

Investing in Michigan's Infrastructure: Building for Economic Growth

Leading Practices in Infrastructure Planning, Funding &
Financing with Key Findings for the State of Michigan



BUSINESS LEADERS FOR[®]
MICHIGAN



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INTRODUCTION

The purpose of this report is to provide a high-level view of model practices that can strengthen the way Michigan manages its infrastructure over the long term. It showcases innovative strategies that appear promising for a state with our unique opportunities and challenges. These concepts should serve as starting points for a more robust, productive discussion on how to deliver a strong, stable infrastructure in the years ahead.

This study is composed of two major works: a full report and this shorter executive summary, which is intended to highlight the most important elements of the full report. Both documents are available on BLM's website at: www.businessleadersformichigan.com.

The Case for Change

To suggest that states face significant infrastructure investment challenges might be an understatement. With limited funds for maintenance and improvement projects, states often address only the most critical projects while lesser needs are given lower priority. While Michigan is not the only state facing such issues, its aging infrastructure is making this problem increasingly pressing. These challenges need to be addressed quickly so the state can manage risks and reach its future economic goals.

As shown in Exhibit 1 below, the governor of Michigan set up a 21st Century Infrastructure Commission earlier this year. Recognizing that the Commission's work would focus on defining and quantifying the state's infrastructure needs, Business Leaders for Michigan (BLM) launched a complementary initiative designed to identify actions that can be taken to jump-start infrastructure improvements.

The overarching objectives of this project were: (i) to help define an ideal future infrastructure capable of helping Michigan become a "Top Ten" state for jobs, incomes and a healthy economy, and (ii) to recommend strategies for eliminating gaps between the ideal state and current infrastructure conditions, funding levels and policies.

The study findings will provide the guideposts for Michigan's political and business leaders to use in developing infrastructure strategies capable of driving future economic growth.


Exhibit 1. Michigan Infrastructure Challenges – Timeline of Key Events

Road and Bridge Funding Package

The state of Michigan, like many states across the country, is currently facing significant infrastructure challenges. In 2015, Michigan Governor Rick Snyder signed into law a broad road and bridge funding package, however many acknowledge that a more holistic solution is required to address the state's infrastructure needs.

Flint Water Crisis

Drinking water supply and infrastructure issues in Flint culminated in a lead contamination emergency in 2015 and early 2016. This issue is still being addressed.



Michigan would
need to increase
annual infrastructure
spending by

\$4 billion

to align with the
U.S. average.

2015 | 2016

21st Century Infrastructure Commission

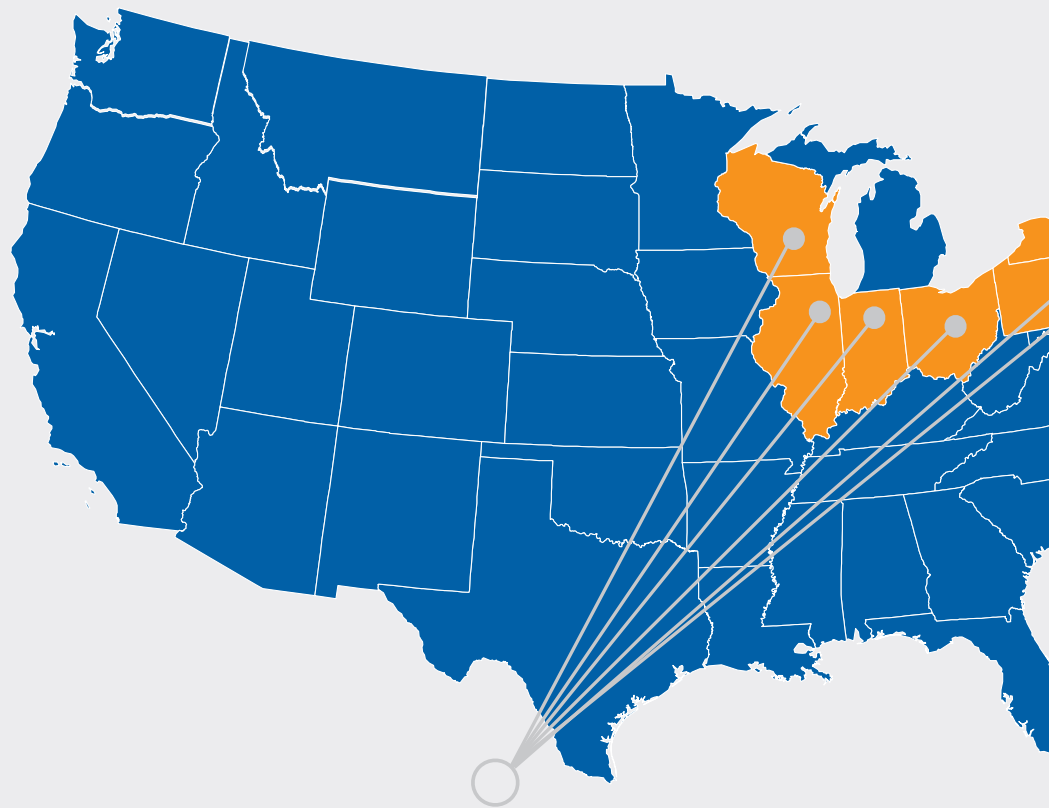
In response to high profile infrastructure issues, Governor Snyder created the 21st Century Infrastructure Commission in March 2016 as a means of studying the state's infrastructure needs and identifying "strategic best practices to modernize" transportation, water and sewer, energy and communications infrastructure in the state so Michigan's infrastructure remains safe and efficient now and in the future.

Michigan Infrastructure Funding and Policy Strategy

BLM launches a complementary initiative in March 2016 designed to identify actions that can be taken to jump-start infrastructure improvements, by identifying leading practices other states and nations have used to address their infrastructure needs, and making recommendations for policy and business leaders (including finance, policy and administrative actions).

Project Research and Data Collection Overview

Project Focus: Infrastructure
Planning, Funding and Financing
in the State of Michigan



6

COMPARATIVE STATES
(24 OTHER REGIONS EXAMINED)

INFRASTRUCTURE IN SCOPE



Transportation

- Roads
- Bridges
- Rail
- Airports



Water

- Drinking Water
- Dams
- Sewer
- Storm Water



Energy

- Electricity
- Gas
- Alternative Energy



Communications

- Fixed Broadband
- Mobile Networks
- Telephone

The project scope included a review of Michigan infrastructure data, workshops with Michigan's 21st Century Infrastructure Commission, a review of domestic and global leading practices in infrastructure planning, funding and financing, and industry expert interviews.

Michigan's infrastructure performance indicators were compared to six comparative states with similar infrastructure types and economies located in the Great Lakes region and Michigan's infrastructure practices were compared qualitatively against practices in nine other U.S. states and 15 international locations around the world.


These locations were selected based on infrastructure types, major industries, infrastructure spending, infrastructure condition grades and the application of innovative techniques and technology. A broad cross-section of locations was selected to determine average, good and leading practices in infrastructure planning, funding and financing.

PROJECT APPROACH

- 1 Michigan Infrastructure Data Review
- 2 Deloitte Infrastructure Expert Interviews
- 3 Infrastructure Industry Expert Interviews
- 4 Global & U.S. Leading Practices Research
- 5 BLM / Infrastructure Commission Workshops

STUDY INPUTS

 **30** Industry Experts Interviewed

 **15** U.S. Locations Researched

 **15** Global Locations Researched

 **19** Leading Practices Identified

 **28** Leading Practice Case Studies

CURRENT STATE OF INFRASTRUCTURE IN MICHIGAN

There are two major and equally important needs regarding the current state of Michigan's physical infrastructure:

(i) rehabilitation of aging infrastructure, and (ii) building new infrastructure to support the future economy.

Exhibit 2 shows the results from the American Society of Civil Engineers (ASCE) report for Michigan in 2009, which graded the state's infrastructure at a D overall, compared to the U.S. average grade of D+ (2013). A grade of D explains that, on average, the infrastructure is poor and at risk with a clear need for improvement in physical condition. An updated ASCE report for Michigan is due in 2017, and will be a critical benchmark for future improvements.

As part of this study, the Infrastructure Commission has confirmed that Michigan has a major need to rehabilitate its deteriorating water and transportation infrastructure. Energy and communications infrastructure is, generally, in better condition and has access to alternative sources of financing.

In 2015, BLM released a "Building a New Michigan" strategy that identified six key opportunities to accelerate the economy. As shown in Exhibit 3 on the next page, infrastructure plays a role in driving growth and meeting the goals in each Building a New Michigan opportunity.

Some of the current economic growth risks related to infrastructure in Michigan are:

- Soo Locks upgrade required to increase logistics reliability;
- Limited public transportation options in major cities;
- Detroit Airport expansion to leverage undeveloped land;
- Waste water overflows into natural waterways; and
- Broadband speed and coverage expansion required to support economic growth.

Exhibit 2. Michigan Infrastructure Condition Grades































Infrastructure Types	Michigan (2009)	U.S. Average (2013)
Roads	D	D
Bridges	D	C +
Rail	D +	C +
Aviation	C	D
Navigation / Ports	C –	C
Public Transport	D +	D
Drinking Water	D	D
Waste Water	C	D
Storm Water	D +	D –
Energy	C –	D +
Communications	N/A	N/A
Overall	D	D +

C = Mediocre, Requires Attention | D = Poor, At Risk

Source: American Society of Civil Engineers

Exhibit 3. Michigan Infrastructure Investment to Support Economic Growth

Six Assets and Opportunities to Accelerate Michigan's Job, Personal Income and Economic Growth

Six Assets	Opportunities	Potential ways to leverage the assets	Infrastructure Impacting the Ability to Grow the Economy			
			Communications	Energy	Water	Transport
Engineering Talent 	<i>Global Engineering Village</i>	Brand the engineering sector • Grow engineering education capacity • Grow engineering firms	High Impact 	Low Impact 	Low Impact 	High Impact 
Geographic Location 	<i>Gateway to the Midwest</i>	Consolidate logistics base into Michigan • Scale Aerotropolis • Invest in strategic trade-related infrastructure	Medium Impact 	Medium Impact 	Medium Impact 	High Impact 
Higher Education System 	<i>Higher Education Marketplace</i>	Strengthen quality, affordability, productivity & economic impact • Grow university enrollment • Grow industry & university funded R&D • Grow commercialization of R&D	High Impact 	Low Impact 	Low Impact 	High Impact 
Natural Resources 	<i>Natural Resources Economy</i>	Invest in infrastructure that promotes natural resources industries • Expand & promote MI's tourism and outdoor recreation amenities & services • Focus public and private R&D activities on sustainable natural resources products and processes	Medium Impact 	High Impact 	High Impact 	High Impact 
Automotive Industry 	<i>Global Center of Mobility</i>	Lead in sustainable mobility & multi-modal systems • Lead in vehicle/ infrastructure technology • Ensure MI remains a top three region for global R&D spending and employment • Catalyze growth in advance and interactive, smart, connected transportation	High Impact 	Medium Impact 	Medium Impact 	High Impact 
Health & Medical Expertise 	<i>Life Sciences Hub</i>	Create a hub for bio-pharmaceutical R&D • Become the center for research, testing & medical labs • Grow medical tourism	High Impact 	Medium Impact 	Medium Impact 	High Impact 

Source: BLM Building a New Michigan Framework

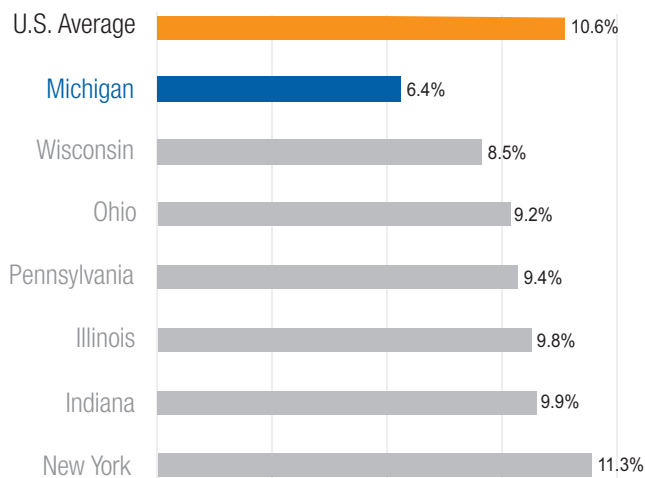
CURRENT STATE OF INFRASTRUCTURE INVESTMENT IN MICHIGAN

Infrastructure investment gaps in Michigan have been growing rapidly over time and have the potential to create a significant burden on future generations. This challenge is complicated by the limited availability of new funding sources, leading to the increased role of private investment, particularly in traditionally publicly-owned sectors, such as transportation and water infrastructure.

As shown in Exhibit 4, Michigan significantly under-invested in its infrastructure between 2010 and 2014, compared to similar states and the U.S. average. Michigan ranks lowest in the U.S. for state and local contributions to total infrastructure spending in the state, contributing just 6.4 percent. The U.S. average is 10.6 percent.

Michigan spent 4.2 percent less than the U.S. average and would need to increase (2014) annual capital spending by \$4 billion to align with the U.S. average. Michigan spent 2.4 percent less than the Great Lakes average and would need to increase (2014) annual capital spending by \$2.5 billion to align with the Great Lakes average. Capital spending includes state and local government expenditure on all infrastructure types across the state.

*Exhibit 4. State and Local Capital Spending
(% of Total Expenditure) Annual Average 2010 – 2014*



Source: U.S. Census Bureau

Exhibit 5 shows that Michigan spent \$325 in functional expenditure (Capital Expenditures and Operational Expenditures) per capita less than the U.S. average between 2010 and 2014, the lowest spend in the country. Michigan spent \$90 and \$167 per capita less than the U.S. average on water (Ranking: 18th) and energy (Ranking: 40th), respectively.

Finding

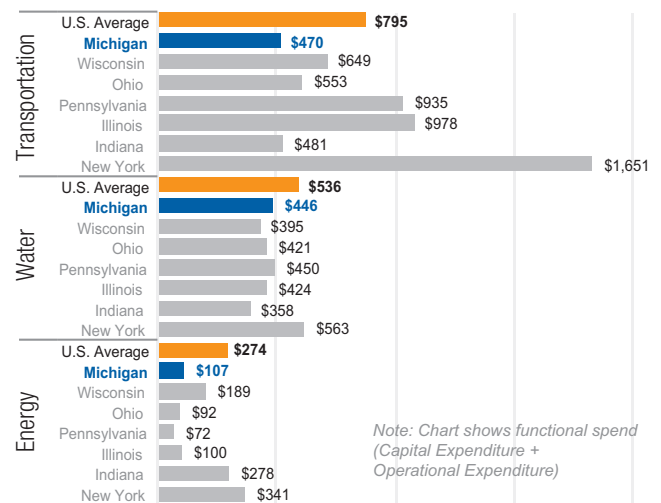
Our research concludes that the minimum Michigan should increase annual infrastructure spending is \$4 billion to close the annual investment gap with the U.S. average over five years.

We would expect Michigan's infrastructure condition grade to improve in the future as a result of this increased level of infrastructure investment, however it's very difficult to predict the specific future condition grade and it should not be assumed that matching the U.S. average on infrastructure spending would correlate to the most recent U.S. average condition grade recorded of D+. As part of this study, a high level Infrastructure Investment Index has been developed for Michigan to provide guidance on best value for money when prioritizing funding needs.

Finding

Results in Exhibit 6 show that water infrastructure may provide the greatest expected value on average, but also contains the highest level of investment risk. Roads and bridges are the highest ranked infrastructure sub-categories. This assessment should be updated over time.

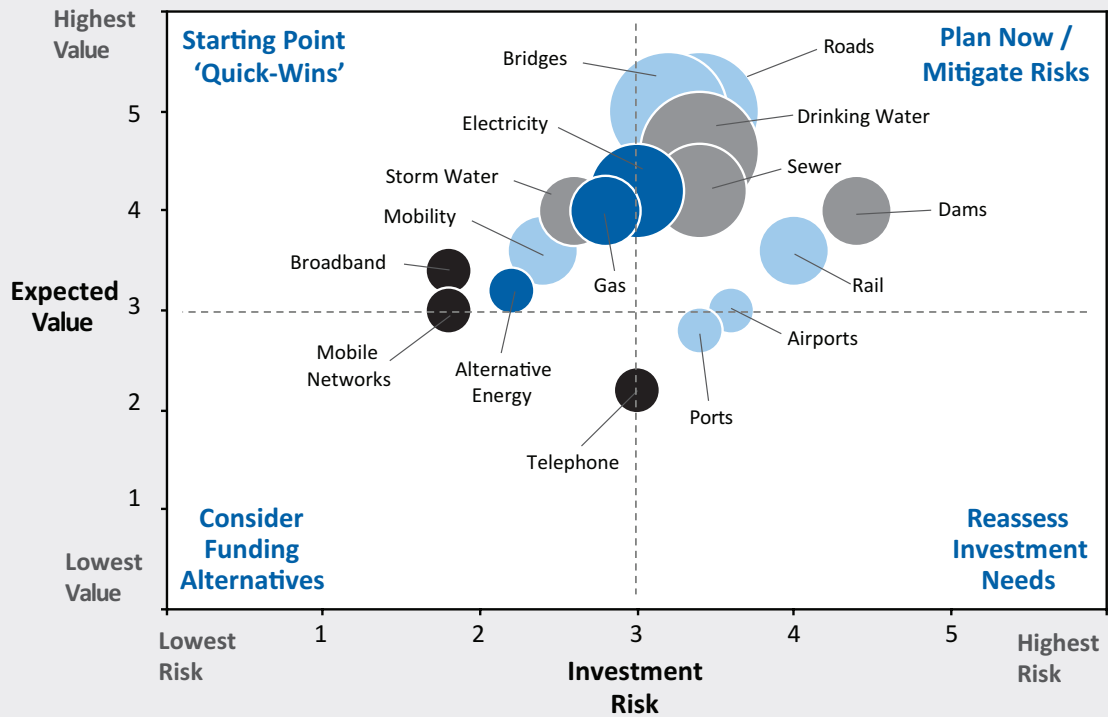
*Exhibit 5. State and Local Functional Spending per Capita
Annual Average 2010 – 2014*



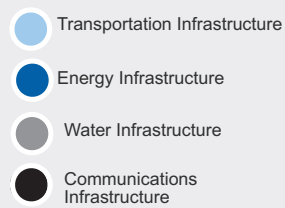
Note: Chart shows functional spend (Capital Expenditure + Operational Expenditure)

Source: U.S. Census Bureau

Exhibit 6. Michigan's Infrastructure Investment Index



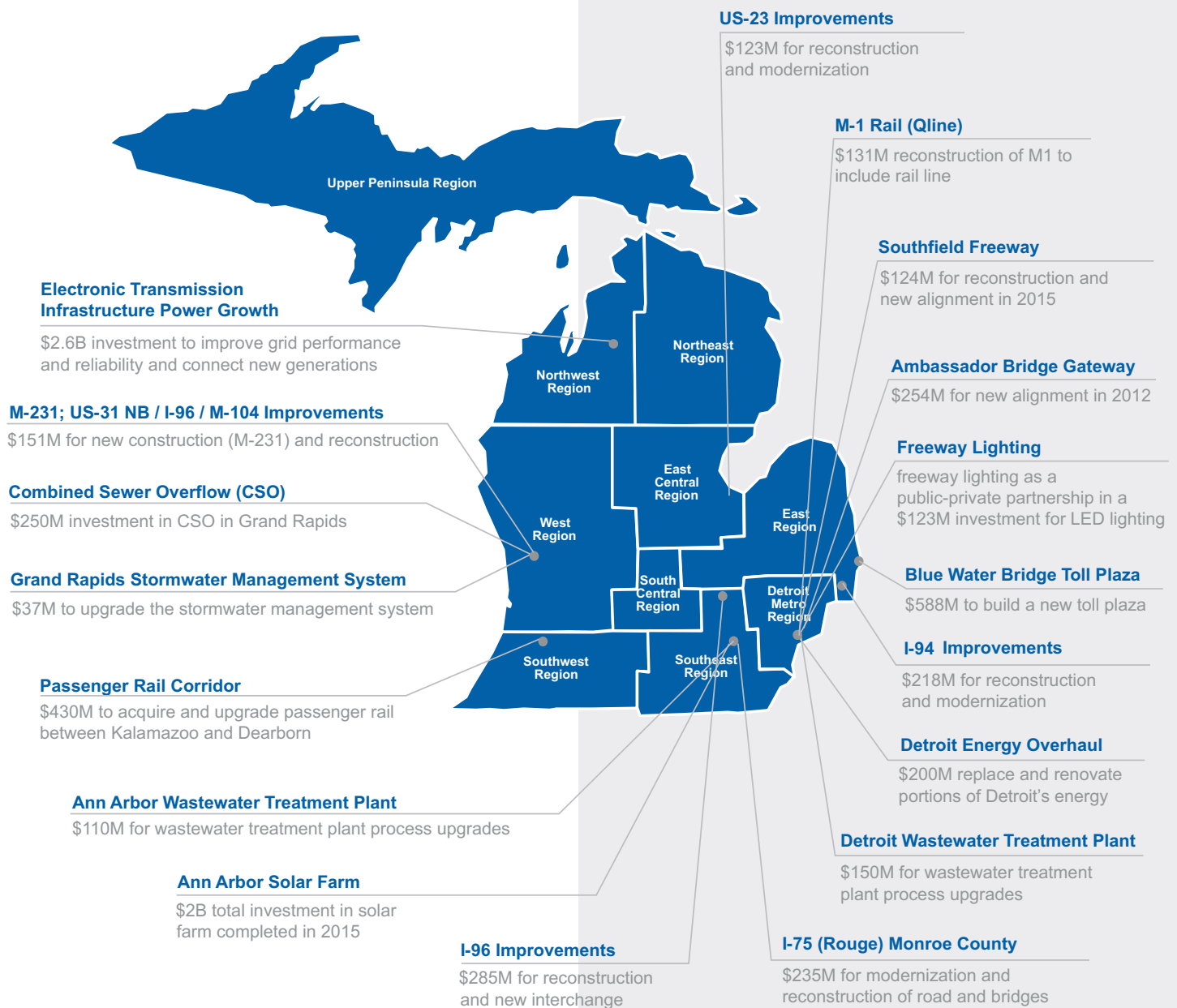
Infrastructure Platforms	Infrastructure Sub-Categories	Expected Value	Invest. Risk
Transportation	Roads	5.0	3.4
	Bridges	5.0	3.2
	Rail	3.6	4.0
	Airports	3.0	3.6
	Ports	2.8	3.4
	Mobility	3.6	2.4
Water	Drinking Water	4.6	3.4
	Sewer	4.2	3.4
	Storm Water	4.0	2.6
	Dams	4.0	4.4
Energy	Electricity	4.2	3.0
	Gas	4.0	2.8
	Alternative Energy	3.2	2.2
Communications	Broadband	3.4	1.8
	Mobile Networks	3.0	1.8
	Telephone	2.2	3.0



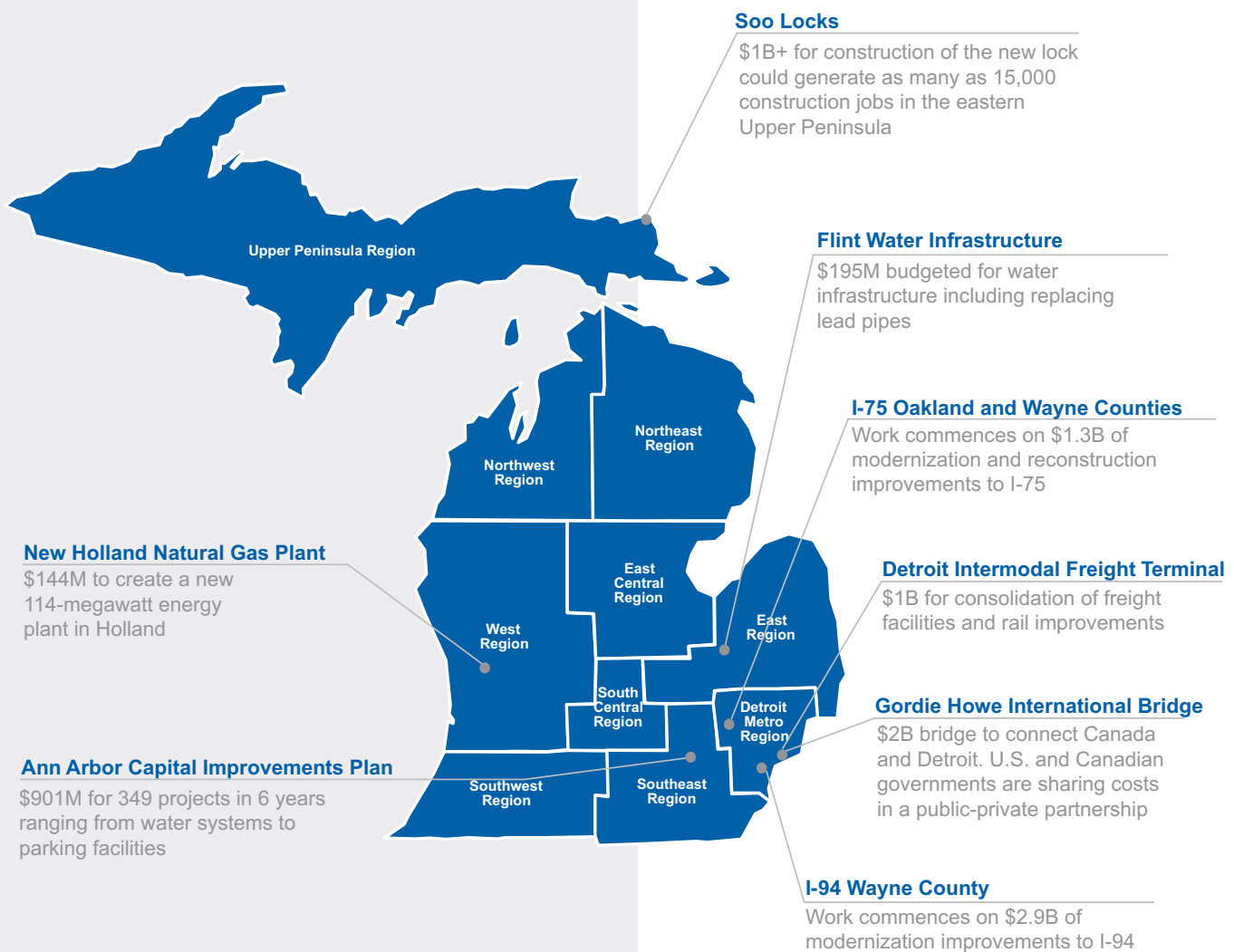
Note: Size of bubble = relative scale of estimated annual investment gap

Major Infrastructure Projects in Michigan

Recent Major Infrastructure Projects in Michigan (2011 – 2016)



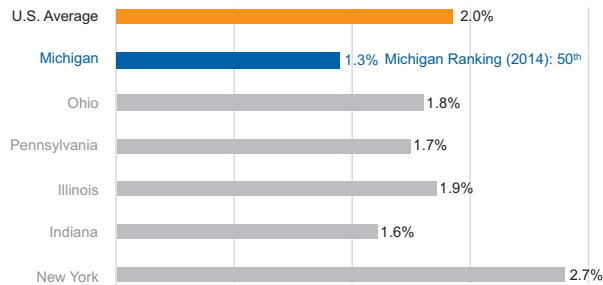
Forecast Major Infrastructure Projects in Michigan (2016 – 2020)



Dashboard of Key Infrastructure Performance Indicators

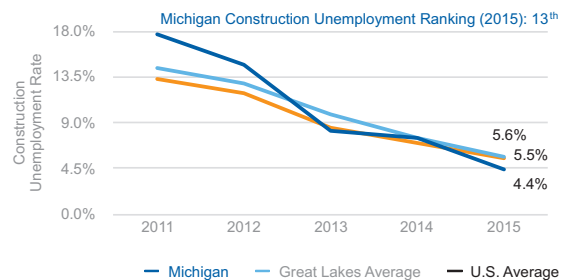
INFRASTRUCTURE ECONOMICS

State & Local Capital Spend as a % of GSP (2014)



Source: US Census Bureau, US Bureau of Economic Analysis

Construction Unemployment Rate (2011 – 2015)

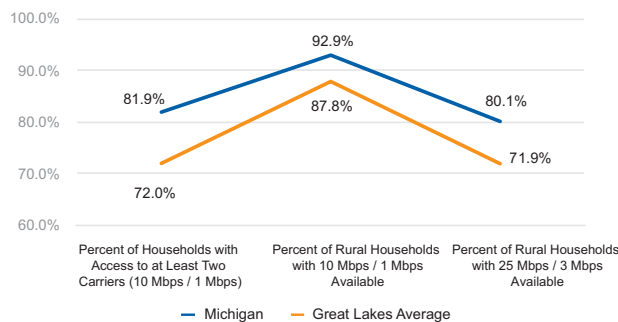


Note: Not Seasonally Adjusted

Source: US Bureau of Labor Statistics, Associated Builders and Contractors, Inc.

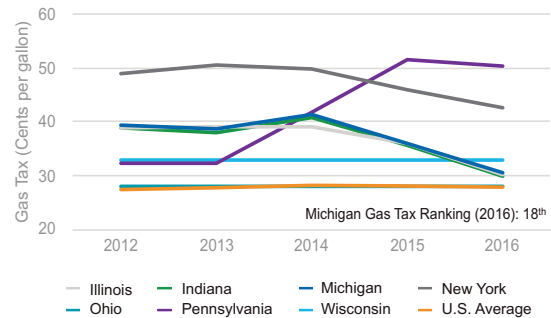
INFRASTRUCTURE PLATFORMS

Household Broadband Penetration (2015)



Source: Connect Michigan, National Broadband Map

State Gas Taxes & Fees (cents per gallon) (2012 – 2016)



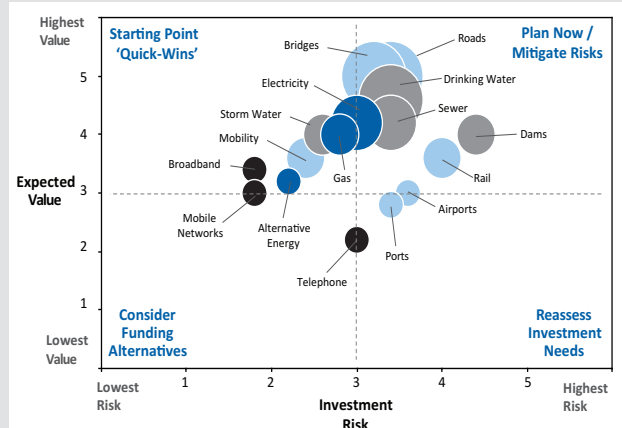
Note: Rates do not include the 18.40 cent/gallon federal excise tax on gas
Source: Taxfoundation.org

INFRASTRUCTURE CONDITION

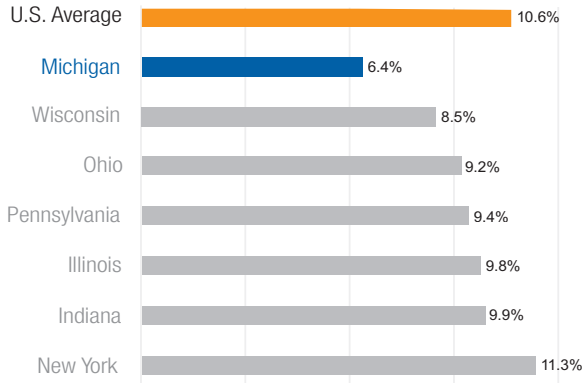
Infrastructure Types	Michigan (2009)	U.S. Average (2013)
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Waste Water	C	D
Storm Water	D +	D -
Energy	C -	D +
Communications	N/A	N/A
Overall	D	D +

C = Mediocre, Requires Attention | D = Poor, At Risk

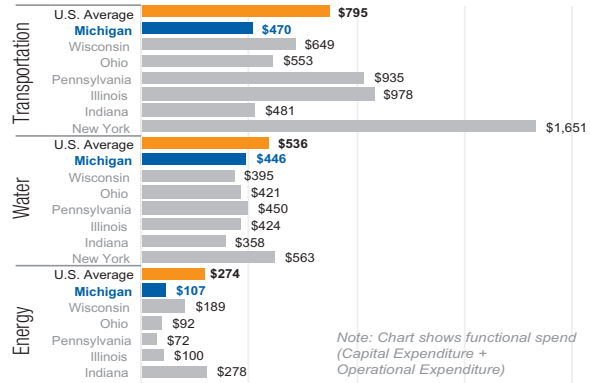
INFRASTRUCTURE INVESTMENT INDEX



INFRASTRUCTURE SPEND



Source: U.S. Census Bureau

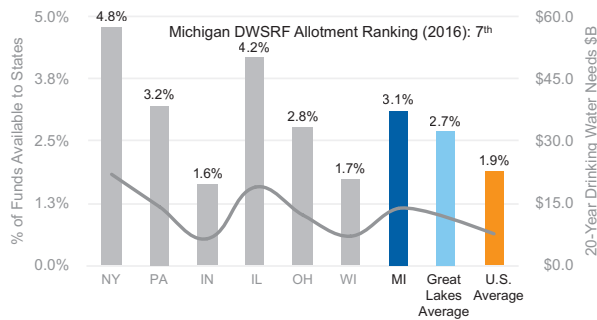


Note: Chart shows functional spend (Capital Expenditure + Operational Expenditure)

Source: U.S. Census Bureau

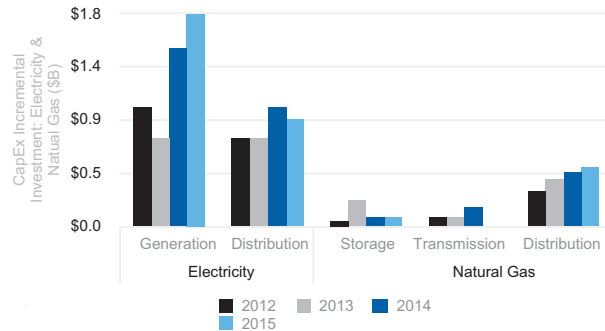
INFRASTRUCTURE PLATFORM

Drinking Water State Revolving Fund Allotments (2011 EPA 20-Year Drinking Water Needs Survey)



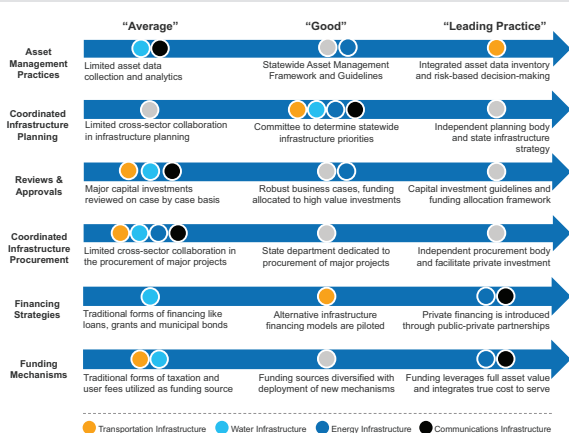
Source: U.S. Environmental Protection Agency

CapEx Incremental Investment: Electricity & Natural Gas (2012 - 2015)

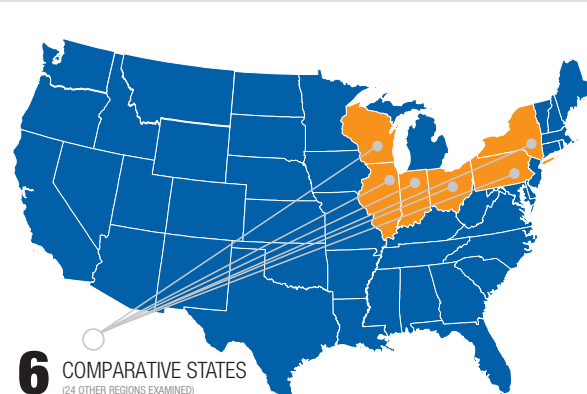


Note: Values are capital expenditures by DTE Energy & Consumers Energy are approximate
Source: Michigan Agency for Energy, Michigan Public Service Commission, May 2016

INFRASTRUCTURE COORDINATION



INFRASTRUCTURE COMPARATIVE ANALYSIS



LEADING PRACTICE RESEARCH FINDINGS

The leading practice research completed in this study found that other state governments in the U.S.—and governments around the world—are increasing their focus on six key elements of the capital investment lifecycle. The aim is to direct funds toward projects that have a high return on investment and which mitigate significant risks to the general public from aging infrastructure.

The research findings are set out on pages 9–14 of this report and are organized around the following six elements of the capital investment lifecycle:

1. Infrastructure asset management
2. Coordinated infrastructure planning
3. Infrastructure investment reviews & approvals
4. Coordinated infrastructure procurement
5. Infrastructure funding mechanisms
6. Infrastructure financing strategies

As part of this study, a gap assessment was completed on Michigan's infrastructure planning, funding and financing practices, and the results in Exhibit 8 show Michigan to be at diverse levels of maturity across its different infrastructure platforms, when compared to leading practices.

Finding

Michigan has generally settled for “fair to good” levels of infrastructure planning, funding and financing practices, while it should be striving for “better or best.”

Exhibit 7. The Public Infrastructure Capital Investment Lifecycle

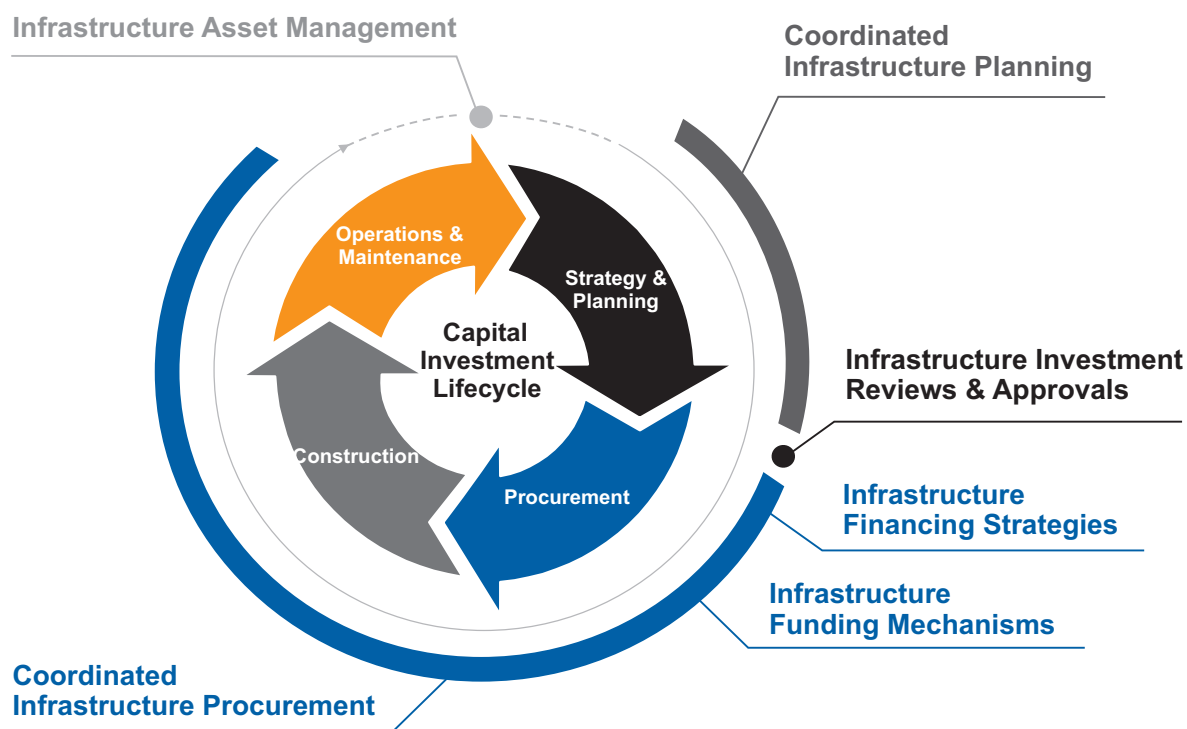
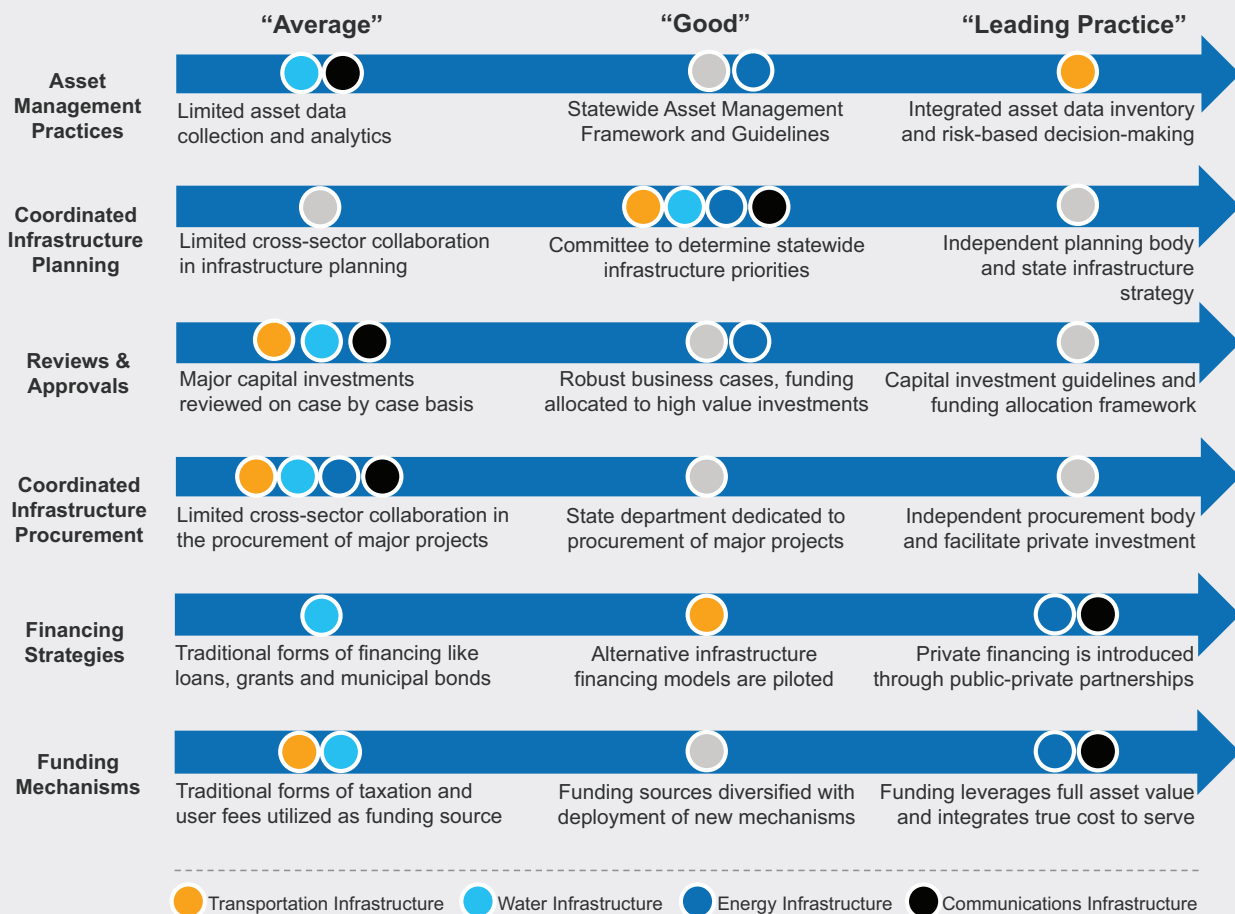


Exhibit 8. Michigan Infrastructure Maturity/Gap Assessment



INFRASTRUCTURE ASSET MANAGEMENT

Leading Practice Observations

Infrastructure asset management encompasses the coordinated organizational activities designed to realize the full value of assets over their lifetimes (e.g., monitoring performance, maintenance and rehabilitation of existing assets, identifying investment needs, and planning construction of new assets).

State governments are designing and implementing standard frameworks, systems and processes for asset management activities to ensure a more coordinated approach.

A coordinated approach can be used to manage large and small assets, to capture and analyze asset data, and to develop investment priorities in a consistent manner.

Adherence to asset management standards can provide state government leaders with assurance that state agencies and municipalities understand the current make-up, condition and risks of their asset bases, and that capital investment priorities being put forward for evaluation have been prioritized based on asset value and risk.

Applicability to Michigan

The Michigan Department of Transportation Asset Management Council is a model for asset management that already exists in the state, and could be expanded to other agencies and cascaded to local government levels.

There is an increasing interest to implement the standard best practice approach to asset management (ISO 55000) in the U.S. due to its comprehensive methodology and proven benefits/results.

Findings

- Expand Michigan Transportation Asset Management Council to include other infrastructure platforms
- Design and implement a statewide asset management framework and guidelines
- Support utilities and local governments with implementation of asset management practices
- Build and maintain a statewide asset database with analytics

Timeframe for Action: 2017 – 2019

LEADING PRACTICE CASE STUDY:

INFRASTRUCTURE ASSET MANAGEMENT IN AUSTRALIA

Pressure to prioritize capital and operating budgets with limited funding and the increasing risks from an aging asset base are the largest drivers of asset management frameworks in Australia.

Some Australian states have designed and published asset management standards, frameworks and guidelines to ensure assets are managed efficiently and effectively, including some mandatory requirements and general guidance for agencies.

Good asset management practices enable organizations to justify forecast expenditures.

LEADING PRACTICE CASE STUDY:

ONTARIO'S RURAL ASSET MANAGEMENT PLAN

The program was launched to help eligible municipalities and local services boards improve and increase their capacity to manage infrastructure assets.

For many municipalities, improving asset management results in community leaders making informed and timely decisions which will help optimize investments, save money, and better manage risks.

Improved municipal asset management also helps ensure that limited provincial resources are directed to the most critical needs.

COORDINATED INFRASTRUCTURE PLANNING

Leading Practice Observations

Infrastructure planning activities are traditionally coordinated by in-house state departments. Recently, however, control is increasingly being transferred to independent statutory authorities which coordinate integrated planning efforts.

This move is designed to remove political influence over infrastructure planning processes and increase the transparency of infrastructure investment decisions.

An independent statutory authority completes a long-term 20–30 year infrastructure plan and establishes priorities for the state.

A capital investment framework is typically used to prioritize recommendations, and the coordinating body consults with relevant state agencies and regional representatives on infrastructure needs. State citizens are engaged in development of the plan.

The infrastructure strategy is scheduled for update every five years, and the coordinating body monitors infrastructure-related economic development indicators and statistics.

Applicability to Michigan

Legislation would be needed to set up an independent statutory authority in Michigan.

The annual costs of operating a coordinated infrastructure planning body may make the solution prohibitive.

Michigan may consider adding additional responsibilities to an independent statutory authority, such as providing expert advice on project procurement and encouraging investment from the private sector.

Findings

- Evaluate the establishment of a coordinated infrastructure planning body
- Analyze the statewide infrastructure priorities to mitigate risks and drive economic growth
- Develop a long-term, statewide infrastructure strategy
- Make infrastructure investment recommendations to the governor and legislature
- Measure improvements in performance

Timeframe for Action: 2017 – 2018

LEADING PRACTICE CASE STUDY: NEW YORK WORKS TASK FORCE

The task force brings together finance, labor, planning, and transportation professionals to coordinate a statewide infrastructure plan and strategic allocation of capital investment funds.

Key outcomes desired by the task force are to develop a coordinated, streamlined and prioritized state infrastructure plan, accelerate major projects, explore financing mechanisms, and partner with the private sector on project procurement.

The task force intends to coordinate \$174 billion in spending across 47 state agencies and authorities.

LEADING PRACTICE CASE STUDY: INFRASTRUCTURE VICTORIA

Infrastructure Victoria has been established to publicly release a 30-year infrastructure strategy detailing short-, medium-, and long-term infrastructure needs and priorities.

The new authority is led by a CEO and seven-member board comprising four members from the private sector and three from the public sector.

The 30-year infrastructure strategy will support improved social, economic, and environmental outcomes. The plan will be updated every five years, and the community and stakeholders will be engaged in its development.

INFRASTRUCTURE INVESTMENT REVIEWS & APPROVALS

Leading Practice Observations

State governments and the general public are increasing their focus and scrutiny over long-term infrastructure plans, challenges, priorities and funding levels. Responsibility for infrastructure investment reviews and approvals continues to stay with the state government; however, there is increasing consultation with the general public and collective engagement with public and private stakeholders over long-term needs and plans for all types of infrastructure across the state.

Standard business case assessment processes are becoming more common for major projects and infrastructure needs are being compared objectively using predefined investment decision criteria and scoring of anticipated benefits and risks.

The state government decides how much funding to commit to the plan, sets timing for its execution and monitors progress through a predefined process.

Applicability to Michigan

Some infrastructure platforms in Michigan may still rely on outdated funding formulas and project lists to determine funding allocations, and may benefit from a new process to objectively screen and score infrastructure projects based on their anticipated benefits and risks.

Michigan may need to include asset management State of Good Repair projects as part of any project scoring system, which would make the process more complex.

Findings

- Design and implement major capital investment guidelines
- Release standard business case analysis template
- Agree on a capital prioritization framework to allocate funding across statewide needs

Timeframe for Action: 2017 – 2018

LEADING PRACTICE CASE STUDY: VIRGINIA DOT SMART SCALE PROGRAM

In 2014, Virginia changed the way transportation projects are selected. Political wish lists have been replaced with an objective, data-driven, and transparent decision process, making the best use of limited state funding.

State localities and regional bodies have come together to develop a one-of-a-kind scoring system for transportation projects. Projects are scored based on an objective, outcome-based process that is transparent to the public, and allows decision-makers to be held accountable to taxpayers.

Projects are evaluated on improvements to safety, congestion reduction, accessibility, land use, economic development, and the environment. Project prioritization criteria and scoring results are made available to the public online.

COORDINATED INFRASTRUCTURE PROCUREMENT

Leading Practice Observations

Traditionally coordinated by an in-house state department, many new, independent statutory authorities are now coordinating infrastructure financing, identifying alternative funding sources, and encouraging private investment activity to realize expected benefits.

If sector-specific, the infrastructure procurement body can sit within the relevant state department.

The structure of an infrastructure procurement body can signal to the markets that public-private partnerships (PPPs) are a priority for the state.

An infrastructure procurement body can coordinate the sale of assets in addition to construction of new assets.

Applicability to Michigan

Legislation would need to be passed to set up an independent infrastructure procurement authority similar to Infrastructure Ontario (see below).

The design and implementation of an alternative financing and procurement program would be dependent on the authorization of current PPP legislation in Michigan.

Findings

- Evaluate the establishment of a coordinated infrastructure procurement body
- Identify and implement long-term innovative funding strategies
- Support financing of major projects
- Facilitate private investment and the set up of PPPs

Timeframe for Action: 2017 – 2019

LEADING PRACTICE CASE STUDY: INFRASTRUCTURE ONTARIO

Infrastructure Ontario is an independent infrastructure procurement body set up to support the government's initiatives to modernize and maximize the value of public infrastructure and realty.

Infrastructure Ontario's scope includes an alternative financing and procurement (AFP) program that has been widely seen as successful, and a world-leading practice to encourage private investment in infrastructure.

This coordinated procurement body has increased the focus from government to revenue generation, cost reduction, and the creation of efficiencies in the public sector.

LEADING PRACTICE CASE STUDY: CONNECTICUT REGIONAL PERFORMANCE INCENTIVE PROGRAM

The State of Connecticut's Regional Performance Incentive Program helps municipalities reduce costs through the regionalization of services.

The program is designed to incentivize municipalities and regions to rethink the way they provide local services, resulting in measurable economies of scale and lower costs for taxpayers.

The proposed project must be new (on a regional basis), demonstrate cost savings, not result in loss of any services, and demonstrate sustainability on a regional basis once established.

INFRASTRUCTURE FUNDING MECHANISMS

Leading Practice Observations

Infrastructure funding sources are government cash flows that can be used to support the construction and operation of infrastructure via the repayment of infrastructure financing.

There are two primary infrastructure revenue streams available to state governments: (i) tax revenues, and (ii) revenues from infrastructure user fees. It is a common problem that many funding sources are not elastic or sustainable.

Direct and indirect taxation may be used to raise funds for infrastructure. Many states in the U.S. have found it difficult to gain approval to raise taxes as a method for paying for infrastructure; however, public appetite seems to be improving.

User fees allow cities and other local jurisdictions to cover the cost associated with funding services, enhancements to increase the quality of life, and cover administrative and regulatory processes.

Alternative infrastructure funding mechanisms identified as part of the review were:

- Full-cost pricing
- Land value capture
- Infrastructure leasing
- Partial asset sales
- Full privatization of infrastructure

Applicability to Michigan

There are many financing mechanisms available to meet infrastructure needs but few viable funding sources to support them.

Findings

- Agree on a set of mechanisms to address funding gaps for each infrastructure platform
- Evaluate changes that can be made to current funding sources
- Pilot innovative funding strategies identified as part of leading practices review

Timeframe for Action: 2017 – 2021

LEADING PRACTICE CASE STUDY:

VEHICLE MILES TRAVELED (VMT) TAX IN OREGON

Oregon has implemented the first voluntary pilot program for vehicle miles travelled (VMT) tax in America. This program taxes miles driven rather than gallons of gas purchased.

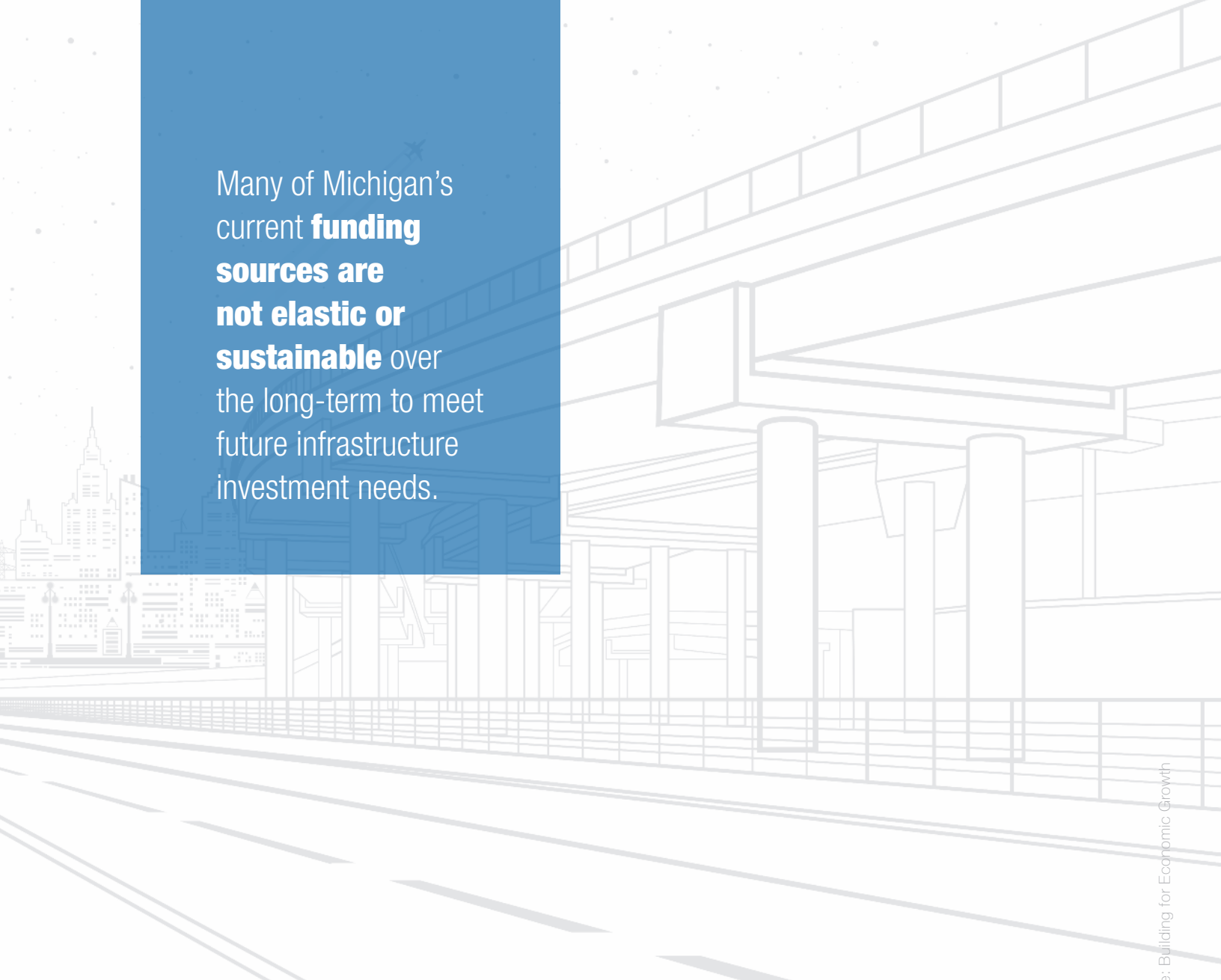
The VMT is a long-term sustainable solution, which derives revenue from new “green” transportation methods, such as electric, hybrid, and other more fuel efficient vehicles.

LEADING PRACTICE CASE STUDY:

WATER SYSTEM REPLACEMENT FEE IN WASHINGTON DC

Washington DC Water has implemented a water system replacement fee to recover costs associated with renewing and replacing water service lines.

The fee has different rates for residential and non-residential customers, and is based on meter size. Low income Customer Assistance Program (CAP) customers are exempt.



Many of Michigan's current **funding sources are not elastic or sustainable** over the long-term to meet future infrastructure investment needs.

LEADING PRACTICE CASE STUDY: METROLINX LAND VALUE CAPTURE IN TORONTO

Toronto's Metrolinx Project administered a fee to property owners, including developers and home buyers, to capture the increase in property value due to the new transportation infrastructure.

Fees include an increase in sales tax, mobility tax, gas tax, business parking levies, and development charge amendments, implemented at certain points on the rail line.

LEADING PRACTICE CASE STUDY: 'REBUILDING NSW' ASSET RECYCLING PROGRAM

The State of New South Wales in Australia leased part of its electricity network to raise money for an infrastructure development fund, and then "recycled" the investments.

The infrastructure development fund money goes toward schools, hospitals, agriculture, pollution reduction, and modernizing the infrastructure to improve efficiency and applicability.

INFRASTRUCTURE FINANCING STRATEGIES

Leading Practice Observations

Infrastructure financing strategies are the debt and equity investments that can be made to pay for projects now, but are then repaid with a minimum return using cash flows over the life of the asset.

The federal government funds highway construction primarily with grants, while it subsidizes drinking water and wastewater projects with low-interest loans. The Federal-Aid Highway Program (FAHP) funds a large majority of the costs for both interstate and non-interstate system projects, with states covering the remaining costs. Administered at the state level, the EPA's Drinking Water State Revolving Fund (DWSRF) and Clean Water State Revolving Fund (CWSRF) provide low-interest loans for drinking water and wastewater infrastructure projects.

Alternative infrastructure financing strategies identified as part of the review were:

- State infrastructure banks
- Infrastructure bonds
- Public-private partnerships
- Special purpose infrastructure providers
- Other sources of private capital

Applicability to Michigan

There is an increasing trend toward private financing of transportation and water infrastructure projects in the U.S. market.

Findings

- Maximize value received from federal loan and grant programs
- Pilot innovative financing models on new projects
- Assess opportunities for direct private investment or ownership of infrastructure
- Design and implement an "incentives for coordination" program, and set efficiency targets

Timeframe for Action: 2018 – 2021

LEADING PRACTICE CASE STUDY:

TOLL ROAD PUBLIC-PRIVATE PARTNERSHIPS

Virginia and Florida are two U.S. states that have led the way with the implementation of innovative, large-scale toll road PPPs to improve infrastructure condition and boost capacity.

Toll roads have been popular PPPs given that highway construction is generally low risk, and long-term cash flows from tolls have low volatility and align with finance repayments.

LEADING PRACTICE CASE STUDY:

INFRASTRUCTURE BANK IN PENNSYLVANIA

Pennsylvania has established separate transportation and water infrastructure investment authorities to leverage federal & state funds, and to make low-interest loans for improvement projects.

The Pennsylvania Infrastructure Bank (PIB) is a PennDOT transportation loan program, and is recognized nationally as a model for similar banks established in several other states.



There are
many financing mechanisms available to meet infrastructure investment needs, but few viable funding sources to support them.

LEADING PRACTICE CASE STUDY:

GREEN BONDS PROGRAM IN WASHINGTON DC

In 2014, Washington DC Water issued \$350 million in taxable, green century bonds to finance a portion of the \$2.6 billion DC Clean Rivers project to reduce waste water overflows to waterways.

This sale was the first green bond in the U.S. debt capital markets and the first century bond issued by a U.S. public utility to be rated AA by Fitch.

LEADING PRACTICE CASE STUDY:

ALASKA WATER & SEWER CHALLENGE

Alaska has initiated a public-private research effort to find more affordable ways to deliver drinking water and sewage disposal services in rural areas, including the potential invention of new decentralized water systems.

The Alaska Department of Environmental Conservation received \$4 million to run the challenge through an EPA appropriation and state match.

Research and industry analysis for this project was conducted by Deloitte's Infrastructure & Capital Projects Group in collaboration with Business Leaders for Michigan.

The data presented in this report come from several sources, most of which are publicly available. The report used the most recent data available for which there was a complete data set. It is composed of two major works: a full report and this shorter executive summary, which is intended to highlight the most important elements of the full report. Both documents are available on BLM's website at: www.businessleadersformichigan.com.



About Business Leaders for Michigan

Business Leaders for Michigan (BLM), the state's business roundtable, is dedicated to making Michigan a "Top Ten" state for job, economic, and personal income growth. The work of BLM is guided by the Building a New Michigan Plan, a holistic, fact-based strategy to achieve the organization's "Top Ten" goals. The organization is composed exclusively of the chairpersons, chief executive officers, or most senior executives of Michigan's largest companies and universities. Our members drive 32% of the state's economy, provide nearly 375,000 direct jobs in Michigan, generate over \$1 trillion in annual revenue and serve nearly one half of all Michigan public university students. Find out more at www.businessleadersformichigan.com.



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