

**REVIEW OF ECONOMIC DEVELOPMENT IMPACTS OF
TRANSPORTATION IMPROVEMENTS:
TWO AND FOUR LANE CORRIDORS.**



**MoDOT
RESEARCH, DEVELOPMENT AND TECHNOLOGY TRANSFER
FEBRUARY 2002**

Four-Lane Corridors Increase Economic Development Potential

Prepared by MoDOT Research and Development Specialist Ernie Perry

Research shows that two- to four-lane roadway improvements boost economic development. In fact, highway investments result in economic development locally, regionally and statewide.

A two-lane to four-lane roadway improvement can spur new development adjacent to the improved corridor, as well as beyond. In Missouri, two-lane to four-lane improvements frequently result in increased economic development on the local and regional levels. Increased economic efficiencies also result through reduced transportation costs.

Three important caveats should be noted:

1) Highway construction has a demonstrated correlation with economic development, but complimentary economic development activities are also necessary, as pointed out in the *Appalachian Development Highway System research*ⁱ and in the *Delta Region Development Program*.ⁱⁱ

2) While four-lane roadways may promote economic growth, they are often perceived by smaller (and sometimes less viable) communities as factors in removing traffic from their business districts, and thus decreasing community economic activity.

3) Research in this area is based on very site-specific case studies (highway bypass studies) or research that looks at macro-economic conditions (construction expenditures increase overall gross national product). Research dealing with specific, facility type improvements is limited.

Literature Overview

The *Wisconsin DOT Corridors 2020 Plan* to connect all communities over 5,000 people indicates:

- 86 percent of manufacturing jobs in 1996,
- 77 percent of all manufacturing firms in 1996,
- and 87 percent of the new or expanding firms,

were all located within 5 miles of a Corridor 2020 route. This is clear evidence of a highway/economic development link. And, based on the *Appalachian Regional Commission study*, five counties adjacent to the Appalachia Development Highway System had job growth exceeding 15 percent, also indicating a benefit of two- to four-lane expansionsⁱⁱⁱ.

Additionally, a 1996 study conducted by Forkenbrock and Foster revealed higher employment and earnings growth rates in counties served by the highways compared to

counties not served^{iv} (based on aggregate multi-county studies conducted in Iowa, Appalachia and the Mississippi Delta region).

Research in Missouri also supports the economic development/highway link. Based on research conducted in 1994 for MoDOT^v, the following table summarizes the proximity of 248 business sites surveyed in Missouri.

Facility Distance from type of highway.

	Less than 1 mile	1 to 3 miles	3 to 10 miles	10 to 20 miles	Over 20 miles	Total
Interstate highway	33.1%	22.7%	14.0%	8.3%	21.9%	242
4-lane non-interstate	37.4%	26.5%	7.6%	8.0%	20.6%	238

Fifty-five percent of all responding facilities with annual sales of more than \$10 million are within three miles of an interstate highway and 66 percent of all facilities with annual sales over \$10 million are located within 3 miles of a 4-lane highway. And 35 of the 47 responding businesses with annual sales of \$100 million or more are within 3 miles of a four-lane highway

Furthermore, about 61 percent of the business respondents indicated that for their facility, *proximity to a highway creates a competitive advantage*. Less than 7 percent felt transportation was a competitive disadvantage and 31.7 percent indicated that transportation was neither a competitive advantage nor disadvantage for their businesses.

And in a 1987 survey of community bypass literature^{vi}, the Iowa Association of Business and Industry relates the importance of business proximity to four-lane and interstate roadways with the following quote, “ the distance to the nearest four-lane highway which provides access to the interstate is one of the first questions asked by prospective companies.”

However, while there is undoubtedly a positive correlation between proximity of business location and four-lane highways, and economic development in general, the issue is complex. In Federal Highway Administration’s 2001 report entitled, “Using Empirical Information to Measure the Economic Impact of Highway Investments”, three key observations are outlined.

- 1) The economic effect of a specific highway can vary from project to project.
- 2) The potential economic effects of a specific new highway can be local and/or regional.
- 3) There has been a lack of post-project studies documenting the actual economic impacts of built highway projects.

In Flora and Tans’ article, *Highway Impacts on Local Economic Development*^{vii}, the authors completed a regression model of growth and highway development in Kansas.

Two findings again reflect the complexity of the situation. First they indicate that the positive impacts of increased highway access accrues only when all other productive resources—labor, capital and natural resources—are in place. They also indicate that their research finds no evidence that residents in towns most served by interstate highways are better off economically as a result.

The authors state that the presence of four-lane and interstate highways are not related to economic development in Kansas under the radical restructuring of the U.S. economy. They conclude that *attention to infrastructure investment that focuses on the quality of life of residents rather than aimed at attracting new enterprises* contribute the most to community development.

According to additional studies in the Appalachia region, Tickamyer and Tickamyer state that, “for much of Appalachia, the area remains poor and underdeveloped despite concerted efforts to improve infrastructure, particularly through the construction of 4-lane highways”^{viii}.

Conclusion

In Missouri, improvements of two-lane roadways to four-lane roadways can be expected to increase economic development locally, regionally and statewide. As the exact cause and effect relationship is yet to be established, additional research is necessary in order to identify the factors related to potential economic development.

Current MoDOT Research

1. *Identification and Development of User Requirements to Support Robust Corridor Investment Models* – Expected to result in a recommended economic model to determine the economic benefits that communities, regions and the state derive from MoDOT transportation investments.
2. *The Effects of Different Land Uses on the Local Property Tax Base in Missouri* – Examines the consequences of community growth and support services in comparison to the fiscal status of the community.

Citations

ⁱ<http://www.ted2001.com/>

ⁱⁱ<http://www.tfrc.gov////////pubrds/winter96/p96w19.htm>

ⁱⁱⁱ Information located at: <http://www.fhwa.dot.gov/policy/12a-hmpg.htm>

^{iv} Forkenbrock, David J., and Norman S.J. Foster. "Highway and Business Location Decisions". *Economic Development Quarterly* Vol. 10, No. 3, August 1996.

^v Forkenbrock, David J. and Norman S.J. Foster. "Analysis of a Missouri Business and Industry Survey of Transportation and Economic Performance", MoDOT, 1994.

^{vi} A Literature Review of Urban Bypass Studies. Office of Project Planning, Iowa DOT, 1987.

^{vii} "Highway Impacts on Local Economic Development", Flora, C.B. and Jinsong J. Tan. North Central Regional Center for Rural Development, Iowa State University.

^{viii} Tickamyer, Ann R. and Cecil H. Tickanyer, 1988. "Gender and Poverty in Central Appalachia." *Social Science Quarterly* 60, 4: 874-891.