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NATIONAL TRANSPORTATION POLICY PROJECT

You Can't Manage What You Can't Measure

Performance Metrics as a Foundation for A New Surface Transportation Policy

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The Transportation-Land Use-Connection
Economic Crisis as An Opportunity for Reform
October 17, 2009

NTPP Core Principles

- Clear federal role
- Promote performance
- Mode neutrality
- Link to energy and environment

Performance Driven: New Vision for U.S. Transportation Policy, June, 2009
http://www.bipartisanpolicy.org/projects/national-transportation-policy-project

Proposed Federal Goals

- Economic Growth
- National Connectivity
- Metropolitan Accessibility
- Energy Security and Environmental Protection
- Safety

Proposed National Performance Metrics

Economic Growth	Energy & Environmental Protection	Safety
Metropolitan Accessibility 1. Access to jobs and labor 2. Access to non-work activities	5. Petroleum consumption	7. Fatalities and injuries per capita
National Connectivity 3. Network Utility 4. Corridor Congestion	6. CO_2 Emissions	8. Fatalities and injuries per Vehicle Miles Traveled (VMT)

Economic Growth Metric: ***Metropolitan Accessibility***

- *Accessibility measures better reflect the interaction between transport systems and land use*
- *Uses a utility-based model to measure accessibility*
- *Captures complex choices, congestion and delay*

1. Access to jobs and labor

- captures agglomeration benefits
- not mode-specific and can be applied across a region of any size

2. Access to non-work activities

- access to non-work destinations, such as hospitals, universities, parks, and other recreational opportunities

Economic Growth Metric:
National Connectivity

3. Network Utility

- how well the transportation system connects different points of economic activity to one another on a national scale
- helps to identify routes that should be connected more directly or where additional links are needed
- metric would evaluate what percentage of population and goods can be accessed by the network within a given period of time

4. Corridor Congestion

- a measure to evaluate performance on specific routes or corridors
- programs should be evaluated based on how much they reduce congestion in the specific corridor or corridors they affect

Energy & Environmental Protection Metrics:

- the use of both metrics is intended to ensure that one public policy objective is not unwittingly sacrificed in the pursuit of the other

5. Petroleum consumption

- overall performance metric for assessing energy security benefits
- States and metropolitan areas would be required to forecast the effects of their transportation programs on direct petroleum fuel consumption (gasoline and diesel)
- captures the broadest range of energy-related transportation program impacts, including the net impact of changes in fuel efficiency, vehicle activity, and fuel type
- allows us to combine the impacts of passenger and freight travel and evaluate options on a mode-neutral basis
- paucity of data on fleet fuel efficiency aggregated at the state or local level may be enhanced with the Motor Vehicle Emissions Simulator (MOVES) model recently developed by the U.S. Environmental Protection Agency (EPA); should allow for improved estimates of petroleum consumption, even in smaller geographic areas

Energy & Environmental Protection Metrics:

6. CO_2 Emissions

- CO_2 emissions account for the majority (95 percent) of transportation-related greenhouse gas emissions and are easy to calculate from available information on fuel consumption
- important to account for upstream impacts in designing a climate change performance metric
- to calculate lifecycle CO_2 emissions, analysts must account for emissions from fuel production, refining, and distribution, as well as emissions from other sources, such as land-use changes
- both the Maine DOT and the Metropolitan Transportation Commission (MTC), the MPO for the San Francisco Bay Area, have estimated the CO_2 emissions impacts of their long-range transportation plans

Safety Metrics

7. Fatalities and injuries per capita

- important to provide a clear understanding of the scale of the problem and can be used across all modes

8. Fatalities and injuries per Vehicle Miles Traveled (VMT)

- important as it relates fatalities to the exposure to risk and focuses directly on the most dangerous mode of travel—the automobile

Proposed NTPP Restructuring of Federal Programs

Formula Preservation Programs
75% of All Funds

Competitive Capacity Expansion Programs
25% of All Funds

Sustaining National Connectivity (35%)
Preserving national connections

Sustaining Core Assets (30%)
Preserving metropolitan infrastructure

Improving Federal Connections (12.5%)
Expansion of national network

Improving Core Transportation (12.5%)
Expansion of metropolitan capacity

Essential Access Program (2%)
Maintaining access for all Americans

Performance Bonus
(8%)

Apply Performance Measures

Application of **Suite of Metrics** at Program Level at State and MPOs

Key Characteristics:

- ✓ Mode-neutral
- ✓ Comprehensive and systemic
- ✓ Non formulaic
- ✓ Outcome-oriented
- ✓ Advancing Transparency & Accountability

Critical Application Challenges Requiring Development

- Preserving rigor and objectivity while recognizing both importance and limitations of quantitative data
- Accommodating, not ignoring areas with major data gaps
- Applying for widely varying investments across regions
- Applying across regions/nationally recognizing variations in regional challenges
- Advancing continuous improvements in data, research , modeling, and public communication and involvement

Prospects for Integrating Energy, Environmental and Land Use Impacts in Transportation Decision Making

- See federally defined metrics as the foundation of both performance and accountability
- Measure in FY2010 Appropriations and Extension legislation
- Challenge of developing rigorous and realistic testing and pilot programs

Thank you

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