sensitive Resource Areas

Wetland Type
- farmed wetland
- lake
- wetland

Wooded Type
- Upland forest
- Floodplain forest
- Savanna
- Not wooded

Data Sources:
Major Roads from NIP's Digital Map of the Region, Version 1; Streams and Wetlands from the McHenry County GIS CD, 1998, Illinois Nature Preserves and Sensitive Resource Areas from IDNR; Floodplain Boundaries from FEMA.
Forest and Savanna prepared for Chicago Wilderness by the University of Illinois at Chicago, The Field Museum, and the Chicago Wilderness Science and Land Management Teams.

Map Created on March 18, 2003
A Cold-water Stream
Surrounded by Savannas...
...Fens and Hillside Seeps
Resource Protection Recommendations

- Conservation easements and nature preserve dedications
- Public acquisition
- Protection of recharge areas and hydric soils
- Conservation design for any new development
- Wetland restoration
Private Landowners Engaging in Restoration
Resources:


http://www.nipc.org/environment/sustainable/.

Chicago Wilderness “Conservation Development in Practice,” 2004


Leadership in Energy and Environmental Design (LEED)


Sustainable Sites Initiative

http://www.sustainablesites.org/