Changing Roles

Summer Tour 2010- Summary and General Agenda for FAYETTEVILLE

Objectives:
At the end of the workshop, participants will:

1. be able to define Green Infrastructure (GI) and explain the 4 Key Principles of GI.
2. be able to recognize the role they can plan in land-use planning in urbanizing areas.

Approach: Use case study, group discussion, exercises and presentations.

Duration: 1 day

Destinations: Fayetteville, AR

Target Audience: natural resource professionals (forestry, extension, fish and wildlife, soil and water, National Forest Service) from counties surrounding Fayetteville. City, County, Regional Planners.

Target # Participants: 10-40

Collaborators:
Nicole Wulff, USDA Forest Service, Changing Roles Program Training Coordinator.
Karen Rollet- Crocker- Fayetteville Natural Heritage Association
Barbara Boland- Fayetteville Natural Heritage Association
Patti Erwin- Arkansas Forestry Commission

Agenda:

8:30 am	Welcome and Introductions: (Nicole, FNHA rep , and Patti)
9:00 am	Group Exercise/Icebreaker (all)
9:15 am	Introduction to the Green Infrastructure (GI) and Wildland-Urban Interface (WUI) (Nicole and Barbara): • Overview of the Green Infrastructure (GI) Approach • Introduction to the wildland-urban interface (WUI) • Using GI as a tool in the WUI • Exploring the role of the natural resource professional • Exercise and Discussion: How does GI support your organization's/agency's mission?
10:00 am	Break
10:15 am	Keys to Success: Part 1- The People and Perspectives: Fayetteville- Plan for Green Infrastructure Case Study (Barbara and Juliet): • Project overview • Building partnership and relationships

- Exercise: Who are the stakeholders, potential partners, champions?
- Understanding GI from a planner's perspective
- Exercise?

11:30 am Lunch

12:30 pm Keys to Success: Part II- The Process (Barbara):

- Considering your resources: skills, tools, and data
- Designing the network
- Learning from experience
- Exercise and Discussion: How does your organization/agency need to benefit from GI? How can your org/agency contribute? What role can you play in the process?

1:30 pm Keys to Success: Part III- The Sell (Nicole)

- Crafting your message
- Understanding your audience
- Providing imagery and support

2:00 pm Break

2:15 pm Exercise: How to effectively relay your message to your audience?

2:45 pm Implementing the GI Plan (Karen or Bob, Patti)

3:15 pm Exercise: Putting it together

3:45 pm Wrap Up and Adjourn

MAY 12, 2010
FNHA/USDA FOREST SERVICE/AR FORESTRY CHANGING ROLES: WILDLAND-URBAN INTERFACE WORKSHOP
GROUP EXERCISES NOTES

QUESTION - In what ways could Green Infrastructure (GI) lead to the evolution of a sustainable and vibrant community?

RESPONSES – GI Planning for establishing and maintaining a robust regional GI would lead to, provide for, promote, contribute to, facilitate, make possible the following:

- Greater Socio-Economic Diversity
- Watershed/Water Quality Protection
- Better Storm Water Management and Flood Control
- Recreational Venues
- More Development Density
- Less Sprawl
- Reduced Gray Infrastructure Construction and Maintenance Expense
- Freeing of Tax Dollars for GI and Other Uses
- Expansion of Public Transportation
- Diminished Automobile Use and Impact
- Improved Air Quality
- Mitigation of Heat Island Effect
- Carbon Footprint Reduction
- Enhanced and Growing Regional Economy tied to High Quality of Life/Healthy Communities desired by visitors to area and potential residents

QUESTION - How is GI related to other programs/projects/initiatives in your area?

RESPONSES – The socio-cultural-enviro-economic benefits of GI have been/are being evaluated/recognized/ revealed through efforts/activities/promotions of or by:

- Arkansas Forestry Commission - Urban Forestry Division, Beaver Water District, IRWP GI Planning Project, Rain Gardens, LID Grant Funding
- Fayetteville Natural Heritage Association Green Infrastructure Planning Project
- Fayetteville Forward Economic Accountability Council Green Economy, Land Use-Green Infrastructure, etc. . . Groups
- NWA Regional Trails Program
- NWA Regional Transportation Planning Authority
- Source Waters and Watershed Protection Groups – Illinois River Watershed Partnership, Beaver Lake-, Clear Creek - , Elk River- Watershed Associations, etc. . .
- Beaver Water District – City of Fayetteville Cooperative Nutrient Management Agreement
- State of Arkansas Conservation Easement Policy introduced by Washington County League of Women Voters
- Prairie Restoration – Woolsey Wet Prairie and Land Mitigation Bank, World Peace Wetland Prairie, etc. . .
- City Parks Ecologically Based Management Policies and Practices
- Fayetteville Streamside/Riparian Zone Protection Ordinance
- Fayetteville Low Impact – High Density - Mixed Use Development Policy

- Fayetteville Hillside Protection Policy
- Fayetteville Tree Ordinance
- Fayetteville 2030 City Plan
- Fayetteville Sustainability Coordinator
- Green Valley Initiative
- NWA Chapter of U.S. Green Building Council
- Fayetteville Storm Water Management Policy and Utility (work in progress)
- Washington County Master Gardeners Rain Garden Projects
- Community Garden Programs
- UA Sustainability Council
- UA Walton College of Business Applied Sustainability Center
- Washington County Extension Service – Rural Riparian Restoration and Rain Garden Outreach

QUESTION – How could GI be used as a tool to address wildland-urban interface challenges/

RESPONSES – Creation of GI Policies, Procedures, and a GI Planning Map, as well as 5-, 10-, 15-, 20- ,25- , etc . Year GI Plans/Goals to be reviewed/updated periodically would help guide future growth decisions prior to development.

GI Planning Map would consist of features listed below:

- GI Network of un-developed to minimally impacted natural/ecological cores, hubs, and corridors
- Wildlife Habitat - Native Species for Conservation/Preservation/Protection
- Streams/Watersheds
- Soils
- Geology
- The Nature Conservancy KARST Groundwater Recharge Sensitivity Zones
- Land Use Type Classes
- Culturally, historically, locally, regionally significant acreage/areas available for conservation, protection, preservation
- City/County/State/Federal Administrative Boundaries\
- Human Constructed or “Gray” Infrastructure

QUESTION – What Role can you/your organization or agency pay in GI planning and/or implementing?

RESPONSES –

- ROLE:
    - Facilitator for communicating/collaborating/coordinating in planning trails, transportation, research, etc . . .
    - Information Conduit
        - Schedule Public GI Awareness/Education Events leading to increased support for GI
        - Establish direct line of communication and regular contact to orient and inform local-, county-, state-, federal- government elected officials and departmental staff re: GI planning and best management practices

- BENEFIT:
    - Quality of Life through Natural Resources conservation/preservation/protection
    - Economic
        - Trails and Public Transportation
        - Utilities
        - Storm Water Management
        - Attractive to business and industry
        - Tax Savings

- CONTRIBUTION:
    - Stricter policy
    - Engineering/etc. design
    - Long-range planning
    - Citizen awareness

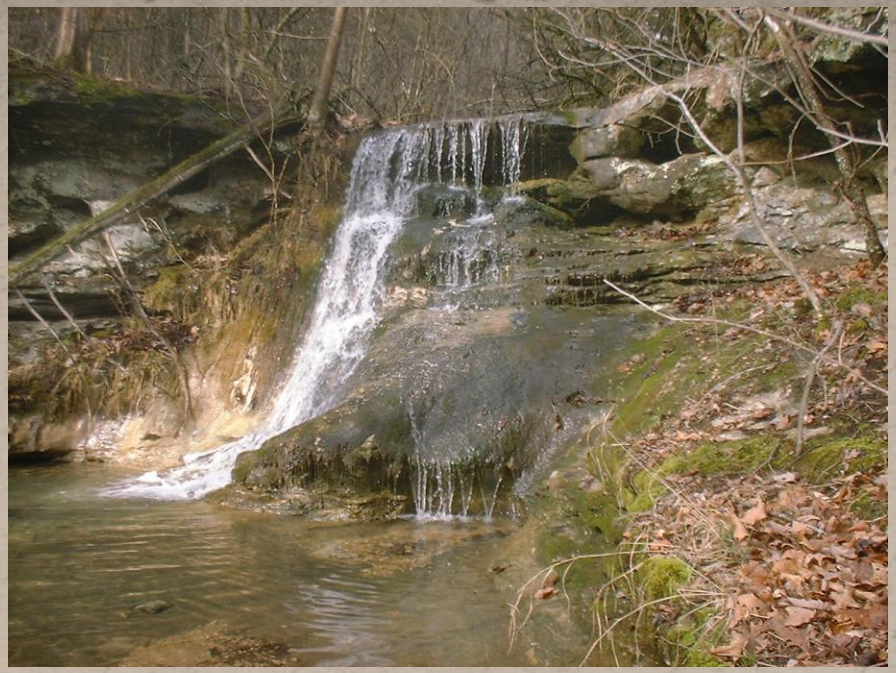
QUESTION – What steps are to be taken with and by respective stakeholders to implement GI Planning?

RESPONSES –

- **Establish a REGIONAL GI PLANNING ALLIANCE**
- Create a REGIONAL GI Network (Core, Hubs, and Corridors) Working Map and provide to stakeholders to aid GI visualization and implementation
- Examine GI Network Map to identify gaps in the network
- Prioritize steps for GI Implementation
- Engage the assistance of Landscape Ecologists in
    - Identifying critical habitat and keystone or umbrella species
    - Determining the potential for connecting, buffering, and/or restoring critical habitat
- Conduct a Suitabililty Analysis
- Meet with City Administrators and Planners to discuss GI Network features in relation to policy making
- Schedule a GI Planning presentation at the Fayetteville 2030 City Plan review session with a goal of enabling legislation in support of GI
- Partner with people to raise awareness re: personal benefits afforded by establishing a robust, regional GI and to get input on aspects of GI that the public considers significant or important
- Convene with experts, at regular intervals, for GI updates, research project planning, recommendations, etc. . .
- Invite, inform, and orient regional Chambers of Commerce re: Economic Benefits of planning for and establishing a Regional GI Network
- Review regional cities policies/ordinances (Planning, Zoning, Storm Water Mgmt, Streets, etc. . .) to determine where to introduce incremental modifications (e.g. Conservation Easements, Low Impact Development, Transfer of Development Rights, Green Business Site Development Planning, Green Roads Certification Program, Storm Water Utility, Streambank/Riparian Zone Protection, etc. . .) and incentives (e.g. tax credits, Green Business Certification, reduced water/sewer utility fees where rain gardens or cisterns are installed, etc. . .) for creating, managing, maintaining GI

- Secure funding to prepare educational/informational GI Network and Planning program and 30-second commercials (audio and video) to run on Internet/Websites, public radio, government access and public television channels
- Coordinate species inventorying and habitat restorations with science/humanities teachers, scout groups, 4-H, day/summer camps, learning centers, Advanced Placement Programs, public and private schools to raise awareness of and build support for GI Network
- Hold regional planning discussions re: HUD Sustainable Communities Program, Regional GI Network

Notes prepared and submitted by Dot Neely 06/30/10



Keys to Success: Part I

People & Perspectives

I'm going to talk about…

- Green Infrastructure Planning
  - Building Partnerships and Relationships
- Case Study:
  - Green Infrastructure Planning – Linking Arkansas Communities
    - Project Overview & Update
      - Developing our Stakeholder database

Green Infrastructure Planning

Strategic, science-based,
community-supported
set of tools for
coordinating conservation of natural resources
and
planning location of growth wisely

Building Partnerships & Relationships

Green Infrastructure Planning is…

HIGHLY COLLABORATIVE

INCLUSIVE OF THE GREATER COMMUNITY

INVITES A WIDE RANGE OF PERSPECTIVES

Think creatively to identify stakeholders

Who regulates it?

Who makes money from it?

Who knows all about it?

Who plays there?

Who depends on it?

Any others?

Who might that actually be?

Those whose approval or participation is REQUIRED

Governmental agencies at federal, state, regional, & local levels: Planning, Transportation, Urban Forestry, Recreation, GIS, Agriculture, Natural Resources, Economic Development

Adjacent public, private, or corporate landowners

Tourism, travel, and recreation industries

Development and Real Estate businesses

Community of experts: Landscape Architecture, Conservation Sciences, GIS, Biology, Environmental Law, Water Management, Agriculture

Educational community: K-12 students & teachers, graduate students, professors in Earth Sciences, Ecology, Conservation Biology, Landscape Architecture

Elected officials and those with political power or influence

Conservancies & Land trusts

Conservation & Recreational groups

Volunteer groups, Neighborhood and Homeowner Associations, Civic groups, Historical societies

Developing Partnerships

- Consider resources of fellow stakeholders
- Be sure there are rewards for everyone
- Aim for developing network of participants
- Give them time to develop
- Benefits:
  - Pooling resources
  - Foster innovative solutions
  - Reduce duplication
  - Increase public awareness of participant groups

Case Study

The beginnings of Green Infrastructure Planning in Northwest Arkansas

Moving this direction for years now…

2002 – Urban Ecosystem Analysis Benton & Washington Counties, Arkansas: Calculating the Value of Nature, American Forest, Inc.

2006 – Urban Forest Conservation Assessment for Fayetteville, Arkansas, Fayetteville Natural Heritage Association & The Nature Conservancy.

2008 – Green Infrastructure Planning – Linking Arkansas Communities, Fayetteville Natural Heritage Association & Beaver Water District

2010 & beyond– Reach out to the rest of the Northwest Arkansas Region with Green Infrastructure Planning and plant seeds throughout Arkansas

Project Summary: Objective

Develop a regional strategic conservation plan in the form of a Green Infrastructure Network Map that encompasses elements of:

- Natural environment
  - Forests
  - Water resources
  - Rare & valuable habitats
- Cultural heritage
  - Rural & agricultural character
- Recreational value
  - Parks & trails

Project Summary: Funding

1 of 6 Pilot Study Grants awarded by USFS Southern Region through Arkansas Forestry Commission's Urban Forestry Program

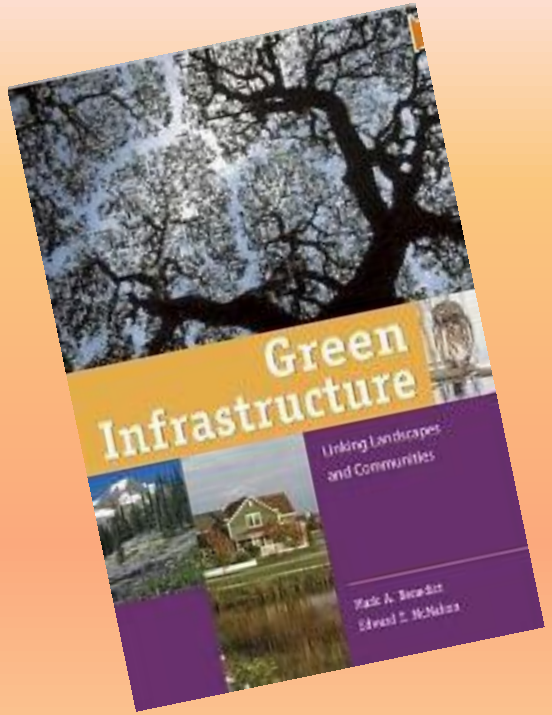
$25,000 matching grant to

Fayetteville Natural Heritage Association

in partnership with

Beaver Water District

Project Summary: Training

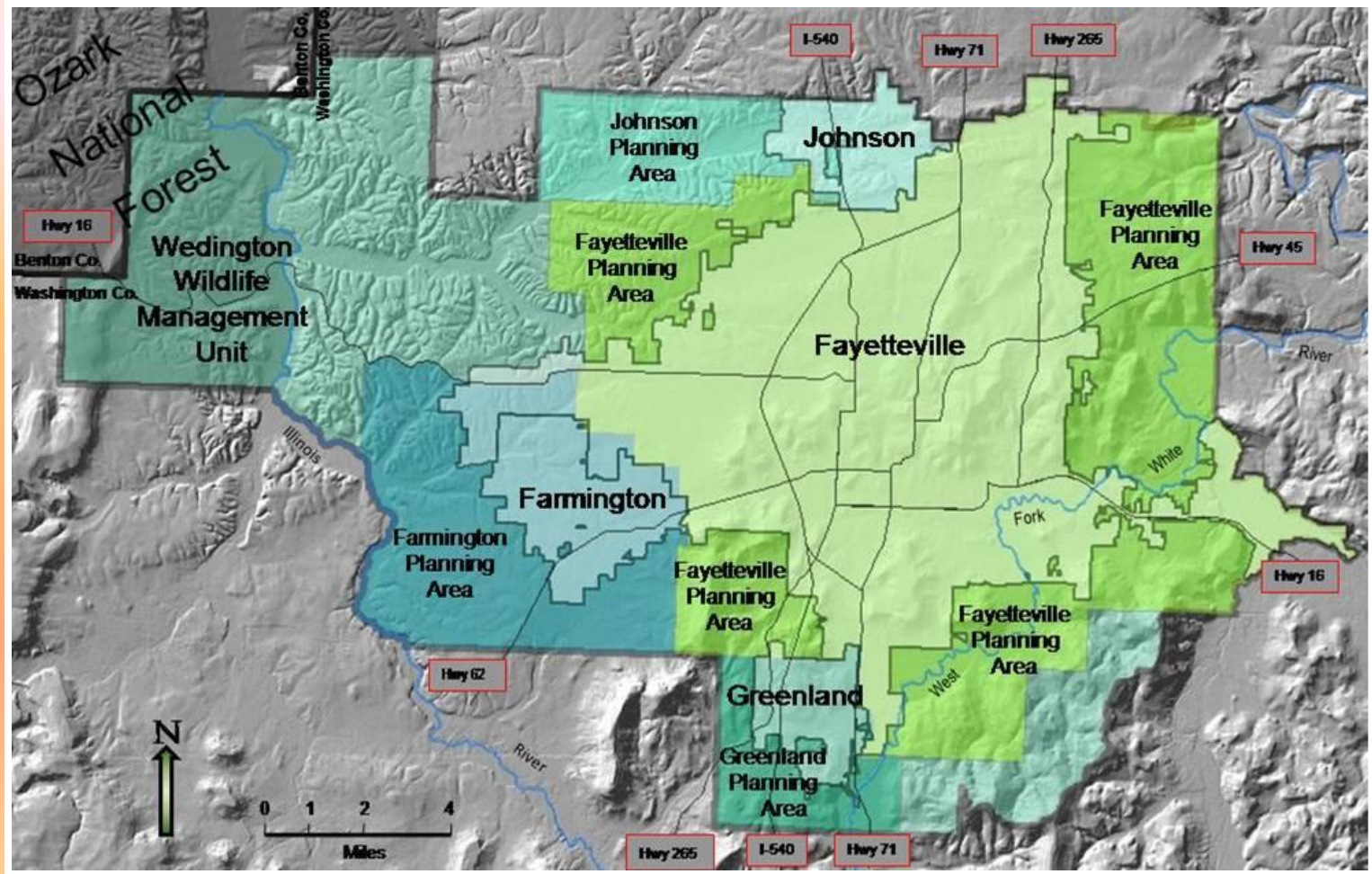


The Conservation Fund in Shepherdstown, WV

Strategic Conservation Planning Using the Green Infrastructure Approach

GIS Tools for Strategic Conservation Planning

Project Summary: Study Area



Fayetteville Natural Heritage Association, Barbara Elaine Boland, August 2008

The Study Area began as an area encompassing City Limits and Planning Areas of Farmington, Greenland, Johnson, & Fayetteville and the Ozark National Forest, Wedington Wildlife Management Unit with adjacent unincorporated areas of Washington County. It proved easier to work with just a rectangle around these features; boundaries now fall 1500 m. beyond the most extreme points in the cardinal directions as above.

Our Work: Identifying Potential Stakeholders

Environmental

Academics, private consultants, NGOs, and governmental agencies:

U of A (Biology, Geography, Geology), County Extension Agency, ECO, Inc. (NGO), TNC, Sierra Club, NRCS, ANRC, Friends of Lake Wedington, ADEQ, IRWP, ANHC, AR Native Plant Society

Heritage

Historians, Historical societies, farmers & old timers, Land Trusts:

Washington County Historical Society, Farm Bureau, AR Historic Preservation Program, Fayetteville Council of Neighborhoods, NWA Land Trust

Recreation

City Parks & Trails, Recreation Groups, Recreational Suppliers, Travel Industry:

Johnson Parks & Trails, Boy Scouts of America, Bicycle Coalition, Pack Rat, Fayetteville Visitors' Bureau, Ozark Society, Arkansas Canoe Club

Landuse

Developers & Contractors, Transportation & Planning Agencies, Chambers of Commerce:

County Planning, Farmington Planning, Northwest Arkansas Regional Planning Commission, Rausch Coleman, StreetSmart NW Arkansas

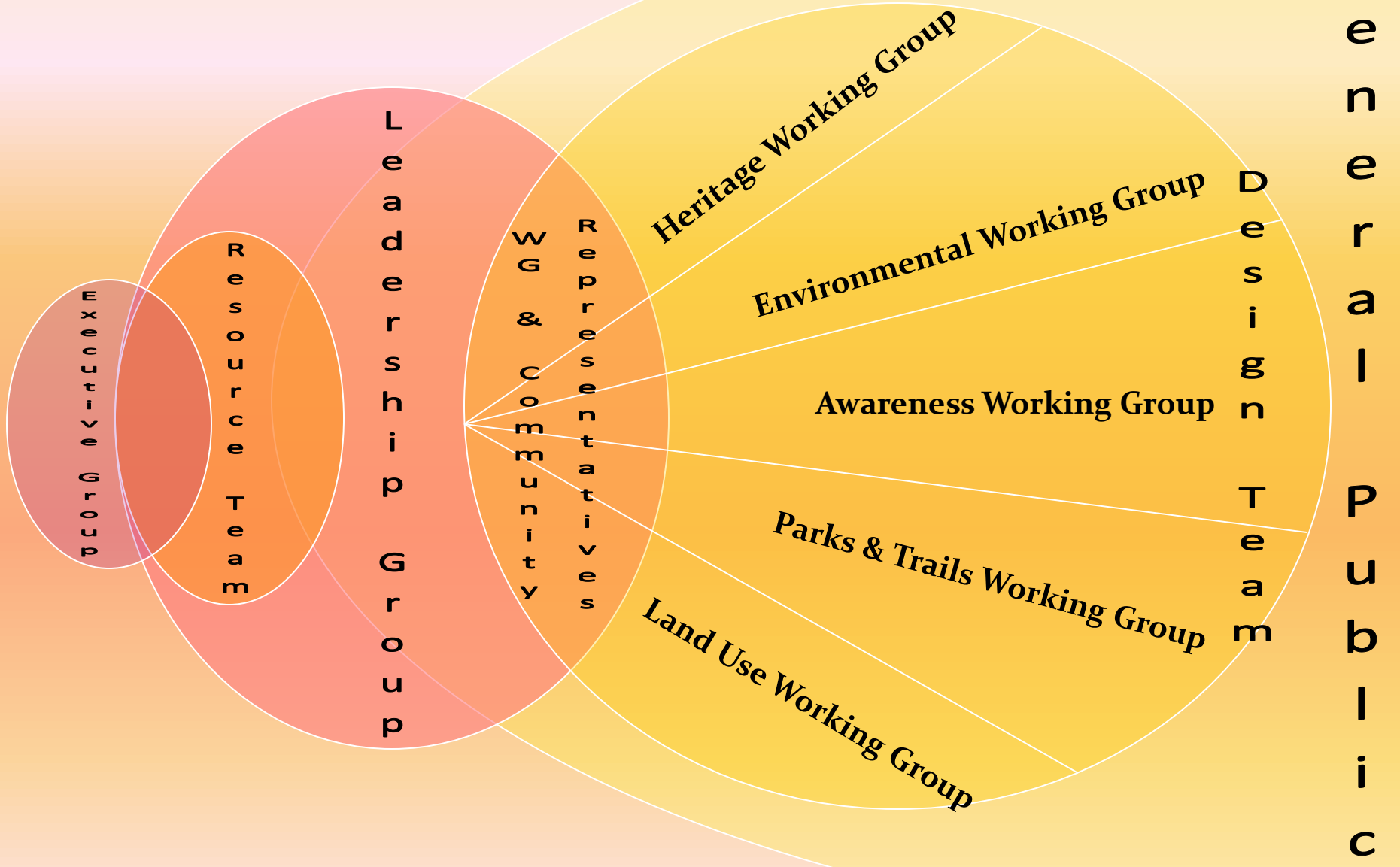
Our Work: Invitation to Participate

325 Invited

115 Attended

60 Volunteered

Our Work: Organization of People



Our Work: Development of Working Group Maps

Working Groups…use the Green Infrastructure Principles and your expertise to…

- Investigate, Envision, and Record elements for Green Infrastructure Network map
- Document decision making criteria
- Research and produce compendium of implementation strategies
- Identify educational outreach and public forum items
- January 15, 2009 target date
- Reported out February 8, 2009

Our Work: Going Public w/ Working Group Maps

Asked: Have we included everything we need to?
Is there anything that shouldn't be there?
Are there specific areas or features you are concerned about?

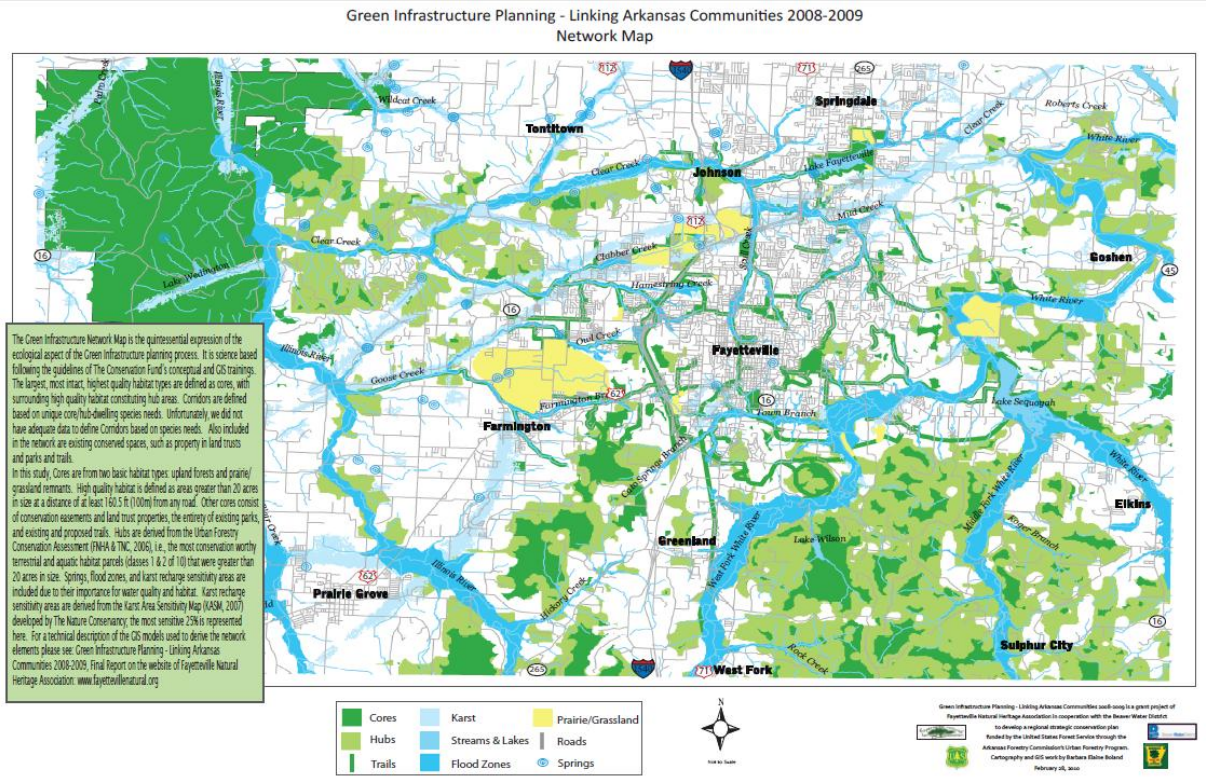
Took the notes, checked them against our maps, and made some updates

PRESENTATIONS

Wedington Woods
Lake Wedington Recreation Area
Fayetteville Public Library (2)
Fayetteville Green Drinks
Greenland Planning
Fayetteville Garden Club
Farmington City Leaders
EPA Green Infrastructure (7/29-30/2010)
Johnson City Leaders
Fayetteville Environmental Action Committee
UofA Annuitants
Fayetteville Lions Club
Fayetteville Exchange Club
Changing Roles Workshop

Our Work: Wrap up

Integration of Working Group Maps into Network Map nearly completed



Final Report due out July 1, 2010

Keys to Success: Part II

The Process

Resources – Skills, Tools, & Data

Skills

- Leadership
  - At every stage
- Expert knowledge
  - For every GI element type
- GIS & Cartography
  - To process expert knowledge & represent it well

Resources – Skills, Tools, & Data

Tools

- Computer Hardware
- Computer Software
- Large data storage capacity
- IT Support
- Projection equipment
- Display equipment
- Printing services

Resources – Skills, Tools, & Data

Data

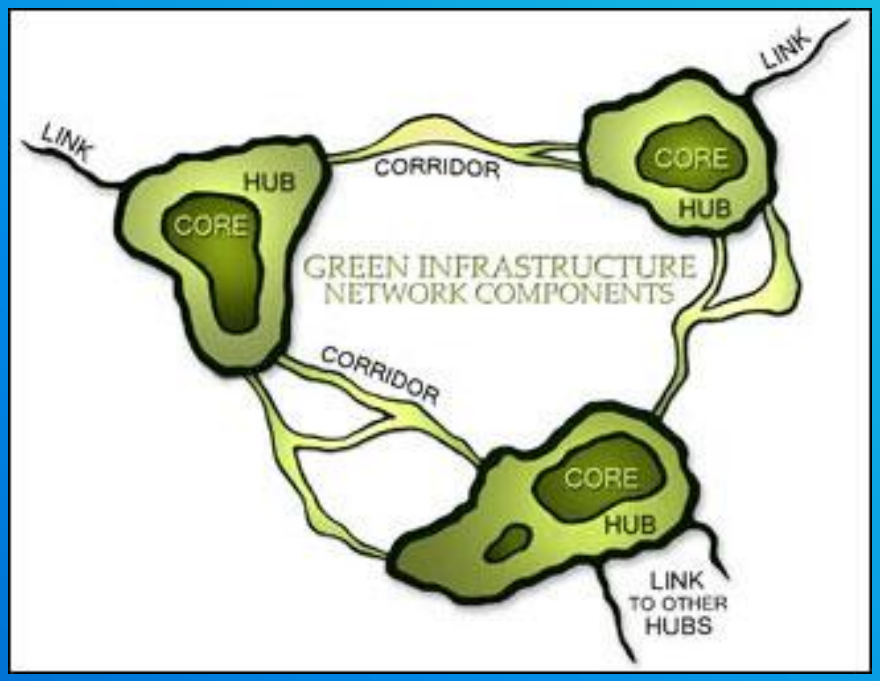
- Depends on what GI elements interested in
- Depends on what is available
- Basics:
  - Roads
  - Surface waters
  - Land Use Land Cover imagery
  - Topography
  - Flood zones
  - Habitat

Resources – Skills, Tools, & Data

Some data we used:

- LULC_FALL_CAST2006.tif
- Study area Box.tif
- TRANSP_ROADS_ALL_AHTD_line.shp
- WaCo_flood_zones_2009.shp
- ADEQ STREAM_ORDER.shp
- TNC\KASM_bw_2007031.img
- AGRIC_SSURGO_GENERAL_INFO_NW_poly.shp
- Prairie_Grassland.shp
- TNC\terrestrial_ecology_10_class_generalized.shp
- TNC\aquatic_ecology_10_class_generalized.shp
- Cemeteries
- Churches
- Schools
- WaCo parcel ownership
- WaCo parcel tax codes
- Springs
- Streams
- Waterbodies
- Public lands
- Fayetteville, Johnson, OSFNF, & NWARPC Trails
- Hillshade topography
- Slope
- NWA Heritage Trails Master Plan 2006
- GNIS place names
- Landscape features
- Scenic routes
- Bridges
- Dams
- Quarries
- Ecoregions
- Watersheds
- ACOE wetlands
- USGS digital raster graphics 1:24k
- 12” Aerial photography
- City & County boundaries

Designing the Network Map - Components

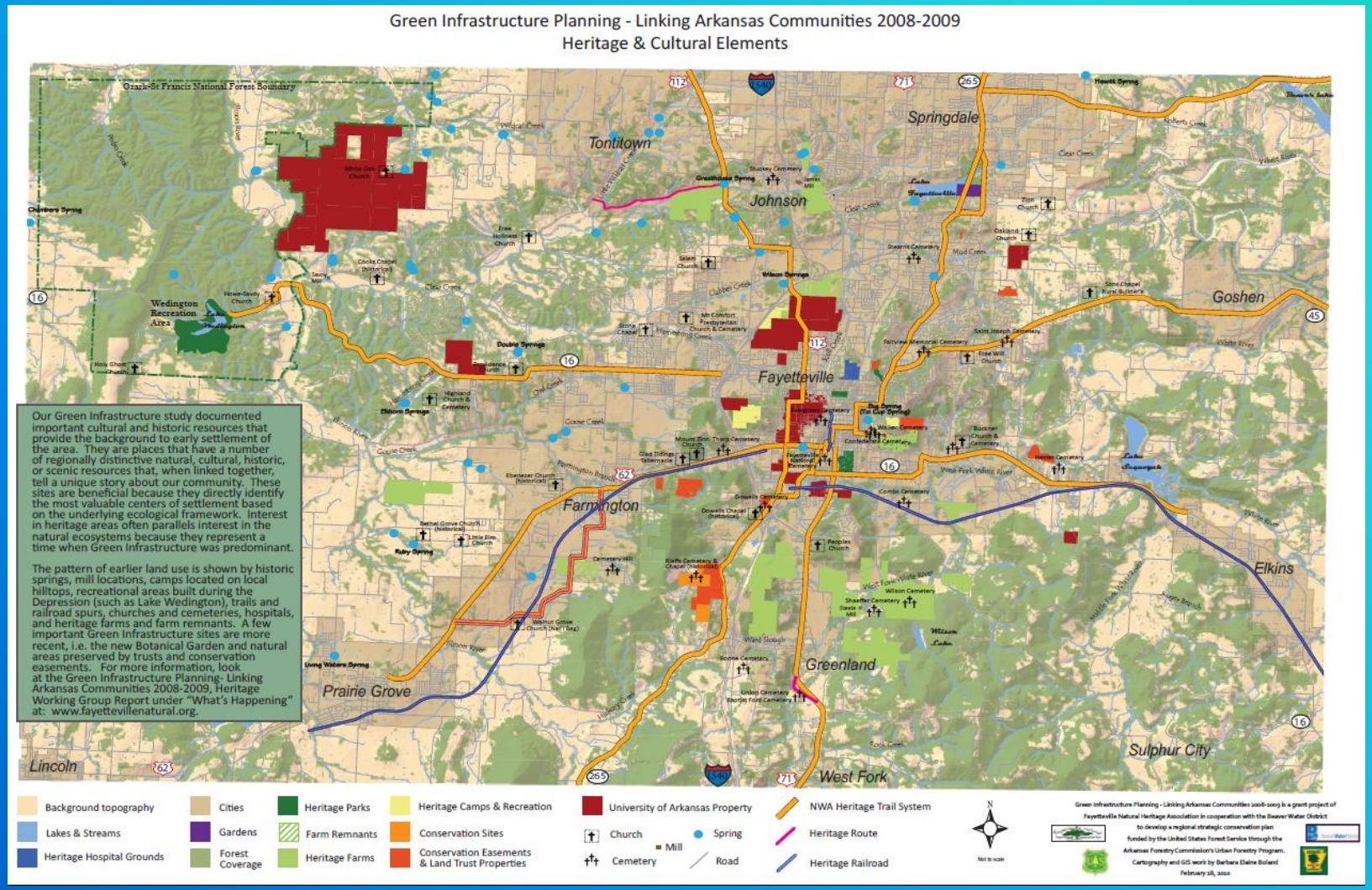


- Cores – intact habitat
- Hubs – slightly more fragmented habitat
- Corridors – wildlife needs-based connectors between hubs
- Sites – may not be ecological in character or connected via corridors

http://www.conservationfund.org/green_infrastructure

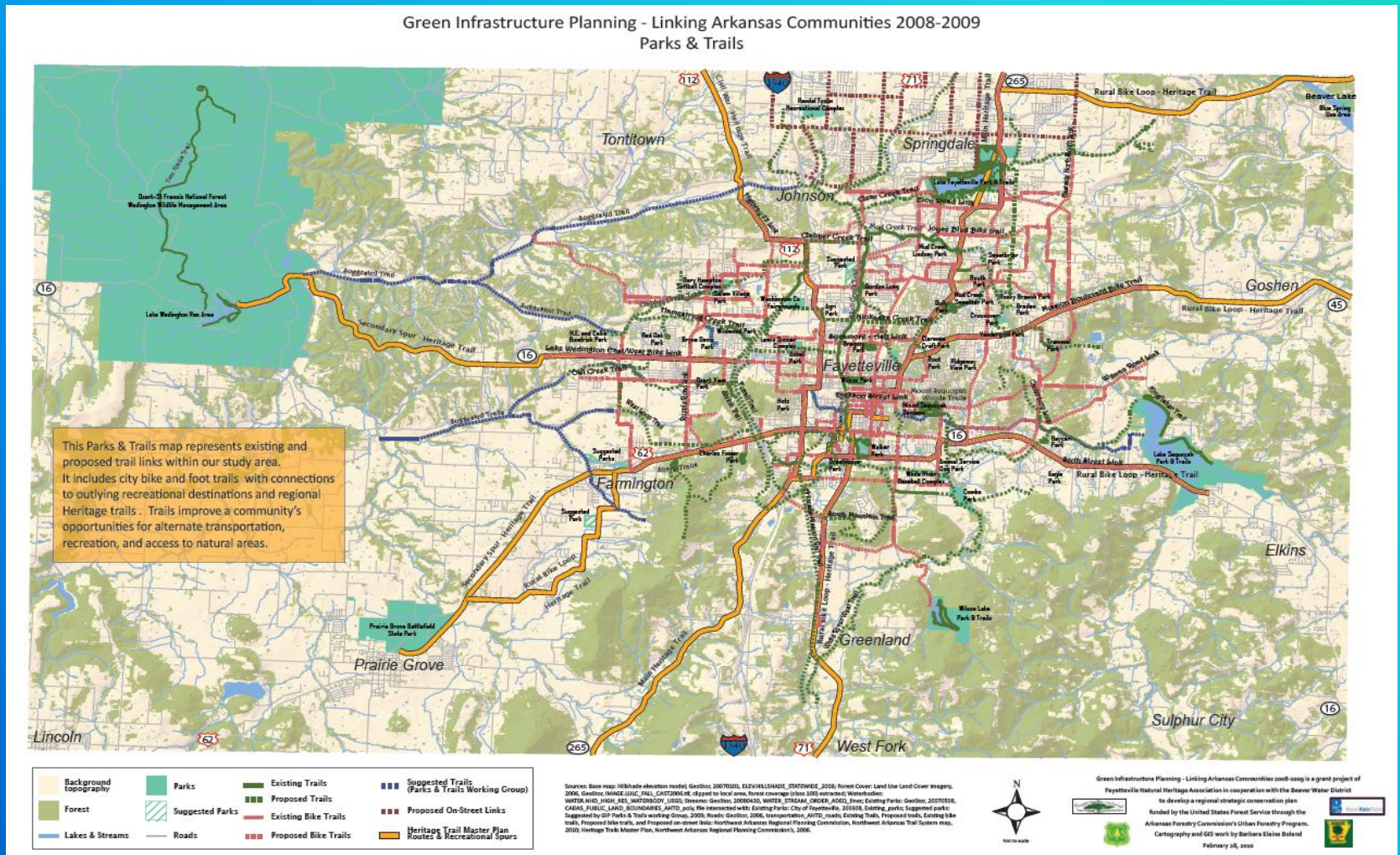
Designing the Network Map - Inputs

Heritage Working Group Map



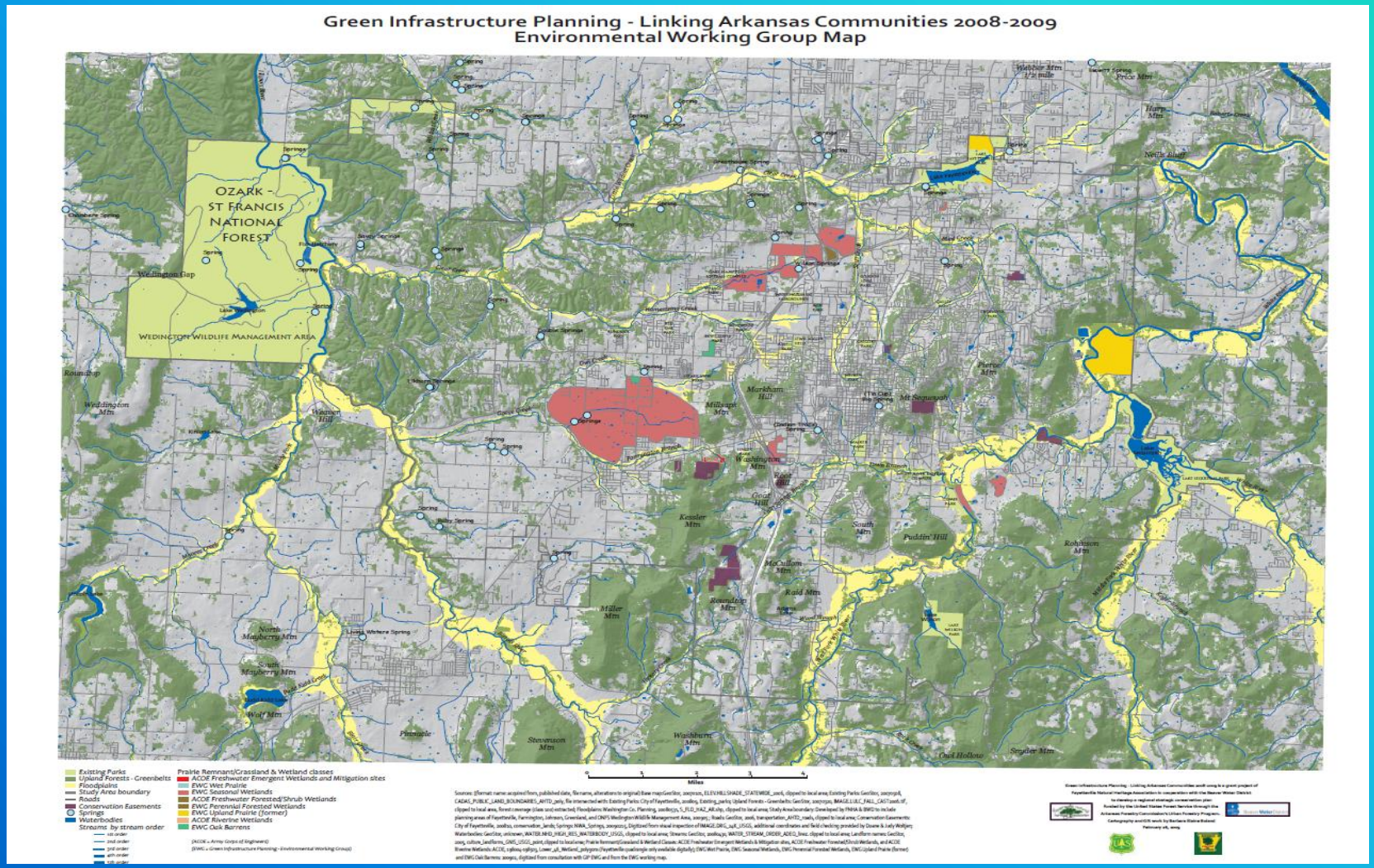
Designing the Network Map - Inputs

Parks & Trails Working Group Map



Designing the Network Map – Inputs

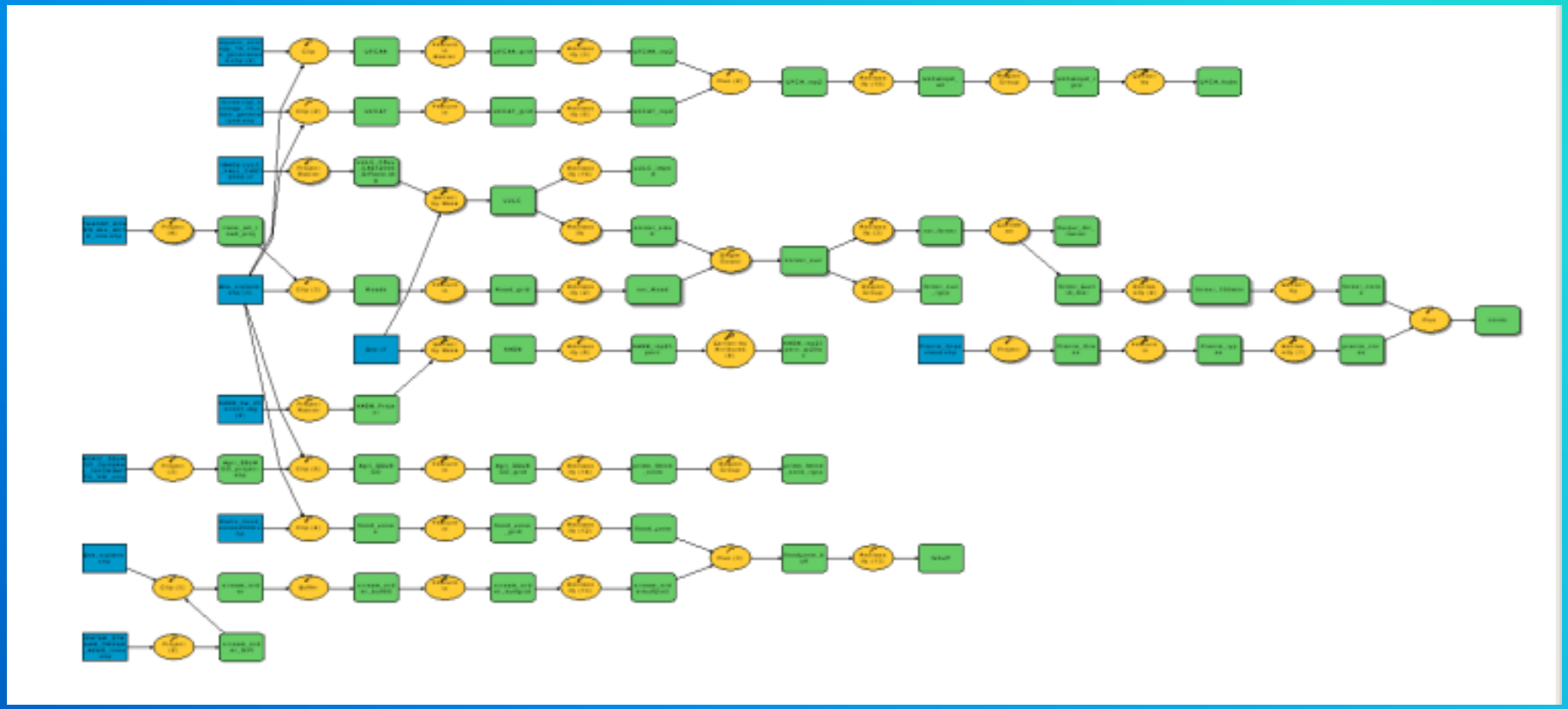
Environmental Working Group Map



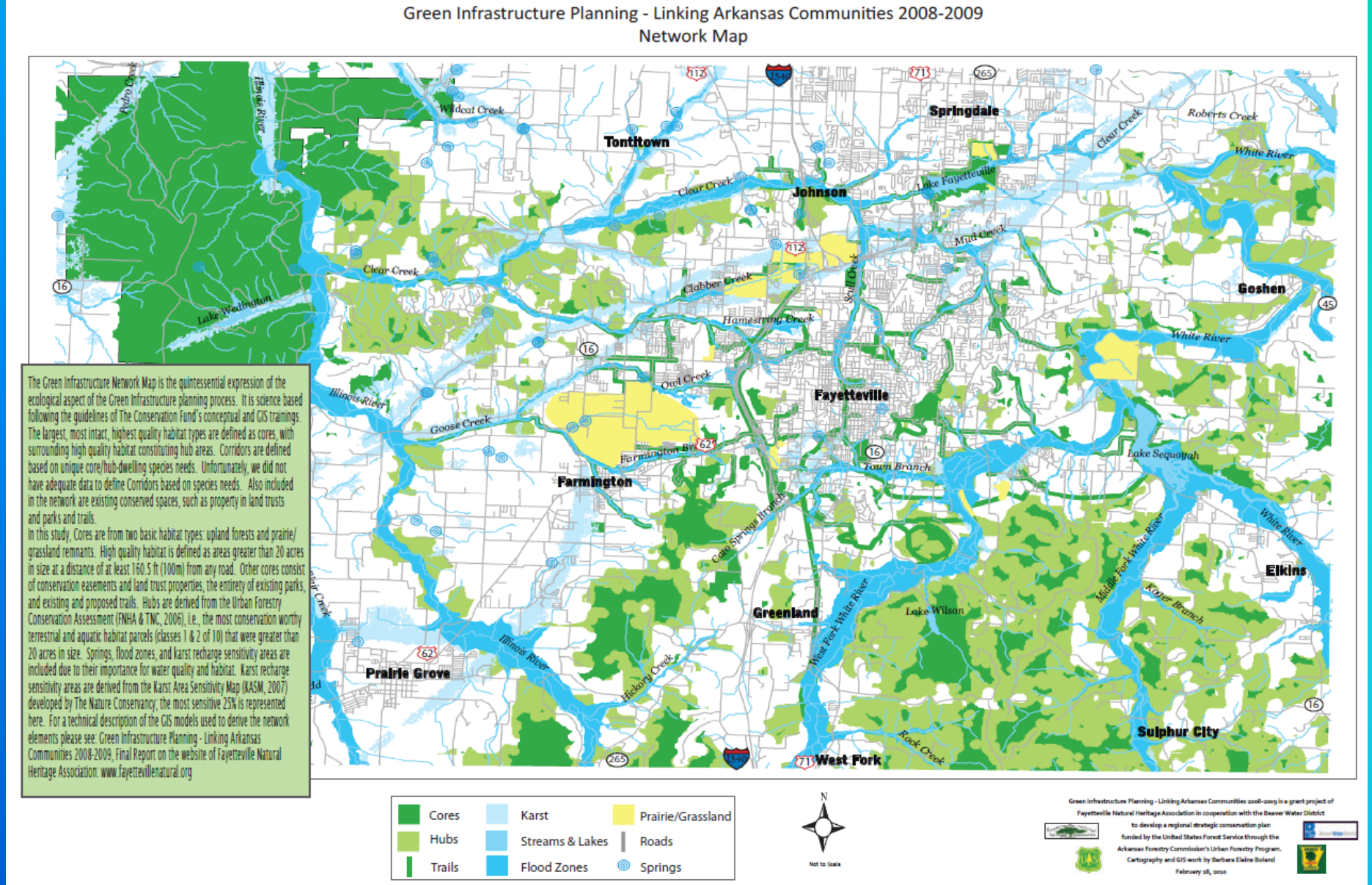
Designing the Network Map – Model

Makes for easy updating

Standardizes processes



Preliminary Network map



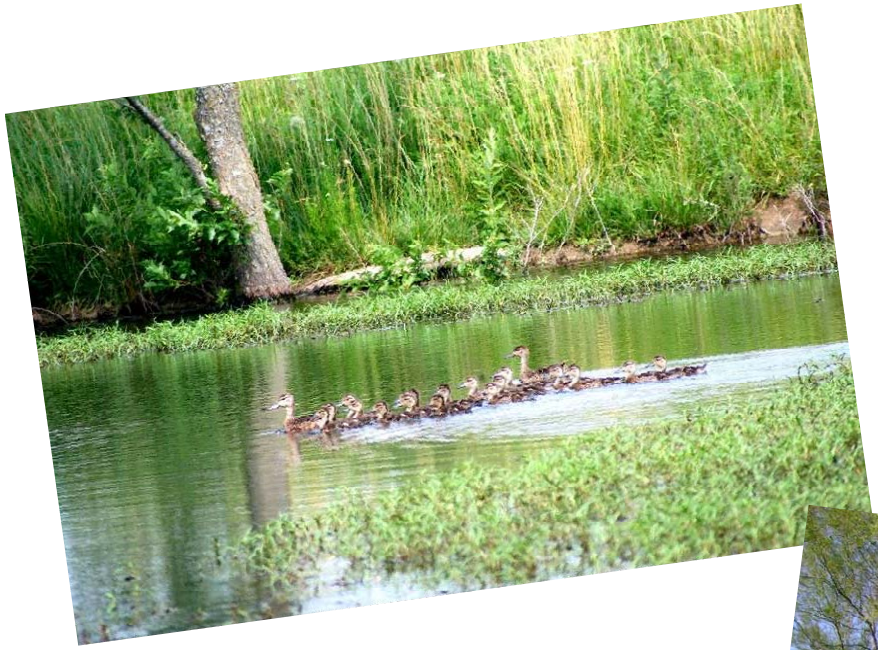
Green Infrastructure Planning in Northwest Arkansas

What's next:

- Use Network map for suitability analyses:
  - Best placement of attention based on unique concerns
  - Identify gaps and vulnerable areas
- Use Network Map to model Alternative futures assessments
  - Visualizing possible future landscapes
- Go Regional:
  - GIP throughout Northwest Arkansas

Learning from Experience

- Data limitations: UFCA study area
- Limited data: Agriculture/cool season grass
- Limited knowledge: Habitats & critters
- Working with volunteers
- Leadership

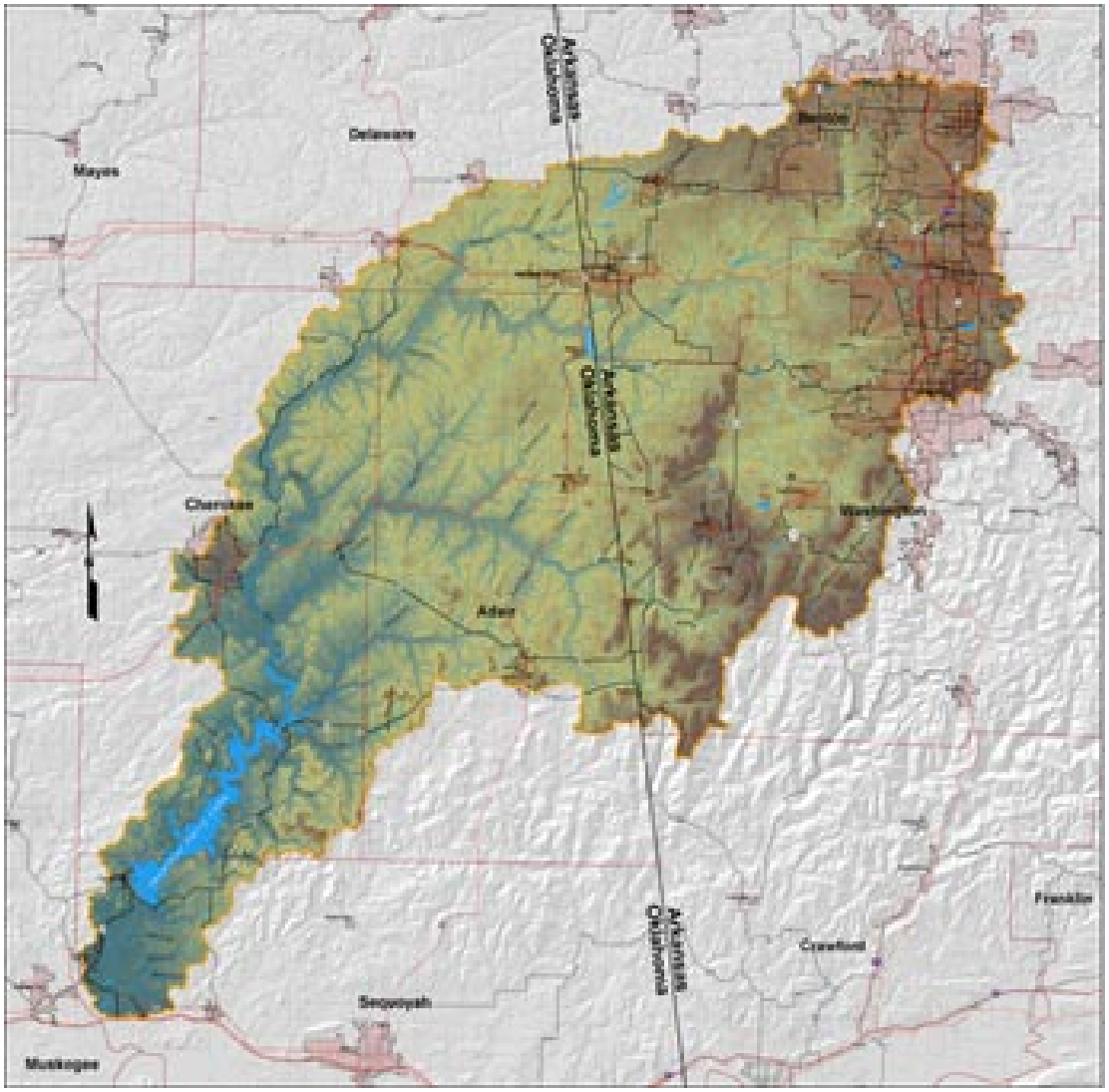


Green Infrastructure Plan

Linking Arkansas Communities
2008-2009

Woolsey Wet Prairie Sanctuary. Photos courtesy City of Fayetteville, 2008

Green Infrastructure Principles
Regional Plan/Local Implementation



Green Infrastructure functions across multiple jurisdictions and at different scales

Green Infrastructure Principles

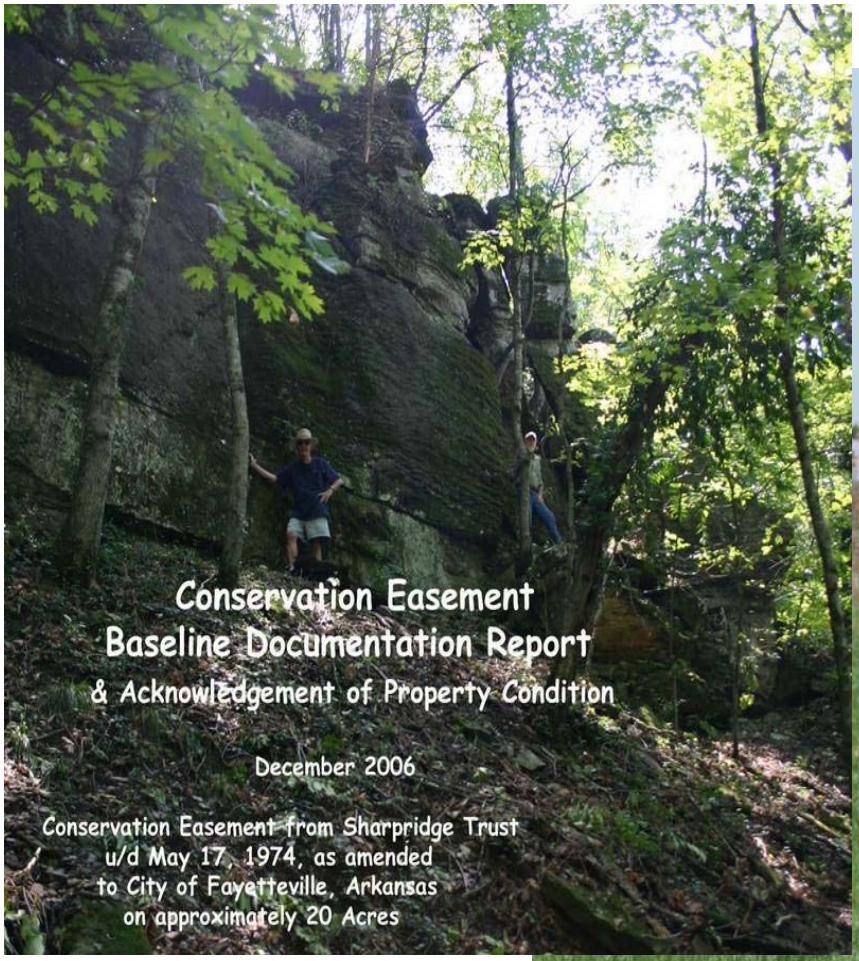
Green Infrastructure should be the framework for conservation and development

A Successful Green Infrastructure Plan Includes ....

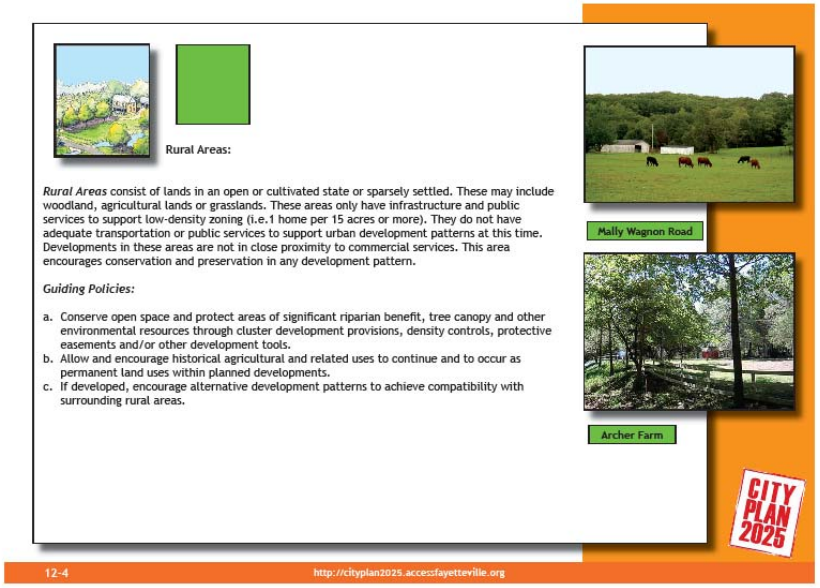
- A detailed Network Plan
- Tools to Assemble and Maintain the Network
- Development Ordinances/Practices to Promote Making All Development Part of the GI Network

Tools to Build Green Infrastructure
Land Acquisition

Tools to Build Green Infrastructure Development Rights



Tools to Build Green Infrastructure
Land Use Planning



Tools to Build Green Infrastructure Development Regulations

Tools to Build Green Infrastructure

Best Practices

Experts

Volunteers

A Successful Green Infrastructure Plan Includes ....

- A detailed Network Plan

- Tools to Assemble and Maintain the Network
  + A dedicated, sustainable source of funding
  + A system to manage assembly & maintenance
  + Complete set of tools (TDR, CE, mitigation bank, ...)
- Development Ordinances/Practices to Promote Making All Development Part of the GI Network
  + Parkland/green space dedication, tree &landscape
  + LID, hillside, riparian, flood plain, road design

Another Problem Caused by Deforestation