

Limitations of the USDOT Investment Analysis

**Briefing for the
National Surface Transportation Revenue
and Policy Study Commission
July 25, 2006**

■ Scope of the Analysis

■ Analytical Limitations

Scope of the Analysis

- Modes
- Capital Focus
- Funding Sources
- Time Horizon
- National Focus

Scope of the Analysis

Modes

- Modes in C&P Analysis
 - Highways and Bridges
 - Public Transit
- Modes not included
 - Intercity Passenger Transportation
 - » Bus
 - » Rail
 - Freight Rail
 - Intermodal Transfer Facilities

Scope of the Analysis

Capital Focus

- Investment analysis is focused on capital expenditures only
- Alternative, non-capital expenditures addressed in only a limited way
- Other Expenditure Types
 - Maintenance and Operations
 - Planning
 - Administration

Scope of the Analysis

Funding Sources

- Investment analysis is independent of funding sources
 - No link to Federal program
- Linking investment needs analysis to Federal funding alternatives requires an intermediate step to define Federal role and responsibilities

Scope of the Analysis

Time Horizon

- C&P investment analysis covers a 20-year period
 - Using a different time horizon would produce different results
- Estimates are in constant, base year dollars
 - Matching investment analysis with projected revenue streams requires assumptions about future inflation

Scope of the Analysis

National Focus

- C&P investment analyses are at the national level only
 - Disaggregations by investment type, population area size, functional system
 - Other breakdowns would require additional analysis

Analytical Limitations

- Feasibility of Investments
- New Technologies
- Investment Purpose
- Infrastructure Types
- Benefits and Impacts
- Network Effects
- Multimodal Analysis

Analytical Limitations Feasibility of Investments

- Analysis assumes there is always a potential engineering solution to any condition or performance problem (though it may not be an affordable or a cost-beneficial solution)
 - Ignores non-economic factors that might prevent a project from ever being built, even if economically justified.
- Analysis assumes all improvements can be implemented in a timely manner
 - Ignores potential for delays as part of the planning process for individual proposed projects.

Analytical Limitations New Technologies

- Analysis generally reflects existing technologies and techniques. Technological advances in critical areas would affect results, including:
 - Construction methods and materials
 - Operations strategies and ITS Technologies
 - Transit vehicle technologies
- Potential impacts of some new technologies can be estimated directly or indirectly

Analytical Limitations

Investment Purpose

- Analysis addresses investments motivated by current or future condition or performance deficiencies
- Other potential motivations
 - Security and Emergency Preparedness
 - Economic Development
 - Political Factors

Analytical Limitations

Infrastructure Types

- Improvements on some infrastructure types are only partially accounted for in the analysis
 - Intermodal Connectors
 - Highway-Rail Grade Crossings
 - Interchanges
 - New Limited-Access Highways
 - Congressional High Priority Corridors

Analytical Limitations

Benefits and Impacts

- Other benefits and impacts not considered in the analysis
 - Environmental Impacts (other than emissions)
 - Productivity Effects
 - Equity
 - » Social Equity
 - » Cost Allocation

Analytical Limitations

Network Effects

- Highways and Bridges
 - Analysis unit is individual segments
 - Limited ability to capture network effects in analysis
 - Especially important for investments and/or strategies that target demand on specific facilities (e.g., pricing)
- Transit
 - Analysis is at the operator-mode level

Analytical Limitations

Multimodal Analysis

- Highways, bridges, and transit investments analyzed independently of one another
 - In some cases, highway and transit may represent alternative transportation investments in the same corridor
 - In other cases, highway and transit improvements may complement one another

Analytical Limitations

Conclusions

- Analytical limitations are often related to data limitations
- The *Afterword: A View to the Future* section of the C&P report contains a more thorough discussion of these analytical issues