

*Needs Assessment  
for  
Local Roads and Streets*

**Executive Summary**

**April 2009**  
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by

**Indiana LTAP Center**

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April 2009

To Whom It May Concern:

## ***Needs Assessment for Local Roads and Streets***

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Please find attached an updated Needs Assessment for Local Roads and Streets. This report was updated at the request of several members of the Local Technical Assistance Program (LTAP) Advisory Board and industry professionals within Indiana. The objective was to use the condition of local transportation infrastructure to identify the funding levels required to maintain this infrastructure and then compare this with existing funding to determine the adequacy of the current funding.

This updated distribution of the Needs Assessment for Local Roads and Streets comes several years after the first report. This release contains updated information on the current condition and the cost to maintain the local transportation infrastructure, including roads and streets, bridges and culverts, and traffic safety features. This document has been revised to reflect current pavement condition data, as documented by an independent pavement assessment survey in an eight county sample, and current bridge data, as documented by the bridge inventory database.

The basic finding of the study is evidence that there is a severe shortage of funds to adequately maintain local transportation facilities. The shortage has existed for a long enough period of time that there is now a need for short-term funding simply to “catch up”. The report estimates the short-term funding required for this “catching up”, as well as the long-term funding over and above current funding required to maintain this system. The purpose of this report is not to identify specific sources for local transportation funds, but rather to document and quantify the need.

For questions related to the information included in this report, please contact me at the phone number or address listed below.

Sincerely,

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The full report is available online at:  
<http://rebar.ecn.purdue.edu/LTAP/Resources/Publications.aspx>

# 1. Executive Summary

The objective of this needs assessment for local roads and streets was to identify the needs of and resources available to local public agencies (LPAs) to construct and maintain their transportation infrastructure. Components of the infrastructure considered in this study include roads and streets, bridges and culverts, and traffic safety features; supporting operational and administrative costs were also considered.

The results of the study indicate that there is a significant shortfall in funding in all of these areas. Table 1.1 shows the increased funding necessary, over and above existing funding, for each of the main study areas. The study includes two funding components. The first component is the short-term funding to remediate the deficiencies of the current system. This short-term

funding would be used to address the backlog that has resulted from years of inadequate funding. The short-term funding could be distributed over a period of five to ten years; however, no provision for the impact of inflation is reflected in this value. The second component is the long-term need, which represents the annual funding shortfall. The long-term shortfall is the difference between the funding required for annual maintenance and programmed reconstruction of the current system and the funding currently provided. The long-term shortfall is expressed in current dollars, and does not reflect future inflation.

Securing funding to meet the short-term and long-term needs will ensure that adequate resources are available to maintain and reconstruct the existing transportation infrastructure, and protect this investment. The funding identified is based on actual costs and conditions in Indiana. Information from many sources was used to develop these estimates, including the Indiana Department of Transportation (INDOT) Highway and Street Inventory, County Highway Operational Reports, a condition survey of county roads, Federal Highway Administration (FHWA) reports and Indiana Local Technical Assistance Program (LTAP) publications. Funding estimates for roads and streets are based on the findings of a condition survey of over 3,100 miles of paved county roads in eight counties. The survey data, which was provided by an independent consultant in 2008, is extrapolated to estimate the pavement needs for all local agencies in the state. Funding estimates for bridges are based on the National Bridge Inspection Standard (NBIS) bridge database. Funding estimates for safety improvements are based on the survey of county roads (for widening and lane markings) and on previous LTAP research (for traffic signs).

<b>Component</b>	<b>Short-term (Backlog)</b>	<b>Long-term (Annual)</b>
Roads and Streets	\$3,504,000,000	\$715,000,000
Bridges and Culverts	\$1,169,000,000	\$117,000,000
Safety Improvements	\$706,000,000	\$26,000,000
Total	\$5,379,000,000	\$858,000,000

## **1.1. Significant Findings**

The significant findings of this study are presented below and address the funding shortfall for local agencies, with specific findings regarding local roads and streets, bridges and culverts, and traffic and safety.

### **1.1.1. Funding Shortfall**

- The short-term funding shortfall for local agencies is currently estimated to be \$5.4 billion. This represents the backlog of needs that have accumulated, as facilities have deteriorated over time.
- The long-term funding shortfall for local agencies is currently estimated to be \$858 million. This represents the additional funding that is needed each year in order to preserve the existing transportation system on the proposed maintenance and reconstruction schedule.
- Local agencies described the funding situation as critical in the October 23, 2008 Commission on Tax and Finance Policy Hearing, citing the dual challenges of steep cost increases (e.g., salt) and fluctuating costs (e.g., asphalt, fuel and aggregate).
- Funding has not kept pace with increasing expenses, and funding revenues for local agencies have been reduced by increased expenses for both the Net State Police Expense and the Bureau of Motor Vehicles Expense, which come directly from the Motor Vehicle Highway (MVH) funds. The Net State Police Expense has increased substantially, consuming over \$86 million in fiscal year (FY) 07-08, compared to \$53 million in FY 04-05 (a 62 percent increase). The Bureau of Motor Vehicles expense has also increased substantially, consuming \$50 million in FY 07-08, compared to under \$39 million in FY 05-06 (a 29 percent increase).
- Funding revenues for local agencies have also diminished due to the reduction in gas tax revenues associated with a decline in vehicle miles traveled and an increase in fuel efficiency. Projections from the Indiana Auditor of State in December 2008 predict decreasing funds for both the MVH and Local Road and Street (LRS) funds. Local agencies may be faced with 2009 revenues that are 5 percent below 2008 revenues (Indiana Auditor of State, 2008), which were 5 percent below 2007 revenues (Davis, 2009).
- Considering MVH and LRS distributions to locals, revenues in FY 07-08 were 17 percent below revenues in FY 99-00, although costs have increased approximately 29 percent between 1999 and 2008 (Bureau of Labor Statistics, *CPI Inflation Calculator*); adjusting for inflation, funding in FY 07-08 is 36 percent lower than the funding in FY 99-00.

### **1.1.2. Roads and Streets**

- County highway and city and town street departments maintain over 84,000 miles of roads and streets. This local system accounts for nearly 90 percent of all of the public roads in Indiana.
- An assessment of funding indicates that the MVH distributions to county highway and local street departments are consumed by administrative, operating, and other necessary expenses. LRS funds are used almost exclusively to maintain local roads. The majority

of counties and many municipalities utilize supplemental funds for transportation, although supplemental funding is inadequate to address the bulk of the transportation funding needs.

- An in-depth evaluation of county roads illustrates the challenges faced by local agencies. An independent consultant was hired to provide assessment of over 3,100 miles of Indiana's paved county roads. This assessment provides clear evidence that local roads need to be improved.
  - Over half of the paved county roads are recommended for improvement, based on the PASER rating. The PASER rating is determined by a visual assessment of pavement condition, based on cracking, rutting and other visible signs of deterioration. A PASER rating of four or less indicates that the pavement is significantly compromised and improvement is needed. Based on the PASER assessment, 51 percent of the paved county roads have a rating of four or less.
  - The international roughness index (IRI) was also used to assess the condition of county roads. The IRI was developed to provide an objective measure of road smoothness, and is recognized as a standard by the World Bank. Seventy-seven percent of county roads exceed an IRI of 125 inches/mile, a traditional breakpoint for a smooth pavement. Only 19 percent of state roads have an IRI greater than 125 inches/mile, indicating that county roads are much rougher. The IRI assessment also confirms that approximately half of the paved county roads need improvement; 46 percent of the paved county roads surveyed have an IRI greater than 200 inches/mile and are recommended for improvement.
- Cities and towns face the same constraints that counties do in terms of limited funding and increasing costs. The cost of maintaining all local roads has continued to increase while the funding available through MVH and LRS has not increased accordingly.

### **1.1.3. Bridges and Culverts**

- County agencies maintain 12,836 bridges over 20 feet in length and an estimated 260,000 smaller bridges and culverts.
- Twenty-five percent of Indiana's county bridges over 20 feet are either structurally deficient or functionally obsolete.
- More than 9 percent of county bridges over 20 feet are load posted below 15 tons, which restricts the average sized school bus from crossing, and necessitates a detour.
- Bridge funding among Indiana counties varies significantly between counties, from as low as \$839 to as high as \$15,857 per year per bridge over 20 feet. This wide range illustrates one of the limitations of the cumulative bridge fund, a primary source of bridge funding. Bridge funding of over \$11,000 per year per bridge over 20 feet is required to meet the proposed bridge replacement program (for an average size bridge).

#### **1.1.4. Traffic and Safety**

- Annual travel on county roads is estimated at 19 billion annual vehicle miles, according to the Federal Highway Administration (FHWA); travel on city and town streets is estimated at 15 billion annual vehicle miles. Local roads play an important role in statewide mobility, and serve approximately 46 percent of the total miles traveled in Indiana (Drumm, 2009).
- Traffic safety is lower on local roads and streets than on state maintained routes. FHWA safety records indicate that 59 percent of all crashes from 2003 to 2006 (the most recent data available) occurred on locally maintained routes, despite their lower traffic volume. The injury crash rate on local roads is more than twice the injury crash rate on state roads, and approximately 46 percent of all fatal crashes occur on local roads (Drumm, 2009).
- Legible traffic signs provide information necessary for the safe and efficient operation of the road system. A survey of signs in Indiana indicates that 245,000 signs on local roads (including counties, cities and towns) are in poor condition and should be replaced.
- Lane delineation plays an important role in road safety. However, 88 percent of the paved county roads included in the condition survey did not have edgeline markings and 72 percent did not have centerline markings. These findings are considered representative of all county roads in the state, although not representative of the conditions in cities and towns.
- Adequate lane width is an important factor contributing to safety; however, the survey of paved county roads indicates that over half (53 percent) of the roads surveyed are less than 18 feet, the minimum width recommended by the American Association of State Highway and Transportation Officials (AASHTO, 2004). These findings are considered representative of all county roads in the state, although not representative of the conditions in cities and towns.

The provision of an adequate, stable and predictable funding source for local roads and bridges is necessary to maintain the integrity of our transportation network, and to ensure the mobility and safety necessary to supports the economic needs of the many jurisdictions in our state. This report documents the increasing needs and the decreasing revenues that face local agencies, and highlights the negative consequences that have resulted from a lack of adequate funding in the last decade. The transportation funding shortfall has resulted in deteriorating conditions, and is evidenced by the \$5.4 billion funding needed to improve facilities that have deteriorated. To maintain our local road infrastructure, a dedicated source of \$858 million per year in additional funding should be allocated. The estimated funding requirements reflect maintenance of the existing system; they do not reflect additional capacity which may be needed to meet future demand or serve future facilities.

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