

## Demonstrating the Economic Impacts of Michigan DOT's Highway Program

*It is critical for Michigan DOT to demonstrate the tangible economic value associated with its highway programs. Through this research, Michigan DOT developed and implemented a reliable method to determine the return on its highway program investment.*

### Problem

Transportation has long been the foundation of Michigan's economy. The state's transportation system handles a broad range of consumer, corporate, manufacturing and agricultural demands. Given the importance of Michigan's roadways, Michigan DOT invests approximately \$1.2 billion annually in the preservation, maintenance and enhancement of the state's road and bridge systems. As part of the agency's Five-Year Highway Program, this investment provides for a well-maintained and efficient transportation system that serves as the backbone for economic activity within Michigan.

Though the results of this \$1.2 billion investment are visible in the form of new and rehabilitated roads and bridges, the related economic benefits are not as obvious. What are the actual benefits to the citizens of Michigan from this sizable investment? And do the returns justify the investment? Michigan DOT set out to answer these questions by quantifying the specific benefits the state receives from this considerable financial commitment.

### Approach

For the past several years, Michigan DOT has collaborated on an ongoing basis with the University of Michigan and the Economic Development Research Group Inc. to analyze the agency's Five-Year Highway Program and measure its impact on Michigan's economy. Re-



*Research shows that highway improvements result in substantial benefits across many sectors of Michigan's economy.*

searchers sought to evaluate the effect on Michigan's major industry sectors as well. Two sectors of particular interest were manufacturing and tourism. Researchers sought to derive the value of the jobs, gross state product and net personal income that could be directly or indirectly attributed to Michigan DOT's road and bridge programs.

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### **Project Information**

**Report Name:** *Economic Benefits of the Michigan Department of Transportation's 2005-2009 Highway Program*  
**Start Date:** July 2004  
**Report Date:** January 2005  
**Research Report Number:** RC-1478  
**Total Cost:** \$43,138  
**Cost Sharing:** 20% MDOT, 80% FHWA through the SPR, Part II, Program

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## Research

Researchers used the Regional Economic Models, Inc. (REMI) model for their analysis. The REMI model has been used with success for other state agencies in Michigan since 1983 and is one of the most widely applied regional economic forecasting tools in the nation. Investigators were able to use the REMI model to examine and correlate factors related to Michigan's overall economy as well as those specific to the transportation industry. REMI also was attractive as an analysis tool because of its ability to calculate spinoff effects, such as spending by individuals who receive income attributed to transportation-related activity. An example of this would be spending by real estate agents who received income from selling homes to highway construction workers.

## Results

Researchers found that from 2005 to 2009, improved road conditions saved households up to \$57 million per year, with businesses realizing another \$12 - \$35 million in annual savings. Additionally, during this same period, Michigan DOT's investment in the state's roads and bridges directly or indirectly created:

- 26,550 Michigan jobs
- \$4.2 billion in personal income
- \$6.5 billion in gross state product

Researchers point out that beyond these impressive figures which focus on economic benefits, the impact of the highway investment on public safety should not be overlooked. New and improved roadways that meet capacity demands and reduce congestion contribute

significantly to improved air quality. Moreover, well-maintained roads and bridges reduce the number of fatal and nonfatal accidents for all users of Michigan's transportation system. These are further compelling reasons for investing in the upkeep and improvement of Michigan's roadway infrastructure.

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*"This research project and the corresponding economic analysis provided Michigan DOT with a solid economic foundation to report back to the citizens of Michigan the benefits of transportation investments."*

*Matt Webb, AICP*

*Project Studies and Justification  
Unit Manager*

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## Value

This project helped to fill Michigan DOT's need to calculate and communicate the benefits resulting from its annual highway investment in new construction, maintenance and rehabilitation, and safety programs. The REMI model not only helped Michigan DOT quantify the economic benefit of its investment in the state's highway system, but also allowed the agency to establish a baseline process for performing its annual assessment of the state's highway program. The annual report has become a valuable tool that is highly anticipated and frequently used by the State Transportation Commission, the state legislature and other key Michigan stakeholders. ■

## Michigan Department of Transportation



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