Members

Rep. Edmond Soliday, Chairperson
Rep. Michael Speedy
Rep. Lloyd Arnold
Rep. William Davis
Rep. Randall Frye
Rep. Jud Mcmillin
Rep. Rick Niemeyer
Rep. Thomas Saunders
Rep. Benjamin Smaltz
Rep. Daniel Forestal
Rep. Edward Delaney
Rep. Cherrish Pryor
Rep. Steven Stemler
Sen. Thomas Wyss, Vice-Chairperso
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Sen. Jean Breaux
Sen. Earline Rogers
Sen. Ronald Grooms
Sen. James Banks
Sen. Vaneta Becker
Sen. Michael Crider
Sen. James Merritt
Sen. Allen Paul

JOINT STUDY COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE ASSESSMENT AND SOLUTIONS

Legislative Services Agency
200 West Washington Street, Suite 301
Indianapolis, Indiana 46204-2789
Tel: (317) 233-0696 Fax: (317) 232-2554

LSA Staff:

Sarah Freeman, Attorney for the Joint Study Committee
Stephanie Wells, Fiscal Analyst for the Joint Study Committee

Authority: *IC 2-5-28.5*

MEETING MINUTES[1]

Meeting Date:	**October 15, 2013**
Meeting Time:	**10:00 A.M.**
Meeting Place:	**State House, 200 W. Washington St., the Senate Chambers**
Meeting City:	**Indianapolis, Indiana**
Meeting Number:	**2**

Members Present: **Rep. Edmond Soliday, Chairperson; Rep. Michael Speedy; Rep. William Davis; Rep. Randall Frye; Rep. Jud Mcmillin; Rep. Rick Niemeyer; Rep. Thomas Saunders; Rep. Benjamin Smaltz; Rep. Edward Delaney; Rep. Cherrish Pryor; Sen. Thomas Wyss, Vice-Chairperson; Sen. James Arnold; Sen. Earline Rogers; Sen. Ronald Grooms; Sen. Vaneta Becker; Sen. Michael Crider; Sen. James Merritt.**

Members Absent: **Rep. Lloyd Arnold; Rep. Daniel Forestal; Rep. Steven Stemler; Sen. Jean Breaux; Sen. James Banks; Sen. Allen Paul.**

Chairman Soliday called the meeting to order at 10:07 A.M.

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[1] These minutes, exhibits, and other materials referenced in the minutes can be viewed electronically at http://www.in.gov/legislative Hard copies can be obtained in the Legislative Information Center in Room 230 of the State House in Indianapolis, Indiana. Requests for hard copies may be mailed to the Legislative Information Center, Legislative Services Agency, West Washington Street, Indianapolis, IN 46204-2789. A fee of $0.15 per page and mailing costs will be charged for hard copies.

Issues Relating to the Indiana Department of Transportation (INDOT)

Karen Rossen, Legislative Services Agency (LSA), presented to the Committee a study of INDOT and its management of infrastructure and road financing prepared under the direction of the Legislative Council's Legislative Evaluation and Oversight Policy Subcommittee. See Exhibits A and B.

Karl Browning, Commissioner of INDOT, presented INDOT's response to the report. See Exhibit C. Jay Watson, Scott Adams, and Jim Stark joined Commissioner Browning in speaking to the Committee about INDOT's funding, programming decisions, and project delivery. Id.

Chairman Soliday recessed the meeting at approximately 12:00 P.M.

Railroad Crossings and Grade Separation Projects

Chairman Soliday reconvened the meeting at approximately 1:15 P.M.

Tom DeGiulio, Town Manager of Munster, spoke about the ongoing dual grade separation project at the intersection of 45th Street and Calumet Avenue in Munster. See Exhibit D. Derek Sublette, Manager of Government Relations for Norfolk Southern, spoke about the cost and difficulty of scheduling grade separation projects.

Infrastructure Funding

Kevin Kelly of Conexus Indiana presented Conexus' recommendations for state highway revenue allocation, including ending the diversion of fuel taxes, creating a lockbox for state highway funds, and imposing road user fees. See Exhibit E.

Stephanie Wells, LSA fiscal analyst for the Committee, analyzed changes in transportation funding enacted in HEA 1001-2013, including ending diversions from the motor vehicle highway account, establishing the Major Moves 2020 trust fund, and allowing county option income tax councils to impose wheel taxes and surtaxes. See Exhibit F.

Chairman Soliday noted that, while a representative of the Indiana Metropolitan Planning Organization Council was unable to testify, the organization had agreed to submit a written report and provide regular updates to the Committee.

Cam Carter, Vice President of Economic Development, Small Business Policy, and Federal Relations for the Indiana Chamber of Commerce, testified about the erosion of the federal highway trust fund and expressed the preference of the Indiana Chamber for the creation of a "user pays" model for highway funding.

Dennis Faulkenberg appeared on behalf of the Build Indiana Council and praised the General Assembly for increasing transportation funding, noting that the 2013 budget bill included several initiatives advanced by the Build Indiana Council. See Exhibit G. He also warned against relying on the federal government for continued transportation funding.

Andrew Berger, Government Relations Director for the Association of Indiana Counties, expressed the appreciation of the Association's members for increased transportation funding. He stated that the members are focusing efforts on pavement preservation and asked the General Assembly to maintain the funding increases in future budgets.

Other Business

Gerald Hanas, general manager of the Northern Indiana Commuter Transportation District, presented funding models for several commuter railroads, including Metra (Illinois/Wisconsin), NJ Transit (New Jersey/New York), MARC (Maryland, District of Columbia), and Caltrain and Metrolink (California). See Exhibit H.

On behalf of Professor Michael Hicks of Ball State University, Mark Palmer presented several transit studies, including an analysis of ridership surveys, a study of the effect of gasoline prices on public bus ridership, and the costs and benefits of various financing methods. See Exhibit I.

Sarah Freeman, LSA staff attorney for the Committee, presented three proposed recommendations for consideration by the Committee for inclusion in the Committee's final report. See Exhibit J. The Committee postponed voting on the recommendations until the October 16 meeting.

Chairman Soliday adjourned the meeting at 3:20 P.M.

Issues Relating to the Indiana Department of Transportation

Presented to the Joint Study Committee on Transportation and Infrastructure Assessment and Solutions
October 15, 2013

Legislative Council Resolution 12-03

The Legislative Council, pursuant to IC 2-5-21-10(c), directs that the Legislative Services Agency, under the direction of the Council's Legislative Evaluation Oversight Policy Subcommittee, study the Indiana Department of Transportation and its management of infrastructure and road financing.

TIAS
10/15/13
Ex. A

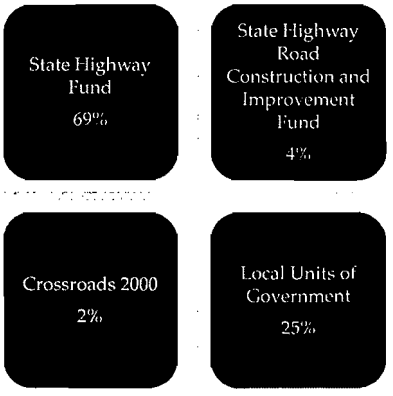
- Financial Tools
- Planning and Asset Management
- Project Lifecycle and Financing

Financial Tools

- Fuel Taxes and Vehicle Registration Fees
- Federal Aid
- Conventional Debt
- Major Moves Construction Fund
- Alternative Transportation Financing

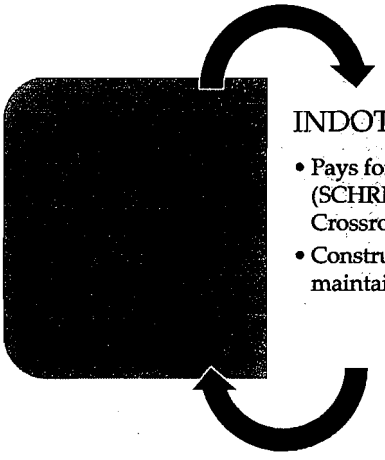
State Fuel Tax, Vehicle Registrations, et al.

- MVHA revenues decreased
  5% between FY 2008 and FY 2012
- Motor Fuel Tax
  $0.18/gallon
  Last increased 2002



Conventional Debt-Financed Construction

- Authority in IC 8-14.5-6
  Sunset July 1, 2007
- As of June 30, 2012
  $1.135 B outstanding
  Maturity from 2012 to 2029
  Interest rates from 3.0% to 7.25%
  Annual principal payments range from $36.4 M to $96.2 M

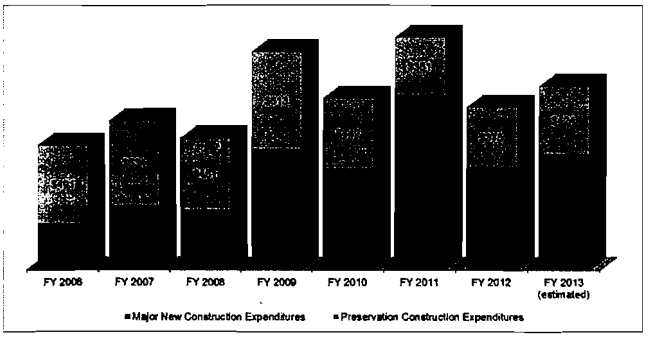


INDOT

- Pays for lease rentals (SCHRIF and Crossroads 2000)
- Constructs, maintains, operates

Major Moves Construction Fund

- Received $3.8 B in 2006
- Increased new construction expenditures in relation to preservation construction expenditures



Alternative Transportation Financing

Not well defined	Not necessarily new financing tools	Most from federal legislation
• Federal Highway Administration identification	• Nontraditional source of revenue • Not previous applied to road construction	• Do not require state authority to employ

Transportation Planning in Indiana

- Metropolitan Planning Organizations
- Rural Planning Organizations

Local Organizations

- District Offices
- Local Planning Section
- Asset Management Team
- Project Management Group

INDOT

Transportation Planning Documents

Long-range Transportation Plan (MTP)	Short-range Transportation Improvement Program (TIP)	Unified Planning Work Programs (UPWP)	Public Participation Plans
20 years	4 years	1 to 2 years	

	Asset Management Business Plan	Short-range Transportation Improvement Program (STIP)
[illegible]	5 years	4 years

Asset Management

Systematic evaluation of infrastructure inventory

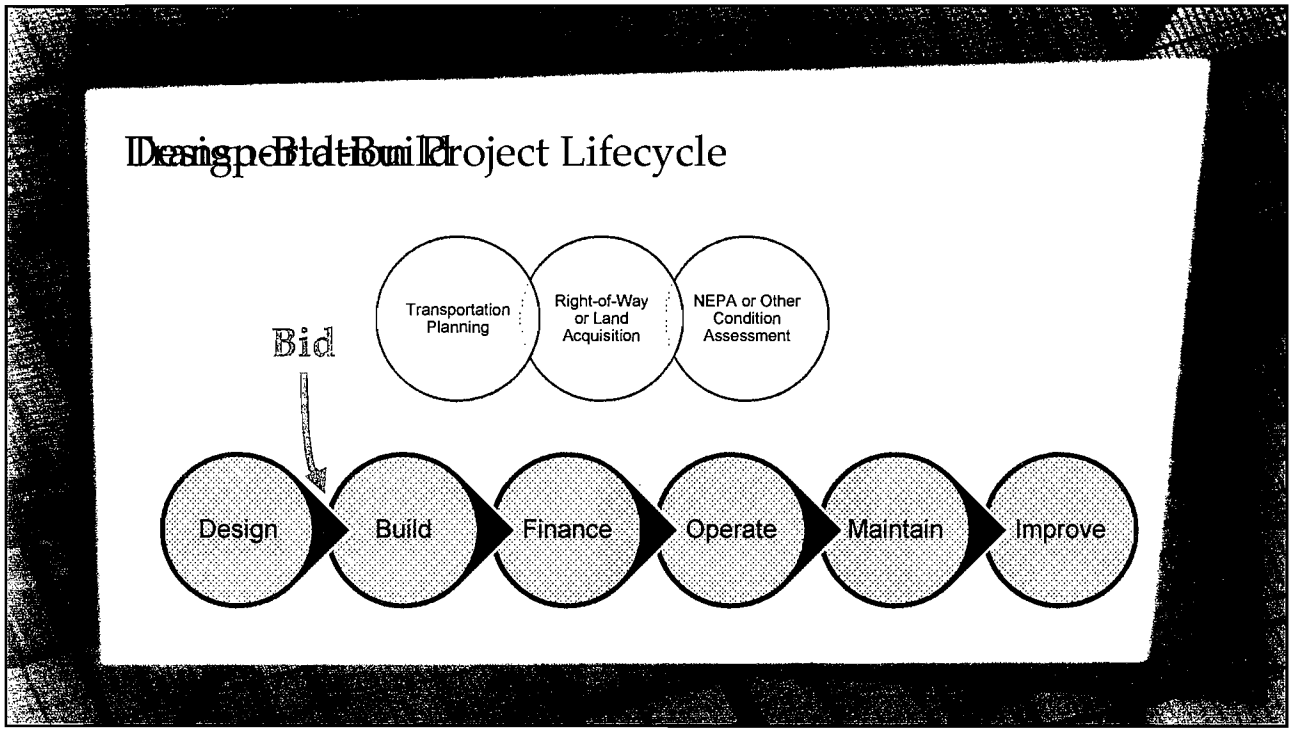
Asset Management Teams
- Project scoring methodologies to rank projects

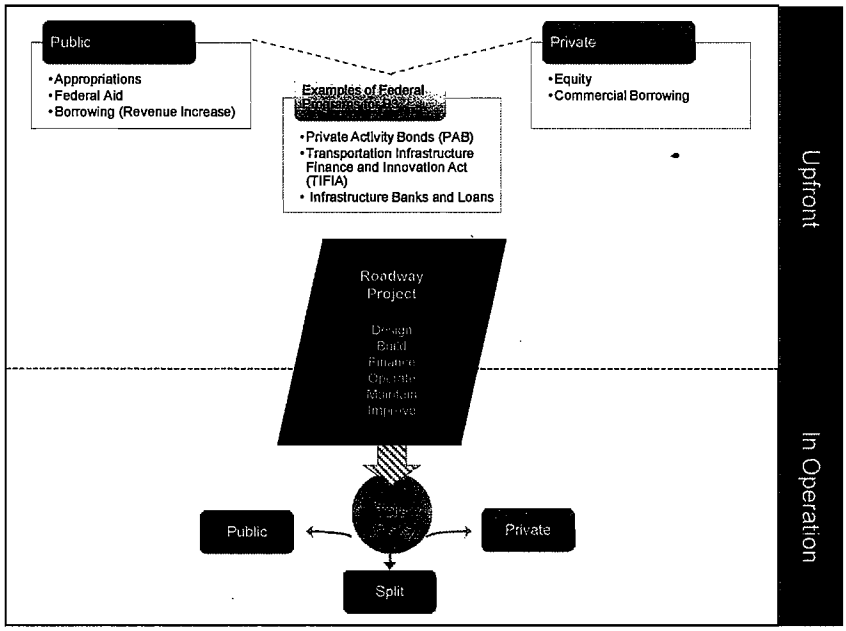
Project Management Group
- Statistical analysis methods unify project scale
- Recommend within set expenditure targets

Project Management

- Scheduling Project Management System
- 1,297 Projects in Design Stage to be let between 2014 and 2017
- 369 projects in active construction stage

Detailed Study
Project Scoping
Environmental Review
Project Design
Public Involvement
Right-of-Way Acquisition
Utility Coordination
Construction Activities


Design-Bid-Build Project Lifecycle
Transportation Planning
Right-of-Way or Land Acquisition
NEPA or Other Condition Assessment
Bid
Design
Build
Finance
Operate
Maintain
Improve


Public
•Appropriations
•Federal Aid
•Borrowing (Revenue Increase)
Private
•Equity
•Commercial Borrowing
Examples of Federal
•Private Activity Bonds (PAB)
•Transportation Infrastructure Finance and Innovation Act (TIFIA)
• Infrastructure Banks and Loans
Roadway Project
Public
Private
Split
Upfront
In Operation

Ohio River Bridges

- Milestone Payments
- Escrow for Cost Overruns
- Availability Payments
- Toll Revenue
- Private Activity Bonds (PABs)

Conclusion

- Planning
- Asset Management
- P3 Use
- Financial Instruments

Issues Relating to the Indiana Department of Transportation

July 2013

Joint Study Committee on Transportation and Infrastructure Assessment and Solutions

Indiana Legislative Services Agency

TIAS
10/15/13
Ex. B

Legislative Evaluation and Oversight

The Office of Fiscal and Management Analysis is a division within the Legislative Services Agency that performs fiscal, budgetary, and management analysis. Within this office, analysts evaluate state agency programs and activities as set forth in IC 2-5-21.

The goal of legislative evaluation and oversight is to improve the legislative decision-making process and, ultimately, state government operations by providing information about the performance of state agencies and programs through evaluation.

The office prepares reports for the Legislative Council in accordance with IC 2-5-21. The published reports describe state programs, analyze management problems, evaluate outcomes, and include other items as directed by the Legislative Evaluation and Oversight Policy Subcommittee of the Legislative Council. The report is used by an evaluation committee to determine the need for legislative action.

Jim Landers, Director
Alan Gossard, Deputy Director

Christopher Baker
Bill Brumbach
Karen Firestone, Audit Team
Mark Goodpaster
Jessica Harmon, Audit Team
Heath Holloway
Randhir Jha
David Lusan
Charles W. Mayfield
Phyllis McCormack
Kathy Norris
Lauren Sewell
Robert J. Sigalow
Mike Squires
Lia Treffman
Stephanie Wells

Preface

Each year, the Legislative Services Agency prepares reports for the Legislative Council in accordance with IC 2-5-21. As directed by Legislative Council Resolution 12-03, this report is a study of the Indiana Department of Transportation and its management of infrastructure and financing.

This report contains information on state asset management and major roadway project financing.

We gratefully acknowledge all those who responded to our questions concerning INDOT, asset management, and roadway project funding or who assisted in the preparation of this report.

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Copies of this report may be obtained for a nominal charge from:
Legislative Information Center
Indiana Legislative Services Agency
200 W. Washington St., Suite 230
Indianapolis, IN 46204
(317) 232-9856

Copies of this report may also be downloaded at no charge from the General Assembly website: http://www.in.gov/legislative/2398.htm.

Executive Summary

Since FY 2006, the Indiana Department of Transportation (INDOT) has used a pay-as-you-go method to fund new road construction and for the maintenance of the state highway system, which is comprised of an estimated 29,890 total lane miles of roadway and approximately 5,315 bridges. The Major Moves Construction Fund, created from the proceeds of the lease of the Indiana Toll Road, has been spent down, reducing one source for funding new road construction.

In general, federal funding provides the majority of transportation funds for states with formula-based distributions to the states through a trust fund.[1] However, the federal fuel tax revenues that support the trust fund are declining as more fuel-efficient vehicles are on the roadway and as the result of fewer vehicle miles driven. The state distributions have remained fairly consistent despite the reduction in fuel tax revenues due to allocations of federal general funds and other sources to the trust fund. Many of the same issues affecting federal fuel tax collections are reducing Indiana's collections of state fuel taxes as well.

Although the federal and state fuel tax revenues are declining, these revenues, as well as vehicle registration fees, will continue to be the primary source of funds for road construction and maintenance for the foreseeable future.[2] However, for alternative financing in light of the decline in transportation tax revenue and to address aging and deficient infrastructure, the federal government has offered the use of several financial instruments on federal aid projects that are designed to attract private investment in transportation. INDOT, in cooperation with the Indiana Finance Authority (IFA), a quasi-governmental entity that incurs debt for state purposes, has started to use some of these methods in recent major construction projects.

As a result of new financing mechanisms, more emphasis is placed on INDOT's ability to select projects for partnership with private firms, manage projects constructed by an outside partner, and evaluate the quality of a project. INDOT has developed the capacity to perform in house discounted cash flow analyses of construction projects, and, along with IFA, has contracted with outside vendors to help in the evaluation of potential projects for public-private partnerships (P3) and to determine the future cost of projects.

INDOT is using P3 on a number of projects for both innovative project delivery and to leverage private investment in roads. Three types of P3 used by INDOT include design-build where the private partner both designs and builds the project, lump sum leasing of existing infrastructure, and new facilities financing which uses a combination of funding sources, such as private financing, public payment methods, and tolling to fund the project.

Financing major new construction is not the only challenge that faces INDOT. Aging infrastructure requires more costly repair when its condition is not maintained. INDOT has worked to develop its methods of assessing projects to put into its construction and maintenance pipeline through asset management. INDOT collects data on safety, mobility, and other roadway assets, which are provided to each of four Asset Management Teams to score and rank projects. The ranking is then provided to the

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[1] Cambridge Systematics, Inc.; Mercator Advisors LLC; Pisarski, Alan E.; Wachs, Martin, *Future Financing Options to Meet Highway and Transit Needs, Web-Only Document 102*, National Cooperative Highway Research Program, December 2006, p. 2-6.
[2] Ibid, 3-1.

Project Management Group, which looks across projects statewide to make recommendations of projects for the state to finance.

Further, INDOT continues to improve on its project management. One indicator of proper project management is cost overruns, which is the ratio of additional project spending required to complete the project above the amount of the original contracted cost. The rate of cost overruns has been reduced from 8.1% in FY 2009 to 1.9% in FY 2012. Some of the improvement may be the result of the project delivery methods selected, but no correlation could be confirmed in the data provided.

This report reviews INDOT and state transportation infrastructure. It reviews INDOT's planning process and its asset management and project management. The paper also looks at P3 project delivery and information on Indiana's P3 projects.

Topic

Legislative Council Resolution 12-03 directed that the Legislative Services Agency, under the direction of the Council's Legislative Evaluation and Oversight Policy Subcommittee, study the Indiana Department of Transportation (INDOT) and its management of infrastructure and road financing. The study and report are required to be completed by July 1, 2013.

Introduction

Since the early 20th century, the state has imposed taxes on motor fuels and vehicle registrations to pay for road construction and maintenance. Also, since 1925, the state has received federal aid for highway construction. These funds were used by the counties to build a state highway system with a goal of connecting all of the county seats.[3] Today, state funds from fuel taxes and vehicle registrations are divided between the state and local government units. The state's share of the revenues is used to leverage federal aid, to pay for construction and maintenance costs directly, and to pay debt service.

Using revenue to directly pay for construction and maintenance is known as pay-as-you-go financing. This method of highway financing can limit the amount of construction that can be undertaken annually based on the revenue received. Debt financing allows an increase in the amount of money available for construction within a given time period. Traditionally, new borrowing is undertaken when a new source of revenue is available, such as an increase in an existing tax, toll, or fee. The revenue from the source is used exclusively for debt service, and this is known as revenue incremental borrowing.

Both pay-as-you-go and revenue incremental borrowing are considered conventional or traditional methods of transportation financing. Over time, the funds available from these traditional methods of financing are diminishing. The fuel tax revenues are declining at both the state and federal level due to less fuel consumption. Some federal funding is decreasing, due in part most recently to sequestration.[4] For Indiana specifically, the authority for the Indiana Finance Authority (IFA) to undertake revenue incremental borrowing expired in 2009.

The pressures on state highway funding have led states to look to private partners for both project delivery and alternative methods of road construction and maintenance financing. The federal government has become a proponent of these public-private partnerships (P3s) by allowing and backing debt instruments to promote major project development.

While the actual number of projects undertaken as P3s in Indiana is not large, going forward, the size of projects that are being constructed as P3s will have a significant effect on state infrastructure financing. After entering into one of the largest existing infrastructure P3s in the country, INDOT has had the opportunity to sharpen its skills in project development and financing.

This report will look at the statutory and organizational structure of INDOT and the appropriations and resources available to the agency. The highway systems and bridges of the state will be described and their conditions considered. The documents and partners in transportation planning will be addressed, as

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[3] Kiefer, Donald W, *Indiana Public Finance, Past and Present*, Indiana Commission on State Tax and Financing Policy, 1974, pp. 7-10.

[4] U. S. Department of Transportation, Federal Highway Administration, *Notice: Sequestration of Highway Funds for Fiscal Year (FY) 2013*, March 22, 2013.

will INDOT's new asset management program. Finally, a look at P3 project delivery and financing will provide information on Indiana's P3 projects.

Indiana Department of Transportation

Statutory Authority of the Department of Transportation

In 1989, INDOT was established in IC 8-23 as the successor organization to the Transportation Coordinating Board, the Transportation Planning Office, the Department of Highways, and the Department of Transportation. After recodification of the INDOT statute in 1990 and 1991, the basic responsibilities and powers of the agency have remained largely unchanged. The Governor appoints a commissioner who is responsible for organizing and administering INDOT.

INDOT's statutory responsibilities include:

- Identification, development, coordination, and implementation of the state's transportation policies.
- Approval of federal transportation grants from funds allocated to the state.
- Review, revision, adoption, and submission of budget proposals.
- Construction, reconstruction, improvement, maintenance, and repair of state highways and toll road projects or toll bridges.
- Administration of other transportation programs, such as railroads, rail preservation, aeronautics, airports, and aviation development.

Additionally, among the responsibilities assigned to the INDOT commissioner or the commissioner's designee is the development, continuous update, and implementation of long-range comprehensive transportation plans, work programs, and budgets. INDOT is to evaluate and utilize improved transportation facility maintenance and construction techniques. Also, INDOT is to provide technical assistance to local government with road and street responsibility.

The INDOT commissioner or the commissioner's designee has the authority to acquire property in the name of the state and to dispose of or encumber property. The agency may enter into a contract or a lease with the Indiana Finance Authority concerning toll road projects.

Also, INDOT may make contracts and expenditures, perform acts, enter into agreements, and make the necessary rules, orders, and findings to comply with the federal government in order to qualify and receive federal funding. INDOT may hold investigations and hearings concerning matters covered by its orders and rules.

State statute allows INDOT to contract with persons outside of INDOT to do those things that in the commissioner's opinion cannot be adequately or efficiently performed by INDOT.

Mission, Goals, and Values

INDOT indicates its mission is to plan, build, maintain, and operate a superior transportation system that enhances safety, mobility, and economic growth. The agency has the following goals posted on its website[5]:

1. Let an estimated 213 INDOT construction contracts valued at approximately $981million in FY 2013. Projects to be let include 44 major new projects valued at approximately $620 million and 169 preservation projects valued at approximately $361 million.

2. Implement employee training and organizational changes to improve INDOT's project management core competency. Create, communicate, and deploy a consistent method to successfully manage projects agencywide.

3. Improve INDOT's work zone safety program and results. Increase employee involvement, responsibility, and accountability to provide a safe work environment and reduce employee injuries and crashes.

4. Reduce the number of severe crashes on INDOT roadways. Install proven safety treatments (i.e., rumble stripes, safety edge) to reduce vehicle lane departures, especially in rural areas.

5. Develop and implement new business practices to improve agency productivity and financial accountability. Engage INDOT's management staff to modernize service delivery while fostering INDOT's cultural values of respect, teamwork, accountability, and excellence.

Organizational Structure and Management

According to a National Cooperative Highway Research Program (NCHRP) report, to accelerate program delivery the centralization or decentralization of a department of transportation (DOT) is less important than the extent to which the organization is flat. The report also indicates that the staffing levels play an important role in deciding which projects are performed in house versus those that get outsourced.[6]

INDOT did not provide organization charts, but rather provided staffing summaries. These staffing summaries illustrate the staffing changes at INDOT between 2005 and 2013. As seen in Table 1, the district offices have significantly more staff than the central office. A decrease in staff at the district offices has been highlighted in INDOT's budget reports. Staffing increases occurred in the district offices as the Major Moves construction program got underway in FY 2006 through FY 2008. The numbers began to decline in FY 2009 and reached new lows after FY 2011.

[5] http://www.in.gov/indot/2341.htm as accessed on June 10, 2013.

[6] Keck, Dennis; Patel, Hina; Scolaro, Anthony J.; Bloch, Arnold; Ryan, Christopher, *Accelerating Transportation Project and Program Delivery: Concept to Completion*, National Cooperative Highway Research Program, 2010, pp. 12-13.

Table 1. Staffing Summary by Major Division, FY 2005-FY 2013.

Division	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013*	Difference FY 2005 to FY 2013
Central Office										
Commissioner	5	3	7	6	7	6	5	6	7	2
Innovative Project Delivery									10	10
Chief of Staff	88	86	107	101	23	32	28	32	53	-35
Operations						190	181	212	135	135
Major Program Management						13	14	14		
Engineering Services and Design Support							210	203	275	275
Planning Operations	115	111	120	118	153	165				-115
Highway Management	368	327	409	413	385	230				-368
Capital Program Management							134	110	90	90
Business and Asset Management	22	22	23	25	2					-22
Management Information Systems						56				
Finance	122	109	116	116	105	55	107	115	112	-10
Legal	31	29	31	32	73	80	83	83	80	49
Human Resources	29	24	12	17	12	11	14	20	20	-9
ICPR Project			20	16	4					
Central Office Total	**780**	**711**	**845**	**844**	**764**	**838**	**776**	**795**	**782**	**2**
District Offices										
District Operations	54	55	63	63	62					-54
Crawfordsville	538	490	583	562	496	482	459	440	430	-108
Fort Wayne	550	502	578	567	510	491	461	463	452	-98
Greenfield	645	577	667	668	609	575	558	551	525	-120
LaPorte	630	584	643	619	561	570	533	529	505	-125
Seymour	610	573	612	621	550	509	475	471	459	-151
Vincennes	547	506	601	584	545	505	465	473	456	-91
District Offices Total	**3,574**	**3,287**	**3,747**	**3,684**	**3,333**	**3,132**	**2,951**	**2,927**	**2,827**	**-747**
INDOT Total	**4,354**	**3,998**	**4,592**	**4,528**	**4,097**	**3,970**	**3,727**	**3,722**	**3,609**	**-745**

In the central office, INDOT has nine executive leadership positions, including the commissioner position. Each executive position has staff with various responsibilities. The reporting structure and the interaction of divisions with similar areas of responsibility are not specified. So, while more of the agency staff is in the district offices, the amount of decentralization and the hierarchical relationship could not be determined.

Table 2. Area of Responsibility of INDOT Executive Staff.

Executive Position	Number of Staff FY 2013	Responsibilities
Commissioner	7	• Executive Staff
Innovative Project Delivery	10	• Tolling Oversight • Operations Director • Design Director • Construction Director • Senior Project Manager – Ohio River Bridges • P3 Director
Human Resources	20	• Payroll and Benefits • Employee Development • Statewide Safety Director

Executive Position	Number of Staff FY 2013	Responsibilities
Chief of Staff	53	• Aviation (within the Multimodal Division) • Communications • Media Relations • Freight Mobility (within the Multimodal Division) • Public Involvement (within Communications Division) • Transit (within the Multimodal Division) • Local Projects, Metropolitan Planning Organizations, and Grant Administration • Economic Initiatives • Contract Administration • Innovation and Enhancement • Legislative Affairs
Law and Chief Legal Counsel	80	• Disadvantaged Business Enterprises and Title VI (within Economic Opportunity Division) • Economic Opportunity and Prequalifications • Internal Affairs • Legal Services
Capital Program Management	90	• Project Management • Railroad (within the Utility Coordination Division) • Utility Coordination • Land and Aerial Survey (within Construction Management Division) • District Project Management • Construction Management
Chief Financial Officer	112	• Accounting • Management Information Systems • Procurement, Project Finance, and Budget • Finance Operations Support • Audit, Agency Results, and Revenue • Capital Project Funds Management • Financial Systems Integration • Innovative Program Delivery
Operations	135	• Operations (District Deputy Commissioners) • Traffic Management and District Support • Technical Services and District Support • Fleet and Facilities • Maintenance Management • Project Manager

Executive Position	Number of Staff FY 2013	Responsibilities
Engineering Services and Design Support	275	• Asset Management • Bridges • Environmental Services • Geotechnical Engineering (within Pavement Division) • Highway Design and Technical Support (formerly Roadway Services) • Program Development • Real Estate • Research and Development • Pavement • Trails and Greenways (within the Asset Management Division)

INDOT organizes and manages highway construction, maintenance, traffic, development, and testing through six district offices. Each district is headed by a deputy commissioner. The districts are further divided by subdistricts and units for administration purposes. The six district offices and their subdistricts are as follows[7].

Table 3. District Office Areas of Responsibility.

District	Responsibility	Counties	
Crawfordsville	5,003 lane miles of state roads	Benton	Owen (partial)
Subdistricts: Cloverdale	850 lane miles of interstate	Boone	Parke
Crawfordsville	1,556 large culverts	Clay	Putnam
Fowler	899 state bridges	Clinton	Tippecanoe
Frankfort	159 snow routes	Fountain	Vermillion
Terre Haute	378 traffic signals	Hendricks	Vigo
	89 flashers	Montgomery	Warren
	48,283 road signs	Morgan (partial)	
	969 panel signs		
Fort Wayne	4,600 lane miles of state roads	Adams	Kosciusko
Subdistricts: Bluffton	525 lane miles of interstate	Allen	LaGrange
Elkhart	1,238 large culverts	Blackford (partial)	Miami
Fort Wayne	742 state bridges	DeKalb	Noble
Wabash	143 snow routes	Elkhart	Steuben
	448 traffic signals	Fulton (partial)	Wabash
	224 flashers	Grant	Wells
	63,000 road signs	Huntington	Whitley
	1,500 panel signs	Jay (partial)	

[7] http://dotmaps.indot.in.gov/apps/districtmaps/default.asp as accessed on June 10, 2013.

District	Responsibility	Counties	
Greenfield	4,375 lane miles of state roads	Blackford (partial)	Marion
Subdistricts: Albany	1,300 lane miles of interstate	Delaware	Randolph
Cambridge	1,366 large culvert	Fayette	Rush
Greenfield	1,133 state bridges	Hamilton	Shelby
Indianapolis	194 snow routes	Hancock	Tipton
Tipton	539 traffic signals	Henry	Union
	146 flashers	Howard	Wayne
	51,500 road signs	Jay (partial)	
	1,500 panel signs	Madison	
LaPorte	5,668 lane miles of state roads	Carroll	Newton
Subdistricts: Gary	560 lane miles of interstate	Cass	Porter
LaPorte	892 large culverts	Fulton (partial)	Pulaski
Monticello	824 state bridges	Jasper	St. Joseph
Rensselaer	173 snow routes	Lake	Starke
Winamac	618 traffic signals	LaPorte	White
	234 flashers	Marshall	
	58,600 road signs		
Seymour	4,675 lane miles of state roads	Bartholomew	Jennings
Subdistricts: Aurora	755 lane miles of interstate	Brown	Johnson
Bloomington	1,910 large culverts	Clark	Monroe
Columbus	943 state bridges	Dearborn	Morgan (partial)
Falls City	163 snow routes	Decatur	Ohio
Madison	355 traffic signals	Floyd	Owen (partial)
	187 flashers	Franklin	Ripley
	52,094 road signs	Harrison	Scott
	1,424 panel signs	Jackson	Switzerland
		Jefferson	Washington
Vincennes	4,425 lane miles of state roads	Crawford	Owen (partial)
Subdistricts: Evansville	450 lane miles of interstate	Daviess	Perry
Linton	1,809 large culverts	Dubois	Pike
Paoli	875 state bridges	Gibson	Posey
Tell City	137 snow routes	Greene	Spencer
Vincennes	254 traffic signals	Knox	Sullivan
	144 flashers	Lawrence	Vanderburgh
	57,000 road signs	Martin	Warrick
	1,075 panel signs	Orange	

Appropriations

The three main appropriation categories for the state transportation budget include intermodal transportation, distributions to local units of government, and highway operations.

Intermodal Transportation – This appropriations unit includes modes of transportation that are not highway- or road-based, such as public mass transit and railroads. As seen in Table 4, about $79 million per year, or 4% of the transportation appropriations for each year of the next biennium, are for intermodal transportation. The majority of intermodal transportation funds ($42 million annually, or 52%) are appropriated for public mass transportation. The majority of the funding for public mass transportation is provided by the state General Fund and passed on through grants to local units and railroads.

Distributions to Local Units of Government – A distribution of state dedicated funds is made by statutory formula to local units of government through the Motor Vehicle Highway Account (MVHA) and the Local Road and Street Fund. The dedicated funds are derived from various fuel taxes and other fees, such as vehicle registration fees. Additionally, local units receive a portion of the federal aid for highways.

Overall, distributions to local units of government have decreased about 4.4% between FY 2011 actual and FY 2015 appropriations, and most of the decrease is in federal funds (9.2%). The decrease in federal funds for distributions to local units of government is less than the overall decrease in federal funds in the state transportation budget, which is about 35.1%. (Note: The change in federal share observed results in part to the difference between actual amount received and estimated apportionment.)

Highway Operations – Funds for the administration, support, and direct costs of highway construction and maintenance and debt service are included in this appropriation unit. Newly added to the appropriation are milestone payments and a reserve fund aimed at mitigating the cost of change orders for the Ohio River Bridges project.

The appropriations for highway operations in the next biennium are about $1.3 billion each year, a decrease of about half of the FY 2011 actual expenditure of $2.6 billion. The decrease is due to reductions in funding sources. The Major Moves Construction Fund, which provided state dedicated funds since FY 2006, is mostly used up and will provide only minimal funding in FY 2014 and FY 2015.

Additionally, revenues from federal sources decrease by about $400 million for highway operations, when the federal funding in the Distribution to Local Units of Government is considered.

Of the approximately $2.6 billion total appropriated for highway operations in the next biennium, $208 million (8%) is for debt service, and $126 million (5%) is for the milestone and reserve funds on the Ohio River Bridges project.

Table 4. Expenditures and Appropriations, FY 2011 – FY 2015.

Appropriation Division	Fund Source	Actual FY 2011	Actual FY 2012	Estimated FY 2013	As Passed FY 2014	As Passed FY 2015	% of Total FY 2014 - FY2015 Biennium
Intermodal Operations		**$80,095,012**	**$79,158,265**	**$78,314,787**	**$78,711,245**	**$79,101,245**	**100%**
	General Fund	0	43,797,101	42,581,051	42,581,051	42,581,051	54%
	Dedicated Funds	56,921,016	17,870,786	17,147,578	17,544,036	17,934,036	22%
	Federal Funds	22,473,098	17,147,886	17,886,158	17,886,158	17,886,158	23%
	Local Funds	700,898	342,492	700,000	700,000	700,000	1%
Distributions to Local Units of Government		**$611,960,918**	**$614,457,808**	**$594,720,000**	**$596,280,000**	**$585,280,000**	**100%**
	Dedicated Funds	374,084,110	380,517,368	369,280,000	369,280,000	369,280,000	63%
	Federal Funds	237,876,808	233,940,440	225,440,000	227,000,000	216,000,000	37%
Highway Operations		**$2,593,490,927**	**$2,044,041,935**	**$1,802,017,079**	**$1,337,930,000**	**$1,290,429,999**	**100%**
	Dedicated Funds	1,254,381,296	1,049,194,282	1,105,817,080	645,030,000	640,530,000	49%
	Federal Funds	1,339,109,631	994,847,653	696,199,999	692,900,000	649,899,999	51%
Transportation Total		**$3,047,670,049**	**$2,503,717,568**	**$2,475,051,866**	**$2,012,921,245**	**$1,954,811,244**	**100%**
	General Fund	0	43,797,101	42,581,051	42,581,051	42,581,051	2%
	Dedicated Funds	1,685,386,422	1,447,582,436	1,492,244,658	1,031,854,036	1,027,744,036	52%
	Federal Funds	1,361,582,729	1,011,995,539	939,526,157	937,786,158	883,786,157	46%
	Local Funds	700,898	342,492	700,000	700,000	700,000	0%

Changes to Funding in the FY 2014 – FY 2015 Biennium

INDOT and local units will receive additional funding beginning in FY 2014 from two changes to the MVHA. In addition to the changes to the distributions, a new trust fund called the Major Moves 2020 Trust Fund was established.

MVHA Distributions – One percent of state gross retail tax collections will be diverted to the MVHA, the account that receives fuel tax revenue and other fees for distribution to the state and local units. Also, historic payments from the MVHA for expenses incurred by the Bureau of Motor Vehicles, Department of Revenue, the Criminal Justice Institute, and the State Police will instead be paid for from other funds. The changes will increase the amount available for statutory distribution from the MVHA to the state and local units by an estimated $134.7 million per year.

Major Moves 2020 Trust Fund – The Major Moves 2020 Trust Fund (MM2020) was established for major highway expansion projects that enhance the ability to transport goods in and through Indiana, upon appropriation by the General Assembly. As a trust fund, the money in the fund may not be transferred, assigned, or otherwise removed from the fund by the State Board of Finance, the Budget Agency, or any other state agency. The MM2020 will receive a total of $400 million in the FY 2014 – FY 2015 biennium from the state General Fund, but none of the funding is currently appropriated for use during the FY 2014 – FY 2015 biennium.

Financial Tools

The following are the traditional and alternative financing instruments available to INDOT to fund highway construction and maintenance. INDOT's partner in establishing its financial policy is IFA, which undertakes debt on behalf of the state and owns and operates infrastructure through contracts with the state and private entities. The tools that INDOT selects to finance its road projects are made in conjunction with IFA and the administration and are chosen within the authority given by the General Assembly and, for federally sanctioned projects, the federal government.

State Transportation Funding

The Indiana Code provides for the financing of highways through taxes on various types of fuel and vehicle registration fees. In Indiana the majority of fuel tax is placed in the state MVHA and the Highway Road and Street Fund and shared between the state and local units by statutory formula.

Table 5. Distribution of Motor Fuel and Gasoline Tax, Vehicle Registration Fees, and Other Sources.

Final Distribution Recipient	% of Total Revenue*
State Highway Fund**	69%
State Highway Road Construction and Improvement Fund (Bonding)	4%
Crossroads 2000	2%
Local Units of Government	25%

*The Motor Carrier Regulation Fund receives a small distribution of funds that is less than 1%. Numbers above total 100% due to rounding.

Source: LSA, Indiana Handbook of Taxes, Revenue, and Appropriations, FY 2012.

Fuel tax money allocated to INDOT is placed in the State Highway Fund. In FY 2012, about 36% of the funds available for distribution from the MVHA were allocated to the State Highway Fund. Other funds, such as the Major Moves Construction Fund, contribute to the State Highway Fund, and in FY 2012, INDOT had about $1.047 billion available to either leverage federal dollars with spending for federally sanctioned projects or to directly pay for state-only funded projects.

The motor fuel tax rate was last increased in 2002 (effective January 2003), raising the rate to $0.18/gallon. With a decrease in vehicle miles traveled and an increasing number of fuel-efficient vehicles, revenues to the MVHA have decreased from $855.7 million in FY 2008 to $814.8 million in FY 2012.[8]

State Highway Fund
(IC 8-23-9-54)

Sources of Revenue:
- State General Fund
- Federal aid
- Reimbursements
- Money provided for the construction, maintenance, reconstruction, repair, and control of public highways
- Appropriations from the state treasury
- Distributions from -
  - Motor Vehicle Highway Account
  - Highway Road and Street Fund
  - Gasoline Tax
  - Motor Carrier Fuel Tax
  - Toll bridge and tollway bond proceeds or revenues
  - Major Moves Construction Fund

Uses:
- INDOT operations
- Construction, reconstruction, operation, maintenance, and control of the state highways or tollways that are the responsibility of INDOT

[8] The amounts discussed are the total received by the MVHA. INDOT received $775.5 million from the distributed funds in FY 2012.

Federal Aid

Federal funds are appropriated through the federal highway budgets and for several years had been allocated under continuations of the FFY 2007 budget. With the start of the FFY 2013 budget in October 2012, federal funding was appropriated in the Move Ahead for Progress in the 21st Century (MAP-21) bill. As opposed to the previous law with road safety as the main focus, MAP-21 is focused on leveraging private and other alternative investments for road funding and accelerating project delivery.

Table 6. Federal Apportionment to Indiana.

FFY	Apportioned Total
2012	$923,106,579
2013	920,713,612
2014	928,604,225

Source: FHWA, Table: *Estimated Apportionment of Federal-aid Highway Program Funds for FY 2014 Authorized Under MAP-21.*

Indiana's total apportionment for federal aid for transportation remains fairly constant at over $920 million under MAP-21, as seen in Table 6. Of the total, about $555 million per year is for the National Highway Performance Program for construction and maintenance of roads.

Crossroads 2000

Crossroads 2000 was enacted in 1997 with appropriation of a one-time allocation of $70 million from the state budget surplus and an increase in vehicle registration fees. There were more than 100 projects completed with the original Crossroads 2000 program, and in 2003, $420 million in bonds were issued for construction projects to be completed between 2002 and 2004.

Some of the projects completed included the Hoosier Heartland Corridor, I-65/County Line Road interchange at the Marion/Johnson County line, new road and bridge construction on SR 69, and travel lanes added to SR 23, US 231, I-69, and I-65.

Conventional Debt-Financed Construction

A shortcoming of financing projects with annual federal and state appropriations is that larger projects may have to be broken into segments or delayed until enough money is available to complete the project. An alternative is to borrow the funds necessary to complete the project at one time. The benefits of borrowing include the low cost of borrowing available to public entities and the avoidance of construction cost inflation with a shorter project timeframe. Another feature of debt financing is that the cost of the road can be paid over the life of the asset, thereby aligning the costs with the period of use. However, debt is not "new" money, but rather a way of advancing future revenues of an existing source.[9]

Under IC 8-14.5, IFA was given authority to issue and sell bonds or notes to provide for construction of projects and to refund bonds or notes. IFA issued bonds or notes with the approval of the INDOT commissioner and the State Budget Agency. However, bonds or notes are obligations of IFA and do not constitute an indebtedness of the state within the meaning or application of any constitutional provision or limitation. The bonds or notes are payable from revenues from a lease to INDOT, the proceeds of the bonds or notes, or investment earnings on proceeds of bonds and notes.

The statute also gave IFA the authority to contract with INDOT for construction, ownership, maintenance, and operations of projects and transportation systems. The contract may include provisions for IFA to pay INDOT for costs associated with the contract, including construction costs and salaries or wages.

[9] U.S. Department of Transportation, Federal Highway Administration, Office of Innovative Projects, *Project Finance Primer*, p. 9.

INDOT may also enter into a lease with IFA to sell, transfer, or convey any transportation system to IFA through a negotiated lease.

INDOT pays for lease rentals with IFA and secures bonds issued by IFA with the revenue transferred to the State Highway Road Construction and Improvement Fund (SHRCIF) or the Crossroads 2000 Fund. Funding for SHRCIF and the Crossroads 2000 Fund comes from incremental increases in the gas tax and vehicle registration fees, and the amounts are appropriated in the transportation budget.

The notes to the IFA financial statement for June 2011 indicate that highway revenue bonds are issued by IFA to finance and refinance highway and bridge projects in a three-step process.

> First, INDOT leases right-of-way and other property on which a highway or bridge project is to be situated to IFA under a ground lease[10] agreement and supplement for the particular project.
>
> Second, INDOT constructs the project for IFA under a construction agreement.
>
> Third, IFA leases the constructed project to INDOT under a master lease agreement for the project.

In the first two steps, INDOT would receive funds for the project construction, while in the third step IFA would receive lease payments to pay debt service on the highway revenue bonds.

The outstanding balance for highway revenue bonds on June 30, 2012, was $1.135 billion, with maturities on the bonds ranging from 2012 to 2029. The interest rate ranges on the bonds were 3.0% to 7.25%, and the annual principal payments ranged from $36.4 million to $96.2 million. According to INDOT, some of the bonds at the higher rates are noncallable, meaning they cannot be refunded at a lower interest rate. Under IC 8-14.5-6-1 concerning the issuance of bonds and notes, the authority for the IFA to issue any bonds or notes for the construction of projects after July 1, 2007, was sunset.

The Indiana Code states that debt financing between the IFA and INDOT is alternative financing. However, the use of a new revenue source to fund the debt service is more generally considered to be conventional financing.

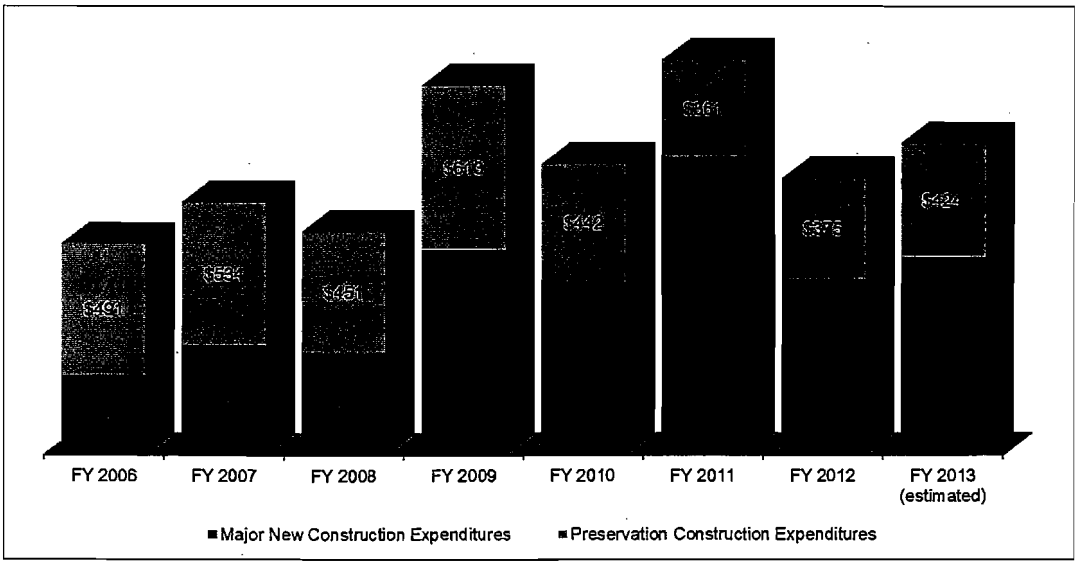
Major Moves Construction Fund

The Major Moves construction program began in 2006 when the Indiana Toll Road was leased to a private firm for 75 years following statutory authority granted by the Indiana General Assembly. In return, a lump sum payment of about $3.8 billion was received by Indiana, and the firm agreed to operate and maintain the toll road. The money was placed in the Major Moves Construction Fund (MMCF) and appropriated to INDOT for new construction. The MMCF is now mostly expended.

[10] A ground lease allows for a tenant (e.g., IFA) to develop a piece of property with the understanding that the land and all the improvements will be returned to the property owner (e.g., INDOT).

Prior to Major Moves, for the five construction years 2001 through 2005, it is estimated that new construction expenditures were about a third of the total state road construction (or about $250 million per year), while preservation construction expenditures were about two-thirds of the construction expenditures (or about $500 million per year).[11] Referring to Chart 1, in the five-year period between FY 2009 and estimated FY 2013, a reversal took place as the funding from the MMCF was dedicated to new road construction. The expenditures for new construction were a little less than two-thirds of the total road construction expenditures (or about $783 million per year), and one-third (or about $443 million per year) were for preservation construction.

Chart 1. New Construction and Preservation Construction, FY 2006 - FY 2013. (In Millions)



Alternative Transportation Financing

The separation between conventional and alternative financing methods is poorly defined. Many of the instruments of alternative transportation financing have existed for a long time. However, the instrument may not have been traditionally used for highway construction or maintenance, or the method has only recently received endorsement in the form of legislative approval by the state or federal government. Alternative methods of transportation financing identified in this paper result from the use of this term by the Federal Highway Administration or other authoritative entities. Details on the instruments are found in Appendix A.

Financing instruments do not provide a new source of revenue, but may reduce the disadvantages for private investment in transportation projects.[12] Every debt instrument needs a revenue source to repay borrowed amounts. In innovative financing instruments, a nontraditional source of revenue may be used to repay the borrowing. The responsibility for repayment of financing instruments ultimately rests with the citizens of the state.

[11] Indiana Department of Transportation, *Indiana's 2013-2035 Future Transportation Needs Report*, p. 15.

[12] Federal Highway Administration, Office of the Inspector General, *Financial Analysis of Transportation-Related Public-Private Partnerships*, Report Number CR-2011-147, July 28, 2011, p. 11.

Most of the alternative financing mechanisms are provided through federal legislation and do not require specific state authority to employ. Grant Anticipation Revenue Vehicles (GARVEEs), for which Indiana had statutory authority until it expired in 2009, and state infrastructure banks are two alternative methods of financing that were enacted by the Indiana General Assembly, however.

A P3 is both a project delivery system and a project financing mechanism to the extent that private partners provide equity investments and may issue debt to finance a project. Using debt financing instruments in conjunction with P3s can lower the overall project cost of capital and increase private investment in public infrastructure projects. In one example, the Inspector General of FHWA modeled some actual P3 projects and found that in a 50-year existing, or brownfield, toll road project of about 550 miles in length and patterned after the Pennsylvania Turnpike, the overall capital costs decreased from 7.61% to 6.28% with the use of a combination of publicly guaranteed loan instruments, commercial debt, and equity.[13]

[13] Ibid.

Description of Indiana's Highways and Bridges

Highway Systems

There are six different state and local highway systems identified in the state law under the jurisdiction of either INDOT or political subdivisions depending on the highway type. Under state law, the state highway system is designated by INDOT based on the following considerations:

- The relative importance of each highway to county or municipal government.
- Existing business and land use.
- Development of natural resources, industry, and agriculture.
- Economic welfare of Indiana.
- Safety and convenience of highway users.
- The financial capacity of the state to reconstruct, construct, and maintain the highways.[14]

INDOT may change the location of a state highway to reduce the length of a highway, eliminate steep grades or sharp turns, widen narrow parts, and promote public convenience and safety.[15]

By statute, the state highway system is limited to 12,000 miles, although statute does not indicate if these are centerline (counting a single lane of highway) or lane miles (counting all lanes of the highway).[16] As a result of this statutory limitation and the number of miles currently in the state highway system, the construction of new interchanges or bypasses requires the state to transfer a like amount of road to a local unit.[17]

The state may transfer a highway to a county highway system or a municipal street system, and a county or municipality may transfer a highway or street to the state system. A transfer requires a memorandum of agreement signed by both entities including the purpose of the transfer, the effective date, and any conditions agreed to by the signers.[18]

Indiana's Highway and Street System (IC 8-23-1)

State Highway System. Includes highways and streets of statewide economic importance. INDOT is responsible for these roads. It specifically includes a highway to the seat of government in each county and connecting arteries and extensions through municipalities.

Interstate System. National system of interstate and defense highways. The interstate system is a subset of the State Highway System and included in the statutory mileage limitation.

County Arterial Highway System. Designated by county highway authority to have the greatest importance to the county. The county highway authority is responsible for these roads.

County Local Highway System. Roads and streets that primarily provide access to residences, businesses, farms, or other abutting property. The county highway authority is responsible for these roads.

Municipal Arterial Street System. Designated by the municipal street authority in a municipality of more than 5,000 residents to have the greatest importance to the county. The municipal authority is responsible for these roads.

Municipal Local Street System. Roads and streets that primarily provide access to residences, businesses, and abutting properties. The municipal authority is responsible for these roads.

[14] IC 8-23-4-2
[15] IC 8-23-4-8
[16] IC 8-23-4-2
[17] http://www.fhwa.dot.gov/infrastructure/asstmgmt/csin0601.cfm
[18] IC 8-23-4-10 to IC 8-23-4-12

Of the six road systems defined in the Indiana Code, only roads designated as part of the state highway system are under the control of INDOT. Indiana's state highway system is made up of the highways and streets of statewide economic importance. INDOT is responsible for an estimated 11,884.43 centerline miles and 29,889.86 total lane miles. Except for Michigan, INDOT has responsibility for the smallest number of centerline miles of the surrounding states, as seen in Table 7.

Table 7. Miles under State Department of Transportation Control.

State	Centerline Miles	Lane Miles
Illinois	38,963	NA
Kentucky	27,500	60,781
Ohio	19,256	49,354
Indiana	11,884	29,890
Michigan	9,651	27,436

Sources: Indiana - Pavement Distance Summaries by District accessed at http://www.in.gov/indot/2722.htm; Illinois - Illinois Highway Statistics Sheet 2012 accessed at http://www.dot.state.il.us/adhighwaystats.html; Kentucky - 2006 Kentucky Long-Range Statewide Transportation Plan, Chapter 3, accessed at http://transportation.ky.gov/Planning/Pages/Long-Range-Statewide-Transportation-Plan.aspx; Michigan - Michigan Department of Transportation Fast Facts 2013 accessed at www.michigan.gov/mdot/MDOT_fastfacts02-2011_345554_7.pdf; Ohio - Centerline Miles, Lane Miles and Vehicle Miles Traveled Report accessed at http://www.dot.state.oh.us/Divisions/Planning/TechServ/TIM/Pages/VehicleMiles.aspx.

Table 8. Centerline Miles by Area and Ownership of Indiana Roads.

Area	Owner	2000	2011	Change
Rural	INDOT	9,553	8,733	(820)
	County	60,896	57,097	(3,799)
	Municipality	3,215	3,025	(190)
	Total	**73,664**	**68,855**	**(4,809)**
Urban	INDOT	1,662	2,249	587
	County	5,705	8,874	3,169
	Municipality	12,576	15,691	3,115
	Total	**19,943**	**26,814**	**6,871**
Rural and Urban	INDOT	11,215	10,982	(233)
	County	66,601	65,971	(630)
	Municipality	15,791	18,716	2,925
	Total	**93,607**	**95,669**	**2,062**

*2011 centerline miles do not include the Indiana Toll Road. The mileage given is less than the self-reported ownership amount reported in Table 1.

Source: Federal Highway Administration, Highway Statistics.

A review of Indiana centerline miles with data available from the FHWA indicates a shift from rural to urban areas over time. Table 8 shows changes in centerline miles by area and ownership between 2000 and 2011. During this period, rural areas lost 4,809 miles and urban areas gained 6,871 miles. The shift is consistent with redesignations of rural and urban areas after a census.

The state as a whole gained 2,062 centerline miles between 2000 and 2011. However, state-owned centerline miles decreased 233 miles, and county-owned roads decreased by 630 miles in this time period. The growth of roads based on centerline miles has been in municipalities, including townships, towns, and cities.

Table 9. Change in Mileage and Daily Vehicle Miles Traveled on INDOT-Owned Roads.

Year	Centerline Miles	Lane Miles	Daily Vehicle Miles Traveled
2011	10,982	27,879	101,195
2000	11,215	28,238	121,981
Change	**(233)**	**(359)**	**(20,786)**

Source: Federal Highway Administration, Highway Statistics

Table 9 shows the decrease in mileage, both centerline and lane miles, for roads owned by INDOT, between 2000 and 2011. The decrease occurred as INDOT had a major construction program underway. However, INDOT estimates that when the Major Moves construction program ends in 2015, an additional 413 centerline miles of new roads will have been added to the state's infrastructure.[19]

The decrease in mileage seen in Table 9 most likely reflects that either the new construction replaced existing roads or duplicated existing routes resulting in a spinoff to local units. The decrease also reflects the change in control of the Indiana Toll Road, which was maintained by INDOT under agreement with the IFA, its owner, and is now maintained by a private concessionaire.

The decrease in vehicle miles traveled shown in Table 9 illustrates one of the key challenges to road funding in the current environment. The reduction in travel contributes to a reduction in the amount of fuel tax revenue, both at the federal and state level.

Project letting data between CY 2005 and CY 2012 were reviewed to estimate expenditures on road construction and maintenance. The letting price is not the actual total cost, and certain lettings may contain projects other than roads. The average annual contract letting was about $746 million, with about 74% of the total lettings in this period containing road-related projects. The total road-related lettings between CY 2005 and CY 2012 were $6.7 billion.

[19] Indiana Department of Transportation, *INDOT Biennium Budget Presentation to the State Budget Committee,* November 28, 2012, p. 16.

Bridges

Of Indiana's 18,789 bridges, 5,315 (28%) are under the control of INDOT. While Indiana ranks 11th nationally in the number of total bridge structures, it is 21st in the number of state-owned bridges, suggesting that relatively more of the bridge structures are owned by local units of government, the federal government, railroads, or other private owners. As seen in Table 10, with the exception of Michigan, the states adjacent to Indiana have more state-owned bridge structures than Indiana.

Between 2005 and 2012, INDOT let contracts for bridge- and culvert-related projects totaling $3.2 billion, or 37.8% of the total contracted amount. (Note: Some road work may be included in this total and may overstate the percentage of bridge- or culvert-related lettings due to joint bridge and roadway projects.)

Table 10. State-Owned Bridges by Number and Area in 2012.

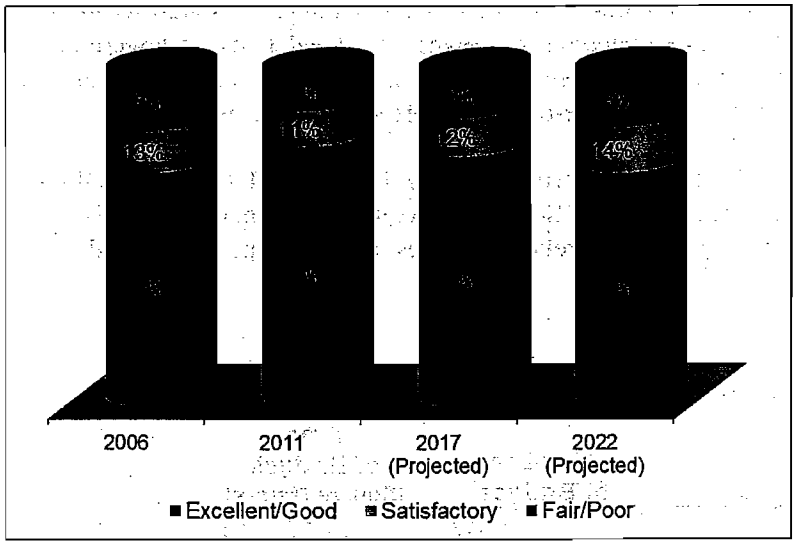
Rank	State	Number of Bridges	Area of Bridges (Square Meters)
1	Texas	33,513	34,402,542
2	North Carolina	16,976	8,551,270
3	Pennsylvania	15,202	9,840,626
4	California	12,180	21,715,899
5	Virginia	11,892	7,390,931
6	Missouri	10,372	7,722,311
7	Ohio	10,345	9,601,718
8	Kentucky	8,975	5,190,362
9	South Carolina	8,395	6,416,807
10	Tennessee	8,196	6,918,081
11	Louisiana	7,877	13,720,374
12	Illinois	7,740	7,586,357
13	New York	7,460	7,184,004
14	Arkansas	7,236	5,123,421
15	West Virginia	6,802	3,280,365
16	Oklahoma	6,799	4,553,010
17	Georgia	6,632	7,001,026
18	Alabama	5,738	6,649,142
19	Mississippi	5,716	5,874,192
20	Florida	5,414	11,326,808
21	Indiana	5,315	4,373,025
22	Wisconsin	5,165	4,515,467
23	Kansas	4,976	3,732,635
24	Arizona	4,700	3,330,170
25	Michigan	4,410	4,478,725

Note: The numbers do not include toll or state park bridges.

Source: http://www.fhwa.dot.gov/bridge/nbi/no10/ownercount12.cfm

Infrastructure Conditions

Chart 2. Pavement Conditions, All Indiana Roads, 2006-2022.



Source: Indiana Department of Transportation, INDOT Biennium Budget Presentation to the State Budget Committee, November 28, 2012

The American Society of Civil Engineers (ASCE) provided "report cards" for the nation's and each state's infrastructure based on the evaluation of seven infrastructure categories: aviation, bridges, dams, drinking water, rail, roads, and wastewater. Overall, Indiana received a grade of D+, but received grades of C- for roads and C+ for bridges. Comparatively, the nation as a whole received grades of D for roads and C+ for bridges.[20]

The International Roughness Index (IRI) survey assists in measuring pavement roughness, and INDOT collects this data annually in order to determine maintenance priorities. Chart 2 provides IRI data by pavement condition from 2006, 2011, and the projected pavement conditions for 2017 and 2022. As demonstrated in Chart 2, INDOT projects that an additional 16% (or 1,385 lane miles) will be categorized as fair or poor by 2022 assuming that funding levels for preservation activities remain constant.[21]

[20] American Society of Civil Engineers, 2013 Report Card for America's Infrastructure, accessed at http://www.infrastructurereportcard.org/ on May 27, 2013.

[21] Indiana Department of Transportation, *INDOT Biennium Budget Presentation to the State Budget Committee*, November 28, 2012, p. 16.

The C+ grade for Indiana's bridges statewide was due to the estimated 22.2% that are categorized as deficient bridges. The bridges are maintained by INDOT and the counties.[22] However, the percentage of deficient bridges has decreased from 32.5% in 1992.

The majority of bridges in Indiana were built during the 1960s, and most bridges in Indiana were designed for a 50-year life expectancy.[23] Deficient bridges are either considered to be "structurally deficient" or "functionally obsolete." A structurally deficient bridge means that weaknesses have been identified, and the bridge will require maintenance, repair, and eventually replacement or rehabilitation. A functionally obsolete bridge is a bridge that is structurally sound but that does not meet current design standards.[24]

Table 11. Indiana and the Surrounding States' Deficient Bridges.

State	Total Number of Bridges	Number of Structurally Deficient Bridges	Number of Functionally Obsolete Bridges	Percent of Deficient Bridges*	Area of Deficient Bridges**
Ohio	27,045	2,462	4,311	25%	4,524,587
Kentucky	14,031	1,244	3,219	32%	1,695,830
Illinois	26,514	2,311	1,976	16%	3,682,905
Indiana	18,789	2,036	2,188	22%	1,860,701
Michigan	11,000	1,354	1,672	28%	2,060,868

*Includes bridges classified as structurally deficient and those classified as functionally obsolete.
**Area measured in square meters.

Source: Federal Highway Administration, Deficient Bridges by State and Highway System 2011, as of December 2012.

New Construction and Preservation

Increasing the state's roadway inventory would theoretically increase the expenditures needed for preservation construction projects in the future. INDOT is addressing this issue through the use of asset management approaches and focusing on preservation over the life of the asset instead of repairing it after deterioration. INDOT proposes that pavement preservation methods save money on future repairs compared to the amount spent on reconstruction, and they estimate that $1 spent on pavement preservation could save about $6 to $14 on future repairs.[25]

[22] American Society of Civil Engineers, Indiana Section, *2010 Report Card for Indiana's Infrastructure*, p. 15.
[23] Ibid., p. 13.
[24] U.S. Department of Transportation, Federal Highway Administration, Federal Transit Administration, *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, Report to Congress,* 2010, Chapter 3, p. 10.
[25] Indiana Department of Transportation, *INDOT Capital Program Report*, Fiscal Year 2012, p. 35.

Transportation Planning in Indiana

This section of the report provides an overview of the transportation planning process in Indiana. Federal requirements for transportation planning are discussed, and the roles of local organizations in the transportation planning process are outlined.

Federal regulation through the most recent federal transportation authorization bill, MAP-21, requires that states develop statewide transportation plans that cover a minimum planning time period of 20 years. In addition, federal law requires state DOTs to produce a four-year Statewide Transportation Improvement Program (STIP), and INDOT is developing a five-year Asset Management and Construction Plan. The program development process for preparing these plans follows.

The INDOT district offices, working closely with INDOT's central office, metropolitan planning organizations (MPOs), and regional planning organizations (RPOs), conduct ongoing assessments of system conditions and identify transportation needs. A statewide call for projects is issued. The submitted projects are reviewed, scored, and prioritized by the district offices and the central office Local Planning Section.

The Asset Management Team performs a statewide project review, which includes scoring and ranking the submitted projects. The Asset Management Team also conducts a needs analysis by applying demand and socioeconomic data. These activities lead to a prioritized list of projects for the Project Management Group to review. The Project Management Group evaluates the proposed projects to make sure they are aligned with agency and national goals.

Drafts of the STIP and the Asset Management and Construction Plan will be produced. New projects will be incorporated into the Scheduling Project Management System (SPMS), and approved changes to existing projects will be updated in SPMS, as well. After a 30-day public comment period, the drafts of the plan documents may be approved, and the final plans are the catalyst for project management to begin.[26, 27]

Local Agencies that Participate in the INDOT Planning Process

There are two types of planning organizations at the local level that provide both data and plans to the state planning system.

Metropolitan Planning Organizations

The Federal-Aid Highway Act of 1962 required that regional agencies establish transportation planning processes that were continuing, cooperative, and comprehensive in order to receive certain federal transportation funds. The 1973 Federal-Aid Highway Act required the establishment of MPOs in all urbanized areas with population over 50,000 and dedicated a portion of state funding to the MPOs for transportation planning purposes.

Indiana has 14 MPOs, 3 with cross-state responsibility. The MPO boards consist of locally elected officials, officials of public agencies that administer or operate major modes of transportation in the area,

[26] Indiana Department of Transportation, *Annual Program Development Process (APDP) (DRAFT for Comment),* 2013, pp. 15-23.
[27] Indiana Department of Transportation, *Indiana's 2013-2035 Future Transportation Needs Report,* 2013, p. 62.

and the appropriate state officials. Typically, MPOs also have technical advisory committees and citizen advisory committees, as well as directors and staff.

Metropolitan Planning Organization Planning Documents			
Long-range Transportation Plan (MTP)	Short-range Transportation Improvement Program (TIP)	Unified Planning Work Programs (UPWP)	Public Particpation Plans
20 years	4 years	1 to 2 years	

Each MPO is tasked with producing the following planning documents for its area:

- The Metropolitan Transportation Plan, or MTP, a long-range transportation plan that includes all transportation projects planned for at least 20 years.
- The Short-range Transportation Improvement Program (TIP) approved by the Governor that includes projects planned and funded for at least the next 4 years.
- The Unified Planning Work Program (UPWP) that includes a list of MPO activities that will be completed within 1 to 2 years.
- The Public Participation Plan that provides strategies for receiving public input during the planning process.

In metropolitan areas with populations over 200,000, called Transportation Management Areas, a Congestion Management Process must be produced.

In order to receive federal funding for a transportation project within the MPO's area, the project must be included in the MPO's TIP as well as INDOT's STIP. Generally, a local unit member or the state carries out the transportation project, not the MPO.

INDOT provides a portion of the federal funding it receives to the MPOs based on a distribution formula for transportation planning purposes and to carry out the activities outlined in the UPWP.[28] These funds include the following: transportation funds, State Planning and Research (SPR) funds, metropolitan planning funds (PL), Surface Transportation Program funds, and Federal Transit Administration funds.

Table 12. Number of Metropolitan Planning Organizations by State.

Rank	State	Number of MPOs by State	Number of Multistate MPOs*
1	Florida	26	1
2	Texas	25	2
3	California	19	2
4	North Carolina	17	0
4	Ohio	17	5
5	Pennsylvania	16	2
6	Georgia	15	3
7	Illinois	14	4
7	Indiana	14	3
7	Virginia	14	3
7	Wisconsin	14	4
8	Alabama	13	2
8	New York	13	0
9	Michigan	12	0
10	Connecticut	11	0
10	Tennessee	11	5

*Indicates the number of multistate MPOs that serve the state and are included in the total number of MPOs by state.

Source: United States Department of Transportation, Federal Highway Administration/Federal Transit Administration, Metropolitan Planning Organization database.

Historically, federal transportation funds have been split between states and local agencies at a 75% to 25% ratio, respectively. For FY 2013, Indiana's apportionments of federal funds totaled $858.5 million, resulting in $643.9 million for INDOT and $214.6 million for local agencies.

[28] Indiana MPO Council and INDOT, *Cooperative Operations Manual,* July 26, 2012, p. 7.

In general, the full amount of the apportionment is not available for spending until it is authorized. Spending authority, also called obligation authority, is the amount a state or other unit is allowed to commit to projects within a fiscal year. Usually, the spending authority is less than the federally apportioned funds. Spending authority for FY 2013 totaled $604.5 million for INDOT and $201.5 million for local agencies. Spending authority for FY 2013 was calculated at 93.8794% of the total apportioned funds.[29]

The following table reports Indiana's MPOs along with selected data.

Table 13. Indiana's Metropolitan Planning Organizations.

Metropolitan Planning Organization (MPO)	Number of Staff*	Major City	Designation Year
Area Plan Commission of Tippecanoe County	12	Lafayette	1976
Bloomington/Monroe County MPO	5	Bloomington	1982
Cincinnati-Northern Kentucky MPO**^	33	Cincinnati	1974
Columbus Area MPO	1	Columbus	2003
Delaware-Muncie Metropolitan Plan Commission	9	Muncie	1976
Evansville MPO**	10	Evansville	1986
Indianapolis MPO**	14	Indianapolis	1978
Kokomo-Howard County Governmental Coordinating Council	5	Kokomo	1982
Louisville Area MPO**^	21	Louisville	1973
Madison County Council of Governments	13	Anderson	1969
Michiana Area Council of Governments**^	21	South Bend	1974
Northeastern Indiana Regional Coordinating Council**	12	Fort Wayne	1974
Northwest Indiana Regional Planning Commission**	27	Portage	1975
West Central Indiana Economic Development District	7	Terre Haute	1975

*Some staff included may also be engaged in programs other than transportation planning or modeling.
**Denotes MPOs that are designated as Transportation Management Areas.
^Denotes multistate MPO.

Sources: United States Department of Transportation, Federal Highway Administration/Federal Transit Administration, Metropolitan Planning Organization Database.
"Designation of Transportation Management Areas", Federal Register, Volume 77, Number 138, July 18, 2012; MPO websites.

Regional Planning Organizations

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) encouraged the inclusion of rural officials in the transportation planning process but did not require states to establish entities for this purpose, unlike the requirement for MPOs. Although regional planning organizations are not required by federal or state statute for transportation planning, they assist INDOT with the process through public outreach and data collection. There are 13 RPOs in Indiana, and 5 are also designated as MPOs.[30] Most of the RPOs represent rural counties. The following table reports Indiana's RPOs and the counties that are represented by each RPO.

[29] Indiana Department of Transportation, *2013 Breakdown of Formula Apportionments and 2013 Local Share of Federal Formula Apportionments*, Revised February 15, 2013.
[30] Indiana Department of Transportation, *Annual Program Development Process*, p. 6.

Table 14. Indiana's Regional Planning Organizations.

Regional Planning Organization (RPO)	Counties Included in the RPO
East Central Indiana Regional Planning District	Blackford, Delaware, Grant, and Jay
Economic Development Coalition of Southwest Indiana	Gibson, Posey, Warrick, and Vanderburgh
Indiana 15 Regional Planning Commission	Crawford, Dubois, Orange, Perry, Pike, and Spencer
Kankakee-Iroquois Regional Planning Commission	Benton, Carroll, Jasper, Newton, Pulaski, Starke, Warren, and White
Madison County Council of Governments*	Madison
Michiana Area Council of Governments*	St. Joseph, Elkhart, Marshall, and Kosciusko
Northeastern Indiana Regional Coordinating Council*	Allen and DeKalb
Northwestern Indiana Regional Planning Commission*	Lake, Porter, and LaPorte
Region III-A Economic Development District and Regional Planning Commission	Huntington, LaGrange, Noble, Steuben, Wabash, and Whitley
River Hills Economic Development District and Regional Planning Commission	Clark, Floyd, Harrison, Scott, and Washington
Southeastern Indiana Regional Planning Commission	Dearborn, Decatur, Franklin, Jefferson, Jennings, Ohio, Ripley, and Switzerland
Southern Indiana Development Commission	Daviess, Greene, Knox, Lawrence, and Martin
West Central Indiana Economic Development District*	Vermillion, Sullivan, Vigo, Clay, Parke, and Putnam

*Denotes RPOs that are also designated as Metropolitan Planning Organizations (MPO).

Source: Indiana Department of Transportation, *Annual Program Development Process (APDP) (DRAFT for Comment)*, 2013, p. 6; Indiana Association of Regional Councils website, http://www.iarc.cc/, Accessed May 31, 2013.

INDOT's Planning Documents

There are three main transportation planning documents[31] produced by INDOT, two of which are required by federal agencies. Federal agencies accept or indicate conditional approval of the federally required documents. INDOT's STIP, one of the required documents, has only conditional approval.

On January 13, 2010, INDOT received notification from the U.S. Department of Transportation that the 2010-2013 STIP would be conditionally approved pending a corrective action. The FHWA and the Federal Transit Administration (FTA) observed confusion between INDOT and the MPOs regarding the transportation planning process and subsequently requested that INDOT clarify "the internal roles and responsibilities for developing planning products within INDOT" within one year after this notification was received.[32] INDOT was notified on March 10, 2011, that the corrective action would continue until the following documents were provided:

- State/MPO Transit Planning Agreements.
- INDOT's MPO Manual.

[31] INDOT also develops and maintains the following: Indiana Multimodal Freight Mobility Plan, INDOT State Rail Plan, Indiana State Aviation Plan, Aviation Capital Improvement Program, Indiana Byways Program, Hoosiers on the Move State Trails, Greenways and Bikeways Plan, Strategic Highway Safety Plan, Annual Indiana Public Transit Reports, and American Disability Act Transition Plans.

[32] U.S. Department of Transportation letter to INDOT Commissioner Michael Reed, January 13, 2010.

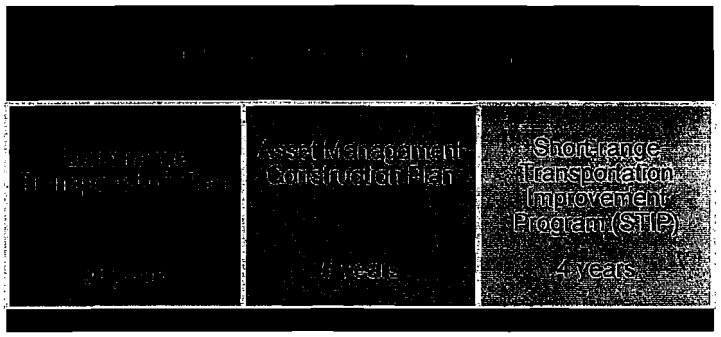
- Revisions to the Local Public Agencies Manual.[33]

As a result of the continued corrective action, the 2012-2015 STIP was conditionally approved.

Long-Range Transportation Plan

State departments of transportation are federally required to develop long-range transportation plans that cover a minimum planning period of 20 years. These planning documents vary by state and can be broad policy documents, or they may include specific projects. Generally, long-range transportation plans address forecasted transportation demand, provide policies and strategies to address meeting demand, and provide methods to preserve the existing transportation system.

INDOT's most recent long-range transportation plan document is the Indiana 2013-2035 Future Transportation Needs Report. This report does not list specific projects, but provides a need-based framework for addressing future transportation needs and strategies to accomplish them.



Asset Management Construction Plan

The Asset Management Construction Plan is currently being developed, and it will be a five-year plan that focuses on the completion of preservation projects based upon the identification of transportation needs that should be undertaken within that time frame. INDOT's Asset Management Teams (pavement, bridges, safety, and mobility) will assess current conditions and conduct needs analyses in order to identify projects to include in the plan. The Asset Management Construction Plan will also synchronize multiple projects in order to reduce transportation disruptions. Generally, the types of projects that will be included in the Asset Management Construction Plan take about three to five years from approval to begin construction.[34]

Statewide Transportation Improvement Program

STIP is a four-year planning document that provides projects that are expected to be funded within that period of time. The estimated costs of all projects included in the STIP cannot exceed anticipated revenues. The MPO's TIP is incorporated in INDOT's STIP. Projects must be included in both the STIP and an MPO's TIP in order to receive federal funds. The STIP must be approved by the FHWA and the FTA.

INDOT updates the STIP every two years, although amendments may be made to the current STIP through a review and approval process by the FHWA and the FTA. Minor changes or "administrative modifications" may be made to the STIP without approval. The most current STIP document for Indiana is a draft for 2014 through 2017.

[33] U.S. Department of Transportation letter to INDOT Commissioner Michael Cline, July 11, 2011.
[34] Indiana Department of Transportation, *Annual Program Development Process,* p. 12.

The majority of projects in the draft 2014-2017 STIP are state-sponsored projects (81%) compared to local-sponsored projects (19%). About 72% of the state-sponsored projects and about 37% of the local-sponsored projects are bridge and culvert projects. (See Table 15.)

Table 15. State and Local-Sponsored Projects from STIP (Draft), FY 2014 – FY 2017.

State-Sponsored Projects

Type of Project	Number of Projects	Federal Funds	Matching Funds
Bike and Pedestrian	20	$3,647,367	$1,301,107
Bridge and Culvert	2,184	671,986,084	129,012,945
Environment	16	1,950,566	445,975
Intelligent Transportation System*	33	28,587,446	3,758,050
Pavement and Road	542	944,683,221	194,447,041
Safety	194	75,161,165	17,102,240
Other	46	2,176,826	1,434,546
Total	**3,035**	**$1,728,192,676**	**$347,501,904**

Local-Sponsored Projects

Type of Project	Number of Projects	Federal Funds	Matching Funds
Bike and Pedestrian	117	$20,296,706	$6,138,731
Bridge and Culvert	262	64,991,673	18,338,964
Environment	1	0	300,000
Pavement and Road	251	187,954,562	39,871,856
Safety	30	2,663,180	401,356
Other	42	16,672,164	4,384,917
Total	**703**	**$292,578,285**	**$69,435,824**

*These projects include traffic management initiatives, their operations, and technical support.

Source: INDOT FY 2014-FY 2017 Draft STIP.

Management of State Transportation Infrastructure

This section of the report explores the methods that INDOT utilizes to manage the state's transportation infrastructure. Asset management is discussed as a data-driven strategy for managing infrastructure through maintaining an accurate infrastructure inventory in order to identify needs and prioritize them based upon economic principles and evaluating alternatives. Also, INDOT's project management activities are described.

Asset Management

As state departments of transportation are confronted with demands for cost-effective approaches to planning and managing infrastructure, asset management is being utilized for developing a comprehensive framework for evaluating alternatives.

Asset management may be defined as:

> . . . a systematic process of maintaining, upgrading, and operating physical assets cost-effectively. It combines engineering principles with sound business practices and economic theory, and it provides tools to facilitate a more organized, logical approach to decision-making. Thus, asset management provides a framework for handling both short- and long-range planning.[35]

Generally, asset management is comprised of the following processes:

- Establishment of performance expectations to guide decision making.
- Collection and analysis of inventory and performance information.
- Utilization of tools and procedures to provide cost-effective strategies within the available budget to meet agency needs and satisfy user requirements.
- Evaluation of alternative choices.[36]

Two of the more common components for state highway agencies using asset management are pavement and bridge management systems. In addition to these asset groups, INDOT also collects data on safety, mobility (new interchanges and new roadways), and statewide assets (rest areas, weigh stations, and INDOT buildings). Data is collected annually for the pavement management system, while data for bridges is collected semiannually. Data collection for safety is continuous through crash reports from law enforcement, work management systems, and INDOT's project scheduling system. Regarding mobility and statewide assets, data is collected every three years for non-interstate locations and about every two to three years for interstate locations. Also, there are data collection devices that have been installed on urban interstates to collect traffic data throughout the year.

INDOT has established four Asset Management Teams (mobility, roadway, bridge, and traffic safety) comprised of INDOT central office and district office members. The teams establish project scoring methodologies to assist in ranking projects, which allows for particular asset attributes to be captured. When the teams have completed project rankings, the results are provided to the Program Management Group. The Program Management Group applies statistical analysis methods to the project scores in order

[35] Federal Highway Administration and the American Association of State Highway and Transportation Officials, *Asset Management: Advancing the State of the Art Into the 21st Century Through Public-Private Dialogue*, 1996, p. 3.

[36] U.S. Department of Transportation, Federal Highway Administration, Office of Asset Management, *Asset Management Primer*. 1999, p. 13.

to have a common scale. After expenditure targets are determined, the Program Management Group makes project recommendations to the INDOT Executive Office and Funds Team.[37]

INDOT is developing a single database system to better integrate data from disparate databases for the purposes of asset management. State Planning and Research funds (100% federal funds) are being used for the development of the database. The database project is estimated to cost about $2.5 million over two years starting in FY 2013.[38]

Project Management

Both NCHRP and FHWA emphasize that DOTs should focus on project management. NCHRP reports better project outcomes with better management. FHWA describes the changing role for DOTs as project management occurs through public-private partnerships.

Projects are classified by INDOT as major, minor, or maintenance. Major projects usually involve substantial changes to existing roads or major new construction. Minor projects are usually improvements to existing infrastructure, such as bridge replacement or the addition of turn lanes to intersections. Maintenance projects include activities such as guardrail replacement or filling pot holes.[39]

The traditional method of highway project construction is known as Design-Bid-Build (DBB). First, a project is designed by the DOT or its engineering contractor. Next, the design or a segment of the design is put out for bid, and the qualified construction contractor with the lowest bid receives the contract. Then, the project moves into the build phase, where any deviations from the initial design result in change orders that potentially increase the cost of the project and lengthen the project's delivery time. Often projects are divided into several segments, either to fit the available spending authority or to facilitate construction of the project within a given timeframe.

Environmental Review

The National Environmental Policy Act of 1969 (NEPA) requires that environmental impacts be assessed for transportation projects. There are three environmental review determinations that transportation projects may meet:

- Categorical exclusion for projects that are not expected to significantly impact the environment.
- Environmental assessment resulting in a finding of no significant impact.
- Environmental impact statement concluding with a record of decision for projects that are expected to significantly impact the environment.

Source: Council on Environmental Quality, Executive Office of the President and Advisory Council on Historic Preservation, *NEPA and NHPA: A Handbook for Integrating NEPA and Section 106*, March 2013.

Along with the DBB process is the purchase of right of way, or land on which the project will be built, including price negotiation and potential relocation of residents and businesses. Also, if the project receives federal aid, a National Environmental Policy Act (NEPA) evaluation of the area affected by the project must be completed.

[37] Indiana Department of Transportation, *Annual Program Development Process,* pp. 13-15.
[38] Roy Nunnally, interview.
[39] Indiana Department of Transportation, *Project Development Process Manual,* August 2007, pp. 4-6.

Project management is the planning and completion of both major and minor projects. The activities of project management generally consist of the following stages[40]:

- Detailed study.
- Project scoping.
- Environmental review.
- Project design.
- Public involvement.
- Right-of-way acquisition.
- Utility coordination.
- Construction activities.

INDOT tracks construction projects through the Scheduling Project Management System (SPMS) in order to follow projects through the development cycle. Data provided from SPMS indicates that there are currently 1,297 projects in the design stage that are programmed to be let and constructed from FY 2014 to FY 2017. Data from SPMS also indicates that there are currently 369 projects active in the construction stage.[41]

Change orders and cost overruns may be indicators of the effectiveness of transportation project delivery management. Change orders allow contractors to take corrective action in the event of design errors, changed conditions, or construction problems and may result in increased costs, or cost overruns, for the project sponsor, depending on the cause of the change. In some instances, change orders may delay project delivery.

While change orders generally address problems uncovered during construction, in some cases change orders may be used to circumvent procurement rules by not specifying the actual project needs in the initial contract. INDOT's change-order process was investigated in 2005 by the state Inspector General, who reviewed 1,750 change orders processed for 499 contracts that resulted in increased costs for highway construction by over $68 million.[42] The investigation resulted in recommendations for methods to improve the process, including the recommendation to require that change orders be approved by an engineer at the central office.[43]

The most recent INDOT change-order policy was issued on January 4, 2010. This policy specifies the authorities deemed appropriate for approving change orders that will monetarily impact contracts. Project changes that are estimated to change project costs by $50,000 or less are approved by project engineers and supervisors. Change orders are approved by the area engineer for impacts of $50,000 to $250,000. The district construction director or the state construction engineer approve changes for impacts of $250,000 to $2 million. The director of the division of construction management must approve change orders that are estimated to impact project costs by over $2 million.[44]

In addition, INDOT commissioned an evaluation of its construction evaluation process. Using construction evaluations completed by project supervisors from 1999 to 2007, a consultant, Janssen and Spaans Engineering, reviewed phases of the projects. Because the actual change orders were not reviewed, Janssen and Spaans could not conclude whether the change orders during this period of time

[40] Indiana Department of Transportation, *Annual Program Development Process,* p. 23.
[41] Indiana Department of Transportation, Data from SPMS, accessed April 12, 2013.
[42] Indiana Office of the Inspector General, *Inspector General Report: INDOT Change-Orders*, October 27, 2005.
[43] Ibid.
[44] Indiana Department of Transportation, New Change Order Policy Memorandum, January 4, 2010, p. 3.

occurred as a result of errors in the design, changes in project scope, or unanticipated circumstances.[45] In 2001, there were 65 projects that were let for construction with a percentage cost overrun of 9.85%. On average during 2002 through 2006, 115 projects were let for construction with an average percentage cost overrun of 4.48%. In 2004, the most projects were let for construction (152) with a percentage cost overrun of 5.54%. In 2006, there were 70 projects that were let for construction with a percentage cost overrun of 4.24%. The review suggests that the amount of cost overruns due to change orders had decreased over the time period reviewed.[46]

INDOT provided more recent data to LSA concerning cost overruns for closed contracts. For FY 2009 through FY 2012, the number of change orders for construction contracts averaged about 2,695 for an average of 309 construction contracts designed and awarded.[47] The following table provides cost overruns for contracts closed for FY 2009 through FY 2012 and indicates that the dollar amount of cost overruns due to change orders has declined for closed contracts.

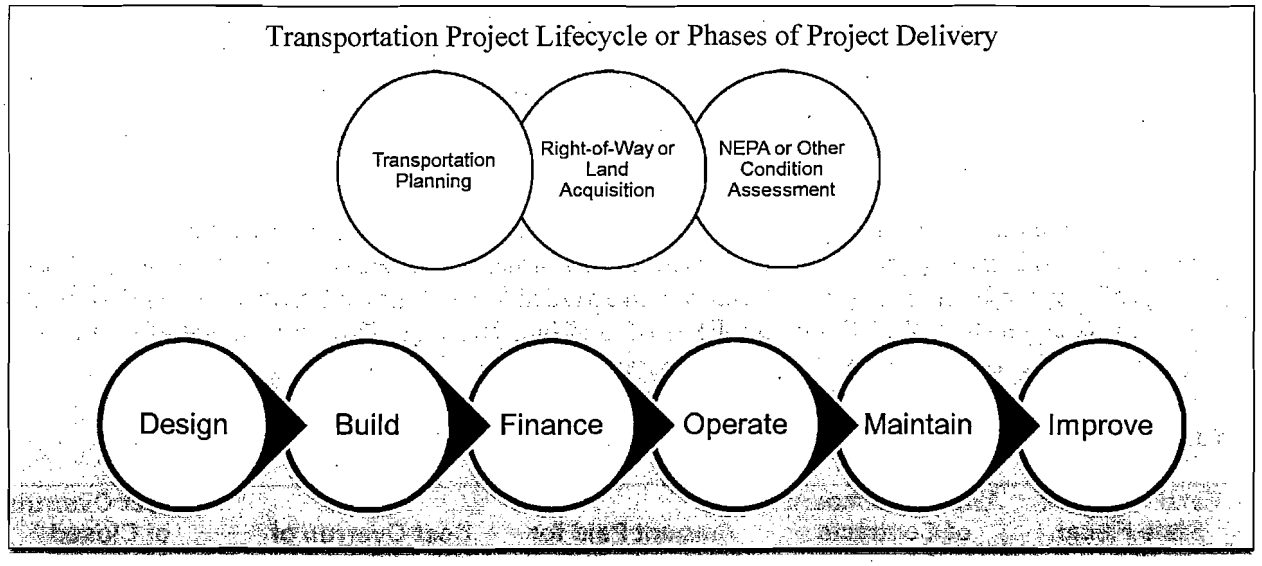
Table 16. Cost Overruns for Closed Contracts, Fiscal Years 2009-2012.

Final Payment State Fiscal Year	Awarded Amount of Contracts Closed	Amount Paid for Contracts Closed	Cost Overrun of Closed Contracts	% Cost Overrun of Closed Contracts
2009	$585,483,903	$633,152,269	$47,668,366	8.1%
2010	649,656,571	680,726,337	31,069,766	4.8%
2011	821,298,633	846,886,305	25,587,672	3.1%
2012	948,186,722	966,098,817	17,912,095	1.9%

Source: Indiana Department of Transportation, Data from SPMS, accessed April 12, 2013.

[45] Janssen and Spaans Engineering, Inc., *Indiana Department of Transportation Construction Evaluation Review,* January 2008, p. 3.
[46] Janssen and Spaans Engineering, Inc., p. 5.
[47] Indiana Department of Transportation, Data from SPMS, accessed April 12, 2013.

Public-Private Partnerships



A P3 has come to be known as a project that does not follow the DBB model discussed on page 28. Another feature that distinguishes a P3 is that a private partner is contracted to participate in more than one element of a project. The term P3 includes design-build (DB), design-build-finance-operate-maintain-improve, and all variations between. As more project elements are contracted out together, the direct project responsibilities shift from the sponsoring agency to its private partners, and the sponsoring agency undertakes the new roles of setting performance standards, evaluating project progress and quality, and managing the project.[48, 49]

Innovative Project Delivery

Project delivery is a term that refers to organizing a project, from project planning and scoping to road construction and financing. The literature identifies many benefits from P3 on reducing project cost and the time to complete the project. The following items highlight some of the benefits that have been identified for P3s.

Risk Redirection or Reduction. Each phase in the lifecycle of a transportation project includes risks within the phase. In the traditional DBB, different engineers and contractors participate in different phases of the project exposing the sponsoring agency to transfer risks, such as designs and conditions not aligning. In general, risk increases project costs. While there is no way to eliminate risk completely, risk can be mitigated by shifting risk to the party that is most able to control the risk. Transfer risks can be addressed by linking phases of project delivery to make a single party responsible for interconnected elements of the project.

Time and Cost Savings. A 2005 review of design-build by the FHWA compared similar DB and DBB projects to estimate differences in project delivery. (It is recognized that no two construction projects are exactly the same.) The study found a favorable 9% total project difference and a 13% construction-phase difference in project delivery.

[48] http://www.fhwa.dot.gov/ipd/p3/defined/

[49] Federal Highway Administration, *Establishing a Public-Private Partnership Program: A Primer*, November 2012, p. 5-5.

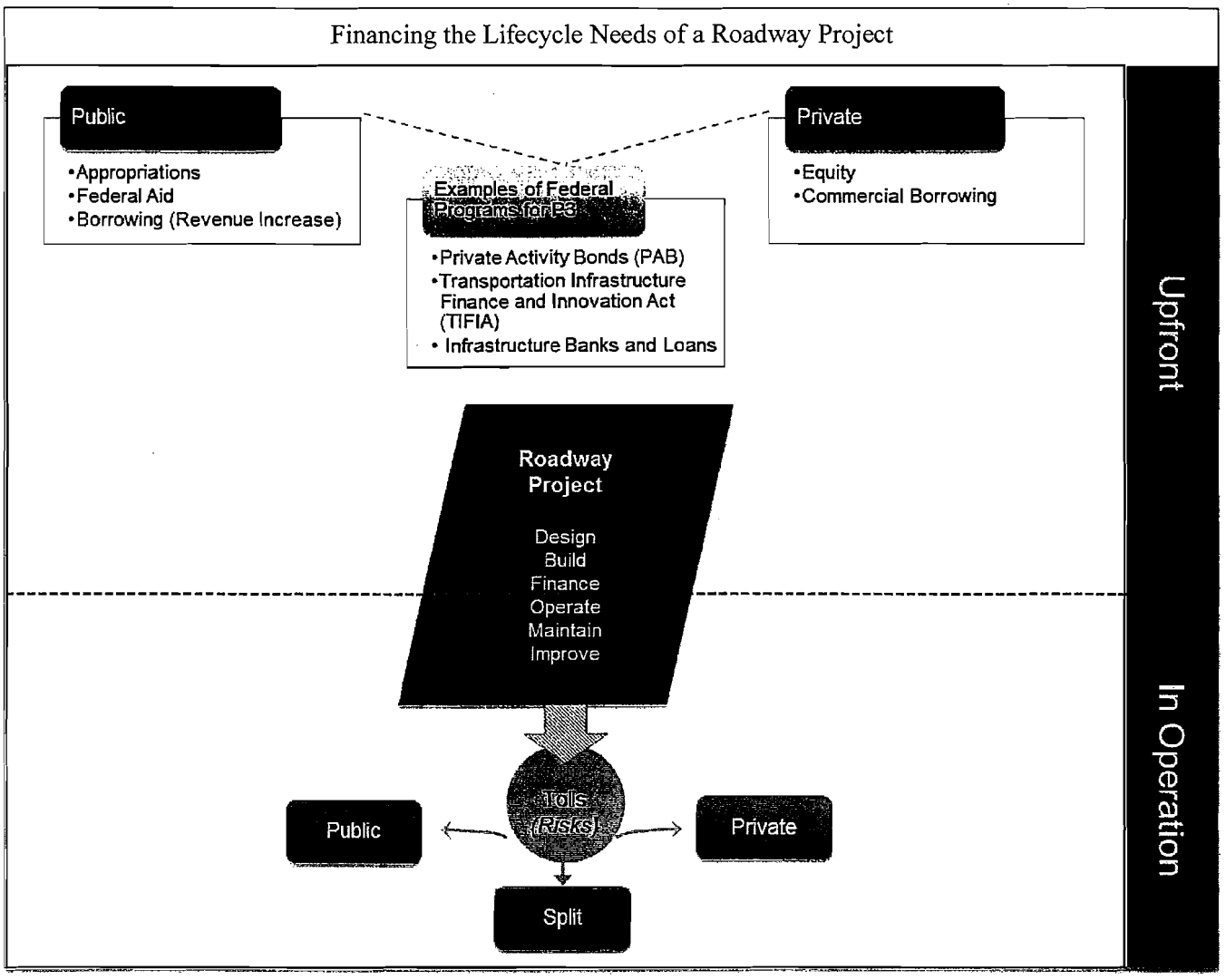
Time savings may result from project work being completed concurrently, rather than sequentially. For example, the builder who has a design-build contract may order materials while the project is still in design. Under P3, the builder has a longer lead time to purchase materials and may be able to purchase materials at a more advantageous time and at a lower price.

Another way in which a P3 may provide cost savings is by reducing the number of bid processes per project. In the DBB system, a bid that does not attract sufficient bids may be withdrawn and rebid. In a DB project, the designer-builder qualifications are a factor in the offer evaluation process. A request for qualifications is evaluated and a small number of contractors selected to respond to a request for proposal.

Innovation. A private partner may be able to use techniques that are not available to a public agency. One example cited from Indiana's experience is the Milton-Madison Bridge replacement. The new bridge was built on temporary supports and moved into place. It is estimated that this process saved three years of construction time and closed traffic for only 10 days.

Shared Project Financing

The P3 model can promote private investment in public roads, either through equity investments or debt financing mechanisms. It was once thought that most P3s would be like the Indiana Toll Road lease, featuring upfront payments (for an existing facility) or deliverable infrastructure (for a new land project) in exchange for tolling rights over time. Currently, P3s have more intricate financing mechanisms, often based around debt financing worked out between the public and private partners.



Each public and private partner has methods available to finance roadway projects on its own. However, private financing is more expensive than tax-exempt public financing for several reasons. First, investors require a higher rate of return to compensate for taxes on nonexempt debt instruments. Second, private financing requires a higher return to provide dividends to equity investors or to compensate for the taxes on a private partner that may not be assessed on a public entity. Third, the markets' assessments of the borrower influences the cost of capital, and public entities may be better known and more stable than the private partner.[50]

As P3s have evolved, the private partner is generally a consortium of entities that come together for one project. The financing of the project is a package of resources, including both private and public infusion of equity, debt instruments that generally are backed by the public partner and repaid by the consortium, and revenue-generating instruments that are used to repay the equity and debt.[51]

It is not necessary for a P3 to have toll revenue as a component of repayment. However, when there is tolling, the tolls may be paid to the public or private partner, or shared between the two. With receipt of the toll revenues come the associated risks, such as insufficient revenue to pay debt service or equity

[50] Office of the Inspector General, U.S. Department of Transportation, *Financial Analysis of Transportation-Related Public-Private Partnerships*, Federal Highway Administration Report Number: CR-2011-147 Date Issued: July 28, 2011, p. 5.
[51] Federal Highway Administration, *Establishing a Public-Private Partnership Program: A Primer*, November 2012, p. 5-5.

dividends. A public partner may choose to retain the toll revenue and the associated risks to make a project more attractive to the financial markets or to attract more competitive bids. However, in any transportation financing, the taxpayer always bears the repayment risks.

According to the FHWA, P3s are differentiated by the compensation mechanism that repays equity investors and debt.[52] The three primary sources of revenues include:

> *Tolls* - Each vehicle pays for use of the facility. In this model all revenue risk transfers to the partner who receives the tolls. While inability to repay debt is the downside risk, on the upside, the partner who receives the tolls, depending on use and toll rates, may collect excess revenue.
>
> *Shadow Tolls* – The public partner pays the private partner for each vehicle that enters the facility. In this model the use risk is transferred to the private partner, while the public partner retains the revenue risk to pay for tolls.
>
> *Availability Payments* – The public partner pays the private partner for the facility being available at certain levels of service. This method may be used in combination with tolls, where the tolls make up a portion of the availability payment or offset some of the payment made by the public partner.

Determining Which Projects are Candidates for P3

Not every project can benefit from P3, however. Various studies have shown that project costs increase when a premium is required for the risk that is transferred to the private partner. Additionally, since the process is more involved for contractors, a stipend for unsuccessful bidders may be needed or in some cases increased to attract more bidders.

Although contracting portions of a project to a private partner may enhance project delivery, the public agency can retain control of certain portions of project delivery. In particular, the FHWA indicates that the public agency should "drive and manage the process, set the program's direction, identify potential projects, select bidders, and manage contracts".[53]

Project Selection in Indiana

INDOT indicates that there is a difference between commercial and financial close on a P3. The commercial close sets the project delivery method, while the financial close solidifies the financing of the project. Thus, it may be decided that a project will be a P3 for project delivery, but the details of the financing are worked out before the financial close.

INDOT has created a deputy commissioner position for innovative project delivery, and the deputy commissioner and the IFA state financial director work together to identify projects that may add value to taxpayers under a P3 model. INDOT indicates that they take a lifecycle approach and look for projects where a P3 will provide better value with cost savings. At IFA, outside consultants are contracted to model option analyses and identify the best projects for P3. IFA and INDOT, as well as

[52] Federal Highway Administration, *Financial Structuring and Assessment for Public-Private Partnerships: A Primer*, December 2012, p. 2-5.

[53] Federal Highway Administration, Office of Innovative Projects, *Establishing A Public-Private Partnership Program: A Primer*, November 2012, p. 3-2.

the FHWA, indicate that not all projects benefit from P3 and that projects need to be carefully screened.

The FHWA endorses use of specialized P3 units to systematically and identify projects for P3 early in the development process. A P3 unit may also give potential private partners more confidence by interacting with a more experienced and capable client team with whom to negotiate agreements.[54]

The FHWA also recommends certain program goals to guide and facilitate the development and implementation of P3 projects[55] as follows:

- Promote economic growth
- Encourage competition and innovation
- Realize long-term cost savings
- Transfer cost and schedule risks
- Accelerate major projects
- Coordinate agency processes and build public capacity to undertake P3s
- Communicate the benefits and risks of P3s to stakeholders

The FHWA recommends certain evaluation tools, including[56]:

- Traffic and revenue studies
- Preliminary design and cost estimates
- Risk assessment
- Financial feasibility assessment using cash flow and valuation models
- VfM analyses (See sidebar.)

Value for Money (VfM) analyses are conducted in order to compare the value of using P3 for project delivery to using a traditional delivery model. According to the FHWA, VfM analyses generally require the creation of a model of a traditional project estimating the costs and risks along the whole lifecycle of the facility and comparing that model to estimated costs and risks for a P3 project.

IFA indicates that they and INDOT are working to develop guidance for what projects make sense to turn into a P3. This is an indication that the project selection process is still developing in Indiana. There are generally five steps to the process:

- Project identification
- Project screening
- Project development
- Project procurement
- Contract award

During project identification, INDOT considers projects that may benefit from a P3 from among projects in its planning process as well as projects proposed by interested parties. During project screening, projects are reviewed for obstacles and risks, as well as the feasibility of using a P3 delivery method. Project development considers the project scope, market demand, commercial

[54] Ibid., p. 3-3.
[55] Ibid., p. 5-2.
[56] Federal Highway Administration, Office of Innovative Projects, *Value for Money Assessment for Public-Private Partnerships: A Primer*, December 2012, pp. 1-2 – 1-3.

structure, payment mechanisms, and value for money. During the project development phase NEPA studies and feasibility studies are conducted. The commercial structure for the project is selected based upon market factors and the best value for INDOT.

Methods of Selecting Project Financing

In addition to project selection, financing mechanisms have to be selected. INDOT, IFA, and the Governor's office work within the resources allowed by the legislature or FHWA to develop a program of project finance.

In the late 1990s and early 2000s, conventional debt instruments were used to fund projects through capturing increases in fuel taxes and vehicle registrations. In 2005, the lease of the East-West Indiana Toll Road Project ushered in a new era of public-private partnership, with the private partner providing upfront funding or infrastructure. Going forward, it appears that financing major projects will use a P3 delivery system and multiple financial tools that rely on the credit of both the public and private partner.

INDOT has developed its capabilities to evaluate the best financing instrument for the projects it will undertake. As with project selection, INDOT works with IFA to evaluate financial data generated by in-house modeling and external consultants. INDOT considers the discounted cash flows and the costs of construction inflation in making its financing decisions.

In one example of financing selection by INDOT, INDOT anticipated using a method of contractor financing for completion of U.S. 31 and then withdrew the proposal. It was determined by INDOT and IFA that the project was too far into design to offset the higher cost of capital. It is now understood that having innovation and achieving cost savings requires recognizing a project as a P3 early in the project development.

Indiana's Use of P3

INDOT and IFA have used P3 authority in several ways, including design-build structure, the lease of existing facilities, and innovative road finance. The following descriptions are an overview of each type of P3.

Design-Build (DB)

Initially, the design-build structure was not used for roads, but in the 1990s, the federal government began to allow these projects under Special Experimental Project No. 14 - Innovative Contracting. DB is still considered experimental for road building, but INDOT has been using the method since about 1990. From review of contracts let during each fiscal year, it is estimated that on average between 2005 and 2012, 9.3% of the annual contract amount has gone to DB contracts. The annual amount varies greatly from 0.6% in FY 2009 to 22.0% in FY 2011, as seen in Table 17.

Table 17. Let Contract and Project Cost Overruns, FY 2005 – FY 2012.

Fiscal Year	Number of Design-Build Contracts	Design-Build Letting Amount	Total Letting Amount	% Design-Build (Dollar Basis)	% Cost Overrun of Closed Contracts
2005	1	$27,542,864	$329,131,502	8.4%	
2006	1	15,494,000	988,399,834	1.6%	
2007	4	174,031,375	992,667,528	17.5%	
2008	2	32,226,660	1,068,362,714	3.0%	
2009	11	7,669,036	1,349,222,729	0.6%	8.1%
2010	13	166,584,432	1,356,765,260	12.3%	4.8%
2011	7	322,564,303	1,462,927,648	22.0%	3.1%
2012	2	45,849,836	998,759,788	4.6%	1.9%
Total		**$791,962,506**	**$8,546,237,003**	**9.3%**	

Source: Indiana Department of Transportation, *Design-Build Contracts.xlsx*, June 21, 2013.

Cost overruns may occur when change orders are approved, and DB potentially reduces the number of change orders. When the cost overruns reported in Table 16 and Table 17 are considered with the percentage of let projects, it appears that the increase in DB contracting amounts in FY 2010 and FY 2011 may be a factor in the reduction in cost overruns in FY 2012. However, there were insufficient data provided by INDOT for LSA to determine if there is a correlation.

Lump Sum Payment

In 2005, IFA leased for 75 years its East-West Toll Road Project for about $3.8 billion to operate, maintain, and improve the facility. This P3 was the largest of the brownfields or existing facility agreements in the country and was one of a few projects that included a lump sum upfront payment by a vendor. The proceeds of the lease were paid to the state, although IFA, as the owner of the facility, recognizes the revenue across the life of the lease.

The lump sum payment model of P3 does not seem to be the way that projects will be financed in the future.[57] Economic conditions changed greatly after the Indiana Toll Road was leased, and two years ago it appeared that the concessionaire may have had difficulty making debt service payments.[58] The change in P3 structure is reflected in the way Indiana is going about its next round of major construction projects.

[57] Thompson, Andy, "P3s: No Longer about Upfront Cash," *Infrastructure Investor* posted October 3, 2012 11:41 GMT.
[58] Holeywell, Ryan, "Road Risk," Governing, October 2011, p.48.

New Facilities Financing

New major construction projects are being financed with alternative financing instruments that leverage private investment in the facilities. The concessionaire is delivering multiple phases of the project, including to design, build, finance, operate, and maintain.

Leases for the new major projects are much shorter, using a time horizon for operating and maintenance agreements of about 35 years, as compared with the 75-year term of the Indiana Toll Road lease. The FHWA recommends this change in length of lease to better reflect a facility's life span.[59]

One example of this new facility financing is the Ohio River Bridges Project. The IFA issued a request for proposal to develop, design, build, finance, and, for certain components, operate and maintain the East End Crossing portion of Louisville-Southern Indiana Ohio River Bridges Project.[60]

East End Crossing Project

The IFA contracted with WVB East End Partners to design and build the East End Crossing of the Ohio River Bridges project for rights to a 35-year concession. The concessionaire is a team of Walsh Investors, VINCI Concessions, Bilfinger Berger, and other regional, national, and international firms. The total project is estimated at $736 million.

The East End Crossing will complete an interstate loop around Louisville. Kentucky is responsible for the Downtown Crossing portion of the Bridges project, which will build a new I-65 northbound bridge and reconfigure nearby interchanges in downtown Louisville and Jeffersonville.

Sources:
IFA, "Basis for Preliminary Selection of WVB East End Partners."
Project Finance, *Deal Analysis: East End Crossing*, May 10, 2013.

The project financing has four facets.

- The state will make milestone performance payments to the contractor for the first eight years of the project. The milestones are contractually set at $54 million annually and have been appropriated for FY 2014 and FY 2015 from state dedicated funds. If the contractor reaches the milestones, the payments will be made.

- The state is escrowing $9 million a year for five years. At the end of the five-year period, if there have not been unforeseen cost overruns, the money in the trust fund will be divided between the contractor and INDOT. If cost overruns are incurred that contractually would be the responsibility of INDOT, the money in the fund may be used to pay for these additional costs. The money for these escrow payments has been appropriated for FY 2014 and FY 2015.

- The IFA will make availability payments from the appropriations to INDOT starting at $37 million per year and increasing by a formula set out in the contract over the 39-year life of the project. This is the largest availability payment-based project undertaken by any state to date.[61]

- The facility will be tolled, with the toll revenue being retained by the state. The toll revenue does not support borrowing repayment. Instead, the toll revenue may be applied to the annual availability payments, and the revenue risk will be placed on the state.

Also, IFA issued $641 million of private activity bonds (PABs) on behalf of the consortium. A PAB allows a private partner to reduce financing costs with tax-exempt instruments. The PABs are authorized

[59] Federal Highway Administration, *Establishing a Public-Private Partnership Program: A Primer*, November 2012, p. 5-5.
[60] IFA, "Basis for Preliminary Selection of WVB East End Partners," accessed at http://www.in.gov/ifa/2750.htm.
[61] Project Finance, *Deal Analysis: East End Crossing*, May 10, 2013, accessed at http://www.projectfinancemagazine.com.

by the FHWA and are separate from the state cap for PABs that support other types of infrastructure investments.

The proceeds of the borrowing are to be loaned to the consortium, WVB East End Partners LLC. While Indiana has an S&P rating of AAA, the debt was issued with a BBB rating. IFA was considered a strong counterparty, but there is appropriations risk for repayment since the tolls were not part of the borrowing.[62,63] The consortium is responsible for repayment of the debt.

Further, IFA has issued a request for qualifications to develop, design, build, finance, operate and maintain the I-69 Section 5 project through an availability payment concession.[64] According to the request for qualifications, the IFA is the procuring agency and oversees state-related debt issuance for efficient and effective financing solutions. As the other project sponsor, INDOT works closely with IFA and oversees the work of the private partner, develops technical specifications for the RFP, and supports the technical evaluation of the private partner's qualifications and responses to the RFP.[65]

Conclusion

In this review of INDOT and its management of infrastructure and financing, INDOT's changing role in project delivery and management is demonstrated. Some of the specific information considered for this report provides an insight into the changes that are occurring at INDOT as follows.

- INDOT completes federally required planning with federally required input from local MPOs. The 2012-2015 STIP that INDOT is operating under was given conditional approval pending INDOT clarifying roles and responsibilities for developing plans within INDOT.

- Review of INDOT's planning system indicated that INDOT uses asset management as a way to evaluate projects across the state. INDOT's project management was reviewed using cost-overrun data provided by INDOT. It appears that cost overruns have declined in the period between FY 2009 and FY 2012 for closed projects.

- For a number of years, INDOT has been using design-build, a P3 structure for project delivery. A review of contracts let between FY 2005 and FY 2012 indicated that about 9.3% of projects were let as design-build projects. A peak in design-build lettings occurred in FY 2010 and FY 2011 and may have affected the cost overrun results. This interpretation is inconclusive, however.

- The financing of P3 projects is becoming much more complex. Historically, INDOT has partnered with IFA to deliver roadway projects using conventional debt instruments. More recently, INDOT and IFA are developing the capacity to evaluate projects in early stages for P3 delivery, both in-house and through outside consultants. INDOT and IFA are using alternative methods of financing that have been made available by the FHWA on federal aid projects.

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[62] Project Finance, *Deal Analysis: East End Crossing*, May 10, 2013, accessed at http://www.projectfinancemagazine.com.
[63] Devitt, Caitlin, "Rating Agencies Detail Criteria Behind IFA's $641M PABs Sale", The Bond Buyer, May 11, 2013.
[64] Request for Qualifications to Design, Build, Finance, Operate, and Maintain the I-69 Section 5 Project - Issued May 23, 2013; SOQ Due Date July 9, 2013, accessed at http://www.in.gov/ifa/2779.htm, p. A-2.
[65] Ibid., p. A-5.

Appendix A

Grant Anticipation Revenue Vehicles (GARVEEs)

A GARVEE allows an agency that receives federal-aid highway funds under Title 23 to pay interest, principal, and debt-issuing costs from the federal-aid revenue or project reimbursement. Direct GARVEE projects receive federal authorization and are repaid from federal-aid revenue, while indirect projects use the federal reimbursement to the state, which is considered state funds, to repay the bonds. Indirect GARVEE projects do not require federal approval nor are they considered a federal funding tool.

Some form of a GARVEE dates back to 1956, and changes have been made in the program from time to time. There were no changes to GARVEE regulations as a result of the passage of MAP-21.

Advantages	Disadvantages
• GARVEEs expedite construction of a highway facility by providing funding at the beginning of the project. • Repayment allows for allocation of the cost of construction over the life of the highway facility.	• GARVEEs entail the use of future federal-aid highway funds to repay debt.

State Statute	In IC 8-14.5-7, the IFA had authority to issue GARVEE bonds until the statute's expiration on July 1, 2009.
Indiana Use	IFA did not issue debt under its GARVEE authority.
Use by Other States	***Ohio River Bridges, Louisville, Kentucky*** - Kentucky is developing the Downtown Crossing portion of the Ohio River Bridges project, which includes a new I-65 northbound bridge and reconfigures nearby interchanges in downtown Louisville and Jeffersonville. Construction is expected to be completed in the first half of FY 2017. The cost of the Kentucky portion of the Ohio River Bridges project is $1.3 billion. In 2012, plans for financing the project included $300 million in direct federal aid, $846.2 million of revenue bonds backed by tolls, and $236 million of GARVEE bonds.[66] The Kentucky General Assembly authorized the sale of $231 million in GARVEE bonds in 2009 to assist in funding the Kentucky portion of the Ohio River Bridges project.[67] Reportedly, an initial sale of $100 million was completed in December 2009 to acquire right-of-way, relocate utilities, and mitigate environmental issues. A second bond issue of $89.7 million was completed in February 2010. FHWA reports that the second bond issue was rated AA- by Moody's, Aa3 by Standard & Poor's, and AA by Fitch. However, Moody's Investors Service downgraded GARVEE bonds for 27 projects, including projects of the Kentucky Asset/Liability Commission and Fitch Ratings downgraded 11 Garvee bonds.[68] ***Veterans Memorial Bridge Replacement, Portland, Maine*** - The Veterans Memorial Bridge Replacement was a design-build project that included replacing a bridge that was built in 1954 with a new bridge that is designed to have a life expectancy of 100 years. Construction began in June 2010, and the bridge was opened in June 2012. The cost of the project was $63.1 million. The project was funded through $50 million in GARVEE bonds and $13.1 million in Transportation Capital Improvement Trust Fund revenue bonds.

[66] Sigo, Shelly, "Kentucky Plans Bonds for Bridges," The Bond Buyer, January 25, 2012.
[67] http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_debt_financing/garvees/archived_highlights.htm.
[68] Slavin, Robert, "Moody's Downgrades $10 Billion in Garvees," The Bond Buyer, November 15, 2012.

I-485 Charlotte Loop, Charlotte, North Carolina - The I-485 Charlotte Loop project is a design-build-finance P3 that includes the construction of a new 5.1-mile, 8-lane section of interstate. Construction began in the summer of 2011 and is slated to be completed by December 2014.

The cost of the project is $139.5 million. The project is being funded through GARVEE bonds, State Transportation Trust Fund disbursements, and contractor financing through availability payments which will be paid by future appropriations made by the North Carolina General Assembly.

For more information on these projects and other projects funded through GARVEE bonds, please refer to http://www.fhwa.dot.gov/ipd/finance/project_profiles/index.htm

Private Activity Bonds (PABs)

This instrument allows state entities to borrow money on behalf of private contractors if the project serves a public purpose. PABs have been used for other types of infrastructure projects with a federal limit on the amount of tax-exempt debt the state may issue, known as a volume cap. PABs for highways and freight transfer facilities were added with the passage of SAFETEA-LU in 2005 and are not part of the individual state's volume cap.

The U.S. Department of Transportation (USDOT) approves a state or local government's use of tax-exempt debt on behalf of a private entity. USDOT has a total authorization of $15 billion in PAB approval. The private entity is responsible for the debt service on a project. As of September 2012, USDOT had approved 15 projects for PAB, including the East End Bridge Crossing in Indiana.

Advantages	Disadvantages
• PABs increase private participation in transportation projects by allowing tax-exempt interest rates for borrowing. • Private partner repays the debt.	• Government agency secures the borrowing, meaning the taxpayer is ultimately responsible for repayment. • Interest rates may not be as low compared to traditional tax-exempt borrowing.

State Statute	There is no specific statutory authority for PABs in the Indiana Code. In IC 8-15.5-10-3, the IFA pays amounts owed using its available funds and may certify to the General Assembly amounts needed and create moral obligations of the state to pay any amounts owed by the IFA. In IC 8-15.7-8, the IFA and INDOT have authority to apply for, execute, or endorse applications by private entities to obtain federal, state, or local credit assistance including grants, loans, lines of credit, or guarantees.
Indiana Use	East End Crossing (Ohio River Bridges)
Use by Other States	***I-635 Managed Lanes, Dallas-Fort Worth Metroplex, Texas*** - The I-635 Managed Lanes project is a design-build-finance-operate-maintain P3 that is expected to be completed in early 2016. The project is being constructed in order to relieve congestion around Dallas and will include the reconstruction of main lanes and frontage roads and the addition of managed lanes. The total project cost is $2.6 billion, of which $615 million is being funded through PABs. ***I-495 Capital Beltway HOT Lanes, Fairfax County, Virginia*** - The Capital Beltway High Occupancy Toll (HOT) Lanes improvement project is a design-build-finance-operate-maintain P3 that opened in November 2012. Improvements to the existing Capital Beltway include: • 14 miles of two new lanes in each direction. • High Occupancy Vehicle (HOV) lanes. • Replacement of more than $260 million of aging infrastructure. • Construction of carpool ramps. The total project cost was $2.068 billion, of which $589 million was funded using PABs. For more information on these projects and other projects funded through PABs, please refer to http://www.fhwa.dot.gov/ipd/finance/project_profiles/index.htm.

State Infrastructure Banks (SIBs)

The federal SIB program allows each state to establish an infrastructure revolving loan fund eligible to be capitalized with federal transportation funds. According to the FHWA, SIBs allow states to efficiently use their transportation funds "and significantly leverage federal resources by attracting nonfederal public and private investment."[69] SIBs provide nongrant assistance to public or private entities for transportation projects in the form of below-market-rate loans, interest rate buy-downs on third-party loans, guarantees, and other forms of credit enhancement. Any debt issued or guaranteed by a SIB must be of investment-grade quality.

Advantages	Disadvantages
• SIBs offer below-market interest rates and loan guarantees. • They can generate ongoing revenue by using loan repayments to sell bonds in the bond market. • SIBs can fund creditworthy projects in a timely manner, reducing delays that may occur for grants or other types of funding. • Because SIBs are revolving funds, they can lend more funding to transportation projects. • Projects are assessed based on their financial viability, so there is a program evaluation process. • They promote the equitable allocation of resources by spreading SIB loans across several different projects.	• The accessibility to existing credit options in the municipal bond market may cause the underutilization of SIBs. • There may be difficulty identifying revenue streams for smaller-scale local projects. • State's backlog of projects may tie up federal highway funds.[70] • Some SIBs are not self-sufficient, but are dependent on various types of tax revenue.

State Statute	There is no specific statutory authority for SIBs in the Indiana Code.
Indiana Use	As of December 2008, Indiana's infrastructure bank entered into two loan agreements and distributed $6 million.[71]
Use by Other States	***Cooper River Bridge Replacement, Charleston, South Carolina*** - The Cooper River Bridge Replacement project was a design-build project to replace two functionally obsolete bridges and construct a new bridge. The bridge opened to traffic in July 2005. The total project cost was $675.2 million, of which $325 million was from the South Carolina Transportation Infrastructure Bank, which is backed by motor fuel tax, truck registration fees, local taxes, and tolls. ***President George Bush Turnpike, North Dallas Metroplex, Texas*** - The Turnpike, completed in 2006 and its extension completed in 2011, is a 30.5-mile toll roadway connecting various cities in the northern part of the Dallas Metroplex. The turnpike was accomplished through the traditional project delivery method. The cost of the original turnpike was $530.5 million, of which $50 million was funded through the North Texas Tollway Authority Capital Improvement Fund. For more information on these projects and other projects funded through SIBs, please refer to http://www.fhwa.dot.gov/ipd/finance/project_profiles/index.htm.

[69] FHWA Office of Innovative Program Delivery, State Infrastructure Banks, http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_credit_assistance/sibs/.
[70] Slone, Sean, *State Infrastructure Banks,* The Council of State Governments, June 2011.
[71] http://transportation-finance.org/funding_financing/financing/credit_assistance/state_infrastructure_banks.aspx.

Transportation Infrastructure Finance and Innovation Act (TIFIA) Program

The TIFIA program was developed in 1998 to help states and local units secure loans for certain qualifying nationally or regionally significant projects. TIFIA is useful for a new toll project where estimated toll revenue is indeterminate.

The TIFIA program offers the following instruments for up to 33% of the total project cost:

- Secured direct loans for financing capital costs. Repayment begins within 5 years of substantial completion of the project and has a 35-year maximum term.
- Loan guarantees backed with the full faith and credit of the federal government to repay nonfederal lenders.
- Standby line of credit which is a contingent federal loan to supplement project revenues, if needed, during the first 10 years of project operations.

MAP-21 authorizes $750 million in FY 2013 and $1 billion in FY 2014 in TIFIA budget authority from the Highway Trust Fund to pay the subsidy cost of credit assistance.

Advantages	Disadvantages
• TIFIA leverages nonfederal investment for large projects using supplemental or subordinate debt. • There are flexible repayment options for borrowers. • TIFIA has low interest rates. • The debt can be supplemental or subordinate.	• TIFIA applies to large projects. • TIFIA requires states to have primary borrowing capacity.

State Statute	There is no specific statutory authority for TIFIA in the Indiana Code. In IC 8-15.5-10-3, the IFA pays amounts owed using its available funds and may certify to the General Assembly amounts needed and create a moral obligations of the state to pay any amounts owed by the IFA. In IC 8-15.7-8, the IFA and INDOT have authority to apply for, execute, or endorse applications by private entities to obtain federal, state, or local credit assistance including grants, loans, lines of credit, or guarantees.
Indiana Use	Indiana submitted an initial application for a TIFIA direct loan for the East End Crossing (Ohio River Bridges) in September 2012.
Use by Other States	***Eagle Project, Denver Metro Area, Colorado*** - The Eagle Project is a design-build-finance-operate-maintain P3 that is expected to be completed in 2016. The project will expand commuter and light rail and bus transit throughout the Denver Metro. The total project cost is about $2 billion, of which $288 million is funded through a TIFIA loan secured by a senior lien gross revenue pledge of the Regional Transportation District's 0.4% sales tax revenues and a subordinate lien pledge of 0.6% sales tax revenues. ***I-595 Corridor Roadway Improvements, Broward County, Florida*** - Improvements to the I-595 Corridor Roadway began in June 2009, and construction is expected to be completed in the summer of 2014. Improvements include the reconstruction and widening of existing roads and ramps, and the total project length is about 10.5 miles. The project is a design-build-finance-operate-maintain P3. The total project cost is about $1.8 billion, of which $603 million is funded through a TIFIA loan. The direct loan is secured by a subordinate lien on availability

payments made by the Florida Department of Transportation to their private partner, I-595 Express, LLC.

Ohio River Bridges, Louisville, Kentucky - The Kentucky Public Transportation Infrastructure Authority has applied for a TIFIA direct loan for the Downtown Crossing (Ohio River Bridges).

For more information on these projects and other projects funded through TIFIA, please refer to http://www.fhwa.dot.gov/ipd/finance/project_profiles/index.htm

Transportation & Infrastructure Assessment & Solutions

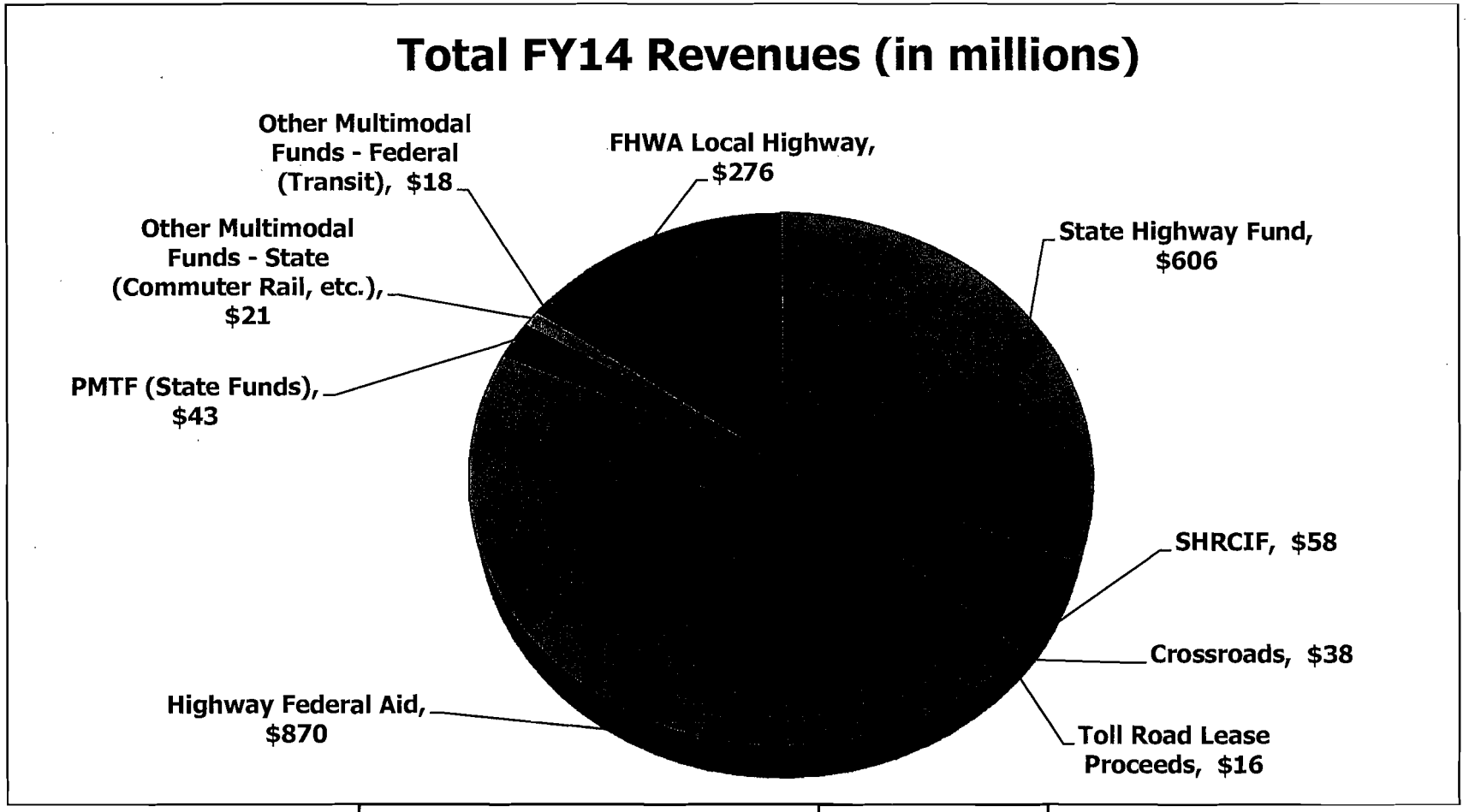
Joint Study Committee

THAS 10/15/13 Ex C

Karl B. Browning
Commissioner
INDOT

October 15, 2013

Authorized Funding



	2014
Total Highway Funding	$1,863
Total Non-highway Funding	$81
Total Funding	$1,944

4% of INDOT funding is authorized for other than highway maintenance and construction. Most of the $81M is specified for formulaic distribution.

Use of the State Highway Fund

IC 8-23-9-55

Sec. 55. Money in the state highway fund shall be used for the following:

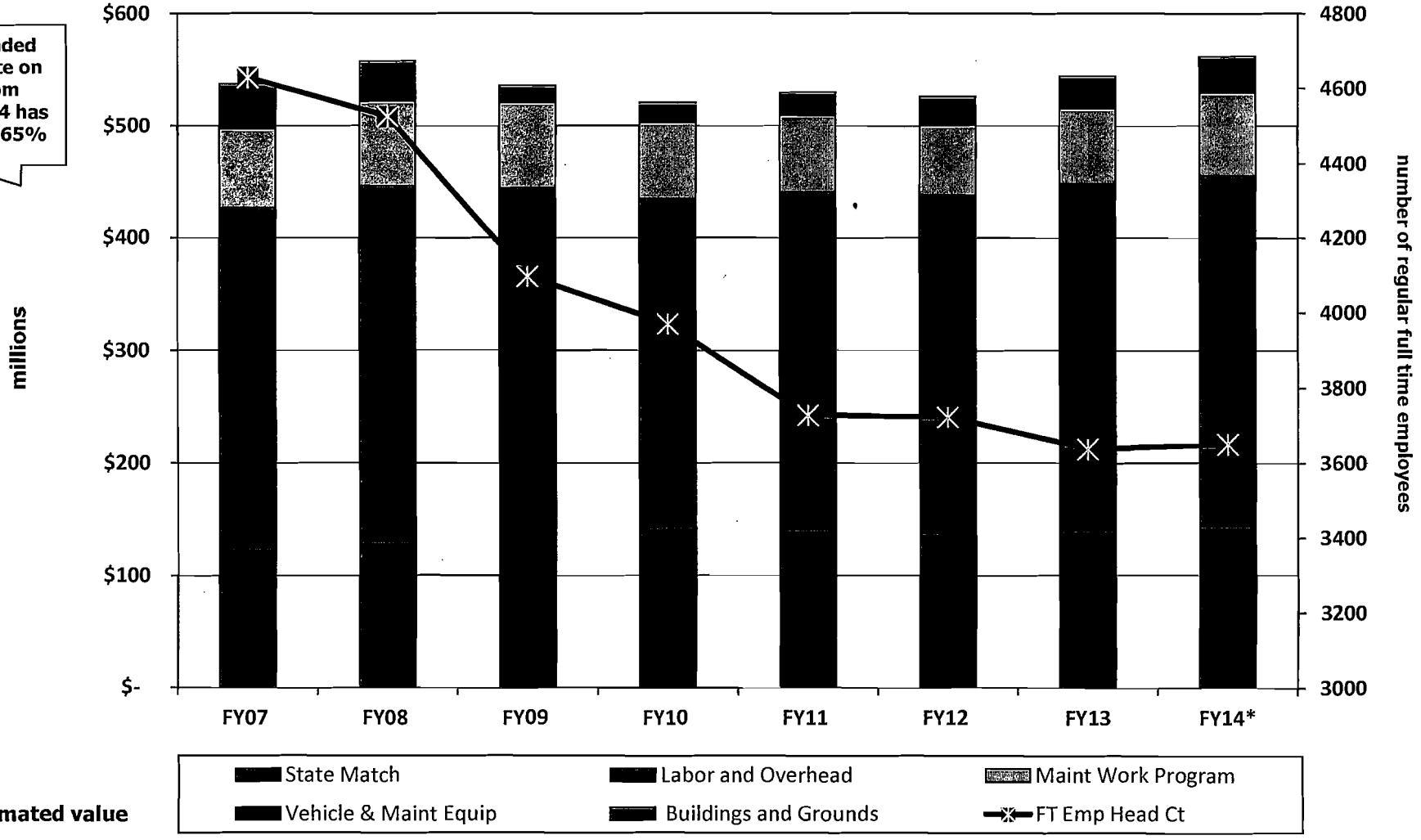
(1) Operation of the department

(2) Construction, reconstruction, operation, maintenance, and control of the state highways that are the responsibility of the department and tollways that are the responsibility of the department under IC 8-15-3

INDOT is required to spend state highway funds only on the state highway system and department operations. Federal Funds have similar constraints.

Decision 1: How the SHF Money is Spent

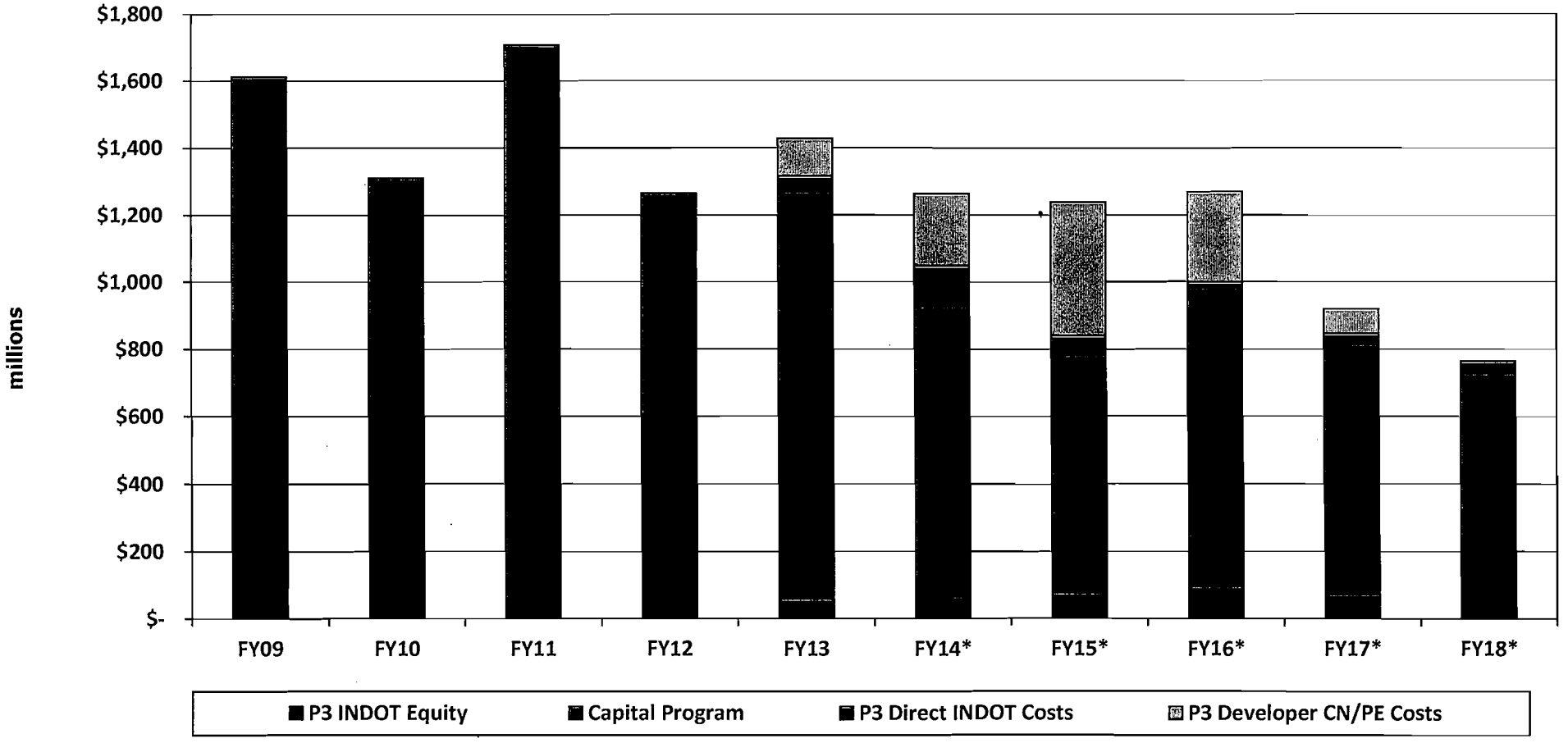
INDOT's Compounded Annual Growth Rate on Expenditures from FY2007 thru FY2014 has been LIMITED to 0.65%



*FY14 estimated value

2013 Legislation improves ability to leverage Federal Funding. Operating expenses have been kept in check by workforce attrition.

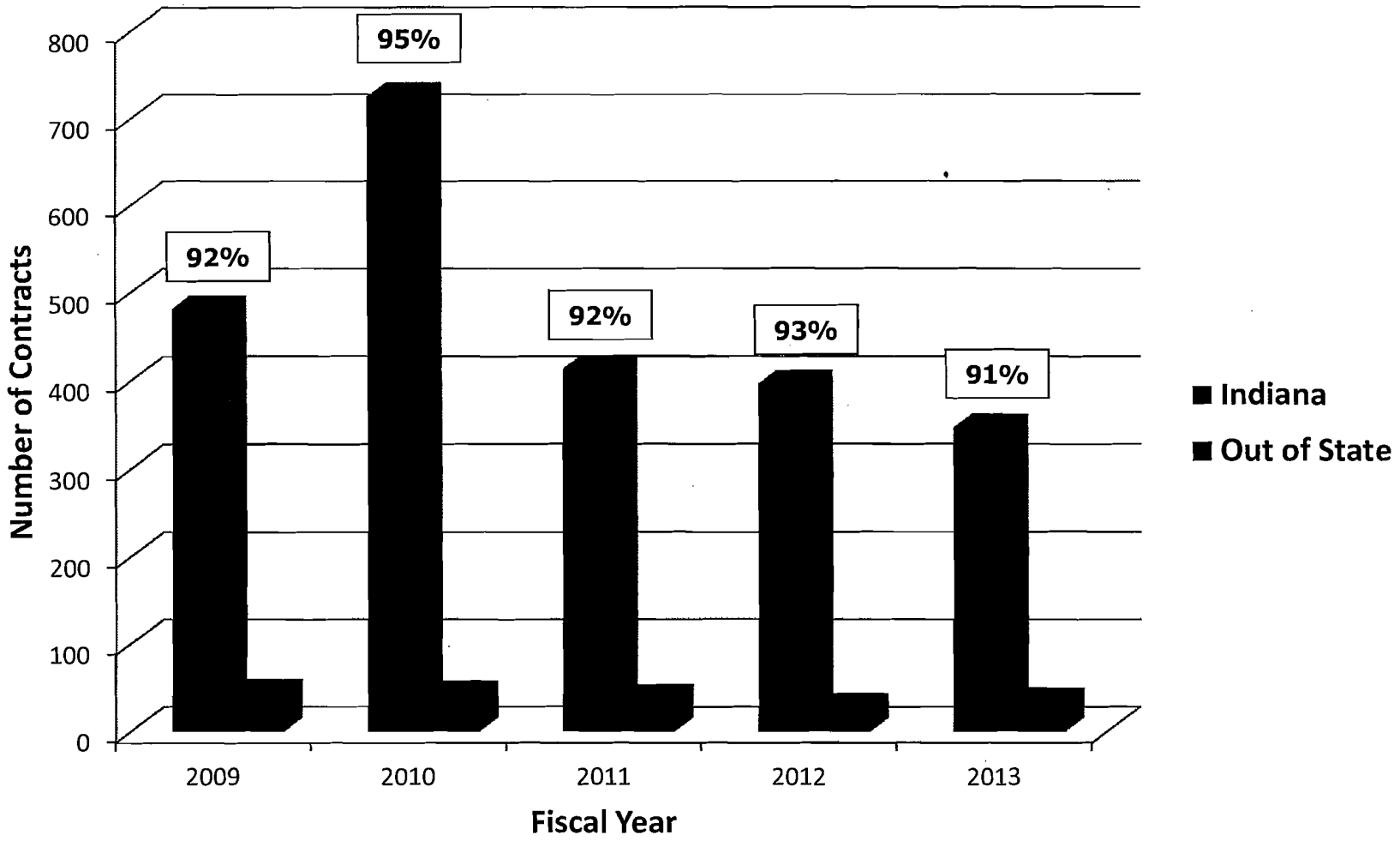
Decision 2: Construction Program



Includes construction, utility relocations and railroad expenditures.
***FY14 through FY18 are estimated values**
Does not include Major Moves 2020 funds

Includes preservation, new capacity, and P3 construction using both SHF and FHWA funds. INDOT programs for a rolling 5 year period based on expected funding levels from motor fuel taxes and FHWA funding levels. Current 5 year program completes Major Moves 10 year plan plus programs necessary preservation work in FY17 & FY18.

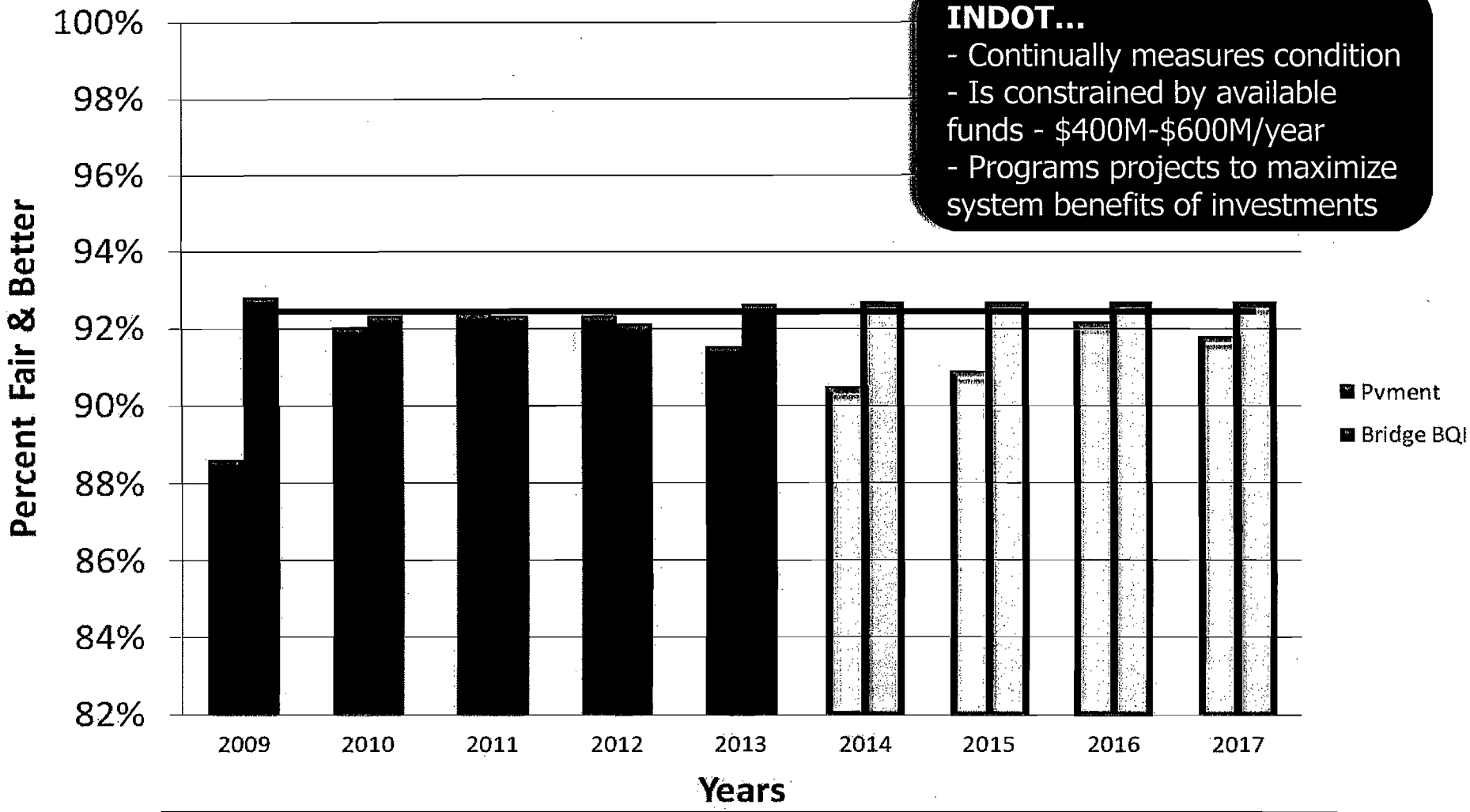
Construction Contract Awards



INDOT is statutorily and federally required to accept low bid on construction projects. Over 90% of construction contracts are awarded to Indiana companies.

Decision 3: Which Preservation Work

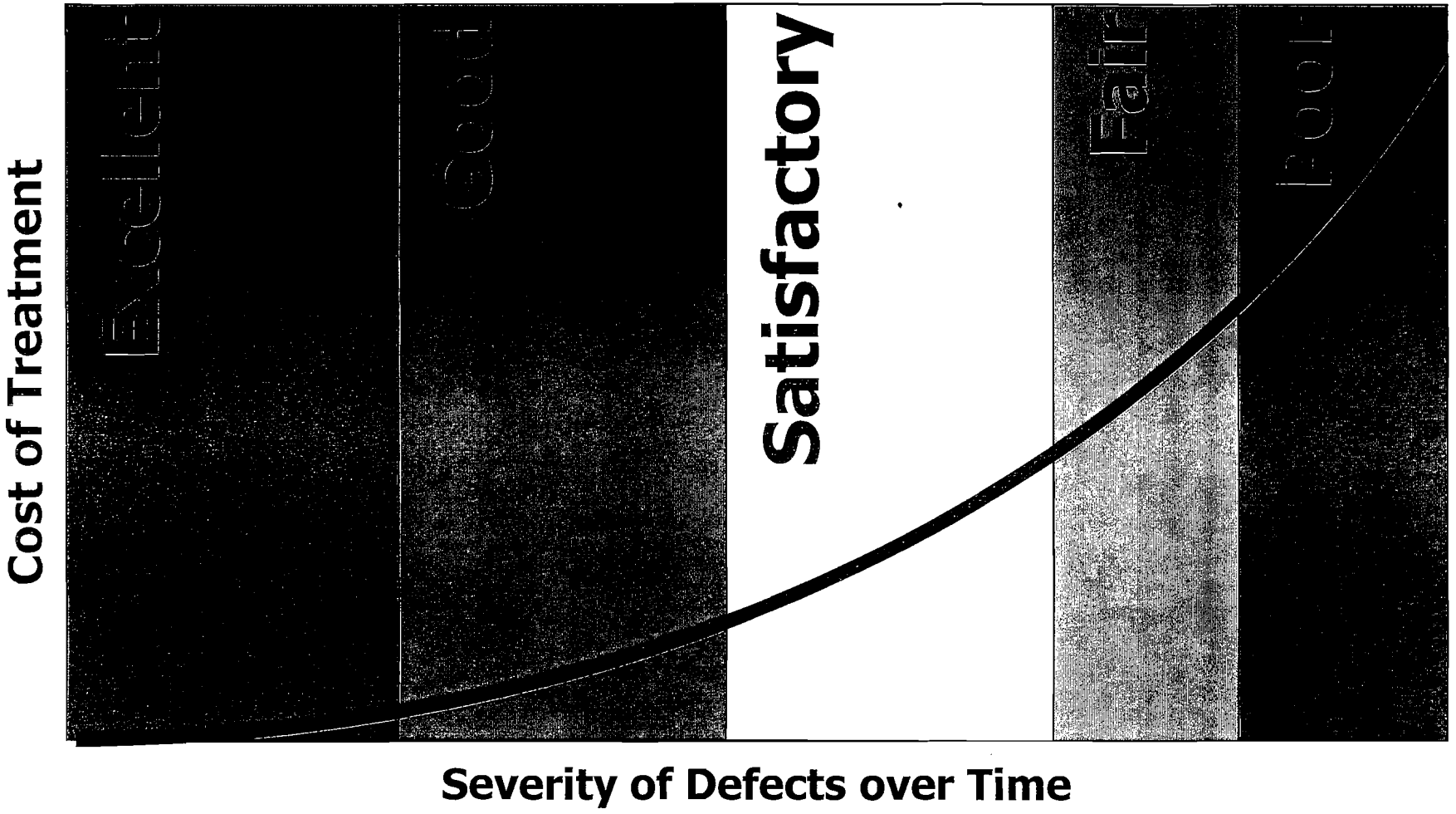
Bridge & Pavement Conditions



INDOT…
- Continually measures condition
- Is constrained by available funds - $400M-$600M/year
- Programs projects to maximize system benefits of investments

Preservation project selections are based on a least cost of ownership model.
Goal is to protect the public's investment. Current program expected to close the gap to condition goal.

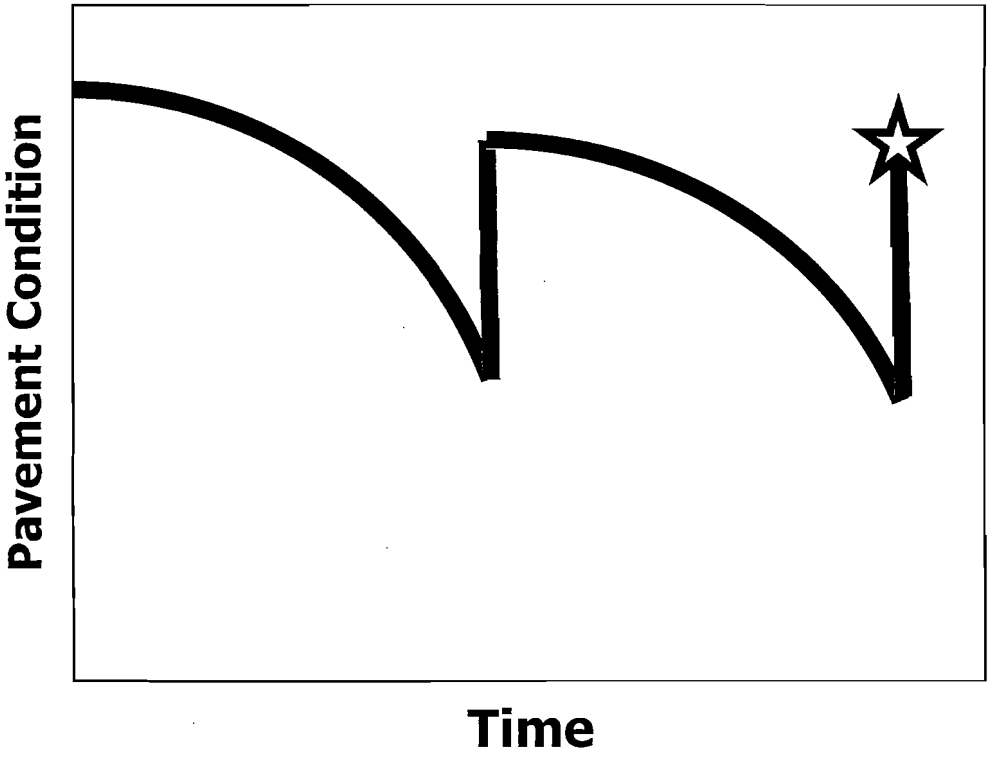
Programming Decisions - Preservation



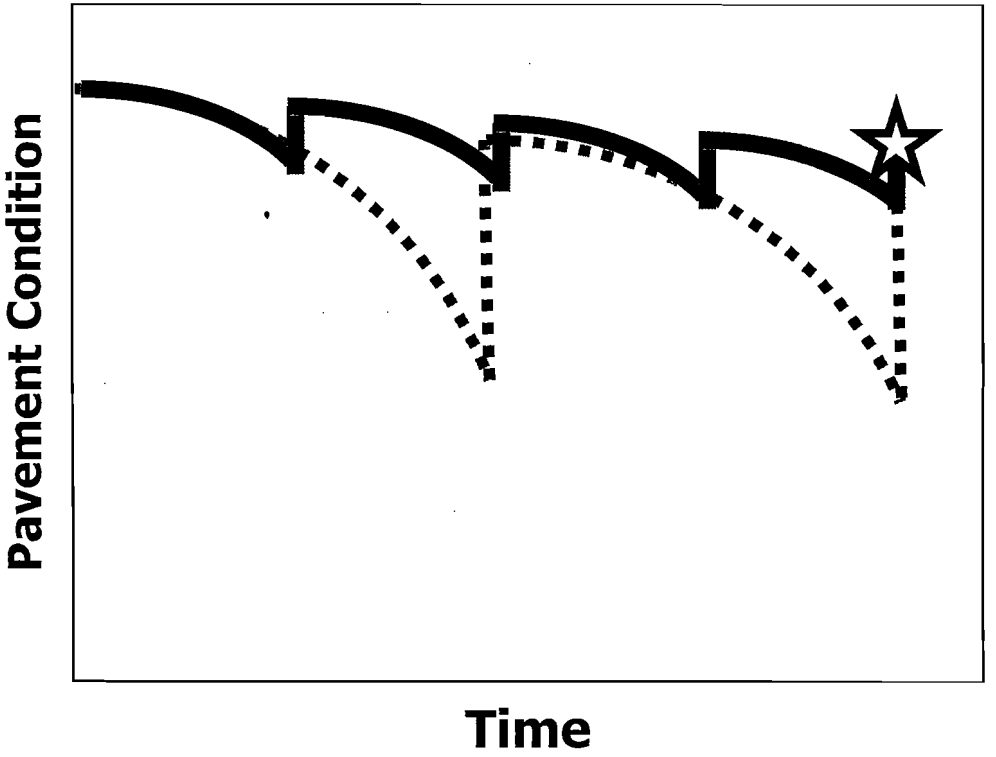
If it isn't completely broken, fix it! Lowest cost of ownership requires early intervention.

Programming Decisions - Preservation

$500k Rehabilitation x 2 = $1M



$85k Preservation x 4 = $340k

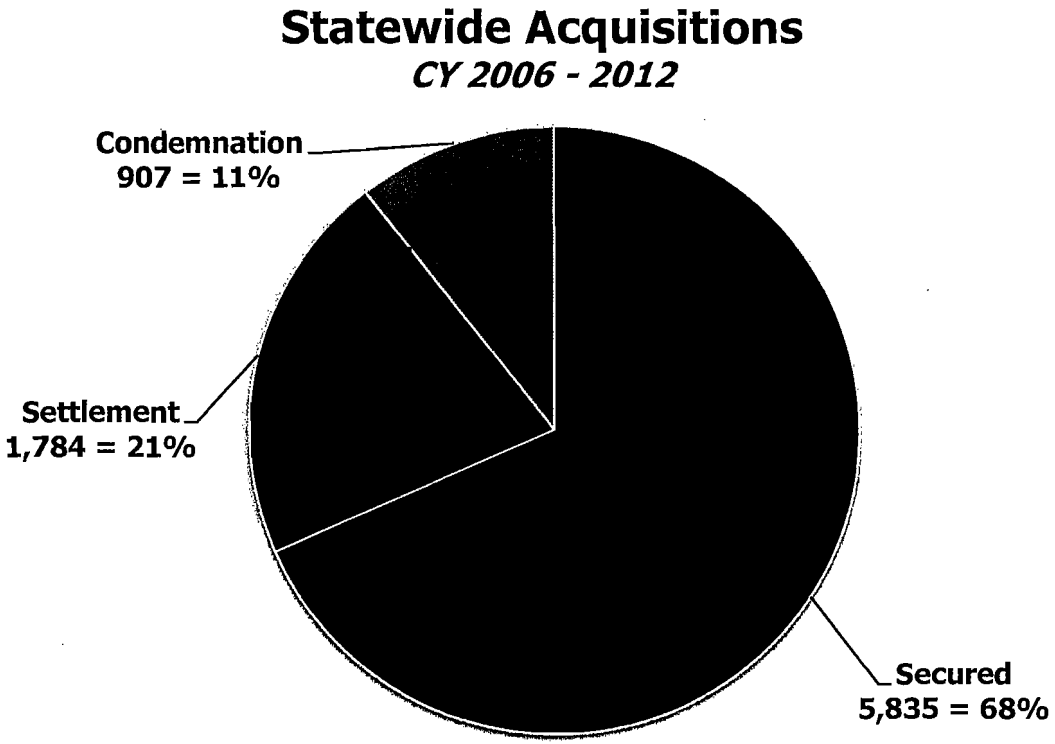


Both treatment scenarios end at the same place on the graph, but the second scenario expends $660k less over the life of the asset.

Lowest cost of ownership is early intervention.

Real Estate

- Nationally Awarded Real Estate Program
- Federally Recognized Kitchen Table Meetings
- Acquisition & Relocation Assistance Experts



INDOT takes great care to be fair. The program is nationally recognized among the best. The process includes opportunities for sellers to appeal for their best interests.

P3 Models in Indiana

Toll Revenue Concession
Asset that Appeals to Private Industry, Upfront Payment, Long-Term O/M

→ indiana TOLL ROAD

Availability Payment Backed By Tolls
Traffic Volumes that Can Support Construction Costs, Revenue Source Backed by Tolls

→ THE OHIO RIVER BRIDGES; I-69 ILLIANA CORRIDOR PARTNERING FOR PROGRESS

Availability Payment
Leveraging Capital Funding Appropriations To Attract Low-Cost Private Sector Finance

→ INTERSTATE 69 ***Section 5***

P3 decisions affect the state's overall credit rating and are done with careful consideration and analysis in concert with partners at IFA.

Success is Never Final.

TOWN OF MUNSTER

At Your Service

TO: **Mr. Chairman and Members of the Joint Study Committee on Transportation and Infrastructure Assessments and Solutions**

FROM: **Thomas F. DeGiulio, Town Manager**

MEETING DATE: **October 15, 2013**

RE: **Calumet Avenue & 45th St. Grade Separation**

Mr. Joseph Simenetto, Munster Town Council President and I are honored to be here today to speak about a very important transportation project the dual grade separations of the Canadian National Railroad at 45th Street and Calumet Avenue.

This is a very interesting project and one with a long history. In 1941, there was a plan to install a grade separation on Calumet Avenue that would have provided relief from the two different rail lines that were within 300 feet of each other, the Pennsy and the Grand Trunk Railroad. This dual crossing created a congested and dangerous area that resulted in three deaths in 1941. The news article published in The Times reported that the deaths would have been averted if the proposed separation planned for later that year (1941) was built. It was never built with the United States involvment in World War II and other issues coming into play.

Over the ensuing decades the traffic problems grew worse as development occurred in all directions. In the late 1990's Calumet was extended to Route 30 in Dyer. The two rail lines created two T-intersections that created a traffic nightmare. Both Calumet and East 45th and Calumet and West 45th operate as a Level of Service "F" intersections. Our current traffic counts are:

Calumet Avenue 28,000 ADT
45th (E & W) 13,800 ADT

The impact of these "LOS-F" intersections spill over to traffic congestion in all four directions.

TIAS
10/15/13
Ex. D

1005 Ridge Road • Munster, IN 46321 • (219) 836-8810 • Fax (219) 836-6540 • Police / Fire Emergencies 911
Police Non-Emergency (219) 836-6600 • Fire Non-Emergency (219) 836-6960
www.munster.org

Brief History

- The current concept was approved by the Munster Town Council in 2004.
- Work began to under take funding and design options in 2005.
- In 2006 we began working with Congressman Pete Visclosky and Senators Richard Lugar and Evan Byah to secure Federal funding.
- In 2007 4.0 million in Federal funding was secured for design work.
- In 2007 the Town sold $8,125,000 in Special Taxing District Redevelopment Bonds for property acquisition.
- In 2008 all but one property was secured by the Munster Redevelopment Commission.
- The Town began working with a private developer to acquire a Munster Steel twelve acre parcel of industrial property. The private developer has acquired the site and is building a new site for Munster Steel in the City of Hammond. This partnership will relocate a third generation business that operated in Munster since the mid-1950's to a site in Hammond. Munster Steel will be technologically updated and efficiency improved. The business should be prepared to move into their new home in 2014 and be set for the next 50 – 60 years. Employment will expand and Hammond gets a very stable industrial business. The land that Munster Steel was located will be developed into a $100 mixed use transit oriented development.

The Town began the preliminary engineering work in 2009. Included in this work was wetland delineation, geotechnical investigation.

In 2011 as a result of our preliminary findings we discovered that there was Park property that was encumbered as 6f as a result of a previous DNR grant. The long and complicated process was started to unencumber this property and to provide replacement property. With the cooperation and guidance of the DNR we were able to accomplish the conversion of multiple properties. We are currently finalizing the legals and deeds to complete these transactions. This opened up more space for outdoor recreation in one of our larger parks; allowed a faith based institution to expand its campus; and permit expanded development of the former Munster Steel site.

The actual design work has been underway and we have received InDOT comments to our 30% completion plans. The all important Environmental Impact document is underway. Our work program with INDOT is to utilize our federal earmark of $4 million all of the engineering work for both phases of the separation.

Our plan with INDOT is to be prepared for bidding in March – May 2015.

Now we come to the hard part

How do we pay for two regional projects that may cost $50 million and take 3 – 4 years to build? Local bond issues are not the answer. The Northwest Indiana Regional Planning Commission is not capable of funding these types of projects. This project has regional implications far beyond the borders of Munster.

Now you really know why we are here

Calumet Avenue is now fully connected from Hammond to Dyer and is a critical north south traffic route through western Lake County. There are four hospitals (Hammond, Munster (2) and Dyer) and hundreds of medical providers that are served by these two corridors. Ambulance traffic is significant on this corridor.

The Canadian National Railroad cuts through the Town of Munster isolating the southern third of the Town. All traffic comes to a standstill when trains tie up the intersections in four directions. The Canadian National acquisition of the EJ&E Railroad has created a by-pass for their traffic and has temporarily lowered the number of trains from 38 per day to 12 per day in Munster. This will increase as time goes by as the asset is used to its full capacity.

A Cost saving idea

When doing these types of projects the first thing is to construct a railroad by-pass or shoo fly. These temporary structures must be built to support trains as if it was a permanent improvement. The project would require a separate shoo-fly for each phase. The estimate for each shoo-fly is $6 – 8 million, a total of $12 – 16 million for work that is temporary. The shoo-fly construction will also cause some added costs to the permanent structure construction.

We have proposed to the Canadian National and INDOT an idea that would save the two projects significant dollars and allow each phase to be built in a much shorter time period.

Because of the existence of the EJ&E bypass, Canadian National trains can come from Canada to Griffith just to the east of Munster and by-pass this project. They would continue west to Joliet where they can go northwest into Chicago or continue north. Of course the reverse commute is also true. We are proposing to reimburse the Canadian National for their auditable increased costs as a result of this detour. We have proposed to open cut the track, install the prefabricated structure which will be manufactured on site, and install it in the matter of a few hours. The Canadian National Railroad forces would be responsible for initially removing the tracks and then restoring the area after the structure is installed.

Our consulting engineers have projected that the railroad would be non-functional for 5 – 7 days. During the time the railroad is shut-down we would reimburse them for their itemized costs incurred as a result of the detour. One of the best practices to do this

is to link the payments to the Railroad to come from the contractor. A daily cost for closure time will be pre-established. This will be based on the increased costs incurred by the railroad as a result of the closure. We would budget this amount as an allowance in the contract. This will give the contractor an incentive to finish the structure portion of the work allowing the railroad to resume operations. If the contractor completes the work in less time than is allowed, the budgeted payment to the railroad will go to the contractor as an incentive.

The projected savings of this plan is significant in both time and overall costs. We are working with INDOT, the Canadian National and Federal Highway to get this concept approved. It has been done elsewhere and proven to be successful.

The State has used incentive clauses on many contracts.

Munster has skin in the game.

The Town has invested money and time into this project.

- We have earmarked all of our proceeds from the Toll Road lease as part of our local match; this is $525,000.
- We have invested $8.125 million in Special Taxing District Bonds for property acquisition.
- We will invest more money in acquiring the final piece of property needed for the second phase in Calumet Avenue.
- We are proposing to build the first 800' of road on East 45th Street and complete the intersection improvements on Calumet Avenue in 2014 or early 2015. Estimated costs are $1.0 million.
- We have been setting aside TIF dollars for this project. We currently have $1.25 million in reserve and will continue to set aside money each year through the life of the project.

This project is in the NIRPC Transportation Improvement Program. It was initially designated for $3.6 million. At the recent direction of the FHWA these funds have been temporarily reassigned. The funds will be reinstated when we are ready to proceed to construction.

We have been keeping the NWI Regional Development Authority in the loop and have requested their financial assistance on both phases. Their maximum contribution is $6.0 million.

After the project is completely designed and is "shovel ready" we would be eligible for a future TIGER grant from the USDOT funding. These are very competitive grants. INDOT and the Town have agreed to pursue this option if available.

All of this leaves the Town with a once in a generation project that will impact hundred of thousands of people and have an impact of millions of dollars to existing commerce and future economic development for Northwest Indiana and all of Indiana. Unfortunately, we are still significantly short of funding.

We are requesting that the State consider this and other grade separations as important infrastructure links. These are enormously expensive projects that fall outside of the normal road funding formulas. In addition to the obvious safety issues of separating trains from vehicles, pedestrian and bike riders; the impact of improving the LOS F intersections will be significant for motorists and air quality.

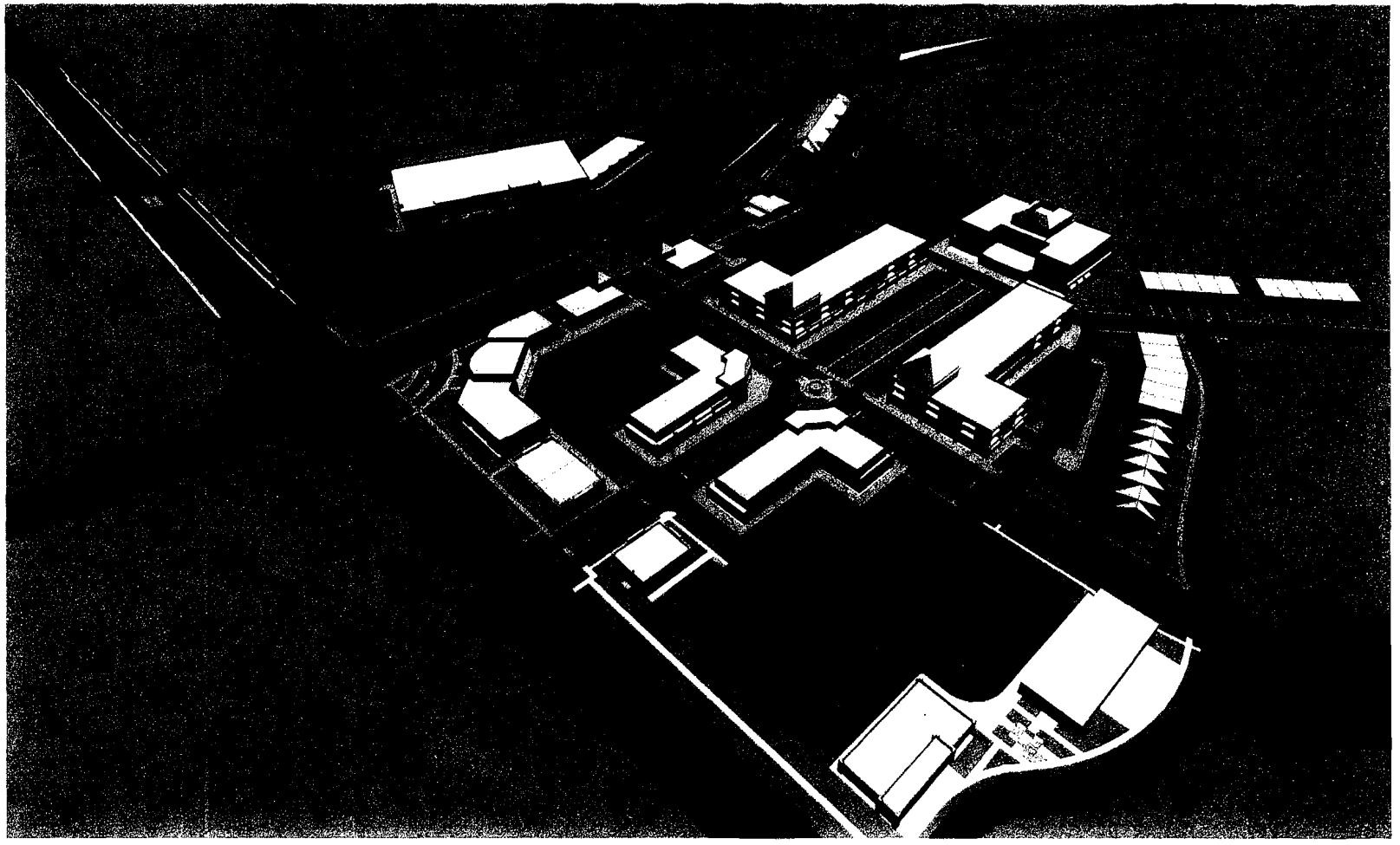
How can the State help?

Local communities need the State's financial help with these types of regional impact projects. The General Assembly can help by stepping in where the Federal government is not providing enough fiscal resources for vital infrastructure projects.

The General Assembly through the InDOT can encourage locals to be innovative. We are trying to help ourselves, the State and Feds by utilizing alternative funding concept that allow us to complete these projects.

Thank you for allowing us to present this project today. We are but one of many in the State. We will be happy to entertain your questions.

The attached illustrations are renderings of the proposed redevelopment of the Munster Steel and Park property. This $100 million development is well suited for a possible Transit Oriented Development. The maps show the actual impact of the purchase of the E.J. & E Railroad by the Canadian National creating the by-pass around the City of Chicago. This by-pass makes it possible to detour train traffic from Munster and allow the open cut construction of the two structures.



Aerial View

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Robinson

P.1

Date: 03-25-11
Job # 125-11

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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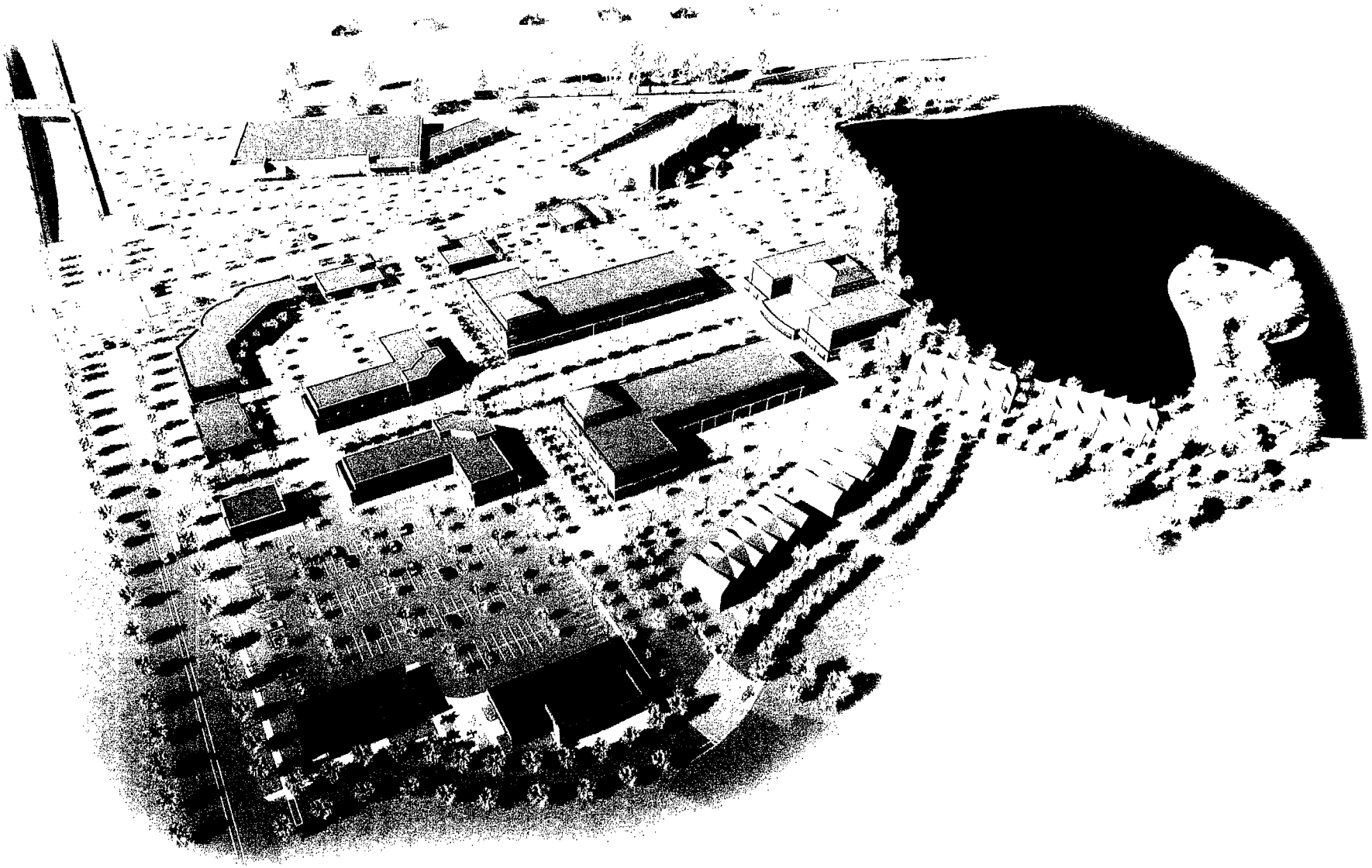

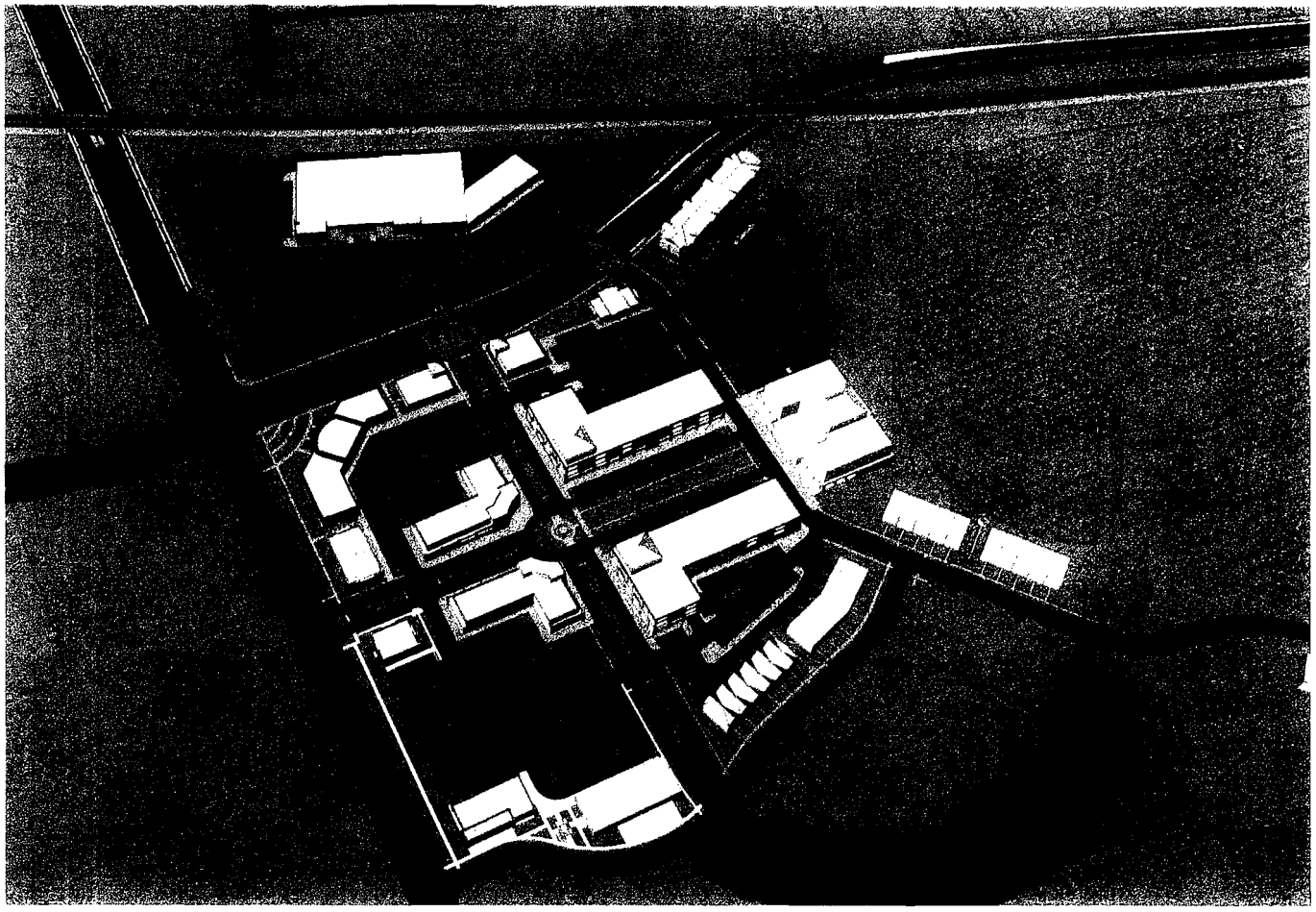

Aerial View

LINDENGROUP

Robinson

P.1

Date: 03-25-11
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Calumet Avenue / 45th Grade Separation

Munster, Indiana

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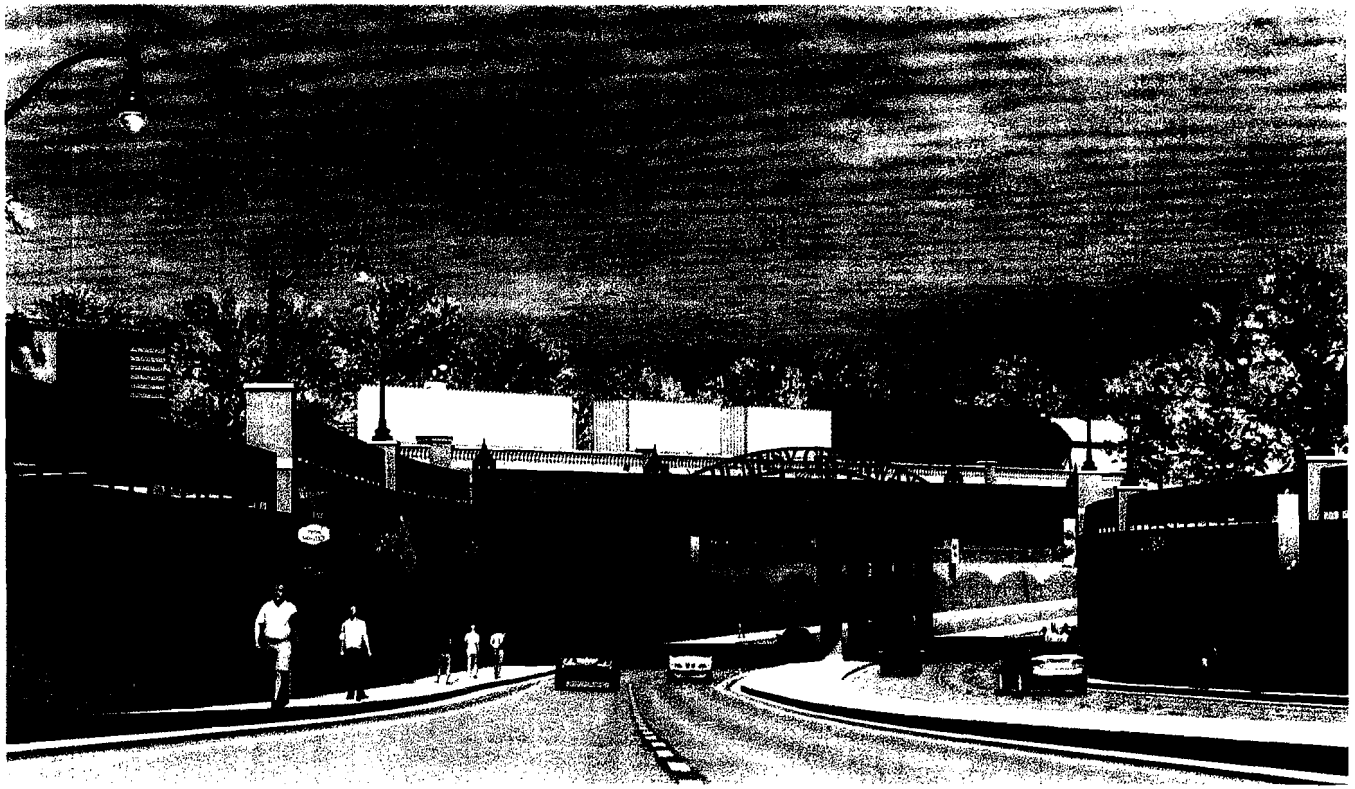

NORTH EAST VIEW OF 45TH STREET GRADE SEPARATION

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Robinson

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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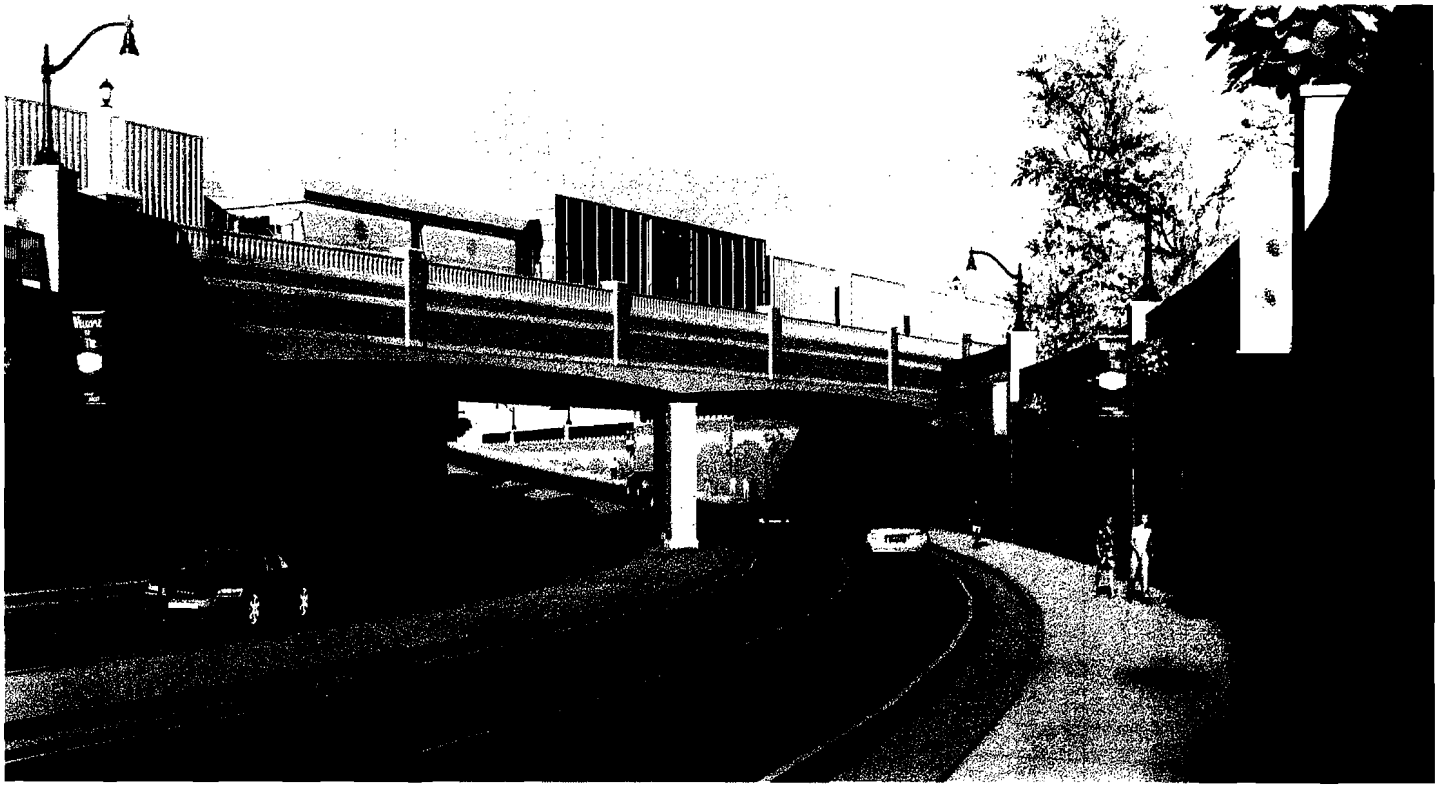
P.2

Date: 03-25-11
Job # 125-11



SOUTH WEST VIEW OF 45TH STREET GRADE SEPARATION

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Robinson

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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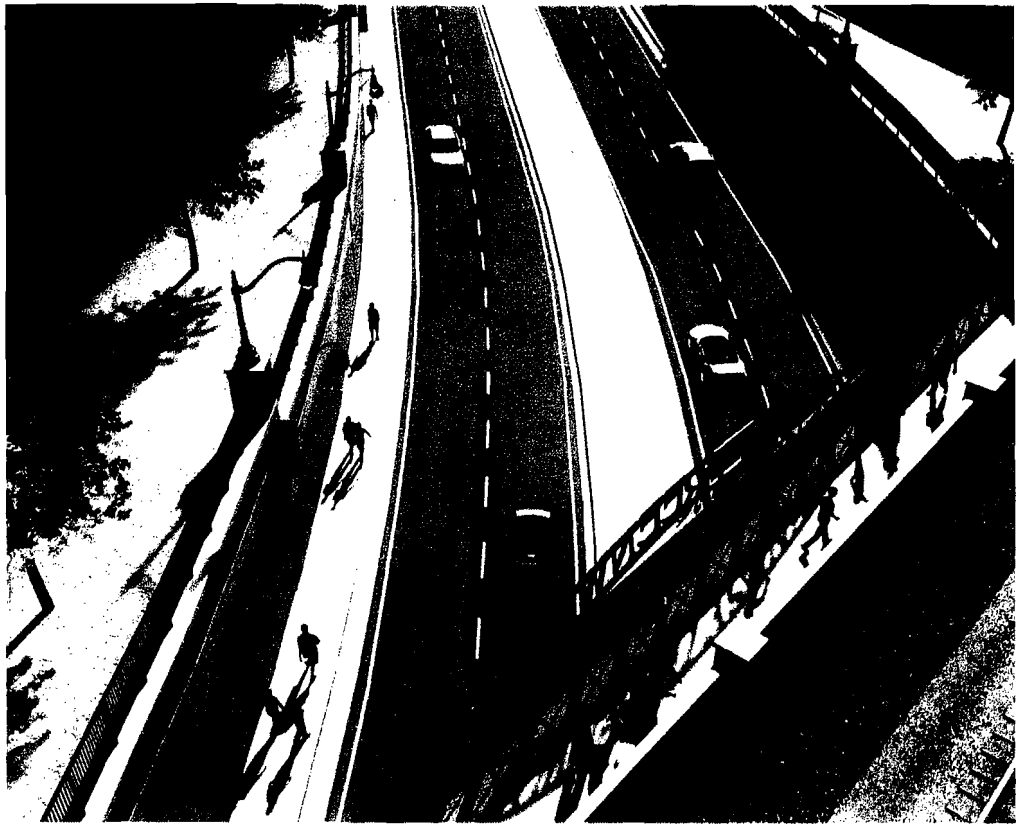
Job # 125-11



AERIAL VIEW OF 45TH STREET GRADE SEPARATION AND PEDESTRIAN BRIDGE

LINDENGROUP

Robinson

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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Date: 03-25-11
Job # 125-11

NORTH EAST VIEW OF CALUMET AVENUE GRADE SEPARATION

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Robinson

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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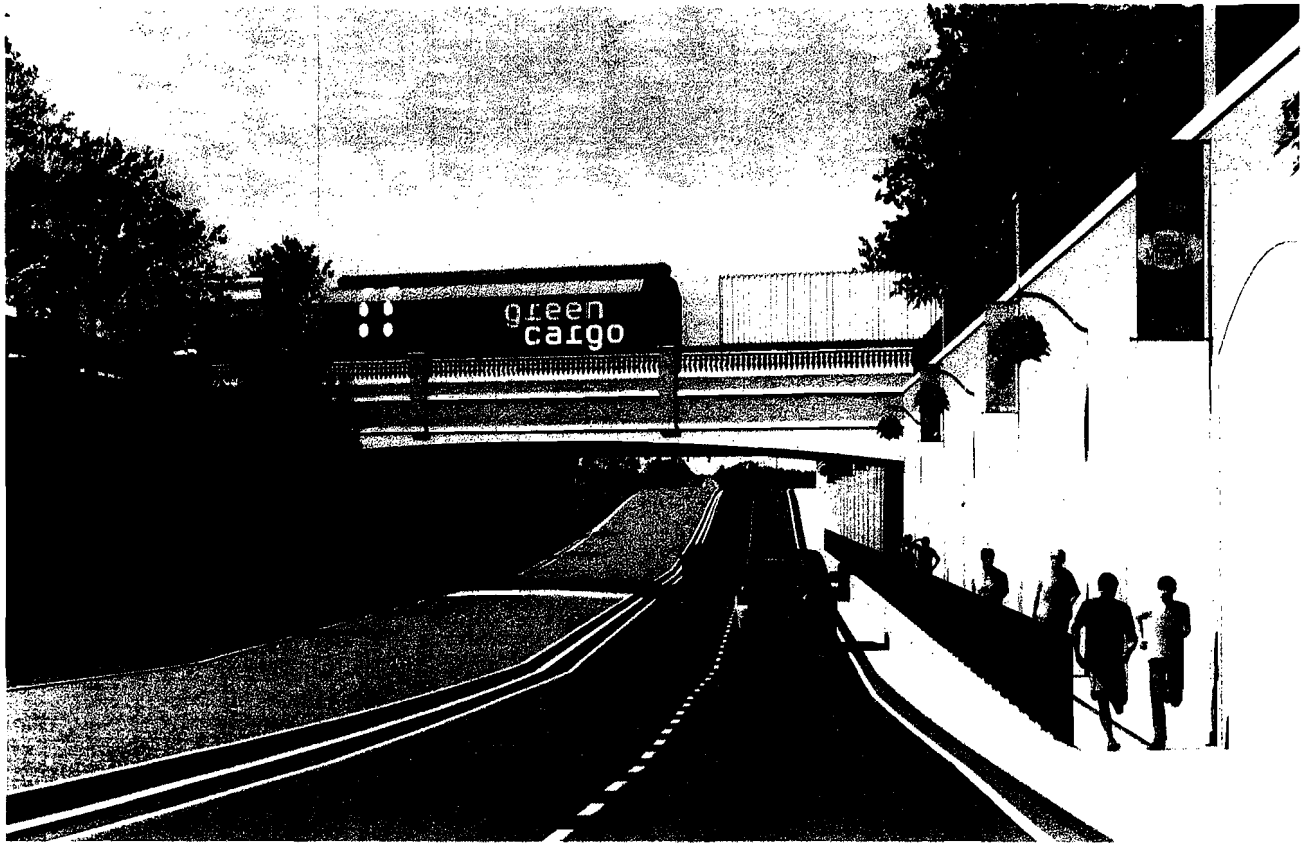
Date: 03-25-11
Job # 125-11



NORTH VIEW OF CALUMET AVENUE GRADE SEPARATION

LINDENGROUP
Robinson

TOWN OF MUNSTER

Calumet Avenue / 45th Grade Separation

Munster, Indiana

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Calumet Avenue / 45th Grade Separation

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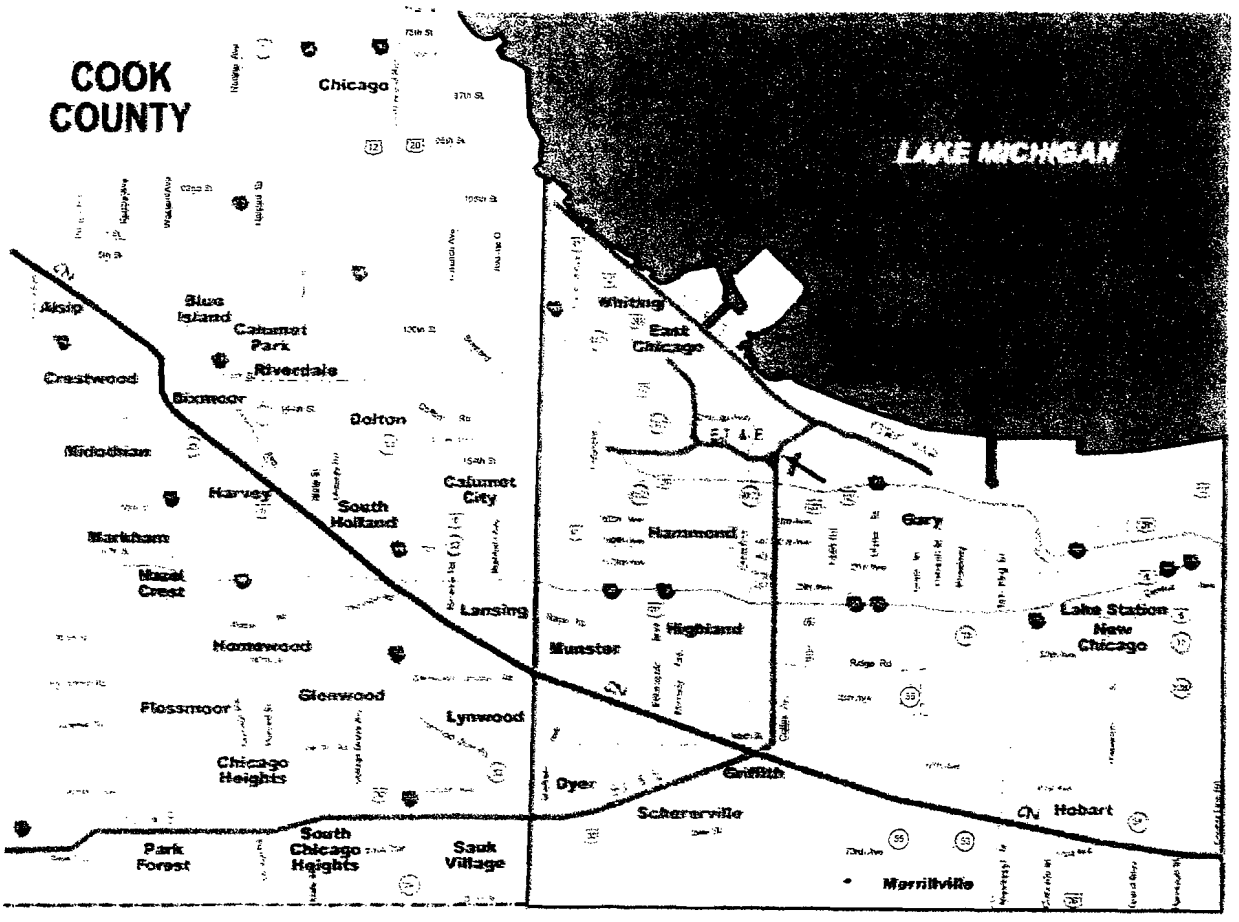
Date: 03-25-11
Job # 125-11

CN - CONTROL OF EJ & E



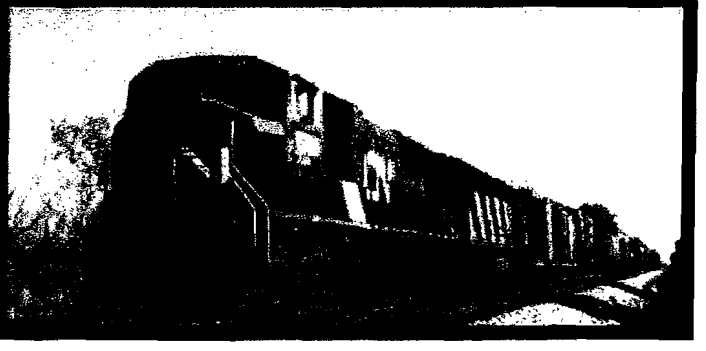
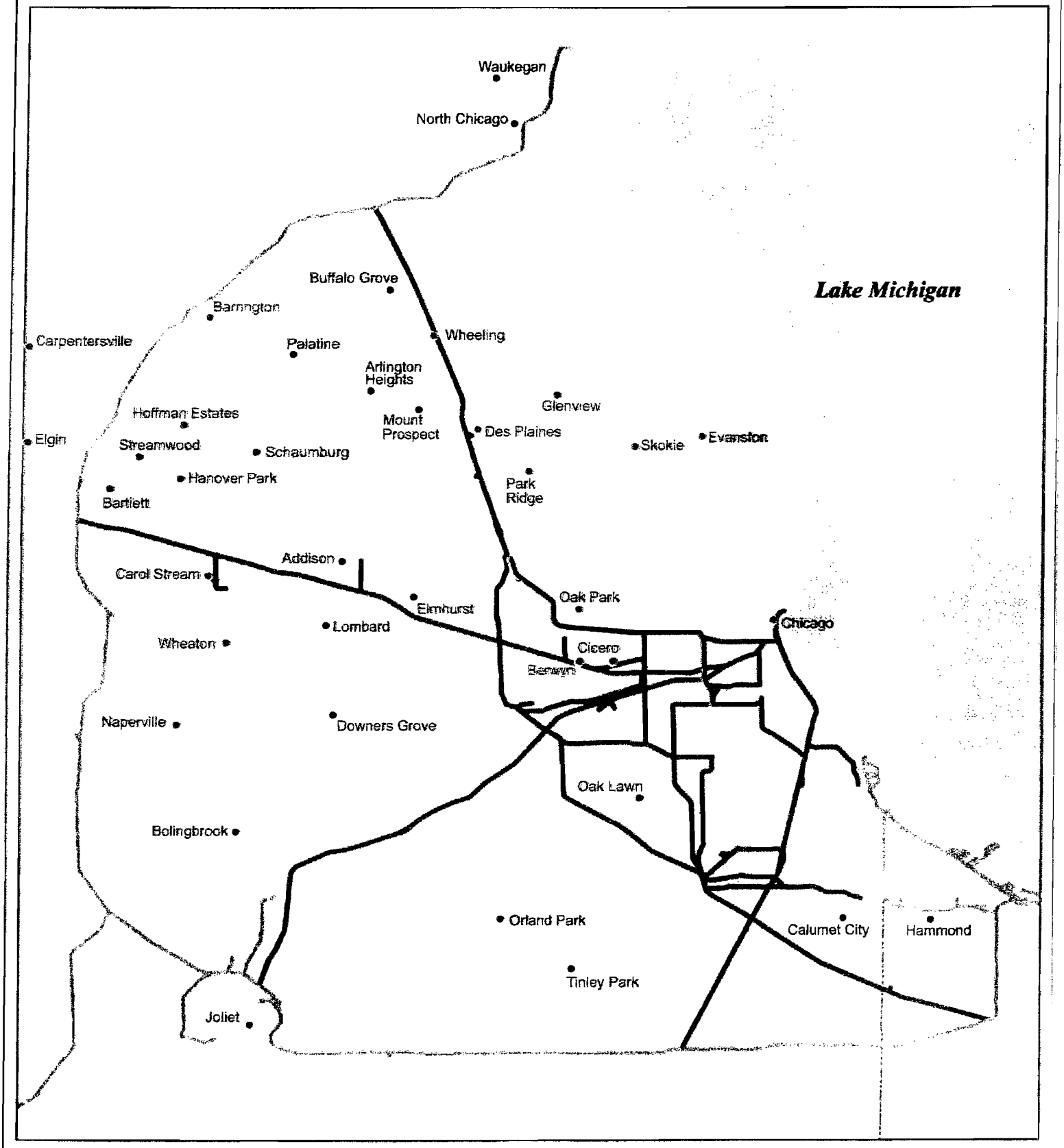


Exhibit 2 – Central Corridor Map



Legend

- City
- Central Corridor
- EJE
- Canadian National

0 10 20 Miles

N

ICF20080214SYK001

Indiana General Assembly
Joint Study Committee on
Transportation and Infrastructure
Solutions and Assessments
October 15, 2013

CONEXUS
INDIANA

Importance of Logistics

- Logistics employs approximately 300,000 Hoosiers.
- An estimated 75,000 more Hoosiers are employed in logistics positions by the state's manufacturers.
- Logistics jobs, on average, pay 15% more than a private sector job.

CONEXUS
INDIANA

TIAS
Ex. E
10/15/13

"Crossroads of America"

Economic Impact:
- $10 billion or 4.1% of Indiana's 2011GDP
- Employs approximately 300,000 people in Indiana

Indiana's Infrastructure:
- 1st in interstate access with 14 interstate highways
- 1st in pass-through interstates
- 12th in interstate highway miles
- 9th in rail miles with 4,446 miles
- 5 intermodal rail facilities
- 2nd largest FedEx hub in the world
- Strong network of airport facilities
- 4 of the top 125 cargo airports serving Indiana
- 3 public ports (1 Great Lakes; 2 Ohio River)
- 67 private ports (3 Great Lakes; 64 Ohio River)

Indiana's Advantages:
- 75% of U.S. & Canadian populations within a day's truck drive
- Indiana has a trade surplus
- Leader in exports/imports of important commodities (coal, iron/steel products, grains, food products, scrap metals, etc.)

Executive Summary

- The Conexus Indiana Logistics Council (CILC) is a forum of 50 logistics executives and thought leaders from throughout Indiana representing the following logistics sectors – air; infrastructure; rail; trucking; warehousing/distribution; waterborne; advanced manufacturing and service firms. Logistics users are manufacturers; distributors/warehousing; and third party providers.
- CILC is working to:
  - Enhance the environment for companies in advanced manufacturing and logistics to grow their business, taking advantage of Indiana's position at the heart of the global supply chain;
  - Create a more attractive environment for manufacturing and logistics companies to relocate to or expand in Indiana, thereby creating jobs and increasing state and local revenue; and
  - Create high paying jobs for Hoosiers; the average wage of Indiana manufacturing and logistics jobs is more than 33% higher than the state's median income.
- Launched *Phase I: A Plan for Indiana's Logistics Future* in March of 2010
- Launching *Phase II: A Plan for Indiana's Logistics Future* by 1st quarter of 2014

CONEXUS INDIANA

Indiana's Needs Identified in Phase I: A Plan for Indiana's Logistics Future

Limitations:
- Transportation "bottlenecks"
- Lack of direct rail service
- Underutilized air facilities with little international freight movement
- Lack of efficient mode-to-mode connectivity (e.g. road to rail. road to water. road to air. rail to water)
- Decaying locks infrastructure
- Lack of dredging that prohibits barges/ships to maximize capacity

Impact of Inaction:
- Increased costs
- Potential environmental impacts
- Inefficient freight movement
- Loss of productivity for Indiana's businesses
- Decreased safety

CONEXUS INDIANA

Key "Go-Gets" Identified in Phase I: A Plan for Indiana's Logistics Future

Infrastructure
1. 2 or 3 large intermodal multimodal facilities for Indiana (1 Completed: 3 in Process)
2. Construction and redesign of key locks (In Process)
3. Plan to attract air freight business to Indiana (In Process)
4. Completion of key infrastructure projects in bottleneck regions (Completed)
5. Identify and create a plan to improve provide infrastructure-like access to regions cities with limited access based on impact and potential (Completed)
6. Design a plan of action to ensure that Indiana's logistics industry has unparalleled LNG CNG access and availability (In Process)

Public Policy
1. Develop a public policy package to be provided to the Governor and General Assembly representing the needs of the logistics industry (2 Completed. 1 in Process)
2. Become a resource to public and private sectors (Ongoing)

Workforce Development
1. Identify logistics job skills gap areas (Completed)
2. Work with postsecondary education to develop curriculum for portable logistics curriculum (Completed)
3. Identify a company that will create a logistics on-line educational program using new curriculum leading to portable credential (Completed)

CONEXUS INDIANA

State Highway Revenue Allocation Recommendations

End Diversions

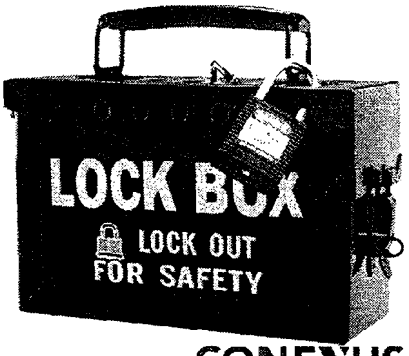
- State highway fuel taxes
  - Diversions ended in 2013 – BMV & State Police
  - Diversions in place in 2014 – IDOR and AMTRAK
- State sales tax on gasoline
  - 1% of sales tax allocated in 2013
  - Equivalent of 15% of sales tax on gasoline
- Funds used for highways, bridges and maintenance only

CONEXUS INDIANA

State Highway Revenue Allocation Recommendations

State Lockbox

- State Motor Vehicle Account
- Funds used for highways, bridges and maintenance only



CONEXUS INDIANA

State Highway Revenue Allocation Recommendations

Short Term Solutions

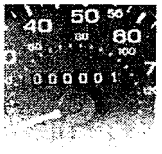
- Index state fuel taxes to CPI (based on the previous year)
- Alternative fueled and electric car user fees
  - Alternative fueled vehicles included in 2013

CONEXUS INDIANA

State Highway Revenue Allocation Recommendations

Long Term Solutions

- Study phase in of state mileage taxes and phase out of state gas taxes and other unique source not yet identified



CONEXUS INDIANA

Identified Highway Infrastructure Projects with Statewide Impact

Identified Highway Projects with Statewide Impact

- Illiana Expressway (IN estimated cost: $205m)
- US 30 limited access (IN estimated cost: $933.5m)
- Hoosier Heartland Highway (Completed)
- US 31 – Indy to South Bend (IN estimated remaining cost: $702.2m)
- Indiana Commerce Connector (IN estimated cost: $1.9b)
- I-69 (IN estimated remaining cost: $1.2b)
- I-69 Evansville/Henderson KY Bridge (IN estimated cost: $700m)
- Ohio River bridges (Completed)
- I-65 additional lanes – state line to state line (IN estimated cost: $1.9b)
- I-70 additional lanes – state line to state line (IN estimated cost: $1.3b)
- Marion limited access (IN estimated cost: $21.1m)
- Connersville Connector (IN estimated cost: $138.1m)
- Madison Connector (IN estimated cost: $226.5m)
- Mt. Vernon Port Connector (IN estimated cost: $271.2m)
- Jasper Connector (IN estimated cost: $312.3m)
- Others (gathering from Regional Councils)

CONEXUS INDIANA

Questions & Answers?

For more information, please contact David Holt, Vice President of Operations and Business Development, at (317) 638-2108, dholt@conexusindiana.com, or visit **ConexusIndiana.com**

CONEXUS INDIANA

October 15, 2013

JOINT COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE ASSESSMENT & SOLUTIONS

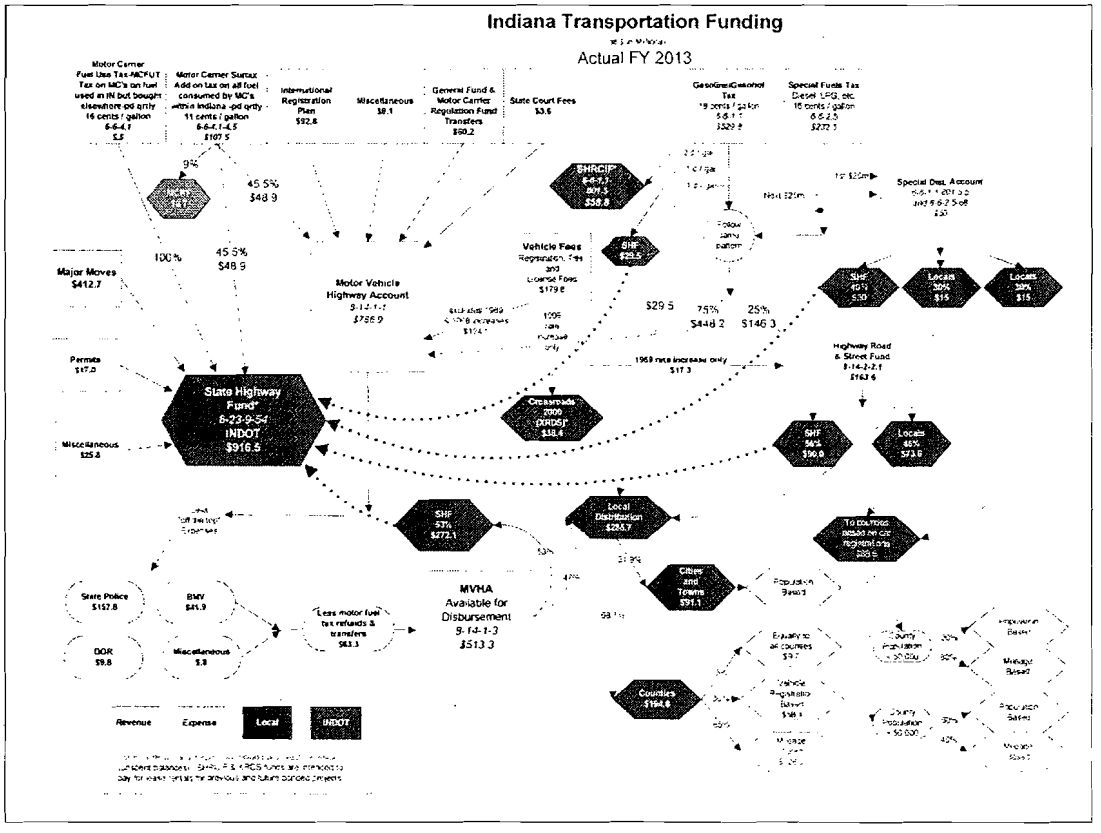
HEA 1001-2013

- The Budget Bill did several things for transportation:
  - Changes to the Motor Vehicle Highway Account
    - 1% of Sales Tax Directed to MVHA
    - Removal of certain expenses from MVHA
  - Major Moves 2020 Trust Fund
  - Changed how counties can approve wheel tax/surtax.

TIAS 10/15/13
Ex. F

MOTOR VEHICLE HIGHWAY ACCOUNT

- Removed BMV, State Police, DOR and other miscellaneous expenses out of MVHA and now covered by General Fund.
- Added 1% of Sales Tax to MVHA (total of $71 M in 2014)
- In total, roughly $210 M (estimated) new revenue into the MVHA for distribution
  - $110 M for State Highway Fund (INDOT)
  - $100 M for local distributions



MAJOR MOVES 2020 TRUST FUND

- $400 M over the biennium in a trust fund for highway expansion projects that enhance the ability of goods to be transported in and through the state.
- Fund is to be administered by INDOT, and money in the fund must be appropriated by the legislature.
- The Treasurer of State will invest the funds on behalf of the state.

CHANGE IN WHEEL TAX/SURTAX ADOPTION

- Previously, the county council was the body to impose these taxes.
- HEA 1001-2013 permits the COIT Council to impose these taxes.
- The body that initially imposes these taxes is the body that may increase, decrease, or rescind these taxes.

QUESTIONS?

SOLUTIONS

for long-term, dedicated, stable
d adequate sources of road funding
for Indiana

Road Funding by the Numbers

Indiana's $1 Billion Road Funding Gap

The funding gap for Indiana's road system (state and local) is, conservatively, $1 billion annually. This represents the amount of additional funding the state needs to maintain its aging road, street and bridge inventory. It does not include the costs of upgrading the system.*

There are many options state leaders could implement to fill the road funding gap. Solutions should be long-term, dedicated, stable and adequate to fund the needs.

144M

Stop DIVERSIONS of fuel tax revenue

In Fiscal Year 2012, legislators allocated money from the Motor Vehicle Highway Fund (MVH) to support non-road agencies and activities, including: Department of Revenue (DOR) Tax Division operating costs; State Police forensic labs; Bureau of Motor Vehicles (BMV) and Department of Education school traffic safety programs. Of the agencies supported by the highway fund, the State Police, the BMV and the DOR have the capability of raising their own funds to pay for operating expenses – keeping $144 million per year in the MVH for road and bridge improvements.

550M

Direct SALES TAX collected on fuel purchases to roads

Currently, Indiana is one of only eight states collecting sales tax on the sale of gasoline and/or diesel fuel. Indiana's sales tax rate on fuel is one of the highest in the nation. As fuel prices rise, this tax provides a bonus to the state General Fund to the tune of $550 million each year (based on a $3.00 per gallon price at the pump), but none of it goes to state or local roads. Because it's a road user fee like the gas tax, legislators should direct the sales tax collected on [illegible] the MVH, not the General Fund.

1M

Implement fees on ALTERNATIVE FUELED and electric vehicles

Indiana has no mechanism to capture the equivalent of the per-gallon gasoline tax from [illegible] fueled and electric vehicles. Drivers of these vehicles receive all of the benefits of using ou[illegible] without paying for them. In 2010, the US Energy Information Administration estimated that [illegible] of these vehicles were on Indiana roads, using 6.5 million equivalent gallons of gasoline. This equates to more than $1 million in unrealized state gas tax revenue each year. The agen[illegible] projects alternative fueled vehicles will make up nearly 50 percent of the market by 20[illegible] important to establish a structure to enable Indiana to collect a gas tax equivalent, regardle[illegible] fuel type, before alternative fueled and electric vehicles become a larger share of the market.

* Sources: *Indiana Department of Transportation testimony, surveys and studies by the Purdue Local Technical Assistance Program and a report of the Indiana Metropolitan Planning Organizations Council.*

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Indiana Road Funding Solutions by the Numbers, continued

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Fix the WHEEL TAX decision making process

Today, Indiana county councils are responsible for approving a county wheel tax; however, the county and all cities and towns share the revenue based on population. Counties currently collect $69 million per year from the wheel tax, with the capacity for $174 million. Counties are concerned with sharing revenue with cities and towns without a recorded vote on a fee increase, and cities and towns are concerned with not having the authority to implement a fee on their own. By broadening the ability of additional local entities to implement a wheel tax, policymakers would encourage a greater use of this important road funding tool.

105M

Implement a new statewide REGISTRATION FEE

With the cut in vehicular registration fees from the offset from lottery revenues in the 1990s, there is some capacity for raising registration fees to go toward the highway fund. There are about six million vehicles registered in Indiana. A $50 annual registration fee would raise $300 million for roads.

300M

INDEX the gas tax

Indiana last raised the gas tax in 2003 to 18 cents per gallon, but its buying power has reduced by 19 percent. Unless the gas tax is indexed, its buying power will continue to erode. Alternative fuelled vehicles, reduced overall driving and simple inflation will ensure that revenues do not keep pace with the need. Indexing alone won't provide adequate funds to meet current needs, but it will help keep the situation from getting worse. Beginning an indexing program now will add about a half cent per gallon to the gas tax, raising $15 million annually. According to INDOT, indexing fuel taxes from 2003 will generate an additional $120 to $200 million per year, depending on the index used.

15M

RAISE the gas tax

While raising taxes may be unpopular, it IS an option for raising additional funds. Each penny of the gas tax raises approximately $30 million annually. The mechanism to collect and distribute these funds is already in place. It is one of the simplest solutions available today.

30M

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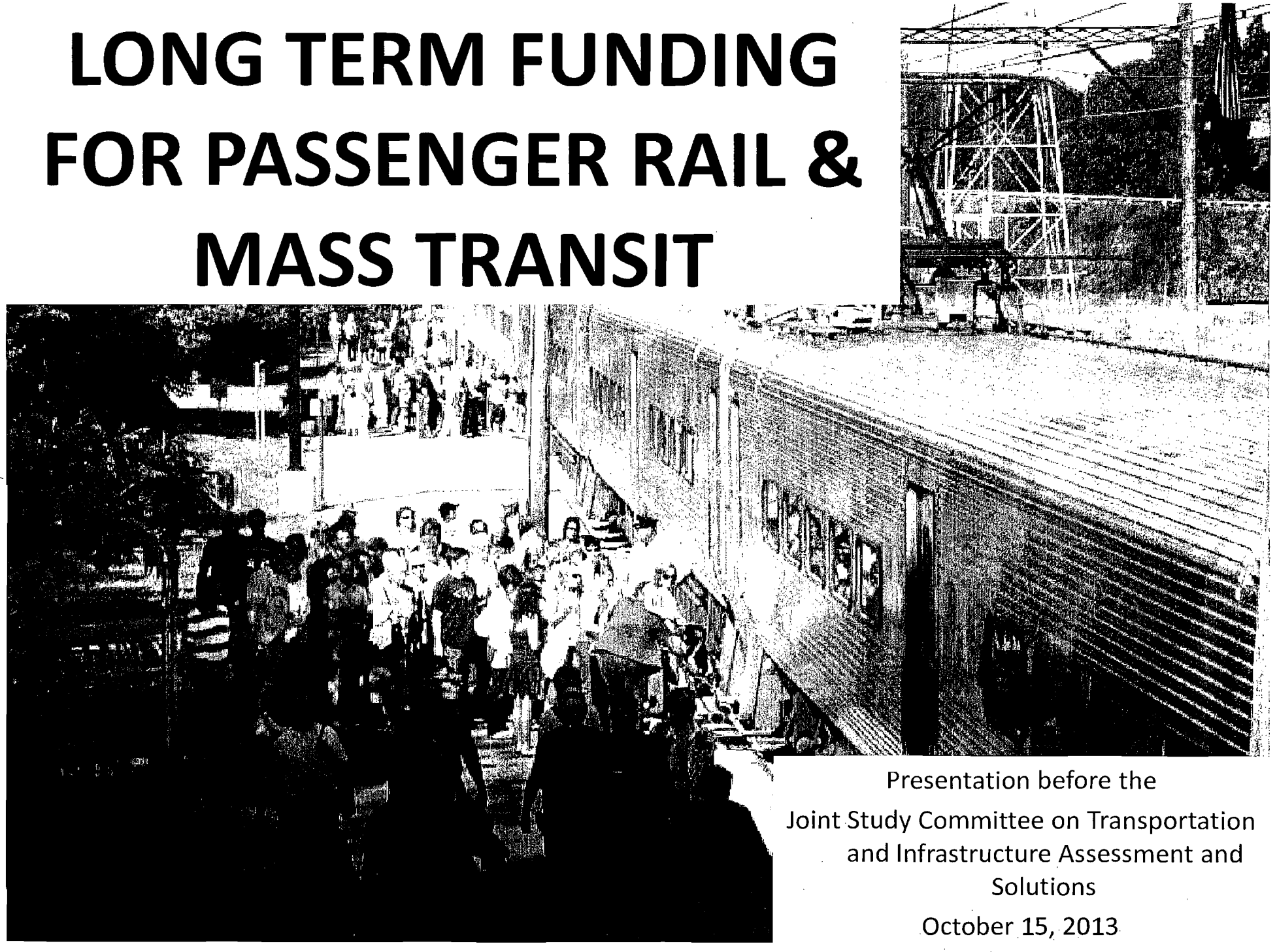
LONG TERM FUNDING FOR PASSENGER RAIL & MASS TRANSIT



Presentation before the

Joint Study Committee on Transportation and Infrastructure Assessment and Solutions

October 15, 2013

TIAS

10/15/13

Ex. H

Reporting Commuter Railroad: Metra
State(s) of Operation: Illinois/Wisconsin
Metropolitan Area: Chicago – Cook County and surrounding collar counties Lake, Will, McHenry, DuPage, and Kane
Contact:

Description of Funding:

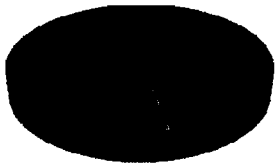
Operating Subsidy Sources

Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
County	Sales	1.25% in Cook, 0.5% in S collar counties	N	Y

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
Statewide	General Fund		Y	N

Operating Sources: Metra



Source: 2011 NTD, Table 1

Reporting Commuter Railroad: NJ TRANSIT
State(s) of Operation: New Jersey/New York
Metropolitan Area: New Jersey/Manhattan
Contact:

Description of Funding:

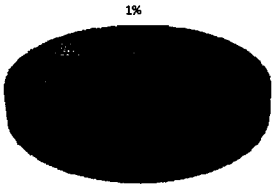
Operating Subsidy Sources

Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
Statewide	General Rev, Dedicated & Other		Y	Partial

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
Statewide	Transportation Trust Fund	Gas and other motor fuels plus sales tax and turnpike authority	Y	Partial

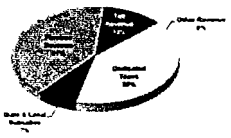
Operating Sources: NJ TRANSIT



Source: 2011 NTD, Table 1

MTA 2013 Adopted Budget
Baseline Expenses After Below-the-Line Adjustments
Non-Reimbursable

Where the Dollars Come From ...



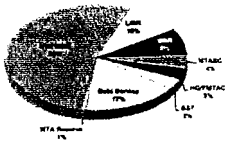
By Revenue Source ($ in millions)	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Total	[illegible]

* Includes the Below the Line Adjustments in the Farebox Revenue

Where the Dollars Go ...

By Expense Category

By MTA Agency



By Expense Category includes below-the-line adjustments ($ in millions)	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
MTA Below the Line Adjustments *	[illegible]
Total	[illegible]

By MTA Agency * includes below-the-line adjustments ($ in millions)	
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
MTA Below the Line Adjustments *	[illegible]
Total	[illegible]

Expenses include Depreciation, OPEB, Retiree and Environmental Remediation

* The financing of Financial Stone Family requires activity in a below the line adjustment. It is included in Debt Service expenses.
* MTA Capital Construction is not included in the above charts, as its budget includes reimbursable expenses only.
* The below the line adjustments have not been allocated to specific Agencies as yet.

Reporting Commuter Railroad: MARC
State(s) of Operation: Maryland, District of Columbia
Metropolitan Area: Baltimore/Washington DC
Contact:

Description of Funding:

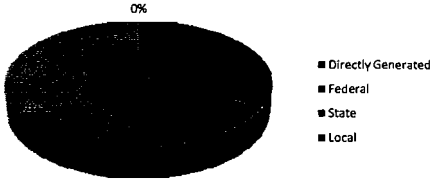
Operating Subsidy Sources

Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
Statewide	Dedicated & other		Y	Partial

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
Statewide	Dedicated & other		Y	Partial

Operating Sources MARC



Source: 2011 NTD, Table 1

Reporting Commuter Railroad: Caltrain
State(s) of Operation: California
Metropolitan Area: San Jose to San Francisco
Contact:

Description of Funding:

Operating Subsidy Sources

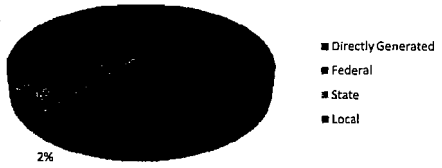
Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
County	Sales	Varies	Y	N
Statewide	Sales	¼ of 1 cent of the state 7.5% sales tax		

Contribution in 2012
San Mateo County: 41.92%
Santa Clara County: 40.28%
San Francisco: 17.80%
Current crisis no dedicated funding

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
County	Sales	Contribution varies by county	Y	N

Operating Sources: Caltrain



Source: 2011 NTD, Table 1

Reporting Commuter Railroad: Metro Link
State(s) of Operation: California
Metropolitan Area: Los Angeles and surrounding counties of Orange, Riverside, San Bernadino and Ventura
Contact:

Description of Funding:

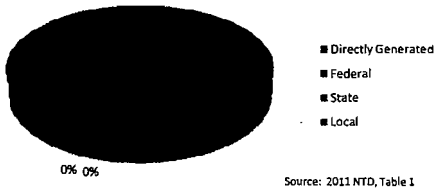
Operating Subsidy Sources

Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
County	Sales	Rate varies by county	Y	N
Statewide	Sales	¼ of 1 cent of the state 7.5% sales tax		

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
County	Sales	Contribution varies by county	Y	N

Operating Sources: Metrolink



Source: 2011 NTD, Table 1

Reporting Commuter Railroad: Northern Indiana Commuter Transportation District
States of Operation: Indiana & Illinois
Metropolitan Area: Chicago

Description of Funding:

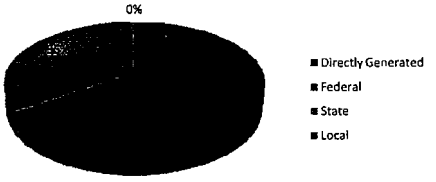
Operating Subsidy Sources

Applied Jurisdiction	Tax Source	Description or rate	Annually Appropriated	Dedicated
Statewide for NICTD	Sales	0.123%	N	Legislatively
Statewide for all transit systems	General Fund	12.34% of state formula	Y	N

Capital Fund Sources or Debt Service Funds

Applied Jurisdiction	Tax Source	Description or rate	Available for Bonding	Dedicated
Statewide for NICTD	Freight car lease tax	Ad Valorem Property Tax	Y	Legislatively

Operating Sources: NICTD



Source: 2011 NTO, Table 1

ECONOMIC IMPACT
Exporting Labor & Importing Wages

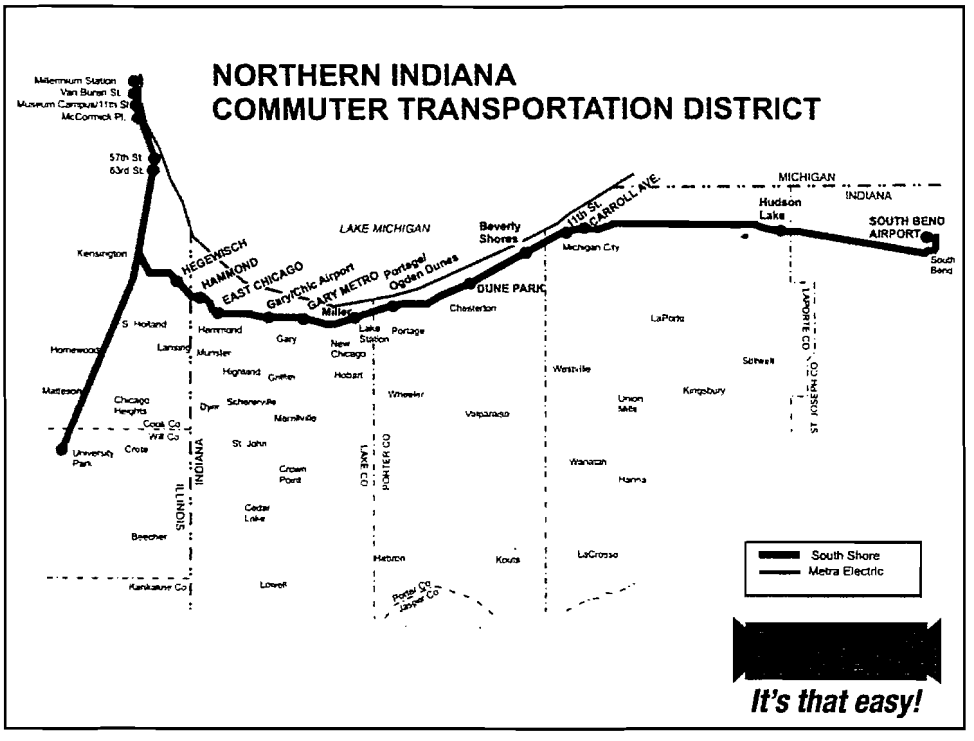
- Chicago is the 3rd largest regional economy in US
- On average Chicago area jobs pay 39% more than similar jobs in northern Indiana. NWI higher in manufacturing, mining & construction*.
- Access to Chicago doubles the job base of Lake & Porter counties: **513,000 vs 244,600****
- Average annual household income of **$82,000** for a South Shore commuter equates to approximately **$369M**.
- Without access to Chicago based employment this household income level **could significantly drop**.

**Policy Analytics update of 2006 report on Economic and Demographic Trends relevant to the West Lake Corridor Expansion: Bureau of Labor Statistics, 2012 Cook County vs NW Indiana*
***STATSIndiana and Illinois Department of Employment Security, "Where Workers Work"*

SOUTH SHORE RIDER – 2013*

- 60% of respondents were female
- 43 years of age
- 69% have been riding for more than 3 years
- 95% of rush hour passengers arrive by car
- Why do people ride?
  - Cost of driving vs taking the train
  - Ability to relax with less stress
  - Chicago parking rates
- Well educated with over one-half having college or post graduate degrees
- Occupation:
  - 34% are in executive, supervisory or professional
  - 32% administrative or technical
- Average household income is $82,000

*2013 South Shore Line Onboard Passenger Survey



Joint Study Committee on Transportation and Infrastructure Assessment and Solutions

September 26, 2013

Presentation by:
Michael Hicks, Ph.D.

On Behalf of The:
Indiana Transportation Association

Index:

Tab 1: Executive Summary – An Analysis of Ridership Surveys

Tab 2: Executive Summary – The Effect of Gasoline Prices on Public Bus Ridership in Indiana

Tab 3: Executive Summary – Financing Methods, Benefits and Costs in Indiana

CD containing entire studies attached to back page of binder

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PUBLIC TRANSPORTATION IN INDIANA

an analysis of ridership surveys

Analysis and Research by

Dagney Faulk, Ph.D. Michael Hicks, Ph.D. Kevin Kroll

Center for Business and Economic Research
Ball State University Muncie, Indiana

June 2012

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EXECUTIVE SUMMARY

This report provides information on the characteristics of public transit riders in Indiana to provide an overview of who uses transit and for what purpose. We use data from ridership surveys to examine demographic characteristics of riders and rider satisfaction.

The public transit network in Indiana consists of 66 urban and rural public transit systems operating bus and light van passenger vehicles along with one commuter rail system.

In 2010 the transit systems in Indiana provided over 35.2 million passenger trips and logged more than 46.6 million vehicle miles. Operating revenue totaled $204.1 million. Of this total, $48.2 million (24 percent) was from state assistance primarily from the Public Mass Transportation Fund (PMTF) funded through the state sales tax.

Fixed-Route Service

Fixed-route systems are defined by set routes and designated stops. Of the 18 cities with fixed-route systems, all but Muncie have shown increased ridership from 2006 to 2010.

In the seven fixed-route transit systems for which we have ridership survey data, more than 90 percent of those surveyed were between the ages of 18 and 65, of legal driving age.

Almost 70 percent of riders surveyed are transit dependent, meaning they do not have access to at least one car in their household.

Among survey respondents, 49 percent were in the lowest income bracket of their respective surveys, which was an annual household income below $10,000 or $15,000 depending on the survey. Only 9.6 percent of respondents' households have an annual income of over $50,000.

About a third of transit riders use the bus system more than 5 days per week. Over 80 percent of riders use the bus a minimum of 3 days per week.

Sixty percent of transit users described the primary purpose of their trip as being for either work or school.

We estimate that annual income tied to fixed-route bus transit in the state ranges from $436 million to $647 million for riders who use transit to get to work.

The typical fixed-route bus rider in Indiana is a 19-34 year old female, making less than $15,000 a year. She is likely to be transit dependent, using the bus 3-5 times or more per week. The trip is likely to be for either school or work.

Fixed-Route passengers are charged an average fee of $0.96 per ride among all the transit systems in Indiana. The six largest transit systems charge an average of $1.17 per trip.

Demand-Response Systems

In total there are over 66 demand-response providers currently operating in Indiana (INDOT Public Transit Annual Report 2010). In rural areas these systems serve as a flexible transportation option in areas with small populations that cannot support a fixed-route service. Demand-response users are required to book trips in advance via telephone or internet.

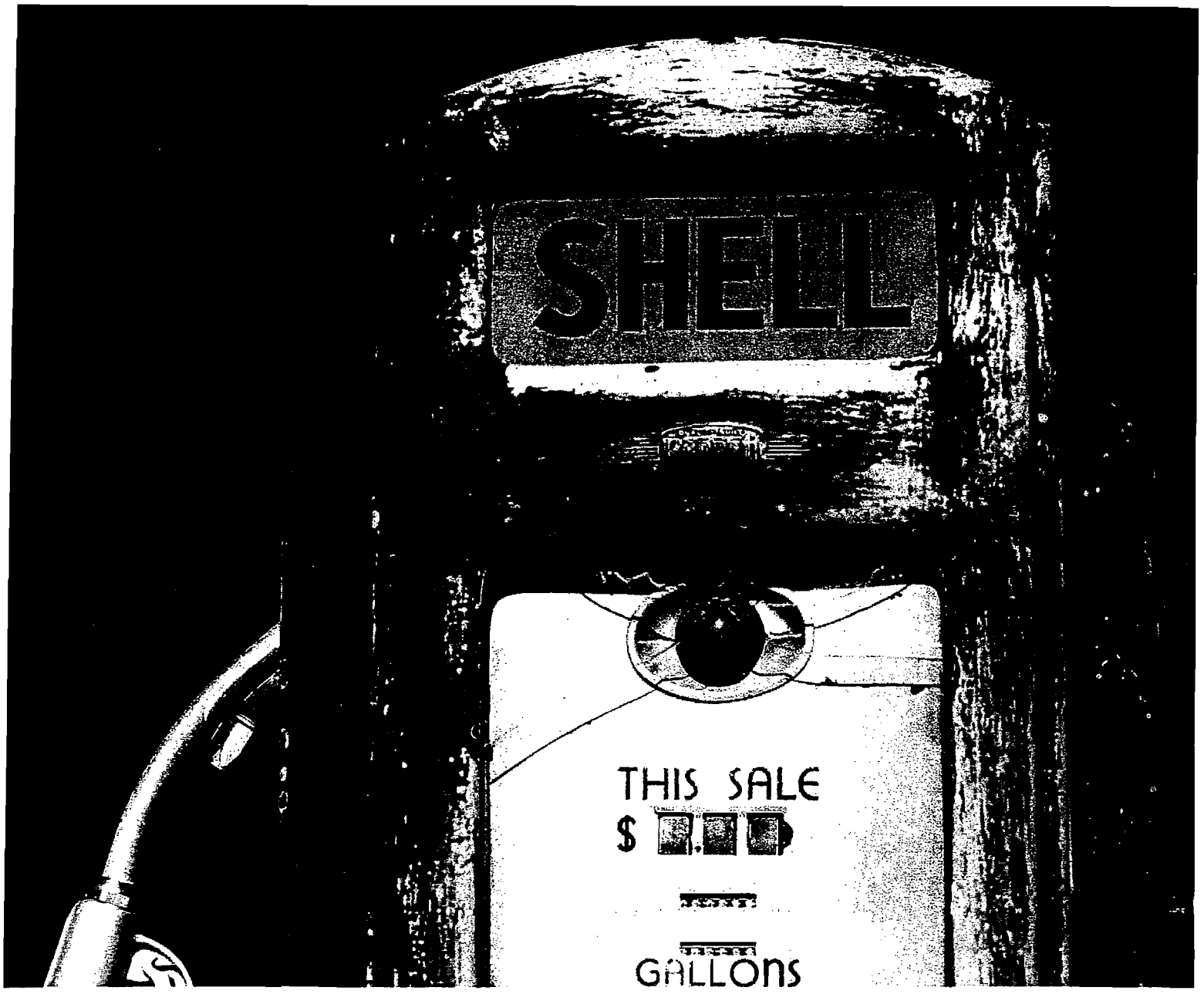
Total ridership for the five urban demand-response systems and 43 rural demand/response systems in Indiana totaled over 640,000 and 2 million, respectively in 2010. In addition, we estimate that there were more than one million demand-response riders in the 18 urban transit systems that have both fixed-route and demand-response transit.

Bloomington was the only system that collected ridership survey data for its demand-response service. In 2010 Bloomington's demand-response completed approximately 31,500 passenger trips. Direct response riders in Bloomington pay $2.00 per direction traveled.

The population demographics for demand-response service are typically very different from that of fixed-route. More than 50 percent of demand-response users in Bloomington were over the age of 75, and more than 70 percent were over the age of 60.

Income levels also differed, but not as much. There were 34 percent of riders in the lowest income bracket of under $10,000, while 87 percent made less than $40,000 per year. Less than 5 percent earned over $85,000 per year, the highest income bracket.

The most common trip purpose for demand-response riders are to get to medical appointments, to access community resources and to get to and from work.



THE EFFECT OF GASOLINE PRICES ON PUBLIC BUS RIDERSHIP IN INDIANA

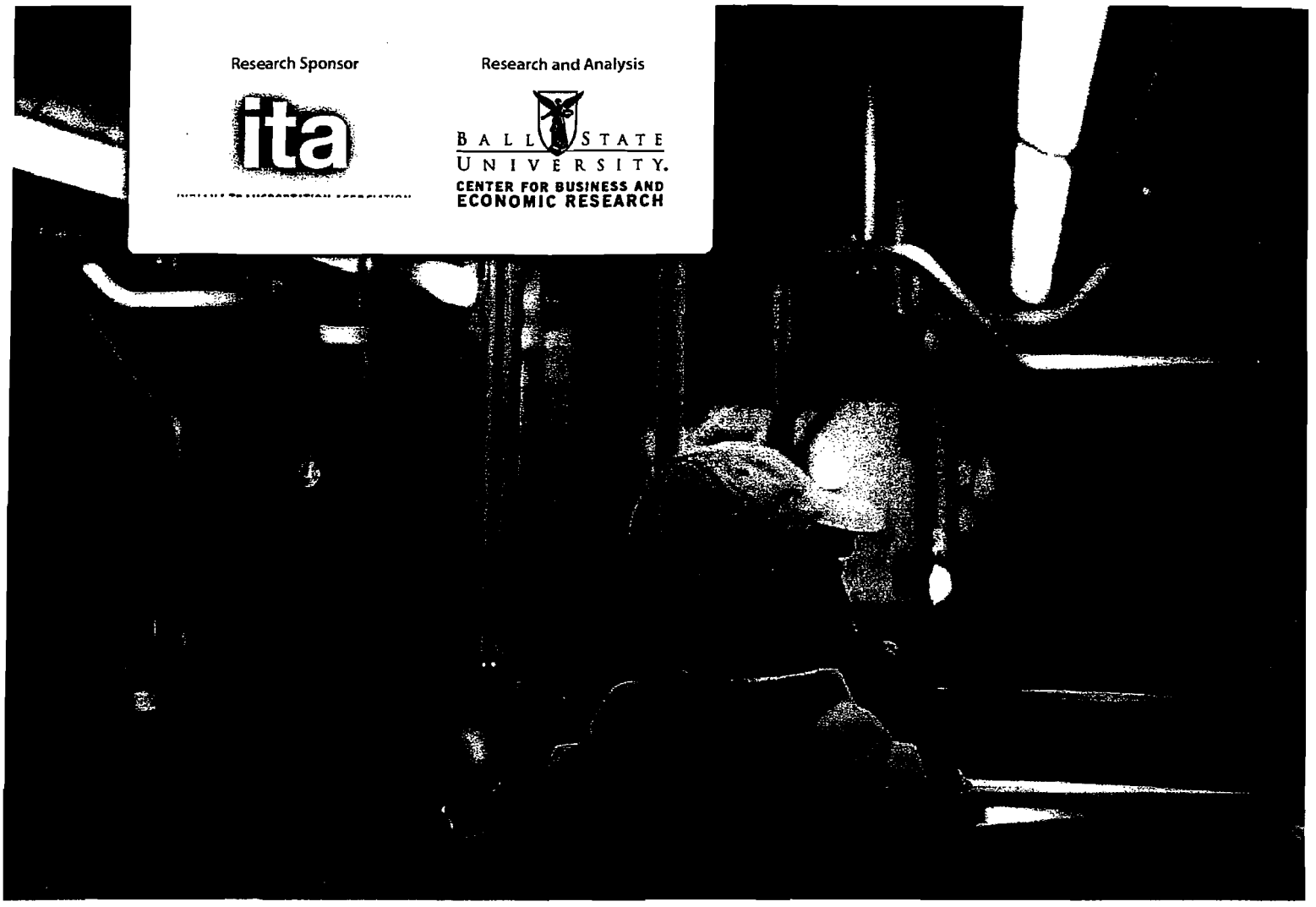
Analysis and Research by
Michael Hicks, Ph.D. - Dagney Faulk, Ph.D.

Center for Business and Economic Research
Ball State University, Muncie, Indiana
September 2012

BALL STATE UNIVERSITY
CENTER FOR BUSINESS AND ECONOMIC RESEARCH

EXECUTIVE SUMMARY

This study estimates the long-run and short-run effect of gasoline price changes on bus ridership in selected fixed route and demand response systems in Indiana from 2006 through 2011. We find that in the short run, a 10 percent increase in gasoline prices will increase fixed-route ridership by roughly 1.15 percent. This is an elasticity measure. Over the long run, a 10 percent increase in gasoline prices will lead to a roughly 3.4 percent increase in ridership. These findings are consistent with economic research that identifies long-run response to price changes is much higher than short-run response. We also find that demand-response riders are not sensitive to price changes in gasoline, a finding that was expected. We then simulated the effect of gas price changes on bus transportation demand over the coming decades, under three different scenarios. Under the high gasoline price scenario (at $5.00/gallon by 2035) we expect ridership on Indiana's bus system to triple to more than 90 million trips per year. Using long-run responsiveness and the Energy Information Administration's gasoline price forecast, we expect ridership to more than double to over 60 million riders by 2035. Using the EIA forecast and low price responsiveness we would expect ridership to rise by 50 percent to 44 million riders by 2035.



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Research and Analysis

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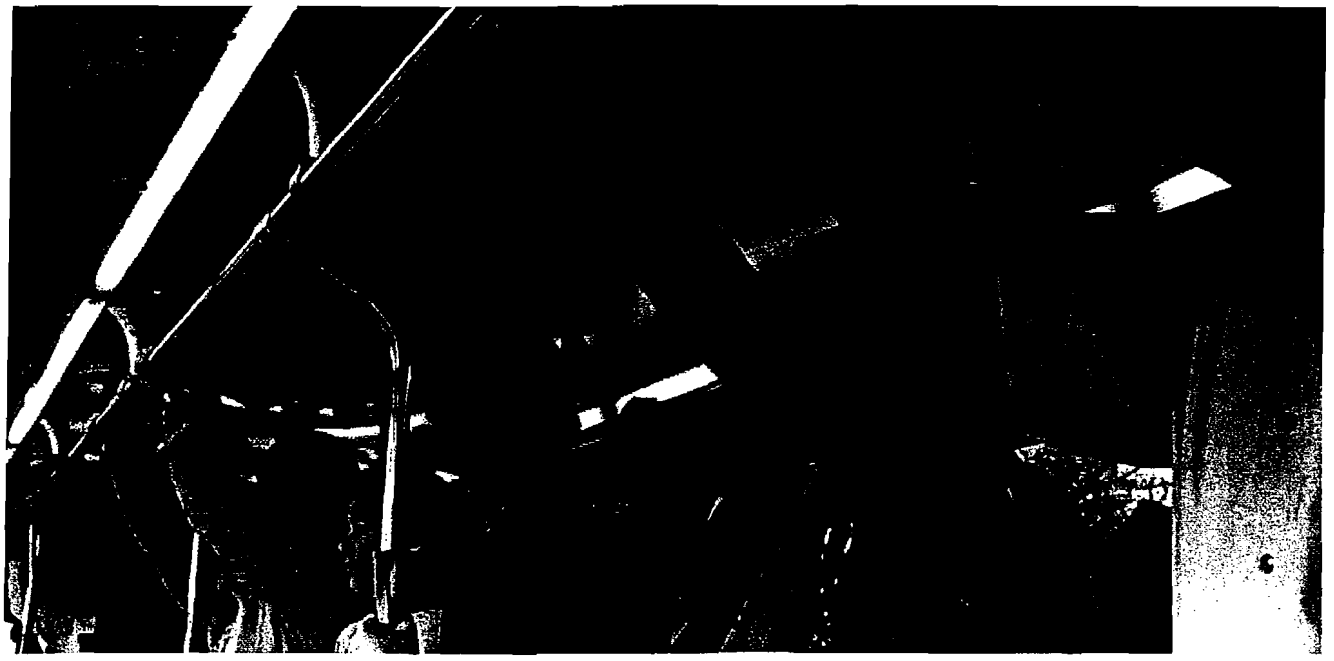
Fixed-Route and Demand-Response Bus Systems:

Financing Methods, Benefits, and Costs in Indiana

Michael J. Hicks, Dagney Faulk, and Kevin Kroll
Center for Business and Economic Research, Ball State University
January 2013



Executive Summary

This study examines a number of policy considerations related to the financing of transit—primarily fixed-route and demand-response bus systems—within a federal system. We do so by first explaining the role of federal government, state and local government, and private financing of transportation from a theoretical perspective. Here, the idea of fiscal federalism will be explicitly linked to the provision of public transportation. We follow this with data and analysis on Indiana and other states that provide public transit at a similar scale and scope to Indiana. After examining the cost side of public transit, we explore the benefits of local fixed-route and demand-response bus systems. Here we discuss and analyze the benefits that occur, and to whom these benefits accrue. This motivates the next section, which compares these costs and benefits at each level of government. We end with a summary, conclusions, and policy considerations.

Financing Public Transit

Total expenses for transit systems are borne by riders through fares and by local, state, and federal governments. Some fees are reimbursed through social service or Medicaid programs. The revenue sources and the method of disbursing revenues to transportation systems vary widely among states.

Indiana transit systems received a total of $184,665,627 in funding from all levels of government, which equals $28.75 per capita. Every state receives federal funding for transit. Indiana received $103,960,670 in federal transit funds or $16.19 per capita in 2009.

The federal government offers specialized funding through a variety of transit grants and programs through the Federal Transit Act (FTA). In 2009, Indiana received $17.8 million through various grant programs allocated through the Indiana Department of Transportation.

As of 2009, all states except Alabama, Hawaii, Arizona, Nevada, and Utah provided state funding for transit. Transit systems in Indiana received $55.5 million in state funding in 2009, $8.63 per capita.

Indiana accrues 90.5 percent of its state funding for public transit through the general sales tax (see *Table 2* in this report). Indiana uses a formula-based system based on passengers, vehicle miles traveled, locally derived income, and operating expenses to allocate funds through the Public Mass Transportation Fund (PMTF).

While the changes in PMTF funding over the years were meant to be revenue neutral, the expansion of the number of systems in the state has meant that some systems, particularly the fixed-route systems, have experienced declines in their share of state funding.

Transit is partially funded by local taxes in 34 states across the U.S. Indiana receives 88.5 percent of its local funding for transit through property taxes, with the rest coming from income, gasoline, and other taxes. Most other states receive the majority of their local transit funding from sales or property taxes.

In 2009, transit funding in Indiana totaled $223.6 million ($34.82 per capita), of which 17.4 percent was covered through fare revenue. In total fare revenue, Indiana transit systems received $38,991,477. Of that, 48.5 percent were from fixed-route bus systems across the state, which totals $18,912,408.

Benefits and Costs of Public Transit

Riders benefit from the presence of transit services through its direct use, and indirectly from income, consumption, and public services made available by the presence of public transportation. Households without riders benefit as well through the reduction of congestion costs, lower levels of air pollutants, and reduced damage to highway infrastructure. Governments that support bus transit also accrue benefits. These include additional tax revenues from workers who can maintain employment due to access to a system. Similarly, costs in health care or social services that are reduced or eliminated through public bus service are a benefit to governments. Examples of this may be reduced Medicaid costs due to reduced levels of missed medical appointments, lower transportation costs for Medicare-reimbursed households, or reduced SNAP (food stamps) expenditures due to access to employment opportunities.

Our estimates here are limited to fixed-route bus systems. Our method involves calculating the predominant individual benefits of transportation. We separate benefits and costs by two groups: the public and private sectors. The public sector is primarily governments of all levels who provide transit revenue support, receive benefits in the form of reduced tax expenditures in other areas and receive increased tax revenues due to higher levels of economic activity. The private sector is made up of businesses and citizens who receive direct benefits due to access and use of bus transit, and indirect benefits such as congestion relief and improved environmental quality. In this process, we use conservative assumptions and categorize benefits into four categories: 1) public costs deferred or reduced through the presence of a fixed-route bus system, 2) miscellaneous private costs reduced through the presence of a fixed-route bus system, 3) private sector benefits of the system, 4) federal, state, and local tax revenues linked to a fixed-route bus system. These are compared to costs on a miles-traveled measure.

There are several types of costs deferred by state and local governments and by individuals as a consequence of the presence of bus transit. The most obvious of these are costs avoided by state, federal, and local governments and households as a consequence of the presence of a fixed-route bus system. These may include fixed costs such as the construction of a parking lot at a university or annual costs such as higher expenses associated with Medicaid travel reimbursement on demand-response systems.

For the purposes of this study, we employ conservative estimates of congestion and pollution costs and do not use carbon costs in this analysis. Our cost estimates are derived from secondary sources from well-respected analysts of transportation systems. As such, these estimates should be viewed as conservative.

The private sector also benefits directly from the presence of public transportation. The benefits include not only the avoided costs of operating a vehicle (which is not an option for all riders), but also a variety of costs to businesses and households avoided by the presence of public transportation systems. Our analysis finds that employee turnover in firms is significantly lower in counties that have access to a bus system.

Finally, tax revenues for local (LOIT), state (income and sales), and federal payroll taxes were derived from the previously mentioned microsimulations. These estimates omit changes to consumption patterns (e.g. less downtown shopping) or ancillary taxes and fees paid to federal, state, and local governments through incomes supported by the availability of public transit. Also, our simulation omitted all demand-side benefits of transit. We did not calculate the number of local businesses or commercial activity associated with the availability of bus transit.

Our benefit-cost estimates suggest that for each $1 of expenditure on public transit, more than $3 of benefit are realized. These costs and benefits are similar to those reported in other studies and represent the largest share of the benefits that can reasonably be estimated with currently available data. Quite clearly, the benefits of public fixed-route transit systems outweigh the costs for both taxpayers as a whole and those who ride the transit systems.

Our benefit-cost estimates suggest that for each $1 of expenditure on public transit, more than $3 of benefit are realized.

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JOINT STUDY COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE ASSESSMENT AND SOLUTIONS

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Authority: IC 2-5-28.5

To: TIAS Committee Members
From: Sarah Freeman, Committee Attorney
Date: October 16, 2013
Re: Committee Recommendations

Proposed Recommendation #1 (Soliday)

The Committee recommends that a Market Study be conducted concerning the long and short term potential economic opportunities and consequences of establishing additional commercial ports in the following regions:

(1) Lake Michigan, including channels that are ordinarily navigable to Lake Michigan.
(2) The Ohio River, including channels that are ordinarily navigable to the Ohio River.

The Committee further recommends that the market study include the following:
(1) Current data and statistics on Great Lakes shipping trends.
(2) An analysis of the federal permitting process administered by the United States Army Corps of Engineers.

Proposed Recommendation #2 (Soliday)

The Committee recommends that legislation be enacted to amend IC 8-10 to:
(1) clarify the potentially overlapping jurisdictions of the ports of Indiana and local port authorities; and
(2) address the rights and responsibilities of local port authorities established before the enactment of the legislation.

TIAS
10/15/13
Ex J

Proposed Recommendation #3 (Soliday)

The Committee recognizes that the federal Passenger Rail Investment Improvement Act of 2008 requires states with passenger rail service lines of less then 750 miles to fund the lines' operating costs, and that only the executive branch and the budget committee may address the state of Indiana's assumption of financial responsibility for the Hoosier State line operated between Indianapolis and Chicago by the National Passenger Railroad Corporation (Amtrak). However, the Committee recommends that the creation of a long term subsidy for the Hoosier State line should be considered as a potential solution only after Amtrak submits a more viable business and service plan for review and analysis by the executive branch and the budget committee.