Climate Change Adaptation Practices in Support of Mitigation: Evaluating the Progress of Transportation Planning Agencies

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BECC 2011 Conference
Need for Adaptation

Efforts are focused on mitigation...
BUT.....need to be adapting as well!
Especially within transportation sector.

Climate Action Plans (Mitigation)  State Adaptation Plans

Pew Center on Global Climate Change, 2009
Overview of Project

- **Goal:** Evaluate agencies’ behavior in terms of their integration of adaptation practices in support of mitigation within the transportation planning process.

- **Method:**
  - Request participation from MPOs
  - Review MPOs reports/documents on climate change
  - Survey MPOs in Mid-Atlantic Region
  - Evaluated results
### Survey Method

**MPOs surveyed**
- WILMAPCO
- DVRPC
- SEDA-COG
- Dover/Kent MPO
- Southwestern PC

**Questions based on:**
- Adaptive Capacity
- Actions:
  - Infrastructure & Service Changes and Improvements
  - Data and Information
  - Planning and Evaluation
  - Coordination and Cooperation

<table>
<thead>
<tr>
<th>Name</th>
<th>Jurisdiction</th>
<th>Population (2010)</th>
<th>Area (Sq Mi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEDA-COG</td>
<td>Central PA</td>
<td>12,702,379</td>
<td>6,366</td>
</tr>
<tr>
<td>DVRPC</td>
<td>Delaware Valley (NJ, PA)</td>
<td>5,626,318</td>
<td>3,811</td>
</tr>
<tr>
<td>WILMAPCO</td>
<td>New Castle County, DE and Cecil County, MD</td>
<td>639,457</td>
<td>795</td>
</tr>
<tr>
<td>D/KC MPO</td>
<td>Dover and Kent County, DE</td>
<td>167,364</td>
<td>602</td>
</tr>
<tr>
<td>SPC</td>
<td>Pittsburg, PA</td>
<td>2,574,953</td>
<td>7,110</td>
</tr>
</tbody>
</table>
## Survey Results - Barriers to Adaptation

<table>
<thead>
<tr>
<th>Barriers</th>
<th>WILMAPCO</th>
<th>Dover/Kent</th>
<th>SEDA-COG</th>
<th>Southwest, PA</th>
<th>DVRPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of supportive policies, standards, regulations, and design guidance</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Existing regulations that prevent mitigation or adaptation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of availability of resources (such as in-house expertise)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Lack of useful examples or models of adaptation actions</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Limited budget</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Short term nature of transportation planning (focusing on current needs)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Limited understanding of the current climate risks and vulnerabilities</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Belief that there is too much uncertainty associated with climate change</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Perspective that climate change is not an immediate threat or not an issue</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Survey Results - Category Importance

Category Importance by MPO/RPO

1 - Infrastructure and Service Changes and Improvements
2 - Data and Information
3 - Planning and Evaluation
4 - Coordination and Cooperation

Levels of Importance Scale:

- WILMAPCO
- Dover/Kent
- SEDA-COG
- Southwest PA
- DVRPC

Categories of Adaptation Practices:
Category #1-Infrastructure and Service Improvements

Adaptation Practices for Category #1-Infrastructure, Service Changes and Improvements

Level of Progress Scale

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No Knowledge</td>
</tr>
<tr>
<td>2</td>
<td>Awareness</td>
</tr>
<tr>
<td>3</td>
<td>Actively Exploring</td>
</tr>
<tr>
<td>4</td>
<td>Integrated into Existing Plans</td>
</tr>
<tr>
<td>5</td>
<td>Supporting Implementation</td>
</tr>
</tbody>
</table>

1-Alternative Fuel Infrastructure
2-Fuel Efficient Vehicles Usage
3-Alternative Energy and Energy Efficiency
4-Urban Revitalization
5-HOV Lanes
6-Toll Facilities
7-ITS Programs
8-Park and Ride Locations
9-Transit Stops
10-Bicycle and Pedestrian Facilities
11-Regional Transit Network

WILMAPCO
Dover/Kent
SEDA-COG
Southwest PA
DVRPC
Category #3-Planning and Evaluation

Adaptation Practices for Category #3

Level of Progress Scale

- 1: No Knowledge
- 2: Awareness
- 3: Actively Exploring
- 4: Integrated into Existing Plans
- 5: Supporting Implementation
Future Goals

- **Expand survey**
  - 8 Climate Change Impact Regions in US
    - Survey MPO/RPO outside NE Mid-Atlantic
  - Recommendations for implementing adaptation practices
    - Strategies, tools, methods, and improvements to existing plans
Thank you!

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  - Dr. Sue McNeil (University of Delaware)
  - Emily Liggett (Bucknell University)
- **Contact:** michelle.oswald@bucknell.edu