

EYES ON THE ROAD

Assessing the quality of Wisconsin's local roads

The quality of paved local roads in Wisconsin has fallen by 6.8% since 2010, leaving them in worse shape than 14 years ago though still reasonably good on average. Local roads around the state are not all the same, with the paved roads in much better shape in cities such as Appleton and Eau Claire than in Kenosha and Milwaukee. State funding boosts may help to address some issues, particularly in rural areas, but challenges will likely remain.

Since 2010, the quality of the state's paved local roads has fallen from an average rating of 6.6 on a 10-point scale to 6.2, a drop of 6.8% (see Figure 1), according to a Wisconsin Policy Forum analysis of state data.

Between 2010 and 2023, the share of local roads in Wisconsin rated as either excellent or very good fell by 9.5 percentage points. Over those same years, there was a 6.9 percentage point increase in the share of roads rated as good or fair and a modest increase in the share of roads rated poor or worse.

While on average local roads in Wisconsin remain in relatively good condition, this decline deserves attention: local roads are vital within their communities and provide connections to the rest of the state and country through the highway system. For motorists, the quality of their roads can affect the speed of their commute, the wear and tear on their vehicle, and even their safety in some cases.

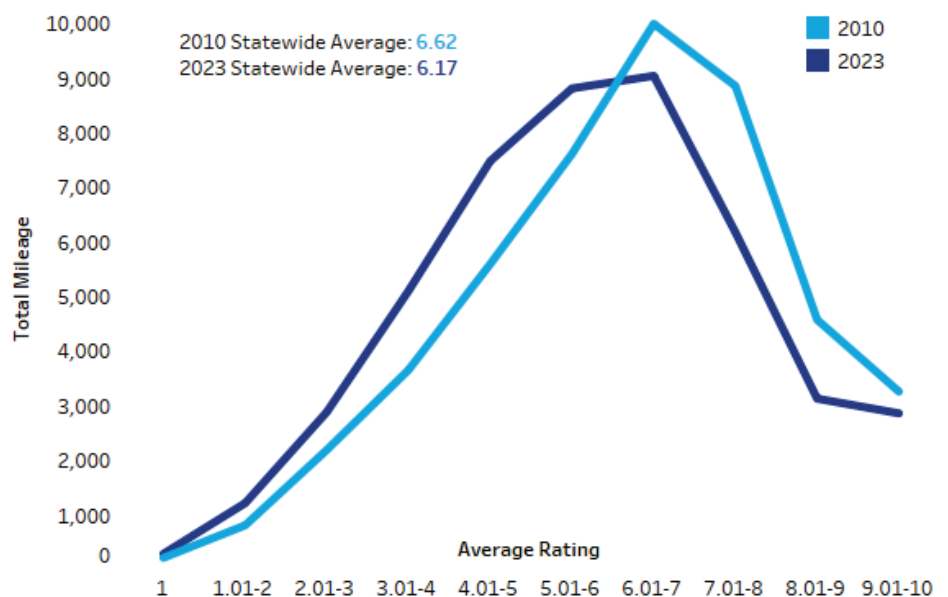
For businesses, roads are the arteries that carry the lifeblood of commerce and help ensure it is flowing smoothly. In Wisconsin, local roads are especially important because they provide a vital link for farm and timber producers in far corners of the state to global markets. If these roads fall into disrepair, they represent a drag on the economy.

Because of Wisconsin's harsh northern climate, its roads also deteriorate faster and are more expensive to maintain compared to most other states. As roads break down, the costs to repair them increase sharply.

In this brief, we use data from the Wisconsin Department of Transportation (DOT) and Department of Revenue (DOR) to better understand the state's local roads and how they vary in quality across Wisconsin. A variety of factors can influence road ratings, including traffic, the surface type and other characteristics of the road, and local property values and investment in road maintenance and construction.

Figure 1: Local Road Quality Declines Since 2010

Total mileage by road quality rating, 2010 versus 2023



Source: Wisconsin Department of Transportation

WHAT IS A LOCAL ROAD?

Wisconsin's overall road network is divided into two systems: the local network, consisting of county trunk highways, urban streets, and rural roads, and the [state trunk highway](#) system, made up of Interstate, U.S., and state highways. The state highway system connects large communities in Wisconsin and other states, while local roads connect homes, businesses, and schools within a given community, and provide connections to the larger highway system.

In Wisconsin, there are 101,548 miles of local roads, ranging from gravel town roads with barely any traffic to multi-lane urban thoroughfares with tens of thousands of daily vehicles and features that include curbs, gutters, storm sewers, lighting, and traffic signals.

There are [three general types](#) of local roads. The largest are known as arterials, which connect cities and serve as major non-highway thoroughfares. East Washington Avenue in Madison is one example. Next come collectors such as parts of West Mitchell Street, just south of Milwaukee's downtown – these connect smaller local roads with arterials. Last come ordinary local roads that provide access to neighborhoods and more rural areas.

HOW LOCAL ROADS ARE RATED

To measure road quality, the Wisconsin DOT uses a nationally recognized 10-point grading scale for paved road surfaces that was developed by the University of Wisconsin-Madison. The scale is known as PASER, or "[Pavement Surface Evaluation and Rating](#)."

Quality ratings are supposed to be collected by local governments on each road segment under their jurisdiction every two years as part of their reporting to DOT. The department does not consider ratings more than two years old to be valid. Statewide, these self-reported data are based on a detailed set of [manuals defining](#) quality. DOT officials provide training resources to guide local officials in assessing road quality, but do not audit or verify the data.

As a result, these data are not perfect. Given the massive number of road miles and the varying degrees of resources and knowledge among the local officials responsible for assessing them, it is likely there are some variations in the accuracy of the ratings. In addition, only 89% of road miles had ratings in the DOT

How Road Ratings Are Used

These ratings are designed for use by local governments to prioritize investments in the roads that need them most. Having a detailed picture of the roads under their jurisdiction allows these governments to make adequate investments to prevent roads from falling into disrepair.

In some cases, the state Department of Transportation also uses these ratings to allocate state road aids to local governments. The ratings are used to prioritize projects for funding through the state's [Local Roads Improvement Program](#) (LRIP) and the [Agricultural Roads Improvement Program](#) (ARIP).

To be eligible for funding through LRIP, roads must be rated below 7 on the quality scale, with priority given to roads with greater traffic, or those with heavy vehicle traffic. The newly-created ARIP prioritizes rural roads, focusing its attention on roads with less traffic that are vital for farmers or timber producers to transport their goods to market.

database in 2022 and 2023. Some municipalities fall well below this percentage in reporting on their roads, so the DOT data included 11,237 of miles of roads that were not rated within the past two years.

However, these ratings have been consistently and extensively collected for decades, so they represent the best available data on road quality in Wisconsin.

In order to examine how the quality of Wisconsin's paved roads has changed over time, we looked at only the local road segments that had been recently rated in both 2010 and 2023. We also removed gravel roads of all types, as they are rated on a separate scale. They do, however, deserve attention, and are discussed below.

EXAMINING THE RATINGS

Under the PASER scale, paved roads rated 8, 9, or 10 are considered excellent or very good. These roads might be newly constructed, reconstructed, or resurfaced, and have no cracks and require little maintenance.

In 2023, 24.9% of the roads in our sample, or 11,730 miles, had a rating of 8 or more. That compares to



34.4% of the roads in the 2010 sample, or 16,135 miles.

Roads with scores of 4, 5, 6 or 7 are considered to be in fair or good condition, with some signs of aging or cracking. These roads are generally sound structurally and can continue to bear the weight of traffic without rapid damage, though they may need to be resurfaced. The useful lifespan of roads in this category can also be extended by timely maintenance such as crack sealing.

Statewide, nearly two-thirds (65.1%) of sampled roads had ratings of at least 4 and less than 8 in 2023, and included 30,640 miles. That compares to 58.2% of sampled roads in 2010, or 27,287 miles.

About 10.0% of the local road miles in our 2023 sample were rated as less than 4, which includes roads rated as poor, very poor, and failed. That's an increase from 7.3% of the sampled roads in 2010.

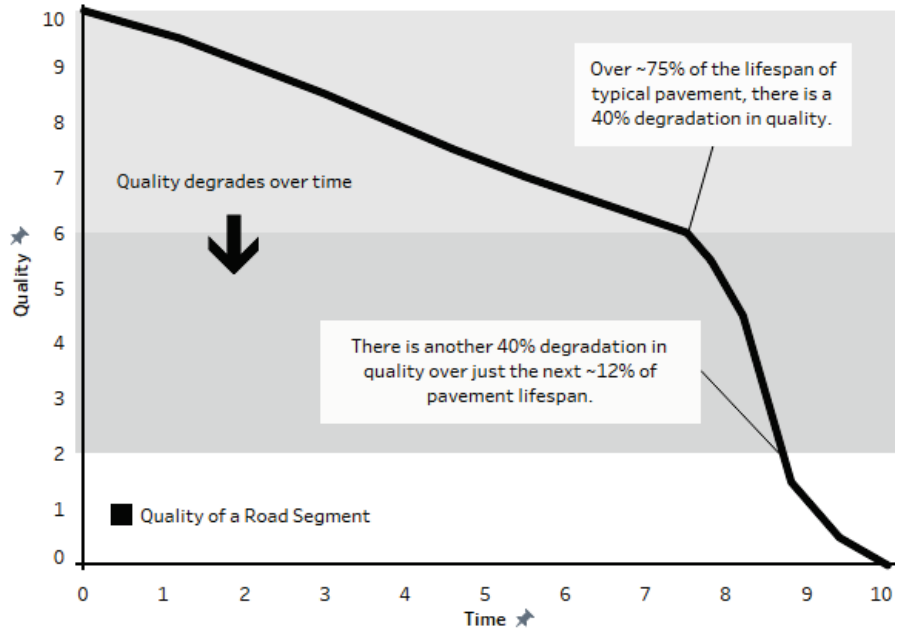
These are the worst roads in the state, with those receiving a 1 considered failed and in need of total reconstruction. These roads must be rehabilitated with major work, like completely removing and replacing the pavement and in some cases also repairing the underlying road structure that supports the pavement.

POOR ROADS MEAN HIGHER COSTS

Roads tend to deteriorate slowly for the first part of their lifespan, then quickly near the end. As they rapidly deteriorate from ratings of "Fair" to "Poor," the costs of repair skyrocket – up to six times more for roads in poor or very poor condition relative to the cost to bring roads still in good condition up to a similarly high level of quality (see Figure 2).

Road deterioration can also be accelerated by heavy vehicles and more frequent traffic. State policy has changed to allow heavier vehicles, including lengthening the period of time overweight trucks can transport [crops](#), allowing a similar exemption for [manure](#), and eliminating weight limits for trucks transporting [forest products on frozen roads](#).

Figure 2: Typical Pavement Condition Life Cycle



Source: adapted from Wisconsin Department of Transportation WISLR Manual

These changes may make farm and forest product operations more efficient, but they also impact the quality of rural roads in communities that may not have the resources to adequately maintain and reconstruct them.

RATING LOCAL ROADS BY COMMUNITY

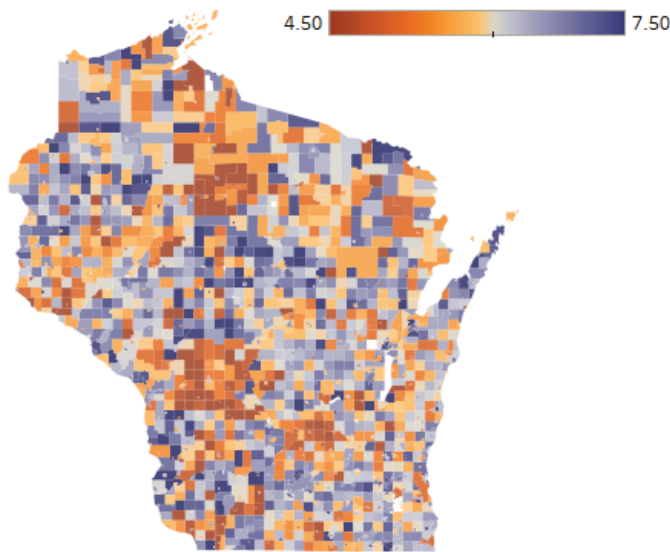
Our comparison of road ratings in 2010 and 2023 was complicated by the fact that many large municipalities had gaps in the DOT's 2010 ratings. Milwaukee, Madison, and Green Bay – the three largest cities in the state by population and local road mileage – all had less than 40% of their 2010 mileage rated within two years. Roads may lack a rating because they were not rated by the local government in the two-year period, or because rating data from local governments did not flow correctly into the state system.

These missing ratings for 2010 make it difficult to make comparisons over time, particularly in these communities and the counties in which they are located. However, nearly 90% of statewide local road mileage in 2023 – more than 90,000 out of a total 101,548 miles – was rated in either 2022 or 2023, including more than two-thirds of the mileage in each of the three largest cities. This allows us to examine 71,534 miles of paved local roads in 2023 after all types of gravel roads are excluded.



Figure 3: Some Geographic Variation in Road Quality

2023 average rating by municipality for paved roads that have been recently evaluated



Source: Wisconsin Department of Transportation

Looking at just the 2023 data, the average quality rating for local roads in Wisconsin is 6.23. The city of Milwaukee, however, has an average rating of just 5.08 – about 18.4% worse than the statewide average. The average rating for Madison, on the other hand, is 6.87, which is about 10.3% above the statewide average.

Among the state’s 25 most populous communities, Milwaukee’s average road quality ranks 23rd, greater

than only the cities of Waukesha and Kenosha (both 4.96). Roads in Appleton (7.65) have the highest average rating of any of these municipalities. Wauwatosa (7.35), Eau Claire (7.19), and Oshkosh (7.06) also have roads that average a score of greater than 7.

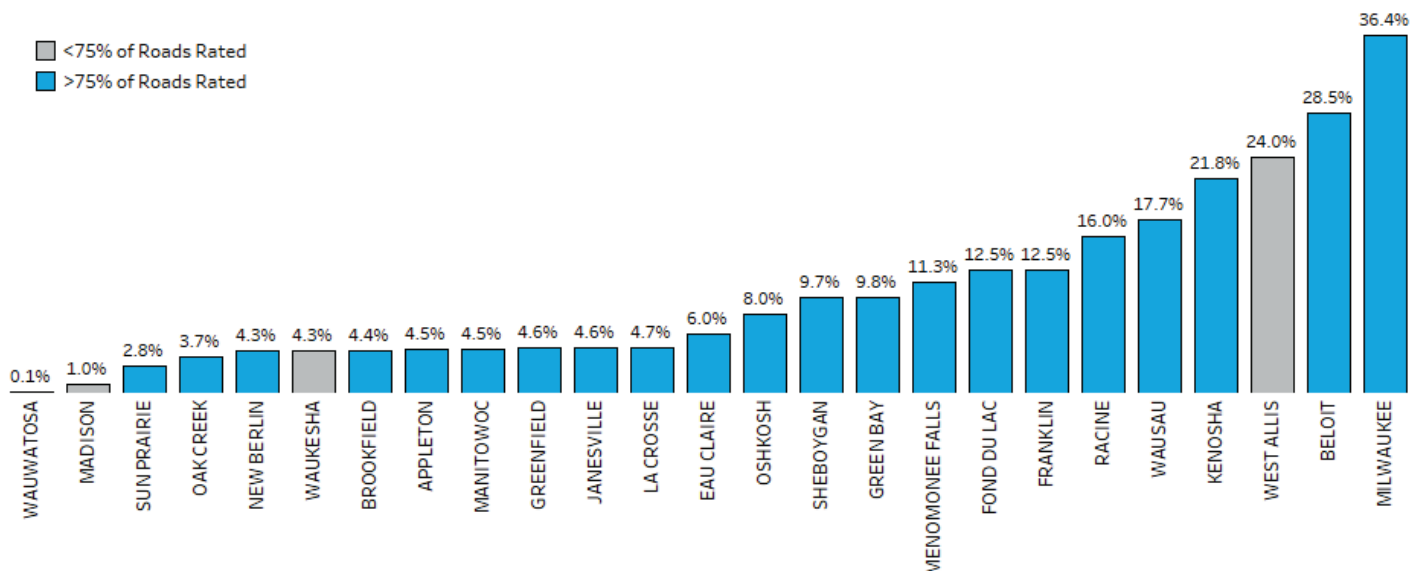
Most municipalities – just under 70% – have an average rating between 5 and 7. Only 2.9% of municipalities had a 2023 average rating above 8, and only 2.3% had an average rating below 4. There is also not a large difference in road quality between types of municipalities, although the average is slightly higher in villages (6.44) than in towns (6.21) or cities (6.17).

Similarly, all counties had an average road rating between 5 and 7 except Price, which was the lowest in the state at 4.85. Door County, with an average rating of 6.90, had the highest rated paved roads in the state. Dane County ranked seventh-best at 6.63 and Milwaukee County’s average rating of 5.68 was the eighth-worst statewide. Figure 3 shows how paved road quality varies around the state.

Looking only at road segments with a rating of less than four – those considered to be “poor,” “very poor,” or

Figure 4: Higher Share of “Poor” and “Failed” Roads in Southeast Wisconsin

Makeup of paved roads rated less than 4 out of those that have been recently evaluated, 25 most populous municipalities in Wisconsin



Source: Wisconsin Department of Transportation



“failed” – paints a similar picture as average ratings. Milwaukee is the only one of the 25 most populous communities in which a rating of poor or worse has been assigned to more than a third of the recently rated road segments.

Nearly half of the top 25 communities have less than one in 20 road miles rated as poor or failed. Figure 4 on the previous page shows how the top 25 cities in the state compare, with some other communities with lower incomes and property values such as Beloit also having more low-quality roads.

When comparing communities, it is important to note that road quality does not depend solely on how well the local government is managing its roads. Other factors beyond the control of local officials can make a difference too, including the construction of new neighborhoods with new roads, weather conditions, state and federal aid levels, and trends in commodity and labor prices.

HIGH-TRAFFIC ROADS ARE BETTER MAINTAINED

The amount of daily traffic on roads is correlated with their quality, but not necessarily in the way one might expect. Despite the greater wear and tear on high-traffic roads, local officials are clearly prioritizing these roads keeping them in better condition than less-traveled ones. Projects on higher-traffic roads may also be eligible for federal funding, further widening the gap in quality.

Of the paved roads with up-to-date ratings in Wisconsin in 2023, the DOT database includes average daily traffic data for around 85% of them. The highest-quality roads in 2023 were those that had between 1,000 and 4,999 daily vehicles. Those roads had an average rating of 6.62. Roads with 5,000 to 9,999 daily vehicles had a virtually identical 6.61 average rating (see Figure 5).

The roads with the most traffic – 10,000 vehicles or more per day – did have a slightly worse average rating than the roads that were somewhat less traveled. Yet in general, declines in quality seem to go hand-in-hand with declines in

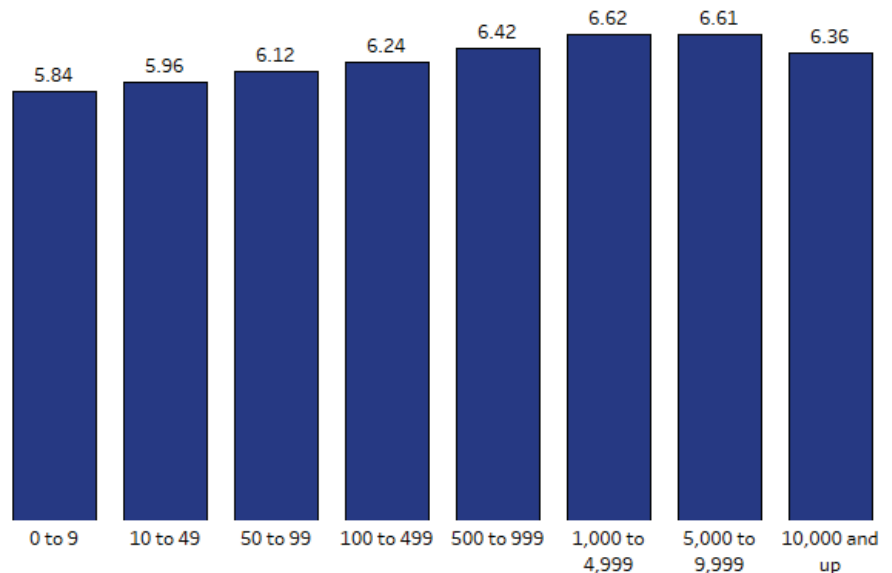
traffic. For each rung of daily traffic below 1,000 vehicles, average quality in 2023 got lower, with the least-used roads – those that saw nine or fewer vehicles each day – receiving the lowest average rating, at just 5.84.

Another factor in the rating of a road is its surface type. DOT’s database tracks the composition of each local road, and most of them are surfaced with either concrete or a type of asphalt. Road crews can apply either a type of heated asphalt (hot mix) or a less expensive but also less durable type that has not been heated (cold mix). Not surprisingly, roads that have been surfaced with the more expensive heated variety of asphalt have a higher average rating than the less costly type.

UNPAVED ROADS

Wisconsin also has 18,773 miles of unpaved roads, which are largely gravel and sealed gravel roads. The latter consist of gravel sealed with a substance popularly referred to as tar, and to the untrained eye may seem like a type of paved road. These gravel roads are graded on a [5-point scale](#), with 5 as the top score. Though this scale is separate from the one for paved roads, the five-point measure helps to illustrate the large difference between unpaved and paved roads. Ultimately, even a well-maintained gravel road is of lower quality than a paved road in fair condition.

Figure 5: Roads With More Traffic Are in Better Condition
Average 2023 rating for recently evaluated paved roads by average daily traffic



Source: Wisconsin Department of Transportation



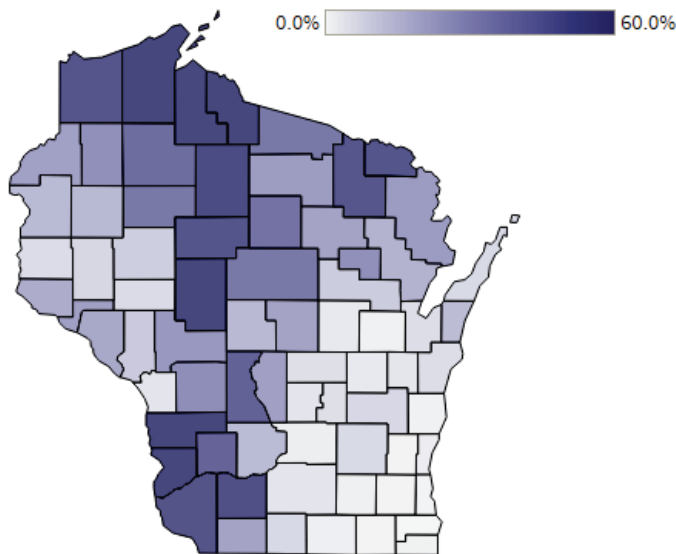
While we excluded unpaved roads from our main analysis, these roads are worth examining since they do have an impact on the overall quality of the transportation system. If we were to include unpaved roads within our analysis, roads in the less populated areas of the state would receive much lower average ratings. Unpaved roads tend to carry the least traffic, and are found in less wealthy areas of the state, which shows the relationship between the quality of a road and the traffic on it and the property values in the surrounding community.

Gravel roads – including those sealed with tar – make up less than 1% of all local road mileage in Milwaukee County and several surrounding counties (Washington, Waukesha, Walworth, and Racine) and they make up just 4.1% of roads in Dane County (see Figure 6). However, gravel roads make up more than one-third of the local network in 20 counties. That includes five in which more than 60% of local road miles are gravel – Vernon, Clark, Iron, Bayfield, and Crawford.

However, the driving experience in these counties varies, as gravel roads are not all the same. Southwestern Wisconsin counties like Vernon, Grant, and Iowa have a larger proportion of higher-quality sealed gravel roads, while northern Wisconsin counties like Florence and Clark feature more traditional gravel roads.

Figure 6: Most Gravel Roads Found in Northern and Western Wisconsin

Percentage of recently rated gravel road miles, 2023 data



Source: Wisconsin Department of Transportation

LOCAL GOVERNMENT SPENDING TRENDS MAY HELP EXPLAIN QUALITY CHANGES

DOR data show spending on roads is one of the biggest budget items for local governments in Wisconsin. The data break out spending on road construction, which includes all the costs from project design and engineering through any necessary demolition and grading to the actual construction. Local governments can borrow funds to construct roads, though they must use other revenues to pay off the debt.

The data also provide spending figures on road maintenance and administration, which includes funds spent on the oversight and repair of roads as well as the cost of sweeping streets, mowing ditches, and plowing snow.

Between 2010 and 2022, total local government spending on road construction increased by an average annual rate of 4.8% per year, outpacing the 4.2% annual growth in [DOT's index that tracks road construction costs](#). There were differences in spending by type of local government, with cities increasing construction spending at an annual rate of 3.4% over the same period. Towns (4.9%), villages (6.3%), and counties (6.0%) all increased construction spending more rapidly.

However, local spending on road maintenance increased by an average annual rate of only 1.9% from 2010 to 2022. That gap between the rise in costs and local maintenance spending may help to explain the drop in local road quality.

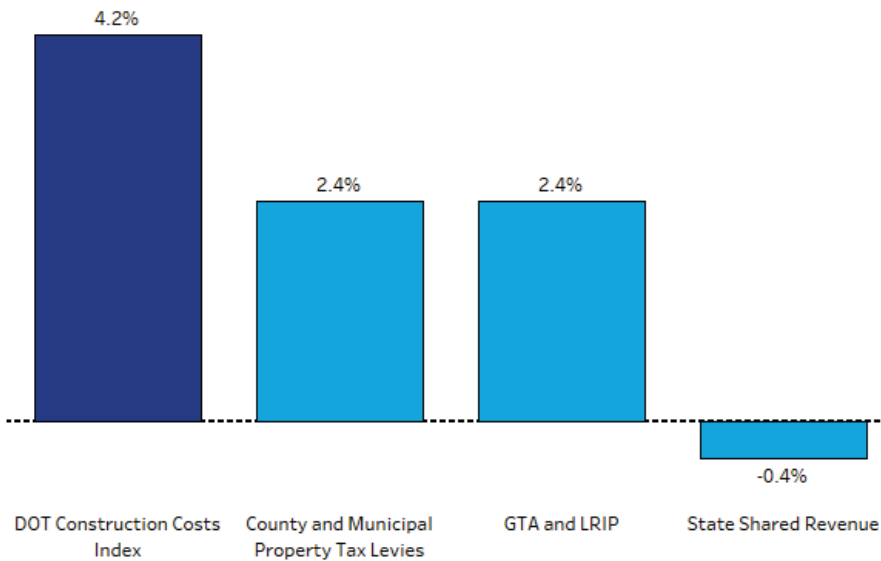
Besides borrowing, money to pay for local road spending typically comes from a combination of state transportation aids and grants, a form of general state aid known as shared revenue, local revenues such as the property tax, and to a lesser extent federal funding. For the most part, growth in these revenue sources has lagged the rise in road construction costs.

Figure 7 on the next page shows how those costs have outpaced several of the major revenues that pay for local transportation spending: state [General Transportation Aid](#) (GTA) and Local



Figure 7: Growth in Construction Costs Outpaces Major Local Revenues

Annual growth rate of revenue sources and road construction costs, 2010-2023



Sources: Wisconsin Departments of Revenue and Transportation, Wisconsin Legislative Fiscal Bureau

Roads Improvement Program (LRIP) payments, shared revenue, and the combined statewide property tax levy for counties and municipalities.

While the growth in local road construction spending has more than matched construction inflation, it's possible that these spending increases have come at the expense of other local needs. One of those priorities may be spending on road maintenance itself. Though lower maintenance spending may help balance local budgets in the short term, it is likely adding to road costs in the future.

STATE TRANSPORTATION AID REPRESENTS A KEY FACTOR

An additional factor that may have contributed to the decline in local road quality is the overall funding levels within the state's transportation fund. [Lackluster growth](#) in transportation revenues – particularly the gas tax – may have kept the state from making the investments needed to help local governments keep up with local road needs while still adequately funding the state's highway system.

Between 2011 and the current 2024 budget projections, gross revenue in the state's transportation fund has grown at an average annual rate of 2.6%, lagging the 4.2% average growth in road construction costs.

To some degree, this picture may already be changing for the better, especially in towns. Last year, Wisconsin Act 12 provided a [massive increase in state shared revenue aid](#), and was especially generous to less populous communities such as towns, which will see total state shared revenues more than double in 2024. Roads represent the single largest spending item for towns, so it is likely that a major portion of the aid will be used to improve and maintain those largely rural roads.

Cities and villages also benefited from the Act 12 funding increases, though to a lesser extent. A number of cities such as Janesville, [Madison](#) and Waukesha, did not see a major boost in shared revenue from Act 12 and continue – like other municipalities – to live under state limits

on local property tax levies used for operations. That places a particular restriction on spending for road maintenance and puts local governments in a potentially difficult position of having to choose between addressing declining road quality, public safety, or other local priorities.

Additionally, the 2023-25 budget provided \$250 million in supplemental aid for local roads, largely directed at improving town roads. This investment came in two parts: the newly created Agricultural Roads Improvement Program (ARIP), which allocates \$75 million annually for investments in local roads that connect farmers and forest producers to their markets, and \$100 million in supplemental funds for the LRIP program. The 2021-23 budget included the same amount of supplemental LRIP investments.

Combined with the increases to shared revenue, these two infusions of local transportation funding may lead to some improvement in local roads that will show up in future quality ratings. Increases in grants and aids through the federal [Bipartisan Infrastructure Law](#) may also help address local road quality, though most federal aid goes to the state highway system.

Ultimately, however, a key question is whether the state's transportation fund can sustain additional aid for local roads. That's particularly the case since the investments over the past two budgets have been



supported in part through transfers of state income and sales tax revenues into the transportation fund – a maneuver the state may not be able to repeat in the future.

In our review of local challenges, Milwaukee in particular merits special attention, since only four of the 100 most populous municipalities in Wisconsin had a worse average road quality in 2023. Act 12 will increase the funds available for investment in Milwaukee largely through a newly authorized 2% city sales tax, but the legislation also mandates that the city first use these revenues to address pension liabilities and restore public safety staffing levels. The remaining funds could help address road quality, but other [priorities in the city budget](#) will also compete for attention.

CONCLUSION

The quality of Wisconsin's paved local roads has deteriorated since 2010 – a trend worth watching closely. It will take time and substantial investments to reverse this decline in quality across tens of thousands of local road miles. Recent infusions of state aid should be helpful, but may not be enough.

Catching up could prove even more difficult if local governments around Wisconsin fall too far behind in maintaining and replacing roads. Given the tight labor market, especially for [blue-collar jobs](#), a statewide blitz to rapidly improve road quality could inflate construction costs. Instead, state and local officials may see steady investments as the wiser choice.

Since the state transportation fund has limited funding and must also maintain state highways, state officials may wish to consider which local roads are prioritized for funding. Recent increases in LRIP and ARIP funding have focused on rural roads with higher traffic. While high-traffic roads throughout the state are important, focusing increased investment mainly on rural roads with more traffic could add to the deterioration of less-traveled rural roads as well as those in urban areas.

For now, the state's roads remain in generally good condition and timely investment could help ensure that remains true for years to come. A failure to do so, however, could mean a bumpier and more costly ride in the future.

