



# Michigan's Path to a Prosperous Future: Infrastructure, Environment, Climate

Altarum and the Citizens Research Council of Michigan joined forces to develop "Michigan's Path to a Prosperous Future: Challenges and Opportunities," a **five-part series of papers that presents a realistic, data-informed vision of Michigan's future based on current trends and trajectories across multiple dimensions – population and demographics, economy, workforce, talent, health, infrastructure, environment, climate, and state and local government.**

**This brief provides a top-level summary of the three major areas of focus in the fourth paper: infrastructure, environment, and climate change challenges and opportunities facing Michigan. To view the full papers, go to <https://crcmich.org/publications/prosperous-future>.**

Surrounding Midwest states are surpassing Michigan economically and across a number of other measures, jeopardizing the state's ability to stay competitive. As Michigan's population growth continues to stagnate in comparison to the national average, it is essential that the state is able to attract and retain a younger, better-prepared workforce.

Efforts to attract residents from other states and countries are stymied in part by poorly maintained infrastructure, which is generally worse than national averages and surrounding states. Michigan's infrastructure, environment, and the goal of adapting to a changing climate are inextricably linked and interdependent. Increasingly extreme weather events will place further stress on the state's aging and inadequate infrastructure. The state's poor infrastructure in turn creates environmental challenges, such as polluted water and flooding.

## Infrastructure: Expensive and Underperforming

The condition of infrastructure in the United States has been a topic of concern for many decades. Michigan's infrastructure systems tend to underperform both national averages and nearby peer states.



**Michiganders suffer some of the nation's poorest road pavement conditions**



**Many communities struggle to dependably provide residents with clean drinking water**



**Outdated and under-capacity storm sewers amplify problems of flooding and water pollution**



**Michigan power customers pay higher-than-average rates for electric service while receiving below-average reliability**

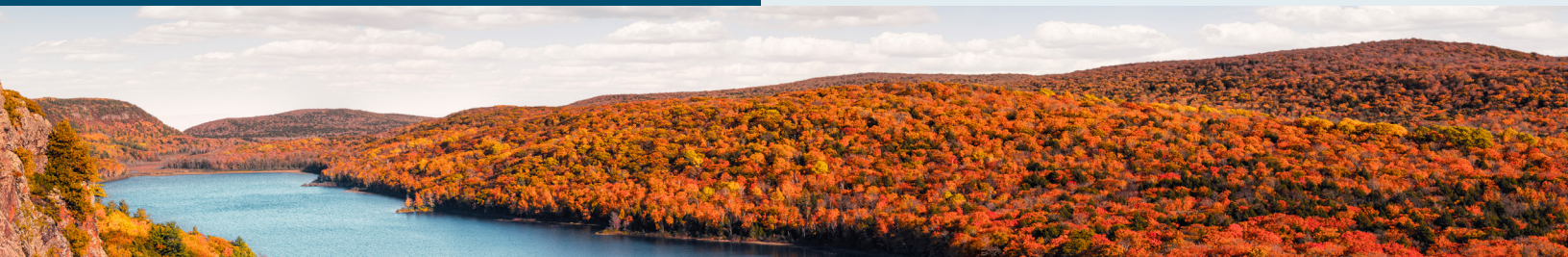
Estimates of Michigan's infrastructure 'funding gap' typically exceed \$5 billion per year. Efforts to increase investments in public infrastructure at the federal level have culminated in new and expanded funding programs. Michigan can invest state and local resources to leverage these resources to catch up with maintenance backlogs and build sustainable modern infrastructure for the 21st century. This will require decades of concerted effort and long-term strategic planning to reimagine and rebuild fiscally sustainable modern infrastructure systems across the state.

**Development without Population Growth:** Many of Michigan's infrastructure funding problems relate to the state's embrace of suburban 'sprawl' style development in an era of marginal population growth. Michigan's public policies have long encouraged and subsidized low-density greenfield developments. This dynamic results in each Michigander being called on to fund an ever-increasing amount of infrastructure. Michigan should encourage future development patterns that consider the life-cycle costs of infrastructure necessary to support new development.

**Poor Roads:** Michigan's highways are the fourth worst in the nation, while its locally maintained roads are in even worse condition. Despite an established transportation asset management program and recent funding increases, Michigan's pavement conditions are not clearly improving. Proposals for new and increased vehicle and fuel fees would bring in revenue to support improved road conditions. Other reforms may make better use of existing revenue, such as reducing allowable truck weights, adapting new technologies and methods to improve asset management and for investment decision support, and amending the state's transportation funding distribution formula to better match needs.

**Aging Water Systems:** Many of Michigan's historical cities struggle to maintain aging water infrastructure, including drinking water systems, sanitary sewers, and stormwater management systems. As many of these cities have seen significant population losses, the costs of maintaining and replacing these systems must often be supported by fewer residents and reduced revenue. Water main breaks are common. Heavy rainstorms often overwhelm sewer systems, leading to basement backups, urban flooding, and overflows of raw sewage directly into waterways. Many Michigan cities have made meaningful investments in water infrastructure in recent years, but the full scope and scale of the challenge remains largely unknown. The need for increased storm sewer capacity will grow larger with climate adaptation planning.

**Unreliable Energy:** Many areas of Michigan lose power frequently after storms. The state ranks in the bottom ten, and below all its Midwest neighbors, for electric service reliability. Creating energy policies that simultaneously address reliability, cost, and climate issues is a complex challenge. The Michigan Public Services Commission and utility companies are working to address system deficiencies while transitioning to renewable energy, but transitioning to a modern, reliable low-emission energy grid will require substantial investment.



## Our Natural Resources and Environment: Impact of Industrial Legacy

In recent decades, people have increasingly relocated not for jobs, but for the perception of a healthier, more satisfying life. Michigan's unmatched natural resources (particularly the Great Lakes) are significant assets that can be utilized to attract new residents to the state. However, leveraging natural resources for economic growth is complicated by Michigan's industrial legacy. An increased emphasis on environmental protection and remediation is necessary to improve environmental and public health, as well as the perception of the state to outsiders.



**The Cost of Prioritizing Business Over the Environment:** Michigan's industrial legacy has left the state with hundreds of polluted sites. Many urban neighborhoods near industrial facilities are subject to multiple environmental pollutants, each of which individually remain under thresholds that would require a regulatory response, but which together can lead to chronic health conditions. Such areas have been referred to as "sacrifice zones," as the health and wellbeing of the residents has been sacrificed for perceived economic benefit. These areas could become centers of urban renewal and economic development, but only if the local environment is remediated and protected to ensure environmental and public health.



**Protect Michigan's Natural Advantages:** Michigan has great potential to leverage its natural amenities and beauty for economic development and improved quality of life. To do this, the state must substantially invest in environmental remediation and management. This includes addressing outstanding issues with soil and water pollution, but also other emissions that impact human and environmental health such as light pollution, noise pollution and invasive species.

## Climate Adaptation: Transitioning to a Viable Future

Climate change poses a threat to the wellbeing of Michiganders and all of humanity. Extreme weather and shifting climate trends threaten to disrupt many aspects of the modern economy. Adapting to a changing climate while transitioning the economy away from fossil fuels will be a defining challenge of the 21st century.



**Leading the Way, but Room for Improvement:** Michigan is ahead of many U.S. states in that a critical mass of policymakers appear to recognize the disruptive potential of climate change. The MI Healthy Climate Plan demonstrates a willingness to participate in a global effort to drastically reduce carbon emissions and aims to achieve statewide carbon neutrality by 2050. However, it does not describe a roadmap to achieve that, and it is unclear if such a goal is feasible.



**Building Climate Resilience into State Policy:** Given the global nature of climate change, it is not possible for Michigan to measurably mitigate its impacts through state policies alone. Michigan must build community resilience and embrace policies that encourage Michigan's built environment and institutions to adapt to the changing climate.



**Climate-Proofing Infrastructure:** The primary challenge to infrastructure will be stronger storms that bring more precipitation. Infrastructure planning and design should include solutions such as routing power lines underground, designing and maintaining stormwater systems to accommodate severe storms, minimizing impervious surfaces like pavement while increasing surface areas that can absorb water, and routinely inspecting and maintaining critical dams, levees, and other flood control facilities.

Public policies that help Michigan successfully adapt to climate change will promote the wellbeing of citizens and help support a sustainable state economy. If Michigan does this well, the state could become a future haven for 'climate migrants' — people who choose to move to regions that are less susceptible to the most extreme impacts of climate change.

## Investing in the Future of Michigan

In the early years of Michigan's statehood, infrastructure and environment played a key role in shaping the state's communities and economy. Michigan's economy and communities grew, in large part, by capitalizing on the state's natural resources to become a leading state for manufacturing. An understanding of the challenges facing Michigan can help to develop solutions to rebuild and maintain infrastructure that is fiscally sustainable while protecting the environment and preparing for the impacts of climate change. Michigan's natural resources can now play a key role in reshaping the state's communities and economy for the future. Public policies should emphasize sustainable development and environmental remediation and protection to promote population health and wellbeing, build modern infrastructure that serves people well, and take actions to prepare for a changing climate.



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