Pilot for Assessing Indirect and Cumulative Effects during Metropolitan Transportation Plan (MTP)

Presented by
Taruna Tayal, Candice Andre, AICP
Alena R. Cook, PE

September 14, 2016
Types of Environmental Impacts

- Direct
- Indirect
- Cumulative

Indirect & Cumulative Effects (ICE) Assessment
Your poll will show here

1. Install the app from pollev.com/app
2. Make sure you are in Slide Show mode

Still not working? Get help at pollev.com/app/help
or
Open poll in your web browser
Your poll will show here

1. Install the app from pollev.com/app
2. Make sure you are in Slide Show mode

Still not working? Get help at pollev.com/app/help
or
Open poll in your web browser
**What “Integration” Is…**

...a planning process that provides a seamless connection between long-range transportation planning and project development that ultimately leads to supporting the timely delivery of projects.

| Land Use Planning and Community Vision | Long Range Transportation Planning | Project Planning (NEPA) |
Integrating Planning, Development, and Implementation Processes

Vision

Comp. Transport. Plan

Metro. Transport. Plan

Prioritization

STIP

ICE

NEPA

Design

ROW

Construction

Operations & Maintenance

NCDOT Integration
Integration…

- Enables a seamless transfer of information:
  - transportation needs
  - environmental & community considerations
  - long range planning decision making process

- Encourages better coordination, decisions, and documentation

- Meets legal requirements for use of long range planning information in project development (is NOT doing NEPA in long range planning)
Integration Linkages

Long Range Transportation Planning

- Problem Statement
- Planning Level Alternatives Analysis
- Community Impact Assessment

Project Development

- Purpose & Need
- Detailed Alternatives Analysis
- Community Impact Analysis
- Indirect & Cumulative Effects Screening

Indirect & Cumulative Effects Analysis

Public Involvement
Integration- ICE

- Best Practices developed by multi-agency team with oversight by leadership team
- Joint effort by long range planners & project development practitioners at NCDOT & FHWA, with MPOs, RPOs, commerce, and environmental resource agencies
- Tools include procedures, matrices, sample templates, & examples
- Assessments on both system-wide level and specific project proposal level
ICE Pilot New Bern Area MPO
New Bern Area MPO

- Craven County
- Newest MPO in NC
- Important Consideration for NBAMPO Transportation Plan
  - Improving Mobility
  - Conservation of Natural Environment
  - Cost-Benefit Ratio
Indirect & Cumulative Effects Assessment: NBAMPO MTP

- 4 Products
  1. Existing Conditions Assessment
  2. Future Growth Potential Assessment
  3. ICE Screening
     • Plan level
     • Proposed projects

- Include as appendix of MTP
Product 1: Existing Conditions Assessment

Population Density

Employment Density
Product 1: Existing Conditions Assessment

Environmental Features

Developable Land
# Product 1: Existing Conditions Assessment

## Product 1: MTP - ICE Plan-Level Existing Conditions Matrix: New Bern MTP Study Area

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Greater Likelihood</strong></td>
<td>&gt; 3% annual population growth</td>
<td>&gt; 3% increase New Jobs Expected</td>
<td>60% or greater of available land*</td>
<td>Services available [muni 100%; county 20% of area]</td>
<td>Development activity abundant</td>
<td>Less stringent; no growth management</td>
<td>Notable Feature(s): Abundant / More Sensitive</td>
<td>Not Expected</td>
</tr>
<tr>
<td><strong>Expected</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Likely</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Possible</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Not Likely</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Not Expected</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Lesser Likelihood</strong></td>
<td>No population growth or decline</td>
<td>No new Jobs or Job Losses</td>
<td>0 - 9% of available land*</td>
<td>Limited or no service available now or in future</td>
<td>Development activity lacking</td>
<td>More stringent; growth management</td>
<td>Notable Feature(s): Minimal / Less Sensitive</td>
<td>Possible Indirect Effects</td>
</tr>
</tbody>
</table>

Possible Indirect Effects
Product 2: Future Growth Potential Assessment

- Based on socioeconomic data for each of the Traffic Analysis Zones (TAZ) on forecasted population and employment growth
  
  - High growth potential = within next 10 years
  
  - Moderate growth potential = >10 years
ICE Assessment and Best Management Practices
MTP Project - ICE Screening

Draft MTP Projects:
- Roadway
- Public Transit
- Rail
- Bicycle

MTP Roadway Projects
# Indirect Effects Screening

## Product 3 - Part 1: MTP - ICE Screening Matrix for Indirect Effects, Plan-Level: New Bern Area MPO MTP Study Area (2040)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Likelihood</td>
<td>High</td>
<td>High</td>
<td>&gt; 3% annual population growth</td>
<td>&gt; 3% increase New Jobs Expected</td>
<td>40% or greater of available land*</td>
<td>Services available [muni 100%; county 20% of area]</td>
<td>Development activity abundant</td>
<td>Less stringent; no growth management</td>
<td>Notable Feature(s): Abundant / More Sensitive</td>
<td>x</td>
</tr>
<tr>
<td>Expected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likely</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x x</td>
<td>Likely Indirect Effects</td>
</tr>
<tr>
<td>Possible</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Not Likely</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Not Expected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Lesser Likelihood</td>
<td>Low</td>
<td>None</td>
<td>No population growth or decline</td>
<td>No new Jobs or Job Losses</td>
<td>0 - 9% of available land*</td>
<td>Limited or no service available now or in future</td>
<td>Development activity lacking</td>
<td>More stringent; growth management</td>
<td>Notable Feature(s): Minimal / Less Sensitive</td>
<td>x</td>
</tr>
</tbody>
</table>

## Likely Indirect Effects
Product 3: Indirect & Cumulative Effects

MTP Projects & Environmental Features

MTP Projects, Land Use, Projected Growth
Project D: Brices Creek Road Connector over Trent River

- 3 alternatives
- Horizon Year 2040
- Indirect Effects Screening =

<table>
<thead>
<tr>
<th>Alt</th>
<th>Indirect Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Likely Indirect Effects</td>
</tr>
<tr>
<td>B</td>
<td>Likely Indirect Effects</td>
</tr>
<tr>
<td>C</td>
<td>Possible Indirect Effects</td>
</tr>
</tbody>
</table>

- Accessibility
- Environmental Features
Product 3: MTP-ICE Screening Matrix for Cumulative Effects: Plan-Level

<table>
<thead>
<tr>
<th>Rating</th>
<th>Notable Cultural Features</th>
<th>Notable Community Features</th>
<th>Notable Water Quality Features</th>
<th>Notable Natural &amp; Habitat Features</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater</td>
<td>Unique Resources Not Protected / Recognized</td>
<td>Unique Resources Not Protected / Recognized</td>
<td>Unique Resources Not Protected / Recognized</td>
<td>Unique Resources Not Protected / Recognized</td>
<td></td>
</tr>
<tr>
<td>Likelihood</td>
<td>Past Actions</td>
<td>Current Activities</td>
<td>Future Development</td>
<td>Past Actions</td>
<td>Current Activities</td>
</tr>
<tr>
<td>Expected</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Possible</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Not Likely</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Lesser</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Features Incorporated in Local Planning and Protection</td>
<td>Features Incorporated in Local Planning and Protection</td>
</tr>
</tbody>
</table>

Possible Cumulative Effects
Product 4: Recommended Best Management Practices

- Green Infrastructure Planning / Green Growth Toolbox
- Revising Zoning Ordinances
- Smart Growth Ordinance
- Habitat Cohesion and Protection
- Farmland Protection (Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR) programs)
Product 4: Recommended Best Management Practices

- Start with an accurate baseline
- Prioritize important resources in local plans!
- Use the resources available
  - Planning guidance
  - Funding opportunities
  - Grant-writing assistance
- Available for preserving existing character and growth opportunities
- Implementation of BMPs will be the key
Conclusion and Lessons Learned
Ultimate Benefits of ICE

- Inter Agency Coordination
- Identify challenges/obstacles early in planning process
- Enhance project credibility; reduce risk/uncertainty
- Provide project planning and development baseline
- Broader assessment of impacts and outcomes
- Informs alternative analysis
- Help tell the story of project need, purpose, and benefit
- Interim Year analysis may be beneficial
- Yield specific BMPs for local communities
Lessons Learned

- Work closely with MPO/locals
- Tailor assessment to the area
- Robust GIS mapping
- Provide local training & workshops on recommended BMPs
- Reflect implementation of BMPs in future MTP updates
Your poll will show here

1. Install the app from pollev.com/app
2. Make sure you are in Slide Show mode

Still not working? Get help at pollev.com/app/help
or
Open poll in your web browser
Acknowledgments

- NBAMPO – Maurizia Chapman and Kim Maxey
- NCDOT, TPB – Alena Cook and Dan Thomas
- NCDOT, PDEA – Bob Deaton
- FHWA – Bill Marley, George Hoops

Questions / Comments