



**McHenry County Democrat Article
May 19, 1901**

“A New Automobile”

This chapter presents the long term transportation plan to support the variety of motorized vehicles used in McHenry County. It highlights the need for this type of infrastructure investment in order to meet the goals and objectives of the plan. Then, the County’s potential role in implementing these types of projects is discussed.

Motorized vehicles have evolved considerably over the last century and now include motorcycles, sports cars, sedans, mini-vans, pick-up trucks, SUVs, numerous heavy delivery vehicles types, standard semi-trailers, and farm implements such as combines and tractors. With so many types of vehicles for almost every purpose, the total number of licensed vehicles in McHenry County has on occasion been greater than the total population. The wide-spread and enthusiastic adoption of the motorized vehicle for household uses has supported the development of local, state, and federal agencies to build and maintain a vast network of paved roadway facilities specifically designed to accommodate these vehicles.

Dr. Emil Windmueller returned a few days ago from Milwaukee, Wis., with his new steam automobile, making the trip overland, leaving Milwaukee at 2 p.m. and arriving home at 10:30 p.m. He purchased the new vehicle of the Milwaukee Automobile Company and it is one of the best and handsomest the company turns out. It is of the carriage pattern and combines all the latest improvements of modern horseless vehicles. A speed of thirty miles per hour can be maintained on good roads if the operator so desires and the doctor now has the best and fastest machine in the northwest, outside of Chicago. He found his trip from Milwaukee a most delightful one and says that in Milwaukee and Racine counties he found good roads but as soon as he crossed the borders of McHenry County he encountered horrible roads and is inclined to the belief that our roads are sadly deficient in comparison with those of our neighboring counties. The trouble seems to be that no pains are taken here to keep the loose stones off the roads.

It is a certain fact that the automobile has come to stay and we expect ere long to see several more of them in this city. The cost of these machines has now been brought within reasonable limits and they will soon come into use quite generally in the country towns. The one owned by the doctor can be used on any road a horse can travel, can be operated slow or fast, as desired, and mud or steep hills are no hindrance to it, while cobble stones only serve to help “settle the operator’s dinner” and prevent indigestion, while to scare horses they are a complete failure. -Source: Woodstock Library

Figure 83: Dr. Windmueller Drives through Woodstock

Unlike bicycle and pedestrian infrastructure, the type of facilities needed for heavy vehicles traveling at high speeds requires more rigorous engineering design. Additionally, users of motorized vehicles are required to have licenses, hold insurance, and follow the legal rules of the road to avoid being fined by police departments. The additional regulations on motorized vehicles are practical given the potential hazards and the costs to society associated with crashes and legal actions.

EXISTING MOTORIZED VEHICLE ROAD NETWORK

All but a few properties in McHenry County have direct access to a paved public roadway adequate for legally licensed motor vehicles. Most of the roads are local municipal or rural township roads (See Figure 84). The difference between the amount of travel on local roads and the amount on County, State and Federal Highways is going to grow larger over the next couple decades.

Agency	Centerline Miles	Current Afternoon Peak Use in Miles	2040 Afternoon Peak Use in Miles
Township & Municipal	1,976	330,965	496,730
County	218	241,338	348,462
State	141	246,490	311,457
Federal	58	118,947	158,927

Figure 84: Road Network by Agency



Figure 85: Intersection of Rakow Road and Pyott Road

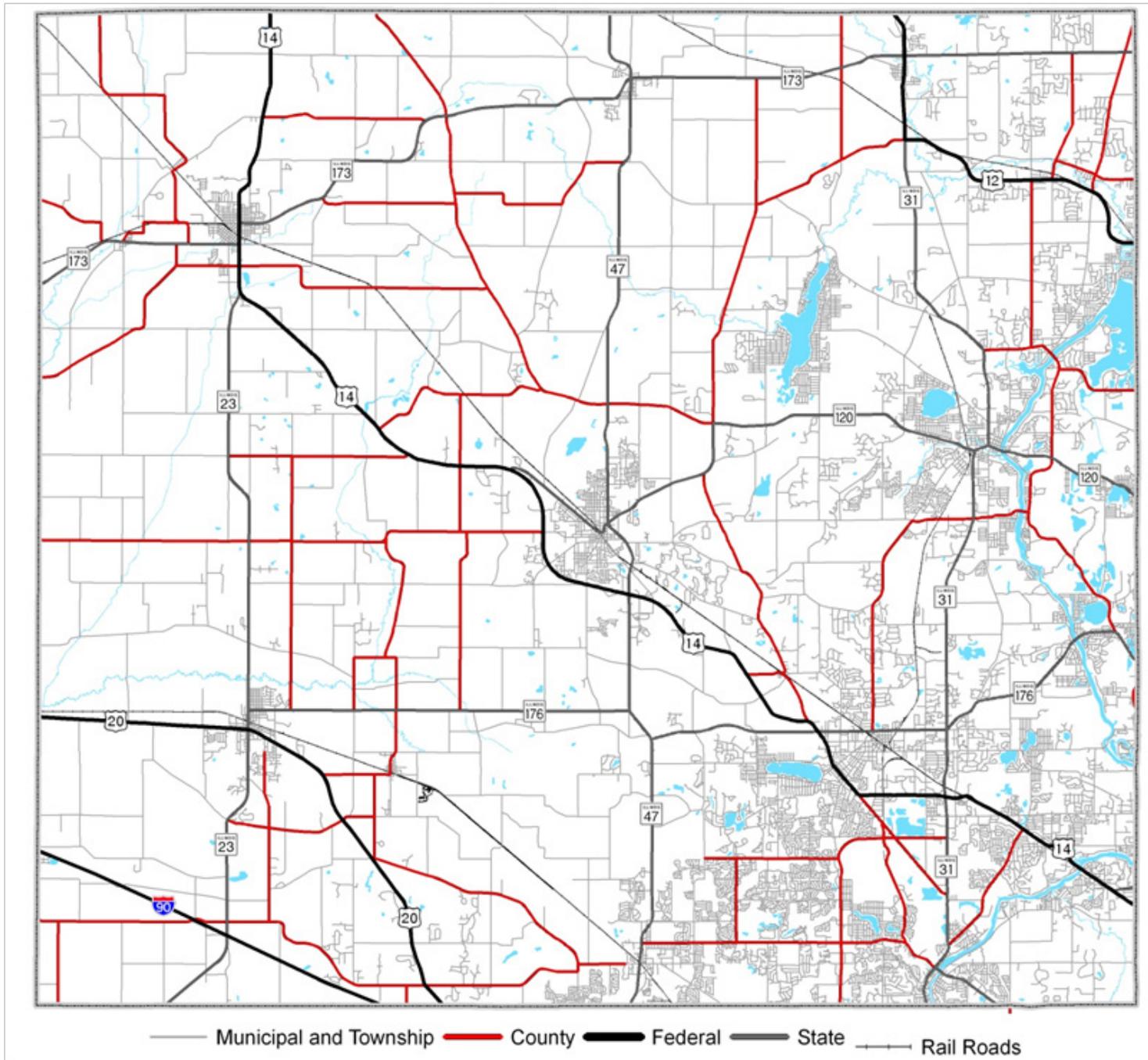


Figure 86: Existing Motorized Vehicle Road Network

Goal 1. Highway Congestion Mitigation

The goal is to have a reliable arterial road network. This goal is to be balanced with the need to preserve the character of McHenry County and the ability to maintain the existing transportation infrastructure.

An arterial highway is a roadway that serves as a major roadway within a community connecting multiple land uses (residential to industrial for example). A principal arterial is a roadway that serves as a major roadway between communities. According to the County's model for future road use, during the heaviest rush hours the number of miles traveled on arterial highways is likely to increase 50%, and by 39% on principal arterials between today and the year 2040. This increase in use will lead to the number of hours of delay during the afternoon peak on arterial roadways to increase from 751 to 2,182 or 190%, and the number of hours of delay on principal arterial roadways to increase from 2,694 to 4,969 or by 85%. Additional capacity and operational improvements to serve motorized traffic during peak hours is clearly warranted on many existing arterial highways because the amount of delay on the system is two to three times greater than the increase in use. To summarize and highlight where congestion is most likely to occur, a deficiencies analysis was undertaken and resulted in a map color-coding the areas with the highest afternoon motor vehicle capacity problems (See Figure 87 on page 90).

Currently, capacity and operational improvements for motorists are warranted on five principal arterials in the County:

- Illinois 47 in Woodstock and between Woodstock and Huntley
- Illinois 31 in McHenry and between McHenry and Crystal Lake
- Randall Road between Crystal Lake and Algonquin
- U.S. 12 in Richmond and between Richmond and Fox Lake
- U.S. 14 between Woodstock and Crystal Lake

U.S. 14 between Woodstock and Crystal Lake has been redesigned to include two additional through lanes for motorists, geometric improvements at existing signalized intersections, and to have a side path built north of the Community College for bicyclists and pedestrians. U.S. 14 from Illinois 176 in Crystal Lake to Fox River Grove has already been built to provide four through travel lanes for motorists. Initial engineering work has been completed for, Illinois Route 47, Illinois Route 31, and Randall Road. To date, the preliminary engineering for U.S. 12 has been led by the Village of Richmond and has focused on mitigating motorized traffic loads during weekends in the Village. The portion of U.S. 12 between Richmond and Fox Lake has not undergone any engineering design work.

By 2040, the deficiencies analysis indicates that capacity and operational improvements are likely to be warranted on additional principal arterials. These include Illinois Route 120/Charles Road between Woodstock and McHenry, U.S. 14 between Harvard and Woodstock, IL 176 from Marengo to Island Lake, and IL 23 between Harvard and Marengo. The traffic model forecasts much greater motorized traffic volumes on the local street network. The deficiencies analysis shows several arterial highways with high capacity deficiencies during the afternoon peak period. These include McHenry Avenue in Crystal Lake, Ringwood Road in McHenry Township, Harmony Road in Coral Township, River Road between McHenry and Island Lake, and Cary-Algonquin Road between Cary and Algonquin.

DESIGN CONSIDERATIONS

The general design elements necessary to add capacity and to make operations improvements for motorists include adding lanes to roadways and adding appropriate turning movement and vehicle queuing accommodations at roadway intersections. These design elements are typically very expensive and require years of engineering study, design, and analysis. Certain design elements can be implemented faster, such as retiming and coordinating traffic signals. Other elements can be done over time as part of the building permit process such as promoting joint access points from adjacent properties along the roadway, and requiring adequate setbacks from the roadway to enable future capacity additions.

Outside of the peak travel hours, other factors than roadway vehicle capacity influence system functionality. Special weight limits on bridges are required because of structural deficiencies and bridge closure place additional regulatory burdens and create physical barriers for truck drivers hauling heavy loads across the County. Crash incident response, reporting, and clean-up operations create unexpected delays for all users.

BRIDGE CONSIDERATIONS

To mitigate bridge related congestion, an aggressive program is needed to maintain adequate and rehabilitate deficient bridge structures. The County Board has been pursuing such a program since 2008 when the County Board's Strategic Plan tasked the McHenry County Division of Transportation to undertake more aggressive inspection cycles along with bridge maintenance and replacement practices. Since 2008, the County has increased the number of County and township bridges rehabilitated or replaced in any given year from approximately 1 to 3. As this program moves from addressing the worse structures into maintaining the best structures, it will be important to continue to evaluate and prioritize bridges in order to avoid unnecessary reductions in load weights.

INCIDENT MANAGEMENT

Coordination between road agencies and all police departments helps increase emergency response times and thereby minimizes congestion on arterial and principal arterial highways. This helps improve emergency response times to



crash incidents as well as making fast weather related repairs such as clearing of downed trees or repairing a ruptured frozen water main. A typical roadway design element to facilitate emergency response and maintenance activities includes additional roadway shoulder space.

Most roadways have been designed to accommodate peak hour volumes of motorized vehicles. Few common roadway design elements are able to improve peak hour capacity and operations, improve off peak hour capacity and operations, as well as reduce incident delays such as crash reporting and snow removal. Common design elements that fit these criteria are roundabout intersection designs, adequate bicycle, and pedestrian accommodations, and bus turn-outs.

ROUNDABOUTS

Where suitable, roundabouts are a common design element of roadways that are able to improve off peak hour capacity and operations while providing superior peak hour capacity and operations. The roundabout design has some low-tech capabilities that lead to very cost-effective operations. For example, an intersection designed as a roundabout does not require a vehicle to trigger a signal and can provide equal or greater benefits to off peak users as peak users. Almost all vehicle detectors currently in use are impossible for bicyclists and

Note: The model made assumptions based on pursued project in 2005. The model assumes additional through lanes for motorists will be added to U.S. 14 between Woodstock and Crystal Lake, to Illinois Route 47 between Charles and U.S. 14 in Woodstock, to Lamb Road between Charles and Illinois Route 120 in Woodstock, and to Randall Road between Crystal Lake and Algonquin. A few new roads are also anticipated and included in the model. A new road is assumed in McHenry extending south from the Ringwood Road and IL 120 intersection to Illinois Route 31. Ackman Road is assumed to have been extended west from Haligus Road to Illinois Route 47. Kretzner Road is assumed to have been extended south to Huntley Dundee Road. A new roadway diverting traffic west of downtown Richmond and a new bridge extending Lamb Road to U.S. 14 in Woodstock are also included.

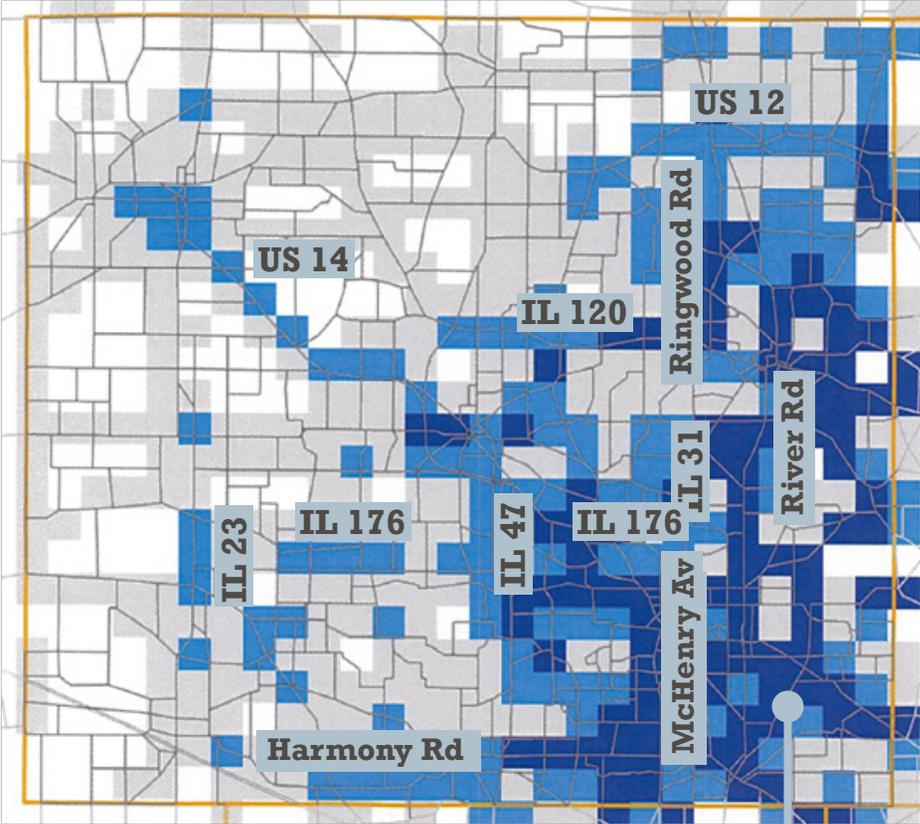


Figure 87: 2040 Roadway Capacity Deficiencies

Legend:

- Low (0-3)
- Medium (4-10)
- Medium High (11-15)
- High (16-20)

difficult for motorcyclists to trigger. Intersections without electronic control measures do not lose functionality during storm events resulting in power disruptions.

By maintaining an even flow of traffic through the intersection, roundabouts reduce energy and maintenance costs for motorists and reduce maintenance costs to roadway agencies. Roundabouts eliminate right angle turns into an intersection. This has proven to reduce the energy needed by trucks to stop and accelerate. In areas with heavy semi-trailer volumes, the need to stop and accelerate produces significant noise and traffic flow delays as the vehicles down-shift multiple gears and then up-shift multiple gears. The physical damage to the pavement is also dramatically reduced as a result. At intersections with heavy semi-trailer traffic, it is common for the pavement to fail and begin to roll or buckle like a blanket due to very heavy loads pressing hard into the pavement to make full stops.

The elimination of right angle turns at an intersection also reduces the possibility of severe injuries or fatalities occurring. Compared to a head on or angle collision at higher velocities, physics dictates how a glancing blow at reduced velocities results in exponentially less kinetic energy being transferred through the frame and panels of a vehicle onto the passengers. By all but eliminating the most powerful crash types, standard safety equipment in motor vehicles allows vehicles involved in a crash to move out of the intersection for incident reporting. This reduces the reporting and forensics necessary to be undertaken for legal and insurance purposes to a minimum. After a crash, all users benefit if injuries and fatalities are avoided. Intersections closures are minimized allowing traffic to flow at predictable rates. Medical costs are reduced as paramedic, ambulatory, County Coroner, and hospital costs are avoided. Police costs are also minimized as much less forensic work is necessary to report and make appropriate citations.

Improve Options

Other common roadway design elements that provide peak, off peak, and reduce incident delays are roadway side paths, sidewalks, and cross-walks. The County's traffic model forecasts much greater increases of motorized traffic on the local

street networks. As local streets become congested, motorists will search for alternate routes, alternate destinations, and increasingly find it more efficient to simply walk or bike to local destinations. During off peak periods, these facilities continue to provide the same benefits while limiting unsafe interactions with motorists. Following major weather events that may lead to multiple road closures for motorists, these facilities can provide a minimum level of local transportation such as allowing a short trip to purchase water or to a pharmacy to fill prescriptions.

Along bus routes, the placement of bus stops and building adequate accommodations for buses to decelerate, pull off, safely allow passengers to board and depart the bus, and then accelerate back into traffic is very important during peak hours. Without adequate space called turn-outs built for buses, the regular stopping of buses along a route can cause system-wide delays as well as temporarily close a travel lane for motorists. Space is needed to allow buses to decelerate while exiting traffic and to accelerate while reentering traffic to minimize disruptions to the expected flow.



Figure 88: Sidewalks and Bus Stops are Also Common Design Elements that Help Mitigate Congestion

Goal 2. Safety

The goal is to have zero fatal collisions in the County. One objective of the plan is to identify projects and initiatives needed to improve transportation safety in the County. As seen in Figure 89, the annual number of fatalities has dropped from approximately 30 each year to approximately 14 each year. In particular, fixed object, head on, and rear end collisions have been reduced. However, the

annual number of turning crashes remains at about 4 each year. Intersection designs that eliminate or reduce the number of potential conflicting movements would be helpful in reducing this number. Fixed object crashes also remain high. Shoulder treatments that allow for adequate vehicle recovery typically are at least 4 feet wide at 55 miles per hour and are compact enough to not cause a vehicle to rollover.

Crash Type	2005		2006		2007		2008		2009		2010		2011	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Angle	4	13%	2	6%	10	33%	2	11%	1	7%	1	7%	1	7%
Animal	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Fixed object	8	27%	11	34%	6	20%	4	22%	6	40%	4	29%	3	21%
Head on	9	30%	7	22%	7	23%	4	22%	2	13%	1	7%	1	7%
Other non collision	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Other object	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Overtaken	1	3%	2	6%	0	0%	4	22%	3	20%	1	7%	1	7%
Parked motor vehicle	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Bicyclist	0	0%	0	0%	0	0%	0	0%	0	0%	1	7%	1	7%
Pedestrian	2	7%	1	3%	2	7%	2	11%	2	13%	2	14%	2	14%
Rear end	4	13%	0	0%	0	0%	1	6%	1	7%	1	7%	0	0%
Sideswipe opposite direction	2	7%	3	9%	1	3%	0	0%	0	0%	0	0%	1	7%
Sideswipe same direction	0	0%	2	6%	0	0%	0	0%	0	0%	0	0%	0	0%
Train	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Turning	0	0%	4	13%	4	13%	1	6%	0	0%	3	21%	4	29%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	30		32		30		18		15		14		14	

Figure 89: Fatal Crashes in McHenry County by Crash Type from IDOT Crash Data 2005-2011

Goal 3. Mobility for All

The goal is to improve the transportation in the County to meet the needs of seniors, children, persons with disabilities, and people without automobiles. The objective is to lower the costs incurred by individuals, families, not-for-profit organizations, and government agencies related to accessing basic services. For many years, the idea of providing mobility for all has been largely a call for alternatives to the personal automobile. In recent years, technology advancements promise to make motorized personal vehicles central to addressing mobility limitations.

Motorized vehicles greatly expand the travel range of individuals that can drive or can share the ride with someone else. However, many residents will never be able to drive and or will not be able to afford owning and operating a motorized vehicle. Recent technology advances have made driverless systems a reality. Motorized vehicles that could drive through the existing road network without a person to pilot the vehicle could revolutionize the configuration and use of motorized vehicles. Internet search engine giant Google Incorporated has developed many of the basic systems necessary to enable these vehicles (See Figure 90). Car manufacturers, Nissan Corp. and General Motors, have announced that they will develop multiple driverless models for the year 2020.

While meeting with a group at Horizons for the Blind Incorporated in Crystal Lake, the Executive Director Camillee Caffarelli asked 2040 Transportation planners when driverless vehicles were going to be permitted. Given recent technological developments, it is not entirely unreasonable to assume substantial adoption of these systems by the year 2040 in McHenry County. Furthermore,

Transportation and Infrastructure Committee Chair of the U.S. House of Representatives Bill Shuster described driverless cars in a Politico magazine article that ran on September 9, 2013 as “the future of transportation and it’s here”. As such, it is not too early to begin reviewing design and permitting issues that may present obstacles to the use of this technology.

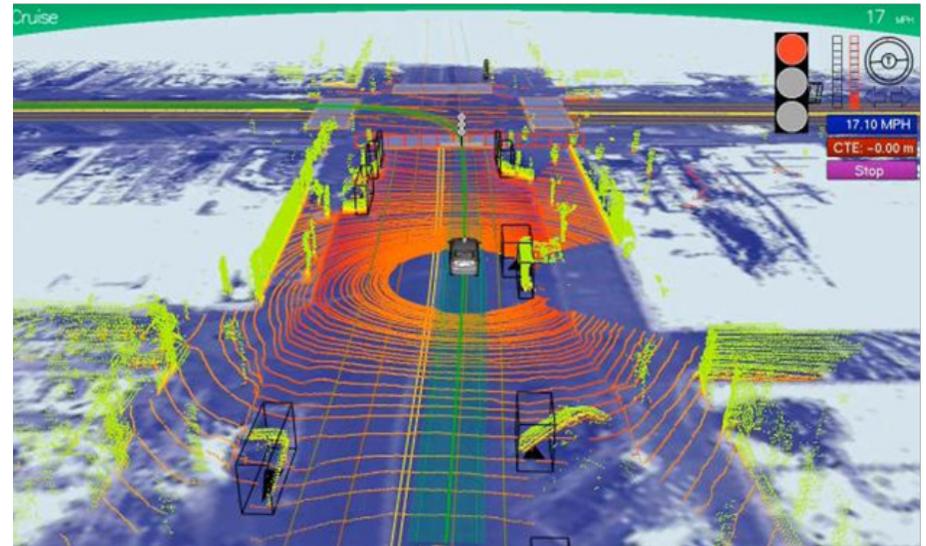


Figure 90: World View of a Driverless Google Car
Source: CNet article, Sept. 3, 2013

Goal 4. Transportation Choices

The goal is to become a bicycle and pedestrian friendly County with improved commuter rail and local bus services.

Nearly 100 years ago in 1914, the American Association of State and Highway Transportation Officials (AASHTO) was founded. AASHTO is responsible for establishing highway design parameters in the United States. Regarding bicycle infrastructure, AASHTO reminds all transportation officials of the importance of adding design components for bicyclists and pedestrians on our roadways.

“All roads, streets, and highways, except those where bicyclists are legally prohibited, should be designed and constructed under the assumption that they will be used by bicyclists. Therefore, bicyclists’ needs should be addressed in all phases of transportation planning, design, construction, maintenance, and operations. All modes of transportation, including bicyclists, should be jointly integrated into plans and projects at an early stage so that they function together effectively.” (This is also quoted in the Bicycle and Pedestrian Plan).

Collectively, this approach to roadway design and accommodation of all modes is called “Complete Streets”. In addition to including bicycle and pedestrian accommodations into future roadway designs, it is very important, as part of Complete Streets, to maintain the existing highways adequately to reduce the number of physical barriers, such as rutted shoulders and potholes, that prevent bicycling and walking. Between today and the year 2040, an estimated \$511 million dollars in highway and roadway maintenance will be needed in McHenry County. It is important to keep roadways open to bicyclists and pedestrians as well as motor vehicles during construction. During snow and heavy rain events, the effects of standard highway maintenance such as snow plowing on bicyclists and pedestrians should be considered.



Figure 91: Sidewalks Provide Accessibility for Pedestrians

Goal 5. Environmental Quality

The goal is to promote ecological and human health. One objective of this plan is to balance the other objectives with the need to protect and enhance certain habitats and improve the quality of life in certain neighborhoods. One objective is to adopt innovative best practices in roadway design to limit or mitigate negative impacts to surface and ground water. Another objective of the plan is to identify transportation infrastructure to promote healthy and active living.

Motorized vehicles require solid and dry hard surfaces built in such a way that allows for stormwater and snow melt to drain off of the surface. Additionally, motorized vehicles require adequate clear zones to avoid collisions associated with vehicles running off the road and hitting fixed objects such as trees. These requirements physically divide the habitats of McHenry County's wildlife and native vegetation as well as change the ambient water flows that these species have adapted to utilize. Over the last fifty years, the direct and accumulated effects to the environment resulting from road construction have been studied and used to develop new practices for the design process.

Generally, it is important to prioritize improving existing roadways instead of building new ones. Existing roadways have already disturbed the surrounding ecosystems and new design standards applied to existing roadways hopefully will mitigate these disturbances. When widening a road surface or building needed new roadways, best management practices are needed to minimize impacts to the natural infrastructure that enables life as we know it. Road work should protect soils seeded to recharge the region's fresh water lakes, rivers, and aquifers (where we get our drinking water). Road agencies should consider planning low-maintenance native vegetation species along highways to create a filter or buffer between local streams and the stormwater runoff from roadways.

Additional consideration should be given to understanding the transportation needs of animals living in the area to minimize fragmentation of mating pairs and dangerous encounters with motorized vehicles.



Figure 92: Algonquin Road Curb Designed for Turtles

Goal 6. Transportation and Land Use

The goal is to prioritize economic development by supporting development and industry. An objective of the plan is to identify areas of high employment and areas of higher unemployment levels that can positively benefit from new transportation infrastructure investments.

At the time of the 2010 U.S. Census, McHenry County's five largest cities had the largest number of unemployed individuals. Of these, McHenry and Woodstock had over two percentage points more unemployed than Crystal Lake, Algonquin, and Lake in the Hills. Some of McHenry County's smallest communities had the greatest percentage of the workforce that is unemployed. Union with a population of 580 had 16.6% unemployed. McCullom Lake with a population of 1,049 had 15.9% unemployed. McHenry County's medium sized cities of Fox Lake, Harvard, and Wonder Lake had relatively large numbers of unemployed residents and the second, third, and fourth greatest percentage.

Given the superior access that McHenry County has to the world when compared to other communities in North America, new transportation infrastructure investments are not likely to draw new industries into the greater Chicago-Milwaukee-Rockford region but rather incentivize where these industries locate. To minimize the possibility that workers will have to relocate and to maximize the possibility that the unemployed can find a job close to home, roadway improvements for motorists should be focused in communities with large numbers and percentages of unemployed. Given the low wages offered by many industries and the high costs of transportation and housing in McHenry County, communities with transit services and neighborhoods within walking distance of improved roadways will likely provide more workers a certain amount of disposable income thereby improving the larger economy.



Figure 93: Residence in Woodstock

MOTORIZED VEHICLE PROJECTS

Roadway improvement ideas for motorized vehicle were taken from the County's 2020 Long Range Transportation Plan adopted in 2005, from the on-line community map and library kiosks, and by reviewing current community and state transportation plans. Projects were prioritized if they were voted for on-line with an average of 3.0 or greater, requested by an agency in writing, and met four or more goals of the plan. These are the projects that are included in the Plan Map in Figure 94). A full explanation of this evaluation is included in Appendix F.

Label	Project Name	Project Costs (\$2013)	Votes	Agency	Goals	Priority
M1	Woodstock to Huntley Capacity, Operations, and Side Path (IL 47 from US 14 to Reed Road)	\$104,800,000	Yes	Yes	Yes	High
M2	Woodstock Traffic Circulation (IL 47 from US 14 to Charles Road)	\$94,900,000	Yes	Yes	Yes	High
M3	Crystal Lake to McHenry Capacity, Operations, and Side Path (IL 31)	\$101,100,000	Yes	Yes	Yes	High
M4	Crystal Lake to Woodstock Capacity, Operations, and Side Path (US 14)	\$75,700,000	Yes	Yes	Yes	High
M5	Richmond to Fox Lake Capacity, Operations, and Side Path (US 12)	\$125,800,000	Yes	Yes	Yes	High
M6	Marengo Access to Interstate 90, South Bypass, IL 23 Intersections	\$93,900,000	Yes	Yes	Yes	High
M7	North McHenry Fox River Crossing from Chapel Hill to IL 31	\$47,000,000	Yes	Yes	Yes	High
M8	Ringwood Road and Spring Grove Road Corridor Preservation	\$5,100,000	Yes	Yes	Yes	High
M9	Randall Road Commercial Center Development (Add Capacity for Motorists, Bicycles, Pedestrians, and Transit Users)	\$90,800,000	No	Yes	Yes	Medium
M10	North Algonquin Fox River Crossing	\$76,500,000	Yes	No	Yes	Medium
M11	New Congestion Mitigation Route Southwest of McHenry	\$51,300,000	Yes	No	Yes	Medium
M12	New Southern Arterial from IL 23 to IL 47	\$62,600,000	No	Yes	Yes	Medium
M13	Zimmerman Road Extension from Country Club Road to IL 120 in Woodstock	\$8,500,000	Yes	No	Yes	Medium
M14	Ackman Road Mixed Residential and Commercial Development	\$32,300,000	Yes	Yes	No	Medium
M15	Ackman Road and Miller Road Extension to IL 47	\$10,200,000	Yes	Yes	No	Medium
M16	Mt. Tabor/Haligus and IL 176 Connectivity	\$7,500,000	Yes	Yes	No	Medium
M17	Industrial Park Connection between McConnell Road and US 14	\$18,600,000	Yes	No	No	Low
M18	Extension from Lakewood Road to Huntley Dundee Road	\$6,800,000	No	Yes	No	Low
B5	Marengo Road Corridor Preservation from US 20 to Main Street*	\$0	Yes	Yes	Yes	Preservation
B7,B12,B13,&B15	IL 176 Corridor Preservation from IL 23 to US 12*	\$0	Yes	Yes	Yes	Preservation
B8	US 14 Corridor Preservation from IL 120 to IL 23*	\$0	Yes	No	Yes	Preservation
B11&B17	IL 173 Corridor Preservation from IL 23 to IL 47 and East of US 12*	\$0	Yes	No	Yes	Preservation
B18	IL 23 Corridor Preservation from IL 176 to US 14*	\$0	Yes	No	No	Preservation
*Note: Costs for these corridor preservation projects are included as part of the bicycle and pedestrian plan.		\$1,013,400,000				

Motorized Vehicle Plan

\$1 Billion Investment

↔ Motorized Vehicle Capacity/Operations Project

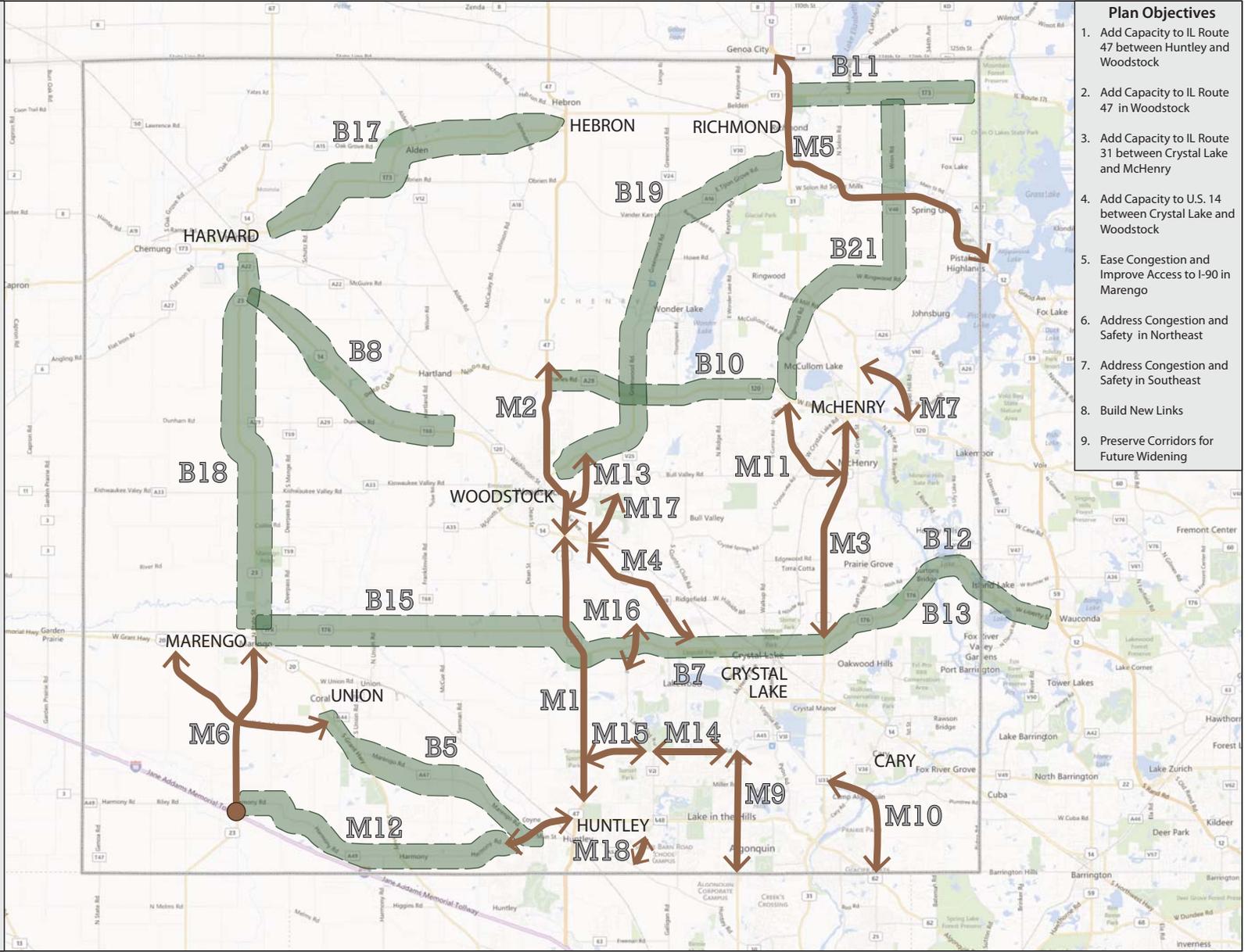
● Interchange

█ Corridor Preservation

B8 Project Label

Projects were prioritized if they were voted for on-line with an average of 3.0 or greater, requested by an agency in writing, and met four or more goals of the plan. These are the projects that are included in the Plan Map. Projects with a "Preservation" priority are of lesser priority. The plan is to set aside, where appropriate, right-of-way to enable the future construction of these projects.

Sam Schwartz Engineering D.P.C.



Plan Objectives

1. Add Capacity to IL Route 47 between Huntley and Woodstock
2. Add Capacity to IL Route 47 in Woodstock
3. Add Capacity to IL Route 31 between Crystal Lake and McHenry
4. Add Capacity to U.S. 14 between Crystal Lake and Woodstock
5. Ease Congestion and Improve Access to I-90 in Marengo
6. Address Congestion and Safety in Northeast
7. Address Congestion and Safety in Southeast
8. Build New Links
9. Preserve Corridors for Future Widening

Figure 94: Motorized Vehicles Plan

Funding for motorized vehicle infrastructure depends heavily on the ability to keep maintenance costs of the existing system low. Low-cost preventative maintenance can dramatically increase the life of good roads. This has been hard to implement in McHenry County as many agencies have been challenged to keep up with the constant maintenance required for roadways built on poor soils and subject to multiple freeze-thaw cycles during the winter.

Between 2015 and 2040, approximately \$1.5 billion, \$59 million each year, is estimated for new construction and maintenance of highway facilities in the County (see Figure 95). Of this \$1.5 billion, \$568 million could be available from County funds. An additional \$796 billion is likely to be available from IDOT, ISHTA and the USDOT. The plan estimates the municipalities will be able to contribute approximately \$115 million in local public works funding for projects based on historic financial trends.

The total estimated cost to maintain the road network between 2015 and 2040 is \$511 million. After maintenance is taken into account, approximately \$1 billion is estimated to be available to fund the \$1.013 billion in projects identified as part of this plan. If adequate funding is not provided for maintenance in the short-term, the long-term costs of maintenance will be much larger. It will be very important for all agencies responsible for highway maintenance to take advantage of innovative pavement management techniques when prioritizing maintenance of the existing roadway system. Prolonging the life of County roadways will mean more financing for new projects.



Figure 96: In the Future, Preventative Maintenance will be Important

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

Figure 95: Total Motorized Vehicle Funding