



MICHIANA ON THE
MOVE →
transportation plan **2050**

MICHIANA ON THE MOVE

2050 TRANSPORTATION PLAN

OCTOBER 2023

Michiana Area Council of Governments
227 W. Jefferson Blvd.
11th Floor County-City Bldg.
South Bend, IN 46601

www.macog.com

RESOLUTION 31-23
A RESOLUTION ENDORSING THE
MICHIANA ON THE MOVE: 2050 TRANSPORTATION PLAN

WHEREAS, the Infrastructure Investment and Jobs Act (IIJA) (Public Law 117-58, also known as the “Bipartisan Infrastructure Law”), requires the development of a Transportation Plan with a minimum 20-year horizon.

WHEREAS, the Michiana Area Council of Governments (MACOG), the duly designated Metropolitan Planning Organization for the South Bend and Elkhart/Goshen Transportation Management Area, and the Rural Planning Organization for Marshall and Kosciusko Counties, has cooperated with local government units and implementing agencies, and coordinated with multi-modal interests and intermodal activities to the best of its ability in developing the 2050 Transportation Plan.

WHEREAS, MACOG has used state of the art network modeling equipment, local input, obtained positive and negative public input and comment from groups and individuals, and has coordinated the activities of all area modes available.

WHEREAS, MACOG has considered the requirements listed in IIJA to the extent possible and has complied with the Clean Air Act requirements as they pertain to the development and conformity of Transportation Plans.

BE IT THEREFORE RESOLVED that the MACOG Policy Board, after consideration and discussion, several public input opportunities, a public hearing session, and this final opportunity for public review, finds that the Michiana on the Move: 2050 Transportation Plan meets the requirements set forth in the Infrastructure Investment and Jobs Act and is hereby endorsed.

IN WITNESS WHEREOF, this Resolution has been adopted on this 11th day of October, 2023.

Michiana Area Council of Governments



Mark Senter, Policy Board Chair

ACKNOWLEDGMENTS

2023 POLICY BOARD MEMBERS

Mark Senter	Mayor, City of Plymouth	Chairperson
Cary Groninger	Commissioner, Kosciusko County	1st Vice-Chair
David Wood	Mayor, City of Mishawaka	2nd Vice-Chair
Phil Jenkins	Mayor, City of Nappanee	Secretary
Mark Root	Council Person, St. Joseph County	Treasurer
Jesse Bohannon	Council Person, Marshall County	Member
Mike Burroughs	Commissioner, Marshall County	Member
Matt Deitchley	District Deputy Commissioner	INDOT Member
Dwight Fish	Council Person, City of Elkhart	Member
Carl Baxmeyer	Commissioner, St. Joseph County	Member
Douglas Graham	Council Person, Elkhart County	Member
Kathy Groninger	Council Person, Kosciusko County	Member
Lori Hamann	Council Person, City of South Bend	Member
Gregg Hixenbaugh	Council Person, City of Mishawaka	Member
Todd Johnson	Deputy District Commissioner	INDOT Member
James Mueller	Mayor, City of South Bend	Member
Rod Roberson	Mayor, City of Elkhart	Member
Gina Leichty	Mayor, City of Goshen	Member
Joseph Thallemer	Mayor, City of Warsaw	Member
Suzanne Weirick	Commissioner, Elkhart County	Member

ACKNOWLEDGMENTS

2023 TRANSPORTATION TECHNICAL ADVISORY COMMITTEE MEMBERS

Amy Hill	Transpo / South Bend PTC	Chair
Brent Warren	City of Nappanee Street Department	1st Vice-Chair
Steve Moriarty	Kosciusko County Highway	2nd Vice-Chair
Ty Adley	Marshall County Planning	Member
Leslie Biek	City of South Bend Engineering	Member
Doug Burgess	INDOT Fort Wayne District	Member
Tory Irwin	City of Elkhart Public Works	Member
Dustin Sailor	City of Goshen Engineering	Member
Chris Dressel	City of South Bend Comm. Invest.	Member
Bill Holder	Kosciusko County GIS	Member
Chris Jamrose	City of Mishawaka Engineering	Member
Natasha Kauffman	Elkhart County Planning	Member
Shawn Klein	St. Joseph County Area Plan	Member
Patrick MacCarthaigh	South Bend International Airport	Member
Marsha McSherry	Kosciusko County Administrator	Member
Sky Medors	St. Joseph County Public Works	Member
Jason Peters	Marshall County Highway	Member
Lisa Shrader	INDOT LaPorte District	Member
Derek Spier	City of Mishawaka Planning	Member
Sean Surrisi	City of Plymouth	Member
Justin Taylor	City of Warsaw Planning	Member
Emmanuel Nsonwu	INDOT Central Office	Member*

*Non-voting Members

MACOG STAFF MEMBERS

James Turnwald	Executive Director
Zach Dripps	Director of Operations & Community Development
Carla Herwarth	Office & Procurement Manager
Ashley Matthews	Administrative Assistant
Russ Ragimbekov	Information Technology Manager
Katie Dominguez	Graphic Design & Communications Manager
Debbie Gardner	Fiscal Accounting Manager
Molly Chenoweth	Fiscal & Administrative Coordinator
Caitlin Stevens	Director of Transportation
Dana Weaver	Short-Range Planner
Dustin New	Active Transportation Planner
Raj Parikh	Transportation Analyst
Donny Ritsema	Senior Community Development Planner
Olivia Nix	Community Development Planner
Leah Thill	Senior Environmental Planner
Amber Werner	AmeriCorps Program Director
Matt Meersman	River Basin Program Director
Dr. Kate Barrett, Ph.D	Aquatic Ecologist
Greg Slater	Senior Traffic Data Planner
David Harker	Traffic Data Planner
Jeremiah Cox	Transit Planner
Johnnie Woggon	Transit Administrative Specialist

TABLE OF CONTENTS

1	Introduction	1
	Purpose of the Plan	2
	MPO Background	2
	Planning Area	3
	National Planning Factors	3
	Planning Process	4
2	Regional Profile	7
	Population Trends	8
	Household Trends	12
	Employment and Economic Trends	13
	Environmental Trends	18
	Land Coverage Change	20
3	Transportation Network	23
	Transportation Network	24
	Freight & Logistics	35
	Active Transportation	37
	Electric Vehicle Infrastructure	40
4	Public Engagement	43
	Introduction	44
	Stakeholder Engagement	44
	Public Engagement	45
	Survey Summary	49
	Final Draft Plan Review	54

5	Goals and Performance Measures	55
	National Goals	56
	National Planning Factors	56
	Move 2050 Goals and Objectives	57
	Federal Performance Measures and State Targets	58
	Locally Established Benchmarks	67
6	Recommendations	69
	Roadways	70
	Active Transportation	72
	Public Transit	74
	Freight	78
	Connected and Autonomous Vehicles	80
	Electric Vehicles	81
7	Financial Plan	83
	List of Proposed Projects	91
	Active Transportation Project List	109
	Modeling Process	139
	Air Quality Conformity Analysis	149
	Red Flag Investigation	153
	Environmental Justice	187
	Congestion Management Process	195
	Public Comments	209

Appendix



01

Introduction



01

Purpose of the Plan

The Michiana on the Move: 2050 Transportation Plan acts as a blueprint for how the Michiana region will address its transportation needs and how federal, state and local funds will be invested into highways, public transit, freight, bikeways and pedestrian walkways. The Plan also references other local and regional plans in order to coordinate multimodal and intermodal services throughout the community.

This plan is guided by input from public officials, agency staff, key stakeholders, and citizens of the region as a roadmap for implementing multimodal transportation improvements in the Michiana region through the year 2050. Throughout this process, the regional transportation system is evaluated in order to identify and formulate the best solutions to address safety, congestion, highway, public transit, bike and pedestrian and multi-modal systems for the local communities. The 2050 Transportation Plan continues to emphasize the use of existing roads and alternate modes of transportation as invaluable in addressing and identifying solutions to congestion problems.

MPO Background

A Metropolitan Planning Organization (MPO) is a transportation policy-making body made up of representatives from local government and transportation agencies with authority and responsibility in metropolitan planning areas. Federal legislation passed in the early 1970's required the formation of an MPO for any urbanized area with a population greater than 50,000 residents. MPOs were created in order to ensure that existing and future expenditures for transportation projects and programs were based on a continuing, cooperative and comprehensive planning process. Federal funding for transportation projects and programs is channeled through the MPO.

The Michiana Area Council of Governments (MACOG) is a regional organization serving Elkhart, Kosciusko, Marshall, and St. Joseph Counties in Indiana. MACOG was originally organized under the 1964 Amendments to the Interlocal Cooperation Act of the Indiana General Assembly, Section 53-1101 to 53-1107 and the Urban Cooperation Act No. 7, Michigan Public Acts of 1967. Bylaws were adopted by the organization on December 2, 1970.

MACOG serves as a forum for regional discussion and cooperation. MACOG, as a regional organization, is the U.S. DOT designated Metropolitan Planning Organization (MPO) for the region's urban counties of Elkhart and St. Joseph and a Rural Planning Organization (RPO) for the region's rural counties of Kosciusko and Marshall. In addition, MACOG operates the Interurban Trolley, a public fixed-route transit service in the cities of Elkhart and Goshen; serves as the designated Economic Development District by the United States Economic Development Administration; and staffs the St. Joseph River Basin Commission representing seven Indiana counties. MACOG is governed by a Policy Board and Transportation Technical Advisory Committee that provides guidance and assistance to MACOG in its regional planning activities.

The MACOG Policy Board

The MACOG Policy Board is the body responsible for policy formulation, project guidance, and administrative coordination of all policies relating to the development of the transportation plan and its implementation within the Michiana region. Official action taken by MACOG must be approved by the Policy Board. The Policy Board includes elected officials representing the cities and counties within the metropolitan and rural planning areas. A list of the current Policy Board members is included in the acknowledgments.

Transportation Technical Advisory Committee

The Transportation Technical Advisory Committee (TTAC) is comprised of planners, engineers, and other professional staff from various departments representing the local public agencies in the planning area. TTAC serves as the advisory group to the MACOG Policy Board. MACOG

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.
4. Increase accessibility and 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 and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

Planning Process

The Michiana on the Move plan was developed through coordination with other plans and agencies including federal, state and local partners. Additionally, an overarching component to the planning process is public participation. The Plan is a reflection of the needs of the public on transportation investments for the future. This plan is required to be realistic and fiscally constrained. An extensive planning process was followed in the development of the Michiana on the Move 2050 Transportation Plan. Essential elements included the identification of needed projects and resource allocation. These were supported by the following tasks:

- Public Outreach
- Forecasting socioeconomic data
- Existing conditions and needs identification
- Forecasting travel demand
- Environmental Coordination and Red Flag Analysis
- Title VI and Environmental Justice

Public Outreach

MACOG conducted a variety of public outreach efforts throughout the development of the Michiana on the Move 2050 Transportation Plan as detailed in Chapter 4. The engagement for this plan can be divided into two groups: Stakeholder and Public. Stakeholder engagement involved feedback from representatives across many sectors and local public agencies, either in person or by survey response. Public engagement centered around a project specific website, surveys, comment map and attending pop-up events to seek people's feedback on goals and transportation needs for the region.

The website provided background information on the planning process and access to the survey and an interactive comment map for location specific feedback. To further raise awareness of the website and feedback opportunities, staff utilized a wide ranging approach including:

- Social Media posts
- Informational videos
- Attendance at events
- Promotional fliers at area libraries
- Yard signs

Socioeconomic Forecasts

Socioeconomic data such as population, number of households, household income, and employment levels are important to assess the future transportation needs of the Metropolitan Planning Area (MPA). This data can greatly inform future travel behavior. The historic and current socioeconomic data available along with projections developed by Woods & Poole and

other economic forecasts were used to develop the future population and employment numbers of the MPA. The regional socioeconomic data was allocated to Traffic Analysis Zones (TAZs) and incorporated into a hybrid travel demand model for the 2050 Plan. The data was used in the travel demand model to assess the current conditions and future travel demand within the region.

Existing Condition and Needs Identification

MACOG used various planning tools to conduct an existing condition and needs analysis. A detailed description of the region's current conditions, trends and projections are found in Chapters 2 and 3. Data informing congestion, bridge and pavement conditions, crash location, and connectivity can provide crucial information to communities when prioritizing needed transportation enhancements.

Providing safe and efficient movement of goods and people, with access to core services is the primary role of the transportation system. The network should be available and accessible to everyone in the region, which is why the Michiana on the Move plan identifies and considers all forms of transportation. The Plan attempts to coordinate the impact of connectivity between various land uses and between various communities through the transportation planning process.

Forecasting Travel Demand

Forecasting travel demand is an important part of transportation planning. Anticipating the demands of future travel assists local governmental agencies in identifying the future needs of the region and planning to account for and fulfill those needs. The travel demand model not only forecasts the generation of future trips but also forecasts the modal splits based on the affordability of a personal vehicle, availability of alternative modes of transportation, and travel behavior of the users based on time of day, facility types and travel conditions of the roadways.

MACOG uses a hybrid tour based model developed for the 2040 Transportation Plan to forecast future travel demand. In 2019, the model was expanded to not only include Elkhart and St. Joseph Counties, but also Marshall and Kosciusko

Counties and Niles, Michigan. The model is sensitive to conditions such as the availability of alternative modes of transportation, urban design elements, types of controls existing at the intersections, speeds and delays, and fuel prices. Unlike the traditional 4-step trip-based travel demand model, MACOG's hybrid model includes 12 steps. A description of the modeling process is provided in Appendix C.

Environmental Coordination and Red Flag Investigations

In order to help determine potential environmental impacts of potential transportation projects, MACOG conducted a red flag analysis on most projects included in the 2050 Transportation Plan. A red flag analysis uses GIS and available datasets compiled by the Office of Environmental Policy at INDOT to identify the existence of environmental items of concern with respect to:

- Infrastructure
- Water Resources
- Mining/Mineral Exploration
- Hazardous Materials
- Ecological Information
- Cultural Resources

An inventory of the Red Flag Investigations are provided in Appendix E.

Title VI and Environmental Justice

MACOG believes that Title VI and Environmental Justice are critical elements to the transportation planning process. Title VI and Environmental Justice are about the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income. In Appendix F, MACOG conducted a study on Environmental Justice populations which summarizes the potential impacts of the proposed projects.





02

Regional Profile

02

The MACOG Region is comprised of four (4) counties located North Central Indiana: Elkhart, Kosciusko, Marshall, and St. Joseph Counties. Two of the four counties (St. Joseph and Elkhart Counties) border the Michigan state line. There are 35 cities and towns in the Michiana Area. Figure 2.1 shows populations estimates for the largest communities in each of the four (4) counties.

As shown in Figure 2.2, the regional is centrally located to several major cities in the Midwest. The largest city in the region, South Bend, is located 95 miles (2 ½ hrs drive time) east of downtown Chicago, 155 miles (3 hrs drive time) north of downtown Indianapolis, and 215 miles (3 ½ hrs drive time) southwest of Detroit. Additionally, Lake Michigan is located approximately 35 miles (45 mins drive time) northwest of the Region.

The MACOG region is home to several attractive water resources. The region is unique in that its water resources drain into three major water body networks: the Great Lakes, the Mississippi River, and the Ohio River. A large portion of the region’s water flows into the St. Joseph River via the Elkhart River and other tributaries, and further drains into Lake Michigan. Over 130 natural lakes occur in the region, more than half being located within Kosciusko County. Many of these lakes are hot spots for recreation, such as Lake Wawasee, the largest lake wholly contained in Indiana. Below the surface, the only sole source aquifer in Indiana is located within Elkhart, Kosciusko, and St. Joseph Counties. This portion of the region is designated as a Wellhead Protection Area, meaning that it receives a special level of protection from groundwater contamination.

Figure 2-2: MACOG Regional Location



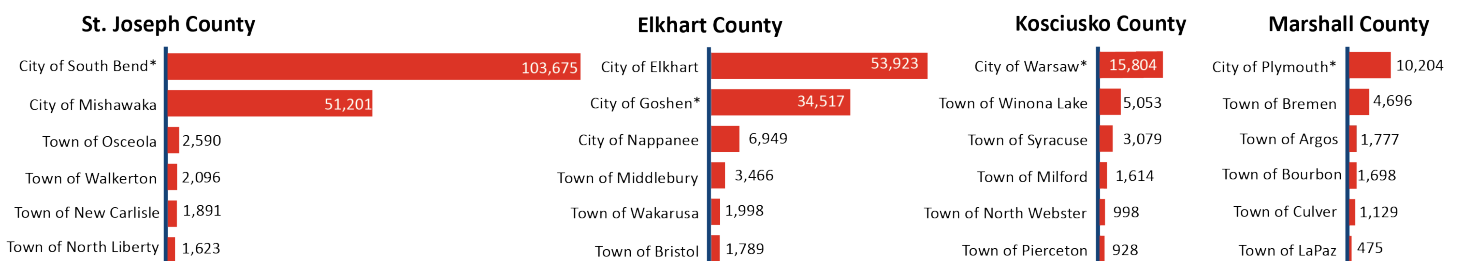
Population Trends

Population Growth

According to 2022 U.S. Census Bureau population estimates, Indiana’s 6,833,037 residents make it the 17th most populous state. The population change from the 2020 decennial census to the 2022 population estimates was 44,238 individuals at a rate of 0.65%, placing Indiana 23rd in the nation for percent growth between 2020 and 2022. The overall national change in population was approximately 1,776,045 individuals, bringing the overall growth rate between 2020 and 2022 to approximately .53%, meaning that Indiana has a growth rate slightly higher than the average among the rest of the states. Indiana also has a slightly higher growth rate than its bordering states Illinois (-1.61%), Michigan (-0.35%), Ohio (-0.35%), and Kentucky (0.11%).

The MACOG region experienced modest growth over the past few decades from a region of just over 450,000 residents in 1970 to a region of

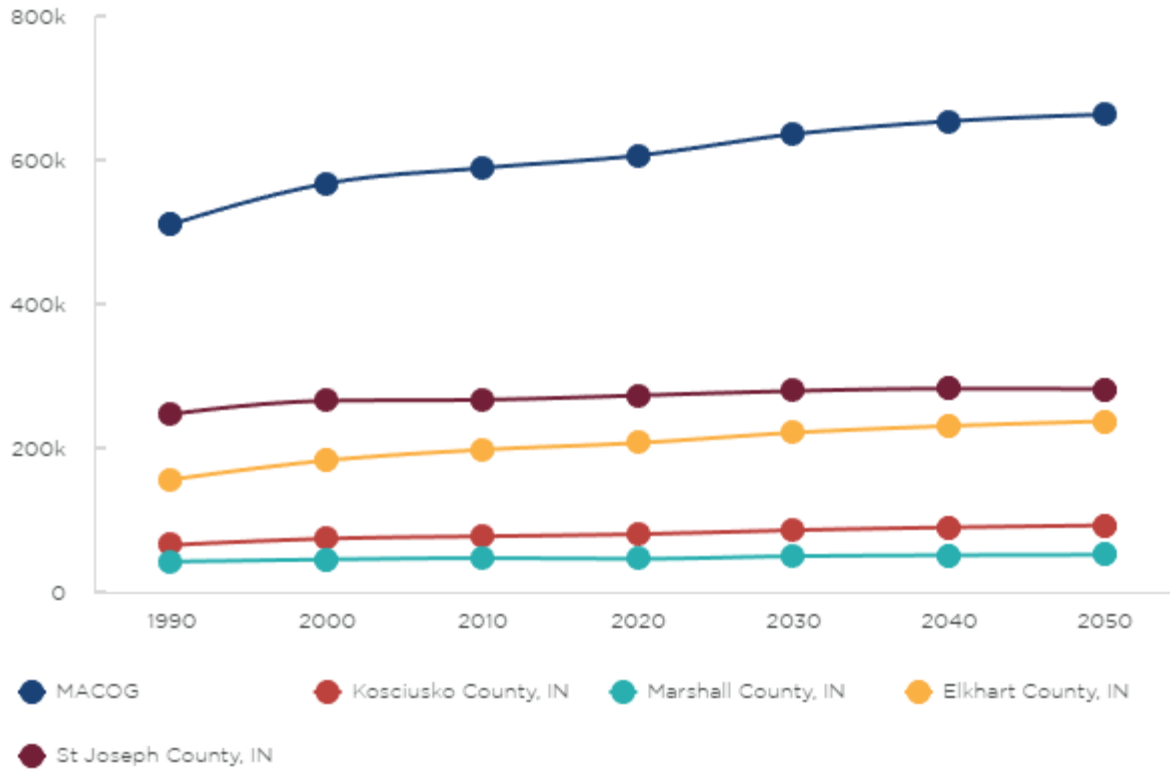
Figure 2-1: Population Estimates



Source: 2020 U.S. Census Bureau

*Indicates the county seat

Figure 2-3: Estimated Regional Population Growth to 2050



Source: US Census Bureau & Woods and Poole

just over 600,000 in 2020. The MACOG region experienced its highest growth rate in recent decades between 1990 and 2000 where the MACOG region as a whole saw an 11% population increase. While this growth rate has slowed down in recent years, as a whole the MACOG region is still growing. Between 2010 and 2020, the MACOG region grew by approximately 2.9%. During this same time period, Elkhart County experienced a 4.7% change in population, Kosciusko County experienced a 3.7% change in population, St. Joseph County experienced a 2.2% change in population, and Marshall County experienced a -2.1% change in population.

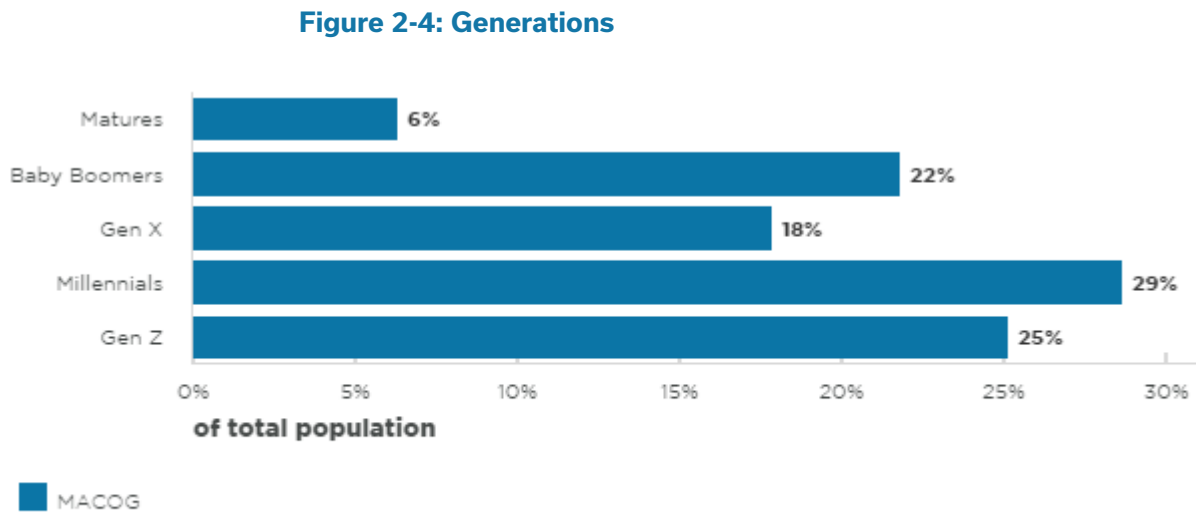
Using Woods and Poole Economic Data to project the regional population out to 2050, it is estimated that the population of the region may increase to 663,286 persons, which is a substantial 9.4% increase in population in the region as a whole as seen in Figure 2-3.

Age Distribution and Gender

The median age of an area can be a key indicator of possible economic productivity. Typically, communities and regions with a large working age population have more economic productivity. The median age in the MACOG region increased from 27.7 years in the 1970s to 38.2 years in 2021. This 10.5-year increase in median age in the region aligns with several decades of a fast growth rate in the past. Future forecasts project that the increase in median age will slow down, increasing by only 0.2 years by 2050 to 38.4 years.

In 2021, approximately a third of the MACOG region population were younger than 25 years old (211,062 persons), approximately half of the population aged 25 to 64 years (294,777 persons), and just under a sixth of the population were aged 65 and older (99,575 persons). Within the MACOG region, the 10 to 14 years cohort had the largest population (44,777 persons).

Figure 2-4 showcases a breakdown of generations in the MACOG region.



Sources: US Census Bureau ACS 5-year 2017-2021

The age distribution of the MACOG region in 2050 is expected to exhibit some consistency, with roughly one-third of the population (227,945 individuals) being younger than 25 years old. Additionally, approximately half of the population (317,384 persons) is projected to fall within the 25 to 64 years age group, while just under a sixth (117,960 individuals) are anticipated to be 65 years and older. Nevertheless, it is crucial to note that the composition of these age groups within their respective subdivisions will undergo substantial changes. Notably, the 80 to 84 years age cohort is forecasted to experience a remarkable 193% increase, rising from 9,721 persons in 2021 to 18,798 in 2050. Similarly, the 85 years and older age cohort is projected to grow by approximately 190%, going from 12,348 individuals in 2021 to 23,503 in 2050.

The data comparing the population distribution by age between 2021 and the projected figures for 2050 in the MACOG region reveals several notable trends. Firstly, there is a consistent decline in the younger age groups, with significant negative differences, indicating a decrease in the population of individuals under 40 years old. Conversely, the older age groups, particularly those aged 60 and above, show substantial positive differences, suggesting a significant increase in the senior

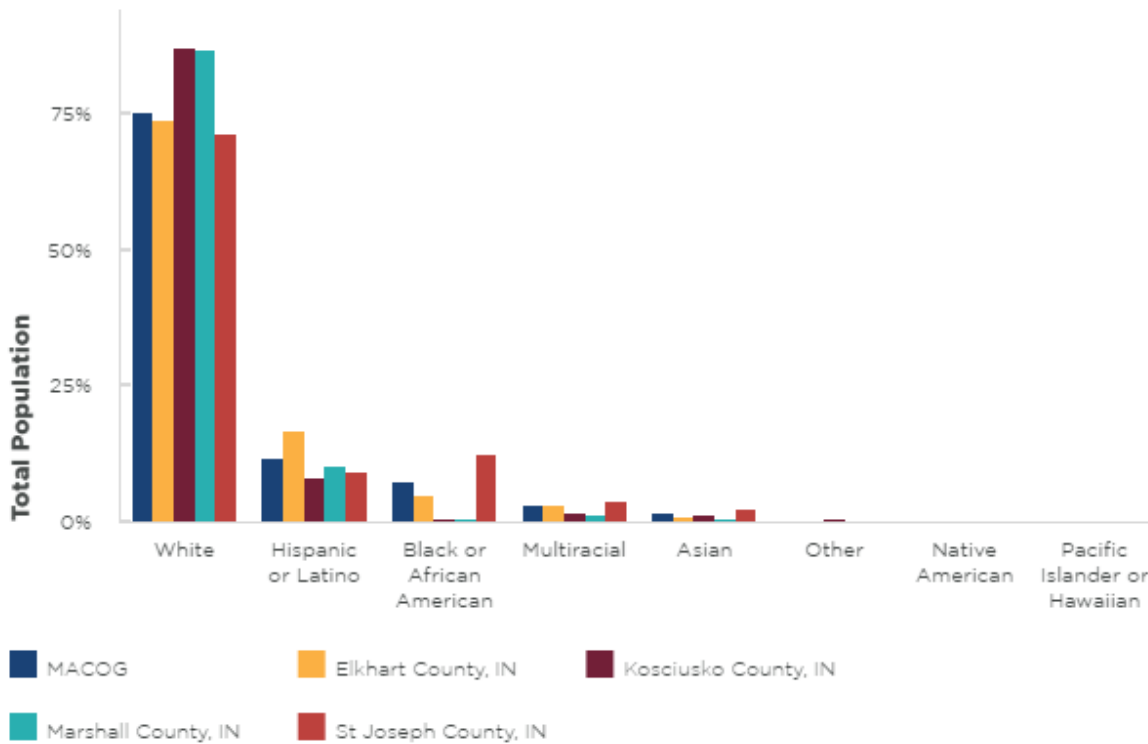
population. This demographic shift reflects an aging population with a declining proportion of young individuals, indicating potential challenges and changes in healthcare, workforce dynamics, and social services as the region’s population continues to age over the coming decades.

Race, Ethnicity, and Language

2021 ACS estimates indicate that approximately 24% of the MACOG region identifies with a minority ethnic or racial community, shown in Figure 2-5. 7.5% of the population identifies as Black/African American, 0.3% identifies as American Indian/Native American, 1.6% identifies as Asian, >0.1% identifies as Native Hawaiian/Pacific Islander, 4.8% identifies with Some Other Race Alone, and 9.3% identifies with Two or More Races. Additionally, in the MACOG region 12.3% of the population (regardless of race) identifies as Hispanic or Latino.

St. Joseph County is the most racially and ethnically diverse county in the region with a minority population made up of 28.4% of the county’s population, up from approximately 20.5% in 2015. Elkhart County’s minority population encompasses 25.2% of the county’s population,

Figure 2-5: Race and Ethnicity



Sources: US Census Bureau ACS 5-year 2017-2021

which is a sizable increase from Elkhart County’s 12.3% minority population in 2015. Kosciusko County’s minority population increased from 7.1% of the population in 2015 to 12% in 2021. Finally, Marshall County’s minority population actually saw a small decline in its share of Marshall County’s population from 6.7% in 2015 to 6.4% in 2021.

Overall, the region as a whole seems to be following a trend of increasing diversification. This is in line with Woods & Poole Economics population projections for the region as a whole. By this estimation, St. Joseph County’s racial and ethnic minority populations may grow to approximately 44% of the county population by 2050, Elkhart County’s racial and ethnic minority populations may also grow to approximately 44% of the county population by 2050, Kosciusko County’s racial and ethnic minority populations may grow to approximately 26% of the county population by 2050, and Marshall County’s racial

and ethnic minority populations may grow to approximately 29% of the county population by 2050.

English remains the most widely spoken language in the region with 86.6% of the population speaking only English. 8.1% of the population of the region speaks Spanish, a 168% increase from the state as a whole which has a 4.8% concentration of Spanish speaking persons. An additional 5.2% of the MACOG region population speaks neither Spanish nor English, only slightly more than the state as a whole where 4.5% of the population speaks neither Spanish nor English. This is likely due to the number of people who speak German or Other West Germanic Languages. This include Pennsylvania Dutch, which is commonly spoken in portions of the region with a higher proportion of Amish.

Household Trends

The term household population describes the number of people in a type of housing unit, and it can include groups of related or unrelated people or a single occupant. According to the 2020 census, the region's number of households was 230,614 where most households consist of families. The average regional household size is 2.67. Elkhart County retains the largest average household size, at 2.84 persons, and St. Joseph County has the smallest average, at 2.44 persons.

Number of Households vs Population

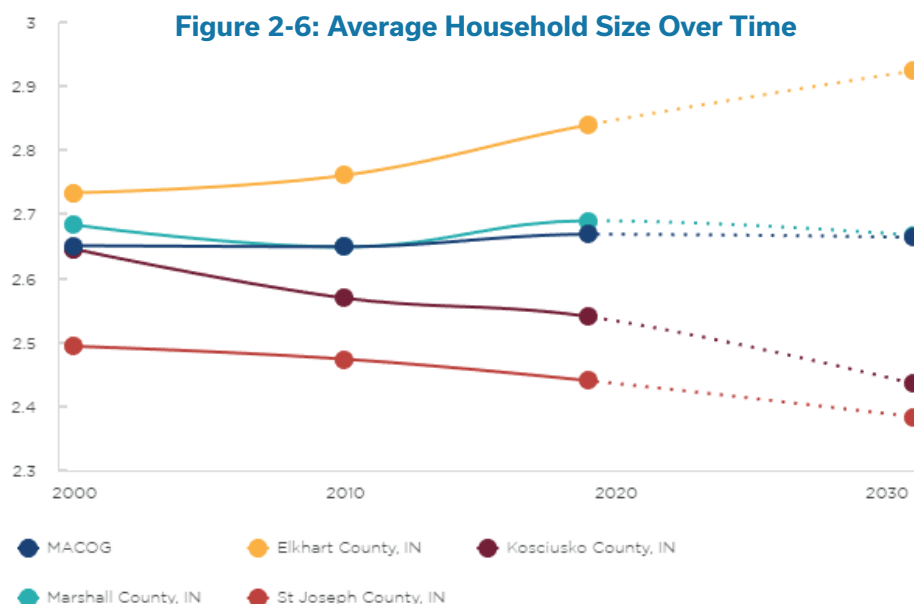
The data comparing the number of households to the population in the MACOG region reveals interesting patterns from 2010 to 2020. Over this period, the region witnessed a 4.5% increase in households, slightly outpacing the 3% growth in population. This trend can be attributed to a rise in the average household size. However, a closer look at each county shows distinct variations in population and household growth rates. Notably, Elkhart County experienced a 4.8% population growth accompanied by a 6.2% growth in households, while Kosciusko County witnessed a remarkable 6.9% surge in households alongside a 3.7% population growth. Conversely, Marshall County's households increased modestly by 0.4%, while its population declined by 2%. St. Joseph County, on the other hand, exhibited balanced growth in both population and households at 4.1% and 2.2% respectively.

These divergent population and household changes also led to shifts in average household size across the region. Elkhart County maintained the highest number of people per household, growing from 2.76 in 2010 to 2.84 in 2019. Marshall County followed closely with an average household size of 2.69, up from 2.65 in 2010. Conversely, Kosciusko County experienced a slight decrease in average household size to 2.54. Notably, St. Joseph County had the smallest number of people per household, with an average of 2.44 in 2019, showcasing a consistent decline over the past decade. These trends collectively reflect the evolving dynamics of household composition and population distribution across the MACOG region and its counties.

Income

The provided data on per capita income within the MACOG region illuminates income dynamics and disparities across the counties. While the region's average per capita income stands at \$30,884 (2021), it falls below both the national average of \$37,638 (2021) and Indiana's average of \$32,537 (2021). Among the counties, Kosciusko County and St. Joseph County show higher per capita incomes at \$32,250 and \$31,983 respectively, potentially influenced by factors such as diversified industries, or educational institutions. In contrast, Elkhart County and Marshall County

Figure 2-6: Average Household Size Over Time



have lower per capita incomes, standing at \$28,194 and \$28,746 respectively. This divergence might reflect variations in economic structures, job opportunities, and cost of living across the counties. Overall, the data underscores the economic diversity within the region and provides valuable insights into income dynamics relative to national and state averages.

Poverty

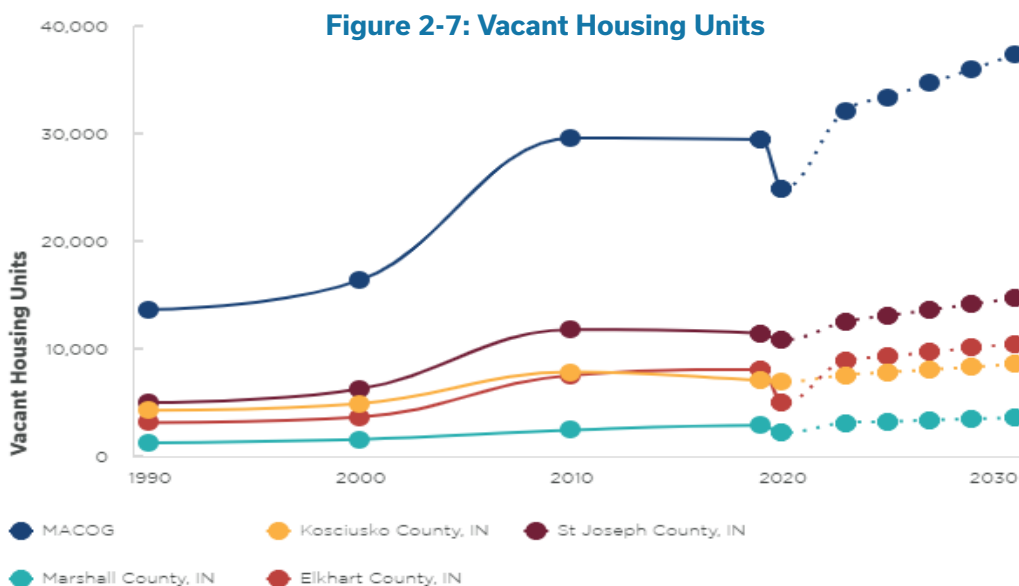
The U.S Census determines the poverty status of families by assigning each family to an income threshold based on family size and ages of the members. If a family's income falls below that threshold, the family is considered to be in poverty. The poverty guideline for a household of four is \$26,500. For a household of two, it is \$17,420 and for a household of three, \$21,960. St. Joseph has the highest percentage of poverty at 14.3%, followed by Elkhart County (11.8%), Marshall County (11.4%), and Kosciusko County (9.7%).

fluctuations in the number of vacancies can offer indications of changing population dynamics and housing demand. Examining this data reveals varying patterns among the counties. From 1990 to 2020, Marshall County consistently maintained the lowest number of household vacancies, while Elkhart County had the highest. Between 2010 and 2020, the region experienced a decrease in household vacancies, suggesting a potential increase in housing demand or improvements in housing conditions. When reviewing Figure 2-7, the projection shows a general upward trend in household vacancies across the region, reflecting anticipated changes in the housing landscape. This data underscores the importance of monitoring housing vacancy rates to inform housing policies and address potential housing shortages or oversupplies, ensuring a balanced and sustainable housing market in the MACOG region and its counties.

Employment and Economic Trends

Housing Supply and Vacancies

The data on household vacancies provides insights into housing trends across the MACOG region and its respective counties. Over the years,



Sources: US Census Bureau; US Census Bureau ACS 5-year

Housing and Transportation

The data provided in Table 2-1 reveals the dynamics between household income, transportation habits, and vehicle ownership across the MACOG region and its counties. Despite slight variations in median household income, the region maintains a relatively consistent average of around 5 household trips. Elkhart County stands out with a higher prevalence of households owning three or more vehicles, potentially linked to its manufacturing influence. St. Joseph County, being more urban, exhibits a higher number of households with a single vehicle. Notably, Marshall County's rural makeup corresponds to a lower count of households with no vehicles. These insights emphasize the interplay between income, transportation needs, and vehicle availability, offering valuable cues for tailored regional transportation strategies and infrastructure development.

The Housing and Transportation Affordability Index (H+T Index) provides insights into the combined financial burden of housing and transportation costs for residents in different counties within the MACOG region. This index sets a benchmark at no more than 45% of household income for affordability. In this context, Marshall County stands out with the highest affordability challenge, as 52% of the typical household income is spent on housing and transportation combined, with transportation costs accounting for a significant portion (30%). St. Joseph County fares slightly better, with a lower transportation cost burden, while Elkhart County falls in the middle. Kosciusko County exhibits the most favorable affordability at 48%, with housing costs relatively lower at 20%, but transportation costs still represent a notable share of household income (26%). These affordability variations underscore

the need for regional policymakers to consider comprehensive strategies that address both housing and transportation affordability.

Labor Force

The data offers a compelling insight into the labor force dynamics and economic health of the MACOG region and its counties. The average labor force participation rate for the region stands at 65.17%, with Kosciusko County leading at 66.27% and Marshall County lagging at 62.40%. These variations likely stem from factors like industry concentration and local economic initiatives.

Unemployment rates, as observed across multiple years, provide insights into the region's economic resilience. The pandemic-induced downturn in 2020 resulted in elevated unemployment rates across all counties, but subsequent years showed recovery. For instance, Kosciusko County's unemployment rate spiked to 6.30% in 2020 but retreated to 2.50% in 2022. A similar trend is visible in St. Joseph County, where unemployment surged to 8.60% in 2020 but recovered to 3.40% in 2022.

Comparing job numbers and employment figures provides deeper insights. St. Joseph County consistently holds a higher number of jobs than Kosciusko County, yet Kosciusko County maintains relatively steady employment. Elkhart County's remarkable job growth is linked to its resilient manufacturing sector, while fluctuations in St. Joseph County's employment figures could be attributed to its industry composition. These trends collectively highlight the intricate interplay of local economies, industries, and broader events, underscoring the region's adaptability in the face of challenges and its potential for sustained growth.

Table 2-1: Household Income, Trips, and Vehicles

Geography	Median Household Income	Total Household Vehicle Trips	Vehicles Available: No Vehicles	Vehicles Available: One Vehicle	Vehicles Available: Two Vehicles	Vehicles Available: Three or More Vehicles
MACOG	\$65,264	5.2	15,683	72,653	87,961	49,253
Elkhart County, IN	\$61,182	5.4	5,932	21,451	27,835	16,125
Kosciusko County, IN	\$66,764	5.4	1,590	8,738	12,235	8,449
Marshall County, IN	\$58,296	5.2	1,033	4,725	6,403	4,704
St Joseph County, IN	\$58,599	5	7,128	37,739	41,488	19,975

Major Employment Clusters

Major employers of the region are in the manufacturing, health, and education sectors. Large employers include Thor Industries, Inc., Forest River, Inc., Lippert Components, Inc., and the Beacon Health System in Elkhart County; Zimmer Biomet Holdings, Inc., DePuy Synthes, and KCH/Lutheran Health in Kosciusko County; Culver Academies, Nishikawa Standard, and Plymouth Community School Corporation in Marshall County; and University of Notre Dame, Msm Holdco, LLC, and Saint Joseph Regional Medical Center, Inc in St. Joseph County.

There have been several significant announcements of new employers in the region, including Amazon which will create an additional 1,000 jobs in Elkhart County and General Motors and Samsung Electric Vehicle Battery Plant, slated to create 1,600 new jobs in St. Joseph County.

In the MACOG region, two major industry sectors stand out: Manufacturing and Education & Health Care (as seen in Figure 2-8). Combined, these sectors employ over 50% of the regional workforce. Looking closely at each county, a diverse sector breakdown emerges, illustrating the region's vibrant economy. Analyzing employment by occupation data provides valuable insights into the economic resilience of both the region and its counties. Notably, the manufacturing industry plays a significant role in Kosciusko (21.4%),

Marshall (18.7%), and Elkhart (18.5%) Counties, indicating consistent employment patterns. Conversely, St. Joseph County's employment by occupation breakdown offers a more balanced perspective, hinting at varied employment opportunities possibly influenced by its urban context.

Commuting Characteristics

The commuting data sheds light on transportation preferences within the MACOG region and its counties (Figure 2-9). Notably, driving alone remains the dominant choice, particularly in urban areas like Elkhart County and St. Joseph County. Work-from-home arrangements have gained prominence, reflecting evolving work trends. Walkability emerges as a notable trend, with St. Joseph County leading in this category. Bicycling also sees adoption, especially in Elkhart County and Marshall County. Public transit sees varied utilization, most notably in St. Joseph County. Carpooling shows participation, particularly in Elkhart County and Kosciusko County. Overall, the data highlights the importance of diverse transportation options and offers insights for promoting sustainable mobility strategies across the region.

Figure 2-8: Employment by Sector

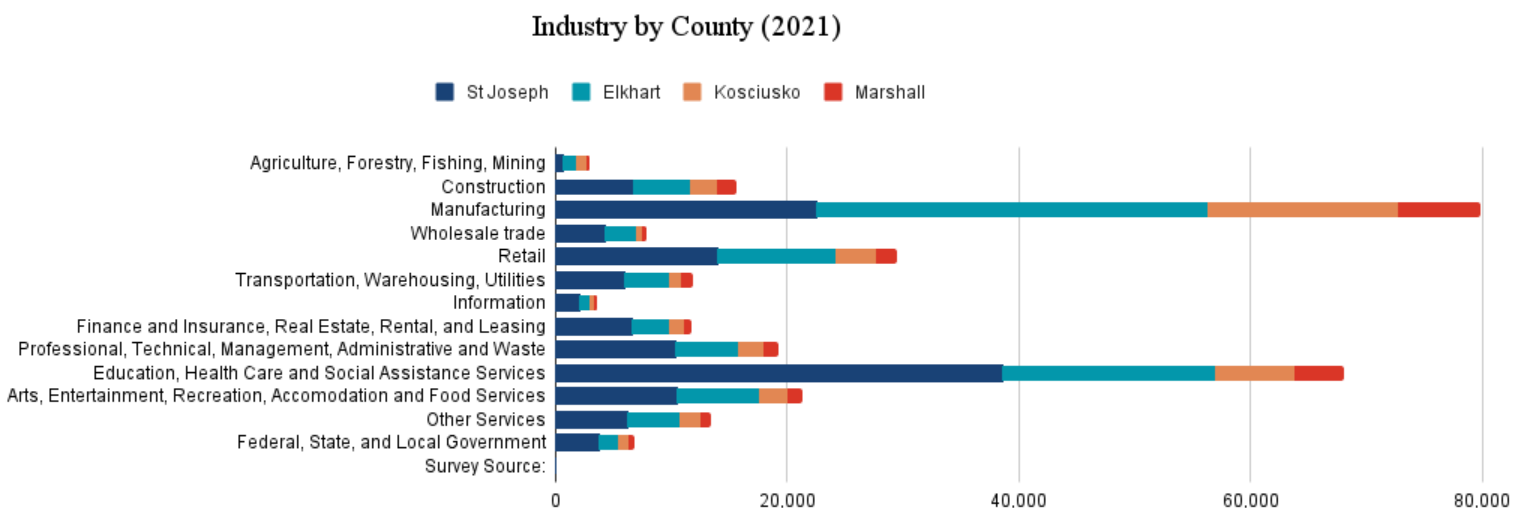
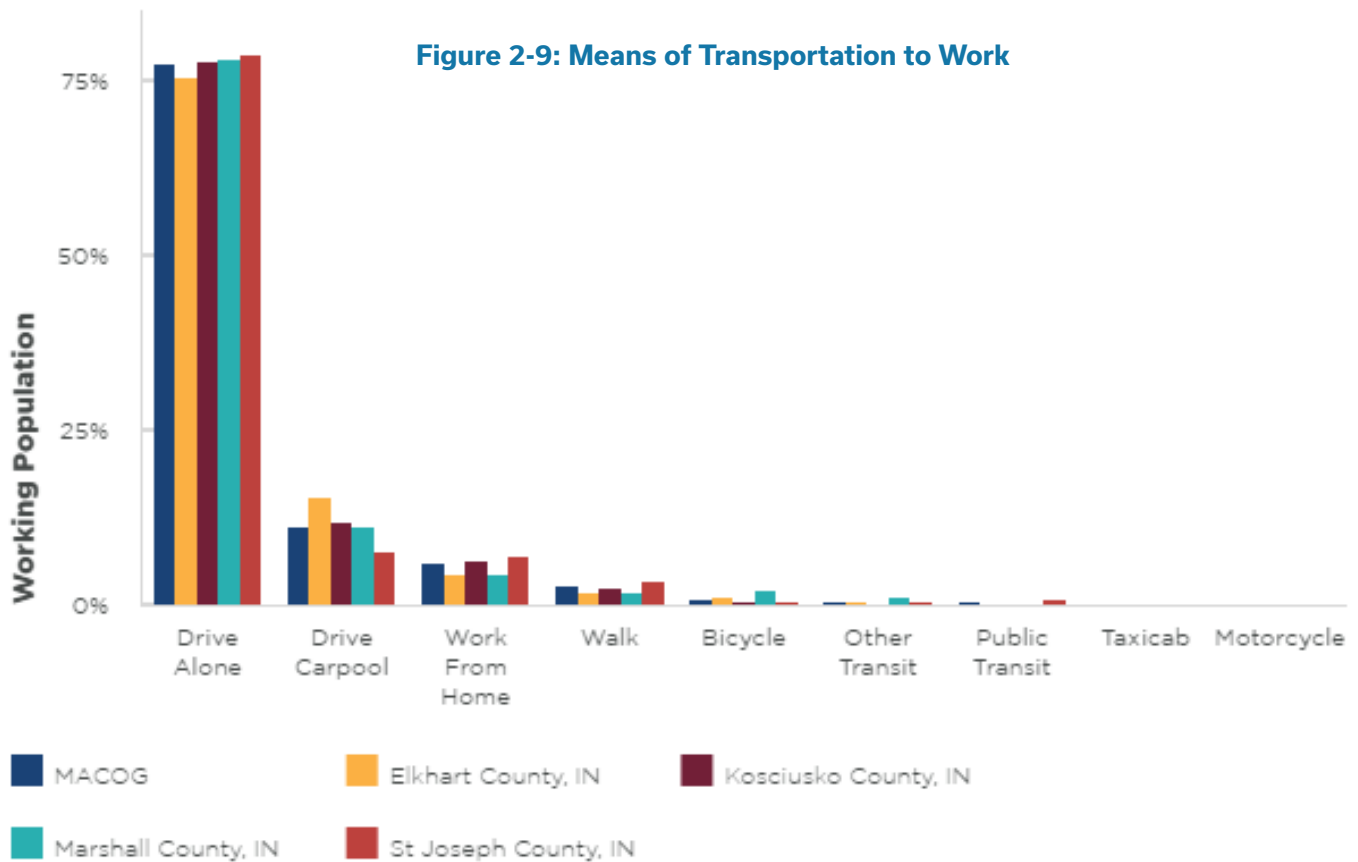


Figure 2-9: Means of Transportation to Work



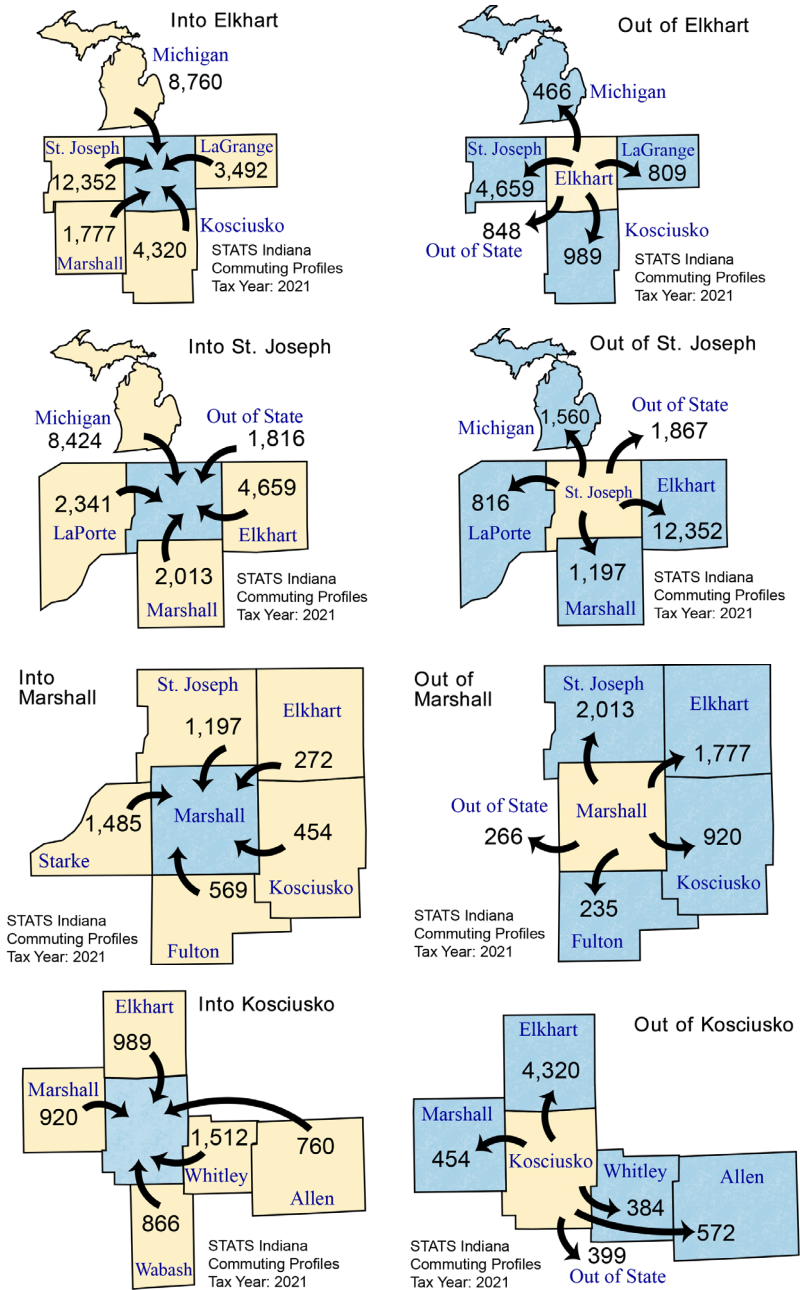
Sources: US Census Bureau ACS 5-year 2017-2021

Commuting Flows

Traffic flow commuting profiles can be used as one way to understand how traffic moves throughout Elkhart, Kosciusko, Marshall, and St. Joseph County. Understanding traffic flows between counties is important for planning future transportation needs. Elkhart County and St. Joseph County are major employment centers for the region, attracting 30,701 and 19,253 commuters respectively. Based on Indiana IT-40 2021 Tax returns, a little over 82% of Elkhart and St. Joseph County workers have jobs located within their county of residence. Of the remaining 18%, generally 17,011 workers, or 30%, travel between Elkhart and St. Joseph County to work. The remaining workers commute to Michigan and the surrounding counties including LaGrange, Kosciusko, Marshall, and LaPorte Counties.

Marshall and Kosciusko County exhibit different travel patterns, with a slightly higher percentage of workers commuting to other counties. In both, there are more commuters traveling outside the county to work than those traveling into the county to work. In Marshall County, 83% of workers stay in the county for work. The majority of the remaining workers commute to St. Joseph, Elkhart, and Kosciusko Counties. Kosciusko County retains 86% of workers, while 14% of their workers travel to the surrounding counties with the majority of these workers commuting to Elkhart County. See Figure 2-10 for the maps of the regions commuting patterns.

Figure 2-10: Commuting Flows



Broadband and Remote Work Capabilities

High-speed internet access is a crucial service for residents and businesses in any community, as people increasingly rely on online services for everything from remote work and schooling to virtual home health care. As mentioned in the MACOG’s Comprehensive Economic Development Strategy report (CEDS), an extensive fiber-optic network is currently available in St. Joseph County, along with a smaller-scale network in Marshall and Elkhart counties. However, many of the rural areas do not have access to the same level of broadband service as the urbanized areas. Additionally, the United Health Foundation found that Indiana as a state ranks just 37th nationwide for percentage of the population with access to high speed broadband internet via computer, smartphone or tablet (currently 86.4 percent), one of the social determinants of health. MACOG conducted a state of digital inclusion with Purdue University to assess existing supply and demand. In the MACOG region, 12.7% of households have no internet access and 9.1% of households have no computer.

Connectivity and Accessibility

Efficient transportation networks play a pivotal role in enhancing the quality of life by connecting residential neighborhoods, commercial areas, and recreational facilities. A well-connected network accommodates diverse transportation modes, boosting reliability and efficiency. The Michiana area’s strategic location offers excellent accessibility to major regional cities like Chicago, Indianapolis, Detroit, Toledo, and Fort Wayne, all within a 3-hour travel window via interstates and highways such as I-80/I-90, US 31, and US 30. This connectivity not only benefits local residents but also facilitates the movement of goods for manufacturers and warehouses.

The region's local road network contributes to efficient commutes, with average travel times below the national mean of 27.6 minutes (2021). Most commuters within the region experience a commute of 24 minutes or less. Elkhart County boasts the shortest mean travel time to work at 19.4 minutes, while Kosciusko County follows closely at 19.6 minutes. St. Joseph County and Marshall County have slightly longer mean travel times at 21.2 and 23.3 minutes, respectively. Notably, Kosciusko and Marshall Counties have the highest percentage of workers with commutes under 10 minutes, while Elkhart and St. Joseph Counties show a greater percentage of commuters with travel times between 15 and 19 minutes. This efficient network of roads contributes to accessible and streamlined daily commutes for the region's residents.

Education

The educational attainment data provides valuable insights into the educational landscape of the MACOG region and its counties. High school degree holders form a significant portion of the population, with variations ranging from 29.6% in St. Joseph County to 37.1% in Marshall County. Notably, Elkhart County, Kosciusko County, and St. Joseph County exhibit substantial percentages of bachelor's degree holders, suggesting a focus on higher education and skilled workforce development. St. Joseph County stands out with the highest percentage of graduate degree holders (13.0%), indicating a strong emphasis on advanced education. These educational trends reflect a region with diverse opportunities for education and workforce development, potentially influencing the region's economic prospects and competitiveness.

Economic Resiliency

The comparison across the MACOG region and its counties reveals key indicators of economic resiliency and growth. Notably, housing supply and vacancy trends show a region that can swiftly adapt to changing demand, reflected in the decrease in household vacancies between 2010 and 2020. Commuting characteristics underscore a commitment to sustainable mobility strategies, with work-from-home arrangements and increased bicycle and public transit usage. Educational

attainment data demonstrates the region's investment in higher education, as seen in the significant percentages of bachelor's and graduate degree holders, implying a skilled and competitive workforce. Moreover, the emphasis on broadband access highlights a forward-looking approach to technology and communication infrastructure, aligning with future economic demands. These factors together portray a region poised for sustained growth, with a resilient approach to change, a skilled workforce, and infrastructure readiness. The MACOG region and its counties exemplify a proactive and adaptable strategy for economic prosperity.

Environmental Trends

The ongoing issue concerning changing climate is projected to affect not only us individually, but many aspects of our society including our water resources, human health, vital infrastructure, agriculture, economies, energy use, urban environments, and ecosystems.

Increasing Temperatures

There are multiple sets of data trends that show that there are no signs of declination of temperatures. Temperature increases have become more intensified in the last decade, which can be experienced in every season in the region. Annual average temperature is an overall indicator that is looked at to identify extreme years and detect short- and long-term trends. Annual average temperatures have had record breaking occurrences many times in the last decade. Temperature increases bring stress and challenges to agriculture with lengthening growing seasons, diminishes air quality, extends allergy seasons with increased frost-free days, and many more effects to human health and the environment.

Extreme Weather Events

As temperatures increase the amount of precipitation that falls is also increasing. Average annual rainfall has increased by 1.33 inches per decade across Indiana. This trend is expected to continue, as well as changes in the type of precipitation and when it falls; meaning precipitation can occur in different seasons As the climate warms, rainfall will take the place of what would generally be much of the snowfall that

occurs in the cold season for the region. The wetter winters and springs would ultimately increase the risk of extreme weather events such as the risk of flooding. Our region has experienced significant flooding events over the past decade. When flooding occurs, there are significant impacts on vulnerable transportation assets and the ability for people to move efficiently throughout the region. Thus, it is an important consideration to ensure transportation infrastructure resilience is being planned for and discussed in a changing climate.

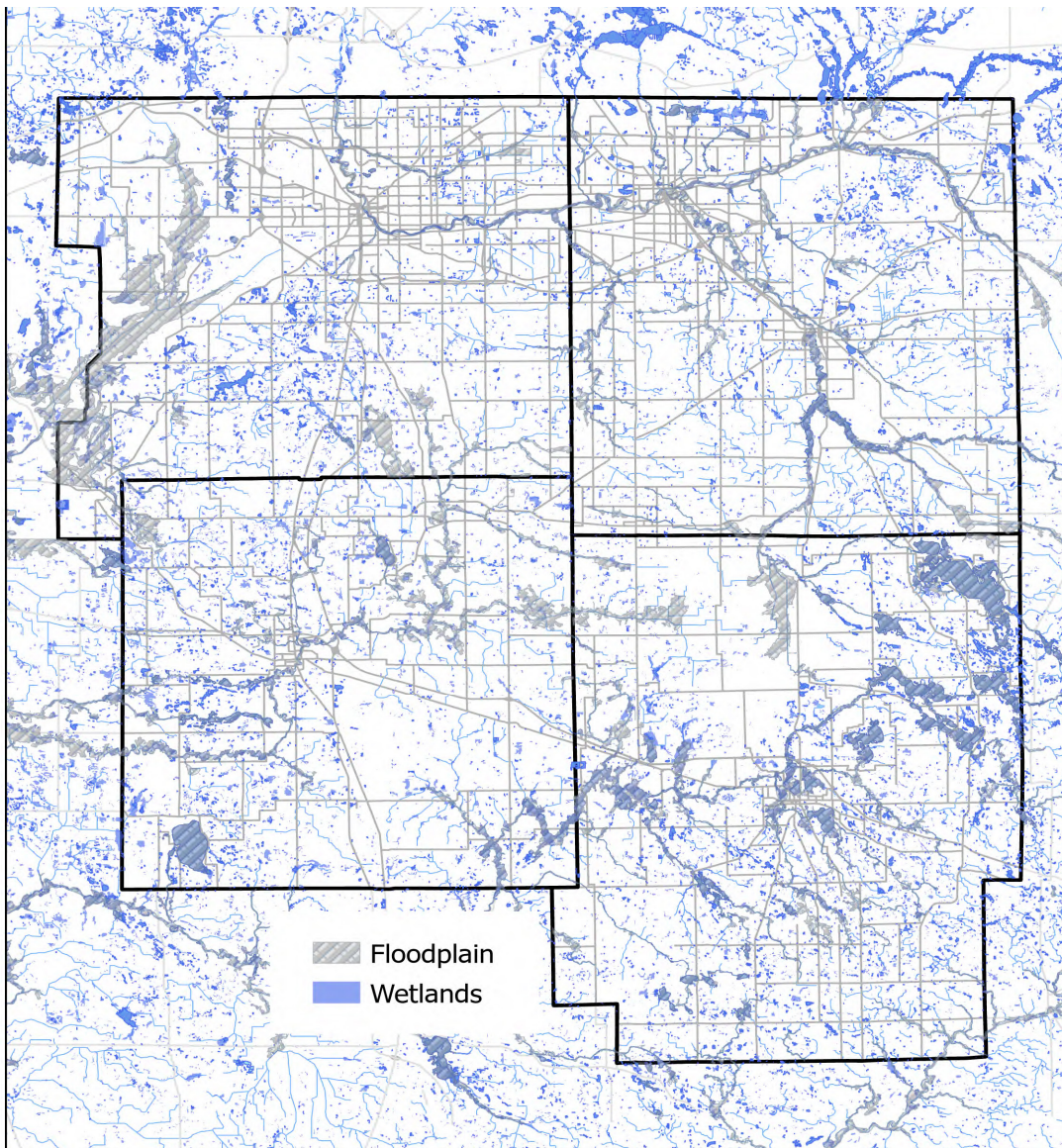
Figure 2-12 illustrates the floodplains and wetlands that exist in the region.

Figure 2-11: 2018 Flooding in South Bend



Source: WVPE

Figure 2-12: Map of Wetlands and Floodplains

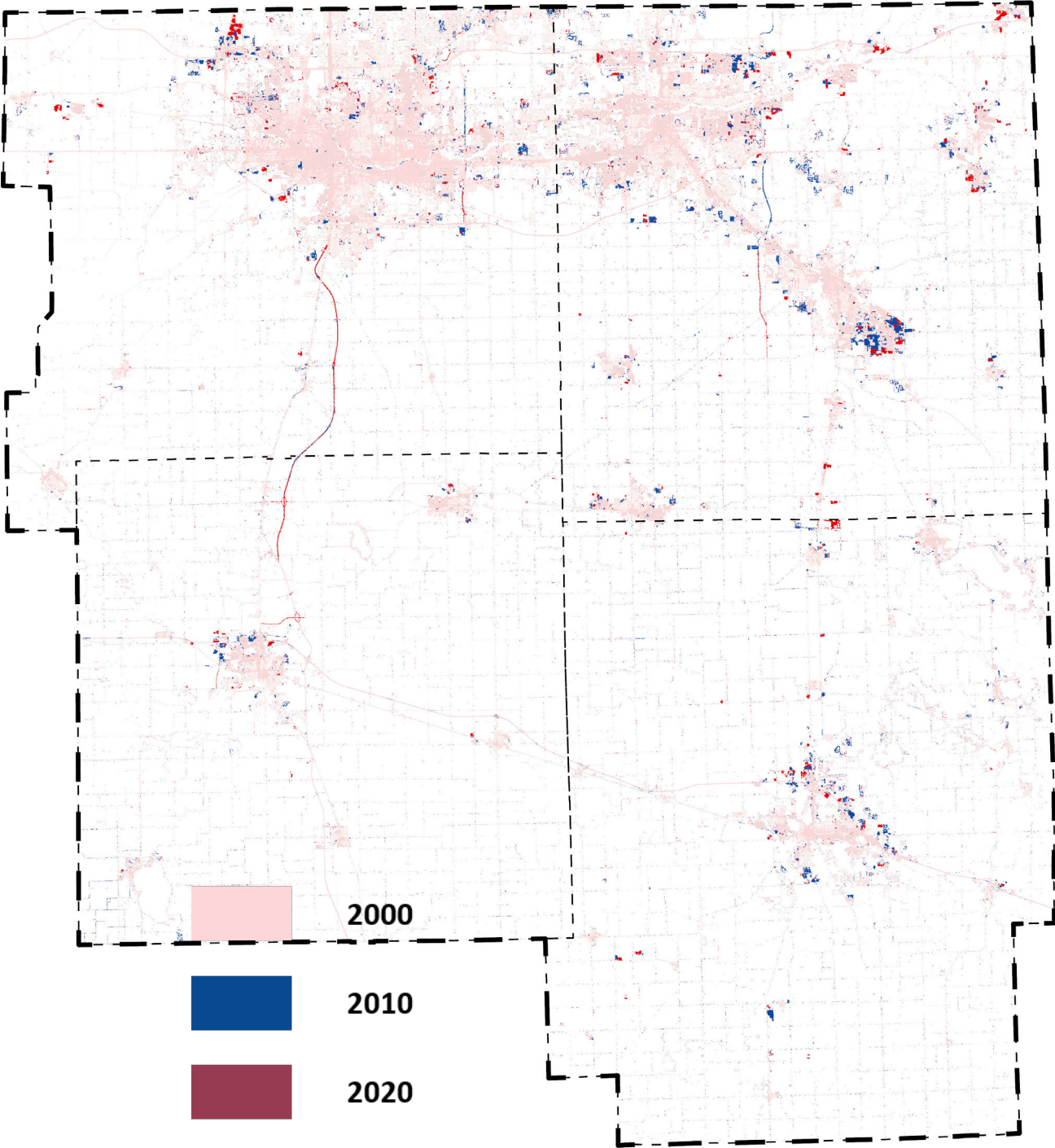


Land Coverage Change

Land coverage change provides insights on possible environmental impacts as well as previous growth trends throughout the region.

Figure 2-13 depicts the change in land cover over the past 20 years.

Figure 2-13: Map of Land Coverage Change Over Time





03

Transportation Network



03

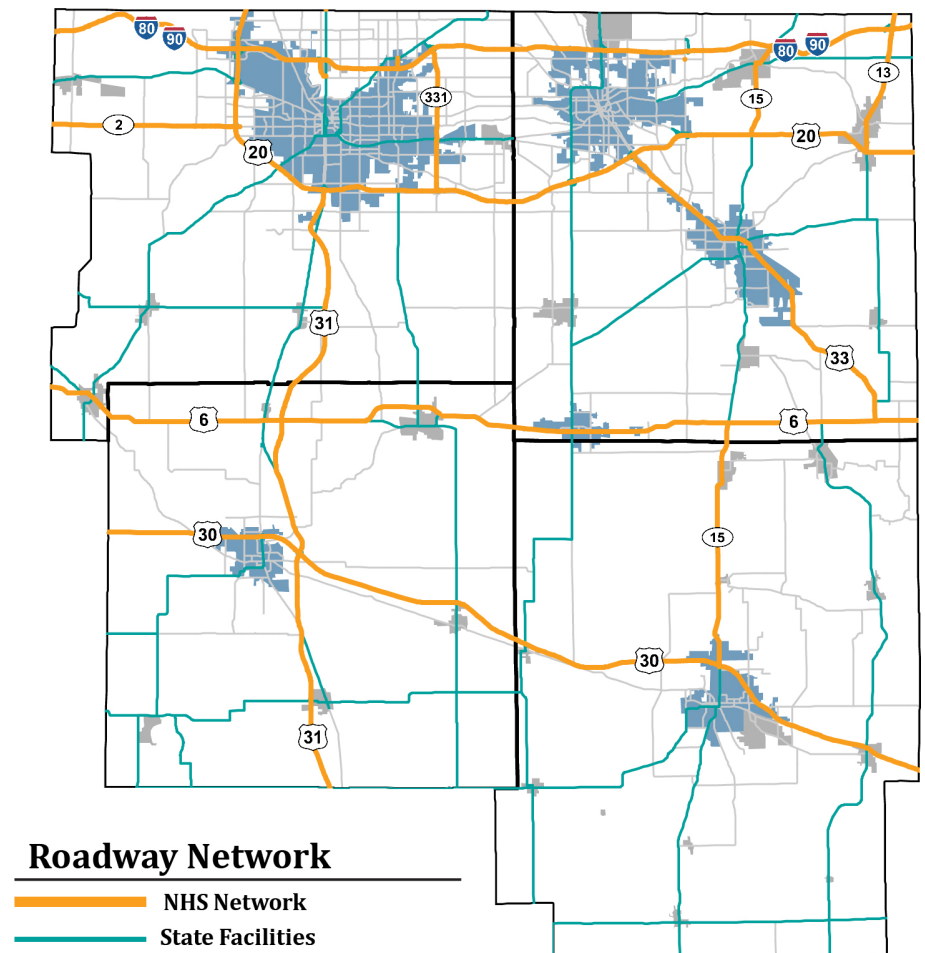
Transportation Network

Social and economic characteristics can influence the demand on the transportation system. More people, more jobs, or more economic successes can result in higher traffic volumes and increased development. The 2050 Transportation Plan analyzes the trends and projections of social and economic characteristics, in order to better understand the future demand on the regional transportation system. The transportation network is more than roads and highways; it includes public transportation, bicycle and pedestrian paths and the movement of freight. It is not just one of these elements, but all of them working together, to create an efficient and effective transportation network for people and products to move throughout the region. Figure 3-1 shows the major roadways within the MACOG region.

Roads and Highways

The MACOG region comprises over 6,548 miles of roadway, providing connectivity and access, both locally and regionally. At its most basic, the roadway network can be separated into three categories: the national highway system, state facilities, and local facilities. Furthermore, roadways are functionally classified, based upon their intended character of service, into interstates, expressways, principal and minor arterials, major and minor collectors, and local roads. The transportation network is always evolving and because of this, it is important to identify and address changes, challenges, and opportunities that might occur in the future through the visioning of the transportation planning process.

Figure 3-1: Roadway Network



National Highway System

The National Highways System (NHS) contains roads and highways important to the nation's economy, defense, and mobility and therefore should be given the highest priority for improvements and repairs. Within the MACOG region there is one corridor that is part of the Eisenhower Interstate System: I-80/I-90 (Indiana Toll Road). This interstate runs through the northern portion of the region, traveling from California to New York. Other highways that are part of the NHS include US 6, US 20, US 30, US 31, US 33, SR 2, SR 13, SR 15 and SR 331.

Regional State Facilities

State highways are generally a mixture of primary and secondary roads intended to provide regional

connectivity between the cities and towns within the state. For the MACOG region, SR 2, SR 4, SR 10, SR 14, SR 25, SR 110, SR 120, SR 933 (Lincolnway), US 6, US 20, and US 30 provide east-west connections inside and outside the region. For north-south connection, SR 13, SR 15, SR 17, SR 19, SR 23, SR 331, US 31, and US 33 provide connection inside and outside the region.

Local Facilities

The Michiana area has an extensive network of arterial and collector roadways that provide access and connectivity for a high volume of vehicular traffic. These networks are extended to other smaller incorporated towns and cities, accommodating travel demand. In total, 35 cities and towns are connected by the network within the MACOG region.

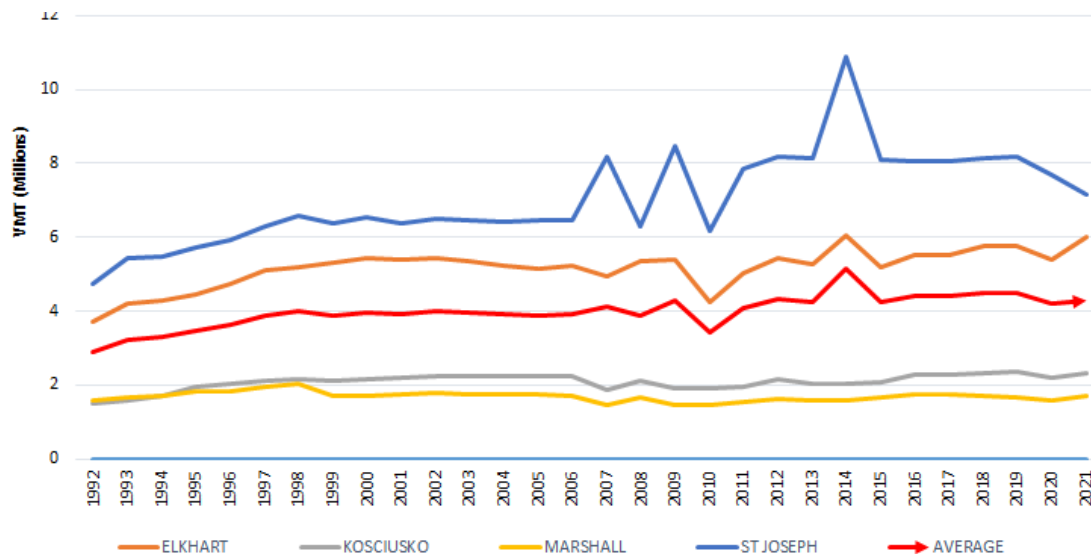
Vehicle Miles Traveled

Vehicle-miles traveled (VMT) is an indicator of road network usage as it measures the distance in which vehicles travel over a particular length of time. VMT is a measure used in transportation planning for a variety of purposes. It measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one-year period. The Federal Highway Administration has kept records of VMT on a monthly basis since

1970. In 2007, the national level of VMT hit an all-time annual high since the start of this record keeping. By 2008, nationwide VMT dropped for the first time since 1980, and continued to flatline due to economic and social factors. Since 2015 however, VMT has steadily been increasing due to a recovering economy.

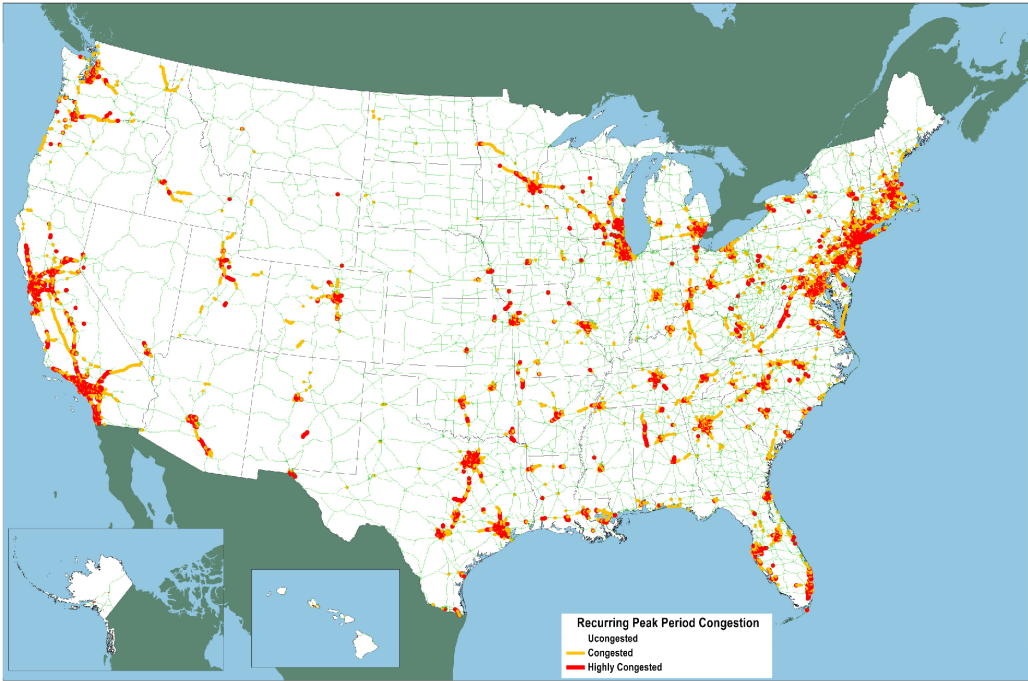
Since 1992, The MACOG Region has seen a general increase in VMT, which is shown in Figure 3-2. A plateau occurred in the late 1990's and lasted until the mid 2000's. After the late 2000's Great Recession, a slight upward trend in VMT occurred to where we are today with an average of 4.2 million VMT across all four MACOG counties. As of 2021, the vehicle-miles traveled within the MACOG Region was 17.2 million miles, which is up from the 2020 year, which was 16.9 million miles. Higher VMT numbers creates more congestion, thus putting a strain on the network in the form of reduced speeds and longer travel times during peak period travel. Figures 3-3 & 3-4 show 2012 and 2045 peak period congestion on the NHS, respectively. Most of the peak period congestion occurs in larger metropolitan areas, however, as the transportation network and urbanized areas have expanded over the last 10 years, more road users have and will continue to add to peak period congestion.

Figure 3-2: Total Daily VMT by County



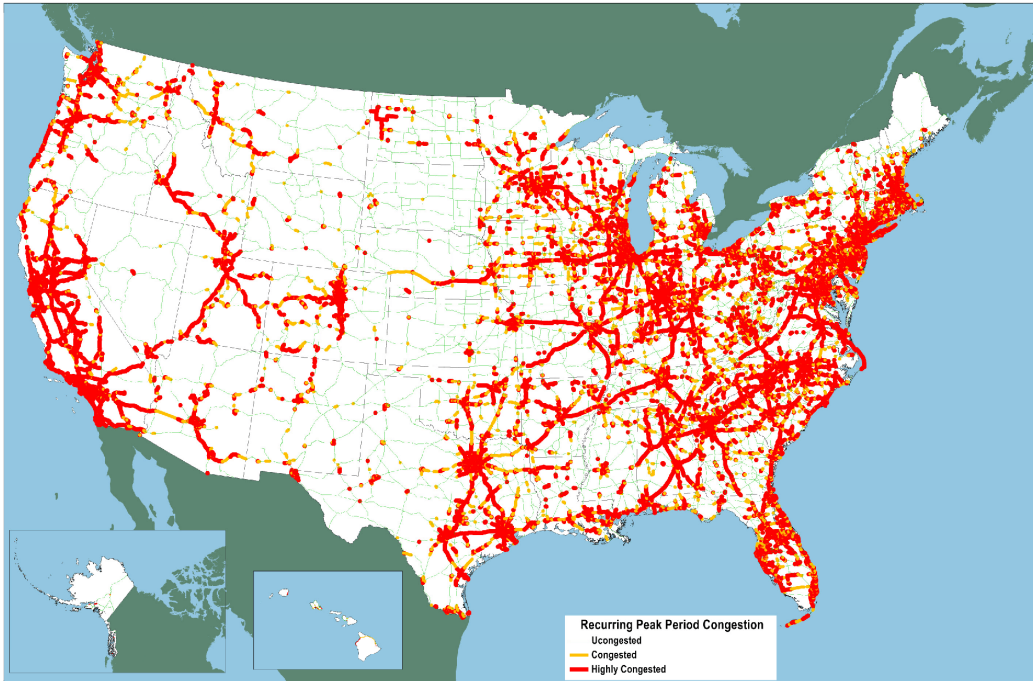
Source: 2022 INDOT

Figure 3-3: Peak Period Congestion on the NHS: 2012



Notes: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segment have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the HPMS Field Manual Appendix N
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 4.3, 2017.

Figure 3-4: Peak Period Congestion on the NHS: 2045



Notes: Highly congested segments are stop-and-go conditions with volume/service flow ratios greater than 0.95. Congested segment have reduced traffic speeds with volume/service flow ratios between 0.75 and 0.95. The volume/service flow ratio is estimated using the procedures outlined in the HPMS Field Manual Appendix N
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 4.3, 2017.

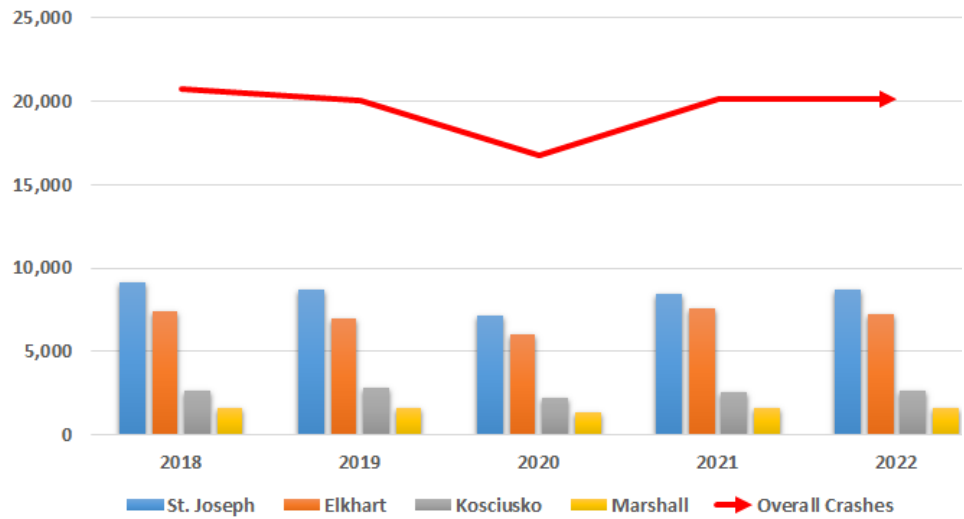
Safety

The MACOG Region has seen a slight decrease in overall crashes from 2018 through 2022 (Figure 3-5). An anomaly occurred between 2019 and 2021; there was a 16% drop in crashes from 2019 to 2020, and a 17% jump between 2020 and 2021. This is likely due to the COVID-19 pandemic and subsequent shutdown, which reduced the amount of roadway users, therefore, dropping the overall amount of crashes during this timeframe.

Over the last 5 years in The MACOG Region, there was an average of 19,563 total crashes, meaning nearly **54 crashes** occurred every day. Every crash is recorded by the seriousness of the injury sustained. They are labeled as serious injury (fatal & incapacitating), non-serious injury (non-incapacitating & possible), or property damage only. There is a focus on serious injury crashes, as improvements to the road network can help prevent these types of injuries, making roads safe for all users.

Figure 3-6 shows breaks down the overall crashes by type. Of all of those crashes, **6,397 crashes involved serious or fatal injuries, which accounts for 6.54% of the total crashes reported.** St. Joseph County accounted for the majority of these crashes over the 5 year period, with the highest average property damage only and possible/non-incapacitating/incapacitating injury crashes. Elkhart County did see the highest average fatal injury crash rate at 29 over the same 5 year period. An overall drop in incapacitating injury crashes (and subsequent increase in non-incapacitating injury crashes) seemed to occur from 2021 to 2022 in 3 out of the 4

Figure 3-5: Total Crashes by County from 2018-2022



counties, although after further research, a policy change occurred with a new version of The Automated Reporting information Exchange System (ARIES) software in 2021, providing reporting agencies a different avenue to report suspected serious injuries. This is shown on Figure 3-7.

Through geographic information system applications, MACOG maps and analyzes the location of crashes in order to effectively determine which segments of roadway would most benefit from safety enhancements. MACOG continually strives to improve the safety of the transportation system within the region in order to reverse increasing crash rates.

Figure 3-6: Overall Crash Total by Type

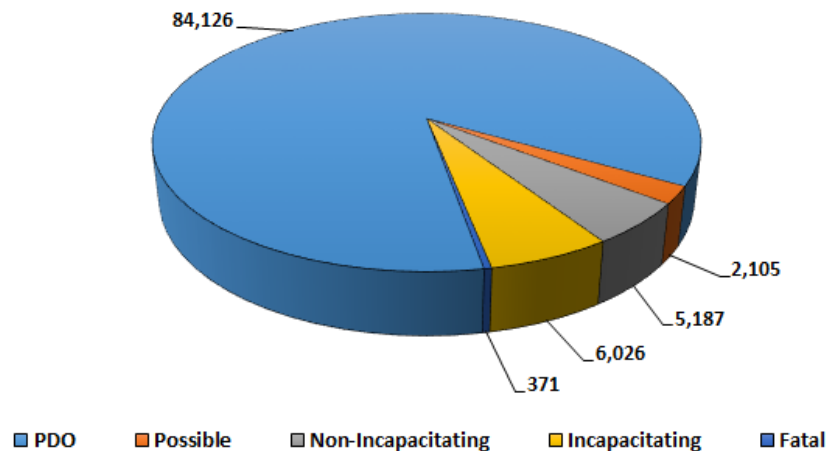
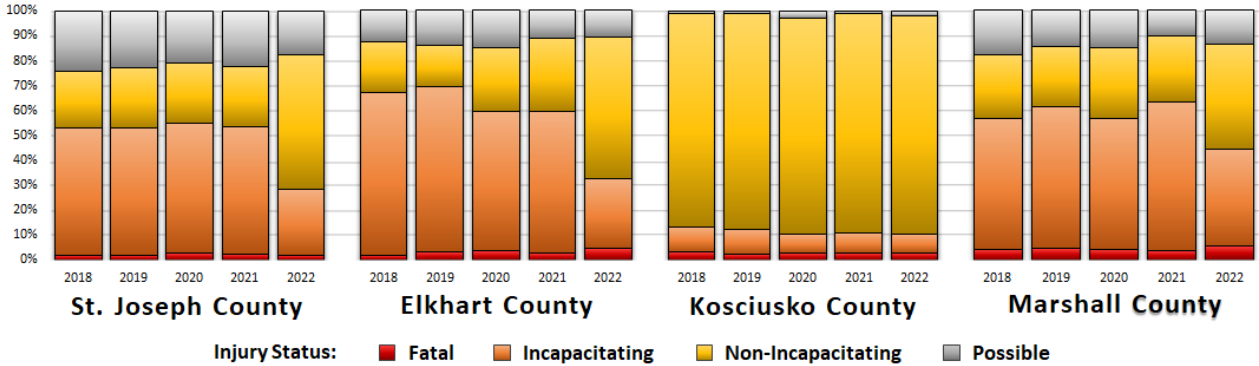


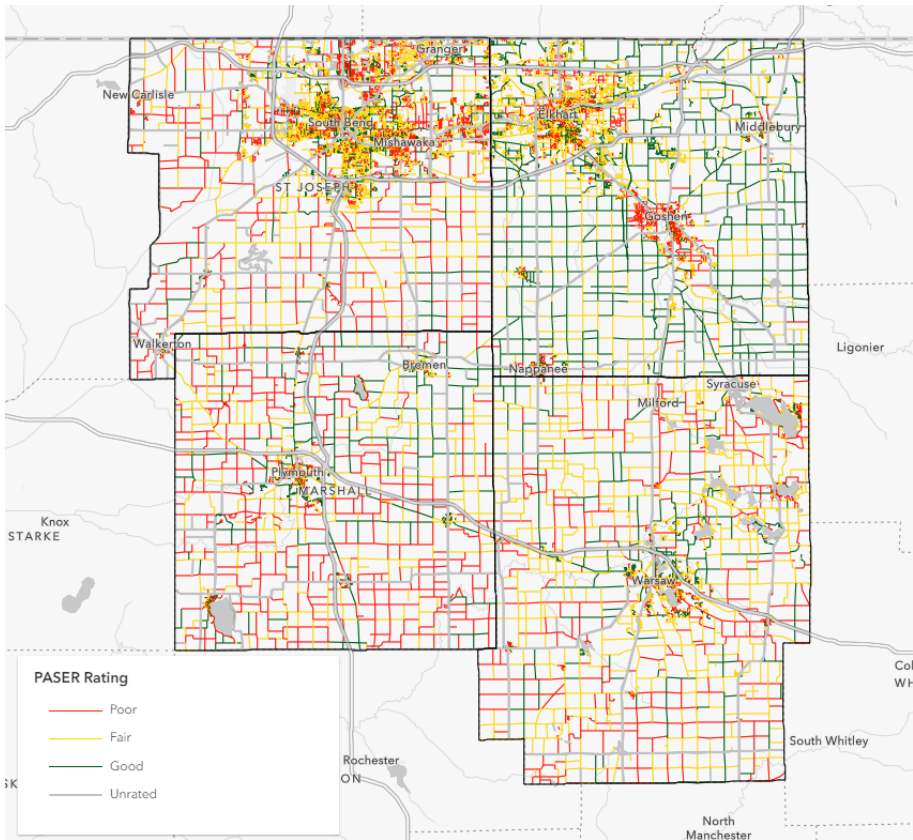
Figure 3-7: Percent of Injury Crashes by Type



SOURCE: AUTOMATED REPORTING INFORMATION EXCHANGE SYSTEM (ARIES)

Asset Management

Asset management provides local public agencies a method for compiling important information about their assets in order to be able to formulate quality management strategies for current and future periods. According to Federal Highway Administration (FHWA), “Asset management is a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the lifecycle of the assets at minimum practicable cost” (23 U.S.C. 101(a) (2), MAP-21 § 1103). The transportation network is a critical infrastructure asset for the region and local public agencies. Preservation and maintenance are key for ensuring that the network remains safe for travel, efficient, and reliable. Asset management can maximize life cycle costs, becoming a tool for cost effective practices. INDOT estimates that \$1 spent on pavement preservation can save \$6 to \$14 on future repairs. In 2016, INDOT introduced



the Community Crossing Matching Grant. With this grant, the state began to require asset management as a part of communities planning process in order to receive monies from this grant.

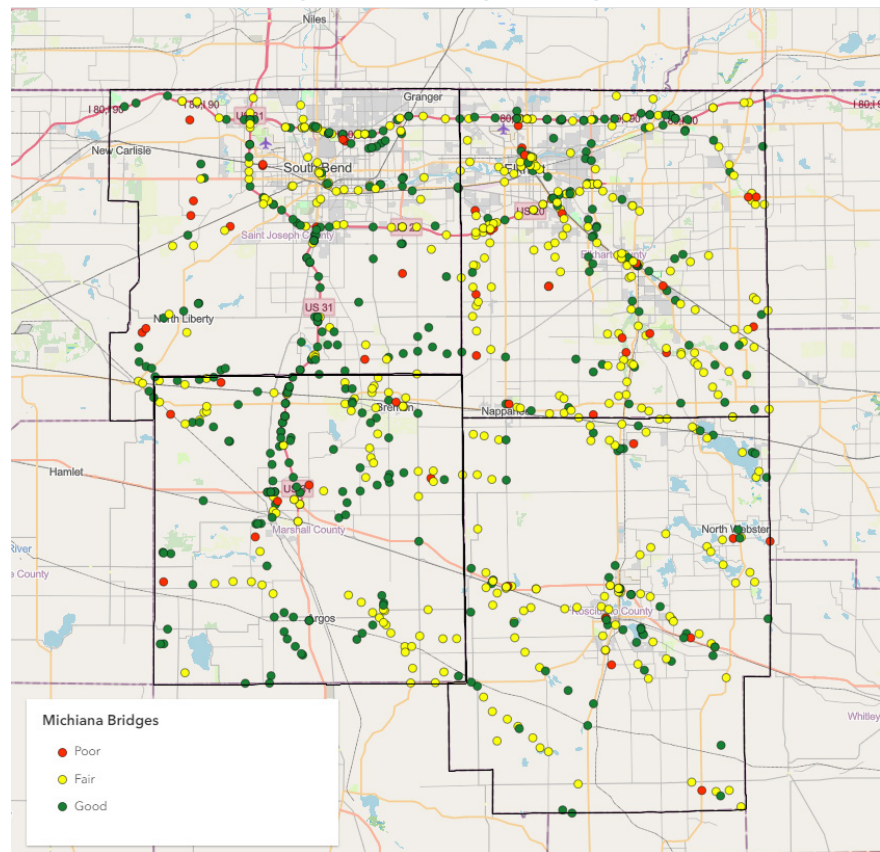
Since that time MACOG has trained and developed strategies to provide technical assistance to Local Public Agencies (LPAs) regarding asset management by teaching LPAs Pavement Surface Evaluation and Rating (PASER) techniques as well as helping them to understand how roadways deteriorate based on the type of wear visible on those roads. MACOG helps LPAs develop 5-year asset management plans in an effort to help the region maintain the roadway network in a strategic manner. With those partnerships, MACOG has worked to develop tools in which LPAs can more quickly visualize road repairs and estimate costs for appropriate fixes to those issues. Figure 3-8 shows road ratings throughout the region. As of 2022, roughly 25% of roads in the MACOG region are rated as GOOD (PASER 8-10), 45% are rated FAIR (PASER 5-7) and 30% are rated POOR (1-4).

Along with maintaining a regional database for road ratings, MACOG began an initiative in 2019 to maintain current and historical bridge ratings and statistics throughout the Region. In doing so communities are able to quickly reference the status of their bridges while also giving them the opportunity to perform analysis on bridge facilities they own in order to guide their decision making while preparing bridge asset management plans and applying for grants to rehabilitate or replace bridges in the transportation network. As of 2022 nearly 50% of bridges across The MACOG area are rated as FAIR, 45% are in GOOD condition, and 6% fall in the POOR category (Figure 3-9).

Public Transit

Public transit is an integral part of the transportation system, providing another mode

Figure 3-9: Bridge Ratings



choice for transportation. This includes providing options for senior citizens, the young, disabled and economically disadvantaged populations. Providing efficient public transit allows all populations access to businesses, health care facilities, employment, and recreation. For this reason, public transit is a crucial link to a stable economy and a better quality of life. Choosing public transit can also yield environmental benefits, lowering congestion and lessening automotive emissions.

Currently, those in the MACOG region are served by two fixed-route public transit services in the urbanized areas and a variety of travel options. Transpo provides fixed-route bus service throughout South Bend and Mishawaka. Transpo connects with Niles Dial-A-Ride (DART) to provide service into Niles, Michigan. The Interurban Trolley serves Elkhart, Goshen, and major points of commerce in between the two cities. Additionally, varieties of demand response services are available in Elkhart, Kosciusko, and Marshall Counties. Regionally, the Michiana area has access to two rail

transit services: the South Shore Line and Amtrak.

Transpo

Transpo operates twenty-one (21) fixed transit routes that serve the cities of South Bend, Mishawaka and Elkhart on 30 minute and 60 minute headways. Service runs Monday through Saturday with no service on Sundays. As of 2023, Transpo operates a fleet of fifty (50) revenue vehicles, all of which are Compressed Natural Gas (CNG) buses.

Over time, Transpo has seen fluctuations in ridership. This is largely due to economic and social factors as well as changes in service. Figure 3-10 illustrates Transpo’s ridership trend since 1996. Transpo reached their highest annual ridership numbers in 2007 at 3,480,510 patrons. Ridership had a significant drop from 2007 through 2009, where it plateaued until 2014 when a steady drop occurred. The lowest ridership since 1996 occurred in 2020 at 939,294 riders, but this was likely due to The COVID-19 pandemic and subsequent shutdown in the economy. Since then, there has been a rise back up above 1 million annual riders in 2022.

In addition to offering fixed-route service, Transpo also offers paratransit services, which covers a three-quarter of a mile corridor on either side of the transit routes. Transpo also provides four (4) Mishawaka School Tripper routes offered in mornings and afternoons during the school year. These are tailored towards providing students an

opportunity to use public transit to get to school. Beginning in 2013, a program allowed school age children unlimited travel during the summer for a discounted rate of \$30. In 2018, in order to introduce more K-12 youth to public transportation and increase access to employment, educational, and recreational opportunities, Transpo’s Free K-12 Summer Travel Program was introduced. This service provides free rides to students during the months of June, July and August. This program was expanded to the Interurban Trolley in 2019 and totaled over 31,000 rides.

Interurban Trolley

The Interurban Trolley is a fixed route bus service in Elkhart County, which was introduced in 1999. The Trolley operates a system of five (5) fixed routes (with a transfer point in downtown Elkhart), administered by MACOG. The Interurban Trolley provides easy and affordable public transit along the corridors connecting Elkhart and Goshen as well as major points of commerce between the two cities. In 2009, the Interurban Trolley added the Yellow Line, providing a viable connection to the South Bend and Mishawaka areas via a transfer point with Transpo. This, in turn, provides greater access and quality of life to & from the Michiana region.

The Interurban Trolley, since 1999, has seen a steady increase in ridership (Figure 3-11). This is likely due to adding additional fixed routes and realignments to the past system. The Interurban Trolley provided 470,394 unlinked

Figure 3-10: Transpo Annual Ridership Trend

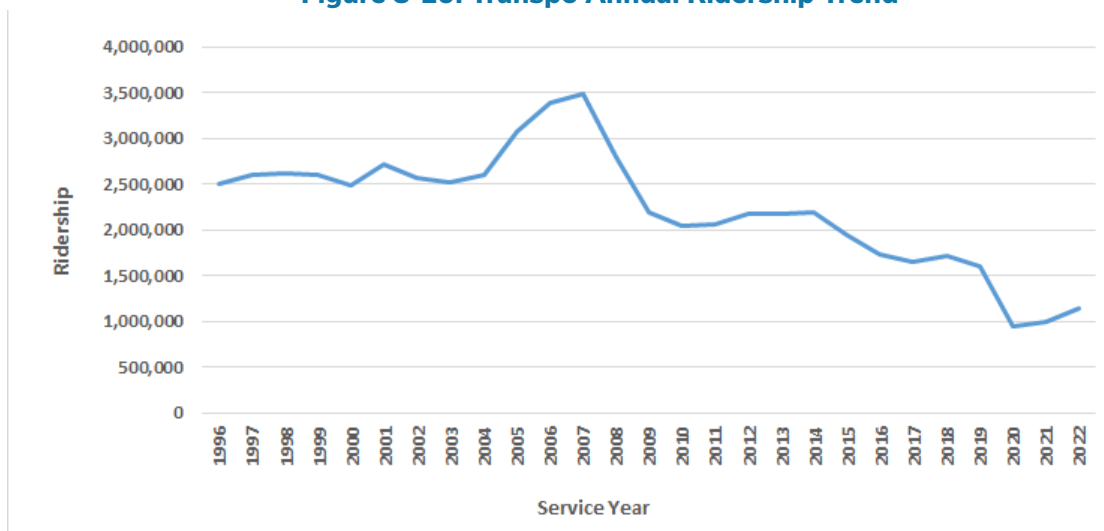
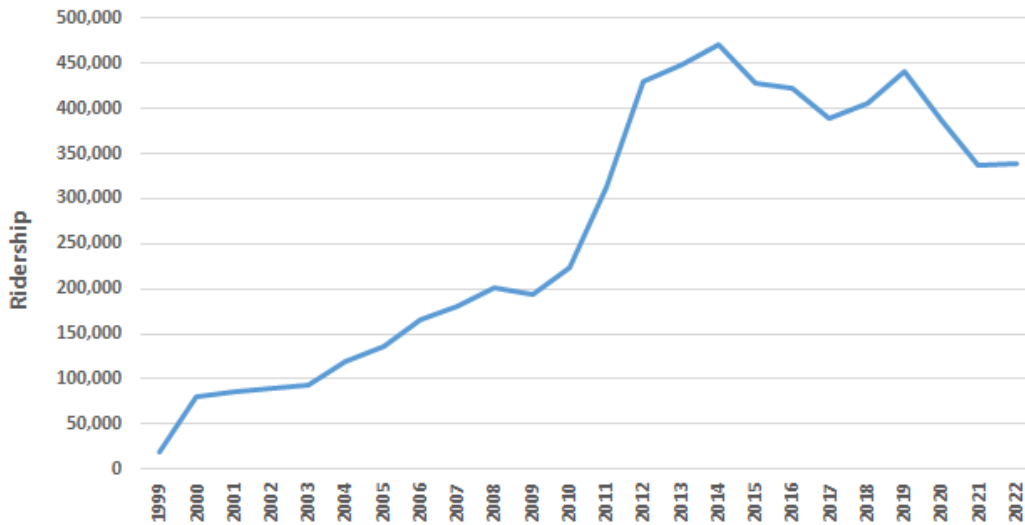


Figure 3-11: Interurban Trolley Ridership by Line



passenger trips in 2014, the highest annual ridership in its history. Ridership dropped to 389,896 in 2017 before breaking the 400,000 mark in 2018 and 2019. There was once again a drop in ridership between 2020 to 2022 to its last annual reported value of 338,606 in 2022.

In addition to offering fixed route service, the Interurban Trolley offers paratransit services in Elkhart and Goshen. In August 2013, the demand response services offered through the Heart City Rider (HCR) and the Goshen Transit Service (GTS) were discontinued, being replaced by what is now the Interurban Trolley Access service. The Interurban Trolley Access provides ten (10) ADA accessible vans for trips to disabled persons unable to use the Interurban Trolley fixed route system within the ADA Corridor. The ADA Corridor includes a 1.5-mile buffer on either side of the fixed transit routes. MACOG continually assesses the effectiveness and efficiency of the transit route system to ensure that the community’s needs are being met.

Connect Transit Plan

Starting in late 2021, MACOG and South Bend Public Transportation Corporation (Transpo), through a Federal Transit Authority (FTA) grant, conducted the CONNECT Transit Plan. CONNECT studied the Interurban Trolley and Transpo fixed route transit systems that service South Bend, Mishawaka, Elkhart, and Goshen in both St. Joseph and Elkhart counties. The plan looked at alternative ways to balance important but

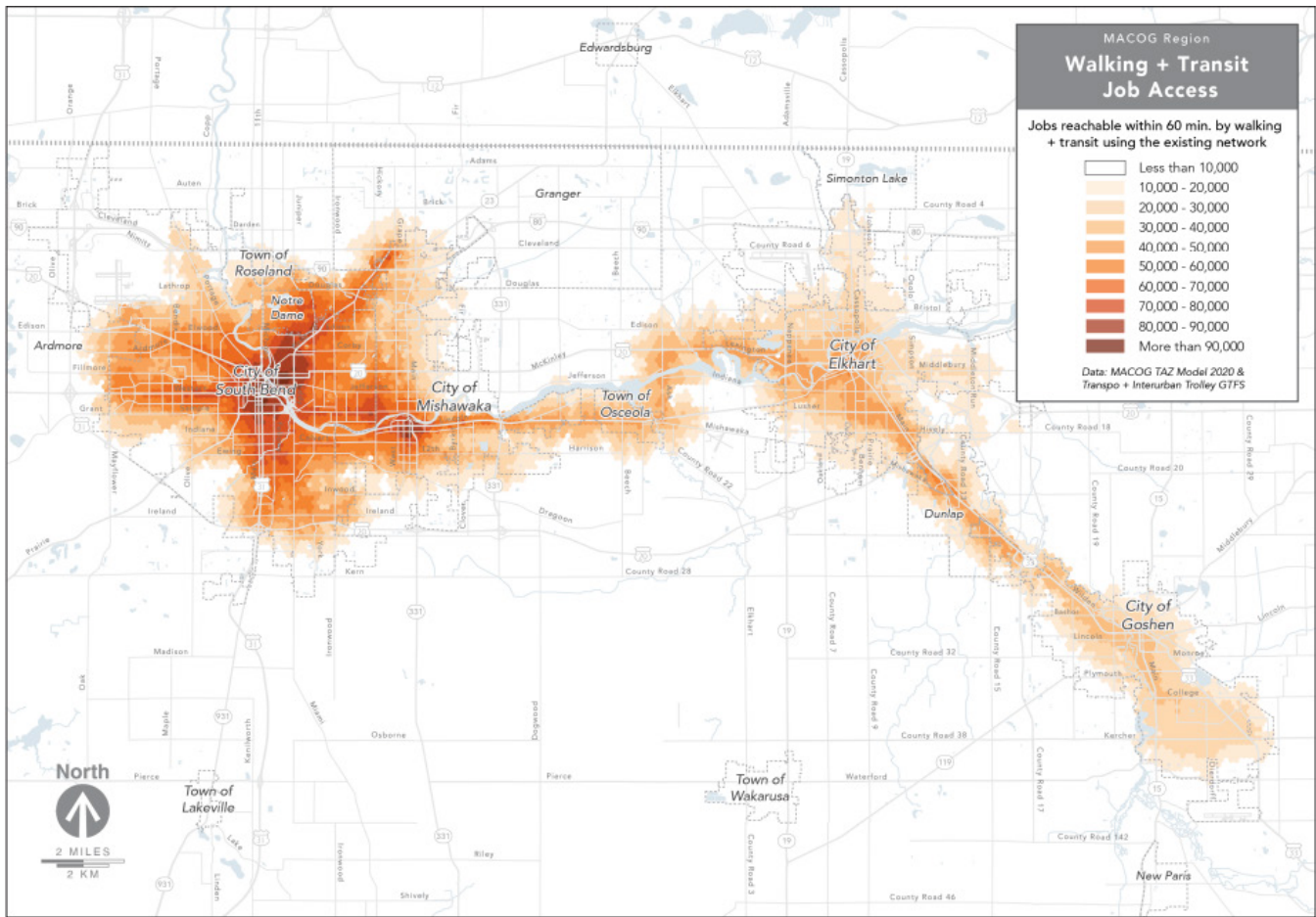
competing priorities, such as improving the frequency and span of service versus adding new service areas and new routes. This has resulted in a ten (10) year plan to improve transit services across the region. This plan was endorsed by both The Transportation Technical Advisory Committee (TTAC) and Policy Board meetings in March & April of 2023 respectively. The results from this plan can be viewed at www.connecttransitplan.com.

Public Demand Response Services

Demand response service is a non-fixed route system that requires riders to schedule trips ahead of time. There are four of these types of services in the MACOG region provided by the Kosciusko Area Bus Services (KABS), Marshall County Council on Aging, Elkhart County Council on Aging and Elder Haus.

The Kosciusko Area Bus Service (KABS) serves the entire Kosciusko County area. Their service has a fixed route but deviates from that route to requested stops within a pre-defined corridor. KABS operates on weekdays with a peak hour fleet of eight vehicles. The Marshall County and Elkhart County Councils on Aging operate transit services throughout their counties while Elder Haus provides service in the City of Nappanee. Their services provide trips during the weekdays to older adults who are no longer able to drive themselves. Other organizations, such as ADEC, provide additional transportation services to individuals needing assistance.

Figure 3-12: Walking & Transit Job Access



Job Access via Transit

As more and more of the population relies on our transit systems to access their places of employment, our transit systems will be used more frequently and will have to keep up with the need of use. Figure 3-12 shows the job access via walking and transit. There is a large population that can reach their jobs within 60 minutes of our existing network. Communities will continue to grow, therefore, forcing these transit systems to find ways to improve service, both efficiently and effectively.

South Shore Line

The South Shore Line, operated by the Northern Indiana Commuter Transportation District (NICTD), is a commuter rail service providing access from South Bend to Millennium Station in Chicago. The South Bend boarding site is located at the eastern point South Bend International Airport and links the South Shore Line with airline services

and other public bus services. Five (5) daily trains leave from South Bend bound to Chicago, with five (5) trains offering return service.

According to the South Shore Annual Ridership report, South Bend ridership decreased from 260,794 in 2017 to 246,661 in 2018, a 5.52% decline. As with other modes of transportation, ridership dropped significantly in 2020 due to the COVID-19 pandemic. This was the first time in over 10 years that annual ridership dipped below 100,000 passengers to 82,616. Since 2020, ridership has more than doubled to 176,631. Service improvements such as double tracking and the potential relocation of the South Bend Station aim to make the trip from South Bend to Chicago a 90 minute-commute.

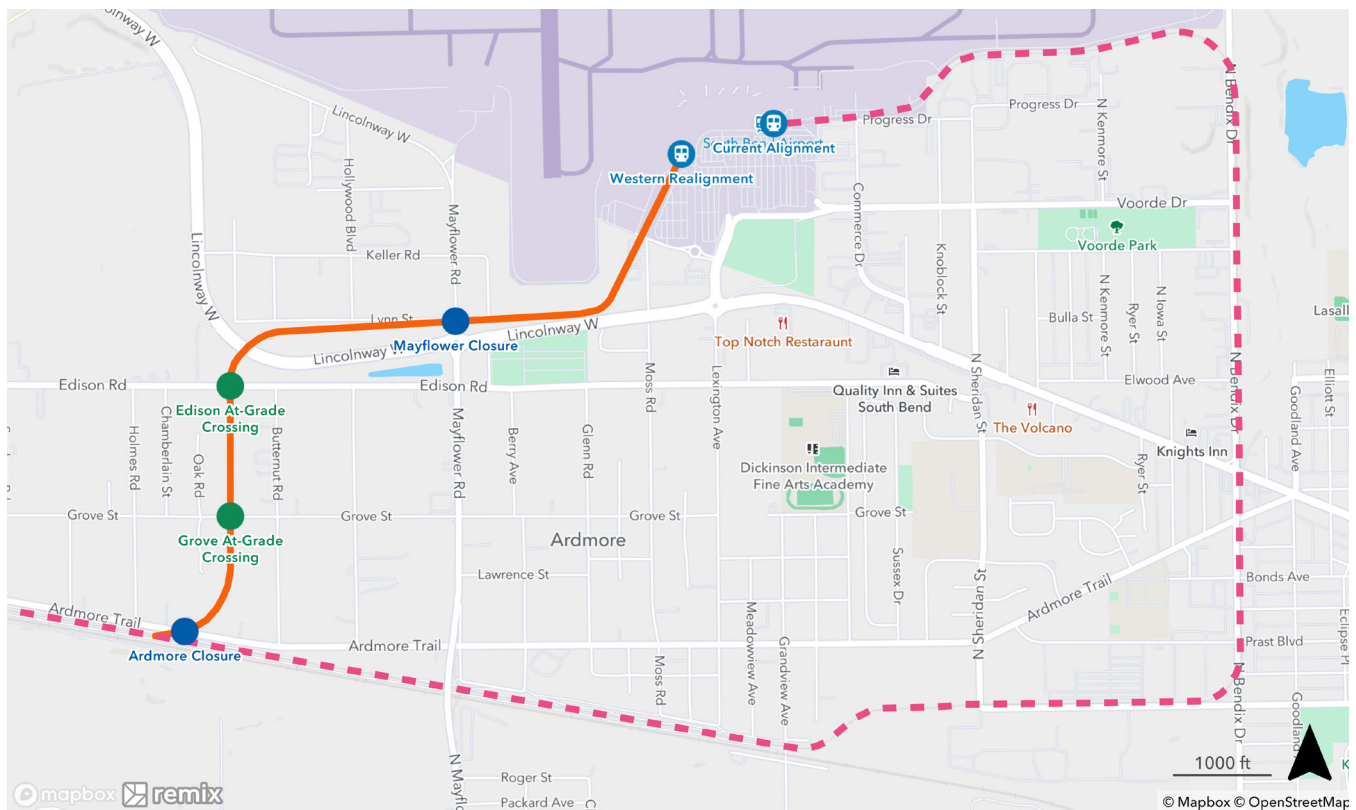
Since the early 1990s, when the transition from the current South Bend Amtrak station to The South Bend International Airport occurred, there

has been interest in once again moving The South Shore Line eastern terminus from the current location on the airport's east side. The main reasons for this renewed interest is due to the reduction in the number of at grade crossings and lessened travel time from South Bend to Chicago. After numerous studies over the last 3 decades, NICTD's board, in 2022, began pursuing a new project, relocating the eastern terminus to a new station on the airport's west side along with a new proposed train route. This new route would reduce at-grade crossings from twenty-two (22) to as few as three (3) and decrease travel time to Chicago's Millennium Station from between twelve (12) and fifteen (15) minutes (Figure 3-13). As of 2023, this proposed project is still being considered, with final engineering and procurement support expected by the end of quarter one in 2024. This proposed route would greatly improve safety within the transportation network and leave the opportunity to provide service to other proposed locations in the future.

Amtrak

Amtrak provides rail passenger service throughout the United States. Passenger stations within the MACOG region are located in South Bend and Elkhart. Two routes run along this line. Capitol Limited runs from Chicago to Washington D.C stopping at each station daily. Lake Shore Limited has daily service running from Chicago to Boston and New York. Both stations also serve 33 cities with direct service. Passenger volumes for both South Bend and Elkhart have consistently been near or above 20,000 annual passengers from 2016 through 2019. During the COVID-19 pandemic, numbers dropped significantly to 10,474 and 9,383 passengers in Elkhart and South Bend, respectively. Annual ridership has picked back up in 2022 to 16,157 in Elkhart and 18,484 in South Bend.

Figure 3-13: South Shore Line Realignment



High Speed Rail

An important development occurring in the Region and the Midwest is the configuration of a high-speed rail system. Studies are still being conducted as far as which tracks will be used, but the proposed system would connect Cleveland, Cincinnati, Detroit, Indianapolis, St. Louis, the Quad Cities, Milwaukee, and Minneapolis-St. Paul to a hub in Chicago with various stops in between, including stops in North Central Indiana (Figure 3-14). The Midwest Regional Rail Planning Study (MWRRP), led by the Federal Railroad Administration (FRA), aims to set forth a “strategic forty-year vision for the Midwest’s passenger rail network, addressing topics, including network configuration, service levels, financing, and governance.” The majority of high-speed trains on this network would travel at 110 miles per hour, consuming less fuel than slower rail and air transportation, and be a self-sufficient system unsubsidized by the government. Amtrak service

through Niles, Michigan has already been upgraded with track and signal improvements to provide high speed service (110 mph) on parts of the route, along with service in the US 30 corridor.

For economic development, several factors make high-speed rail an appetizing concept. The construction and operation of the system would create jobs and revenue for companies supplying equipment and services to the project, as well as after the project is complete. Also, high-speed rail offers decreased travel time, which means increased connectedness between the Region and nearby major cities – an attractive proposition for employers, employees, families, and travelers.

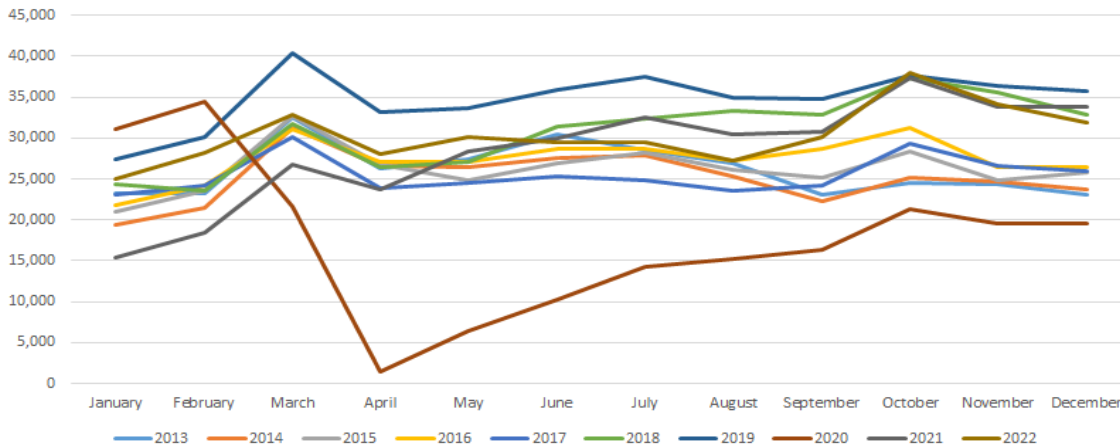
Aviation

There are a variety of airports located in the Region serving different purposes within the State and the Nation. There are five (5) general aviation airports, three (3) of which are regional, and two

3-14: Midwest Regional Rail Initiative



Figure 3-15: Monthly Enplanements at SBN



(2) of which are local. The regional airports are located in Elkhart, Goshen, and Warsaw and serve both regional and national markets with around 90 total base aircrafts. The local airports are located in Plymouth and Nappanee, serving local and regional markets with smaller aircraft. The only commercial service airport within the region is located in South Bend.

The South Bend International Airport (SBN) is also the only multimodal passenger facility operating in the Michiana area. In a true coordination of travel modes, the South Shore Line boarding station for train passengers is located at the east end of the SBN facility, while. Transpo city buses and private taxicabs board passengers along the arrival/departure drive. SBN is a full service commercial airport categorized as a Small Hub by the Federal Aviation Administration and consists of three active runways. Four commercial airlines operate from SBN providing links to hubs and destinations such as Atlanta, Chicago, Charlotte (VA) Dallas/Fort Worth, Detroit, Fort Myers/Punta Gorda, Las Vegas, Minneapolis, Orlando/Sanford, Phoenix/Mesa, Sarasota/Bradenton, and Tampa Bay/St. Petersburg.

With exception to 2020, there has been over 300,000 passengers enplaning at SBN, with spikes in March/April, as well as October. The highest passenger enplanement occurred in 2019 at 417,929, however, due to the COVID-19 pandemic and subsequent shutdowns across The United States, a 49% drop in enplanements followed in 2020. Since 2021, enplanements have rebounded

to pre-pandemic levels above 300,000 passengers. The South Bend International Airport provides a great impact to the region. It is estimated the Airport provides an economic benefit to the community in excess of \$1.7 Billion per year. With the change in designation from a regional to an international airport in April 2014, an even greater impact is being seen. These details are laid out in Figure 3-15.

Freight & Logistics

Road, rail, and air networks in the region serve freight and goods movement as well as passenger travel. Being able to provide a network that accommodates these movements efficiently is critical to the region’s economic well-being. In the Indiana Multimodal Freight and Mobility Plan updated in 2018, Indiana’s freight network is described as a “robust multimodal system comprised of highway, railroad, port and waterway, and air cargo facilities, as well as intermodal connections between each.” The MACOG region, in particular, experiences a high volume of freight traffic due to its highway and rail infrastructure.

Truck Network

Northern Indiana has many heavily traveled roadways especially relating to freight movement. According to the 2018 Indiana Multimodal Freight and Mobility Plan, “Indiana’s freight flow is projected to continue to grow substantially over the coming, with all counties in The MACOG Region growing over 50%.” The largest growth

in our region is in Elkhart County, which by 2045 is projected to grow over 20,000 kilotons; this can be attributed to The Norfolk Southern Auto Terminal. Marshall County is expected to see over 67% growth as it hosts seven state roads and four railroad companies with active rail lines. Marshall County, along with Kosciusko County, are expected to see higher growth with the ProPEL US 30 study that is currently taking place.

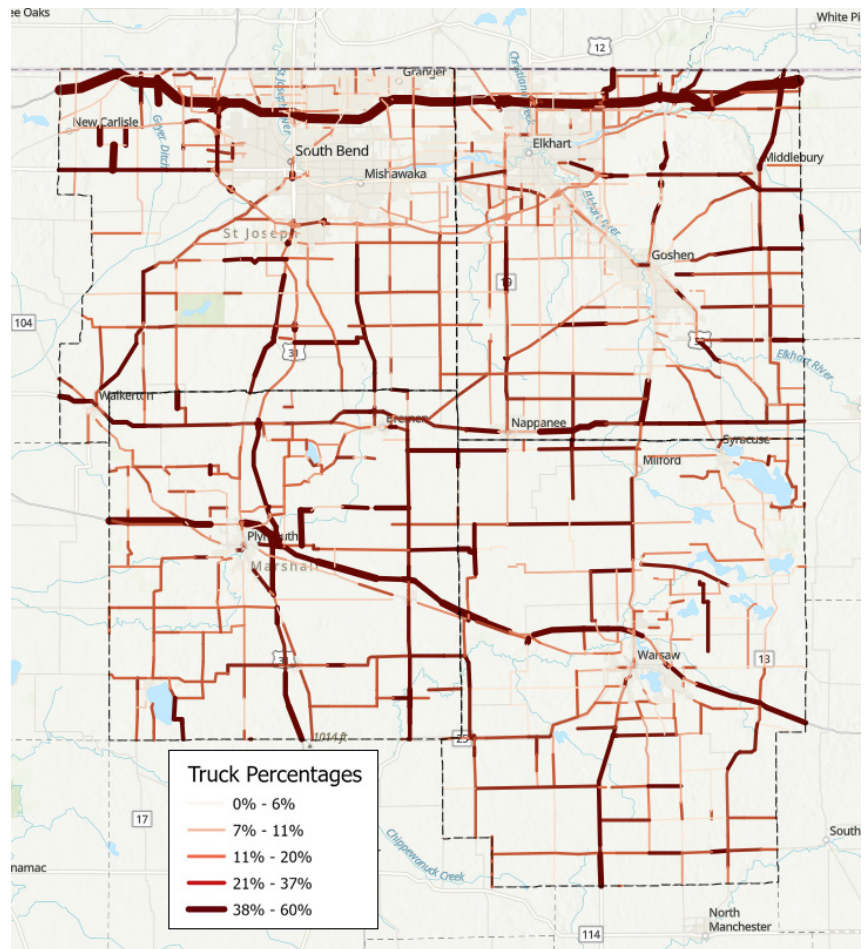
Figure 3-16 shows the truck volumes and comparisons to total traffic for the region. Roadways where trucks make up more than 20% of all traffic include state owned facilities, such as I-80/90, US 31, US 30, US 20, US 33, US 6, SR 2, segments of SR 15 and SR 13, as well as some local county roads throughout the region. The Indiana Toll Road (I-80/90) produces the majority of truck traffic through the region, with an average above 50% of the total annual average daily traffic (AADT).

ProPEL US 30 & 31

ProPEL is described as “an INDOT initiative for transportation planning that uses collaborative PEL studies to consider environmental, community and economic goals.” ProPEL US 30 includes two study areas, which are shown in Figure 3-16. The US 30 West study area extends from SR 49 in Porter County to Beech Rd. in Marshall County. It also includes a stretch of US 31 from US 30 south to CR700 North. The US 30 East study area starts at Beech Rd. in Marshall County to The Indiana/Ohio State Line in Allen County.

Through the use of PEL studies, INDOT aims to create smarter and more efficient transportation systems, in turn producing stronger communities as a result. The goal of this study is to identify the transportation needs of the corridor, identify improvements and environmental and community impacts, evaluate and screen alternatives, and provide recommendations to local officials &

3-16: Truck Travel Percentage

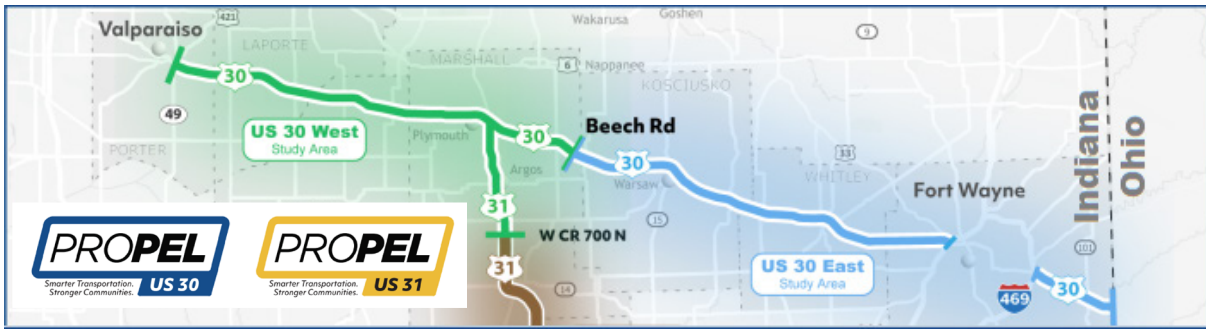


INDOT. This PEL study is expected to wrap up in the fall of 2024 with recommendations.

The US 30 and 31 Coalitions and local communities have continued conversations about priorities and potential solutions. Marshall County Local communities and the US 30 and 31 Coalition have continued conversations about priorities and potential solutions. In Fall of 2022, the Marshall County Commissioners established the Marshall County US 30 and 31 Study Committee, a study outlining Marshall County Priorities was created and presented to INDOT and the Coalitions as shown in Figure 3-17.

Kosciusko County and the City of Warsaw have had ongoing discussions since 2018 related to preferred improvements for U.S. 30.

Figure 3-17: ProPEL US 30 and US 31 Project



Air Cargo

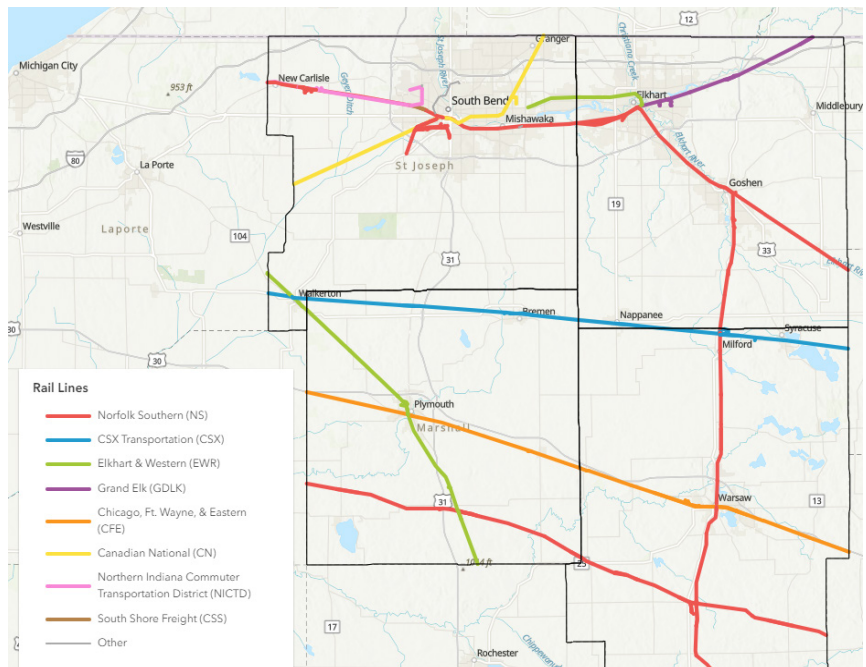
Airports also play a part in the movement of freight. The South Bend International Airport serves as the only commercial airport within MACOG’s boundaries and transports a significant amount of freight into and out of the region. FedEx and UPS use the South Bend International Airport for air and ground parcel distribution. Total cargo steadily rose in 2018, peaking at just over 2.2 million tons in September. This value was eclipsed in the summer of 2019 at just under 2.5 million tons of cargo. 2020 was the lowest year in the 5 years that were analyzed, likely due to the COVID-19 pandemic. Since then, there has been a slow recovery to reach pre-pandemic levels.

Rail

There are 3 Class 1 railroads across our region: CSX Transportation (CSX), Norfolk Southern (NS), and Canadian National (CN). These three railroad operators account for over 70% of operational rail mileage in the MACOG region. Norfolk has the most rail mileage in the four county region, along with the NS Elkhart Yard in Elkhart County. This facility is the second largest of all NS railyards in the NS system. It’s 72 classification tracks provide movement of agricultural products, steel, chemical (including ethanol), and automotive products. South Shore Freight (operated by NICTD), Elkhart & Western (EWR), Grand Elk (GDLK), and Chicago, Ft. Wayne & Eastern (CFER) are the class 3

facilities within The MACOG Region. These four rail operators provide service to rail lines not served by the larger class 1 operators. Although they tend to have lower traffic volumes and lower speeds, they provide vital freight service access at a lower-cost. Figure 3-18 provides a look at both the class 1 and class 3 rail systems within the region.

Figure 3-18: Rail Lines



Active Transportation

Bicycle and Pedestrian

Bicycle and pedestrian projects are an important and integral component of transportation planning. A transportation system that supports

bicycling and walking expands residents' mobility options and can complement multiple forms of transportation. A strong bicycle and pedestrian network can enhance a community's quality of life by providing great economic, environmental, social and health benefits. By reducing single occupant vehicle travel, air quality improves and users can lead healthier lifestyles. Within the MACOG region, there has been a push to incorporate connections to the current trail network and urban/rural population centers (Figure 3-19).

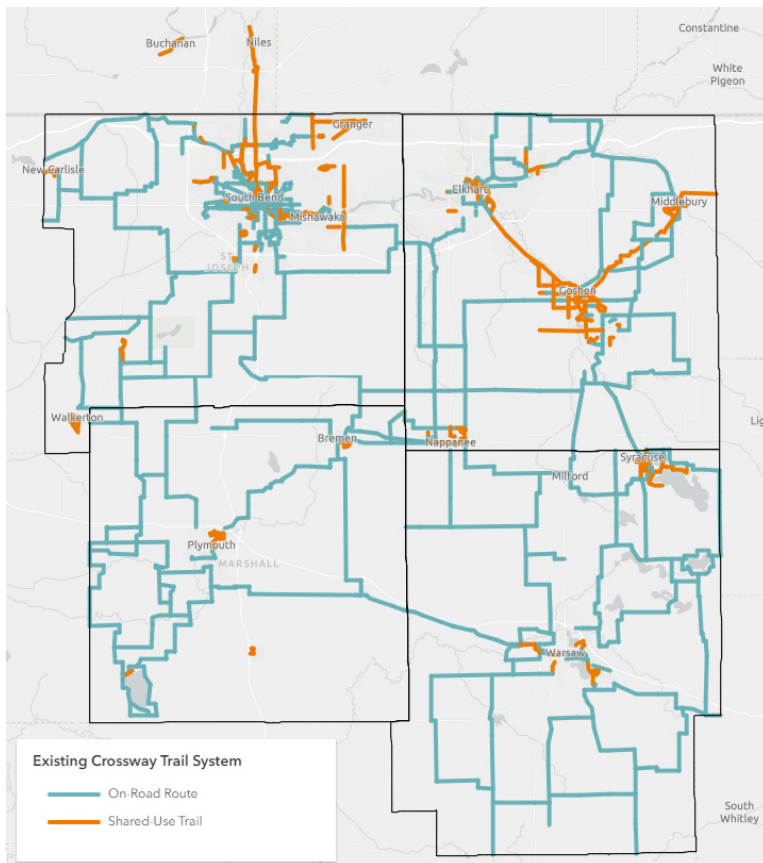
Despite the low percentage of commuters that walk and bike to work nationally, new trends suggest that these modes of transportation are becoming increasingly popular. Compared to the United States as a whole, most counties in the MACOG region documented a higher rate of walking and bicycling to work. Figure 3-20 shows estimates by county of workers who commute by either biking or walking. The entire MACOG region, as a whole, is above the national average by nearly half a percent regarding bicycle

commuting and a quarter percent when it comes to pedestrian commuting. Because St. Joseph County has the largest urban population, it is no surprise that residents tend to walk to work more often, as 4.0% of commuters lean toward that type of commuting. Marshall County shows the highest percentage of bicyclist commuters at 2.4% of the commuting population. These findings are significant, particularly to the region, because it shows that there is an interest in alternative commuting methods.

Trail Count Program

Another goal that communities within the four county MACOG Region are trying to achieve is managing and maintaining the trail systems that they currently have or plan for the future. One way that MACOG has been able to help our local partners is through the trail counting program, which has been providing our local community officials with daily, monthly, and yearly trail usage data. This in turn allows local governments to see where the greatest need to invest in their community trails is.

Figure 3-19: Existing Crossway Trails System

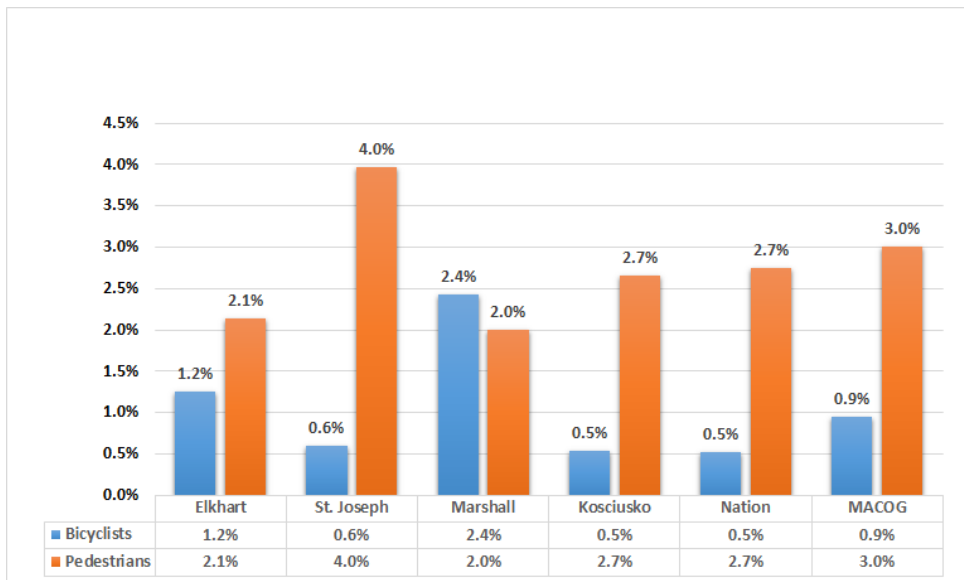


Currently, the trail network within St. Joseph, Elkhart, Marshall, and Kosciusko Counties boasts 10 permanent trail counters, each counter having the ability to count both pedestrians and bicyclists separately. Through the year of 2022, over 700,000 unique users have been counted through this counting system. Also, MACOG has 2 mobile counting units, which similarly counts pedestrians and bicyclists, and these units are able move from one location to the next, allowing a greater sample of trail users to be counted. These mobile counters also allow local communities to test different sites for the placement of future permanent counters (Figure 3-21 & Figure 3-22).

Sidewalks and Accessibility

Sidewalks are an important component of the transportation network because no matter the destination, every trip starts and ends with pedestrian travel. Sidewalks should be connected and accessible. MACOG has worked with

Figure 3-20: Workers Commuting by Bicycle or Walking



many Local Public Agencies (LPAs) in the region to adopt Americans with Disabilities Act (ADA) Transition Plans for the Public Right-of-Way, which addresses sidewalk accessibility. The purpose of these plans is to ensure communities are creating reasonable, accessible paths of travel in the public right-of-ways for everyone, including people with disabilities. These plans provide a schedule for communities on how they should address and improve sidewalk accessibility. As part of the plan, communities have adopted Accessibility Guidelines for Pedestrian Facilities in the Public Right-of Way. These guidelines suggest that whenever there is an intersection improvement project or new construction project, any affected curb ramps, sidewalks, and crosswalks will be rebuilt to these ADA design guidelines, where feasible and reasonable. MACOG has created an ADA inventory database that can be used as a guide for sidewalk improvements and a resource for creating a better pedestrian network.

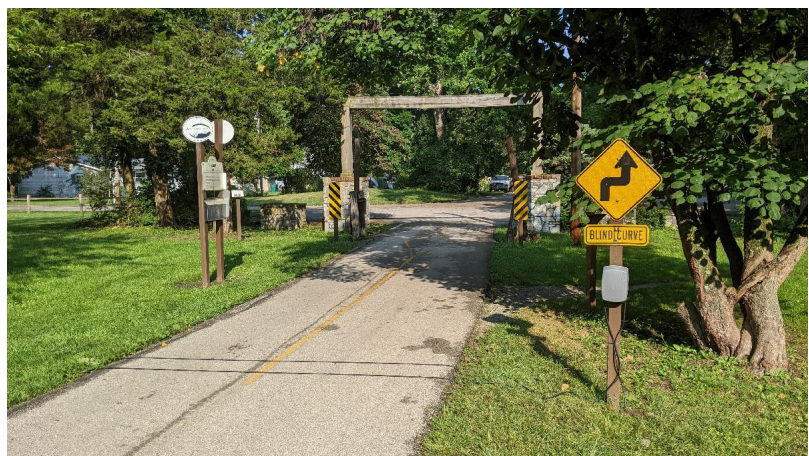
Horse and Buggy Users

MACOG Region is home to a large Amish population that have unique transportation considerations. Modes

Figure 3-21: Beutter Park, Mishawaka (Permanent Counter)



Figure 3-22: Heritage Trail, Winona Lake (Mobile Counter)



of transportation among this population include walking, biking, and use of horse & buggy. Elkhart & Kosciusko Counties contain the majority of the Amish demographic. Statistically, from 2019-2022, 27 crashes involving a horse & buggy occurred, 1 of which included a fatality. As roadways take on different changes and characteristics over time, there is a need to include our most vulnerable populations in the decision making process.

Electric Vehicle Infrastructure

Given the region’s recent air quality has hovered near the 8-hour ozone standard, cleaner modes of transportation are a significant opportunity to remain in attainment for ozone over the long-term while reducing particulate matter and carbon emissions. In the United States, transportation alone is responsible for 27% of greenhouse gas emissions, according to a study by the Environmental Protection Agency in 2022. As local utility portfolios incorporate renewables as part of their Integrated Resource Plans with a 20-year planning horizon, electric vehicles specifically present an opportunity to convert to a cleaner vehicle fleet in the region over the coming decades.

Recent private funding opportunities such as the Indiana Volkswagen Environmental Mitigation Trust Fund, administered by the Indiana Department of Environmental Management, and Indiana Michigan Power grants for electric schools buses have supported a variety of electric and alternative fuel vehicles and fueling or charging infrastructure which have reduced emissions. New or expanded federal funding opportunities such as EPA Clean School Bus Program and U.S. EPA DERA programs, which lower the total cost of ownership further below conventional vehicles form any use cases. The INDOT National Electric Vehicle Infrastructure (NEVI) program will transform the ability for

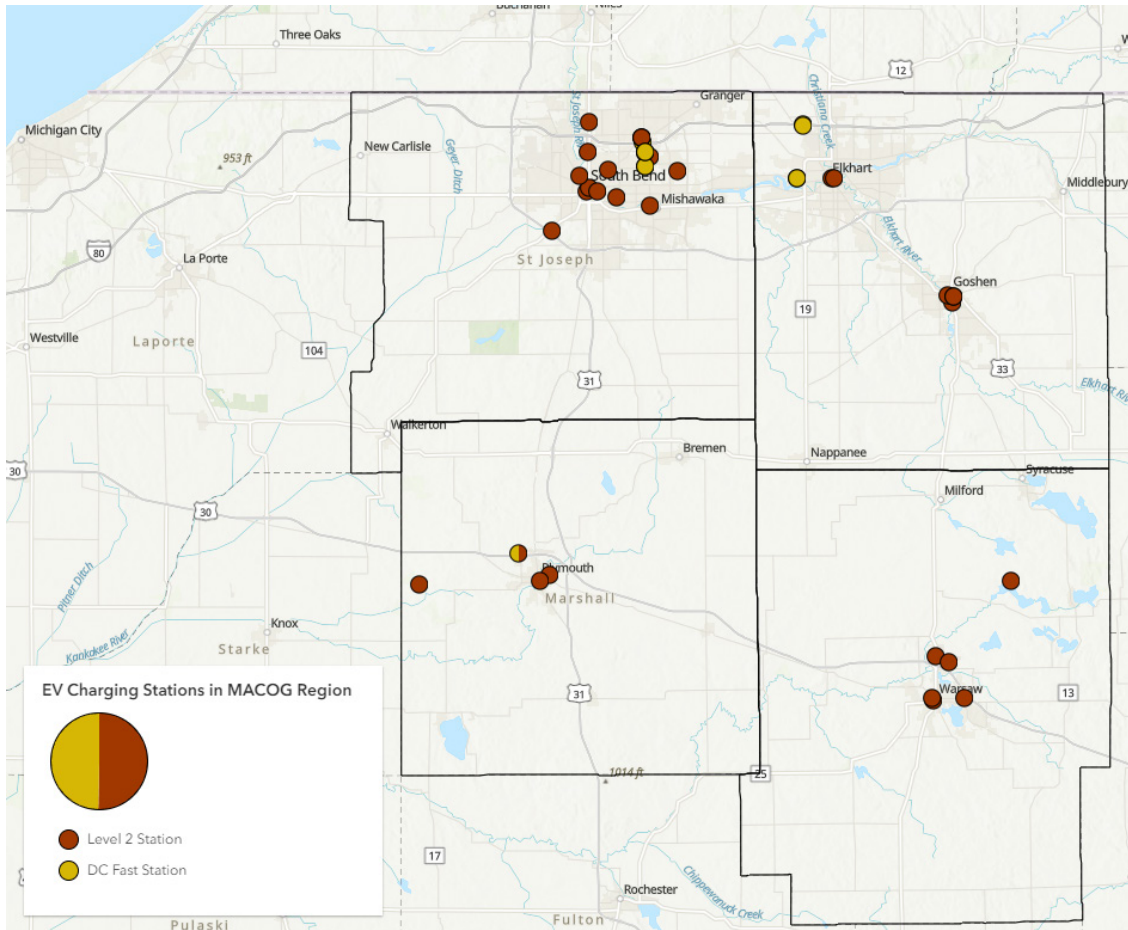
electric vehicles to travel long distances, investing in nearly \$100M in Indiana in direct current fast charging (DCFC) stations. The state’s NEVI plan approved by FHWA in 2022 puts forth a vision is to “collaboratively plan, build, and maintain safe and innovative EV infrastructure that enhances quality of life, drives economic growth, and facilitates the movement of people and goods.” The Volkswagen program has invested over \$5M to bring DCFC stations online at about 60 locations by the end of 2023.

Figure 3-23 shows the location of publicly accessible electric vehicle charging infrastructure, including slower Level 2 stations provided at destinations typically at charging speeds around 7 kW (about 25 range-miles per hour), and Level 3 or DCFC which are often located along highway corridors and provide speeds greater than 50 kW. With the NEVI standard of 150 kW and newer vehicles capable of accepting 150-200 kW (hundreds of miles in 30 minutes), new stations typically provide 150 kW – 350 kW per port for light-duty vehicles. Heavy duty charging infrastructure is not yet publicly available in the region.

Since 2012, over 40 charging stations have been added to the network. Ten Level 2 locations were installed between 2021-2023 through \$90,000 in Volkswagen program grant funding that MACOG



Figure 3-23: EV Charging Stations in the MACOG Region



secured on behalf of local government grantees to provide a basic level of public charging access. In 2022, 994 all-electric vehicles were registered in the region according to Indiana Bureau of Motor Vehicles (BMV) data provided through the Indiana Vehicle Fuel Dashboard released by the Indiana Office of Energy Development in 2023. This number is an underestimate of the total demand for charging, and excludes plug-in hybrid vehicle data which the BMV combines with traditional hybrids.

While current registrations account for less than 0.1% of registered light-duty vehicles in the region, electric vehicle sales are projected to increase rapidly due to the shift in auto manufacturer portfolios, regulations, incentives, and consumer trends.



04

Introduction

Stakeholder and Public engagement is an essential element of the decision-making process that goes into identifying transportation needs for the region. MACOG began the Michiana Move 2050 planning process with the goal of increasing public engagement by raising awareness of the planning process and opportunities for the public to provide feedback and input. Staff utilized a variety of outreach efforts to ensure information collected was representative of across the region.



MACOG staff began gathering public input in the Fall of 2022 with an online survey and comment map. The focus of the surveys was to gather input on future development in our region and identify transportation concerns. Throughout the fall MACOG staff held a series of popup events at 9 locations throughout the region, producing survey responses from over 200 individuals. At the same time and throughout the 2022/2023 winter, MPO staff also held and attended numerous meetings with elected officials, engineers, planners, and

other key stakeholders to gather feedback on a vision, goals, and strategies for transportation investments. MACOG utilized meetings for Policy Board and the Transportation Technical Advisory Committee (TTAC) to provide updates on planning activities for the Michiana on the Move plan. The public was also given the opportunity to provide comments on the Plan and projects in its final draft state during an open public comment period from September 8, 2023 to October 9, 2023. An open house was held on September 21st from 3:00 p.m. to 6:00 p.m. in order to provide all a chance to ask questions and give feedback.

Stakeholder Engagement

Identified stakeholders included representatives from county and municipal governments, economic development partners, and other interested parties throughout the four counties. Additionally, consultants and engineers regularly working with the stakeholders were invited to participate. On August 31, 2022 MACOG held kick off meetings in Kosciusko and Marshall County and on September 1, held meetings in St. Joseph and Elkhart County. During these meetings, stakeholders were informed about the planning process and asked to think through three different growth scenarios for our region. The first scenario was “business as usual” where development occurred as expected. The second was a “compact” scenario where stakeholders considered high density development. The third and final exercise was a “visionary” scenario where the question was posed - “If you could have everything you wanted, what would development look like?” Stakeholders were also asked to identify regional benchmarks they would find useful for tracking progress. As an MPO, MACOG is required to establish performance measures centered around seven national goals. While MACOG’s Policy Board has chosen to support INDOT’s performance measures, stakeholder were able to provide potential several benchmarks specific to the region. Stakeholders were given seven national goals and asked to share benchmarks that they would use to track progress. For example, one national goal is “infrastructure condition” and a benchmark that was suggested to track the progress of this goal was “the percentage of roads in good pavement condition”.



information about our engagement activities. The survey was created to better understand how people move around the region, what transportation issues impact their daily lives, and what factors they believe should be considered when thinking about the future of transportation. A social media plan that included sponsored Facebook posts, eye-catching graphics, and short informational videos was executed to capture as many survey responses as possible. In addition to this survey, an interactive comment map was created to allow people to leave location specific comments, both positive and negative, about our transportation network. To further capture survey responses, staff attended a variety of pop up events, including:

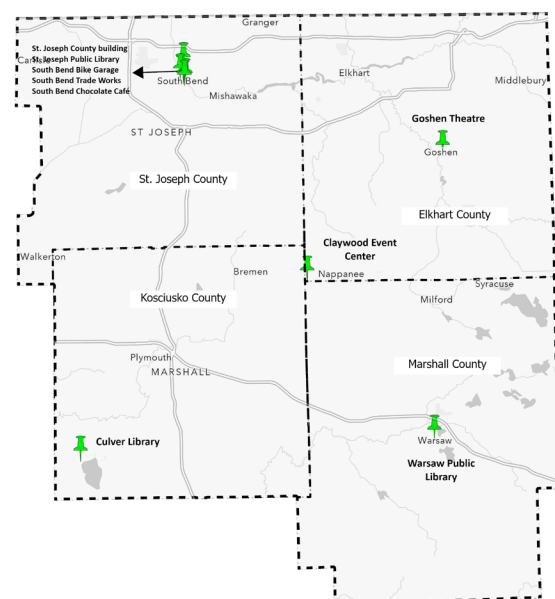
- Urban Adventure Games in St. Joseph County
- First Friday in Downtown Goshen
- First Friday in Downtown South Bend
- South Bend Bike Garage
- Green Drinks
- Transpo Transfer Center
- Interurban Trolley Transfer Center
- Culver Library
- Warsaw Public Library
- South Bend Library
- Michiana Bike to Work Week
- Nappanee Family Safety Day

Staff held a series of Spring 2023 stakeholder meetings to identify potential projects. During the Spring meetings stakeholders were presented with data related to crash locations, pavement and bridge conditions, and level of service to assist in informing potential projects. Working directly with staff and with this information, stakeholders were provided the opportunity to identify additional transportation project needs, including both vehicular and active transportation.

Public Engagement

A variety of approaches were also used to engage our region’s public. A website specific to our plan (move.macog.com) was created, which housed information about the plan, links to our survey and interactive comment map, and up to date

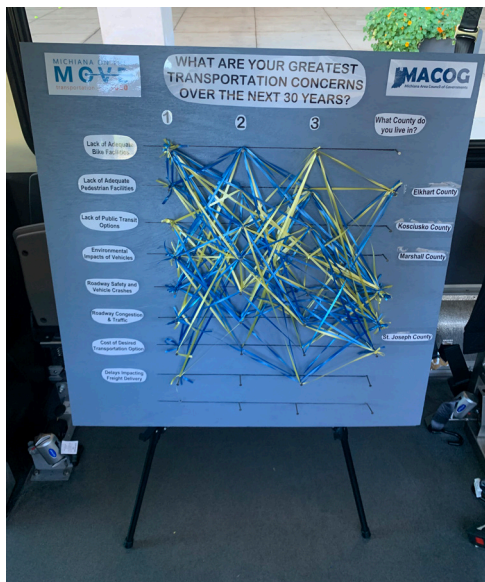
Figure 4-1: In-Person Events



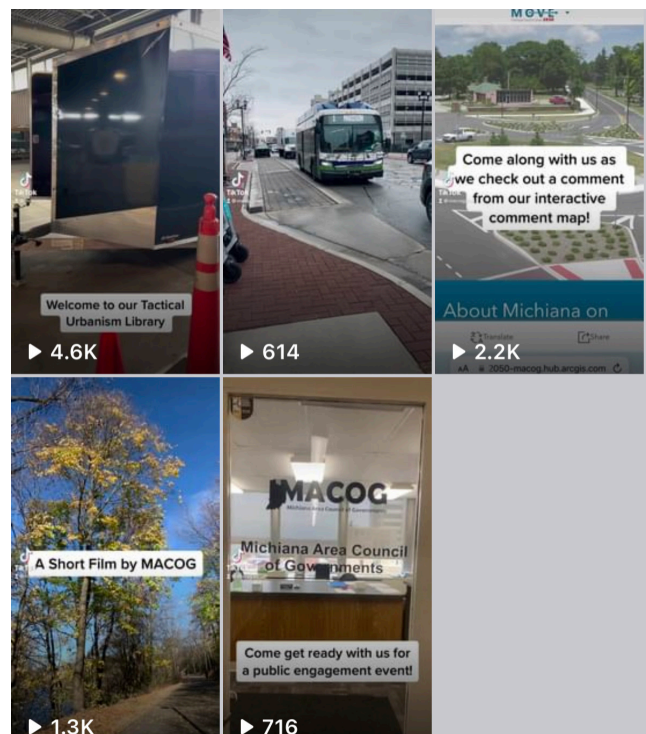
Staff utilized a number of survey methods throughout the engagement process. This included common methods such as paper question/answer survey and online versions of the same survey. Part of the online survey also included the opportunity to electronically place a pin at locations of concern and provide details or the concern. It should be noted that a number of pinned locations were followed up with field verification of the issue and, when appropriate, the concerns were noted to be addressed in future projects. Less common, but effective methods also included string boards and feedback frames during pop up events.

MACOG staff also attempted to build interest and engagement through social media. Regular text and graphic posts were posted with included links to the online survey. Additionally, short videos were regularly created to emphasize particular aspects of the plan. These included:

- Public Transportation
- How Tactical Urbanism is a part of Planning
- How staff addresses Input
- Overview of the Long Range Plan
- How to provide Input



Stakeholders were also provided the opportunity to identify specific projects for future planning. In addition to vehicular transportation, active transportation projects were identified on separate maps. These included both known project needs and desirable projects for all modes of transportation.





MICHIANA ON THE
MOVE
transportation plan 2050

MACOG

How will I get to work in 2050?

Provide feedback for a chance to win a \$150 gift card!

Scan the QR code with your camera app to comment and learn more about the transportation plan.

www.move.macog.com

All of the comments received online are summarized in Figure 4-2 in the maps on the following page.

Not all residents have access to the internet, particularly the significant Amish community within the Region. MACOG made specific efforts to ensure members of the Amish community had an opportunity to provide input on the plan. MACOG attended the Nappanee Family Safety Day event, which is a one day event bringing together the area Amish community. Attending this event was suggested by the leadership of the Nappanee Area Safety Committee following a stakeholder with them.

In addition to online promotion, MACOG used strategically placed yard signs (see above example) to promote the online survey. These were placed in downtowns and along trails throughout the region. Participants could just scan the QR code and it would take them directly to the website.



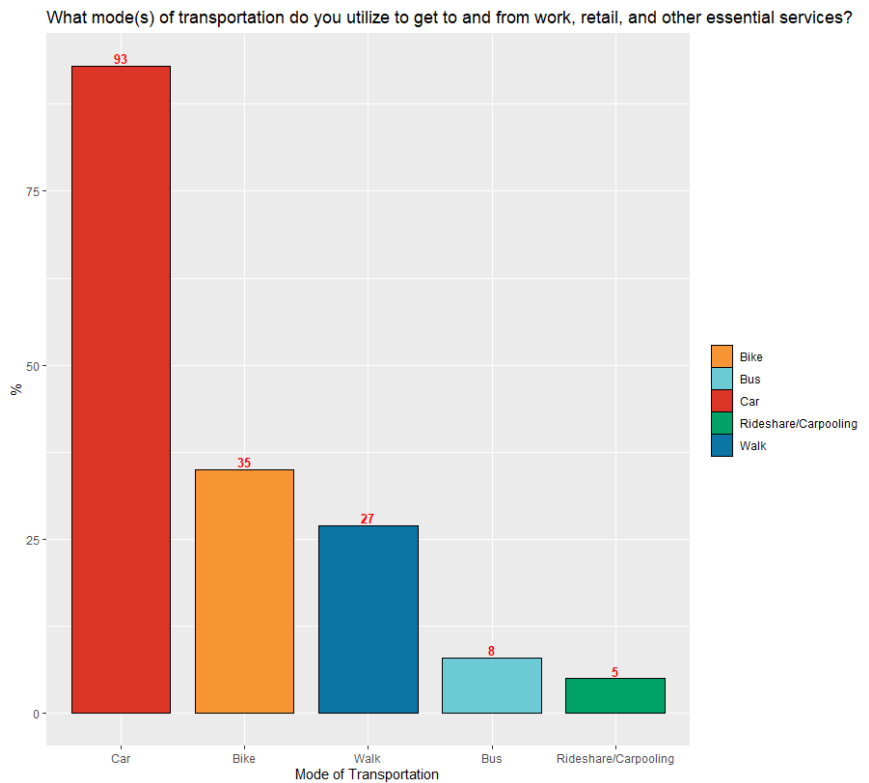
Survey Summary

The following pages provides a summary of the public survey conducted for the Move 2050 Plan.

How You Move

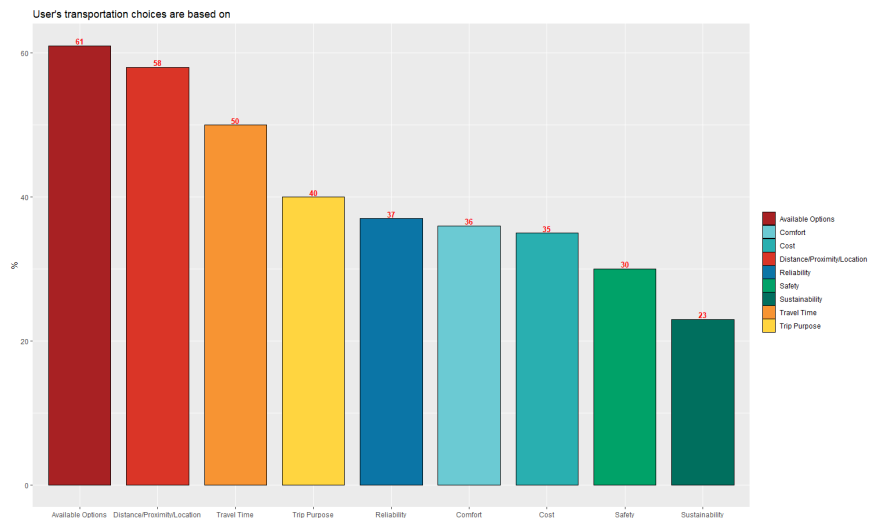
What mode(s) of transportation do you utilize to get to and from work, retail, and other essential services?

Majority of responses utilize car, however the next highest responses were by bike or walking.



My transportation choices are based on...

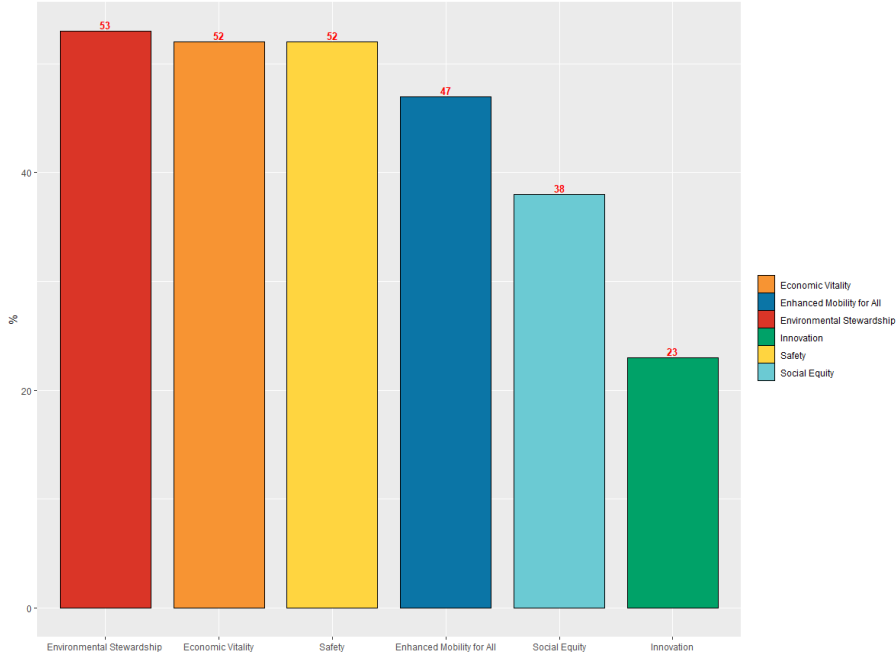
The main factors in choosing the mode of transportations are having available options and the distance or location to those options.



Vision for the Future

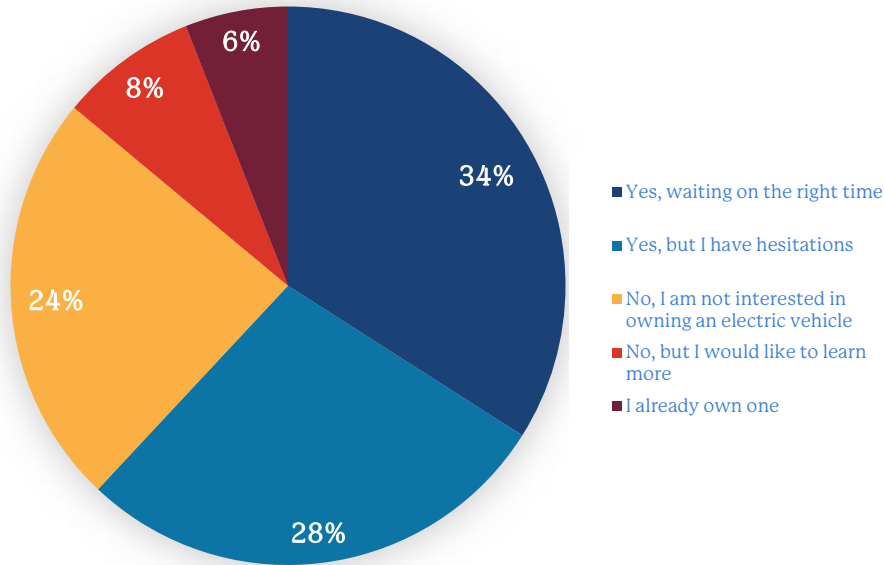
Which regional goals are most important to you?

The top three goals were Environmental Stewardship, Economic Vitality, and Safety.



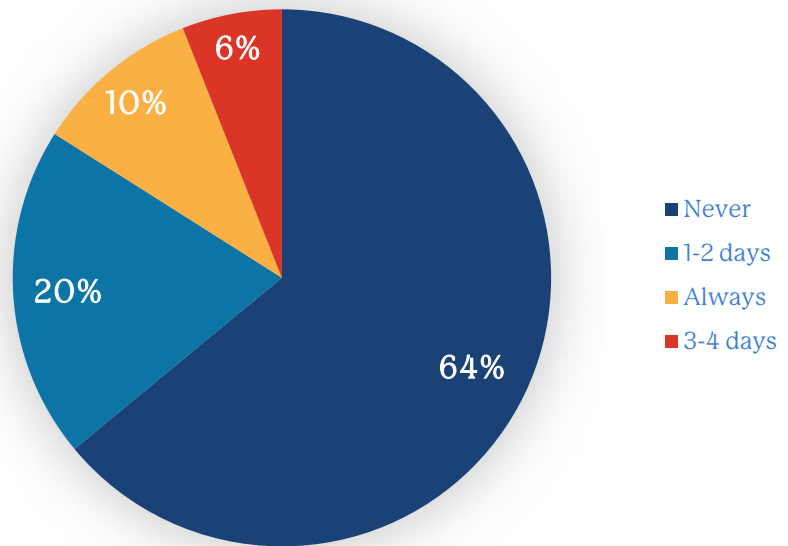
Have you considered owning an electric vehicle?

The majority of responses indicated they would consider owning an electric vehicle, with only approximately a quarter of the responses indicating they are not interested.



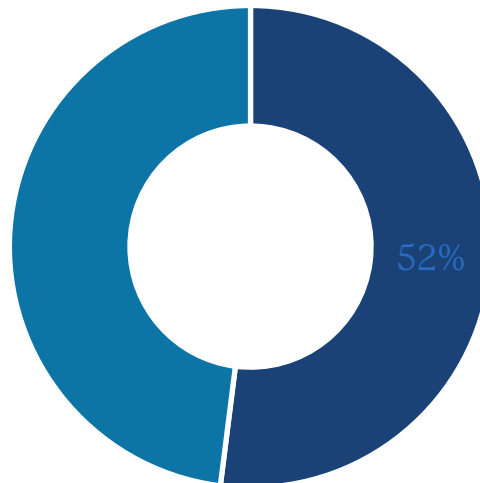
On average, how often do you work from home each week?

The majority of responses indicated they never work from home, however a significant portion do at least work from home one day a week.



Should Autonomous (self-driving) vehicles should be considered throughout transportation planning.

As the existing transportation network evolves, accommodation for autonomous vehicles will likely become necessary and the majority of responses support that.

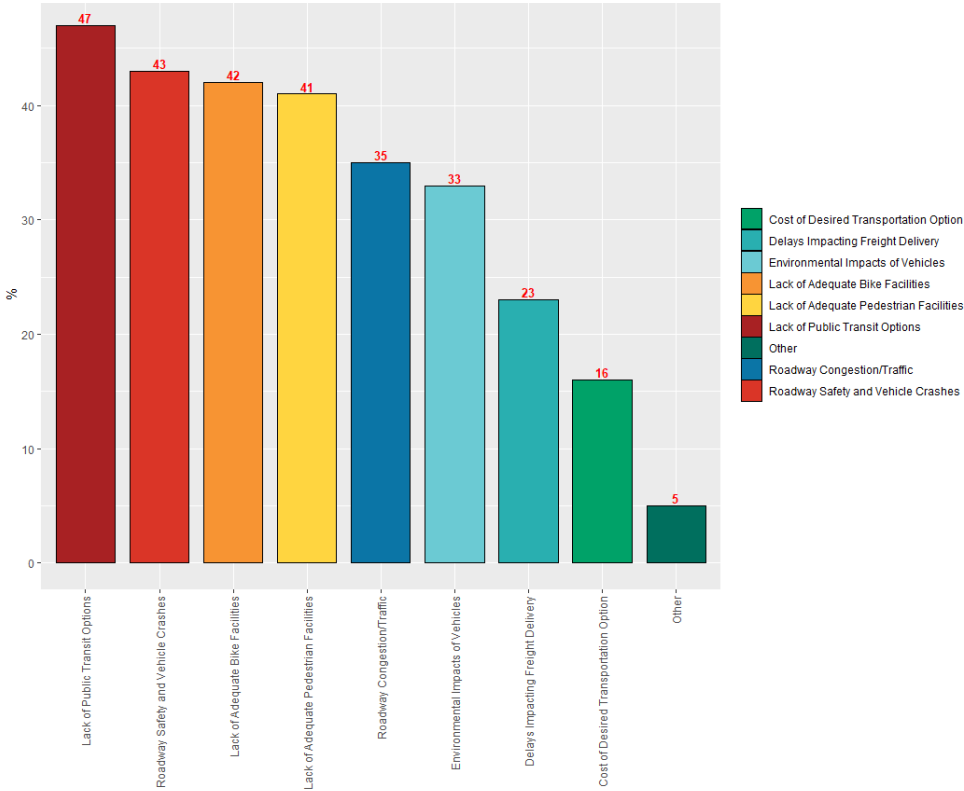


■ Agree ■ Disagree

Needs and Priorities

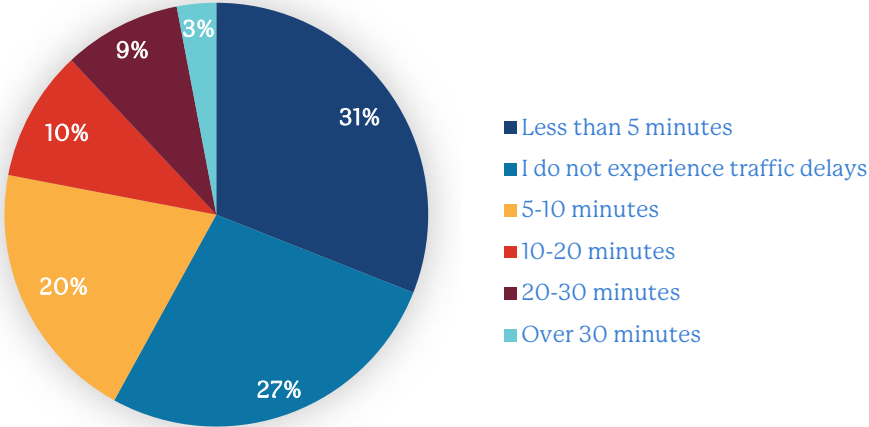
What are your greatest transportation concerns?

The top four concerns are: Lack of Public Transit, Roadway Safety, Lack of Bike Facilities, and Lack of Pedestrian Facilities.



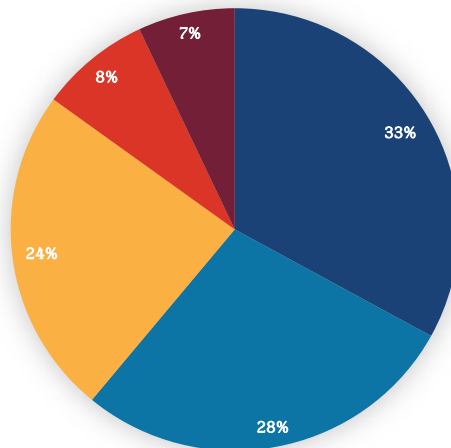
On average, how much time per day do you spend in traffic?

Most of the response said less than 5 minutes or did not experience traffic delays.



Which statement best describe you?

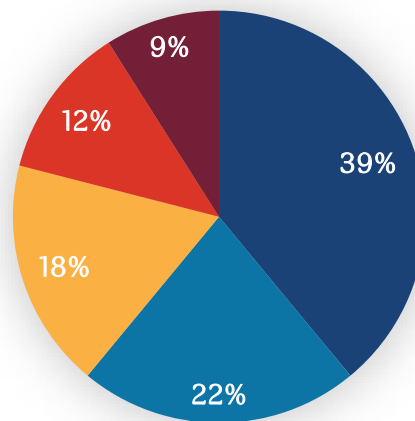
Over half of the responses would consider other forms other modes were more viable.



- I would drive less if there were more viable alternatives
- I will only drive, but think we should also invest in other modes of transportation
- If I could meet my daily needs using alternative modes of transportation, I would not use a car
- I currently meet my daily needs WITHOUT a car
- I will only drive and do NOT think we should invest in other modes of transportation

If active transportation infrastructure allowed you to commute to work, retail, and other essential services, would you walk/bike?

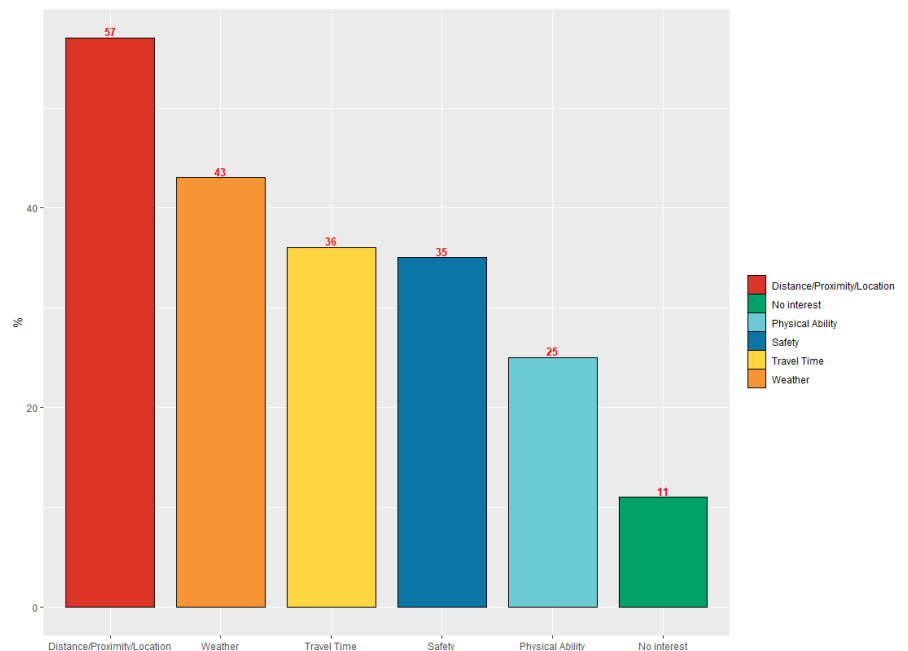
Significantly more than half would at least occasionally use active transportation if the infrastructure were in place.



- Yes, frequently
- Yes, occasionally
- No
- Maybe
- I already commute via walking/biking

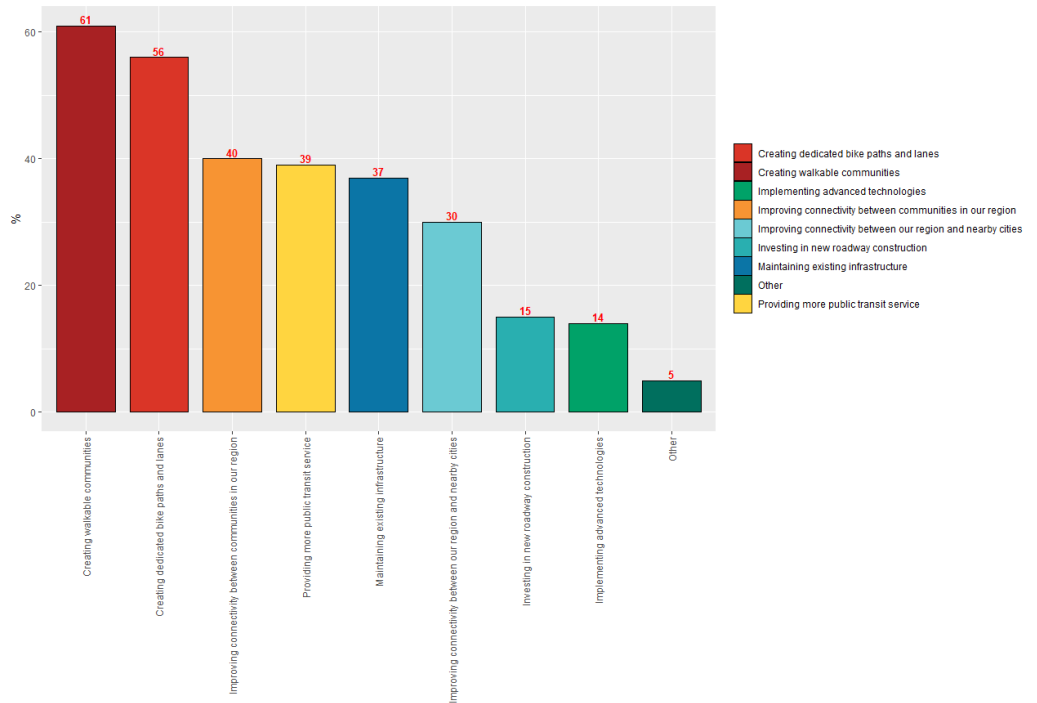
What prevents you from commuting via active transportation?

The top reason is the distance to travel, followed by the weather, travel time and safety.



Which transportation improvements are MOST important to you?

The top two responses are creating walkable communities and creating dedicated bike paths and lanes, indicating more support for active transportation.



Final Draft Plan Review and Adoption

The Draft Long Range Transportation plan 2050 was released for a 30-day public comment on September 8, 2023 and was open through October 9, 2023. An Open house meeting for providing information and collecting comments on the Plan was held at the MACOG Office on September 21, 2023. The comment period and meetings were advertised in the South Bend Tribune and other local newspapers. Copies of the draft plan were made available at the MACOG office. Comment sheets were provided along with the draft copy to simplify the comment process. The draft 2050 plan was also available for online review and comments were collected through the MACOG website. Appendix H contains the comments received during the development and draft review public comment periods.

The Final Plan was presented and approved by MACOG's Policy Board on October 11, 2023.

LOCAL

Drive, bike, walk: Area transportation plan open for review, final comment

Joseph Dits South Bend Tribune
Published 5:22 a.m. ET Sept. 16, 2023 | Updated 5:22 a.m. ET Sept. 16, 2023



SOUTH BEND — A draft plan for transportation projects across Elkhart, Kosciusko, Marshall and St. Joseph counties for the next 20 to 25 years is now available for the public to review and offer feedback.

The Michiana Area Council of Governments will hold an open house from 3 to 5 p.m. Sept. 21 in its conference room on the 11th floor of the County-City Building in downtown South Bend. The draft plan may also be viewed at move.macog.com. Public comments will be taken until Oct. 9.

Infrastructure bill in motion: Pete Buttigieg visits Elkhart to highlight project to make railroads cause fewer delays

The plan will then MACOG Policy Board a.m. Oct. 11 in the

The plan is a federal input from local go



A bicyclist waits near a caution sign at the spot where U.S. Secretary of Transportation and former South Bend mayor Pete Buttigieg and Elkhart Mayor Rod Robinson toured the railroad crossing at Richmond Street and Blazer Boulevard on Wednesday, Aug. 30, 2023, during

MACOG looks to future with long-term transportation plan

Published: Sep. 12, 2023 at 11:34 PM EDT



05



Goals and Performance Measures

05

The Infrastructure Investment and Jobs Act (IIJA) continues the Moving Ahead for Progress in the 21st Century Act's (MAP-21) focus on performance based transportation planning, and outlines goals for which State DOT's, MPOs, and local road agencies should be held accountable for during the development and maintenance of the federally funded transportation system. Performance Based Planning and Programming (PBPP) attempts to ensure that both long-term and short-term transportation investment decisions are made based on their ability to meet established goals for improving the overall transportation system. Furthermore, it involves measuring progress toward meeting goals and using information on past and anticipated future performance trends to inform investment and policy decisions.

National Goals

The current transportation legislation outlines seven (7) national goals for which state DOTs and transit agencies, in cooperation with MPO's, should establish targets for performance measures.

- **Safety** - to achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- **Infrastructure Condition** - to maintain the highway infrastructure asset system in a state of good repair
- **Congestion Reduction** - to achieve a significant reduction in congestion on the National Highway System
- **System Reliability** - to improve the efficiency of the surface transportation system

- **Freight Movement and Economic Vitality** - to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- **Environmental Sustainability** - to enhance the performance of the transportation system while protecting and enhancing the natural environment
- **Reduced Project Delivery Delays** - to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

National Planning Factors

Additional factors MPO's should consider in the regional transportation planning process include federal Planning Factor included in federal regulations (23 CFR 450.306(b)):

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.
3. Increase accessibility and mobility of people and freight.
4. 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.

5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
6. Promote efficient system management and operation.
7. Emphasize preservation of the existing transportation system.
8. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
9. Enhance travel and tourism.

Move 2050 Goals and Objectives

MACOG recognizes that there are additional goals that are not fully addressed by Federal performance measures, including but not limited to those related to economic vitality, active transportation, equity and quality of life. As part of MOVE 2050, MACOG has developed three core goals and established several regional benchmarks to better reflect the values, needs, and conditions of the transportation network in the MACOG region.

- Enhance High Quality Hometowns - through a connected and safe transportation system that offers transportation choices and enhances quality of life, health, and mobility for people of all abilities and backgrounds. (Sustainability, Equity, Public Transit, Active Transportation)
 - Objectives:
 - Increase transportation choice through investment in transit and active transportation facilities
 - Pursue solutions that promote social equity and reduce the burden of transportation and housing on limited income households and other disadvantaged groups
 - Increase measures to improve air quality in the region through reduction in transportation related greenhouse gas emissions

- Increase climate resiliency
- Support communities within the region to adopt Complete Streets Policy
- Ensure Safe Movement of People and Goods - by maintaining a safe, efficient, reliable, and resilient transportation system for all users (safety and security, maintaining infrastructure)
 - Objectives
 - Support projects and policies that contribute to the reduction in the number of serious injuries and fatalities
 - Support projects and policies that contribute to the preservation and maintenance of pavement and bridge conditions
 - Support state of good repair for transit fleets and facilities
- Support a Thriving Economy - through transportation investments that improve access to areas of employment, educational opportunities, and other core services. (Mobility options, employment areas, and freight movement efficiency)
 - Objectives:
 - Improve the connectivity between workforce and jobs by offering a range of options to manage commuting distances and travel times
 - Improve mobility within and between communities across the region by providing a diversified transportation system, rather than relying solely on roadway capacity
 - Improve Truck Travel Time Reliability on the Freight Network
 - Pursue infrastructure investments to support regional and local economic growth

Federal Performance Measures and State Targets

Over the last decade a series of federal rulemakings have been made to implement the federal PBPP requirements. MPO's are required to establish targets for the below referenced performance measures by either agreeing to plan and program projects so that they contribute toward the accomplishment of the relevant State DOT target for the performance measure, or commit to a

quantifiable target for that performance measure for their metropolitan planning area. MACOG continues to elect supporting INDOT's established targets. MACOG's Policy Board most recently approved supporting INDOT's established targets on October 12, 2022.

Reflecting the national goals and planning factors, the US Department of Transportation (USDOT) has established measures in performance areas listed below to track progress.

Performance Area	Performance Measures	Related MOVE2050 Goal
Safety	<ul style="list-style-type: none"> Number of fatalities and serious injuries Rate of fatalities and serious injuries Number of non-motorized fatalities and serious injuries 	Ensure Safe Movement of People and Goods, Enhance High Quality HomeTowns
Pavement and Bridge Condition	<ul style="list-style-type: none"> Percent Interstate pavement in good and poor condition Percent Non-Interstate NHS pavement in good and poor condition Percent National Highway System (NHS) bridges in good and poor condition 	Ensure Safe Movement of People and Goods
System Performance	<ul style="list-style-type: none"> Interstate and Non-Interstate travel time reliability Truck travel time reliability 	Support a Thriving Economy
Congestion Mitigation and Air Quality	<ul style="list-style-type: none"> Peak Hour Excessive Delay Non-Single Occupancy Vehicle (SOV) Travel On-Road Mobile Source Emissions 	Support a Thriving Economy, Enhance High Quality HomeTowns
Transit Asset Management	<ul style="list-style-type: none"> Transit Asset Management (TAM) Plans State of Good Repair Measures Percent of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB) Public Transportation Agency Safety Plans 	Ensure Safe Movement of People and Goods, Enhance High Quality HomeTowns

The below sections includes areas in which MACOG is supporting the statewide targets developed by INDOT and agrees to plan and program projects so that they contribute to the achievement of those targets. Tables 5.1 through 5.6 provides a summary of the established targets and progress made towards those goals as reflected on the FHWA website State Performance Dashboard.

Safety

INDOT, the MPOs, FHWA, and the Indiana Criminal Justice Institute (ICJI) collaborated on the Safety Performance Measures and Safety Performance

Targets, which were set in 2018 and have been updated annually. MACOG’s Policy Board most recently adopted the established 2023 Safety targets in October 2022, and will consider the proposed 2024 targets this fall. The Highway Safety Improvement Program (HSIP) is a primary source of federal funds for qualifying safety improvement projects. HSIP along with other funding sources are used to implement safety improvements with the purpose to reduce roadway crashes, and a corresponding reduction in fatalities and serious injuries on all public roads and directly supports the Indiana Strategic Highway Safety Plan.

Table 5.1 - Safety Targets and Performance

	5-Year Average Target		5-Year Average Actual			
	2015-2019	2017-2021	2014-2018	2015-2019	2016-2020	2017-2021
Number of Fatalities	889.6	817.3	833.4	846.4	862.4	883
Rate of Fatalities (per 100M VMT)	1.087	1.006	1.03	1.038	1.064	1.102
Number of Serious Injuries	3501.9	3311.4	3375.3	3319.8	3293.4	3295.4
Rate of Serious Injuries (per 100M VMT)	4.234	4.088	4.173	4.07	4.06	4.112
Number of Non-Motorized Fatalities and Serious Injuries	393.6	393.6	383.8	385.6	389.2	404

	Future 5-year Average Targets		
	2018-2022	2019-2023	Proposed 2020-2024
Number of Fatalities	876	894.2	876.3
Rate of Fatalities (per 100M VMT)	1.076	1.088	1.072
Number of Serious Injuries	2998.2	3348.1	3281.1
Rate of Serious Injuries (per 100M VMT)	3.675	4.068	3.987
Number of Non-Motorized Fatalities and Serious Injuries	344.5	399.5	391.6

MACOG will contribute to the achievement of these targets by:

- Working with local road and transit agencies to identify problematic areas in the region for which to improve safety
- Completion of a Regional Safety Action Plan
- Reviewing crash reports submitted to the Indiana State Police for accuracy and analysis
- Maintain a Regional Crash dashboard for Serious Injuries and Fatalities and Vulnerable Road Users
- Support training for Traffic Incident Management and first responders
- Promote driver education through DriveSafeMichigan.com
- Advance the number of League of American Bicyclist Certified Instructors and assist in Bicycle Education Programs
- Support communities in the completion of ADA Transition Plans

Pavement and Bridge Condition

The pavement and bridge condition performance measures are applicable to the Interstate and non-Interstate Highways that comprise the National Highway System (NHS). The NHS includes the Interstate Highway System as well as other roads important to the nation’s economy, defense, and mobility. The measures are focused on the condition of pavement and bridges, including ramps utilized to access the system and directly support the Indiana Transportation Asset Management Plan (TAMP). There are four measures to assess pavement condition and two measures

for assessing bridge condition. Condition of pavement is based on their International Roughness Index (IRI) value and other distress metrics, and bridge condition is based on the National Bridge Inventory (NBI) condition ratings for deck, superstructure, substructure, and culvert. INDOT, the MPO’s, and FHWA collectively developed 2 and 4-year targets for the pavement and bridge performance measures. The National Highway Performance Program is a core Federal-aid highway program that provides financial support to improve the condition and performance of the NHS, and the construction of new NHS facilities. INDOT utilizes these funds for maintenance activities on the NHS.

Table 5.2 - Infrastructure Condition Targets and Performance

	2018-2022 Targets		Actual					
	2-yr (2019)	4-yr (2021)	2016	2017	2018	2019	2020	2021
% of Interstate in Good Condition	N/A	50	69.62	73.6	67.3	56.5	70.1	73.2
% of Interstate in Poor Condition	N/A	0.8	0.26	0.4	0.2	0.5	0.3	0.4
% of Pavement on Non-Interstate NHS in Good Condition	78.7	40	40.81	44.3	43.9	44.8	54.2	61
% of Pavement on Non-Interstate NHS in Poor Condition	3.1	3.1	4.22	2.30%	1.9	0.9	0.7	0.4
% of NHS Bridges in Good Condition	48.3	47.2		50	49.7	48	49.9	50.5
% of NHS Bridges in Poor Condition	2.6	3.1		2.3	2	2.6	1.9	2.3

Future Targets		
	2-yr (2024)	4-yr (2026)
% of Interstate in Good Condition	60%	62%
% of Interstate in Poor Condition	1%	1%
% of Pavement on Non-Interstate NHS in Good Condition	50%	48%
% of Pavement on Non-Interstate NHS in Poor Condition	1.50%	1.50%
% of NHS Bridges in Good Condition	49%	47.50%
% of NHS Bridges in Poor Condition	3%	3%

MACOG will contribute to the achievement of these targets by:

- Sharing resources related to design and engineering best practice
- Support local jurisdictions through the collection of PASER ratings and development of local asset management plans
- Maintenance of a Regional Bridge and Pavement Condition Dashboard

System Performance - Level of Travel Time Reliability (LOTTR)

The system performance measures are also applicable to the Interstate and non-Interstate NHS. These performance measures assess system reliability and freight movement. This is measured using data from FHWA's National Performance Management Research Data Set (NPMRDS), and is the ratio of longer travel times (80th percentile) to normal travel times (50th percentile). This data is collected during four time periods including

weekdays from 6 am to 10 am, 10 am to 4 pm, 4 pm to 8 pm, and weekend days from 6 am to 8 pm. FHWA has determined that any road segment with a reliability ratio of 1.5 or greater is considered to be unreliable. Truck Travel Time Reliability is calculated in a similar fashion, however longer travel times are found using the 95th percentile travel time, and an additional time period was included, overnight for all days from 8 pm to 6 am.

Table 5.3 - Reliability Targets and Performance

	Targets		Actual				
	2 -yr (2019)	4-yr (2021)	2017	2018	2019	2020	2021
Interstate Highway Reliable Person-Miles Traveled on Interstate Highways	90.50	92.80	93.80	95.70	93.70	99.40	94.30
Reliable Person-Miles Traveled on Non-Interstate Highways	N/A	89.80			97.00	97.90	96.70
Truck Travel Time Reliability on Interstates	1.27	1.30	1.23	1.21	1.25	1.18	1.26

Future Targets		
	2-yr (2024)	4-yr (2026)
Interstate Highway Reliable Person-Miles Traveled on Interstate Highways	93	93.5
Reliable Person-Miles Traveled on Non-Interstate Highways	93	93.5
Truck Travel Time Reliability on Interstates	1.32	1.3

MACOG will contribute to the achievement of these targets by:

- Conducting travel time studies of major corridors to evaluate congestion and traffic flow
- Utilize the Travel Demand Model to forecast future congestion and assist communities in evaluating project effectiveness
- Assist in sharing resources between local jurisdictions and first responders

Congestion Mitigation and Air Quality

Several measures related to congestion mitigation and air quality have been identified including non-Single Occupancy Vehicle (SOV) travel and annual hours of peak hour excessive delay per capita (PHED), as well as on-Road Mobile emissions. Currently this rule only applies to urbanized areas of more than 1 million in population that are in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. Starting in 2022, areas of population of more than 200,000 are required. States and MPOS for which this applies will coordinate on a single, unified target. While MACOG is not required to set targets for

these performance measures, it is encouraged to coordinate in the target selection process. MACOG participated in coordination efforts in establishing PHED targets with INDOT, MDOT, and SWMPC in 2022.

On-Road Mobile Source emissions is another performance measure established for the CMAQ program, and applies to State DOT's with areas designated as nonattainment or maintenance for ozone, carbon monoxide, or particulate matter. Total emissions reduced is calculated by summing 2 and 4 years totals of emission reduction, in kilograms per day, for all CMAQ funded projects.

Table 5.4 - Air Quality Targets and Performance

	Targets		Actual		
	2 -yr	4-yr	Baseline: 2017 (4-yr Cumulative)	2-yr Cumulative (2019)	4 yr Cumulative (2021)
Cumulative Reductions - Particulate Matter (PM 2.5)	20	30	179.17		
Cumulative Reductions - Particulate Matter (PM 10)	0.3	0.5	4.07	168.04	168.06
Cumulative Reductions - Nitrogen Dioxide (Nox)	1600	2200	4,576.37	2,737.32	3,373.77
Cumulative Reductions - Carbon Monoxide (CO)	200	400	13,939.45	2,245.09	2,668.04
Cumulative Reductions - Volatile Organic Compound (VOC)	1600	2600	2,641.02	277.01	863.37

Future Targets		
	2-yr (2024)	4-yr (2026)
PM 2.5	3	4
PM 10	0.02	0.03
Nitrogen Dioxide		725
Carbon Monoxide	330	520
Volatile Organize Compound	590	600

MACOG will contribute to the achievement of these targets by:

- Continuing the Clean Air Program to education citizens and business about air quality.
- Working with local jurisdictions to identify CMAQ eligible projects.
- Assist local jurisdictions with implementation of EV infrastructure

Transit Asset Management (TAM) and Public Transportation Safety Program

Under the TAM Final Rule, FTA established four performance measures to approximate the State of Good Repair (SGR) for categories of capital assets including rolling stock, equipment and facilities. These targets are included in Transit Asset Management Plans which provides an overview of the strategic and systematic practices that transit providers put forth to ensure proper management of public transportation capital assets. TAM plans must be updated in its entirety at least once every

four years, however transportation providers must report annually on asset inventory data, conditions assessments and performance results. MACOG administers the Interurban Trolley in Elkhart and Goshen, and coordinates with other transit providers including the South Bend Public Transportation Corporation (Transpo) to ensure targets are set for applicable assets. Transpo most recently completed the updated TAM Plan in 2021 and the Interurban Trolley completed an updated plan in September of 2022.

Table 5.5 - TAM Targets and Performance

Transit (TAM Targets)		TARGET (TAM 2018)				Actual		
Interurban Trolley		2019	2020	2021	2022	2019	2020	2021
Rolling Stock - % of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Bus	0	0	0	0	0	0	0
	Cutaway Bus							
	Mini-Van	20	20	20	20	20	20	20

Future Targets - TAM 2022					
	2023	2024	2025	2026	2027
Bus	0	0	0	0	0
Cut-away Bus	0	0	0	0	0
Mini-Van	20	20	20	20	20

In 2016, a final rule was published for the Public Transportation Safety Program, establishing substantive and procedural rules for enforcement of FTA’s safety programs. The Public Transportation Agency Safety Plan (PTASP) Final Rule requires public transportation agencies to develop safety plans based on Safety Management Systems (SMS) principals. SMS is an organizational approach to managing safety and includes four components including a safety management policy, safety risk management, safety assurance, and safety promotion.

Both agencies completed their initial PTASP in 2020, with an update completed in 2022. Latest targets were made based upon review of the last five (5) years of safety performance data including vehicle revenue miles (VRM) and major mechanical system failures.

Table 5.5 - TAM Targets and Performance

TRANSPO		TARGET (TAM 2018)				Actual		
		2019	2020	2021	2022	2019	2020	2021
Rolling Stock - % of revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Bus	20	20	25	20	45	20	20
	Cutaway Bus	20	20	0	0	40	0	0
Equipment Age - % of non-revenue vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Trucks and Rubber Tire Vehicles	0	50	0	0	25	25	25
Facilities - % of facilities with a condition rating below 3.0 of FTA's Transit Economic Requirement Model (TERM) Scale	Admin.	0	0	0	0	0	0	0
	Maintenance	0	0	0	0	0	0	0
	Parking Structures	0	0	0	0	0	0	0
	Passenger Facilities	0	0	0	0	0	0	0

Future Targets - TAM 2022					
	2023	2024	2025	2026	2027
Bus	45	0	0	14	14
Cutaway Bus	0	0	6	0	2
Trucks and Rubber Tire Vehicles	50	0	0	28	28
Admin.	0	0	0	0	0
Maintenance	0	0	0	0	0
Parking Structures	0	0	0	0	0
Passenger Facilities	0	0	0	0	0

Table 5.6 - PTASP Targets and Performance

Interurban Trolley		Target		Actual		
		2021 Target	2022 Target	2019	2020	2021
Fatalities (total)	Fixed Route Bus	0	0	0	0	0
	Paratransit	0	0	0	0	0
Fatalities (per 100k VRM)	Fixed Route Bus	0	0	0	0	0
	Paratransit	0	0	0	0	0
Injuries (total)	Fixed Route Bus	1.6	2	3	2	2
	Paratransit	1	3.2	4	0	7
Injuries (per 100k VRM)	Fixed Route Bus	0.27	0.3	0.16	0.16	0
	Paratransit	0.52	1.1	1.03	0	2.8
Safety Events (total)	Fixed Route Bus	1.2	1	1	1	0
	Paratransit	1.2	1	2	0	1
Safety Events (per 100k VRM)	Fixed Route Bus	0.2	0.2	0.16	0.16	0
	Paratransit	1.44	0.3	0.52	0	0.4
System Reliability (Failures)	Fixed Route Bus	18.8	37.6	42	57	52
	Paratransit	1.2	0.8	1	0	1

Table 5.6 - PTASP Targets and Performance

TRANSPO		Target		Actual		
		2021 Target	2022 Target	2019	2020	2021
Fatalities (total)	Fixed Route Bus	0	0	0	0	0
	Paratransit	0	0	0	0	0
Fatalities (per 100k VRM)	Fixed Route Bus	0	0	0	0	0
	Paratransit	0	0	0	0	0
Injuries (total)	Fixed Route Bus	2	2	0	4	0
	Paratransit	0	0	1	1	1
Injuries (per 100k VRM)	Fixed Route Bus	0.11	0.11	0	0.04%	0
	Paratransit	0	0	0.03%	0.04%	0.04%
Safety Events (total)	Fixed Route Bus	3	3	0	3	0
	Paratransit	1	1	0	0	0
Safety Events (per 100k VRM)	Fixed Route Bus	0.16	0.16	0	0.03%	0
	Paratransit	0.09	0.09	0	0	0
System Reliability (distance b/w failures)	Fixed Route Bus	125,000	125,000	8,913	6,428	12,969
	Paratransit	40,000	40,000	38,104	26,508	14,140

Locally Established Benchmarks

As reflected in the Move 2050 Goals, MACOG will track several benchmarks annually to depict overall trends in three core areas: Enhance High Quality Hometowns, Ensure Safe Movement of People and Goods, and Support a Thriving Economy. Further benchmark may be tracked in other resources such as online dashboards and storymaps at [Maps.macog.com](https://maps.macog.com).

- Enhance High Quality Hometowns - Benchmarks
 - # of Complete Streets Policies
 - Miles of Active Transportation Facilities
 - # Miles of Bicycle Lanes
 - # Miles of Shared Use Paths
 - # of people within 1/4 mi of transit
 - Transportation Costs as a percent of median income (Housing and Transportation Affordability Index)
 - Vehicle Miles Traveled per Capita

- Ensure Safe Movement of People and Goods - Benchmarks (Resilient Infrastructure, efficiency, safety)
 - # of Fatalities Regionally
 - # of Serious Injuries Regionally
 - # of Vulnerable Road User Crashes Regionally

- Support a Thriving Economy - Benchmarks
 - # of jobs within ½ mile of a transit route





06

Recommendations



06

The culmination of the long-range planning process lies in the meticulous curation of projects and policies. This decision draws upon insights from preceding chapters, public participation, consultations with stakeholders, and thorough scenario analyses. These elements collectively lead to the subsequent recommendations that will keep Michiana on the move.

MACOG has synthesized the requirements of the transportation system and formulated a series of recommendations, each supported by corresponding actions, for every mode of transportation. Most of the recommendations focus on utilizing and optimizing what we already have. The ideas are based on studying trends in the transportation network right now, past and into the future.

The exploration of these recommendations are structured according to the topics and modes presented below. The recommendations are organized as follows:

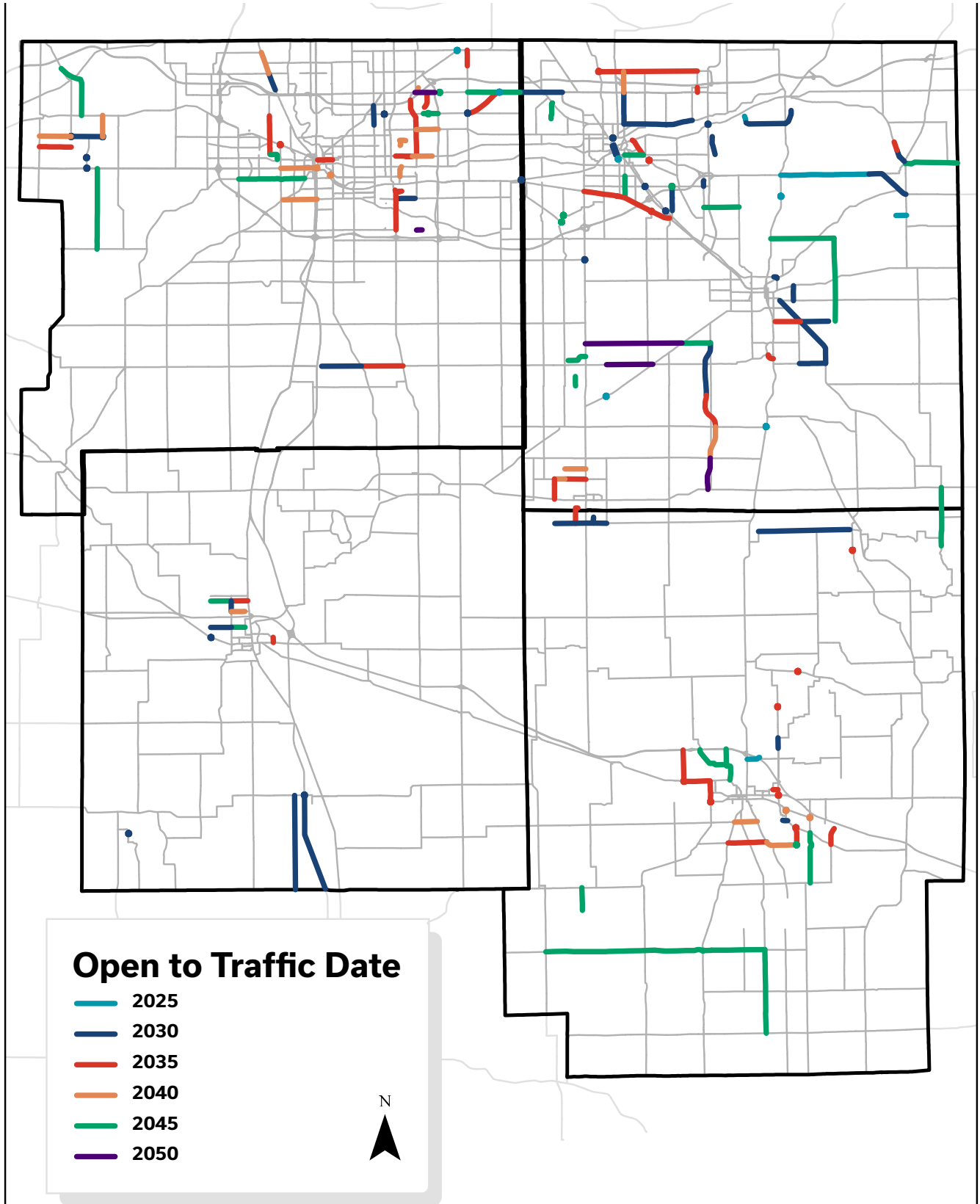
- Roadways
- Active Transportation
- Public Transit
- Freight
- Electric Vehicles
- Connected and Autonomous Vehicles

Roadways

The 2050 Transportation Plan recommends a program of projects and strategies intended to reduce existing and projected congestion, support increased mode choice, and address deficiencies within the network. The fiscally reasonable roadway recommendations will improve the existing and future network by upgrading or adding new roadways. A map of the roadway transportation project is shown below and a full listing of the projects can be found in Appendix A. Implementing these recommendations will help the region achieve the goals, objectives, and performance targets discussed in previous chapters. However, future deficiencies cannot always be precisely or accurately modeled or predicted. Therefore, the 2050 Transportation Plan is a dynamic document, one that will undergo future updates to reflect changing conditions and needs. This is why MACOG continually monitors the transportation network and works to implement short-term improvements.

Additionally, MACOG is committed to prioritizing safety in order to reduce the risk of death and serious injury that result from incidents on transportation systems in our region. MACOG was selected for a Safe Streets for All grant. MACOG is soliciting proposals from qualified consultants to provide professional planning services for the preparation of the Regional Safety Action Plan. This plan will assist MACOG and local governments in planning and programming to foster and build a safe transportation system for all users of all modes with the ultimate goal of reducing crash related fatalities and serious injuries. Recommendations should be structured around the Safe Systems Approach, which provides the framework to help agencies get to zero fatalities by addressing safer roads, safer road users, safer speeds, safer vehicles, post-crash care, equity, and culture.

Figure 6-1: Roadway Projects



Active Transportation

Our transportation network is more than just roads for vehicles. It also incorporates sidewalks, bike lanes, trails and other facilities for pedestrians, bicyclists, and transit users. Active transportation is human-powered transportation that engages people in healthy physical activity while they travel from place to place. People walking, bicycling, pushing strollers, using wheelchairs and other mobility devices, skateboarding, and rollerblading are all forms of active transportation. Everyone is a pedestrian in each trip they take, whether that means walking from the transit stop to work or walking across the parking lot.

The MACOG region boasts more than 800 miles of trails, bike lanes, and bicycle routes. MACOG continues to foster a region-wide commitment to accessible and efficient active transportation. In 2016, the Active Transportation Plan was adopted into the Michiana on the Move: 2040 Transportation Plan. This plan identified needs and resources to improve and increase walking and bicycling in the region and serves as a comprehensive strategy to ensure that all users of the transportation network are able to move around in a safe, connected, and accessible environment.

In 2019, MACOG adopted a Regional Complete Streets Policy to guide projects receiving funds allocated for transportation projects in the South Bend and Elkhart-Goshen Urbanized Area.

A map of the active transportation projects is shown below and the full project listing for the Active Transportation Plan can be found in Appendix B.

Active Transportation Plan Policy Objectives

Make improvements to better connect residents and visitors to each of the major communities and destinations within and surrounding the region

Improve connectivity between bicycling, walking, public transit and other modes of transportation.

Integrate transportation and land use policies to encourage sustainable growth that encourages walking, bicycling, and transit.

Form, maintain, and grow public and private partnerships to encourage development and connectivity of active transportation facilities.

Create an active transportation network and programs that will make the Michiana region known as a walk- and bike-friendly destination.

Work with partners to ensure that outreach efforts have a consistent message to educate community members on safe and courteous walking, bicycling, and driving habits for children and adults.

Utilize national best practice guides in network planning, infrastructure design, project management, and maintenance procedure to ensure that facilities provide an accessible transportation network.

Work with partners to build awareness about the personal and community benefits and advantages of using active transportation with public transit, especially for everyday trips

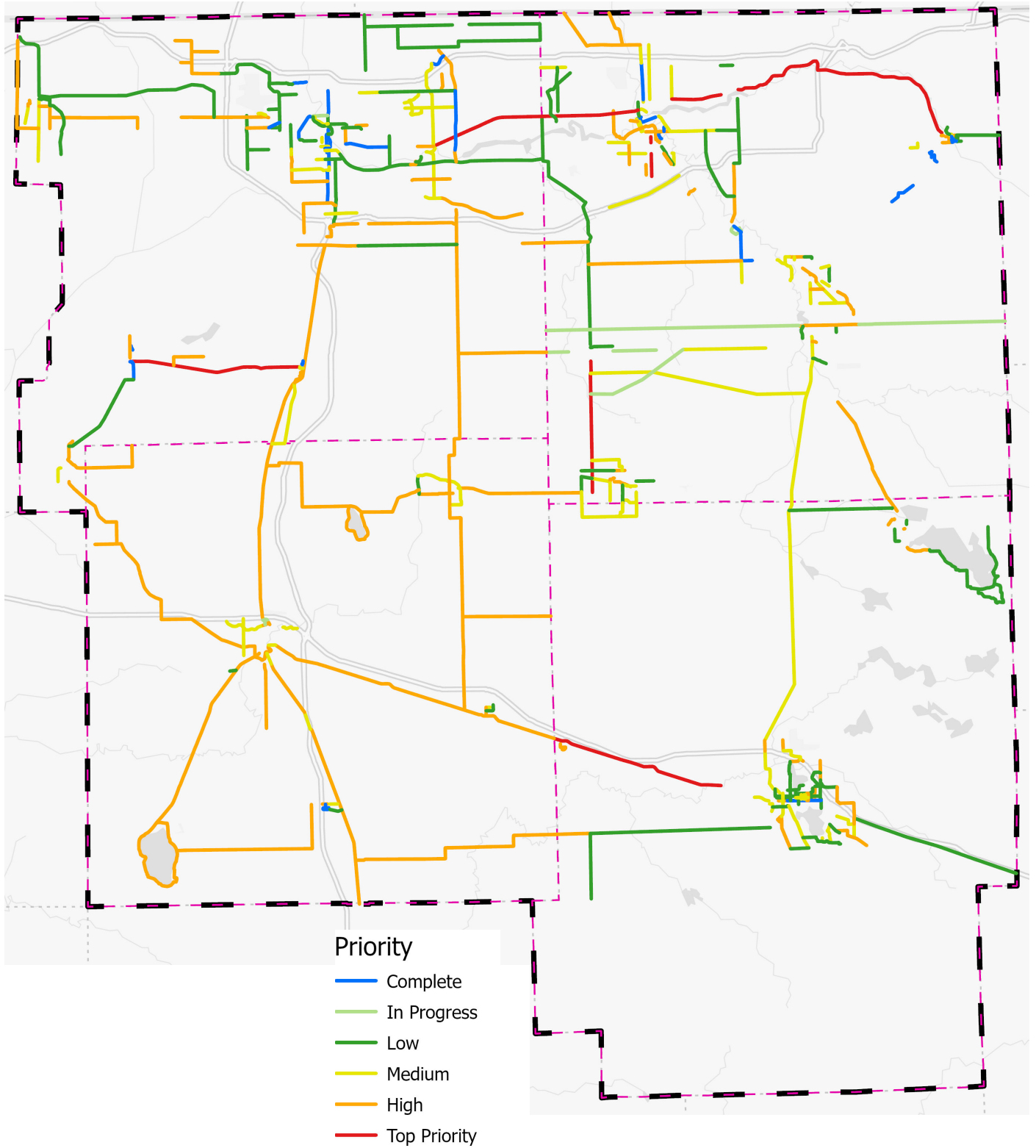
Promote the accessibility and availability of destinations using active transportation, particularly in areas with a higher demand for walking, bicycling, and public transit.

Provide training and best practice information to law enforcement and public officials to enforce and enact pedestrian and bicycling friendly laws and policies throughout the region.

Promote the proper use and installation of safety equipment, such as lights, helmets, and reflective clothing.

Organize and support programs and events that promote safe active transportation year-round.

Figure 6-2: Active Transportation Projects



Public Transit

MACOG in partnership with Transpo created the Connect Transit Plan. It outlines a vision and blueprint for enhancing public transit in the Region. This multi-year study started in Summer 2021, and was adopted by the Transpo Board of Director plus the MACOG Policy Board in Spring 2023. This plan identifies a short-term network that is cost-neutral, except for the implementation of two new bus routes in Goshen that have already been fully funded. The Additional Funding Network presents an aspirational network for what public transit could be with an 80-85% increase in funding.



Hospital and Goshen College. Route 50 also has a new deviation to serve the new County Courthouse location and to save time for this deviation, Route 50 only serves the south side of Concord Mall.

Short Term Network Changes

The Short Term Network recommends changes that would slightly shift the priorities of transit investment toward goals that support higher ridership and better access for most people, within the current transit budget. The outcomes of the proposed changes would improve service for many, but also have trade-offs. A few key differences from today’s network include:

Elkhart-Goshen

- All routes are numbered. With the addition of two new routes, color-coded route naming does not work well.
- Routes 32 and 33 each have small routing tweaks to connect shopping centers and other destinations more efficiently.
- Route 35 (Orange Line) no longer serves Concord Mall since activity in that area is much lower as the mall is mostly closed. With the time savings from not serving the mall, Route 35 now serves more of the industrial areas along Middlebury Street, Toledo Road, Eastland Drive, and County Road 17.
- In Goshen, new Route 52 serves West and North Goshen, reaching Roxbury Park, Arbor Ridge Apartments, and the Chamberlain Neighborhood.
- New Route 53 serves parts of South Goshen including Historic Southside, Reith Park, Greencroft, all the way to Winchester Trails.
- With the new Route 53, Route 50 (Red Line) is shifted to Main Street to directly serve Goshen

South Bend-Mishawaka

- Route 1 is slightly simplified to operate via Colfax, Jacobs, to McKinley. It is also extended to Southwood and Reverewood, to take over the eastern part of existing Route 11.
- New Route 2 serves the Orange and Washington corridors, the Excel Center, and the Far Northwest, but only hourly.
- With no new funding, the addition of Route 2 means that Route 3 is now entirely hourly. It remains mostly on Portage.
- With the addition of Route 2, Route 4 is now simplified and remains on Lincolnway, instead of deviating to serve College, Orange, and Olive Streets.
- Route 5 would operate the same limited schedule. It is straightened to stay on Michigan Street instead of deviating to Iroquois. The loop at the north end has been extended to serve Clay High School.
- Routes 6 and 8 are revised in how they serve the Michigan, Fellows, and Miami corridors. Route 6 now serves Irish Hills Apartments, and continues to run every half hour, while Route 8 is reduced to every hour. Route 8 is extended farther south to Jackson Road, where Route 6 runs today.
- Route 7 is extended to serve Walmart and other big box stores, St. Joseph Regional Medical Center and along Main Street to connect to Mishawaka Transit Center. Its path through Notre Dame has also been adjusted to be simpler and faster. With this revision Route 15A is no longer needed and does not exist anymore. This also provides a doubling of

- frequency on Main Street in Mishawaka.
- Route 9 is replaced by Route 30, which provides a one-seat ride between Downtown South Bend and Downtown Elkhart, with faster travel times of under one hour. Route 30 also remains on Mishawaka Avenue from Logan to Main before turning south to Downtown Mishawaka.
- Route 10 would run similar to today, except be extended further west to the Martin's Grocery store on Mayflower.
- Route 11 would be mostly similar to today except that the eastern portion serving Southwood Manor and Reverewood would now be part of Route 1 and be served once per hour.
- Route 12 has been adjusted to run two-way along Main then run one-way on Indiana, Olive, Ewing, Kemble, Calvert.
- Route 13 has been extended to Main Street to make a direct connection to Route 15. It has also been adjusted near downtown
- Route 15 would replace Route 15B and be changed to travel in both directions on Grape Road from University Mall to McKinley, before following follows Logan to Lincolnway to Downtown Mishawaka, with Route 7 replacing route 15A now providing a 30 minute connection along Main Street between Mishawaka Transit Center, the St. Joseph Regional Medical Center, and University Park Mall
- Route 16 has been revised to operate via Portage from Downtown to Bendix and Cleveland, since Route 2 now provides all-day, two-way service to the industrial areas north of the airport. Route 16 has been extended north along Dylan Drive to serve new destinations like FedEx, Amazon and the LOGAN Distribution Center.

Transpo and MACOG staff will develop revised schedules, booklet maps, system maps, and other materials as well as conduct the necessary internal changes necessary to implement the route changes in the Short-Term Network. Some changes may be made very soon, while others may take many months before they can be implemented. For example, new service in Goshen will require new vehicles, which will take a number of months to procure from a manufacturer.

Additional Funding Network

The Additional Funding Network presents transformative changes that would substantially grow ridership through new investment in transit. The outcomes of which would more greatly effect residents and businesses access to transit and to jobs across the region.

Elkhart-Goshen

- Improved 30-minute frequency of service on two corridors in Elkhart: Cassopolis with a simplified Route 33 and to the southwest with a new Route 36 serving South 6th Street and Oakland Avenue.
- A new hourly Route 34 serving Osolo Road, the Industrial Park along CR 6, ending near CR 17 at the under construction Amazon Facility.
- Every 30-minute service on the new Route 52 in West Goshen and the new Route 53 in southern Goshen, Rieth Park, and Greencroft.
- Route 50 (Red Line) is extended farther south to provide 30-minute service to Winchester Trails.
- A revised, simpler service to North Main Street and Arbor Ridge Apartments with hourly service on Route 51A.
- A new hourly service through the Chamberlain neighborhood and East Goshen on Route 51B.
- With better service in southwest Elkhart, the looping pattern for Route 35 (Orange Line) is reversed to travel clockwise, simplifying and speeding service.

South Bend-Mishawaka:

- Frequent (15-minute service) on Western Avenue (Route 10), Mishawaka (Route 30), Portage (Route 3), Michigan (Route 6) and part of South Bend Avenue (Route 7).
- Revised Route 7 with frequent service between Downtown South Bend and Notre Dame.
- Route 7 maintains its 30-minute service between Notre Dame, University Park Mall, St. Joseph Medical Center and Downtown Mishawaka.
- Route 8 improves to every 30 minutes on Fellows to Donmoyer where it shifts into two hourly services to Walmart and Erskine Village.
- Route 13 now has a bi-directional loop.
- Routes 1, 2, 12, and 14 are improved to every

30 minutes and Route 18 is added, providing direct service to the Pokagon Community, Four Winds Casino, and adjacent areas.

- Routes 5 and 16 are improved to all-day services with hourly service.

To see some or all of the Additional Funding Network recommendations, local partners, like cities, counties, businesses, institutions or others would need to come to the table with additional funding to support improved services. These local dollars can be extended with some federal grant funding for certain kinds of improvements, but long-term, it is essential to have local sources of funding to ensure that expanded services can be operated

Fixed route transit service is not the only tool to support access to jobs and opportunity for those without cars or those who cannot drive. Vanpool and carpool programs are a commonly used approach to help connect people to major employment centers. In South Bend, Mishawaka, Elkhart, and Goshen there are many industrial parks and large areas of manufacturing, logistics, and warehousing operations, particularly on the periphery of the urban areas. Newer facilities are being built regularly, and those on the edge of the developed areas are particularly hard to serve with fixed route transit. MACOG is working to implement a regional vanpool.

The Connect Transit Plan can be read in full at www.connecttransitplan.com.

Figure 6-3: Elkhart-Goshen Additional Funding Transit Network

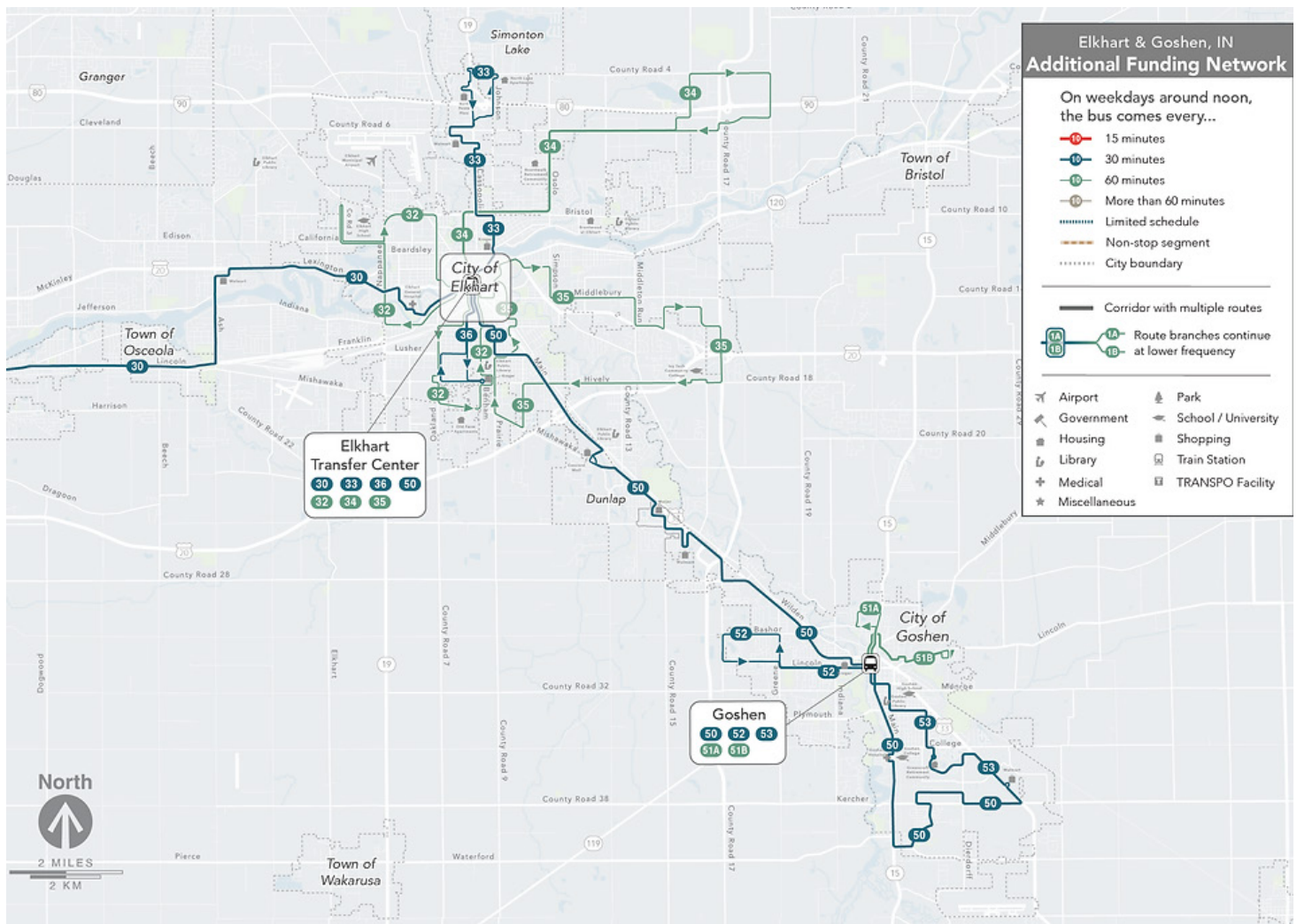
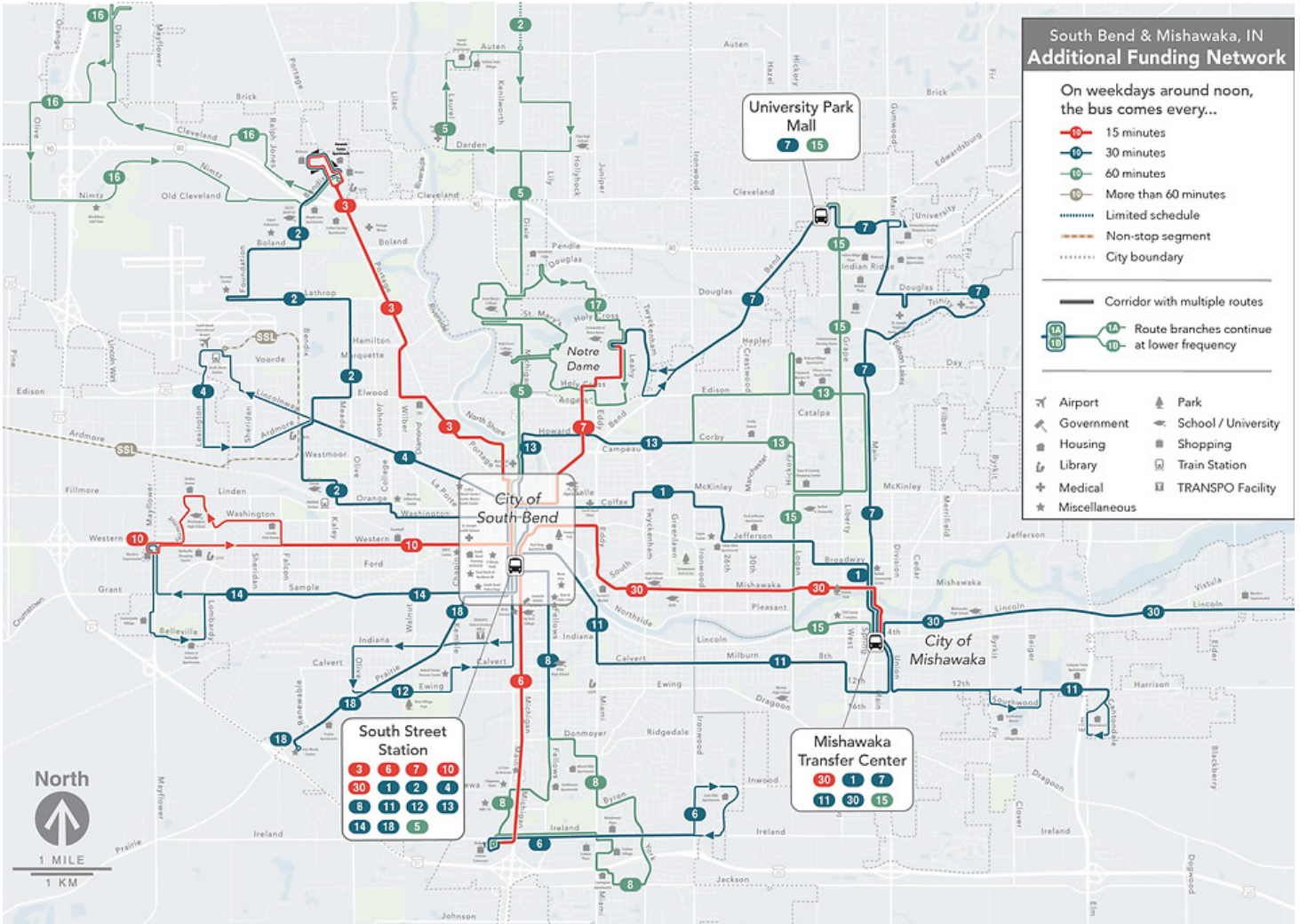


Figure 6-4: South Bend Additional Funding Transit Network



Freight

The region is a manufacturing powerhouse, with one in three jobs in the region related to manufacturing, generating \$15.8 billion in regional Gross Regional Product annually. The movement of freight is crucial to the regional economy, as it involves the transportation of raw materials, intermediate goods, and finished products. Efficient and reliable freight movement is necessary for manufacturers to receive inputs and distribute products to customers and markets both domestically and internationally.

Inefficient or delayed freight movement can lead to disruptions in the supply chain, resulting in increased costs, reduced productivity, and potential losses in revenue. Therefore, an efficient and reliable freight system is critical to attracting and retaining businesses, providing them with a competitive advantage, enabling them to operate more efficiently and at a lower cost than their competitors in other regions.

In the 2023 Indiana Multimodal Freight and Mobility Plan it discusses that trucks dominate the freight movements in Indiana. In 2022, 590 million tons and \$680 billion of freight are estimated to move through Indiana’s transportation system. Trucks carry 80% of all freight tonnages and 95% of all freight values to, from, within and through Indiana. Rail is the second largest mode to carry commodities in the state, by accounting for 15% of total tonnages and 3% of total values in 2022. Water carries 5% of total tonnages and 0.4% of total values. Air has an almost negligible effect on the overall state tonnages, however, it represents 1.2% of overall value. This is because air

Figure 6-5: Average Daily Long-Haul Traffic on the NHS: 2015

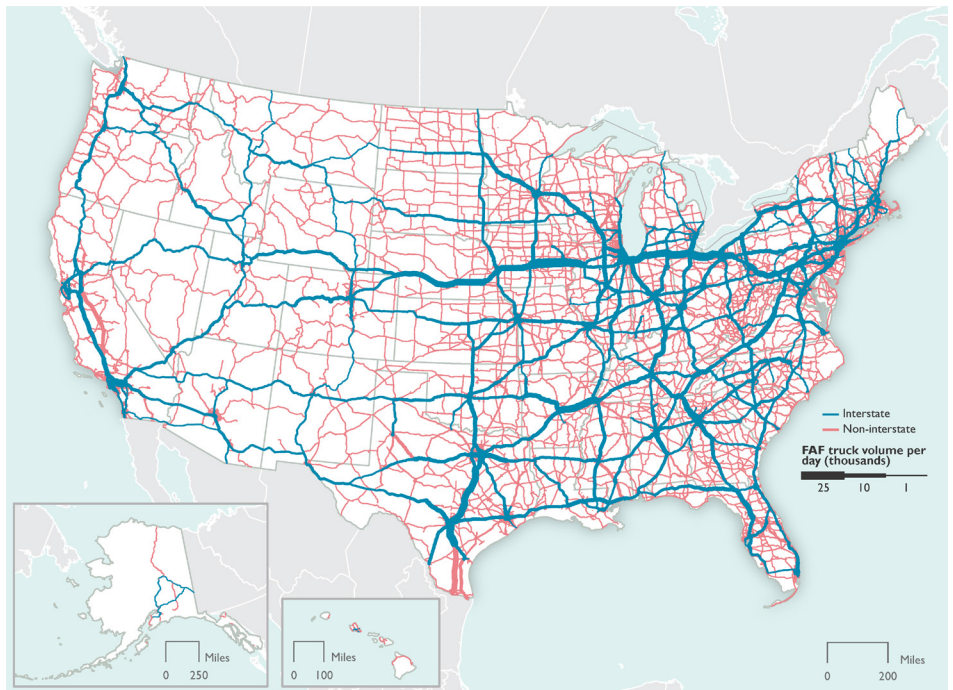
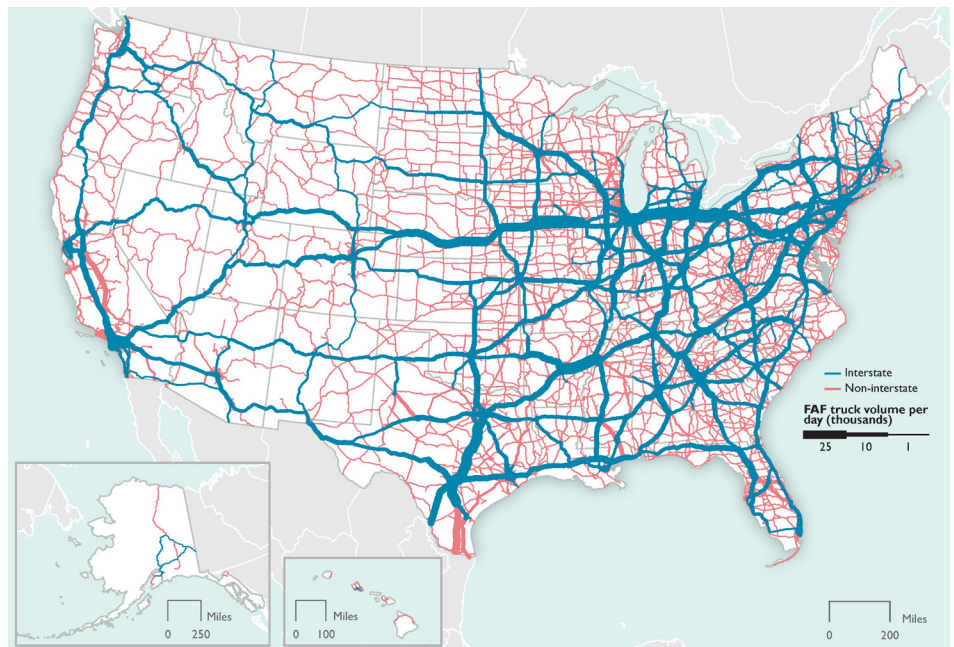


Figure 6-5: Average Daily Long-Haul Traffic on the NHS: 2045



cargo is typically comprised of higher unit cost goods.

By 2045, Indiana's freight commodities are estimated to grow to 760 million tons and \$1.09 trillion, with an increase of 28% and 61% respectively. While the mode share is expected to remain similar through 2045, trucks will have an even larger share according to forecasts, by carrying 86% of total tonnages and 96% of total values. Remaining the second largest mode by 2045, rail has a decreased share of commodity shipment by tonnage (10%) and the same share of total commodity value (3%). Goods carried by water and air continue being a small share of total freight in Indiana through 2045,

Long-haul freight truck traffic in the United States is concentrated on major routes connecting population centers, ports, border crossings, and other major hubs of activity. By 2045, long-haul freight truck traffic in the United States is expected to increase dramatically on Interstate highways and other arterials throughout the nation. Additionally, congested highways carrying a large number of trucks substantially impede interstate commerce, and trucks on those segments contribute significantly to congestion, see Figures 6-5, 6-6, 6-7 & 6-8. The increased freight traffic and increased congestion will impact the regional transportation network, especially I-80/90, US 31, US 30 and US 20. Understanding these forecasts and how to address them is critical to the efficiency movement of goods. MACOG is working to finalize a regional Freight Mobility Study by 2024. Any new recommendations from this plan that are endorsed and approved will be amended into this plan.

Figure 6-6: Peak Congestion on High Volume Truck Portions of NHS: 2015

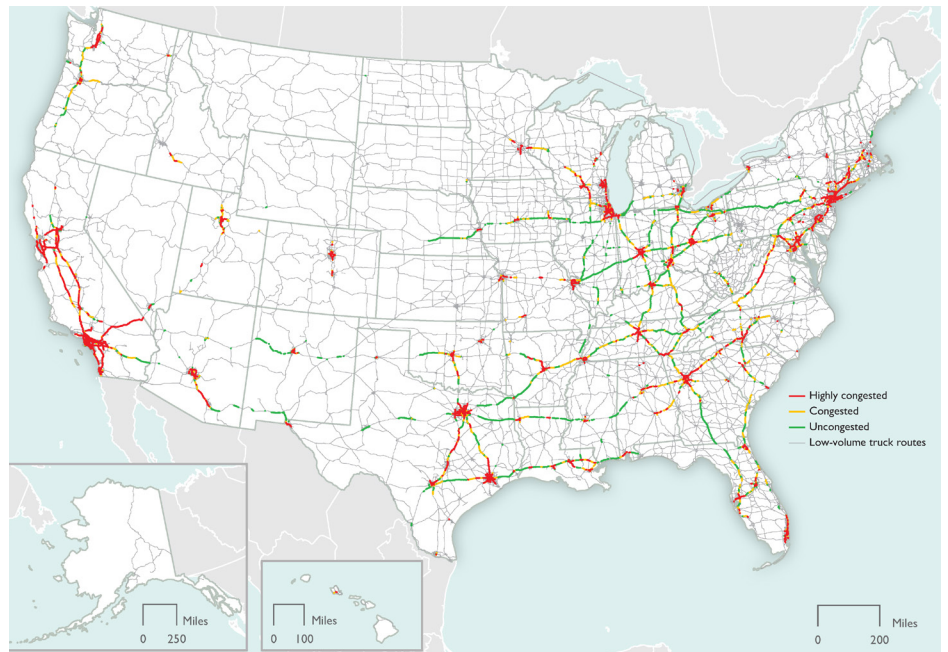
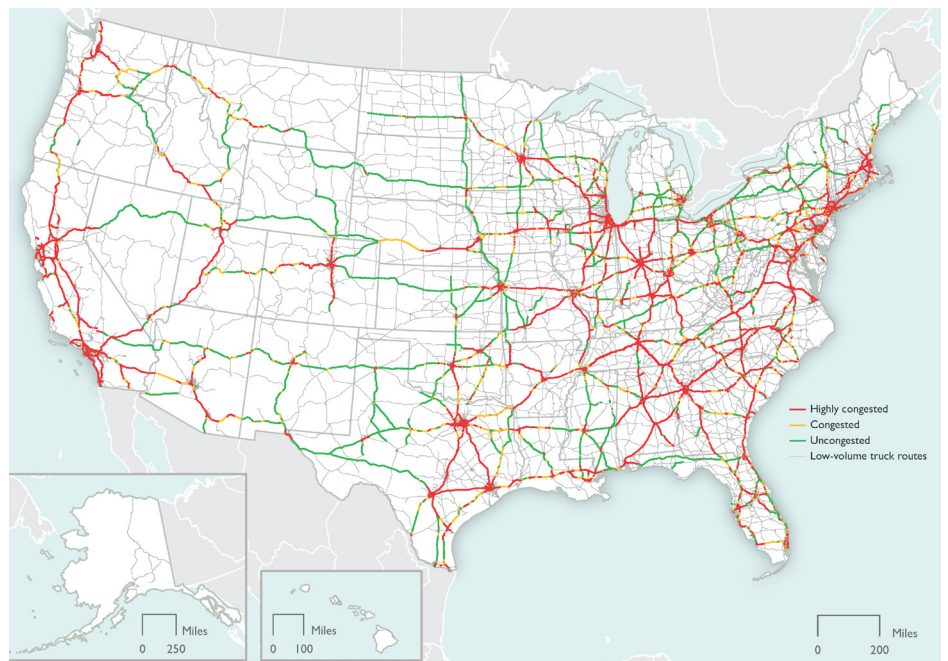


Figure 6-7: Peak Congestion on High Volume Truck Portions of NHS: 2045



Connected and Autonomous Vehicles

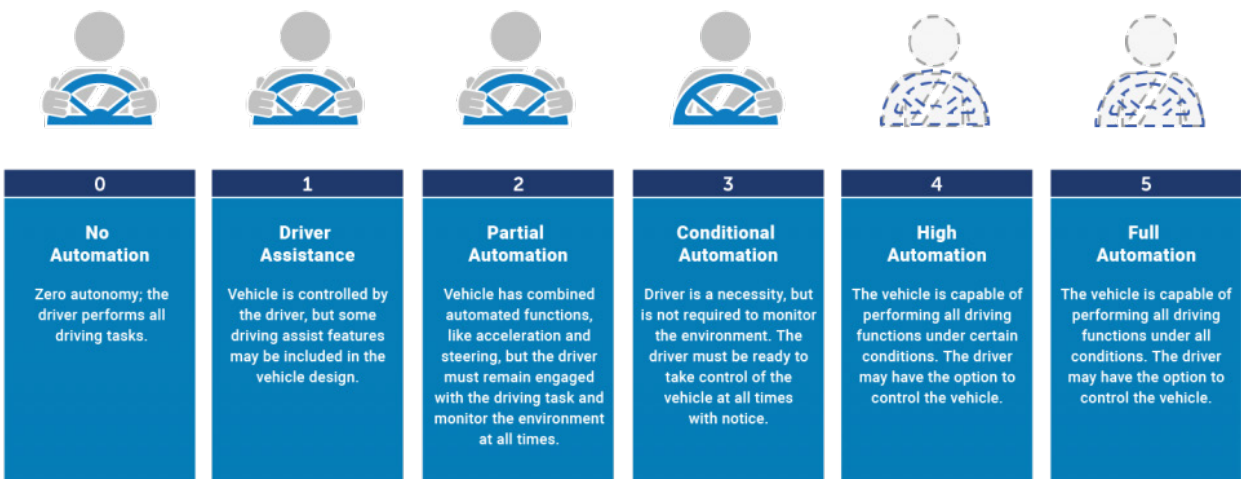
With the adoption and utilization of new technologies, our transportation system is expected to experience significant change in the coming decade. Most significant of these technologies includes Connected and Autonomous Vehicles (CAVs), increased adoption of electric vehicles (EVs), and ridesharing and other Mobility as a Service (MaaS) models such as Lyft, Uber, as well as scooters and bike sharing. The continuing development of these technologies and services will play a considerable role in the future of mobility for people and freight, and as such should be considered in on-going planning efforts in the region.

The U.S Department of Transportation defines vehicle automation as vehicles that have some control functions that are safety-critical, such as steering, throttle, and breaking. There are six levels of vehicle automation that are depicted below. Connected vehicles refer to those that can

communicate with other vehicles or devices along the roadway, while autonomous vehicles are those that can maneuver without driver assistance.

The availability and prevalence of CAVs may require changes to transportation law, policies, current infrastructure design, and access management. While traffic may flow more efficiently with the presence of CAVs, the change in Vehicle Miles Traveled (VMT) could either increase or decrease due to a variety of factors such as mode shifts, impacts on development and commuting patterns, as well as accessibility to non-drivers.

RSG coordinated with Michiana Council of Governments (MACOG) staff to refine three Mobility as a Service (MaaS) and Connected/ Autonomous Vehicle (CAV) scenarios to be evaluated for the Long Range Transportation Plan (LRTP). The scenarios represented best and worst case CAV scenarios in 2045 and a MaaS/shared-CAV scenario for an interim year, 2035. The report can be read in full at www.macog.com/docs/transportation/tp/2045_TransportationPlan_Apl.pdf.



Electric Vehicles

The United States automotive industry is going through a transformation and more manufacturers are adding electric vehicles to their lineups. Many automakers have detailed plans to electrify large portions of their lineups over the next decade. MACOG wants to ensure that our region is prepared for this transition.

In the realm of planning and technical assistance, our primary goal is to enhance the accessibility and utilization of electric vehicle (EV) charging infrastructure in the MACOG region. This begins with a comprehensive evaluation of the charging landscape. Through this evaluation, we aim to identify gaps in the network of EV charging stations and other alternative fuel options. This understanding will guide us in prioritizing projects that address these gaps, ensuring that our residents, businesses, and organizations have a broader range of choices when it comes to transportation modes and fuel types. Additionally, we are committed to supporting local governments in providing a basic level of access to public electric vehicle charging to provide residents, businesses, and other organizations with greater choice in their transportation mode and fuel type.

When it comes to Level 2 Destination Charging, MACOG's focus is on addressing charging deserts especially in rural areas and small towns within MACOG. These areas often lack publicly available charging infrastructure are in areas with indicators of potential disadvantage or a high proportion of renters or multi-family residents who may not be able to charge where they live. By concentrating our efforts on these underserved areas, we can work with partners and local governments to strategically deploy Level 2 charging, bridging the accessibility gap and supporting the transition to electric vehicles.

When it comes to Level 3 / DCFC (Direct Current Fast Charging), we are closely monitoring planned public and private investments in DCFC charging infrastructure. This includes initiatives like the Volkswagen program, NEVI Plan, Electrify America network, and Tesla Supercharger network. Additionally, we will continue to advocate for the designation of US-30 as an Alternative Fuel Corridor (AFC) for EV charging. Finally, we recognize the importance of integrating Heavy-Duty Zero Emission Vehicle (ZEV) infrastructure considerations into future Freight Plans.

Through these multifaceted efforts, we are committed to advancing the accessibility, viability, and sustainability of cleaner transportation options in the MACOG region, benefiting our community and the environment.







07

Financial Plan

07

Under federal regulations, the 2050 Transportation Plan must include a financial plan that demonstrates how the adopted plan can be implemented. The financial plan shall compare the estimates of funds that are reasonably expected to be available for transportation uses, including transit, and the cost of constructing, maintaining and operating the total (existing, plus planned) transportation system over the period of the plan. As such, the development of reasonable funding estimates and costs is essential to the development of a transportation plan that is consistent with the federal requirements for fiscal constraint.

Federal Funding Programs

The Federal Highway Administration (FHWA) allocates federal funds through Congressional legislation. The Infrastructure and Investment and Jobs Act (IIJA) was signed into law November 15, 2021. The allocation of federal funds in MPO areas may only be spent if it is included as part of the transportation planning process and only if they are included in an approved TIP. These funds may be used on functionally classified system of federal, state, and local roadways throughout the United States.

The core IIJA funding programs are divided into the following categories:

- National Highway Performance Program (NHPP)
- Surface Transportation Block Grant Program (STBG)
- Congestion Mitigation & Air Quality Improvement Program (CMAQ)
- Highway Safety Improvement Program (HSIP)
- Transportation Alternatives (TA, Set-Aside from STBG)

- Carbon Reduction Program (CRP)
- PROTECT Formula Funding

Indiana Department of Transportation (INDOT) is responsible for projects on its State and Federal facilities. All federal aid eligible roads are functionally classified by agreement between the State, MPOs, and LPAs (Local Public Agencies) based on Federal Highway Administration (FHWA) guidelines for functional classification. All roads classified at major collector or higher may receive Federal Surface Transportation Program (STBG) funds. The selection of projects to be developed using STBG funds in the South Bend and Elkhart/Goshen Urbanized Areas under the requirements of IIJA are to be made by the MPO in consultation with the State.

The Highway Safety Improvement Program is continued (HSIP) to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. The CMAQ program is continued to provide a flexible funding source to States, MPOs and LPAs for transportation projects and programs to help meet the requirements of the Clean Air Act. Active Transportation projects are able to utilize STBG, as well as a Transportation Alternatives set-aside from STBG.

Two new funding programs established in IIJA include the Carbon Reduction Program (CRP) and Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation Program (PROTECT). CRP is designed to fund projects that reduce transportation emissions, while PROTECT is established to help make surface transportation projects more resilient to natural hazards.

The current federal legislation funds include several formula based calculations defined by Congress, which are distributed to urban areas based on population and by a funding agreement between the MPO and INDOT. Currently, funding is available in rural areas on a competitive basis at INDOT's discretion.

Local Funding Programs

The following accounts serve as the local source of revenue for highway project implementation; each of these sources can be used as the local match for Federal funds:

- Local Road and Street Account (LR&S)
- Motor Vehicle Highway Account (MVHA)
- Bonding Capabilities
- Tax Increment Financing (TIF)
- Cumulative Bridge Funds
- Major Bridge Funds
- Capital Improvement Cumulative Funds
- Wheel Tax
- Economic Development Tax (EDIT)

Local Road and Street Account (LR&S)

LR&S funds provide an important source of revenue for both city and county highway departments. The funds are dedicated for engineering, construction, or reconstruction of roads or streets, as well as for the payment of bond and interest to finance a project of this type.

Motor Vehicle Highway Account (MVHA)

MVHA revenue is an account of the General Fund of the State of Indiana, which, by statute, is credited with the collection of the first six cents of the motor fuel and fuel use taxes, plus the statutory fees for motor vehicle registration and operation. These highway user taxes are collected by the State and then a portion is distributed back to the cities and counties for administration. The MVHA is the principal source of revenue for the overall operation of street and highway departments. MVHAs uses include the purchase of materials, labor costs, and/or equipment purchases required in the maintenance and construction of streets and roads.

Bonding Capabilities

The two major categories of debt financing are:

- Revenue bonds
- General obligation bonds

Revenue bonds in Indiana are used for proprietary function such as sewage treatment and refuse disposal equipment by all levels and types of local governments. Governments are not limited in the amount of revenue bond debt they may incur. Revenue bonds hold no pertinent place in a discussion of finances for our purposes, and will

no longer be referred to in this report.

General obligation bonds are used for debt financing of non-proprietary functional expenditures such as roads and schools. The amount of general obligation debt, which local governments and special districts may incur, is limited to two percent (2%) of net locally assessed property value. (This limit is set and may be altered by the Indiana State Legislature)

Tax Incremental Financing (TIF)

TIF funds are used to pay off bonds, or are used to pay directly for infrastructure projects in a particular area of a city or county. These funds are collected from a particular area and are spent in a particular area to increase the tax base and encourage future development. TIF funds may also be used as local match for federal and state projects.

Cumulative Bridge Funds (CBF)

Cumulative Bridge Funds are a supplementary source of revenue for the construction and repair of highway bridges and grade separations. Indiana statutes authorize the county commissioners of the individual county units to establish a county-wide tax levy not to exceed ten cents (\$0.10) on each one hundred dollars (\$100) assessed valuation of all taxable personal and real property within the county and municipalities for the purpose of accumulating funds for the construction and repair of highway bridges.

Major Bridge Funds

Major Bridge Funds are local county revenues available to counties for longer span bridges. Counties with populations between 100,000 and 700,000 are eligible to establish this fund. Those county's are eligible as long as there is are major obstructions (physical barrier such as rivers that inhibits to the passage of motor vehicle traffic) between commercial or population centers are eligible. The county may levy a tax in compliance with Indiana statutes not to exceed three and thirty-three hundredths cents (\$0.0333) on each one hundred dollars (\$100) assessed valuation of all taxable personal and real property within the county to provide for the major bridge fund. Funds

may be used for major bridges, defined as 200 feet or more in length with special exceptions for bridges within cities.

Capital Improvement Cumulative Funds

All cities and towns in Indiana may establish Capital Improvement Cumulative Funds to provide monies for any or all ten purposes expressed in Chapter 226, Section 1, Acts 1965. This fund then receives the allotment of the state-collected cigarette tax. The ten purposes include the acquisition of land or right-of-way to be used for streets, roads, alleys, sidewalks, or thoroughfares, and the maintenance of these facilities. Capital Improvement Cumulative Funds may also be used toward the retirement of general obligation bonds. Traditionally, limited amounts of this money have been used in transportation areas.

Wheel Tax (Local Option Highway User Tax)

The Local Option Highway User Tax is available to all counties. It requires that the County Council and County Commissioners approve the tax. St. Joseph and Elkhart Counties approved the tax in 2003. Kosciusko County approved a Wheel Tax in June 2014. Distributions are made to the cities and towns as well as the counties.

Economic Development Income Tax (EDIT)

The Economic Development Income Tax is an optional tax available to all counties in Indiana. It must be passed by the County Council and approved by the County Commissioners. This tax is also known as CEDIT, County Economic Development Tax. It can be adopted by the County Council if the county has the County Adjusted Gross Income Tax (CAGIT), or by the County Commissioners if the county has County Option Income Tax (COIT), or either body if the county has neither CAGIT nor COIT. Most counties that use CEDIT also have either CAGIT or COIT. CEDIT generally can be adopted at rates up to 0.5%, but the combined CAGIT and CEDIT rates in counties with both taxes cannot exceed 1.25%, and the combined COIT and CEDIT rates cannot

exceed 1%. Revenue is divided among the county, cities and towns, and must be used for economic development or public capital projects. CEDIT revenue is collected by the state Department of Revenue and distributed back to the adopting counties. St. Joseph and Kosciusko County have adopted COIT and CEDIT. Elkhart County has adopted CAGIT and CEDIT. Marshall County has adopted CAGIT.

Transit Funding Programs

The Federal Transit Administration (FTA) apportions grant funds, which can be used in urbanized areas of 50,000 or more persons as defined by the decennial census. In order to use these funds, the Governor must have previously authorized a designated recipient to receive said funds and comply with all FTA operating, planning, and capital equipment requirements. In the South Bend and Elkhart-Goshen urbanized areas, there are three designated recipients, MACOG, the South Bend PTC and NICTD. MACOG has dual designation as a designated recipient in South Bend as well as in Elkhart-Goshen. The City of Niles is the designated recipient for Niles Dial-A-Ride System.

Urban Funds

Section 5307 funds are formula funds used for transit planning, operating, and capital equipment purchases. Section 5307 recipients include TRANSCO, the City of Niles (South Bend portion of the TMA), NICTD, and MACOG, which operates the Interurban Trolley and the Interurban Trolley Access Service. Section 5337 and 5339 are also formula based funding programs. Section 5337 is FTA's first stand-alone initiative written into law that is dedicated to repairing and upgrading the nation's rail transit systems. NICTD uses these funds to maintain its fixed guideway in a state of good. Section 5339 provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities. Section 5310 provides formula funding to large urbanized areas over 200,000 (South Bend Urban Area) to increase the mobility of seniors and persons with disabilities.

Rural Funds

Section 5311 provides financial assistance in rural and small urban areas (areas of 5,000 to 50,000 persons) through a formula grant program administered by INDOT. These funds do not require a designated recipient and may be used by local public agencies, non-profit organizations, and operators of public transit for operating and capital equipment purchases. A Section 5311 program recipient in the MACOG region is the Marshall County Council on Aging and Kosciusko Area Bus System (KABS). Prior to 2008, MACOG was the recipient of the funds. Section 5310 is also available for all areas under 200,000 in population from a discretionary program funded by FTA through the INDOT and is a capital equipment program available to non-profit agencies.

Local Revenue Estimates total \$56.63 million per year in the urbanized area based on a 5-yr average of receipts reported to the Department of Local Government Finance. These funds are available for all aspects of operating, maintaining, and constructing the transportation network. It is assumed that available revenues for projects listed in the plan represent only a portion of total local revenue, to account for expenditures of operations and maintenance. While the amount of funds spent on transportation changes year to year, it is expected that local governments spend at least \$5.5 million a year for construction and reconstruction projects. This leaves the majority of funds, \$51.13 million, annually for maintenance and operations. In order to match the Federal Funds provided to the urban area the local governments would need to provide the 20% match which is \$94.9 million or 16% of the 20-year Local Revenue Estimates for the urbanized area. It is fiscally reasonable then to assume that the local governments are able to provide the local match for these projects.

Financial Plan

Transportation

Under federal regulations, the 2050 Transportation Plan must include a financial plan to demonstrate how the adopted transportation plan can be implemented. The following tables demonstrate the financial feasibility of the Plan and how projects could be funded.

Table 7-1: Estimated Annual Local Public Agency Revenue (in Millions)

LPA	MVHA	LRSA	LOHUT	CBF	MBF	Total	Projected Revenue to 2045
Elkhart County	\$15.15	\$3.97	\$0.43	\$1.28	\$3.33	\$24.16	\$241.62
St. Joseph County	\$20.32	\$7.13	\$2.04	\$0.91	\$2.08	\$32.47	\$324.72
Urban Area Total	\$35.47	\$11.10	\$2.47	\$2.19	\$5.41	\$56.63	\$566.34

MACOG is responsible for prioritizing and distributing federal funds in the urbanized area. Under the current transportation legislation, MACOG receives approximately \$16.3 million for both the Elkhart and South Bend Urbanized area (Table 7-2). This demonstration assumes that federal funds are applied only to construction costs that reflect the year of expenditure. The assumed federal/local split for transportation projects is 80% federal and 20% local, unless the project is known to be completely funded locally. It is also assumed that the growth rate for Federal Funds in the urbanized areas will remain flat-line (0%) at FY 26 amounts for St. Joseph and Elkhart Counties, as the current federal authorization will expire in 2027. Both Marshall and Kosciusko Counties are considered rural and do not directly receive a federal allocation for transportation projects. Therefore, they are not included in the financial plan. We have included the projects in this plan if reasonable additional resources (ie. Group III or Group IV funds from the State, competitive or discretionary grants, etc) were available.

Tables 7-3 through 7-5, demonstrates the financial reasonableness of the Michiana on the Move: 2050 Transportation Plan. For each funding period, the urban area federal funding allocations remain above the needed federal funding for projects in this plan.

Table 7-2: Estimated Federal Funds Allocation (in Millions)

County	Total	2024-2030	2031-2040	2041-2050
Elkhart Co	\$164.30	\$42.60	\$60.85	\$60.85
St. Joseph	\$277.05	\$71.83	\$102.61	\$102.61
Urban Area Total	\$441.35	\$114.42	\$163.46	\$163.46

Table 7-3: Estimated Total Project Costs (in Millions)

County	Total	2024-2030	2031-2040	2041-2050
Elkhart Co	\$252.65	\$83.58	\$73.08	\$95.99
St. Joseph	\$221.85	\$36.72	\$96.88	\$88.25
Urban Area Total	\$474.51	\$120.30	\$169.96	\$184.24

Table 7-4: Estimated Federal Funds Needed (in Millions)

County	Total	2024-2030	2031-2040	2041-2050
Elkhart Co	\$202.12	\$66.87	\$58.46	\$76.80
St. Joseph	\$177.48	\$29.38	\$77.51	\$70.60
Urban Area Total	\$379.61	\$96.24	\$135.97	\$147.40

Table 7-5: Estimated Matching Funds Needed (in Millions)

County	Total	2024-2030	2031-2040	2041-2050
Elkhart Co	\$50.53	\$16.72	\$14.62	\$19.20
St. Joseph	\$44.37	\$7.34	\$19.38	\$17.65
Urban Area Total	\$94.90	\$24.06	\$33.99	\$36.85

Public Transportation

It is anticipated that Transpo, NICTD and Niles Dial-a-Ride will continue to receive Section 5307 Urbanized Area Formula funds in the South Bend Urbanized Area. Additionally, Transpo receives Section 5339 Bus and Bus Facilities funds and NICTD receives 5337 Status of Good Repair funds to assist with capital costs in providing transit services in the area. Section 5310 provides formula funding to large urbanized areas over 200,000 (South Bend Urbanized Area) and is a statewide competitive grant process for urbanized areas between 50,000 to 200,000 (Elkhart-Goshen Urbanized Area). The goal of the 5310 program is to increase the mobility of seniors and persons with disabilities. In the Elkhart-Goshen Urbanized Area it is anticipated that Interurban Trolley will continue to receive Section 5307 Urbanized Area Formula funds.

Local match for Transit comes from state funding, Public Mass Transit Fund (PMTF) which is distributed by INDOT, passenger revenues, and local government.

Based on the FY2022 annual allocation for these programs and assuming that the allocation is flat, the South Bend Urbanized is anticipated to receive \$287.7 million in Federal Transit Administration funds for 2024 through 2050. During the same time period, the Elkhart-Goshen Urbanized Area would receive \$53.1 million in Federal Transit Administration funds. These funds would be used for capital projects or operating expenses.

Table 7-6: Estimated Federal Transit Funds

County	Category	Annual Allocation	Federal Funds (2024-2050)
Elkhart Co	5307	\$2,750,000	\$ 74,250,000
	5310	\$ -	\$ -
	5337	\$ -	\$ -
	5339	\$ -	\$ -
	Total Funds	\$2,044,263	\$ 53,150,838
St. Joseph	5307	\$5,556,143	\$150,015,861
	5310	\$398,713	\$10,765,251
	5337	\$4,392,348	\$118,593,396
	5339	\$308,373	\$8,326,071
	Total	\$10,655,577	\$287,700,579





A *Appendix*



List of Proposed Projects

A

Figure A-1: Elkhart County Proposed Project Map

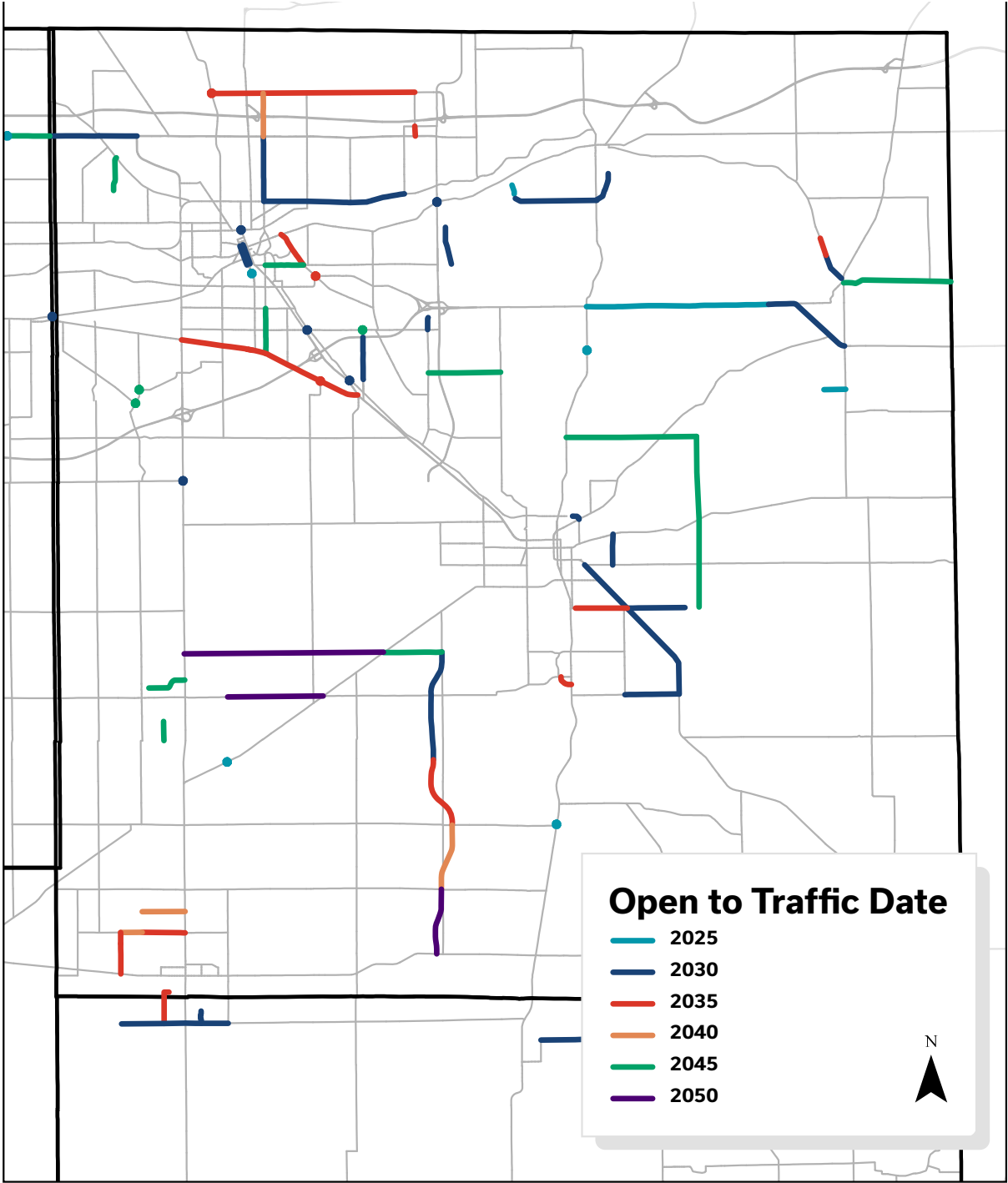


Table A-1: Elkhart County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Bristol	2025	Railpark Ct/ Stonemount Ct	Railpark Ct (Dead End)	Stonemount Ct (Dead End)	New Road Construction	0.21
Bristol	2030	Bristol Bypass	Bloomington Dr	Industrial Dr/CR 10	New Road Construction	0.72
Bristol	2030	CR 10	SR 15 (Dead End)	Railpark Ct	New Road Construction	1.91
Elkhart	2025	Benham Ave	Dr. MLK Blvd		Intersection Improvement	
Elkhart	2030	Bristol St (CR 10)	Jeanwood Dr	CR 15	Auxiliary Lanes (Center Turn Lane)	1.27
Elkhart	2030	Hively Ave	Norfolk Southern Railroad (#510012C)		Grade Separation	
Elkhart	2030	2nd St	Harrison St	Jefferson St	One-Way to Two-Way	0.47
Elkhart	2030	3rd St	Harrison St	Jefferson St	One-Way to Two-Way	0.47
Elkhart	2030	Bristol St	Johnson St	Jeanwood Dr	Road Diet	2.01
Elkhart	2030	Johnson St (CR 9)	Bristol St	CR 6	Added Travel Lanes (2 to 3 Lanes)	1.50
Elkhart	2035	Toledo Rd	Goshen Ave	Indiana Ave	Intersection Improvement	
Elkhart	2035	Goshen Ave	Jackson Blvd	Middlebury St	Road Reconstruction	0.88
Elkhart	2045	Middlebury St	Prairie St	Goshen Ave	Added Travel Lanes (2 to 3 Lanes)	0.89
Elkhart	2045	Prairie St	Mishawaka Rd	Lusher Ave	Auxiliary Lanes (Center Turn Lane)	1.04
Elkhart County	2030	CR 13	Sunnyside Ave	US 20	Added Travel Lanes	0.98
Elkhart County	2025	Sunnyside Ave	US 33/Norfolk Southern Railroad (#533510B)		Grade Separation	
Elkhart County	2030	Benchmark Rd	CR 14	Beck Rd	New Road Construction	0.87

Table A-1: Elkhart County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Elkhart County	2030	Old CR 17	CR 18	Love's Dr	New Road Construction	0.28
Elkhart County	2030	CR 17	CR 142	CR 38	New Road Construction	2.56
Elkhart County	2030	CR 6	Ash Rd	John Weaver Parkway	Added Travel Lanes (4 Lanes)	2.02
Elkhart County	2035	CR 15	CR 6	CR 104	New Road Construction	0.23
Elkhart County	2035	CR 4	CR 7		Intersection Improvement	
Elkhart County	2035	CR 4	CR 7	CR 15	Auxiliary Lanes (Center Turn Lane)	4.72
Elkhart County	2035	CR 52	CR 3	SR 19 (Main St)	Auxiliary Lanes (Center Turn Lane)	1.00
Elkhart County	2035	CR 20 (Mishawaka Rd)	SR 19 (Nappanee S)	US 33	Auxiliary Lanes (Center Turn Lane)	4.34
Elkhart County	2035	CR 20	CR 111		Intersection Improvement	
Elkhart County	2035	CR 17	CR 46	CR 142	New Road Construction	1.69
Elkhart County	2035	CR 101	Berlin Ct Ditch	CR 52	Road Reconstruction	0.26
Elkhart County	2035	CR 17	CR 50	CR 46	New Road Construction	1.54
Elkhart County	2035	CR 101	Berlin Ct Ditch	CR 52	Road Reconstruction	0.26
Elkhart County	2040	CR 17	CR 50	CR 46	New Road Construction	1.54
Elkhart County	2040	Johnson St (CR 9)	CR 6	CR 4	Added Travel Lanes (2 to 3 lanes)	1.00
Elkhart County	2040	CR 52	CR 101	CR 3	Road Reconstruction	0.50
Elkhart County	2045	CR 43	County Line Rd (1400 N)	US 6	Added Travel Lanes (4 Lanes)	1.02
Elkhart County	2045	CR 38	SR 119	CR 17	Auxiliary Lanes	1.36

Table A-1: Elkhart County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Elkhart County	2045	CR 22	CR 3		Intersection Improvement	
Elkhart County	2045	CR 24	CR 3		Intersection Improvement	
Elkhart County	2045	CR 118	Old CR 17	CR 19	New Road Construction	1.68
Elkhart County	2045	CR 26	SR 15	CR 31	New Road Construction	3.03
Elkhart County	2045	CR 31	CR 36	CR 26	New Road Construction	3.95
Elkhart County	2045	Kerryhaven Dr	Current Termini	CR 10	New Road Construction	0.78
Elkhart County	2045	CR 16 (Warren St)	SR 13 (Main St)	County Line Rd	Road Reconstruction	2.51
Elkhart County	2050	CR 17	US 6	CR 50	New Road Construction	1.52
Elkhart County	2050	CR 38	SR 19	SR 119	Road Reconstruction	4.63
Elkhart County	2045	CR 18	CR 13		Intersection Improvement	
Elkhart County	2050	CR 40	CR 7	SR 119	Road Reconstruction	2.22
Elkhart County/ Town of Middlebury	2025	CR 20	CR 37	SR 13	Road Reconstruction	0.51
Elk Co./ Nappanee	2040	CR 150	SR 19	CR 3	New Road Construction	1.00
Goshen	2025	Wilden Ave	Current Terminus	Middlebury St	New Road Construction	0.19
Goshen	2030	College Ave	US 33	Industrial Park Entrance	Auxiliary Lanes (Center Turn Lane)	1.34
Goshen	2030	Blackport Dr	Monroe St	Lincoln Ave	Road Reconstruction	0.71
Goshen	2030	CR 40	Dierdorff Rd (CR 27)	US 33	Auxiliary Lanes (Center Turn Lane)	1.25
Goshen	2035	Waterford Mills Parkway	CR 40	SR 15	New Road Construction	0.35

Table A-1: Elkhart County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Goshen	2035	College Ave	9th St	US 33	Auxiliary Lanes (Center Turn Lane)	1.21
INDOT	2025	US 20	SR 15	CR 35	Added Travel Lanes (5 Lanes)	4.23
INDOT	2025	SR 15	CR 18		Intersection Improvement	
INDOT	2025	SR 15	CR 146		Intersection Improvement	
INDOT	2025	SR 119	CR 7		Intersection Improvement	
INDOT	2030	US 20	CR 35	SR 13	Added Travel Lanes (5 Lanes)	2.13
INDOT	2030	US 33	CR 40	Monroe St	Added Travel Lanes	3.88
INDOT	2030	SR 19	CR 28		Intersection Improvement	
INDOT	2030	SR 120	CR 17		Intersection Improvement	
Middlebury	2030	Bristol Avenue	Brown St	Powell Dr	Road Reconstruction	0.65
Middlebury	2035	Bristol Avenue	Powell Dr	Cedar Creek Dr	Road Reconstruction	0.42
Nappanee	2035	CR 101	Market St (US 6)	Berlin Ct Ditch	Auxiliary Lanes (Center Turn Lane)	0.70
Wakarusa	2045	Maple Ln (CR 103)	CR 42	Wabash Ave	Auxiliary Lanes	0.44
Wakarusa	2045	Orchard Park Dr	Current Termini	SR 19 (Nappanee Street)	New Road Construction	0.93

Figure A-2: Kosciusko County Proposed Project Map

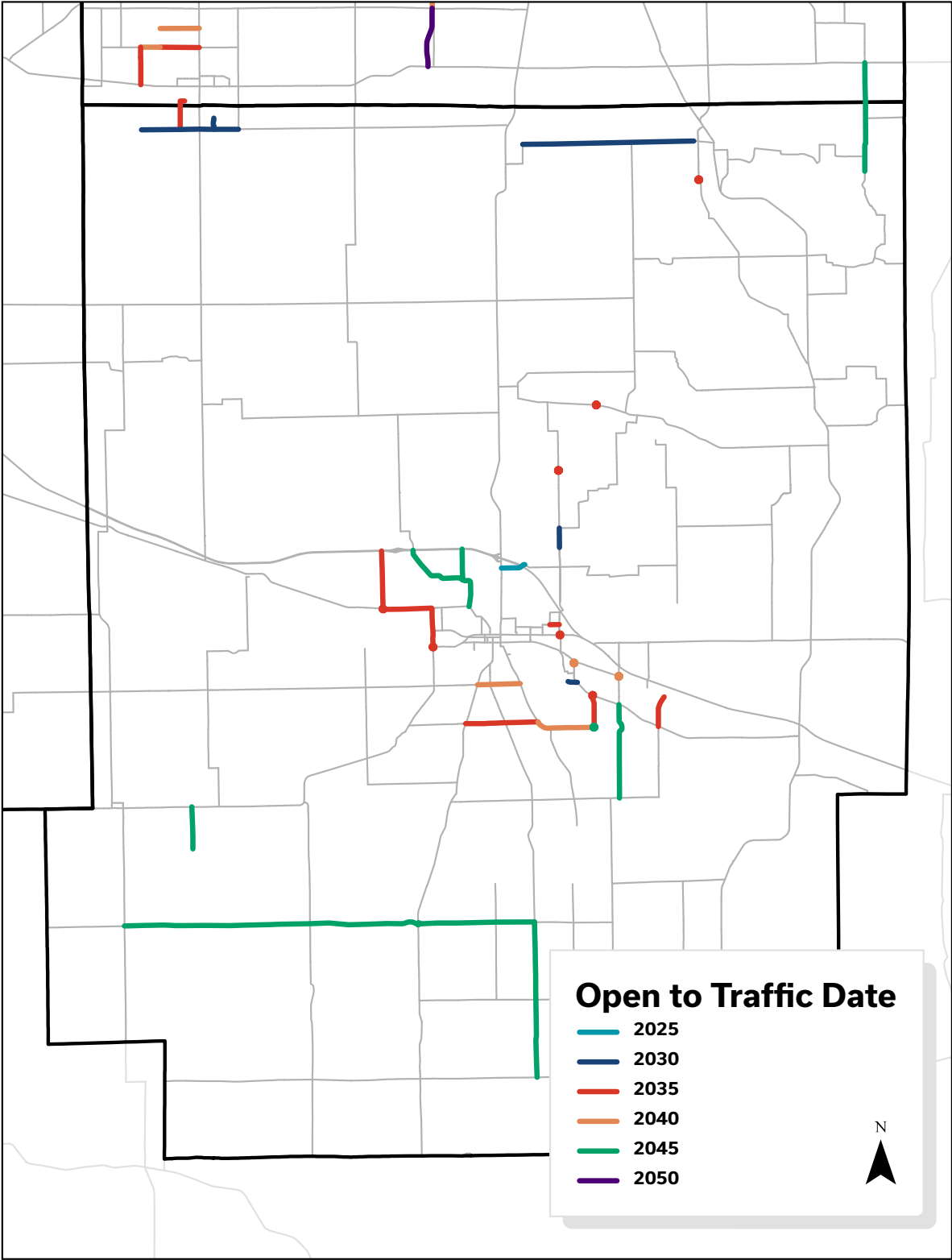


Table A-2: Kosciusko County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Kosciusko County	2030	W 1350 N	N 700 W	W 950 N	Road Reconstruction	2.49
Kosciusko County	2030	E 1300 N	Old SR 15	Kern Rd	Road Reconstruction	4.38
Kosciusko County	2035	CR 200 S	SR 15	Country Club Rd	Auxiliary Lanes	1.86
Kosciusko County	2035	CR 350 W	Old US 30	US 30	Road Reconstruction	1.49
Kosciusko County	2035	Old US 30	CR 350 W	N Zimmer Rd	Auxiliary Lanes	1.25
Kosciusko County	2035	Armstrong Rd	N 200 E		Intersection Improvement	
Kosciusko County	2035	E 450 N	N 100 E		Intersection Improvement	
Kosciusko County	2035	Old US 30	CR 350 W		Intersection Improvement	
Kosciusko County	2035	New Road (N 850 W)	W 1350 N	Indiana Ave	New Road Construction	0.85
Kosciusko County	2035	New Road (350 E)	Pierceton Rd	Wooster Rd	New Road Construction	0.80
Kosciusko County	2035	E 1200 N	Syracuse Webster Rd		Intersection Improvement	
Kosciusko County	2040	CR 225 S	CR 200 S	Packerton Rd	Auxiliary Lanes	1.51
Kosciusko County	2045	County Farm Rd	SR 14	CR 700 S	Added Travel Lanes	4.02
Kosciusko County	2045	CR 700 S	SR 19	County Farm Rd	Added Travel Lanes	10.64
Kosciusko County	2045	CR 900 W	CR 500 S	SR 25	Added Travel Lanes	1.09
Kosciusko County	2045	N Fox Farm Rd	CR 150 W	US 30	Added Travel Lanes	1.68
Kosciusko County	2045	Wawasee Dr (CR 900 E)	Morris Rd	County Line Rd	Added Travel Lanes	1.78
Kosciusko County	2045	250 E	CR 400 S	Pierceton Rd	New Road Construction	2.46
Nappanee	2030	Jackson St	W 1350 N	Current Termini	New Road Construction	0.29
Warsaw	2025	Anchorage Rd	Detroit St	Biomet Dr	Auxiliary Lanes (Center Turn Lane)	0.63

Table A-2: Kosciusko County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Warsaw	2030	CR 100 E	CR 250 N	CR 300 N	Road Reconfiguration	0.50
Warsaw	2035	Parker St	Center St		Intersection Improvement	
Warsaw	2035	Zimmer Rd	Winona Ave		Intersection Improvement	
Warsaw	2035	Sheridan St	Harrison St	Parker St	New Road Construction	0.24
Warsaw	2040	100 S (Rozella Rd)	SR 15	Country Club Rd	New Road Construction	1.10
Warsaw	2045	N 150 W	Lake St	US 30	Added Travel Lanes	1.65
Warsaw/ Kos. Co.	2035	Zimmer Rd (CR 225 W)	SR 25 (Crystal Lake Rd)	Old US 30	Auxiliary Lanes	0.98
Winona Lake	2030	Columbia Dr	Pierceton Rd	Chestnut St	New Road Construction	0.24
Winona Lake	2035	Packerton Rd	CR 225 S	Pierceton Rd	Auxiliary Lanes (Center Turn Lanes)	0.83
Winona Lake	2035	Pierceton Rd	Packerton Rd		Intersection Improvement	
Winona Lake	2040	Wooster Rd	CR 250 E		Intersection Improvement	
Winona Lake	2040	Wooster Rd	Kings Hwy		Intersection Improvement	
Winona Lake	2045	Packerton Rd	CR 225S		Intersection Improvement	

Figure A-3: Marshall County Proposed Project Map

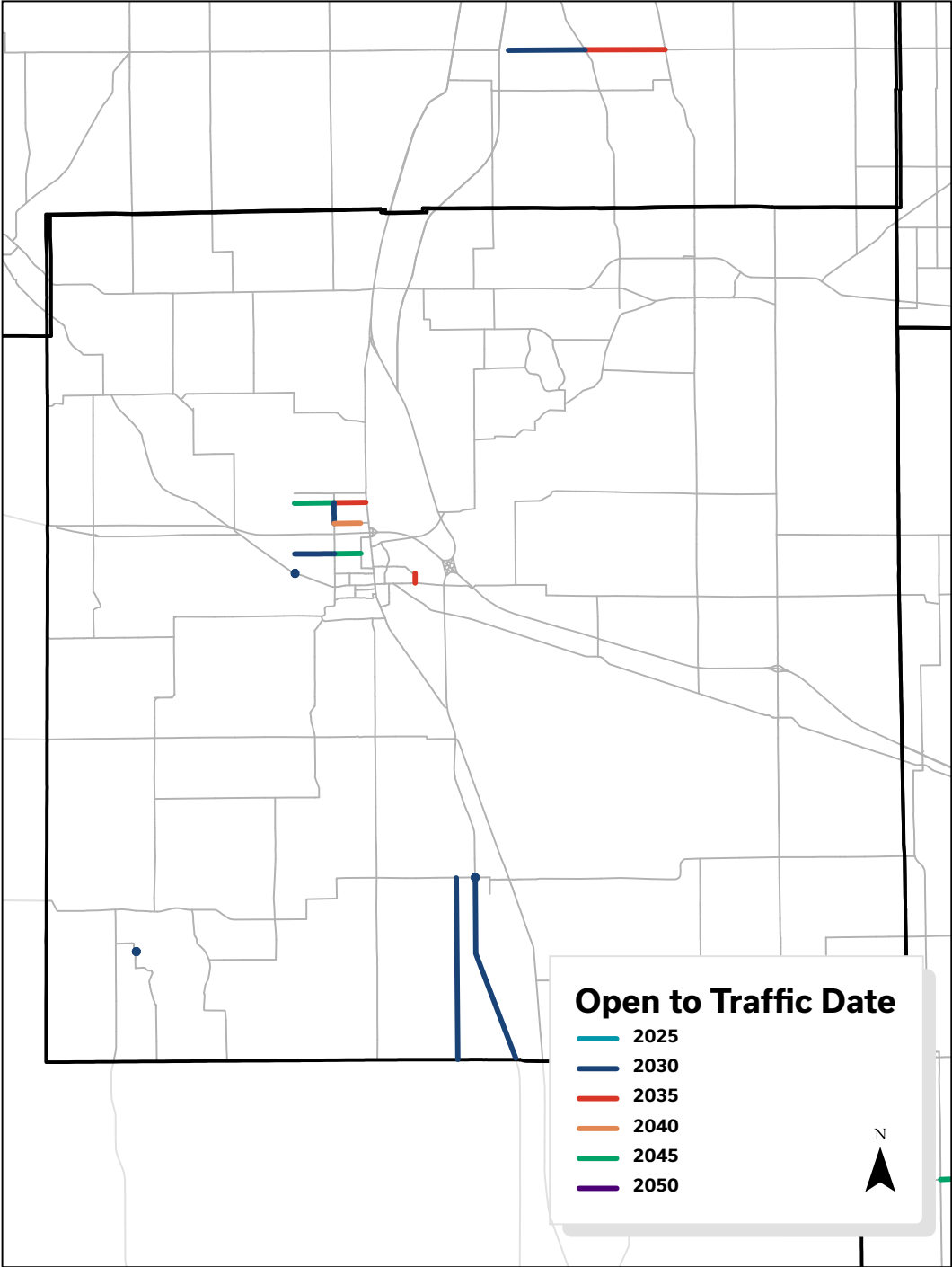


Table A-3: Marshall County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Culver	2030	Main St	Davis St		Intersection Improvement	
INDOT	2030	US 31	SR 10		New Interchange Construction	
INDOT	2030	US 31	Marshall Countyline	SR 10	Access Control	4.67
Marshall County	2030	Lincoln Hwy	Pioneer Dr		Intersection Improvement	
Marshall County	2030	Linden Rd	SR 110	SR 10	Road Reconstruction	4.52
Marshall County	2035	Veterans Pkwy	Oak Dr	Michigan Rd	New Road Construction	0.79
Marshall County	2045	Veterans Pkwy	Oak Dr	Pioneer Dr	New Road Construction	0.99
Plymouth	2030	Oak Dr	Hoham Dr	Veterans Parkway (Future Ph)	Road Reconstruction	0.51
Plymouth	2030	Jim Neu Dr	Pioneer Dr	Oak Dr	Road Reconstruction	0.99
Plymouth	2035	Plymouth Municipal Airport			Runway Extension	
Plymouth	2035	Richter Rd	Jefferson St	Baker St	Road Reconstruction	0.25
Plymouth	2040	Hoham Dr	Oak Rd	Western Ave	Auxiliary Lanes	0.66
Plymouth	2045	Jim Neu Dr	Western Ave	Oak Dr	New Road Construction	0.66

Figure A-4: St. Joseph County Proposed Project Map

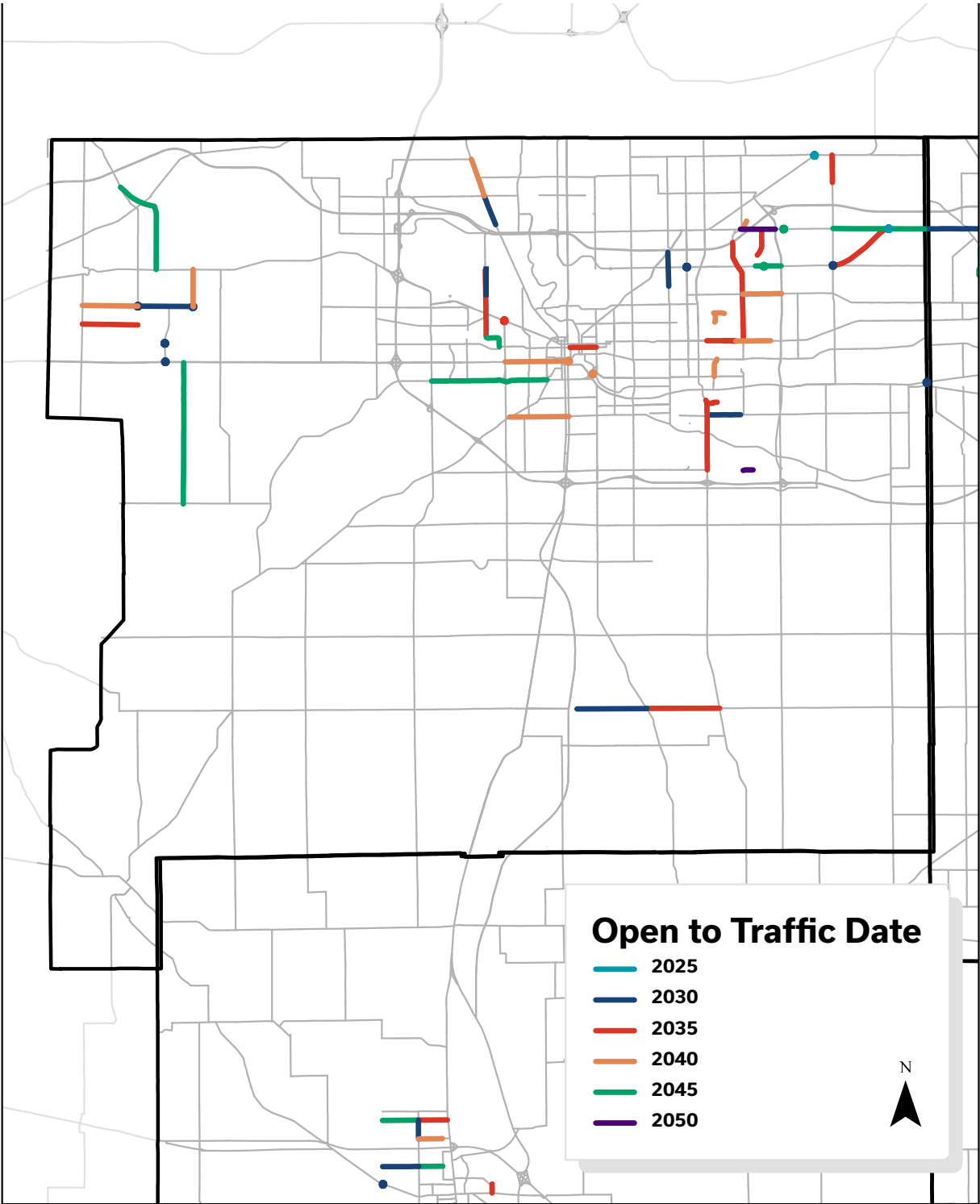


Table A-4: St. Joseph County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
Mishawaka	2030	Twelfth St	Campbell St	Dodge St	Added Travel Lanes (2 to 3 Lanes)	0.86
Mishawaka	2030	Grape Rd	Douglas Rd		Intersection Improvement	
Mishawaka	2035	Fir Rd	McKinley Ave	1-80/90	Auxiliary Lanes	2.75
Mishawaka	2035	Union St	Ireland Dr	Sixth St	Added Travel Lanes	1.90
Mishawaka	2035	Veteran's Pkwy	Cul de sac	Cleveland Rd	New Road Construction	0.74
Mishawaka	2035	7th St/6th St Connector	Union St	Laurel St	New Road Construction	0.30
Mishawaka	2035	McKinley Ave	Division St	Lynn St	Added Travel Lanes (2 to 5 lanes)	1.14
Mishawaka	2040	Catalpa Ave	Current Terminus	Filbert Rd	New Road Construction	0.29
Mishawaka	2040	Division St	Current Terminus	Catalpa Ave	New Road Construction	0.25
Mishawaka	2040	Beacon Pkwy Connector	Cleveland Rd	Beacon Pkwy	New Road Construction	0.24
Mishawaka	2040	Cedar St	Mishawaka Ave	Jefferson Blvd	Road Diet	0.49
Mishawaka	2050	Fulmer Rd	Current Terminus	Clover Rd	New Road Construction	0.27
Mishawaka	2050	Cleveland Rd	Fir Rd	Capital Ave	Added Travel Lanes	0.95
Mishawaka	2040	McKinley Ave	Lynn St	Elder Rd	Added Travel Lanes (2 to 5 lanes)	0.94
South Bend	2030	Hickory Rd	Helper St	SR 23	New Road Construction	0.92
South Bend	2035	Colfax	SR 23	Colfax Bridge	Road Reconstruction	0.71
South Bend	2030	Bendix Dr	Voorde Dr	Lathrop Dr	Road Diet	0.65
South Bend	2035	Bendix Dr	Bertrand Rd	Voorde	Road Diet	1.19

Table A-4: St. Joseph County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
South Bend	2040	Western Ave	Olive St	Martin Luther King Blvd	Road Diet	1.73
South Bend	2040	Eddy St/SR 23			Road Reconfiguration	
South Bend	2040	Ewing St	Prairie St	Michigan St	Road Reconstruction	2.19
South Bend	2040	Western Ave	MLK Blvd		Intersection Improvement	
South Bend	2045	Bertrand Rd	Meade St	Bendix Dr	Road Diet	0.33
South Bend	2045	Meade St	Orange Rd	Bertrand Rd	Road Diet	0.23
South Bend	2045	Sample St	SR 23	Mayflower Rd	Road Diet	3.16
St. Joseph County	2025	Cleveland Rd	Beech Rd		Intersection Improvement	
St. Joseph County	2030	Edison Rd	Walnut Rd		Intersection Improvement	
St. Joseph County	2030	Pierce Rd	US 31	Miami Hwy	Road Reconstruction	1.91
St. Joseph County	2030	Portage Rd	Bendix Dr	Brick Rd	Added Travel Lanes (5 Lanes)	0.84
St. Joseph County	2030	Douglas Rd	Bittersweet Rd		Intersection Improvement	
St. Joseph County	2030	Edison Rd	Smilax Rd		Intersection Improvement	
St. Joseph County	2030	Larrison Rd	Filmore Rd		Intersection Improvement	
St. Joseph County / INDOT	2030	Larrison Rd	SR 2		Intersection Improvement	
St. Joseph County	2030	Edison Rd	Walnut Rd	Timothy Rd	New Road Construction	2.01
St. Joseph County	2035	Bittersweet	Anderson	SR 23	Added Travel Lanes	0.75

Table A-4: St. Joseph County Proposed Project List

Sponsor	Open to Traffic By	Project Route	Beginning Termini	Ending Termini	Type of Work	Length (Miles)
St. Joseph County	2035	Early Rd	Timothy Rd	Walnut Rd	New Road Construction	1.52
St. Joseph County	2035	Ash Rd	Lincolnway (NS Railway)		Grade Separation	
St. Joseph County	2035	Pierce Rd	Miami Rd	SR 331	New Road Construction	1.99
St. Joseph County	2040	Edison Rd	Wintergreen Rd	Walnut Rd	New Road Construction	2.03
St. Joseph County	2040	Portage Rd	Brick Rd	Adams Rd	Added Travel Lanes	1.06
St. Joseph County	2040	Day Rd	Fir Rd	SR 331	Added Travel Lanes	1.07
St. Joseph County	2040	Smilax	Edison Rd	US 20	New Road Construction	1.36
St. Joseph County	2045	Cleveland Rd	Canadian National		Grade Separation	
St. Joseph County	2045	Douglas Rd	Canadian National		Grade Separation	
St. Joseph County	2045	Douglas Rd	Veteran's Parkway	Capital Ave	Added Travel Lanes	0.70
St. Joseph County	2045	Cleveland Rd	Bittersweet Rd	Ash Rd	Added Travel Lanes	2.50
St. Joseph County	2045	Douglas Rd / Cleveland Rd Connector	Beech Rd	Bittersweet Rd	New Road Construction	1.85
St. Joseph County	2045	Snowberry Rd	Johnson Rd	SR 2	New Road Construction	3.84
St. Joseph County	2045	Spruce Rd	US 20	Hamilton Trl	New Road Construction	1.91





B

Appendix

Active Transportation Project List



B

MACOG finalized the Active Transportation Plan in 2016, which identified needs, resources, and strategies to increase walking and bicycling in the MACOG region. The intent of the plan was not to secure funding - but instead using recommendation as a guide for local jurisdictions when opportunities become available. During the Michiana on the Move: 2050 Transportation Plan development, additional active transportation projects were identified.

Figure B-1: MACOG Active Transportation Projects

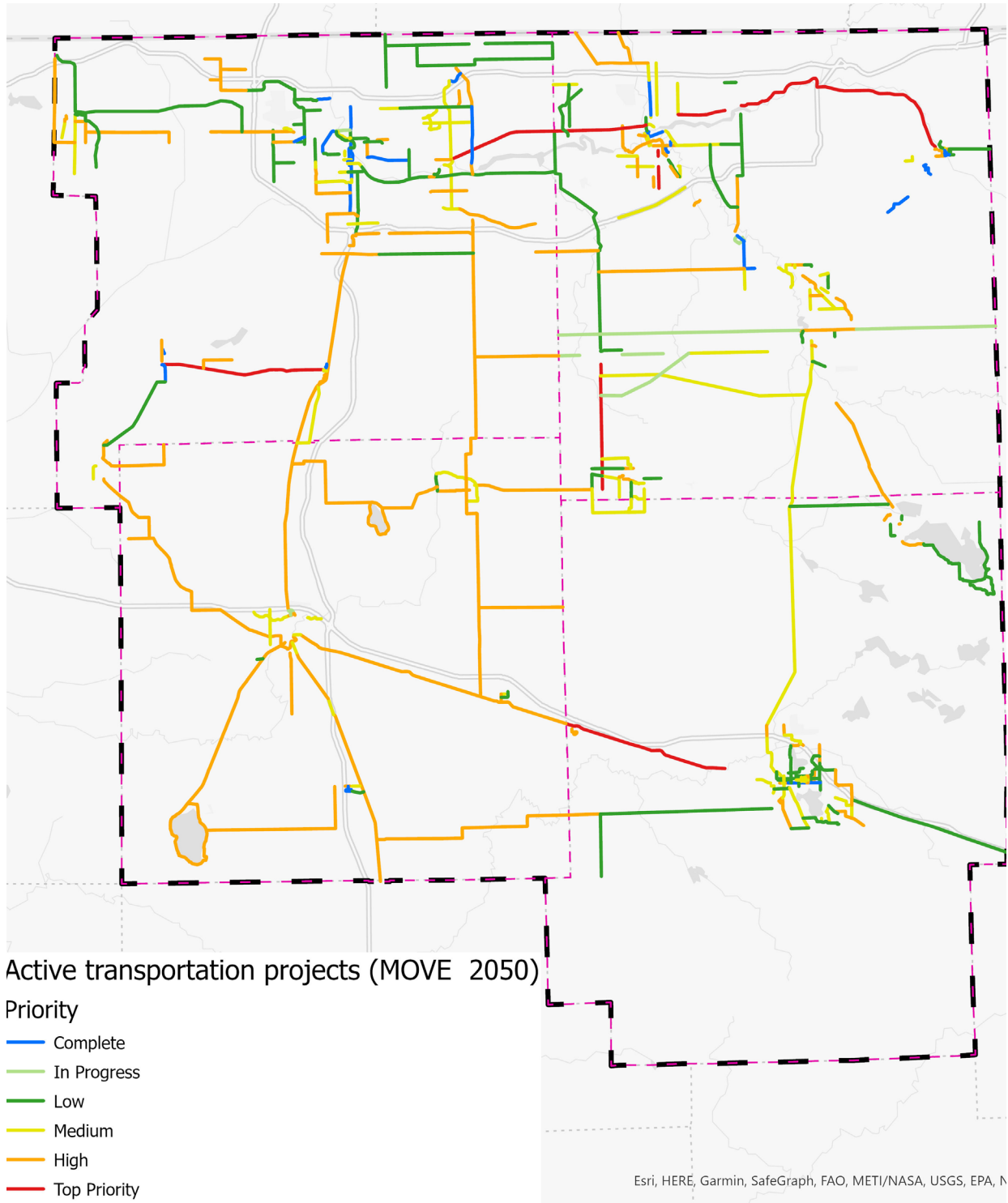


Figure B-2: Elkhart County Active Transportation

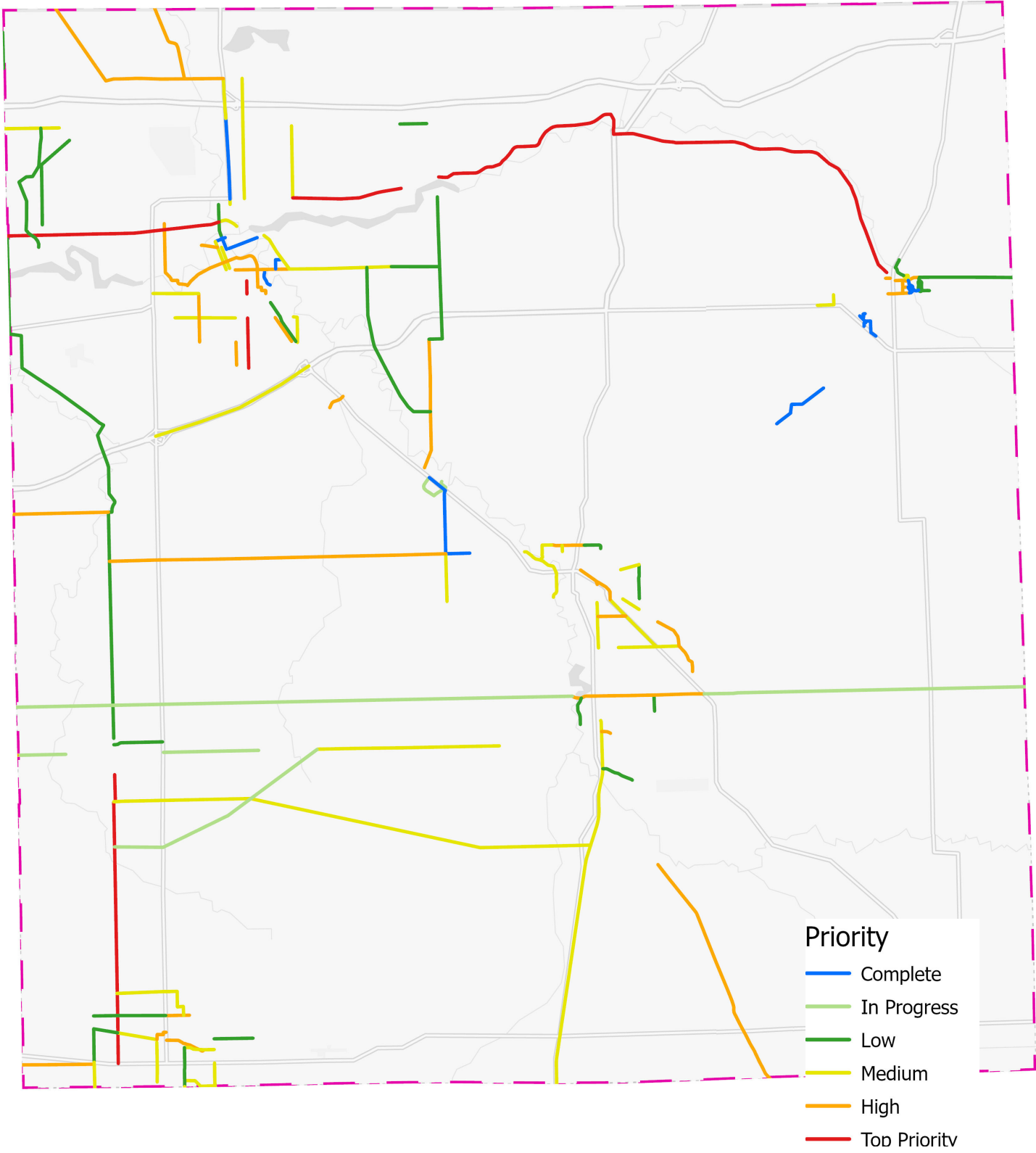


Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
575	INDOT/ Elkhart County Elkhart/	SR 119 / CR 40	SR 19	CR 19	Shared Use Path	Medium
114	St. Joseph County Elkhart/	Ash Rd	CR 20	Ferrettie/ Baugo Creek Park Enterence	Shared Use Path	Low
115	St. Joseph County Elkhart/	Ash Rd	Ferrettie/ Baugo Creek Park Entrance	Elkhart & Western Railroad	Shared Use Path	Low
116	St. Joseph County	Ash Rd	Adams Rd	Anderson Rd	Shared Use Path	Low
41	Elkhart County	Mishawaka- Elkhart Connection	CR 1	Ash Rd	Shared Use Path	Top Priority
43	Elkhart County	Nappanee/ Wakarusa Trail	US 6	CR 42	Shared Use Path	Top Priority
50	Elkhart County	Nappanee/ Wakarusa Trail	CR 42	Railroad St	Shared Use Path	Top Priority
59	Elkhart County	CR 3	Wakarusa Town Limits (Wildcat Dr)	CR 24	Wide Shoulders/ Signed Route	Top Priority
34	Elkhart County	CR 8	CR 17	Echo Ln	Shared Use Path	Top Priority
36	Elkhart County	CR 8	Bonneyville Mill	Bristol Town Limit	Shared Use Path	Top Priority
37	Elkhart County	CR 8	Cedar Creek Dr	Bonneyville Mill	Shared Use Path	Top Priority
38	Elkhart County	CR 8	Arrowhead Dr	Echo Ln	Shared Use Path	Top Priority
49	Elkhart County	CR 17 Bike-Ped Bridge	CR 45	Rieth Blvd	Shared Use Path	In Progress
615	Elkhart County	CR 38	SR19	CR17	Wide Shoulders/ Signed Route	In Progress
616	Elkhart County	CR 38	Lincolnway East	Elkhart County/ LaGrange County Line	Wide Shoulders/ Signed Route	In Progress
614	Elkhart County	CR 40	SR 19 (Nappanee St)	CR 119	Wide Shoulders/ Signed Route	In Progress
55	Elkhart County	CR 40	Ash Rd	CR 1	Wide Shoulders/ Signed Route	In Progress
613	Elkhart County	CR 119	SR 19 (Nappanee St)	CR 40	Wide Shoulders/ Signed Route	In Progress
35	Elkhart County	Pumpkinvine Trail	CR 35	CR 20	Shared Use Path	Complete
39	Elkhart County	Pumpkinvine Trail	CR 20	CR 33	Shared Use Path	Complete

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
40	Elkhart County	Old CR 17	CR 18	CR 45 (Mapleheart Trl)	Shared Use Path	High
42	Elkhart County	Concord Mall Dr	Mishawaka Rd	CR 45	Walking Path	High
44	Elkhart County	CR 29	CR 46	Elkhart County/ Kosciusko County Line	Wide Shoulders/ Signed Route	High
45	Elkhart County	CR 4	Cassopolis St	CR 5	Signed Route	High
46	Elkhart County	CR 5	CR 4	Indiana State Line	Signed Route	High
47	Elkhart County	CR 7	CR 4	Indiana State Line	Signed Route	High
48	Elkhart County	CR 56	County Line Rd	CR 101	Signed Route	High
53	Elkhart County	CR 28	Ash Rd	CR 3	Signed Route	High
54	Elkhart County	CR 30	CR 3	Reliance Rd	Wide Shoulders/ Signed Route	High
52	Elkhart County	SR 15/Winona Railway Corridor	Winona Railway Trail Terminus	Elkhart County/ Kosciusko County Line	Shared Use Path	Medium
51	Elkhart County	Wabash 4th District Railroad	CR 42	SR 15	Shared Use Path	Medium
563	Elkhart County	Johnson St (CR 9)	Bristol St (CR 10)	CR 4	Shared Use Path	Medium
562	Elkhart County	CR 20 (Mishawaka Rd)	SR 19 (Nappanee St)	US 33	Shared Use Path	Medium
561	Elkhart County	CR 6	Ash Rd	CR 10	Shared Use Path	Medium
56	Elkhart County	CR 17	Jackson Blvd	CR 18	Shared Use Path	Low
57	Elkhart County	CR 18	CR 17	Old CR 17	Shared Use Path	Low
58	Elkhart County	CR 16	River Park Dr	Elkhart County/ LaGrange County Line	Shared Use Path	Low
60	Elkhart County	CR 22	CR 3	CR 100	Wide Shoulders/ Signed Route	Low
61	Elkhart County	CR 100	CR 22	CR 20	Wide Shoulders/ Signed Route	Low
62	Elkhart County	CR 20	CR 100	Ash Rd	Wide Shoulders/ Signed Route	Low
63	Elkhart County	CR 42	Winona Railway Trail	CR 142	Signed Route	Low

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
561	Elkhart County	CR 6 from Ash to CR 10	Ash Rd	CR 10	Shared Use Path	Low
562	Elkhart County	CR 20 (Mishawaka Rd)	SR 19	US 33	Shared Use Path	Low
560	Elkhart County	CR 1	CR 12	CR 10	Bike Lanes	Low
570	Elkhart County	CR 115/ CR 13	Old CR 17	Middlebury St (CR 14)	Bike Lanes	Low
571	Elkhart County	CR 52	CR 101	SR 19 (Main St)	Bike Lanes	Low
572	Elkhart County	CR 6	CR 15	Elkhart Blvd	Shared Use Path	Low
573	Elkhart County	Cobus Creek Trail	Old US 20	CR 6	Shared Use Path	Low
1	Bristol	CR 8	Bristol Town Limit	Division St	Shared Use Path	Top Priority
2	Bristol	CR 8	Elkhart St	River Rd (CR 8)	Shared Use Path	Top Priority
3	Bristol	CR 8	Division St	Arrowhead Dr	Shared Use Path	Top Priority
5	Elkhart	E&W Rail Trail	Main St	CR 1	Shared Use Path	Top Priority
566	Elkhart	Bristol St (CR 10)	Osolo Rd	CR 15	Shared Use Path	Top Priority
565	Elkhart	Prairie St	Mishawaka Rd	Lusher Ave	Shared Use Path	Top Priority
21	Elkhart	Prarie St	Main St	Indiana Ave	Shared Use Path	Top Priority
6	Elkhart	Sycamore St	Island Park	Langle Park	Walking Path	Complete
7	Elkhart	Cassopolis St	Bristol St	Windsor St	Walking Path	Complete
10	Elkhart	Main St	Jackson Blvd	Potawattomi Dr	Bike Lane	Complete
19	Elkhart	Greenway Trail (Tipton St)	Existing Greenway Trail	Middlebury St	Shared Use Path	Complete
20	Elkhart	Greenway Trail (Cemetery/ Church St)	Middlebury St	Goshen Ave	Shared Use Path	Complete
27	Elkhart	Jackson Blvd	Waterfall Dr	Bowers Ct	Complete Street	Complete
4	Elkhart	Mapleheart Connector (Princeton Blvd)	McDonald St	Indiana Ave	Shared Use Path	High

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
9	Elkhart	Mapleheart Connector	Middlebury St	McDonald St	Bike Lane	High
8	Elkhart	Waterfall Dr	Elkhart Ave	Middlebury St	Cycle Track	High
11	Elkhart	Middlebury St	Goshen Ave	Main St	Signed Route	High
12	Elkhart	Sherman St	3rd St	Riverside Dr	Signed Route	High
13	Elkhart	Franklin St	Waterfall Dr	Arcade Ave	Signed Route	High
14	Elkhart	Arcade Ave	Franklin St	West Blvd	Signed Route	High
15	Elkhart	West Blvd	Arcade Ave	Lexingtons Ave	Signed Route	High
16	Elkhart	West Blvd	Lexington Ave	Mishawaka Rd	Signed Route	High
17	Elkhart	Oakland Ave	Hively Ave	Indiana Ave	Signed Route	High
569	Elkhart	Main St	Hively Ave	Lusher Ave	Shared Use Path	High
568	Elkhart	Benham Ave	Mishawaka Rd (CR 20)	Hively Ave	Shared Use Path	High
18	Elkhart	Eddy St	Mapleheart Greenway	Greenway Trail	Shared Use Path	Medium
22	Elkhart	Lusher Ave	17th St	Benham Ave	Shared Use Path	Medium
23	Elkhart	Middlebury St	Goshen Ave	CR 15	Shared Use Path	Medium
24	Elkhart	Park Connector	High Dive Park	Wellfield Botanic Gardens	Shared Use Path	Medium
25	Elkhart	Cassopolis St	Lawrence St	Bristol St	Walking Path	Medium
26	Elkhart	Cassopolis St	Windsor St	CR 4	Walking Path	Medium
28	Elkhart	3rd St	Sycamore St	Division St	Bike Lane	Medium
29	Elkhart	2nd St	Jeffeson St	Division St	Bike Lane	Medium
30	Elkhart	Indiana Ave	Oakland Ave	Nappanee St	Bike Lane	Medium

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
567	Elkhart	Goshen Ave	Jackson Blvd	Middlebury St	Shared Use Path	Medium
564	Elkhart	Osolo Rd (CR 11)	Bristol St	CR 6	Shared Use Path	Medium
31	Elkhart	Mapleheart (Sterling Ave)	Mapleheart Greenway	Ren St	Shared Use Path	Low
32	Elkhart	Middlebury St	CR 15	CR 17	Shared Use Path	Low
33	Elkhart	Main St	"Potawattomi Dr			
64	Goshen	Northwest Trail (US 33)	Rieth Blvd	Reliance Rd	Shared Use Path	Complete
65	Goshen	Northwest Trail (Bashor Rd)	Reliance Rd	Tanglewood Dr	Shared Use Path	Complete
66	Goshen	Northwest Trail (Reliance Rd)	US 33	Bashor Rd	Shared Use Path	Complete
67	Goshen	US 33 Northern Connector	Monroe St	Main St	Shared Use Path	High
68	Goshen	Horn Ditch Trail	Fiddlers Pond Trail	Walmart	Shared Use Path	High
69	Goshen	Plymouth Ave	9th St	US 33	Shared Use Path	High
70	Goshen	9th St	Washington St	US 33 Northern Connector	Shared Use Path	High
71	Goshen	Wilden Ave	Rock Run Creek	6th St	Shared Use Path	High
72	Goshen	Waterford Mills Parkway	Regent St	Winona Railway Trail	Bike Lane	High
73	Goshen	Kercher Rd	US 33	Violet Rd	Complete Street	High
74	Goshen	US 33	College Ave	Monroe Ave	Shared Use Path	Medium
75	Goshen	9th St	College Ave	Purl St	Shared Use Path	Medium
76	Goshen	Shanklin-Mullet Trail	Existing Shanklin-Mullet Trail	Lincoln Ave	Shared Use Path	Medium
77	Goshen	Chicago Ave	Lincoln Ave	Bashor Rd	Shared Use Path	Medium
78	Goshen	Indiana Ave	Chicago Ave	Mapleheart Greenway	Shared Use Path	Medium
79	Goshen	Wilden Ave	CR 21	Rock Run Creek	Shared Use Path	Medium

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
80	Goshen	Fiddlers Pond Trail	Existing Fiddlers Pond Trail	Monroe Ave	Shared Use Path	Medium
81	Goshen	1st St	Wilden Ave	Mapleheart Greenway	Shared Use Path	Medium
82	Goshen	College Ave	15th St	Horn Ditch	Bike Lane	Medium
83	Goshen	Reliance Rd	Bashor Rd	Berkley Ave	Signed Route	Medium
574	Goshen	Lincoln Ave	Pumpkinvine Trail	Blackport Dr	Shared Use Path	Medium
84	Goshen	Dierdorff Rd	Kercher Rd	Regent St	Shared Use Path	Low
85	Goshen	Wilden Ave	6th St	Middlebury St	Shared Use Path	Low
86	Goshen	Blackport Dr	Monroe St	SR 4	Signed Route	Low
87	Goshen	Violett Rd	Kercher Rd	CR 40	Signed Route	Low
89	Middlebury	CR 8	Railroad St	Cedar Creek Dr	Shared Use Path	Top Priority
95	Middlebury	Essenhaus Trail	Essenhaus Trail	Pumpkinvine Trail	Shared Use Path	Complete
88	Middlebury	River Bend Park Trails	Warren St	River Park	Walking Path	In Progress
90	Middlebury	Warren St	River Park Dr	State St	Signed Route	High
91	Middlebury	Church St	Brown St	Pumpkinvine Trail	Signed Route	High
92	Middlebury	Spring St	Pumpkinvine Trail	End of street	Signed Route	High
93	Middlebury	Mill St	Spring St	Warren St	Signed Route	High
94	Middlebury	Lawrence St	Mill St	End of street	Signed Route	High
96	Middlebury	Old Mill Park Trail	Warren St	Warren St	Walking Path	Medium
97	Middlebury	Northridge SRTS (US 20)	Westlake Dr	Heritage Dr	Walking Path	Medium
98	Middlebury	Old Mill Park Trail	Old Mill Park Trail	York Dr (Pumpkinvine Trail)	Walking Path	Low
99	Middlebury	River Park Dr	Warren St	CR 116	Walking Path	Low
100	Nappanee	Stauffer Park Trail	Main St	Stauffer Park	Shared Use Path	High
101	Nappanee	Westside Park Trail	Nappanee St	Main St	Shared Use Path	High

Table B-1: Elkhart County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority/Status
102	Nappanee	Woodview Dr	Main St	McCormick Dr	Shared Use Path	High
103	Nappanee	Derksen Dr	Stauffer Park	Miriam Ave	Bike Lane	High
104	Nappanee	NorthWood High School Connector	CR 3	NorthWood High School	Shared Use Path	Medium
105	Nappanee	Westside Park Trail	Nappanee St	Arnott St	Shared Use Path	Medium
106	Nappanee	NorthWood School Connector	SR 19	Woodview Dr	Shared Use Path	Medium
107	Nappanee	Oakland Ave	US 6	Elkhart/Kosciusko County Line	Shared Use Path	Medium
108	Nappanee	Jackson St	US 6	Elkhart/Kosciusko County Line	Shared Use Path	Medium
109	Nappanee	Nappanee Industrial Connector	Oakland Ave	Jackson St	Shared Use Path	Medium
110	Nappanee	Nappanee St	US 6	Northside Trail	Signed Route	Medium
125	Nappanee	Jackson St	Elkhart/Kosciusko County Line	W 1350 N	Shared Use Path	Medium
576	Nappanee	Nappanee St	Indiana Ave	Chippewa Dr	Shared Use Path	Medium
577	Nappanee	Jackson St	County Line	Derksen Rd	Shared Use Path	Medium
111	Nappanee	Northside Trail	Arnott St	Tomhawk Trail	Shared Use Path	Low
112	Nappanee	Tomahawk Trl	Northside Trail	US 6	Shared Use Path	Low
113	Nappanee	CR 54	Oakland Ave	Blackstone Blvd	Shared Use Path	Low
126	Nappanee	W 1350 N	SR 19	N 700 W	Shared Use Path	Low
578	Nappanee/ Kosciusko County	W 950 N	W 1350 N	US 6	Bike Lanes	Low
597	Wakarusa	Orchard Park Dr	CR 3	SR 19 (Nappanee Street)	Bike Lanes	Low
575	INDOT/ Elkhart County	SR 119 / CR 40	SR 19	CR 19	Shared Use Path	Medium
114	St. Joseph County	Ash Rd	CR 20	Ferrettie/ Baugo Creek Park Entrance	Shared Use Path	Low
115	St. Joseph County	Ash Rd	Ferrettie/ Baugo Creek Park Entrance	Elkhart & Western Railroad	Shared Use Path	Low
116	St. Joseph County	Ash Rd	Adams Rd	Anderson Rd	Shared Use Path	Low

Figure B-3: Kosciusko County Active Transportation

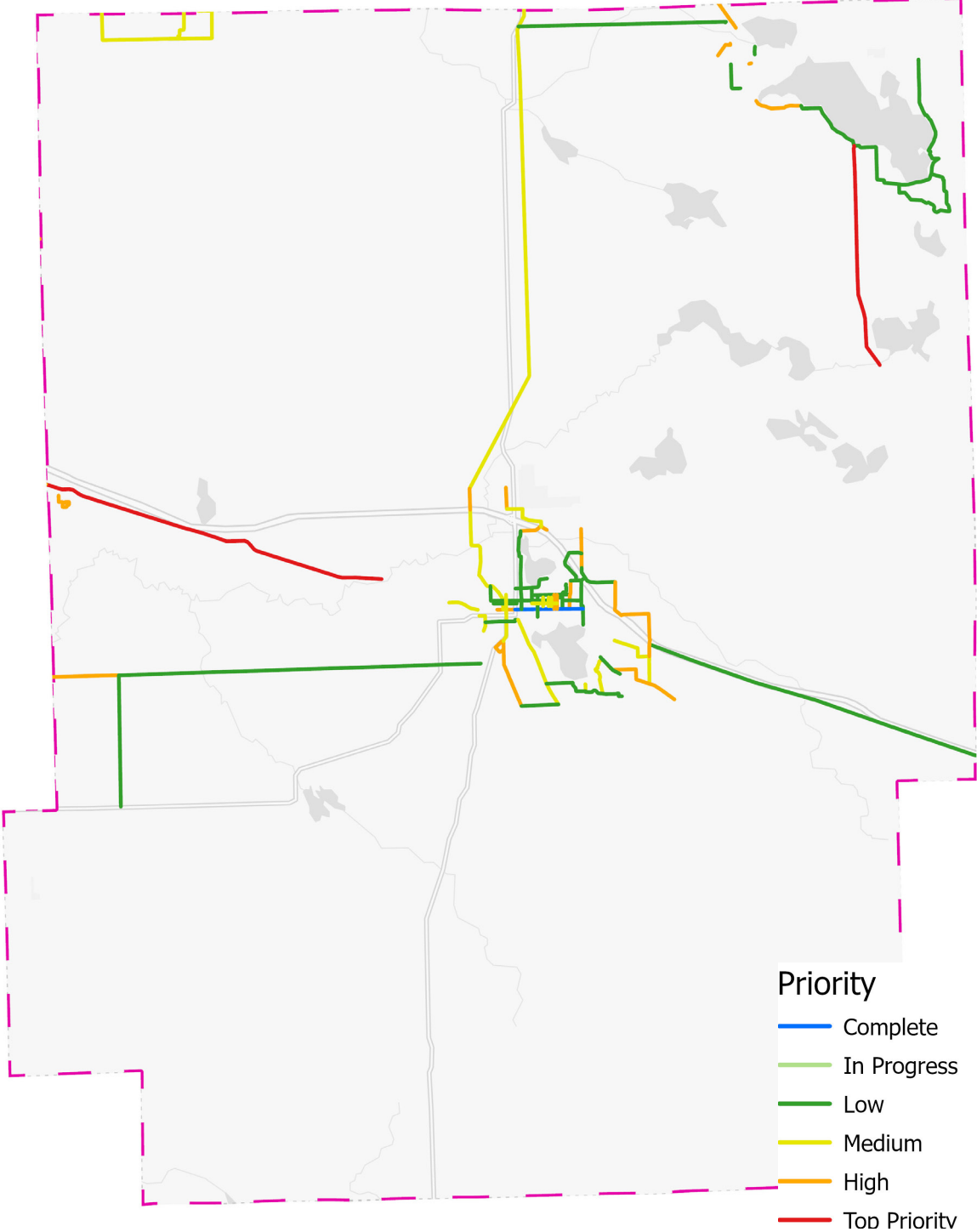


Table B-2: Kosciusko County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
122	Kosciusko County	Lincolnway	Kosciusko/Marshall County Line	N 350 W	Shared Use Path	High
117	Kosciusko County	SR 15/Winona Railway Corridor	Elkhart/Kosciusko County Line	W 300 N	Shared Use Path	High
118	Kosciusko County	W 100 S	Kosciusko/Marshall County Line	S 950 W	Signed Route	High
119	Kosciusko County	S 250 E	Sunset Dr	Old Road 30	Signed Route	High
120	Kosciusko County	Old Road 30	S 250 E	N 175 E	Shared Use Path	High
121	Kosciusko County	N 175 E	Old Road 30	E 75 N	Signed Route	High
123	Kosciusko County	Fox Farm Rd	Lake St	US 30	Bike Lane	Medium
579	Kosciusko County	N 700 W	W 1350 N	Market Street (US 6)	Bike Lanes	Medium
580	Nappanee	W 1350 N	N 700 W	W 950 N	Bike Lanes	Medium
124	Kosciusko County	US 30/RR Corridor	S 250 E	Kosciusko/Whitley County Line	Shared Use Path	Low
612	Etna Green	Heritage Park Trail	W. Broadway St	Heritage Park	Shared Use Path	High
127	Syracuse	Pickwick Dr	SR 13	Pickwick Dr	Shared Use Path	High
128	Syracuse	Syracuse Elementary SRTS	New Syracuse Elementary	Main St	Shared Use Path	High
129	Syracuse	Main St/Railroad Crossing	Railroad Ave	Boston St	Shared Use Path	High
130	Syracuse	Syracsue-Wawasee Trail (SR 13)	Harkless Dr	Grandview Dr	Shared Use Path	High
131	Syracuse	Huntington St	Elkhart/Kosciusko County Line	Main St	Signed Route	High
132	Syracuse	Syracuse Webster Rd	Pickwick Dr	E 1200 N	Shared Use Path	Low
133	Syracuse	Syracuse-Wawasee Trail (Hatchery Rd)	N 850 E	Turkey Creek Rd	Shared Use Path	Low
134	Syracuse	Syracuse-Wawasee Trail (Hatchery Rd)	N 800 E	N 850 E	Shared Use Path	Low
135	Syracuse	Syracuse-Wawasee Trail (Vawter Park)	Southshore Dr	N 800 E	Shared Use Path	Low

Table B-2: Kosciusko County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
136	Syracuse	Syracuse-Wawasee Trail (Southshore Dr)	Grandview Dr	Vawter Park Rd	Shared Use Path	Low
137	Syracuse	Syracuse-Wawasee Trail (N 800 E)	Vawter Park Rd	Hatchery Rd	Shared Use Path	Low
138	Syracuse	Syracuse-Wawasee Trail (N 850 E)	Hatchery Rd	Koher Rd	Shared Use Path	Low
139	Syracuse	Syracuse-Wawasee Trail (Koher Rd)	N 850 E	E 1000 N	Shared Use Path	Low
140	Syracuse	Syracuse-Wawasee Trail (E 1000 N)	Koher Rd	Turkey Creek Rd	Shared Use Path	Low
141	Syracuse	Syracuse-Wawasee Trail (Turkey Creek	Hatchery Rd	Buttermilk Dr	Shared Use Path	Low
142	Syracuse	Syracuse-Wawasee Trail (Eastern Trail)	Turkey Creek Rd	E 1250 N	Shared Use Path	Low
143	Syracuse	E 1200 N	Syracuse Webster Rd	Brook Pointe Inn	Shared Use Path	Low
144	Syracuse	Front St	Railroad	Chicago St	Walking Path	Low
	Syracuse/North Webster	North Webster-Syracuse Trail	North Webster Town Limits	Conklin Bay Trail	Shared Use Path	High
150	Warsaw	Market St	West Center St	Detroit Street/SR 25	Cycle Track	High
155	Warsaw	Market St	Detriot St/SR 25	McKinley/Krebs Trailhead	Shared Use Path	Complete
145	Warsaw	County Farm Rd	W 200 S	SR 15	Shared Use Path	High
146	Warsaw	SR 15	Kincaid St	Herscher Dr	Shared Use Path	High
147	Warsaw	Silveus Crossing	US 30	W 300 N	Shared Use Path	High
148	Warsaw	Shelden St	W 300 N	W 250 N	Shared Use Path	High
149	Warsaw	Herscher Dr	Ranch Rd	SR 15	Walking Path	High
151	Warsaw	E 200 N	Sunset Dr	US 30	Signed Route	High
152	Warsaw	Husky Trl	Mariner Dr	E 200 N	Complete Street	High
600	Warsaw	Colfax St	Market St	Sheridan St	Bike Lanes	High

Table B-2: Kosciusko County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
599	Warsaw	Grant St	Market St	Sheridan St	Bike Lanes	High
153	Warsaw	SR 15	Kincade St	Winona Ave	Shared Use Path	Medium
154	Warsaw	Logan St	Current Trail	Winona Ave	Shared Use Path	Medium
156	Warsaw	Country Club Rd	Smith St	E 200 S	Shared Use Path	Medium
157	Warsaw	Buffalo St	Center Lake	Winona Ave	Bike Lane	Medium
158	Warsaw	Lake St	Market St	Fox Farm Rd	Bike Lane	Medium
159	Warsaw	W 250 N	Shelden St	Rainbow Dr	Signed Route	Medium
160	Warsaw	Rainbow Dr/Bell Dr	E 250 N	Biomet Dr	Signed Route	Medium
161	Warsaw	Biomet Dr	E 200 N	Bell Dr	Signed Route	Medium
601	Warsaw	Bronson St	Center St	Clark St	Bike Lanes	Medium
604	Warsaw	Main St	Cook St	Colfax St	Bike Lanes	Medium
602	Warsaw	Maple Ave	Center St	Clark St	Bike Lanes	Medium
603	Warsaw	Sherman St	Center St	Clark St	Bike Lanes	Medium
605	Warsaw	Center St	Hepler Dr	Hand Ave	Shared Use Path	Medium
162	Warsaw	Harrison St	Market St	Dubois Dr	Shared Use Path	Low
163	Warsaw	Dubois Dr	Harrison St	Parker St	Shared Use Path	Low
164	Warsaw	Arthur St	Detriot St	Beyer Farm Trail	Shared Use Path	Low
165	Warsaw	Springhill Rd	Provident Dr	Northpoint Dr	Shared Use Path	Low
166	Warsaw	Provident Dr	Dubois Dr	Springhill Rd	Shared Use Path	Low
167	Warsaw	Parker St	Dubois St	Husky Trl	Shared Use Path	Low
168	Warsaw	North Point Dr	Mariner Dr	Husky Trl	Shared Use Path	Low

Table B-2: Kosciusko County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
169	Warsaw	E 200 S	Country Farm Rd	Country Club Rd	Shared Use Path	Low
170	Warsaw	West St	Lake St	Ft Wayne St	Bike Lane	Low
171	Warsaw	Ft Wayne St	West St	Lincoln St	Bike Lane	Low
172	Warsaw	Main St	Union St	Huron St	Bike Lane	Low
173	Warsaw	Prarie St	Logan St	Smith St	Bike Lane	Low
174	Warsaw	Park St	Market St	Anchorage Rd	Bike Lane	Low
175	Warsaw	Cook St	Main St	Arthur St	Bike Lane	Low
176	Warsaw	Sheridan St	Cook St	Harrison St	Bike Lane	Low
177	Warsaw	Ft Wayne St	Lincoln St	Parker St	Bike Lane	Low
178	Warsaw	Parker St	Center St	Dubois Dr	Bike Lane	Low
179	Warsaw	Lincoln St	Market St	Beyer Farm Trail	Bike Lane	Low
180	Warsaw	Argonne Rd	Center St	Winona Ave	Bike Lane	Low
181	Warsaw	Scott St	Smith St	Sheridan St	Bike Lane	Low
182	Warsaw	Husky Trl/Patterson Rd	N 175 E	Mariner Dr	Complete Street	Low
183	Winona Lake	Heritage Trail (Pierceton Rd)	Miller Field Park	Stonehenge Golf Club	Shared Use Path	High
184	Winona Lake	Jefferson SRTS (Wooster Rd)	Jefferson Elementary School	S 250 E	Shared Use Path	Medium
185	Winona Lake	Heritage Trail (S 250 E)	Lakeland Christian Academy	Pierceton Rd	Shared Use Path	Medium
606	Winona Lake	Southfield Rd	Winona Beach Dr	Dead End (Western Dr)	Bike Lanes	Medium
607	Winona Lake	Lake City Greenway	Roy St	Pierceton Rd	Shared Use Path	Medium
608	Winona Lake	Oak St	Winona Beach Rd	Country Club Dr E	Shared Use Path	Low
609	Winona Lake	Pierceton Rd	Freedom Ln	Packerton Rd	Shared Use Path	Low
610	Winona Lake	Roy St/ Southfield Rd	Packerton Rd	Winona Beach Dr	Shared Use Path	Low
611	Winona Lake	Winona Beach Dr	Country Club Rd	Wildwood Ln	Shared Use Path	Low

Figure B-4: Marshall County Active Transportation

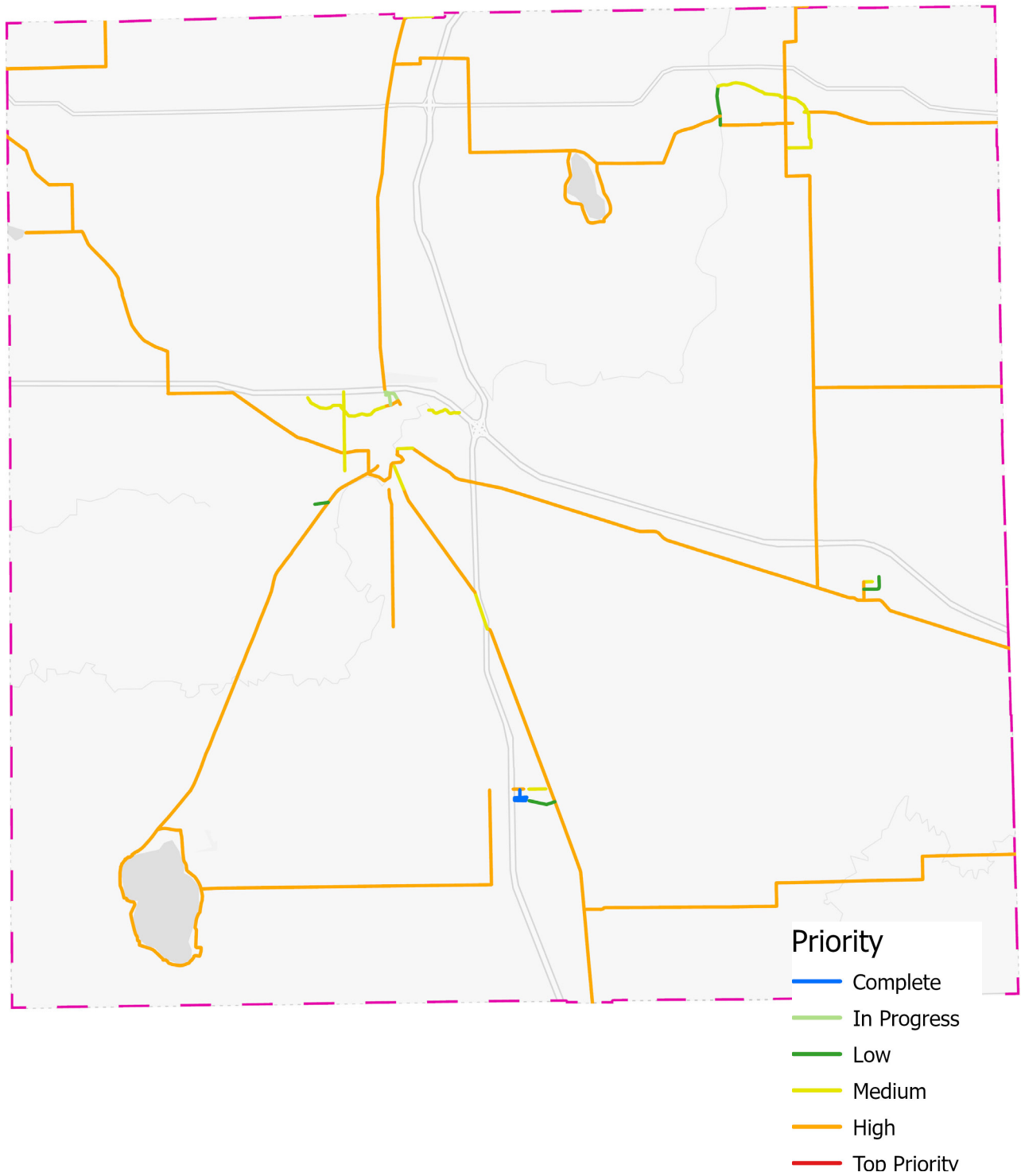


Table B-3: Marshall County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
200	Marshall County	Abandoned Rail	Culver	Plymouth	Shared Use Path	High
201	Marshall County	Michigan Rd/Old US 31	Marshall/St. Joseph County	US 30	Shared Use Path	High
202	Marshall County	Muckshaw Rd	Oakhill Ave	13th Rd	Wide Shoulders/ Signed Route	High
203	Marshall County	Lincoln Hwy/ Old US 30	Kosciusko/ Marshall County	Plymouth City Limits	Shared Use Path	High
204	Marshall County	Michigan Rd	Old US 31	Marshall County/ Fulton County	Signed Route	High
205	Marshall County	Michigan Rd	Old US 31	Eastwood Dr	Signed Route	High
206	Marshall County	19th Rd	Michigan Rd	Fir Rd	Signed Route	High
207	Marshall County	Fir Rd	19th Rd	18b Rd	Signed Route	High
208	Marshall County	18b Rd	Fir Rd	Cedar Rd	Signed Route	High
209	Marshall County	Cedar Rd	18b Rd	18th	Signed Route	High
210	Marshall County	18th Rd	Cedar Rd	Kosciusko/ Marshall County	Signed Route	High
211	Marshall County	Elm Rd	Lincolnway	3rd Rd	Signed Route	High
212	Marshall County	8th Rd	Elm Rd	County Line Rd	Signed Route	High
213	Marshall County	2b Rd	County Line Rd	Bremen Town Limits	Signed Route	High
214	Marshall County	3rd Rd/N Shore Dr	Plymouth Goshen Trl	Linden Rd	Signed Route	High
215	Marshall County	Plymouth Goshen Trl	Plymouth St	3a Rd	Signed Route	High
216	Marshall County	Linden Rd	3rd Rd	1st Rd	Signed Route	High
217	Marshall County	1st Rd	Linden Rd	Michigan Rd	Signed Route	High
218	Marshall County	Lake of the Woods	3rd Rd	3rd Rd	Signed Route	High
219	Marshall County	Lincolnway	Rose Rd	Lincolnway	Signed Route	High

Table B-3: Marshall County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
220	Marshall County	Rose Rd	Lincolnway	Plymouth LaPorte Trl	Signed Route	High
221	Marshall County	Plymouth LaPorte Trl	Rose Rd	4b Rd	Signed Route	High
222	Marshall County	4b Rd	Plymouth LaPorte Trl	Koontz Lake	Signed Route	High
223	Marshall County	Thorn Rd	4b Rd	3b Rd	Signed Route	High
224	Marshall County	3b Rd	Thorn Rd	Plymouth LaPorte Trl	Signed Route	High
225	Marshall County	Plymouth LaPorte Trl	3b Rd	County Line Rd	Signed Route	High
226	Marshall County	Linden Rd	SR 10	18b Rd	Signed Route	High
227	Marshall County	18b Rd	Linden Rd	Shore Dr	Signed Route	High
228	Marshall County	1st Rd	Tamarack Rd	County Line Rd	Signed Route	High
229	Marshall County	Tamarack Rd	County Line Rd	1st Rd	Signed Route	High
230	Marshall County	Lincolnway	Lincolnway	Plymouth City Limits	Signed Route	High
231	Marshall County	Elm Rd	Tyler Rd	4th St	Signed Route	High
232	Marshall County	US 31/Michigan Rd	13th Rd	Michigan Rd	Shared Use Path	Medium
199	Culver	Lake Maxinkuckee Trail	Culver	Culver	Shared Use Path	High
186	Argos	Indiana Ave/SR 10	US 31	Argos Community Park	Shared Use Path	High
187	Argos	Pond Trail	Indiana Ave	Indiana Ave	Complete	Medium
188	Argos	Indiana Ave/SR 10	Argos Community Park	1st St	Shared Use Path	Medium
189	Argos	Railroad Trail	Kenilworth Rd	Michigan St	Shared Use Path	Low
190	Bourbon	Florence St	Thompson St	Triton Elementary School	Shared Use Path	High
191	Bourbon	Thompson St	Florence St	Center St	Complete Street	Medium

Table B-3: Marshall County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
192	Bourbon	Liberty Ave/Triton Ave	Thompson St	Shaffer Rd	Shared Use Path	Low
193	Bremen	Grant St	Sunnyside Park	Yellow River	Shared Use Path	High
194	Bremen	Bremen Greenway	Yellow River Greenway	Plymouth St	Shared Use Path	Medium
195	Bremen	Woodies Ln	Plymouth St	3rd Rd	Bike Lane	Medium
196	Bremen	Center St	4th St	3rd Rd	Signed Route	High
197	Bremen	3rd Rd	Elm Rd	Woodies Ln	Signed Route	Medium
198	Bremen	Yellow River Greenway	Grant St	Bremen Greeway	Shared Use Path	Low
242	Plymouth	Greenway-Michigan Rd Connector	Existing Greenway	Michigan Rd	Shared Use Path	In Progress
233	Plymouth	Plymouth Greenway	Jefferson St	5th St	Shared Use Path	High
234	Plymouth	Lincolnway	Plymouth City Limits	Jefferson St	Signed Route	High
235	Plymouth	Michigan Rd	Eastwood Dr	Oakhill Ave	Signed Route	High
236	Plymouth	Lincolnway/ Jefferson St	Plymouth City Limits	5th St	Signed Route	High
237	Plymouth	5th St	Jefferson St	Cromer St	Signed Route	High
588	Plymouth	Plymouth-Goshen Trail	Chuck Glaub Dr	Michigan Rd (SR 17)	Shared Use Path	High
586	Plymouth	Oak Dr	SR 17	US 30	Shared Use Path	Medium
587	Plymouth	Schuh Canal	Michigan Rd	Race St	Shared Use Path	Medium
238	Plymouth	Plymouth Greenway	Existing Greenway	US 30	Shared Use Path	Medium
239	Plymouth	Jefferson St	Plymouth Greenway Crossing	Lincolnway	Bike Lane	Medium
240	Plymouth	Michigan St	Pennsylvania Ave	Oakhill Ave	Signed Route	Medium

Table B-3: Marshall County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
241	Plymouth	Plymouth Greenway	Dixon Lake	Railroad Trail	Shared Use Path	Low

Figure B-5: St. Joseph County Active Transportation

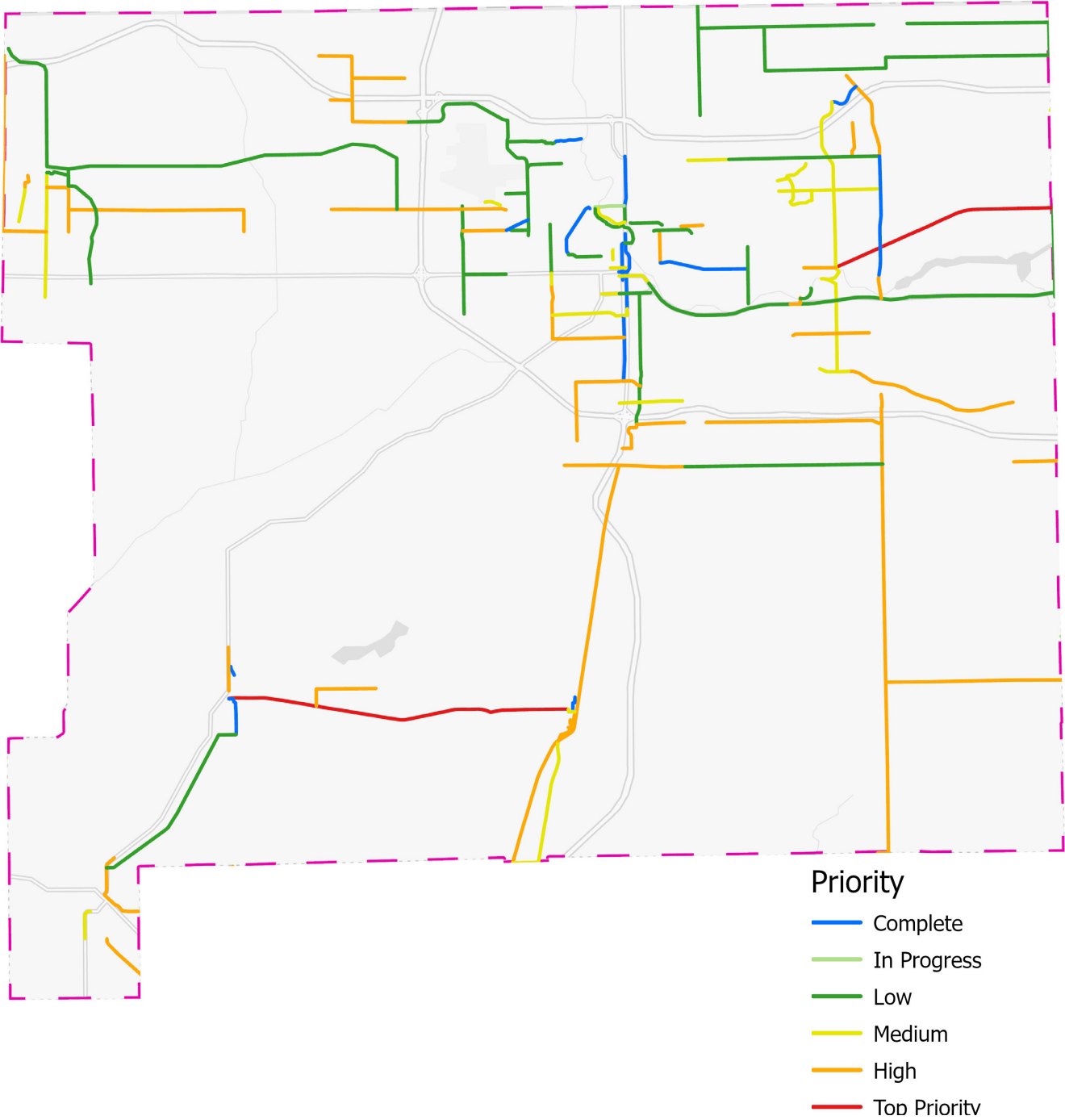


Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
351	St. Joseph County	Potato Creek Trail	North Liberty	Lakeville	Shared Use Path	Top Priority
326	St. Joseph County	Mishawaka-Elkhart Connection	Elkhart/St. Joseph County	Fir Rd	Shared Use Path	Top Priority
323	St. Joseph County	Auten Rd	SR 933	Laurel Rd	Shared Use Path	Complete
324	St. Joseph County	La Salle Trail	Darden	State Line Rd	Shared Use Path	Complete
325	St. Joseph County	Old US 31/Michigan Rd	Marshall/St. Joseph County	Kern Rd	Shared Use Path	High
327	St. Joseph County	Capital Ave	SR 23	Douglas Rd	Shared Use Path	High
328	St. Joseph County	Kern Rd	Lilac Rd	York Rd	Signed Route	High
329	St. Joseph County	Walkerton Trl	Marshall/St. Joseph County	Walkerton Town Limits	Signed Route	High
330	St. Joseph County	Dragoon Trl	Clover Rd	Beech Rd	Signed Route	High
331	St. Joseph County	Elm Rd	Ireland Rd	Tyler Rd	Signed Route	High
332	St. Joseph County	Jackson Rd	Ironwood Rd	Elm Rd	Signed Route	High
333	St. Joseph County	Edison Rd	Quince Rd	Sheridan St	Signed Route	High
334	St. Joseph County	Ardmore Trl	Mayflower Rd	Sheridan St	Signed Route	High
335	St. Joseph County	Old Cleveland Rd	Olive Rd	Primrose Rd	Signed Route	High
336	St. Joseph County	Primrose Rd	Old Cleveland Rd	Auten Rd	Signed Route	High
337	St. Joseph County	Auten Rd	Primrose Rd	Quince Rd	Signed Route	High
338	St. Joseph County	Darden Rd	Primrose Rd	Quince Rd	Signed Route	High
339	St. Joseph County	Brick Rd	Olive Rd	Primrose Rd	Signed Route	High
340	St. Joseph County	Linden Rd	Chippewa Ave	Johnson Rd	Signed Route	High
341	St. Joseph County	Dice St	Michigan Rd	St. Joseph St	Signed Route	High
342	St. Joseph County	St. Joseph St	Dice St	Ruth Ave	Signed Route	High

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
343	St. Joseph County	Ruth Ave	St. Joseph St	Carroll St	Signed Route	High
344	St. Joseph County	Carroll St	Ruth Ave	Jackson Rd	Signed Route	High
345	St. Joseph County	Wintergreen Rd	Dunn Rd	Early Rd	Signed Route	High
346	St. Joseph County	Sage Rd	Early Rd	Edison Rd	Signed Route	High
347	St. Joseph County	Edison Rd	Sage Rd	Wintergreen Rd	Signed Route	High
348	St. Joseph County	Early Rd	Timothy Rd	County Line Rd	Signed Route	High
349	St. Joseph County	Kern Rd	Beech Rd	Ash Rd	Signed Route	High
350	St. Joseph County	Pierce Rd	Elm Rd	Ash Rd	Signed Route	High
357	St. Joseph County	Lincolnway	Mishawaka City Limits	Ash Rd	Complete Street	High
617	St. Joseph County	Capital Ave Trail	Jefferson Blvd	Douglas Rd	Shared Use Path	Medium
352	St. Joseph County	Douglas Rd	Twykenham Dr	SR 23	Shared Use Path	Medium
596	St. Joseph County	County Parks Connector	Bendix Woods Park	Spicer Lake Park	Shared Use Path	Medium
353	St. Joseph County	Adams Rd	Ironwood Rd	Elm Rd	Shared Use Path	Low
354	St. Joseph County	Brick Rd/Anderson Rd	Grape Rd	Ash Rd	Shared Use Path	Low
355	St. Joseph County	Adams Rd	Bittersweet Rd	Ash Rd	Shared Use Path	Low
356	St. Joseph County	Grape Rd	Brick Rd	Adams Rd	Shared Use Path	Low
613	St. Joseph County	Walkerton/N Liberty Trail	SR 23/Tyler Rd	Tamarak Trail	Shared Use Path	Low
	St. Joseph County	Ironwood Rd	Cleveland Rd	Stateline Rd	Shared Use Path	Low
593	St. Joseph County	Kern Rd	Elm Rd	York Rd	Shared Use Path	Low
594	St. Joseph County	Pine Rd	Edison Rd	Lincolnway West	Shared Use Path	Low

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
595	St. Joseph County	Lincolnway West	Wintergreen Rd	Pine Rd	Shared Use Path	Low
247	Lakeville	Newton Park Trail	Wilson Dr	Newton Park	Shared Use Path	Complete
243	Lakeville	Motts Alley	Michigan Rd	Wilson Dr	Shared Use Path	High
244	Lakeville	Wetland Walkway	South Trail	Lakeville Comm. Center	Walking Path	High
245	Lakeville	Abandoned Railroad Corridor	Michigan Rd	LaVille Schools	Shared Use Path	Medium
246	Lakeville	Wilson Dr	Motts Alley	Mangus St	Shared Use Path	Medium
248	Mishawaka	Beacon Parkway	Capital Ave (Loop)	Capital Ave (Loop)	Shared Use Path	Complete
265	Mishawaka	Lincolnway	Ironwood Dr	Capital Ave	Complete Street	In Progress
266	Mishawaka	Lincolnway	Capital Ave	Mishawaka City Limits	Complete Street	In Progress
249	Mishawaka	Douglas Rd	Fir Rd	Capital Ave	Shared Use Path	High
250	Mishawaka	Juday Creek Golf Course Trail	Douglas Rd	Lindy Dr	Shared Use Path	High
251	Mishawaka	12th St	Union St	Downey Ave	Shared Use Path	High
252	Mishawaka	Capital Ave	Lincolnway	Jefferson Blvd	Shared Use Path	High
253	Mishawaka	Jefferson Blvd	Byrkit St	Cedar St	Walking Path	High
582	Mishawaka	Cedar St	Lincolnway	Madison	Shared Use Path	High
581	Mishawaka	Lincolnway East	Cedar St	Race St	Shared Use Path	High
254	Mishawaka	Fir Rd/Byrkit Ave	Beacon Pkwy	Jefferson Blvd	Shared Use Path	Medium
255	Mishawaka	Byrkit Ave	Prospect Dr	Dragoon Trl	Shared Use Path	Medium
256	Mishawaka	Byrkit Ave Pedestrian Bridge	Prospect Dr	Jefferson Blvd	Shared Use Path	Medium
257	Mishawaka	Prospect Dr	Merrifield Park	Byrkit Ave	Shared Use Path	Medium
258	Mishawaka	Holy Cross Pkwy	Trinity Place	Edison Lakes Pkwy	Shared Use Path	Medium

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
259	Mishawaka	Juday Creek Trail	Edison Lakes Pkwy	Main St	Shared Use Path	Medium
260	Mishawaka	Edison Lake Pkwy	Holy Cross Pkwy	Park Place	Shared Use Path	Medium
261	Mishawaka	Park Place	Edison Lakes Pkwy	Filbert Rd	Shared Use Path	Medium
262	Mishawaka	Filbert Rd	Park Place	Day Rd	Shared Use Path	Medium
263	Mishawaka	Day Rd	Edison Lakes Pkwy	Fir Rd	Shared Use Path	Medium
264	Mishawaka	Dragoon Trl	Blair Hills Ave	Clover Rd	Shared Use Path	Medium
584	Mishawaka	Day Rd	SR 331	Main St	Shared Use Path	Medium
583	Mishawaka	Douglas Rd	Captial Ave	SR 23	Shared Use Path	Low
585	Mishawaka	Edgewater Dr	Mishawaka Ave	Cedar St	Shared Use Path	Low
267	New Carlisle	College St	Lincolnway	Bourissa Hills Park	Walking Path	High
268	New Carlisle	County Line Rd	Early Rd	Spicer Lake	Wide Shoulders/	High
269	New Carlisle	Dunn Rd	Race St	Wintergreen Rd	Signed Route	High
270	New Carlisle	Bourissa Hills Park Trail Connector	Bourissa Hills Park	Woodmont Ridge Dr	Shared Use Path	Medium
271	New Carlisle	Timothy Rd	Lincolnway	Bendix Woods	Wide Shoulders/	Medium
272	New Carlisle	Trail	Race St	Wintergreen Rd	Shared Use Path	Low
274	North Liberty	Tamarack Trail	Quinn Rd	Main St	Shared Use Path	Complete
275	North Liberty	Safe Routes to School	School Dr	Wrenwood Dr	Shared Use Path	Complete
276	North Liberty	SR 23	Osborne Rd	SR 4	Signed Route	High
322	"South Bend/ Mishawaka"	Logan St	Bethel College	Northside Blvd/ Wilson Blvd	Complete Street	Low
277	South Bend	Coal Line Phase I	Lincolnway	Riverside Dr	Shared Use Path	Complete
278	South Bend	Michigan St	Marion St	Bartlet St	Shared Use Path	Complete

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
280	South Bend	Boland Dr	Portage Ave	Riverside Dr	Shared Use Path	Complete
281	South Bend	St. Joseph St/ Michigan St	Jefferson Blvd	Marion St	Cycle Track	Complete
282	South Bend	Michigan St	Jefferson Blvd	Broadway St	Bike Lane	Complete
283	South Bend	Main St	Marion St	South St	Cycle Track	Complete
285	South Bend	Jefferson Blvd	Eddy St	Logan St	Bike Lane	Complete
286	South Bend	Ardmore Trl	Sheriden St	Bendix Dr	Complete Street	Complete
295	South Bend	Michigan Rd	Angela Blvd	Cleveland Rd	Shared Use Path	Complete
297	South Bend	Main St	Chippewa Ave	Indiana Ave	Bike Lane	Complete
300	South Bend	Western Ave	St. Joseph St	Lafayette Blvd	Bike Lane	Complete
279	South Bend	Coal Line Trail Ph II	Riverside Dr	Michigan Rd	Shared Use Path	In progress
284	South Bend	Lafayette Blvd	Riverside Dr	North Shore Dr	Shared Use Path	High
287	South Bend	Chippewa Ave	Gertude St	Fellows St	Complete Street	High
288	South Bend	Jackson Rd	York Rd	Fellows St	Complete Street	High
289	South Bend	Olive St	Ewing Ave	Ford St	Complete Street	High
290	South Bend	Ewing St	Olive St	Main St	Complete Street	High
291	South Bend	Eddy St	Chalfant St	Jefferson Blvd	Complete Street	High
292	South Bend	Corby Blvd	Twykenham Dr	Ironwood Dr	Complete Street	High
293	South Bend	Riverside Dr	Michigan St	Michigan St	Shared Use Path	Medium
294	South Bend	Riverside Dr	Michigan St	Lafayette Blvd	Shared Use Path	Medium
296	South Bend	Indiana Ave/Railroad	Olive	Main St	Shared Use Path	Medium

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
298	South Bend	Indiana Ave/ Michigan St	Main St	Broadway St	Shared Use Path	Medium
299	South Bend	Wayne St	Michigan St	Taylor St	Complete Street	Medium
301	South Bend	Monroe St/ Lincolnway	Lafayette Blvd	Bronson St	Complete Street	Medium
302	South Bend	Lincolnway West	Maplewood Ave	Lexington Ave/ Airport Blvd	Complete Street	Medium
303	South Bend	William St	Lincolnway	Washington St	Complete Street	Medium
304	South Bend	Michigan St	North Shore Dr	Angela Blvd	Complete Street	Medium
305	South Bend	Olive St	Ford St	Western Ave	Complete Street	Medium
306	South Bend	Sample St	SR 23	Lafayette Blvd	Complete Street	Medium
589	South Bend	North Shore Dr	Michigan St	Angela Blvd	Shared Use Path	Medium
590	South Bend	Ireland Rd	York St	Lafayette Blvd	Shared Use Path	Medium
307	South Bend	Railroad (Bendix Dr)	Westmore St	Nimtz Pkwy	Shared Use Path	Low
308	South Bend	Lathrop St	Bendix Dr	Portage Ave	Shared Use Path	Low
309	South Bend	Boland Dr	Portage Ave	Railroad (Bendix Dr) Trail	Shared Use Path	Low
310	South Bend	Fellows St	Sample St	Ireland Rd	Complete Street	Low
311	South Bend	Fellows St	Ireland Rd	Jackson Rd	Complete Street	Low
312	South Bend	Mayflower Rd	Dogwood Dr	Lincolnway	Complete Street	Low
313	South Bend	Olive St	Western Ave	Lincolnway	Complete Street	Low
314	South Bend	Howard St	North Shore Dr	SR 23	Complete Street	Low
315	South Bend	Campeau St	South Bend Ave	Rockne Dr	Complete Street	Low
316	South Bend	Sample St	Lafayette Blvd	High St	Complete Street	Low
317	South Bend	Western Ave	Sheriden St	Mayflower Rd	Complete Street	Low

Table B-5: St. Joseph County Proposed Project List

ID	Sponsor	Project Name	Beginning Termini	Ending Termini	Type	Priority
318	South Bend	Voorde Dr	Sheriden St	Bendix Dr	Complete Street	Low
319	South Bend	Prast Blvd	Ardmore Trl	Bendix Dr	Complete Street	Low
320	South Bend	Nimtz Pkwy	Railroad (Bendix Dr) Trail	Olive Rd	Complete Street	Low
321	South Bend	Lincolnway	Bronson St	Ironwood Dr	Complete Street	Low
592	South Bend	Colfax St/ Orange St	College St	Charles Martin Sr Dr	Shared Use Path	Low
591	South Bend	Riverside Dr	Michigan St	Angela Blvd	Shared Use Path	Low
358	Walkerton	SR 23	Harrison St	Walnut Crossing Dr	Walking Path	High
359	Walkerton	Harrison St/ Underwood Rd	County Line Rd	SR 23	Signed Route	High
360	Walkerton	SR 23	Walkerton Trl	Walkerton Town Limits	Walking Path	Medium





C

Appendix

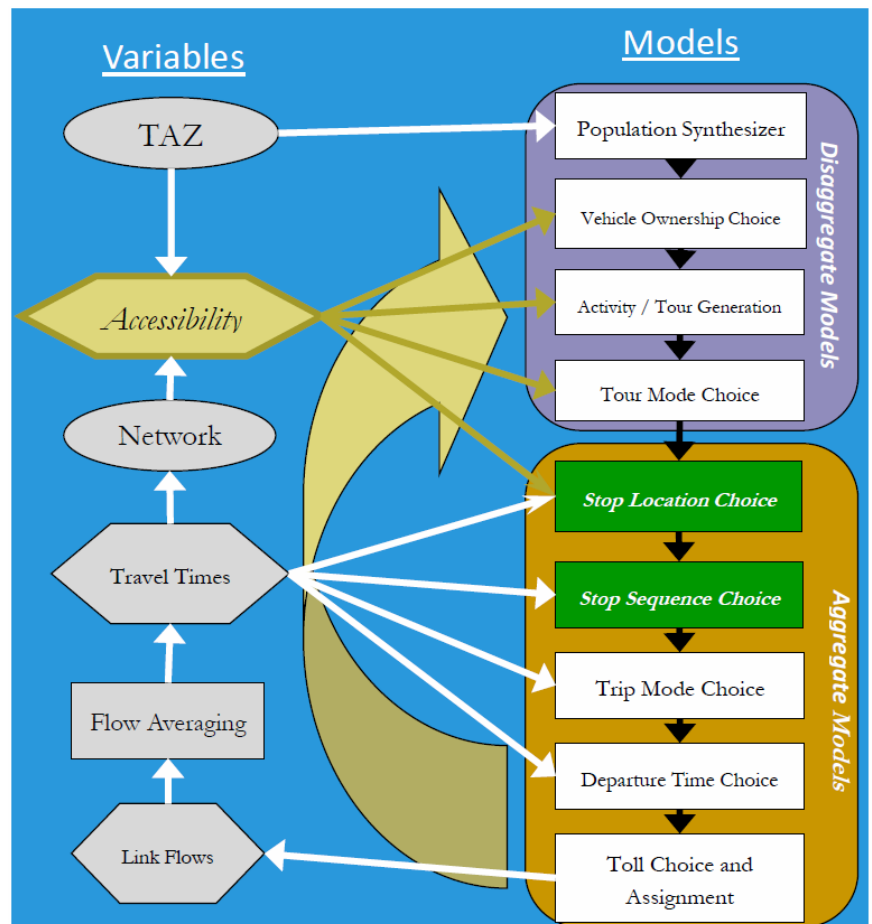
Modeling Process

C

Figure C-1: The MACOG Hybrid Model Design

Travel demand forecasting models (TDMs) are a major analysis tool for the development of long-range transportation plans. These mathematical models are designed to calculate the number of trips, connect their origins and destinations, forecast the mode of travel, and identify the roadways or transit routes most likely to be used in completing a trip. Models are used to determine where future transportation problems are likely to occur, as indicated by modeled roadway congestion. Once identified, the model can test the ability of roadway and transit system improvements to address those problems.

For the 2045 Transportation Plan, in coordination with the Michigan Department of Transportation (MDOT) and the Southwest Michigan Planning Commission (SWMPC), MACOG contracted with Resource Systems Group (RSG) to expand the travel demand forecasting model into Niles, Michigan to the north of the urbanized area as well as the rural counties of Kosciusko and Marshall County to the south. A hybrid model, blending aspects of traditional four-step models and activity-based models, the model can be described as trip-based, as it produces aggregate trip table matrices of trips between origins and destinations rather than disaggregate records detailing individual travelers' activities. However, it can also be described as tour-based since the travel patterns predicted can be mathematically proven to be consistent with tours and all travel is segmented within the model by types of tours, eliminating the non-home-based trips problematic in traditional four-step models.



Source: MACOG Travel Model: Model Development and Validation Report

Unlike traditional four-step models which are entirely aggregate and activity-based models which are entirely disaggregated, the hybrid model includes both aggregate and disaggregate component models. Despite the inclusion of disaggregate choice models, there are no random number draws or Monte Carlo simulations included in the TDM. As a result, the model results are reproducible, unlike the results of activity-based or other simulation models. Any difference between two model runs is directly attributable to differences in their inputs as with traditional trip-based models. Whereas, in simulation models, multiple model runs are necessary when comparing alternatives to ensure that the difference between model runs results from differences in the alternative inputs rather than from differences in the random numbers drawn for each run.

Significant elements of the TDM are as follows:

Socioeconomic Inputs

HELPViz Land Use Model

HELPViz was developed by RSG as part of the Sustainable Evansville Area Coalition's Regional Plan for Sustainable Development. Using the Land-Based Classification System's activity-based codes, local 2002 aerial photography and 2013 oblique photography was used to describe land use changes in Elkhart and St. Joseph County over a 10-year period which was then used to adapt HELPViz to the area.

This land use model offers sensitivity to land use zoning, building codes and infrastructure facilities such as the transportation network, water and sewer utilities. HELPViz allocates the future population and employment regional totals to the TAZs based on build out capacities, the transportation network and infrastructure facilities. HELPViz uses a Nested Logit model framework and uses information at both TAZ and parcel levels.

Michigan Population Forecasts

Travel demand models are driven, in part, by the relationship of land use activities and characteristics of the transportation network. Inputs to the modeling process include the number of households, population in the households, vehicles, and employment located in a given TAZ.

The collection and verification of the socioeconomic data for the Michigan portion of the model was a collaborative effort between SWMPC, their committee members, and MDOT. Household, population, and employment data from the 2010 U.S. Census, the 2015 American Community Survey, Claritas and Hoovers employment databases was presented to SWMPC's Technical Advisory and Policy Committees. They were asked to provide detailed information about new development and where employers or population had been lost. The revised data was included in the travel demand model.

Kosciusko and Marshall County Demographics

Future population and employment growth in Kosciusko and Marshall County was based on a methodology used by the Hillsborough County Metropolitan Planning Organization in Florida. Local control totals based on Census counts were used to distribute growth to urban cores and areas of influence surrounding the various cities and towns while limiting overall growth to independent county control totals established using Woods and Poole data. This includes the average household income, average students per household, and average workers per household by horizon year.

The allocation methodology for population and employment to vacant developable lands was accomplished using a multi-step process that culminated in the allocation of growth based on the results of a gravity model. The gravity model distributes growth based on the attractiveness of a census block multiplied by the attractiveness of an activity centroid divided by the square of the distance between the two.

Using feedback from stakeholders that was digitized using a 500' grid, a residential density value was assigned to each square. Based on the density value of each grid, a priority would be assigned to the square from 1-3. This value, aggregated to the Census Block level, is the basis for the attractiveness score of the Census Block.

2050 Model Validation

The historic and current socioeconomic data available along with projections developed by Woods & Poole and other economic forecasts were used to develop the future population and employment numbers of the MPA. The regional socioeconomic data was allocated to Traffic Analysis Zones (TAZs) and incorporated into a hybrid travel demand model for the 2050 Transportation Plan. The zones divide the geography of the two-county study area into 505 smaller areas. The TAZ layer also contains 71 external zones for a total of 576 zones. The socioeconomic characteristics of each area, such as the number of households or employees, are recorded within the database record for that zone. These socioeconomic variables are used in the

model to forecast travel demand.

Comparing 2020 Decennial census data to outputs in the TDM, the model continues to be an accurate predictor of demographic change in the region. As can be seen from the table, the difference between the 2020 Decennial census population, households and employment in the region compared to the predicted values for 2020 from the TDM is minimal.

Table C-1: Model Validation

	2020 Census	2020 TDM Year	Difference
Population	606,294	610,273	+0.65%
Households	225,634	228,263	+1.15%
Housing units	255,504	256,202	+0.27%

Population Synthesis

The TDM generates a disaggregate synthetic population of households based on the supplied demographic information associated with the traffic analysis zones. For each zone, individual households are created. Each household has a total number of persons, workers, students, and a binary variable indicating whether any of the household members is over the age of 65. Each household also has an income variable that indicates whether the household belongs to the lower (under \$35,000/year), middle (\$35,000 - \$75,000/year) or upper (over \$75,000/year) income category, each of which comprises approximately a third of the households in the region. The number of vehicles available to each household is modeled separately, after the population synthesis, based on these variables and other variables describing the zone in which the household is located.

Tour and Stop Generation

The TDM generates tours and stops rather than trips. The number of tours and stops of each type is estimated using multiple regression models applied to the disaggregated synthetic population

Table C-2: Factors Affecting Household Tour and Stop Generation

	Work-ers	Non-Work-ers	Stu-dents	Seniors	Vehicles	Income	Gas Price	Acces-sibility
Work Tours	+			-	+	+		
Work Stops	+			-	+	+		-
Other Stops	+	-	+	-	+	+		
School Tours			+			+		-
School Stops			+			+		-
Other Stops			+			+		-
Other Tours	+	+		+	+		-	
Short Maintenance Stops	+	+		+	+	+	-	
Long Maintenance Stops	+	+	-	+	+		-	
Key	+	Variable (column) in-creases tour/stop rate (row)			-	Variable (column) de-creases tour/stop rate (row)		

of households. First, the number of tours, of each type, is estimated for each household. Then, for each stop type, the ratio of stops per tour is modeled and the total number of stops produced by multiplying this ratio by the number of tours. (See Table C-2)

In this framework, the modeled behavior is dominated by the tour generation equations, with the stop generation playing a secondary role (in some ways similar to, albeit simpler than, activity-based approaches which allow more tradeoffs). This is reflected in their goodness-of-fit which is quite good for the tour generation equations, but rather modest for stop generation since stop rates per tour are relatively constant.

Although cross-classification models were once viewed as an advance over regression models for generating trips, this was due to their ability to reduce aggregation bias compared to regression models which were applied to zones as a whole. By applying regression models instead to a disaggregate population, aggregation bias is eliminated altogether in the approach adopted here. While cross-classification models are limited to two or three variables at most, regression models can include more variables, introducing sensitivity in resulting trip rates to factors like gas prices and accessibility variables, in addition to the basic demographic characteristics. Although interaction effects were widely tested, the only interaction effect that proved significant was the interaction of gas prices and household income; increasing gas prices decreased certain stop rates, but only for low income households.

The number of work tours was mostly a simple function of the number of workers. Vehicle ownership, the presence of seniors and household income offered some additional explanatory power. The presence of seniors in a household made work tours slightly less frequent, perhaps because senior workers are less likely to work full time.

The number of work stops is calculated for each household and allocated to income groups based on the household's income. The number of work stops per work tour is relatively constant. However, the number of work stops per work tour is slightly higher for high income workers, probably reflecting greater frequency of eating out

for lunch which results in two work stops (before and after lunch). Accessibility also makes work stops marginally more frequent because it implies that commute times are shorter, so it is easier to get back and forth between home and work, such as going home for lunch, returning to work after dinner, work activities on weekends, etc.

The number of other stops per work tour is significantly increased by the number of household students from workers stopping to drop off students on the way to work and decreases with the number of non-workers in the household who can drop off the students instead. Here also, we see income and vehicle ownership increasing other stops on work tours, again perhaps increased lunch stops out.

The number of other (non-work) tours made by a household is most influenced by the number of non-workers in the household: more non-workers generate more non-work tours. However, the non-work tours are also increased albeit less by workers and are more frequent for households with seniors and more vehicles. Non-work tours also decrease slightly as gas prices rise. The number of short (under 30 minutes) maintenance stops per other tour was largely constant, but somewhat higher for households with more people and income. The number of long (over 30 minutes) maintenance stops was also fairly constant and increased with the number of vehicles available; however, it also decreased with the number of students, who may curtail long shopping activities. The number of discretionary stops decreased slightly with the presence of seniors and increased with income and students with cars.

Tour-Based Modal Choice

In the model, as in activity-based models, the mode of travel is developed in two stages: tour mode choice and trip mode choice. After tours are generated, they are assigned a primary mode by tour mode choice models. Then, after the spatial distribution of stops creates trips, individual trips are assigned a mode based on the primary mode of the tour in trip mode choice models. (See Table C-3 on the following page)

The model makes use of four primary tour modes:

- Private Automobile
- Public Transit
- Walk / Bike
- School Bus

The primary mode for a tour is determined by a simple set of definitions or rules.

- Any tour containing a school bus trip is a school bus tour.
- Any other (non-school bus) tour containing a public transit trip is a public transit tour.
- Any other (non-transit) tour containing a private automobile trip is an automobile tour.
- Any other tour, which contains only walk

or bike trips, is a non-motorized tour.

In this framework, the primary choice determining transit mode share is the tour mode choice. Trip mode choice ultimately reduces mostly to the determination of vehicle occupancy for automobile tours or the allocation of access modes for transit tours. Even in advanced activity-based models, fixed shares or other simple heuristics have been used for trip mode choice; whereas, tour mode choice models are more comparable to mode choice in traditional models.

The incorporation of behaviorally sensitive tour mode choice models in the TDM represents significant added value as compared to the previous model in which mode shares were fixed and totally insensitive to demographics, levels-of-service, or any other policy variables.

Table C-3: Factors Affecting Tour Mode Choice

	LOS	Cost		Demographics					Built Environment		
	Accessibility by Mode	Gas Price	Bus Fare	Workers	Students	Senior HH	Income	Vehicle per Person	Percent Sidewalks	Activity Diversity	Intersection Density
Work Tours											
Auto	+	-	+		+	+	+	+	-	-	
Transit	+	+	-		-	-	+	-	-	-	
Non-Motorized	+	+	+		+	-	-	-	+	+	
School Tours											
Auto	+	-					+	+			
Transit	+	+					-	+			
Non-Motorized	+	+					-	-			
School Bus	+	+					-	-			
Other Tours											
Auto	+	-		+	+	+		+		-	-
Transit	+	+		+	-	-		-		-	-
Non-Motorized	+	+		-	+	-		-		+	+
Key	+ Direct Increase										
	+ Indirect Increase										
	- Indirect Decrease										
	- Direct Decrease										

Source: MACOG Travel Model: Model Development and Validation Report

The model produces, in addition to automobile trips by occupancy class, the system-level transit ridership, the number of transit trips generated by each residence zone, and the total regional number of daily walk/bike trips. Moreover, the model architecture allows for the straightforward addition of future component models to produce transit and non-motorized trips at the route/street level. These component models and level of spatial fidelity could be developed in a future model upgrade.

The key difference between the tour mode choice models and those common in activity-based models is the way in which they measure the level-of-service provided by each competing mode and the related assumption of the hierarchy of travelers' choices (i.e., whether travelers' destination choices depend more on their mode choices or vice versa).

In activity-based models, as in traditional four-step models, tour mode choice is modeled after destination choice (or distribution) and can therefore use actual travel times between origins and destinations as level-of-service variables. This traditional model structure was first developed for very large metropolitan areas with significant choice rider markets and is more sensitive to changes in level-of-service provided by transit improvements and for testing their impacts on transit route ridership. However, it may be oversensitive to level-of-service variables and a source of optimism bias in transit forecasts, as this model structure is built on the assumption that travelers are more likely to change mode than destination. This may well be the case for affluent choice riders for their work commute in large cities. However, there are many situations where it is more reasonable to assume that travelers are more likely to change destinations than mode.

Local household survey data offer some support of this general assumption for the region that travelers are more likely to change destination than mode of travel. In general, this assumption seems more appropriate in markets similar to MACOG with few choice riders, where mode choice is generally a foregone conclusion on which destination choice is conditioned. For example, either the traveler has access to a car and does not even think of riding transit or they do not have access to a car and rely on transit, choosing their

destinations, possibly even workplace, based on where the transit system can get them. "Reverse hierarchy" models such as those developed for the TDM, which represent destination (or stop location) choice conditional on mode choice, still take the level-of-service provided by competing modes into account and allow for changes in ridership based on improvements to transit or highway modes. However, they measure the level-of-service provided by each mode not directly by the travel times between origins and destinations but indirectly by the accessibility to various types of destination provided by each mode to a residence zone.

Departure Time Choice

The regional travel model includes departure time choice models which distribute trips throughout the day. The models are capable not only of producing the traditional AM, PM and off peak trip tables for standard assignments, but also can produce trip tables for any or all 15-minute periods from 6 am to 9 pm. These 15-minute trip tables should be of significant value for traffic micro-simulations and could be used in the future in conjunction with a dynamic network assignment.

In addition to adding temporal resolution, the departure time choice models add sensitivity to new variables, most notably travel times and accessibility. The new models will reflect shifts in travelers' departure times in order to avoid longer travel times. This effect, commonly referred to as peak-spreading as travelers leave earlier or later to avoid peak traffic, was modest, but already statistically significant in the household survey data. The effect was evident for all tour types but was most significant for Other Tours, which, in general, presumably have more flexibility in the timing of their activities than the other tour types.

The models also incorporate accessibility variables which allow departure times to vary geographically in the model, e.g., lower accessibility, rural travelers might generally leave for work earlier (since they have further to go to get to work).

Home-based and non-home-based trips for each tour type are represented by different models, since the first and last trips of a tour have different temporal distributions compared with mid-tour

non-home-based trips. This segmentation is particularly important for midday/lunch traffic which is associated primarily with shorter, mid-tour non-home-based trips, as opposed to the am and pm peaks which are more associated with longer home-based trips.

University Student Travel Models

The university student travel models are supported by the Michiana Area College Travel Study. The College Travel Study closely paralleled the Michiana Area Household Travel Study in questionnaire structure and content. Six colleges agreed to participate in the study: Bethel College, Goshen College, Holy Cross College, Ivy Tech Community College, the University of Notre Dame, and Indiana University – South Bend.

Before administering the College Travel Study, the survey was soft-launched to 25 students from Goshen College. Goshen College was gracious to agree to soft-launch the survey as a way to test the data and ensure that the survey questions were clear and relevant to students taking the survey. After the soft-launch was completed, the data was reviewed. The College Travel Study was then administered with each participating college sending out an invitation email. Survey administration began on Wednesday September 18, and closed on October 14. This survey administration timing was specifically selected to ensure that the survey started after classes were in session (and the add/drop period had passed) and the survey was completed prior to the October break period. A total of 672 students completed the survey.

Truck Model

Based on the method recommended in the Quick Response Freight Manual II, a commercial vehicle model was developed for predicting trips for four-tire commercial vehicles, single unit (SU) trucks, and multiple unit (MU) trucks. The model uses a four-step process. These steps are trip generation, distribution, choice of time of day and trip assignment. In addition, the special trip generators of inter-region and inter-modal trucks were added in the model to better replicate the current inter-region and inter-modal truck movements.

The inputs to trip generation are the number of employees and the number of households by Traffic Analysis Zone (TAZ). These rates were obtained by adjusting the original generation rates in the Quick Response Freight Manual. To replicate the current truck traffic condition in the study area, the rates for four-tire commercial vehicles were further adjusted by a factor of 0.10.

The external-internal (EI) and internal-external (IE) truck trips were classified as a distinct type of trip in order to better replicate the in-balance direction truck flows at different time periods. Before the trip distribution, the trip origins and destinations were balanced for all TAZs and external stations for the following types of trips:

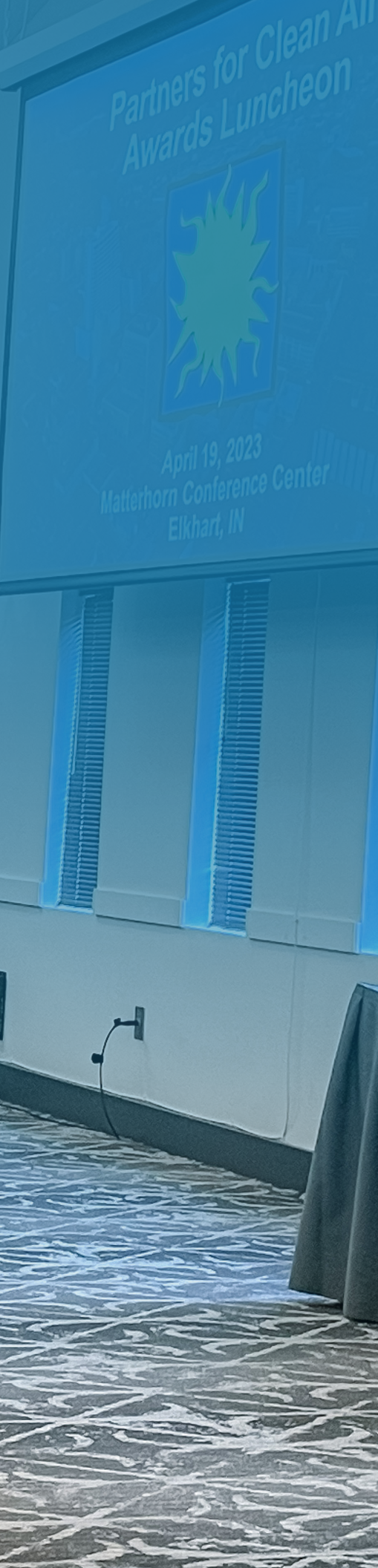
- EI-IE SU truck trips of all TAZs and external stations
- EI-IE MU truck trips of all TAZs and external stations
- Internal-to-Internal (II) SU truck trips of all TAZs
- Internal-to-Internal (II) MU truck trips of all TAZs
- Internal-to-Internal (II) 4-tire commercial vehicle trips of all TAZs

For four-tire commercial vehicles, it is assumed that the normal EI-IE trip attractions are proportional to the trip destinations. At the beginning, destinations are used as the normal EI-IE trip attractions and the balancing process scales to the total adjusted attractions.

For single-unit and multi-unit trucks, a destination choice model was applied separately to internal & external trips. The destinations chosen in these models (the sum over all origins) are scaled to the total number of trips produced in generation. This vector is then used as both the productions and attractions for a doubly-constrained gravity model to distribute the truck trips.

The time-of-day assignments were implemented in order to obtain better model results. To facilitate this, the trip tables from trip distribution must be factored to reflect morning peak, midday, and off-peak periods prior to trip assignment. The hourly time-of-day factors were derived from classification traffic counts provided by MACOG and applied to the MACOG Regional Travel Model.





D

Appendix

Air Quality Conformity Analysis

D

There are many aspects of air quality that are important to the environment, health and quality of life of the region and its residents. Clean air is vital to the productivity of people, land and businesses in North Central Indiana. Poor air quality can cause a wide variety of health problems, contributing to premature death from cardiovascular and respiratory diseases such as asthma. These problems are often worse in poor urban communities. Air pollution comes from many different sources such as factories, power plants, dry cleaners, cars, buses, trucks, windblown dust, and even fires. It can harm plant life, causing negative impacts on natural areas, forests, and farms.

Within the context of air quality, it is most relevant to discuss the status of the Elkhart and St. Joseph Counties region with regard to attainment of the National Ambient Air Quality Standards. Air quality has improved in the region substantially over the past decade. Significant investment by industries in pollution reduction to comply with federal and state regulation of air emissions has contributed to this improvement. Other significant contributors to this progress include implementation of vapor recovery requirements on area gas stations and congestion mitigation awareness in transportation planning.

National Ambient Air Quality Standards

The federal government established the National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants, all of which, in concentrations above certain levels, have adverse effects on human health. These criteria pollutants include: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), ozone (O₃), particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).

NAAQS attainment status achievements are one of the strongest demonstrations of air quality improvement over time. Based on air quality monitoring data collected in Elkhart and St. Joseph Counties by the Indiana Department of Environmental Management (IDEM), the MACOG region is in attainment of the existing NAAQS for Ozone and Fine Particulate Matter. The MACOG area's air quality continues to improve with each passing year.

While celebrating the region's achievements, it is important that we continue to strive for continuing improvement in air quality. The United States Environmental Protection Agency (EPA) is mandated to periodically review and update the NAAQS as scientific evidence warrants. As new data and studies reveal new information about health risks from these pollutants, the standards are reviewed and if necessary modified to be more protective of public health. EPA currently has several air quality standards and monitoring requirements in various states of study, proposal, and promulgation. Some of these could result in the region falling back into nonattainment, based on new data or tighter standards.

Ozone has only recently been designated in attainment and Fine Particulate Matter is the second most hazardous pollutant in the region, this section focuses on them for purposes of understanding the current status of the region's ambient air quality.

Ozone

Ozone (O₃) is an odorless, colorless, highly reactive gas. Ground level ozone forms when its precursors (i.e., nitrogen oxides and volatile organic compounds) mix with high temperatures, bright sunlight and calm winds. This reaction forms smog and can lead to ozone action days, a period when certain pollutant-generating activities should be minimized. Cars, power plants, refineries, chemical plants, gasoline storage, and household paints and solvents emit nitrogen oxides and volatile organic compounds as a byproduct of their use. O₃ can irritate the eyes, nose, throat and respiratory system. It can be especially harmful to individuals with chronic heart or lung disease, as well as the very young and very old. Children, in particular, can be at risk during the summer months due to increased outdoor activity. In addition to public

health risks from O₃, long-term exposure during the growing season also damages sensitive vegetation. Cumulative O₃ exposure can lead to reduced tree growth; visibly injured leaves; and increased susceptibility to disease, damage from insects and harsh weather.

As of October 2015, an area does not meet the 8-hour O₃ NAAQS if the 3-year average of each year's fourth highest 8-hour average O₃ concentration is greater than 0.070 ppm. The design values for Elkhart and St. Joseph County's air emissions indicate that both of the counties are in attainment of the 2015 Ozone NAAQS.

Fine Particulate Matter

Fine particulate matter (PM_{2.5}) is produced by all forms of combustion from engines, wood-burning, open-burning and industrial processes. The annual PM_{2.5} NAAQS is met when the annual arithmetic mean concentration is less than or equal to 15.0 μg/m³ (parts per billion). The 24-hour PM_{2.5} NAAQS is met when the three-year average of the 98th percentile of 24-hour concentration is less than 35 μg/m³. The trend of compliance with the annual PM_{2.5} is a greater indicator of the impact of fine particulate matter on human health.

In January 2013, the EPA set the Annual PM_{2.5} standard to 12 μg/m³ (parts per billion). The design values for Elkhart and St. Joseph County's air emissions indicate that the MACOG region continues to remain in conformance with the revised health standards.

What is a design value?

A design value is a statistic that describes the air quality status of a given location relative to the level of the National Ambient Air Quality Standards (NAAQS).

South Coast Air Quality Mgmt. District v. EPA

On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA* ("South Coast II," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone national ambient air quality standard (NAAQS) and attainment for the 2008 Ozone NAAQS when the 1997 Ozone NAAQS was revoked. These conformity determinations are required in these areas after February 16, 2019. The South Bend-Elkhart area was a maintenance area at the time of the 1997 Ozone NAAQS revocation on April 6, 2015 and was also designated unclassifiable/attainment for the 2008 Ozone NAAQS on May 21, 2012. Therefore, per the South Coast II decision, a conformity determination is required for the 1997 Ozone NAAQS on the Transportation Plan.

Transportation Conformity Requirements

On November 29, 2018, the EPA issued Transportation Conformity Guidance for the South Coast II Court Decision (EPA-420-B-18-050, November 2018) that addresses how transportation conformity determinations can be made in areas that were nonattainment or maintenance for the 1997 Ozone NAAQS when the ruling for the 1997 Ozone NAAQS was revoked, and an area was designated attainment for the 2008 Ozone NAAQS in EPA's original designations for this NAAQS (May 21, 2012).

The transportation conformity regulation at 40 CFR 93.109 sets the criteria and procedures for determining conformity. The conformity criteria for Transportation Plans and Transportation Improvement Programs (TIPs) includes: the latest planning assumptions (93.110), the latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c)), and an emissions budget and/or interim emissions (93.118 and/or 93.119).

For the 1997 Ozone NAAQS areas, transportation conformity for Transportation Plans and TIPs for the 1997 Ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR

93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 Ozone NAAQS revocation was effective on April 6, 2015, and the South Coast II court upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, or budget and interim emissions tests.

Therefore, transportation conformity for the 1997 Ozone NAAQS for MACOG's 2050 Transportation Plan, Michiana on the Move, can be demonstrated by showing the remaining requirements in Table 1 in 40 CFR 93.109 have been met. These requirements, which are laid out in Section 2.4 of EPA's guidance and addressed below, include:

- Latest planning assumptions (93.110)
- Consultation (93.112)
- Transportation Control Measures (93.113)
- Fiscal constraint (93.108)

A final air quality conformity determination will be found in the *Transportation Conformity Determination Report for the 1997 Ozone NAAQS* on MACOG's website once approved.



E *Appendix*

Red Flag Investigation

E

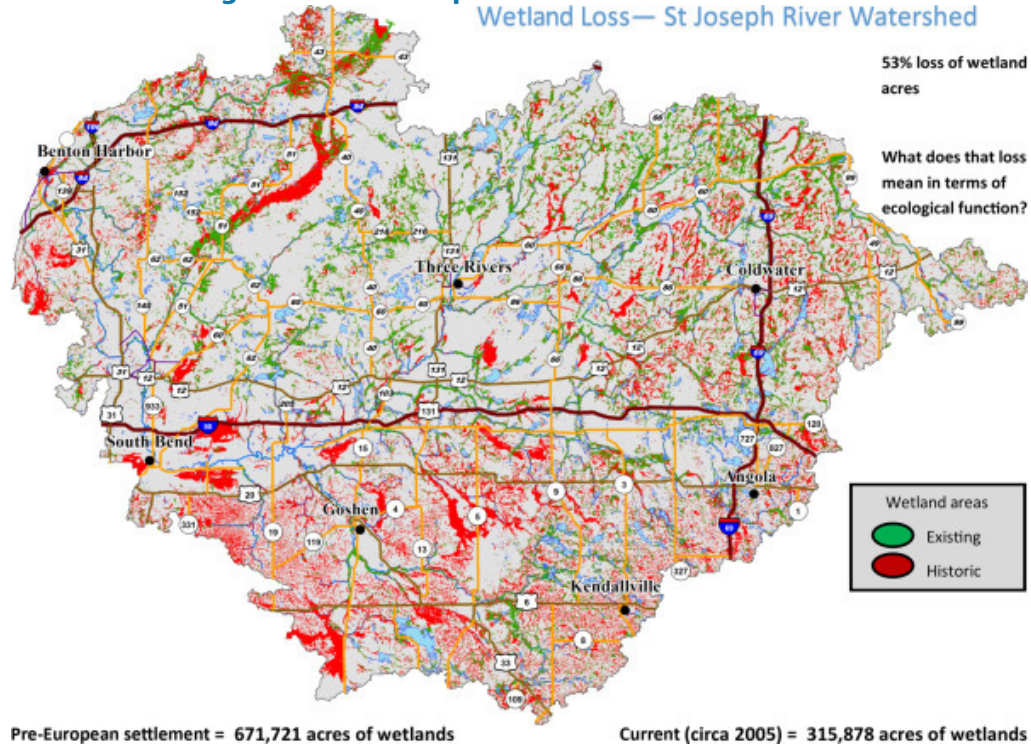
The National Environmental Policy Act of 1969 (NEPA) established a national policy to promote the protection of the environment in the actions and programs of federal agencies. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) act as lead federal agencies, and are responsible for implementing the NEPA process and working with state and local project sponsors during transportation project development. All transportation projects have the potential to impact our environment; therefore, it is essential that environmental considerations are identified during the planning and design phases.

The FHWA and FTA NEPA process is designed to assist transportation officials in making project decisions that balance engineering and transportation needs with the consideration of social, economic, and environmental factors. This process allows for involvement and input from the public, interest groups, resource agencies, and local governments. The process is used as an “umbrella” for compliance with over 40 environmental laws, regulations, and executive orders, and provides an integrated approach to addressing impacts to the human and natural environment from transportation projects.

While an in depth environmental review is not appropriate at this stage for projects included in the Transportation Plan, an initial consultation with environmental and cultural resources agencies is important to provide an opportunity to share plans and discuss future activities during project development. Additionally, environmental consultation allows for further discussion of potential mitigation activities at the regional level. The following list includes partners who were contacted for feedback related to the plan.

Environmental and Cultural Resource Partners
Indiana Department of Environmental Management, Office of Air Quality
Indiana Department of Natural Resources, Division of Historic Preservation & Archaeology
Indiana State Department of Agriculture, Soil and Water Conservation Districts
USDA, National Resources Conservation Services
USDA, Department of Agriculture, Forest Division
USDOT, Federal Highway Administration
USDOT, Federal Transit Administration
US Department of Housing & Urban Development
US Fish and Wildlife Services (USFWS)
US EPA Region 5
US EPA, Ground Water & Drinking Water Branch (Sole Source Aquifer)
US Army Corps of Engineers
Saint Joseph River Basin Commission
Kankakee and Yellow River Basin Commission
The Watershed Foundation
Shirley Heinz Land Trust
Izaak Walton League
Pokagon Band of Potawatomi
Local Historic Preservation Offices
Indiana Landmarks
Local Health Departments
Local Floodplain Administrators
Health by Design
Pokagon Band of Potawatomi & Additional Tribal Contacts

Figure E-1: St. Joseph River Watershed Wetland Loss
Wetland Loss— St Joseph River Watershed



In the St. Joseph River Watershed, 53% of pre-settlement wetlands have been lost (see Figure E-1). In an effort to mitigate any further impacts to wetlands, MACOG will continue to work with our environmental partners, such as the Shirley Heinz Land Trust, to ensure that wetland mitigation occurs with the development of transportation projects.

Red Flag Investigations are another key component to MACOG’s compliance with NEPA, hazardous material requirements, as well as MACOG’s commitment to a healthy environment. A red flag investigation is a preliminary environmental analysis that identifies potential impacts to Infrastructure, Mining/Mineral Exploration, Hazardous Material Concerns, Water Resources, and Historical Resources within a ½ mile radius of a proposed project area. The results from this analysis will be incorporated into project

planning, design, and construction with the goal of minimizing impacts to local resources.

Projects advancing to construction will require additional studies and detailed design to more clearly describe project features. This process enables environmental impacts and appropriate mitigation measures to be established. Projects using state or federal funds will require detailed environmental study and permitting in conformance with the National Environmental Policy Act (NEPA) and other federal, state and local regulations.

Preliminary Red Flag Investigation Data

The following is a listing of potential impacts to Infrastructure, Mining/Mineral Exploration, Hazardous Materials and Water Resources based on results from

red flag investigations performed by MACOG. The categories included in the review were chosen because they were generally available throughout the region in a GIS format.

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Elkhart County												
CR 10	Railpark Ct to SR 15	New Road Construction		✓								✓
Railpark/ Stonemount Ct	Railpark Ct to Stonemount Ct	New Road Construction		✓						✓		✓
Benchmark Rd	CR 14 to Beck Dr	New Road Construction		✓								
CR 118	Old CR 17 to CR 19	New Road Construction	✓		✓							✓
CR 13	Sunnyside Ave to US 20	Added Travel Lanes	✓	✓	✓	✓				✓	✓	✓
CR 15	CR 6 to CR 104	New Road Construction			✓	✓	✓			✓	✓	
CR 17	CR 142 to CR 38	New Road Construction	✓	✓	✓							
CR 17	CR 46 to CR 142	New Road Construction		✓								
CR 17	CR 50 to CR 46	New Road Construction										
CR 17	US 6 to CR 50	New Road Construction						✓				✓
CR 18	CR 13	Intersection Improvement			✓						✓	✓
CR 20	CR 111	Intersection Improvement		✓	✓							✓
CR 20	CR 37 to SR 13	Road Reconstruction	✓									
CR 20	SR 15	Intersection Improvement						✓		✓	✓	✓
CR 20	SR 19 to US 33	Added Travel Lanes	✓	✓	✓	✓	✓			✓	✓	✓
CR 22	CR 3	Intersection Improvement								✓	✓	

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
CR 24	CR 3	Intersection Improvement			✓					✓		
CR 26	SR 15 to CR 31	New Road Construction	✓	✓		✓	✓	✓	✓	✓		✓
CR 31	CR 36 to CR 26	New Road Construction	✓	✓		✓						✓
CR 38	SR 119 to CR 17	Center Turn Lanes	✓		✓							
CR 38	SR 19 to SR 119	Road Reconstruction	✓				✓			✓		
CR 40	CR 7 to SR 119	Road Reconstruction	✓	✓								
CR 40	SR 19 to SR 119	Added Travel Lanes	✓	✓	✓							
CR 43	CR 1400 N to US 6	Added Capacity										✓
CR 52	CR 101 to SR 19	Road Reconstruction	✓			✓				✓		✓
CR 6	Ash Rd to CR 10	Added Travel Lanes					✓	✓		✓	✓	
CR 6	CR 10 to John Weaver Parkway	Added Travel Lanes					✓			✓	✓	
Johnson St	Bristol St to SR 4	Added Travel Lanes			✓		✓	✓		✓	✓	
Kerryhaven Dr	Current Termini to CR 10	New Road Construction								✓	✓	
Old SR 17	SR 18 to Love's Dr	New Road Construction										✓
Sunnyside Dr	US 33 to CR 13	Added Travel Lanes		✓		✓		✓		✓		✓
2nd St	Harrison St to Jefferson St	One-Way to Two-Way		✓		✓	✓	✓		✓	✓	✓
3rd St	Harrison St to Jefferson St	One-Way to Two-Way		✓		✓	✓	✓		✓	✓	✓
Benham Ave	Lusher Ave to Indiana Ave	Road Reconstruction		✓		✓	✓			✓	✓	✓
Bristol St	Johnson St to Jeanwood Dr	Road Diet			✓	✓	✓			✓		
Bristol St	Jeanwood Dr to CR 15	Added Travel Lanes			✓	✓	✓			✓		
CR 4	CR 7 to CR 15	Auxiliary Lanes			✓		✓			✓	✓	
CR 6	CR 6 to Cassopolis St	Intersection Improvement										

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Goshen Ave	Jackson Blvd to Middlebury St	Road Reconstruction	✓	✓	✓	✓	✓			✓	✓	
Hively Ave	Norfolk Southern Railroad (#510012C)	Grade Separation		✓		✓	✓			✓		✓
Indiana Ave	Oakland Ave	Intersection Improvement		✓			✓		✓	✓		✓
Jackson Blvd	Goshen Ave	Intersection Improvement		✓	✓	✓	✓			✓	✓	
Jackson Blvd	Goshen Ave to Riverview Ave	Road Diet		✓	✓	✓	✓			✓	✓	
Jackson Blvd	Johnson St	Intersection Improvement		✓	✓	✓	✓			✓	✓	
Main St	Beardsley Ave	Intersection Improvement		✓	✓	✓	✓			✓	✓	
Main St	Hively Ave to Lusher Ave	Road Diet		✓	✓	✓	✓			✓	✓	✓
Middlebury St	Prairie St to Goshen Ave	Added Travel Lanes	✓	✓	✓	✓				✓	✓	
Northside Connector	Adamsville Rd to Johnson St	New Road Construction			✓							
Prairie St	Mishawaka Rd to Lusher Ave	Added Travel Lanes	✓			✓	✓			✓	✓	✓
Sunny Dr	Northpointe Blvd to CR 4	New Road Construction								✓	✓	
Toledo Rd	Goshen Ave to Indiana Ave	Intersection Improvement	✓			✓	✓			✓		✓
Blackport Dr	Monroe St to Lincoln Ave	Road Reconstruction		✓	✓	✓	✓			✓		
College Ave	Nineth St to US 33	Auxiliary Lanes		✓	✓	✓	✓		✓	✓	✓	
College Ave	US 33 to Century Dr	Center Turn Lanes		✓	✓	✓	✓					
CR 142	CR 17 to CR 15	Added Travel Lanes		✓								✓
US 33	Fairfield Ave to Plymouth Ave	Auxiliary Lanes										
CR 40	Dierdorff Rd to US 33	Center Turn Lanes										✓
Waterford Mills Pkwy	CR 40 to SR 15	New Road Construction	✓	✓		✓	✓			✓	✓	✓
Wilden Ave	Current Termini to Middlebury St	New Road Construction				✓	✓		✓	✓	✓	✓

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Bristol Ave	Brown St to Powell Dr	Road Reconstruction		✓	✓	✓	✓			✓		✓
Bristol Ave	Powell Dr to Cedar Creek Dr	Road Reconstruction		✓			✓					
CR 101	Market St to CR 52	Road Reconstruction		✓	✓							✓
CR 150	SR 19 to CR 3	New Road Construction	✓	✓	✓					✓		✓
Maple Ln	CR 42 to Wabash Ave	Center Turn Lanes	✓	✓	✓					✓		✓
Orchard Park Dr	Current Termini to SR 19	New Road Construction								✓	✓	
Kosciusko County												
Anchorage Rd	Detroit St to Biomet Dr	Auxiliary Lanes		✓	✓	✓						✓
Armstrong Rd	CR 200 E	Intersection Improvement										
County Farm Rd	SR 14 to CR 700 S	Added Capacity	✓	✓		✓	✓					
CR 1200 N	Syracuse Webster Rd/N 500 E	Intersection Improvement	✓			✓				✓		✓
CR 200 E / N 100 E	E 200 N to Armstrong Rd	Added Capacity	✓			✓	✓	✓		✓		✓
CR 225 S	CR 200 S to Packerton Rd	Added Capacity				✓		✓		✓		✓
CR 350 W	Old US 30 to US 30	Added Capacity		✓		✓				✓		✓
CR E 450 N	CR N 100 E	Intersection Improvement	✓		✓							✓
CR 800 W	US 30 to SR 19 / W 900 N	Added Travel Lanes	✓		✓							✓
CR 700 S	SR 19 to County Farm Rd	Added Travel Lanes	✓	✓						✓	✓	✓
CR 900 N	CR 500 S to SR 25	Added Travel Lanes		✓	✓					✓		
N Fox Farm Rd	CR 150 W to US 30	Added Capacity	✓		✓	✓	✓	✓		✓		✓
New Road (CR 350 E)	Pierceton Rd to Wooster Rd	New Road Construction		✓								✓
New Road (CR 850 W)	W 1350 N to Indiana Ave	New Road Construction	✓	✓	✓	✓				✓		✓
Old US 30	CR 350 W to Fox Farm Rd	Bike/Pedestrian		✓		✓	✓			✓		✓

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Old US 30	N Zimmer Rd to CR 350 W	Added Capacity		✓		✓				✓		✓
Pierceton Rd	Parckerton Rd to Market St	Added Capacity		✓		✓	✓	✓		✓	✓	✓
CR 1350 N	CR 700 W to CR 950 N	Road Reconstruction										✓
Wawasee Dr (CR 900 E)	Morris Rd to County Line Rd	Added Capacity	✓	✓		✓		✓		✓		✓
Jackson Street	W 1350 N to Current Termini	New Road Construction										
CR 100 E	CR 250 N to CR 300 N	Road Realignment										
CR 100 S	SR 15 to Country Club Rd	New Road Construction	✓	✓		✓	✓		✓	✓	✓	✓
CR 150 W	Lake St to US 30	Added Travel Lanes		✓	✓	✓				✓	✓	✓
CR 300 N	Shelden Dr	Intersection Improvement		✓		✓	✓	✓				✓
Market St	Norfolk Southern	Grade Separation		✓		✓	✓			✓		✓
Parker St	Center St	Intersection Improvement		✓		✓	✓			✓	✓	
Sheridan St	Parker St to Harrison	New Road Construction		✓		✓	✓	✓				✓
Zimmer Rd	SR 25 to Old US 30	Added Capacity		✓		✓				✓		✓
Zimmer Rd	Winona Ave	Intersection Improvement		✓		✓						✓
Columbus Dr	Pierceton Rd to Chestnut St	New Road Construction		✓		✓	✓			✓		✓
Kings Hwy/ Winona Ave	Parke Ave/ Argonne Rd to	Intersection Improvement		✓	✓	✓	✓					✓
Packerton Rd	CR 225 S to Pierceton Rd	Added Travel Lanes				✓		✓		✓		✓
Pierceton Rd	CR 250 E	Safety Improvement				✓						✓
Pierceton Rd	Packerton Rd	Intersection Improvement				✓				✓		✓
Wooster Rd	Kings Hwy	Intersection Improvement		✓	✓	✓				✓	✓	✓
Wooster Rd	CR 250 E	Intersection Improvement		✓	✓	✓				✓	✓	✓

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Marshall County												
Lincoln Hwy	Pioneer Dr	Intersection Improvement		✓								
Linden Rd	SR 110 to SR 10	Road Reconstruction	✓	✓								
Michigan Rd	12 B Rd to US 31	Intersection Improvement	✓	✓			✓					✓
Veterans Pkwy	Michigan Rd to Pioneer Dr	New Road Construction		✓						✓		✓
Main St	Davis St	Intersection Improvement	✓	✓			✓					✓
Hoham Dr	Oak Dr to Michigan Rd	Center Turn Lanes		✓						✓		✓
Jim Neu Dr	Western Ave to Oak Dr	New Road Construction	✓	✓			✓			✓	✓	✓
Richter Rd	Jefferson St to Baker St	Road Reconstruction		✓		✓	✓			✓		✓
Plymouth Municipal Airport		Runway Extension		✓						✓		✓
Oak Rd	US 30 to Hoham Dr	Added Travel Lanes		✓						✓		✓
St. Joseph County												
Ash Rd	Lincolnway at NS RR Crossing	Grade Separation	✓	✓		✓	✓			✓		✓
Cleveland Rd	Beech Rd	Intersection Improvement						✓				
Douglas Rd/ Cleveland Rd Connector	Bittersweet Rd to Beech Rd	New Road Construction						✓				✓
Douglas Rd	Canadian National	Grade Separation		✓		✓						✓
Douglas Rd	Bittersweet Rd	Intersection Improvement										✓
Douglas Rd	Ironwood Rd	Intersection Improvement	✓	✓		✓		✓				✓
Douglas Rd	Ivy Rd to SR 23	Added Travel Lanes	✓	✓		✓		✓				✓
Douglas Rd	Veteran's Pkwy to Capital Ave	Added Travel Lanes		✓		✓						✓
Edison Rd	Similax Rd	Intersection Improvement		✓								✓
Edison Rd	Timothy Rd to Walnut Rd	New Road Construction										✓

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Edison Rd	Walnut Rd	Intersection Improvement										✓
Filmore Rd	Larrison Rd	Intersection Improvement				✓						
Harrison Rd	Strawberry Rd to Lemon Rd	New Road Construction		✓		✓						✓
Larrison Rd	Filmore Rd	New Road Construction		✓		✓						✓
Pierce Rd	Miami Rd to SR 331	New Road Construction		✓		✓						✓
Pierce Rd	US 31 to Miami Rd	Road Reconstruction										
Snowberry Rd	Hamilton Trl to Hamilton Trl	New Road Construction	✓	✓		✓		✓				✓
Twelfth St	SR 331 to Union St	Added Capacity		✓		✓	✓		✓	✓	✓	✓
Beacon Pkwy Connector	Cleveland Rd to Beacon Pkwy	New Road Construction		✓		✓	✓	✓		✓	✓	✓
Catalpa Ave	Filbert Rd to Catalpa Ave	New Road Construction		✓	✓	✓	✓			✓		✓
Cedar St	Mishawaka Ave to Jefferson Blvd	Road Diet		✓	✓	✓	✓			✓	✓	✓
Cleveland Rd	Fir Rd to Capital Ave	Added Travel Lanes			✓	✓				✓	✓	✓
Division St	Catalpa Ave to Current Terminus	New Road Construction		✓	✓	✓	✓	✓		✓	✓	✓
Elwood Ave	SR 331	Intersection Improvement		✓		✓	✓		✓	✓	✓	✓
Fir Rd	McKinley Ave to 1-80/90	Center Turn Lanes		✓			✓	✓		✓	✓	✓
Fulmer Rd	Current Terminus to Clover Rd	New Road Construction	✓	✓		✓	✓	✓		✓	✓	✓
Grape Rd	Douglas Rd	Intersection Improvement										
Hickory Rd	Helper St to SR 23	New Road			✓	✓	✓			✓		✓
Jefferson Blvd	Byrkit St to Cedar St	Safety Improvement		✓		✓	✓			✓	✓	✓
McKinley Ave	Fir Rd to Division St	Added Capacity		✓		✓	✓	✓		✓	✓	✓
McKinley Ave	Lynn St to Elder Rd	Added Travel Lanes		✓	✓	✓	✓	✓			✓	✓
Seventh St	Union St to Laurel St	New Road Construction		✓	✓	✓	✓		✓	✓	✓	✓

Table E-1: Infrastructure

Road	Limits	Type	Cemeteries	Railroads	Religious Facilities	Trails	Managed Lands	Airports	Hospitals	Recreational Facilities	Schools	Pipelines
Twelfth St	Campbell St to Dodge St	Added Travel Lanes		✓		✓	✓		✓	✓	✓	✓
Union St	Irelto Dr to Sixth St	Added Capacity			✓	✓	✓		✓	✓	✓	✓
Veterans Pkwy	Cul-de-Sac to Cleveland Rd	New Road Construction										
Veterans Pkwy	Cul-de-Sac to Douglas Rd	New Road Construction										✓
Bendix Dr	Bertrand Rd to Lathrop Rd	Road Diet	✓	✓		✓	✓	✓		✓	✓	✓
Bertrand Rd	Meade St to Bendix Dr	Safety Improvement		✓		✓	✓			✓	✓	✓
Colfax	SR 23 to Colfax Bridge	Center Turn Lanes	✓		✓	✓	✓		✓	✓	✓	✓
Eddy St	SR23	Road Reconfiguration		✓	✓	✓	✓			✓	✓	✓
Lincolnway West	Olive St	Intersection Improvement		✓		✓	✓	✓		✓	✓	
Meade St	Orange Rd to Bertrto Rd	Safety Improvement		✓		✓	✓			✓	✓	✓
Sample St	Maryflower Rd	Intersection Improvement				✓	✓			✓	✓	✓
Sample St	SR 23 to Mayflower Rd	Safety Impromvement				✓	✓			✓	✓	✓
Sheridan St	Lincolnway to Progress Dr	Road Reconstruction		✓		✓	✓	✓		✓	✓	✓
Western Ave	Olive St to Dr. Martin Luther King Jr. Blvd	Road Diet	✓	✓	✓	✓	✓			✓	✓	✓

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground
Elkhart County																				
CR 10	Railpark Ct to SR 15	New Road Construction		✓									✓				✓			
Railpark/Stonemount Ct	Railpark Ct to Stonemount Ct	New Road Construction		✓	✓					✓							✓			
Benchmark Rd	CR 14 to Beck Dr	New Road Construction		✓	✓	✓				✓		✓								
CR 118	Old CR 17 to CR 19	New Road Construction	✓	✓	✓	✓				✓		✓								
CR 13	Sunnyside Ave to US 20	Added Travel Lanes	✓	✓	✓					✓		✓								
CR 15	CR 6 to CR 104	New Road Construction		✓	✓					✓		✓								
CR 17	CR 142 to CR 38	New Road Construction		✓	✓							✓	✓							
CR 17	CR 46 to CR 142	New Road Construction		✓	✓							✓								
CR 17	CR 50 to CR 46	New Road Construction	✓	✓	✓	✓							✓							
CR 17	US 6 to CR 50	New Road Construction	✓	✓	✓	✓							✓							
CR 18	CR 13	Intersection Improvement		✓	✓	✓				✓		✓								
CR 20	CR 111	Intersection Improvement	✓	✓	✓					✓		✓								
CR 20	CR 37 to SR 13	Road Reconstruction		✓	✓	✓							✓							
CR 20	SR 15	Intersection Improvement	✓	✓	✓	✓				✓		✓								
CR 20	SR 19 to US 33	Added Travel Lanes	✓	✓	✓					✓		✓								
CR 22	CR 3	Intersection Improvement	✓	✓	✓	✓				✓		✓								

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground
CR 24	CR 3	Intersection Improvement	✓	✓	✓	✓					✓									
CR 26	SR 15 to CR 31	New Road Construction		✓	✓	✓	✓				✓		✓	✓			✓			
CR 31	CR 36 to CR 26	New Road Construction		✓	✓	✓	✓				✓						✓			
CR 38	SR 119 to CR 17	Center Turn Lanes			✓	✓							✓							
CR 38	SR 19 to SR 119	Road Reconstruction			✓	✓							✓				✓			
CR 40	CR 7 to SR 119	Road Reconstruction			✓	✓							✓							
CR 40	SR 19 to SR 119	Added Travel Lanes		✓	✓	✓					✓	✓	✓							
CR 43	CR 1400 N to US 6	Added Capacity		✓	✓	✓					✓		✓							
CR 52	CR 101 to SR 19	Road Reconstruction			✓		✓				✓		✓							
CR 6	Ash Rd to CR 10	Added Travel Lanes		✓	✓	✓	✓				✓		✓							
CR 6	CR 10 to John Weaver Parkway	Added Travel Lanes			✓	✓	✓				✓		✓							
Johnson St	Bristol St to SR 4	Added Travel Lanes		✓	✓	✓	✓				✓		✓				✓			
Kerryhaven Dr	Current Termini to CR 10	New Road Construction			✓								✓							
Old SR 17	SR 18 to Love's Dr	New Road Construction		✓	✓	✓							✓							
Sunnyside Dr	US 33 to CR 13	Added Travel Lanes		✓	✓	✓					✓		✓							
2nd St	Harrison St to Jefferson St	One-Way to Two-Way				✓														
3rd St	Harrison St to Jefferson St	One-Way to Two-Way				✓														

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground	
Benham Ave	Lusher Ave to Indiana Ave	Road Reconstruction																		✓	
Bristol St	Johnson St to Jeanwood Dr	Road Diet		✓	✓	✓	✓				✓		✓					✓			
Bristol St	Jeanwood Dr to CR 15	Added Travel Lanes		✓	✓	✓	✓				✓		✓					✓			
CR 4	CR 7 to CR 15	Auxiliary Lanes			✓	✓	✓				✓		✓					✓			
CR 6	CR 6 to Cassopolis St	Intersection Improvement		✓	✓																
Goshen Ave	Jackson Blvd to Middlebury St	Road Reconstruction			✓	✓	✓				✓	✓									
Hively Ave	Norfolk Southern Railroad (#510012C)	Grade Separation			✓	✓	✓				✓		✓							✓	
Indiana Ave	Oakland Ave	Intersection Improvement			✓	✓	✓				✓										
Jackson Blvd	Goshen Ave	Intersection Improvement				✓					✓										
Jackson Blvd	Goshen Ave to Riverview Ave	Road Diet				✓					✓										
Jackson Blvd	Johnson St	Intersection Improvement		✓	✓	✓	✓				✓		✓					✓			
Main St	Beardsley Ave	Intersection Improvement				✓					✓										✓
Main St	Hively Ave to Lusher Ave	Road Diet			✓	✓	✓				✓		✓								
Middlebury St	Prairie St to Goshen Ave	Added Travel Lanes			✓	✓	✓				✓		✓					✓			
Northside Connector	Adamsville Rd to Johnson St	New Road Construction		✓	✓	✓	✓				✓		✓							✓	
Prairie St	Mishawaka Rd to Lusher Ave	Added Travel Lanes			✓								✓								✓

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground	
Sunny Dr	Northpointe Blvd to CR 4	New Road Construction			✓	✓	✓				✓										
Toledo Rd	Goshen Ave to Indiana Ave	Intersection Improvement		✓	✓	✓	✓				✓		✓								
Blackport Dr	Monroe St to Lincoln Ave	Road Reconstruction			✓	✓	✓				✓		✓								
College Ave	Ninth St to US 33	Auxiliary Lanes			✓	✓	✓				✓		✓				✓				
College Ave	US 33 to Century Dr	Center Turn Lanes		✓	✓	✓	✓				✓		✓								
CR 142	CR 17 to CR 15	Added Travel Lanes				✓							✓								
US 33	Fairfield Ave to Plymouth Ave	Auxiliary Lanes																			
CR 40	Dierdorff Rd to US 33	Center Turn Lanes																			
Waterford Mills Pkwy	CR 40 to SR 15	New Road Construction				✓					✓		✓								
Wilden Ave	Current Termini to Middlebury St	New Road Construction		✓	✓	✓	✓				✓		✓								
Bristol Ave	Brown St to Powell Dr	Road Reconstruction			✓	✓	✓				✓		✓								
Bristol Ave	Powell Dr to Cedar Creek Dr	Road Reconstruction			✓	✓	✓				✓		✓				✓				
CR 101	Market St to CR 52	Road Reconstruction			✓		✓				✓										
CR 150	SR 19 to CR 3	New Road Construction			✓								✓								
Maple Ln	CR 42 to Wabash Ave	Center Turn Lanes			✓								✓								
Orchard Park Dr	Current Termini to SR 19	New Road Construction			✓	✓					✓		✓								

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground	
Kosciusko County																					
Anchorage Rd	Detroit St to Biomet Dr	Auxiliary Lanes		✓	✓	✓					✓		✓								
Armstrong Rd	CR 200 E	Intersection Improvement		✓																	
County Farm Rd	SR 14 to CR 700 S	Added Capacity	✓	✓	✓	✓					✓	✓	✓							✓	
CR 1200 N	Syracuse Webster Rd/N 500 E	Intersection Improvement		✓	✓	✓					✓		✓								
CR 200 E / N 100 E	E 200 N to Armstrong Rd	Added Capacity	✓	✓	✓	✓					✓		✓								
CR 225 S	CR 200 S to Packerton Rd	Added Capacity	✓	✓	✓						✓	✓	✓								✓
CR 350 W	Old US 30 to US 30	Added Capacity	✓	✓	✓	✓					✓		✓								
CR E 450 N	CR N 100 E	Intersection Improvement			✓								✓								✓
CR 800 W	US 30 to SR 19 / W 900 N	Added Travel Lanes			✓								✓								✓
CR 700 S	SR 19 to County Farm Rd	Added Travel Lanes	✓	✓	✓	✓					✓	✓	✓								
CR 900 N	CR 500 S to SR 25	Added Travel Lanes			✓						✓		✓								
N Fox Farm Rd	CR 150 W to US 30	Added Capacity	✓	✓	✓	✓					✓	✓	✓						✓	✓	
New Road (CR 350 E)	Pierceton Rd to Wooster Rd	New Road Construction	✓	✓							✓	✓	✓								
New Road (CR 850 W)	W 1350 N to Indiana Ave	New Road Construction	✓	✓																	
Old US 30	CR 350 W to Fox Farm Rd	Bike/Pedestrian	✓	✓	✓	✓					✓		✓								
Old US 30	N Zimmer Rd to CR 350 W	Added Capacity	✓	✓	✓	✓					✓		✓								

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground	
Pierceton Rd	Parckerton Rd to Market St	Added Capacity		✓	✓	✓					✓	✓	✓								
CR 1350 N	CR 700 W to CR 950 N	Road Reconstruction				✓					✓										
Wawasee Dr (CR 900 E)	Morris Rd to County Line Rd	Added Capacity		✓	✓	✓					✓		✓								
Jackson Street	W 1350 N to Current Termini	New Road Construction			✓								✓								
CR 100 E	CR 250 N to CR 300 N	Road Realignment				✓							✓							✓	
CR 100 S	SR 15 to Country Club Rd	New Road Construction		✓	✓	✓	✓				✓		✓								
CR 150 W	Lake St to US 30	Added Travel Lanes				✓							✓								
CR 300 N	Shelden Dr	Intersection Improvement		✓	✓	✓	✓				✓		✓								
Market St	Norfolk Southern	Grade Separation		✓	✓	✓					✓		✓								✓
Parker St	Center St	Intersection Improvement		✓	✓	✓					✓		✓								
Sheridan St	Parker St to Harrison	New Road Construction		✓	✓	✓	✓				✓		✓								
Zimmer Rd	SR 25 to Old US 30	Added Capacity		✓	✓	✓	✓				✓		✓								✓
Zimmer Rd	Winona Ave	Intersection Improvement		✓	✓	✓					✓		✓								✓
Columbus Dr	Pierceton Rd to Chestnut St	New Road Construction		✓	✓	✓	✓				✓		✓								
Kings Hwy/ Winona Ave	Parke Ave/ Argonne Rd to	Intersection Improvement		✓	✓	✓					✓		✓								
Packerton Rd	CR 225 S to Pierceton Rd	Added Travel Lanes				✓					✓		✓								

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground
Pierceton Rd	CR 250 E	Safety Improvement		✓	✓	✓					✓	✓	✓							
Pierceton Rd	Packerton Rd	Intersection Improvement		✓	✓	✓					✓		✓							
Wooster Rd	Kings Hwy	Intersection Improvement				✓							✓							
Wooster Rd	CR 250 E	Intersection Improvement				✓							✓							
Marshall County																				
Lincoln Hwy	Pioneer Dr	Intersection Improvement			✓	✓					✓		✓							
Linden Rd	SR 110 to SR 10	Road Reconstruction			✓	✓	✓						✓							
Michigan Rd	12 B Rd to US 31	Intersection Improvement			✓	✓	✓				✓		✓							
Veterans Pkwy	Michigan Rd to Pioneer Dr	New Road Construction			✓	✓	✓				✓		✓							
Main St	Davis St	Intersection Improvement			✓	✓	✓				✓		✓							
Hoham Dr	Oak Dr to Michigan Rd	Center Turn Lanes				✓					✓		✓							
Jim Neu Dr	Western Ave to Oak Dr	New Road Construction			✓	✓	✓				✓		✓							
Richter Rd	Jefferson St to Baker St	Road Reconstruction		✓	✓	✓	✓				✓		✓							
Plymouth Municipal Airport		Runway Extension				✓					✓		✓							
Oak Rd	US 30 to Hoham Dr	Added Travel Lanes				✓					✓		✓							
St. Joseph County																				
Ash Rd	Lincolnway at NS RR Crossing	Grade Separation			✓	✓	✓				✓		✓							

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground	
Cleveland Rd	Beech Rd	Intersection Improvement		✓	✓	✓															
Douglas Rd/ Cleveland Rd Connector	Bittersweet Rd to Beech Rd	New Road Construction		✓	✓	✓					✓						✓				
Douglas Rd	Canadian National	Grade Separation		✓	✓	✓					✓		✓								
Douglas Rd	Bittersweet Rd	Intersection Improvement			✓	✓					✓										
Douglas Rd	Ironwood Rd	Intersection Improvement		✓	✓	✓					✓	✓	✓								
Douglas Rd	Ivy Rd to SR 23	Added Travel Lanes		✓	✓	✓					✓	✓	✓								
Douglas Rd	Veteran's Pkwy to Capital Ave	Added Travel Lanes		✓	✓	✓					✓		✓								
Edison Rd	Similax Rd	Intersection Improvement		✓																	
Edison Rd	Timothy Rd to Walnut Rd	New Road Construction		✓	✓	✓							✓				✓				
Edison Rd	Walnut Rd	Intersection Improvement		✓	✓	✓											✓				
Filmore Rd	Larrison Rd	Intersection Improvement		✓	✓	✓							✓								
Harrison Rd	Strawberry Rd to Lemon Rd	New Road Construction		✓	✓	✓					✓		✓								
Larrison Rd	Filmore Rd	New Road Construction		✓	✓	✓					✓		✓								
Pierce Rd	Miami Rd to SR 331	New Road Construction		✓	✓						✓		✓								
Pierce Rd	US 31 to Miami Rd	Road Reconstruction		✓	✓	✓					✓		✓								
Snowberry Rd	Hamilton Trl to Hamilton Trl	New Road Construction		✓	✓	✓					✓	✓	✓								

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground
Twelfth St	SR 331 to Union St	Added Capacity	✓	✓	✓	✓						✓	✓							
Beacon Pkwy Connector	Cleveland Rd to Beacon Pkwy	New Road Construction	✓	✓	✓								✓							
Catalpa Ave	Filbert Rd to Catalpa Ave	New Road Construction		✓	✓								✓							
Cedar St	Mishawaka Ave to Jefferson Blvd	Road Diet		✓	✓	✓					✓		✓							
Cleveland Rd	Fir Rd to Capital Ave	Added Travel Lanes		✓	✓															
Division St	Catalpa Ave to Current Terminus	New Road Construction		✓	✓								✓							
Elwood Ave	SR 331	Intersection Improvement	✓	✓	✓	✓							✓	✓						
Fir Rd	McKinley Ave to 1-80/90	Center Turn Lanes		✓	✓	✓					✓		✓							
Fulmer Rd	Current Terminus to Clover Rd	New Road Construction	✓	✓									✓	✓						
Grape Rd	Douglas Rd	Intersection Improvement																		
Hickory Rd	Helper St to SR 23	New Road	✓	✓	✓	✓					✓		✓							
Jefferson Blvd	Byrkit St to Cedar St	Safety Improvement	✓	✓	✓	✓					✓		✓							
McKinley Ave	Fir Rd to Division St	Added Capacity	✓	✓	✓								✓							
McKinley Ave	Lynn St to Elder Rd	Added Travel Lanes		✓	✓	✓							✓							
Seventh St	Union St to Laurel St	New Road Construction		✓	✓	✓					✓		✓							
Twelfth St	Campbell St to Dodge St	Added Travel Lanes	✓	✓	✓	✓							✓	✓						

Table E-2: Water Resources & Mining and Mineral Resources

Road	Limits	Type	Canal Routes - Historic	NWI Wetland Lines	NWI Wetland Polygons	Rivers & Streams	IDEM 303d Rivers and Streams	Cave Entrance Density	Karst Springs	Canal Structures - Historic	Floodplain-DFIRM	NWI Wetland Points	Lakes	IDEM 303d Listed Lakes	Sinkhole Areas	Sinking-Stream Basins	Petroleum Well	Mines-Surface	Petroleum Field	Mines-Underground
Union St	Irelto Dr to Sixth St	Added Capacity	✓	✓	✓	✓					✓	✓	✓				✓			
Veterans Pkwy	Cul-de-Sac to Cleveland Rd	New Road Construction			✓	✓	✓				✓						✓			
Veterans Pkwy	Cul-de-Sac to Douglas Rd	New Road Construction			✓	✓	✓				✓		✓							
Bendix Dr	Bertrand Rd to Lathrop Rd	Road Diet	✓	✓								✓	✓							
Bertrand Rd	Meade St to Bendix Dr	Safety Improvement			✓							✓	✓							
Colfax	SR 23 to Colfax Bridge	Center Turn Lanes			✓	✓	✓				✓		✓				✓			
Eddy St	SR23	Road Reconfiguration			✓	✓	✓				✓		✓							
Lincolnway West	Olive St	Intersection Improvement																		
Meade St	Orange Rd to Bertrto Rd	Safety Improvement			✓								✓							
Sample St	Maryflower Rd	Intersection Improvement			✓	✓														
Sample St	SR 23 to Mayflower Rd	Safety Improvement			✓	✓														
Sheridan St	Lincolnway to Progress Dr	Road Reconstruction																		
Western Ave	Olive St to Dr. Martin Luther King Jr. Blvd	Road Diet			✓	✓	✓				✓		✓				✓			

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
Elkhart County																				
CR 10	Railpark Ct to SR 15	New Road Construction																		✓
Railpark/ Stonemount Ct	Railpark Ct to Stonemount Ct	New Road Construction																		✓
Benchmark Rd	CR 14 to Beck Dr	New Road Construction		✓			✓							✓						✓
CR 118	Old CR 17 to CR 19	New Road Construction																		✓
CR 13	Sunnyside Ave to US 20	Added Travel Lanes					✓								✓			✓		✓
CR 15	CR 6 to CR 104	New Road Construction	✓																	✓
CR 17	CR 142 to CR 38	New Road Construction						✓												✓
CR 17	CR 46 to CR 142	New Road Construction																		
CR 17	CR 50 to CR 46	New Road Construction																		✓
CR 17	US 6 to CR 50	New Road Construction																		
CR 18	CR 13	Intersection Improvement					✓													✓
CR 20	CR 111	Intersection Improvement	✓				✓				✓									✓
CR 20	CR 37 to SR 13	Road Reconstruction		✓				✓			✓									✓
CR 20	SR 15	Intersection Improvement					✓				✓									✓
CR 20	SR 19 to US 33	Added Travel Lanes	✓	✓	✓		✓							✓	✓					✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities	
CR 22	CR 3	Intersection Improvement					✓														
CR 24	CR 3	Intersection Improvement					✓														
CR 26	SR 15 to CR 31	New Road Construction																			✓
CR 31	CR 36 to CR 26	New Road Construction						✓													
CR 38	SR 119 to CR 17	Center Turn Lanes																			✓
CR 38	SR 19 to SR 119	Road Reconstruction			✓		✓						✓								✓
CR 40	CR 7 to SR 119	Road Reconstruction																			✓
CR 40	SR 19 to SR 119	Added Travel Lanes			✓		✓								✓						✓
CR 43	CR 1400 N to US 6	Added Capacity																			
CR 52	CR 101 to SR 19	Road Reconstruction					✓	✓							✓						✓
CR 6	Ash Rd to CR 10	Added Travel Lanes									✓				✓						✓
CR 6	CR 10 to John Weaver Parkway	Added Travel Lanes									✓										✓
Johnson St	Bristol St to SR 4	Added Travel Lanes	✓				✓				✓			✓	✓						✓
Kerryhaven Dr	Current Termini to CR 10	New Road Construction																			✓
Old SR 17	SR 18 to Love's Dr	New Road Construction																			✓
Sunnyside Dr	US 33 to CR 13	Added Travel Lanes	✓				✓								✓			✓			✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
2nd St	Harrison St to Jefferson St	One-Way to Two-Way	✓	✓	✓		✓				✓		✓	✓	✓					
3rd St	Harrison St to Jefferson St	One-Way to Two-Way	✓	✓	✓		✓				✓		✓	✓	✓					
Benham Ave	Lusher Ave to Indiana Ave	Road Reconstruction	✓				✓								✓					
Bristol St	Johnson St to Jeanwood Dr	Road Diet					✓								✓					
Bristol St	Jeanwood Dr to CR 15	Added Travel Lanes					✓								✓					
CR 4	CR 7 to CR 15	Auxiliary Lanes					✓						✓	✓	✓					✓
CR 6	CR 6 to Cassopolis St	Intersection Improvement					✓				✓			✓	✓					✓
Goshen Ave	Jackson Blvd to Middlebury St	Road Reconstruction	✓	✓	✓		✓			✓	✓		✓	✓	✓		✓			✓
Hively Ave	Norfolk Southern Railroad (#510012C)	Grade Separation	✓	✓	✓		✓		✓	✓	✓			✓	✓			✓		✓
Indiana Ave	Oakland Ave	Intersection Improvement	✓		✓		✓			✓	✓			✓	✓					
Jackson Blvd	Goshen Ave	Intersection Improvement	✓	✓	✓		✓				✓			✓	✓					✓
Jackson Blvd	Goshen Ave to Riverview Ave	Road Diet	✓	✓	✓		✓				✓			✓	✓					✓
Jackson Blvd	Johnson St	Intersection Improvement	✓	✓	✓		✓			✓	✓		✓		✓					✓
Main St	Beardsley Ave	Intersection Improvement	✓	✓	✓		✓				✓	✓	✓	✓	✓					✓
Main St	Hively Ave to Lusher Ave	Road Diet	✓		✓		✓				✓			✓	✓			✓		✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
Middlebury St	Prairie St to Goshen Ave	Added Travel Lanes	✓	✓	✓		✓			✓	✓		✓	✓	✓		✓			✓
Northside Connector	Adamsville Rd to Johnson St	New Road Construction	✓				✓				✓			✓	✓					✓
Prairie St	Mishawaka Rd to Lusher Ave	Added Travel Lanes					✓							✓	✓					
Sunny Dr	Northpointe Blvd to CR 4	New Road Construction					✓			✓				✓	✓					✓
Toledo Rd	Goshen Ave to Indiana Ave	Intersection Improvement		✓			✓			✓		✓		✓						
Blackport Dr	Monroe St to Lincoln Ave	Road Reconstruction	✓		✓		✓							✓	✓					✓
College Ave	Nineth St to US 33	Auxiliary Lanes			✓		✓				✓			✓	✓					✓
College Ave	US 33 to Century Dr	Center Turn Lanes					✓							✓	✓					✓
CR 142	CR 17 to CR 15	Added Travel Lanes					✓	✓							✓					
US 33	Fairfield Ave to Plymouth Ave	Auxiliary Lanes																		
CR 40	Dierdorff Rd to US 33	Center Turn Lanes					✓													
Waterford Mills Pkwy	CR 40 to SR 15	New Road Construction					✓							✓	✓					
Wilden Ave	Current Termini to Middlebury St	New Road Construction	✓		✓		✓						✓		✓					✓
Bristol Ave	Brown St to Powell Dr	Road Reconstruction	✓		✓		✓				✓		✓	✓	✓					✓
Bristol Ave	Powell Dr to Cedar Creek Dr	Road Reconstruction									✓		✓	✓						✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities	
CR 101	Market St to CR 52	Road Reconstruction						✓		✓				✓	✓					✓	
CR 150	SR 19 to CR 3	New Road Construction		✓			✓			✓				✓	✓					✓	
Maple Ln	CR 42 to Wabash Ave	Center Turn Lanes		✓			✓			✓				✓	✓					✓	
Orchard Park Dr	Current Termini to SR 19	New Road Construction	✓	✓	✓		✓			✓	✓		✓	✓	✓					✓	
Kosciusko County																					
Anchorage Rd	Detroit St to Biomet Dr	Auxiliary Lanes	✓				✓			✓				✓	✓					✓	✓
Armstrong Rd	CR 200 E	Intersection Improvement					✓														
County Farm Rd	SR 14 to CR 700 S	Added Capacity						✓													
CR 1200 N	Syracuse Webster Rd/N 500 E	Intersection Improvement					✓							✓	✓					✓	
CR 200 E / N 100 E	E 200 N to Armstrong Rd	Added Capacity			✓		✓			✓										✓	
CR 225 S	CR 200 S to Packerton Rd	Added Capacity																			
CR 350 W	Old US 30 to US 30	Added Capacity			✓									✓							
CR E 450 N	CR N 100 E	Intersection Improvement						✓		✓						✓					
CR 800 W	US 30 to SR 19 / W 900 N	Added Travel Lanes						✓		✓						✓					
CR 700 S	SR 19 to County Farm Rd	Added Travel Lanes					✓	✓							✓						

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
CR 900 N	CR 500 S to SR 25	Added Travel Lanes					✓	✓		✓										✓
N Fox Farm Rd	CR 150 W to US 30	Added Capacity					✓							✓	✓					✓
New Road (CR 350 E)	Pierceton Rd to Wooster Rd	New Road Construction																		
New Road (CR 850 W)	W 1350 N to Indiana Ave	New Road Construction		✓			✓			✓				✓	✓					✓
Old US 30	CR 350 W to Fox Farm Rd	Bike/Pedestrian			✓		✓			✓				✓	✓					✓
Old US 30	N Zimmer Rd to CR 350 W	Added Capacity			✓		✓			✓			✓	✓	✓					✓
Pierceton Rd	Parckerton Rd to Market St	Added Capacity	✓				✓			✓				✓	✓					✓
CR 1350 N	CR 700 W to CR 950 N	Road Reconstruction								✓										
Wawasee Dr (CR 900 E)	Morris Rd to County Line Rd	Added Capacity					✓													✓
Jackson Street	W 1350 N to Current Termini	New Road Construction					✓			✓										✓
CR 100 E	CR 250 N to CR 300 N	Road Realignment								✓										✓
CR 100 S	SR 15 to Country Club Rd	New Road Construction	✓				✓							✓	✓					✓
CR 150 W	Lake St to US 30	Added Travel Lanes	✓		✓		✓								✓				✓	
CR 300 N	Shelden Dr	Intersection Improvement					✓							✓	✓					✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
Market St	Norfolk Southern	Grade Separation	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓					✓
Parker St	Center St	Intersection Improvement	✓	✓			✓				✓		✓	✓	✓					✓
Sheridan St	Parker St to Harrison	New Road Construction	✓				✓							✓	✓					✓
Zimmer Rd	SR 25 to Old US 30	Added Capacity					✓				✓			✓	✓					✓
Zimmer Rd	Winona Ave	Intersection Improvement									✓			✓	✓					✓
Columbus Dr	Pierceton Rd to Chestnut St	New Road Construction			✓		✓				✓			✓	✓					✓
Kings Hwy/ Winona Ave	Parke Ave/ Argonne Rd to	Intersection Improvement	✓	✓			✓				✓		✓	✓	✓					✓
Packerton Rd	CR 225 S to Pierceton Rd	Added Travel Lanes																		
Pierceton Rd	CR 250 E	Safety Improvement					✓													
Pierceton Rd	Packerton Rd	Intersection Improvement																		✓
Wooster Rd	Kings Hwy	Intersection Improvement	✓		✓		✓								✓				✓	
Wooster Rd	CR 250 E	Intersection Improvement	✓		✓		✓								✓				✓	
Marshall County																				
Lincoln Hwy	Pioneer Dr	Intersection Improvement					✓													
Linden Rd	SR 110 to SR 10	Road Reconstruction					✓				✓									✓
Michigan Rd	12 B Rd to US 31	Intersection Improvement	✓		✓		✓			✓	✓			✓	✓					✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities	
Veterans Pkwy	Michigan Rd to Pioneer Dr	New Road Construction					✓			✓				✓	✓						✓
Main St	Davis St	Intersection Improvement	✓		✓		✓			✓	✓			✓	✓						✓
Hoham Dr	Oak Dr to Michigan Rd	Center Turn Lanes					✓							✓	✓						
Jim Neu Dr	Western Ave to Oak Dr	New Road Construction		✓			✓			✓			✓	✓	✓						✓
Richter Rd	Jefferson St to Baker St	Road Reconstruction			✓		✓				✓			✓	✓						✓
Plymouth Municipal Airport		Runway Extension					✓							✓	✓						
Oak Rd	US 30 to Hoham Dr	Added Travel Lanes					✓								✓						
St. Joseph County																					
Ash Rd	Lincolnway at NS RR Crossing	Grade Separation		✓			✓					✓			✓						✓
Cleveland Rd	Beech Rd	Intersection Improvement																			
Douglas Rd/ Cleveland Rd Connector	Bittersweet Rd to Beech Rd	New Road Construction																			
Douglas Rd	Canadian National	Grade Separation																			✓
Douglas Rd	Bittersweet Rd	Intersection Improvement																			
Douglas Rd	Ironwood Rd	Intersection Improvement		✓			✓			✓			✓	✓	✓				✓		✓
Douglas Rd	Ivy Rd to SR 23	Added Travel Lanes		✓			✓			✓			✓	✓	✓				✓		✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities
Douglas Rd	Veteran's Pkwy to Capital Ave	Added Travel Lanes									✓									✓
Edison Rd	Similax Rd	Intersection Improvement		✓			✓			✓				✓	✓					✓
Edison Rd	Timothy Rd to Walnut Rd	New Road Construction									✓									✓
Edison Rd	Walnut Rd	Intersection Improvement									✓									✓
Filmore Rd	Larrison Rd	Intersection Improvement												✓	✓			✓		
Harrison Rd	Strawberry Rd to Lemon Rd	New Road Construction																		✓
Larrison Rd	Filmore Rd	New Road Construction																		✓
Pierce Rd	Miami Rd to SR 331	New Road Construction						✓							✓					
Pierce Rd	US 31 to Miami Rd	Road Reconstruction																		
Snowberry Rd	Hamilton Trl to Hamilton Trl	New Road Construction		✓			✓			✓			✓	✓	✓			✓		✓
Twelfth St	SR 331 to Union St	Added Capacity	✓	✓	✓		✓			✓			✓	✓	✓					✓
Beacon Pkwy Connector	Cleveland Rd to Beacon Pkwy	New Road Construction		✓	✓		✓			✓	✓		✓	✓	✓			✓		✓
Catalpa Ave	Filbert Rd to Catalpa Ave	New Road Construction					✓				✓			✓	✓					✓
Cedar St	Mishawaka Ave to Jefferson Blvd	Road Diet	✓		✓		✓			✓			✓	✓	✓					✓
Cleveland Rd	Fir Rd to Capital Ave	Added Travel Lanes					✓								✓					✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities	
Division St	Catalpa Ave to Current Terminus	New Road Construction		✓			✓						✓	✓	✓						✓
Elwood Ave	SR 331	Intersection Improvement	✓	✓	✓		✓			✓			✓	✓	✓						✓
Fir Rd	McKinley Ave to 1-80/90	Center Turn Lanes		✓			✓							✓	✓				✓		✓
Fulmer Rd	Current Terminus to Clover Rd	New Road Construction	✓	✓	✓		✓			✓			✓	✓	✓						✓
Grape Rd	Douglas Rd	Intersection Improvement																			
Hickory Rd	Helper St to SR 23	New Road	✓				✓					✓	✓								✓
Jefferson Blvd	Byrkit St to Cedar St	Safety Improvement			✓		✓				✓		✓	✓	✓				✓		✓
McKinley Ave	Fir Rd to Division St	Added Capacity		✓	✓		✓			✓	✓		✓	✓	✓				✓		✓
McKinley Ave	Lynn St to Elder Rd	Added Travel Lanes		✓			✓				✓		✓	✓	✓				✓		✓
Seventh St	Union St to Laurel St	New Road Construction	✓		✓		✓					✓	✓	✓	✓						✓
Twelfth St	Campbell St to Dodge St	Added Travel Lanes	✓	✓	✓		✓			✓			✓	✓	✓						✓
Union St	Irelto Dr to Sixth St	Added Capacity	✓		✓		✓			✓	✓		✓	✓	✓						✓
Veterans Pkwy	Cul-de-Sac to Cleveland Rd	New Road Construction																			
Veterans Pkwy	Cul-de-Sac to Douglas Rd	New Road Construction																			
Bendix Dr	Betrand Rd to Lathrop Rd	Road Diet	✓	✓	✓		✓			✓			✓	✓	✓						✓

Table E-3: Hazardous Materials

Road	Limits	Type	Brownfield Sites	State Cleanup Sites	Voluntary Remediation Program	Manufactured Gas Plant Sites	Underground Storage Tanks	Confined Feeding Operations	Tire Waste Sites	Waste Treatment, Storage, and Disposal	NPDES Pipe Locations	Superfund Sites	Institutional Control Sites	Industrial Waste Sites	Leaking Underground Storage Tanks	Septage Waste Sites	Infectious/Medical Waste Sites	Solid Waste Landfills	Waste Transfer Stations	NPDES Facilities	
Bertrand Rd	Meade St to Bendix Dr	Safety Improvement	✓		✓		✓						✓	✓	✓						✓
Colfax	SR 23 to Colfax Bridge	Center Turn Lanes	✓	✓		✓	✓			✓			✓	✓	✓						✓
Eddy St	SR23	Road Reconfiguration			✓	✓	✓				✓		✓	✓	✓						✓
Lincolnway West	Olive St	Intersection Improvement	✓	✓			✓			✓				✓	✓						
Meade St	Orange Rd to Bertrto Rd	Safety Improvement	✓		✓		✓			✓			✓	✓	✓						✓
Sample St	Maryflower Rd	Intersection Improvement											✓		✓						✓
Sample St	SR 23 to Mayflower Rd	Road Diet											✓		✓						✓
Sheridan St	Lincolnway to Progress Dr	Road Reconstruction				✓				✓			✓	✓	✓						✓
Western Ave	Olive St to Dr. Martin Luther King Jr. Blvd	Road Diet	✓	✓	✓	✓	✓				✓		✓	✓	✓						✓





F

**Environmental
Justice**

F

Environmental Justice and Title VI

The Michiana Area Council of Governments uses the Indicators of Potential Disadvantage to help staff, member governments, planning partners, and the general public consider Civil Rights (Title VI) and Environmental Justice (EJ) concerns when carrying out planning activities, project development, and programming. The IPD analysis identifies populations of interest under Title VI and EJ using U.S. Census American Community Survey (ACS) data.

Indicators of Potential Disadvantage

MACOG supports and models their Environmental Justice (EJ) process based upon guidelines from the Delaware Valley Regional Planning Commission (DVRPC) in Pennsylvania. DVRPC developed the Indicators of Potential Disadvantage (IPD) method, which locates selected population groups in the region to better inform how the regional transportation system and MPO programs, policies, and investments might impact these groups. These population groups include minorities, low-income, carless households, persons with physical disabilities, elderly over age 65, Hispanic, and Limited English Proficiency (LEP).

Neither Title VI or the Civil Rights Act nor Executive Order #12898 provides specific guidance to evaluate EJ within a region's transportation planning process. Therefore, MPOs must devise their own methods for ensuring that EJ population groups and issues are represented in transportation decision-making. This is a challenging assignment, and serious consideration must be given to the available types of quantifiable data, as well as how the data is to be used and interpreted. It should be noted that while the IPD method helps ascertain population data, it is

only one tool in a larger strategy involving public participation, stakeholder outreach, data sources, and other research.

IPD information is derived from the American Community Survey (ACS) five-year estimates data set from the U.S. Census. The ACS is conducted every year to provide up-to-date information about the social and economic needs of the country. ACS data is in one-year, three-year, and five-year estimates. The five-year estimates set was chosen as it provides the largest sample size, includes data for all areas, and information can be found at the census tract and block group level.

A full report of the Environmental Justice population analysis with maps and figures is available on MACOG's website at www.maps.macog.com.

Proposed Project Impacts

By mapping the 2050 Transportation Plan proposed projects, potential impacts to IPD tracts can be anticipated and evaluated. All groups, including IPD populations, can benefit from the proposed transportation improvements in the area. But, careful considerations needs to be given to projects located in above average IPD block groups. Over 65% of above average and well above average IPD block groups have a project within 1/4 mile. Many proposed projects will include improved accessibility and connectivity to the area, which provides increased access to community services.

Each project will bring short-term impacts to residents in the area, such as delays, increased detour traffic, noise, or right-of-way purchases. These impacts will be experienced by all populations groups, not just the IPD populations. During project development, considerations will need to be made at the project level if there are any adverse impacts to the potentially disadvantage population groups. Figures F-1, F-2, F-3, and F-4 illustrate the distribution of transportation projects. The projects are located throughout the region, without a disproportionately high impact to the IPD populations.

Figure F-1: Elkhart County Environmental Justice

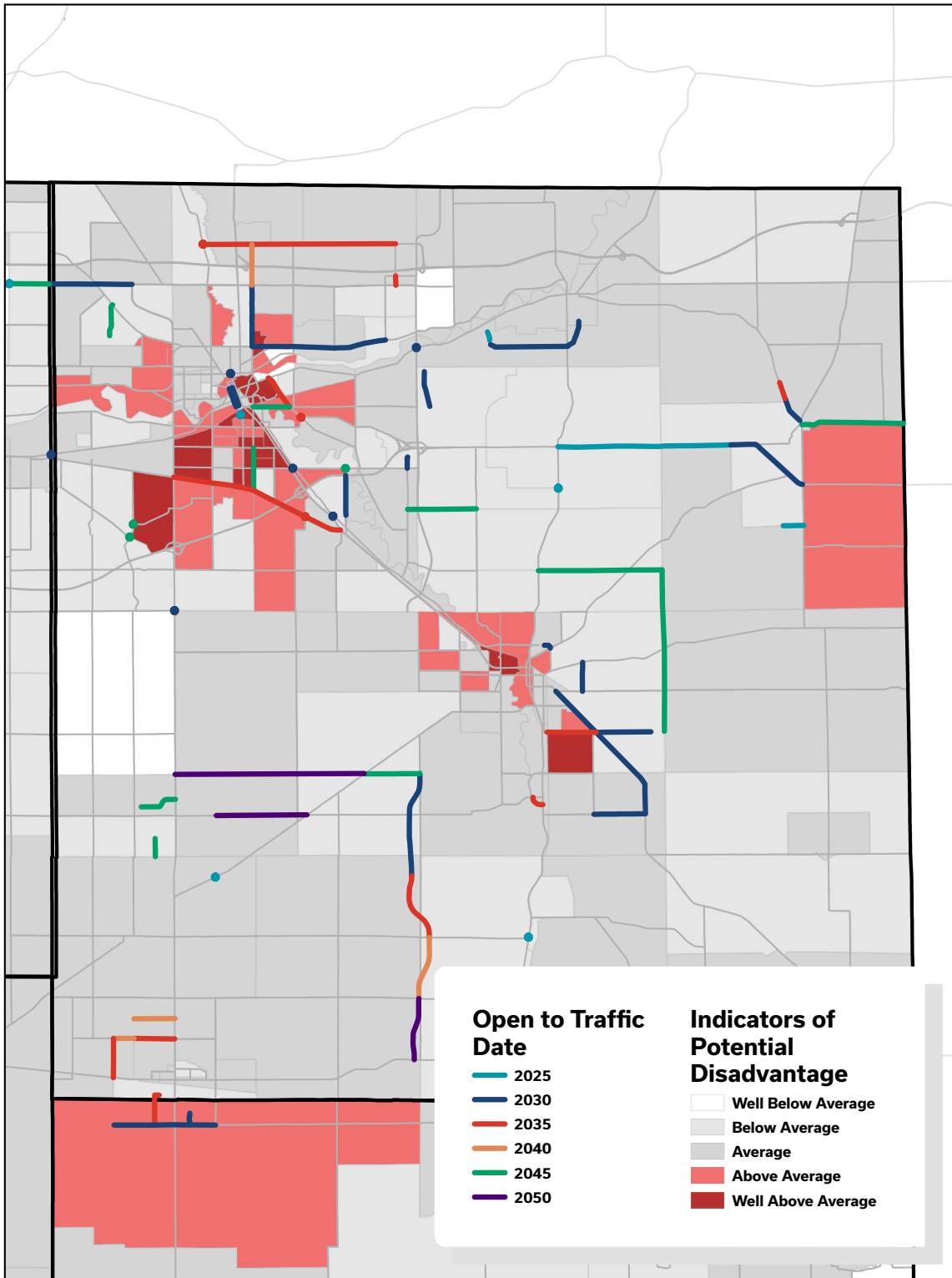


Figure F-2: Kosciusko County Environmental Justice

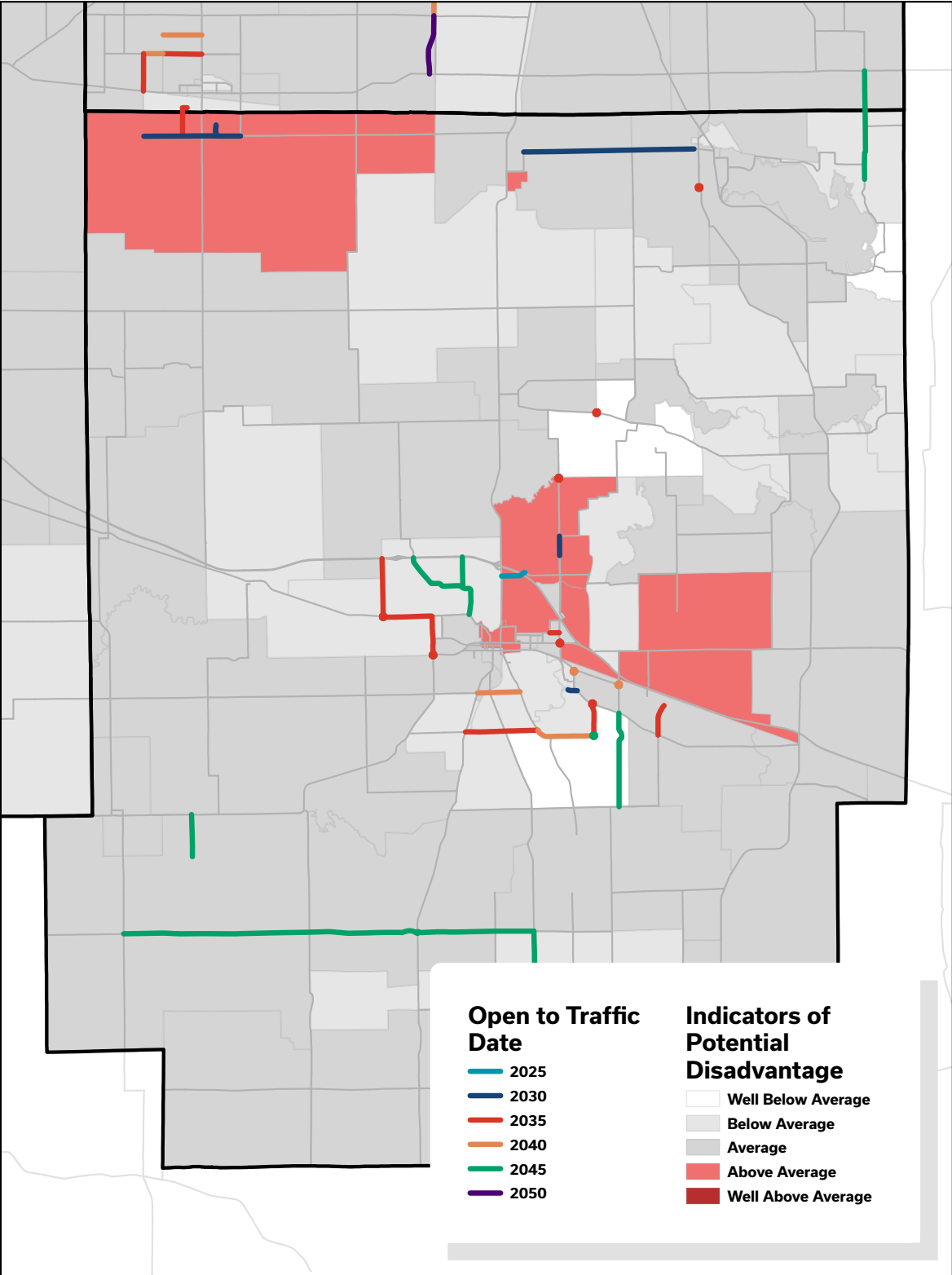


Figure F-3: Marshall County Environmental Justice

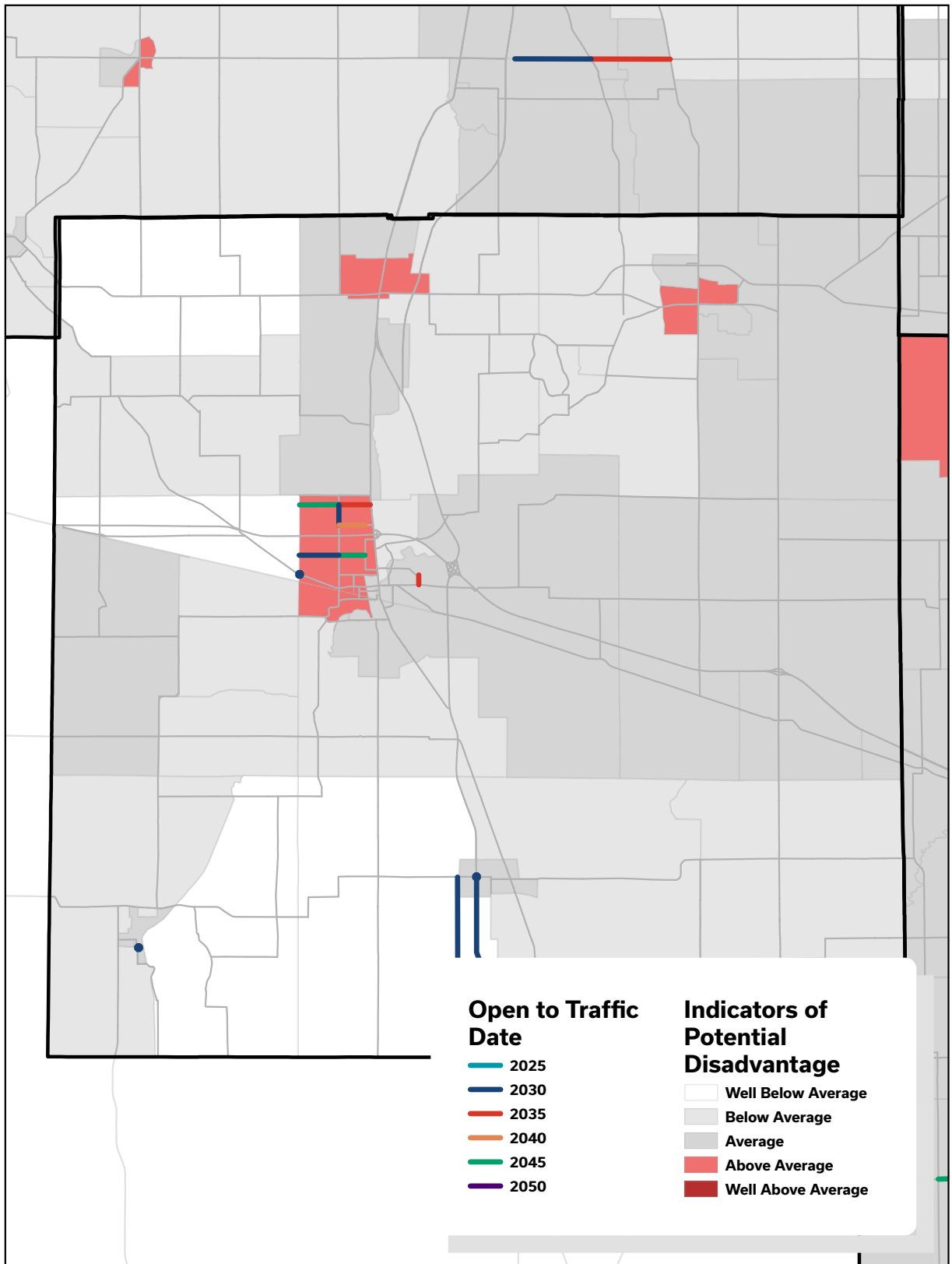


Figure F-4: St. Joseph County Environmental Justice

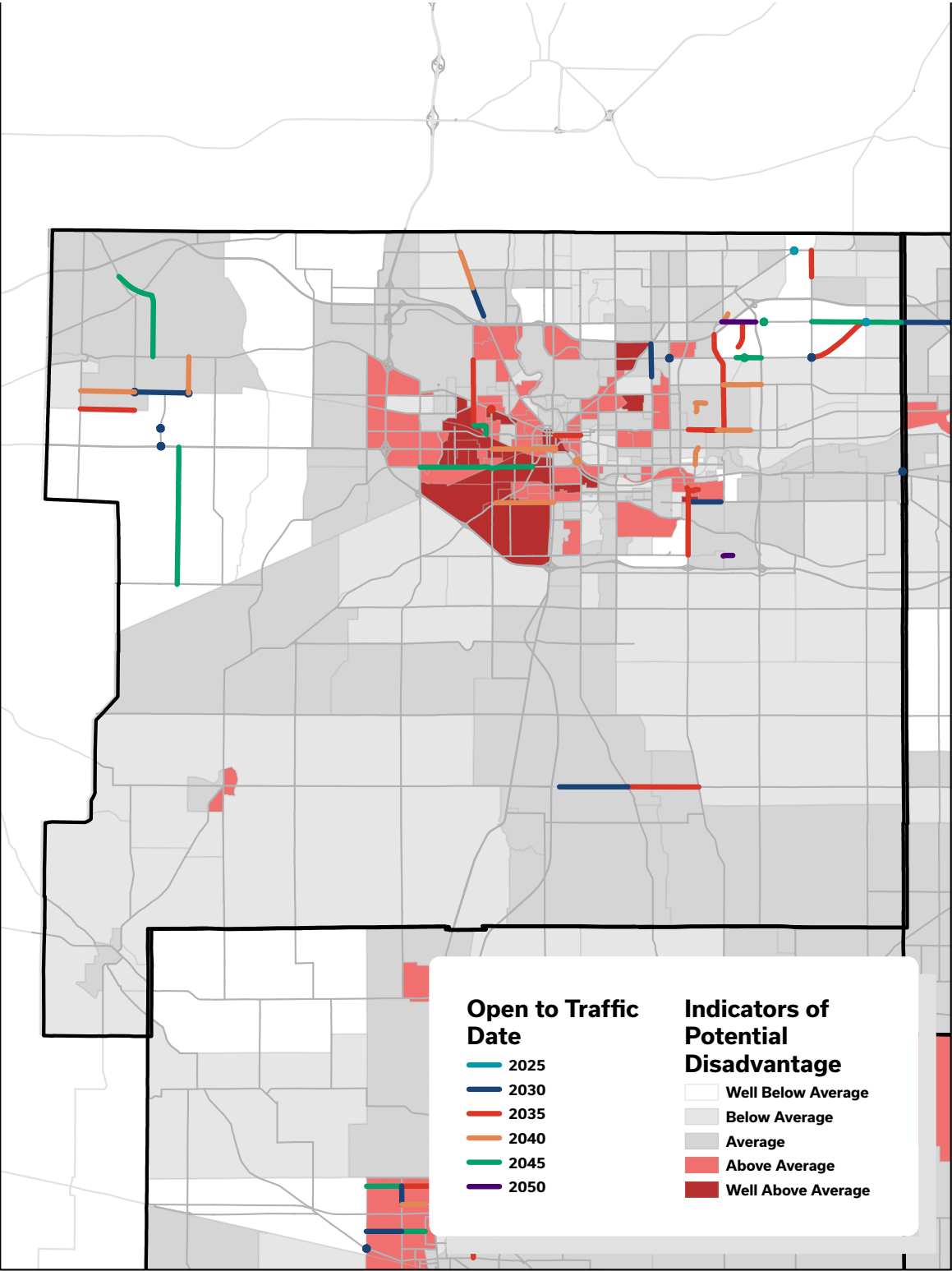
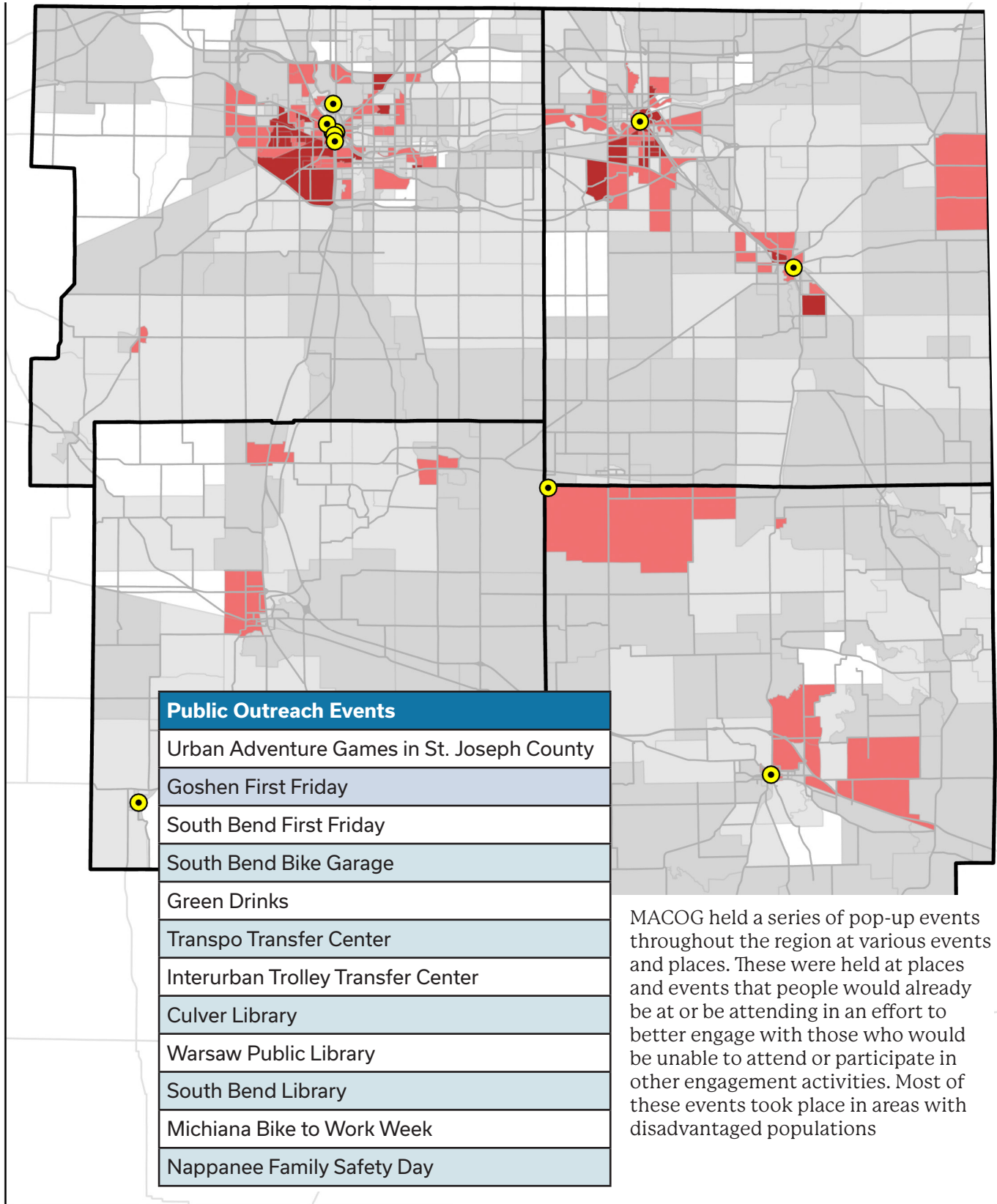


Figure F-5: Pop-Up Outreach Events



MACOG held a series of pop-up events throughout the region at various events and places. These were held at places and events that people would already be at or be attending in an effort to better engage with those who would be unable to attend or participate in other engagement activities. Most of these events took place in areas with disadvantaged populations





G *Appendix*



Congestion Management Process

G

Introduction

A congestion management process (CMP) is a systematic and regionally-accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs. The CMP is intended to move these congestion management strategies into the funding and implementation stages. The CMP, as defined in federal regulation, is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system.

A CMP is required in metropolitan areas with a population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements also state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.

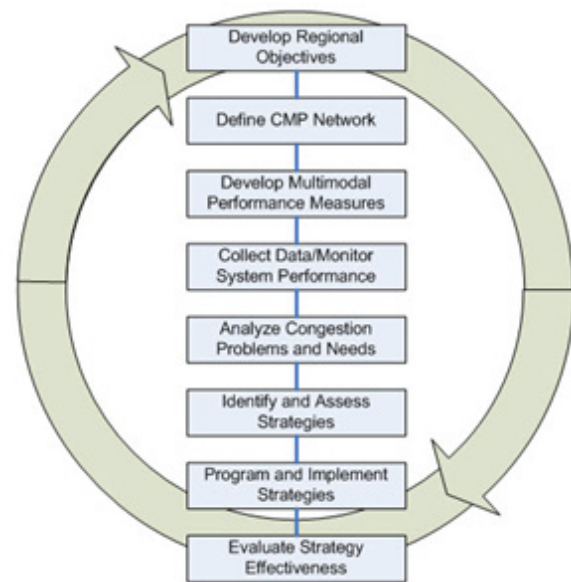
Efforts to address congestion in urban areas are one of the primary demands on transportation funding. CMP is not intended to be a standalone process, but instead an integral part of a larger overall planning process. Some specific benefits of the CMP includes

Some specific benefits of CMP include a structured process for addressing congestion issues within metropolitan transportation area, an objectives-driven and performance-based approach that ensures investment decisions align with desired outcomes, increased collaboration and coordination among various stakeholders, more effective allocation of transportation funding for operations and capital projects, the ability to swiftly address small-scale congestion problems, and a linkage between planning and project development to support environmental analysis under NEPA.

The Michiana Area Council of Government’s 2023 Congestion Management Process (CMP) was created to update the previous CMP. The CMP is an integral part of 2050 Transportation Plan and tailored to the unique characteristics of the MACOG region. It provides a structured framework for evaluating travel demand reduction and operational management strategies, lends itself to identifying, prioritizing, and programming transportation improvement projects, and has been integrated into the Transportation Improvement Plan (TIP) and the Transportation Plan (TP) by providing reliable tools for project evaluation, selection and prioritization.

MACOG’s CMP includes the eight elements of the CMP as discussed in the Federal Highway Administration (FHWA) Congestion Management Process guidebook. The figure below shows the elements of the MACOG CMP.

Figure G-1: MACOG CMP Elements

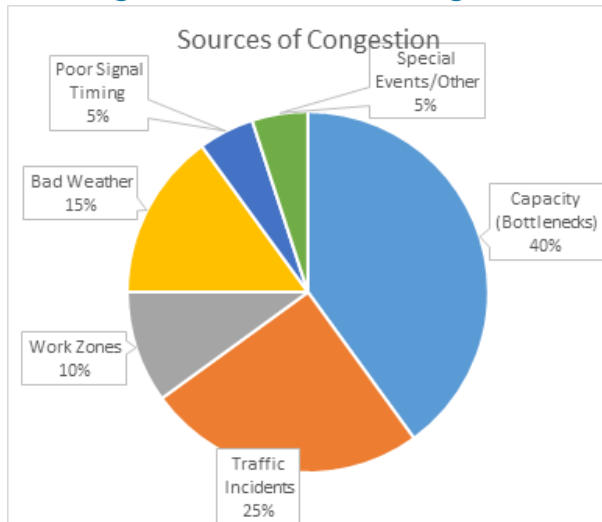


Source: https://www.fhwa.dot.gov/planning/congestion_management_process/cmp_guidebook/fig2.cfm

Defining Congestion

Traffic congestion is the level at which transportation system performance is no longer acceptable due to traffic interference. The level of acceptable system performance will vary by type of transportation facility, location within the region and time of day. The level of acceptable system performance depends upon transportation and development goals for the region and reflects public perception of traffic congestion. Essentially, congestion is a condition on road networks that occurs as use increases, and is characterized by slower speeds, longer trip times, and increased vehicular queuing.

Traffic **Figure G-2: Sources of Congestion**



congestion is generally categorized into recurring or non-recurring congestion. Recurring congestion is caused by inadequate road capacity. In other words, there are more vehicles trying to utilize a roadway than can be physically accommodated at a single time. Sometimes, poor signal timings, poor access management, and roadway geometric deficiencies contribute to reduced capacity. This type of congestion begins at regular times of the day and often occurs at the same locations. Recurring congestion is often defined as routine disruption in traffic flow.

Non-recurring congestion is an unexpected disruption in traffic flow often caused by random events such as crashes, spillages, vehicle breakdowns, inclement weather, special events, road construction, etc. According to the Federal

Highway Administration (FHWA), sixty percent (60%) of congestion is caused by non-recurring factors.

Congestion Management Process

The Congestion Management Process was initially spelled out in the Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). The CMP is a regional approach to manage and monitor the transportation system. The CMP is intended to serve as an organized and transparent way for our planning area to identify and manage congestion, connect performance measures to support funding for projects, and evaluate recommended strategies to ensure we are effectively addressing congestion.

MACOG created the CMP by following the U.S. Department of Transportation Federal Highway Administration’s “Congestion Management Process: A Guidebook”. The following describes the contents of a CMP:

“A congestion management process is a systematic and regionally-accepted approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs. The CMP is intended to move these congestion management strategies into the funding and implementation stages.”

The CMP, as defined in federal regulation, is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system. The process includes:

- Development of congestion management objectives
- Establishment of measures of multimodal transportation system performance
- Collection of data and system performance monitoring to define the extent and duration of congestion and determine the causes of congestion
- Identification of congestion management

strategies

- Implementation activities, including identification of an implementation schedule and possible funding sources for each strategy
- Evaluation of the effectiveness of implemented strategies

Action 1 - Develop Regional Objectives

The Regional CMP reflects the goals and objectives developed as part of the Michiana on the Move: 2050 Transportation Plan to Enhance High Quality Hometowns, Ensure Safe Movement of People and Goods, and Support a Thriving Economy. The overall focus of the CMP is to reduce congestion through the use of better management and operations of the existing transportation system. The objectives of CMP support a range of regional goals.. Therefore the primary objectives are to:

- **Optimize existing transportation infrastructure** - To make the most efficient use of existing transportation infrastructure by identifying bottlenecks, choke points, and areas of high congestion and finding ways to optimize them.
- **Congestion Reduction** - To reduce traffic congestion and improve the flow of vehicles at intersections and corridors within the transportation network.
- **Safety Improvements** - To reduce traffic crashes and ensure safety of all road users by concentrating on high-risk areas or intersections.
- **Multi-Modal Integration** - Develop a seamless multimodal transportation network that integrate various modes of transportation

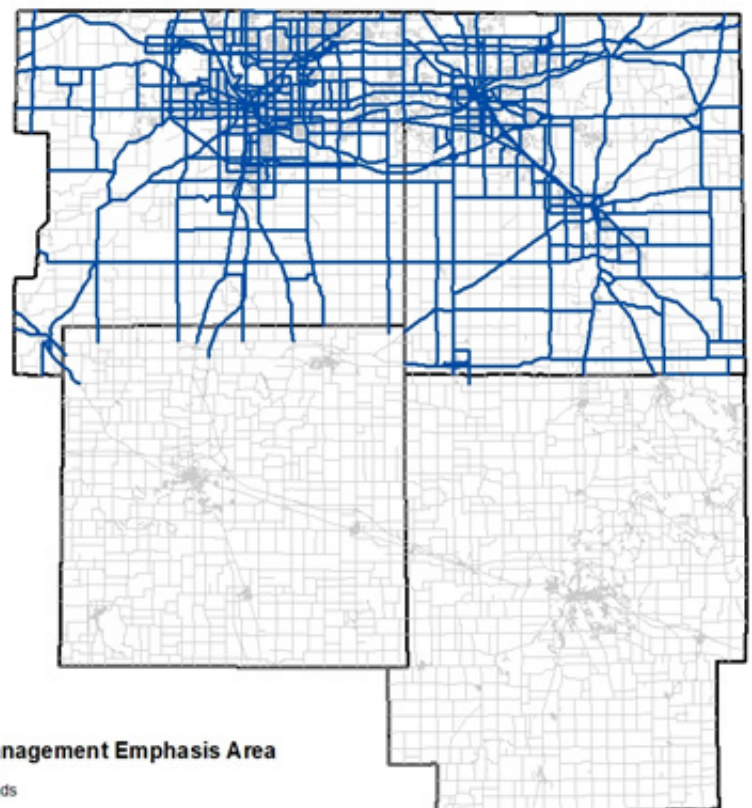
Action 2 - Define CMP Network

MACOG planning area consists of the federally designated urbanized areas of Elkhart and St. Joseph Counties. MACOG also serves as a rural planning organization to Kosciusko and Marshall Counties. The 4-county region contains an estimated 606,294 people (2020 Census), covering 1,921 square miles. The MACOG region comprises over 6,548 miles of roadway, providing connectivity and access, both locally and regionally.

MACOG is unique in the sense that it is an MPO that represents rural areas as well as two urbanized areas (the South Bend Urbanized Area and the Elkhart/Goshen Urbanized Area). While MACOG monitors and studies congestion throughout the entire region, the CMP is intended to be focused on metropolitan areas with a population exceeding 200,000.

For MACOG’s Congestion Management Process network an emphasis is placed on all federally functionally classified roads (major collector and above) in St. Joseph and Elkhart Counties which consists of 1,147 centerline miles of roadway.

Figure G-3: Congestion Management Emphasis Area



Congestion Management Emphasis Area

— Emphasis Roads
 — Other Roads

Action 3 - Develop Multi-Modal Performance Measures

Performance measures are defined as specific indicators used to evaluate how well a person, organization, or a system is operating. Performance measures for the CMP specifically characterize current and future conditions on the transportation system in the region, track progress toward meeting regional objectives, identify specific locations with issues to address, assess the effectiveness of strategies, and communicate system performance.

Since congestion is a complex topic there are multiple facets of congestion that can be measured. Congestion deals with both spatial (the where such as an intersection, roadway segment, or transit route) and temporal dimensions (the when such as time of day or year). Additionally, the transportation network is a system that does not operate in isolation. This means that actions that take place in one part of the transportation system can affect (positively or negatively) congestion on other nearby facilities. There is also a relative aspect to congestion where transportation users may qualitatively perceive congestion as being more or less severe based on observations at the same location at a different time, or at a different location. This is why it is important understand the following four major dimensions of congestion:

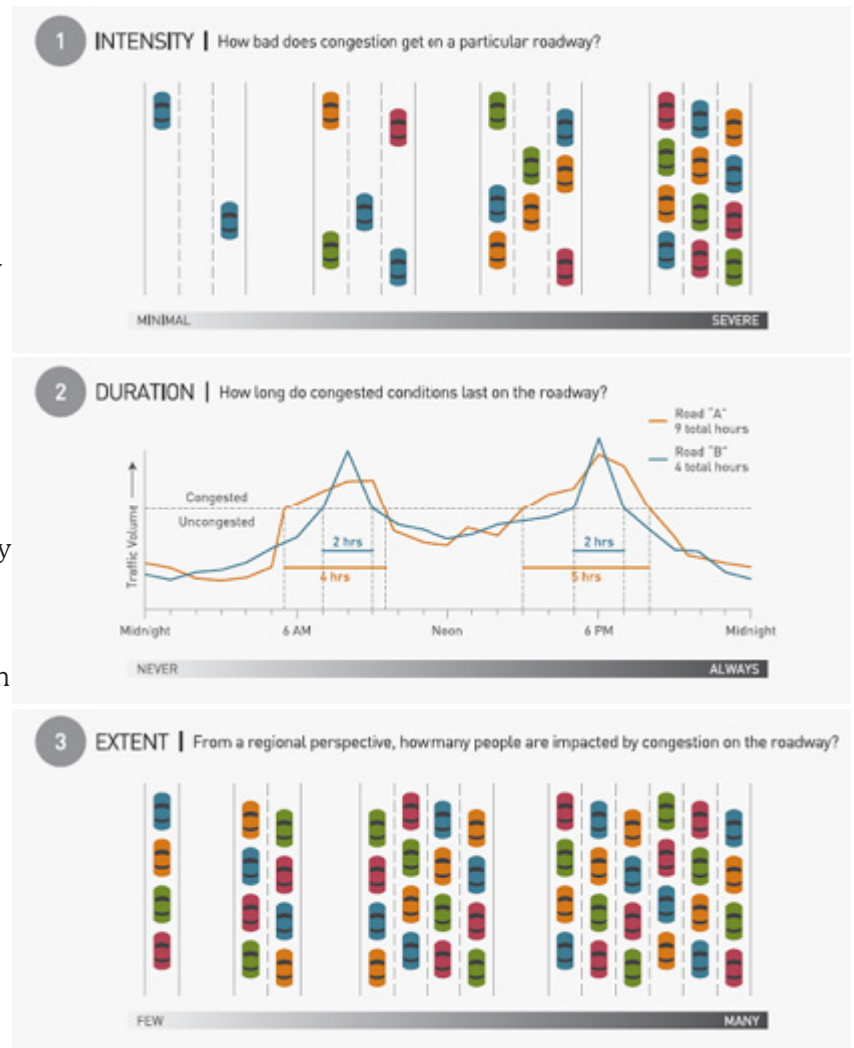
- Intensity – The relative severity of congestion that affects travel. Intensity has traditionally been measured through indicators such as V/C ratios or LOS measures that consistently relate the different levels of congestion experienced on roadways.
- Duration – The amount of time the congested conditions persist before returning to an uncongested state.
- Extent – The number of system users or components (e.g. vehicles, pedestrians, transit routes, and lane miles) affected by congestion, for example the proportion of system network components (roads, bus lines, etc.) that exceed a defined

performance measure target.

- Variability – The changes in congestion that occur on different days or at different times of day. When congestion is highly variable due to non-recurring conditions, such as a roadway with a high number of traffic crashes causing delays, this has an impact on the reliability of the system.

These four dimensions of congestion discussed are not, however, all inclusive of the range of issues that could be considered in selecting performance measures for the CMP. Therefore, the following performance measures can be utilized when assessing the transportation system:

Figure G-4: Dimensions of Congestions



Level of Service and Volume to Capacity Ratio

The most common measure currently used to define congestion involves Level-of-Service (LOS) values as defined in the Highway Capacity Manual (HCM). LOS is a qualitative measure describing operational conditions of a segment or traffic stream. Six different levels are defined (LOS A, B, C, D, E, and F).

LOS A = Free flow

LOS B = Reasonable free flow

LOS C = Stable flow

LOS D = Approaching unstable flow

LOS E = Unstable flow

LOS F = Forced or breakdown flow

Level of Service (LOS) and Volume-to-Capacity Ratios (V/C) gauge the intensity of roadway congestion at a particular location. They are primarily used as general indicators of roadway sufficiency or for detailed corridor studies. LOS is expressed as values A through F, representing the volume over capacity, while V/C represents it as a ratio. The MACOG Travel Demand Model encompasses factors such as travel time, congestion, and delays.

Average Travel Time

The average travel time is defined as the total time to traverse a length of a roadway under prevailing traffic conditions. All stopped delays are included in the average travel time. This measure can be used to compare the quality of service of various alternate routes from a point of origin to a point of the destination. MACOG Travel Demand Model predicts average travel time and AM-PM peak period travel time in the region.

Average Travel Speed

The average travel speed is calculated by dividing the distance traveled by the average total time to travel along a given length of roadway. The total time includes stopped delays in addition to the actual time the vehicle is in motion. The number of travel time runs depends on the variance in travel

time, the acceptable degree of precision, and the level of confidence desired.

Delay

Total delay or stopped delay is the time that a vehicle is stopped in traffic or at an intersection. Expressed in seconds per vehicle, stopped delay can be measured as the actual “locked wheel” time, or in terms of time less than a very slow speed, such as 5 mph. The Highway Capacity Manual’s (HCM) delay equation uses turning movement volumes to capacity ratios to determine stopped delays at intersections.

Travel Time Index

Travel Time Index (TTI) is the ratio of travel time in the peak period to the travel time at free-flow conditions. TTI measures the travel time for a given roadway segment. Travel time can include waiting time at signals, as well as delay caused by traffic.

Traffic Counts and Turn Movements

When monitored correctly, the amount of traffic on the road network can be useful in identifying potential congested areas. Roads and intersections are designed to handle certain volumes at any given time. The volumes and type of vehicles are often good indicators of existing or future problems. MACOG has an extensive traffic count program with close to 5,000 locations counted every three years. These counts are on State and local roads throughout the region and extending into surrounding counties. This helps MACOG to establish a baseline roadway network that is used in the Travel Demand Model (TDM), which allows us to model congestion issues on a comprehensive roadway network including all National Highway Network roads and other roads that are functionally classified as major collector and above.

MACOG has an extensive traffic count database that, in some locations, extends to the early 1980s. Most of the locations counted use traditional road tube collection methods, however, MACOG has expanded with the use of video capture systems (i.e. MioVision) over the last decade. This method uses artificial intelligence (AI) machine learning techniques to analyze turning movements at intersections. This significantly reduces the

required staff time to gather and process turning movements in the region.

This is an ongoing process designed to provide decision-makers with valuable information about the transportation system performance and to evaluate the effectiveness of strategies to address congestion. By monitoring the effectiveness of congestion mitigation strategies, MACOG can improve our ability to select the most cost-effective strategies at each location specific to its condition and needs.

Crash Rates

Traffic crashes can cause non-recurring congestion by temporarily blocking one or more lanes of traffic. Time is needed for emergency response professionals (i.e. police, firefighters, emergency medical services, emergency management agencies, etc.) to perform their jobs. This also includes “clear time” to remove the vehicles and debris from the roadway and crash site. Crashes at an intersection can affect the entire function of the intersection. During a fatal crash, the roadway is often completely closed for hours.

MACOG reviews and improves the accuracy of reported crash locations from the Automated Reporting Information Exchange System (ARIES), the database portal that all police departments report traffic crashes into for Indiana, since 2006. Additionally MACOG maintains a dashboard of serious and fatal crashes in the region. This information is used to identify locations where safety may be an issue, which could be an indicator of non-recurring traffic incidents causing delays. When MACOG studies crash data we use the three most recent years of crash data to identify high crash intersections and corridors. High crash corridors are based on the total number of crashes occurring along each corridor in a community and their severity.

Action 4 - Collect Data/Monitor System Performance

Performance measures rely on the collection of data. MACOG collects and obtains a wide variety of data related to system performance. Much of this data is also used in conjunction with the Congestion Management Process. MACOG

understands the limitations such as availability and cost for gathering data. The following data is useful in determining existing and future congestion, as well as, determining the cause of congestion.

Traffic Count and Turn Movement Data

The MACOG traffic counting program allows us to monitor any increases or decreases in traffic over time. MACOG collects count data at over 5,000 locations on state and local facilities every three years that in some locations, go back to the early 1980s. The counters used by MACOG are capable of collecting information such as volume, speed, time of day, and vehicle classification.

In addition to an extensive traffic count database, MACOG utilizes the use of video capture systems to gather turning movement data at intersections.

Crash Data

MACOG reviews and improves the accuracy of reported crash locations from ARIES, the database portal that all police departments report traffic crashes into for Indiana, since 2006. This information is used to identify locations where safety may be an issue, which could be an indicator of non-recurring traffic incidents causing delays.

Land Use Data

Congestion is often the result of developments in land use. MACOG tracks changes to land use developments with the aid of aerial photography. Information on land use changes, trends and future development are used in MACOG’s Travel Demand Modeling. Additionally, the HELPViz Land Use Model was developed by RSG for MACOG. Using the Land-Based Classification System’s activity-based codes, 2002 aerial photography and 2013 oblique photography was used to describe land use changes in the urbanized areas of the region over a 10-year period which was then used to adapt HELPViz to the area.

This land use model offers sensitivity to land use zoning, building codes and infrastructure facilities such as the transportation network, water and sewer utilities. HELPViz allocates the future population and employment regional totals to the TAZs based on build out capacities,

the transportation network and infrastructure facilities. HELPVIZ uses a Nested Logit model framework and uses information at both TAZ and parcel levels.

Transit Data

MACOG oversees the operation of the Interurban Trolley, the public transit system in Elkhart and Goshen. This means that MACOG has a robust dataset of transit data including boarding and alighting statistics, total ridership, on-time performance, and archived Automatic Vehicle Location. Additionally, MACOG has strong partnership with Transpo and are typically provided similar datasets because MACOG frequently assists them with various planning projects.

Bicycle / Pedestrian Data

Bike and pedestrian counters provide vital data for park planning and improvement, helping administrators identify peak usage times and popular routes. Encouraging active transportation, these counters promote healthier lifestyles and reduce car dependency, contributing to improved public health and lower emissions. As of 2023, MACOG has 10 permanent urban MULTI post counters, capable of tracking pedestrians and bicyclists bidirectionally. The Urban MULTI is optimized to count large groups of pedestrians and cyclists with high accuracy. MACOG also has 2 mobile MULTI pedestrian/bicycle counters that rotate between different communities for trail usage statistics. These mobile counters have been deployed to 16 sites across the MACOG region.

Other Data Sources

Additionally, MACOG will evaluate the effectiveness and benefits of other data sources, including the National Performance Management Research Data Set (NPMRDS), mobile data sets (i.e. StreetLight), and other transportation data sources and analysis programs. New and innovated data collection techniques and sources are constantly being promoted, which requires MACOG to reevaluate the effectiveness of each dataset.

Action 5 - Analyze Congestion Problems and Needs

In order to identify congestion, MACOG utilizes performance measures, data collected for performance monitoring, and analytical tools. Input from local communities was also included as to the location of congested areas.

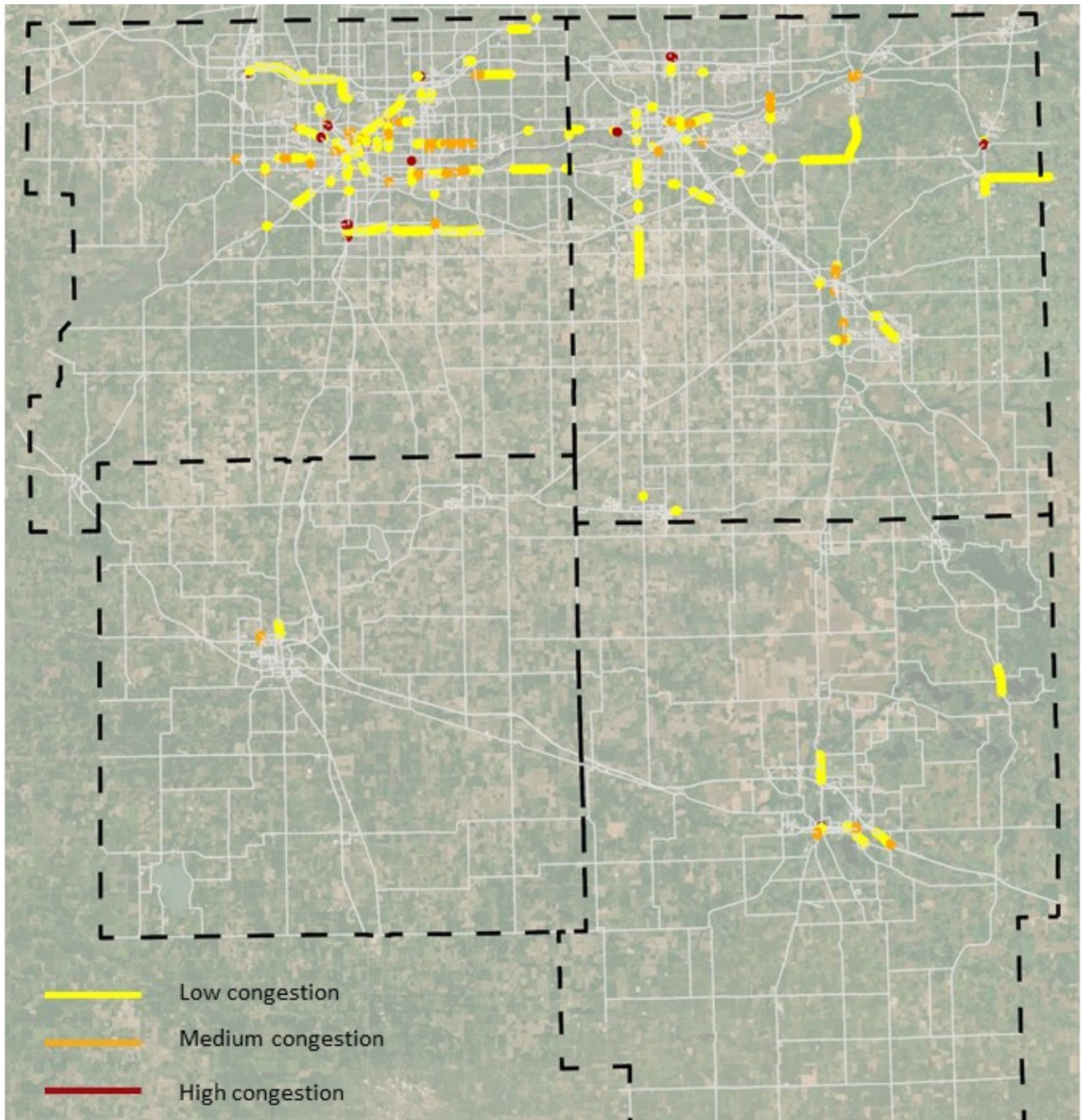
The traffic count data collected by MACOG is analyzed to measure the V/C ratios for the AM and PM peak hours. This V/C ratio can be used to calculate the LOS during the most congested times of the day. With improvements to the traffic count database, the peak hour average speed data can be used to identify existing and future areas of potential congestion issues through comparison to the daily 85th percentile speed values throughout the transportation network, rather than just at a few selected locations.

Travel time survey data is traditionally collected using the floating car method to gather data for the AM and PM peak hours. Utilizing this travel time data with available free flow times, the TTI for the collected corridors can be calculated. The TTI can then be used to designate the congestion level as low, moderate, high, or severe. However, the floating car method is subject to drawbacks with peak hour data collection often occurring outside normal business hours and different driving habits among drivers resulting in different congested speeds. Instead, MACOG is looking to the data provided through FHWA's National Performance Management Research Data Set (NPMRDS) to provide consistent results for future analysis.

Lastly, a transportation model is utilized to simulate the traffic flow for the region in order to discover where there are areas of congestion, and also to determine the effects of vehicular traffic on regional air quality. The transportation model is a network of links and nodes designed to represent the overall system of roads in a given area. This model is then combined with data previously described to create a simulation of the traffic flows of the region. The travel forecasting models offer a means by which decision makers can look at different transportation options and see the potential effects they might have at the regional or corridor level.

MACOG continues to improve the collection,

Figure G-5: Level of Congestion



interpretation, and dissemination of data required to enhance the Congestion Management Process.

Congested Segments

The map shows existing congestion on roadways throughout the MACOG region identified by the travel demand model. The model generated a worst-case Level of Service based on multiple durations (peak hour, peak period, intersection,

etc). A Level-of-Service D, E, and F were then identified as congested with Level of Service D representing low congestion and Level of Service F representing high congestion. Due to the regional nature of the model, MACOG continues to make refinements and as such will produce updated congestion maps as needed.

Action 6 - Identify And Assess Strategies

The identification and assessment of appropriate congestion mitigation strategies is a key component of the CMP. The strategies for managing congestion can be divided into four categories:

1. Travel Demand Management (TDM)
2. Traffic System Management (TSM)
3. Active & Public Transportation Improvements
4. Road Capacity Strategies

Travel Demand Management

The primary purpose of TDM strategies is to create a more efficient transportation system by reducing the number of vehicles during peak periods while providing mobility options to those who want to travel. To accomplish this type of change, TDM will incentivize changes in behaviors and are effective in dense, mixed-use environments. These strategies include:

- **Parking management:** Providing traveler information on parking spaces availability can reduce the amount of time vehicles spend searching for a parking space. Reduced parking fees for high-occupant vehicles or by the time of day will incentivize individuals to either carpool or change the travel time to non-peak hours.
- **Carpools and vanpools:** Ridesharing reduces single-occupant vehicle (SOV) trips and vehicle miles traveled (VMT). Carpools are generally two to five people sharing a ride in their personal vehicles. Vanpools are typically leased through a vanpool provider (public or private) and can accommodate up to twelve people.
- **Employer programs:** These include allowing employees to work from home (telecommute) which helps reduce SOV trips, especially during peak travel times. Additionally, employers may allow workers to arrive and leave work outside the traditional commute period, either a Compressed Week (four 10-hour workdays) or Flexible Schedules (start and end times vary).

Transportation System Management

While TDM address the supply (number of vehicles) of congestion, TSM seeks to identify operational strategies to enhance the capacity of the transportation system. Through better management and operation of existing transportation facilities, improved capacity and traffic flow will also benefit air quality, movement of goods, and system accessibility and safety. These strategies include:

- **Access Management:** Controlling the design and operation of driveway and street connections will allow more free-flowing traffic conditions with fewer access points for delays.
- **Intersection Improvements:** Congestion and travel-time can be improved with enhanced traffic control devices, additional turning lanes, pedestrian safety medians, and other appropriate geometric designs to help reduce congestion and improve safety.
- **Signal Interconnect & Optimization:** Delays may be caused by excessive wait-times at signalized intersections. Traffic flow could be improved through updated equipment upgrades, timing plan improvements, interconnected signals, or traffic signal removal.
- **Traffic Calming:** Changing the physical design of the roadway can result in traffic to slow down or even a reduction of the amount of traffic. This could include narrowing roads, speed humps, road diets, traffic circles, etc. This can also have the benefit of increasing biking and walking by creating a safer space for pedestrians and cyclists.
- **Traffic Incident Management:** Coordinating multi-disciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible. Effective traffic incident management reduces the duration and impacts of traffic incidents and improves the safety of motorist, crash victims, and emergency responders.
- **Remove At-Grade Rail Crossings:** In a few key locations of the region, at-grade rail crossings reduce traffic flow on major

corridors. Congestion segments could be improved by separating the roadway from the railway.

Active & Public Transportation Improvements

Shifting the view of congestion from a motorized traffic focus to a people centric focus can result in a multi-modal implementation. Improving other modes of transportation can encourage more individuals to switch their preference from SOV to walking, biking, or public transit. These strategies include:

- **Land Use or Livable Community Policies:** Development policies that support increased accessibility to bicycle, pedestrian and transit can reduce demand for travel by automobile. Examples would include policies that encourage new transit-oriented designs or reinvestment in existing urban centers.
- **Complete Street Design:** Optimize the use of existing streets by incorporating bicycle facilities in the form of bike lanes, buffered bike lanes, shared-use paths, or side paths to facilitate road sharing and encourage bicycle use.
- **Improved Transit Service:** Congestion on a particular corridor or destination may be alleviated with the addition of new fixed-route service, more frequent service, or extended service. More reliable & frequent service has been shown to increase ridership and decrease vehicular traffic.

Road Capacity Strategies

This category of strategies addresses adding more base capacity to the road network. Given the expense and possible adverse environmental impacts of new single-occupant vehicle capacity, management and operations strategies should be given due consideration before additional capacity is considered. Additionally, these improvement may only be a short-term solution, because increasing the capacity might induce more demand. These strategies include:

- **Additional Travel Lanes:** Deficient roadway capacity is a major contributor to congestion. Additional roadway capacity

is needed in many areas to keep-up with increased travel demand.

- **Geometric Design Improvements:** Bottlenecks can occur where short sections of the roadway are of an insufficient width or number of lanes to accommodate the travel demand. Intersections may need additional turn lanes, channelized turn lanes, or grade-separated interchanges.
- **Center Turn Lanes:** Providing an area where vehicles can move out of the thru lanes and pause while making a left turn can improve the flow of traffic. This can also reduce the risk of rear-end crashes and make turning vehicles more visible to on-coming traffic.

Action 7 - Program And Implement Strategies

The CMP has been integrated into the transportation planning process. In the Transportation Plan, MACOG used LOS and V/C to assist in identifying and evaluating the final recommended projects. Similarly, when considering projects for in the Transportation Improvement Program (TIP), congestion is an important criterion in the project scoring.

A scoring system has been created for the selection of projects included in MACOG's Transportation Improvement Program, which identifies ten categories to evaluate projects. Two categories that relate to the CMP. One of those specifically focuses on congestion, where 10 points (out of 100) are awarded to projects that aim to reduce vehicle miles traveled (VMT) or vehicle hours traveled (VHT). The other is on connectivity, where another 10 points are given for projects that improve mobility options or provide intermodal connections.

By explicitly incorporating congestion and connectivity factors into the scoring system, this approach makes it clear that these are priorities but also acknowledges that they are part of a larger, more complex transportation ecosystem that requires balancing multiple objectives. The scoring system allows us to make more informed decisions about which projects should be prioritized for funding and implementation, ensuring that projects align with regional

goals including but not limited to congestion management.

Action 8 - Evaluate Strategies

Understanding and evaluating the effectiveness of the CMP is dependent upon the proper monitoring of the implemented strategies. The monitoring will help decision makers determine whether strategies were successful in alleviating congestion and if so, to what degree they were successful. The evaluation of implemented strategies will be accomplished through the feedback of data collection efforts and performance measures. The following measures and data can be collected after a project has been completed to monitor effectiveness:

- Level of Service - Determining the efficiency and comfort of a transportation network
- Delay Studies - Measuring the amount of time vehicles spend idling or moving slowly to help identify bottlenecks and inefficient intersections
- Crash Rates
- Traffic volumes

Reduction in congestion leads to less stress, safer roads, shorter travel times, and improved air quality. MACOG's Congestion Management Process is meant to identify areas where congestion may be a problem and recommend a range of potentially useful strategies to alleviate congestion. Identification of congested areas can lead to more detailed studies and may ultimately lead to projects in the Transportation Plan and Transportation Improvement Program. Through continuous monitoring and updated process, the CMP will evolve and change with the transportation system, in the hopes of making a better and safer transportation network.





H *Appendix*

Public Comments

H

Date, Submitted by, Comment	Response
<p>September 14, 2023, Matt Schrock, Goshen City Council (District 3), Online: I have spoke my concerns about bus routes at the past few public input meetings in Goshen, what i heard at these meetings is all the great coverage for the South side of town, including Historic Southside, Reith Park, Greencroft, all the way to Winchester Trails, including existing routes covering more of the south side, that is great coverage in these areas. These same areas don't have much low to mid income residents, that don't drive, which is what i see riding the bus more times than not in Goshen. You mentioned the Arbor Ridge Apartments, and the Chamberlain Neighborhood new coverage, which covers very little area where ridership might be good due to the income levels. The area close to the work release center, twin pines trailer park, the area south of the recently rebuilt West Wilden Ave, all the industrial mfg areas along Logan St and Steury Ave. I think the new coverage areas in Goshen's North side are a move in the right direction, with hopefully more coverage coming in the future. Thanks for reading.</p>	<p>Thank you for your comment. Recommendations for the Interurban Trolley Service stemmed from extensive public stakeholder engagement during the Connect Transit Plan, which was adopted in Spring 2023. As new routes are implemented in Goshen, a public comment period will be held for the schedule and routes as outlined in the Public Engagement Plan.</p>
<p>September 17, 2023, Adam Knott, Online: How will you work on extending the South Shore line to Goshen or Elkhart? If not that then have a connector line that runs from Goshen to South Bend airport on the rails. I know it will take a lot of time, money, and work but when will we get this meaningful connection to strengthen our communities?</p>	<p>We appreciate your comment. The South Shore Line definitely serves as a unique and important asset to our region. Current South Shore service priorities include double tracking from Michigan City to Gary and the realignment of the approach into the terminal station at South Bend International Airport. Planning efforts more recently have focused on improving fixed route transit service between communities, through the Connect Transit Plan which was adopted in Spring 2023. The plan goals included identifying efficiencies in the system, reassessing community priorities, designing a bus network to match priorities, and developing a long-term plan for transit improvement and possible expansion</p>
<p>October 3, 2023, Adam Knott, Social Media: I have a question that might not have an easy answer. Is there any long term plan or just any desire to try to expand south shore service to Goshen or to create our own service from Goshen to South Bend International Airport? I don't mean in the next few years as I understand that this would be expensive and take a lot of time to plan. I'm asking if there is a plan for the next decade or two?</p>	<p>Thank you for your comment. They have been provided to the City of South Bend.</p>
<p>September 18, 2023, Unknown, Online: I've reviewed the plan and had a chance to discuss with some friends and colleagues. It's extremely disappointing to see a miss in our urban cores, especially along the river... more specifically in South Bend. You included many projects that are already completed, but neglect some of the gaps in traversing the riverfront. Lincoln Way East is a great example. This could connect two cities and has a major educational institution in between (IUSB). The bones exist for this route between sample and Ironwood. We need leadership to get this done. Another gap is on the west side of the St. Joseph river between Crowe @ Jefferson and at least LaSalle to the north. This could ideally even continue to Leeper Park. Please look further for these opportunities.</p>	<p>Thank you for your comment. They have been provided to the City of South Bend.</p>

Date, Submitted by, Comment	Response
<p>September 18, 2023, Alison Mynsberge, Online: 2035 is too long to wait for Bendix to not destroy my vehicle while endangering cyclists and pedestrians near the airport.</p>	<p>Bendix from Lathrop St to Voorde Dr is currently under design and scheduled to let for construction in 2027. The project listing was updated to reflected a sooner open to traffic date for this section.</p>
<p>September 22, 2023, John Daly, Online: The developments going in East of town here in New Carlisle will be impactive enough on local lifestyles without adding an endless stream of truck traffic into and through New C. Any transportation plan put into place needs to provide an alternative other than engulfing downtown with endless noise fumes and congestion.</p>	<p>We appreciate your comment. The Town of New Carlisle is currently undergoing a Comprehensive Plan update in order to identify needs and wants for future development and growth within New Carlisle. Additionally, St. Joseph County is conducting further transportation analysis for future development. Your comment has been provided to New Carlisle and St. Joseph County staff.</p>

Date, Submitted by, Comment	Response
<p>September 22, 2023, Daniel Carter, Email: SAFER & QUIETER RRXS in the LYDICK AREA</p> <p>I am interested in creating Safer and Quieter Rail-Road Crossings (RRXs) in the Lydick area. I have lived in the Lydick area for 41 years and have noticed in the last 15 years there has been an increase in the number of trains going through this area. The RRXs of concern are (from east to west) Pine Rd, Country Club Rd, Quince Rd, Pear Rd, Sage Rd, Tulip Rd and Smilax Rd. With the increase in businesses and industries west of South Bend, this will bring an increase in traffic going across these RRXs. I have suggested to County Commissioner Carl Baxmeyer and County Councilman Joe Thomas the need for safer and quieter RRXs in the Lydick area. I have explained how there are 3 sets of tracks and a mix of high-speed trains with slow speed trains... I have explained to them how there are 80-90 freight trains along with Amtrak trains and 18 South Shore trains per day going through the Lydick area and that the freight trains may be moving very slow and/or even coming to a stop while the South Shore train is coming through at high-speed (79 MPH max) and that drivers at these RRXs see a slow approaching freight train... and that some drivers will be tempted to go around the gates to "beat-the-train" (which I witnessed at Country Club Rd RRX). This driver may not realize that there may be another train coming from the other direction, especially if it's a South Shore train and then... CRASH! You have an accident, causing property damage, injury and/or even death. You could also have the chance of a derailment and causing a hazardous spill. To prevent this from happening, I have suggested upgrading these RRXs with quadrant gates, that is 2 sets of gates and lights on each side of the road before crossing the tracks. This would eliminate any chance of a driver crossing the tracks as a train approaches the RRX. Once the quad-gates are installed, these RRX's would qualify for a "quiet-zone" and the trains would no longer need to blow it's horn as a warning device as it approaches the crossing. This would make for a quieter and more pleasant place to live in the Lydick area. With a quiet zone this area could draw-in more residents, sub-divisions and more businesses. The quality of life would improve, the property values would increase, and the Little League Players wouldn't have to hold their ears when the trains go past Warren Park. The clients at the Reins of Life would not become distraught when the train horns blow. I have been pursuing a quiet zone in Lydick since 2004 with no luck. I would hope I make the right contacts to make this happen. I have recently got a petition with over 100 signatures that want this quiet zone in the Lydick area. This action would be a win-win situation for the community. The quiet zones in South Bend and Mishawaka seem to work, I believe they would work in the Lydick area.</p> <p>It's been in the news that the South Shore Train station is going to be moved, at a cost of \$75-80 million. I believe there should be some money set aside from that project to upgrade these RRXs to safer quad-gates. It's also been in the news that Warren Twp. is getting a new fire station (at a cost of around \$5million). It's being built to support the new battery plant and other new businesses in the area. I feel the RRXs need to be upgraded to optimize safeness for the new employees driving to and from the new plants AND for visitors to the area attending the soccer fields and Warren Park.</p> <p>I sincerely believe this issue should be a high priority in the Lydick area. If you have any questions or concerns, please contact me. Thank you for your time.</p>	<p>We appreciate your comment and feedback related to the Transportation Plan. One of the core goals for the Michiana on the Move: 2050 Transportation Plan is to ensure the safe movement of people and goods. MACOG continually strives to support our communities in pursuit of safety improvements. With over 400 miles of rail lines and over 400 highway-rail grade crossings, MACOG continues to work with communities to prioritize rail-vehicle safety at the regional level. The establishment of a quiet zone is a locally made decision, and MACOG will support and provide technical assistance to communities who choose to pursue that effort. Your comment has been provided to St. Joseph County staff, who encourage you to continue working with County representatives.</p>

Date, Submitted by, Comment	Response
<p>September 20, 2023, Rick Badman, email: I have been interested in the future for over 60 years since I was a child in North Manchester. I will present some suggestions that may go beyond anything you can imagine.</p> <p>ENERGY INFRASTRUCTURE If we expect to have over a million electric vehicles on the road by 2050, we will need enough electricity for them without depriving public and commercial customers of electricity. For maximum output and the least amount of expenditures I would use my plasma drilling moles to drill down miles to geothermal sources of energy that would generate as much energy as a nuclear plant without causing radioactive waste material. We might double our electrical output before the middle of the century thanks to several geothermal power plants. Besides the fact that geothermal energy would be cheaper and use less land area than solar and wind, it would never run out. If we bury the power lines to prevent outages during storms, there shouldn't be a lack of electricity.</p> <p>THIRD RAIL SYSTEMS Charging stations would be cheaper to construct and take less time to install. But a third rail system for roads and streets would supply continuous electricity for electric vehicles. Trains out on the East Coast where I lived for over 35 years use a third rail system which should be used nationwide. By placing magnetic repulsion plates on the bottom of train cars and locomotives, levitated trains could use existing rails. They would use the third rail system. Passenger trains would use existing rail lines and secondary rails beside existing rails in the countryside to not delay freight train travel. Levitated passenger trains could run between Cleveland and Chicago at upwards to 300 mph. I could get on a train in Warsaw and end up in either Chicago or Cleveland in less than an hour. Being able to travel from downtown to downtown would be very convenient for travelers and better than flying.</p> <p>Plasma drilling moles would be used to bore out the tunnels that will be used to allow electric vehicles to travel faster and safer. Plasma moles use plasma beams instead of solid cutting heads so they can bore out tunnels faster without needing to change heads. We might have over 100 miles of tunnels by 2050 thanks to dozens of my drilling moles. The third rail system could supply the electricity the vehicles need so they can travel at over 100 mph. Levitated cars could use repulsion plates in the tunnels to travel at over 200 mph where it is safe to do so.</p> <p>THE MOVING HIGHWAY SYSTEM To match the speed of levitated trains, a moving highway system will be available both underground and on the surface. So that less land will need to be taken for the system, median strips of land could be used by the moving platforms. A person using the system would drive to an entry area, pay to use it, set his vehicle on a platform, and have aerodynamic nose and tail pieces placed on the vehicle. The moving highway system would allow a car to travel at over 300 mph safely because the platform is the only moving element that would be computer controlled.</p> <p>FIELD DISPLACEMENT ENGINES It might be possible to build field displacement engines that ionize air molecules to produce an electromagnetic energy surface to repel off of and a motive field that would determine the speed and direction of the craft. A hybrid power system that uses my rotary engine and plasma igniters so that water could be used as fuel and flywheels instead of batteries would spin a generator that would generate the fields. Even flying cars could use field displacement engines.</p>	<p>Thank you for your thoughts on innovation for the transportation system.</p>

Date, Submitted by, Comment	Response
-----------------------------	----------

October 3, 2023, Steve Watts, online: I live in a neighborhood connected to Ironwood Drive, north of Cleveland Road. There are numerous, significant neighborhoods like mine from Cleveland Road to the State Line & beyond, such as the Reserve. I would like to see a plan for construction of a path all along Ironwood Drive, similar to what's been created along the River & also along Adams Road and Gumwood Road in Granger. If this were completed, bike riding, jogging & walking would be much safer and the quality of life for all these neighborhoods would grow significantly. At this point, I cannot see if such a plan is included in your proposal.

The Transportation Plan does identify a proposed path along Ironwood Drive from Cleveland Rd to State Line Rd. St. Joseph County is evaluating the development of a County-wide Bicycle and Pedestrian Master Plan, as proposed in the draft County Comprehensive Plan, which will allow for further exploration of connections in this neighborhood.

October 7, 2023, Steve Watts, online: I am against the changing of 2nd and 3rd street in Elkhart from one way to two way. If you talk to anyone from South Bend, the number one topic they talk about isn't the shootings, but how screwed up traffic is since the streets were changed. It is no magic potion to attract new business by changing to two way and slowing traffic down. Business has always had the opportunity to build on those streets. The way Elkhart is laid out, you need an express way to get from the north side to the south side. If you change, that will only leave Prairie street as the express route. I think this will have unintended consequences that you don't want. I think more people will AVOID downtown if the streets change. I know that since Mayor Moore changed Main St to angled parking, I (and others) don't even travel down main st anymore. As far as all the new parking you're hoping for, why do you think that the Marion St parking garage has been such a failure since it was built? Because people don't want to park 2 or 3 or 4 blocks away from where they are going and walk there. There is plenty of parking available downtown right now, it just is all owned by private owners who are letting the lots fall into disrepair. They could sell to any interested party at anytime to build new business. That's the problem, no one wants to build there. There are already empty buildings like the Elkhart Truth building and the Chase bank. Slowing traffic down will not guarantee that these buildings will be used. I know that if the streets change I will avoid the downtown area altogether.

Thank you for your comment. They have been provided to the City of Elkhart.

Transportation Project Clarification/Corrections

- o City of South Bend - Bendix from Lathrop St to Voorde Dr - Updated Open to Traffic Date





MICHIANA ON THE
MOVE →
transportation plan **2050**

Michiana on the Move 2050 Transportation Plan



Michiana Area Council of Governments
227 W. Jefferson Blvd.
County-City Building, Room 1120
South Bend, IN 46614