

# 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**

*June 18, 2008*

HDR|Decision Economics

# 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***

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

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

11

*Transit investment can outperform highway alternatives*

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

# CASE: Streetcar Investment (Cincinnati, Ohio)

*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)
<b>Congestion Management</b>	<b>\$16.4</b>
<b>Mobility</b>	<b>\$35.2</b>
<b>Economic Development</b>	<b>\$378.9</b>
<b>Total Costs</b>	<b>\$115.8</b>

# 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***