



# Measuring the Economic Impact of Public Transportation Investment

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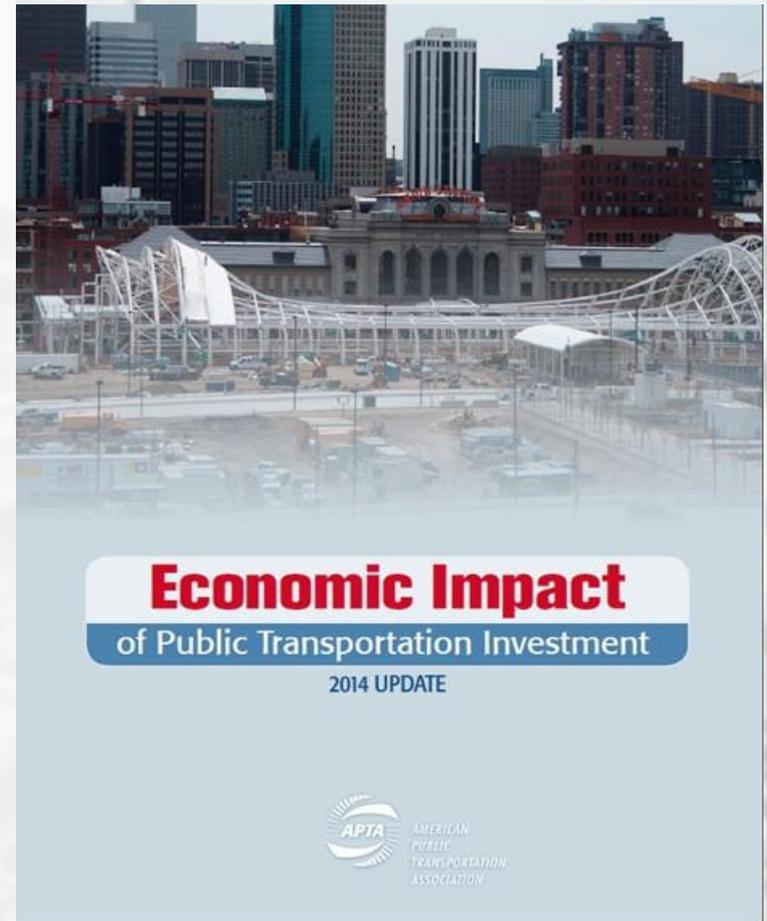
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# Why Economic Studies?

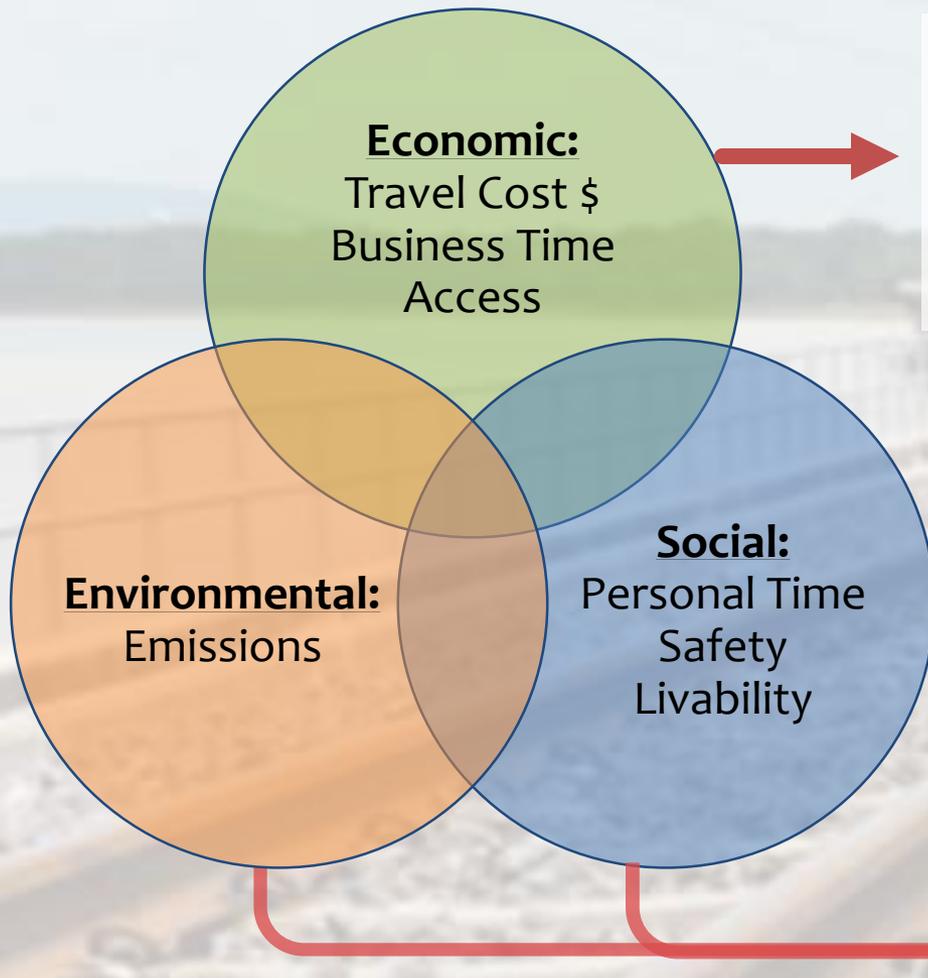
- Show the value of funding local public transportation.
- Show how everyone gains from it.
- Gain public support for financing, regulatory approvals new projects & initiatives.
- Allow public transportation to catch up with other modes that routinely demonstrate their value to the public.

# Agenda

- Review of established national methodology
- Adapting methods to apply for local impact studies
- Three local analysis options for transit agencies
  - Fully in-house analysis
  - Leveraging support from MPOs or State DOTs
  - Specifying content for university or consultant studies



# Established National Methodology



## ***\$ flow in the economy:***

- Impacts of Spending
- Cost + Productivity Impacts

## ***value of non-money benefit***

- Willingness to pay

# Four Types of Economic Analysis

	Analysis Type	Description
1	<b>Economic Contribution of Transit Agency</b> <i>(role in economy)</i>	<ul style="list-style-type: none"><li>• Actual \$ income and jobs supported (directly or indirectly) by agency payroll, spending and user reliance</li></ul>
2	<b>Economic Impact of Transit System</b> <i>(compared to no transit)</i>	<ul style="list-style-type: none"><li>• Actual \$ income and jobs created by a more productive economy, enabled by user cost savings, expanded access to jobs, less congestion for cars.</li></ul>
3	<b>Societal Benefits of Transit System</b> <i>(benefit-cost analysis)</i>	<ul style="list-style-type: none"><li>• <b>Value of benefits</b> associated with travel time, cost, environment, safety, parking-land use, livability</li><li>• Includes both \$ money and non-money benefits</li></ul>
4	<b>Impact of Proposed New Services</b> <i>(compared to no action)</i>	<ul style="list-style-type: none"><li>• Effects on land values, land uses and business activity</li><li>• Effects on \$ income and job creation in the economy</li></ul>

# 1. Economic Contribution of Transit Agency

## ***Spending Impact:***

How the agency's operation supports jobs + income in the community.

- Not the full story, but the easiest to do
- Uses readily available information

# Spending generators

## Capital Investment

Facilities (stations, parking, maintenance facilities, offices)

Equipment (vehicles, guideway elements, control systems)

Construction services

## Ongoing Spending

Payroll (drivers, operations/repair staff, administration)

Materials (fuel, parts, communications)

Services (maintenance, business services)

# Calculation of broader economic contribution

## Direct and multiplier (indirect & induced) effects on the economy



### **Direct sales**

*Transit agency contracts for new terminal construction*

### **Direct jobs & wages**

*Construction company employs workers*



### **Indirect sales**

*Construction company pays a contractor for testing services*

### **Indirect jobs & wages**

*Contractor employs workers*



### **Induced sales**

*Workers buy groceries*

### **Induced jobs & wages**

*Grocery stores employ workers*

# Spending Effect: APTA National Findings

*The contribution of transit spending to the US economy is impressive,*

Jobs Generated in the U.S. per Billion Dollars of Spending on Public Transportation

Job Generation per \$ Billion of Spending	Capital Spending	Operations Spending	National Average
Direct Effect	5,063 – 5,822	11,364 – 13,069	9,551 – 10,984
Indirect Effect	3,679 – 4,231	1,863 – 2,142	2,385 – 2,743
Induced Effect	5,117 – 5,885	7,826 – 9,000	7,047 – 8,104
Total Jobs	13,859 – 15,938	21,053 – 24,211	18,983 – 21,830
Recommended Value for Use	15,900	24,200	21,800

*but national ratios cannot be applied for local impacts, because bus & rail equipment mix varies, and not all manufacturers and suppliers are local.*

*That is why local data and local multipliers are needed.*

# Local transit dependency can also be shown

- Describe the portion of a region's economy that is facilitated by transit, without the use of scenarios
- Most notably: transit's *role in providing access to jobs*

## Colorado Springs example

Colorado Springs - occupations of those who report using transit most often for work

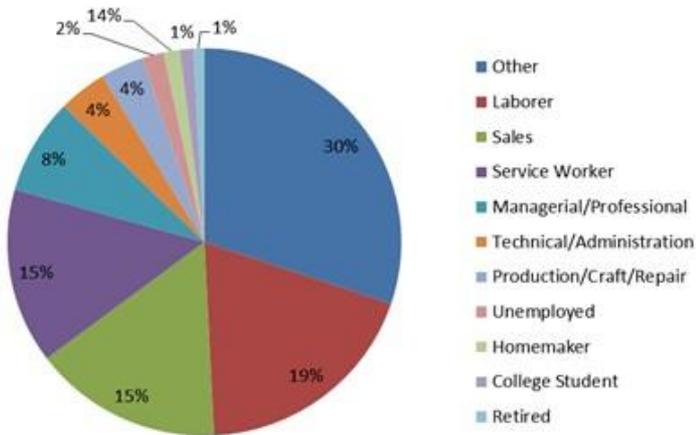


Table 11. Annual Economic Contribution of Transit Commuters to the Grand Junction County Economy (Top Ten Industries By Employment – Mesa County)

Description	Employment	Labor Income	Value Added	Output
Health & social services	166	\$5,051,687	\$5,570,598	\$9,535,840
Accommodation & food services	135	\$2,147,196	\$3,411,131	\$6,579,176
Retail trade	109	\$2,572,739	\$4,012,657	\$5,734,676
Professional- scientific & tech services	86	\$3,232,807	\$4,828,260	\$7,884,332
Educational services	84	\$2,725,378	\$4,188,032	\$7,630,400
Administrative & waste services	71	\$1,775,587	\$2,766,642	\$4,505,814
Government & non NAICs	68	\$1,875,990	\$2,179,687	\$2,449,010
Finance & insurance	58	\$1,891,870	\$5,539,790	\$11,165,146
Other services	42	\$1,362,971	\$1,553,102	\$2,642,194
Manufacturing	36	\$1,265,248	\$2,549,917	\$10,320,834

Source: Impact analysis for planning (IMPLAN) software package, IMPLAN Group LLC

# Economic Contribution: Reporting Findings

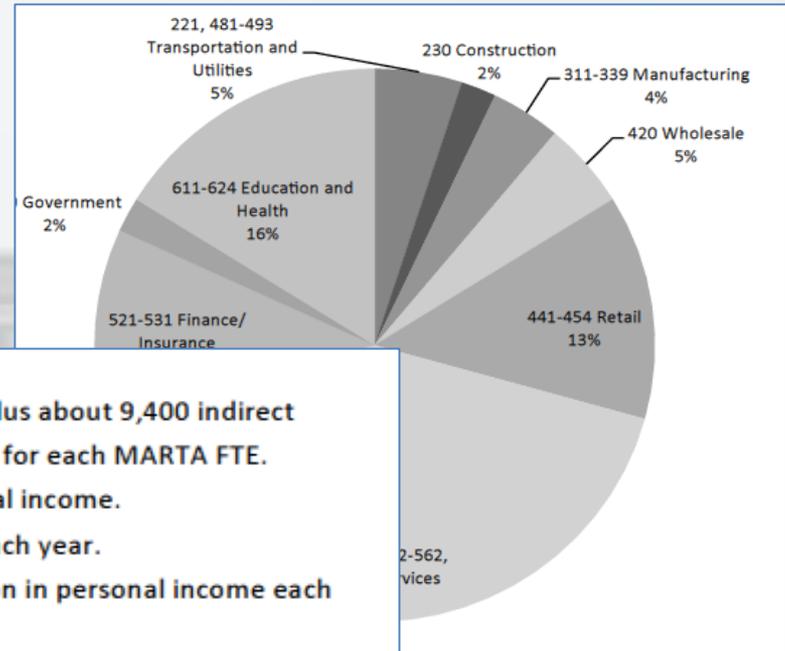
*Not just big numbers, also show how jobs are supported throughout the community*

## The Economic Impact of the Metropolitan Atlanta Rapid Transit Authority on the Economy and Labor Mobility of the Region

December 2011

### Major Findings

- MARTA's operating budget supports 4,500 direct employment jobs plus about 9,400 indirect and induced jobs in the state—that is, more than two additional jobs for each MARTA FTE.
- Those jobs provide Georgians with more than \$700 million in personal income.
- MARTA's capital budget supports 10,000 to 20,000 jobs in Georgia each year.
- Jobs supported by the capital budget provide \$500 million to \$1 billion in personal income each year.
- Based on responses to the 2011 MARTA Ridership Survey, half of all MARTA riders are using the bus and rail systems to commute to jobs in the service region.
- Nearly 65,000 workers in the Atlanta area use MARTA for their daily commute.
- Nearly 41,500 of these workers rely exclusively on MARTA to get to work and have no alternative means of transportation.
- Of Atlanta's 18 fastest-growing industry sectors (out of 54), 14 are among those whose workers rely heavily on MARTA for transportation to and from work.
- The economic activity produced by MARTA-dependent workers supports about 36,000 additional jobs.



## 2. Economic Impact of Transit System

### ***Efficiency - Travel Cost Reduction Impact:***

How the transit system saves money for riders, reduces congestion for car users, reduces parking needs, and expands access to jobs – increasing business efficiency.

- A broader story. Requires scenarios.
- Requires MPO or state DOT data on traffic levels, travel times and markets served

# Transportation Efficiency Effects

Savings for transit users *AND* automobile & truck travelers



Direct traveler benefits from transit:

- Travel Time Savings
- Vehicle operating cost + parking cost savings
- Reliability  
(if congestion is reduced)

Economic impacts derived from savings for:

- “On-the-clock” business travel
- Commute trips (employers pay a premium to compensate)
- Freight (on the roads)

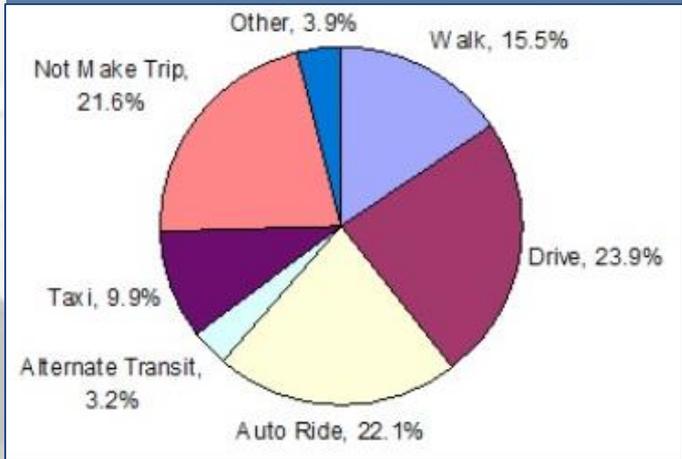
# Transportation Efficiency Effect: Scenarios

Compare travel costs under different scenarios:

- Expansion versus contraction of service
- A world with and without transit

Requires an understanding of local transportation demand and trip-making patterns.

Alternative Mode of Travel If Public Transportation Agency Were to Cease Operation



Source: *A Profile of Public Transportation Passenger Demographics and Travel Characteristics Reported in On-Board Surveys* (APTA, 2007).

# Efficiency: Long-Term Impact of Transit Service

## Annual Costs of New Automobile Ownership

Variable Cost	Per Mile
Gas	\$0.1528
Maintenance	\$0.0497
Tires	\$0.0100
Total	\$0.2125
Annual Miles Per Household	15,000
Annual Mileage Cost	\$3,188
Fixed Cost	Per Car
Insurance	\$1,029
License and Registration	\$611
Depreciation	\$3,571
Finance Charge	\$848
Annual Fixed Cost	\$6,059
<b>Total Yearly Driving Cost</b>	<b>\$9,247</b>
+Parking Cost	\$1,863
Total with Parking	\$11,109
-Potential Cost of Transit Pass	-\$1,006
<b>Net Annual Household Savings of Relinquishing 1 Full-Size Sedan and Using Transit Instead</b>	<b>\$10,103</b>

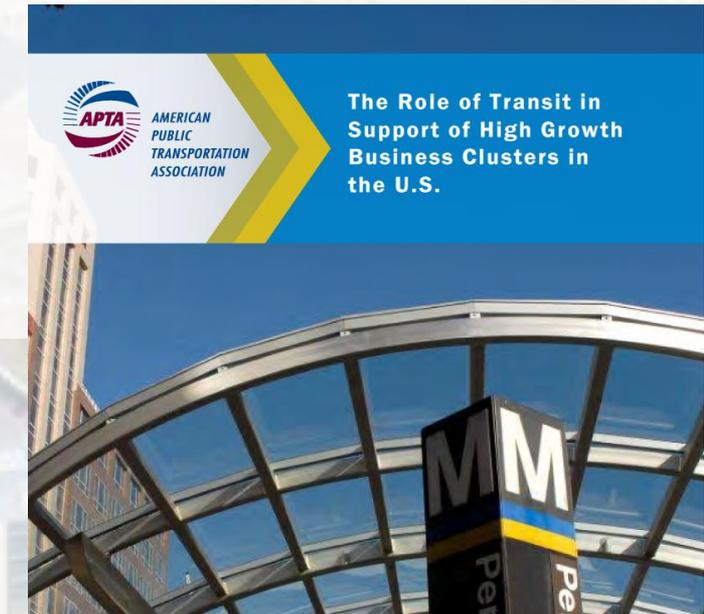
- Cost savings from reduction in automobile ownership
- Broader changes in urban density
- Changing trip lengths and automobile dependency

Source: APTA

# Long-Term Impact of Transit on Market Access

## Business Productivity Benefits: “Agglomeration Economies”

- Access to a larger and more diverse **labor market** – better matching of needed skills
- Access to a broader **customer base** – more efficiently serving the market (recreation, etc.)
- **Knowledge-sharing** facilitated by easier interactions between businesses (and universities)



# Economic Impact Results Require Scenarios

## *Double service? Cut service in half? No transit?*

Exhibit 3-10. Estimate of Scenario Impacts on the Economy, 2030  
 Difference between "Current Trend" Scenario and "Doubling Ridership" Scenario  
 (effect of investing \$13 billion per year)

*APTA national study*

Form of Impact	Annual Magnitude of Change After 20 Years*
<b>Households: Disposable Income</b>	<b>+18.4 billion</b>
<i>from cost savings to public transportation passengers</i>	<i>( + \$6.8 billion )</i>
<i>from savings in auto user operating costs</i>	<i>( + \$6.2 billion )</i>
<i>from savings in auto ownership costs</i>	<i>( + \$5.4 billion )</i>
<b>Business: Productivity</b>	<b>+ \$10.1 billion</b>
<i>from labor market access enhancement</i>	<i>( + \$5.0 billion )</i>
<i>from auto/truck operating cost reduction</i>	<i>( + \$5.1 billion )</i>
<b>Tax Impacts</b>	<b>+ \$4.4 billion</b>
<i>from Federal Tax Revenue</i>	<i>( + \$3.3 billion )</i>
<i>from State &amp; Local Tax Revenue</i>	<i>( + \$1.1 billion )</i>
<b>Economic Impact</b>	
<i>Total Household and Business Impact</i>	<b>+ \$28.5 billion</b>
<b>Equivalent Job Benefit</b>	<b>410,820</b>

# Making the Local Economic Case for Transit

Plan for a primer on how to do it, for APTA members

- ***Level 1 – DO IT YOURSELF***  
Contribution to supporting jobs & income in the economy.
- ***Level 2 – DO IT IN CONJUNCTION WITH MPO or DOT***  
Impact on economic growth, counting travel time and cost savings and access impacts.
- ***Level 3 – REQUIRES A RESEARCH CONSULTANT***  
Impact of specific investments and/or policies  
Specify checklist of elements to include for a good study.

# Economic Assessment: Within Reach?

*Level I: contribution of transit agency operations to the local economy*

- Straightforward analysis
- Only a partial accounting of impacts
- Assessment based on agency data: staff, payroll and budgets
- Local multipliers (e.g. IMPLAN)
- Equivalent to analysis routinely performed by airports
- **Attainable with in-house resources**

# Economic Assessment: Within Reach?

## Level II: *Transportation efficiency effects*

- Scenario analysis
- A more complete view of transit impacts
- Requires additional information on local travel patterns which are normally kept or calculated by MPOs (or State DOTs)
- Economic model such as TREDIS or REMI TranSight
- **Attainable with common agency partnerships**

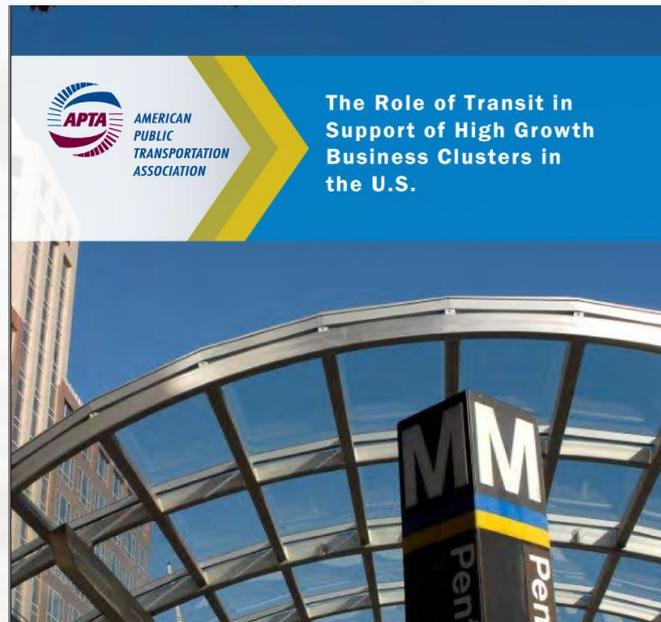
# Economic Assessment: Within Reach?

## Level III: Long term impacts

- More complex land-use/transportation relationships
- Advancing state of practice
- **Likely to require outside expertise**
- **Agencies can intelligently specify desired work**

# For More Information

- APTA Reports on transit economic impacts  
[www.apta.com/resources/reportsandpublications](http://www.apta.com/resources/reportsandpublications)



- EDR Group Reports on transit economic impacts  
[www.edrgroup.com/library/public-transport-passenger-rail](http://www.edrgroup.com/library/public-transport-passenger-rail)