

National Capital Region Transportation Planning Board



Briefing on a Comprehensive Cost-Benefit Analysis Framework for Assessing Transit Investments, and Possible Implications for Transportation Planning in the Washington Region

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HDR|Decision Economics

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Comprehensive Cost-Benefit Analysis

- **Practices and procedures firmly in place for virtually all types of public infrastructure**
- **Transit the exception; assessment confined to ridership and related performance measures (transit user time savings)**
- **Ridership reflects mobility, but not other objectives and benefits of transit:**
 - *Congestion management*
 - *Environment*
 - *Safety*
 - *Economic development*
 - *Transit-oriented development*

Why is Transit Treated Differently?

- **Stems from FTA “New Starts Process”**
- **FTA process designed to rate applicant projects for pool of federal funds**
- **FTA process not designed to guide local infrastructure investment choices and trade-offs**
- **FTA process not designed to enable comparisons of value among infrastructure alternatives (highway options; congestion pricing options; technology options)**

Risks in the Current Approach

- **Failure to generate a level playing field for transportation alternatives**
- **Failure to recognize all sources of value in comparing local alternatives**
- **Risk of mistakenly rejecting good transit projects**
- **Failure to recognize all financing opportunities**
- **Not shaping projects to serve local objectives**

Alternative Approach for Regional Investment Planning

- **Cost-Benefit Analysis to recognize all sources of transit value**
- **Uses conventional tools**
- **Applicable both for analysis and as a deliberative public process**

Comprehensive Recognition of Transit Benefits

- **Mobility**
- **Congestion Management**
- **Community Economic Development**

Mobility

- **Time savings to transit users**
- **Cash savings to low income households for reallocation to housing, nutrition, child care ...**
- **Cross-sector benefits: reduced financial burden on social services**

Congestion Management

- **Reduced delay**
- **Improved reliability, predictability and productivity**
- **Reduced environmental emissions**
- **Lower vehicle operating costs**
- **Safety (lives, injuries, property)**

Community Economic Development

Location Efficiency

- High density economic activity
- Less demand for motorized trips
- Reduced auto-ownership requirements, dependence
- Higher density life-style

Measurement

- Development benefits measured as increased economic land value

CASE: Light Rail (Austin, Texas)

Transit investment generates value in all three categories

Category of Benefits	Green Line	Orange Line
<u>Total Benefits (Million U.S. dollars)</u>	<u>\$1,369.9</u>	<u>\$233.6</u>
Congestion Management	\$ 852.5	\$106.5
Mobility	\$ 224.0	\$ 32.5
Community Economic Development	\$ 293.5	\$ 94.6

CASE: Transit v. Highway Investment (Cincinnati, Ohio)

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Transit investment can outperform highway alternatives

	BRT, Region-wide	Light Rail Region-wide	New Highway Capacity
Total Cost	\$522	\$6,218	\$1,209.1
Total Benefits	\$1,141	\$10,784	\$1,365.2
Net Benefits	\$619	\$4,566	\$156.1
Internal Rate of Return	27.1%	8.7%	4.9%

CASE: Streetcar Investment (Cincinnati, Ohio)

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Focus on ridership benefits alone can miss financing opportunities and lead to the mistaken conclusion that a project is not economically worthwhile

	Millions of Constant Dollars (Present Value)
Congestion Management	\$16.4
Mobility	\$35.2
Economic Development	\$378.9
Total Costs	\$115.8

Conclusions

Cost-Benefit Analysis feasible and proven

- *Enables quantitative understanding of significance of transit investment for economic well-being of region*
- *Facilitates understanding of development-based financing capacity of transit investment*
- *Facilitates community understanding, deliberation and consensus*
- *Allows comparative ranking of alternative scenarios for the region, including transit, highways, pricing and other policy options*