

This chapter presents the long term transportation plan for transit services and infrastructure in McHenry County. It highlights the need for this type of infrastructure investment and service operations 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.



Figure 69: Residents Access the McHenry County Administration Building using Transit

MCHENRY COUNTY'S EXISTING TRANSIT SYSTEM

Let's look at what's in place now.

The County is served by the Union Pacific Northwest commuter rail service to Chicago and limited bus service. The County has commuter rail stations in Harvard, Woodstock, Crystal Lake, Pingree Road, Cary, Fox River Grove and a branch that goes to McHenry. Many County residents also access the Milwaukee District West service at the Big Timber Road station in Elgin and the Milwaukee District North service in Fox Lake. Pace operates three bus routes in the County, the 806 between Crystal Lake and Fox Lake via McHenry and Johnsburg, the 807 between Woodstock and McHenry, and the 808 between Harvard and Crystal Lake via Woodstock. These routes, referred to as fixed-routes, operate during the week on regular fixed schedules.

Richmond, McHenry, Nunda, Algonquin, and Grafton Townships provide seniors, and some individuals with disabilities, some demand-response services. Demand-response refers to a service that requires individuals to call in advance to schedule a vehicle to provide a single trip. When these services are designed to serve the senior population and individuals with disabilities they are considered paratransit services. The City of Harvard and the City of Marengo have dial-a-ride services open to the general public. The cities of Crystal Lake, McHenry, and Woodstock are under one demand-response service called MCRide, provided through a contract between McHenry County and Pace. Other services are provided by non-profit organizations such as the Senior Care Volunteer Network and agencies such as the Veteran's Affairs Commission.

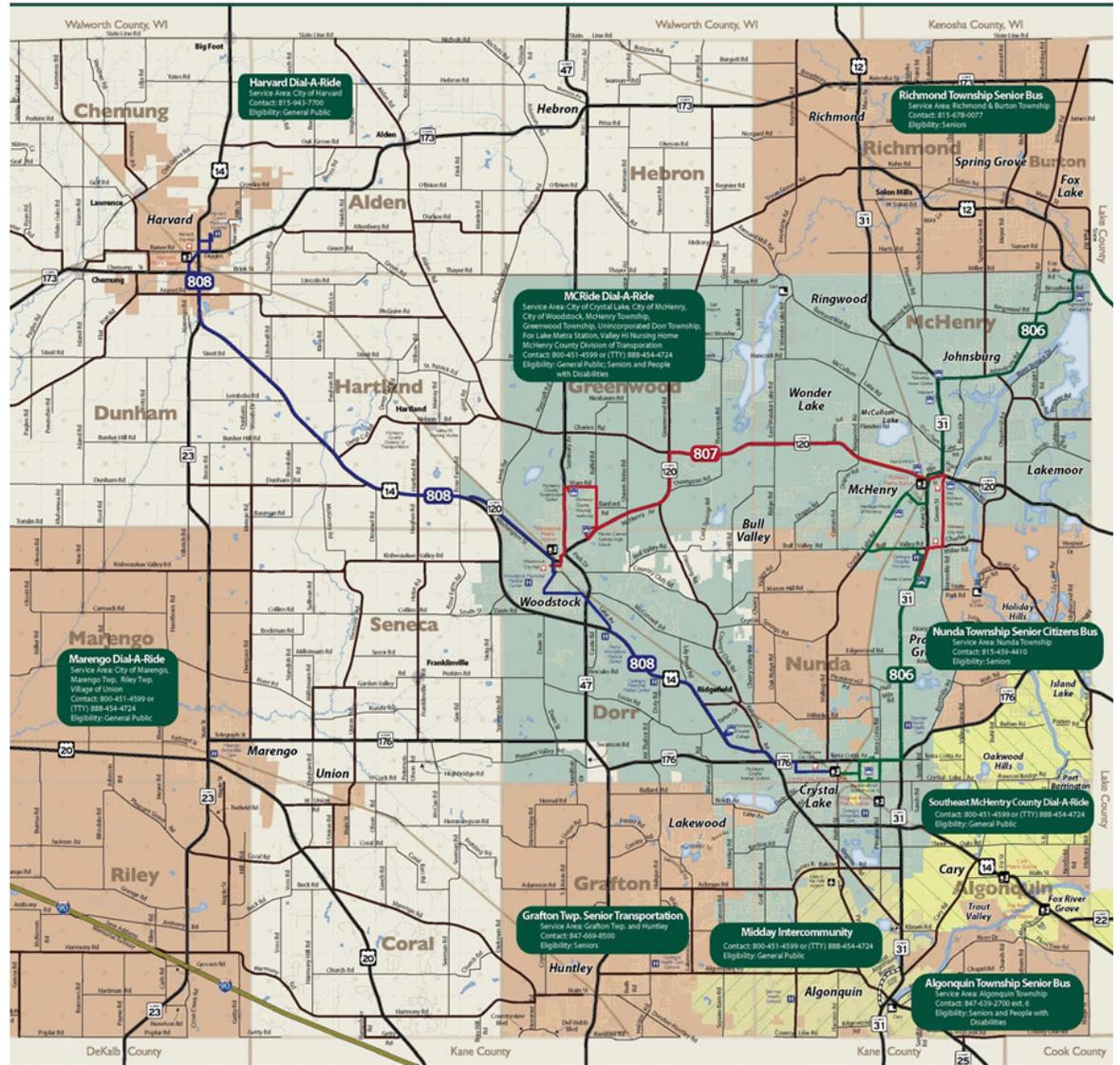


Figure 70: Existing Transit Services in McHenry County

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.

Since 2002, the number of individuals living and working in McHenry County has declined while the number of residents working outside the County and the number of workers living outside the County have grown (See Figure 71).

The pressure to accommodate the nearly 100,000 workers commuting out of the County, over 40,000 workers coming into the County, and 50,000 workers commuting within the County has created a demand to widen highways everywhere and to expand commuter rail service to new areas. As these work pattern trends continue, the pressure on the existing transportation network to accommodate conflicting flows will grow more difficult to address. In recent years, many highway projects have been completed or initiated to address

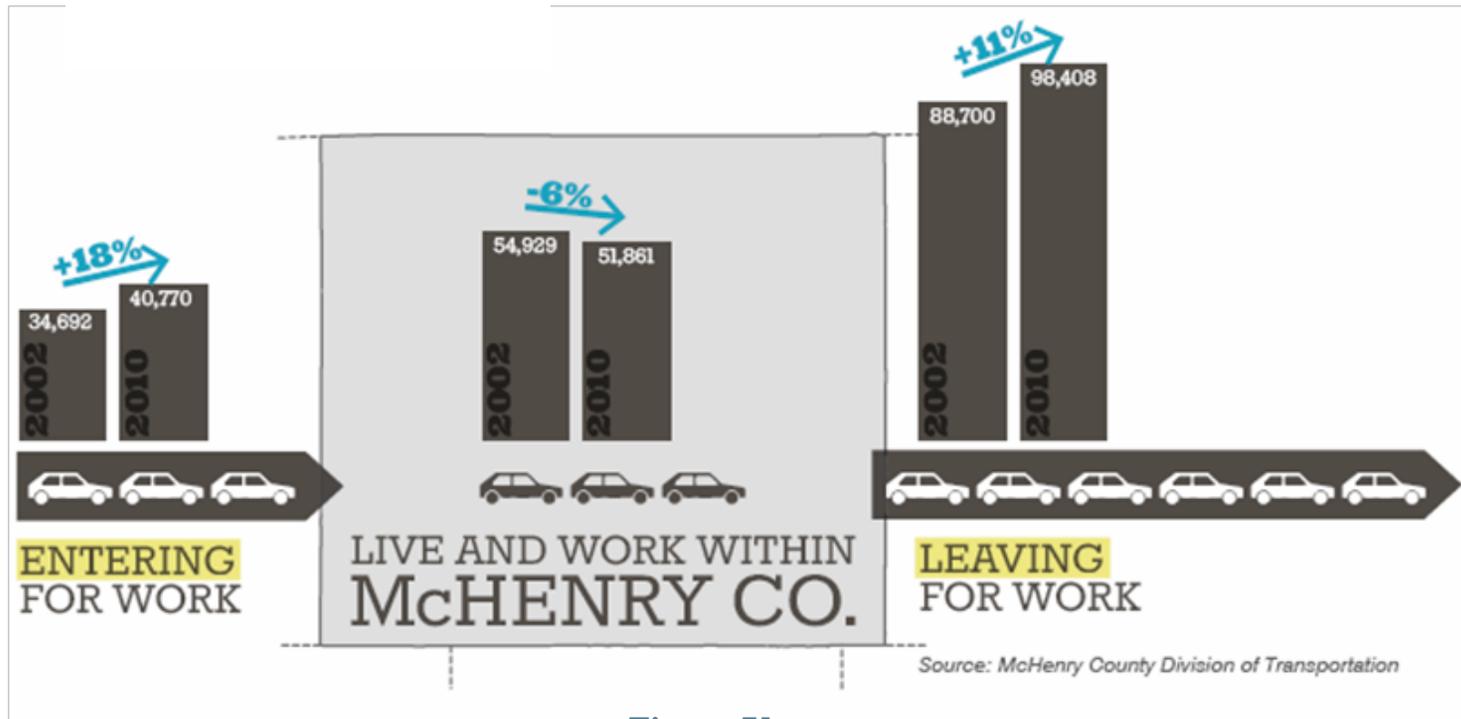


Figure 71: McHenry County Employment Travel Patterns (2002-2010 Change)

these concerns. These efforts will by design fall short of accommodating the County's future traffic needs.

By the end of 2012, U.S. 14 in Crystal Lake, IL 120 in McHenry, IL 31 from Washington Street to Running Brook Farm Road in McHenry, IL 47 south of Reed Road in Huntley, Algonquin Road, and Rakow Road had been built with what can be considered their ultimate automobile capacity. Current construction of the Western Algonquin Bypass might be the last major project to relieve chronic congestion in Algonquin. Charles J. Miller Road in McHenry is also being built to what is likely its ultimate highway capacity. Designers are currently drafting what is likely the ultimate highway capacity for U.S. 14 between Crystal Lake and Woodstock, IL 47 from Reed Road north through Woodstock to Charles Road, IL 31 from IL 176 to IL 120, and Randall Road.

Highways are designed to handle just the amount of traffic forecasted to use the highway on any given day twenty years in the future. It has generally been assumed that a new design process will begin as a highway reaches capacity in order to provide greater capacity. In the near future, a sizeable portion of McHenry County's main highways will be nearly impossible to widen to accommodate additional traffic. Traffic models predict that the average 35 minute trip today in the County will take 53 minutes in 2040 during the afternoon rush hours. This average jumped 5 minutes between 2000 and 2010. Under such circumstances, mass transit, sidewalks, and bicycle trails increasingly become the only capacity that can be added.



Figure 72: MCRide Transit Service

As highway congestion grows, transit in particular will become a quicker, more reliable, and more cost effective choice if a service is provided. When given a choice, people choose to ride transit if it is faster, more reliable, and cheaper than driving. For McHenry County residents, the largest destination for work is Chicago; and, it has been served well by passenger rail for over 100 years (See Figure 71). Between 2002 and 2010, ridership on the Union Pacific Northwest line serving McHenry County grew more than 20% from 9.1 million to 11.0 million trips/year.

In 2010, 8.7% (12,276) of the workers living in McHenry County commute to Chicago each day. This percentage has grown from 7.5% in 2002 and is now

greater than the percentage working in Crystal Lake. Of these commuters to Chicago, an estimated 40% use Metra each day (See Note). If each one of these individuals drove to work, the regional highways would have to accommodate approximately 8,400 additional vehicle trips per day, and the parking garages in Chicago would need space for an additional 4,200 spots for McHenry County residents. The high percentage of commuters using Metra to travel to Chicago is predictable because the service is faster, more reliable and much cheaper than driving and paying for parking. However, the use of transit to other destinations today is generally impossible. Where possible, the current options are slower, far less reliable, and only slightly cheaper than driving.

Note: This estimate is based on the number of Metra riders in 2006 that boarded on an average day in McHenry County and the number of workers traveling to Chicago ($4,192/10,236 = 41\%$).



Figure 73: Woodstock Station around 1910 (Source: Woodstock Library)

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.

Providing safe bicycle and pedestrian access to transit services is a critical aspect of making transit a real option for people. Every transit trip begins with a bicycle or pedestrian trip. In six years, the number of transportation-related fatalities in the County has been reduced by 50%. The annual number of fatalities has dropped from approximately 30 each year to approximately 14 each year. However, the annual number of bicycle and pedestrian fatalities has remained constant and trending higher, from 2 to 3 each year. These statistics suggests that bicycle and pedestrian facilities are not being improved as they are being used more. As such, improvements to bicycle and pedestrian infrastructure in the County would likely improve safety, accommodate greater bicycle and pedestrian trips, and thereby promote transit use.

Although personal safety on a vehicle has not been an issue in McHenry County, personal safety in Chicago continues to steer many away from using Metra to connect to CTA trains and buses. In a June 23, 2012 Chicago Tribune article “CTA thefts, robberies on rise since 2009”, Hilkevitch, Bodens, and Germuska provide an analysis of crime trends on the CTA. In 2011, about 5,800 crimes were reported on the CTA. Thefts were the highest number of crimes, climbing 42 percent between 2009 and 2011. CTA officials reminded the Tribune at the time that over 532 million rides were provided on the CTA in 2011. This means that a crime occurs for about every 100,000 trips.

The CTA offers safety tips including staying alert and awake. The CTA specifically asks riders to not become too engrossed in a book, an activity enjoyed by many

Metra riders. Additionally, the wooden CTA platforms drop down to electrified tracks. Those traveling with children are urged to allow extra time and to carry small children through the turnstiles and to hold them back from the edges of the platform. Parents with strollers have to use the stairs except where elevators have been installed.



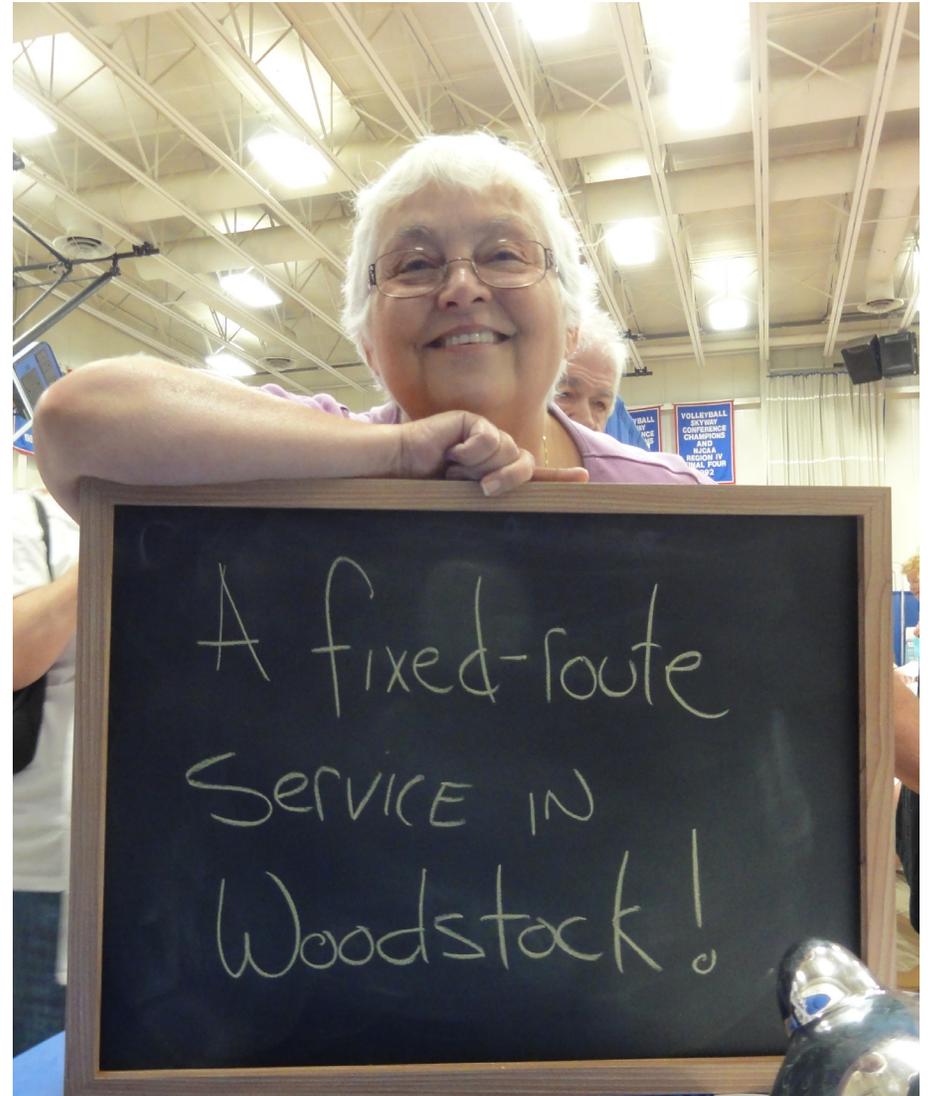
Figure 74: Pace Provides Limited Fixed Route Transit Service in McHenry County

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. Throughout one's lifetime, mobility generally changes with age. In McHenry County, those that drive have far greater mobility during most of their lifetime than those that cannot drive.

At a point in life where driving is no longer an option, those that learned how to access and use the limited transit services available while they were younger are likely to have greater mobility than life-long drivers. That time can come early in life following an accident or a medical procedure. For some, this could occur temporarily due to economic hardship. For all, basic and regularly scheduled transit services provide greater mobility than having to rely solely on the automobile.

With the growing elderly population, many of the senior residents are underserved by public transportation. Based on input from stakeholders in the community and research of issues and best practices, McHenry County needs to make certain improvements to accommodate the transportation needs of senior citizens. Some recommendations include coordination with other entities and public education. Also, volunteer organizations will continue to serve a critical role in senior transportation in the County. The American Association of Retired Persons (AARP) Public Policy Institute found that in order to accommodate "the mobility needs of an aging population, the focus of transportation planning and policy must shift from increasing road capacity to providing more multimodal solutions". Improvements for the aging population will also improve the quality of life for the entire community.



Goal 4. Transportation Choices

The goal is to become a bicycle and pedestrian friendly County with improved commuter rail and local bus services. One objective of this plan is to identify where missing links to the sidewalks and bikeways are needed. Another objective of the plan is to restructure local bus services and add additional commuter rail services.

Like drivers, transit riders pattern their lives based around their commutes. Unlike drivers, transit riders must conform their schedules to fit the service schedules and service types provided in McHenry County. These services have a small geographic foot-print and can be limited to early morning and early afternoon. Many make hard choices about where and how to live in order to access basic services. As such, providing transit as a true choice is a function of geographic coverage, service duration and frequency, and service type.

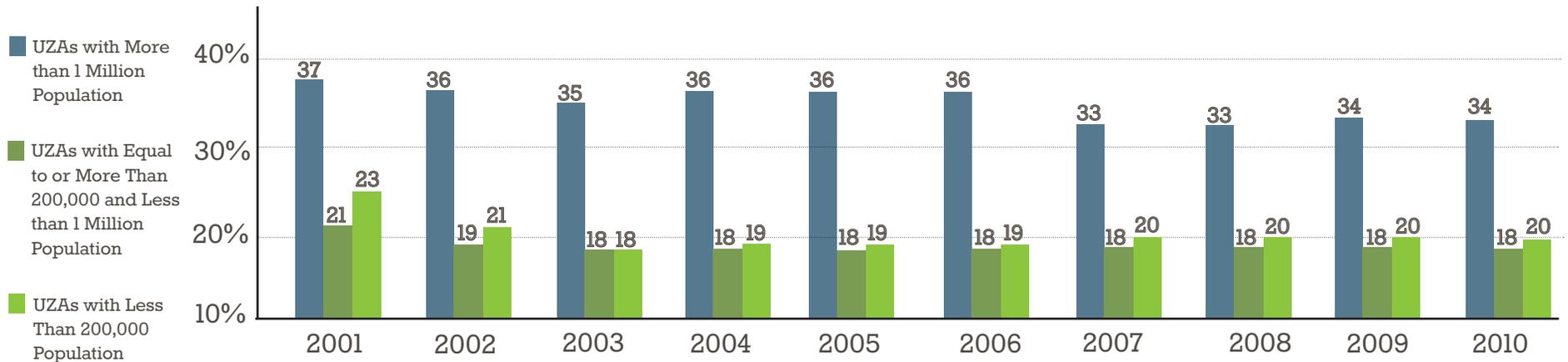
In the last thirty years, little has changed in the County in terms of transit. Metra added its first station in over 100 years in the County when the Pingree Road Station opened in 2005. In 2012, after decades of operating independently, the Crystal Lake, McHenry, and Woodstock dial-a-ride services were combined into a single service called MCRide. The McHenry Township Senior Express service is coordinated with MCRide to provide users in the Township a single contact point and greater choices. In December 2012, Pace restructured Bus Route 806 along IL 31 in McHenry and Route 807 more directly between Woodstock and McHenry, and refined the Route 808 schedule.



Figure 75: Route 807 in Woodstock

Wanting to have transit as a choice and actually using transit are two distinct indicators of need. To better predict the likely level of transit service that a given geographic area will actually support, planning staff at the Regional Transportation Authority (RTA) developed a Transit Demand Index (TDI) based on an analysis of existing service in the RTA service area. These have been correlated with a number of demographic characteristics and the ones with the most direct relationships identified. This means that areas shown to be able to support a certain level of transit service by the TDI are not based on general transit market indicators but on very specific indicators of where and when transit meets the performance expected in the Chicago region. The threshold for the provision of transit services in Chicago is in general far more difficult to meet than other areas of the Midwest. For example, urban areas with over 1,000,000 persons tend to have fare box recovery ratios, an indicator of how much the costs are covered by fare revenues, between 30 and 40 percent. Urban areas less than a million will have recovery ratios around 20% (See Figure 76).

The RTA Analysis shows that an increased potential for transit ridership is based on adult population and senior population. People in households with children are less likely to ride transit. More cars in a household will reduce transit demand. Also, retail workers have a high likelihood of riding transit, while other types of employment do not. The RTA has created an online map of the region (<http://www.rtams.org/RTG>) showing areas of high, medium, and low transit demand based on the TDI factors. Figure 77 shows the map for McHenry County, and adjacent areas of the RTA service area. Areas that offer medium to high levels of support for transit in McHenry County include Woodstock, McHenry, Crystal Lake, Cary, Fox River Grove, Algonquin, Marengo, Spring Grove, Richmond and the Harvard area have some quarter mile sections that show medium or high levels of support.



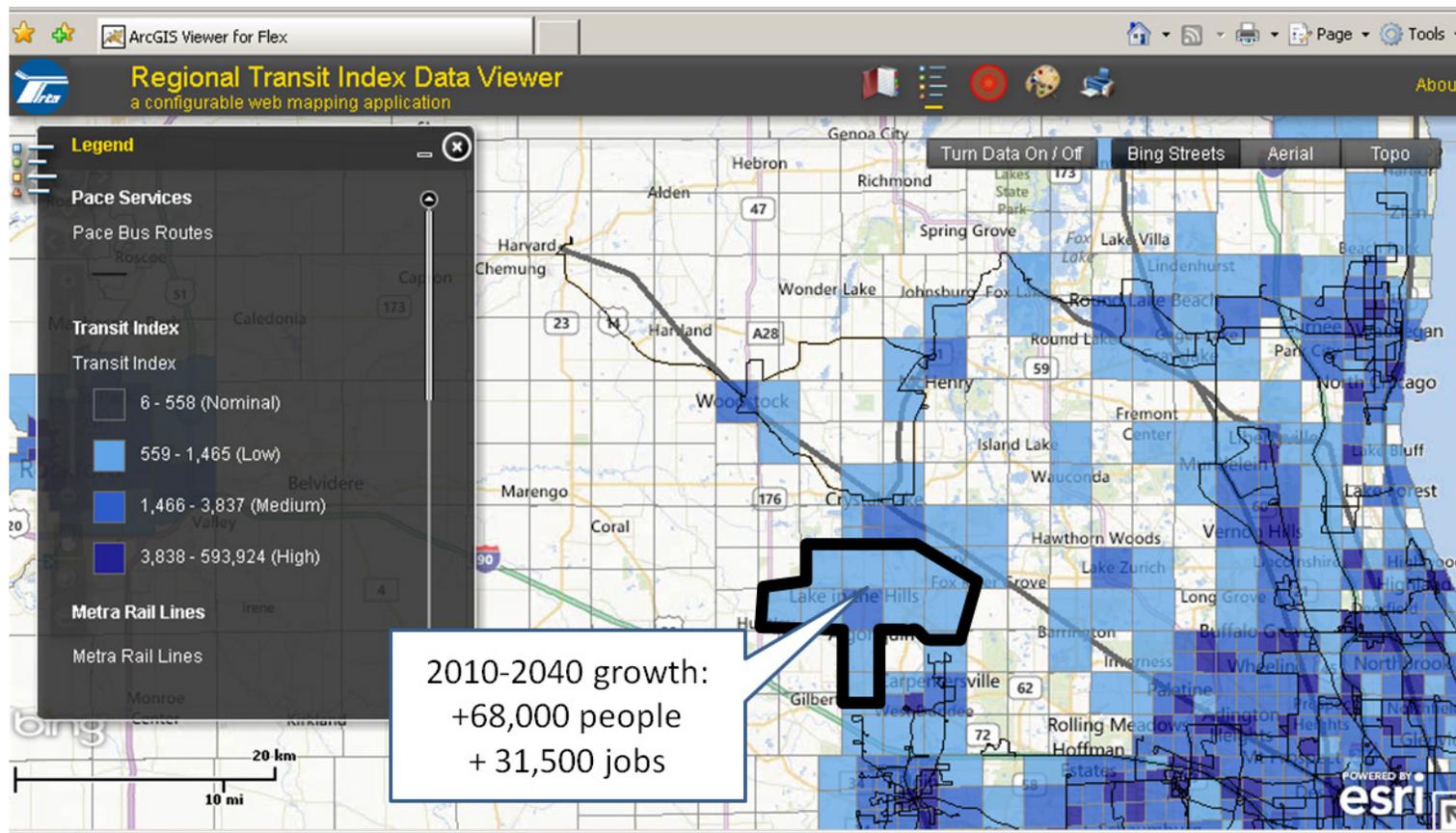
Source: Federal Transit Administration, (2011), 2010 National Transit Summary and Trends, Recovered from <http://www.ntdprogram.gov/ntdprogram/pubs/NTST/2010%20National%20Transit%20Summaries%20and%20Trends-Complete.pdf>

Figure 76: 2010 Farebox Recovery Ratios in the United States by Urban Zone Area Size (UZAs)

An area over 9 miles square between Crystal Lake, Huntley, and Elgin that has no commuter rail, bus routes, and limited demand-response/paratransit services meets the criteria for low to medium transit service. This area encircled in Figure 77 had 106,000 residents and 26,600 jobs in 2010. By 2040, this area will become far more transit supportive. Between 2010 and 2040, over 30% of the population

growth of the County will likely occur in this area. An estimated 68,000 additional persons will be living here for a total of 174,000 and an additional 31,500 jobs are to be added making the total jobs in this area 58,100.

The factors used by the RTA develop the regional TDI, in their order of significance, are:



1. Demographic

- Number of adults (18 to 64)
- Number of seniors (65 and older)
- Number of children (17 and under) – negatively correlated
- Number of vehicles in household – negatively correlated

2. Employment

- Retail employment
- Non-retail employment

Figure 77: Regional Transit Index

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.

Increased levels of transit use would result in significant benefits in terms of health and physical fitness, the environment, and transportation-related effects. The following are some benefits resulting from the implementation of expanded transit services in the County.



DIRECT ENVIRONMENTAL BENEFITS

Replacing automobile trips with shared mass transit trips can have significant environmental benefits. Between 30 and 45 percent of Americans live in areas impacted by traffic-related air pollution. A single person, who replaces a 20-mile round-trip car commute with public transit can reduce his annual CO2 emissions by 4,800 pounds per year, equal to a 10 percent reduction in all greenhouse gases produced by an average two-adult, two-car household (Davis, Todd, and Monica Hale. (2007) Public Transportation's Contribution to US Greenhouse Gas Reduction. McLean, VA: American Public Transportation Association). McHenry County residents, with their longer than average commutes, will see even greater health benefits when using transit.

DIRECT HEALTH BENEFITS

Transit is inherently linked with active modes of transportation, such as walking and biking. In fact, each transit trip typically generates two trips by foot: one for the rider to reach the transit vehicle; and another for the rider to get from the vehicle to their destination. These short trips taken by "active" modes of transportation are important in helping to improve community health. It is estimated that public transit users take 30 percent more steps and spend roughly eight more minutes walking each day than drivers (Edwards, R. 2008. Public Transit, Obesity, and Medical Costs: Assessing the Magnitudes. Preventative Medicine, 46(1); 14-21. January.).

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.

Transit oriented development (TOD) is a recognition of the difficulties and opportunities of transit services. Difficulties include providing service in areas of large single land use, such as 2,000 unit residential subdivisions and 500,000 square foot commercial strips. Opportunities include encouraging and supporting mixed-use developments of smaller residential, industrial, and commercial developments that are walkable and easier to serve with transit services. Land use patterns that are dense and diverse are critical to the success of fixed route bus services.

When developing the Transit Demand Index (TDI), the RTA found that retail employment in particular is a strong indicator for transit suitability. Service jobs pay less than other jobs. As such, those within the retail sector are more likely than the rest of the work force to seek transit as a superior economic choice. This might be particularly true in McHenry County. Transportation and housing costs exceed 60% of household income throughout much of the County. A housing and transportation affordability index created by the Center for Neighborhood technology shows that McHenry County has costs much higher than other populated areas of northern Illinois (Figure 78). This is an important factor as economic growth in the County may be less as a result of high housing and transportation costs.

According to the McHenry County 2030 Comprehensive Plan, the County should advocate for best practices and work with other jurisdictions to ensure that the

regional transportation network provides adequate access to transit stations for pedestrians, bicyclists, and motorists alike. The County should also look to expand transit service into areas with high transportation and housing costs in order to make these areas more affordable. According to the American Public Transportation Association, a household in the Chicago region can save almost \$12,000/year if they can eliminate one car by using transit.

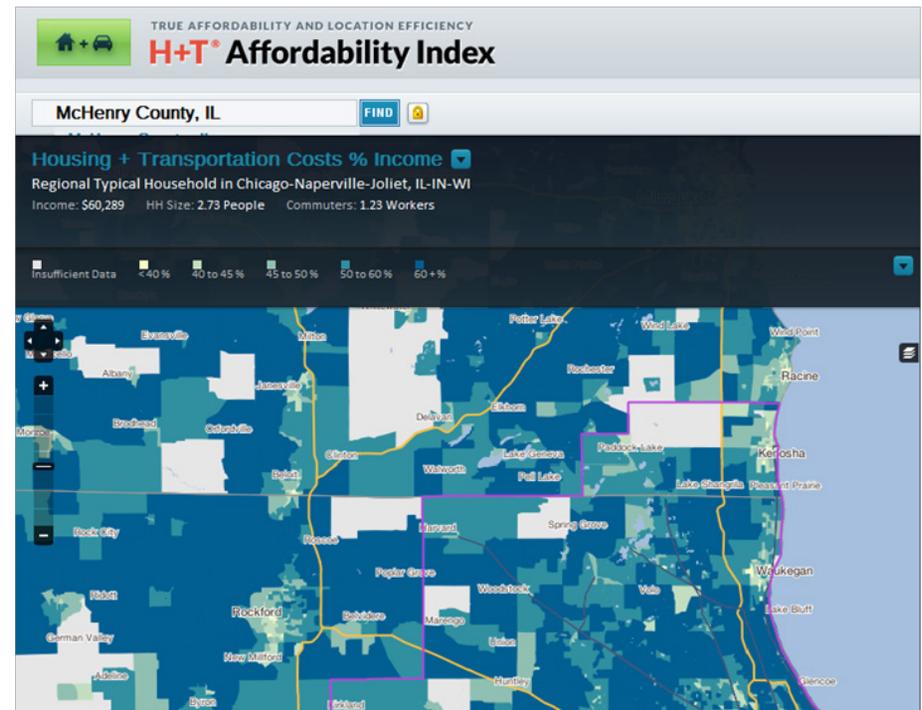


Figure 78: Housing and Transportation Affordability Index

Transit service concepts were developed by a consultant team led by TranSystems Inc. over the course of a year of study. A Transit Steering Committee was created including representation from the Illinois Department of Transportation, the Regional Transit Authority, Pace Suburban Bus, Metra Commuter Rail, McHenry County Council of Mayors, Pioneer Center, and the McHenry County Council of Governments. The steering committee reviewed market conditions for transit service and contemplated the best solutions to pursue over the next several years with consideration for distant future services. These projects were presented to individual focus groups and posted on the 2040 Plan website for individual rankings. The projects, estimated project costs, and a review of plan goals met are summarized in the following table (See Figure 79). These are the projects that are included in the Plan Map in Figure 80. A full explanation of this evaluation is included in Appendix D.

The Randall Road, IL 31, and Algonquin Road bus service projects and the Huntley Area Dial-a-Ride service are proposed to meet the gap of service and needs indicated by the RTA’s TDI index in Huntley, Lake in the Hills, southern Crystal Lake, and Algonquin. The Richmond Area Dial-a-Ride and the Richmond to Fox Lake Metra Shuttle are proposed to better serve the growing communities of Richmond and Spring Grove. All of the transit projects listed in Figure 79 would require additional financial resources.

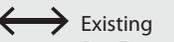
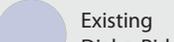
Public comments are summarized in Appendix E. During the open houses for the draft plan held in November 2013, the need to provide County-wide paratransit services to meet the basic transportation needs of seniors and individuals with disabilities was cited multiple times. Future coordination of efforts of demand-response services should keep this goal in mind.

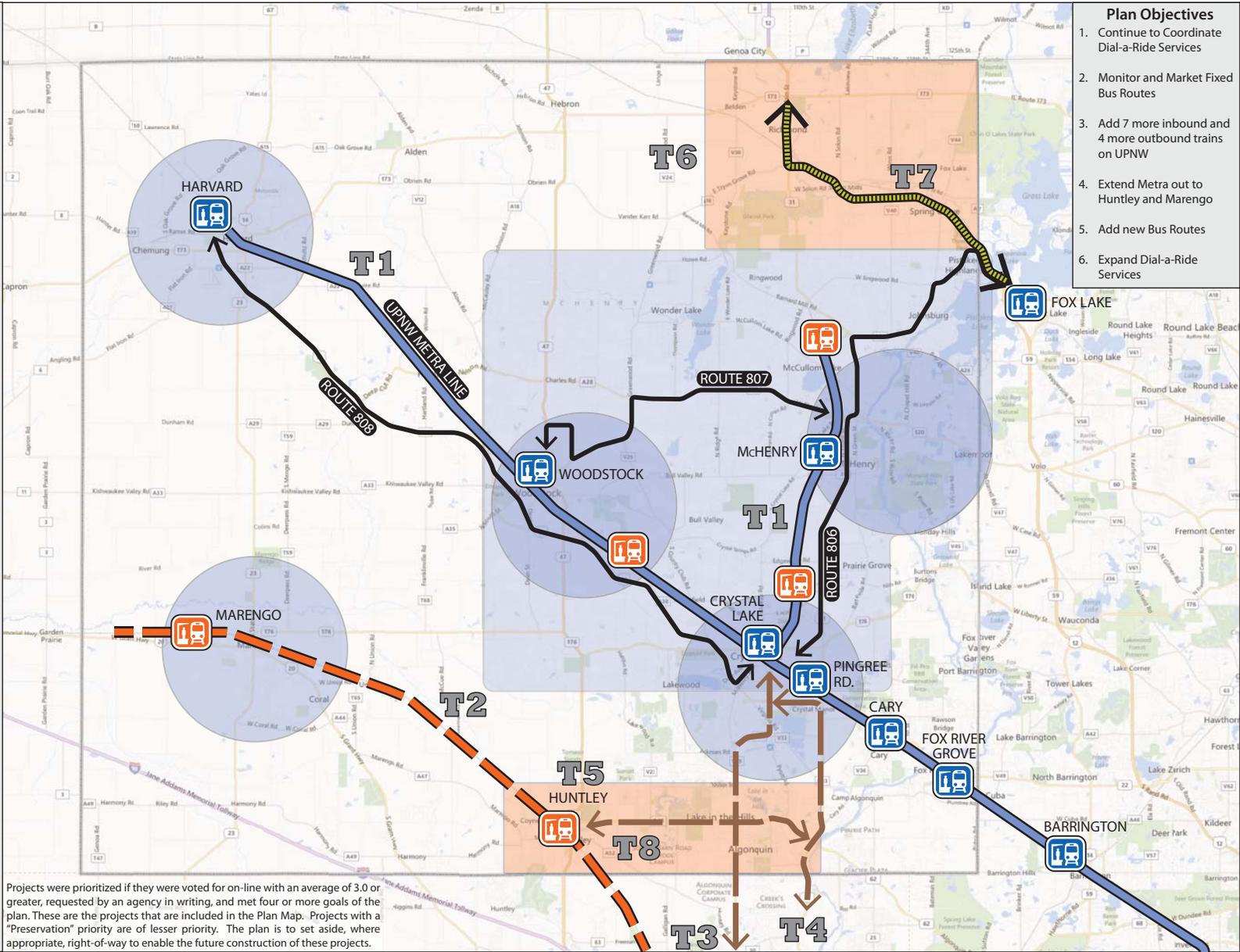
Label	Project Name	Project Costs (\$2013)	Votes	Agency	Goals	Priority
T1	Metra Union Pacific Northwest Line Capital and Capacity Upgrades	\$442,600,000	Yes	Yes	Yes	High
T2	Metra Milwaukee District West Line Extension to Huntley, Union, and Marengo	\$154,400,000	Yes	Yes	Yes	High
T3	Randall Road from Crystal Lake Metra to Elgin Transportation Center Bus Service	\$23,600,000	No	Yes	Yes	High
T4	IL Route 31 between Crystal Lake and Elgin Transportation Center Bus Service	\$13,200,000	No	Yes	Yes	High
T5	Algonquin Road Bus Service from Del Webb/Future Metra station to downtown Algonquin	\$13,200,000	No	Yes	Yes	Medium
T6	Richmond Area Dial-a-Ride Service	\$3,600,000	No	Yes	Yes	Medium
T7	Richmond and Spring Grove to Fox Lake Metra Station Shuttle	\$2,600,000	No	Yes	Yes	Medium
T8	Huntley Area Dial-a-ride Service	\$6,500,000	No	No	Yes	Low
		\$659,700,000				

Figure 79: Project Evaluation of Goals Met

Transit Plan

\$660 Million Investment

-  Existing Metra Station
-  Future Metra Station
-  Existing Metra
-  Future Metra
-  Existing Bus Route
-  Future Bus Route
-  Future Shuttle Route
-  Existing Dial-a-Ride
-  Future Dial-a-Ride
- T8** Project Label



- ### Plan Objectives
1. Continue to Coordinate Dial-a-Ride Services
 2. Monitor and Market Fixed Bus Routes
 3. Add 7 more inbound and 4 more outbound trains on UPNW
 4. Extend Metra out to Huntley and Marengo
 5. Add new Bus Routes
 6. Expand Dial-a-Ride Services

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.

Figure 80: 2040 Transit Services Map

Federal funding is critical for new transit service and capital infrastructure. On the other hand, local funding from the RTA, County, and other local agencies is very important to fund transit operations. Between now and 2040, modest increases in the amount of funding for transit are estimated given current trends. Most of this is a result of assuming federal funding for Metra’s Union Pacific Northwest line upgrades (\$380 million).

It is important to note that transit funding for new projects must compete for limited funds. As such, it is imperative that McHenry County puts a strategy in place to most effectively and efficiently pursue the limited dollars. It will be important for the County to team with other entities. For example, to implement bus service along Randall Road, partnerships with Kane County and the City of Elgin will be needed.

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	\$345.9	\$83	\$503.5	\$15	\$971.4	\$38.9	Total

Figure 81: Estimated Transit Funding by Source

Partnerships should be pursued to build park and ride lots and make infrastructure improvements like sidewalks and transit stop amenities. The County should also continue to meet with Pace and monitor service on the fixed bus routes and local dial-a-rides. The Transit Plan Implementation Task Force, created in 2006 to help implement the coordinated demand-response recommendations of the County’s 2005 Transit Plan, should continue to meet in order to facilitate these conversations and to explore actionable partnerships.



Figure 82: McHenry Township Senior Express