



# 30-YEAR **INTEGRATED** INFRASTRUCTURE **STRATEGY**



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# Introduction

## A Strategy For Every Reader

The Michigan Infrastructure Council's (MIC) 30-Year Integrated Infrastructure Strategy (*Strategy*) is the first comprehensive infrastructure plan for the State of Michigan. It is one of a kind in the United States. Michigan has the opportunity to lead the nation in an integrated approach to managing infrastructure assets through facilitating and leading coordination and collaboration from both public and private infrastructure communities. The result will improve the quality and reliability of essential services delivered to all residents.

We encourage all Michiganders to be active participants in creating a more resilient and sustainable infrastructure and join us in furthering a culture of integrated asset management statewide to ensure a brighter future.

### Strategy Focus

This inaugural *Strategy* focuses on four critical asset classes: energy, transportation, water, and communications. These four asset classes are fundamental to modern communities. They are integrated, meaning issues in one can impact the others. They also face significant challenges, like aging infrastructure, climate change, and rapid technological innovations. Focusing on these areas allows the *Strategy* to address critical societal needs and ensure sustainable, resilient infrastructure development for future generations.

### Key Concepts

**Asset Management**—A comprehensive strategy that integrates engineering, finance, and data analysis to proactively manage assets throughout their lifecycle. This ensures long-term performance, minimizes disruptions, mitigates risks, and optimizes resource allocation.

**Integrated Asset Management**—Traditional infrastructure management often functions in silos, with separate teams overseeing different infrastructure asset classes. Integrated asset management breaks down these barriers. It fosters collaboration between the various infrastructure owners serving communities to ensure a unified approach that considers the interdependencies between different infrastructure projects and systems during both planning and operations.

**Sustainability**—A continuous commitment to long-term stewardship. Using resources efficiently, minimizing waste, and constantly seeking ways to improve environmental and social outcomes through effective communications, innovation, and adaptation.

**Resilience**—Refers to the ability to withstand extreme events and disruptions while maintaining functionality. It encompasses measures to prevent failures, mitigate impacts when they occur, and rapidly recover to a usable state.

# Audience

## Public and Private Infrastructure Owners

Public and private infrastructure owners at the state, regional, county, and local levels are at the core of the *Strategy*. The actions presented in the document are intended to enhance an asset owner's ability to deliver safe, reliable, and affordable infrastructure services to their communities for decades to come with the support and understanding of the public.

## Elected Officials

Elected officials are essential partners in developing and implementing successful infrastructure strategies. Their involvement ensures that projects are funded, well-planned, accountable to the public, and meet the long-term needs of communities. Elected official turnover can alter the course of infrastructure focus, which is why the involvement of departmental staff is imperative to continue infrastructure strategies beyond administrations.

## Private Consultants And Contractors

Both public and private sector infrastructure owners rely upon the expertise and specialized skills of private consultants for design, engineering, construction, and management of assets. Ensuring these crucial players are engaged in the *Strategy* is critical, especially for smaller municipalities with limited infrastructure resources in-house.

## Regional Planning Agencies

Regional planning agencies are at the forefront of local infrastructure discussions and planning. With a long history of transportation planning and asset management expertise, these agencies are ideal partners and allies in implementing the *Strategy*.

## Academic Institutions and Trade Organizations

For decades in Michigan, academic institutions and trade organizations have been at the center of infrastructure policy research, analysis, and professional development. In implementing the *Strategy*, the MIC will work closely with these groups to avoid redundancies and increase capacity through partnerships.

## The Public

The ultimate benefactors and beneficiaries of the *Strategy* are the people and businesses who rely on Michigan's infrastructure to prosper. Michigan citizens and organized citizen groups also have a role in helping manage infrastructure services. The *Strategy* will enhance efforts to clarify why Michigan needs to invest in its infrastructure and continue to support asset owners to invest effectively, efficiently, and equitably.





# Executive Summary

## Vision

We envision future infrastructure systems that strengthen social bonds, empower a robust economy, and safeguard our natural heritage, great lakes, and quality of life for generations to come.

## Background

Overcoming the challenges posed by aging infrastructure systems plagued by decades of deferred maintenance was the focus of the 21st Century Infrastructure Commission (Commission). The Commission recognized that Michigan lacked a strategic plan for managing its infrastructure holistically. With over 3,300 separate entities responsible for delivering infrastructure services, our siloed approach was hindering progress. To overcome this, the commission proposed an integrated asset management approach. This is a commitment to preserving and extending the life of existing assets while planning new systems comprehensively. The result is an infrastructure future where transportation, water, energy, and communication networks are viewed as parts of a single, interconnected system, managed collaboratively by all stakeholders to ensure long-term sustainability.

## Michigan Infrastructure Council (MIC)

Based on the recommendations of the Commission, the Legislature passed Public Act 323 of 2018 (the Michigan Infrastructure Council Act). Public Act 323 established the MIC within the Department of Treasury and charged MIC with developing a roadmap to implementing asset management in a standardized and systematic way across infrastructure types and jurisdictions. By creating a common set of principles and practices across agencies, we can better coordinate and plan for the state's critical infrastructure to better serve communities and deliver on our statewide infrastructure goals.

## The 30-Year Integrated Infrastructure Strategy (Strategy)

The 30-Year Integrated Infrastructure *Strategy* is a hallmark of Public Act 323 and a culmination of the early work of the MIC. Michigan requires infrastructure that connects communities, empowers individuals and businesses, and sustains the environment. By actively promoting improved asset management practices, fostering public private collaborations, and aligning state agency processes, the *Strategy* offers a holistic solution that tackles the existing infrastructure deficit, and puts policies and practices in place that avoids recurrence.



## **| Case For Urgency**

Modern infrastructure systems exhibit a high degree of interconnectedness, optimizing efficiency and service delivery. However, this very interdependent design presents a significant vulnerability in operation. A localized disruption within one system, such as a water main break, can trigger a cascading effect, impacting seemingly disparate sectors and causing widespread societal disruption and compromising quality of life. This vulnerability underscores the critical need for integrated infrastructure planning. This proactive approach moves beyond individual systems, considering the interconnected nature of these systems during the planning phase of project development. By fostering collaboration and coordination across sectors, we can build resilience that minimizes the impact of disruptions.

## **| Challenges And Opportunities**

The *Strategy* is a collaborative effort by the MIC, the Transportation Asset Management Council (TAMC), and the Water Asset Management Council (WAMC). It was shaped by the expertise and experiences of our members, testimonials from Asset Management Champions program graduates, feedback from statewide outreach, and the results of our public infrastructure survey. Throughout the development process, we sought to identify new and emerging infrastructure challenges that transcend asset classes and geography. These shared challenges are an opportunity for collaborative integrated actions.

### **Challenges That Transcend Asset Classes**

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- Asset Management Knowledge
- Data Access
- Aging Infrastructure
- Adequate Funding
- System Capacity
- Declining Reliability
- Changing Customer Demands
- Population Change
- New Technology
- Climate Adaptation
- Equity and Environmental Justice (EJ40)
- Affordability
- Workforce
- Increasing Cost (Inflation)
- Ongoing Maintenance of Data

# Actions and Strategies

## **GOAL** | Culture of Asset Management

Everyone empowered, informed, and included in shaping infrastructure that impacts their communities and lives.

## **GOAL** | Regional Infrastructure Coordination Hubs (RICH)

Transforming regional transportation planning processes into integrated infrastructure hubs.

## **GOAL** | Unified Planning and Regulatory Framework

Aligning State process and data systems to support integrated asset management approaches and investment strategies.

## **GOAL** | Rethinking Rates and Revenues

Updating our current rates and revenue structures to reflect the realities and opportunities of the 21st century

## **GOAL** | Efficient and Green Public Infrastructure Systems

Leading by example in the clean energy transition.  
Building energy security into the future public sector business model

## **GOAL** | Leaders in Emerging Technology

Maximizing the productivity of our workforce through the adoption of transformative technology

*“Integrated strategies represent a holistic approach to managing highly interdependent modern infrastructure systems. They consider not only connections between asset classes, but also connections between quality of services and quality of life.”*

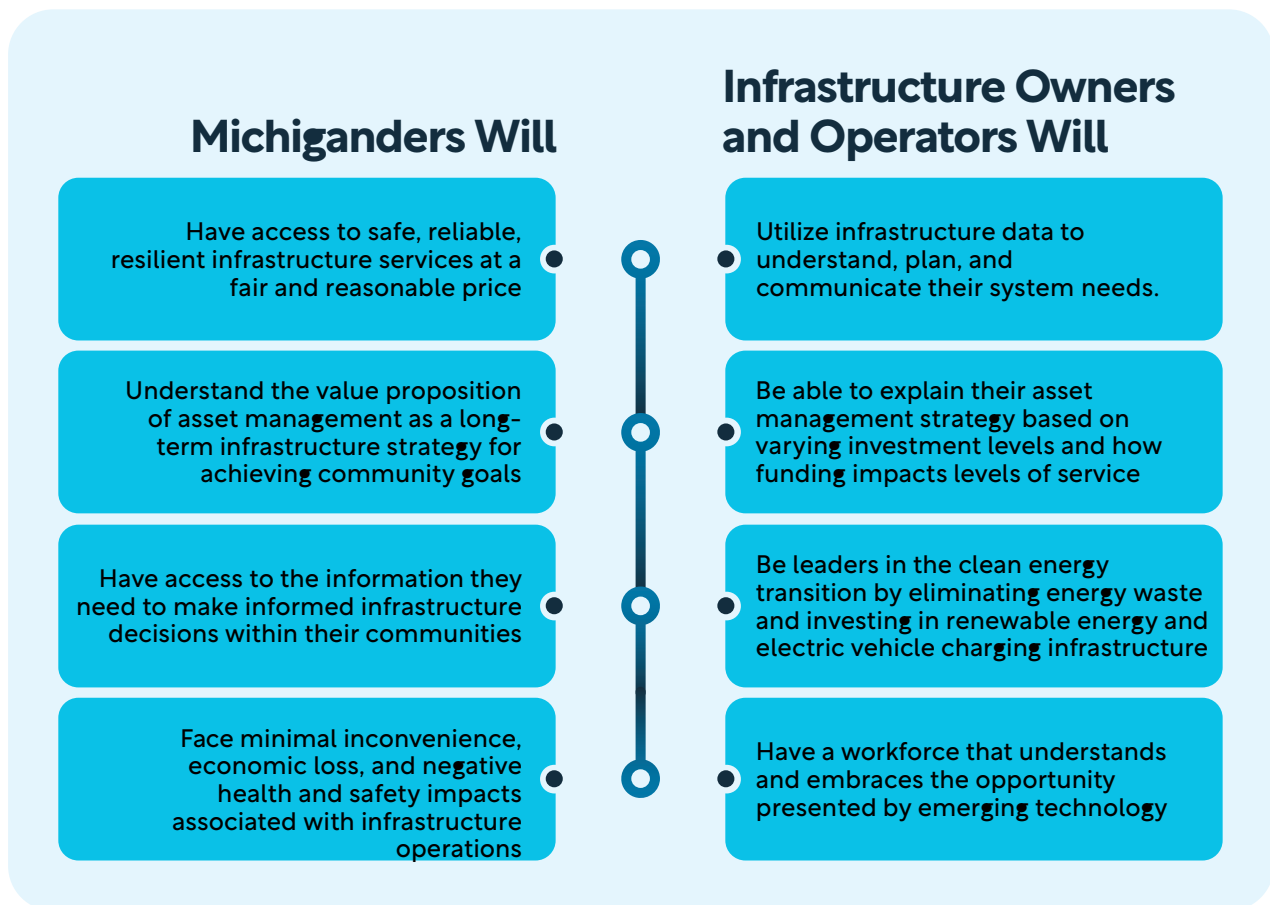
—Kathleen Lomako, Chair of MIC’s 30-Year Integrated Infrastructure Strategy



## Strategy Outcomes

The intent of the *Strategy*'s actions is not to create new statewide goals, reporting requirements or regulations. Instead, the *Strategy* chooses to explore ways integrated asset management can serve as a strategic tool for optimizing existing processes and accelerating the achievement of our existing infrastructure goals and ambitions. While the precise roadmap to our long-term aspirations is ever evolving, we can collectively navigate towards them by keeping our vision at the forefront.

By 2054 Michigan will be a place where innovative infrastructure strategies strengthen social bonds, empower a robust economy, and safeguard our natural heritage, great lakes, and quality of life for generations to come.



## Next Steps

Over the next five years, the MIC will work with others to advance the actions identified in this *Strategy* and track progress. As our collective ability to coordinate and collaborate grows, Michigan will be able to tackle more complex challenges, allowing us to expand the scope of the *Strategy* in future years. The MIC will facilitate and lead updates to the *Strategy* every five years, celebrating the successes achieved and identifying next steps to move Michigan forward.



An aerial photograph of a multi-lane highway interchange. The highway runs vertically through the center, with several lanes in each direction. It is flanked by green grass and trees. To the left, there is a large parking lot with many cars and a building. The sky is clear and blue.

# Michigan's Integrated Infrastructure Journey

2016-2023



Asset management has long been a part of the State's approach to infrastructure oversight. Recognized as best practice for understanding an organization's near- and long-term operational and capital needs, these plans are required by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) for water, Michigan Department of Transportation (Michigan Department of Transportation) for roads and bridges, and in some instances by the Michigan Public Service Commission (MPSC) for energy as part of their roles in ensuring Michiganders have access to safe and reliable infrastructure services.

While these practices are all currently done individually within these agencies, they can inform one another and increase their efficiency when organized into an integrated asset management strategy. Developing a more holistic approach and aligning these currently separate efforts was a focus of the 21st Century Infrastructure Commission, a predecessor of the MIC and the starting point of the State's integrated infrastructure journey.

## **21st Century Infrastructure Commission**

[A 2016 report by the 21st Century Infrastructure Commission](#) painted a stark picture of Michigan's infrastructure situation. Decades of deferred maintenance left bridges crumbling, roads potholed, and water systems vulnerable. These failing systems weren't just inconveniences: they posed threats to public health, environmental quality, and the state's economic competitiveness.

Michigan lacked a strategic plan for managing its infrastructure holistically. With 3,300 separate entities responsible for different pieces of the puzzle, our siloed approach was hindering progress. To overcome this fragmented approach, the commission proposed a radical shift: integrated asset management and planning across all infrastructure types. A future where transportation, water, energy, and communication networks are viewed as parts of a single, interconnected system, managed collaboratively by all stakeholders.

In 2017, Michigan launched the Infrastructure Asset Management Pilot, fueled by insights of the 21st Century Infrastructure Commission. This initiative aimed to assess our current

infrastructure management practices and identify actionable steps for immediate improvement. Through active engagement with diverse communities and stakeholders, the pilot identified critical data and process gaps that hindered collaboration between agencies. [The project's final report](#) provided a roadmap to overcome these barriers and recommended the establishment of a dedicated entity to spearhead these efforts.

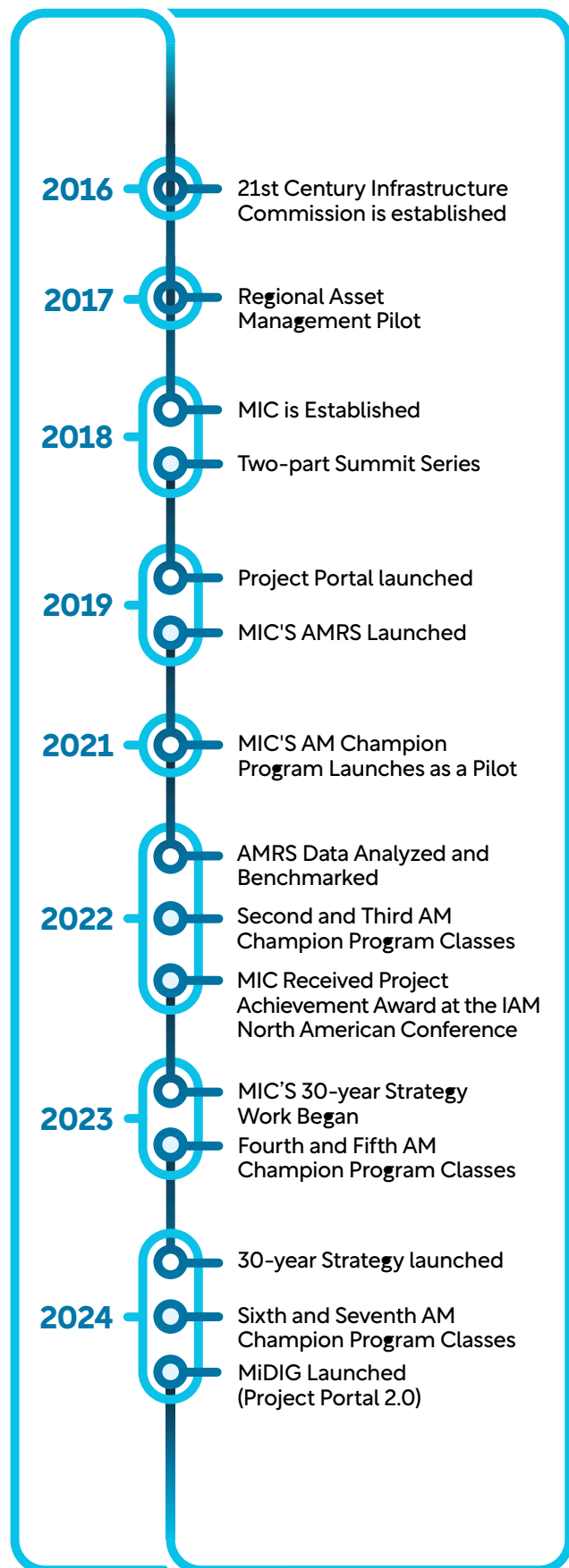
## **The Michigan Infrastructure Council**

Michigan's infrastructure suffered from isolated decision-making for years. With no central authority and numerous owners, collaborations focused on specific projects, neglecting broader improvements. Recognizing this issue, the 21st Century Infrastructure Commission report and the Regional Asset Management Pilot advocated for a unifying body: the Michigan Infrastructure Council (MIC). In 2018, this vision became reality with Public Act 323, of 2018 (Michigan Infrastructure Council Act), embedding the MIC within the Department of Treasury to guide coordinated infrastructure efforts across the state.

## **Asset Management Councils**

The Michigan Infrastructure Council (MIC) fulfills its legislative mandate through close collaboration with its sister councils, the Transportation Asset Management Council (TAMC) and the Water Asset Management Council (WAMC). These specialized councils, strategically housed within the MIC, serve as vital advisory bodies, providing expert guidance on the unique challenges and opportunities related to the state's critical transportation and water infrastructure systems.

## Michigan Integrated Asset Management Journey



## MIC Accomplishments

### AM (Asset Management) Champion Program

To strengthen AM best practices across the state, MIC launched the AM Champion Program in Spring 2021. This program combines asynchronous education, facilitated discussions, peer interactions, and industry learning into a professional certification from MIC.

- **Over 500+ asset management champion graduates from across the state**, a diverse pool represent a cross-section of organizations and staff levels across many infrastructure owners who will be driving change across Michigan over the coming decades.
- Overall, 98% of graduates feel they are better positioned to champion AM within their organizations.
- Grew the program to target decision makers and other stakeholders in 2023.

### Asset Management Readiness Scale (AMRS)

AMRS is a tool developed by the MIC to help organizations identify skills, capabilities, and tasks required to effectively plan, invest in, and deliver sustainable infrastructure systems.

- In 2021 **MIC collected 140 AMRS submissions** benchmarking AM proficiency across a diverse range of communities.
- Recognized the need for AM awareness training through submitted AMRS data. Worked to expand the class size and number of offerings of the AM Champions in response to AMRS benchmarking.
- Leverage the responses in developing annual work plans to ensure we are meeting our stakeholders where they are at in their AM journey.

## MIC Accomplishments (Continued)

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### **MIC “Dig Once” Project Portal Pilot**

Michigan Infrastructure Council (MIC) spearheaded a revolutionary transformation in 2021 with the MIC Project Portal Pilot, a web-based platform empowering both public and private infrastructure owners. This collaborative tool enables early-stage visualization and collective assessment of all construction plans within a designated area, fostering long-term, comprehensive planning, streamlined coordination discussions, and informed decision-making.

Championing “dig once” practices, the MIC Project Portal actively promotes collaboration, significantly streamlining infrastructure development by minimizing redundant excavation. This translates demonstrably into enhanced resource efficiencies, substantial cost savings, and reduced disruptions for Michigan residents and businesses.

The pilot program achieved remarkable success, attracting over 100 users, and exceeding 10,000 project entries across various asset classes. Buoyed by positive feedback and recognizing the program’s immense potential, the MIC developed a new, enhanced version of the Portal called MiDIG in 2024. MiDIG will further revolutionize infrastructure planning in Michigan, promoting greater collaboration, efficiency, cost-effectiveness, and minimized disruptions for stakeholders. Importantly, MiDIG will serve as a critical piece of the regional infrastructure coordination hubs pilot, further discussed in the *Strategy’s* actions, solidifying its role as a cornerstone for improved infrastructure planning and collaboration across the state.

### **Asset Management In The Morning (AM In The A.M.)**

Recognizing the crucial role played by consultants serving smaller infrastructure owners, MIC launched the AM in the AM webinar series in 2022. This initiative bridges the gap between the MIC and engineering consultants, who often function as proxies for these smaller owners by designing, engineering, constructing, and operating their systems.

The AM in the AM series directly connects consultants with the MIC’s programs and resources, empowering them to better serve their clients. This includes equipping them with knowledge of relevant MIC tools and training, ultimately fostering a statewide culture of asset management among smaller infrastructure owners.

### **Regional Asset Management Summits**

MIC, in partnership with the Michigan Association of Regions (MAR), executed a two-part summit series aimed at improving coordination and collaboration across asset classes in Spring of 2019 and Fall/Winter of 2019-2020. Twenty-seven summits were conducted across the state with nearly 1,000 participants representing public and private asset owners of all sizes across asset classes.



# Partnerships For Progress

For the MIC, partnerships are not just beneficial, they're essential to our success. Partnering across the state, nation, and world unlocks wider resources, knowledge, and expertise. Together we will continue to tackle complex infrastructure challenges and develop integrated solutions for a more resilient future.

## MIC Programming Partners

**Michigan Infrastructure Office (MIO)**—Since 2023, the MIC has partnered with the MIO as part of their Technical Assistance Center (TAC). The TAC helps local governments, state agencies, and tribal nations pursue federal infrastructure grants made available through the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA).

**Michigan High Speed Internet Office (MI-HI)**—Since 2022, the MIC staff has served on the Connecting Michigan Communities (CMIC) and Realizing Opportunity Through Broadband Investment (ROBIN) steering committees, helping review statewide broadband infrastructure investment plans to realize the greatest value statewide.

**Michigan Association of Regions (MAR)**—Since 2019, the MIC has partnered with the MAR to encourage communities to assess their current asset management practices using the MIC's Asset Management Readiness Scale (AMRS). MAR provides the MIC with anonymized assessments of current practices that allows the MIC to tailor education and training that meets locals where they are in their asset management journey. Results from this benchmarking were included in the MIC 2023 Annual Report.

**Canadian Network of Asset Managers (CNAM)**—Through a partnership with CNAM, the MIC developed the curriculum for our Asset Management Champions program. The training is based on best practices and lessons learned from Canada's implementation of the Infrastructure for Jobs and Prosperity Act implementation. Program participants are also provided a CNAM membership free-of-charge for up to a year after they graduate the program.

**icInfrastructure**—The asset management experts at icInfrastructure have served as key advisors and educators for the MIC AM Champions training program. With over two decades of global asset management experience, icInfrastructure has been instrumental in developing our asset management curriculum and coaching services to our Champion graduates.

**Michigan State University**—In 2022, the MIC partnered with Michigan State University's Institute of Public Utilities as part of the 2022 Michigan Forum: Sustainable Infrastructure for Michigan.

**ATOM-AI**—Following the success of the MIC Project Portal proof of concept stage in 2023, the MIC partnered with ATOM-AI to begin developing the next version of the Portal to support statewide deployment. After months of development and customization, the MIC released its Project Portal 2.0 (MIDIG) in June 2024.

**Environment, Great Lakes, Energy (EGLE)**—Michigan drinking water operators can now boost their professional development by completing the Asset Management Champions program. Thanks to a 2023 collaboration between the MIC and EGLE, graduates of the program qualify for up to 2.5 continuing education credits.

**Michigan Department of Transportation (MDOT)**—The (MIC) and MDOT initiated a collaboration in early 2024 to incorporate the Statewide Transportation Investment Plan (STIP) into the MIC Project Portal. This integration will unlock the potential of MDOT's existing data, fostering increased cooperation among local, private, and state stakeholders as we work together to modernize Michigan's roadways.







# Case For Urgency

While recent investment increases at the State and Federal level represent a significant step forward, it's important to recognize that sustained investment and proper asset management are necessary to address the full scope of infrastructure needs in Michigan. The potential economic, health and safety, and environmental consequences of inaction make long-term infrastructure reform a critical priority for ensuring Michigan's future.

## Michigan's Critical Infrastructure – A System Of Systems

Our dependence on interconnected infrastructure creates vulnerabilities during outages. Power failures, water main breaks, transportation disruptions, and communication blackouts can quickly cascade across sectors, causing widespread disruption. Transportation networks become paralyzed with inoperable traffic lights, hindering emergency response and economic activity. Communication blackouts impede coordination efforts and citizens access to banking systems and ability to use credit cards. Food spoilage due to compromised refrigeration systems cripple family budgets and lead to grocery shortages, impacting public health and economic stability.

These stark realities demand a comprehensive, coordinated approach to infrastructure management. All stakeholders, from government entities to owners and operators, must collaborate effectively. Our focus should extend beyond simply delivering infrastructure services. We should strive to build a society where essential services—reliable power, clean water, safe transportation, and resilient communication networks—underpin a high quality of life for all. Through collaborative efforts to build robust and adaptable infrastructure, we can ensure a smoothly functioning society where these services are not just delivered, but delivered in a way that promotes equity well-being and empowers communities to thrive.



## By The Numbers

**10,077,331**

Michigan's population, whose quality of life is heavily reliant on infrastructure

**31%**

Michigan households do not have an affordable, reliable high-speed internet connection

**7,500,00**

Michigan's population that rely on 1,400 different public water supplies for clean drinking water

**12%**

Michigan's electric generation is from renewable resources

**122,038**

Miles of public roadway in Michigan managed by 617 agencies

**75%**

Residential homes rely on natural gas for heating

**7,000,000**

Michigan's population that rely on 1,080 municipal water treatment facilities to protect public health and the environment

**10-50%**

Of treated drinking water is lost to leakage during delivery

**5,000,000**

Residential and commercial electric customers served by 57 different electric utilities

**30-40%**

Percentage of municipal energy bills attributable to the treatment and distribution of water and wastewater

# Current Statewide Condition Assessment

## Infrastructure System Assessment

In accordance with the Michigan Infrastructure Council Act, the *Strategy*'s development included a comprehensive, statewide assessment of critical infrastructure systems. To ensure data accuracy and consistency, the MIC collaborated with representatives from various state agencies and partner councils to review existing infrastructure condition datasets and data collection practices. The analysis identified a significant challenge in aggregating and analyzing condition data for infrastructure systems beyond transportation assets, primarily due to inconsistencies across the diverse programs and processes used to collect this information.

## 2023 Michigan Infrastructure Public Survey

While the MIC couldn't produce a data-driven assessment in time for this report, we conducted a public survey to gauge public opinion on our infrastructure systems. Public perception is a crucial factor in shaping effective policy. By understanding public views, we can effectively communicate challenges, dispel misconceptions, and prioritize infrastructure improvements based on the needs of our constituents.

### Citizen Report Card

Roads Bridges and Highways	<b>D+</b>
Stormwater Infrastructure	<b>C</b>
Drinking Water System	<b>A-</b>
Wastewater/Sewer System	<b>A-</b>
Natural Gas System	<b>A-</b>
Electric Infrastructure System	<b>B</b>
Broadband Service	<b>B</b>

The public survey had 469 participants from across the State of Michigan.

### Public Insights

**51%**

Respondents believe insufficient or unreliable infrastructure negatively impact their quality of life.

**57%**

Respondents would prefer electronic communications (email, websites, social media) on infrastructure condition, performance, and priorities.

## Conclusion

The inaugural statewide condition assessment has successfully advanced collaboration. To enhance future planning, we recommend prioritizing data standardization. This will enable better analysis, decision-making, and a statewide dashboard. The MIC can facilitate this by establishing data guidelines, ensuring quality, and promoting interoperability across agencies. This will create a more robust data ecosystem for informed infrastructure planning and management. Initial steps in this effort are outlined in the Unified Planning and Regulatory Framework action area later in this report.



# Statewide Goals and Progress Analysis

In accordance with the Michigan Infrastructure Council Act, development of the *Strategy* included a review and analysis of existing statewide priorities, goals, and net changes in asset value. This analysis included the review of recently published reports, legislation, press releases, websites, and other State databases.

## Water Goals

Meeting federal water quality standards, addressing emerging threats, preserving our waterways, and promoting environmental justice is the current priority for Michigan's water systems.

- Eliminate lead service lines in clean water distribution systems
- Control the spread of Per-and polyfluoroalkyl substances (PFAS)
- Ensure 40% of water infrastructure initiatives benefit Michigan's disadvantaged communities
- Protect 30 percent of Michigan's land and water by 2030 to naturally capture GHG emissions

## Michigan Department Of Transportation Goals

"Fixing the damn roads" has been a priority of the Whitmer Administration and a focus of recent bi-partisan state budgets. Since 2018, Michigan has repaired, rebuilt, or replaced 13,198 lane miles of road and 903 bridges. Michigan's 2023 transportation budget (\$6.3 billion) was the largest in State history.

- **95%** of freeway system in a state of good or fair condition
- **85%** of non-freeway system in state of good or fair condition
- **<10%** of national highway system in poor condition
- **<5%** of interstate pavements in poor condition
- **60%** good/fair on local, non-federal aid eligible roads

## Electric Goals

Transitioning to a clean energy economy is a clear priority for Michigan. Michigan's current energy goals are outlined in Public Act 235 of 2023. Passed in November 2023, this Legislation codifies many of the recommendations of the MI Healthy Climate plan into state law.

- **100%** Decarbonization by 2040
- **60%** Renewable Energy Standard by 2035
- **2500** Megawatts of Battery Storage by 2040
- **10,000** Electric Vehicle Charging Stations by 2030
- **40%** of State funding for climate action goes to Justice40 (EJ40) Communities
- **0**—Coal plants operational in Michigan by 2030
- **<2.5 hours**—Annual Average Customer Outage Duration
- Achieve at least **2%** annual electric energy efficiency

## Broadband Goals






Broadband plays a crucial role in shaping our quality of life. Broadband empowers individuals to increase their education level, start online businesses, connect with critical services such as tele-health, and foster innovation.

- Achieve universal broadband in Michigan by 2030
- **95%** adoption of in-home broadband for Michigan

# Investment Needs

## Funding Sources And Challenges

Michigan's roads, bridges, water systems, energy grid, and communications infrastructure each have their own funding streams and regulations. While general fund revenues are used to support publicly owned assets, there are few revenue streams that cross all asset classes, let alone all of Michigan's public and private asset owners. In areas of Michigan where regional- or community-level drinking water and wastewater systems are not in place, individual owners pay for their own wells and septic systems.

	ASSET CLASS	TYPICAL REVENUE SOURCES	CHALLENGES
TRANSPORTATION	<b>Roads and Bridges</b> 	<b>Federal Funding</b> —18.4 Cents Per Gallon <b>State Funding</b> —30 Cents Per Gallon <b>Local Funding</b> —Varying millages and special assessments based on projects.	The current funding model is insufficient to support proper asset management practices. Changes in vehicle efficiency, and increases in hybrid/electric vehicles threaten existing funding source sufficiency.
WATER	<b>Drinking Water and Wastewater</b> 	<b>Rates and Customer Bills</b> —based on volumetric charges <b>Federal Funding</b> —Grants and loans <b>State Funding</b> —Grants and loans <b>Local Funding</b> —Grant fund transfers <b>Self-Funding</b> (private wells and septic systems)	Many water systems are at the end of their useful life and require high fixed-cost for replacement. Unbilled system losses, customer conservation, and overall cost of living increases impact communities ability to raise rates to perform asset management necessary to stabilize long-term costs.
	<b>Stormwater</b> 	Drain assessment fees were approved by authorized stakeholders (limited statewide)	A lack of dedicated financial resources for stormwater management has resulted in poorly maintained systems statewide. Coupled with increasingly intense rainstorms, this has triggered catastrophic flooding events, causing substantial property losses.
ENERGY	<b>Electricity and Natural Gas</b> 	<b>Rates</b> —Residential, commercial, and industrial services based on usage	Electrification is redefining the way we use the existing electric grid requiring increased investments to ensure safe and reliable grid operations.
COMMUNICATIONS	<b>Broadband</b> 	<b>Rates</b> —Residential and Commercial Service <b>Federal Funding</b> —Community Development Block Grants, USDA Community Connect <b>State Funding</b> —Connecting Michigan Communities	Many rural areas lack the density to fully recover the costs of providing broadband services through affordable bills. Serving these areas requires significant subsidies from both the State and Federal government.



## Investment Gap Analysis

Throughout Michigan, rate structures and revenue sources have been insufficient for decades. This lack of adequate funding sources has led to significant investment gaps for our asset classes. For state government, accurately gauging infrastructure investment gaps is not just a prudent course of action, it's an essential one. This empowers informed resource allocation, prioritizes strategic spending, and facilitates development of comprehensive plans to address critical needs. For the *Strategy*, the MIC looked to update deficits that were calculated by the 21st Century Infrastructure Commission report in (2016).

Asset Class	21st Century Estimate	Updated Estimates
	Annual	Annual
Transportation	\$2.6B (Source)	\$3.9B (Source)
Water and Sewer	\$800M	\$1B (Source)
Electric	Not Available	\$8B+* (Source)(D)(C)(I)
Gas	Not Available	\$2B+** (S1)(S2)
Broadband	\$500M	~\$300M‡ (Source)

\* Electric estimate is based upon submissions from the three largest public utilities in the State. This estimate does not include smaller utilities

\*\* Natural gas is based on largest private providers. When considering smaller providers and choice providers the number is much larger.

‡ Broadband estimate is based on recent federal allocations \$1.5B from 2022-2026 to Michigan based on recent accessibility study.

## Affordability Analysis

While not required by the [Michigan Infrastructure Council Act 323](#), the MIC included an affordability analysis from a customer perspective as part of the *Strategy*. Household bills are the basis of many affordability discussions and a key metric to keep in mind when considering future infrastructure policy.

Asset Class	Average Bill (Annual)
Transportation	~\$413 (Source)
Water and Sewer	~\$1,002 (Source)
Electric	~\$1,300 (Source)
Gas	~\$900 (Source)
Broadband	~\$780 (Source)

◊ These average utility costs are for informational purposes only and individual bills may differ

## **Changes In Asset Value**

Currently, no standardized approach exists for valuing infrastructure across different asset classes (e.g., roads, bridges, water networks). This leads to inconsistencies and makes comparisons difficult. Data on asset values may be siloed within different departments or agencies, making it difficult to get a holistic view and hindering informed decision-making.

## **Future Assessments**

Having access to the big picture assessments of our infrastructure is key to effective decision-making at both the state and local levels. Based on this assessment, the MIC is prioritizing development of an integrated infrastructure dashboard on our website. The dashboard will take state housed infrastructure data and transform it into valuable infrastructure insights for local governments and the legislature to consider when making future infrastructure funding and investment decisions. First steps in this process and the MIC's commitment to leading by example are outlined in the Unified Planning and Regulatory Framework section of this report.

## **Conclusion**

Fair and reasonable rates, fees, and tax structures are the foundation of a sustainable business model, ensuring the system's financial health, environmental responsibility, and social equity amongst user bases. The core function of a rate structure is to recover the full life cycle cost of providing services. This includes not just operational expenses like maintenance and staffing, but also the cost of replacing and upgrading infrastructure over time. Underpriced rates lead to underfunding, forcing utilities to defer maintenance, compromising service quality, and ultimately creating a cycle of costly repairs and emergencies as well as long term capital investment.









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# The 30-Year Integrated Infrastructure Strategy (*Strategy*)

Michigan's once-reliable infrastructure is facing significant challenges. Years of deferred maintenance have pushed many systems beyond their designed lifespans, hindering their ability to meet the demands of a growing and evolving state. Historically, infrastructure projects have been planned and delivered in isolation, with minimal consideration for their interdependencies. This siloed approach has resulted in a fragmented system, evidenced by issues like failing water and sewer systems causing sinkholes in our roadways, power outages darkening our streets and rendering our traffic signals useless. These infrastructure deficiencies not only pose a threat to public health and safety, but also negatively impact our economic competitiveness and overall quality of life.

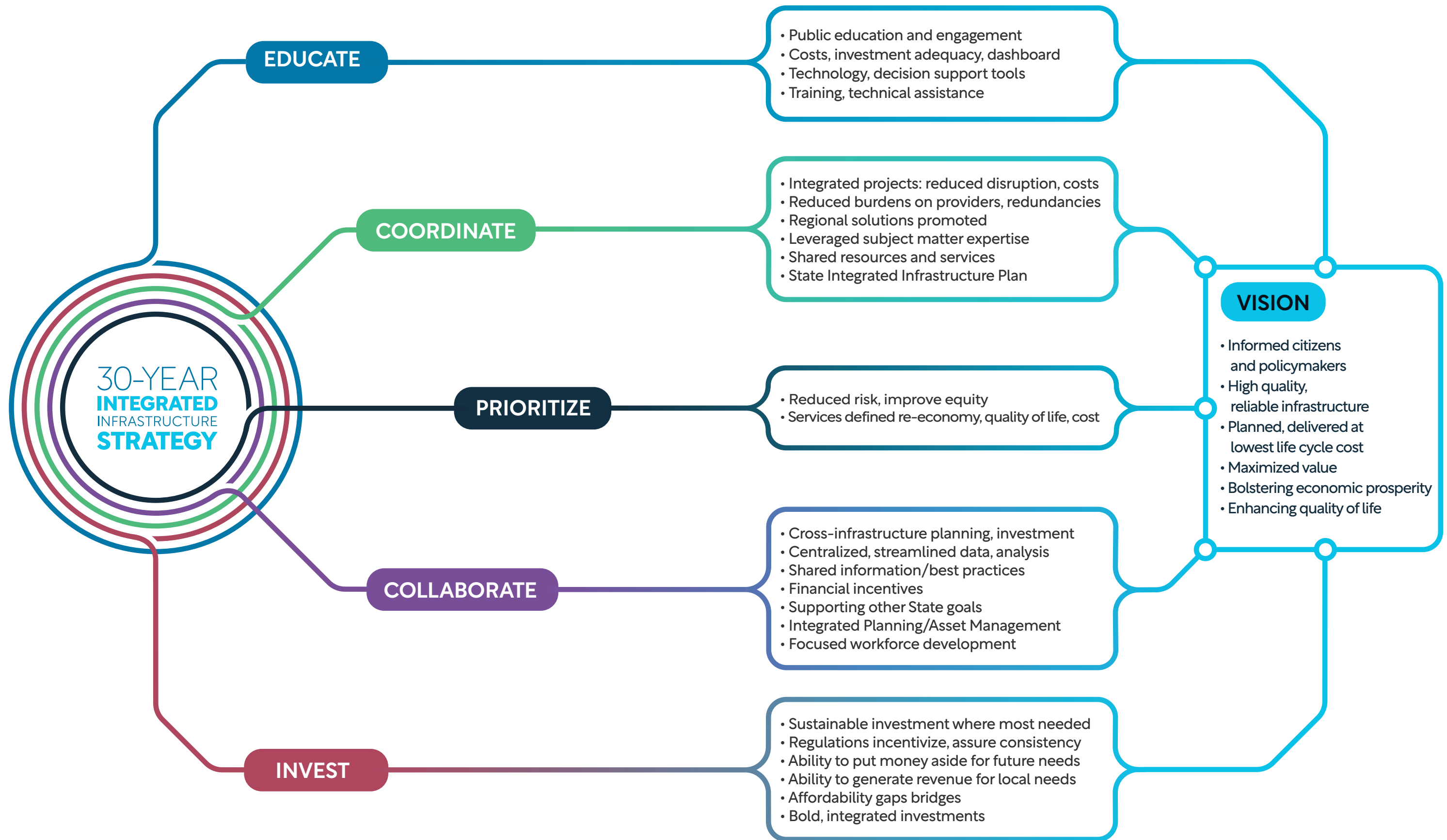
The current practice of addressing infrastructure needs through isolated projects within individual sectors leads to fragmented planning. This reactive approach fails to consider the interdependencies between infrastructure systems, resulting in missed opportunities for cost optimization and the realization of broader societal benefits. The *Strategy* proposes a paradigm shift towards a comprehensive and sustainable approach that prioritizes long-term planning and integrated infrastructure development.

## Vision 2054

Infrastructure that strengthens social bonds, empowers a robust economy, and safeguards our natural heritage, great lakes, and quality of life for generations to come.

## Integrated Asset Management

Asset management involves continually inventorying and assessing infrastructure condition so that maintenance can be planned, which extends the service life of an asset before it must be replaced. This makes it more economical to maintain performance. The result is cost savings for local communities and users, satisfaction for customers, and improved security, safety, and public health for communities. Implemented in a standardized and systematic way across infrastructure types, asset management can improve coordination and reduce life cycle cost. This integrated asset management approach serves as the foundation for this *Strategy*.









# Asset Management Education 101

Asset management is an organization-wide commitment to managing infrastructure assets in a way that delivers maximum value to customers at the lowest life-cycle costs.

## Key Components of Asset Management

Developing goals and objectives, not just fixing the broken parts

Collecting data to identify assets, their condition, remaining services life, and overall system condition

Fully funding at the level required to meet the goals and objectives of the plan

Implementing, funding, and financing

Monitoring and reporting goal progress and other results to the public and decision makers

Planning and programming, identifying a strategic plan for what parts of the system will be repaired, maintained, or replaced

## Outcomes

Improved security, safety, and public health for our communities

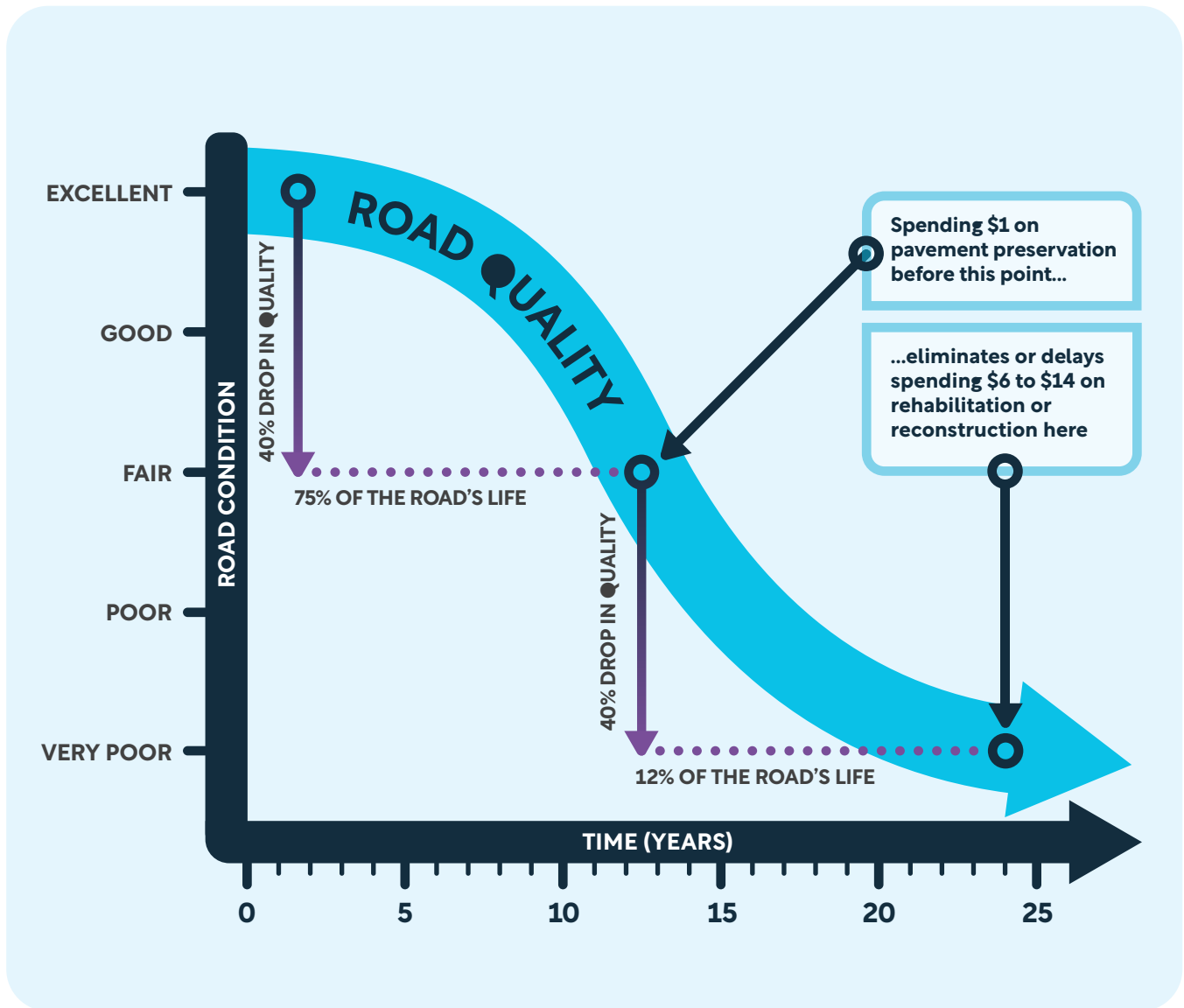
Reduced overall costs for local communities and users

Prolonged life of pipes, roads, and bridges, which reduces water main breaks, sinkholes, and potholes and travel delays or other economic impacts to the public

Satisfied customer demands, service expectations, and regulatory requirements—focusing on sustainability

Funding levels based on sound operational and financial planning

## Right Fix, Right Time



Right fix, right time is a principle of asset management that recognizes the importance of identifying and implementing the correct solution to an infrastructure problem at the appropriate stage of its lifecycle. This avoids wasted time and resources that can be incurred by fixing something too early, or too late. Similar to changing the oil in a car, if you wait too long, you may need to replace the entire engine.

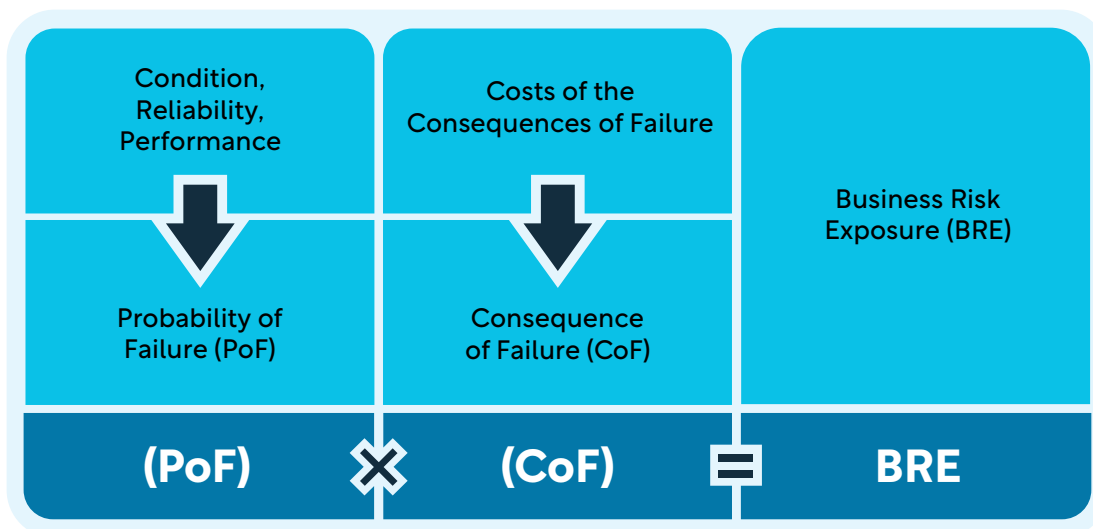


## Level of Services



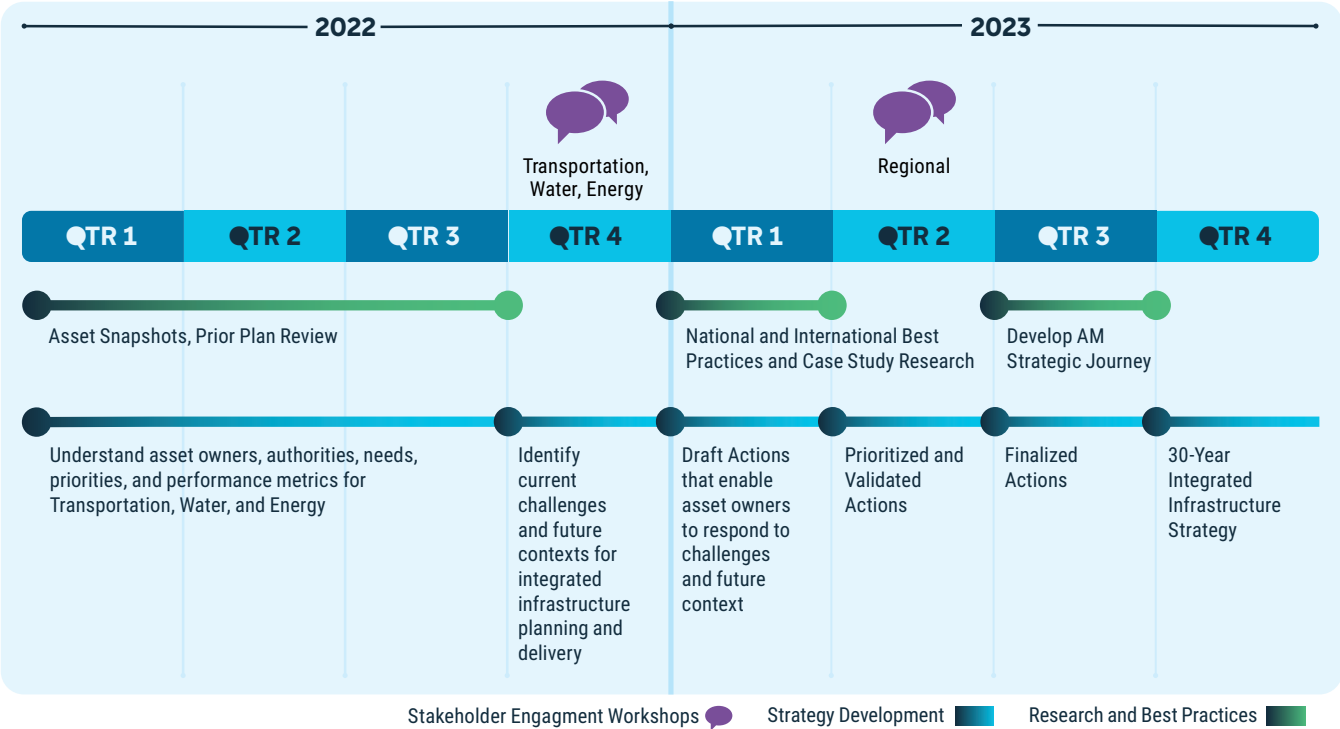
The objective of asset management is to meet a required level of service of a community, in the most cost-effective manner, while considering future users of the system. This often requires making decisions based on long-term costs rather than short-term savings like deferring maintenance. This approach preserves assets and prevents inter-generational inequities where future customers must pay expensive bills for past user's "cheap" infrastructure fixes. Levels of service is a key tool in communicating what performance users should expect from their infrastructure based on current rates, and how increasing rates can benefit performance.

## Risk Mitigation



Understanding the risks associated with each asset based on asset condition, performance, and consequences of asset failure allows for informed decision-making around investments, maintenance schedules, and resource allocation. This ensures you are prioritizing critical assets and mitigating risks through executing the plan.

# Strategy Development Process

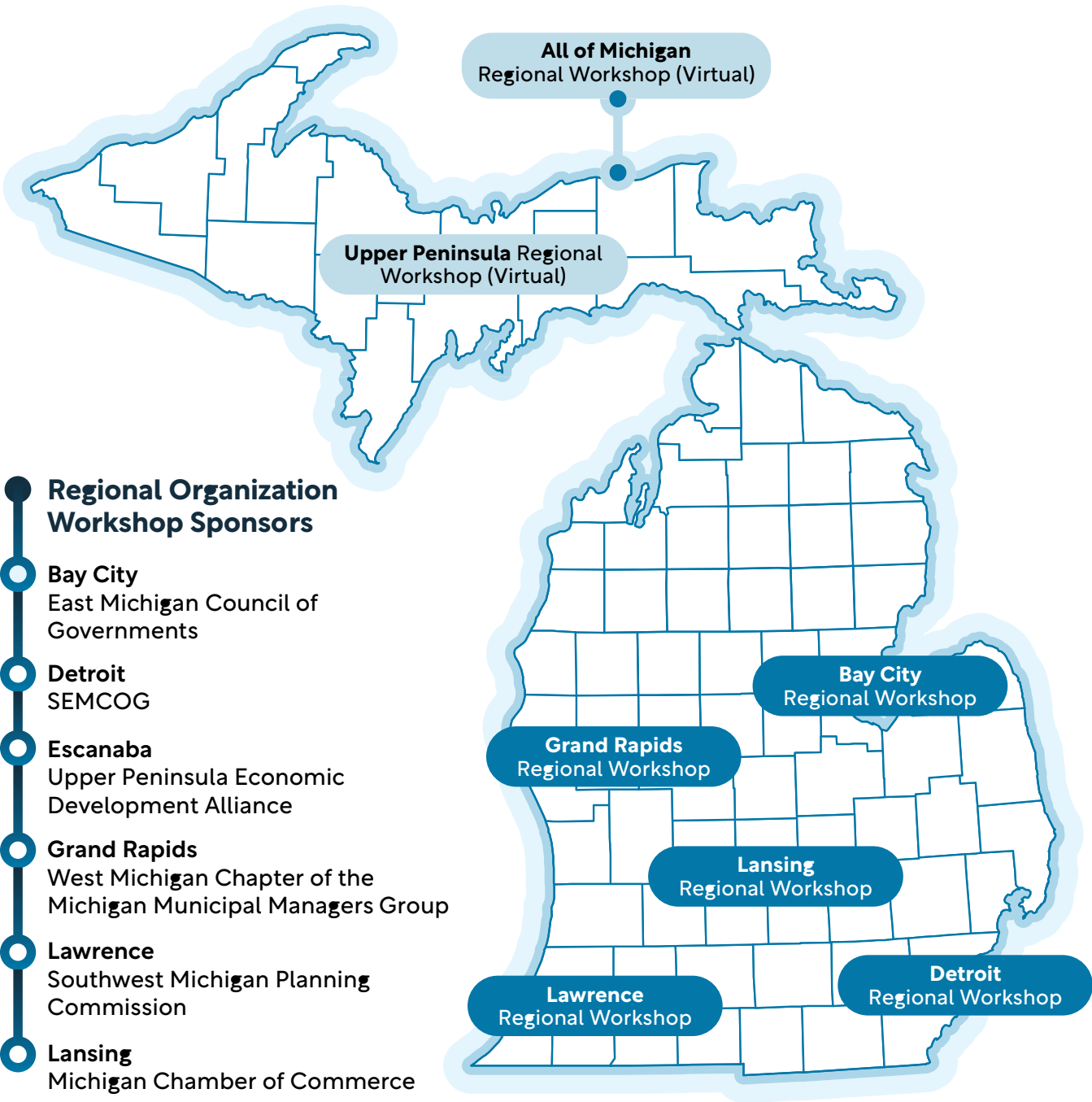


The *Strategy* was not developed in isolation. This document is a collaborative effort by the MIC, the Transportation Asset Management Council (TAMC), and the Water Asset Management Council (WAMC). It was shaped by the expertise and experiences of council members, testimonials from Asset Management Champions training program graduates, feedback obtained from statewide outreach, and the results of our public infrastructure survey.

While this *Strategy* can't solve every infrastructure issue faced by individual asset owners, it lays critical groundwork for the future. It goes beyond investing in infrastructure systems to include investing in the people and processes that ensure these systems meet the needs and expectations of the communities they serve.

The *Strategy* argues for rethinking our past siloed approach to infrastructure management in favor of a more integrated future. It is intended to:

- Encourage community discussion about infrastructure needs and opportunities.
- Guide investment prioritization towards impactful and sustainable solutions.
- Promote sound sustainable investments that consider long-term benefits and environmental impact.
- Minimize citizen inconvenience through greater coordination and collaboration. This will enhance infrastructure performance and improve the quality of life for Michigan residents.



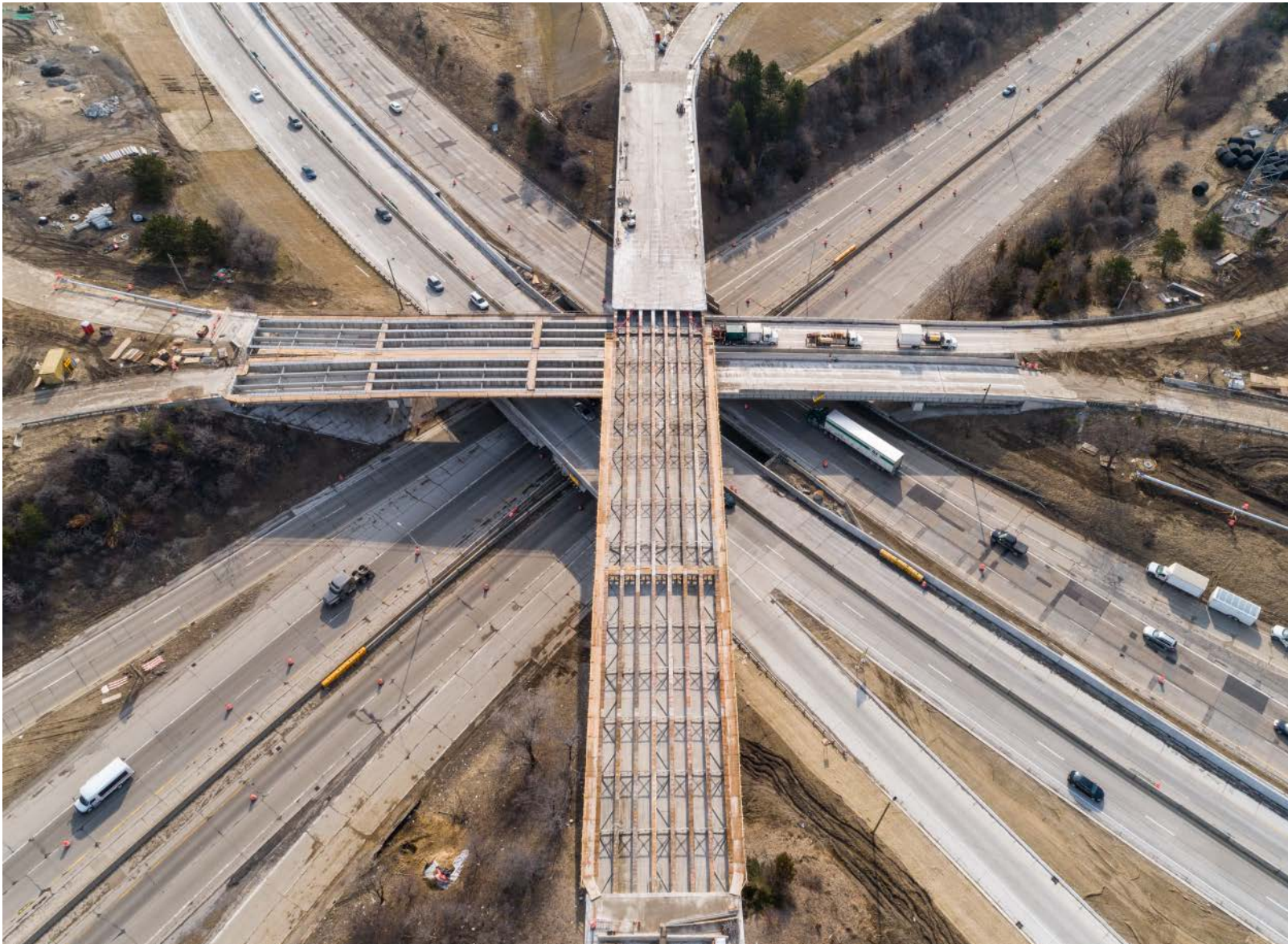


# Current and Future Challenges

The *Strategy* isn't a top-down plan from State government. It's a collaborative effort, built on the voices of those who know infrastructure best: the people who use, maintain, and manage it. From rural communities to bustling cities, infrastructure owners, operators, planners, and even everyday citizens shared their concerns and visions.

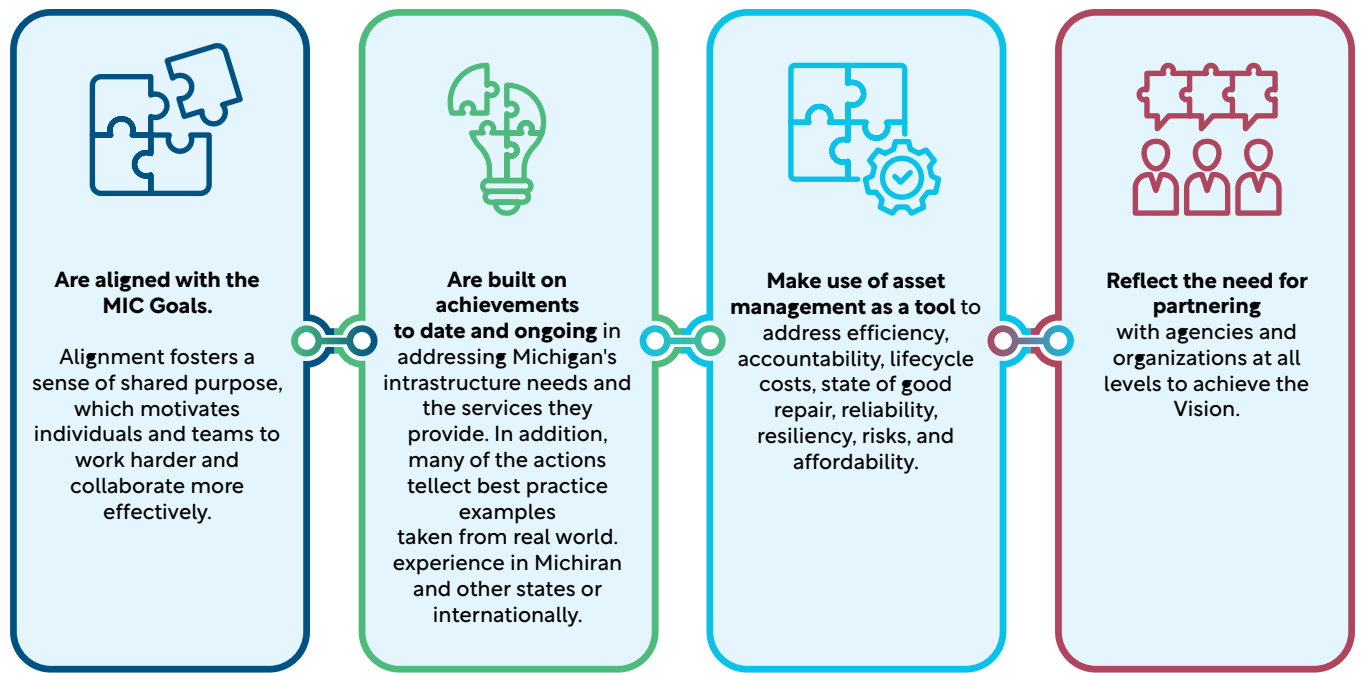
We didn't just talk about the problems of today; we looked ahead and asked stakeholders, "What challenges will our infrastructure face in the future, due to climate change, technology, or changing demographics?"

By listening to these diverse perspectives, the *Strategy* wasn't just informed by reality, it was built on it. The actions and outcomes reflect the needs of communities and practitioners, ensuring a roadmap that tackles current challenges and prepares for the future, simultaneously.



# The Actions

The actions of the inaugural Strategy focus on the short-term (1–5 years) and building the foundations necessary to support our long-term transformative vision for Michigan’s infrastructure. By rolling out changes in smaller phases, we will gain real-world experience and feedback early on. This will allow us to identify and address potential issues and propose alternatives before they can disrupt the overall Strategy. The roles in implementing these actions are intentionally broad and range from elected officials to infrastructure users. Because we all have a role in improving Michigan’s infrastructure future, we need to start growing into those roles together to implement long lasting change. The *Strategy* starts this process.





# Statewide Culture of Asset Management

Everyone has a role in improving our infrastructure situation. Ensuring everyone understands and embraces their role is critical to the success of this *Strategy*. Effective infrastructure management requires a shared understanding among those who own, operate, pay for, and use these essential infrastructure services. While asset management plans and processes are becoming more familiar to infrastructure specialists, the long-term business case and return on investment are not well understood by the broader public. Helping everyone understand how investing in asset management now can stabilize infrastructure costs and improve performance overall will be key to securing the necessary funding to develop and implement sound asset management policies and plans.

## Objectives

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### | Objective:

**Every Public-Sector Employee Has Access to Standardized Infrastructure Asset Management Training.**

### | Strategy:

**Continue The Asset Management Champions Program And Explore Program Structures That Improve Access To Training In The Long-Term.**

Since 2021, MIC AM Champions program has trained over 500 infrastructure practitioners in the principles and processes of asset management and how to assess their current management practices against best practices using the Asset Management Readiness Scale (AMRS). In 2023, to meet growing demand for the training, the MIC expanded the number

of cohorts offered annually as well as the size of each cohort. Continuing to meet the demand for this entry level training will be a priority of the MIC. The MIC Asset Management Education Committee is currently exploring opportunities to expand the program permanently.

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### | Objective:

**Preparing Elected Officials and Administrators for Asset Management Policy And Plans.**

### | Strategy:

**Partnering with the Michigan Municipal League, Michigan Townships Association, MME, GFOA, and Others, The MIC Will Develop an Abbreviated Asset Management Training That Focuses on the big Picture.**

Implementing an effective asset management program can be a significant challenge for local agencies, often hindered by a lack of buy-in from administrators and elected officials.

Often lacking formal training on the big picture of asset management and the business case, these individuals are rightfully concerned with the short-term costs of implementation.

## **| Objective:**

### **Aligning Our Vision with Private Consultant Practices**

## **| Strategy:**

- 1) Holding Regular Forums with Private Sector to Provide Updates On MIC Programs.**
- 2) Integrating Private Sector Subject Matter Experts in MIC Committees and Training Programs.**

MIC recognizes the importance of partnering with the consultant community because many public infrastructure owners rely on the private sector to construct, operate, and maintain their infrastructure assets. Ensuring these companies

are aware of MIC's vision and engaged in building our asset management culture among infrastructure owners, support will be vital to ensuring all communities' benefit.

## **| Objective:**

### **Creating an Informed Citizen Who Understands and Embraces Their Role in Our Integrated Infrastructure Future.**

## **| Strategy:**

#### **MIC Will Develop A Series Of Citizen Guides To Infrastructure Systems.**

A recent survey conducted by MIC revealed valuable insights into how to enhance public understanding and support for infrastructure investment. The goal of the survey was understanding public perception of infrastructure condition and performance and gauge the effectiveness of our current educational approaches. As outlined earlier in

the Strategy, the public often overestimates the condition of underground infrastructure they cannot see when compared to engineering assessments. The survey also revealed the public desired opportunities outside of public meetings to better understand investment priorities and asset management strategies of their communities.

# Regional Infrastructure Coordination Hubs (RICH) Pilot

For decades, regional planning agencies have navigated the complexities of interconnected issues like transportation, economic development, and environmental sustainability. They bring together diverse voices – local governments, businesses, and residents – to find solutions. When it comes to planning and implementing integrated infrastructure projects, local leadership is crucial, and regional agencies like RICH are uniquely equipped for the task. As a trusted, neutral facilitator, RICH will be the driving force behind this *Strategy*, ensuring local voices lead the way to a sustainable future through collaborative, integrated infrastructure projects.

## Objectives

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### | Objective:

#### **Develop a Framework for an Integrated Infrastructure Planning Process.**

Regional planning agencies across the state are well poised to be the center of future integrated infrastructure planning. With longstanding transportation planning processes in place that already convene a multitude of stakeholders, they have the skills and expertise necessary to deliver a “dig-once future.” By expanding their processes to incorporate

water, energy, and telecommunications providers during the pilot, we will better understand what it takes to deliver integrated infrastructure solutions. We will also gain valuable understanding of how the Project Portal can be utilized as a tool to facilitate and support integrated infrastructure projects.

### | Strategy:

#### **MIC Will Partner with Regional Planning Agencies to Develop a Framework for Comprehensive Infrastructure Planning and Better Understand the Resource Needs of Rich Operations Based on Different Objectives.**

Based on the Results of the Pilot, The MIC Will Develop a Funding Proposal for Statewide Deployment.



## Secondary Areas Of Investigation

While growing the existing MIC Project Portal and its user base will be the short-term priority of the RICHs, MIC plans to collaborate with pilot participants to further explore other opportunities

to expand their services to better support an integrated infrastructure future in Michigan. Below are ideas and areas of interest identified through the *Strategy* outreach participants.

### | Networking And Professional Development For Asset Managers

A local forum where asset management professionals can grow their network and gain valuable insights into local best practices and

initiatives. Holding periodic meetings and gatherings to discuss local infrastructure issues, challenges, and integrated solutions.

### | Developing Community Engagement Strategies

Community-based asset management programs such as adopt-a-road and adopt-a-drain were identified by many outreach participants as best practices for providing citizens hands-on experience with infrastructure and teaching the importance of infrastructure maintenance

programs. Thoughtfully engaging the public in asset management will be key to the success of this *Strategy*. RICH will play a leadership role in exploring and developing programs and outreach that help citizens engage and better understand asset management practices.

### | JUSTICE40

Ensuring funding and benefits from climate action flow to Michigan's 350 Justice40 communities' census tracts will require preparing these communities to seek and receive state and federal funding. In partnership with the Michigan Infrastructure Office's Technical Assistance Center (TAC) and RICH, MIC will partner with Michigan engineering firms to

provide asset management services to Justice40 communities. By collecting infrastructure data and assessing the current state of the infrastructure using asset management principles and practices, these communities will be able to better plan infrastructure projects and seek state and federal funding.

### | Exploration of Shared Services and Mutual Assistance Programs

Shared services and mutual assistance offer a valuable approach for regions to optimize asset management and mitigate the impact of infrastructure failures. Significant cost savings can be achieved by pooling resources and expertise across municipalities eliminating duplication of efforts, reducing administrative

costs, and facilitating faster service restoration after an infrastructure failure. Sharing specialized personnel and equipment allows smaller communities to access expertise they might not otherwise afford, leading to higher-quality and more efficient service delivery.

### | Piloting Emerging Technologies — Asset Management

Regional testbeds are valuable tools for accelerating adoption of innovative infrastructure technologies by de-risking innovation, demonstrating benefits, and facilitating customization and scalability. By addressing challenges in funding, data sharing, and scalability, regional testbeds can play a significant role in achieving the full potential of

innovative infrastructure solutions to address critical challenges across communities. As MIC looks to establish Michigan's infrastructure owners as leaders in emerging technologies, we will need a place to pilot these ideas in a variety of real-Michigan scenarios to gather feedback and results that can be shared and leveraged statewide.

# Unified Planning and Regulatory Framework

Unlocking the full potential of the MIC's integrated infrastructure vision requires collaboration and coordination that extends beyond local and regional agencies to include the State departments. By aligning our asset management processes with our regulatory models we can create a compliance by design approach to future oversight. By aligning our data systems, we can turn siloed infrastructure data points into valuable insights that can educate and inform state and local infrastructure investment and priorities.

## Objectives

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### | Objective:

#### **Integrating Infrastructure Dashboard**

### | Strategy:

**MIC Will Work With TAMC, WAMC, and the Department of Treasury to Develop an Integrated Infrastructure Dashboard. The Dashboard Will Transform Infrastructure and Financial Data Reported to the State Into Valuable Insights for Decision Making.**

The long-term goal of MIC is to transform state infrastructure data into a strategic asset, enabling better decision-making at both state and local levels. This vision necessitates development of a comprehensive database that gathers infrastructure data from across hundreds of regulatory processes and presents it in a user-friendly interface accessible to the community

leaders and citizens. Currently, the TAMC transportation dashboards serve as an effective public facing tool for measuring our statewide transportation goals. By building upon this model, we can bring useful insights to state and local decision makers about infrastructure needs and performance across all asset classes.

### | Objective:

#### **Aligning Funding Streams and Permitting to Unlock Integrated Solutions.**

### | Strategy:

**MIC Will Work With Michigan Department of Transportation, EGLE, MPSC, and Local Governments to Identify Barriers and Opportunities for Aligning Existing Funding Streams to Support Integrated Infrastructure Projects.**

The MIC will work with MIO on their streamlined permitting project to better understand current practices and identifying changes necessary to better support future integrated infrastructure projects. Aligning various funding streams dedicated to specific assets can be a powerful tool to incentivize comprehensive infrastructure projects. By pooling resources from diverse sources like transportation grants, environmental remediation budgets, and economic development funds, stakeholders can approach infrastructure projects with a broader

perspective. When various funding streams come together, it encourages collaboration between different agencies and jurisdictions building stronger regions and, in turn, a stronger Michigan. By aligning infrastructure grant and loan offerings and promoting collaboration through scoring criteria, we can create strong incentives to pursue integrated infrastructure solutions that maximize the return on public investments. By creating a streamlined permitting process for integrated projects, we can further increase this incentive and promote a dig-once future.

## **| Objective:**

### **Incorporate Transportation Plans in the Project Portal as a Baseline.**

## **| Strategy:**

- 1) MIC Will Collaborate With The Michigan Department of Technology, Management and Budget (DTMB), Michigan Department of Transportation, and TAMC to Establish Data Connections Between Existing Data Sources and the New MIC Project Portal.**
- 2) MIC Will Investigate Other Plans and Data Sets Held by the State Departments That Could Be Integrated Into MiDIG.**

Eliminating redundant reporting by local and regional governments by improving our ability to share infrastructure data within state departments will be a priority of MIC. In developing the *Strategy*, MIC worked closely with Michigan Department of Transportation and DTMB to explore opportunities to integrate

existing transportation planning data captured in JOBNET and the TAMC Investment Reporting Tool (IRT) into the MiDIG. By integrating this data into the Project Portal, without the need for resubmission by road agencies, we eliminate redundancy in reporting.

## **| Objective:**

### **Leveraging Collective Expertise Through Cross Council Collaboration**

## **| Strategy:**

- 1) MIC Expands Its Committee Structure to Include Representation From Both WAMC And TAMC.**
- 2) The MIC Will Host an Annual Cross Council Strategic Planning Meeting Where the Councils Will Align Annual Work Plans and Strategies.**

To achieve the 2054 vision, MIC, WAMC, and TAMC are committed to seamless collaboration and coordinated efforts. We recognize the power of diverse perspectives and the unique solutions that emerge from working together.

Building on the learning and appreciation gained during the *Strategy* development, we will align our operations, combine our expertise, and join forces to deliver on its actions.

## **| Objective:**

### **Hosting an Inaugural Integrated Infrastructure Conference**

## **| Strategy:**

### **MIC, WAMC, and TAMC Will Host an Inaugural Integrated Infrastructure Conference to Showcase the *Strategy* and Build Awareness and Support for Future Efforts.**

Conferences and seminars present an opportunity to bring together stakeholders from across Michigan to break down silos and build relationships that foster future collaboration. They also offer unique opportunities to bring together asset classes

to think in an integrated approach to asset management and capital development. Our first conference was held in August 2024, planned collaboratively by the MIC, TAMC, and WAMC.



# Rethinking Rates and Revenues

A robust system for pricing and revenue generation is fundamental to sound asset management practices. Implementing effective rate structures guarantees sufficient cash flow to finance crucial investments and ongoing maintenance of our infrastructure networks. While one-time infusions of infrastructure funding can temporarily alleviate current deficiencies, they do not address the underlying systemic causes of their existence. Predictable cash flow from a well-designed system allows for consistent budgeting and planning, avoiding the boom-and-bust cycles fueled by one-time injections. This enables proactive maintenance and prevents costly breakdowns in the future. This is the path to sustainability, and helping others down that path is a short-term priority of the MIC.

## Objectives

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### | Objective:

#### Increasing our Advocacy for Funding and Finance

### | Strategy:

**MIC Will Establish a Funding and Finance Committee to Oversee Our Advocacy Efforts. The Committee Will Collaborate With Academics, Associations, and the Private Sector to Develop Consensus Driven Policy Recommendations for the Legislature.**

The way we currently pay for fixing and maintaining Michigan's roads, bridges, water systems, and other infrastructure is outdated and won't be enough eventually. This is because people are using less gas for cars and heating, using less water overall, and there are changes in our population. These factors mean the old ways of collecting money (like gas taxes and water bills) won't bring in enough to keep everything in good shape.

If we don't find a new way to pay for infrastructure, things will only get worse, which will make life harder for everyone in Michigan. To fix this, we need to be open and honest about how much things cost (transparent rate reforms) and come up with a long-term asset management plan for funding our infrastructure so it can be properly maintained for years to come.

### | Objective:

#### Building Rate Analysis and Rate Making Into Our Finance Departments

### | Strategy:

**Partnering With Academic Institutions and Private Consultants, The MIC Will Look To Provide Low- or No-Cost Ratemaking Training for Public Finance Professionals.**

Building sustainable and equitable water rates requires a dedicated team of government experts with deep community understanding. This team should possess expertise in cost-balancing, equity with a focus on low-income assistance programs, and conservation strategies achieved through innovative rate structures. Climate change and evolving

customer behaviors necessitate timely adjustments to rate structures, making a dynamic approach crucial to safeguard long-term infrastructure investments. By fostering strong community engagement alongside in-house ratemaking expertise, we can ensure cost recovery, promote fairness for all water users, and cultivate trust with the public.

## **| Objective:**

### **Ensuring Access in a Rising Cost Environment**

## **| Strategy:**

**The Funding and Finance Committee Will Partner With Social Service Networks, Michigan Department of Health and Human Services, and The Michigan State Housing Development Authority to Promote and Advocate Policies That Ensure All Michiganders Continue to Have Access to Safe, Reliable, and Affordable Infrastructure Services.**

While subsidizing utility bills offers temporary relief for low-income residents, it doesn't address the root causes of high bills. The state needs to prioritize long-term solutions like efficiency upgrades, weatherization programs and plumbing repairs, alongside rate reform that reflects how different demographics utilize infrastructure. Upgrading our infrastructure is vital, but we must ensure a just transition that doesn't disproportionately burden low-income communities.

Reconciling affordability, equity, and significant investment needs is complex, but achievable.

Rate reform and upgrade programs need to be implemented in parallel. Data-driven rate structures that reflect usage patterns can help. However, in many cases, this alone won't be enough. Strong partnerships between social service networks, state assistance programs, and utility companies are crucial.

These partnerships will bridge the gap between customer ability to pay and the cost of service. This ensures essential services remain accessible for vulnerable residents while preserving the financial health of service providers, ultimately leading to better asset management.

## **| Objective:**

### **Diversification of Revenues for Financial and Climate Resilience**

## **| Strategy:**

**MIC Will Work With the Department of Treasury to Draft Guidance for Communities Interested in Developing Clean Energy Revenue Streams.**

Traditionally, infrastructure projects have relied on established sources like user fees, property taxes, and government funding. While these remain important, exploring clean energy revenue streams offers a promising path towards affordability for Michigan citizens. Recent legislation opens doors for communities: expanding on-site renewable generation, offering tax breaks for clean energy

installations, and enabling innovative business models for electric vehicle charging networks. By empowering communities to unlock these new revenue streams, we can not only diversify our infrastructure funding but also position Michigan as a leader in the clean energy transition, creating stronger communities for the future.

# Efficient and Green Public Infrastructure Systems

MIC will empower the public sectors to be leaders and role models in our clean energy journey. As outlined in the MI Healthy Climate Plan, broad decarbonization of Michigan's economy is critical for ensuring Michigan remains a great place to live and work. Infrastructure operations including streetlighting, pumping of stormwater and sewage, water and wastewater treatment, fleet operations, and conditioning of ancillary buildings comprises a meaningful portion of the statewide energy consumption and carbon emissions. Due to the age of these systems, many of the assets use obsolete technology that is energy intensive compared to their modern counterparts. By strategically eliminating this energy waste and greening our infrastructure operations, we can lower the costs of operating these systems.

## Objectives

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**Objective:**  
**Public Sector Energy Management Systems**

**Strategy:**  
**MIC Will Work With MPSC, EGLE, Private Utilities, and the Private Sector to Explore Development and Procurement Options for Municipal Energy Management Systems.**

Gathering and analyzing energy usage data is the first step in effective energy management. Historically, this process has been time consuming for public sector customers given their total energy burden is spread across multiple bills paid by different employees across departments. Piecing this data together to understand the big picture of municipal energy usage is critical to developing municipal energy strategies. Today,

commercial software solutions exist to aggregate this data and transform it into actionable steps. Unfortunately, these software solutions are often cost prohibitive for municipalities with already limited resources. Overcoming this obstacle and improving access to energy management software for the public sector is a key first step in municipal decarbonization.

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**Objective:**  
**Targeting Energy Waste Reduction Programs to Improve Equity**

**Strategy:**  
**Working With the MPSC, Local Governments, and the Legislature to Implement the New EWR Provisions of Michigan Clean Energy Future Law.**

Energy waste reduction (EWR) offers a substantial return on investment, with every dollar invested generating \$2.73 in benefits. As our annual EWR budget surpasses half a billion dollars and targets double, ensuring equitable distribution of these benefits becomes paramount.

Instead of solely focusing on individual customers, strategically targeting municipal infrastructure operations with future EWR funding creates a multiplier effect. By improving pump efficiency,

switching to LED lighting, weatherizing public buildings, and electrifying fleets, we can unlock significant operational savings for local governments.

These savings can then be passed through to communities in tangible ways, such as rate reductions, tax credits, or reinvested in further system improvements. This collaborative approach leverages EWR's true potential, maximizing benefits for everyone.



## | Objective:

### Public Right-of-Way as Clean Energy and Broadband Asset.

## | Strategy:

### MIC Will Work With MPSC, Michigan Department of Transportation, and Private Electric and Broadband Providers to Identify Current Process and Legislative Barriers That Exist to Better Leveraging the Right of Way for Clean Energy And Connectivity.

Underutilized land can be a powerful clean energy and broadband asset for state and local government. The clean and connected future will require significant adjustments to electric grid layout and finding economic ways to deliver broadband to rural communities. Recent guidance from the FHWA allows state and local governments to allow Clean Energy and Connectivity projects in the Federal-aid highway right-of-way.

Among the reasons for the guidance was to better leverage the full value and productivity of existing ROW assets and to promote energy security by diversifying energy generation and delivery methods. By co-locating future solar, broadband, and electric transmission in our highway right-of-way, we can accelerate the time it takes to site, permit, and build our clean energy future with minimal citizen inconvenience at a lower cost.

## | Objective:

### Exploring Pathways to Community Solar

## | Strategy:

### MIC Will Work With EGLE, MPSC, Local Governments and Private Electric Utilities to Assess the Existing Barriers of Community Solar.

Outreach discussions revealed concerns about the high energy burden associated with the operations of infrastructure systems. Stakeholders worried about rising energy costs throughout the state and their impact on infrastructure providers' ability to perform and implement proper asset management programs. Many saw potential in using blighted properties for solar panel installations to generate clean energy and offset local consumption helping provide more predictable energy costs in the future. Community leaders expressed interest in pursuing community solar programs similar to other states that allowed for the utilization of blighted and brownfields for solar installations

that could offset consumption across multiple sites. The MIC acknowledges the need to explore renewable energy solutions for Michigan's infrastructure. We will leverage our expertise of both public and private sector energy leaders to better understand the barriers to community solar. This partnership will focus on exploring the challenges and opportunities associated with program implementation, ultimately leading to the development of a roadmap for improved utilization of renewable energy within our infrastructure systems.

# Leaders in Emerging Technology

In implementing this *Strategy*, MIC will establish Michigan as a national leader in deployment of a smart infrastructure systems. The practice of infrastructure management is evolving rapidly, fueled by the convergence of emerging technology and universal broadband. Integrating these innovative processes into our asset management approaches has the ability to increase the safety and reliability of our services and the productivity of our infrastructure workforce.

## Objectives

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### | Objective:

#### **Evolving and Enhancing The MIC Project Portal**

### | Strategy:

#### **MIC Will Hold Portal User Feedback Sessions to Identify Areas for Improvement and Upgrade the System to Better Serve Its User Base.**

Since the launch of the pilot in 2019, the MIC Project Portal has been a testbed for inter-agency collaboration ideas and processes. It evolved from a concept in the Regional Asset Management Pilot, to a digital sandbox where organizations can engage with

their peers in coordination and collaboration efforts necessary to dig less and accomplish more. While the Portal will move from pilot project to full deployment in 2024, our commitment to continuously improving the product remains.

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### | Objective:

#### **Increase Use of Emerging Technologies to Advance Asset Management Capabilities**

### | Strategy:

#### **Partnering With Michigan Department of Transportation, RICH, and the Office of Future Mobility to Understand and Eliminate Barriers to Increased Utilization of Emerging Technology in Asset Management.**

Drones have become powerful tools for asset management, offering a range of benefits for inspecting, monitoring, and maintaining infrastructure assets. They offer a cost-effective and efficient alternative to traditional inspection methods, leading to significant cost savings and improved operational efficiency.

Additionally, drones enhance safety by eliminating the need for personnel to work in hazardous environments, and they provide detailed data collection and enable data-driven decision-making. Rules for utilizing these technologies for asset management and all the necessary licensing are not clear at this time.

## | Objective:

### Leveraging Computerized Maintenance Management Systems (CMMS)

## | Strategy:

**Working With WAMC, EGLE, and the Legislature, MIC Will Explore Opportunities to Leverage The State's Economies of Scale to Provide Computerized Maintenance Management Systems at Low- Or No-Cost to Public Infrastructure System Owners.**

Leveraging modern data analysis tools such as CMMS can quickly transform our approach to infrastructure management statewide. These tools empower informed decision-making through improved situational awareness, streamlined data acquisition, and insightful analysis.

This translates to:

- Strategic planning: Data-driven decisions for future investments.
- Optimized maintenance: Prioritization of critical assets and efficient resource allocation.
- Cost reduction: Lower operational expenses through streamlined processes and improved workflow.

By leveraging the economies of scale offered by the state, like the successful implementation of ROADSOFT, these tools can be made more accessible to smaller communities that often lack dedicated software budgets. This broad access can significantly accelerate the adoption of best practices and enhance the sustainability and affordability of public infrastructure systems for all citizens, regardless of their community size. Furthermore, the implementation of these tools will accelerate agency asset management journeys, fostering a more proactive and efficient approach to infrastructure management across the state.

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## | Objective:

### Retrofitting our Infrastructure for Real-Time Monitoring and Awareness

## | Strategy:

**Working With the Legislature, EGLE, Michigan Department of Transportation, and Others, MIC Will Look to Develop Funding Streams for Retrofit Investments and Development of Smart Infrastructure Systems Statewide.**

Network intelligence and advanced sensors empower infrastructure owners to gain deeper insights into their day-to-day operations, unlocking previously hidden information unavailable in the analog era. Retrofitting existing systems with this technology can shed new light on longstanding problems and enable data-driven decision-making. Combining this approach with emerging artificial intelligence

further magnifies the value by unlocking future predictive insights. The benefits of real-time data insights, remote asset management, advanced analytics, and edge computing significantly outweigh the initial investment costs. These benefits lead to improved asset performance, enhanced resilience, sustainable infrastructure management practices, and informed investment decisions.





# 30-Year Strategy Conclusion

The Michigan Infrastructure Council (MIC) is dedicated to realizing the vision of the 30-Year Integrated Infrastructure Strategy. Michiganders deserve a sustainable and resilient infrastructure system that addresses current gaps and prepares for the future.

The 30-Year Strategy proposes an integrated approach through coordinated investments through strategic partnerships and collaborative planning, and smart infrastructure investments using asset management principles such as lifecycle costing and preventative maintenance. By working together towards our common goals, we will lay the foundation for public health, environmental well-being, economic prosperity, and a high quality of life for all Michigan residents.

Infrastructure management is a shared responsibility. All communities should benefit from a holistic, integrated system. Therefore, the MIC will continue to champion effective practices that align with existing partner goals, maximizing impact.

The MIC will collaborate with partners to track progress on the *Strategy's* actions and expand

its scope in future iterations. Collaboration, coordination, education, investment, and prioritization will remain core values guiding this work. This will accelerate the adoption of best practices and collaborative planning statewide, ultimately delivering the robust infrastructure system Michiganders deserve.

The MIC will lead updates to the *Strategy* every five years. This ensures responsiveness to evolving needs and our changing environment. The next iteration will leverage a more comprehensive understanding of the state's transportation, water, energy, and communications assets and their condition. This will enable a more refined analysis of investment needs, current infrastructure conditions, and priorities across asset classes. Additionally, it will enhance network intelligence in asset management planning and monitoring.

# Acronyms & Abbreviations

**AM Champions**

Graduates of the Asset Management Champions Program

**AM**

Asset Management

**AMRS**

Asset Management Readiness Scale

**APA**

American Planning Association's Michigan Chapter

**ASCE**

American Society of Civil Engineers

**BIL**

Bipartisan Infrastructure Law

**CMIC**

Connecting Michigan Communities

**CNAM**

Canadian Network of Asset Management

**DTMB**

Michigan Department of Technology, Management and Budget

**EGLE**

Michigan Department of Environment, Great Lakes, and Energy

**EJ40**

Environmental Justice40 Communities

**EWR**

Energy Waste Reduction

**FHWA**

Federal Highway Administration

**GFOA**

Government Finance Officers Association

**GIS**

Geographical Information Systems

**IAM**

Institute of Asset Management

**IRA**

Inflation Reduction Act

**IRT**

Transportation Asset Management Council's Investment Reporting Tool

**JobNet**

Software that Michigan Department of Transportation (Michigan Department of Transportation) uses to store transportation project information

**MAR**

Michigan Association of Regions

**Michigan Department of Transportation**

Michigan Department of Transportation

**MI-HI**

Michigan High Speed Internet Office

**MIC**

Michigan Infrastructure Council

**MIO**

Michigan Infrastructure Office

**MME**

Michigan Municipal Executives

**MML**

Michigan Municipal League

**MPSC**

Michigan Public Service Commission

**MTA**

Michigan Townships Association

**Public Act 235**

Clean and Renewable Energy and Energy Waste Reduction Act

**Public Act 323**

Michigan Infrastructure Council Act

**RICH**

Regional Infrastructure Coordination Hubs

**ROBIN**

Realizing Opportunity Through Broadband Investment

**SEMCOG**

Southeast Michigan Council of Governments

**TAC**

Technical Assistance Center

**TAMC**

Transportation Asset Management Council

**The Strategy**

Michigan Infrastructure Council's 30-Year Integrated Infrastructure Strategy

**Treasury**

Michigan Department of Treasury

**USDA**

United States Department of Agriculture

**WAMC**

Water Asset Management Council



# Acknowledgments

## Michigan Infrastructure Council (MIC) Membership

<b>John Weiss</b> Grand Valley Metro Council <i>Appointed by Senate Majority Leader</i>	<b>John Daly III PhD</b> Lapeer County Road Commission <i>Appointed by Senate Minority Leader</i>	<b>Charyl Kirkland</b> Michigan Public Service Commission
<b>Palencia Mobley P.E.</b> Mode Collective <i>Appointed by the Governor</i>	<b>Beverly Watts</b> BME Consulting <i>Appointed by Governor</i>	<b>Jonathan Mallek</b> Michigan Department of Agriculture and Rural Development
<b>Kathleen Lomako</b> Former Executive Director of SEMCOG <i>Appointed by the Governor</i>	<b>Marco Bruzzano</b> DTE Energy <i>Appointed by Governor</i>	<b>Eric Swanson</b> Department of Technology Management and Budget
<b>Erin Kuhn</b> West Michigan Shoreline Regional Development Commission <i>Appointed by Governor</i>	<b>Doug Matthews</b> City of Grand Rapids <i>Appointed by Senate Majority Leader</i>	<b>Sue McCormick</b> Water Asset Management Council
<b>Daniel Fredendall</b> OHM Engineering <i>Appointed by Speaker of the House</i>	<b>Aaron Keatley</b> Department of Environment, Great Lakes, & Energy	<b>Joanna Johnson</b> Transportation Asset Management Council
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## MIC Staff

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<b>Tim Zebell</b> Michigan Municipal League	<b>Southeast Michigan Council of Governments (SEMCOG)</b>	<b>Central Upper Peninsula Planning &amp; Development Regional Commission (CUPPDRC)</b>
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**Upper Peninsula Economic  
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**Van Buren Technical Center**  
**Kirtland Community College**

And to all of those who attended our  
outreach and forgot to sign in, thank  
you for helping us shape this  
important document.



