

# **SHRP2 C03: Interactions between Transportation Capacity, Economic Systems, and Land Use**

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**Economic Development Research Group, Inc.**

*In Association with:*

**ICF International**

**Cambridge Systematics, Inc.**

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# SHRP2 C03 Study Objectives

- Identify LONG-TERM Economic Impacts from New/Capacity-Enhancing Highway Investments
- Provide Findings that Illustrate the Interaction between Highway Infrastructure and Non-Highway Investments and Initiatives
- Develop Preliminary Assessment Guidance for Policy-makers and Practitioners
- Design Case-Based Web-Based Tool for Illustrating and Communicating Economic Impacts
- Create Flexible System for Adding New Cases

# Potential Uses of SHRP2 C03

- Compare Proposed Projects to Real-World Examples
  - Use case search to access outcomes of similar projects
- Evaluate Potential Range of Economic Impacts Associated with Proposed Highway Projects
  - Assess effects of key project characteristics
  - Identify potential effects of concurrent investments
- Prioritize Based on Long-Term Economic Development Potential
  - Decide which project types, settings and initiatives produce best overall results

# Current Case Characteristics

- Project Type
  - Nine types in current data
  - Two new types to be added
- Urban/Rural Setting
  - Directly affects level and type of economic impacts
- Degree of Economic Distress
  - Sets stage for leverage and potential factor interactions
- Intensity of Activity
  - Addresses traffic volume, market size and access to intermodal facilities (e.g., airport ports)
- 60 Cases in Database – 40 Additional Cases by mid-2010

# Case Characteristics

<b>Project Type</b>	<b>Median Costs per Mile (<i>millions</i>)</b>	<b>Median AADT</b>
Access Road	\$ 1.45	-
Beltway	\$ 24.78	58,000
Bypass	\$ 5.85	10,000
Connector	\$ 19.28	62,200
Interchange*	\$ 90.01	116,550
Limited Access Road	\$ 9.19	61,288
Widening	\$ 43.44	20,500

# How Findings Were Developed

- Literature Review
  - Assessed prior studies, cases & ED research
- Synthesis of Case Studies/Interviews
  - Focused on project types & factors influencing economic impacts
- Assessment of Existing Models
  - Reviewed structural composition of ED models
- Statistical Analysis of Case Data
  - Identified key interactions & controlled for key factors
- Common Sense

# SHRP2 C03 – Findings To-Date

- Size of Investment (\$\$) is not the Primary “Driver” of Long-Term Economic Impacts
- Project Types and Economic Conditions Have Greatest Influence on Investment Outcomes
- Non-transportation Initiatives Matter
- Greatest Economic Effects Attributable to:
  - Regional setting
  - Current level of economic activity/distress
  - Location and intensity of use
  - Concurrent economic development policies

# Estimating Potential Economic Impacts

- Based on User-Specified Project Characteristics
  - Project type, location and economic conditions
- Applies Findings from Cases and Synthesis of Studies
  - Basic relationships establish range of economic impacts
- Users Provide Supplemental Adjustments
  - Includes policy and intensity of user-defined options
- Includes Internal Consistency and Checks

# Project Setting Effects

- Variation in AADT
  - Metro areas 10% higher than median
  - Rural areas 74% lower than median
- Variation in Costs per Mile
  - Non-distressed areas 18.2% higher than mean
  - Distressed areas 17.5% lower than mean

# Key Interaction Factors

- Access to Alternative Modes
  - Airports
  - Rail Intermodal Facilities
  - Seaports
- Market Access
  - Labor Markets
  - Freight/Delivery Markets
- Congestion
  - Shifts spatial distribution of economic impacts

# Effects of Interactions

- Effects of Concurrent Infrastructure
  - Water, sewer, broadband, power, etc.
    - Range of effects: -35% to +20%
- Supportive Land Use Policies
  - Permitting, zoning, special districts, etc.
    - Range of effects: -20% to +11%
- Business Incentives
  - Tax increment financing, abatements, job training programs, etc.
    - Range of effects: -5% to +5%

# Challenges in Case Development

- Obtaining Retrospective Data on Cases
  - Economic impacts take time to manifest themselves
  - Timing differs by project type
- Distinguishing Cyclical Effects from Investment-Induced Effects
  - Historical baselines for property values and taxes are often unavailable or incomplete
- Separating Highway Investment Effects from Other Economic Development Initiatives
  - Urban/rural and distressed/non-distressed areas
- Assessing Effects of Large, Phased Projects

# SHRP2 C03 – Next Steps

- Add 40 New Case to:
  - Expand range of project types
  - Add key information to under-represented case data
- Roll-out Project Tools and Results
  - Web tool prototype – January 2010
  - Complete set of 100 Cases – July 2010
  - Practitioner's guide and user's handbook – October 2010
- Apply Findings and Methods to New Investment Initiatives

### The T-PICS System

contains a database of case studies of built transportation projects and pre/post project data regarding their impacts on the economy of proposed new projects by providing information on the range of actual impacts observed from already-built projects. The system at this time contains information only for highway-related projects.

### Announcements

This is a draft version of the web site for Transportation Project Impact Case Studies (T-PICS). It provides access to a national database of case studies that can be used to assess the pre- and post-construction economic development and related effects of various kinds of transportation projects. The first sixty case studies are included in this release of T-PICS. Additional case studies and project types will be added in 2010. Click on the "About T-PICS" tab (above) for additional information.

### Case Search

(Screen and Select)

You define a set of project characteristics. The system screens available cases and selects those that meet your criteria. You can then view the selected cases.



### My Project Tools

(Rate and Rank and Predict Impacts)

You describe a proposed project (not yet built). You set allowances for 'importance weights' for various criteria. The system rates and ranks cases by how well they match to your defined criteria. You then view and compare best-ranked matches. The system then uses findings from available case studies to estimate the most likely level and range of economic impacts for your proposed project.





## 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: **7**

**Project Type:**

[De-Select All](#)

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

**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](#)

[Change Search Parameters](#)

### Case Search Results

#### Matches: 7

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 - \$160,000,000

Compare	Title	Description	Project Type	State	BEA Region	Project Cost (2008)	End Date
<input type="checkbox"/>	<a href="#">US Highway 28...</a>	US 281 is a new highway constructed from the downtown sector of San Antonio to the San Antonio International Airport and provides freeway access to fastest growing part of region.	Connector	TX	Southwest	\$40,400,000.00	1978
<input type="checkbox"/>	<a href="#">Beltway 8 Hous...</a>	Beltway 8 is a toll facility owned and operated by the Harris County Toll Road Authority (HCTRA). As the outer highway loop surrounding the city, Beltway 8 provides direct access between large residential and commercial development outside of the downtown area. Construction of the first 27.5 mile section of Beltway 8 between Hwy 59 and I-45 in west Houston initiated in 1985 and finished in July 1990. The improved accessibility accelerated the growth of residential and	Beltway	TX	Southwest	\$77,651,700.00	1988

[Download Search Results](#)
[Print Search Results](#)
[Compare Projects](#)



## My Project Tools

You can change the average project cost and expected AADT of your project, and adjust the characteristics of your region to reflect local conditions. These changes will affect the economic impacts of your project.

**Current Project Cost (\$):**

\$271 million

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

\$271 million

**Estimated AADT (thousands):**

61,000

[Change Search Parameters](#)



	Jobs	Wages	Output
Direct Impacts	1,780 - 2,960	\$236,793,000 - \$394,655,000	\$236,793,000 - \$394,655,000
Supplier and Wage Impacts	1,070 - 1,780	\$142,076,000 - \$236,793,000	\$142,076,000 - \$236,793,000
Total Impacts	2,850 - 4,740	\$378,869,000 - \$631,448,000	\$378,869,000 - \$631,448,000