Step 4: Assessing Effects on Conservation Objectives

Featuring the Southeast Michigan Council of Governments

Presenter
Amy Mangus, Southeast Michigan Council of Governments

Moderator
Spencer Stevens, FHWA Office of Planning

Eco-Logical Webinar Series
Integrated Eco-Logical Framework (IEF)

- Process to guide transportation and resource specialists in the integration of transportation and ecological decisionmaking.
- Helps identify potential impacts to environmental resources very early in the planning process.
Steps of the IEF (and the Eco-Logical approach)

1. Build and strengthen collaborative partnerships
2. Integrate natural environment plans
3. Create a Regional Ecosystem Framework (REF)
4. **Assess effects on conservation objectives**
5. Establish and prioritize ecological actions
6. Develop crediting strategy
7. Develop programmatic consultation, biological opinion, or permit
8. Implement agreements, adaptive management, and deliver projects
9. Update REF
Elements of PEL

System-level Planning

- Linking Planning & NEPA
- Environmental Analysis Process (NEPA)
- Transportation Plans

Integrated Planning

Voluntary

Required

Conservation & Resource Management Information

Project-level Decisions
Integrated Planning

Opportunities to support multiple community goals and improve quality of life

Land Use System
Transportation System
Water Resources System
Other Natural, Cultural Resource Systems

Integrated Approach
Step 4: Assess Effects

Key actions

• Spatially relate proposed infrastructure to distribution of habitat priorities.

• Estimate effects of projects early in the planning process before detailed NEPA analysis.

• Transportation agencies with planning responsibilities can coordinate with resource agencies on data needs and assessment techniques.
Step 4: Assess Effects
Benefits of assessment in integrated planning

**Environmental stewardship**
1. An understanding of transportation effects and potential mitigation areas
2. Identification of agency preferences regarding avoidance, minimization, potential conservation, and restoration investments

**Project predictability**
1. Identification and quantification of mitigation needs from anticipated transportation impacts
2. Take advantage of mitigation opportunities available in the short-term that may no longer be available later, when the project is implemented
Agency Coordination: Data and Information Sharing

- Data from partner agencies can inform the assessment of proposed projects
- Basis for early consideration of the effects of alternative transportation solutions on environmental, community, and cultural resources
- Resource agency outputs relevant to transportation planning include:
  - State Wildlife Action Plans
  - Watershed Management Plans
  - Historic Resource Inventories
Agency Coordination: Documentation Benefits

- Synopsis of coordination: level of participation and how you coordinated.
- Identify transportation agencies involved in the planning study
- What steps will need to be taken with each agency during NEPA scoping?
An assessment of potential impacts of transportation projects can inform future regional mitigation activities.

Environmental mitigation activities are “intended to be regional in scope, and may not necessarily address potential project-level impacts.”

- 23 CFR 450.104
Benefits for Mitigation

Example:
South Carolina DOT – Carolina Bays Ecosystem Initiative

Example:
Mississippi DOT – Deaton Ecological Preserve
Contact Information

Spencer Stevens
FHWA Office of Planning
202/366-0149
Spencer.stevens@dot.gov
Eco-Logical Step 4: Assess Effects on Conservation Objectives

Amy Mangus, Leader
SEMCOG Plan Policy Group
mangus@semcog.org
Transportation & the Environment

- Transportation system impacts environment
- Goals of our process
  - Raise awareness of environmental issues in transportation planning/design
  - Implement environmentally friendly practices in construction/maintenance
  - Document in Regional Transportation Plan
Task Force

- Federal Highway Administration
- U.S. Geological Survey
- Little Traverse Bay Bands of Odawa Indians
- Michigan Departments of Geographic Information, Environmental Quality, Natural Resources, and Transportation
- Michigan State Historic Preservation Office/State Archeologist
- Local Road Agencies
- Environmental Interests
Regional Approach

- Identify environmentally sensitive resources
- Analyze possible impacts of transportation projects on resources
- Recommend mitigation guidelines during all transportation project phases
At What Stage is the Information Used?

- Prior to project selection
- Potential impacts after receiving list of projects
What This Process is Not

• Not a project level analysis
  – Complementary processes already in place to analyze impacts in detail

• Not a determining factor in project selection
  – Impacts do not necessarily indicate project should not be implemented
## Environmentally Sensitive Resources

<table>
<thead>
<tr>
<th>Water resources</th>
<th>Cemeteries</th>
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</thead>
<tbody>
<tr>
<td>Wetlands</td>
<td>Historic Bridges</td>
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<tr>
<td>Groundwater Resources</td>
<td>Heritage Routes &amp; Natural Beauty Roads</td>
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<tr>
<td>Floodplains</td>
<td>Historic Bridges</td>
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<tr>
<td>Woodlands</td>
<td>Nonmotorized Facilities</td>
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<tr>
<td>Historic Sites</td>
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</tbody>
</table>
Impact Analysis

- Buffer analysis around transportation projects
  - 250 feet – ¼ mile
- Determine which resources in proximity to environmentally sensitive resources
<table>
<thead>
<tr>
<th>Environmental Resource</th>
<th>Bridges</th>
<th>Congestion Capacity</th>
<th>Congestion Non-Capacity</th>
<th>Nonmotorized</th>
<th>Pavement</th>
<th>Rail</th>
<th>Study</th>
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</thead>
<tbody>
<tr>
<td>Lakes and Streams</td>
<td>250'</td>
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<tr>
<td>Designated Trout Lakes/Streams &amp; Natural Rivers</td>
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<td>Wellhead Protection Areas</td>
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<td>Sinkholes</td>
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<td>Trees</td>
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Sample Buffer Analysis

- Pavement project
- ¼ mile buffer
- Woodlands
- Possibly impacted woodlands
Figure 74
Projects Included in the 2040 Regional Transportation Plan

Note: Not all projects are represented on this map. Projects listed as "Various Roads or Bridges", a nonmotorized path that does not follow a street, or bus purchases are examples of projects that may not be mapped. Where possible, sub-projects were mapped.
## Possible Project Impacts

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Number of Projects Potentially Impacting Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Total Number of Projects Planned)</strong></td>
<td>Water Resources</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Bridge (47 projects)</td>
<td>30</td>
</tr>
<tr>
<td>Congestion - Capacity (109 projects)</td>
<td>91</td>
</tr>
<tr>
<td>Congestion - Non-Capacity (10 projects)</td>
<td>5</td>
</tr>
<tr>
<td>Nonmotorized (8 projects)</td>
<td>1</td>
</tr>
<tr>
<td>Pavement (283 projects)</td>
<td>228</td>
</tr>
<tr>
<td>Rail (0 projects)</td>
<td>0</td>
</tr>
<tr>
<td>Study (14 projects)</td>
<td>13</td>
</tr>
</tbody>
</table>

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1 Water resources consist of lakes and streams, designated trout lakes/streams, and Natural Rivers.
2 Groundwater resources consist of wellhead protection areas and sinkholes.
Source: SEMCOG.
Mitigation Guidelines

• Practices to be considered during all project phases
  – Planning/design
  – Construction/maintenance

• Overall guidelines applying to all projects

• Resource specific guidelines
Getting the Word Out

- Educational opportunities
- Information to project selection group
- Continued analysis in 2040 RTP
- Online mapping tool
Mitigation Guidelines

• Practices to be considered during all project phases
  – Planning/design
  – Construction/maintenance

• Overall guidelines applying to all projects

• Resource specific guidelines
Next Steps

- Resource agency coordination
- Continued refinement of analysis/guidelines
- Education and technical assistance for implementing agencies
Next Steps

- Adding additional data
- Implementing agencies
- Advanced assessment such as Monroe County Conservation Planning
Eco-Logical Step 4: Assess Effects on Conservation Objectives

Amy Mangus, Leader
SEMCOG Plan Policy Group
mangus@semcog.org
2013-2017 Five Year Transportation Program Projects and Unfunded Pavement Needs

- **5-Year Bridge Projects**
- **5-Year Road Projects**

**Remaining service Life:**
- **Category I: 0-2 Years**: These pavements typically require more expensive reconstruction and major rehabilitation improvements.
- **Category II: 3-7 Years**: These pavements typically require less expensive capital preventive maintenance improvements such as pavement sealing and thin overlays.
- **MITIP Corridor G South Analysis Area**

Miles:

0 2.5 5