

BLUEPRINT

2050

A 21st Century Transportation
System for Wisconsin



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About 1000 Friends of Wisconsin

1000 Friends of Wisconsin was created in 1996 by a group of academics and environmentalists with the primary focus of promoting legislation that led to Wisconsin's Smart Growth Comprehensive Planning Law. Over the years we have continued to work to defend the law but also to expand our mission to the many issues that are associated with land use policies and activities that advance healthy communities, positive economic outcomes, and environmental benefits in Wisconsin. We understand that climate change and land use are intrinsically linked. Our goal is to help people make the connection between sound land use and transportation decisions; which lead to a healthier, cleaner environment. We are working to ensure communities across Wisconsin draft and adopt comprehensive climate action plans that focus on: equitably reducing greenhouse gas emissions and a responsible focus on mitigation. We are committed to applying an equity lens to all our programming and operations.

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Introduction

The United Nation's Intergovernmental Panel on Climate Change (IPCC) estimates that in order to prevent irreversible and catastrophic climate change, we must keep global warming to less than 1.5 degrees Celsius.¹

Across Wisconsin climate damages are mounting as we begin dealing with more heatwaves, floods, and storms. Increased rainfall and flooding has already prevented some farmers from planting or destroyed harvests due to erosion and saturation. In some places, not only were crops destroyed, but livestock was killed and roads were washed away. According to Climate Wisconsin - under the climate conditions forecasted, many tree species currently residing in Wisconsin's Northwoods, like red pine, balsam fir, and paper birch, may fail to reproduce and go locally extinct. Wisconsin has and will continue to be hit hard.

In the face of this crisis, it is important to know that transportation is the largest and fastest growing sector of carbon emissions, accelerating climate change emissions and threatening communities and ecosystems across the planet. Moving to a zero-emissions transportation system is critical to addressing the IPCC's dire warning. While electric generation utilities have taken the first step by committing to produce renewable energy, the pathway forward for the transportation sector remains less clear.²

Our transportation system is both carbon intensive and deeply inequitable. Our funding decisions over the last seventy years have predominantly focused on car-centric infrastructure. While this has created a well-connected road network, it has hindered those who do not, or cannot drive. In Milwaukee County alone, a report by Public Policy Forum found that over 12,000 qualified workers are unable to access jobs simply because of a lack of transportation options.³

For many, our transportation system is a detriment, especially for those who rely on other forms of travel outside of personal automobiles. According to a survey done by the Survival Coalition of Wisconsin Disability Groups, more than 40% of respondents with a disability do not have access to public transportation in their communities.⁴ Our transportation system also harbors gaps in racial equity. Communities of color are disproportionately affected by transportation and land-use policies that have left these communities exposed to higher amounts of vehicle pollution, with a lack of transportation choices, and increased risk of pedestrian injury or death.^{5,6}

Our transportation system is fiscally unsustainable. Local roads are in disrepair and transit systems are in decline. Any new revenue is devoted to highway expansion. We have invested billions of dollars in new highway infrastructure without addressing the enormous backlog of local road maintenance. This policy, sustained over decades, has left us with exploding debt and increased transportation emissions.

As we move to a zero-carbon transportation system, fast-changing technologies will present both challenges and opportunities. An array of choices involving electric vehicles, self-driving cars, high-speed rail, and alternative fuels, will make it hard for policymakers to discern the right course of action. The goal of this report is to provide a vision for a zero-carbon, clean, safe, and inclusive transportation system for Wisconsin that will enable informed decision-making. Along the way, our report will also provide an insight into the existing system's gaps and shortfalls and make recommendations on the best ways to connect our communities.



Top: Our transportation funding priorities have created a disjointed network of pedestrian and bicycle infrastructure that makes travel difficult for anyone without a vehicle. These shortcomings are especially apparent for this Madison, WI resident who must travel on the street to overcome a gap in sidewalk infrastructure.

Bottom: Most of our public space is dedicated to personal vehicle travel. Often we have overbuilt infrastructure, leaving an empty and uninviting space such as this corridor in Milwaukee, WI.

Problem: Budget Constraints

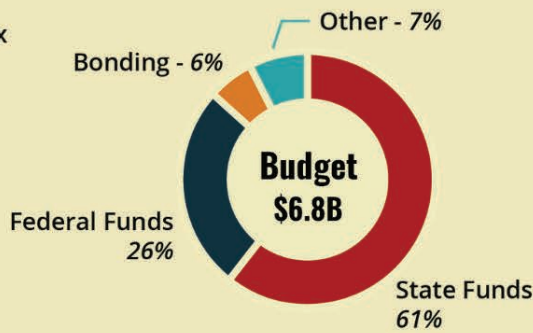
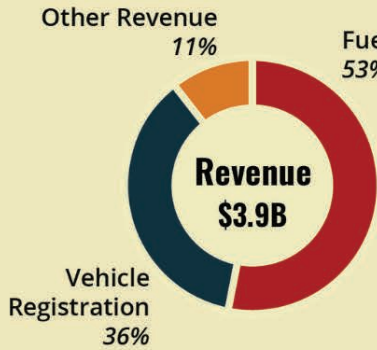
Wisconsin's transportation system consists of a network that supports many forms of travel, including local roads, highways, railroads, airports, harbors, bicycle and pedestrian pathways, and public transit services. Many of these facilities and services are under the purview of the Wisconsin Department of Transportation (WisDOT). The department plans, builds, and maintains the state and interstate highways systems. It also partially covers the costs of county and municipal transportation systems, which includes county highways, local roads, and transit systems.

To support these systems, WisDOT collects revenue from a variety of user fees. The major revenue sources for WisDOT are the motor vehicle tax (also known as the gas tax), and vehicle registration fees. The gas tax, which is collected from gasoline sales, is a direct user fee, proportional to how much a driver uses the infrastructure. The other major revenue source is vehicle registration fees, which are a less equitable flat tax that charges all residents the same fee regardless of how much they drive or the price of their vehicle. These two sources accounted for 89% of WisDOT's revenue during the last budget cycle.

A common refrain is that roads in Wisconsin pay for themselves through user fees. However, this is not true. These user fees fully-support only state-owned highways, which make up 10% of Wisconsin's road network. The other 90% of the network, local roads, are only partially supported by user fees. In a given year between 41-55% of local road funding comes from municipal property and sales tax.⁷ This means that every year Wisconsin households pay hundreds, if not thousands of dollars, in property and sales taxes to support roads. This is in addition to vehicle registration and gas tax fees. Our roads do not pay for themselves. Wisconsin needs to focus our limited funding on maintaining existing roadway infrastructure before adding additional highway miles to the bill.⁸

WISCONSIN TRANSPORTATION BUDGET

2017-2019 Biennium Overview



Source: WisDOT Budget Trends 2018 - 2019: Tables T-2, T-6

REVENUE

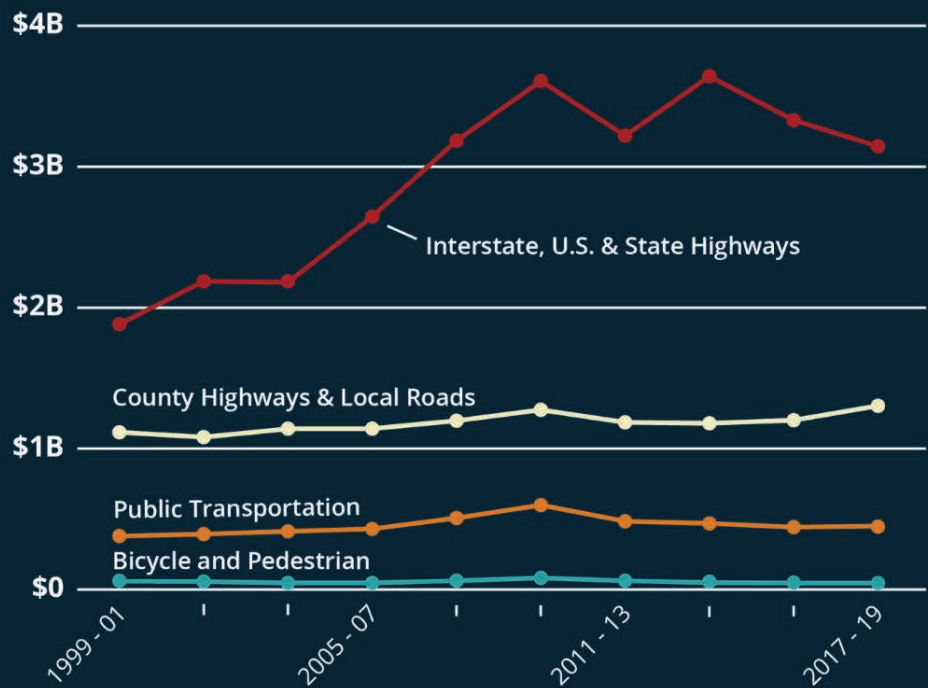
To support our transportation network, WisDOT collects the majority of revenue (89%) from the gas tax and vehicle registration fees. This revenue joins federal funding and bonding to make up the State's transportation budget.

EXPENDITURES

For decades in Wisconsin, transportation policy has prioritized major highway expansion. The vast majority of new revenue has been directed towards our highways, leaving very little new revenue for other forms of transportation. As a result, State investment in local roads, public transit, and active transportation has been left behind.

Even though bicycle and pedestrian infrastructure is among the most cost-effective infrastructure on a per-mile basis, it does not receive any support from the State and must rely solely on federal funding.

State Transportation Budget by Biennium



Source: WisDOT - Budget Trends 2018 - 2019: Tables T-TR1, T-3, T-23, T-25.

Unfortunately our transportation policy has been doing the exact opposite, heavily investing in highway infrastructure. This explosion in highway spending has put a strain on the transportation budget, absorbing almost all of the new revenue over the last decade. Local roads, transit, walking, and biking have been completely left behind. To fuel our highway spending, Wisconsin has used several fiscally unsustainable short-term solutions. These quick fixes include raising vehicle registration fees, increased bonding, and transferring money from other important state programs.

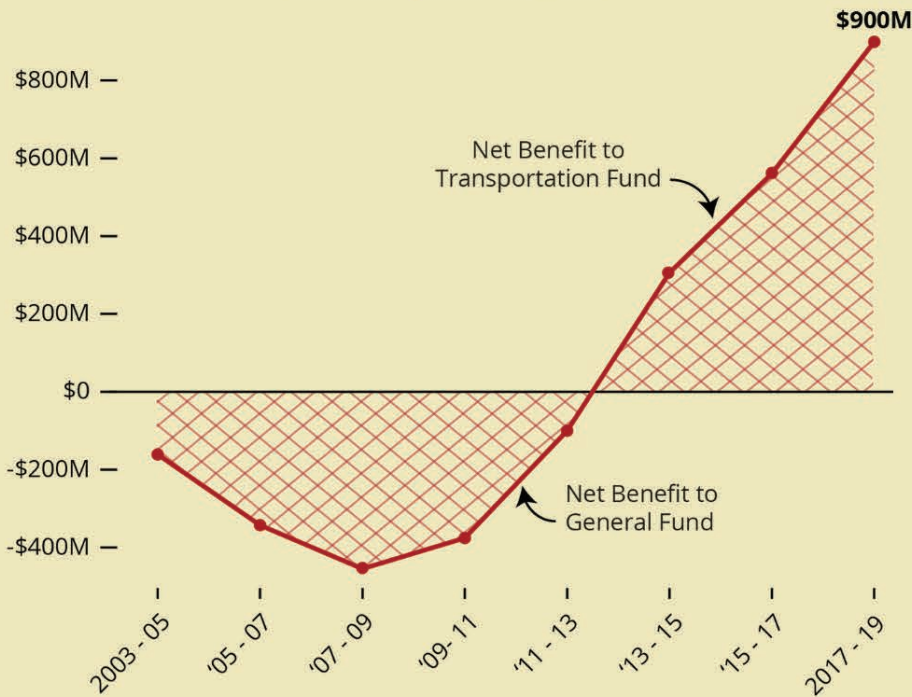
Another quick fix would be to raise the gas tax. In recent years, Wisconsin's gas tax revenue has slowed significantly. This is the result of two factors. One is the increasing fuel efficiency of vehicles and the widening use of hybrid and electric vehicles. As cars have become more fuel efficient, they are consuming less gasoline, reducing revenue. The other is the result of a 2006 bipartisan decision to no longer tie the gas tax to inflation. Rather than adjust for inflation, the gas tax now remains at \$0.39 per gallon, which reduces its buying power year-over-year. One of the primary reasons 1000 Friends supported deindexing the gas tax was that annual revenue increases were largely being used to expand highways rather than addressing the existing infrastructure backlog. During this period, local roads continued to degrade. The program that supported local road maintenance was raided to expand highways and the majority of gas tax revenue increases were directed to highway construction. Since 2006, the debate over raising Wisconsin's gas tax has persisted, but action has not been taken.

Today, Wisconsin's transportation budget is faltering. With an endless desire to build highways without a way to pay for them, the state has turned to vehicle registration fees. The increase in registration fees is nowhere close to meeting the shortfall in the transportation budget.⁹ To further fill this gap, Wisconsin makes annual transfers from the state's general fund to the transportation fund. The general fund is typically used to fund education, healthcare programs, and many other important public services. Now, our expensive highway infrastructure has become a burden on programs entirely unrelated to transportation.

The annual transfers and increased registration fees are still not enough to cover the explosion in highway spending. To make up the remaining difference, Wisconsin has been borrowing money at an unsustainable rate. Since 1999, biennium debt service has increased almost 450%. This surge of borrowing is taking revenue away from infrastructure maintenance and redirecting it to debt payments. Wisconsin's highway-expansion policy is fiscally unsustainable, requiring increased registration fees, exploding debt, diverted education and healthcare funds, and local property and sales tax to maintain. Given these budgetary failings, it has become obvious that unless Wisconsin changes its transportation policy to focus on the maintenance of our existing systems and to reinvest in cheaper forms of travel like walking, biking, and transit, there will be a complete breakdown in transportation funding for all modes of travel.

BUDGET TRANSFERS & DEBT

Transfers between the Transportation Fund and the General Fund



Source: Legislative Fiscal Bureau, 2019 Informational Paper #35, Transportation Finance - Table 7

TRANSFERS

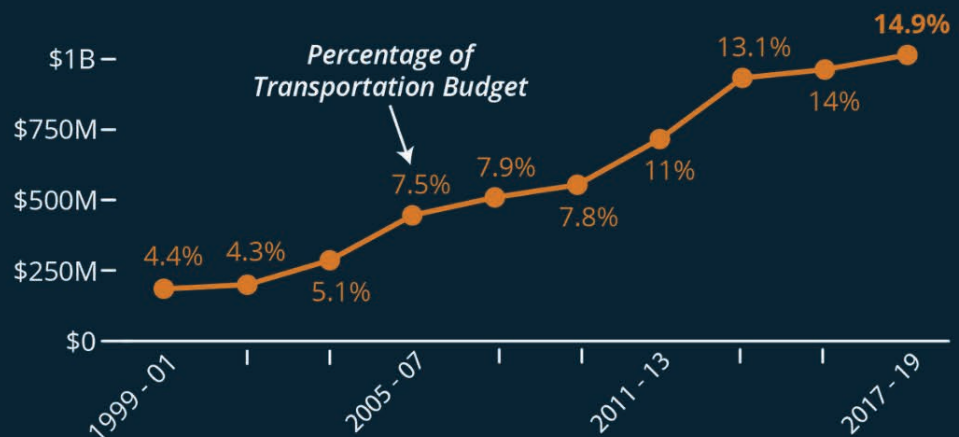
To bolster falling transportation revenues, annual transfers are made from the state's General Fund, which is typically used to fund education, health care, and many other important public services.

From 2003 to 2011, transportation funds were transferred to the General Fund to cover a fiscal shortfall. From 2011 until the present the reverse has occurred. There have been no subsequent transfers out of the Transportation Fund. However, the General Fund continues to transfer money to the Transportation Fund to support highway projects that the transportation budget could not otherwise afford.

DEBT SERVICE

To fuel Wisconsin's explosion in highway spending, the State increasingly uses debt to finance highway construction. Our investment in highways during this period, when paired with slowing revenue growth, has created a transportation budget that is fiscally unsustainable.

Transportation Debt Service by Biennium



Source: WisDOT - Budget Trends 2018 - 2019, Tables T-6, T-41

WEBSITE: 1KFRIENDS.ORG

Problem: System-Wide Faults

Wisconsin's overwhelming focus on personal automotive travel has created a system that is a major source of carbon emissions. As climate damage continues to mount, our transportation system will be unable to react appropriately. It is also a system that does not provide adequate public transportation services, fails to meet the essential travel needs of an increasing number of residents, burdens the state with high costs, and disproportionately harms communities that have been historically marginalized.

Greenhouse Gas Emissions (GHG)*

Starting in 2016, transportation became the largest source of GHG emissions in the United States. This has occurred against the backdrop of two competing forces. While vehicles have been getting more efficient over the last decade, Americans are also driving more than ever before.¹⁰ Emissions from transportation are rising, while those from electric power plants are decreasing. Our transportation system is now the biggest contributor to climate change and if nothing shifts, it will lead to irreversible and catastrophic damage. Eliminating transportation emissions wherever possible will be critical to achieving carbon neutrality by 2050.

Emissions from light-duty personal vehicles account for the majority of our transportation emissions. Light-duty vehicles include passenger vehicles and light-duty trucks such as SUVs, minivans, and most non-commercial pick-up trucks. While some light-duty personal vehicles are used commercially, it's fair to

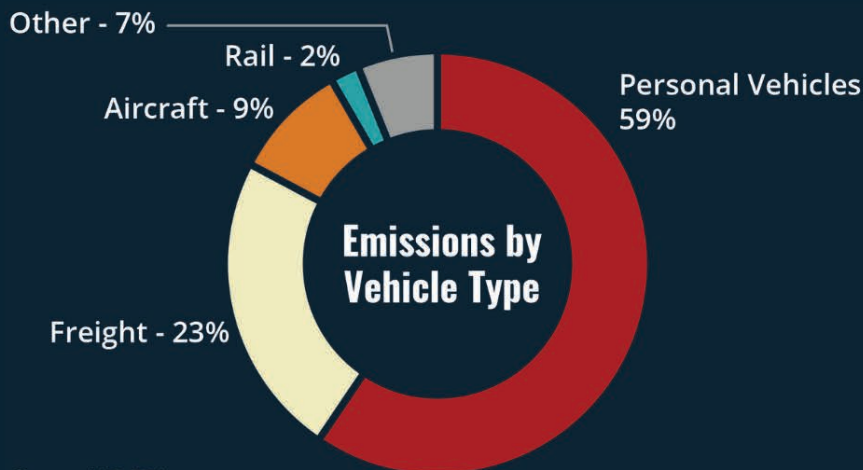
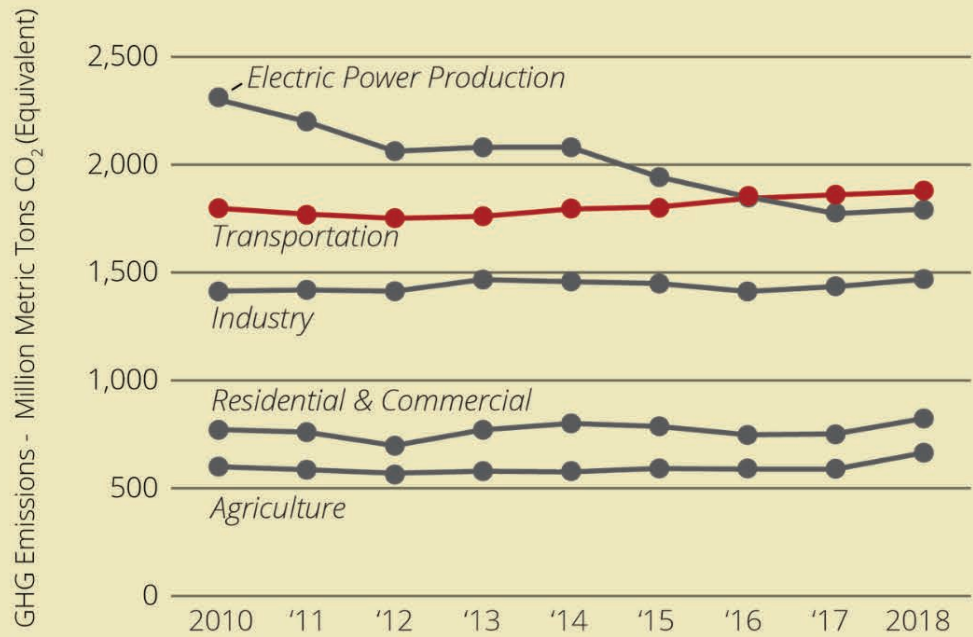
** The principal greenhouse gases in the emissions that threaten our climate are carbon dioxide CO₂ and methane CH₄. These are the most serious because trace amounts have a powerful greenhouse effect and they are long lived – CO₂ persists in the atmosphere for centuries and CH₄ slowly degrades into CO₂.*

TRANSPORTATION EMISSIONS

EMISSIONS BY SECTOR

Starting in 2016, transportation became the largest source of GHG emissions in the United States. This has occurred against the backdrop of two competing forces. While vehicles have been getting more efficient over the last decade, Americans are also driving more than ever before. Our transportation system is now the biggest contributor to climate change and if nothing changes, it will lead to irreversible and catastrophic damage

U.S. Greenhouse Gas Emissions by Sector



Source: U.S. EPA - "U.S. Inventory of Greenhouse Gas Emissions and Sinks, 2020" - Table 2-13

PERSONAL VEHICLES

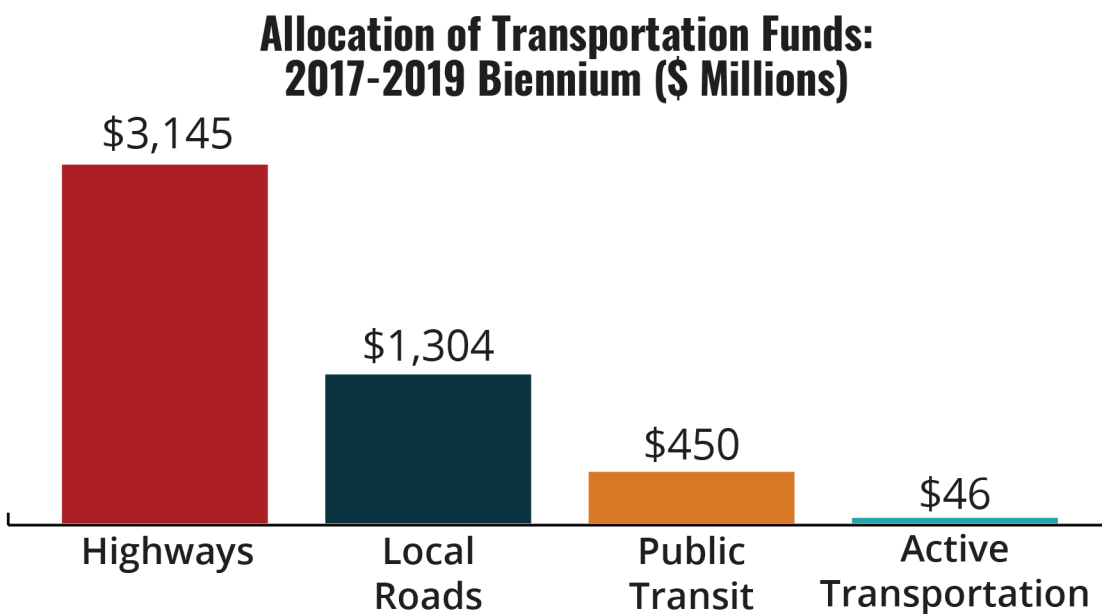
Emissions from light-duty personal vehicles accounted for the majority of our transportation emissions in 2018, the most recent year of data available. Personal vehicles include passenger vehicles and light-duty trucks such as SUVs, minivans, and most non-commercial pick-up trucks.

Other includes boats, buses, motorcycles, and pipelines.

say that the majority of our transportation emissions (59%) come from personal automotive travel.¹¹ If current trends hold, personal automotive travel will soon surpass coal-fired power plants in carbon emissions.¹² Under our current system, transportation emissions will increase if we continue to make investments solely in automobile-oriented infrastructure. If Wisconsinites continue to drive at our current pace, we will be unable to tackle the climate crisis. We need to invest in accessible, efficient, affordable public transit, complete walking and biking infrastructure, support the electrification of vehicles, and reduce our vehicle miles traveled (VMT). This can be achieved by reprioritizing our transportation funding towards these options and promoting better land use in our communities.

Inadequate Support of Non-driving Infrastructure

Our transportation funding choices are playing into and supporting this carbon intensive transportation system even though public transportation and active transportation modes such as walking and biking are less polluting and more efficient than personal vehicles.¹³ A disproportionate amount of funding has been used to expand highways, which has taken funding precedent over all other forms of transportation. State investment in transit is severely lacking, not



Sources: Wisconsin Department of Transportation: 2018-2019 Budget Trends, Tables T-TR1, T-3, T-23 and Fiscal Bureau, Informational Paper - 37, 40 (2019). *Note:* Includes both state and federal funding.

even keeping pace with inflation.¹⁴ This has created strains on local transit agencies across the state as populations increase and maintenance costs grow. Facing stagnate budgets and falling state support, transit agencies are struggling to provide services. Other forms of public transportation including passenger rail receive miniscule support, 0.2% of the 2017-2019 biennium budget, while intercity bus services receive no state funding and must rely solely on federal grant money. Support for active transportation is in a similar place. Even though bicycle and pedestrian infrastructure is amongst the most cost-effective infrastructure on a per-mile basis, it does not receive support from the state and its development must rely solely on federal grants.¹⁵

Large Populations Poorly Served or Not Served at All

Our inadequate support of multi-modal transportation has resulted in a system that fails to meet the needs of people across Wisconsin. Over 160,000 Wisconsin households do not have a personal vehicle.¹⁶ This group includes a portion of residents who prefer to take public transportation, but also those who cannot drive for any number of reasons. Those who rely on public transportation include many people with disabilities, older adults, and children who are too young to drive.

When convenient services are available, many Wisconsinites prefer to use public transportation. We see young adults preferring to live in areas with good public transportation access.¹⁷ A growing number of people are forgoing car ownership. Nationwide, the number of 16-year-olds holding a driver's license has fallen from 43.6% in 1987 to just 26% in 2017.¹⁸ Additionally, ownership of a car is prohibitively expensive for many families with low-incomes. In 2018, the average annual cost was estimated at \$8,850 per year.¹⁹

While our public transportation shortcomings are serious at the local, regional, and statewide level, the nature of the problems varies. "Arrive Together: Transportation Access and Equity in Wisconsin," a 2018 transportation study in nine Wisconsin cities, found a common frequency and service hour issue across Wisconsin. Public transportation services between residential areas and major employers are often nonexistent or severely limited.

Interviews with workers showed that many have to choose between living in high-cost areas near employment centers or bear the expense of owning a car.²⁰ Others were prevented from taking employment because it fell outside of the regularly scheduled service. These public transportation shortcomings are creating a constraint on economic development as businesses are unable to connect with their workforce.²¹

Lack of Regional Transportation

At a commuter level, public transportation often falters when crossing municipal lines. In such cases, special arrangements have to be made between the municipalities involved. These agreements are limited in scope and arduous to negotiate. Municipalities could solve this problem by forming Regional Transit Authorities (RTAs) – agencies empowered to plan, fund, and operate regional transit systems. However, in 2011, the state legislature banned the creation of RTAs in Wisconsin and disbanded existing RTAs in Dane County and Southeastern Wisconsin.²²

Intercity public transportation is also minimal and infrequent. Our intercity public transportation system consists primarily of bus services and limited passenger rail. Intercity buses offer service to many areas of the state, but long-distance bus trips can be time-consuming, offer few amenities, and lack the speed of passenger rail. Additionally, after arriving, many passengers are stranded at far-flung stations because local transit is limited or does not exist to connect riders with their final destination.

Passenger rail, while more convenient, is not available in most major cities. Twenty-one cities in Wisconsin with populations over 25,000 are not served by passenger rail. The only regular intercity passenger rail service is along the Chicago-Milwaukee-Minneapolis corridor. Intercity rail travel to Green Bay, the Fox Valley, or to Eau Claire is impossible. Madison, Wisconsin's second largest city is not served by intercity passenger rail despite being the state's fastest growing city, the site of the State Capitol, and home to the main campus of the University of Wisconsin.

Passenger Rail Service in Wisconsin



Note: Passenger Rail includes Intercity Rail (Amtrak) and Commuter Rail to Kenosha (Metra).

Sparsity is only half the story. Passenger rail can at times experience serious delays sitting on a side track waiting for freight rail. While Amtrak was granted priority over freight trains by the federal government, their passenger trains regularly wait because freight rail companies know federal enforcement is non-existent.²³ Over the last fifty years, only one enforcement action has been taken by the federal government. Better enforcement and additional funding would help create a faster, higher capacity system that better meets the needs of Wisconsin residents. In spite of this challenge, ridership on the Empire Builder route between Milwaukee and Chicago is seeing record numbers.²⁴ This growth is indicative of passenger rail's potential throughout Wisconsin.

The current shortcomings of intercity travel are a direct result of indifference from state and federal leaders toward public transportation. A prime example of this indifference occurred in 2011 when the state rejected a federal grant that would have fully-funded the infrastructure upgrades for a Madison to Milwaukee high-speed rail corridor. This included rail upgrades, new locomotives and passenger cars, and all of the costs associated with design and construction. This decision was indicative of a prevailing preference for automobiles at the expense of all other forms of travel. Fast and reliable intercity public transportation is severely lacking in Wisconsin. Until our government begins supporting intercity public transportation with legislative oversight and appropriate funding, it will continue to falter in Wisconsin.

Passenger Rail and Intercity Bus Service in Wisconsin



Note: Passenger Rail Includes Intercity Rail (Amtrak) and Commuter Rail to Kenosha (Metra).





Problem: Economic Drawbacks

Wisconsin's overwhelming focus on personal automotive travel has created a system that is stifling economic growth and preventing tens of thousands of residents from reaching quality employment with businesses desperate for workers. This system has kept many in poverty, while harboring gaps in racial equity.

Stifling Economic Growth

Today's young talent is increasingly drawn to places first and employment options second.²⁵ Recognizing this shift, employers are often locating in places that draw on these pools of young workers. Core Values: Why American Employers are Moving Downtown, a report by Smart Growth America, identified over 500 companies that either relocated, opened new offices or expanded to locations that were walkable and had access to high-quality public transportation between 2010 and 2015.²⁶ Companies are increasingly looking for multimodal transportation access as a key requirement when they make decisions on where to locate. For example, no Wisconsin city made the shortlist of destinations for Amazon's potential new second headquarters due to a lack of rapid transit options.²⁷ Support of public transportation and multi-modal transportation is a key economic development tool to recruit and retain talent in Wisconsin.

However, many employers today are hampered by a geographical gap between where their potential employees live and where their jobs are available. A lack of non-automobile transportation options has compounded this problem. As was mentioned earlier,

in Milwaukee County alone, it is estimated that there are over 12,000 workers who cannot find jobs simply because of a lack of transportation options.²⁸ Our transportation system lacks the flexibility that allows for economic development to thrive. Jobs that are on the other side of municipal or county lines are often inaccessible due to a lack of regional public transportation. In many places where public transit is available, it is often infrequent or slow to the point of being unusable. Increased support of active transportation and public transportation will open up previously inaccessible jobs to people and help attract workplaces of the future.

Support Redevelopment in Communities

New public transportation and active transportation investments often attracts new development. These investments in older neighborhoods can be a catalyst for their redevelopment. In Minnesota, \$8.4 billion of new development is taking place in and around the Green Line rapid transit corridor that connects Minneapolis and St. Paul. These developments in turn attract more new residents and potential employers. The Green Line corridor, by one estimate, had the potential to attract 16,600 new jobs by 2035.²⁹ In Cleveland, OH, since the creation of the HealthLine Bus Rapid Transit System, the number of jobs along the corridor has doubled.³⁰ Walkable, transit-friendly districts create places that are beneficial to innovation. Studies have shown that companies located in dense, transit-oriented developments are more likely to file patents or try new styles of operations.³¹ A transportation system that focuses on repairing local roads, public transportation, and active transportation could be a catalyst for redevelopment in communities across Wisconsin.

Poverty and Equity

Our transportation system is not equitable. Communities of color in Wisconsin cities are often segregated and lack access to reliable transportation options. Workers in Milwaukee are unable

to access a growing number of jobs in the surrounding suburbs of Germantown, Mequon and Waukesha. Communities of color often suffer from poor pedestrian and bike infrastructure, leaving them more vulnerable to being hit by a car.³² Frequency of service is sub-optimal, often requiring hours of waiting. Bus stops are poorly maintained or feel unsafe, further reducing the likelihood of riding transit. Worse still, these neighborhoods face significantly higher exposure to vehicle pollutants.³³ By focusing solely on automobile travel, our transportation system is reinforcing segregation and poverty while supporting those already privileged enough to own and operate an automobile.

A more equitable system would substantially increase support for public and active transportation. According to a 2015 Harvard study, time spent commuting is the single largest predictor of an individual's ability to break out of poverty.³⁴ New investment in public and active transportation would unlock access to opportunities for people throughout Wisconsin. A recent report found that just two employment focused transit lines between the inner-city and suburbs connected nearly 700 employers and 15,000 jobs in the Milwaukee area.³⁵ People with disabilities who cannot operate a car could have the opportunity to fully participate in the economy and society.

In our system, many jobs are inaccessible. Those suburban jobs that are served by transit often require several transfers or commutes longer than one hour. These prolonged commutes result in less time spent with family or studying for school. Investing in high quality public transportation is a cost effective way to address a host of equity-related issues; accessibility of jobs, housing affordability, transportation costs, air pollution, and safety.³⁶ Addressing these needs through comprehensive transportation investments will boost access to employment, help communities break out of cycles of poverty, and improve transportation safety.

Solution:

Blueprint for 2050

An equitable, decarbonized transportation system by 2050 in Wisconsin will look considerably different from infrastructure today. A significant culture shift will need to challenge the primacy of automobiles, leading to wider acceptance of public transportation, active transportation and electric vehicles as legitimate travel modes for everyone. The balance of transportation investments will need to shift from highway expansion to local road preservation and investment in public transportation and active transportation modes. Potential investment in different transportation modes will be evaluated on a level playing field—with projects that have the most environmental, equity, and economic development benefits rising to the top.

Transportation revenue generation infrastructure and mechanisms will need to be transformed. Consumers will be able to see the true price of each trip being considered, including the environmental, societal, and economic costs. Demand for transportation options will need to be effectively managed by planning carefully while ensuring that they do not disproportionately impact low-income consumers and communities of color. Trips made by efficient public transportation and zero carbon modes of transportation will need to be given first priority on public infrastructure.

Land use planning, transportation planning, and transportation infrastructure investment must be integrated in a comprehensive manner. New development will be built around the concept of “multimodal accessibility to destinations,” in which school, shopping, healthcare, and leisure are close to each other, maximizing residential and activity hubs along public transit

nodes and corridors. Population growth should be directed to areas of compact infill development, where a suite of land use and transportation policies, and incentives promote a reduction in traffic.

Communities of color and low-income communities will no longer be negatively affected by transportation decision-making. Reliable and efficient public transit must be available along with affordable housing in proximity to transit corridors. Marginalized people should no longer bear the worst impacts of highway expansions, and disparities in the availability of active transportation options need to be eliminated. Transportation barriers that prevented the elderly and those with disabilities from fully participating in the economy need to be removed.

Wisconsin will be connected by a high-quality rapid transit network, and it will be possible to access every major population center without a personal car. In this system, states and communities will cooperate extensively, sharing resources and information to ensure seamless regional connectivity. Reliable and sustainable regional funding mechanisms have to be set up to allow these systems to be built, maintained, and upgraded on a regular basis.

Almost all motorized transportation will need to be electrified from renewable sources or powered by sustainable fuels—with ubiquitous support infrastructure such as charging stations for electric cars, bikes, and other forms of mobility. Public transportation should follow this lead with a shift to clean, electric transportation.

Health and livability must be central to Wisconsin's transportation decision-making. If we can make this transition, particulate matter emissions from our transportation system will be negligible. Active transportation investments will aid in reducing the prevalence of diseases like hypertension, diabetes, and cardiovascular issues. The epidemic of traffic-related deaths and serious injuries will have been greatly reduced. Finally, our transportation budget will address the needs of all Wisconsinites, not just those who drive, in a sustainable and responsible manner. We can make this system a reality with hard work, thoughtful planning, and a desire to make Wisconsin a healthier, safer, more sustainable place to live.



Photo Courtesy of SDOT Photos
https://www.flickr.com/photos/sdot_photos/

Solution: Policy Reform

At some point, Wisconsin will have to face the music. Our transportation system is failing. Local roads are in disrepair, our transit systems are shrinking, and active transportation is an afterthought. We cannot afford to maintain the roads that we have and yet we continue to ignore them. Worse still, instead of facing the problem, we have instead invested billions of dollars in new highway infrastructure. This policy, sustained over decades, has left us with exploding debt and an enormous backlog of local road projects. Counties across Wisconsin have tens, if not hundreds of millions of dollars in deferred repairs.³⁷ Our transportation policy is unsustainable, plain and simple. Unless we revamp our transportation priorities, our local roads will fail and our transit systems will collapse. We will also be no closer to solving the environmental and social justice faults inherent to our transportation system.

Policy: Change transportation funding priorities across state government to reduce highway expansion

Wisconsin spends hundreds of millions of tax dollars annually on highway expansion in the name of reducing congestion. Yet we seem no closer to solving our congestion problem. This is because adding lanes and expanding highways will not solve congestion. Within a short period of time, induced demand takes over and the number of rush-hour trips increases to the point of congestion.³⁸ Simply put, we cannot build our way out of traffic. Instead of continuing to support a failing system, Wisconsin must change its funding priorities. We need to be strategic with our limited resources by focusing on existing infrastructure and reinvesting in lower-cost alternatives like public and active transportation.

Ongoing maintenance costs continue to rise throughout the state and local budgets have become increasingly strained. If there is any hope of getting this crisis under control, Wisconsin needs to switch to a “Fix-it-First” policy.³⁹ Fix-it-First focuses on investments in existing infrastructure first and considers expansion only after our local roads are in a state of good repair. This means addressing the regular maintenance like potholes that have proliferated under our current system. This policy is also fiscally prudent, as regular repairs help prevent more costly reconstruction projects. If Wisconsin is ever going to get a handle on its transportation funding crisis, it must adopt a policy of fixing existing infrastructure first.

The other half of the equation is to reinvest in walking, biking, and public transit. These lower cost modes of transportation will be discussed in more detail in subsequent chapters. Needless-to-say more cost-efficient transportation investments exist if Wisconsin is considering a \$1 billion project to add two lanes to a 3.5 mile stretch of I-94 in Milwaukee.⁴⁰

Policy: Promote smart growth and compact development in Wisconsin communities

Wisconsin will be unable to meet its carbon reduction goals if it continues a sprawling development pattern. While often overlooked in the transportation conversation, Wisconsin communities are largely shaped by the relationship between land use and transportation. Today, sprawling housing tracts make it largely impossible to access employment, basic goods, or friends and family without a car. As vehicle travel has become more and more mainstream, our land use has responded with big box development, office parks, and abundant parking. At the same time, our regulations have reacted to accommodate cars by building wider streets, and requiring minimum parking requirements, large lot zoning, and unnecessarily large setbacks.

Outside of select pre-suburban neighborhoods, it is extremely difficult to travel by public transit or by walking and biking. Public transit is infrequent and has limited hours. Sidewalks meander through subdivisions without connecting to meaningful

destinations. Bicycle paths often start and stop in a disjointed network that regularly exposes cyclists to dangerous situations with cars. This leaves automobiles as the sole reliable option for travel.

There is good news though, this trend can be reversed with smart growth policies and compact development that supports transportation alternatives outside of cars. We should be focused on building compact, walkable neighborhoods that reduce the distance residents need to travel for basic goods and employment. Communities in Wisconsin need to reconsider suburban development patterns and instead redevelop places with existing infrastructure. This can be achieved by reducing or removing mandatory parking minimums, prioritizing infill development, and building mixed-use neighborhoods along public transit nodes and corridors. Our land use decisions and our transportation infrastructure directly impact one another, at times amplifying the faults of the other. By addressing land use and transportation together we can lower carbon emissions, improve public health, and create more vibrant and livable Wisconsin communities for everyone.



Walkable downtowns with a mixture of uses promote walking, biking, and transit, while strengthening a sense of place. Middleton, WI's downtown, shown above, caters to a variety of users and uses. Further investment in walkable downtowns will reduce emissions, provide greater access to basic goods, and improve the vibrancy of Wisconsin communities.

Solution: Public Transportation

To achieve a carbon-free transportation system, a variety of policies will be critical to create a fiscally responsible system that works for everyone. Wisconsin's public transportation network is a cornerstone of this transition. Many people, including seniors, people with disabilities, and low-to-moderate income Wisconsinites cannot reach their employment, medical services, or basic goods without transit.⁴¹ Transit has always served as an efficient and low-carbon way to navigate our cities and towns. However, intercity travel is extremely limited.⁴² Expanding local, commuter, and intercity transit with electric bus systems will improve the quality of life for many, including people in historically marginalized communities, while minimizing carbon emissions.

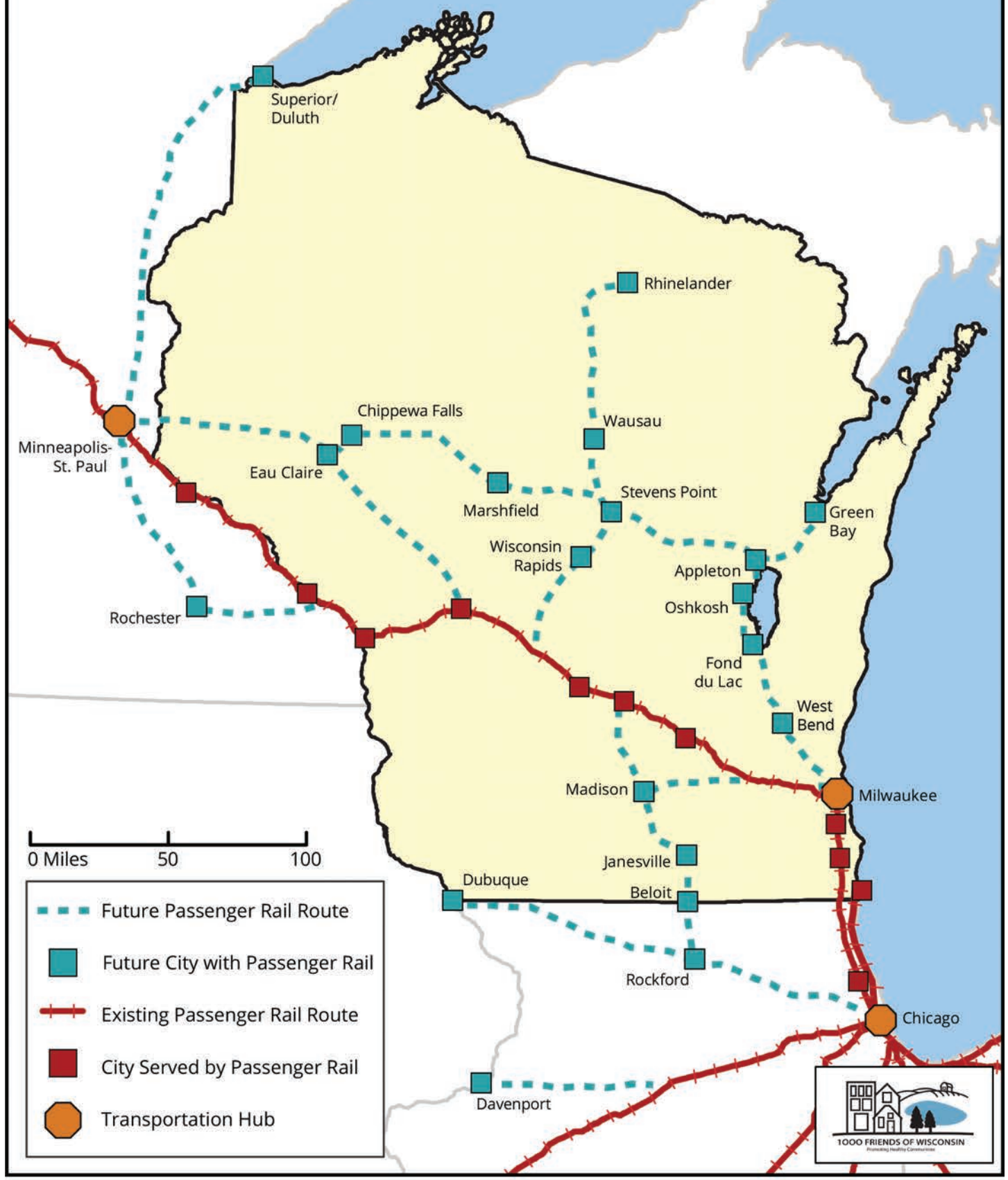
Public transit is one of the few ways that Wisconsin can reduce its transportation emissions while simultaneously reducing congestion. In a 2019 study of 80 U.S. cities reviewing long-term traffic issues, congestion was the same or worse in 63 cities. Two cities, Portland, OR and Salt Lake City, UT, saw the best improvements in congestion. Both cities have invested heavily in multi-modal infrastructure and public transportation rather than highway expansion.⁴³ If Wisconsin is to equitably reduce emissions and improve quality-of-life, improvements in public transportation will be a necessity. Below are ways to support public transportation:

Policy: Reauthorize “Regional Transit Authorities” (RTAs) to improve regional, commuter, and rural transit

Throughout Wisconsin, communities are trying to address transportation access issues across municipal boundaries. This includes getting workers to jobs and people to health care



Future Passenger Rail Service in Wisconsin



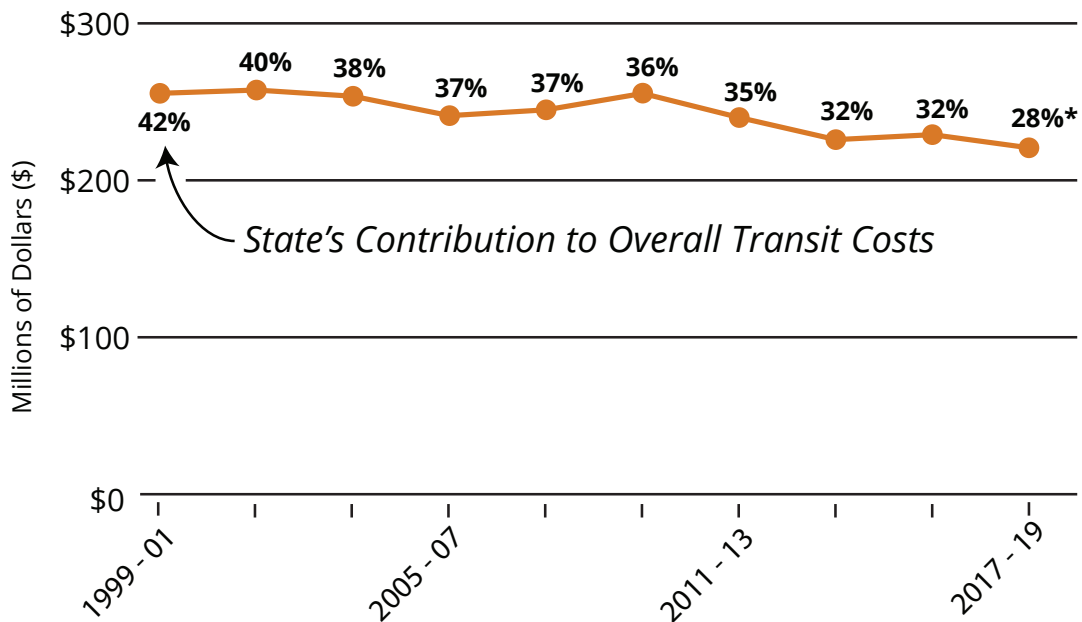
Note: All routes can be achieved with existing rail infrastructure.

providers. In 2011, the state legislature banned the creation of RTAs. Reauthorizing RTAs will allow cities, towns, villages, and counties to address their unique transit needs. Regional collaboration in its current form has resulted in a disjointed network that prevents public intercity travel across the vast majority of the state. Improved regional and intercity travel will help Wisconsin's approximately 1,800 cities, towns, and villages tackle their transportation challenges, while improving the quality of life for their residents.⁴⁴

Policy: Make a major investment in public transit

Transit can support a larger number of riders more efficiently than individuals driving alone. Owing to levy limits and the inability to form RTAs, local transit agencies are unable to address their budgetary needs. Unfortunately, the state's share of public transportation funding has been decreasing, unable to keep up with inflation. In fact, the state's share of overall transit costs has shrunk from 41.6% in the 1999-2001 biennium to just 27.9% in the 2017-2019 biennium. The state should increase mass transit aids to inflationary levels at a minimum and allow local transit agencies to raise revenue above levy limits to address their budgetary needs.

**State Funding to Support Transit by Biennium
(Adjusted for Inflation, 2017 Dollars)**



Source: Wisconsin Department of Transportation: 2018-2019 Budget Trends; T-33, T-34.
*Calculations for Fiscal Year 2019 have not been completed. This number is just Fiscal Year 2018.

Policy: Support the mobility of seniors and people with disabilities by increasing funding to specialized transportation programs

For the next several decades, Wisconsin will see a growing population of seniors and people with disabilities.⁴⁵ This group of residents will increasingly rely on other forms of transportation beyond personal vehicles. WisDOT runs a handful of specialized transportation programs which are stretched thin. These programs provide critical transportation services to vulnerable populations in suburban, urban, and rural areas. Without these programs, many would be unable to reach healthcare or access basic goods. As Wisconsin ages, the state must invest in more specialized transportation assistance.

Policy: Invest in passenger rail routes that add frequency and expand access

Improved state-wide passenger rail will allow for the efficient movement of a large number of people while reducing carbon emissions. Investment in passenger rail would have numerous accompanying benefits, including reduced travel times, economic development through job creation, increased tourism, improved connectivity to neighboring states, and improved market access for local companies.⁴⁶

Wisconsin is positioned to take advantage of its existing rail infrastructure to expand passenger service throughout the state. Unfortunately, many communities in Wisconsin are disconnected from statewide passenger rail, including twenty-one cities with a population over 25,000. Improving our rail infrastructure will help Wisconsin create a carbon-free transportation system, by improving public transportation access around the state. A further investment in separate high-speed infrastructure, independent of existing freight rail lines, would create a reliable and fast network that allows travel of speeds between 110 to 220-mph.⁴⁷ This additional rail capacity will reduce driving, while helping to integrate our transportation network and economy with neighboring states.

Policy: Support opportunities for commuter rail, especially in Southeast Wisconsin

In the Spring of 2011, the state ended plans for a commuter rail line linking Milwaukee and its southern suburbs including Kenosha and Racine, known as the KRM commuter line. The route planned for fifteen roundtrips a day. This service would have linked to the Chicago-area Metra lines in Kenosha.⁴⁸ The KRM commuter line's goal was to provide a desirable alternative to the automobile, to reduce air pollution, and energy consumption. If completed, the KRM commuter line would have improved efficiency in our transportation network, while improving access to jobs and education in Southeast Wisconsin.⁴⁹ Without the reauthorization of RTAs, regions will be unable to explore commuter rail options that support their transportation network.



Photo Courtesy of SDOT Photos
https://www.flickr.com/photos/sdot_photos/

Solution: Active Transportation

Active modes of transportation, including walking and biking, are zero-carbon transportation options that make up a critical piece of Wisconsin's transportation network. There is plenty of potential to improve active transportation in Wisconsin and reduce driving overall. According to the National Household Travel Survey, approximately 21% of trips taken in a personal vehicle travel less than one mile and 46% of trips travel less than three miles.⁵⁰ A one mile trip could be accomplished by walking twenty minutes or less. A three mile trip could be accomplished by bicycle in twenty minutes or less.⁵¹ Building safe walking and biking infrastructure will encourage active transportation in turn reducing driving and carbon emissions throughout the state.⁵² Here are policies that are necessary to support walking and biking infrastructure in Wisconsin:

Policy: Reinstate Wisconsin "Complete Streets Law" on project's receiving state funding

In 2009, Wisconsin passed a complete streets program, a law which required that bicyclists and pedestrians be taken into account when a road is built or reconstructed with state funding. During this period, the Complete Streets policy created safe and comfortable infrastructure for active transportation users across the state.⁵³ Unfortunately, in 2015, Wisconsin amended its complete streets policy, which removed the regulations that had supported bicycle and pedestrian infrastructure on many projects.⁵⁴ WisDOT project managers no longer have to consider other travel alternatives on all projects. This has reinforced the status quo which has reduced new construction of biking and pedestrian infrastructure on state projects. Reinstating the 2009 complete streets law will help build safe active transportation infrastructure around Wisconsin, and support individuals taking zero-carbon transportation options.

Policy: Restore eminent domain acquisition for bicycle and pedestrian trails

In 2017, Wisconsin passed a law that prohibited local governments from using their powers of eminent domain to construct pedestrian and bicycle trails. Now, a single property owner who objects to a project has the power to entirely stop a sidewalk or bicycle path from being built.⁵⁵ This has altered or outright halted many active transportation projects around the state. Until this power is restored, Wisconsin will be significantly hindered in its ability to build active transportation infrastructure. By restoring eminent domain for bike and pedestrian paths, local governments will be able to continue their efforts to build local walking and biking infrastructure.

Policy: Restore state funding for bicycling and pedestrian infrastructure

Wisconsin has a long and proud bicycling culture that supported travel and tourism for decades. Today, there is an absence of state funding for bike and pedestrian infrastructure. Restoring state funding to the Transportation Alternatives (TA) Set-Aside and ensuring its funds are used exclusively for active transportation will help create better infrastructure. This program also provides educational outreach to communities to encourage additional active transportation usage. Special focus should be given to direct these funds to low-income and communities of color. Funding for this program would have statewide appeal, helping to invigorate local economies and improving safety for bikers and walkers, while being very cost efficient.

Policy: Implement a “Vision Zero” goal statewide

Vision Zero is a movement to eliminate all life-altering injuries and fatalities in our transportation system. Wisconsin cities, towns, and villages should be encouraged to join the pledge. This movement puts a special priority on preventing traffic deaths by recognizing people make mistakes and designing our network to accommodate those mistakes.

Special consideration should be given to the enforcement element of Vision Zero. Enforcement comes from a good place, trying to make sure bicyclists, pedestrians, and drivers are all following the rules to make our roads safer. However, enforcement has been disproportionately leveled against communities of color and is the starting point for many deadly interactions between police and people of color. The role of enforcement needs to be reconsidered across the transportation system as it is not being applied equally in our communities. Vision Zero will allow local governments to bring together cross-disciplinary groups to review roadway design, speeds, and existing policies to make our network safer for all users.⁵⁶ By pledging to Vision Zero, Wisconsin would be committing to a safer, more equitable transportation system.



Winter in Wisconsin presents a unique challenge to active transportation as sidewalks and bicycle paths need to be regularly cleared. Many Canadian cities have mastered winter commute policies that promote active transportation. Eau Claire, WI has launched a similar program called “Wintermission Eau Claire,” that encourages increased outdoor recreation and decreased social isolation during winter.

Photo Courtesy of Matthieu Joannon - Upsplash.com - @matt_j



Photo Courtesy of Marc Heckner
Upsplash.com - @herrheckner

Solution: Electric Vehicles

Electric vehicles (EVs), when supported by renewable energy, have the potential to dramatically reduce transportation-related emissions.⁵⁷ As EVs become increasingly popular, it will be important to support investments in electric charging infrastructure and to promote the transition to electric vehicles. Electrical charging infrastructure around Wisconsin will be essential to supporting intercity and interstate electric vehicle travel. Transit authorities and school districts, with support from the state, can begin buying electric buses. Transitioning to an all-electric transportation system will require both immediate action and long-term planning from all levels of government.

While EVs are a foundational piece in a carbon-free transportation system, they do not solve the intrinsic problems with our transportation system, including urban sprawl that increases communities' carbon emissions and makes transit less effective, and the exacerbation of equity issues for those who do not, or cannot, own a personal vehicle. Additionally, because it will take decades to transition gasoline-powered vehicles out of our transportation system, Wisconsin should be prioritizing walking, biking, public transportation, and vehicle sharing wherever possible. Nevertheless, here are policies that are necessary for supporting the electrification of our transportation system:

Policy: Build a statewide network of electric vehicle charging infrastructure that supports major travel corridors with a station every 25 miles

To support electric vehicle adoption, the state should develop an EV infrastructure plan using a collaborative approach at the local and regional level, in partnership with utilities, private-sector players, and EV drivers. One of the biggest issues holding back mass adoption of EVs is a concept known as “range anxiety.” Range anxiety is the fear that an electric vehicle will run out of power, because of a lack of infrastructure.⁵⁸

Wisconsin Electric Vehicle Charging Station Infrastructure - Tourism



● Charging Infrastructure to Support Tourism

0 25 50 100 Miles



Currently, the state's electric vehicle infrastructure is very limited. A 2018 study estimated that Milwaukee has only 5% of the charging infrastructure needed to support the number of electric vehicles expected by 2030.⁵⁹ Extensive EV infrastructure will be needed to support the transition to EVs. Quality infrastructure would include uniform electric vehicle charging infrastructure that is interoperable with all vehicles and avoids charging gaps. To create uniform coverage, a network of charging stations should be located every 25 miles. Communities throughout Wisconsin should create EV-readiness plans, in collaboration with local utilities to further support the creation of EV infrastructure. Much of this infrastructure could be accomplished by using existing highway rest-stops, public-private partnerships, and an ongoing relationship with local utilities.

Policy: Build a network of electric vehicle charging infrastructure at major tourist attractions to support in- and out-of-state travelers

Wisconsin's tourism sector is a crucial and growing part of our state's economy. Visitor spending has been on the rise for the last decade, with tourism supporting 7.8% of all private jobs and generating \$1.6 billion in state and local taxes.⁶⁰ If tourists in electric vehicles are unable to get to important locations around the state, then this trend will reverse. Locating charging infrastructure at key locations will allow Wisconsin's tourism industry to seamlessly transition into an electric vehicle system.

Policy: Create a capital assistance grant to help purchase EV buses for both transit operators and school districts

Electric buses provide a number of significant advantages over traditional diesel buses. When powered by renewable energy, EV buses can provide local transit that is cheaper to operate and greatly reduces emissions. A fleet of electric buses will have lower fuel costs, no exhaust odor, and quieter engines.⁶¹ Currently, electric buses have a higher initial capital cost than traditional buses, but cost less over the lifetime of the vehicle.⁶² Unique partnerships are being developed to help offset the higher initial cost, including partnerships between transit authorities and utilities to share the cost burden.⁶³

Cities around the world are embracing electric buses.⁶⁴ Madison, Milwaukee, and Racine have started making the transition.⁶⁵ With capital funding support from the state, local transit networks will be more competitive for federal grants and can begin building a fully-electrified transit fleet. Our transit networks will be able to move people while producing little to no emissions and saving money over time by transitioning Wisconsin's diesel- and gas-powered transit and

school bus fleets to all-electric buses. All-electric buses will also help protect the public, and children in particular, from dangerous diesel particle pollution while cutting carbon emissions.

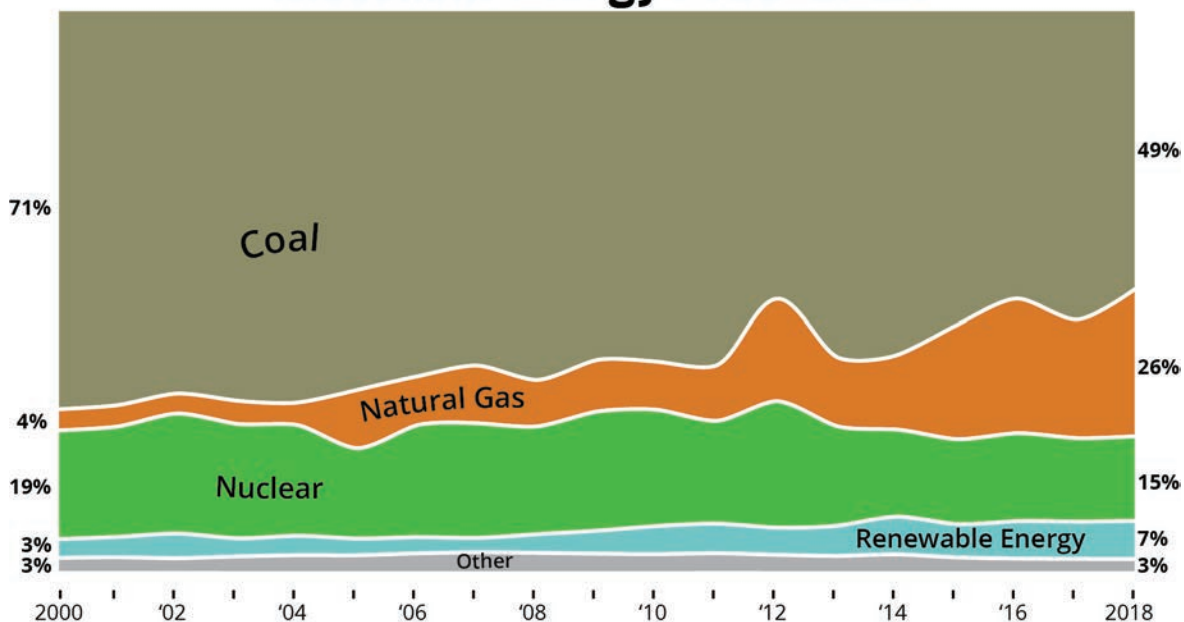
Policy: Create a statewide campaign to promote electric vehicle adoption

One of the biggest hurdles to EV adoption is a lack of familiarity. Most people are unfamiliar with the benefits and infrastructure surrounding electric vehicles. Car dealerships are uninformed about electric vehicles and the rebates and tax credits available to owners. By creating a Wisconsin-wide EV educational program, residents will have more exposure to electric vehicles. An educational program will ease the transition to EVs by providing consumer buying guides, charging guides for commercial businesses, and by offering the opportunity to test drive EVs to demystify the experience. Several surrounding states have undertaken this effort, an excellent example being Minnesota’s “Drive Electric Minnesota.”⁶⁶

Policy: Mandate the transition to renewable energy sources by 2050 so that electric vehicles can operate on carbon-free energy.

As renewable energy continues to become more and more cost-efficient, Wisconsin should set a goal of having a 100% carbon-free electrical grid by 2050. This can be achieved by decommissioning existing coal plants and increasing wind and solar production throughout the state.⁶⁷ Until that time, EVs will rely on carbon-intensive electricity to operate. A carbon-free electrical grid supporting EVs will dramatically reduce emissions from the transportation sector.

Wisconsin Energy Production



Source: US EIA: Net Generation by State by Type of Producer by Energy Source

Conclusion

The United Nation's Intergovernmental Panel on Climate Change (IPCC) estimates that to prevent irreversible and catastrophic climate change, we must keep global warming to less than 1.5 degrees Celsius.⁶⁸ In Wisconsin, our transportation system continues to be a major contributor of emissions. This system is carbon intensive, deeply inequitable, and fiscally unsustainable. Our funding decisions over the last seventy years have predominantly focused on car-centric infrastructure. For many, our transportation system is a detriment, especially for those who rely on other forms of travel outside of personal automobiles.

We can and will build a better transportation system. A system that balances transportation investments away from highway expansion to local road preservation and investment in public and active transportation modes. We can build a system that no longer disproportionately impact low-income consumers and communities of color. A system that connects everyone to the places they need to go, eliminates carbon emissions, and is fiscally sustainable. Wisconsin needs to change. If we implement the recommendations of this report, we can avoid the worst impacts of climate change, while building healthier, sustainable, and more equitable communities that future generations will be proud to call home. Wisconsin can be a leader, let's get to work now!

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