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A Tool for Assessing the Economic Impacts of
Spending on Public Transit


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Center for Urban Transportation Research | University of South Florida

OUTLINE

- Motivation
- The tool
- The basic method
- Focus on three features
- Data requirement
- Application to Central Florida
- Select guidance
- Additional information



2

MOTIVATION

- Potential benefits of providing transit services
 - Transportation benefits (e.g., reduced emissions)
 - **Economic impacts**
- Need for information on transit's economic impacts
- Current sources of information
 - Locally funded studies: costly and time-consuming
 - Results from larger geographies or other areas: limited relevance & can be seriously misleading
- Developing an Excel-based tool
 - Providing objective, current, and area-specific results
 - Low-cost and easy to use
 - Flexible



3

THE TOOL

- Tool components
- What it does and does not do
- Applicability



4

Tool Components

- COVER – main features + project report
- INPUT – all required data entered here
 - Spending data from NTD for existing service
 - Multipliers from RIMS II
- CALCULATIONS – does all calculations
- RESULTS – for a range of options



5

What the Tool Does & Does Not Do

- What it does estimate
 - economic impacts of spending on transit through its ripple effects in the local economy
- What it does not estimate
 - transportation benefits of transit,
 - economic impacts of highway spending, or
 - economic impacts of using transit spending alternatively (e.g., highway projects)



6

Applicability to Impact Assessment

- Feasible applications
 - Actual required data are available for existing service
 - Estimated required data are available (e.g., planned)
- Proper applications
 - County-based geography
 - Study area is of proper size
 - Size of spending is of proper magnitude
 - Does not use a lot of specialized labor
 - Both part- and full-time employment
 - Duration of spending is not too short
 - To sustain impacts requires sustained spending of similar amount and patterns
- Sensitivity analysis with respect to estimated input



7

THE BASIC METHOD

Common for impact assessment

1. Uses multipliers to capture these effects of spending
 - Direct (purchases by transit agency)
 - Indirect (ripple effects through business spending)
 - Induced (ripple effects through household spending)
 2. Assigns spending components to industries
 3. Selects multiplier for each industry
 4. Total Impacts for each spending component =

$$(\text{Spending component}) \times (\text{multiplier for the industry})$$
- KEY: What **spending** to use in this formula?



8

FOCUS ON THREE FEATURES

for this webinar

1. Follows best practices
2. Measures net impacts
3. Presents leveraged unit impacts



9

Follows Best Practices

Break total spending into pieces & consider them separately

- Non-financed money
 - Outside money spent outside
 - + Outside money spent inside
 - **Inside money** spent outside
 - **Inside money** spent inside
- Financed money paid back with outside money
 - Spent outside
 - + Spent inside
- Financed money paid back with **inside money**
 - Spent outside
 - Spent inside



10

Measures Net Impacts

"Gross" does not consider alternative uses of inside money

Financing	Debt Repayment	Spending Pattern	Net	Gross
Non-Financed		Outside money spent outside	0	0
		Outside money spent inside	+	+
		Inside money spent outside	-	0
		Inside money spent inside	0	+
Financed (from outside)	Outside money	Spent outside	0	0
		Spent inside	+	+
	Inside money	Spent outside	-	0
		Spent inside	0	+



11

Presents Leveraged Unit Impacts

Measures	Value	Calculation
(1) Total jobs created (person-years)	320	
(2) Total spending from all sources (\$ M)	\$83.7	
(3) Total spending from local sources (\$ M)	\$47.5	
(4) Regular unit impacts (jobs / \$1 M)	3.8	(1) / (2)
(5) Leveraged unit impacts (jobs / \$1 M)	6.7	(1) / (3)



12

DATA REQUIREMENTS

- Amount of spending by type & component
- Pattern of non-financed spending
- Pattern of financed spending



13

Amount of Spending by type and category

Types/Categories	Non-Financed	Financed
Total O&M (M 2011\$)	\$69,569	\$0
Capital Spending by Category (M 2011\$)		
Land Cost	\$0	\$0
Design and Engineering	\$0	\$0
Guideway (net of land cost)	\$0	\$0
Passenger Stations (net of land cost)	\$32.4	\$0
Administrative Buildings (net of land cost)	\$339.7	\$0
Maintenance Facilities (net of land cost)	\$1,313	\$0
Other Capital Projects (net of land cost)	\$3,274	\$0
Revenue Vehicles – Bus	\$8,270	\$0
Revenue Vehicles – Rail	\$0	\$0
Service Vehicles	\$36.6	\$0
Fair Revenue Collection Systems	\$6.5	\$0
Communications and Information Systems	\$1,269	\$0



14

Pattern of Non-Financed Spending by source and destination

Types and Categories	Distribution by Destination of Spending		Distribution by Source of Funds	
	Outside	Inside	Outside	Inside
Total O&M	10%	90%	32%	68%
Capital Spending by Category				
Land Cost	0%	100%	95%	5%
Design and Engineering	50%	50%	50%	50%
Guideway	75%	25%	95%	5%
Passenger Stations	0%	100%	95%	5%
Administrative Buildings	0%	100%	95%	5%
Maintenance Facilities	25%	75%	95%	5%
Other Capital Projects	0%	100%	95%	5%
Revenue Vehicles - Bus	100%	0%	95%	5%
Revenue Vehicles - Rail	100%	0%	95%	5%
Service Vehicles	100%	0%	95%	5%
Fair Revenue Collection Systems	100%	0%	95%	5%
Communications and Information Systems	100%	0%	95%	5%



15

Pattern of Financed Spending by destination

Types and Categories	Distribution by Destination of Spending	
	Outside	Inside
Total O&M	10%	90%
Capital Spending by Category		
Land Cost	0%	100%
Design and Engineering	50%	50%
Guideway	75%	25%
Passenger Stations	0%	100%
Administrative Buildings	0%	100%
Maintenance Facilities	25%	75%
Other Capital Projects	0%	100%
Revenue Vehicles - Bus	100%	0%
Revenue Vehicles - Rail	100%	0%
Service Vehicles	100%	0%
Fair Revenue Collection Systems	100%	0%
Communications and Information Systems	100%	0%



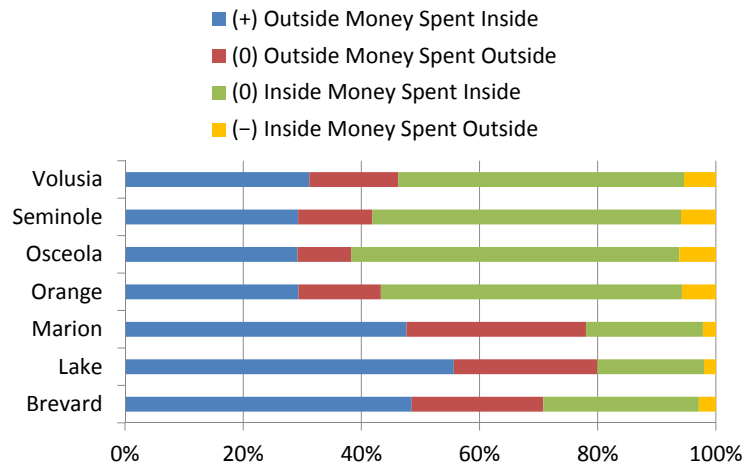
16

APPLICATION TO CENTRAL FLORIDA

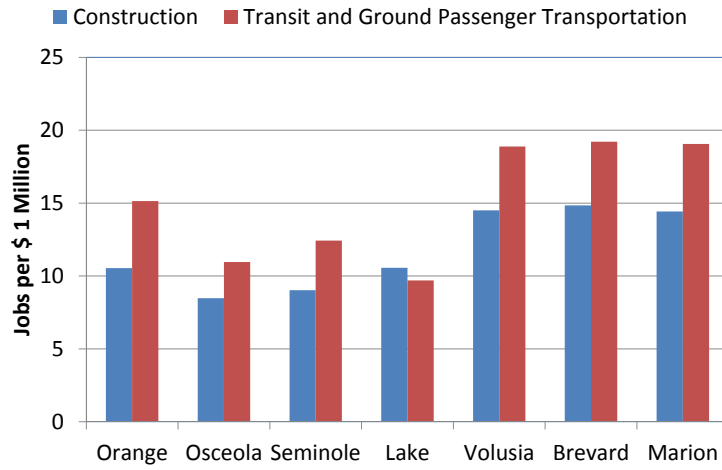
- Summary of spending patterns
- Selected multipliers
- Selected results on job impacts
- Influence of spending patterns on results



Summary of Spending Patterns 2009-2011 average

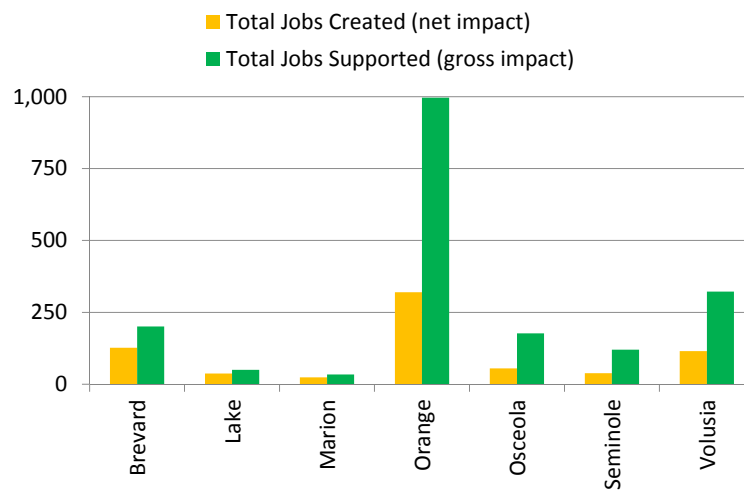


Selected Multipliers for two industries on job impacts



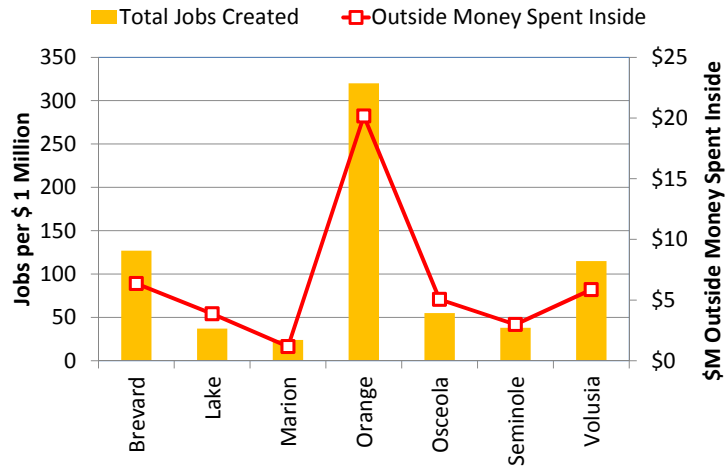
19

Selected Results on Job Impacts Total Jobs Created vs. Supported



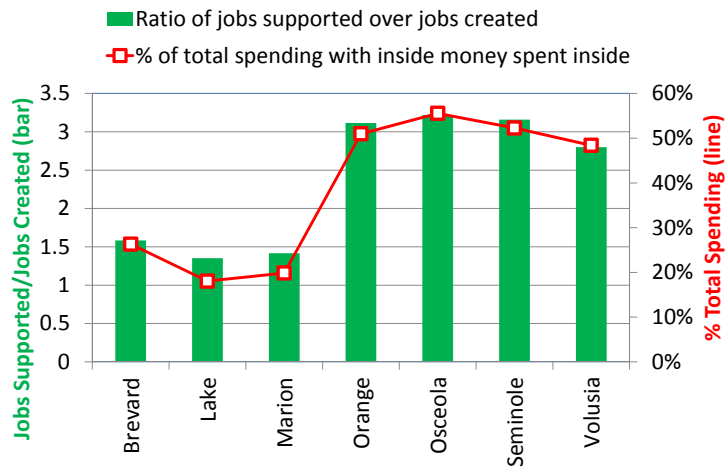
20

Influence of Spending Patterns Total Jobs Created

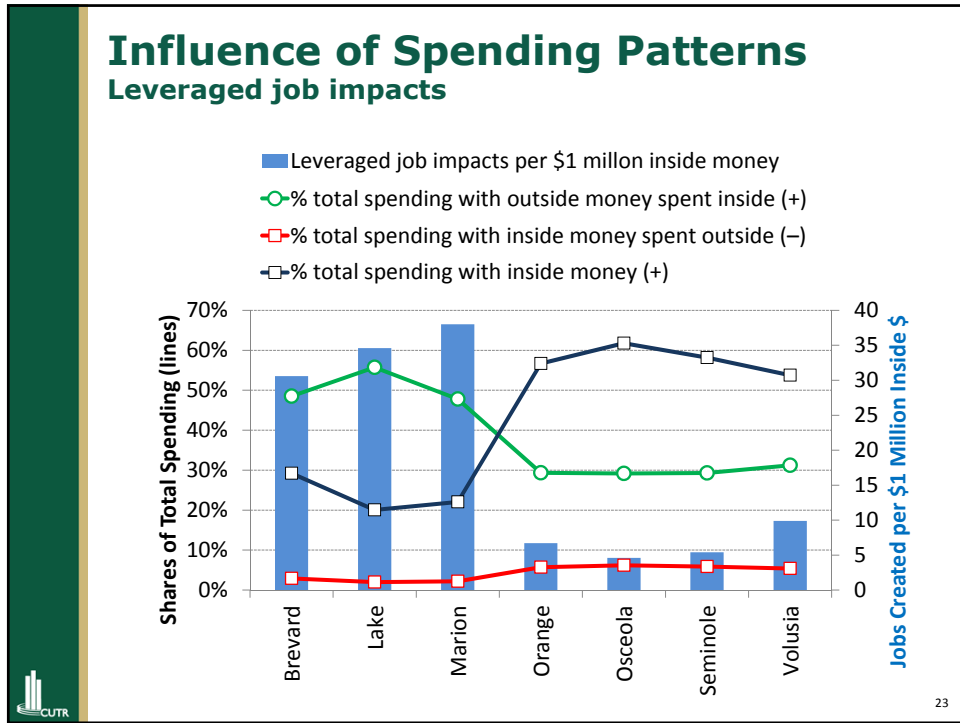


21

Influence of Spending Patterns Ratio of Jobs Supported over Jobs Created



22



- ### SELECT GUIDANCE
- Focus on measuring and using net impacts
 - Carefully qualify gross impacts when used
 - Designed for the magnitude of impacts
 - Can use estimates for input data
 - High dependence on spending patterns:
 - Avoid applying results on unit impacts from larger areas (e.g., nationwide or statewide to a county)
 - Be careful with applying results from one area to another of similar geographies (e.g., MSA)
 - Be careful with applying current results to planned spending for a given study area

ADDITIONAL INFORMATION

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- Access
 - <http://www.nctr.usf.edu/category/publications/>

