

Interactions Between Transportation Capacity, Economic Systems, and Land Use



Client

Strategic Highways Research Program
(project SHRP2-C03)

Facts

Period 2011
Project Country United States

For the Strategic Highways Research Program (project SHRP2-C03), EDR Group (now EBP) led a \$1.75 million national study of the economic impacts of highway projects.

Working with a team including ICF International, Wilbur Smith Associates, Cambridge Systematics, Texas Transportation Institute and Susan Moses Associates, the project included:

- 100 before-and-after case studies of highway projects
- A web-based tool for searching the national database (T-PICS - Transportation Project Impact Case Studies)
- A statistical evaluation system that provides range estimates of the likely range of impacts associated with various types and sizes of transportation investment projects
- A categorization (typology) of conditions affecting the economic impact of highway capacity
- A critique, from a decision-maker point-of-view, of the methods and results of economic impact analysis for new highway capacity.

Analysis of the case study database has also enabled a first-of-its-kind analysis of the observed economic development impacts of highways around the country. The results show a more complex story than the claims of pundits on both sides of the highway debate.

The actual impacts of highway projects on economic development varies widely. Attempts to draw generalizations that highways always or never lead to economic impacts are both wrong. In reality, some projects have large observed impacts, while others have no observable impacts. When impacts occur, they may be at a localized level or at a wide regional (or even national) level, depending on the project scale, type and context.

One of the factors affecting economic outcomes is the variation in project purpose. For instance, projects focusing on enabling access to isolated areas often have the most direct impact on the economic growth of those areas. On the other hand, projects to improve safety are least likely to have an economic impact, though such impact was seldom expected anyway. In fact, economic development is usually only one of several objectives of highway projects, so any complete evaluation of highway benefits must match the measurement of benefits to the intended objectives of the projects.

Another factor affecting economic outcomes is project type. For instance, access road and interchange projects intended to enable access to a business location have the most obvious localized impact on jobs and employment. Inter-city connectors and urban circumferential connectors tend to have regional-scale business impacts. The most difficult to measure projects are capacity enhancements addressing urban congestion or rural bottlenecks, for their benefits are often to shippers and business destinations beyond the project area. These different findings underscore the need to match the measurement to the scale and type of project. They also demonstrate the futility of over-

simplistic approaches to the measurement of economic impacts and statistical analysis that use them.

Community bypass projects generally have less impact than the fears of opponents or hopes of proponents. Impacts on bypassed communities are sometimes negative but often positive due to a reduction in local congestion from truck traffic. In many cases, the largest benefits appear to be for long-distance movements and their beneficiaries outside of the bypassed communities.

Scale and density of the study area, and its economic condition, are also important factors. Road projects tend to help enable growth in the first five years after project completion in urban and rural areas that are not economically distressed. They also help enable growth in isolated rural areas that are economically distressed, though those impacts tend to take longer to emerge (in years 6-10) due to the time involved in completing business attraction efforts. Highway projects have the least direct effect on the economy of distressed urban communities, most likely because those areas have larger problems inhibiting economic growth.

More information is needed to distinguish the effect of various highway projects on access, connectivity, and reliability as well as overall cost and economic productivity. Yet an understanding of those effects is critical of demonstrating how and when highway projects contribute to economic growth and development. EDR Group is now leading a follow-on project (SHRP2 Project C11, "Development of Improved Economic Analysis Tools") specifically to address these issues.

Contact Persons