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August 1999



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Acknowledgement

This study was paid for by Citizens for Appropriate Rural Roads and the Environmental Law and Policy Center of the Midwest.

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Great Cities Institute Publication Number: GCP-99-3

The views expressed in this report represent those of the author(s) and not necessarily those of the Great Cities Institute or the University of Illinois at Chicago.

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Abstract

This study examines the cost-effectiveness of the Evansville-to-Bloomington portion of the proposed new Interstate 69 highway in Southwest Indiana in fulfilling its stated purpose of stimulating economic development in four rural Indiana counties. We compare the proposed highway with other rural economic development programs and strategies such as rural enterprise zones, federal economic development programs, business incubators, and local industrial development groups. In addition, we use a variety of state cost and job creation estimates, cost calculations, and comparison figures. Although this study does not take a position on whether the proposed new highway should be built, we conclude that if the purpose of the I-69 project is economic development in these rural counties, far more cost-efficient alternatives almost certainly exist.

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Executive Summary

This study examines the cost-effectiveness of the Evansville-to-Bloomington portion of the proposed new Interstate 69 highway in Southwest Indiana in fulfilling its stated purpose of stimulating economic development in four rural counties -- Gibson, Pike, Daviess and Greene. To do so, we compare the proposed highway with other, more traditional rural economic development programs and strategies: rural enterprise zones, two federal government economic development programs, business incubators and local industrial development groups. As a basis for comparison, we use cost-per-job.

Using Indiana Department of Transportation ("DOT") cost and job-creation estimates, we first calculate the cost-per-job of using the proposed highway as an economic development tool for these counties. We then compare that figure with cost-per-job data that has been gathered for other rural economic development programs based on experience with those programs throughout the country.

We conclude that:

- The cost of each new job that the proposed new highway would create in the four rural target counties is \$1.56 million.
- The other, more traditional rural economic development programs and strategies that we examine have created jobs elsewhere in the country at costs ranging from \$437 to \$28,350 per job. For most of these programs, such as rural enterprise zones, business incubators and U.S. Economic Development Administration public works projects, the average cost-per-job is between \$1,000 and \$5,000.
- Given that the cost-per-job for the proposed new I-69 highway is over 50 times higher than the cost of traditional rural economic development programs, the highway does not represent a cost-efficient economic development strategy for the four rural counties.

This study does not take a position on whether the proposed new highway should be built. Nor does it advocate any specific alternative or set of alternatives. However, if the purpose of the I-69 project is economic development in these rural counties, as the Indiana DOT has stated, far more cost-efficient alternatives almost certainly exist.

Cost-Per-Job For the Proposed New Interstate 69 Highway

The purpose of this study is to examine the cost-effectiveness of the proposed new Interstate 69 highway in accomplishing Indiana's stated goal of economic development in four rural counties in Southwest Indiana. To do so, we compare the highway with other, more traditional rural

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economic development programs and strategies. Using the well-recognized measuring-stick of cost-per-job, we calculate the estimated cost to the public of each job that the highway would create in the target rural counties and compare it with what other rural economic development programs and strategies have cost, per job, based on experience elsewhere.

Cost-per-job is the best initial measure to employ when determining the return on public investments for economic development. Cost-per-job analysis represents a basic step in conducting an economic impact analysis. Projects that yield the fewest jobs per unit of investment are unlikely to meet a more rigorous evaluation standard.

In November 1998, the Indiana Department of Transportation ("DOT") announced plans to expand the scope of the I-69 project, extending its northern terminus from Bloomington to Indianapolis. As yet, however, the Indiana DOT has announced no proposed route for the Bloomington-to-Indianapolis segment, has given no official cost estimates for it, and has not estimated the number of jobs it would create. For those reasons, this study is limited to the original proposed Evansville-to-Bloomington section of the project. In this report, the words "the highway" and "I-69" refer to the project as originally proposed, between Evansville and Bloomington.

The primary purpose of the proposed new Interstate 69 highway from Evansville to Bloomington, according to the Indiana DOT, is economic development in four rural counties along the route -- Gibson, Pike, Daviess and Greene (Draft Environmental Impact Statement ("EIS"), March 1996, pp. 1-12; Curtis Wiley, "The time to move ahead on the I-69 extension," *Indianapolis Star*, October 10, 1997). This study examines whether the proposed new highway would fulfill that goal in an economically cost-effective manner.

The Indiana DOT has never, to our knowledge, publicly issued any projections of the number of permanent jobs the highway would create in Gibson, Pike, Daviess and Greene Counties, although it has issued other projections. But the U.S. Environmental Protection Agency ("EPA"), a federal government agency, has calculated on the basis of Indiana DOT's other projections that the project would create about four jobs per year in each of the four counties (Letter from Valdas Adamkus, EPA, to Arthur Fendrick, Federal Highway Administration, December 5, 1996). EPA's estimate appears to be reasonable based on the projections that Indiana DOT has released publicly¹.

Indiana DOT's projections measure job-creation over a 30-year period. Thirty years is a long time period to employ because benefits cannot be predicted that long into the future with any certainty. In the past, we have recommended using a seven-year period to measure benefits, but tolerated a range of five to ten years. The private sector utilizes a shorter time frame when measuring potential benefits. Using a shorter time frame would decrease the number of jobs created and increase the cost-per-job figure for the highway. However, using Indiana DOT's 30-year period, at four jobs per county per year the highway would create a total of 480 new jobs in the target counties.

Indiana DOT's current estimate of the highway's cost is \$750 million. (Wiley, "The time to move ahead," October 1997) Highway opponents dispute this estimate, claiming it dramatically understates the true costs of the project. As we will see, for purposes of this study it is not essential to resolve this dispute. We will therefore simply use Indiana DOT's \$750 million

estimate.

Dividing the \$750 million cost of the proposed highway by 480 jobs created in the target counties yields a cost-per-job of \$1.56 million. This is a reasonable approximation since: (1) the overwhelming majority of the highway's costs will be in the four targeted counties, which include about 90 percent of the highway's length; (2) while Indiana DOT projects that the highway would create additional jobs outside the four target counties, they would be incidental to Indiana DOT's stated purpose for the project²; and (3) Indiana DOT's job-creation projections for the target counties may be overstated, since it is not clear whether they take into account jobs *lost* due to the highway's impacts on farms and businesses in the right-of-way.

The \$1.56 million estimated cost for each job the Interstate 69 project would create in the rural target counties can be compared to the cost-per-job of other rural economic development programs and strategies that could serve as alternatives to the proposed highway as an economic development tool for the target counties. Granted, the \$1.56 million figure is only a rough estimate, due to the limited data provided by Indiana DOT. However, such a comparison can yield useful insights in determining whether the highway is cost-efficient as an economic development project for these counties, and whether more cost-efficient alternatives likely exist.

Programs Cost-Per-Job Using Alternative Rural Economic Development

In this section, we examine data on the cost of creating jobs in rural areas using more traditional rural economic development programs and strategies, which can then be compared to the cost-per-job of I-69. The following cost-per-job estimates are taken from studies conducted during the past 20 years on a variety of rural employment development programs. These studies provide valuable information about the costs of creating jobs in rural areas. The cost-per-job estimates for these programs vary widely, ranging from \$437 to \$28,350. For most of these programs, the average cost-per-job is between \$1,000 and \$5,000.

Caution must be exerted when interpreting these figures, because the studies that we have consulted employ different methodologies for selecting and evaluating data. In addition, the cost-per-job estimates have not been adjusted to reflect a common dollar value (that is, they are not all expressed in 1998 or 1999 dollars). Moreover, in some cases these figures represent only the cost of each job directly created by the program. The \$1.56 million cost-per-job estimate for I-69 apparently includes jobs directly *and* indirectly created. (Jobs are indirectly created when they result from money circulating through the economy that was initially spent as a result of a project or program -- for example, when people hired as a result of a program spend their salaries.) Some of the cost-per-job figures for these economic development programs would be even lower if they, like the I-69 figure, took into account jobs indirectly created.

For these reasons, the cost-per-job estimates presented below should be considered as estimates rather than precise costs.

Rural Enterprise Zones

The 1993 study *Rural Enterprise Zones in Theory and Practice*, by Richard Reeder of the USDA Economic Research Service, analyzes the performance of rural enterprise zones (EZ's) across the country. State enterprise zone programs offer tax incentives and other nontaxed government assistance to encourage capital investment and job creation by new firms and expanding local businesses in designated economically-distressed areas. In addition to state government

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incentives, local governments often offer additional incentives, such as reduced development fees, improvements in local infrastructure and property tax abatements, to businesses locating in enterprise zones. Although enterprise zones (EZs) were designed originally as urban economic development tools, they are now found in both urban and rural areas in the United States.

According to Reeder, only tentative conclusions can be drawn from the limited research that has been conducted to date on rural enterprise zones. In general, it appears that enterprise zone programs have created employment opportunities in distressed areas at a reasonable cost. The available evidence suggests that rural EZ's have been as successful in generating jobs as urban EZ's, equaling or even surpassing the cost-effectiveness of urban EZ's.

Reeder cites the following cost-per-job estimates from six studies of state rural enterprise zones:

Cost per total direct job ranged from \$437 in Virginia to \$5,613 in New Jersey. Cost per net direct job can be substantially higher than cost per total direct job, because net jobs are fewer. Thus in New Jersey, the cost per net direct job is \$13,070, more than twice the cost per total direct job. In this case, net direct jobs were computed by netting out those jobs for which the EZ was not viewed to be a major factor. This netted out 68 percent of the reported jobs created by EZ firms. (Reeder, 1993, p. 19)

A study of an EZ in Evansville, Indiana, estimated total direct jobs as the difference between zone and region employment growth. The study used a shift-share analysis to net out jobs generated through regional and industrial growth trends rather than the EZ. The cost per total direct job was \$3,135 and the cost per total net job generated by the EZ was \$4,117 (Reeder, 1993).

It can be argued that the impact of enterprise zone programs should be assessed by considering the "multiplier effect," thus counting jobs indirectly as well as directly created. A study of Indiana enterprise zones examined 1068 firms located in EZs. (At present, Indiana has only urban, not rural, enterprise zones.) A multiplier was applied to total direct jobs reported, in order to estimate the total number of jobs created. The cost per direct job was \$4,116, while the cost-per-job for direct and indirect jobs together was \$1,036 (Reeder, 1993).

USDA Business and Industry Guaranteed Loan Program

The U.S. Department of Agriculture's (USDA) Business and Industry (B&I) Guaranteed Loan Program has two basic functions: (1) to generate and retain rural employment opportunities, and (2) to improve rural economies. The program supports rural businesses by guaranteeing up to 90 percent of a loan received from an authorized lender in a rural area. Most legally organized bodies are eligible to receive loan guarantees under B&I program guidelines. B&I guaranteed loans may be directed towards buildings and real estate, certain debt refinancing, equipment and working capital (USDA web site).

The B&I Guaranteed Loan Program currently has an average cost of \$28,350 in loan guarantees per job created. The actual economic cost of \$28,350 in loan guarantees depends on the riskiness of the loan and other factors, but in any case is substantially less than \$28,350. The actual out-of-pocket cost-per-job expense to the federal government was approximately \$275 in 1997 (Carmon, 1998).

U.S. Economic Development Administration Public Works Projects

In 1997, the U.S. Economic Development Administration (EDA) analyzed the results of 205 EDA-funded public works projects (buildings, industrial parks, roads, water/sewer, marine/tourism), in both rural and urban areas, obtaining close-out payments in 1990. Of the 203 projects that had been completed, an average of 327 direct permanent jobs were created per million dollars of EDA investment. The median cost per direct permanent job created or retained was \$3,058 in EDA funds. When all funding sources (applicant, local, state, and federal) are considered, the total cost per direct permanent job was \$4,857 (Rutgers, 1997).

Business Incubators

A business incubator is a facility in which entrepreneurs can share space and business services. Such services are often offered at below-market rates, thereby enabling a firm to decrease its overhead expenses. By providing this supportive environment, the incubator helps new small businesses survive, which leads to the creation of jobs and a healthier local economy. Business incubators are usually funded with a mix of public and private funds.

Four main components underlie the incubator concept: (1) an internal support network including on-site business assistance at low or no cost, assistance obtaining financing and employee training and placement services, (2) a real estate component that reflects the need for flexible user space including below-market rents and flexible leases, (3) the availability of management consulting services and (4) other support services. A “graduation” policy requiring firms to leave after three to five years may also be part of the incubator arrangement (Wiewel, 1987).

In a 1997 study, the National Business Incubation Association (NBIA) estimated that the cost per direct job created by business incubation programs throughout the United States was \$1,109 (Molnar, 1997). The NBIA contacted business incubators located in rural and urban areas for the survey.

Local Industrial Development Groups

Local industrial development groups (LIDGs) are not-for-profit associations of public and private entities, which are organized to promote capital investment and economic development in municipalities and counties (Bellingham, 1998; Humphrey and Erickson, 1993). LIDG boards are controlled by representatives from such professions as engineering, law and banking, who establish a working alliance with local government, retailers, planning associations and regional utilities.

LIDGs became more prevalent during the 1970s and 1980s as a response to two trends: industrial restructuring and cutbacks in government funding. The most important motivating factors underlying the growth of LIDGs have been job creation, improved capability to compete with other localities for economic development and the ability to access state and federal economic development assistance. (Humphrey and Erickson, 1993)

LIDGs play a variety of roles beyond business recruiting, handling inquiries from prospective businesses and facilitating the site selection process. Some organizations limit additional activities to managing industrial revenue bonds, while others undertake more active functions such as labor force acquisition and training programs, operating industrial parks and business planning (Erie, 1998; Humphrey and Erickson, 1993; Tri-City, 1998).

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Craig R. Humphrey and Rodney A. Erickson contend that LIDGs are a cost-efficient method of job creation:

The median number of new jobs created through the expansion of existing firms, new start-ups, and plant relocations was just over thirty, mostly in manufacturing. Given that the annual operating cost of an LIDG was less than \$40,000 in 1983, the direct cost of creating jobs at that time was relatively low. [Humphrey et al., 1988:11] Some of this cost is also socialized, in that an estimated 40% of the LIDGs received at least a quarter of their annual budget from governmental sources. [Ottensmeyer et al., 1987:574] (Humphrey and Erickson, 1993, p. 113)

Thus, according to Humphrey and Erickson's data, the average cost-per-job created through LIDGs in 1983, based upon their operating budgets alone, was approximately \$1,330.

Conclusion: Cost-Effectiveness of I-69 as a Rural Economic Development Project

As noted, the cost-per-job estimates in the previous section were not calculated by researchers using the same methodologies. Consequently, these estimates should not be taken to be precise. Nor should our analysis be taken to be the result of a cost-benefit analysis examining various alternatives to the proposed new highway.

That being said, however, a dramatic contrast exists between the proposed new highway and these more traditional rural economic development programs in terms of the amount of public investment required to generate economic development. In the case of the new highway, \$1.56 million in public funds are required for each new job created in the rural target counties. None of the alternatives requires more than \$30,000 in public investment for each new job created. For most of them, the cost per job is between \$1,000 and \$5,000.

In short, in fulfilling its stated goal of rural economic development in the target counties the proposed new highway is more than 50 times more expensive than traditional rural economic development programs. Put differently, assuming that these programs would cost about the same in Southwest Indiana as they have elsewhere, the new highway would be 50 times less economically efficient than these alternatives. For each new job that it would create in the four target counties, the I-69 highway would require spending 50 times more tax money than it would cost to create that job using one or more of these alternatives.³

Given that the \$1.56 million cost-per-job for the proposed new I-69 highway is 50 times higher than the estimated cost-per-job using more traditional alternative rural economic development programs, we conclude that the highway does not represent a cost-effective rural development strategy for Gibson, Pike, Daviess and Greene Counties. It is not our purpose to take a position on whether the highway should be built, or to advocate specific alternatives to it. However, if the purpose of the project is economic development in these rural counties, as the Indiana DOT has stated, far more cost-efficient alternatives almost certainly exist.

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Notes

1. In its projections in the Draft EIS, Indiana DOT does not give job-creation estimates for the four target counties either separately or as a group. Rather, it breaks Southwest Indiana into five “regions” and estimates the number of jobs the highway would create in these regions. Gibson County is included in Region 1, and Greene County is in Region 5 -- in each case, along with a number of other counties. Pike and Daviess are in Region 2, along with only one other county (Knox).

Given this presentation of the data by Indiana DOT, to calculate the number of jobs the highway would create in the four target counties, the best one can do is to use Region 2 (which includes two of the four target counties) as a proxy for all four of them. Indiana DOT projects 344 new highway-induced jobs in the three counties of Region 2 over the 30-year study period in the Draft EIS. (Draft EIS, Table 40, p. 138.) That works out to 3.8 jobs/county/year.

2. For the entire State of Indiana, Indiana DOT projects that the highway would create 4,415 new jobs over a 30-year period. That works out to an overall cost-per-job of about \$170,000. Most of the jobs the highway would create would be located in and around Evansville and Bloomington -- both of which are outside the Indiana DOT’s target counties. Indiana DOT acknowledges that neither Bloomington nor Evansville is suffering economically. (Draft EIS, Appendix A, p. 4-17)

3. For the entire State of Indiana, including both rural and urban areas outside the four target counties, at a cost-per-job of \$170,000, the I-69 highway would be more than five times as expensive as the rural economic development programs we have examined.

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