An Ecosystem Approach to Developing Infrastructure

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An Ecosystem Approach to Developing Infrastructure

Presentation Topics

- Integrate Planning
- Eco-Logical Approach
- Landscape Conservation other Agencies

Transportation Goals

- Efficient Transportation
- Sustainable Infrastructure
- Sustainable Ecosystems
- Quality of Life
  - Livability

SAFETEA-LU

- SAFETEA-LU and corresponding regulations specify that the long-range transportation planning process is to include environmental priorities and functions and also includes a planning factor to "**...**protect and enhance environment, promote energy conservation and improve quality of life" and has been expanded to include "...promote consistency between transportation improvements and State and local planned growth and economic development patterns" [23 CFR 450.206 and 450.306].

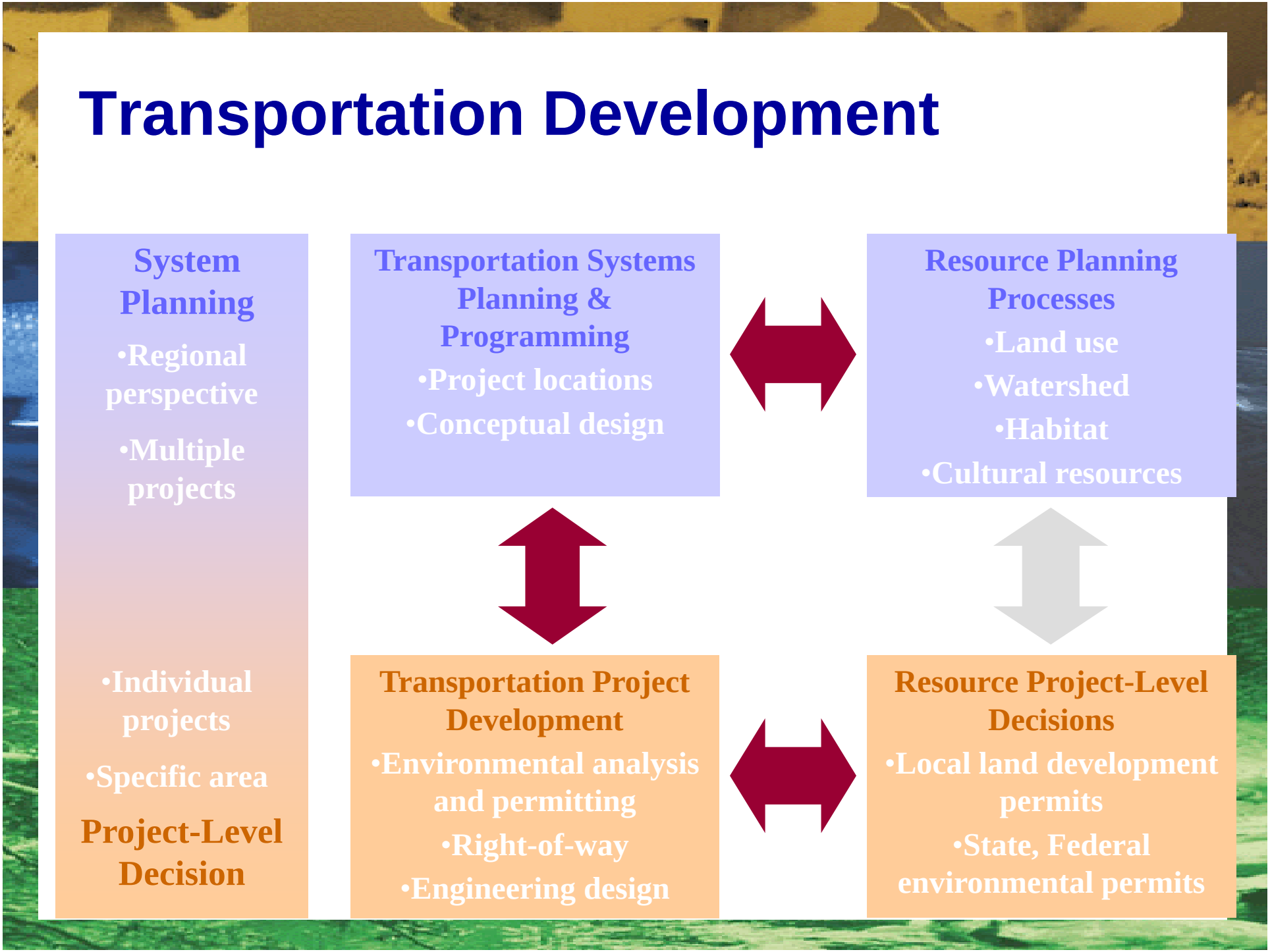
Process Objectives

- Efficient and Effective
  - Timely
  - Cost Effective
  - Predictable
  - Transparent
  - Logical Decisions

Program Review

- Planning
- Project Development (NEPA)
- Design
- Permitting
- Construction
- Maintenance

Transportation Development

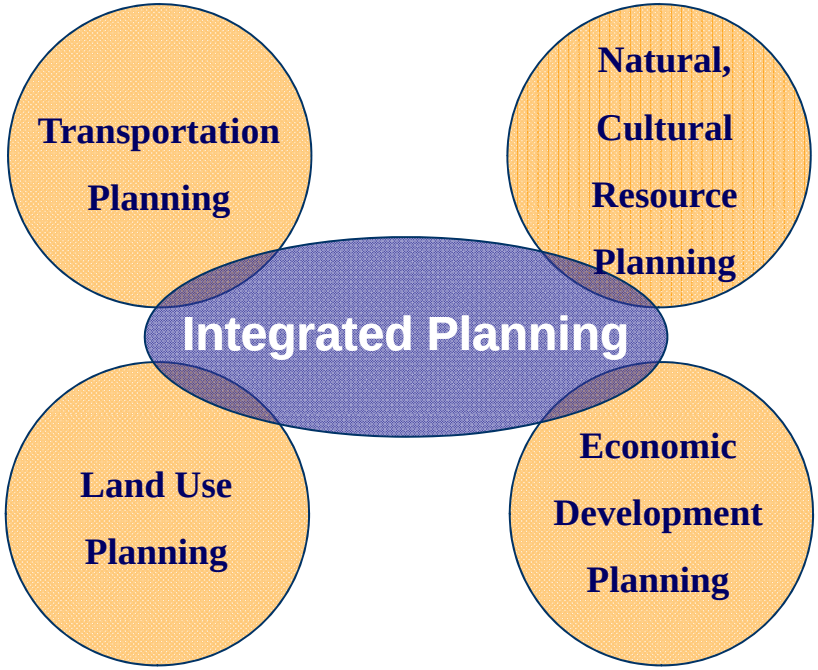


Transportation Planning Requirements: Environmental Considerations in Planning

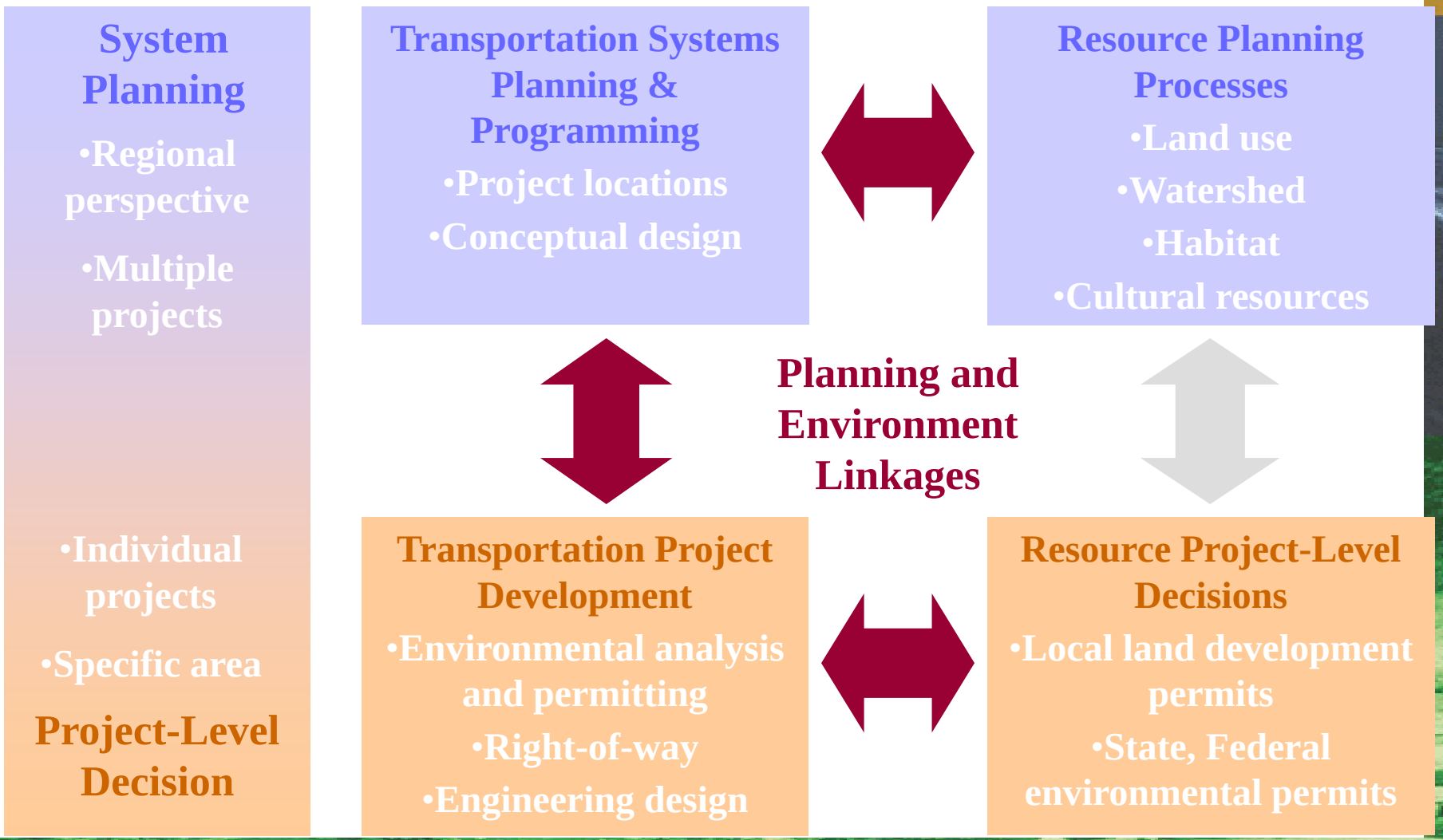
- Environment planning factors
- Consideration of environmental mitigation
- Consultation with resource agencies, including consideration of resource maps and inventories
- Input in Participation Plans

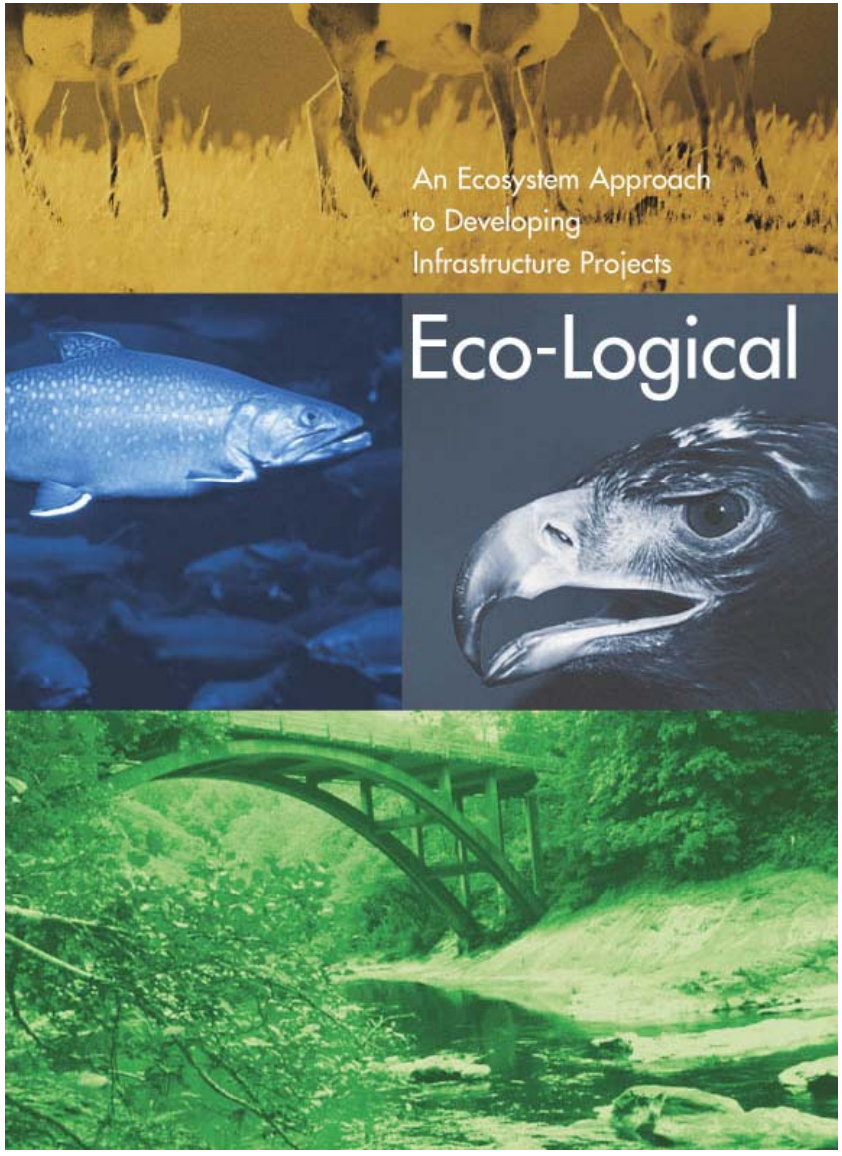
Integrated Planning

A collaborative process that combines transportation planning with federal, tribal, and local land use and cultural and natural resource planning.



Transportation Development





Eco-Logical:

An Ecosystem Approach to Developing Infrastructure Projects

Multi-Agency Initiative

and Publication

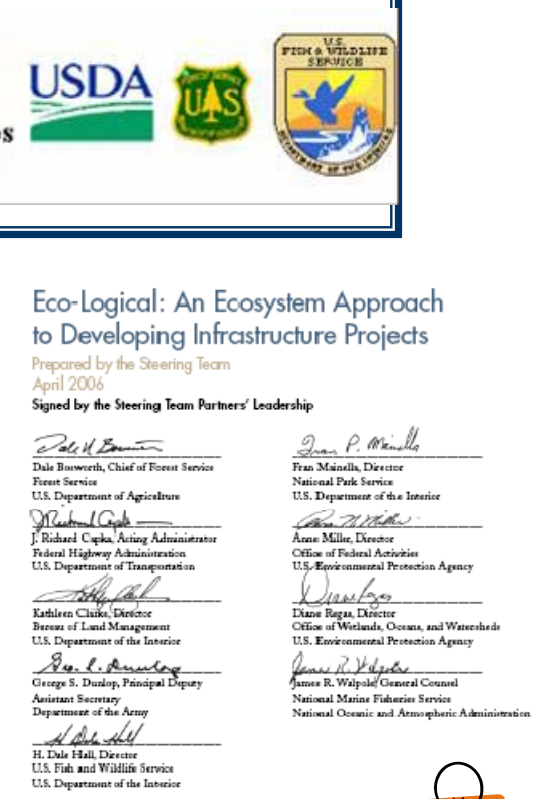
Eco-Logical: Approach to Solutions

1. Inter-agency Steering Team* & strategy

2. Develop/Publish Eco-Logical framework, with signatures from all agencies' HQs

3. Engage participants at all levels, both public & private sector

4. To develop & implement strategies



Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects

Prepared by the Steering Team
April 2006

Signed by the Steering Team Partners' Leadership

Dale Bosworth, Chief of Forest Service
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U.S. Fish and Wildlife Service
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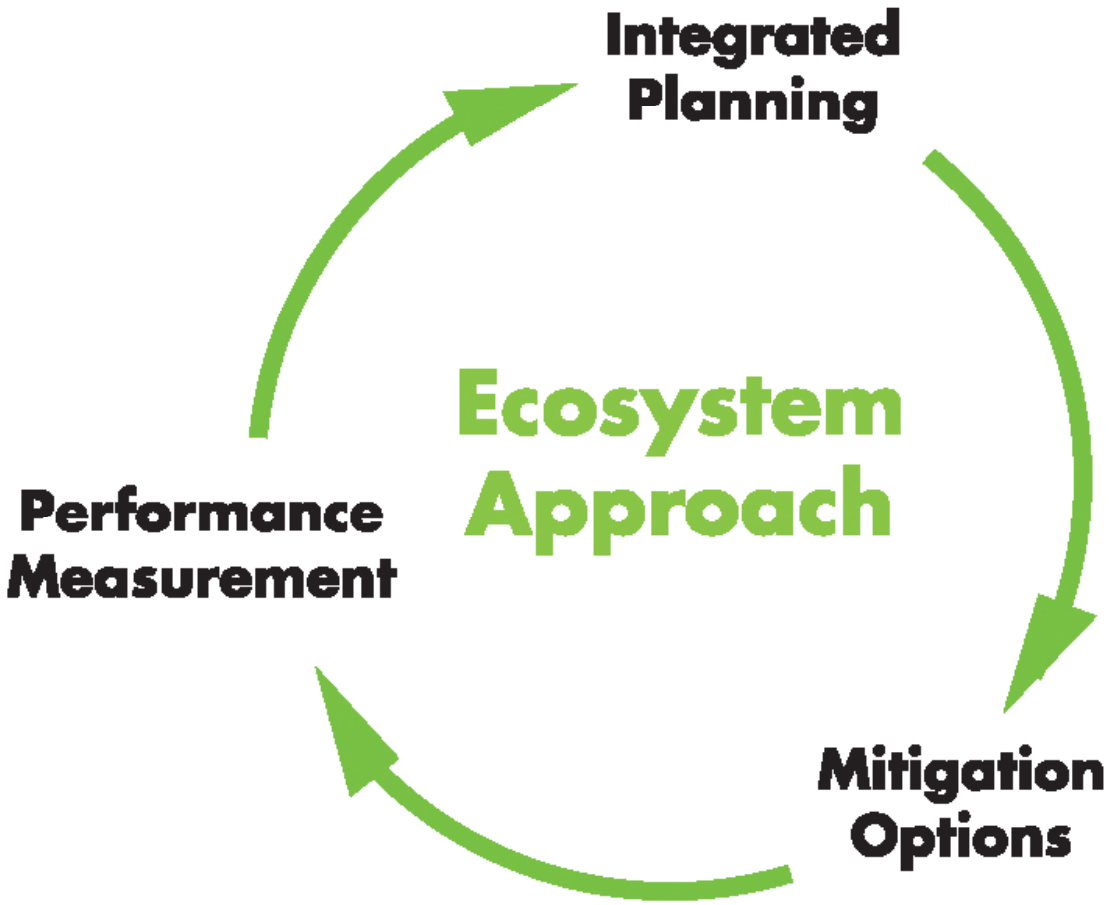
** (Inter-agency team: 8 federal, 3 state trans, 1 toll agency)*

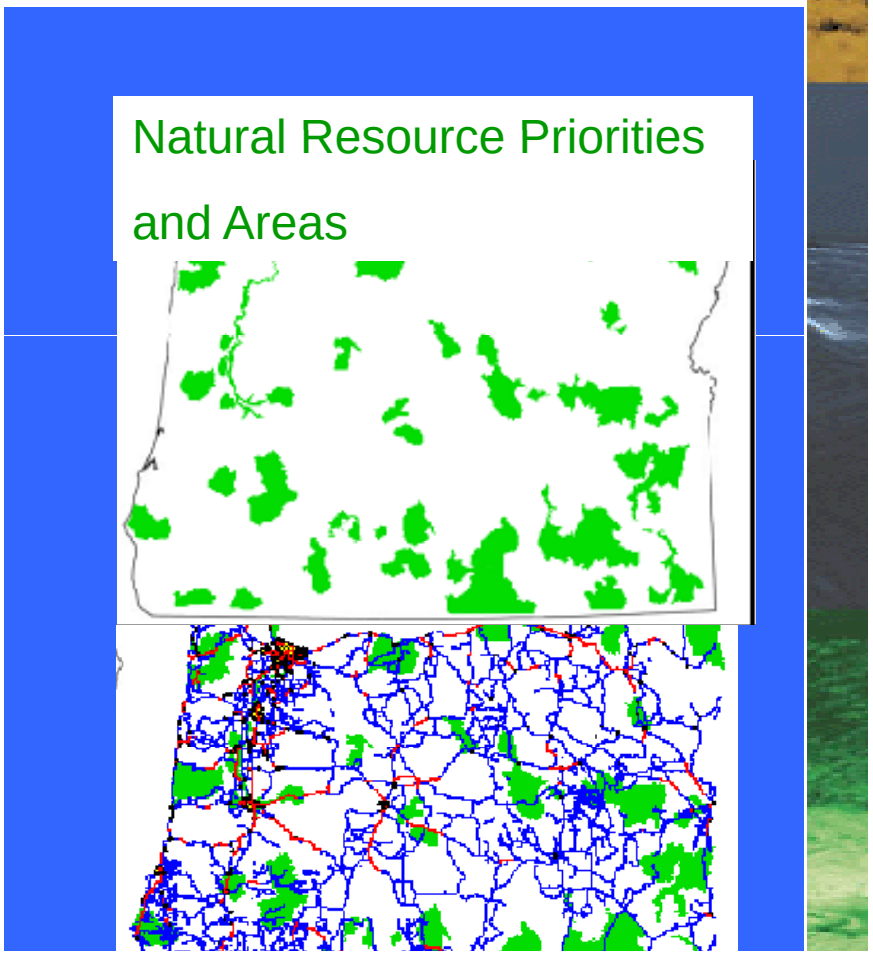
Ecosystem Approach



Eco-Logical: Integration

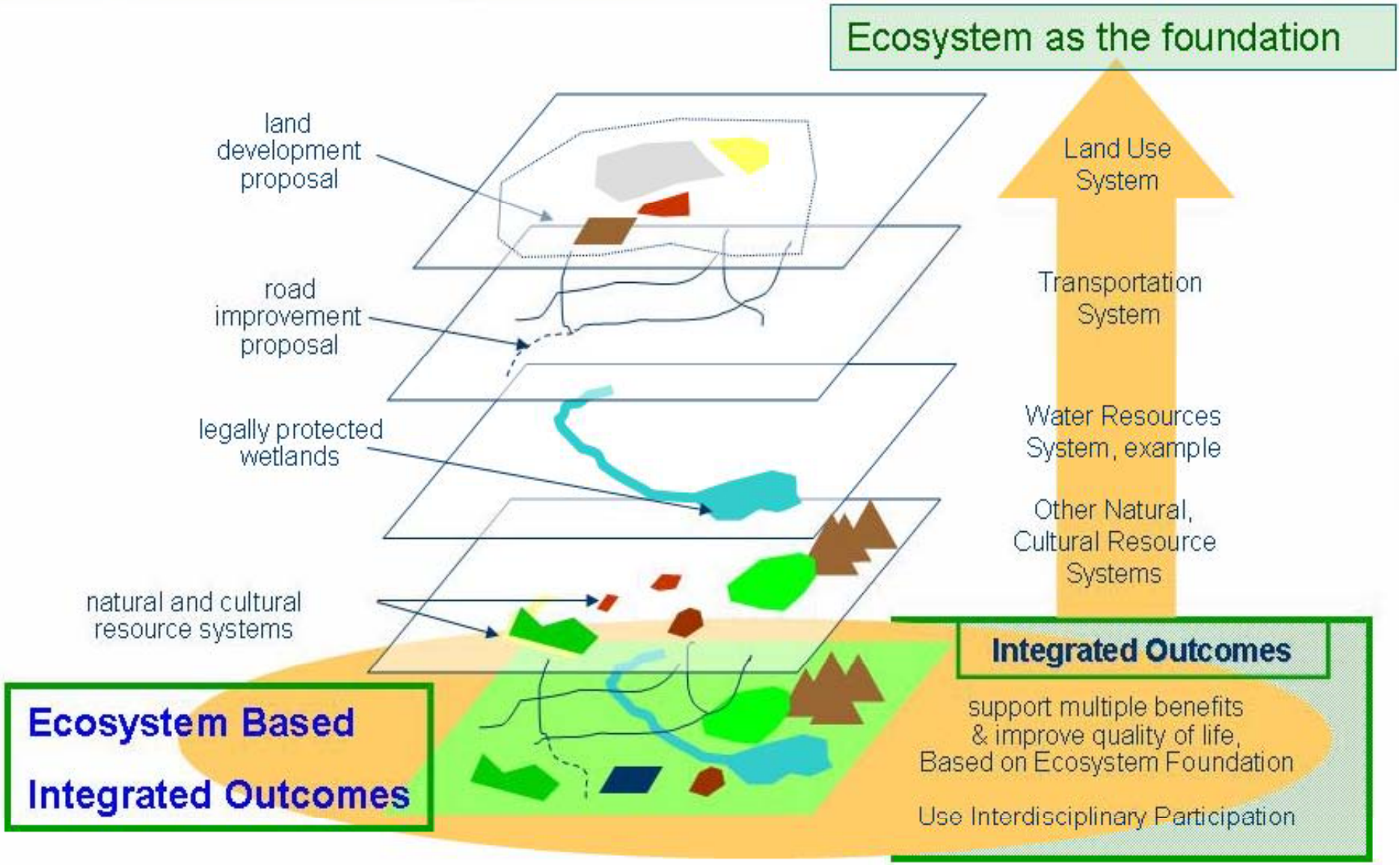
Integrates across:

- **Multiple projects and sites**
- **Agencies and levels**
- **Geographic regions (that utilize natural boundaries)**
- **Multiple resources**
- **Multiple jurisdictions**
- **Public & private sectors**



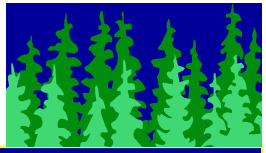
Integrated Map: Trans Plan, Urban areas, Natural resource priorities & areas

A Systems Perspective



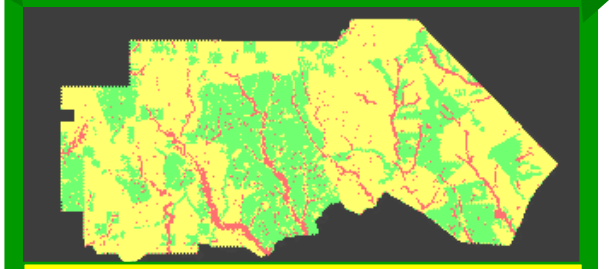
Focus: Integrating Information, People, & Decisions for-

Infrastructure, Transportation Decisions & Projects



Wildlife, Fish, Ecology, Wetlands, Floodplains, Soil, Water

Community Values, Socio-Economics, Prime Farmland, Land Use



Informed Decisions,

Integrated Outcomes,

Quality of Life

Contaminants, Haz Waste

Agency Coordination, Public Participation

Air Quality, Noise, and Other Issues

Cultural & Tribal Resources, 4(f), Parks, Public & Private Lands

Eco-Logical: Solutions

- ***Fulfill relevant statutes***
- ***Healthy ecosystems support sustainable economies and communities***
- ***Useful at <u>any time</u> in planning & project development and delivery***
- ***Non-prescriptive: Framework that can be adapted to integrate information, decisions, people***

Eco-Logical Approach to Improve:

Predictability – Commitments honored by all agencies

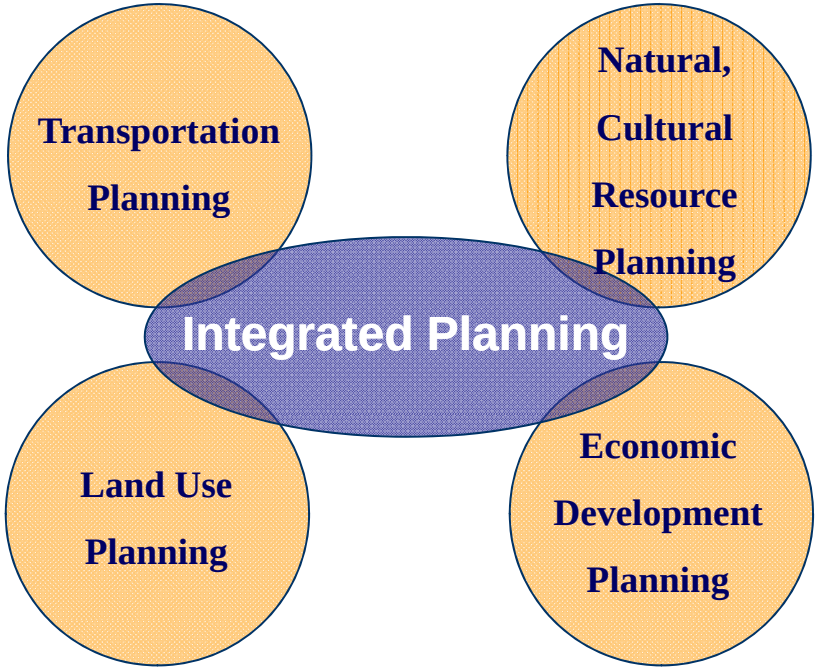
Connectivity – Contiguous areas to support multiple benefits and reduce fragmentation

Conservation – Larger areas, sustain and adapt into long-term

Transparency – Public involvement at all key stages, reduces unknowns

Integrated Planning

A collaborative process that combines transportation planning with federal, tribal, and local land use and cultural and natural resource planning.



SHRP2

STRATEGIC HIGHWAY RESEARCH PROGRAM

TRANSPORTATION RESEARCH BOARD

OF THE NATIONAL ACADEMIES

SHRP 2 Project C02 is developing a performance measurement framework, emphasizing environmental and community measures, that informs the collaborative decision-making process.

C06A Goals & Purpose

- Earlier environmental consultation and decision making
- More strategic and effective conservation and restoration investments/mitigation
- More efficient processes

DRAFT Integration Framework

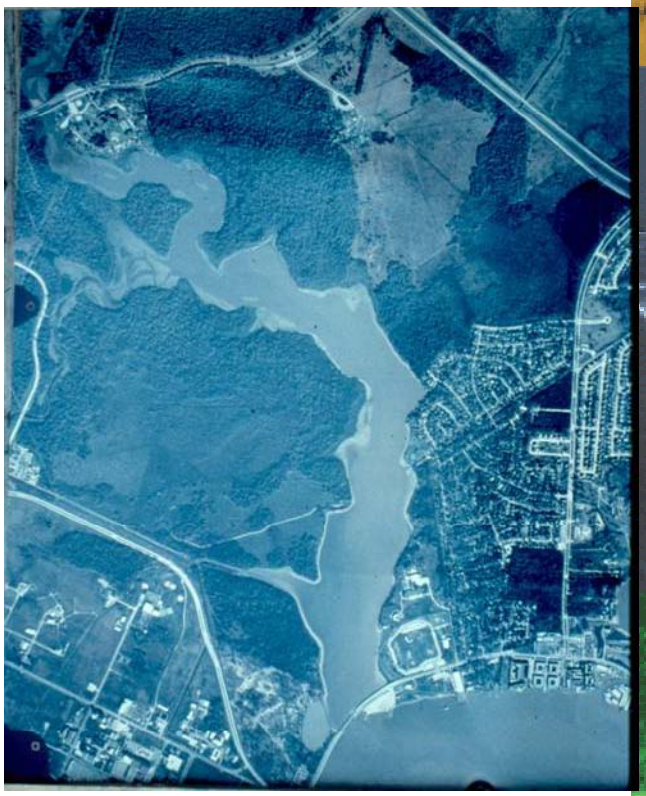
- Step 1: Build & Strengthen Collaborative Partnerships and Vision
- Step 2: Integrate Ecosystem Plans
- Step 3: Create Regional Ecosystem Framework
- Step 4: Assess Transportation Effects
- Step 5: Establish & Prioritize Ecological Actions
- Step 6: Develop Crediting Strategy
- Step 7: Develop Agreements
- Step 8: Implement Agreements
- Step 9: Monitoring and Adaptive Management

Landscape Conservation Approaches

- Different Agencies
- Different Names
- Similar Approaches

Systems Perspective

- Landscape Conservation
- Ecosystem Conservation
- Watershed Conservation



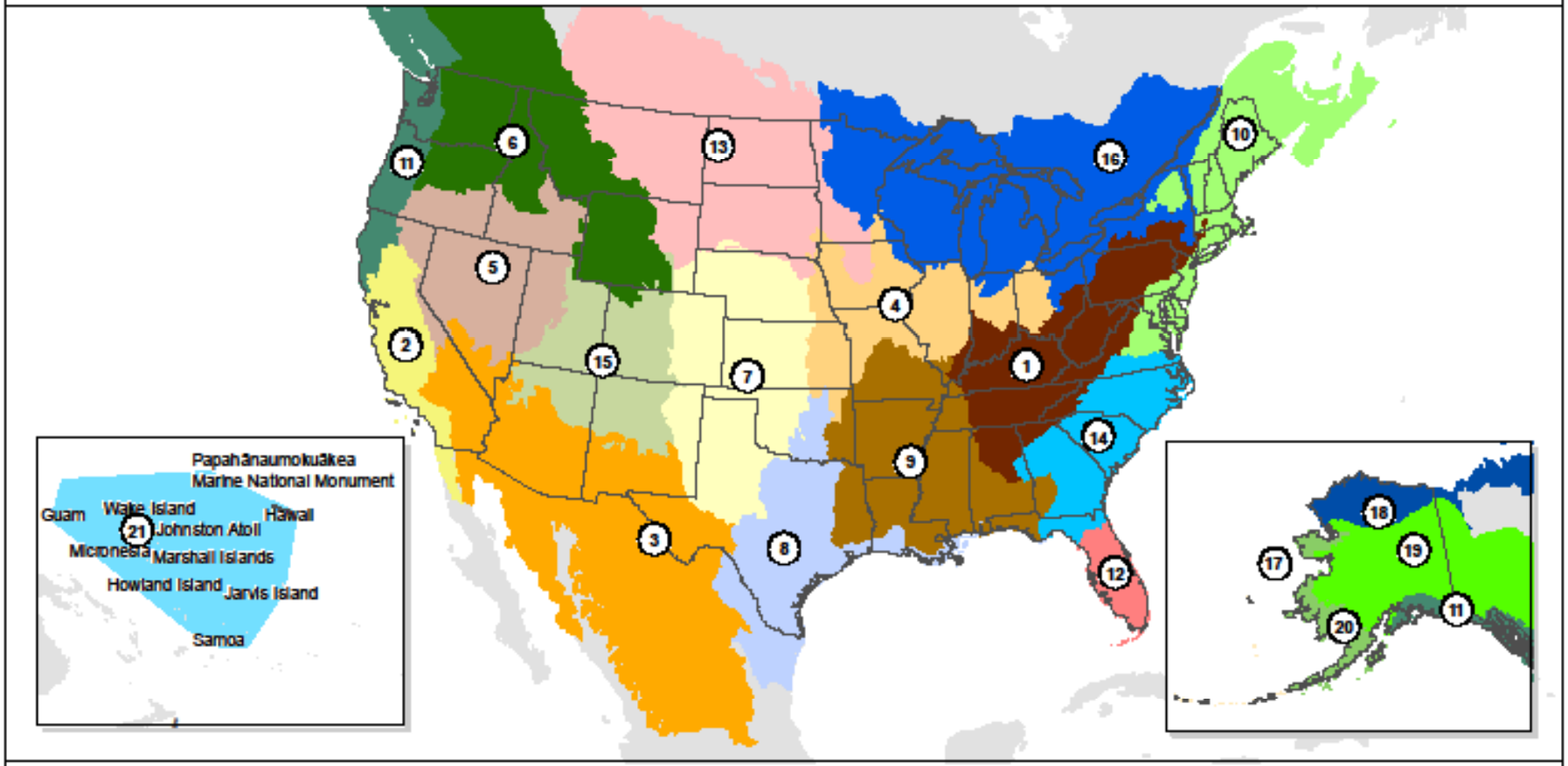
Strategic Habitat Conservation

- Department of Interior
  - USFWS, USGS,
- Strategic Habitat Conservation is a structured, science-driven approach for making efficient, transparent decisions about where and how to expend resources for species, or groups of species, that are limited by the amount or quality of habitat. It is an adaptive management framework integrating planning, design, delivery and evaluation.

Strategic Habitat Conservation
Five Key Principles

- Biological Planning (setting targets)
- Conservation Design (developing a plan to meet the goals)
- Conservation Delivery (implementing the plan)
- Monitoring and Adaptive Management (measuring success and improving results)
- Research (increasing our understanding)

Landscape Conservation Cooperatives



Landscape Conservation Cooperatives

1. Appalachian
2. California
3. Desert
4. Eastern Tallgrass Prairie and Big Rivers
5. Great Basin
6. Great Northern
7. Great Plains
8. Gulf Coast Prairie
9. Gulf Coastal Plains and Ozarks
10. North Atlantic
11. North Pacific
12. Peninsular Florida
13. Plains and Prairie Potholes
14. South Atlantic
15. Southern Rockies
16. Upper Midwest and Great Lakes
17. Aleutian and Bering Sea Islands
18. Arctic
19. Northwestern Interior Forest
20. Western Alaska
21. Pacific Islands
Unclassified

Albers Equal Area Conic NAD83
Produced by FWS, IRTM, Denver, CO
Map Date: 03182010

Open Space

- USDA Forest Service

- Cooperating across boundaries to sustain working and natural landscapes
- to identify how to best help conserve open space, with an emphasis on partnerships and collaborative approaches.

CWA Section 404 Compensatory Mitigation Rule

- US Army Corps of Engineers
- US Environmental Protection Agency
- 10 April 2008

- Watershed Approach
- Compensatory Mitigation of Waters of the US

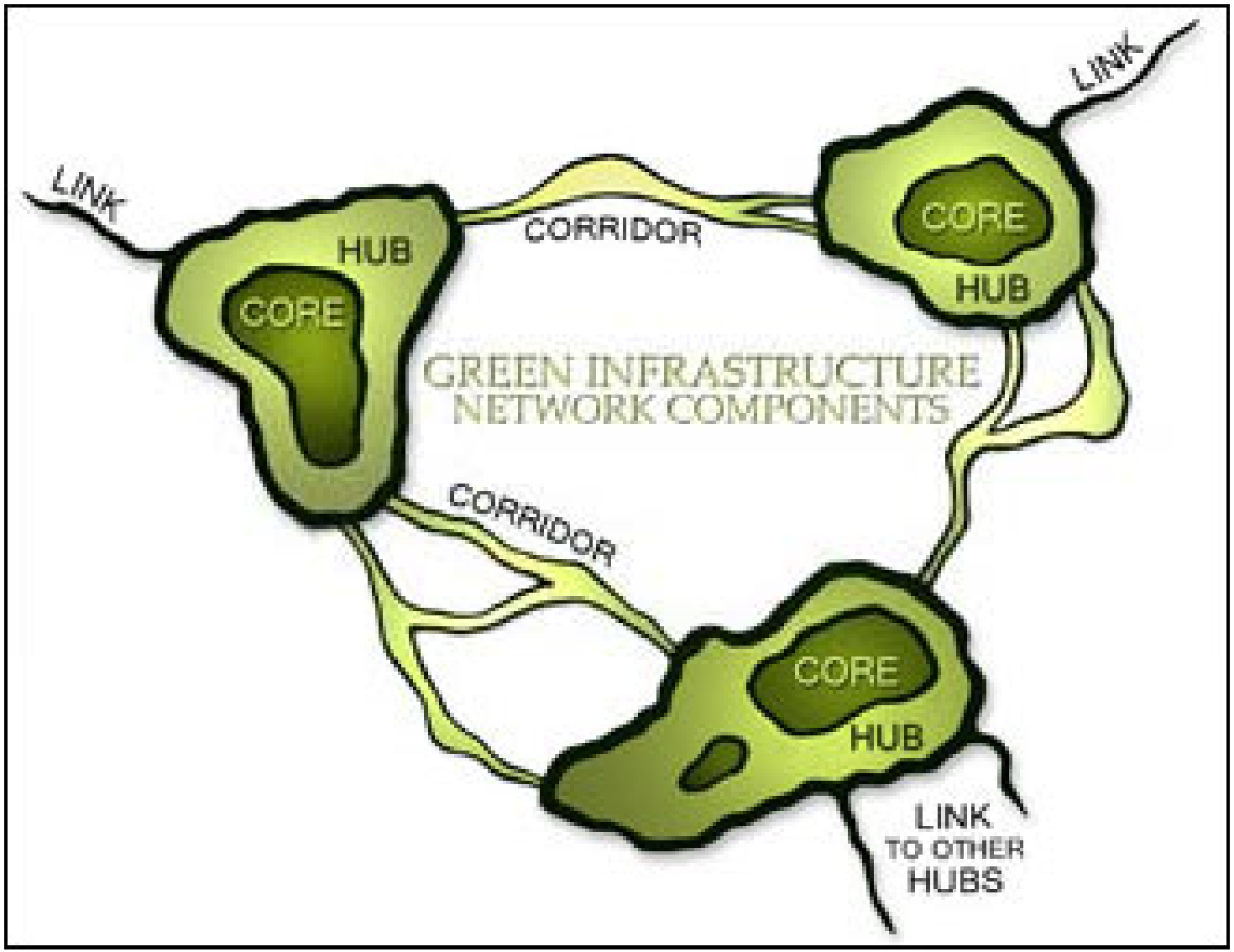
Green Infrastructure Approach

- Green Infrastructure
  - Woodlands, Streams, Grasslands,…
- Gray Infrastructure
  - Roads, Buildings, …

Green Infrastructure Approach

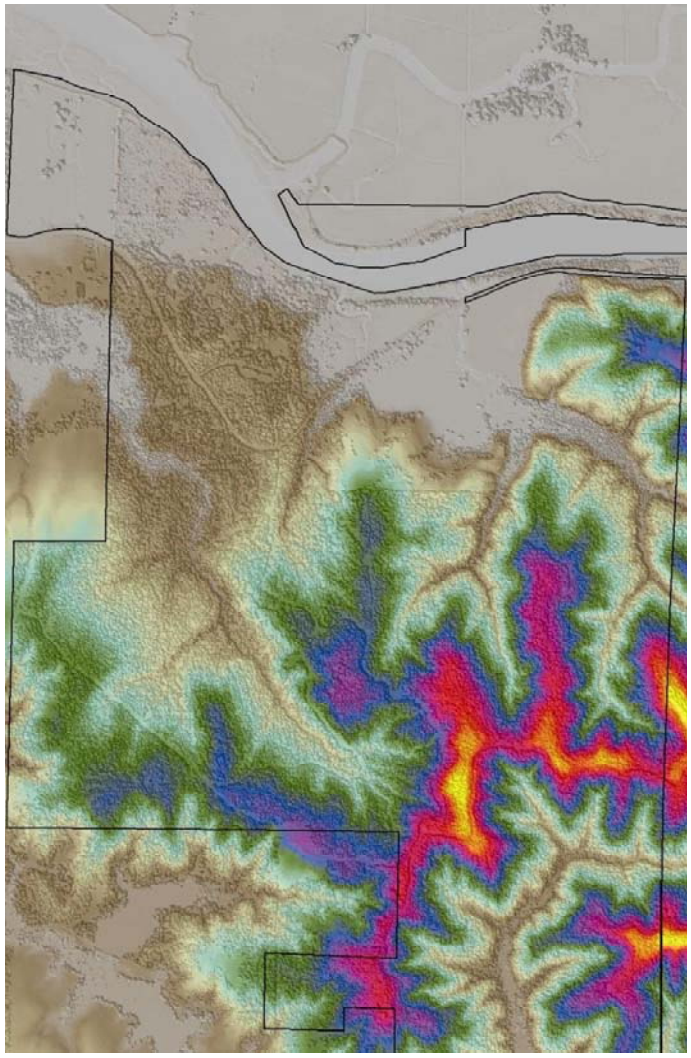
- Green infrastructure is strategically planned and managed networks of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.

Green Infrastructure



Landscape Conservation

- Wildlife Habitats
- Biodiversity
- Clean Water
- Clean Air
- Climate Change
- Food Production
- Recreation
- Flood Control
- Timber Production
- Jobs



Landscape Conservation

- **Rapidly Changing Land use**
- **Shrinking Resources**
- **Climate Change**

Contact Information

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http://environment.fhwa.dot.gov/integ/index.asp