Financial constraints are used in transportation planning to communicate a plan's priorities. Projects that are part of a financially constrained plan are of greater priority than those projects not included. The amount of funding estimated is based on past and current trends as well as assumptions about future revenues and infrastructure maintenance costs (see Figure 47). As such, financial constraints represent a balance between a strong desire to meet the infrastructure needs of the County and known financial limitations.

The planning process anticipates priorities will change over time and new funding opportunities may arise. Since the 2020 Long Range Transportation Plan was adopted in 2006, the County has noted a change in attitude towards increasing funding for transit, bicycle, and pedestrian infrastructure. Regarding funding, some new funding has been found to be temporary or intermittent. The federal transportation bill passed in 2005, known as SAFETEA-LU, included $32.86 million in earmarks for McHenry County projects. The bill passed in 2012, called MAP-21, included no funding earmarks for the County. Other funding can come from unexpected places. In 2008, the County began receiving a portion of the RTA Sales Tax as part of the State's efforts to reform and finance the Regional Transportation Authority and Service Boards.

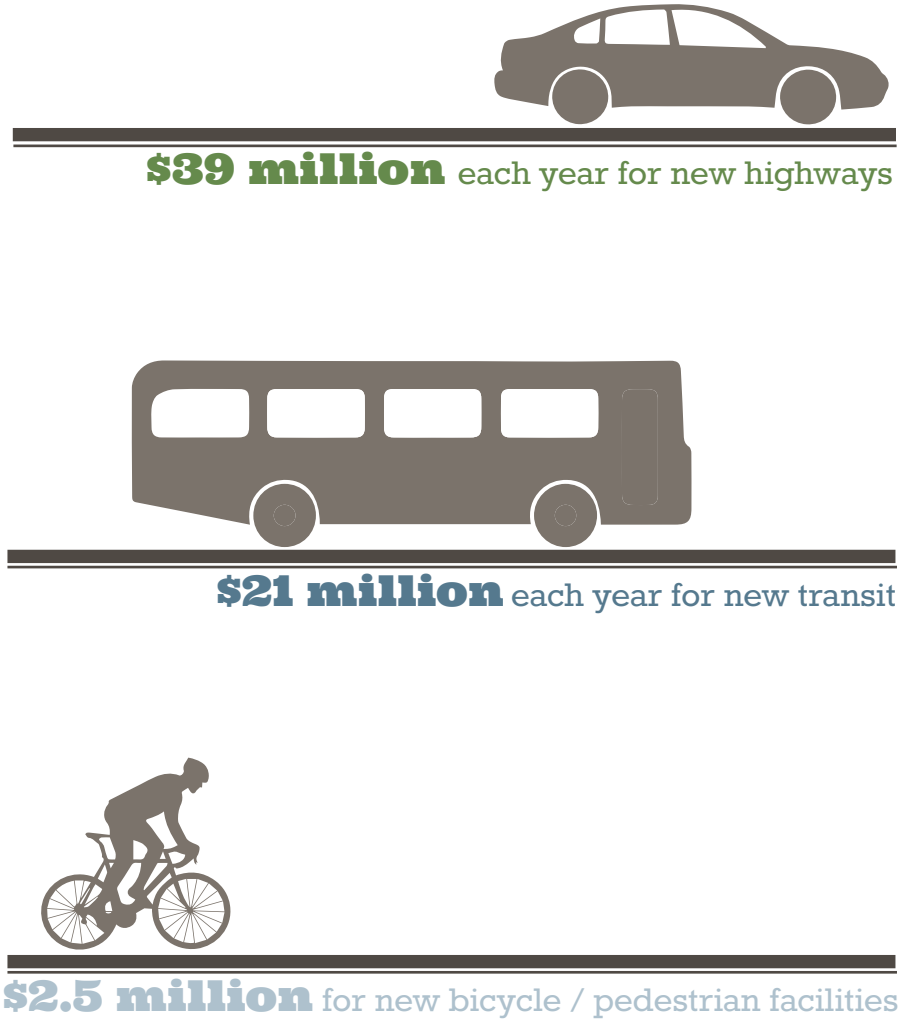


Figure 47: Estimated Available Funding by Mode for 2040 Transportation Plan

As funding is very unpredictable, it is prudent to pursue important projects beyond identified funding. This plan anticipates modest amounts of engineering and land acquisition for projects even though the total project costs are beyond revenue estimates.

The entire nation relies heavily on the motor fuel tax to fund highway maintenance and expansion. Motor fuel tax revenue levels are a function of the number of miles traveled and the efficiency of the vehicles in use. The use or "spending power" of the funding for roadways is largely a function of asphalt prices.

CURRENT TRENDS

A federal motor fuel tax is an excise tax of 18.4 cents per gallon for regular gasoline used by most vehicles. The State of Illinois applies an additional 19.0 cents per gallon; and, McHenry County has a 4.0 cents per gallon County Option Motor Fuel Tax. In McHenry County, a total of 41.4 cents in motor fuel taxes are collected for each gallon purchased. These are excise taxes that are based on quantity purchased not the price of gasoline. As gas prices go up, the amount of gas tax collected per gallon sold remains the same. Recent trends indicate that people are driving less and are driving more efficient vehicles. These trends are dramatically reducing the amount of funding available for transportation.

"At 9,363, miles per capita in 2012 reached its lowest level since 1996."

http://www.planetizen.com/node/60962

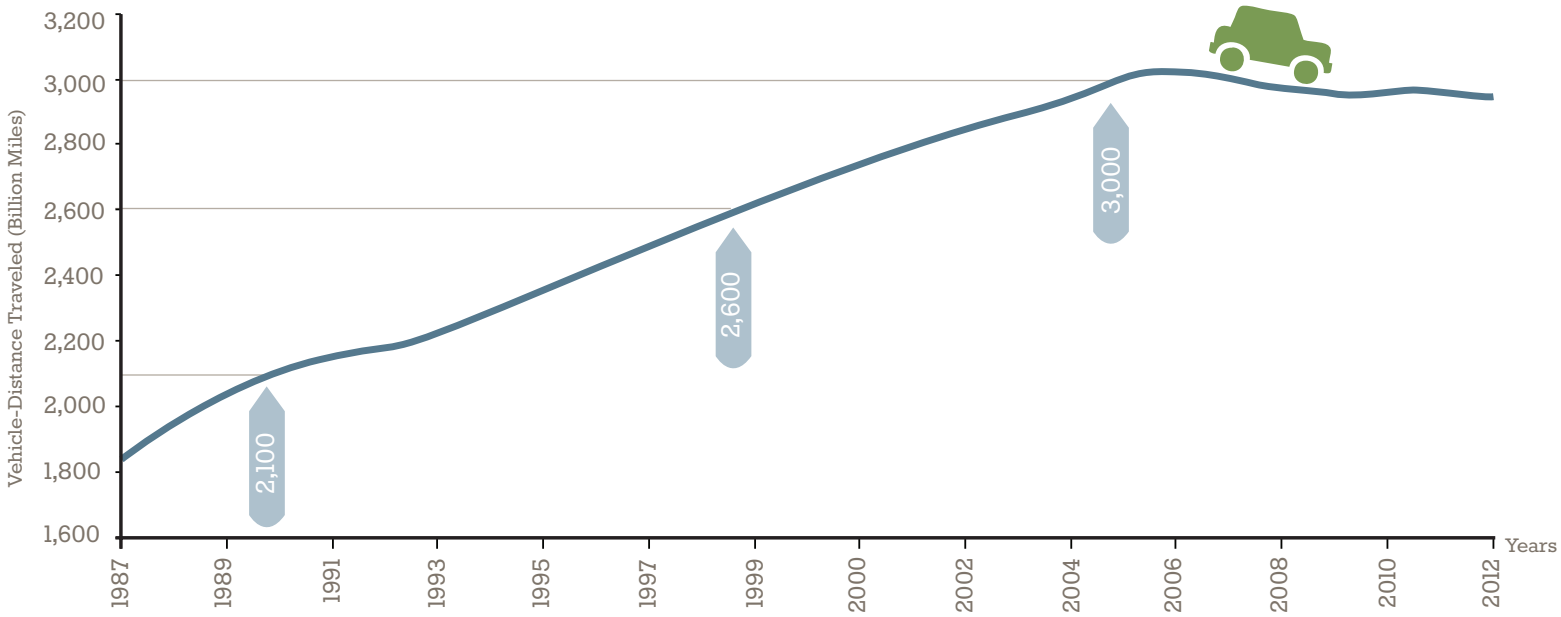
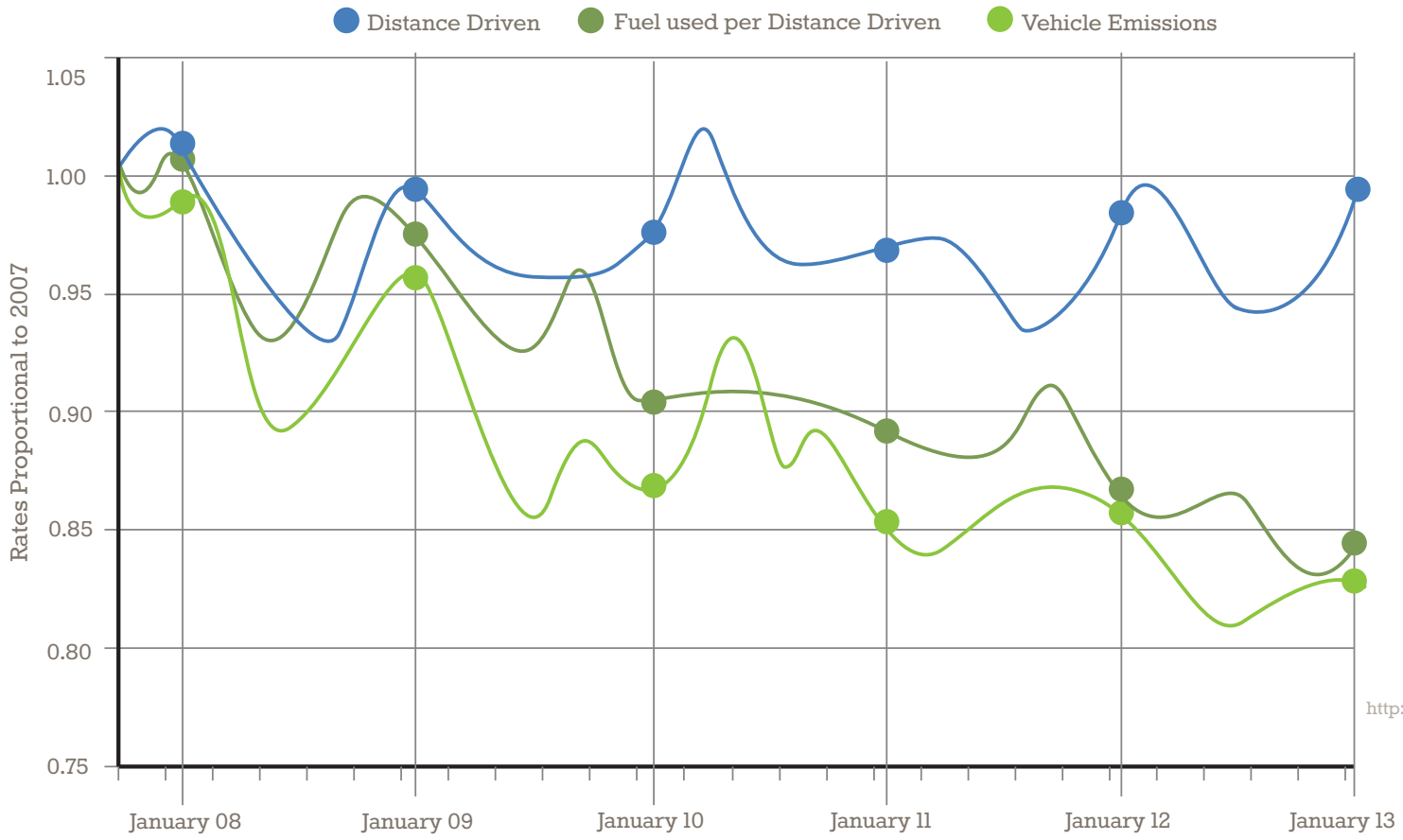


Figure 48: Total Vehicles Miles Traveled Began to Decline before the Recession

Between 2007 and 2012, the amount of local motor fuel tax collected in McHenry County, (County Option Motor Fuel Tax) dropped 10.2 percent from $4.7 million to $4.2 million. When taking into account inflation (using the consumer price index), the 2012 tax receipts were $3.79 million representing a drop of 18.9% in the purchasing power of the County Option More Fuel Tax Fund. Figure 48 illustrates a fairly steep and regular incline in the total number of vehicle miles traveled (VMT) in the country between 1987 and 2007. There are no sustained dips in this line until the economic recession of 2007. The economic recessions of 1990 and 2001 are visible as VMT was flat during those periods. However, as the economy recovered, travel increased.

The total number of vehicle miles traveled by people in the United States has not increased since 2007. This is despite continued population growth from 301.2 million estimated in 2007 to 313.9 million estimated in 2012. On a per capita basis, Americans are now driving 9,363 miles per year which is the measure's lowest level since 1996.



"In February 2013 there was an 18% reduction of emissions per driver of newly purchased vehicles compared to the situation in October 2007."

http://www.umich.edu/~umtriswt/EDI_values.html

Figure 49: Average Vehicle Miles per Gallon in the US

This trend has been identified in other research (see Figure 49). This research has focused on changes in vehicle efficiency in terms of distance traveled, fuel consumed, and fuel emissions. The University of Michigan Transportation Research center has created an Eco-Driving Index (EDI) and the two sub-indexes (EDId and EDIf) that have measured changes in travel behavior and vehicle efficiency. This is a national index that uses the fuel economy of new vehicles purchased each month to create a monthly index of estimated emissions, fuel consumed, and distance driven by these new vehicles. Since 2007, new vehicles are being driven less far and have much greater fuel efficiencies. Compared to October 2007, vehicles sold in February 2013 are driven 2% less, use 16% less fuel, and produce 18% less emissions.

According to the Environmental Protection Agency (EPA), transportation accounts for 28% of all greenhouse gas production in the United States (see Figure 50). As such, an additional 18% reduction in vehicle emissions over the next 6 years would reduce greenhouse gas production in the United States by approximately 5% if production remained steady in the other sectors.

This reduction in emissions is very important for McHenry County as the County is designated as being in non-attainment for clean-air standards. This means that the air quality in McHenry County persistently exceeds the national ambient levels of air pollution. This type of pollution is being monitored as it causes asthma and can be particularly harmful to young children and our older population. All transportation projects in McHenry County must be modeled to measure conformity to the air quality standards. If a project is found to be non-conforming, it is not eligible for federal funding. Projects that are often non-conforming include new highways.

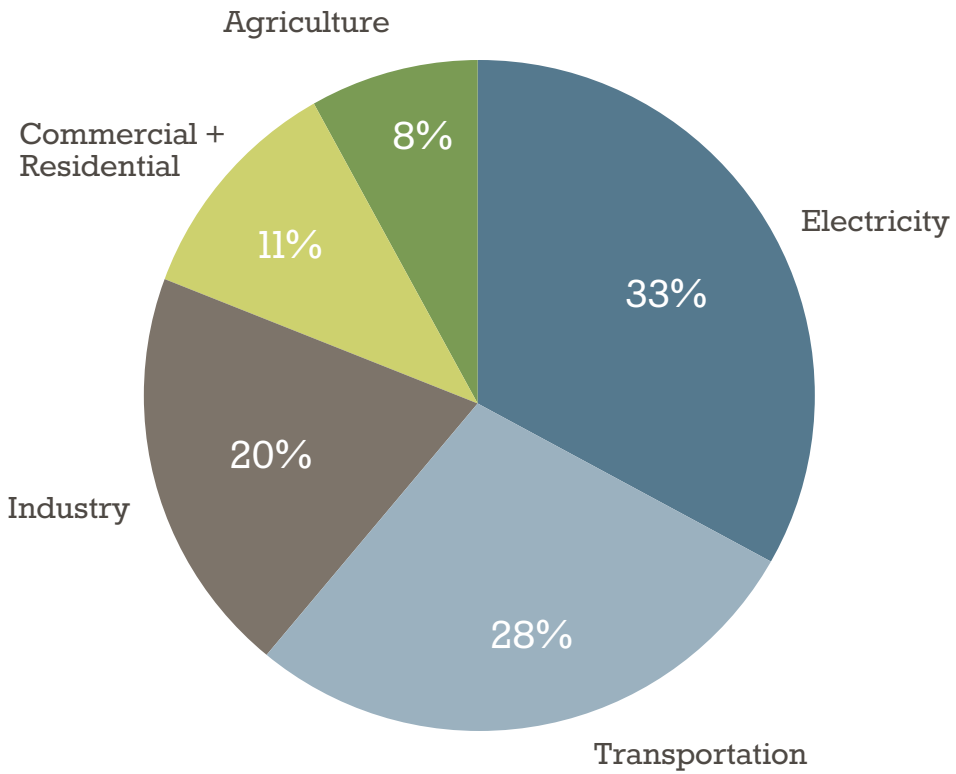


Figure 50: Sources of Greenhouse Gas in the United States

Source: Environmental Protection Agency
http://www.epa.gov/climatechange/ghgemissions/sources.html
Learn more at: http://www.epa.gov/oaqps001/greenbk/index.html

The trend in vehicle efficiency is accelerating. According to the Energy Information Administration, motor vehicle gasoline consumption will be less than previously estimated. Compared with the last Annual Energy Outlook (AEO), the 2013 AEO shows lower gasoline use, reflecting the introduction of more stringent Corporate Average Fleet Economy, or CAFE, standards. The report also indicates that growth in diesel fuel consumption will be moderated by the increased use of natural gas in heavy-duty vehicles.

In the 85 years between 1923 and 2008, average vehicle efficiency changed by 3.4 miles per gallon. Vehicle efficiency has increased more than this in the last five years. Between October 2007 and October 2012, the fuel economy of the average vehicle sold in the Unities States increased by 6.7 miles per gallon or 20 percent. This trend of greater fuel efficiency will continue as a matter of law. The CAFE standards set by the National Highway Traffic Safety Administration calls for an increase in average vehicle miles per gallon to 34.5 mpg in 2016 and 54.5 by 2025.

This report can be found at:
http://www.eia.gov/forecasts/aeo/er/executive_summary.cfm

The latest press release about CAFE changes can be found at:
http://www.nhtsa.gov/About+NHTSA/Press+Releases/2012/Obama+Administration+Finalizes+Historic+54.5+mpg+Fuel+Efficiency+Standards

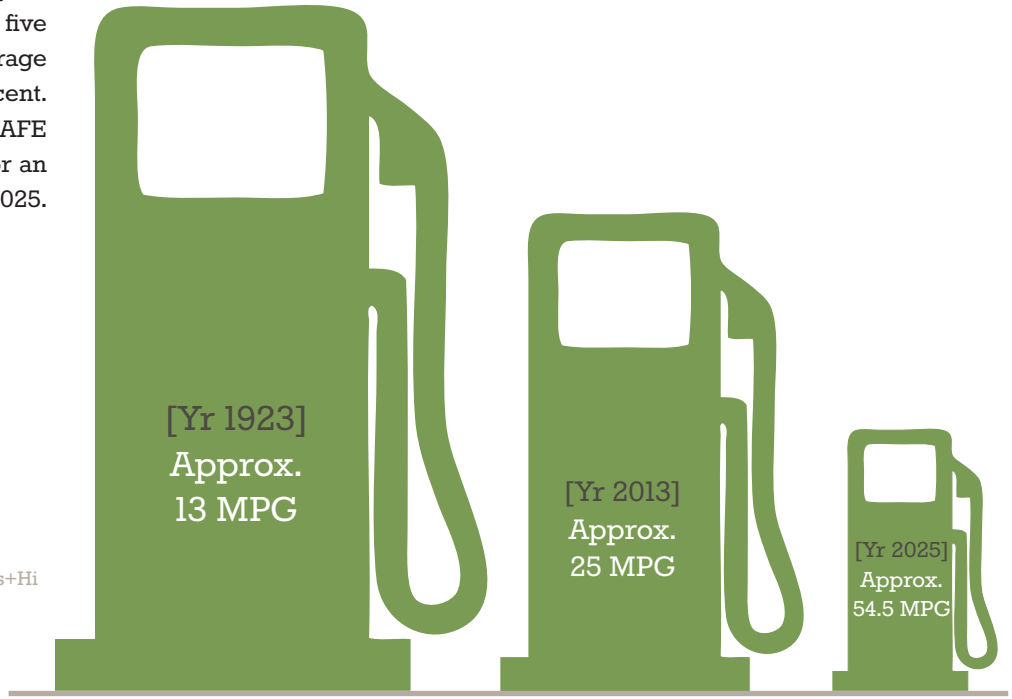


Figure 51: Average Vehicle Miles per Gallon in the US

The data shows Americans are driving less and using less fuel. At the same time, the costs for road construction continue to rise. In 2012 alone, asphalt prices jumped 11.2% from 2011. McHenry County is one of the first counties in North America to pursue what is called a pavement management system to better preserve and maintain its existing and new roadways while reducing costs. These efforts are important to make the best use of available funding, but are unlikely to produce savings great enough to offset the current trends of declining revenues.

When taking into account declining revenues and increasing costs, the assumptions used to measure the benefits of large public works are changing. Increasingly, transportation agencies are adapting to find ways to finance the maintenance and expansion of their transportation systems.

Figure 52: Cost of Road Construction Continues to Rise

There has been a shift in use of taxes by McHenry County. In 2007, project funding for the McHenry County Division of Transportation was funded 77% with a combination of State Motor Fuel Tax and County Option Motor Fuel Tax, and 23% from property taxes allocated to two funds, the Bridge and Matching funds. By 2012, motor fuel taxes accounted for only 46%, property taxes equaled 10%, and sales tax collected through the County RTA Sales Tax equaled 44% of tax revenues (see Figure 53).

When taking into account inflation and needed debt service resulting from the County using alternative debt revenue bonds to finance the Algonquin Road widening project, the County's tax revenues in 2012 available for transportation projects was down slightly ($200,000) from 2007. The County's tax revenues for transportation are not able to keep pace with inflation.

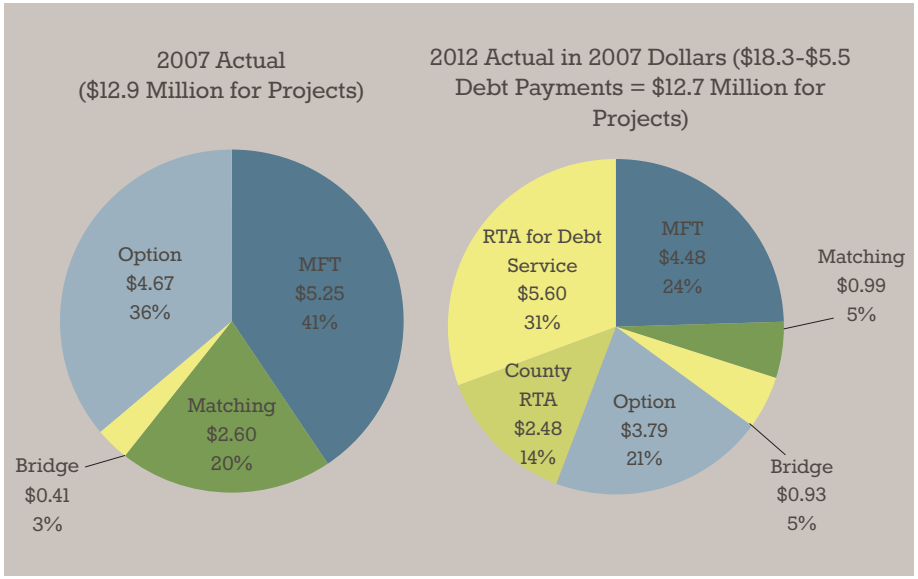


Figure 53: Transportation Project Funding for McHenry County

The total amount of revenues estimated to be collected between 2015 and 2040 will accommodate approximately $39 million in new highway work each year in McHenry County (see Figure 54). This is a future where the amount of new highway construction each year is only slightly lower than what it has been over the last three years.

Transit funding depends largely on decisions to dedicate more or less of the RTA sales tax and limited IDOT funding to expand and maintain the highway system. After accounting for approximately $1.5 billion in revenues for highway maintenance and expansion, modest increases in the amount of funding for transit can be realized given current trends. Most of this is a result of assuming federal funding for Metra's Union Pacific Northwest line upgrades ($380 million) and for Metra's Milwaukee District West Extension ($123.5 million).

Like transit, funding for bicycle and pedestrian accommodations depend heavily on the allocation of funding for highways. Unlike transit, there are more grants available and the projects tend to be much smaller in terms of engineering requirements, costs, and implementation timelines. Between 2015 and 2040, an additional $2.5 million each year is estimated to add new bicycle and pedestrian facilities throughout the County.

In total, approximately $822 million or $33 million each year will be available and needed to maintain the existing transportation network. Approximately $1.7 billion or $68 million each year will be available to expand the system.

Estimated Bicycle and Pedestrian Funding by Source

County MFT	County RTA	RTA	IDOT ISTHA	USDOT	Local	Total	Per Year	
$0	$11	$0	$16	$20	$16	$63	$2.5	New

Estimated Transit Funding by Source

County MFT	County RTA	RTA	IDOT ISTHA	USDOT	Local	Total	Per Year	
$0	$24	$275	$0	$0	$12	$311	$12.4	Operation
$0	$0	$70.9	$83	$503.5	$3	$660.4	$26.4	New
$0	$24	$345.7	$83	$503.5	$15	$971.4	$38.9	Total

Estimated Motorized Vehicle Funding by Source

County MFT	County RTA	RTA	IDOT ISTHA	USDOT	Local	Total	Per Year	
$177	$0	$0	$239	$16.5	$78	$511	$20	Maintenance
$127	$264	$0	$480	$60.2	$37	$969	$38.7	New
$304	$264	$0	$719	$77	$115	$1,479	$58.7	Total

Figure 54: Funding Sources