



Land Use and Economic Analysis of Transportation Systems

Development choices can have significant consequences for transportation systems. Governments increasingly face questions about how best to manage and benefit from the interaction between land use and transportation systems because of the affects on the environment, community life, and fiscal health. ICF International has the knowledge and experience to help answer questions often prompted by these trade-offs.

Transportation—How would different transportation investments or a regional land use plan affect the transportation system? How can increases in congestion and transport costs be minimized? How can the focus shift from adding capacity to improving access?

Environment—What are the air pollution impacts of alternative growth plans and scenarios? What are the water run-off impacts? Who would be affected, and how?

Quality of life—How will different approaches affect the things that citizens care about? Will access to jobs and schools improve? How will proximity to parks and the amount of open space be impacted? How much of the community is well-served by transit? What are the equity implications of different growth strategies?

Fiscal impacts—What would the candidate alternatives cost, and what is the impact to regional budgets?

Community and economic development—How can communities attract the kind of growth that they want? How can communities sustain today's growth?

ICF is at the forefront of developing new approaches to address the links between regional economies and infrastructure investment. ICF has developed a proven method for analyzing how transportation investments support a region's economic development strategy.

Our Approach

- Identifying the economic sectors that will serve as engines of growth
- Assessing transportation needs and investments relevant to the sector and development strategies
- Weighing alternative transportation investments against one another
- Determining the economic development impacts of alternatives

Our Capabilities

ICF helps clients develop alternatives, and evaluate those alternatives against criteria that are important to their community. We apply analytic tools to augment client's in-house analyses. ICF can help support your needs by drawing on our capabilities in:

- Determining strategies for economic development
- Addressing integrated transportation, land use, and environmental issues
- Cost estimating and fiscal planning
- Performance-based life cycle management



This is one in a series of fact sheets highlighting our expertise in transportation. Others fact sheets include:

- Commuter Choice and Transportation Demand Management
- Environmental Analysis and Assessment
- Freight Transportation
- Global Climate Change
- Hazardous Materials
- Strategic Congestion and Mobility
- Sustainable Development

Featured Projects

Transportation and Land Use Alternatives for the Greater Atlanta Region, Georgia Regional Transportation Authority (GRTA). ICF evaluated transportation investment and land use scenarios across a variety of perspectives—transportation, environment, and social impacts—with the objective of ensuring equal accessibility for all community members.

Transportation and Air Quality Impacts of Brownfield and Infill Development, U.S. Environmental Protection Agency (EPA). Based on results from pilot projects in Baltimore, Chicago, Dallas, and Atlanta, we developed guidance for regions on how to quantify the travel and emissions impacts of new development.

Travel and Emissions Impacts of Smart Growth Plans in Maryland, Maryland Department of Transportation. ICF analyzed the likely effects of changes in density, diversity, and design at two community redevelopments in Baltimore and Annapolis.

The Effects of Land Use on Water Runoff, U.S. EPA. The effects of land use decisions are not limited to air emissions. ICF is developing a new runoff model that can be used at the site level to optimize site design and transportation decisions.

Land Use and Transportation Decision Support System, Chittenden County, Vermont (Burlington region). ICF developed a Decision Support System (DSS) that links the county's existing travel model with a GIS-based land use model. The DSS supports both citizen involvement and local and regional planning. Its output includes a wide variety of indicators of regional performance.

Costs and Benefits of European Tunnel Safety Improvements, European Commission. In light of recent tragic accidents in European roadway tunnels, the European Commission considered the adoption of new tunnel infrastructure and operations standards. ICF conducted a preliminary cost-benefit analysis of these standards for both the 15-nation European Union and the Eastern European candidate countries. Benefits were estimated in terms of reduced crash deaths and injuries, reduced tunnel

repair costs, and reduced incident delay. Costs included safety improvements made and the delays associated with tunnel upgrade work.

Economic Analysis of a Multi-Modal Transportation Infrastructure Investment Initiative, Richmond, Virginia Chamber of Commerce. ICF provided comprehensive economic impact and cost-benefit analyses of several transportation infrastructure projects, including two interstate highway expansions; an inter-modal center; airport runway expansions and access improvements; and high-speed rail service. We analyzed investment in these infrastructure projects to determine the future economic expansion and regional growth. Analysis of high-speed rail service between the Washington, D.C. and Richmond included a tradeoff analysis of the investment in increased highway capacity versus investment in rail services.

Cost-Benefit Analysis Model for Freight Transportation Improvements, U.S. Federal Highway Administration (FHWA). ICF directed a team of companies in the development of a cost-benefit analysis model for freight transportation investments. The model accounted for the full economic consequences of freight transportation improvements, from user impacts to business reorganization and economic productivity effects. This work, for FHWA's Office of Freight Planning and Operations, tackles one of the most challenging transportation economics issues facing practitioners today—the relationship between freight transportation and business decisions.

Economic Development Highway Corridors Study, U.S. Highway 2, Roosevelt County/Fort Peck Indian Reservation, Montana, U.S. Federal Highway Administration. Under the guidance of the Federal Highway Administration, ICF conducted an analysis of the linkages between rural transportation improvements and local economic development at the Fort Peck Reservation. The study identified local economic development initiatives which could serve as engines of growth. It also determined the types of highway investments that would be needed to support and capture the full range of economic benefits associated with each initiative. The analysis applied the concept of incremental benefit estimation to assess benefit reliance on transportation improvements. It used input-output analysis to determine potential regional economic benefits linked to highway system investments.

About ICF International

ICF International (NASDAQ: ICFI) partners with government and commercial clients to deliver consulting services and technology solutions in the energy, environment, transportation, social programs, defense, and homeland security markets. The firm combines passion for its work with industry expertise and innovative analytics to produce compelling results throughout the entire program life cycle, from analysis and design through implementation and improvement. Since 1969, ICF has been serving government at all levels, major corporations, and multilateral institutions. More than 2,000 employees serve these clients worldwide. ICF's Web site is <http://www.icfi.com>.

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