Janesville Area
2020-2050 Long-Range Transportation Plan

Janesville Area Metropolitan Planning Organization (MPO)

Adopted May 10, 2021

RESOLUTION 2021-03

A Resolution of the Policy Board of the Janesville Area Metropolitan Planning Organization Adopting the 2020-2050 Janesville Area Long-Range Transportation Plan

WHEREAS, the Janesville Urbanized Area has been designated by the Governor of the State of Wisconsin as a Metropolitan Planning Organization (MPO) for the purpose of carrying out cooperative, comprehensive, and continuing urban transportation planning; and

WHEREAS, the plan was prepared to meet the requirements of Section 134 of Title 23, CFR 450 (the Federal Transit Administration's and Federal Highway Administration's regulations for urban transportation planning), Title VI of the Civil Rights Act of 1964 and the Title VI assurance executed by the State of Wisconsin under 23 U.S. C. 140 and 29 U.S.C. 794, sections 1101(b) of *Fixing America's Surface Transportation Act (FAST Act)*(P.L. 114-94), and all applicable FAST Act and ADA requirements are met; and

WHEREAS, the principal elected officials of local governments including Rock County, the City of Janesville, the City of Milton, the towns of Rock, Milton, Harmony, Janesville, and La Prairie, their designated staffs, the Technical Advisory Committee Members and the public, have participated in the planning process; and

WHEREAS, public participation was provided in a manner consistent with formally adopted Public Participation Procedures that included local newspaper advertising, public information meetings, and internet-based engagement in accordance with public health guidelines set in response to the Covid-19 Pandemic; and

WHEREAS, the Long Range Transportation Plan considers all modes of transportation and reflects the forecasted growth, land use and transportation plans, goals, objectives, and policies of the member communities; and

WHEREAS, the plan includes reasonably anticipated funding to meet the long-term transportation needs, protect the environment and improve the quality of life for the citizens of the Janesville Metropolitan Planning Area.

NOW, THEREFORE BE IT RESOLVED by the Janesville Area Metropolitan Planning Organization that the Policy Board adopt the 2020-2050 Janesville Area Long Range Transportation Plan for the Janesville Metropolitan Planning Area.

ADOPTED: May 10, 2021

APPROVED: Douglas McMillan
Chair, MPO Policy Board

ATTEST: Duane Cherek
Duane Cherek, Planning Director/ MPO Director

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Disclaimer

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MAPS

Commonly Used Abbreviations

AASHTO – *American Association of state Highway and Transportation Officials*

ACS – *American Community Survey, U.S. Census Bureau*

ADA – *Americans with Disabilities Act (1990)*

ADR – *Acquisition of Development Rights*

ADT – *Average Daily Traffic*

AEA – *Agricultural Enterprise Area, DATCP*

ARISE Plan – *Rock Renaissance Area Redevelopment and Implementation Strategy*

BFC – *Bicycle Friendly Community, League of American Bicyclists*

BJE – *Beloit-Janesville Express*

CARES Act – *Coronavirus Aid, Relief, and Economic Security Act (2020)*

CAVs – *Connected & Autonomous Vehicles*

CFCCI – *Chained Fisher Construction Cost Index*

CHA – *Connecting Highway Aids*

CIP – *Capital Improvement Program*

CMAQ – *Congestion Management & Air Quality Program*

CoJ – *City of Janesville*

CTH – *County Trunk Highway*

DHS – *Department of Health Services, State of Wisconsin*

ETJ – *Extraterritorial Jurisdiction*

FAST Act – *Fixing America's Surface Transportation Act (2015)*

FHWA – *Federal Highway Administration, USDOT*

FRA – *Federal Railroad Administration, USDOT*

FRIIP – *Freight Railroad Infrastructure Improvement Program*

FRPP – *Freight Rail Preservation Program*

FSP – *Federal Safety Programs*

FTA – *Federal Transit Administration, USDOT*

GHG – *Greenhouse Gases*

GM – *General Motors*

GTA – *General Transportation Aids*

HSIP – *Highway Safety Improvement Program*

ICE – *Iowa, Chicago & Eastern Railroad*

ITE – *Institute of Transportation Engineers*

ITS – *Intelligent Transportation Systems*

JMW – *Former Janesville-Milton-Whitewater Express*

JTS – *Janesville Transit System*

LOS – *Level of Service*

LRIP – *Local Roads Improvement Program*

LRTP – *Long-Range Transportation Plan*

LTS – *Level of Traffic Stress*

LWCF – *Land and Water Conservation Fund*

MAP—21 – *Moving Ahead for Progress in the 21st Century Act (2012)*

MPA – *Metropolitan Planning Area*

MPO – *Metropolitan Planning Organization*

MRCC – *Midwest Regional Climate Center*

MUTCD – *Manual for Uniform Traffic Control Devices*

NACTO – *National Association of City Transportation Officials*

NBI – *National Bridge Inventory*

NCA – *National Climate Assessment*

NHPP – *National Highway Performance Program*

NHS – *National Highway System*

NHTS – *National Household Travel Survey, FHWA*

NTD – *National Transit Database*

O&M – *Operations & Maintenance*

PASER – *Pavement Surface Evaluation and Rating System*

PRTC – *Pecatonica Rail Transit Commission*

PTASP – *Public Transit Agency Safety Plan*

PTCP – *Pedestrian Transportation Corridor Plan, City of Janesville*

RTA – *Regional Transit Authority*

RTC – *Railroad Transit Commission*

RTP – *Recreational Trails Program*

SCWCTS – *South Central Wisconsin Commuter Transportation Study*

Section 5307 – *FTA operating assistance program funding*

Section 5339 – *FTA capital assistance program funding*

Section 85.20 – *WisDOT operating assistance program funding*

SFP – *State Freight Plan, WisDOT*

SLATS MPO – *Stateline Area Transportation Study (i.e., the established MPO for the Beloit Urbanized Area)*

STBG – *Surface Transportation Block Grant Program*

STH – *State Trunk Highway*

STP-Urban – *Surface Transportation Program – Urban*

SWRA – *Southern Wisconsin Regional Airport*

TA – *Transportation Alternatives*

TAC – *Technical Advisory Committee*

TAM – *Transit Asset Management*

TAP – *Transportation Alternatives Program, WisDOT*

TDM – *Transportation Demand Management*

TDP – *Transit Development Plan, Janesville Transit System*

TEA – *Transportation Economic Assistance*

TIP – *Transportation Improvement Program, Janesville Area MPO*

TOPS Lab – *University of Wisconsin Traffic Operations and Safety Laboratory*

TWLTL – *Two Way Left Turn Lane*

UGS – *Urban Green Spaces Program*

UP – *Union Pacific Railroad*

UPWP – *Unified Planning Work Program, Janesville Area MPO*

UR – *Urban Rivers Program*

USDOT – *United States Department of Transportation*

USGS – *United States Geological Survey*

USH – *United States Highway*

UWW-Rock County – *University of Wisconsin – Whitewater at Rock County*

UZA – *Urbanized Area*

VMT – *Vehicle Miles Travelled*

WICCI *Wisconsin Initiative on Climate Change Impacts*

WisDOT – *Wisconsin Department of Transportation*

WISLR – *Wisconsin Information System for Local Roads*

WRRTC – *Wisconsin River Trail Transit Commission*

WSOR – *Wisconsin & Southern Railroad*

Chapter One: Introduction & Purpose

Every five years, the Janesville Area Metropolitan Planning Organization (MPO) is required to update its Long-Range Transportation Plan (LRTP) to meet the requirements established in the *Fixing America's Surface Transportation Act* (FAST Act) of 2015. The Janesville Area MPO – and all MPOs – must maintain an LRTP to keep the MPO in federal compliance, and critically, to maintain the Janesville Urbanized Area's (UZA) eligibility for federal transportation funding from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The LRTP addresses all modes of transportation present in the Janesville Metropolitan Planning Area (MPA).

The LRTP is the long-range guide to the development of the transportation network throughout the Janesville Urbanized Area, which includes the Cities of Janesville and Milton, as well as portions of the Townships of Rock, Milton, Harmony, La Prairie, and Janesville. The LRTP has a thirty-year planning horizon, and strategizes transportation improvements on a multimodal scale.

The intent of this section is to provide a broad demographic, economic, social, and developmental picture of the Janesville MPA that informs the LRTP: past, present, and future. Please note that data is not always available specifically at the MPA geographic level; therefore, data used will sometimes be expressed at either municipal or county levels. Additionally, this chapter provides background, legislative, environmental, and legal contexts that pertain to this plan, and to the Janesville Area MPO.

The Janesville Area MPO: History & Structure

The Janesville Area MPO was established in 1983 after the 1980 Decennial Census found the Janesville UZA to have exceeded 50,000 in population (The *Federal-Aid Highway Act of 1962* requires that all UZAs with populations exceeding 50,000 have a designated MPO to ensure regional cooperation in transportation planning. While at first the MPA only encompassed the City of Janesville and parts of its four surrounding Townships (Harmony, Janesville, Rock, and La Prairie), after 2000 the UZA expanded to the point where it now includes the entirety of the City of Milton and part of the Town of Milton. Since its 1983 inception, the City of Janesville has staffed the MPO. As of this LRTP, the City of Janesville's Public Works Department – Planning Division primarily staffs the MPO.

A **Policy Board** governs the Janesville Area MPO, and consists of the seven members of the Janesville City Council, the Janesville City Manager, the Mayor of Milton, the Chairs of all five participating townships, a member of the Rock County Board of Supervisors, and a representative of the Wisconsin Department of Transportation – Southwest Region. The Policy Board provides final approval on all plans and programs produced by the MPO. The Policy Board is also responsible for

any changes to the MPO's by-laws, planning boundary, and changes to the MPO's continually maintained Unified Planning Work Program (UPWP) and six-year Transportation Improvement Program (TIP).

A **Technical Advisory Committee (TAC)** acts as the advisory body to the Policy Board, reviewing plans, documents, and programs produced by the MPO prior to their presentation to the Policy Board. The following agencies are represented on the TAC:

- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- Janesville City Manager's Office
- Janesville Department of Public Works
- Janesville Engineering Division
- Janesville Planning Division
- Janesville Transit System (JTS)
- Milton City Administrator
- Milton Public Works Department
- Rock County Board of Supervisors
- Rock County Planning, Economic & Community Development Agency
- Rock County Public Works – Highway Division
- Rock Trail Coalition
- Stateline Area Transportation Study (SLATS MPO)
- Town of Janesville
- Town of Harmony
- Town of La Prairie
- Town of Milton
- Town of Rock
- Wisconsin & Southern Railroad (WSOR)
- Wisconsin Department of Transportation (WisDOT)

LRTP Goals & Performance-based Planning

The *FAST Act* aligns with *U.S.C. 23.450.306*, the federal code of regulations mandating that MPOs develop their LRTPs through a "performance-driven, outcome-based" process to planning for their MPAs. Per federal legislation, the planning process must also address the following ten planning factors, as detailed within the *FAST Act*:

Table 1: Metropolitan Planning Factors from the *FAST Act*

1	Support the ***ECONOMIC VITALITY*** of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2	Increase the ***SAFETY*** of the transportation system for motorized and non-motorized users
3	Increase the ***SECURITY*** of the transportation system for motorized and non-motorized users

Table 1: Metropolitan Planning Factors from the *FAST Act*	
4	Increase ***ACCESSIBILITY & MOBILITY*** of people and freight
5	Protect and enhance the ***ENVIRONMENT***, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns
6	Enhance the ***INTEGRATION & CONNECTIVITY*** of the transportation system, across and between modes, for people and freight
7	Promote ***EFFICIENT SYSTEM MANAGEMENT & OPERATIONS***
8	Emphasize the ***PRESERVATION*** of the existing transportation system
9	Improve the ***RESILIENCY & RELIABILITY*** of the transportation system and reduce or mitigate stormwater impacts of surface transportation
10	Enhance ***TRAVEL & TOURISM***

The *FAST Act* apportions three federal-aid highway programs to the states, who in turn apportion the funds to MPOs and local governments. These programs are as follows:

- Highway Safety Improvement Program (HSIP)
- National Highway Performance Program (NHPP)
- Congestion Management & Air Quality Program (CMAQ) [1]

Other core formula programs apportioned through the *FAST Act* include the following:

- Transportation Alternatives (TA) Program
- Surface Transportation Block Grant (STBG) Program
- The Freight Program

The *FAST Act*'s funding authority is set to expire in September 2021 – to that end, it is widely anticipated that the United States Congress will enact another federal surface transportation reauthorization bill at that point. While it is impossible to predict what form the bill will take, it is widely anticipated that federal programs within the reauthorization will take a greater focus on climate-change related issues, such as natural hazard-resilient transportation infrastructure and alternative fuel corridors. This LRTP is written to comply with the *FAST Act*, but makes efforts to anticipate areas of expected focus in transportation policy and funding.

[1] The Janesville Area MPO is not currently eligible for CMAQ Improvement Program funds, as the MPA is not located in an EPA-designated "Non-Attainment Area."

System Performance Requirements

The *FAST Act* requires that the U.S. Secretary of Transportation, in consultation with the states, MPOs, and other stakeholders, establish performance measures in the areas listed below:

- Pavement conditions on the Interstate System and on the National Highway System (NHS);
- Performance of the NHS and Interstate System;
- Bridge conditions on the NHS;
- Fatalities and serious injuries – both number and rate per vehicle mile traveled – on all public roads;
- Freight Movement on the Interstate System;
- Transit Asset Management (TAM); and
- Public Transit Agency Safety.

The USDOT, WisDOT, and MPOs must coordinate to set performance targets within a set timeline. The *FAST Act* requires MPOs to include targets in Metropolitan Transportation Plans, and Metropolitan Transportation Improvements Programs (TIP).

The *Statewide and Nonmetropolitan Planning: Metropolitan Transportation Planning: Final Rule* defines that the TIP and LRTP shall include, to the maximum extent practicable, a description of the anticipated effect of programmed projects toward achieving the performance measure targets[2] identified in the LRTP, linking investment priorities to those performance targets.[3]

Each of the mode-specific chapters contains a thorough analysis of transportation performance in the MPA, and a justification for each of the performance measures and targets. Some goals are easier to track with available data than others; the LRTP identifies where gaps exist, and the drawbacks of using certain data sets.

Long-Range Transportation Plan Structure

The *Janesville Area 2020-2050 Long-Range Transportation Plan* serves as a minor update to the previous LRTP for the MPA. The Plan is organized into the following Elements.

1) **Purpose & Background:** This chapter outlines the MPO's transportation planning process, adopted land use plan, and the public participation processes used for developing and reviewing transportation documents. Additionally, this chapter discusses land use issues, trends, and population and household projections that affect transportation recommendations. This chapter also discusses broader issues of health and environmental resilience relating to transportation.

[2] 23 CFR 490

[3] 23 CFR 450.326(d)

2) **Freight Element:** The *Freight Element* identifies freight issues, existing facilities, and general recommendations for various freight modes.

3) **Bicycle & Pedestrian Plan:** The Bicycle & Pedestrian Element of the LRTP also serves as the Janesville Area's guiding *Bicycle & Pedestrian Plan*. The Plan outlines planning criteria for developing bicycle and pedestrian facilities, existing conditions, proposed facilities, safety and education policies, implementation strategies, project recommendations, and funding opportunities.

4) **Transit Element:** The *Transit Element* identifies public transit issues, existing operating characteristics, safety, projected conditions, and operating and capital funding sources and needs.

5) **Streets & Highway Element:** The *Streets & Highways Element* summarizes the existing conditions of the Janesville Area MPA's road network, safety, travel demand, system deficiencies status, project recommendations, and funding requirements for 2020-2050.

6) **Environmental Justice Analysis:** The *Environmental Justice Analysis* identified concentrations of minority, poverty, and mobility-limited populations, and examines how well transportation serves populations as well as the impacts of the recommended projects on those groups.

7) **Opportunities for Public Comment Appendix:** These attachments document meeting agendas and minutes, and received comments in relation to the LRTP update.

8) **Supplemental Appendix:** These attachments supplement the various planning elements, and include components such as cost estimation methodology, WisDOT's Facilities Design Manual, etc.

Public Participation

The planning process to update the *Long-Range Transportation Plan* is outlined in the MPO's 2017 *Public Participation Plan*. This plan outlines formal public participation procedures, and guidelines for best public participation practices. Additionally, the MPO extended other opportunities for public comment throughout the process. It is critical to note that this update took place during the COVID-19 pandemic; out of consideration of public health and social distancing guidelines, the vast majority of public input opportunities were held in a virtual environment. The *Appendix* of the LRTP documents detail the approximately 18-month public process of the update to the LRTP.

Guiding Plans Informing the Long-Range Transportation Plan

All iterations of the LRTP are driven by the most recent comprehensive land use plans of Rock County, and the Cities of Janesville and Milton. Recommended future land uses and related densities are used as the basis in the travel demand model to project transportation infrastructure needs. Several MPO short-range plans and documents then directly implement the recommendations of the LRTP.

2021 Unified Planning Work Program (UPWP)

The MPO annual UPWP administers the transportation planning budget and guides both long-range and short-range planning activities. The type of activities budgeted include funding for transportation administration activities such as MPO monitoring, TIP preparation, short-range, and long-range planning efforts. The TAC reviews the items contained in the UPWP, which is subsequently approved by the Policy Board.

2021-2026 Transportation Improvement Program (TIP)

The TIP is a staged six-year listing of actual transportation improvement projects within the MPA. The Program identifies the scheduled construction year of the proposed project, the type of project, funding source, and funding levels. Projects are listed for highway, public transit, specialized transit, and bicycle/pedestrian modes, and these projects use a combination of federal, state, and local funding. The Janesville Area MPO's TIP is updated annually and adopted by the MPO Policy Board, under advisement from the TAC. After the Policy Board approves the TIP, it is then incorporated into Wisconsin's S*tatewide Transportation Improvement Program (STIP).*

2017 Transit Development Plan (TDP)

The MPO and the Janesville Transit System (JTS) work together to complete a TDP every five years, with the next TDP scheduled to take place in 2022. The TDP analyzes all aspects of transit service, including paratransit service, capital needs, and regional services.

City of Janesville Comprehensive Plan (2009; currently undergoing update)

The purpose of the City's Comprehensive Plan is to guide the City's long-range and short-range growth and development. The Plan provides recommendations in the areas of land use, transportation, economic development, parks and open space, historical and cultural resources, housing, community facilities, agricultural and natural resources, utilities, and intergovernmental cooperation. The Comprehensive Plan serves as the principle tool used by City departments and divisions, the Plan Commission, City Council, and other policy bodies to make decisions about the location of land use and community facilities, priorities for public investment and the extension of public services, business development, and how to meet transportation needs over the next 25 years. The City of Janesville is currently undergoing an update to the current Comprehensive Plan, a process which is expected to conclude at some point in 2022.

Other City of Janesville Plans

Various other plans fit together in a hierarchy that is rooted in the Comprehensive Plan. The Comprehensive Plan defines the urban area's twenty-year urban service limits and the conceptual Growth Development Plan that identifies recommended land uses within that boundary. Critical Area and Neighborhood Plans take the recommendations of the Comprehensive Plan to a more local and technical level by focusing on the physical infrastructure needs of smaller segment of the City. Finally, the *2005 Traffic Circulation Plan*, the *Rock Renaissance Area Redevelopment and Implementation Strategy (ARISE)* and the *2016 Parks & Open Space Plan* guide the implementation of the infrastructure improvements needed to address needs at the critical area and neighborhood levels, as well as regional and community levels.

City of Milton Comprehensive Plan (2015)

The purpose of the City's Comprehensive Plan, similar to Janesville's Plan, is to direct community development and land use decisions; assist with community facility budgeting; and stimulate private housing, business, and industrial investment. Elements in the Comprehensive Plan include a Land Use Plan, Community Character Plan, Transportation Plan, Community Facilities Plan, and Historic Resources Recommendations. The most recent Comprehensive Plan was adopted in December 2008, and amended in 2015.

Township Comprehensive Plans

Each MPO township has also adopted a locally derived comprehensive land use plan. The Rock County Planning, Economic, and Community Development Agency prepared plans for the Townships of Harmony, Janesville, La Prairie, and Milton in 2009. The Town of Rock worked with a consultant to update its plan in 2020.

ADA Transition Plan for the Public Right of Way (2019)

To comply with T*itle II of the Americans with Disabilities Act (ADA)* and *28.CFR.35.105,* the City of Janesville worked with a consultant to prepare an ADA Transition Plan and evaluation of facilities in the Public Right of Way. This iteration of the LRTP brings a larger emphasis on how the transportation system in the MPA can best serve persons of all user abilities.

Chapter Two: Land Use & Demographics

This chapter summarizes both current land use patterns (as of 2020) and future year 2050 forecast conditions in the Janesville MPA. Understanding the scale, nature, and location of population and economic trends is critical for developing and understanding a travel demand model.

The Janesville UZA lies in north central Rock County, roughly between Madison, Wisconsin and Rockford, Illinois, and is subdivided by the Rock River. Existing land use and future land use assumptions are derived through a synthesis of community Comprehensive Land Use Plans and Zoning Maps of all jurisdictions within the MPA. **Map 1** illustrates the framework for making decisions relative to growth and development throughout the MPA. The map combines several local land use plans into one map in order to gain a regional perspective.

Development Trends

Historic Janesville Trends

After its founding in the mid-Nineteenth Century, the City of 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 for a strong local economy for most of the Twentieth Century.

The City of Janesville experienced bursts of rapid growth and development in the post-World War Two period (1950's and 1960's) when population nearly doubled from about 25,000 in 1950 to about 46,000 in 1970. A combination of the national "Great Recession" in 2008, and the closure of the General Motors Plant greatly affected Janesville, spiking the local unemployment rate and blunting population growth. Since then, the City has strongly rebounded through economic and downtown revitalization, with a strong local employment rate and population bouncing back to pre-recession levels. While the COVID-19 Pandemic presented incredibly steep economic challenges for the City, Janesville has endured the national crisis while keeping pace with an incredibly high rate of residential and commercial development.

The density of developed lands within Janesville peaked around 1950 with 3,000 persons per square mile. The increase in the availability of automobiles in the 1950s dramatically changed Janesville's landscape to emphasize the private motor vehicle, 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 contribute to the decline in public transportation options. The "Post War" age of development, with its relatively low density of population and land 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 sparse-to-no population, particularly the Southern Wisconsin Regional Airport (SWRA).

Another reason for Janesville's relatively low population density relates to the City's abundant acreage of parks and open space. Since the 1970s, Janesville has promoted its park system as one of its strongest community assets. The City practiced wise long-term planning to preserve parks and open space, including extensive lands for public access along the Rock River, and protection of an expansive greenbelt drainage system. Today, Janesville takes pride in the fact that it leads Wisconsin's largest cities in parkland per capita, with more than forty acres of parkland for each 1,000 residents. **Table 2** below compares park land acreage in Janesville to its peer Wisconsin cities.

Table 2: Janesville Peer Cities Ranked by Acres of Parkland per 1,000 Residents, 2016

Rank by Acres/Capita	City	Population	Parkland Acreage	Acres per 1,000 residents
1	Janesville	62,720	2,568	40.9
2	LaCrosse	51,522	1,400	27.2
3	Beloit	36,888	924	25.0
4	Madison	243,344	6,000	24.7
5	Green Bay	104,779	2,422	23.1
6	Fond du Lac	43,021	692	16.2
7	Eau Claire	67,545	1,038	15.4
8	Waukesha	71,016	1,080	15.2
9	Racine	78,199	1,100	14.1
10	Sheboygan	49,288	551	10.8
11	Appleton	73,596	631	8.6
12	Wausau	39,106	328	8.4
13	Kenosha	99,889	871	8.1
14	Oshkosh	66,778	440	6.6

Source: Janesville Parks & Open Space Plan, 2016

Historic Milton Trends

The City of Milton was, at one time, two communities – Milton, and Milton Junction. Founded in the 1840s, Milton is known today for the hexagonal stagecoach inn, the Milton House, and historic 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 1960s, but the City of Milton today continues to have two functioning downtowns: Parkview Drive to the east, and Merchants Row in old Milton Junction to the west.

Similar to Janesville, pre-war development surrounds Milton's downtown areas in a 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.

Future Development

The type of future land use is determined by local Comprehensive Plans adopted by all municipalities within the MPO. The MPO expects for the pace of development to vary throughout the MPA. The City of Janesville is experiencing its strongest housing growth rate in the northeast due to highway access to Interstate Highway 39/90, and proximity to a regional shopping corridor along Milton Avenue and Humes Road. The City is also prioritizing the development of multi-family, affordable housing to attract more local workforce and confront a low rental vacancy rate that exists throughout Rock County.

Industrial areas in the south of Janesville are also driving strong economic growth. Two upcoming developments could also spur significant housing and economic growth on the south side. First, the City of Janesville is promoting the active redevelopment of the so-called "Centennial Park" – the old General Motors Plant site. If City plans come to fruition, significant employers and housing growth should occur at this site just south of the Rock River, as discussed in the *Freight Element*. Rock County is also moving many of its government offices from the north side to a facility on the south side of Janesville along Center Avenue, which could play an instigating role in spurring growth.

Townships

A variety of land uses exist among the townships within the MPA. Per the Rock County Land Use Inventory, 41,608 acres of cropland exist throughout the MPA.

- **Town of La Prairie** – Very little suburban/exurban residential development exists in the overwhelmingly agricultural Town of La Prairie. Most of La Prairie is a state-designated Agricultural Enterprise Area (AEA), a DATCP designation which provides economic incentives to town landowners to preserve lands for agricultural uses. In total, 12,713 acres are used for farmland in La Prairie. Sand and gravel extraction operations exist in western parts of the Township.

- **Town of Harmony** – Several suburban residential developments comprise the northwest portion of the Township, between the Cities of Janesville and Milton. The City of Janesville intends to create an off-road bicycle/pedestrian connector to link the Glacial River and Ice Age Trails, which would cross through this portion of the Town of Harmony. The remainder of the township is primary cropland or woodland.

- **Town of Milton** – The Town of Milton is home to some exurban development around the City of Milton, but also contains a rich variety of natural features such as lakes, wetlands, and protected natural areas. Cropland, pastureland, and sand and gravel operations also exist throughout the Township.

- **Town of Janesville** – The Town of Janesville primarily consists of exurban residential development and woodlands; south of County Highway A, the Township is predominantly cropland.

- **Town of Rock** – Only about 1,000 acres of the Town of Rock exists within the MPA. This area is governed by a cooperative boundary agreement, and will be annexed into the City of Janesville over the next three decades (completed by year 2046). Population projections for the Township suggest that this area should expect growth in residential development.

Population & Household Trends & Forecasts

Historic Growth

Table 3 summarizes population changes in the last two decennial censuses and the most recent figures from the U.S. Census Bureau's American Community Survey (ACS) for Rock County and all the municipalities within the MPA.

The City of Janesville represented the bulk of gross population growth between 2000 and 2019, and 2010 and 2019. However, the Town and City of Milton grew at a faster rate between 2000 and 2019. Looking at more recent population trends (2010-2019), the Town of La Prairie saw the greatest growth rate. The Town of Rock has experienced a consistent trend of population decline, although the rate is greatly plateauing. Overall, the MPA is experiencing moderate and steady population growth. This trend is expected to continue throughout the planning horizon of the LRTP. Among the municipalities, some population growth or decline can be attributed to annexations of town lands into the City of Janesville.

Table 3: Historic Population Growth, 2000-2019

	Population			Long-Term Historic Growth (%)	Short-Term Historic Growth (%)	2000-2010 Historic growth (persons)	Short-Term Historic Growth (persons)	Long-Term Historic Growth (persons)
Geography	**2000**	**2010**	**2019**	**2000-2019**	**2010-2019**	**2000-2010**	**2010-2019**	**2000-2019**
Janesville Urbanized Area	66,034	69,658	70,032	**6.1%**	**0.5%**	3,624	374	3,998
C Janesville	59,495	63,575	64,245	**8.0%**	**1.1%**	4,080	670	4,750
C Milton	5,132	5,546	5,573	**8.6%**	**0.5%**	414	27	441
T Harmony	2,351	2,569	2,595	**9.5%**	**1.0%**	218	26	244
T Janesville	3,750	3,434	3,544	***-5.5%***	**3.2%**	*-316*	110	*-206*
T La Prairie	929	834	962	**3.6%**	**15.3%**	*-95*	128	33
T Milton	2,844	2,923	3,094	**8.8%**	**5.9%**	79	171	250
T Rock	3,338	3,196	3,179	***-4.8%***	***-0.5%***	*-142*	*-17*	*-159*
Janesville MPA*	**72,982**	**77,412**	**78,350**	**7.4%**	**1.2%**	**4,430**	**938**	**5,368**

Source: 2000 & 2010 Decennial Censuses, 2015-2019 ACS Five-Year Estimates

**2019 MPO Population is an MPO estimate based off of past growth trends, as the MPA only comprises a portion of the member Townships.*

Table 4 summarizes expected trends in future population growth and expected household growth needed to support the future population in the Janesville MPA. Aside from the Town La Prairie, all municipalities within the MPA are expected to experience overall population growth out to 2050. The bulk of population growth is expected to take place within the City of Janesville (13.1% from 2020-2050). The City of Milton is expected to experience a growth rate of 15.5%. The Town of Janesville is expected to experience the highest growth rate of 34.7%. Overall, the population of the MPA is expected grow by about 13.8%.

Consistent with Wisconsin and national trends, average household sizes have steadily decreased in the Janesville Area, and are expected to do so throughout the LRTP planning horizon. The result of this trend is a higher rate of housing growth in proportion to population growth experienced in the past, and a higher proportion of one-person and two-person households. Overall, the MPA is expected to need 7,657 new housing units by 2050 to support an expected growth of 10,825 residents. Geographically, this growth is expected to take place in those areas marked in local Comprehensive Plans as "Planned Neighborhood," "Planned Mixed Use", or existing residential land use designations. There are located along the periphery of the Cities of Janesville and Milton, but particularly concentrated in the Town of Janesville and Harmony.

Housing through "In-fill" development is also encouraged in urbanized and downtown areas in Janesville and Milton.

It is important to note that the Department of Administration population projections were created in 2013, and that it is likely that the upcoming 2020 census will affect the numbers in **Table 4**.

While detailed further in the *Streets & Highways Element* of the LRTP, the Wisconsin Department of Transportation's future employment and household projections for Rock County are an important foundation for evaluating the impact of proposed transportation projects. Key 2050 assumptions are illustrated in maps at the conclusion of this chapter.

Table 4: Projected Future Population, 2020-2050

Geography		2010	2020*	2030	2040	2050**	2020-2050 Growth
C Janesville	Population	63,575	64,245	68,614	60,398	72,686	+8,441 Residents
	Households needed	26,163	27,692	30,226	31,568	33,807	+6,115 Housing Units
C Milton	Population	5,546	5,573	6,008	6,224	6,439	+866 Residents
	Households needed	2,236	2,342	2,590	2,730	2,927	+585 Housing Units
T Harmony	Population	2,569	2,595	2,836	2,989	3,151	+556 Residents
	Households needed	905	958	1,070	1,145	1,250	+293 Housing Units
T Janesville	Population	3,750	3,544	3,916	4,143	4,775	+1,231 Residents
	Households needed	1,448	1,429	1,618	1,801	2,151	+722 Housing Units
T La Prairie	Population	834	962	933	861	832	*-130 Residents*
	Households needed	331	399	395	371	371	*-28 Housing Units*
T Milton	Population	2,923	3,094	3,329	3,442	3,642	+548 Residents
	Households needed	1,188	1,305	1,441	1,530	1,671	+365 Housing Units
T Rock	Population	3,196	3,150	3,227	3,184	3,021	+99 Residents
	Households needed	1,273	1,332	1,393	1,398	1,477	+146 Housing Units
Janesville Area	**Population**	**77,412**	**78,350**	**83,766**	**86,044**	**89,186**	**+10,825 Residents**

Table 4: Projected Future Population, 2020-2050

Geography		2010	2020*	2030	2040	2050**	2020-2050 Growth
MPA***	Households needed	31,639	33,451	36,557	38,254	41,108	+7,657 Housing Units

Source: Wisconsin Department of Administration, Demographic Services Center
**2020 estimation uses the 2015-2019 American Community Survey Population Estimates*
***2050 estimation calculated using linear trend of growth rates between 2020 and 2040 projections generated by WDOA*

Chapter Three: Janesville Area Commuting & Economic Patterns

Figure 1 below illustrates the flow of commuters into and out from the Janesville MPA. The Janesville Area is an economically active region, with roughly 40,000 commuters during an average workday in 2018, and a little more than half of those coming from outside the MPA.

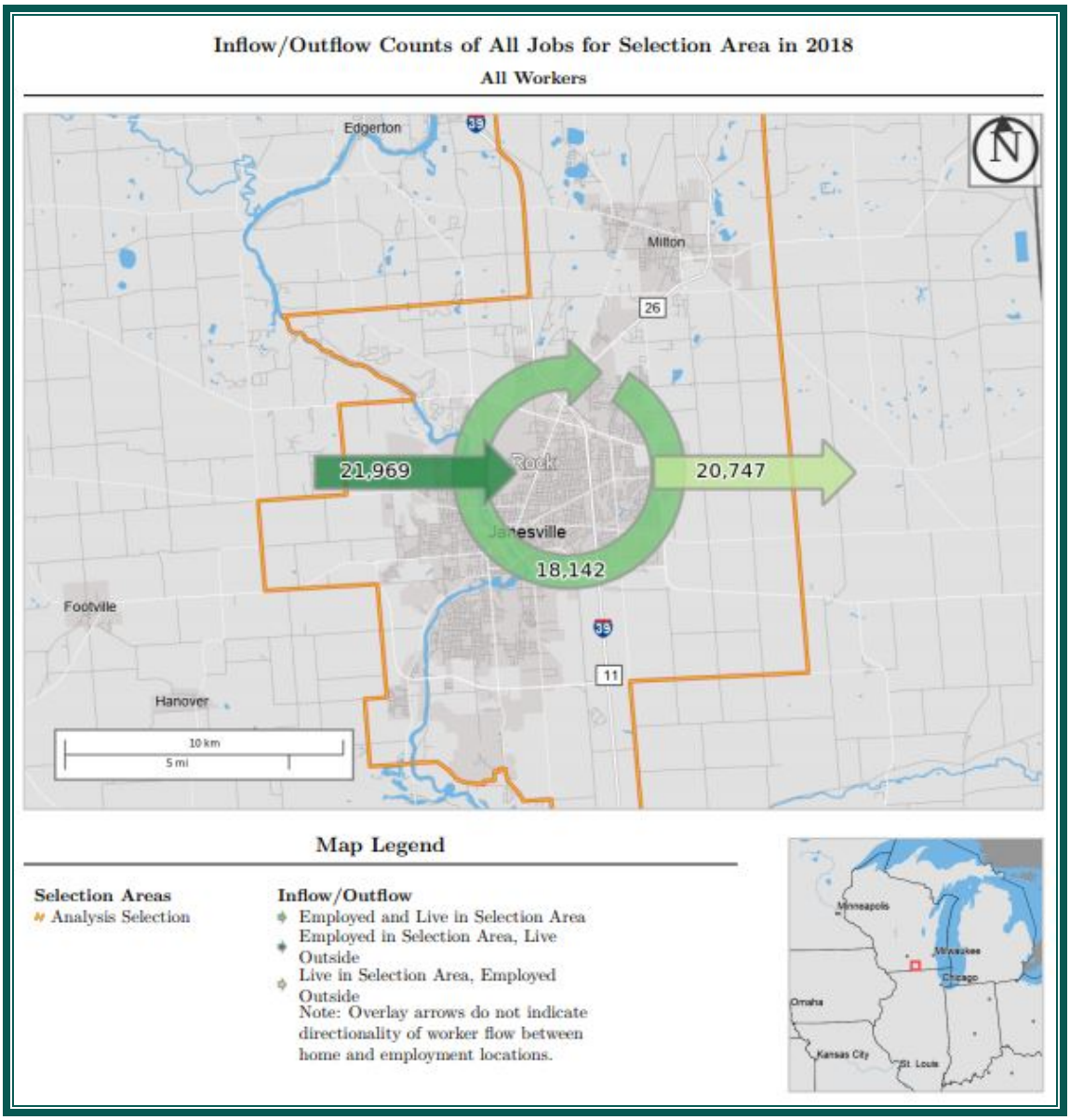

Figure 1: Employee Inflow/Outflow in the Janesville MPA, 2018. Source: Longitudinal Employment Household Dynamics (LEHD), U.S. Census Bureau, 2018.

Contrarily, a little over half of the workforce that resides within the MPA commutes out of the MPA to get to their jobs. **Table 5 and Table 6** illustrate further detail into commuter flows in 2018.

Table 5: Where Residents of the MPA Commute for Work, 2018

Community*	Number of Commuters	Percent of Commuters
Janesville	15,349	39.5%
Madison	3,188	8.2%
Beloit	2,126	5.5%
Milton	1,169	3.0%
Fort Atkinson	757	1.9%
Milwaukee	654	1.7%
Harmony Township	586	1.5%
Rockford	513	1.3%
Whitewater	471	1.2%
Stoughton	441	1.1%
La Prairie Township	439	1.1%
Rock Township	438	1.1%
Total Working Residents	**38,889**	

Source: LEHD Origin-Destination Employment Statistics, 2018. U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program.

**Table includes all communities where 1.0% or more of the MPA residents employed.*

Table 6: Where Employees in the MPA Live, 2018

Community*	Number of Commuters	Percent of Commuters
Janesville	15,283	38.1%
Beloit	2,755	6.9%
Milton	1,098	2.7%
Rock Township	831	2.1%
Madison	806	2.0%
Janesville Township	778	1.9%
Beloit Township	651	1.6%
Milwaukee	630	1.6%
Milton Township	518	1.3%

Table 6: Where Employees in the MPA Live, 2018

Community*	Number of Commuters	Percent of Commuters
Harmony Township	511	1.3%
Edgerton	444	1.1%
Fulton Township	411	1.0%
Total Workers in MPA	**40,111**	

Source: LEHD Origin-Destination Employment Statistics, 2018. U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program.

**Table includes all communities where 1.0% or more of the MPA employees live.*

Table 7 illustrates the means of transportation to work for employed residents within the Janesville Urbanized Area. Of the 3,715 workers who commute via carpool, the vast majority travel via two-person carpools, with the average workers per car equaling 1.07 persons.

Table 7: Janesville Urbanized Area Means of Transportation to Work (2015-2019)*

Method of Commute	Number of Workers	Percent of Workers
Drove Alone	29,406	83.9%
Carpool	3,715	10.6%
Worked from Home	946	2.7%
Walked	386	1.1%
Public Transportation	280	0.8%
Bicycle	140	0.4%
Other**	175	0.5%

Source: U.S. Census Bureau, ACS 2015-2019 Five-Year Estimates

**While the American Community Survey is the most precise data source available, these figures only reflect primary commutes for primary job, and therefore only capture a small portion of trips. More specific travel behavior details are illustrated later in the LRTP.*

***Taxicab, motorcycle, or some other form of transportation*

Table 8 illustrates the distribution of commute times among employed residents in the Janesville Urbanized Area. The average travel time to work for an employed resident of the UZA was 21.3 minutes.

Table 8: Janesville Urbanized Area Commute Times (2015-2019)*		
Travel Time to Work (minutes)	**Number of Workers**	**Percent of Workers**
Less than 10	7,150	20.4%
10-14	7,325	20.9%
15-19	6,379	18.2%
20-24	3,575	10.2%
25-29	1,647	4.7%
30-34	2,559	7.3%
35-44	1,928	5.5%
45-59	2,734	7.8%
60 or more	1,752	5.0%

Source: U.S. Census Bureau, ACS 2015-2019 Five-Year Estimates

**While the American Community Survey is the most precise data source available, these figures only reflect primary commutes for primary job, and therefore only capture a small portion of trips. More specific travel behavior details are illustrated later in the LRTP.*

Chapter Four: Environment, Climate Change & Public Health

Transportation projects affect both human and environmental health. Air quality, drainage, water conditions, vegetation, wetlands, and wildlife are 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, in conjunction with state and federal guidelines, are used to inventory and preserve environmental corridors. The MPO maintains inventories of natural, cultural, and historic features for the purpose of early state planning and identification of strategies to avoid, minimize, or mitigate negative impacts to resources. The *Environmental Justice Analysis* of the LRTP analyzes transportation projects against resources and provides recommendations for further analysis.

Transportation issues affecting public health include air quality, noise, unsafe roadways, and roadways that do not support active transportation (biking, walking, etc.). Many of the strategies and recommendations in the LRTP promote public health, wellness, and mitigation of negative health impacts.

Climate Change & Resilience

Climate change is the long-term alteration of global weather conditions. Climate change encompasses both natural and anthropogenic factors, with the latter having increased the rate of change since the mid-Nineteenth Century. Human activity has increased the amount of greenhouse gas emissions (GHGs) in the atmosphere, contributing to the warming of the earth's atmospheric temperature, warming of the oceans, shrinking of ice sheets, retreating of glaciers, sea level rise, and increase in the frequency and intensity of extreme weather events. The increase in both frequency and severity of extreme weather events is of particular relevance and concern to the transportation sector, due to the direct and severe effects these events have on transportation systems and infrastructure.

The Janesville Area has experienced several Rock River flooding events in the past twenty years, including the 2008 flood which exceeded the 100-year floodplain. The City of Janesville has invested considerable resources into emergency preparedness and resiliency in recent years. Actions taken include the purchase and removal of structures in the floodplain, stormwater improvements, and training of city staff at all levels in emergency management and emergency response.

Both the Jackson Street Bridge reconstruction in 2015 and the Milwaukee Street reconstruction in 2019 were designed to withstand 100-year flood events. Additionally, the City of Janesville removed the downtown Parking Plaza that spanned the Rock River in 2016, lowering the 100-year and 500-year flood elevations, thus mitigating future flood events.

While the LRTP does not offer formal policies addressing climate change resilience, the plan does document vulnerabilities within the existing transportation network to natural hazards, as addressed in the various sub-plans of this document. Future transportation plans are expected to provide more specific direction regarding resiliency.

Temperature

The U.S. Environmental Protection Agency (EPA) has documented that the State of Wisconsin has warmed close to two degrees Fahrenheit over the past century.[4] According to the data from the Midwest Regional Climate Center (MRCC) shown in **Figure 2**, the WI Climate Division 8 (which includes Rock County) has experienced an increase of 0.6 degrees Fahrenheit in the average annual temperature from 1900-1960 to 1961-2019. The Wisconsin Initiatives on Climate Change Impacts (WICCI) projects that annual average temperatures across the state will increase by 4.0 degrees from 1981-2010 to 2041-2060. Using the data from the MRCC shown in **Figure 3**, a 4.0 degree increase from the 1981-2010 average annual temperature would result in an 8.7% increase in average annual temperature from 46.2 degrees Fahrenheit for 1981-2010 to a projected 50.2 degrees Fahrenheit for 2041-2060.

[4] "What Climate Change Means for Wisconsin" (PDF). United States Environmental Protection Agency. August 2016.

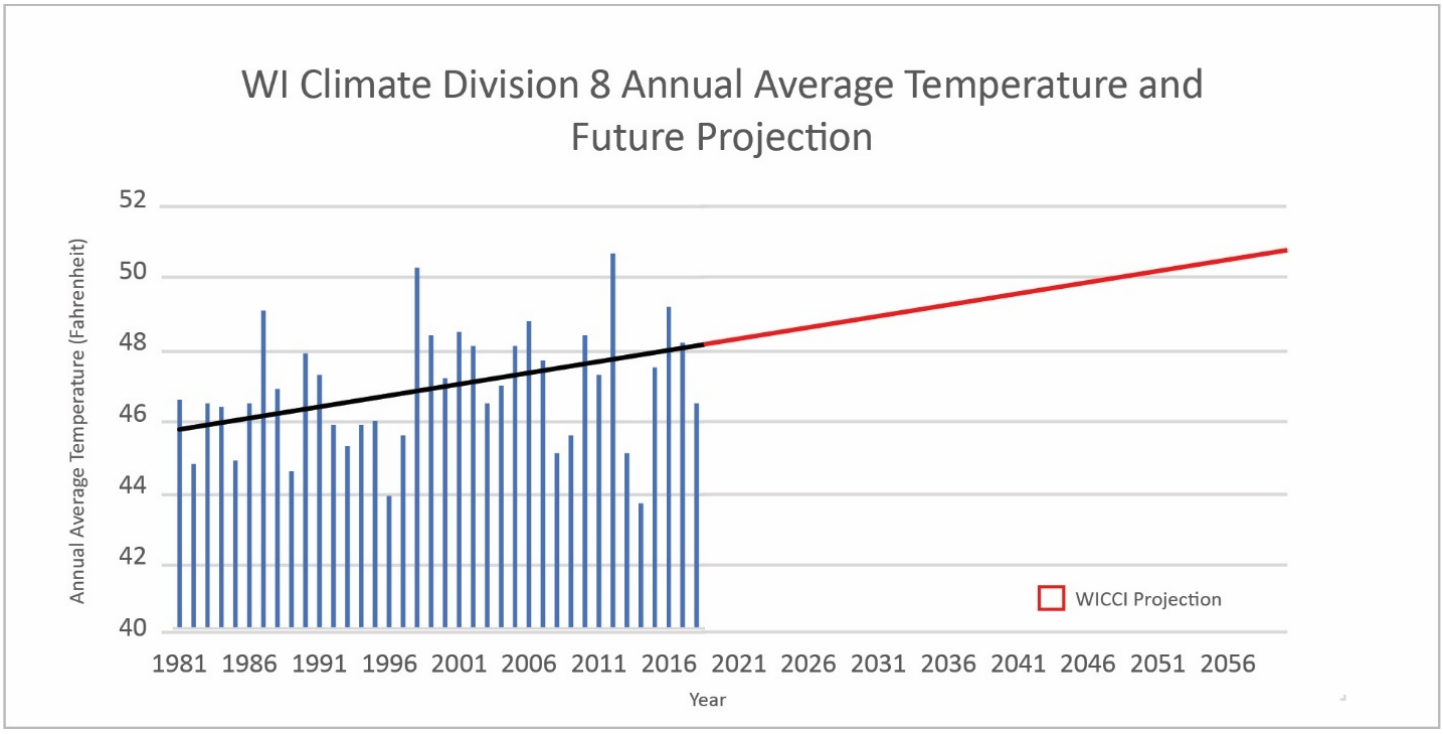

Figure 2: WI Climate Division 8 (Columbia, Dane, Dodge, Green, Jefferson, and Rock Counties) Annual Average Temperature for 1981-2019 with WICCI Annual Temperature Projection for 2041-2060. Data Source: Midwest Regional Climate Center; Wisconsin Initiatives on Climate

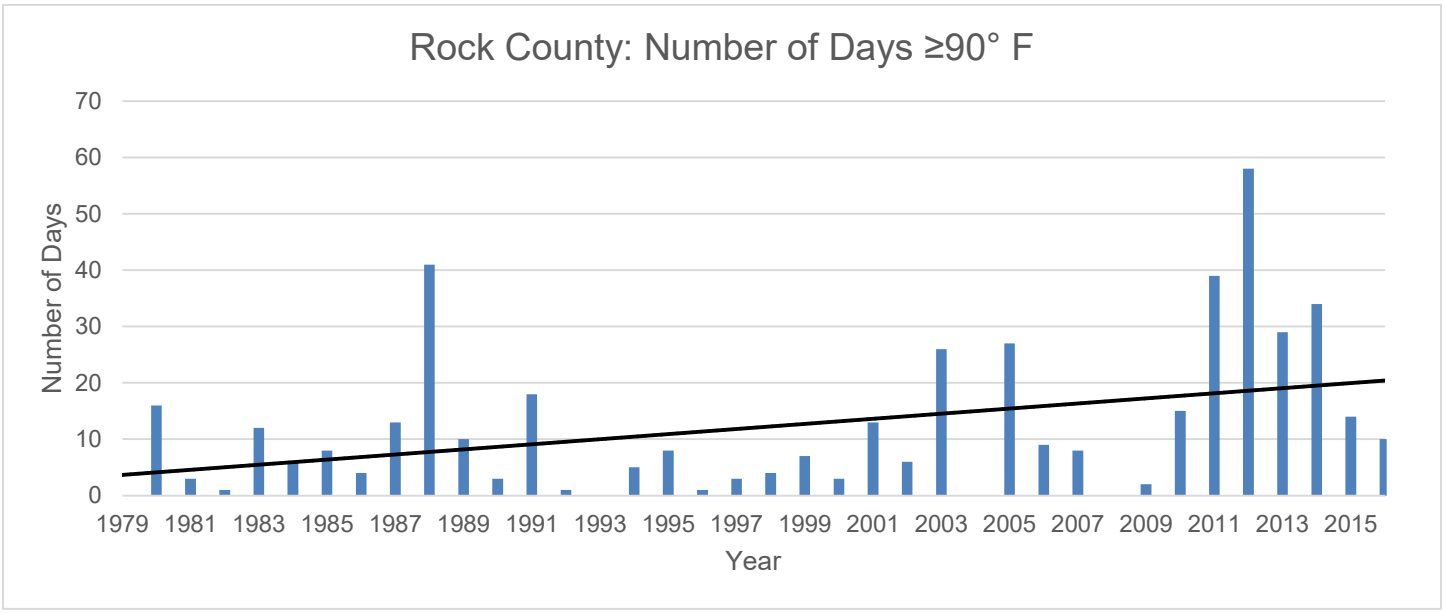

Figure 3: Number of Days at or exceeding ninety degrees Fahrenheit in Rock County. Data Source: Wisconsin Department of Health Services

Per the Intergovernmental Panel on Climate Change, a changing climate leads to changes in the frequency and intensity of extreme weather and climate events.[5] Extreme heat events, or periods of time with unusually hot weather conditions, pose a threat to transportation infrastructure as increased

[5] Intergovernmental Panel on Climate Change (2011), "Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation".

heat reduces the life of asphalt, causes pavement to buckle, and adds stress to expansion joints for bridges and highways.[6]

The Wisconsin Department of Health Services tracks extreme heat days, events, and extreme precipitation through their Environmental Public Health Tracking Program. This data includes the annual number of days with daily maximum temperatures at or above 90 degrees Fahrenheit for the years 1979 to 2019. Rock County, over the climate normal of 1981-2010, had on average 8.6 days of daily maximum temperatures at or above 90 degrees Fahrenheit. The number of days with daily maximum temperatures at or above 90 degrees has increased over the 40 years of data collected by the DHS. The latest twenty years of data (2000-2019) have had an average of 16.6 days of daily maximum temperatures over 90 degrees Fahrenheit compared to the prior 20 years of data (1980-1999) which had an average of 8.2 days of daily maximum temperatures over 90 degrees Fahrenheit.

WICCI estimates that by the mid-21st century (2041-2060), the noted upward trend in frequency of days above 90 degrees Fahrenheit will continue, with projections showing Rock County having 20-40 days above 90 degrees.

Precipitation

The Fourth National Climate Assessment (NCA), published in 2017, reports that annual precipitation in the Midwest has increased by 5% to 15% from the first half of the last century (1901–1960) compared to present day (1986–2015).[7] The 2016 EPA Snapshot for Wisconsin reported that over the last half century (1950-1999), rainfall during the four wettest days of the year has increased by about 35%.[8] Both of these reports of climate trends of the past century show that the intensity of precipitation is increasing, and a subsequent increased risk of flooding for the Midwest, and Wisconsin in particular.

MRCC data shown in **Figure 4** indicates that the WI Climate Division 8 has seen an 8% increase in the average annual precipitation from 1900-1960 to 1961-2019. WICCI predicts that annual precipitation across the state will increase by 5% from 1981-2010 to 2041-2060. Using the data from the MRCC shown in Figure 3, a 5% increase from the 1981-2010 average annual precipitation would lead to an increase of 1.7 inches of precipitation annually in the WI Climate Division 8 from 1981-2010 to 2041-2060.

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[6] Midwest Economic Policy Institute (2017), “Climate Change and Its Impact on Infrastructure Systems in the Midwest”.

[7] Easterling, D. R., J. R. Arnold, T. Knutson, K. E. Kunkel, A. N. LeGrande, L. R. Leung, R. S. Vose, D. E. Waliser, and M. F. Wehner, 2017: Precipitation Change in the United States. Climate Science Special Report: Fourth National Climate Assessment, Volume I. Wuebbles, D. J., D. W. Fahey, K. A. Hibbard, D. J. Dokken, B. C. Stewart, and T. K. Maycock, Eds., U.S. Global Change Research Program, Washington, DC, USA, 207–230.

[8] "What Climate Change Means for Wisconsin" (PDF). United States Environmental Protection Agency. August 2016.

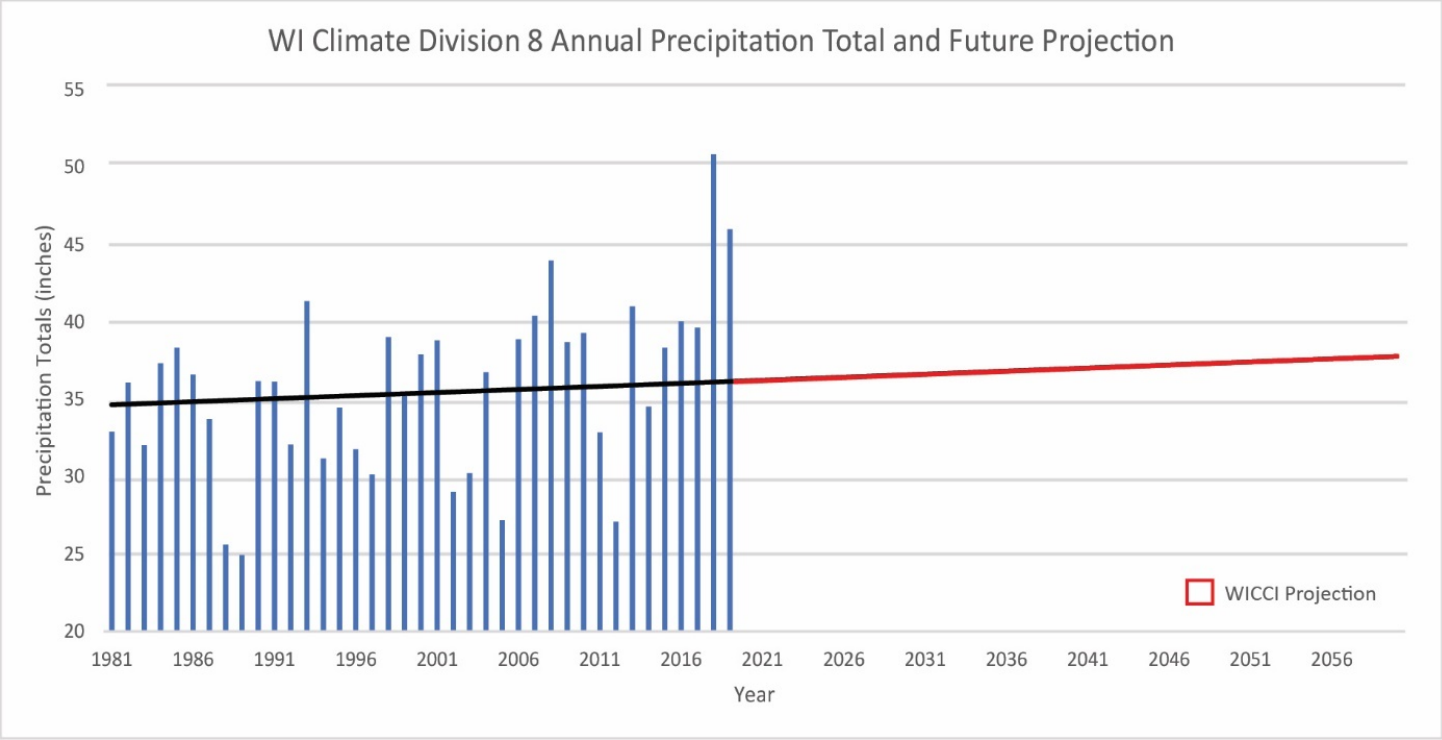


Figure 4: WI Climate Division 8 (Columbia, Dane, Dodge, Green, Jefferson, and Rock Counties) Annual Precipitation Totals for 1900-2019. Data Source: Midwest Regional Climate Center

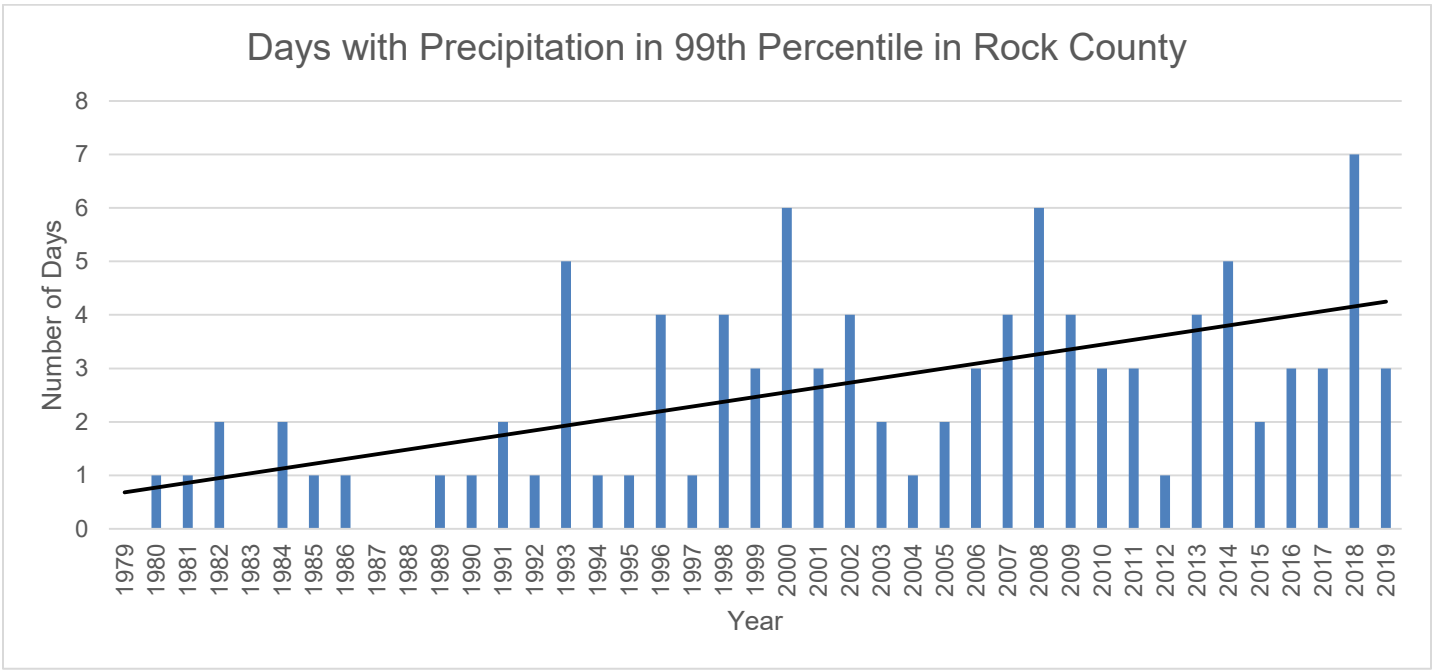


Figure 5: Days with Precipitation in 99th Percentile in Rock County. Data Source: Wisconsin Department of Health Services

As stated earlier in this chapter, a changing climate leads to changes in the frequency and intensity of extreme weather events. Heavy rain events, defined as periods of precipitation where precipitation is the top 1% of all precipitation events within a year, are especially pertinent to the transportation system throughout the MPA due to the effects that flooding can have on transportation infrastructure.

The frequency of heavy rain events in Rock County has increased over the past forty years and is projected to increase in the future due to the effects climate change will have on precipitation.

WICCI reports that heavy rainfall events - at least two inches in a 24-hour period - are recorded roughly twelve times per decade in southern Wisconsin. As shown in **Figure 5** above, Rock County has seen an increase in the frequency of days with precipitation in the 99th percentile, or the number of days where the amount of precipitation is greater than or equal to 99% of the daily precipitation totals for the County. The last twenty years of available data (2000-2019) show an average of three days a year with rain in the 99th percentile, whereas the previous twenty years of data (1980-1999) had an average of two days per year with rain in the 99th percentile.

WICCI estimates that by the mid-21st century, Wisconsin will see a 25% increase in the frequency of heavy rain events per decade, which would result in two-to-three more heavy rain events per decade. The climate models used by WICCI also indicate that the heaviest rainfall events will increase in magnitude as well. A 100-year storm event, consisting of five to seven inches of precipitation in a 24-hour period, is expected to increase by about 10%.

The increases in the intensity and frequency of precipitation that are projected for the region are two key factors that contribute to future flooding risks and increased vulnerability for the transportation infrastructure in the region.

Streamflow & Gage Height

Streamflow is a measure of the rate at which water is carried by rivers and streams.[9] This is an important indicator to measure the impact of climate change on riverine flooding, as heavy precipitation events increase the amount of water and rate of flow of the river, which leads to increased bank erosion and flooding. As identified earlier in this chapter, Rock County has seen an increase in the intensity and frequency of precipitation over the past 40 years, which has a direct effect on the amount of water and rate of water flow of the Rock River.

Figure 6 shows the annual averages of the daily means for the streamflow of the Rock River at the USGS Afton station (located just south of the Southern Wisconsin Regional Airport). In the last fifty years of available data (1968-2018), the annual average of daily means for streamflow of the Rock River has increased by over 800 cubic feet, from 1,650 cubic feet to 2,530 cubic feet as compared to the previous fifty years of data (1918-1967). The increase in annual average of daily means is indicative of the increase in the volume of water being carried through the river during low flow times, as well as a slight increase in the amount of water being carried during peak streamflow. Average

[9] Environmental Protection Agency (2016), "Climate Change Indicators: Streamflow"

peak streamflow over the last fifty years of available data (1968-2018) have seen an increase of just over 350 cubic square feet from the previous fifty years of data (1918-1967).

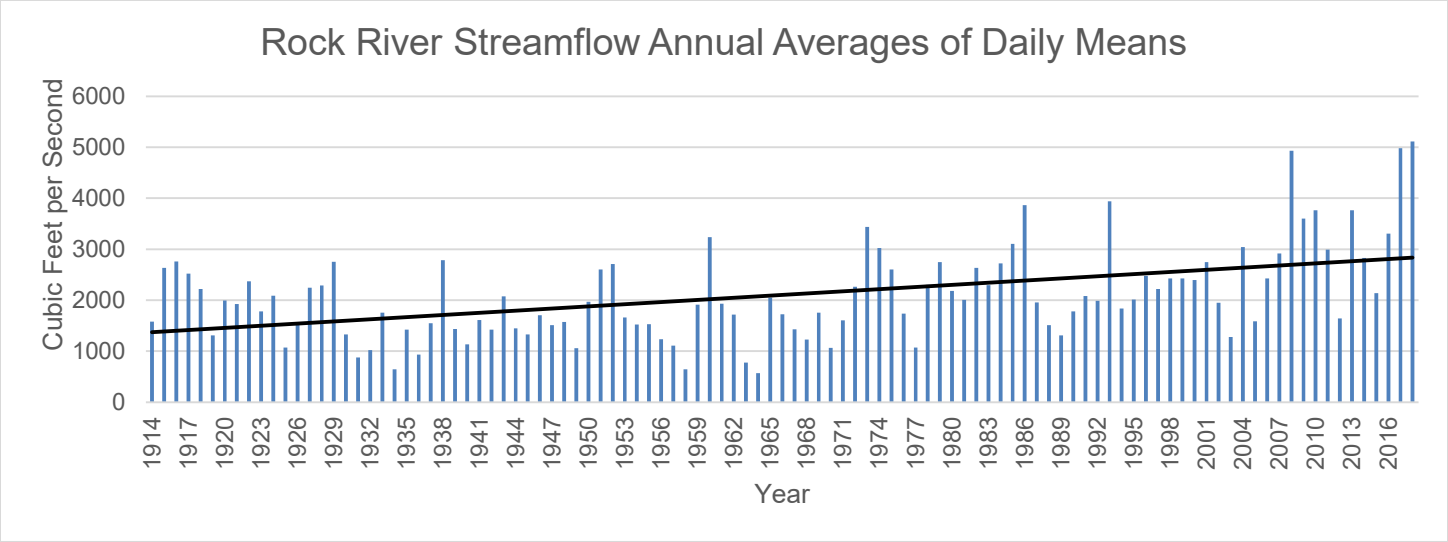
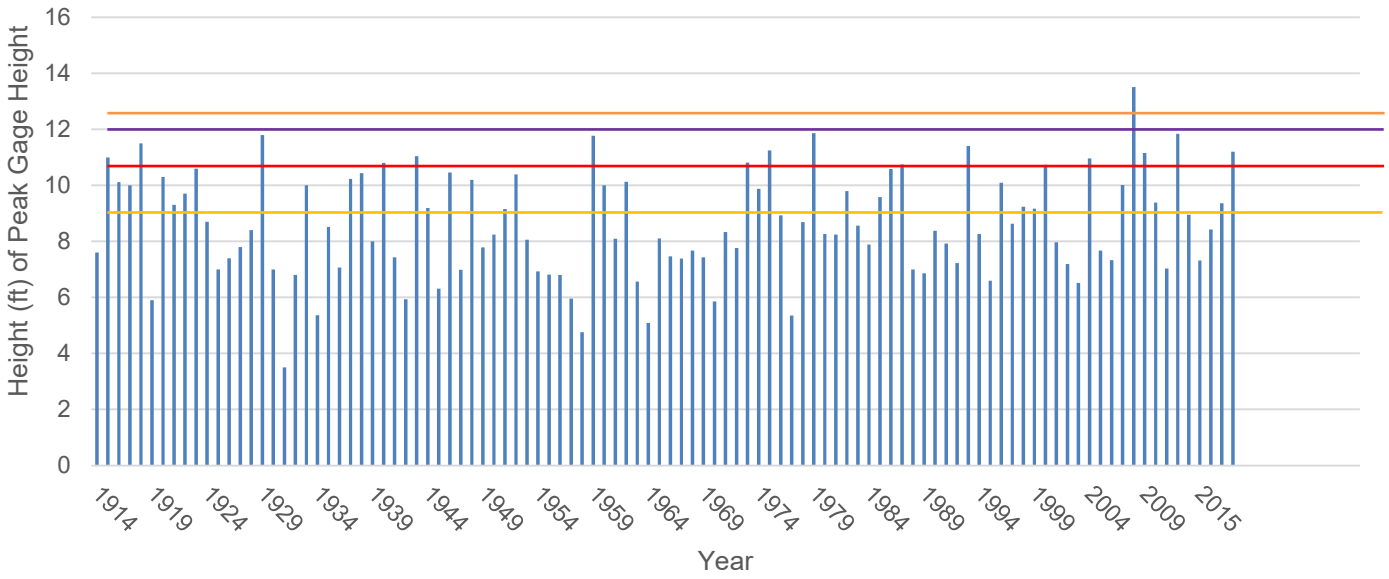


Figure 6: Rock River Streamflow Annual Averages of Daily Means. Data Source: U.S. Geological Survey National Water Information System

The gage height of a river measures the height of the river above the elevation of the water surface. A higher gage height corresponds with a higher river water level. Over the past twenty years, as shown in **Figure 7**, the Rock River has seen an increase in the frequency of peak gage heights reaching flood levels. Thirteen of the last nineteen historic crests of the Rock River gage height have occurred since 2000. 2008 saw both a major flood event (12.2 feet) and a 100 year flood (13.5 feet). Three of the historic crests were moderate floods (11.1-12.2 feet) and six were minor flood events (9.0-11.1 feet).

Figure 7: Annual Peak Gage Height



10

Adaptation & Mitigation

As mentioned earlier in chapter, human activity has increased the amount of GHG emissions in the Earth's atmosphere, which causes the atmosphere to warm and results in climatic changes, including those covered thus far in this chapter. The largest anthropogenic contributor to U.S. GHG emissions is transportation. The EPA reports that transportation in the U.S. accounts for 28% of GHG emissions.[11] The National Aeronautics and Space Administration (NASA) recommends two approaches for governments, organizations and planning agencies in response to climate change: adaptation and mitigation. ***Adaptation*** is the process of adapting to climatic changes that are already occurring/going to occur, such as the documented increases in extreme weather events (days over 90 degrees, heavy rain events) that are included in this report. ***Mitigation***, on the other hand, is working to avoid human contribution to the climate system by reducing and stabilizing GHG emissions.

[10] The USGS has identified corresponding gage heights with flood risk for the Rock River, which are identified in the figure. The orange line corresponds to a 9-foot gage height, which represents a minor flooding risk. The red line corresponds to an 11.1-foot gage height, which corresponds to a moderate flooding risk. This river level also represents a 10% flood, which means that there is a 10% chance that the river reaches this height in a given year. The purple line corresponds to a 12.2-foot gage height, which represents a major flood risk. The green line corresponds to a 13.3-foot gage height, which corresponds to a 100 year, or 1% flood.

[11] Environmental Protection Agency (2017), "Carbon Pollution from Transportation"

Adaptation strategies are important to increase the resilience of transportation assets to climate change effects, allowing the transportation system to continue to operate efficiently. Adaptation strategies in the transportation sector include the use of green infrastructure and natural infrastructure.

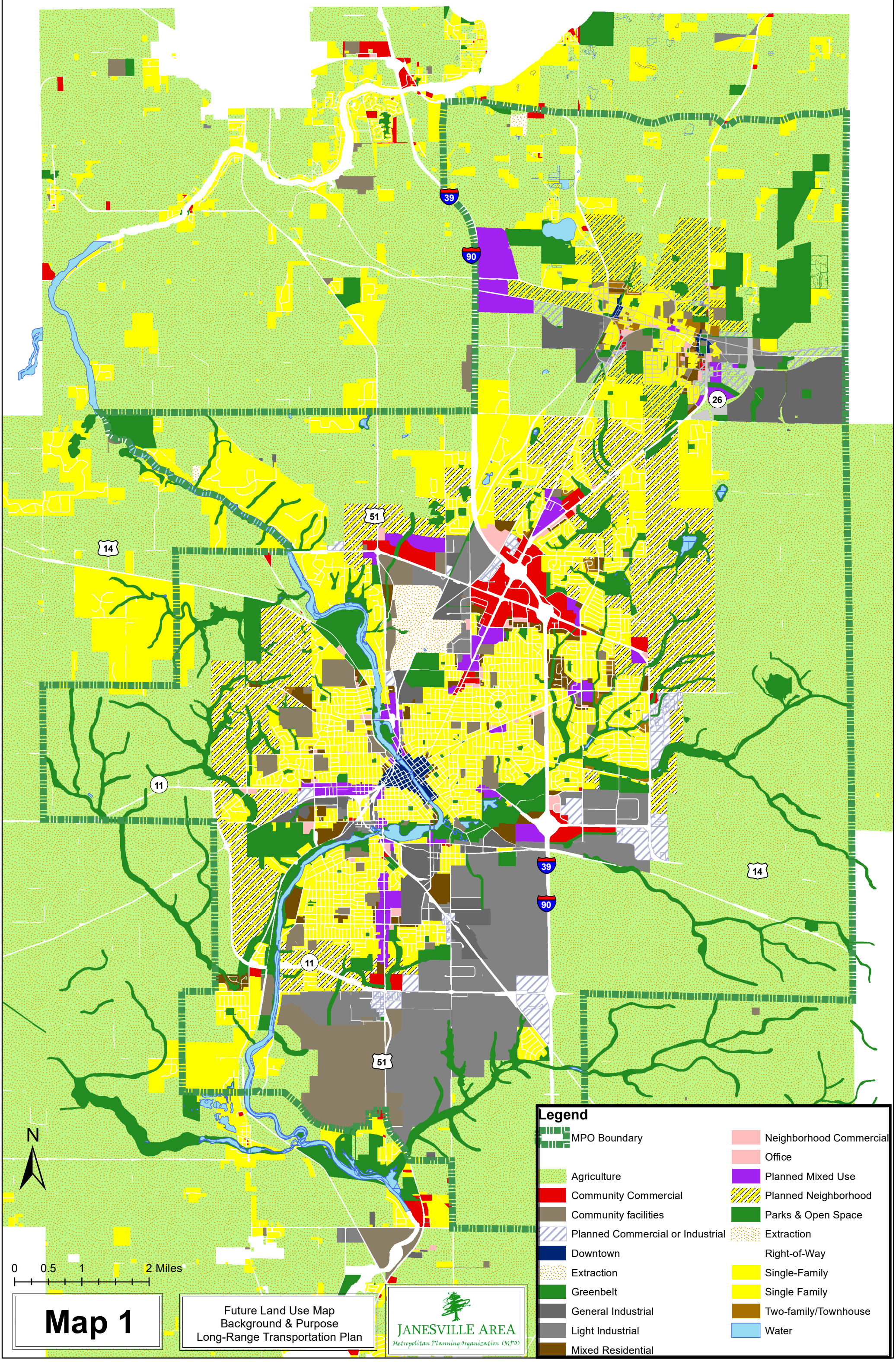
Common green infrastructure examples include permeable pavements, bioswales and bioretention basins. There are already several examples of natural infrastructure adaptations that provide increased resilience to the effects of climate change for transportation assets in the Janesville Area. These include strategies such as the municipal greenbelt system, which provide areas of retention for surface water run-off, and the restoration of vegetated areas such as the Monterey Dam restoration project, where the removal of an obsolete dam will allow for natural vegetation to re-vegetate the area, which will aid in the trapping and slower release of surface, rain, and flood waters.

Mitigation strategies are imperative to reducing the impact that GHG emissions from the transportation sector have on the climate. Mitigation strategies for transportation include travel reduction, vehicle efficiency, and low carbon fuels. Examples of travel reduction include pricing and incentive schemes, increased mass-transit, and denser land uses. Examples of vehicle efficiency and low carbon fuels include increasing vehicle efficiency performance standards, increasing fuel GHG standards, and increasing the use of electric vehicles (EVs).

Conclusion

Climate change will have a significant impact on the MPA transportation system in the thirty-year planning horizon. Climatic trends and projections for the future show increases in temperatures, precipitation, and frequency and intensity of extreme weather events for the Janesville Area. Adaptation strategies of the transportation system to the changing climate will allow transportation infrastructure to recover and withstand the effects of projected inclement weather events. Mitigation strategies will reduce the impact that transportation has on climate, thus lessening the human contribution to the changing climate. Both strategies are vitally important to the resilience and sustainability of the transportation system in the Janesville Area and will allow the system to continue to provide the necessary connections, both human and economic, for the community.

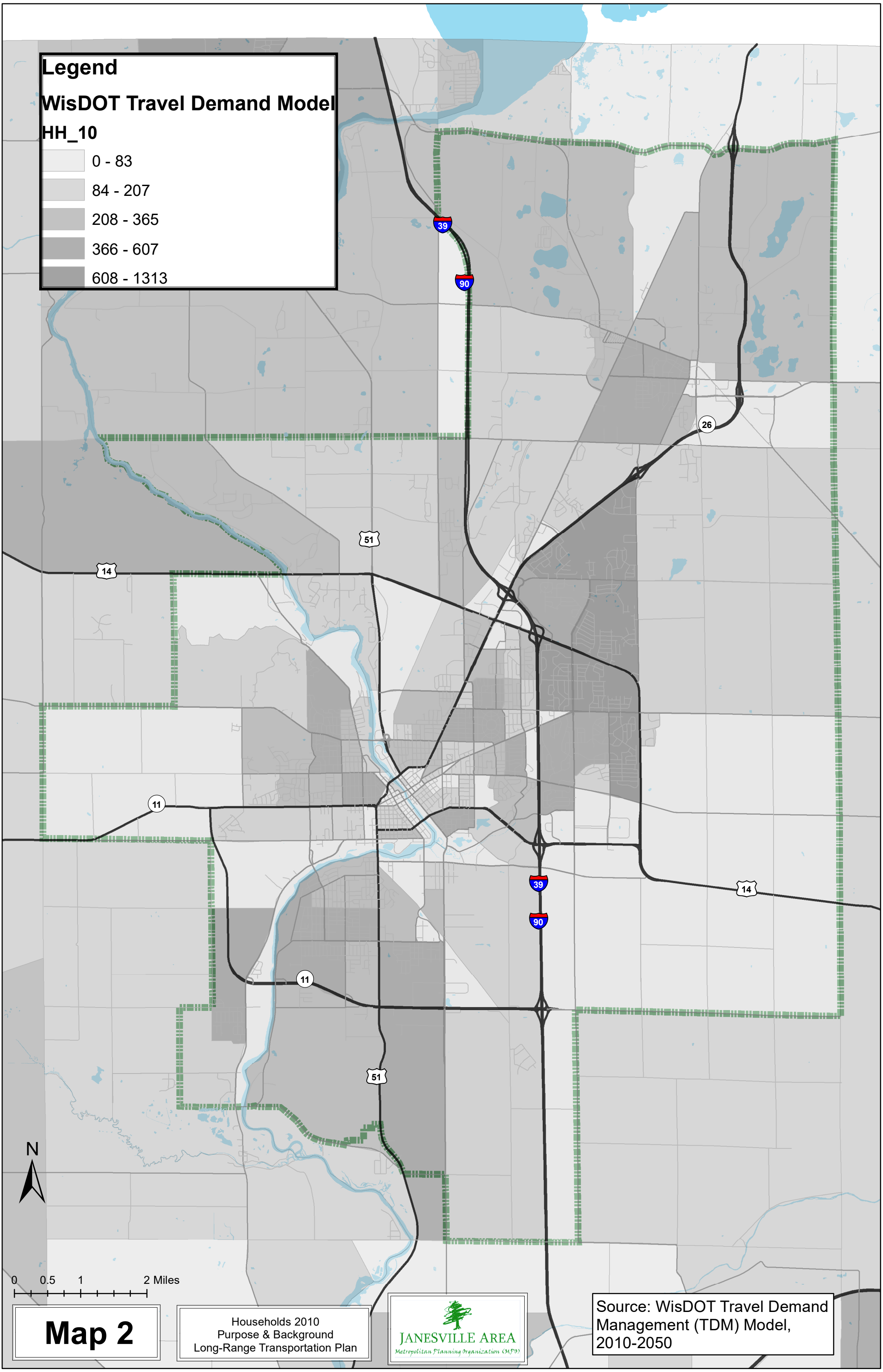
The Janesville Area's transportation network impacts land use, the economy, public health, and the environmental in many and complex ways. Transportation trends and studies on transportation preferences give credence to LRTP goals to expand bicycle and pedestrian infrastructure, as well as maintaining and expanding transit opportunities. 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 multimodal transportation system.



Map 1

Future Land Use Map
Background & Purpose
Long-Range Transportation Plan

JANESVILLE AREA
Metropolitan Planning Organization (MPO)


Legend
WisDOT Travel Demand Model
HH_10
0 - 83
84 - 207
208 - 365
366 - 607
608 - 1313
39
90
26
51
14
11
N
0 0.5 1 2 Miles
Map 2
Households 2010
Purpose & Background
Long-Range Transportation Plan
JANESVILLE AREA
Metropolitan Planning Organization (MPO)
Source: WisDOT Travel Demand Management (TDM) Model, 2010-2050

Legend

WisDOT Travel Demand Model

HH_CHG

- 0 - 45
- 46 - 138
- 139 - 273
- 274 - 529
- 530 - 1166

N

0 0.5 1 2 Miles

Map 3

Household Change, 2010-2050
Purpose & Background
Long-Range Transportation Plan

JANESVILLE AREA
Metropolitan Planning Organization (MPO)

Source: WisDOT Travel Demand Management (TDM) Model, 2010-2050

Legend

WisDOT Travel Demand Model

TOTAL_10

- 0 - 123
- 124 - 351
- 352 - 760
- 761 - 1392
- 1393 - 3550

N

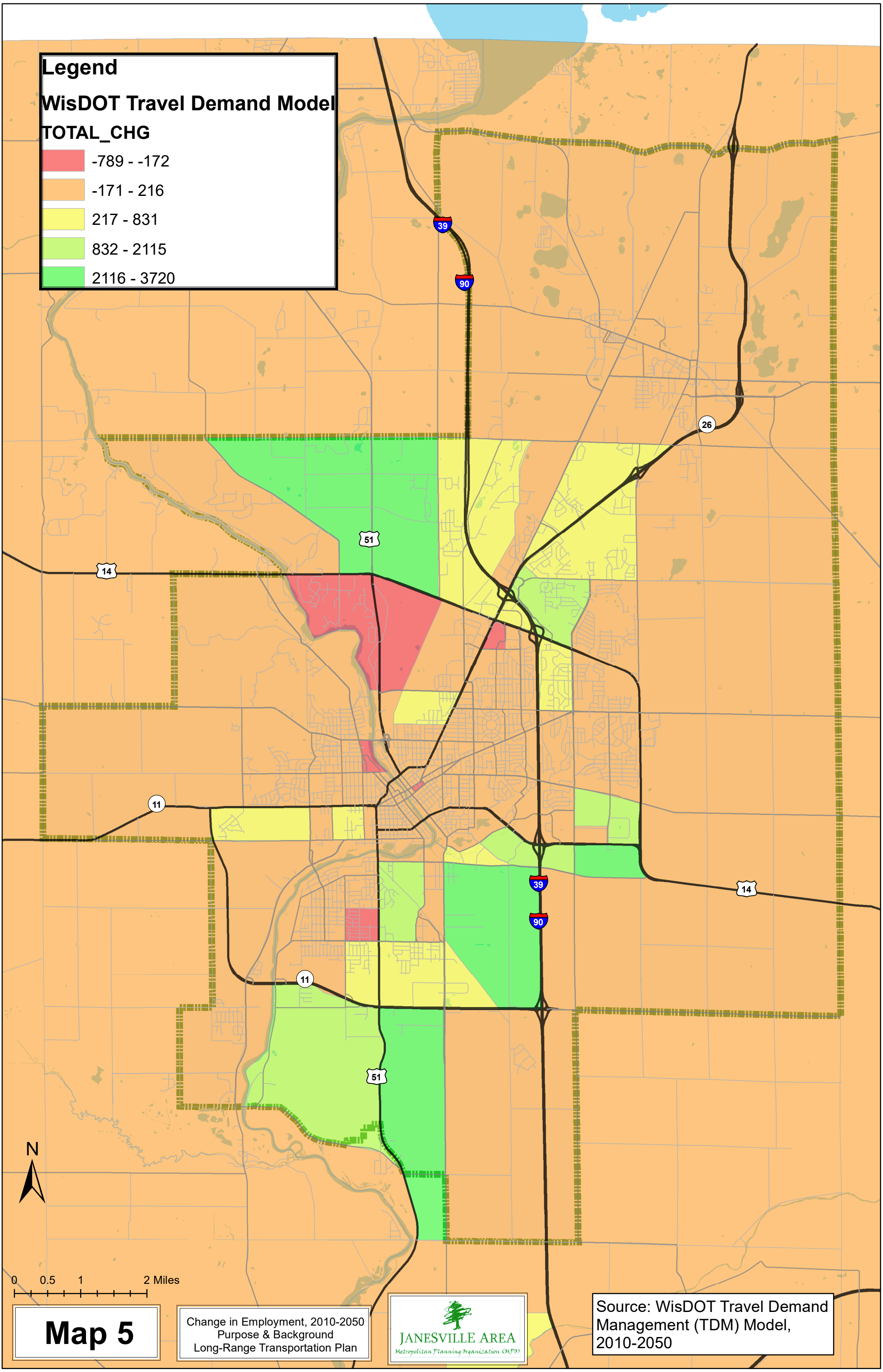
0 0.5 1 2 Miles

Map 4

Total Jobs, 2010
Purpose & Background
Long-Range Transportation Plan

JANESVILLE AREA
Metropolitan Planning Organization (MPO)

Source: WisDOT Travel Demand Management (TDM) Model, 2010-2050


Legend
WisDOT Travel Demand Model
TOTAL_CHG
-789 - -172
-171 - 216
217 - 831
832 - 2115
2116 - 3720
39
90
26
51
14
11
N
0 0.5 1 2 Miles
Map 5
Change in Employment, 2010-2050
Purpose & Background
Long-Range Transportation Plan
JANESVILLE AREA
Metropolitan Planning Organization (MPO)
Source: WisDOT Travel Demand Management (TDM) Model, 2010-2050