Janesville Area
2015-2050 Long Range Transportation Plan

BACKGROUND: LAND USE, TRAVEL, HEALTH, ENVIRONMENT

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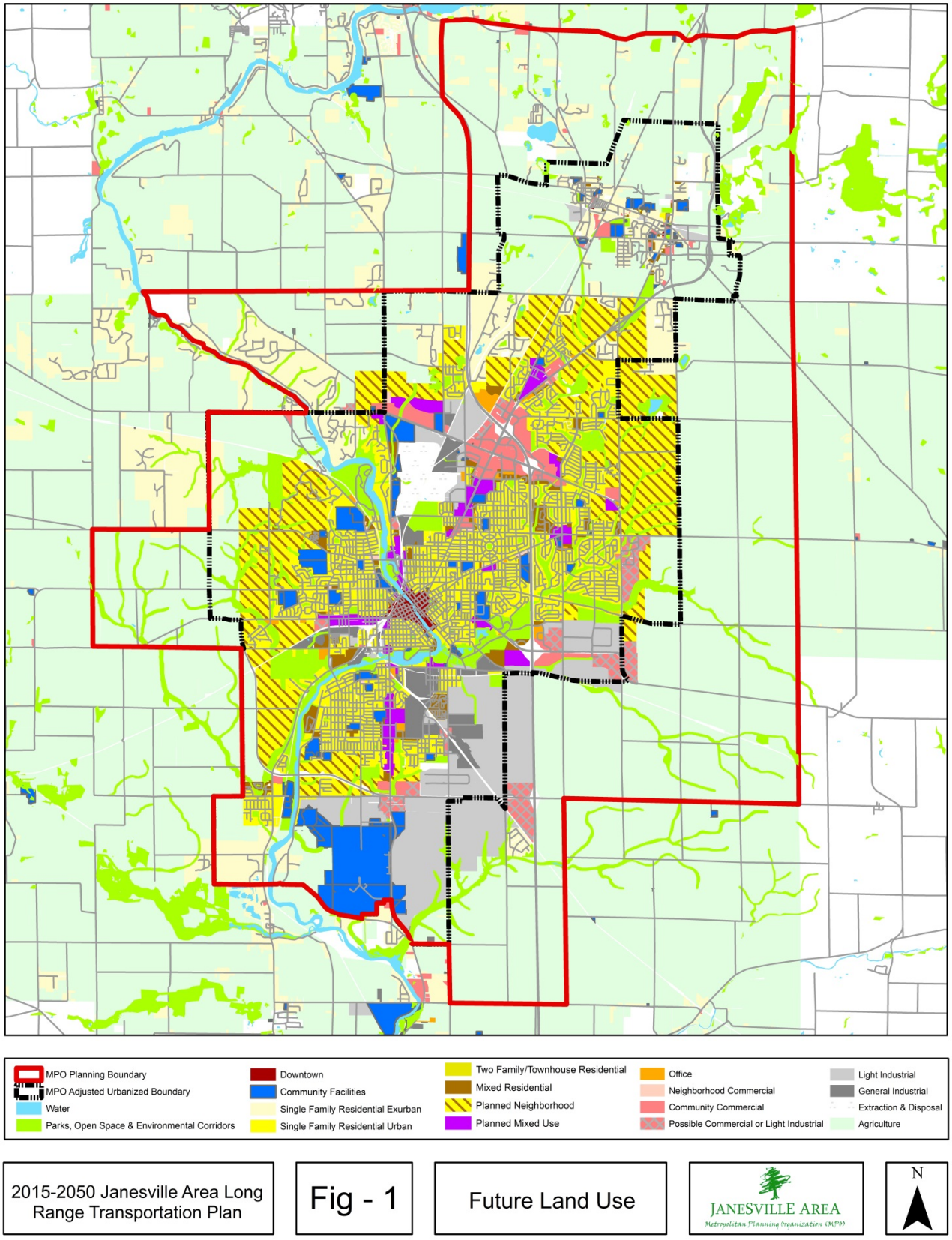
1. INTRODUCTION AND PURPOSE

This section addresses issues facing the Janesville area more broadly, which relate to the project recommendations and the performance measures contained in the Plan. This section also discusses linkages between the plan and human health and the environment.

2. LAND USE

The study area for the Janesville Area Long Range Transportation Plan encompasses the twenty-year urban area boundary, which includes the City of Janesville, the City of Milton and the towns of Janesville, Harmony, La Prairie, Milton, and Rock. Figure 1, entitled Future Land Use, provides an overview of existing and projected land uses through 2050. The map illustrates the framework for making decisions relative to growth and development throughout the MPO planning area. The map combines several local land use plans into one map in order to gain a regional perspective. The land use plans combined to make Figure 1 come from the City of Janesville's Future Land Use Map from the Comprehensive Plan, and the City of Milton's Comprehensive Plan.

Figure 1: Future Land Use



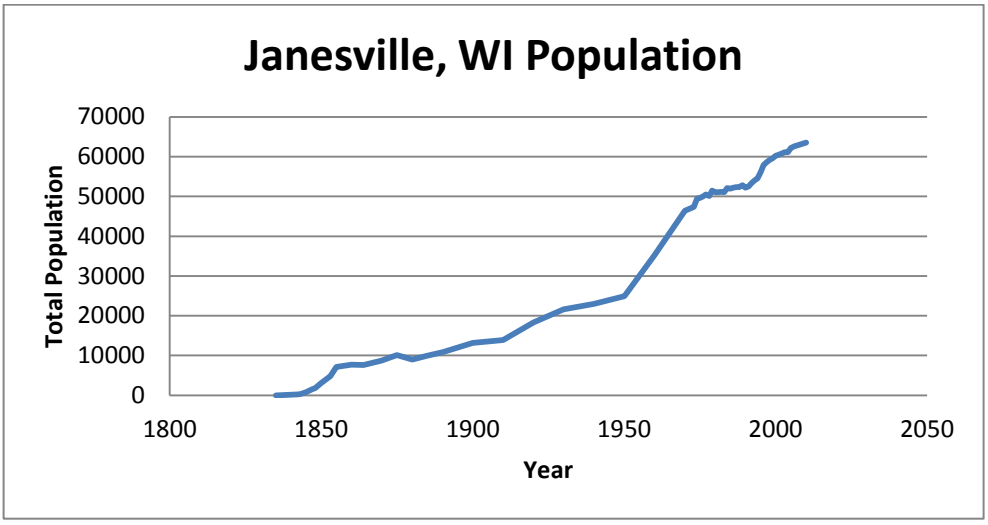
JANESVILLE AREA MPO DEVELOPMENT TRENDS

City of Janesville

Founded in the 1830's, Janesville rapidly developed as a regional center of industry and commerce. Downtown Janesville developed along both sides of the Rock River, and the City's industrial base broadened to serve national markets and provided a strong local economy for most of the 20th century.

The city of Janesville experienced bursts of rapid growth and development in the 1950's and 1960's, when population increased from around 25,000 in 1950 to 46,000 in 1970. Although the 2008 recession and closure of the General Motors Plant affected Janesville, the city continues to grow in population and employment.

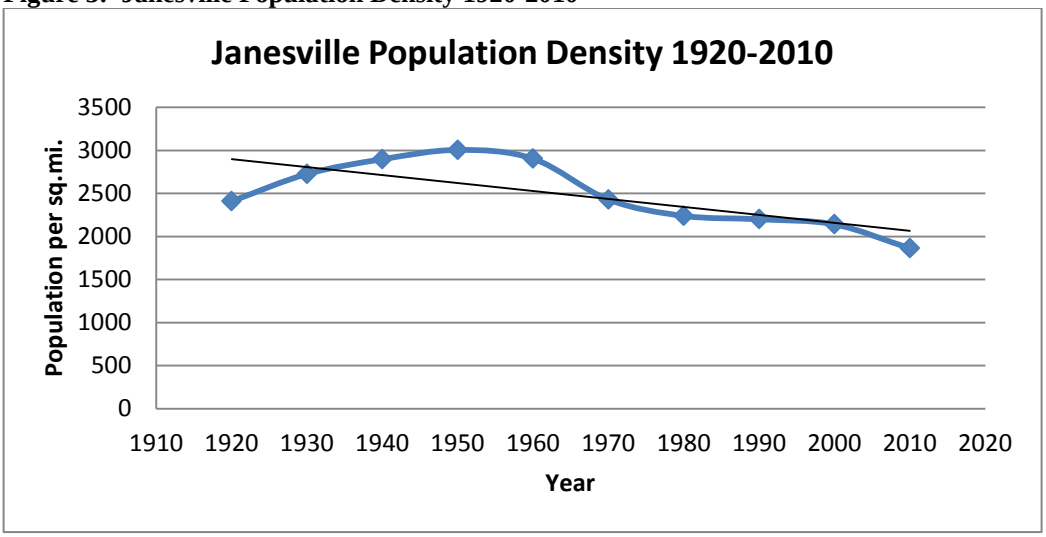
Figure 2: City of Janesville Population 1840's - 2014



The density of developed lands within Janesville peaked around 1950 with 3,000 persons per square mile. The increase in the availability of personal automobiles beginning in the 1950s dramatically changed Janesville's landscape to emphasize private vehicles and de-emphasize public transportation systems. Larger residential lot sizes, wider and curvilinear streets, often a lack of sidewalks, and greater separation of land uses characterize this age of development and contributed to the decline in public transportation options. The "Post War" age of development, with its relatively low density of population and uses, tends to be less serviceable by transit and less friendly to bicyclists and pedestrians.

Population density in Janesville remained relatively stable from 1980 through 2000 at 2,250 persons per square mile. The drop in density between 2000 and 2010 can be attributed to several large annexations that included little to no population, including the South Central Wisconsin Regional airport.

Figure 3: Janesville Population Density 1920-2010



Another reason for Janesville's low population density relates to the city's abundant acreage of parks and open space. Since the early 1970's Janesville has promoted its park system as one of its strongest community assets. Wise long term planning has been used to preserve parks and open space, including extensive lands for public access along the Rock River, and protection of a large greenbelt drainage system. Today Janesville takes pride in the fact that it leads Wisconsin's large cities in parkland per capita, with more than 40 acres of parkland for each 1,000 residents. Table 1 below is from the 2008 Parks & Open Space Plan comparing Janesville to Wisconsin peer cities.

Table 1: Comparison of Peer Communities

Janesville Peer Cities Ranked by Acres of Parkland per 1,000 Residents

Rank by Acres / Capita	City	Population	Parkland Acreage	Acres per 1,000 res.
1	**Janesville**	**62,720**	**2,568**	**40.9**
2	LaCrosse	51,522	1,400	27.2
3	Green Bay	104,779	2,422	23.1
4	Beloit	36,888	924	25.0
5	Fond du Lac	43,021	692	16.1
6	Eau Claire	67,545	1,038	15.4
7	Waukesha	71,016	1,080	15.2
8	Racine	78,199	1,100	14.1
9	Sheboygan	49,288	551	10.8
10	Appleton	73,596	631	8.6
11	Wausau	39,106	328	8.4
12	Kenosha	99,889	871	8.1
13	Oshkosh	66,778	440	6.6
AVERAGE				**16.7**
For comparison	Madison	243,344	6,000	24.7

City of Milton

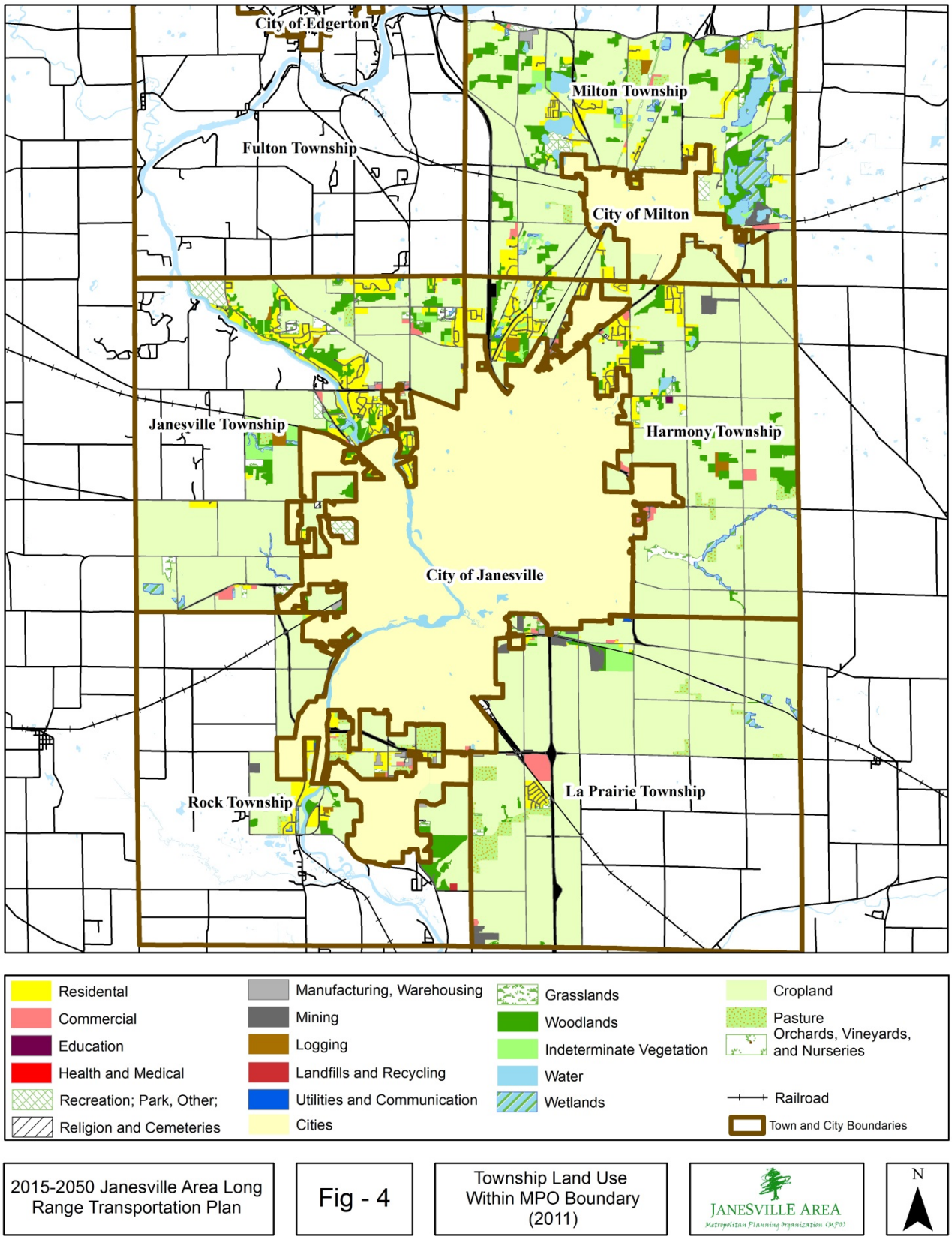
The city of Milton was at one time two communities - Milton and Milton Junction. Founded in the 1840's, Milton is known for the hexagonal stagecoach inn, the Milton House, and Milton College. Milton Junction, one mile west of Milton, was settled in the 1840's and is known for two intersecting railroads. The two communities merged in the late 1960's but the city continues to have two downtowns: Parkview Drive on the east side of the city and Merchants Row in the old Milton Junction area to the west.

Similar to Janesville, pre-war development surround Milton's downtowns in a mostly grid-like pattern of streets. Post-war development rings the historic areas with residential subdivisions to the north and south and an industrial park to the east.

MPO Townships

As shown in Figure 4, the mix of township land uses within the MPO planning boundary varies among the towns. Family farms and agricultural research farms, with very little exurban residential development, dominate the Town of La Prairie. The Town of La Prairie is a designated Agricultural Enterprise Area, which is intended to encourage the preservation of agricultural land use and to promote agricultural economic development appropriate to the area. There are sand and gravel operations in the northwest and southwest areas of the town. Town of Harmony contains a number of exurban residential subdivisions in the northwest area between the cities of Janesville and Milton, while the majority of lands in the eastern and southern areas of the town are cropland or woodland. The Town of Milton has some of almost everything: lakes, wetlands, protected natural areas as well as cropland, pastureland, sand and gravel operations, residential and commercial areas. Much of the land area in the Town of Janesville within the MPO planning area is exurban residential or woodland. Flat, tillable terrain in the southern portion of the town around and south of CTH A is predominantly cropland. There is only a small portion of the Town of Rock within the MPO planning area; much of the township property within the boundary, approximately 1,000 acres, is governed by a cooperative boundary agreement to annex the land into the city over the next thirty years (by year 2046).

Figure 4: Township Land Use within MPO Boundary (2011)



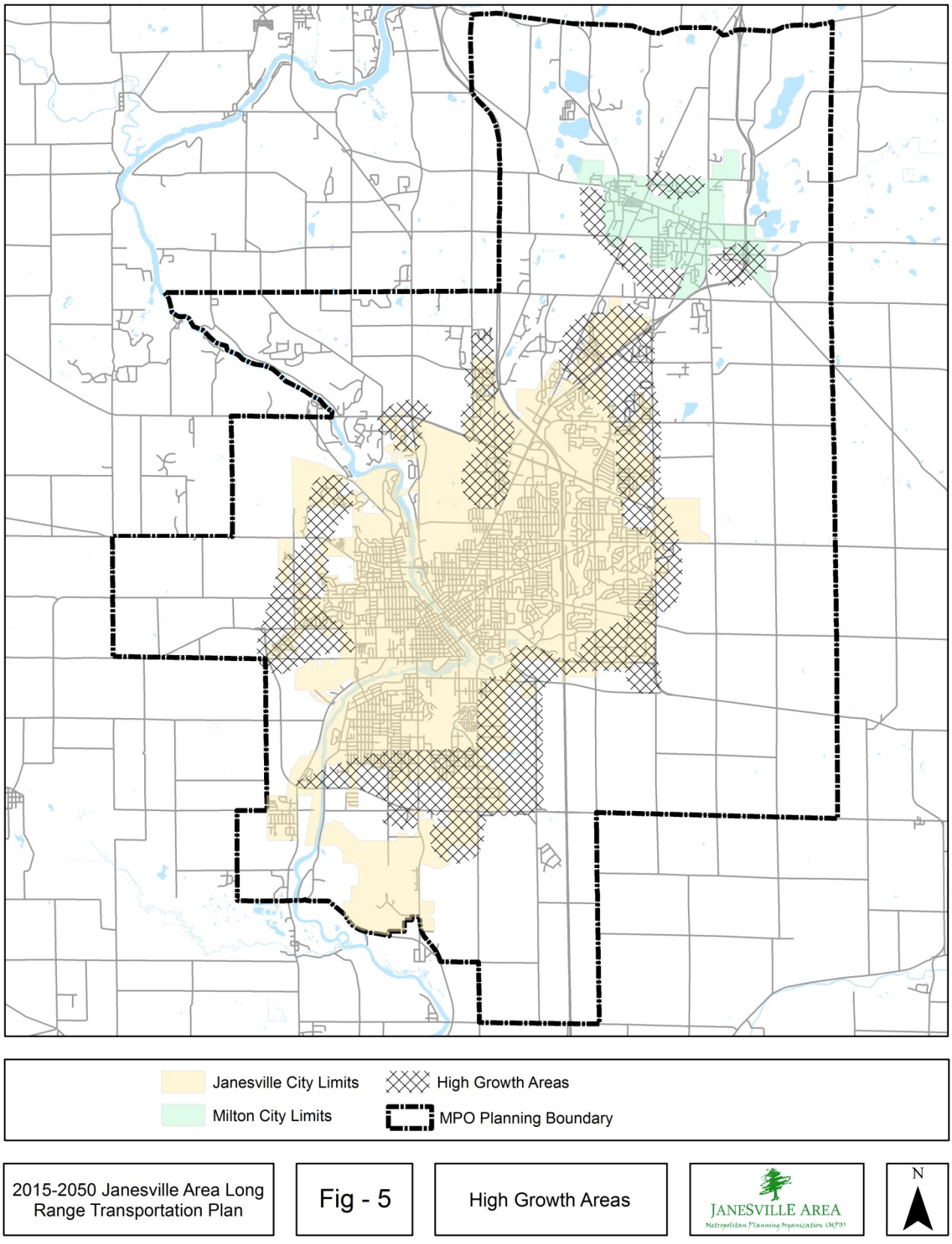
Future development

The type of future land use is determined by local land use plans, as depicted in Figure 1 of this chapter, but the pace of development is expected to vary in the region. The City of Janesville has been experiencing the strongest housing growth rate in the Northeast area due to access to I-39/90 and proximity to a regional shopping area. The City's industrial areas are employment growth areas, as well as new commercial development along the Milton Avenue/Humes Road corridor. These trends in housing and employment growth are expected to continue.

The cities of Janesville and Milton are expected to gain the most people and jobs between 2015 and 2050, but by growth rate the Town of Janesville is expected to grow the fastest at a rate of 35%. Rock Township is expected to grow slightly while La Prairie Township is expected to lose population.

Figure 5 below shows where the most development is expected to occur over the planning horizon. These growth assumptions are included in the traffic forecasting analysis that informs recommendations in the Streets & Highways Section.

Figure 5: High Growth Areas

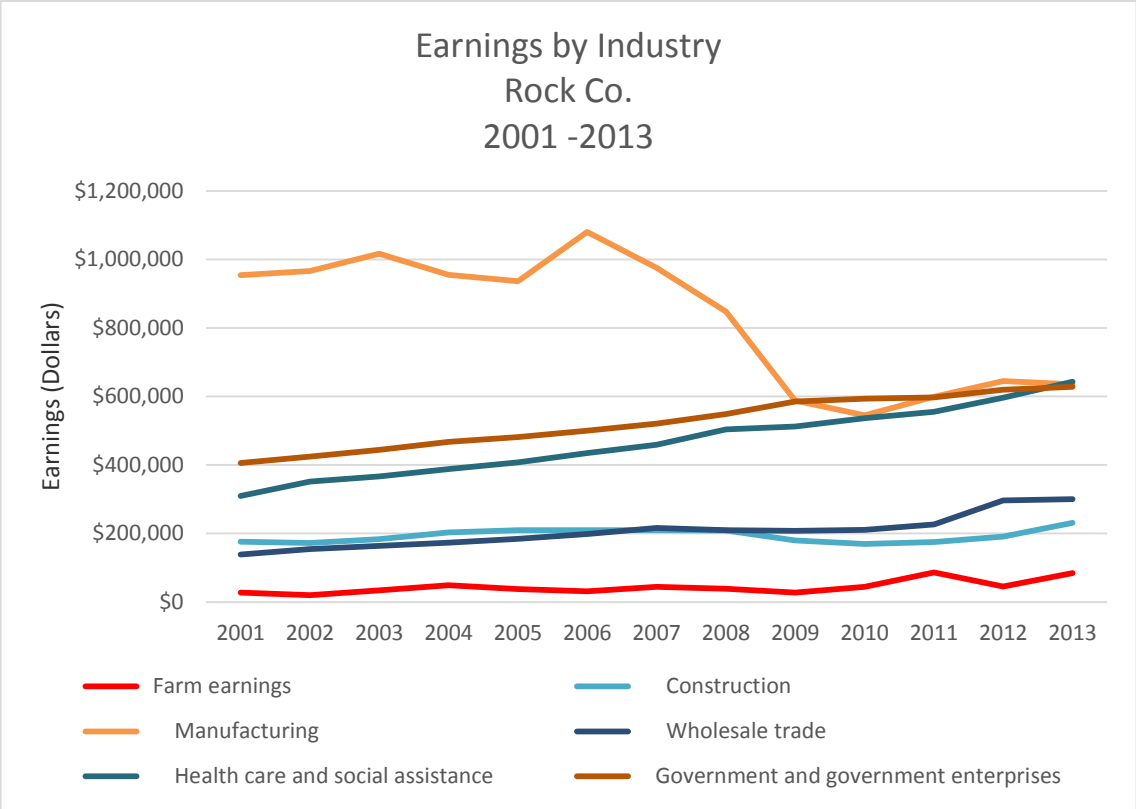


AGRICULTURAL LAND USE

Agriculture and food processing is a major economic cluster in Rock County. Although farm employment only makes up approximately 2.2% of employment in Rock County, the sector has remained steady since 2001.[1] The decrease in earnings seen in 2012 can be attributed to a drought year. Food manufacturing is an expanding component of the agricultural economic cluster, as seen in Figure 7.

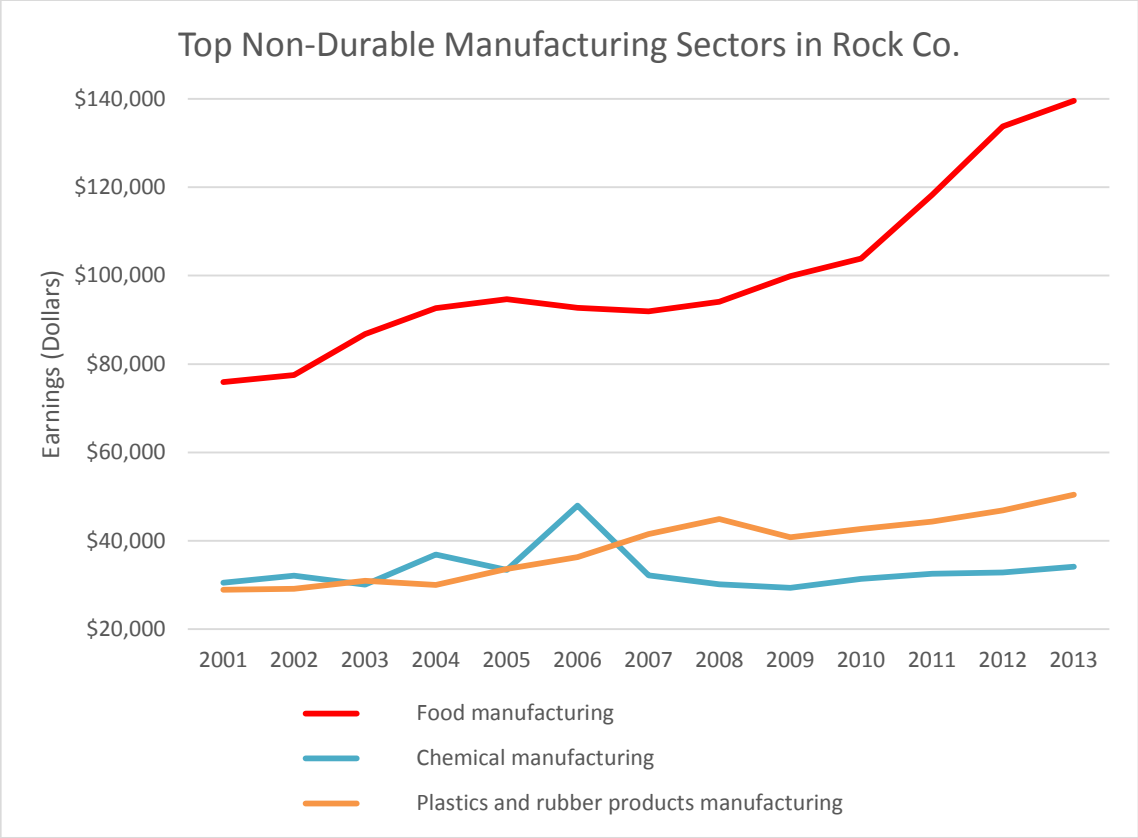
An objective of this plan is to "…support the agricultural economy through the protection of agricultural lands, while maintaining an adequate road network to transport product to market. This objective is consistent with local land use plans, as shown in Figure 1, which focuses new growth adjacent to urban areas or in township areas with existing neighborhoods. Additionally, downtown revitalization efforts lead by the cities of Janesville and Milton will reduce greenfield development around the edge of the cities.

Figure 6: Earning By Industry Rock County 2001-2013



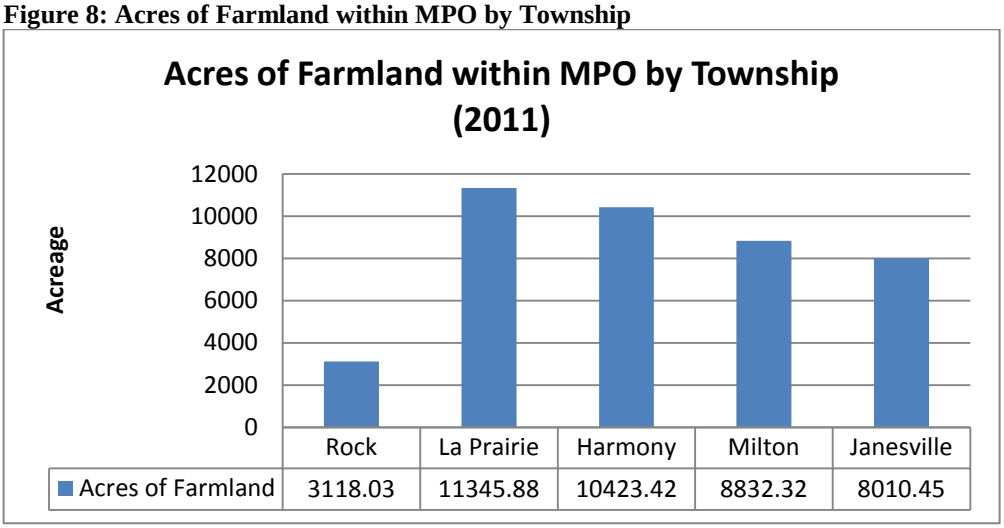
[1] Bureau of Economic Analysis, 2013

Figure 7: Top Non-Durable Manufacturing Sectors in Rock County



The MPO used the Rock County Land Use Inventory (2011) from Rock County Planning Department to develop the map of township land uses within the MPO boundary. The inventory was used to measure the amount of farmland within the MPO boundary. The Town of La Prairie has the most acres of farmland within the MPO boundary with 11,346 acres. This data is one of the MPO's regional measures to monitor its goal of agricultural preservation. The 2011 dataset is the best and most accurate measure at this time. The MPO will continue to collect this data as the Rock County Planning Department makes the data available.

Figure 8: Acres of Farmland within MPO by Township



TRAVEL BEHAVIOR

There is limited data about travel behavior in the Janesville area. The most reliable data comes from the Census Bureau's Census Transportation Planning (CTPP) products, which is a set of special tabulations designed for transportation planning. The Census Bureau American Community Survey provides data regarding means of transportation to work, number of workers in a household, and number of vehicles available. This data is used at the local and national level in this section as well as in the Rock County Travel Demand Model.

The MPO conducted a trail user count and survey in 2010 and 2013 in order to estimate annual usage, learn how individuals use the trail, and solicit input from users about future trail extensions. The study revealed most individuals were using the trail for recreation and exercise. A small percentage used the trail to travel to work, school, shopping, or other purposes. The 2013 survey also measured an increase in trail usage over 2010. The MPO intends to continue to conduct a count and survey of users every three years in order to measure system performance.

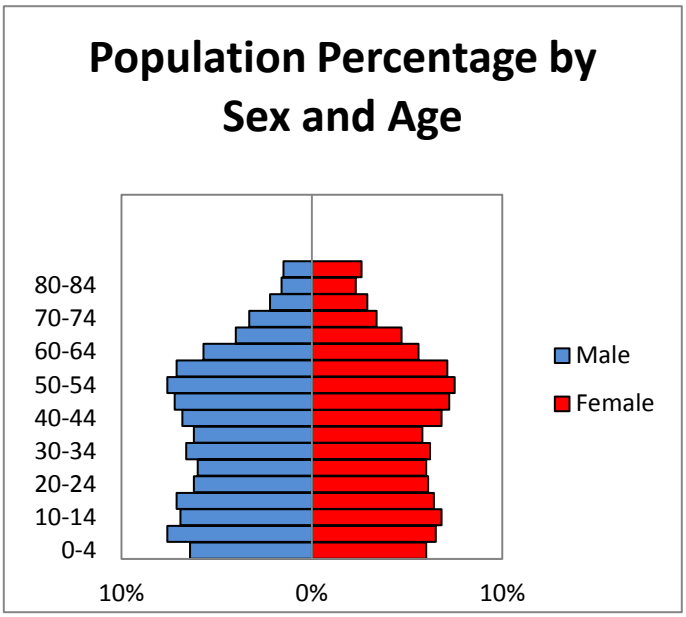
The 2009 National Household Travel Survey (NHTS) provides a national-level picture of transportation trends. Nationally, people are using private vehicles less and using other modes more for all types of trips. The number of person trips per day per person decreased between 1995 and 2001 and again between 2001 and 2009. The NHTS states, "Reasons for this trend require further study, but could reflect the aging of the population, more people not in the workforce, increased use of communications technology, and other social or economic factors." . The average person also traveled fewer miles overall in 2009 compared to 1995 and 2001.

According to NHTS, the number and percent of households with no vehicle available grew by nearly one million households, from 8.1% of all households to 8.7%. The biggest change, according to the report, was the growth in households with one vehicle- in the 2009 NHTS 32.3% of all households reported owning one vehicle, nearly 2.8 million more than 2001. For comparison, 6.2% of City of Janesville residents reported having no vehicles available in their household (ACS 2009-2013).

Generational differences

Demographic research indicates differences exist between American generations in terms of tastes, attitudes, financial decisions, ethics, and travel preferences. Two of America's most researched cohorts are the "Baby Boomers", who are individuals born during1946-1964 and the Millennial generation comprised of individuals born during 1983-2000.

Figure 9: Rock County Population by Sex and Age



Rock County has a significant Baby Boom population, with the largest cohorts between the ages of 45 and 59 and a countywide median age of 38.8.

Numerous recent studies have found that Millennials are placing a greater emphasis on place and the amenities it provides. An April 2014 survey by the Rockefeller Foundation and Transportation for America found that more than half (54%) of the Millennials that they surveyed would consider moving to another city if it had more and better transportation options.

Millennials reported having fewer vehicles available in their household than Baby Boomers. Figures 10 and 11 show the difference nationally between the two generations. The Vehicles Available Per Person is calculated by vehicles available per household divided by total number of persons over 16 years old in the household.

Figure 10: National Vehicles Available Per Person Baby Boomers

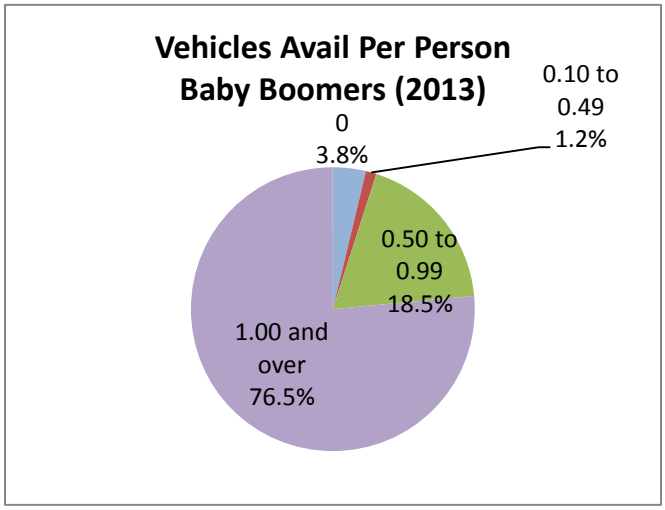
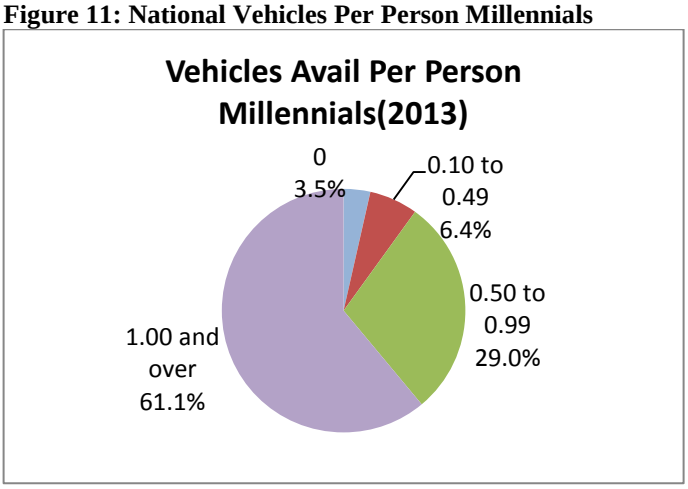


Figure 11: National Vehicles Per Person Millennials



Nationally, there are some slight differences between Millenials and Baby Boomers in travel to work data. Millenials are less likely to drive alone and more likely to walk to work.

Figure 122: National Means of Transportation to Work Baby Boomers

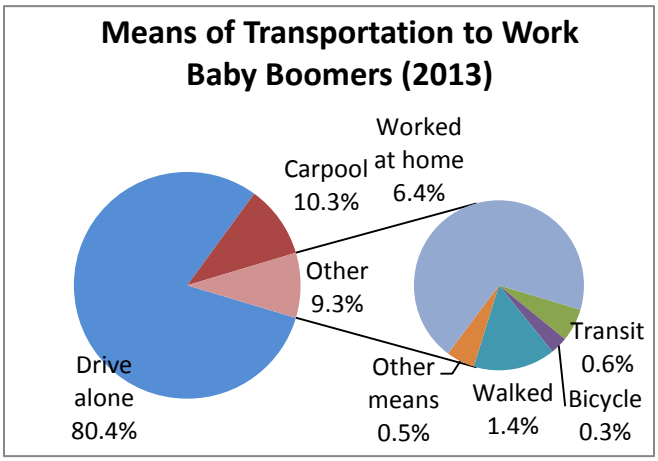
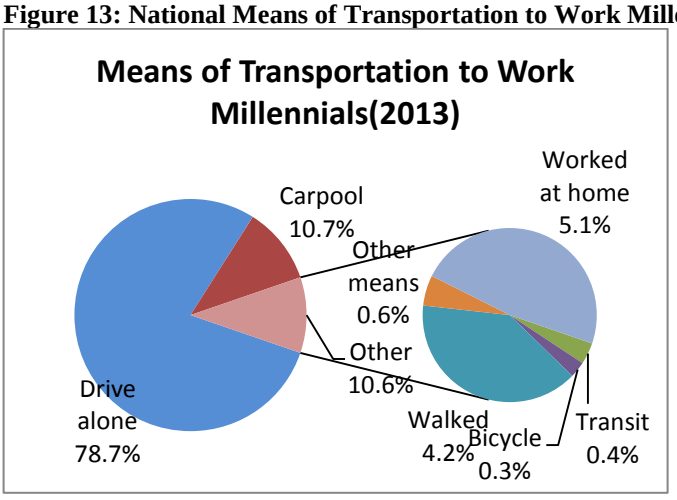


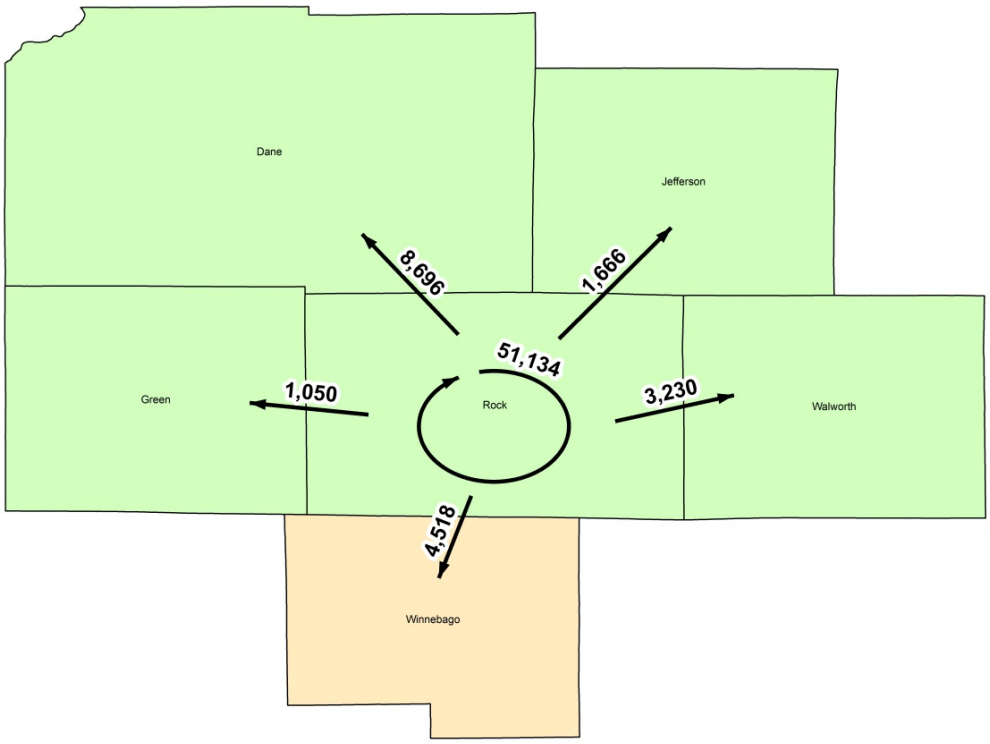
Figure 13: National Means of Transportation to Work Millennials



Janesville Area Commuting Patterns

The Madison metropolitan area is a major employment destination for Rock County residents, with an estimated 9,000 workers commuting to Dane County for work. Another significant destination for workers is Winnebago County, IL, which attracts approximately 4,500 workers. Figure 14 below shows the place of work for Rock County residents.

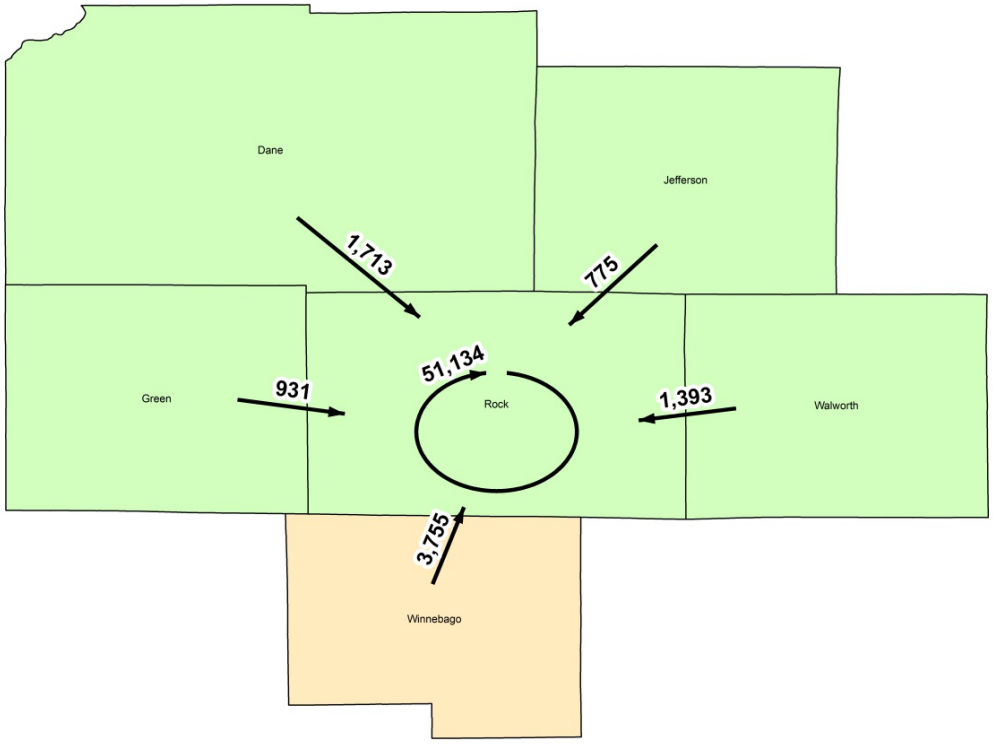
Figure 13: Rock County Resident County of Work



Source: American Community Survey 2009-2013

Rock County has far fewer workers travelling into the county from other destinations, as shown in Figure 15. Approximately 3,800 Winnebago County residents travel to Rock County for work.

Figure 14: Rock County Workers Place of Residence



Source: American Community Survey 2009-2013

Janesville and Milton residents have relatively high and growing rates of carpooling to work, based on comparison of Census 2000 and 2009-2013 estimates. Tables 2 and 3 show American Community Survey 2009-2013 estimates for means of transportation to work for City of Janesville and City of Milton residents. In 2000, 85% of City of Janesville residents drove alone to work, but that percent has dropped to 82.2%. At the same time, carpooling and work from home rates has increased.

Table 2: City of Janesville Means of Transportation to Work (2009-2013)

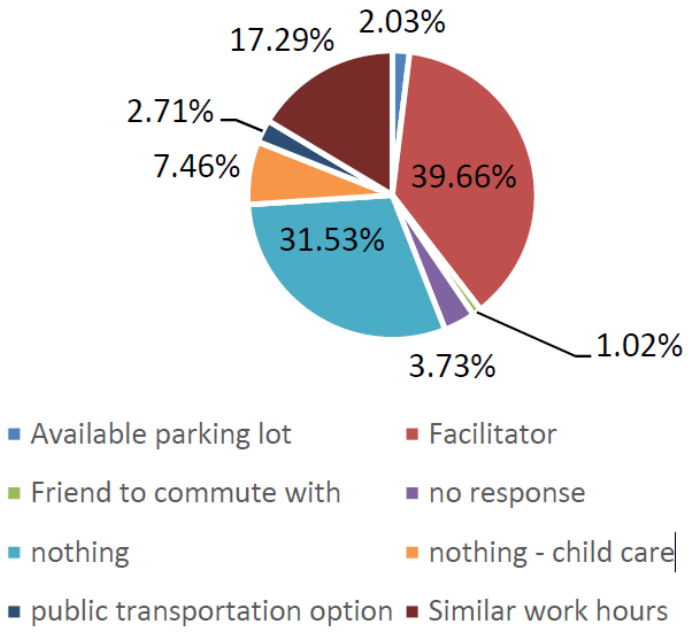
Janesville Means of Tranportation to Work 2009-2013		
Drove alone	23,743	82.2%
Carpool	3,124	10.8%
Public Transportation	278	1.0%
Bicycle	101	0.3%
Walked	447	1.5%
Taxicab, motorcycle, or other means	224	0.8%
Worked at home	969	3.4%
Total	28,886	100%

Table 3: City of Milton Means of Transportation to Work (2009-2013)

Milton Means of Tranportation to Work 2009-2013		
Drove alone	2,086	78.0%
Carpool	373	13.9%
Public Transportation	0	0.0%
Bicycle	0	0.0%
Walked	39	1.5%
Taxicab, motorcycle, or other means	47	1.8%
Worked at home	130	4.9%
Total	2,675	100%

Janesville residents are still below the national average in terms of carpooling, but Milton residents are above the average and a Southwest Region Park-and-Ride System Study[2] published in 2015 asked commuters who drive alone what would induce them to carpool. There were 39.7% who would carpool if there was a facilitator who coordinated rides, 31.5% would not carpool, and 17.3% would if their schedule were similar (refer to Figure 16).

Figure 15: SOUTHEAST COMMUTERS RESPONSE TO CARPOOLING



The State Vanpooling program is a popular option for Janesville area commuters. The Park-and-Ride study found that, as a whole, vanpool users indicated that they use the service because of fuel prices, conveniences to work and back home, and cost of parking. If the service was not available, 82% would chose to drive on their own compared to 13.2% carpooling and 2.2% would use the Van Galder Bus Service.

The Wisconsin Department of Transportation conducted a study on the Southwest Region and indicated the top three locations where a Park-and-Ride lot is in demand. The study found that Janesville has demand for two Park-and-Ride lots to support commuters and one in Evansville. The highest priority is a location in proximity to the intersection of USH 26 and USH 14, followed by a location near the East Racine and STH11 interchange, and USH 59 and USH14 in Evansville.

[2] Wisconsin Department of Transportation. "Southwest Regional Park-and-Ride System Study". June 2015.

3. ENVIRONMENT & PUBLIC HEALTH

Transportation projects affect both the environment and human health. Air quality, drainage, water conditions, vegetation, wetlands, and wildlife are all susceptible to degradation from highway construction. Several plans for the Janesville Area MPO identify environmental corridors and the means of preserving corridors through acquisition or regulation. These plans are used in conjunction with State Department of Natural Resources and Federal guidelines to inventory and preserve environmental corridors. The MPO maintains inventories of natural, cultural, and historic features for the purpose of early stage planning and identification of strategies to avoid, minimize, or mitigate negative impacts to resources. The Environmental Consultation Section of the LRTP analyzes transportation projects against resources and provides recommendations for further analysis.

Public Health is a broad term that refers to the science and art of preventing disease, prolonging life and promoting health through organized efforts and informed choices of society, organizations, public and private, communities and individuals. Transportation issues affecting public health include air quality, noise, unsafe roadways, and roadways that do not support active transportation. Many of the strategies and recommendations in the LRTP promote wellness and mitigate negative health impacts.

CLIMATE CHANGE

Climate change impacts, such as more frequent and intense weather events, pose a considerable threat to transportation infrastructure. As transportation planning agencies, MPO's play a vital role in mitigating future climate change through reduction of transportation related greenhouse gas (GHG) emissions as well as assisting communities to be more resilient to the impacts of climate change. According to FHWA, over one fourth of GHG emissions in the U.S. come from the transportation sectors. There are four major strategies to mitigate or reduce GHG:

1. Improve system and operational efficiencies;
2. Reduce travel activity
3. Introduce low-carbon fuels
4. Increase fuel efficiency

The Janesville Area MPO addresses all of the strategies in the LRTP except for increasing fuel efficiency through its goals, targets, and performance measures.

1. Improve system and operational efficiencies
    a. Maintain acceptable levels of congestion
2. Reduce travel activity
    a. Increase trail usage
    b. Increase transit ridership
    c. Decrease drive alone to work trips
    d. Increase biking and walking as mode to work
    e. Encourage Park-and-Ride locations
3. Introduce low-carbon fuels
    a. Convert JTS bus fleet to Compressed Natural Gas (CNG)

The extent of the impacts of climate change is not well known. For the Midwest, global climate change will likely change the risk of extreme heat, freeze-thaw cycles, extreme precipitation, and tornados. Climate change resiliency strategies may include new or higher standards for engineering design of bridges and other infrastructure, redundancies in infrastructure such as multiple access points, or maintaining more spare buses that could be employed in an evacuation.

The Janesville area has experienced several Rock River flood events in the last decade, including a flood in 2008 that exceeded the 100-year event. The City of Janesville has invested considerable resources into emergency preparedness and resiliency in the last few years. Actions taken include purchase and removal of structures in the floodplain, storm water improvements, and training of staff in emergency management and emergency response. The recently reconstructed Jackson Street Bridge was designed to withstand a 100-year flood event. The City intends to remove the Parking Plaza, an aging parking structure spanning the Rock River. Removal of the structure and its support piles will lower the 100 and 500-year flood elevations, thus mitigating future flood events.

The MPO may play a role in educating member jurisdictions about resiliency strategies. However, there are no formal recommendations or policies addressing climate change resiliency being offered in this plan. Future transportation plans or independent studies may provide specific direction regarding resiliency.

AIR QUALITY

Air quality, emissions, and the efficiency of the transportation system are all interrelated. Emissions are related to the density of traffic volumes in an area, vehicle type, speed and vehicle mode. Mode refers to whether a vehicle is idling, accelerating, cruising, or decelerating. Emissions dispersed during idling can increase if intersection congestion or uncoordinated signals are not corrected. Janesville does have isolated delays during peak periods, although these roadways are not congested or considered as having poor Level-of-Service (LOS).

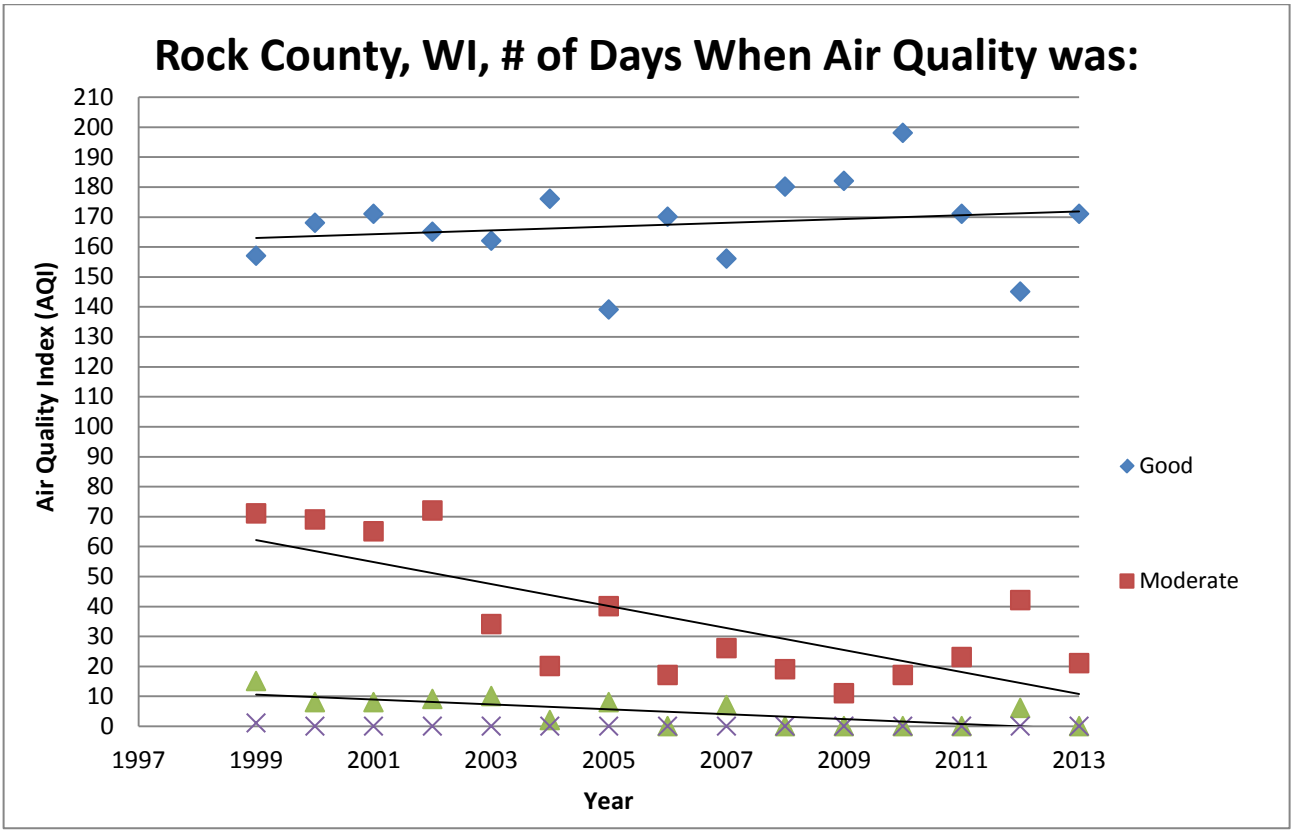
Rock County is an attainment area for ozone based on the National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency (USEPA). Most ozone can be attributed to plumes of ozone drifting downwind (to the north and northwest) from the Chicago-Gary Urban complex[3]. Rock County air quality has improved 1998-2013, but for the 8-hour maximum for the ozone standard, the County exceeded the limit a few times, including 2012. There is only one point in the whole County to measure ozone: Beloit, WI, 1948 Merrill St. (Cunningham School). Local environmental groups and other interested parties have requested additional test sites but the WDNR has cited lack of funding for declining past requests. The study by Sexton and Westberg demonstrates how air quality can vary even within a single county. The USEPA tracks overall air quality and number of days per year when air quality was good, moderate, unhealthy for sensitive groups, and unhealthy. This data come from the Air Quality Index Report on an annual basis. Using this data, it shows air quality is improving for Rock County.

[3] "Elevated Ozone Concentrations Measured Downwind of the Chicago-Gary Urban Complex", Ken Sexton and Hal Westberg. *Journal of the Air Pollution Control Association.* 1980

Table 4: Rock County Air Quality 1998-2013

Rock County	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
# of Days When Air Quality was:																
Good	129	157	168	171	165	162	176	139	170	156	180	182	198	171	145	171
Moderate	40	71	69	65	72	34	20	40	17	26	19	11	17	23	42	21
Unhealthy for Sensitive Groups	16	15	8	8	9	10	2	8	0	7	0	0	0	0	6	0
Unhealthy	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 16: **Rock County Air Quality**



According to EPA, poor air quality and breathing ground-level ozone can result in a number of respiratory symptoms, including coughing, throat irritation, chest tightness, wheezing, and shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily ozone concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. According to the WI Department of Health Services, Rock County is ranked the 14th highest out of 72 Wisconsin counties for prevalence of adult asthma. Between 2011-2013, Rock County also had significantly higher

asthma emergency room and hospitalization rates than the overall state rates. During this period, Rock County ranked 5th highest in the state for asthma hospitalizations and 6th highest for asthma emergency room visits.

Reducing vehicle travel and introducing cleaner fuels are two strategies that address both climate change and air quality. The MPO has not played a role in developing or encouraging other policies, such as limiting idling of vehicles.

INACTIVITY/OBESITY

Twenty-four percent (24%) of Rock County residents are inactive, according to County Health Rankings. The health rankings survey defines physical inactivity as the percentage of adults aged 20 and over reporting no leisure-time physical activity. The question posed in the survey asked about leisure activity but did not ask about active transportation such as walking to school or biking to the grocery store.

An estimated 260,000 trips were taken on the trail system in 2013, according to an MPO trail user count and survey. The trail is often cited as the City of Janesville's most popular recreational amenity. While over 96% of survey respondents indicated that their trip purpose was exercise/recreation/fitness training, the trail system is also used for shopping and commuting.

Several elements in the LRTP will encourage active transportation and active living:

- Trail extensions and connections
- On-street bike lanes
- Flexible street standards like the narrow street ordinance
- Safety conversions to reconfigure four lane roadways to three lane roadways

4. CONCLUSION

The transportation system impacts land use, economy, public health, and the environment in complex and inter-related ways. Trends in transportation and studies of personal preferences support the LRTP's goals to expand on-street and off-street bicycle and pedestrian infrastructure as well as maintain and expand transit as funding permits. The LRTP strongly emphasizes maintenance of the current street network and contains very few road expansion recommendations. This is in-line with the MPO's priorities to provide an increasingly energy efficient and economically viable multi-modal transportation system. As demonstrated in this section, the LRTP recommendations encourage active transportation and reduce air emissions, which when implemented will improve public health and the environment.

References

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