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# Using TPICS to Build Credibility into Steps in the Planning Cycle

[www.tpics.us](http://www.tpics.us)

*Presented by:*

**Glen Weisbrod**  
**Economic Development Research Group, Inc.**

*Presented at:*

**Transportation Research Board,  
Annual Meeting, January 2014**

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# TPICS: Transportation Project Impact Case Studies

- SHRP2 Project C03: *Interactions Between Transportation Capacity, Economic Systems, and Land Use*
- Case-Based, Web-Based Tool for Illustrating and Communicating Economic Impacts
- Team: EDR Group with ICF, Cambridge Systematics, CDM Smith, TTI, Susan Moses

# ***SHRP2 Database: Case Studies***

Project Type	Economic Market Setting		
	Metro	Rural	Mixed
Access Road	2	5	0
Beltway	8	0	0
Bridge	4	3	3
Bypass	4	8	1
Connector	4	2	2
Interchange	10	0	2
Major Highways	5	0	9
Widening	4	2	3
Intermodal	15	15	15
Total	56	23	21

# www.tpics.us

Transportation Project Impact Case Studies (T-PICS) - Windows Internet Explorer

http://www.tpics.us/

File Edit View Favorites Tools Help

Transportation Project Impact Case Studies (T-PICS)

**T-PICS**  
Transportation Project Impact Case Studies

Home **Case Search** My Project Tools About T-PICS

**The TPICS (Transportation Project Impact Case Studies) System**

Contains: (1) a searchable database of past projects and their observed impacts on economic development, and (2) a predictive tool that estimates the range of likely impacts of proposed new projects, based on results from already-built projects. See buttons above.

**Case Search (Past Projects)**

You define a set of project characteristics. The system screens available cases and selects those that

**My Project Tools (Predict Impacts of Future Projects)**


You define a set of project characteristics. The system identifies case studies of past projects that meet your criteria. You can then view details of those cases.

**Further Information**


- SUMMARY OF TPICS
- ADVICE ON TPICS USE
- INSTRUCTIONS FOR TPICS
- ANALYSIS OF TPICS DATA
- FURTHER REPORTS ON TPICS
- TOOLS TO ASSESS WIDER ECON IMPACTS
- SUBMIT NEW CASE
- FORUM

We are very interested in your

# Case Search

  
Transportation Project Impact Case Studies

[Home](#) [Case Search](#) [My Project Tools](#) [About T-PICS](#)

  
**Case Search**  
You enter data characteristics of your own project. Then you can view projects that are similar to yours, and use the data to estimate the likely impacts of your project.  
[View Results](#)

**Basic Criteria** **Other Criteria**

Potential Matches: 9

**Project Type:**  
[De-Select All](#)

☒ Bypass ☒ Limited Access Road ☒ Beltway ☐ Interchange  
☐ Bridges ☐ Access Road ☐ Bundled ☐ Widening  
☒ Connector ☐ Intermodal Freight ☐ Intermodal Passenger

**Region:**  
[De-Select All](#)

☐ New England/Mid-Atlantic ☒ Southwest ☐ Southeast ☐ International  
☒ Rocky Mountain/Far West ☐ Great Lakes/Plains

**Motivation:**  
[De-Select All](#)

☒ Air Access ☒ Labor Market ☐ Int'l Border Access ☒ Site Development ☐ Tourism  
☐ Rail Access ☐ Delivery Market ☐ Marine Port Access ☒ Congestion Mitigation

**Urban/Class Level:**

☐ Rural ☒ Mixed ☒ Metro

**Economic Distress:**


☒ All ☐ Distressed Only ☐ Non Distressed Only

**Keywords:**

[Search Keywords](#) [Clear](#)




# Case Search Refinement



Transportation Project Impact Case Studies

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### Case Search

You enter data characteristics of your own project. Then you can view projects that are similar to yours, and use the data to estimate the likely impacts of your project.

[View Results](#)

**Basic Criteria****Other Criteria**

**Potential Matches: 9**

**Project Cost (2008 \$):** 0 500M >1B

**Market Size (thousands):** 0 2,000 4,000

**AADT (thousands):** 0 250 500

**Population Density (ppl/sq mi):** 0 8,100 16,200

**Airport Travel Distance (mi.):** 0 150 21

**Topography:**  
(1 - Flat  
21 - Mountainous)  
0 325

**Length (mi):**

**Population Growth Rate (%):** -0.7 8

**Employment Growth Rate (%):** -8 11

**Income Growth Rate (%):** -7 10

[Reset Sliders](#)

☒ Include cases with missing data

# Results: Cases Found

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[Change Search Parameters](#)

### Case Search Results

**Matches:9**

Click on a column table header (for example, 'Project Cost') to sort the results by that column. Click two or more checkboxes in the 'Compare' column and click 'Compare Projects' to compare project data. Click on a case study title to view detailed information about that case. Project Cost is in 2008 dollars.

Your case search parameters are:

**Project Type:** Bypass, Limited Access Road, Beltway, Connector

**Urban Class:** Mixed, Metro

**Region:** Southwest, Rocky Mountain/Far West


**Motivation:** Air Access, Labor Market, Site Development, Congestion Mitigation

**Project Cost (2008):** \$0 - >\$1,000,000,000


**Economic Distress:** All

Compare	Title	Description	Project Type	State	BEA Region	Project Cost (2008)	Eni
<input type="checkbox"/>	<a href="#">Interstate 27</a>	Interstate 27 is a north-south highway, which traverses the northern panhandle and high plains of Texas.	Limited Access Road	TX	Southwest	\$980,104,218.88	199
<input type="checkbox"/>	<a href="#">Beltway 8 Houston ...</a>	Beltway 8 is a toll facility owned and operated by the Harris County Toll Road Authority (HCTRA). The improved accessibility accelerated the growth of residential and commercial development in the western part of Houston.	Beltway	TX	Southwest	\$147,171,161.67	198
<input type="checkbox"/>	<a href="#">I-515 Henderson</a>	I-515 was built both to relieve traffic traveling south from Las Vegas on Route 15, and to improve highway access into the southeastern part of Clark County to Henderson.	Limited Access Road	NV	Southwest	\$160,195,288.75	199
<input type="checkbox"/>	<a href="#">E470 Denver</a>	E-470 is a private, 47-mile long toll road that forms an outer beltway around	Beltway	CO	Rocky	\$1,999,520,762.52	200

# Economic & Development Impacts

**T-PICS**  
Transportation Project Impact Case Studies

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 **Case Search Results**

**Huntsville Alabama**

The Huntsville, AL International Intermodal Center (IIC) consists of air and rail cargo operations and includes an access road connection to the highway. The runway was extended in 2004 and the nearby JetPlex Industrial park has 5.6 m square feet of space.

**Related Websites:**  
[Port of Huntsville](#)

**Attachments:**

[Characteristics](#) [Intermodal](#) [Setting](#) [Pre/Post Conditions](#) [Narrative](#) [Impacts](#) [Images](#)

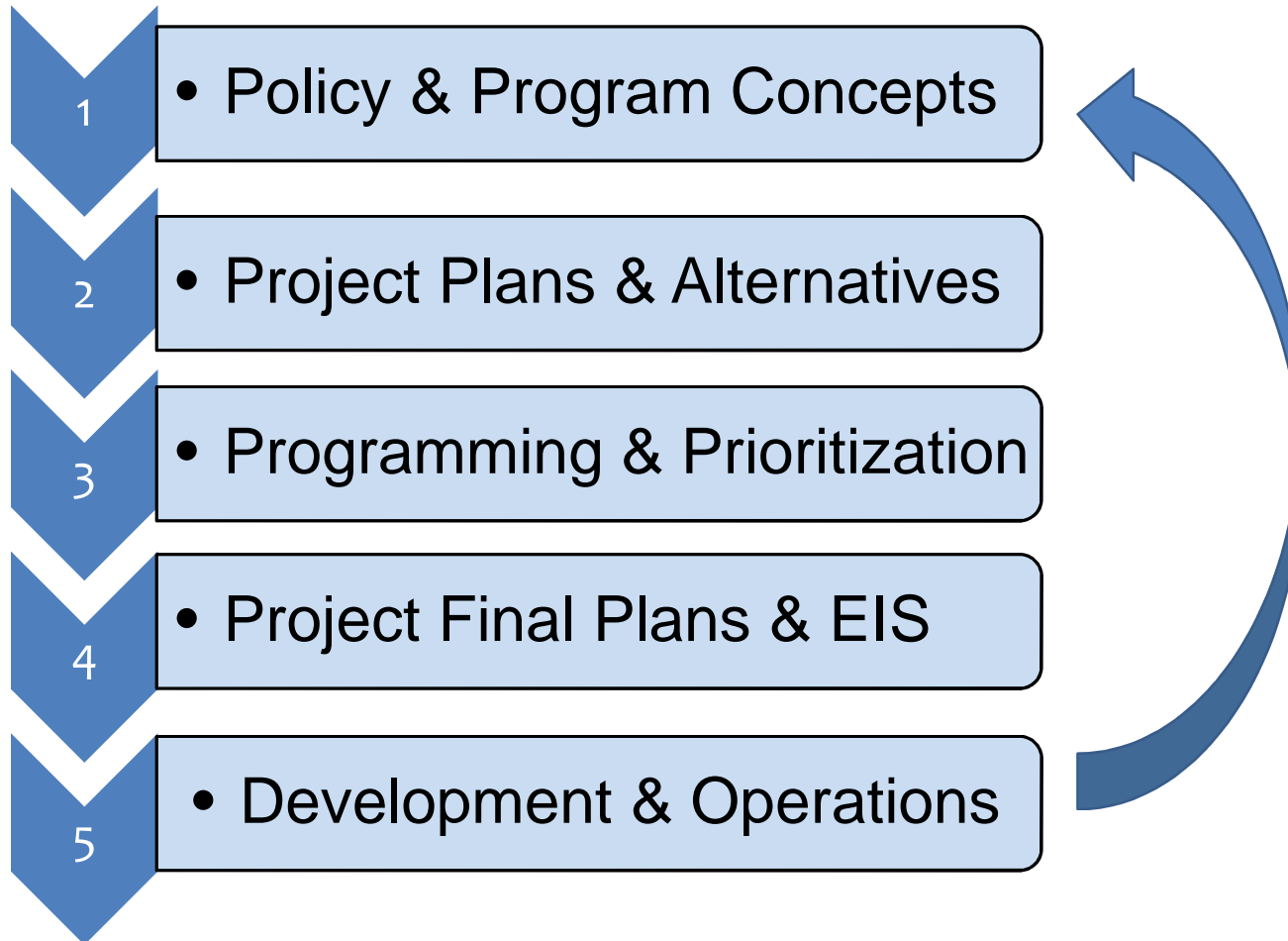
**Pre/Post Conditions**

Measure	Pre-Project	Post-Project	Change	% Change
Personal Income	\$29,447	\$41,488	\$12,041	40.90 %
Economic Distress	N/A	0.64	N/A	N/A
Total Num. of Jobs	135,553	228,640	93,087	68.68 %
Population	196,966	320,914	123,948	62.93 %
Property Value	N/A	\$160,196	N/A	N/A
Business Sales (\$M's)	N/A	N/A	N/A	N/A
Tax Revenue (\$M's)	N/A	N/A	N/A	N/A
Density	341.27	398.69	57.42	16.83 %

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# ***Decision-making has multiple phases***



# ***Different issues and audiences (1)***

1

- Policy & Program Concepts

***What is a realistic range of economic impact expectations?***

Concepts: Bypass, Widening, etc.

Audience: Public Hearings, Elected Officials



# ***Different issues and audiences (2)***

2

- Project Plans & Alternatives

***What configurations  
& settings work best?***

Alternatives: Urban, Suburban Fringe, Rural

Audience: Planners, Area residents & businesses



# ***Different issues and audiences (3)***

3

- Programming & Prioritization

***Which projects have priority for funding and implementation?***

Alternatives: Projects, Timing

Audience: Transportation Agency staff & leaders





# ***Different issues and audiences (4-5)***

4

- Project Spec & EIS

5

- Development & Operation

***What supporting actions need to be taken to enable broader community benefits?***

Project: Supporting Actions, Involvement, Initiatives  
Audience: Local Developers, Public Officials





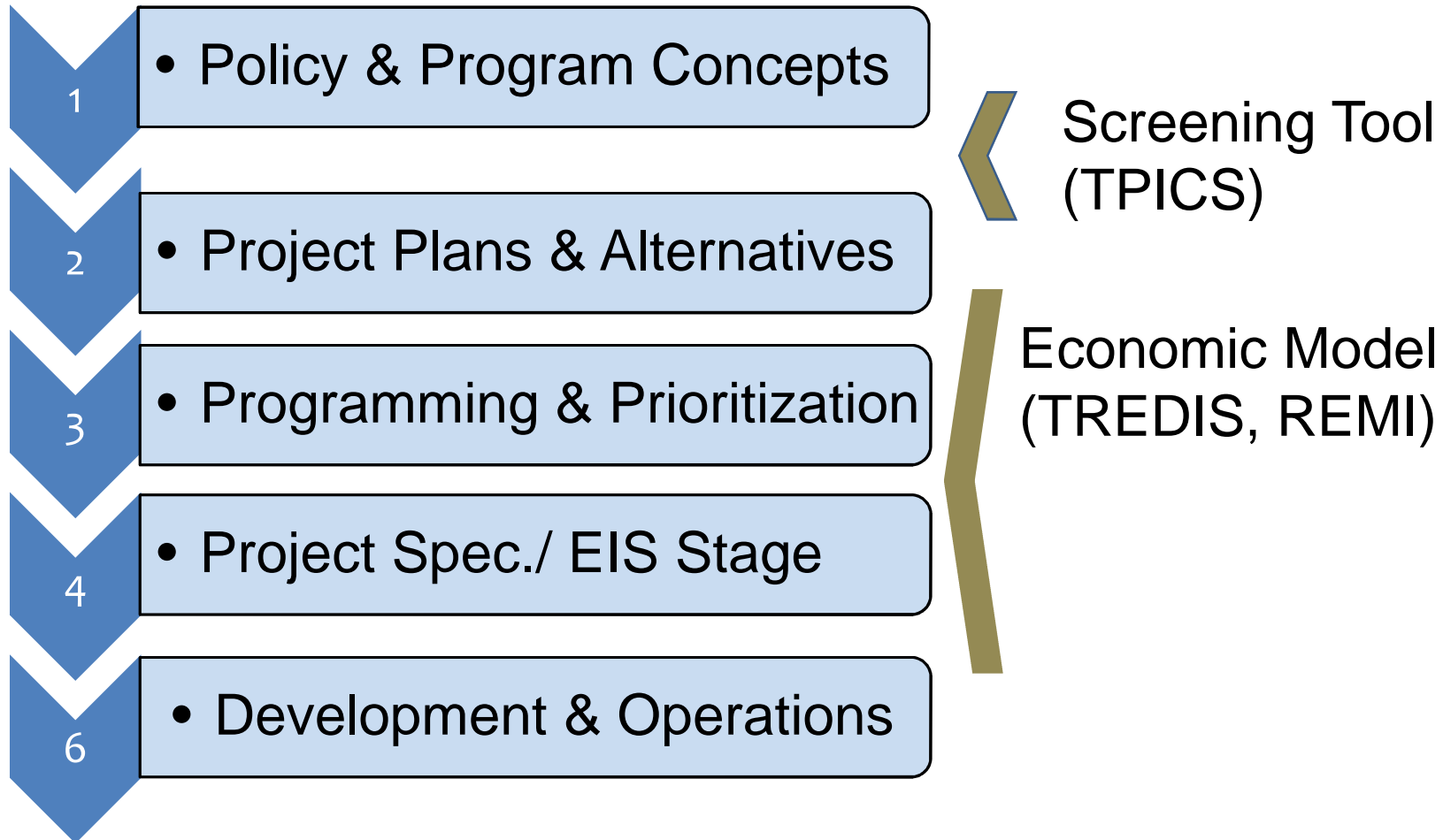
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# ***Early Stage Questions***

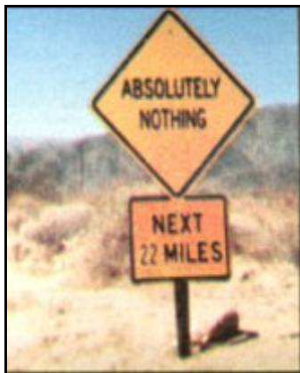
What is a reasonable range of economic impact expectations?

What configurations and settings work best?

# Match Models to Planning Needs

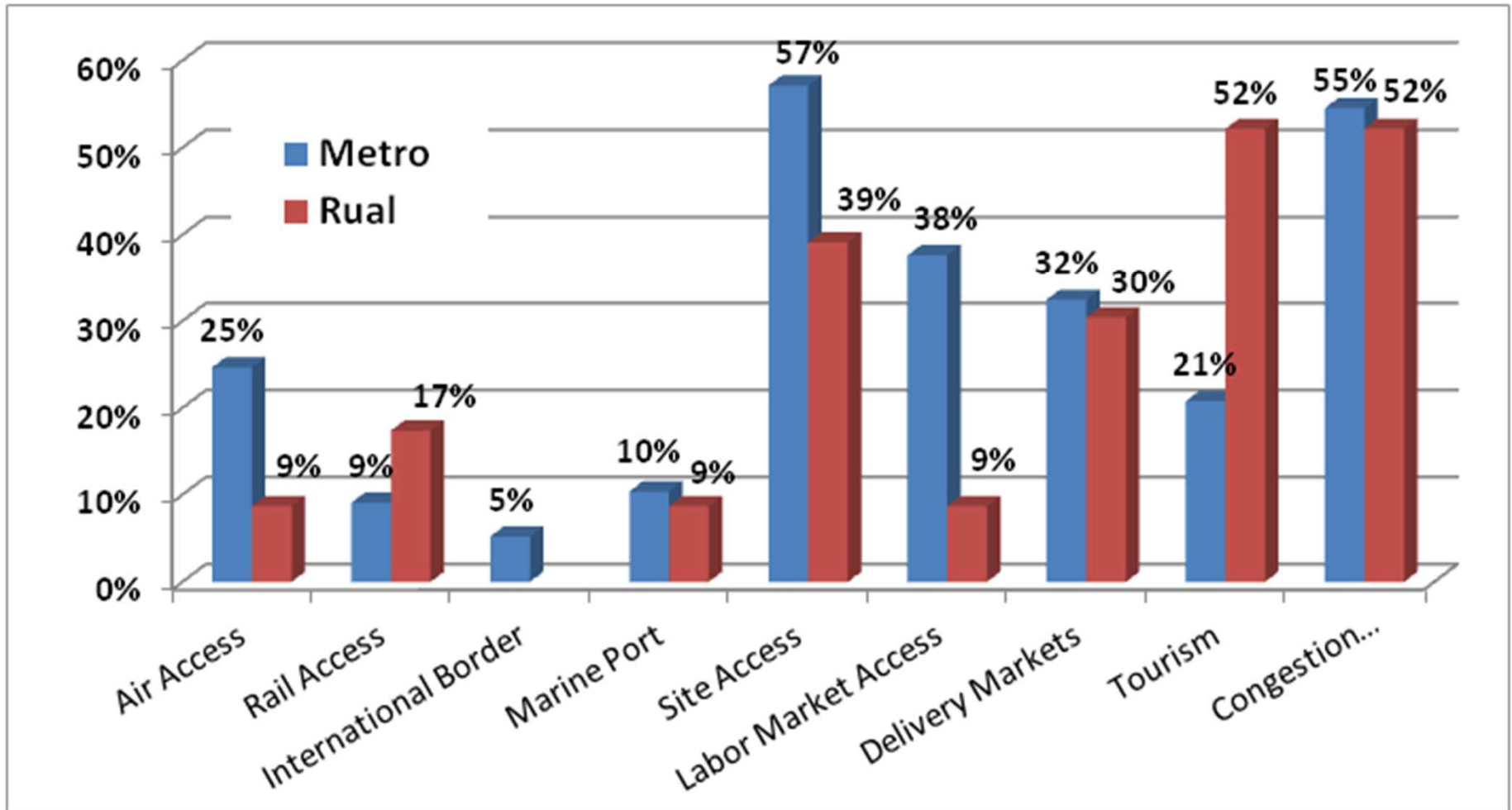


# Because...



Transportation professionals  
need to do a better job  
of communicating the need  
for investment in transportation  
to support the economy  
and improve quality of life

# Motivation for Projects: Access



\* Excluding Passenger and Freight Intermodal

# Range of Economic Impacts

	Metro/Mix Setting			Rural Setting		
	# Cases	Jobs Created Low	High	# Cases	Jobs Created Low	High
Access Road	2	478	3,195	5	7	680
Beltway	7	2,106	43,753	-	-	-
Bridge	6	0	11,771	3	0	319
Bypass	5	0	23,977	6	0	1,420
Connector	6	0	14,578	2	0	412
Interchange	12	0	23,520	-	-	-
Freeway	13	90	50,505	-	-	-
Widening *	6	14,989	15,484	2	3,785	4,080
<b>All Project Types</b>	<b>57</b>	<b>0</b>	<b>50,505</b>	<b>18</b>	<b>0</b>	<b>4,080</b>

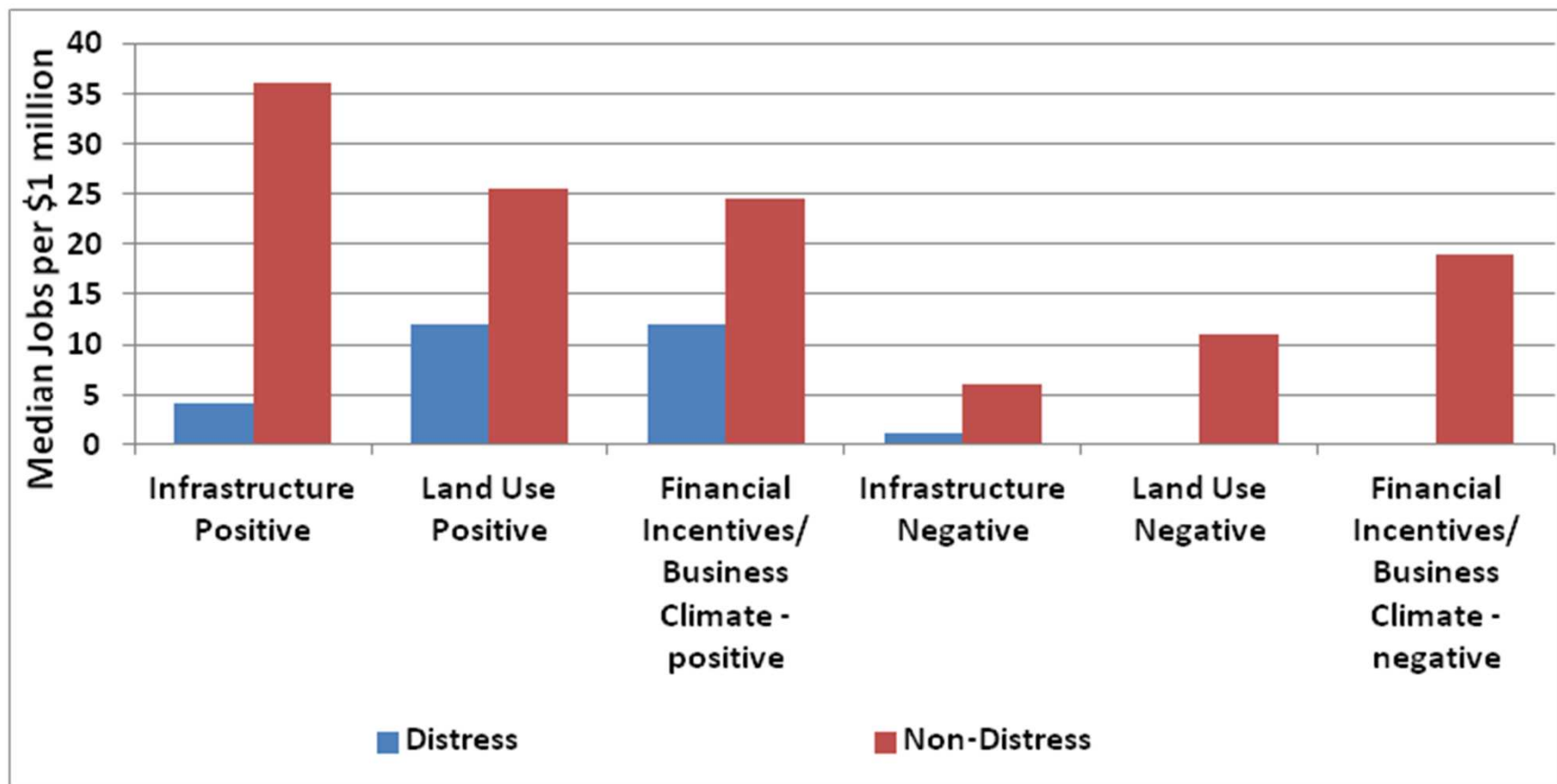
*\*Excluding Passenger and Freight Intermodal Jobs reflect total economic impacts*



# Complementary Infrastructure and Policies

Non-Transportation Factors		Incidence
Positive Local Factors	Available Infrastructure (sewer, water, telecom)	33%
	Land Use Management	45%
	Financial Incentives/ Business Climate	46%
Negative Local Factors	Lack of Infrastructure (sewer, water, telecom)	10%
	Lack of Land Use Management	6%
	Lack of Financial Incentives/ Neg. Business Climate	5%
<b>ALL PROJECTS</b>		<b>100%</b>

# Effects of Non-Transportation Factors and Economic Setting



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# Effects of Interactions

- Effects of Concurrent Infrastructure
  - Water, sewer, broadband, power, etc.
    - Range of effects: -40% to +31%
- Supportive Land Use Policies
  - Permitting, zoning, special districts, etc.
    - Range of effects: -34% to +24%
- Business Incentives
  - Tax increment financing, abatements, job training programs, etc.
    - Range of effects: -12% to +20%



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## Case Search Results

### Huntsville Alabama

The Huntsville, AL International Intermodal Center (IIC) consists of air and rail cargo operations and includes an access road connection to the highway. The runway was extended in 2004 and the nearby JetPlex Industrial park has 5.6 m square feet of space.

### Related Websites:

[Port of Huntsville](#)

### Attachments:



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Characteristics

Intermodal

Setting

Pre/Post Conditions

Narrative

Impacts

Images

## Port of Huntsville

### 1.0 SYNOPSIS

The International Intermodal Center (IIC), an inland port complex located in Northern Alabama, is located at the Port of Huntsville. The port complex also includes the Huntsville International Airport and the Jetplex Industrial Park, which are under the jurisdiction of Huntsville–Madison County Airport Authority. The IIC includes two distinct operations: rail cargo, which began in 1986, and air cargo, which began in 1987. The total construction cost of these two operations combined was \$53.11 million (\$2008). To accommodate the expected increases in freight truck traffic to and from the port, the Wall Triana highway was completed in 1987 connecting the port of Huntsville to I-565 at a cost of \$7.83 million (\$2008). In 2003, rail operations were expanded to include additional sidings and lift capacity, costing an additional \$21.06 million (\$2008). Between 2000 and 2003, the Port of Huntsville extended an existing 8,000 foot runway by 4,600 feet to 12,600 feet to meet the international cargo shipment needs of Panalpina, an existing air cargo firm at the airport. The new 12,600 foot runway opened in May of 2004 and cost \$33.7 million (\$2008). In response to the runway extension, Panalpina flights throughout the U.S. and abroad increased from 7 per day in 2000 to 15 per day in 2008 accommodating an increase of 13,000 tons of freight. (Because of the recession of 2008-2010, Panalpina volumes have decreased, but are expected to increase again

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Measure	Direct	Indirect	Total
Number of Jobs	514	294	808
Income/Wages (\$M's)	\$28	\$16	\$45
Output (\$M's)	\$70	\$40	\$110

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### Case Search Results

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Characteristics

Intermodal

Setting

Pre/Post Conditions

Narrative

Impacts

Images





### My Project Tools

You enter data characteristics of your own project. On the View Results Screen you can see the likely ranges of economic impacts from your project, and estimates of project cost and traffic volume. You will have the opportunity to adjust cost and traffic estimates, and to adjust complementary regional economic development factors to properly reflect your region. In turn, these adjustments will drive changes in expected economic impacts of your project.

[View Results](#)

#### Project Type:

- ☐ Bypass 
 ☒ Limited Access Road 
 ☐ Beltway 
 ☐ Interchange 
 ☐ Widening  
☐ Bridges 
 ☐ Access Road 
 ☐ Bundled 
 ☐ Connector

#### Region:

- ☐ New England/Mid-Atlantic 
 ☐ Southwest 
 ☒ Southeast 
 ☐ International  
☐ Rocky Mountain/Far West 
 ☐ Great Lakes/Plains

#### Urban/Class Level:

- ☐ Rural 
 ☒ Mixed 
 ☐ Metro

#### Economic Distress:

- ☐ Distressed Only 
 ☒ Non Distressed Only

#### Length of your Project:

25 Miles



### My Project Tools

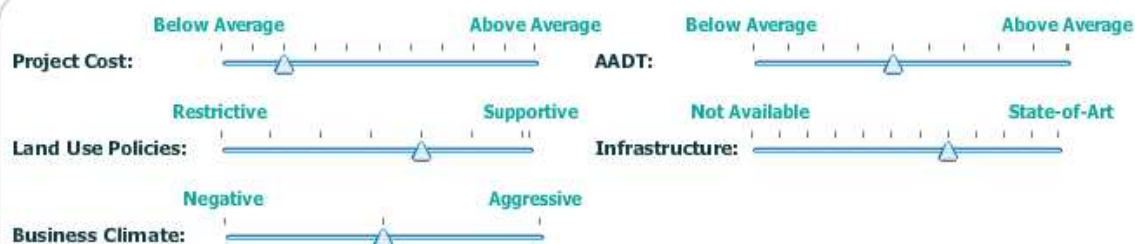
You can change the project cost and expected AADT of your project (the default location of the arrows for both represent the medians), and adjust the characteristics of your region to reflect local conditions. These changes will affect the economic impacts of your project.

#### Estimated Project Cost (\$):

\$271 million

#### Estimated AADT:

61,000

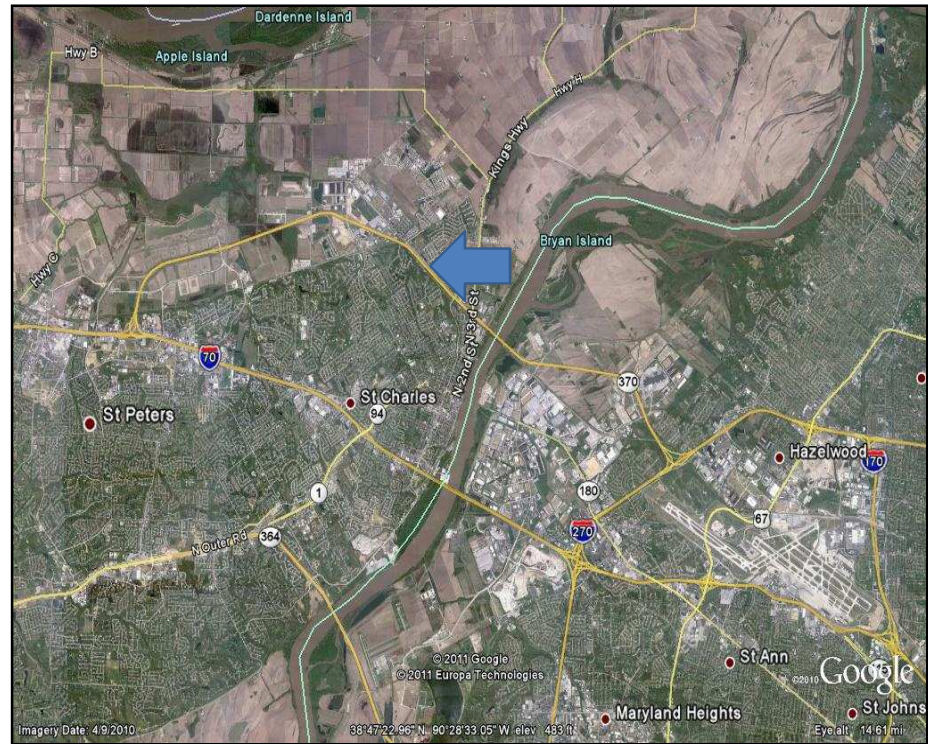
[Change Search Parameters](#)


	Jobs	Wages	Output
Direct Impacts	1,990 - 3,320	\$83,425,000 - \$139,042,000	\$265,225,000 - \$442,042,000
Supplier and Wage Impacts	1,200 - 1,990	\$50,055,000 - \$83,425,000	\$159,135,000 - \$265,225,000
Total Impacts	3,190 - 5,310	\$133,480,000 - \$222,467,000	\$424,360,000 - \$707,267,000



# Missouri Route 370

- Connects I-270 in Bridgeton with I-70 in St. Peters
- 12 miles, including Discovery Bridge built across Missouri River
- Built between 1988 and 1996
- \$343 m (\$1996) cost



# Supporting Policies

- Tax Increment Financing District
- Transportation Development District
- Rezoned hundreds of acres
- City and FEMA resolved flood plain issues
- Established Discover!370 to promote corridor





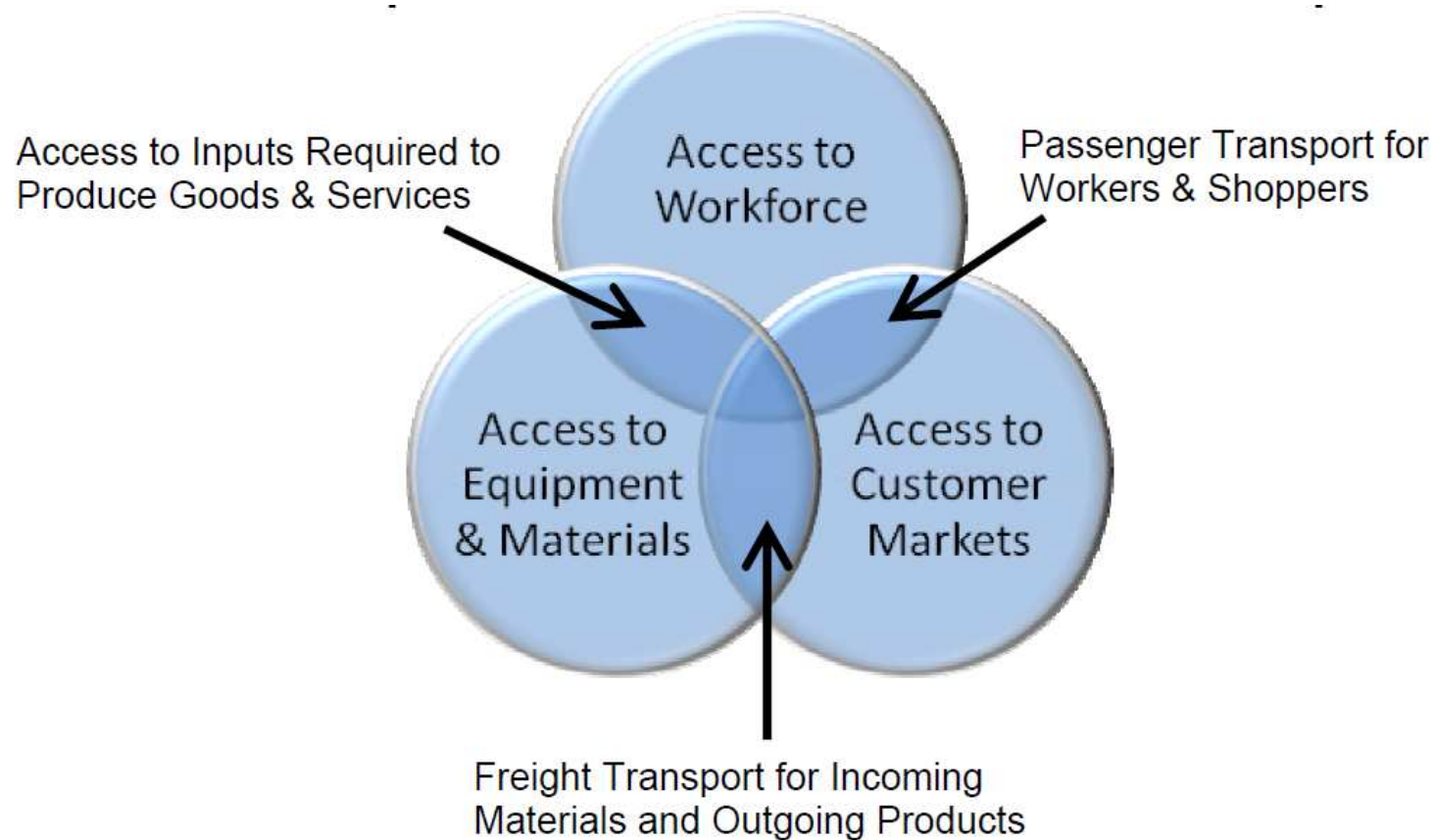
# Route 370 Impacts



- 60,000 AADT
- 6.74 m+ sf of commercial and industrial space
- 2,000+ housing units
- 7,000+ jobs
- \$3 m+ in real property taxes (not including residential)
- \$230 m+ in property values
- \$25 m+ in retail tax revenue

# Economy-Transportation Connection

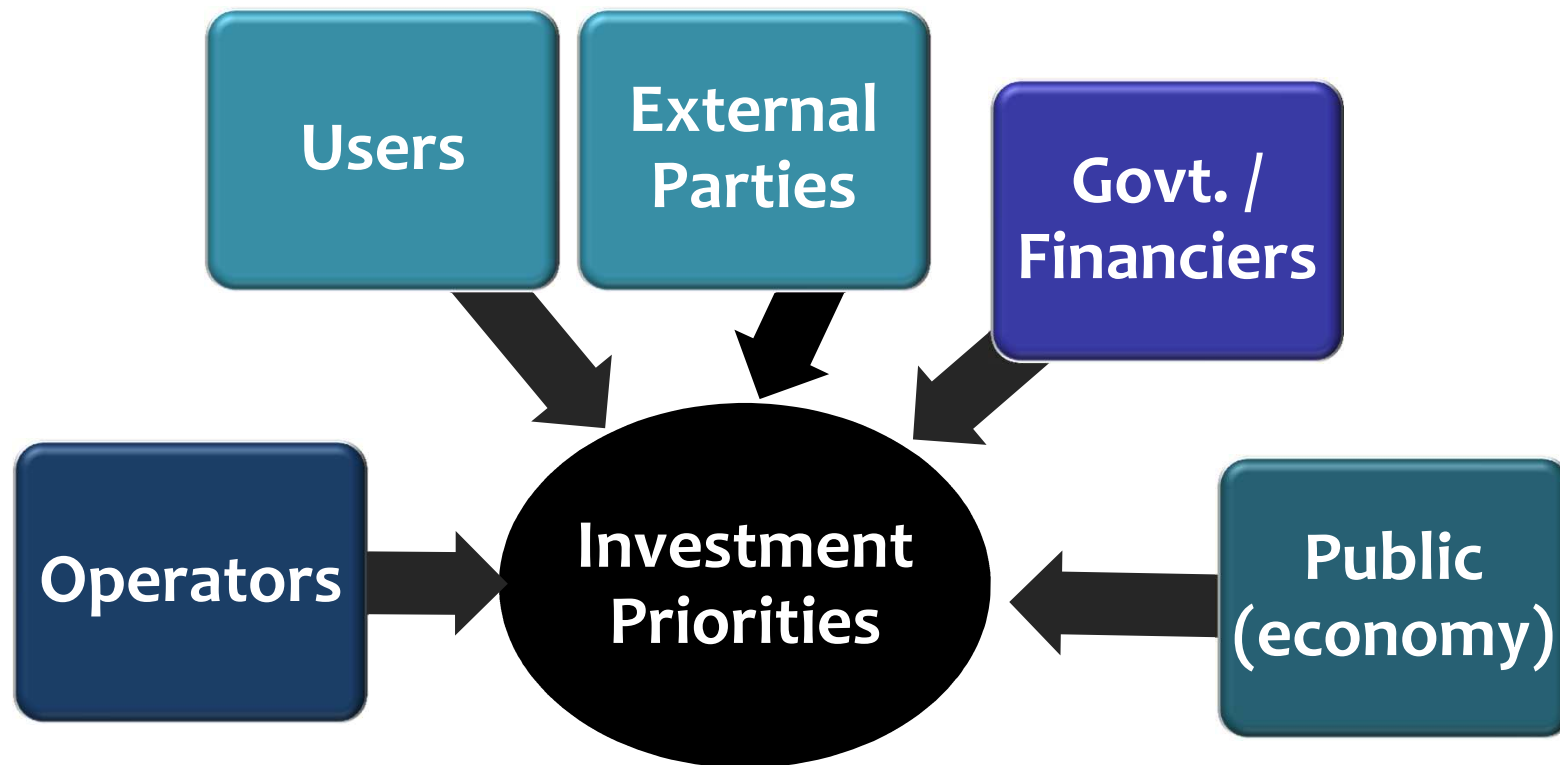
*There are three inputs to business operations and hence job/ income generation. Transport affects the cost & characteristics of all three.*



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# Benefit Perspectives

## *Different Stakeholders*



# Objective of Program Measurement

*Estimate Impacts Across Different Time Dimensions  
with Common Economic Metrics*

- Learning from the Past
- Monitoring the Present
- Planning for the Future



## To improve program effectiveness

- *Economic Impact, Jobs*
- *Cost-Effectiveness*
- *Benefit-Cost*
- *Return on Investment*