

2020 REVIEW AND UPDATE OF VISION 2050



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VISION
2050
One Region, Focusing on Our Future

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RESOLUTION NO. 2020-06

RESOLUTION OF THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION REAFFIRMING AND UPDATING THE ADOPTED YEAR 2050 REGIONAL LAND USE AND TRANSPORTATION PLAN (“VISION 2050”) FOR SOUTHEASTERN WISCONSIN, AND REAFFIRMING THE 2019-2022 TRANSPORTATION IMPROVEMENT PROGRAM FOR SOUTHEASTERN WISCONSIN AS AMENDED TO DATE

WHEREAS, the Southeastern Wisconsin Regional Planning Commission is charged with the responsibility of carrying out a long-range comprehensive planning program for the seven counties in the Southeastern Wisconsin Region and, as a part of that program, is presently engaged in a continuing, comprehensive, and cooperative areawide land use-transportation planning process pursuant to the provisions of the Federal Aid Highway Act of 1962 and the Federal Urban Mass Transportation Act of 1964, as amended; and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission has been designated by the Governor of the State of Wisconsin as the official cooperative, comprehensive, continuing areawide transportation planning agency (Metropolitan Planning Organization, or MPO) under the rules and regulations promulgated by the U.S. Department of Transportation, Federal Highway Administration and Federal Transit Administration, with respect to the Kenosha, Milwaukee, Racine, West Bend, and Wisconsin portion of the Round Lake Beach urbanized areas, such rules and regulations being found in the Federal Register, dated Wednesday, May 27, 2016; and

WHEREAS, the aforesaid rules and regulations promulgated by the U.S. Department of Transportation Federal Highway Administration and Federal Transit Administration, require that the MPO shall develop and update a regional transportation plan and transportation improvement program (TIP) in cooperation with State and local officials, transit operators, and other affected agencies and individuals; and

WHEREAS, by Resolution 2016-07, the Southeastern Wisconsin Regional Planning Commission adopted the design year 2050 regional land use and transportation plan documented in SEWRPC Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin*; and

WHEREAS, the Southeastern Wisconsin Regional Planning Commission amended VISION 2050 by Resolution 2018-11, Resolution 2018-24, and Resolution 2019-14; and

WHEREAS, by Resolution 2018-25, the Southeastern Wisconsin Regional Planning Commission prepared in cooperation with concerned State and local officials, transit operators and other interested parties and adopted, *A Transportation Improvement Program for Southeastern Wisconsin: 2019-2022*, identifying transportation improvements recommended for advancement during the period 2019-2022, providing for a staging of improvements over that time period consistent with the regional transportation plan, and amended this transportation improvement program to date as needed; and

WHEREAS, under the guidance of the Advisory Committees on Regional Land Use Planning and Regional Transportation Planning, the Commission staff reviewed and identified updates to VISION 2050, including updates to the financial analysis identifying the portion of the transportation system recommended in the updated VISION 2050 that can be funded by existing and reasonably expected costs and revenues, referred to as the fiscally constrained transportation system (FCTS), and updates to the equity analyses on the potential benefits and impacts to the Region’s minority populations, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050, as documented in SEWRPC Memorandum Report No. 243, *2020 Review and Update of VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin*; and

WHEREAS, the 2020 Review and Update of VISION 2050 was the subject of a series of two rounds of public meetings held throughout the Region, along with similar meetings held with community partner

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organizations representing diverse groups of traditionally underrepresented residents, nonprofits, and businesses in the Region, including groups representing minority populations, low-income populations, and people with disabilities; and

WHEREAS, the Advisory Committees on Regional Land Use Planning and Regional Transportation Planning unanimously approved the 2020 Review and Update of VISION 2050 at their meeting held on April 29, 2020; and

WHEREAS, the FCTS, as updated, and transportation improvement program have been determined to conform with the 2006 24-hour fine particulate standard and the existing State of Wisconsin Air Quality Redesignation and Maintenance Plan for the year 2006 24-hour fine particulate standard, the 1997 eight-hour ozone standard and the existing State of Wisconsin Maintenance Plan for the 1997 eight-hour ozone standard, the 2008 eight-hour ozone standard and the Redesignation and Maintenance Plan for the 2008 eight-hour ozone standard, and the 2015 eight-hour ozone standard and the budget tests described in 40 CFR 93.109 and 40 CFR 93.118 as required by the Federal Clean Air Act Amendments of 1990.

NOW THEREFORE, BE IT HEREBY RESOLVED:

FIRST: That in accordance with 23 CFR 450.336(a), the Southeastern Wisconsin Regional Planning Commission hereby certifies that the regional land use-transportation planning process is addressing the issues of the metropolitan planning area, and is being conducted in accordance with all applicable Federal laws, regulations, and requirements, including:

1. 23 U.S.C. 134, 49 U.S.C. 5303, and this subpart;
2. In nonattainment and maintenance areas, Sections 174 and 176 (c) and (d) of the Clean Air Act, as amended (42 U.S.C. 7504, 7506 (c) and (d)) and 40 CFR part 93;
3. Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d-1) and 49 CFR part 21;
4. 49 U.S.C. 5332, prohibiting discrimination on the basis of race, color, creed, national origin, sex, or age in employment or business opportunity;
5. Sections 1101(b) of the FAST Act (Pub. L. 114-357) and 49 CFR Part 26 regarding the involvement of disadvantaged business enterprises in USDOT funded projects;
6. 23 CFR part 230, regarding the implementation of an equal employment opportunity program on Federal and Federal-aid highway construction contracts;
7. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 *et seq.*) and 49 CFR Parts 27, 37, and 38;
8. The Older Americans Act, as amended (42 U.S.C. 6101), prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance;
9. Section 324 of title 23 U.S.C. regarding the prohibition of discrimination based on gender; and
10. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794) and 49 CFR part 27 regarding discrimination against individuals with disabilities.

SECOND: That the year 2050 regional land use and transportation plan, being a part of the master plan for the physical development of the Region and set forth in SEWRPC Planning Report No. 55, *VISION*

RESOLUTION NO. 2020-06

2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin, adopted in July 2016, hereby is reaffirmed and updated as set forth in SEWRPC Memorandum Report No. 243, *2020 Review and Update of VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin*.

THIRD: That the document entitled, *A Transportation Improvement Program for Southeastern Wisconsin: 2019-2022*, as amended to date be, and hereby is, endorsed as the transportation improvement program for the seven-county Southeastern Wisconsin Region.

FOURTH: That, in order to obviate the need to reconsider the transportation improvement program in the event that the air quality conformity findings for the new regional transportation plan and the TIP lapse, a revised program of projects would then be comprised of the projects identified in Appendix A of the aforementioned document identified as "Exempt," as well as those projects that have either: 1) completed the NEPA process at such time as the air quality conformity finding lapses, or 2) are identified in the Code of Federal Regulations (Table 3, 40 CFR 51.462).

FIFTH: That a true, correct, and exact copy of this resolution and the aforementioned report shall be forthwith distributed to each of the local legislative bodies of the government units within the Region entitled thereto and to such other bodies, agencies, or individuals as the law may require or as the Commission or its Executive Committee in their discretion shall determine and direct.

The foregoing resolution, upon motion duly made and seconded, was regularly adopted at the meeting of the Southeastern Wisconsin Regional Planning Commission held on the 17th day of June 2020, the vote being: Ayes 18; Nays 0.


Charles L. Colman, Chairman

ATTEST:


Kevin J. Muhs, Deputy Secretary

MEMORANDUM REPORT
NUMBER 243



A REGIONAL LAND USE AND TRANSPORTATION
PLAN FOR SOUTHEASTERN WISCONSIN

2020 REVIEW AND UPDATE OF VISION 2050



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U.S. Department of Transportation
Federal Highway Administration
Federal Transit Administration



June 2020

2020 REVIEW and UPDATE OF VISION 2050

EXECUTIVE SUMMARY



This report documents the first interim review and update of VISION 2050, the year 2050 regional land use and transportation plan. VISION 2050 was originally completed and adopted by the Southeastern Wisconsin Regional Planning Commission in July 2016. The plan aims to provide a long-range vision for land use and transportation in the seven-county Southeastern Wisconsin Region. The recommendations presented in VISION 2050 are intended to shape and guide land use development and transportation improvement, including public transit, arterial streets and highways, freight, and bicycle and pedestrian facilities, to the year 2050. This 2020 Review and Update assesses the progress in implementing the original VISION 2050 recommendations, the performance of the transportation system, year 2050 forecasts underlying the plan, and changes in recent years that impact the plan. Following review of this information and two rounds of public input, the Commission identified updates to the plan recommendations, which are described in this report.

The report includes an updated financial analysis for the transportation system recommended in VISION 2050, which confirmed a funding gap for the recommended system and identifies an updated fiscally constrained transportation system (FCTS). The FCTS includes the portions of the recommended system that can be implemented given existing and reasonably expected future funding and the current limitations on how State and Federal funding can be used. The report then identifies possible ways to address the transportation funding gap so that VISION 2050 can be fully implemented.

The report also includes updated equity analyses, which include evaluations of potential benefits and impacts to people of color, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050. Notably, the equity analysis of the transportation component concluded that without additional funding to implement the VISION 2050 public transit element, a disparate impact on these population groups is likely to occur.

Following the completion of the 2020 Review and Update, the Commission will publish a Second Edition of Volume III, *Recommended Regional Land Use and Transportation Plan*, of the VISION 2050 plan report. This updated edition will incorporate the changes made as part of this planning effort, including the updated financial and equity analyses. Targets established for the National Performance Measures, summarized in this report, will also be incorporated into the Second Edition of Volume III.

REVIEW OF VISION 2050 RECOMMENDATIONS AND IMPLEMENTATION TO DATE

An initial step in the review and update process was to assess how well VISION 2050 has been implemented since the plan was originally adopted in 2016, recognizing that VISION 2050 is an ambitious, long-range plan and implementation may be limited over the initial few years. This step also involved determining the effect of implementation on transportation system performance and reviewing the targets established to date for a series of Federal transportation performance measures.



Regarding land use, notable positive activities include the recent focus on multifamily housing development and continuing to preserve primary environmental corridors. Trends that have been inconsistent with VISION 2050 include developing single-family housing at lower-than-recommended densities in planned urban service areas and developing single-family housing outside planned urban service areas at densities that negatively impact natural and agricultural resources.



Regarding transportation, implementation has also been mixed. The Region has added some transit service, and significant progress has been made in planning the Region's first rapid transit line in Milwaukee County. However, funding constraints have led to several service reductions in recent years. Bicycle facility development has progressed steadily, bike share program implementation has expanded significantly, and programs have been initiated to provide adaptive bicycles and evaluate dockless scooters. Regarding travel demand management (TDM), relatively low fuel prices and the absence of substantial employer-based incentives have resulted in minimal demand for expanded TDM measures, which aim to reduce personal and vehicular travel or to shift such travel to alternative times and routes. However, emerging mobile technologies that support on-demand, shared transportation options could assist in achieving VISION 2050's TDM goals.



Transportation systems management (TSM) measures, which involve maximizing the carrying capacity and travel efficiency of existing transportation facilities, continue to expand and improve. TSM measures will likely continue to expand and evolve as emerging Connected and Automated Vehicle (CAV) technologies continue to evolve. In terms of preserving, maintaining, and improving the Region's arterial street and highway system, implementation has largely aligned with the

plan and investments have been made to improve safety. About 12 percent of the arterial system has been resurfaced, reconditioned, or reconstructed, and significant progress was made in reconstructing the Region's freeway system with the completion of substantial portions of the Zoo Interchange and IH 94 North-South projects.

Several efforts since the completion of VISION 2050 have led to progress in freight transportation implementation, including designation of Critical Urban and Rural Freight Corridors, better accommodation of oversize/overweight (OSOW) truck shipments, and obtaining Federal funding to implement the recommended Muskego Yard Bypass.

REVIEW OF YEAR 2050 PLAN FORECASTS

In addition to reviewing plan implementation to date, the year 2050 forecasts underlying the plan were compared to current estimates. Overall, the plan forecasts remain valid for long-range planning purposes, recognizing it has only been a short period since the forecasts were prepared. The review of demographic and economic forecasts indicates estimates of population and households are modestly lagging forecasts and estimates of employment are exceeding forecasts. The review of travel, traffic, and related forecasts shows existing levels of vehicle-miles of travel and vehicle availability are both slightly exceeding forecasts. There has also been a significant transit ridership decline in recent years due to a variety of factors.

UPDATE OF VISION 2050

A central effort of the 2020 Review and Update involved identifying changes to VISION 2050 based on review of the above information and two rounds of public input. From 2016 to 2020, the Region's demographics and economy did not change substantially. Two exceptions include the planned development of the Foxconn manufacturing campus (addressed by an amendment to VISION 2050 adopted in December 2018) and the ongoing COVID-19 global pandemic—the long-term effects of which are unknown as this report is being published. Therefore, updates to plan recommendations do not represent a major overhaul of the plan.

VISION 2050 land use recommendations remain unchanged with this update, continuing to focus on a more compact development pattern and accommodating projected growth in regional population, households, and employment in a sustainable manner. The plan's recommendations related to transportation infrastructure, including the significant improvement and expansion of the public transit system, the expansion and increased connectivity of the bicycle network and pedestrian facilities, and the preservation and improvement of the arterial street and highway system, remain largely unchanged. Notable changes and updates to the plan include:

- Updating the routing of the recommended rapid transit line along 27th Street in southern Milwaukee County
- Extending the recommended express bus route in western Kenosha County from Twin Lakes to Genoa City
- Recommending alternatives to fixed-route buses (e.g., flexible shuttles, microtransit, and shared vehicles) be considered when expanding transit in certain lower-density areas
- Recommending the Commission continue its Workforce Mobility Team, which helps employers address issues related to workforce transportation, as part of an existing recommendation to improve access to suburban employment centers



- Updating the bicycle network to reflect the recently adopted Washington County Bikeway and Trail Network Plan and recent changes to the recommended Route of the Badger trail network
- Emphasizing bike boulevards as an option when a nearby arterial street has limited right-of-way that restricts construction of a standard or enhanced bicycle facility
- Recommending expanding dockless scooters, dockless bike share, and electric bicycles (e-bikes) in addition to bike share and addressing the benefits and potential safety concerns relating to this type of micromobility
- Recommending government entities work with private-sector mobility providers (e.g., Uber/Lyft or Bublr Bikes) on possible partnerships to advance an equitable, affordable, and efficient transportation system
- Incorporating strategies to address reckless driving
- Adding curbside management strategies as emerging complete streets examples
- Recommending monitoring the growth and development of automated vehicles related to how they could impact the plan
- Removing the STH 60 northern reliever route, originally planned northeast of the City of Hartford, from the recommended highway network

Where necessary, updates to reflect implementation were made throughout the plan. In addition, VISION 2050 is being updated to more clearly show how plan recommendations will achieve the plan’s stated objectives under four important themes: Healthy Communities, Equitable Access, Costs and Financial Sustainability, and Mobility.

UPDATED FINANCIAL ANALYSIS FOR VISION 2050 TRANSPORTATION SYSTEM



Along with changes to the plan, Commission staff reviewed how the expected costs of the transportation system recommended in the plan compare to existing and expected funding. Through this analysis, staff confirmed a funding gap and identified the portion of the recommended system that can be implemented with reasonably expected funding. This portion of the recommended system is referred to as the “Fiscally Constrained Transportation System (FCTS),” which represents the system expected to occur if additional funding is not provided.

The financial analysis presents potential funding sources that could be considered, along with estimates of the revenue each source could potentially generate on an annual basis. Increasing funding to address the transportation funding gap in the Region will require State action and may also need support from federal or local elected officials.

The financial analysis concludes by noting that there are numerous benefits associated with significantly improving and expanding public transit and it is critical that the Region’s arterial streets and highways be reconstructed in a timely manner. Not fully implementing the transportation system recommended under VISION 2050 due to the limitations of current and expected transportation revenues would result in significant negative consequences for Southeastern Wisconsin.

The negative impacts of not improving and expanding transit service include:

- Limited transit-oriented development and redevelopment
- Reduced traffic carrying capacity in the Region’s heavily traveled corridors
- Reduced access to jobs, healthcare, education, and other daily needs, particularly for the 1 in 10 households in the Region without access to a car, which is more likely to affect people of color and low-income residents
- Smaller labor force available to employers
- Reduced ability to develop compact, walkable neighborhoods

The negative impacts of postponing reconstruction of freeways beyond their service life and not adding capacity on highly congested segments include:

- Costly emergency repairs and inefficient pavement maintenance due to unnecessary, and increasingly ineffective, repaving projects
- Increased traffic congestion and travel delays, along with decreased travel reliability
- Increased crashes due to traffic congestion, antiquated roadway design, and deteriorating roadway condition

EQUITY ANALYSIS OF UPDATED LAND USE AND TRANSPORTATION COMPONENTS

Staff also updated equity analyses, which include evaluations of potential benefits and impacts to people of color, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050. Notably, the equity analysis for the transportation component indicated that the recommended more than doubling of transit service would significantly improve transit access for these population groups to jobs, healthcare, education, and other activities. However, the reduction in transit service and minimal provision of higher-quality transit service expected under the FCTS would result in less access to jobs, healthcare, education, and other daily needs than under VISION 2050. Without additional funding to implement the VISION 2050 public transit element, a disparate impact on the Region’s people of color, low-income populations, and people with disabilities is likely to occur.



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INTRODUCTION

1



Credit: SEWRPC Staff

This report documents the 2020 Review and Update of VISION 2050—the year 2050 regional land use and transportation plan for Southeastern Wisconsin. VISION 2050 was originally completed and adopted by the Southeastern Wisconsin Regional Planning Commission in July 2016,¹ and later amended on three occasions. The plan is intended to provide a long-range vision for land use and transportation in the seven-county Southeastern Wisconsin Region. The recommendations presented in VISION 2050 are intended to shape and guide land use development and transportation improvement, including public transit, arterial streets and highways, freight, and bicycle and pedestrian facilities, to the year 2050. In addition, VISION 2050 identifies a fiscally constrained transportation system, which includes the portions of the recommended system that can be implemented given existing and reasonably expected future funding and the current limitations on State and Federal funding. The plan also identifies possible ways to address the transportation funding gap so that VISION 2050 can be fully implemented.

VISION 2050 was developed through extensive public involvement, with valuable input and guidance provided by concerned residents and the Commission’s Advisory Committees on Regional Land Use Planning and Regional Transportation Planning, Environmental Justice Task Force, Jurisdictional Highway Planning Committees in each county, and VISION 2050 task forces on key areas of interest. The process used to develop the plan was intended to engage the public and elected officials in the planning process and expand public knowledge on the implications of existing and future land use and transportation development in Southeastern Wisconsin. The Advisory Committees on Regional Land Use and Regional Transportation Planning, which include population proportional representation of the

¹ VISION 2050, as adopted in 2016, is documented in SEWRPC Planning Report No. 55, VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin.

municipalities and counties in the Region and representation from State and Federal agencies, unanimously approved the plan in June 2016.

Following Commission adoption in 2016, VISION 2050 has been amended on three occasions:

- In June 2018, VISION 2050 was amended to include targets for national safety performance measures to meet Federal transportation planning requirements.
- In December 2018, VISION 2050 was amended to incorporate land use changes to accommodate additional residents and jobs directly or indirectly related to the Foxconn manufacturing campus. In addition, VISION 2050 was amended to incorporate transportation improvements to serve the Foxconn manufacturing campus area, including both highway and transit improvements. As part of the plan amendment, based on recent changes in State funding for transportation projects, staff also updated the analysis of existing and reasonably expected costs and revenues associated with the transportation system recommended in VISION 2050, which resulted in revisions to the fiscally constrained transportation system.
- In June 2019, VISION 2050 was amended to include targets for national performance measures related to transit asset management, National Highway System (NHS) pavement and bridge condition, NHS reliability, freight reliability, and congestion mitigation and air-quality improvement to meet Federal transportation planning requirements.

Every four years, the Commission conducts an interim review and update of the regional land use and transportation plan, in part to address Federal requirements. This review examines whether it remains reasonable for the recommendations in VISION 2050 to be accomplished over the next 30 years, given the implementation of the plan to date and available and anticipated funding. Chapter 2 of this report includes an assessment of the implementation to date of VISION 2050 and a review of current transportation system performance. Chapter 3 reviews the year 2050 forecasts underlying the plan. Chapter 4 then describes the changes that being made to VISION 2050 as part of the 2020 Review and Update. These changes are based on plan implementation that has occurred to date and recent changes in technology, demographics, or the economy. The changes are also based on input received from the public and other stakeholders, including two rounds of public involvement held during the review and update process, which are summarized in Chapter 4. Chapter 4 also presents an updated analysis of existing and reasonably expected costs and revenues associated with the transportation system recommended in VISION 2050. The updated analysis confirmed the funding gap for the recommended transportation system and identifies an updated fiscally constrained transportation system. Lastly, Chapter 4 summarizes updated equity analyses, which include evaluations of potential benefits and impacts to people of color, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050. Notably, the equity analysis of the transportation component concluded that without additional funding to implement the VISION 2050 public transit element, a disparate impact on these population groups is likely to occur.

Following the completion of the 2020 Review and Update, the Commission will publish a Second Edition of Volume III, "Recommended Regional Land Use and Transportation Plan," of the VISION 2050 plan report. This updated edition will incorporate the changes made as part of this planning effort, including the updated financial and equity analyses. Targets established for the National Performance Measures will also be incorporated into the Second Edition of Volume III.



Credit: SEWRPC Staff

2.1 INTRODUCTION

This chapter summarizes the VISION 2050 recommendations for land use and transportation prior to the changes made as part of the 2020 Review and Update, along with the implementation of VISION 2050 since the adoption of the plan in 2016. In reviewing implementation of the plan to date, it is important to recognize that VISION 2050 is an ambitious, long-range plan extending over 30 years, and that implementation of the VISION 2050 recommendations may be limited over the initial few years following its adoption. The sections related to the transportation portion of the VISION 2050 recommendations also include a summary of the effect of implementation on transportation system performance in the Region. In addition, this chapter provides a discussion of the current targets established for the Federal performance measures as part of the National Performance Management Framework established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012. Additional details related to the reviews of the current performance of the transportation system and of the targets established for the Federal performance measures are provided in Appendices A and B, respectively.

2.2 REVIEW OF LAND USE COMPONENT

The land use component of VISION 2050 focuses on compact development and presents a development pattern and recommendations that accommodate projected growth in regional population, households, and employment in a sustainable manner. The compact development pattern recommended under VISION 2050 ranges from high-density development such as transit-oriented development (TOD), to neighborhoods in smaller communities with housing within easy walking distance of amenities such as

parks, schools, and businesses. This range of development is recommended because it has a number of benefits, including:

- Minimizing impacts on natural and cultural resources
- Minimizing impacts to water resources and air quality
- Positioning the Region to attract potential workers and employers
- Maximizing redevelopment in areas with existing infrastructure
- Minimizing the cost of infrastructure and public services
- Meeting the needs of the Region's aging population
- Providing walkable neighborhoods that encourage active lifestyles and a sense of community
- Reducing the distance needed to travel between destinations
- Providing a variety of housing types near employment
- Supporting public transit connections between housing and employment
- Increasing racial and economic integration throughout the Region

VISION 2050 recognizes the impact of market forces on the location, intensity, and character of future urban development. It also recognizes the important role of communities in development decisions. VISION 2050 is intended to provide a guide, or overall framework, for future land use within the Region. Implementation of the land use recommendations relies on the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector.

This section describes the implementation status of each of the 18 land use component recommendations. The base years used for the status reports are 2010, the base year of much of the VISION 2050 land use inventory data, and 2016, the year VISION 2050 was adopted. The most current data available were used to report on the implementation status of the recommendations. It should be noted that the Commission's most recent land use inventory, which is based on aerial photography taken in 2015, is a major data source for the reporting.

► **Recommendation 1.1: Develop urban service areas with a mix of housing types and land uses**

Developing urban service areas with a mix of housing types, including multifamily housing and single-family housing on smaller lots (1/4 acre or less), helps provide affordable housing choices for households with a wide range of incomes. Along with a mix of housing types, mixing land uses can create walkable neighborhoods with housing near neighborhood amenities such as parks, schools, and businesses. This combination helps to provide living options that are affordable, desirable to potential workers, and accessible to people with disabilities. A mix of housing types and land uses would be possible under the Mixed-Use City Center, Mixed-Use Traditional Neighborhood, and Small Lot Traditional Neighborhood land use categories, as illustrated on Figure 2.1 and shown on Map 2.1. Housing type data from 2010 to 2018 compiled from the Wisconsin

Figure 2.1
VISION 2050 Land Use Categories

The recommended VISION 2050 land use pattern was developed by allocating new households and employment envisioned for the Region under the Commission’s year 2050 growth projections to a series of seven land use categories that represent a variety of development densities and mixes of uses.



MIXED-USE CITY CENTER
 Mix of very high-density offices, businesses, and housing found in the most densely populated areas of the Region



MEDIUM LOT NEIGHBORHOOD (showing lots of about 15,000 square feet)
 Primarily single-family homes on ¼- to ½-acre lots found at the edges of cities and villages



LARGE LOT NEIGHBORHOOD (showing lots of about ½ acre)
 Primarily single-family homes on ½-acre to one-acre lots found at the edges of cities and villages and scattered outside cities and villages



MIXED-USE TRADITIONAL NEIGHBORHOOD
 Mix of high-density housing, businesses, and offices found in densely populated areas



LARGE LOT EXURBAN (showing lots of about 1.5 acres)
 Single-family homes at an overall density of one home per 1.5 to five acres scattered outside cities and villages

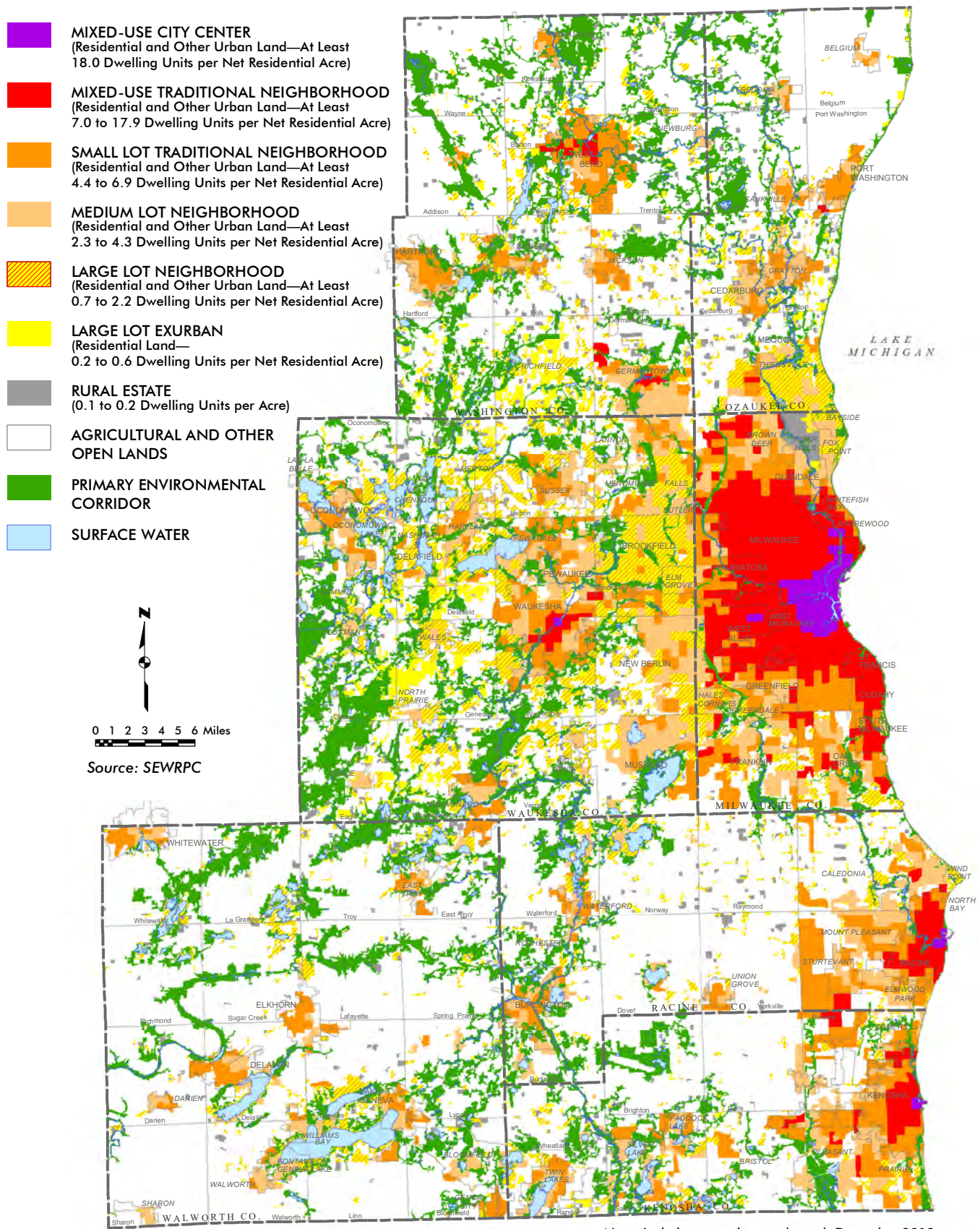


SMALL LOT TRADITIONAL NEIGHBORHOOD (showing lots of about 7,000 square feet)
 Mix of housing types and businesses with single-family homes on lots of ¼-acre or less and multifamily housing found within and at the edges of cities and villages



RURAL ESTATE (showing a cluster subdivision with one-acre lots)
 Single-family homes at an overall density of one home per five acres scattered outside cities and villages

Map 2.1 Land Use Development Pattern: VISION 2050



Department of Administration are presented in Table 2.1. The data are limited to areas of the Region with public sewer service. About 56 percent of the 34,134 new housing units developed in seweried portions of the Region since 2010 have been multifamily, which helps to implement Recommendation 1.1. About 55 percent of the multifamily development since 2010 (and between 2016 and 2018) has occurred in Milwaukee County; however, the production of multifamily housing has increased over the existing mix of multifamily housing and single-family housing in the other counties of the Region as well. The trend of multifamily development in the Region follows national trends.

Data compiled from the Commission's subdivision platting inventory suggest that while the mix of housing units has been consistent with Recommendation 1.1, the single-family housing development that has occurred since 2010 has been mostly at lower densities than recommended. As shown in Table 2.2, only about 14 percent of the 4,106 single-family lots created in subdivisions with sewer service since 2010 have been 10,000 square feet or less in size. The percentage increases only slightly to about 18 percent when looking at the seweried subdivisions created between 2016 and 2018.

VISION 2050 also recommends that local governments in urban service areas include the Mixed-Use City Center, Mixed-Use Traditional Neighborhood, and Small Lot Traditional Neighborhood land use categories in their comprehensive plans as appropriate. Local governments in the Region are required to adopt a comprehensive plan, which must include a long-range land use plan map, and update the plan at least every 10 years. In addition, important land use regulation ordinances such as zoning ordinances must be consistent with the comprehensive plan. This makes local comprehensive plans an important implementation tool for the recommended regional land use development pattern.

Many of the seweried communities in the Region are in the process of preparing 10-year comprehensive plan updates, or need to begin the process soon. Accordingly, this is the ideal time for local governments to consider the benefits of Recommendation 1.1 and incorporate the recommended land use categories into their comprehensive plans as appropriate. According to the Commission's records, 11 seweried communities have adopted 10-year comprehensive plan updates as of October 2019. For the most part, the plan updates have maintained existing land use development patterns, although housing-related objectives and analyses were key elements of some of the plan updates. In addition to 10-year plan updates, many of the seweried communities in the Region have adopted amendments to their comprehensive plans in response to major new developments. This includes the Village of Mount Pleasant, which amended its comprehensive plan to accommodate the Foxconn development and anticipated residential and commercial development.

► **Recommendation 1.2: Focus TOD near rapid transit and commuter rail stations**

VISION 2050 recommends transit-oriented development (TOD) in areas surrounding the rapid transit and commuter rail stations recommended under the transportation component of VISION 2050. Rapid transit and commuter rail are described in more detail under Recommendations 2.1 and 2.2, respectively. Residential development within TODs should occur largely in multifamily buildings or in buildings with a mix of uses such

Table 2.1
New Housing Units by Structure Type in Sewered Areas of the Region: 2010-2018

County	Single-Family		Two-Family		Multifamily		Total	
	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total	Number of Units	Percent of Total
Kenosha	1,380	44.3	60	1.9	1,676	53.8	3,116	100.0
Milwaukee	1,925	14.7	578	4.4	10,593	80.9	13,096	100.0
Ozaukee	1,054	51.7	78	3.8	906	44.5	2,038	100.0
Racine	1,466	62.5	170	7.2	710	30.3	2,346	100.0
Walworth	1,201	68.0	62	3.5	503	28.5	1,766	100.0
Washington	1,607	51.5	340	10.9	1,176	37.6	3,123	100.0
Waukesha	4,720	54.6	368	4.2	3,561	41.2	8,649	100.0
Region	13,353	39.1	1,656	4.9	19,125	56.0	34,134	100.0

Source: Wisconsin Department of Administration and SEWRPC

commercial-retail space on the ground floor and dwellings and/or office space on upper floors. TODs may also incorporate public plazas, parks, and other governmental and institutional uses. Streets and sidewalks within TODs should provide convenient and safe access for walking and bicycling to the transit station. TOD is a focus of VISION 2050 because it supports healthy communities, mobility, and revitalization of urban areas; however, displacement of low-income households was raised as a concern during the visioning process.

VISION 2050 was adopted relatively recently, so there has been limited time to implement the rapid transit and/or commuter rail recommendations. Therefore, there has not been substantial progress in implementing Recommendation 1.2. It should be noted, however, that the initial phase of The Hop streetcar line has begun operating in downtown Milwaukee and the lower eastside. While The Hop is not rapid transit, it does operate on a fixed-guideway and has some of the same real estate development potential as rapid transit. Infill and redevelopment have been occurring at a brisk pace within walking distance of the initial route. The City of Milwaukee has also adopted “Moving Milwaukee Forward: Equitable Growth Through Transit-Oriented Development” plans, which evaluate how to best leverage TOD to advance existing economic development efforts taking place along proposed streetcar extensions through the Walker’s Point and Historic Dr. Martin Luther King, Jr. Drive neighborhoods.

In addition, efforts have been proceeding in developing a bus rapid transit (BRT) line between downtown Milwaukee and the Milwaukee Regional Medical Center in Wauwatosa, which may have significant TOD potential.

► **Recommendation 1.3: Focus new urban development in areas that can be efficiently and effectively served by essential municipal facilities and services**

VISION 2050 recommends that urban development primarily occur within planned urban service areas where urban services, including public sanitary sewer and water service, can efficiently be provided. Between 2010 and 2015, 10.2 of the 14.7 square miles of incremental greenfield urban development that occurred during that time period, or 70 percent, were located in areas consistent with plan recommendations. It should be noted that this analysis only includes land converted from agricultural and other open space uses and does not account for redevelopment efforts that have taken place in the older urban centers of the Region. In

Table 2.2
Single-Family Residential Subdivisions by VISION 2050 Land Use Category Served by Public Sanitary Sewer in the Region: 2010-2018

Municipality	Average Lot Size						Zoning Ordinance Allows Lot Size of 10,000 sq ft or Less as a Principal Use ^a		
	Small Lot Traditional Neighborhood (10,000 sq ft or less)		Medium Lot Neighborhood (10,001-19,999 sq ft)		Large Lot Neighborhood (20,000 sq ft or More)		Total	Number of Subdivisions	
	Number of Lots	Number of Subdivisions	Number of Lots	Number of Subdivisions	Number of Lots	Number of Subdivisions			
Kenosha County									
Village of Bristol	0	0	66	2	0	0	66	2	Yes
Village of Pleasant Prairie	0	0	45	1	0	0	45	1	Yes
Village of Salem Lakes	0	0	0	0	12	1	12	1	Yes
Village of Twin Lakes	0	0	0	0	39	1	39	1	Yes
Milwaukee County									
City of Franklin	0	0	69	1	17	2	86	3	No
City of Greenfield	0	0	25	4	0	0	25	4	Yes
City of Milwaukee	11	1	0	0	0	0	11	1	Yes
City of Oak Creek	0	0	32	2	8	1	40	3	Yes
City of Saint Francis	13	2	0	0	0	0	13	2	Yes
Ozaukee County									
City of Cedarburg	0	0	131	7	0	0	131	7	Yes
City of Mequon	0	0	12	1	185	9	197	10	No
City of Port Washington	33	1	0	0	35	2	68	3	Yes
Village of Belgium	9	1	10	1	0	0	19	2	Yes
Village of Grafton	0	0	52	2	0	0	52	2	Yes
Racine County									
Village of Mount Pleasant	5	1	12	1	13	2	30	4	Yes
Village of Sturtevant	0	0	18	1	0	0	18	1	Yes
Village of Waterford	0	0	0	0	4	1	4	1	No
Walworth County									
City of Delavan	0	0	0	0	12	1	12	1	Yes
City of Lake Geneva	330	1	0	0	0	0	330	1	Yes
Village of Walworth	92	2 ^b	0	0	0	0	92	2	No
Town of Delavan	0	0	71	1	0	0	71	1	No
Washington County									
City of Hartford	0	0	75	3	0	0	75	3	Yes
City of West Bend	18	1	30	1	0	0	48	2	Yes
Village of Germantown	0	0	74	1	16	1	90	2	Yes
Village of Jackson	33	1	0	0	0	0	33	1	Yes
Village of Kewaskum	0	0	5	1	0	0	5	1	Yes
Village of Slinger	0	0	9	1	19	4	28	5	Yes

Table continued on next page.

Table 2.2 (Continued)

Municipality	Average Lot Size										Zoning Ordinance Allows Lot Size of 10,000 sq ft or Less as a Principal Use ^a	
	Small Lot Traditional Neighborhood (10,000 sq ft or less)		Medium Lot Neighborhood (10,001-19,999 sq ft)		Large Lot Neighborhood (20,000 sq ft or More)		Total		Number of Subdivisions	Number of Lots		
	Number of Lots	Number of Subdivisions	Number of Lots	Number of Subdivisions	Number of Lots	Number of Subdivisions	Number of Lots	Number of Subdivisions				
Waukesha County												
City of Brookfield	25	1 ^c	53	2	34	3	112	6			No	
City of Delafield	0	0	35	2	0	0	35	2			Yes	
City of Muskego	0	0	24	1	162	5	186	6			No	
City of New Berlin	0	0	0	0	71	2	71	2			No	
City of Oconomowoc	0	0	343	8	0	0	343	8			Yes	
City of Pewaukee	0	0	276	7	36	4	312	11			No	
City of Waukesha	21	2	184	7	0	0	205	9			Yes	
Village of Hartland	0	0	34	1	104	2	138	3			Yes	
Village of Lannon	0	0	48	1	0	0	48	1			No	
Village of Menomonee Falls	0	0	433	12	82	4	515	16			Yes	
Village of Mukwonago	0	0	72	2	0	0	72	2			No	
Village of Summit	0	0	85	2	19	2	104	4			No	
Village of Sussex	0	0	112	5	96	4	208	9			Yes	
Village of Wales	0	0	18	1	0	0	18	1			No	
Town of Delafield	0	0	0	0	99	4	99	4			No	
Total	590	14	2,453	81	1,063	56	4,106	151			N/A	

^a Local government zoning ordinance includes at least one zoning district that allows single-family residential lot sizes of 10,000 square feet or less as a principal use.

^b The developments were accommodated under the Village Planned Unit Development Overlay District.

^c Existing subdivision platted before 2010 where a school was allowed as a conditional use and demolished. Homes were constructed on the lots after 2010.

Source: SEWRPC

addition, of the 4,784 residential lots created through subdivision plats between 2010 and 2018, 4,106 lots, or 86 percent, were located within planned urban service areas.

► **Recommendation 1.4: Consider cluster subdivision design in residential development outside urban service areas**

VISION 2050 recommends that consideration be given to utilizing cluster subdivision designs to minimize impacts to natural and agricultural resources while accommodating rural residential development outside of planned urban service areas. From 2010 through 2018, 659 lots were created through subdivision plats outside of planned urban service areas. Of these, 90 lots, or 14 percent, were created utilizing cluster subdivision designs.

► **Recommendation 1.5: Limit low-density development outside urban service areas**

Large Lot Neighborhood and Large Lot Exurban residential development outside urban service areas is neither truly urban nor rural in character. Development of this nature generally precludes the provision of centralized sewer and water supply service and other urban amenities. VISION 2050 recommends that Large Lot Neighborhood and Large Lot Exurban residential development be limited to areas outside of planned urban service areas where there were approved subdivision plats and certified survey maps at the beginning of the VISION 2050 planning process. From 2010 through 2018, 569 lots were created through conventional subdivision plats outside of planned urban service areas that were not consistent with Recommendation 1.5.

► **Recommendation 1.6: Provide a mix of housing types near employment-supporting land uses**

Providing a mix of housing types near concentrations of employment, along with a multimodal transportation system, is a key to promoting accessibility to job opportunities within the Region. Increased accessibility to jobs will benefit those in the Region who are seeking job opportunities. It will also benefit employers that need to attract workers from across the Region, including those workers that may have transportation barriers. VISION 2050 recommends that communities with public sewer service, which are home to the vast majority of businesses in the Region, implement the housing mix and development pattern recommended under Recommendation 1.1 to promote access to job opportunities.

As discussed under Recommendation 1.1, a significant amount of the residential development since 2010 (and 2016) within sewered communities has been multifamily. Much of this development has occurred in Milwaukee County; however, Table 2.1 shows that a significant amount of multifamily development has also occurred in the other six counties compared to the existing housing type mix in 2010 (25 percent of the Region's existing housing units were in multifamily buildings in 2010). This may increase access to jobs for lower-wage workers in the Region and help to implement Recommendation 1.6. Also discussed under Recommendation 1.1, most single-family residential development since 2010 (and 2016) has occurred at lower-than-recommended densities. This does not improve access to jobs for moderate-wage workers.

The construction of new Low-Income Housing Tax Credit (LIHTC) developments would also help to increase access to jobs for lower-wage workers and implement Recommendation 1.6. Many of the units in LIHTC

developments have household income restrictions that typically equate to about 60 percent of area median income, which increases the likelihood that the new units will be affordable to lower-wage workers. About 16,600 affordable LIHTC units have been developed in the Region since 2010; however, only 7,400 of those units are “family” units. Occupancy in other types of LIHTC developments may be limited to certain populations, such as seniors. In addition, only 25 percent of the family units were developed outside of Milwaukee County. More family LIHTC developments in sewerer communities outside of Milwaukee County would help to implement Recommendation 1.6.

► **Recommendation 1.7: Encourage and accommodate economic growth**

VISION 2050 recommends continued development of major economic activity centers to encourage economic growth. Major economic centers are defined as areas containing concentrations of commercial and/or industrial land with at least 3,500 employees or 2,000 retail employees.

Between 2010 and 2015, about 2.7 square miles, or 80 percent, of all new commercial and industrial development occurred within a planned urban service area. Of that 2.7 square miles, about 1.4 square miles, or 51 percent, were within a major economic activity center.

VISION 2050 also recommends a mix of housing types near major economic activity centers to promote accessibility between housing and jobs. The housing trends discussed under Recommendations 1.1 and 1.6 also apply to communities with major economic activity centers. Since 2010, multifamily units have accounted for more than 25 percent of the total new housing units in 27 of the 37 communities in the Region with a major economic activity center. This includes 19 communities where multifamily units have accounted for over half of the total new housing units.

In addition, the trend in LIHTC development discussed under Recommendation 1.6 applies to communities with major economic activity centers. Only 48 percent of the 5,139 affordable units constructed in communities with major economic activity centers since 2010 have been family units.

► **Recommendation 1.8: Provide new governmental and institutional buildings in mixed-use settings**

VISION 2050 recommends that new governmental and institutional uses occur in mixed-use settings to the greatest extent possible to be accessible to the greatest number of residents possible. Between 2010 and 2015, 81 percent of all new governmental and institutional uses were located within a planned urban service area within or adjacent to other developing areas.

► **Recommendation 1.9: Provide neighborhood parks in developing residential areas**

VISION 2050 recommends reserving land for parks as new residential neighborhoods are developed within urban service areas. Between 2010 and 2018, 14 new park areas were acquired and at least partially developed to serve developing urban areas of the Region.

► **Recommendation 1.10: Preserve primary environmental corridors**

VISION 2050 recommends preserving primary environmental corridors in essentially natural, open use and limiting development within primary environmental corridors to essential transportation and utility facilities, compatible outdoor recreation facilities, and rural-density residential development (a maximum of one housing unit per five acres) in upland areas not encompassing steep slopes.

In 2010, primary environmental corridors covered about 484 square miles, or about 18 percent of the Region. The Commission's 2015 environmental corridor inventory indicates that the area identified as primary environmental corridor, based on changes to the associated natural resources, has increased slightly to about 489 square miles, an increase of about 1 percent.

The Commission monitors efforts by government agencies and private organizations to ensure the long-term protection of open space lands through public interest ownership, including conservation easements. Between 2010 and 2015, approximately 2,350 additional acres of primary environmental corridors in the Region were protected through public interest ownership or conservation easements. These efforts, combined with joint state-local floodplain and shoreland-wetland zoning; State administrative rules governing sanitary sewer extensions; and local land use regulations, indicate that about 460 square miles (including surface water)—representing 94 percent of primary environmental corridors in the Region—were substantially protected from incompatible urban development in 2015.

► **Recommendation 1.11: Preserve secondary environmental corridors and isolated natural resource areas**

VISION 2050 recommends that local governments consider preserving secondary environmental corridors and isolated natural resource areas as natural, open space, or as drainage ways, stormwater detention and retention areas, or local park or recreation trails in developing areas.

In 2010, secondary environmental corridors and isolated natural resources areas combined covered about 149 square miles, or about 6 percent of the Region. The Commission's 2015 environmental corridor inventory indicates that the areas identified as secondary environmental corridors or isolated natural resource areas, based on changes to the associated natural resources, has increased slightly to about 152 square miles, an increase of about 2 percent. Between 2010 and 2015, approximately 400 additional acres of secondary environmental corridors and isolated natural resource areas in the Region were protected through public interest ownership or conservation easements.

► **Recommendation 1.12: Preserve natural areas and critical species habitat sites**

VISION 2050 recommends preserving all natural areas and critical species habitat sites as identified in the regional natural areas and critical species habitat protection and management plan. Between 2010 and 2015, approximately 675 additional acres of natural areas and critical species habitat areas in the Region were protected through public interest ownership or conservation easements.

► **Recommendation 1.13: Preserve productive agricultural land**

VISION 2050 recommends preserving the most productive soils for agricultural purposes—agricultural capability Class I and II soils as classified by the U.S. Natural Resources Conservation Service—for agricultural use to the extent practicable. Under the plan, the conversion of prime agricultural land (Class I and II soils) to urban use would be limited to lands within planned urban service areas.

Between 2010 and 2015, about 6.3 square miles of prime agricultural land were converted to urban uses. Of that total, about 2.6 square miles were converted to urban use in locations consistent with the plan. About 3.7 square miles of prime agricultural land were converted to urban use in locations not consistent with the plan.

► **Recommendation 1.14: Preserve productive agricultural land through farmland preservation plans**

VISION 2050 recognizes that, under the Wisconsin Farmland Preservation Law (Chapter 91 of the *Wisconsin Statutes*), counties in the State are responsible for preparing farmland preservation plans. The six counties in the Region with substantial amounts of agricultural land—Kenosha, Ozaukee, Racine, Walworth, Washington, and Waukesha—initially prepared farmland preservation plans in the late 1970s and early 1980s. Subsequent changes to the Wisconsin Farmland Preservation Law, enacted by the State Legislature in 2009, effectively required that counties update their farmland preservation plans as one of the conditions for continued landowner participation in the Farmland Preservation Tax Credit Program. By the end of 2013, Kenosha, Ozaukee, Racine, Walworth, Washington, and Waukesha Counties had prepared and adopted new farmland preservation plans. Each plan has been certified by the Wisconsin Department of Agriculture, Trade, and Consumer Protection as meeting the farmland preservation planning standards set forth in Chapter 91.

The farmland preservation areas identified in the updated county farmland preservation plans are intended to be reserved for agriculture and agricultural-related uses. The largest concentrations of farmland identified for preservation in these plans are located in the southwest and south-central areas of the Region—including Walworth County, Kenosha County west of IH 94, and the far westerly portion of Racine County. A relatively large farmland preservation area has also been identified in northern Ozaukee County. Other, smaller farmland preservation areas have been identified in Washington and Waukesha Counties.

► **Recommendation 1.15: Develop a regional food system**

VISION 2050 recognizes the relationship between the Region’s urban centers and agricultural resources, and the need to make healthy foods accessible to all areas of the Region. A number of census tracts in the Region with concentrations of low-income households are “food deserts,” as defined by the U.S. Department of Agriculture.

VISION 2050 recommends developing a regional food system that connects food producers, distributors, and consumers to ensure access to healthy foods throughout the entire Region. VISION 2050 also recommends that local government land use policies support supermarkets and grocery stores near residential areas, urban agriculture, and farmers markets as sources of healthy foods. There are many examples of local government initiatives across the Region that help to implement Recommendation 1.15. To build on these initiatives, the Commission is in the beginning stages of

developing a regional food system plan that will identify current initiatives to increase access to healthy foods and develop recommendations to better connect our food producers, distributors, and residents in need on a regionwide basis.

► **Recommendation 1.16: Preserve areas with high groundwater recharge potential**

VISION 2050 land use recommendations focus on infill, redevelopment, and compact development, and on preserving significant natural resources that would result in the preservation of areas with high and very high groundwater recharge potential. A review of the development that has occurred between 2010 and 2015 indicates that over 99 percent of areas with high or very high groundwater recharge potential remain in agricultural and open space use as of 2015.

► **Recommendation 1.17: Manage stormwater through compact development and sustainable development practices**

VISION 2050 recommends that local and county governments work to minimize impervious surfaces and encourage sustainable development practices to help manage stormwater. Several local governments and special units of government in the Region have undertaken sustainable development initiatives related to stormwater management since 2010. This includes the City of Milwaukee and the Milwaukee Metropolitan Sewerage District, which have each undertaken numerous sustainable development initiatives related to stormwater management. In addition, Washington County and Waukesha County have adopted erosion control and stormwater management ordinances that accommodate green stormwater management (GSM) provisions. Washington County has also developed a model ordinance for local governments to adopt.

The Commission completed a report in 2018 titled “Recommended Language to Support the Protection of the Mukwonago River,” which includes voluntary measures; sample regulatory methods (i.e., zoning and land division regulations); and potential comprehensive plan language related to goals, objectives, policies, and programs to help protect the water quality and quantity of the Mukwonago River. This report includes GSM recommendations embraced by the Southeastern Wisconsin Fox River Commission and the affiliated Mukwonago River Initiative. The recommendations are universal in nature and can serve as a model for accommodating GSM provisions to protect water resources throughout the Region. The Commission has included GSM provisions in its model land division ordinance, and land division ordinances prepared with the Commission staff’s assistance for Kenosha County, the Village of Hartland, and the Town of Addison.

► **Recommendation 1.18: Target brownfield sites for redevelopment**

Southeastern Wisconsin, like many urbanized areas throughout the country, has experienced an increase in vacant or underutilized land once devoted to industrial and commercial uses. These sites, referred to as brownfields, are often concentrated in older, larger urban areas, but could be found in any community in the Region. Redevelopment of brownfields can be challenging because of known or suspected environmental contamination and potential clean-up costs.

There have been numerous brownfield redevelopment efforts undertaken by local and county governments throughout the Region since 2010, often using tools such as Tax Increment Financing (TIF) and State and Federal

brownfield remediation grants and loans to assist in the efforts. There are about 8,700 environmental repair sites and leaking underground storage tank sites in the Region that are listed in the Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking Site (BRRTS). About 6,300 of these sites have been remediated, including almost 1,300 between 2010 and 2019, indicating that there has been substantial progress in brownfield redevelopment in the Region, but there is still work to do.

There is financial assistance available to assist the private sector in redeveloping brownfields, including TIF and State and Federal programs. As part of the effort to assist in brownfield redevelopment, the Commission continues to serve as partner with the Bay Lake, Capital Area, East Central Wisconsin, North Central Wisconsin, Northwest Wisconsin, Southwestern Wisconsin, and West Central Wisconsin Regional Planning Commissions and the WDNR in the Wisconsin Brownfields Coalition. The Coalition has obtained, and continues to seek, U.S. Environmental Protection Agency grant funds for brownfields assessments that the WDNR Brownfields Program awards.

Conclusions from Review of Land Use Implementation

As discussed at the beginning of this section, implementing the VISION 2050 land use component would have numerous benefits to the Region. Some of the Region's recent development trends have helped to implement the land use component and some have not. Among other development activities discussed in this section, the recent focus on multifamily housing development and continuing to preserve primary environmental corridors have contributed to implementing the VISION 2050 land use component. The most significant development trends that have been inconsistent with VISION 2050 include developing single-family housing at lower-than-recommended densities in planned urban service areas and developing single-family housing outside planned urban service areas at densities that may have a negative impact on natural and agricultural resources.

2.3 REVIEW OF TRANSPORTATION COMPONENT

The transportation component of VISION 2050 includes the following six elements: public transit, bicycle and pedestrian, transportation systems management, travel demand management, arterial streets and highways, and freight transportation. Each element is summarized below, including specific plan recommendations and the implementation status of each recommendation. In addition, this section includes a discussion of the current targets established for the Federal performance measures as part of the National Performance Management Framework established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012. Additional details related to the reviews of the current performance of the transportation system and of the targets established for the Federal performance measures are provided in Appendices A and B, respectively. When data are presented throughout each element and in the appendices, the base year varies according to the years data were most recently collected and is noted accordingly.

Public Transit Element

VISION 2050 recommends a significant improvement and expansion of public transit in Southeastern Wisconsin, including four commuter rail lines; eight rapid transit lines; and significantly expanded local bus, express bus, commuter bus, and shared-ride taxi and other flexible transit services. In

addition, the plan recommends expanding and enhancing intercity bus services and implementing two new intercity passenger rail lines. The recommended transit service improvements and expansion include an expansion of service area and hours, and significant improvements in the frequency and speed of service. Map 2.2 displays the routes and areas served by the various components of the recommended transit element.

When VISION 2050 was initially prepared, the financial analysis identified a funding gap for the recommended regional transportation system, particularly for the transit element. The funded portion of the recommended transportation system, which was referred to as the “Fiscally Constrained Transportation Plan (FCTP),” is presented in Chapter 2 of Volume III of the VISION 2050 plan report and updated in the second amendment to VISION 2050.² The updated financial analysis prepared as part of the second amendment continued to show that without additional revenue the Region will not be able to achieve the public transit system recommended under VISION 2050. Under the FCTP, the service levels on the regional transit system would decline by about 10 percent from 2014 levels. The only transit improvements included in the FCTP are Milwaukee County’s East-West Bus Rapid Transit (BRT) line between downtown Milwaukee and the Milwaukee Regional Medical Center, and the lakefront and N. Vel R. Phillips Avenue extensions of the Milwaukee Streetcar (branded as The Hop). Map 2.3 shows the regional transit system under the FCTP.

As anticipated based on the financial analyses prepared for VISION 2050, the Region has not experienced a significant transit expansion between 2014 and 2017, the most recent year for which data are available from the National Transit Database. Altogether, as demonstrated in Table 2.3, average weekday service increased slightly between 2014 and 2017. As further shown in Table 2.3, while commuter bus hours increased, revenue miles of commuter service decreased, likely due to longer travel times in congested travel corridors, where buses share traffic lanes with general traffic. Express bus service increased between 2014 and 2017 due to the implementation of additional MCTS express bus routes. However, between 2017 and 2019, the Region has experienced reductions in transit service, particularly MCTS service, including the elimination of bus routes between the City of Milwaukee and employment centers in Waukesha County implemented as part of the Zoo Interchange litigation settlement, reductions in Freeway Flyer service, and elimination of special school service, as shown on Map 2.4. As service has declined, the Region has also experienced a reduction in ridership on local bus and commuter bus services since adoption of VISION 2050, due to a variety of reasons, including demographic changes, sustained low fuel prices, the increased availability of sub-prime automobile financing, and the increased availability of ride-hailing services. This transit ridership decline is described in greater detail in Appendix A.

² For the 2020 Review and Update, the title of the funded portion of the recommended transportation system, previously referred to as the “Fiscally Constrained Transportation Plan (FCTP),” is being changed to the “Fiscally Constrained Transportation System (FCTS).” This change is discussed in Chapter 4.

Map 2.2 Transit Services: VISION 2050

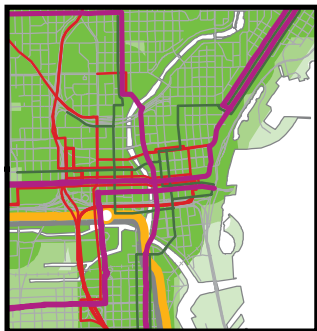
TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

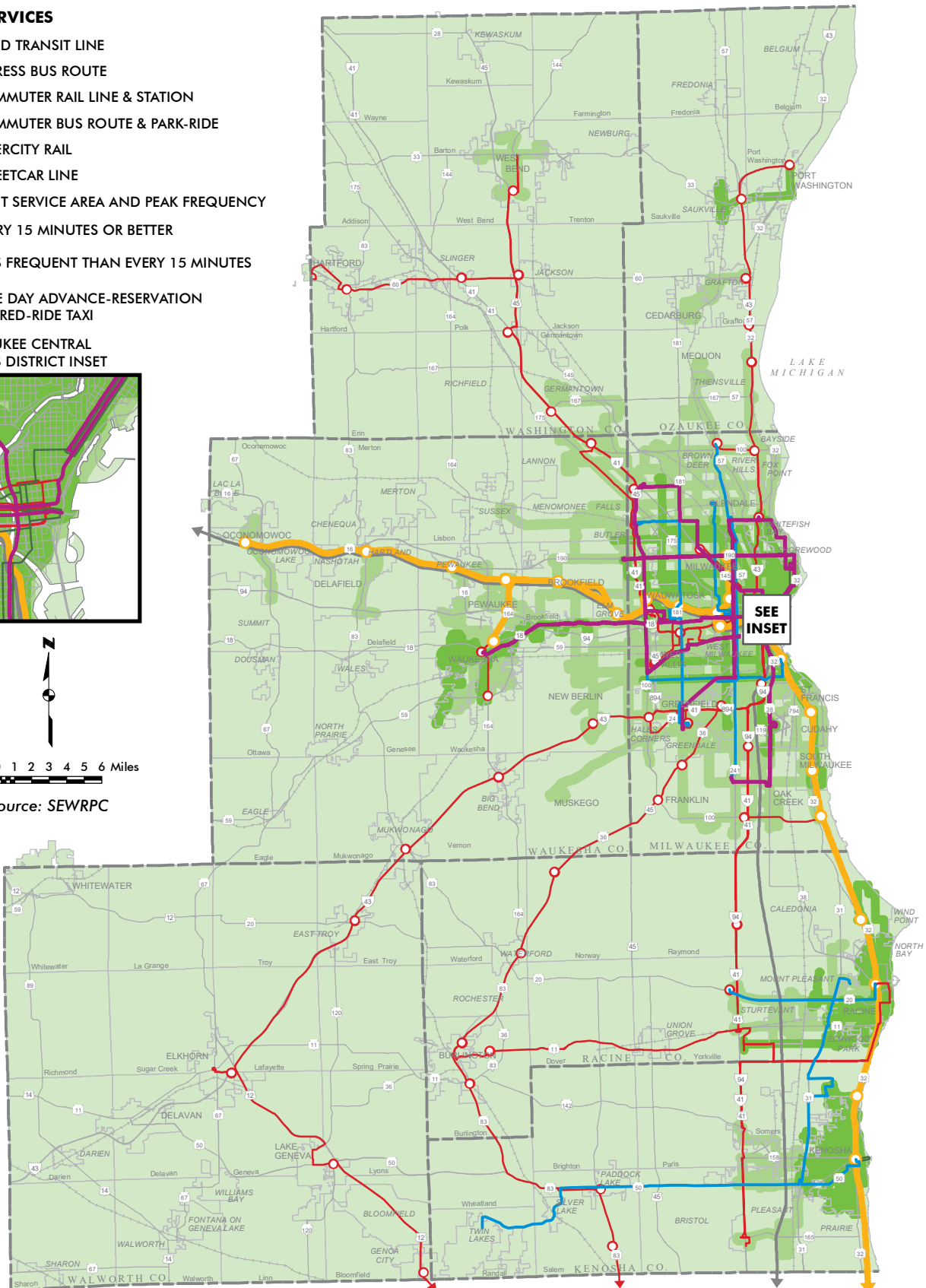
- EVERY 15 MINUTES OR BETTER
- LESS FREQUENT THAN EVERY 15 MINUTES
- ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles







Source: SEWRPC






Note: Includes amendments through December 2018

Map 2.3 Transit Services: Fiscally Constrained Transportation Plan

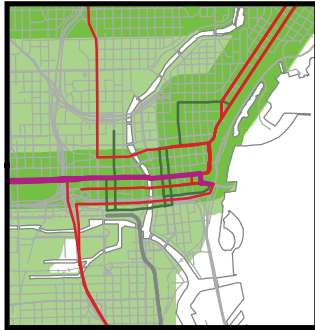
TRANSIT SERVICES

-  RAPID TRANSIT LINE
-  EXPRESS BUS ROUTE (NONE)
-  COMMUTER RAIL LINE & STATION
-  COMMUTER BUS ROUTE & PARK-RIDE
-  INTERCITY RAIL
-  STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

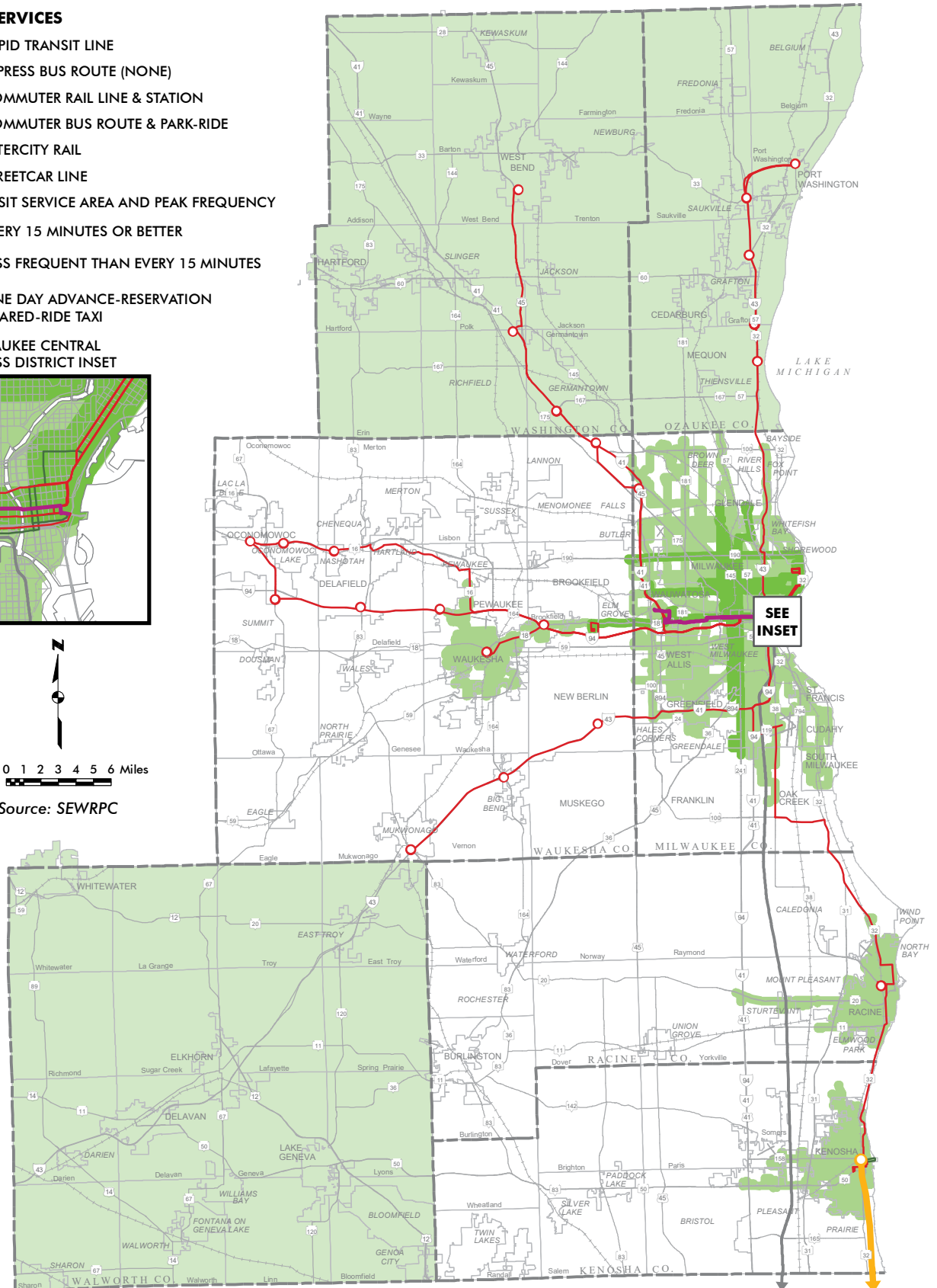
-  EVERY 15 MINUTES OR BETTER
-  LESS FREQUENT THAN EVERY 15 MINUTES
-  ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC



Note: Includes amendments through December 2018

Table 2.3
Fixed-Route Public Transit Service Levels: VISION 2050

Average Weekday Transit Service Characteristics	2014 ^a	2018	Plan as Amended (2050)
Revenue Vehicle-Hours			
Rapid Transit	--	--	1,170
Commuter Rail	10	10	190
Commuter Bus	290	290	1,020
Express Bus	470	880	890
Local Transit	3,860	3,690	7,140
Total	4,630	4,870	10,410
Revenue Vehicle-Miles			
Rapid Transit	--	--	23,500
Commuter Rail	100	100	8,200
Commuter Bus	6,400	5,700	25,100
Express Bus	5,800	10,400	13,200
Local Transit	47,000	46,100	84,500
Total	59,300	62,300	154,500

^a The revenue vehicle-hours and revenue vehicle-miles for 2014 vary slightly from those reported in VISION 2050 due to changes in the methodology for calculating average weekday service.

Source: National Transit Database, MCTS, and SEWRPC

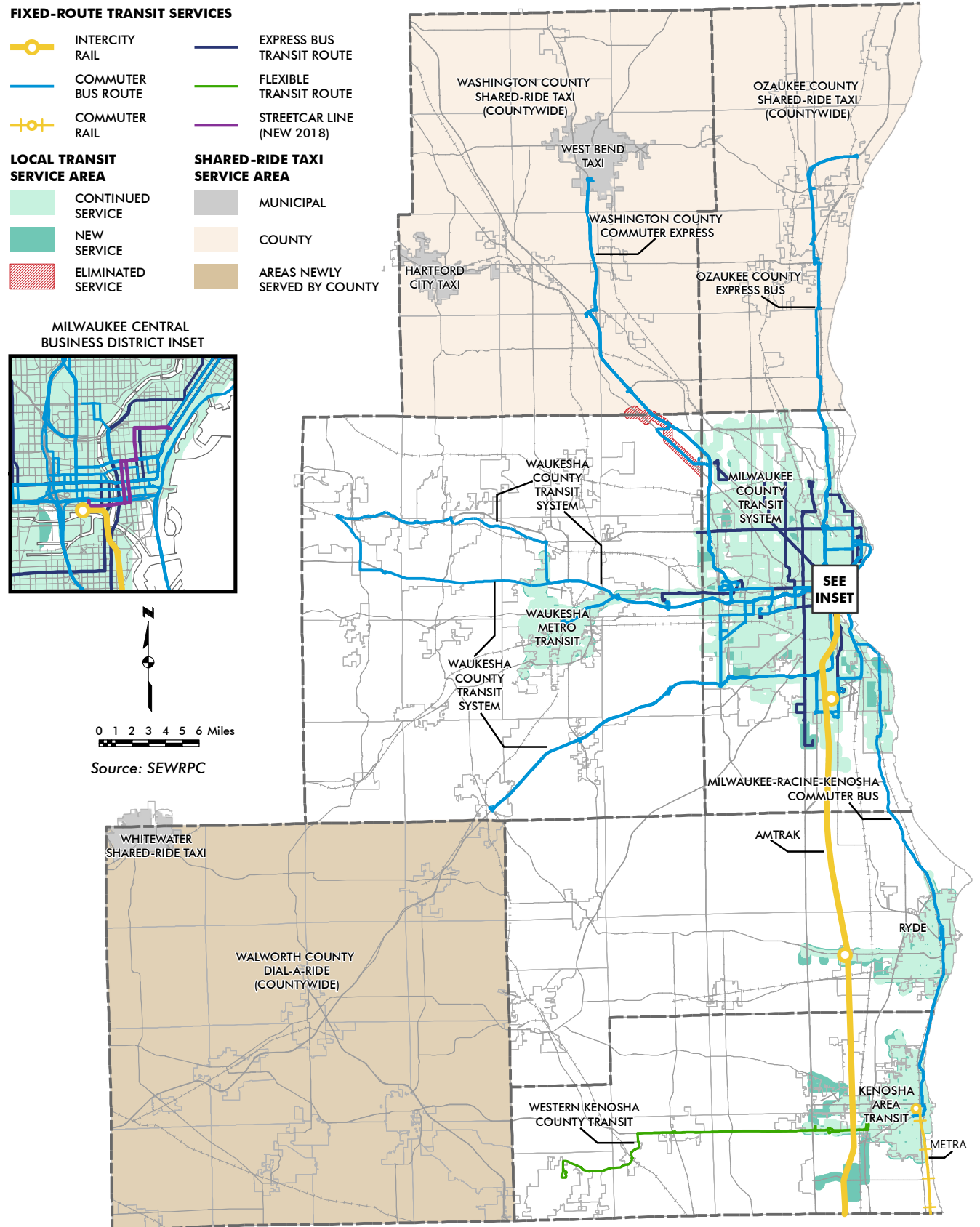
The following section summarizes the transit recommendations and describes progress toward meeting the transit recommendations since adoption of VISION 2050.

► **Recommendations 2.1 through 2.4: Develop a rapid transit network, Develop commuter rail corridors and improve and expand commuter bus services, Improve existing express bus service and add service in new corridors, and Increase the frequency and expand the service area of local transit**

As noted previously, the public transit element of VISION 2050 recommends a significant improvement and expansion of public transit in Southeastern Wisconsin, including eight rapid transit lines; four commuter rail lines; and significantly expanded local bus, express bus, and shared-ride taxi and other flexible transit services. Progress in implementing the transit element of VISION 2050 has been minimal, although there have been some added and expanded transit services, as described below:

- Planning has progressed for the East-West BRT Project, which is in the final design phase. The East-West BRT is a planned nine-mile, regional transit service connecting downtown Milwaukee to the Milwaukee Regional Medical Center. Federal funding was approved in May 2020 and project construction is anticipated to begin in 2021, with service estimated to begin in 2022.
- MCTS enhanced express bus services by merging local bus service along 27th Street with the Purple Line express service and extending the route to serve the Northwestern Mutual campus in the City of Franklin and IKEA in the City of Oak Creek.
- The Hop streetcar began service in November 2018, with service approximately every 15 to 20 minutes, seven days a week. The route has 18 stations, connecting the Milwaukee Intermodal Station, the Historic Third Ward, City Hall, Burns Commons, and locations in between. A 0.4-mile lakefront extension has been mostly constructed

Map 2.4 Changes to Public Transit Services in the Region: 2014-2019



and is awaiting completion of the last station on that line before opening. A N. Vel R. Phillips Avenue extension is also being planned.

- Kenosha Area Transit added new bus routes and extended service in 2017 and 2018 to enhance access to jobs, with assistance from Federal Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds. These routes serve employment centers, including the Amazon Distribution Center, Kenosha Beef, the Business Park of Kenosha, LakeView Corporate Park, and the Pleasant Prairie Premium Outlets Mall.
- In 2017, Walworth County introduced Wal-to-Wal DIAL-a-RIDE, a countywide shared-ride taxi service (excluding trips that begin and end in the City of Whitewater).

As discussed earlier in this section, the Region would experience a 10 percent decline in transit service by 2050 under the FCTP, measured in terms of revenue vehicle-hours of service provided, as a result of funding constraints placed on the current operators of public fixed-route transit services in the Region. Since the adoption of VISION 2050, operators have reduced certain services, made minor adjustments, or proposed service redesigns in response to funding constraints, employment trends, and demographic changes, including:

- Elimination of two MCTS routes between the City of Milwaukee and employment centers in Waukesha County that were implemented in 2014 as part of a settlement agreement between the Wisconsin Department of Transportation (WisDOT) and a coalition of social justice advocates. The two routes, marketed as the “JobLines” routes, served the New Berlin Industrial Park and the Villages of Menomonee Falls and Germantown.
- Elimination of five MCTS special bus routes in June 2019 that provided morning and afternoon service to and from local schools.
- Service reductions for five MCTS Freeway Flyer routes in March 2019.
- During 2018 and 2019, MCTS conducted a review of the bus network and an extensive public outreach program as part of an effort to redesign the transit system to focus a higher level of transit services in corridors where the demand is the highest. The goal of the review and proposed changes to the network, called MCTS NEXT, is to provide more frequent service on busy corridors, more connections overall, and better accessibility for more riders. The potential changes to services are currently being analyzed to determine an appropriate implementation approach.

► **Recommendation 2.5: Improve intercity transit services and expand the destinations served**

VISION 2050 recommends intercity transit services to connect communities within the Region to communities in other parts of the State and the remainder of the Midwest. Specifically, VISION 2050 recommends two new intercity rail lines, one connecting Chicago to Minneapolis and St. Paul via Milwaukee and Madison, and another connecting Chicago to Green Bay via Milwaukee and the Fox Valley. Both services would be operated as extensions of the existing Amtrak Hiawatha service from Chicago, and all three lines would operate at speeds up to 110 miles

per hour. Progress toward improving intercity transit services includes the following:

- WisDOT is partnering with the Illinois Department of Transportation (IDOT), Amtrak, Canadian Pacific Railway (CP), and Metra to increase the Hiawatha service from seven to 10 daily round trips, including constructing a second platform at the Milwaukee Airport Rail Station (MARS) and installing a new track signal system at the Milwaukee Intermodal Station (MIS).
- WisDOT is also partnering with the Minnesota Department of Transportation (MnDOT), Amtrak, and CP to work towards implementing Twin Cities-Milwaukee-Chicago intercity passenger rail service, which would add a second daily round trip between Chicago, Milwaukee, and St. Paul. The proposed service would complement, and follow the same route as, Amtrak's existing, long-distance Empire Builder service.
- Amtrak, in coordination with WisDOT, began operating a new Thruway intercity bus service between Green Bay, the Fox Valley, MIS, and Milwaukee Mitchell International Airport in 2019. The combination of Amtrak's two new daily round trips on the Hiawatha service and the existing Lamers Thruway intercity bus route between Wausau, the Fox Valley, and MIS effectively extends three daily Hiawatha round trips to Fond du Lac, Oshkosh, Appleton, and Green Bay.

► **Recommendation 2.6: Implement "transit-first" designs on urban streets**

VISION 2050 recommends that transit operators work with local governments during the reconstruction of a roadway to include transit-first features on the roadway when it carries rapid, express, or major local transit routes, including transit signal priority systems, dedicated lanes for transit, and "transit bulbs" at significant transit stops. Transit signal priority systems could also be added when existing signals along a roadway are being modified.

Since VISION 2050 was completed, transit-first features have been added to the roadways along the Milwaukee Streetcar route, in conjunction with its construction. Transit signal priority has been implemented at nine intersections along the route and dedicated lanes exist on five segments throughout the route. In many streetcar station locations, transit bulbs provide additional space for waiting and enhance the service by eliminating the need to weave in and out of traffic to serve the station.

► **Recommendation 2.7: Enhance stops, stations, and park-ride facilities with state-of-the-art amenities**

VISION 2050 recommends enhancing transit stops, stations, and park-ride facilities with state-of-the-art amenities to improve the user experience, make services more convenient and accessible, and encourage ridership. Three efforts that represent implementation of this recommendation include:

- A reconstruction of the passenger train concourse at MIS was completed in June 2016, which replaced a deteriorating train shed with a new, modern structure that provides a more welcoming and accessible passageway for people coming to, from, and through

Milwaukee by rail. The new facility meets requirements of the Americans with Disabilities Act (ADA).

- The City of Wauwatosa started allocating annual funding for improvements to bus stop benches and shelters in 2018.
- In 2018, MCTS began the Bus Shelter Art Project in collaboration with The Bus Art Project MKE. The project aims to spread art across the community while also beautifying bus shelters. The program works with local artists to produce and install murals on MCTS bus shelters. To date, murals have been installed on 17 bus shelters in nine Milwaukee neighborhoods.

► **Recommendation 2.8: Accommodate bicycles on all fixed-route transit vehicles**

VISION 2050 recommends that all fixed-route transit vehicles in the Region be able to accommodate bicycles, whether on a rack on the front of the bus for local buses, or on board rapid transit and commuter transit vehicles. When VISION 2050 was completed, all standard-sized buses in the MCTS, City of Racine (RYDE), Kenosha Area Transit, and Western Kenosha County Transit fleets were equipped to accommodate bicycles using a rack on the front of the bus. No known changes to bicycle accommodations on other local and commuter buses have been made since VISION 2050 was completed.

► **Recommendation 2.9: Implement programs to improve access to suburban employment centers**

VISION 2050 recommends a series of programs that can be considered to help complete the “last-mile” journey from bus stops to employment, including vanpool programs, network transportation companies (such as Lyft or Uber), pedestrian facility enhancements, and job access programs to assist low-income individuals in accessing job opportunities (such as driver’s license recovery programs and low-interest vehicle loan programs for low-income individuals).

No known additional programs have been created since VISION 2050 was adopted. However, in 2018, the State of Wisconsin awarded funding through a grant program entitled “Commute to Careers,” which sought to fund projects that connected workers with affordable transportation to and from work or training programs. The program awarded approximately \$2.7 million to 11 recipients in Southeastern Wisconsin that support transportation services and the purchase of vehicles to connect employees to jobs in areas that lack transit services or do not have transit services that meet all shifts.

In July 2018, the Commission, in coordination with the Regional Transit Leadership Council, created the Workforce Mobility Team to assist businesses with connecting workers to jobs in Southeastern Wisconsin. The Team is staffed by the Commission and provides assistance to employers in the Region who experience challenges retaining and attracting workers as a result of those workers having limited or no commuting transportation options available. The goal of the Workforce Mobility Team is to increase residents’ access to jobs and businesses’ access to workers by coordinating workforce transportation efforts regionally and supporting the implementation of innovative solutions across the Region.

► **Recommendation 2.10: Provide information to promote transit use**

VISION 2050 recommends a range of activities to be undertaken by transit agencies in the Region to promote transit use and enhance the quality of transit service to increase its desirability, attract new transit users, and encourage residents to use transit more often. Specifically, VISION 2050 recommends real-time transit information for all operators at transit centers, transit stops, on websites, and on mobile devices. The plan also recommends joint marketing and research among transit operators to enhance transit service, including innovative fare payment systems that facilitate intersystem transfers. Recent efforts that represent implementation of this recommendation are summarized below.

- The Ride MCTS app, which MCTS launched in late 2017, provides a platform for transit users to easily access information and aims to make transit use more convenient, efficient, and desirable by providing features such as in-application ticket purchases, trip navigation, real-time bus tracker, Google Street View of every bus stop, and updates on MCTS services. Along the lines of this recommendation, MCTS has also launched a new marketing campaign to promote its service, particularly for individuals who may be new to public transit.
- RYDE has also launched a mobile app, developed through a partnership with UW-Parkside, which provides information on when the next bus is coming, where to find the closest stop, and how to get from one place to another.
- In early 2019, The Hop released a mobile app to provide real-time information about the locations of the streetcars along the route and estimated arrival times. The app can also provide system alerts when service is impacted or delayed. Information on the locations of the streetcars can also be accessed through a desktop or mobile platform from The Hop's website.

► **Recommendation 2.11: Implement a universal fare program and free transfers across all transit operators**

As transit operators invest in new fare systems across the Region, VISION 2050 recommends that operators coordinate to use the same fare system. This would require significant cross-agency coordination on accounting and procurement, but could offer large benefits to the public by allowing riders to more easily use multiple transit services to complete a journey. While no direct implementation of this recommendation has occurred since VISION 2050 was completed, the introduction of the Ride MCTS mobile app provides an additional platform (in addition to the smart M-Card system already in place) for fare payment, collection, and accounting that has the potential to allow such a policy to be more easily implemented. Milwaukee County, in partnership with Waukesha County, the City of Milwaukee, and the City of Waukesha, has obtained funds to expand the Ride MCTS app to include additional transit operators, which could begin to implement a universal fare program in the Region.

► **Recommendation 2.12: Consider implementation of proof-of-payment on heavily used transit services**

VISION 2050 recommends that transit operators in the Region, particularly MCTS, study the possibility of implementing proof-of-payment on some or all transit routes to increase travel time reliability. Proof-of-payment relies on occasional checks by transit system staff to ensure that riders

have paid their fare, and has been shown to measurably increase the speed of buses where it has been implemented. Since VISION 2050 was completed, there has been no known progress toward implementing this recommendation.

► **Recommendation 2.13: Promote and expand transit pricing programs**

VISION 2050 recommends building on existing transit pricing programs conducted by the Region’s transit operators, expanding the MCTS college and university transit pass programs to include additional colleges and universities, and establishing similar programs for other transit systems in the Region.

MCTS has a Commuter Value Pass (CVP) program that provides transit passes to employers at a reduced fee, allowing those employers to offer discounted transit passes to their employees. VISION 2050 recommends expanding existing employer transit pass programs, such as the CVP program, and encourages other transit operators to negotiate annual or monthly fees with individual employers to provide discounted transit passes to employees. Since VISION 2050 was completed, MCTS staff has developed new marketing materials and conducted proactive outreach to promote the CVP program. No other known implementation of employer transit pass programs has occurred since VISION 2050 was completed.

► **Recommendation 2.14: Expand “guaranteed ride home” programs**

Guaranteed ride home programs provide commuters who take transit, carpool, bike, or walk with the ability to get home in the event of an emergency, unplanned overtime, or other unexpected issues. A guaranteed ride home program is offered to MCTS CVP members and Washington County Commuter Express riders. VISION 2050 recommends expanding the guaranteed ride home program to include other transit operators. Since VISION 2050 was completed, MCTS began coordinating with the ride-hailing company Lyft to schedule a free ride home for any employee enrolled in the CVP program. The State of Wisconsin’s Rideshare, Etc. program also includes an emergency ride home component that provides reimbursement to employers that provide an emergency ride home to employees that carpool, walk, bike, or use transit to commute to work.

Conclusions from Review of Public Transit Implementation

VISION 2050 recommends a significant improvement and expansion of public transit in Southeastern Wisconsin. The plan recognizes that without additional revenue the Region will not be able to achieve the recommended transit system and the funded portion of the transit system identified under the FCTP includes an anticipated reduction of about 10 percent in service levels from 2014 levels. Since the plan was adopted, the Region has added some transit service, including additional MCTS express bus routes, new streetcar service in Milwaukee, additional Kenosha Area Transit service to employment centers, a new countywide shared-ride taxi service in Walworth County. Significant progress has also been made in planning the East-West BRT line in Milwaukee County. However, transit operators have made a number of service reductions in recent years, primarily due to continuing funding constraints. Specifically, MCTS service reductions include elimination of bus routes between the City of Milwaukee and employment centers in Waukesha County implemented as part of the Zoo Interchange litigation settlement, reductions in Freeway Flyer service, and elimination of special school service.

Bicycle and Pedestrian Element

The ability to support biking and walking is an important component of improving quality of life and achieving healthy, vibrant communities. Well-connected infrastructure and a development pattern that provides a mix of uses within short distances make it easier to bike and walk. This encourages people to incorporate active travel into their daily routine, which can improve their health and reduce their healthcare costs. It is also important to integrate bicycle and pedestrian travel and public transit travel, which often begins and ends by either biking or walking. Bicycle recommendations for VISION 2050 include providing on-street bicycle accommodations on the surface arterial street and highway system (nonfreeways), expanding the off-street bicycle path system, implementing enhanced bicycle facilities in key regional corridors, and expanding bike share program implementation. The recommended bicycle network is shown on Map 2.5. Below is a brief summary of the VISION 2050 bicycle and pedestrian recommendations and a description of notable implementation that has occurred since the plan was completed.

► Recommendation 3.1: Expand the on-street bicycle network as the surface arterial system is resurfaced and reconstructed

VISION 2050 recommends that as the 3,300-mile existing arterial street and highway system is resurfaced and reconstructed, and as new surface arterials are constructed, bicycle accommodations be considered and implemented, if feasible, through bicycle lanes, paved shoulders, widened outside travel lanes, and enhanced bicycle facilities, such as buffered and protected bicycle lanes. The surface arterial system of the Region provides a network of direct travel routes serving virtually all travel origins and destinations within Southeastern Wisconsin. Arterial streets and highways—particularly those with high-speed traffic or heavy volumes of truck or transit vehicle traffic—should include one of the previously listed bicycle improvements to safely accommodate bicycle travel.

Map 2.6 shows the existing on-street bicycle accommodations provided in 2019 on the arterial network. Since plan completion, approximately 79.2 additional miles of bicycle lanes and wide, paved shoulders have been implemented on the existing 3,300-mile arterial system, as shown on Map 2.7, bringing the total of standard on-street bicycle accommodations up from 814.7 miles in 2015 to 893.9 miles in 2019. Inclusive of enhanced bicycle facilities (discussed in Recommendation 3.3), on-street bicycle accommodations in the Region in 2019 total 1,000.8 miles, up from 886.5 miles in 2015.

► Recommendation 3.2: Expand the off-street bicycle path system to provide a well-connected regional network

VISION 2050 recommends that a system of off-street bicycle paths be provided between the Kenosha, Milwaukee, Racine, Round Lake Beach, and West Bend urbanized areas and the cities and villages within the Region with a population of 5,000 or more located outside these five urbanized areas. These off-street bicycle paths would primarily be located in natural resource and utility corridors and are intended to provide reasonably direct connections between the Region's urbanized and small urban areas on safe and aesthetically attractive routes with separation from motor vehicle traffic. Some on-street bicycle connections would be required to connect segments of this system of off-street paths. These connections, if provided over surface arterials, should include some type of bicycle accommodation—bicycle lanes, paved shoulders, widened outside travel lanes, enhanced bicycle facilities, or separate paths within the arterial's right-of-way.

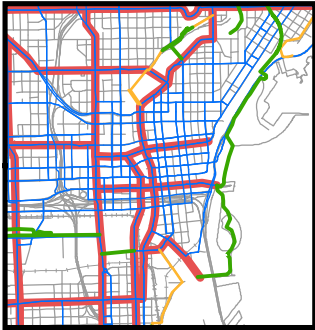
Map 2.5 Bicycle Network: VISION 2050

BICYCLE FACILITIES

- OFF-STREET BICYCLE PATH
- ARTERIAL STREET OR HIGHWAY WITH BICYCLE ACCOMMODATION (IF FEASIBLE)
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- RECOMMENDED CORRIDOR FOR ENHANCED BICYCLE FACILITY^a

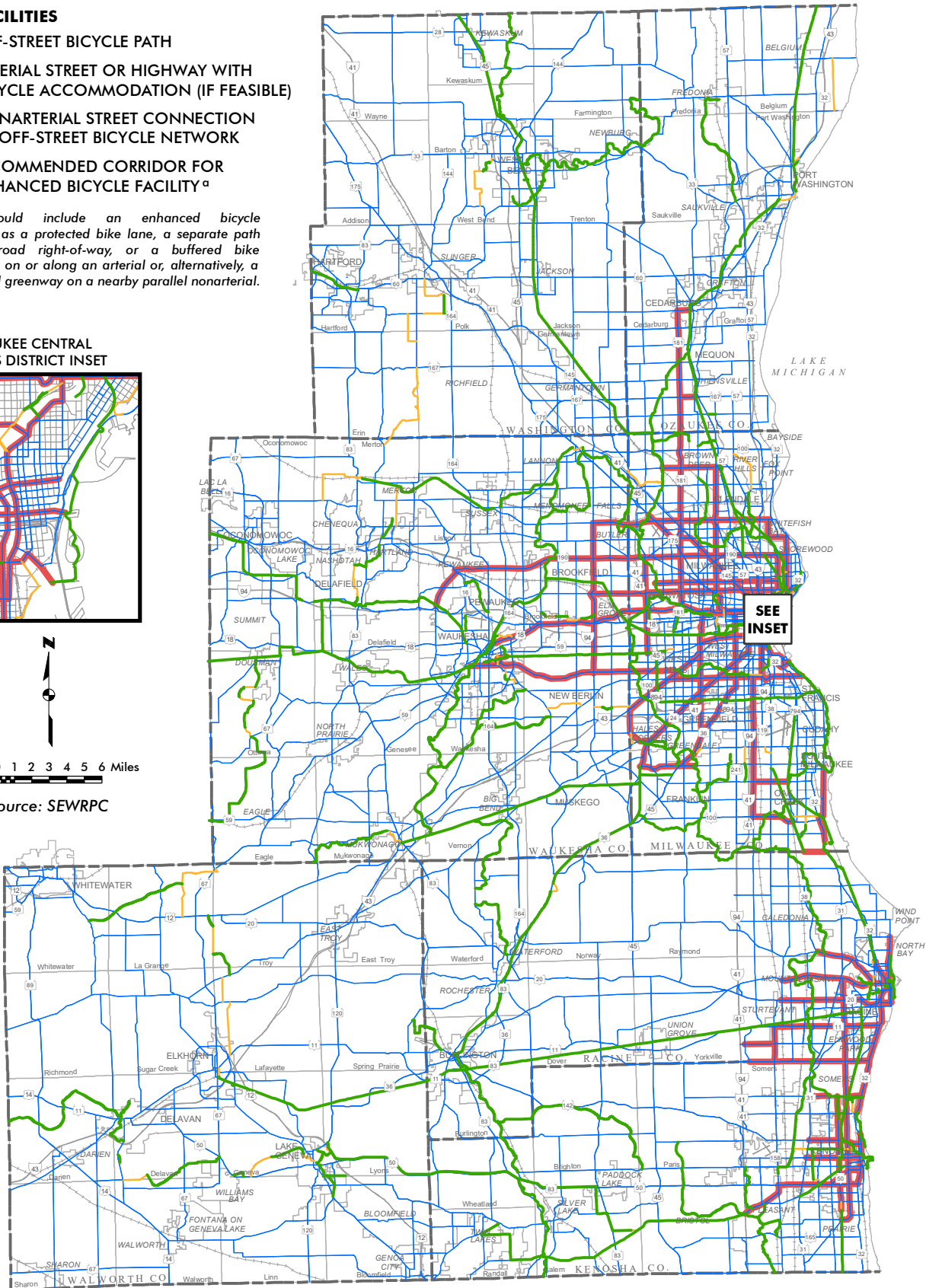
^a Corridor would include an enhanced bicycle facility—such as a protected bike lane, a separate path within the road right-of-way, or a buffered bike lane—located on or along an arterial or, alternatively, a neighborhood greenway on a nearby parallel nonarterial.

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC

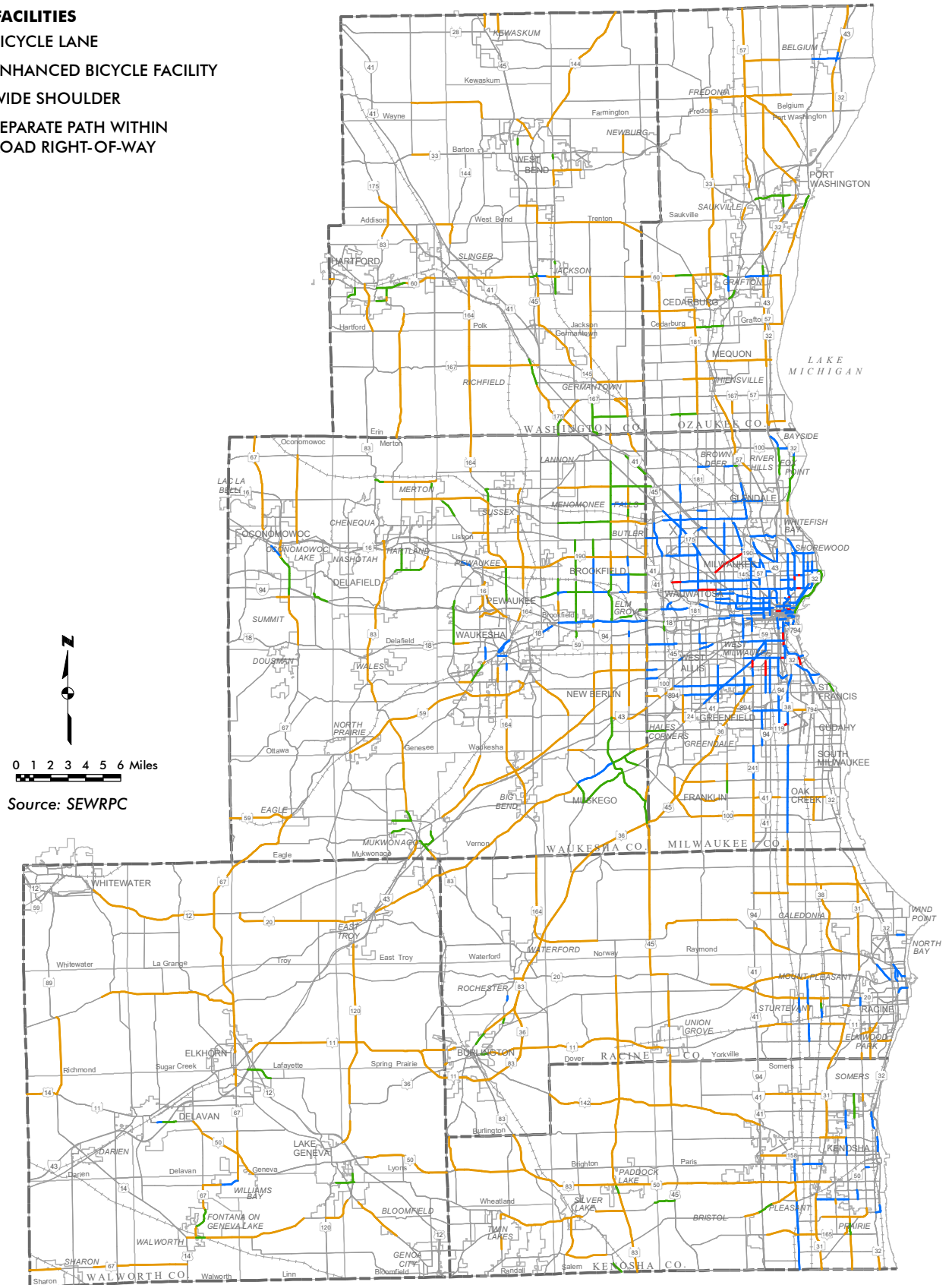


Note: Includes amendments through December 2018

Map 2.6 Existing On-Street Bicycle Facilities: 2019

BICYCLE FACILITIES

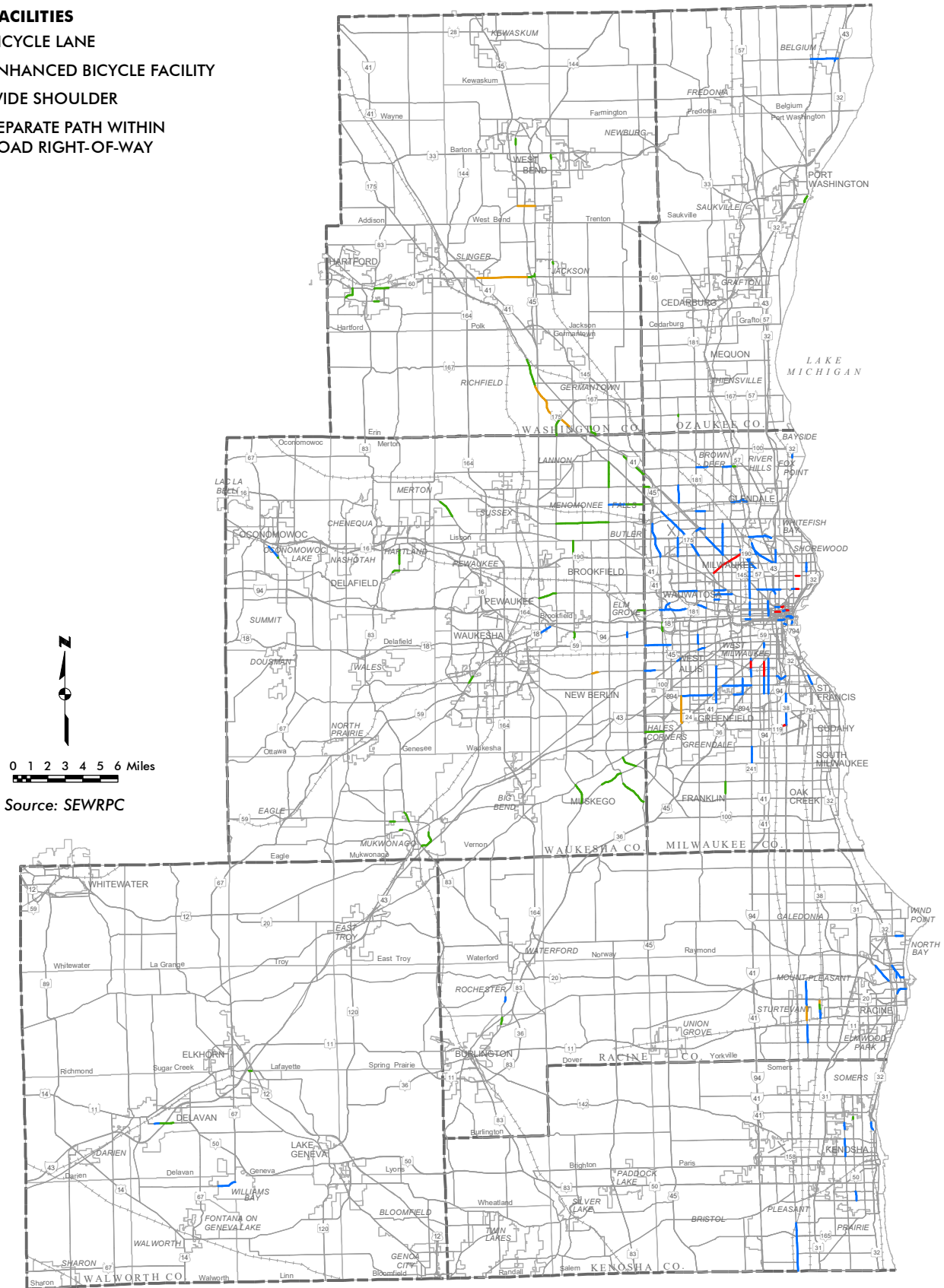
- BICYCLE LANE
- ENHANCED BICYCLE FACILITY
- WIDE SHOULDER
- SEPARATE PATH WITHIN ROAD RIGHT-OF-WAY



Map 2.7 On-Street Bicycle Facilities Completed: 2016-2019

BICYCLE FACILITIES

- BICYCLE LANE
- ENHANCED BICYCLE FACILITY
- WIDE SHOULDER
- SEPARATE PATH WITHIN ROAD RIGHT-OF-WAY



Source: SEWRPC

Bicycle connectivity under VISION 2050 would be improved by addressing gaps in the regional bicycle network. Gaps include those between cities and villages with populations of 5,000 or more where on- or off-street bicycle facilities either do not exist or exist in intermittent segments. Gaps also exist between two off-street path segments. Map 2.8 shows the regional off-street bicycle path system, which includes existing and recommended paths as well as surface arterial and nonarterial connections to the path system. Specifically, VISION 2050 envisioned expanding the 299 miles of off-street paths in 2015 to approximately 709 miles of off-street paths by the year 2050.

Map 2.9 shows the off-street bicycle paths that have been completed as of 2019. Since plan completion, approximately 11.4 miles of additional off-street bicycle paths have been completed in the Region, bringing the total of off-street bicycle paths up from 299.2 miles in 2015 to 310.6 miles in 2019.

► **Recommendation 3.3: Implement enhanced bicycle facilities in key regional corridors**

As shown on Map 2.5, VISION 2050 recommends a network of 374 miles of enhanced bicycle facility corridors through the Kenosha, Milwaukee, and Racine urbanized areas that would connect multiple communities, serve important regional destinations, and link segments of the off-street bicycle path system. Enhanced bicycle facilities—such as protected, buffered, and raised bicycle lanes and separate paths within a road right-of-way—are bicycle facilities on or along an arterial that go beyond the standard bicycle lane, paved shoulder, or widened outside travel lane. They are meant to improve safety, define bicycle space on roadways, and provide clear corridors for bicycle usage. These corridors would either involve implementing an enhanced bicycle facility on or along the arterial street or implementing a neighborhood greenway (“bike boulevard”), which is a low-speed street optimized for bicycle traffic on a parallel nonarterial, within about two blocks of an arterial.

Since plan completion, approximately 5.1 miles of additional buffered and protected bicycle lanes have been completed in the Region, as shown on Map 2.7, with approximately 1.1 miles of this total being completed within the enhanced bicycle facility corridors identified in VISION 2050. Since plan completion, approximately 30 miles of separate paths within a road right-of-way have been completed, as shown on Map 2.7. Regionally, the total mileage of enhanced bicycle facilities has increased from 71.8 miles in 2015 to 106.9 miles in 2019.

► **Recommendation 3.4: Expand bike share program implementation**

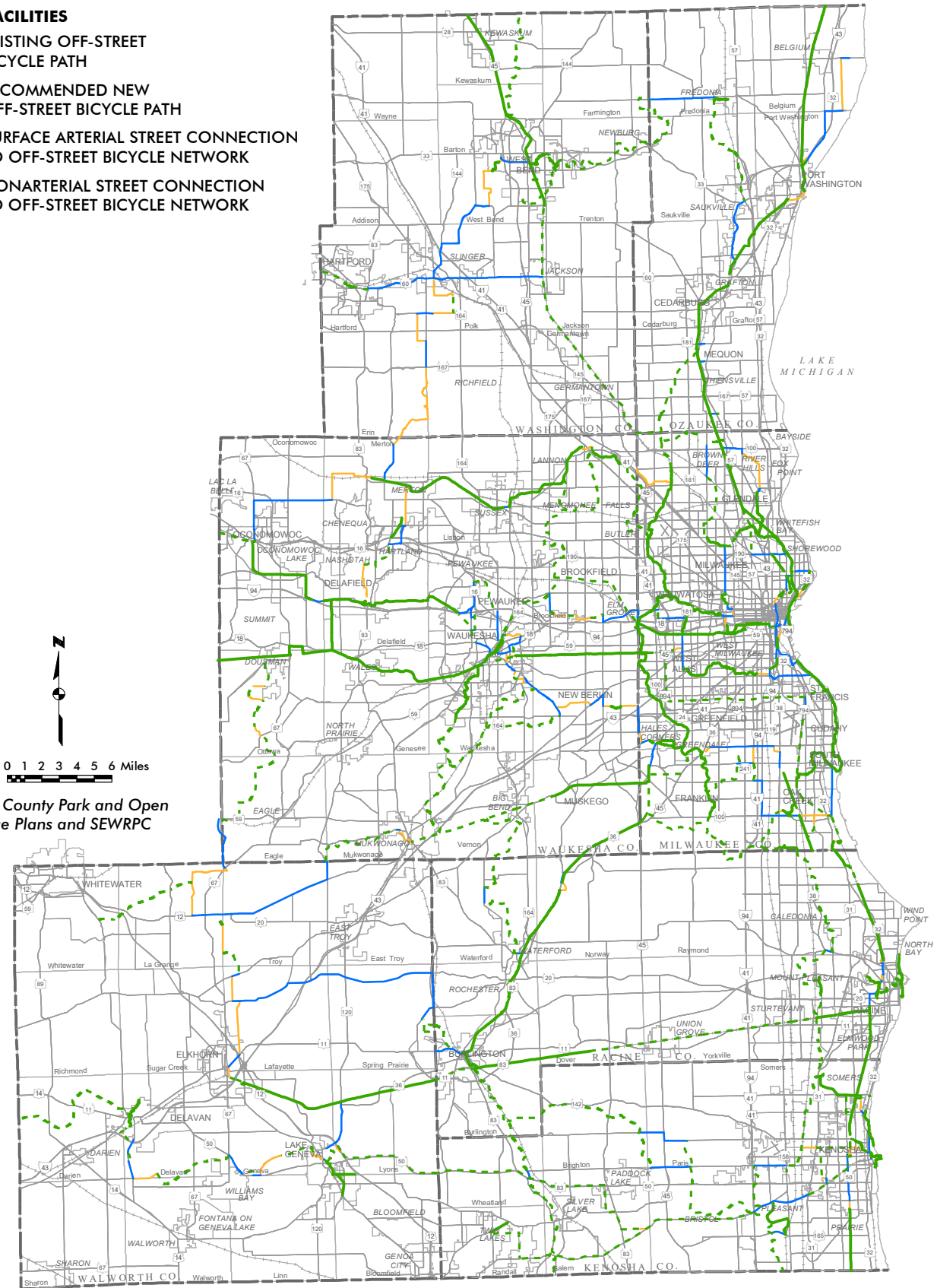
VISION 2050 recommends the expansion of bike share program implementation, as such programs can provide residents and visitors with options to use bicycles for short trips within and between downtown areas and adjacent neighborhoods. They offer opportunities for people to use a bicycle from designated stations for the purpose of traveling to and from home, work, or school; running errands; or for social activities. Bike share has been shown to be effective at providing a travel option for short trips and for reducing trips by automobile. It can also function as a feeder service to transit systems, which often encourages an increase in trips using both of these modes.

Bike share is currently operated by Bublr Bikes in the Cities of Milwaukee, Wauwatosa, and West Allis and the Village of Shorewood. In 2014,

Map 2.8 Off-Street Bicycle Path System: VISION 2050

BICYCLE FACILITIES

- EXISTING OFF-STREET BICYCLE PATH
- - - RECOMMENDED NEW OFF-STREET BICYCLE PATH
- SURFACE ARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK



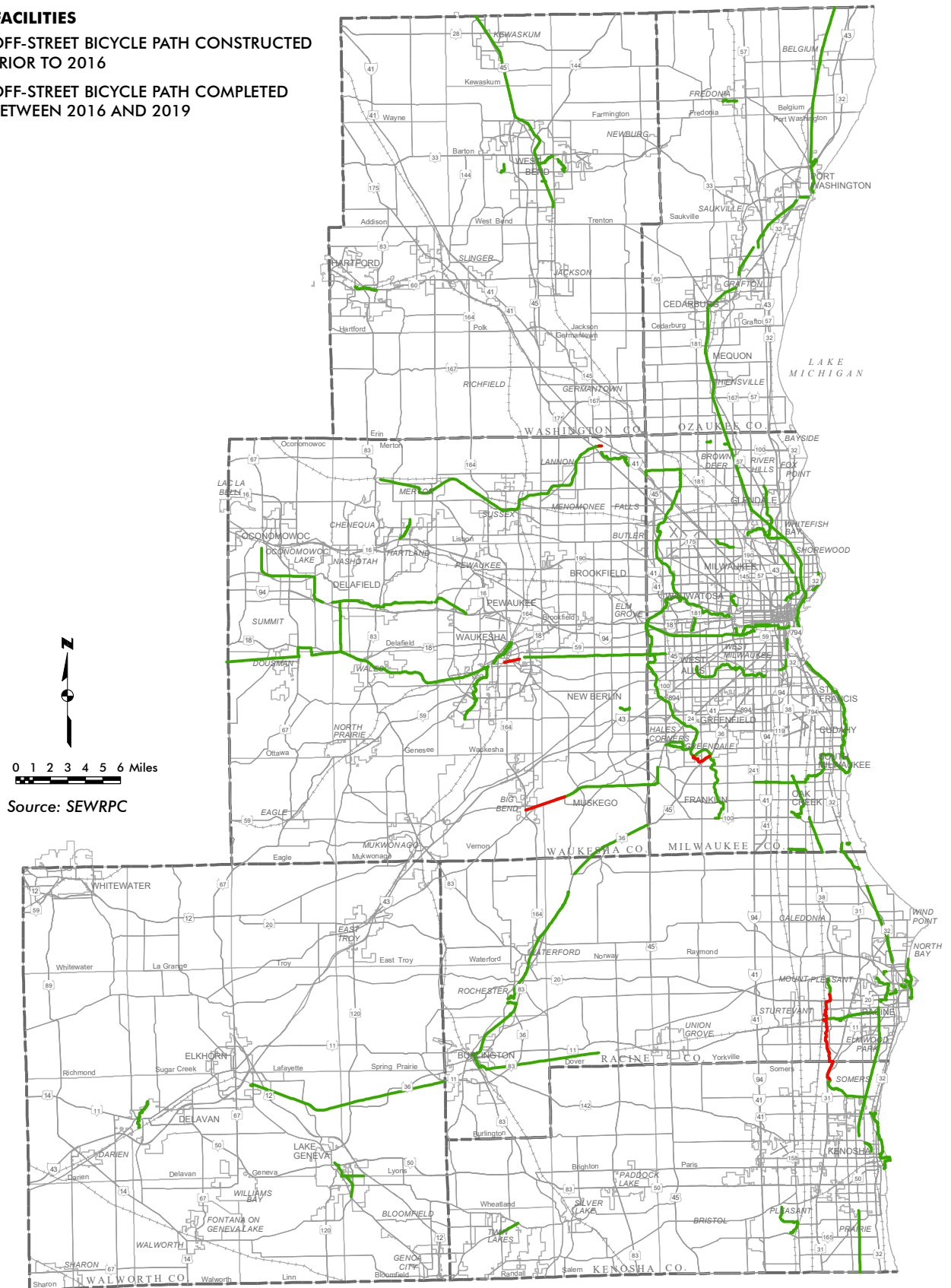
Source: County Park and Open Space Plans and SEWRPC

Note: Includes amendments through December 2018

Map 2.9 Off-Street Bicycle Paths Completed: 2016-2019

BICYCLE FACILITIES

- OFF-STREET BICYCLE PATH CONSTRUCTED PRIOR TO 2016
- OFF-STREET BICYCLE PATH COMPLETED BETWEEN 2016 AND 2019



Source: SEWRPC

there were seven stations installed. Since plan completion, Bublr Bikes has expanded to a total of 89 stations in 2019, as shown on Map 2.10. The City of Milwaukee and Bublr Bikes are also working to expand the system by 26 additional stations. The City of Wauwatosa implemented an adaptive bike share program in 2017, thought to be the first of its kind in the country, which became a part of the Bublr Bikes system in 2019. In August 2019, the City of Milwaukee launched an adaptive bicycle pilot program with Bublr Bikes that makes tricycles and hand cycles accessible to people of all abilities available. Phase 1 of the pilot ended in December 2019 and is being evaluated by the City of Milwaukee.

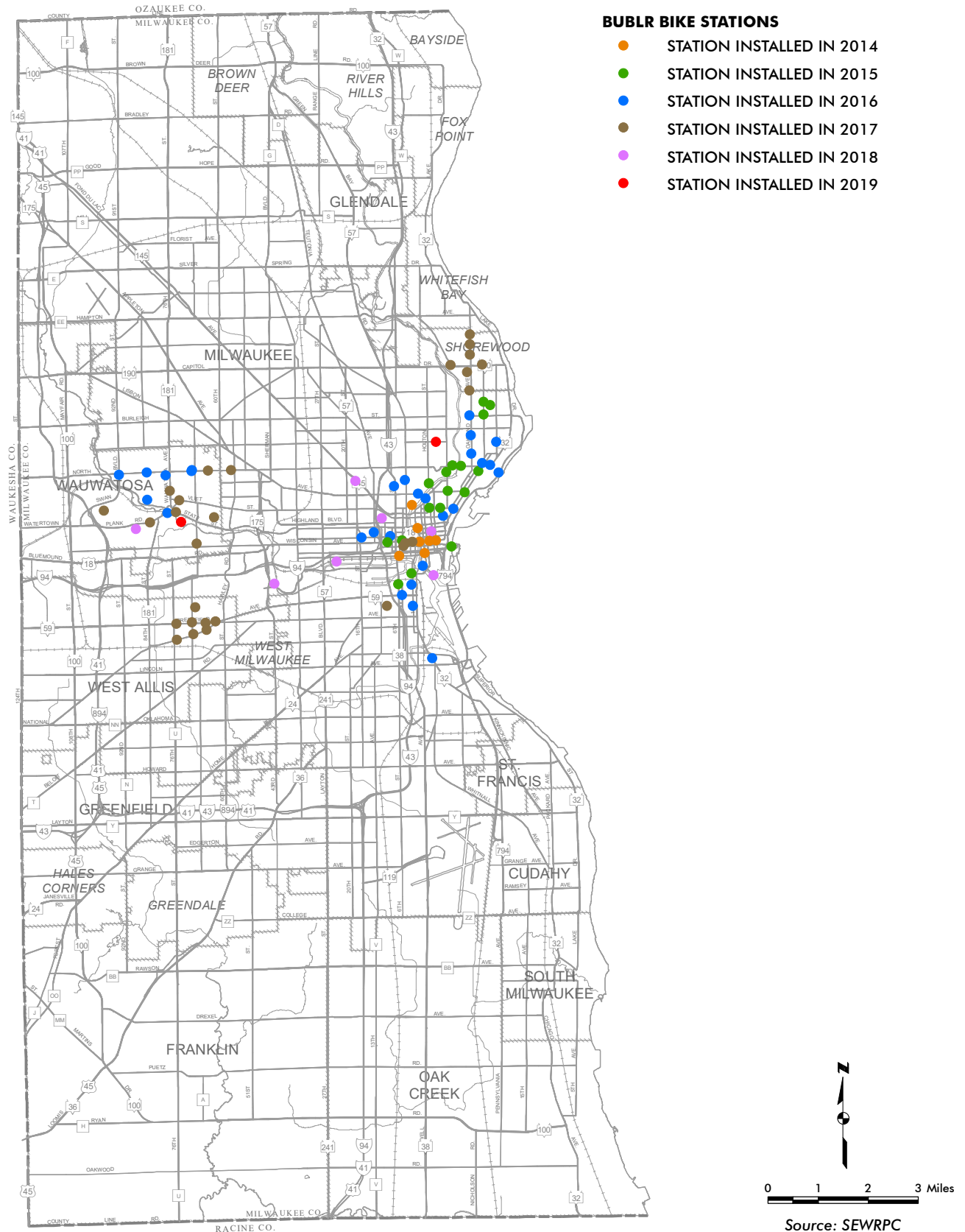
Although VISION 2050 only made recommendations for docked systems such as Bublr Bikes, dockless scooter and bicycle systems have begun operation in many cities. Dockless systems are a rideshare option in which bicycles or scooters do not need to be picked up and returned to designated stations like a standard bike share system, enabling dockless systems to expand geographic service areas. They are effective for short-distance trips and provide important first-mile/last-mile connections, particularly to transit. Dockless systems also create potential safety concerns, especially with the potential use of scooters on sidewalks and where they are parked in the public right-of-way. In Southeastern Wisconsin, the City of Milwaukee initiated a dockless scooter pilot study in 2019 to evaluate the effectiveness of dockless scooters in the City. Three scooter companies participated in the pilot study, which ended in December 2019. The pilot study is evaluating dockless scooters as a viable transportation option for short trips, assessing their potential to serve first-mile/last-mile connections to transit, and providing guidance on regulations for scooter companies. The City of Wauwatosa also adopted an “Electric Scooters and Dockless Mobility Devices” ordinance in 2019.

► **Recommendation 3.5: Provide pedestrian facilities that facilitate safe, efficient, and accessible pedestrian travel**

VISION 2050 recommends that sidewalks be provided along streets and highways in areas of existing or planned urban development; that gaps in the pedestrian network be addressed through neighborhood connections to regional off-street bicycle paths, transit, and major destinations; that sidewalks be designed and constructed using widths and clearances appropriate for the levels of pedestrian and vehicular traffic; and that terraces or buffered areas be provided, where feasible, between sidewalks and streets to enhance the pedestrian environment. VISION 2050 also emphasizes that all pedestrian facilities be designed and constructed in accordance with the Federal Americans with Disabilities Act (ADA) and its implementing regulations. Consistent with ADA requirements, VISION 2050 encourages communities with 50 or more employees to maintain updated ADA transition plans, which evaluate and plan for physical improvements to address accessibility for people with disabilities. VISION 2050 also recommends the development of walkable neighborhoods for the health and vibrancy of communities in the Region. Walkability refers to the ease by which people can walk in an area to various destinations such as schools, parks, retail services, and employment. Walkability can be increased through compact development patterns that have a number of destinations that are within walking distance and through a well-connected network of sidewalks.

Since plan completion, WisDOT completed its statewide ADA transition plan in December 2018, which identifies general practices and policies that WisDOT will undertake to address curb ramp improvements on

Map 2.10
Bublr Bike Stations Installed: 2014-2019



State highways. This transition plan includes a six-year program of identified locations throughout the State in which curb ramps need to be installed. WisDOT has also completed an inventory of existing sidewalks and intersections with and without curb ramps for the State highway system. This inventory can be accessed through an interactive web map on the WisDOT ADA Projects and Compliance webpage. The WisDOT ADA transition plan and its sidewalk and curb ramp inventory can serve as guidance for local governments in developing local ADA transition plans and in addressing curb ramps that are not in compliance with ADA regulations. The development of a regional inventory of pedestrian facilities on all arterial streets that are made ADA-compliant when streets are altered (reconstructed, resurfaced, etc.) or newly constructed should be considered to demonstrate further progress toward meeting ADA requirements.

► **Recommendation 3.6: Prepare local community bicycle and pedestrian plans**

VISION 2050 recommends that local units of government prepare community bicycle and pedestrian plans to supplement the regional plan. The local plans should provide for facilities to accommodate bicycle and pedestrian travel within neighborhoods, providing for convenient travel between residential areas and shopping centers, schools, parks, and transit stops within or adjacent to the neighborhood. Washington County adopted a bikeway and trail network plan in June 2019, and the City of Racine adopted a bicycle and pedestrian plan in November 2019. In addition, a number of communities in the Region have or are currently updating their comprehensive plans to include recommendations for bicycle and pedestrian improvements, including the Village of Fox Point. These plans are incorporated, as appropriate, into VISION 2050.

Local communities should also consider developing pedestrian safety action plans for improving pedestrian safety through street redesign and other engineering countermeasures. Implementation of Safe Routes to School programs by local communities and school districts should be encouraged in their local planning efforts to further address bicycle and pedestrian safety near schools. There has been no known progress since 2015 towards development of pedestrian safety action plans or Safe Routes to School initiatives by local governments; however, the Wisconsin Bike Federation organizes several Safe Routes programs and classes at many elementary schools each year, particularly within the Milwaukee Public Schools system.

Conclusions from Review of Bicycle and Pedestrian Implementation

Since plan completion, 114.3 miles of standard or enhanced on-street bicycle facilities have been implemented, or about 5 percent of the approximately 2,400 miles of arterial streets and highways on which VISION 2050 recommends adding on-street bicycle facilities. Additionally, there have been 11.4 miles of off-street paths implemented since plan completion, or about 3 percent of the 410 miles of new off-street paths recommended for the Region. With respect to bike share program implementation, the Bubl Bikes system has expanded from seven stations in the City of Milwaukee in 2014 to 89 stations in 2019, which includes stations in the Cities of Wauwatosa and West Allis, the Village of Shorewood, and additional neighborhoods in the City of Milwaukee. Although not discussed in the VISION 2050 recommendations, an adaptive bicycle pilot program and a dockless scooter pilot study were initiated by the City of Milwaukee in 2019. The adaptive bicycle pilot program provided 17 tricycles and hand cycles accessible to

people of all abilities available through Bublr Bikes. The dockless scooter pilot study deployed approximately 1,350 scooters from the three companies that participated in the study.

Transportation Systems Management Element

Transportation systems management (TSM) involves managing and operating existing transportation facilities to maximize their carrying capacity and travel efficiency. TSM recommendations for VISION 2050 relate to freeway traffic management, surface arterial street and highway traffic management, and major activity center parking management and guidance. VISION 2050 recommends expanding some of the TSM measures that are currently in place, and implementing some new measures that leverage technology and use a coordinated approach to make our complex transportation system more efficient and safer. Below is a brief summary of the VISION 2050 recommendations and a description of notable implementation that has occurred since the plan was completed.

► Recommendations 4.1 through 4.3: Implement freeway operational control measures, Implement advisory information measures for the freeway system, and Implement incident management measures for the freeway system

Freeway traffic management strategies include measures that improve the operational control, advisory information, and incident management on the regional freeway system. VISION 2050 recommends a continuation or expansion of measures currently in use, as well as the adoption of newer technologies and additional measures that provide potential opportunities for enhanced freeway management. The WisDOT Traffic Management Center (TMC), formerly called the State Traffic Operations Center, plays an essential role in implementing freeway traffic management measures. The TMC, located in the City of Milwaukee, brings traffic operations engineers together with State Patrol officials to monitor, respond to, and manage incidents; and share advisory information for travel throughout Wisconsin.

VISION 2050 recommends measures to improve freeway operation—both during average weekday peak traffic periods and during minor and major incidents—through monitoring of freeway operating conditions and control of traffic traveling on and entering the freeway (Recommendation 4.1). Such measures include expanding and enhancing current operational control measures, such as traffic detectors and ramp meters, and considering measures that are currently not in widespread use, such as ramp meter control strategies, lane use control, speed limit control, part-time shoulder use, speed limit control, and truck restrictions. Existing ramp meters implemented by WisDOT as of 2019 are shown on Map C.1 and in Table C.1 in Appendix C. The number of ramp meters in 2019 remained at 121, unchanged since data were last updated in 2013 during the development of VISION 2050.

VISION 2050 also recommends expanding and enhancing advisory information measures that provide real-time advisory information on current travel conditions to motorists, including variable message signs (VMS), the 511 Wisconsin traveler information website (511wi.gov), highway advisory radio (HAR), and dynamic route planning (Recommendation 4.2). Map C.2 and Table C.2 in Appendix C show the extent of implementing VMS on the freeway system in the year 2019. Since data were last updated in 2013, the number of variable message signs on the freeway system increased by one to 32 in 2019.

With respect to dynamic route planning, WisDOT entered an agreement in late 2016 to share real-time freeway operation and advisory information with Waze and Google Maps to notify users about lane closures, major traffic events, or other incidents. In turn, the TMC receives real-time crowdsourced information from these applications to confirm and, if necessary, respond to user-reported incidents such as disabled vehicles, hazards in the roadway, or unexpected congestion. This technology provides an additional information-sharing platform that allows motorists to know when and how to modify their routes, and provides more information to traffic management professionals, allowing them to better monitor and respond to incidents, potentially decreasing incident response time and reducing traffic congestion.

In addition, VISION 2050 recommends expanding and enhancing incident management measures that detect, confirm, and remove as quickly as possible incidents on travel lanes and shoulders on the freeway system, including crashes, debris, and stopped vehicles (Recommendation 4.3). Measures that enhance incident management include freeway service patrols, closed-circuit television cameras (CCTV), freeway location markers, crash investigation sites, ramp closure devices, and alternative route designations. The year 2019 extent of WisDOT's implementation of crash investigation sites and freeway service patrols is shown on Map C.3 and in Table C.3 in Appendix C, and the implementation of CCTVs on freeways is shown on Map C.4 and in Table C.4. Since data were last updated in 2013, the following implementation of freeway incident management measures has occurred:

- Expansion of CCTVs on freeways from 159 locations in 2013, to 168 locations in 2019
- Continuation of freeway service patrols in Milwaukee County and the addition of freeway service patrols on IH 94 North-South in Racine County as part of the freeway reconstruction project
- The addition of one new crash investigation site on the Bluemound Road exit ramp off of IH 41, increasing the number of sites on the freeway system to 33

Along with the expansion of CCTV, VMS, and traffic detectors as part of the IH 94 North-South project, WisDOT has committed to studying emerging Connected and Automated Vehicle (CAV) technologies, including the dedication of lanes for CAV use on select roads, and automated "last-mile" options to address transportation needs for workers in the Electronics and Information Technology Manufacturing (EITM) zone and surrounding areas. Fiber optic cable is being added throughout the corridor to support the future functionality of CAV on this portion of IH 94. Other technologies being studied are currently emerging or have limited field application; therefore, the study will propose concepts and strategies that can be piloted or tested as technologies continue to evolve, but they are not being included in the reconstruction project currently.

In support of improved incident management, WisDOT's Traffic Incident Management Enhancement (TIME) program aims to improve responder safety; enhance the safe and timely clearance of traffic incidents; and support prompt, reliable, and interoperable communications by stakeholders through a collaborative effort of public safety and transportation agencies. In Southeastern Wisconsin, WisDOT continues

to host TIME Coalition meetings bi-monthly to facilitate discussions, debrief major incidents that occur on the Region's arterial street and highway system, build relationships, and promote a consistent program for incident management among stakeholders, including officials from the TMC, emergency responders, local units of government, the U.S. Department of Transportation, and the Commission staff.

► **Recommendations 4.4 through 4.9: Improve and expand coordinated traffic signal systems, Improve arterial street and highway traffic flow at intersections, Expand curb-lane parking restrictions, Develop and adopt access management standards, Enhance advisory information for surface arterial streets and highways, and Expand the use of emergency vehicle preemption**

Surface arterial street and highway traffic management strategies are measures that improve the operation and management of the regional surface arterial street and highway network. To this end, the following section summarizes progress made toward the respective VISION 2050 recommendations.

- **Traffic Signal Coordination** – Coordinated traffic signals provide efficient progression of traffic along arterial streets and highways, reducing travel time delay, increasing reliability, and allowing motorists to travel through multiple signalized intersections without stopping. There are several coordination system types, including: time-based coordination, interconnected pretimed coordination, traffic responsive systems, real-time adaptive systems, and central computer control systems. VISION 2050 recommends that Commission staff work with State and local governments to document existing and planned arterial street and highway system traffic signals and traffic signal systems, and develop recommendations (including prioritization) for improvement and expansion of coordinated signal systems. The intent is to identify signal coordination corridors that should receive high priority for Federal and State funding, such as FHWA CMAQ funds (Recommendation 4.4).

When VISION 2050 was completed, approximately 1,200 of the 1,700 traffic signals in the Region were part of a coordinated system. As recommended in VISION 2050, the Commission is in the process of documenting existing and planned arterial street and highway system traffic signals and traffic signal systems, with the intent to develop recommendations (including prioritization) for improvement and expansion of coordinated signal systems.

- **Intersection Improvements** – Intersection improvements increase travel efficiency and improve safety along arterial streets and highways through improvements such as improving the type of traffic control deployed at the intersection (two- or four-way stop control, roundabouts, or signalization); improving signal timing at individual signalized intersections; adding right- and/or left-turn lanes; or improving bicycle and pedestrian accommodation through an intersection (e.g., pavement markings and leading pedestrian intervals at signalized intersections). VISION 2050 recommends that State and local governments aggressively consider and implement individual arterial street and highway intersection improvements (Recommendation 4.5). VISION 2050 recommends this be done by preparing a prioritized short-range (two- to six-year) program of arterial street and highway intersection improvements under their

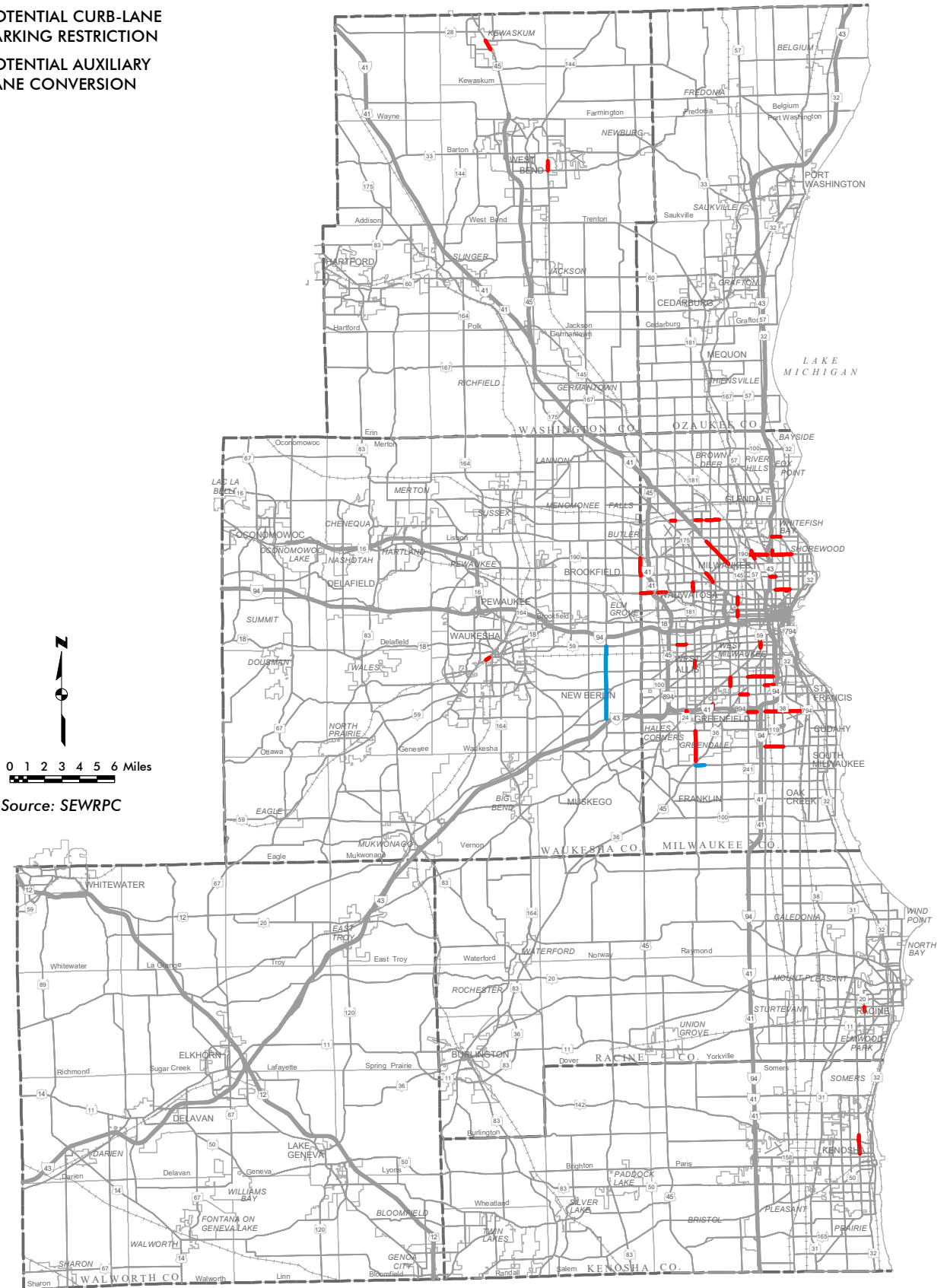
jurisdiction, which is reviewed and updated every two to five years; and that Commission staff work with said agencies, at their request, to prepare such programs.

- **Parking Restrictions** – Curb-lane parking restrictions improve traffic flow and operation by restricting on-street parking during peak traffic periods and operating the curb parking lanes as through traffic lanes. This measure provides an alternative to the expansion of highway capacity through roadway widenings and new construction. VISION 2050 recommends that State and local governments consider implementation of curb-lane parking restrictions as needed during peak traffic periods in the peak traffic direction along segments of roadway expected by the year 2050 to operate under congested conditions and where there may be the ability to utilize the existing parking lane as a traffic lane (Recommendation 4.6). The location of potential curb-lane parking restrictions and auxiliary lane conversions is shown on Map 2.11. There has been no known progress toward expanding curb-lane parking restrictions since VISION 2050 was completed.
- **Access Management** – Developing access management standards for the location, spacing, and operation of driveways (residential or commercial), median openings, and street connections improves transportation system operations by providing full use of the roadway capacity and reducing the number of conflicts that can result in crashes. VISION 2050 recommends that State and local governments continue to adopt and employ access management standards as development takes place along arterials under their jurisdiction and implement access management plans along arterials that currently are developed and violate these access management standards (Recommendation 4.7). When VISION 2050 was adopted, WisDOT had a strong access management policy in place, using *Wisconsin Statutes* and *Wisconsin Administrative Code* to regulate access management on the state trunk highway (STH) system through STH access permit applications and through purchased and administrative access control when reconstruction projects are completed. Since VISION 2050 was adopted, there have been no known changes to access management practices at the local level.
- **Advisory Information** – Similar to advisory information measures for the regional freeway system, advisory information measures for surface arterials involve providing real-time information on existing conditions, particularly delays and major incidents, to encourage more informed travel decisions and more efficient use of the transportation system. VISION 2050 recommends improving and expanding advisory information measures, including expanding data provided on the 511 Wisconsin website to include surface arterials in addition to freeways, and implementing VMS, including hybrid variable/static travel time signs (Recommendation 4.8). Since data were last updated in 2013, during the development of VISION 2050, the following implementation has occurred:
 - Expansion of variable message signs on the surface arterial street and highway system from 19 locations in 2013 to 32 locations in 2019 (shown on Map C.5 and in Table C.5 of Appendix C)

Map 2.11

Location of Potential Curb-Lane Parking Restrictions and Auxiliary Lane Conversions on Arterial Streets and Highways: VISION 2050

- POTENTIAL CURB-LANE PARKING RESTRICTION
- POTENTIAL AUXILIARY LANE CONVERSION



Source: SEWRPC

- Expansion of closed-circuit television cameras on the surface arterial street and highway system from 22 locations in 2013 to 56 locations in 2019 (shown on Map C.6 and in Table C.6 of Appendix C)
- **Emergency Vehicle Preemption** – Emergency vehicle preemption allows emergency vehicles to intervene in the normal operation of traffic signals to either change the traffic signal to the green phase or to hold the green phase for the approach from which the emergency vehicle is oriented. Some governmental units in the Region have implemented emergency vehicle preemption on some or all of the traffic signals under their jurisdictional authority. VISION 2050 recommends expanding the use of emergency vehicle preemption at traffic signals in Southeastern Wisconsin (Recommendation 4.9). The Commission is currently in the process of documenting traffic signals with emergency vehicle preemption capabilities as a part of the inventory of traffic signal systems that is underway.

► **Recommendations 4.10 through 4.11: Implement parking management and guidance systems in major activity centers and Implement demand-responsive pricing for parking in major activity centers**

VISION 2050 includes recommendations to improve parking around major activity centers, allowing motorists to find available parking quickly, and reducing traffic volume, congestion, air pollutant emissions, and fuel consumption. Specifically, VISION 2050 recommends implementing, in major activity centers, parking management and guidance systems and demand-responsive pricing (Recommendation 4.10 and 4.11, respectively). In 2014, the City of Milwaukee completed the first phase of its Advanced Parking Guidance System, which provides drivers with real-time parking availability information for participating structures through electronic signs in the City’s central business district.

Demand-responsive pricing for parking adjusts the price for on-street parking, parking lots, and parking garages around major activity centers. The price for parking can be adjusted throughout the day based on the parking demand in the area with the intent that at least one parking space is available most of the time. In October 2018, the City of Milwaukee finalized a plan that would allow demand-responsive parking in the City’s central business district, adjusting prices anywhere from \$0.25 to \$5.00 per hour, including special pricing for events; however, demand-responsive pricing has not yet been implemented.

The City of Milwaukee has developed its MKE Park application that allows for mobile-based payment and spot renewal. In addition, web-based private parking reservation services like SpotHero and Parqex have entered the Milwaukee area. These services allow users to reserve and pay for parking in privately owned garages and surface lots in advance, often at a significantly reduced price. Use of these systems can increase the efficiency of the parking system by reducing or eliminating drive-time while searching for a parking spot.

► **Recommendation 4.12: Review and update the regional transportation operations plan**

The regional transportation operations plan (RTOP), completed in 2012, is a five-year program identifying candidate corridor and intersection TSM projects prioritized for implementation and funding, particularly

with respect to FHWA CMAQ funding. VISION 2050 recommends that Commission staff work with State, county, and local governments to review and update the RTOP every four years. The Commission staff expects to update the RTOP in 2020.

Conclusions from Review of Transportation Systems Management Implementation

TSM measures—such as ramp meters, CCTVs, VMS, and incident management infrastructure—continue to be expanded as reconstruction and other projects occur on the Region’s arterial street and highway system. The ongoing advancement of the technology behind TSM devices and software, coupled with continuously improving coordination and communication efforts, make TSM measures even more effective. Emerging CAV technologies are likely to require the continued expansion of existing and new TSM measures and make implementation of these strategies even more impactful to the performance of the transportation system.

Travel Demand Management Element

VISION 2050 recommends implementing travel demand management (TDM) measures or strategies intended to reduce personal and vehicular travel or to shift such travel to alternative times and routes, allowing for more efficient use of the existing capacity of the transportation system and reducing traffic volume, congestion, air pollutant emissions, and fuel consumption. To be effective, these measures should be technically and politically feasible; integrated with public transit, bicycle and pedestrian, and arterial street and highway improvements; and combined into coherent packages so that a variety of measures are implemented. Specifically, VISION 2050 recommends implementing TDM measures related to preferential treatment for high-occupancy vehicles (HOV), park-ride lots, personal vehicle pricing, TDM promotion, and detailed site-specific neighborhood and major activity center land use plans.

Below is a brief summary of the VISION 2050 TDM recommendations, and a description of notable implementation that has occurred since the plan was completed.

► Recommendation 5.1: Enhance the preferential treatment for high-occupancy vehicles

VISION 2050 recommends continuing and enhancing the preferential treatment for transit vehicles, vanpools, and carpools on the existing arterial street and highway system. Providing preferential treatment for transit vehicles reduces transit travel times and improves transit travel time reliability, making public transportation more competitive with personal vehicle use. Measures to improve preferential treatment for HOVs include the provision of HOV queue bypass lanes at metered freeway on-ramps, and preferential carpool and vanpool parking. No notable progress toward this recommendation has been made since VISION 2050 was adopted.

► Recommendation 5.2: Expand the network of park-ride lots

To promote the more efficient use of the Region’s transportation system, and reduce single-occupancy vehicle (SOV) travel, VISION 2050 recommends expanding the network of park-ride lots. Park-ride lots should be located along major routes at major intersections and interchanges where sufficient demand may warrant provision of an off-street parking facility. Map 2.12 includes a map of existing and planned park-ride lots. Since VISION 2050 was adopted, there has been a net gain of parking spaces across park-ride lots in the Region resulting from a combination of

lot expansions and relocations. Since 2016, one existing lot in the Village of Summit in Waukesha County was relocated and expanded, and one existing lot in the City of Wauwatosa was relocated and expanded. The location of the expanded park-ride lots, and the remaining existing lots, are shown on Map 2.13.

- ▶ **Recommendation 5.3: Price personal vehicle travel at its true cost**
VISION 2050 recommends that a larger percentage of the full costs of construction, maintenance, and operation of street and highway facilities and services and parking facilities and services be borne by the users of the system. VISION 2050 specifically recommends the following strategies: (1) cash-out of employer-paid parking, which involves encouraging employers currently providing free/subsidized parking to charge their employees the market value for parking; (2) road pricing, which involves charging user fees to pay the costs of construction, maintenance, and operation of street and highway facilities and services; and (3) parking pricing, which involves charging user fees for commercial and residential parking facilities. These measures can result in a reduction in total vehicle-miles of travel (VMT).

In 2019, the unindexed, flat-rate fuel tax remained one of Wisconsin's primary funding mechanisms for transportation at both the State and Federal levels. This funding source continues to provide reduced purchasing power due to increased vehicle fuel efficiency and rising construction, maintenance, and operation costs, and the need for more transportation funding both at the State and Federal level continues to grow.

At the State level, the 2019-2021 State budget included funding for WisDOT to study both tolling and mileage-based fees, the first step toward exploring a pilot project or permanent policy implementation. Both tolling and a mileage fee, also called a VMT fee, are road pricing measures that impose a fee based on the total distance driven, which can encourage residents to drive less, potentially reducing total VMT, traffic volumes, and congestion. With both tolling and VMT fees, pricing can be variable and take other travel characteristics into account such as vehicle type, travel time, and fuel efficiency. This can help capture the broader and varied costs of travel behavior, and provide opportunities for individuals to adapt their travel behavior accordingly.

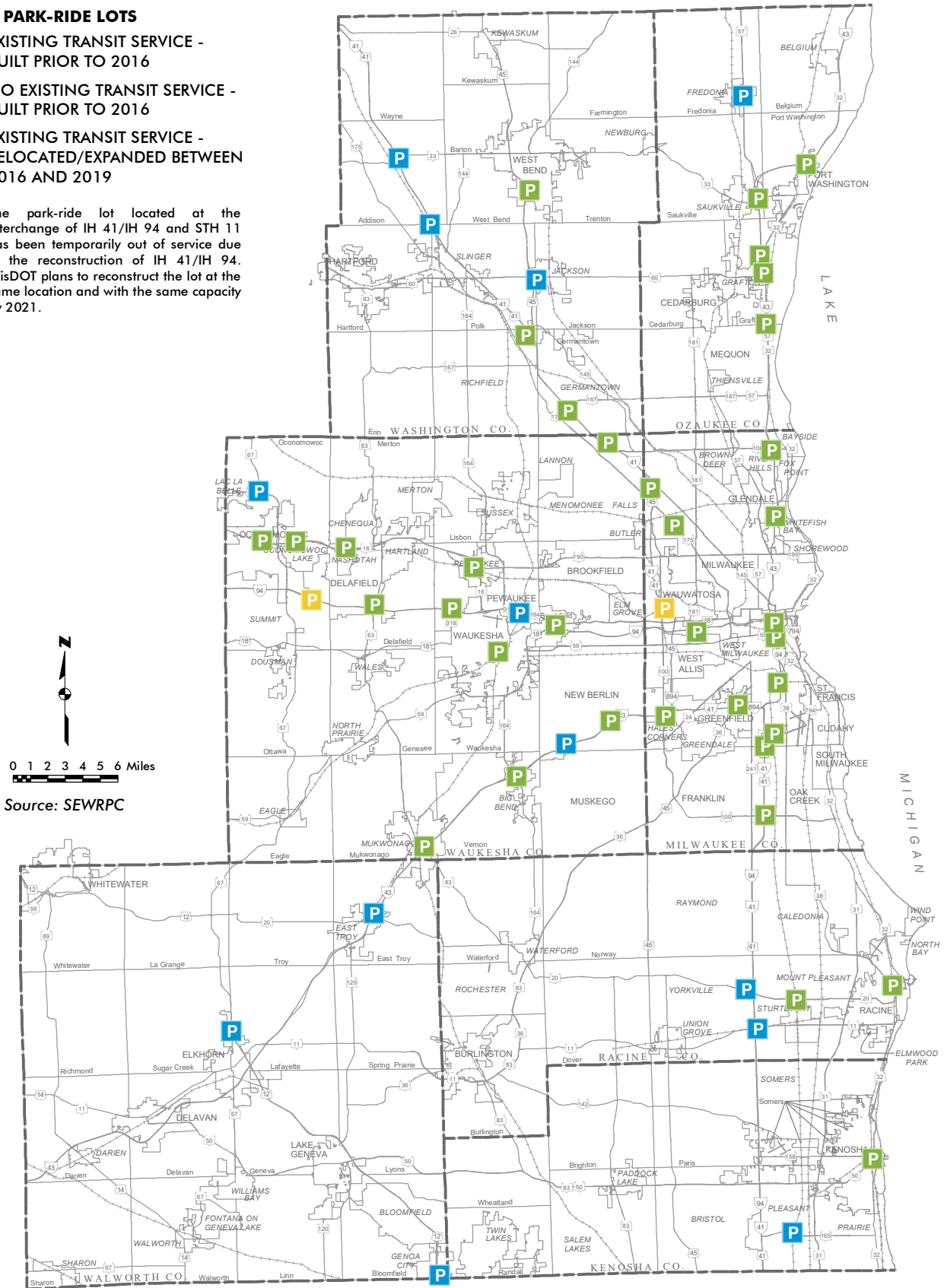
- ▶ **Recommendation 5.4: Promote travel demand management**
VISION 2050 recommends a regionwide program to aggressively promote transit use, bicycle use, ridesharing, pedestrian travel, telecommuting, and work-time rescheduling, including compressed work weeks. The program would include education, marketing, and promotion elements aimed at encouraging alternatives to drive-alone personal vehicle travel. VISION 2050 further recommends expanding programs and services that provide residents in Southeastern Wisconsin the opportunity to reduce personal vehicle ownership and SOV travel, which include car sharing services and a live near your work program. With respect to car sharing services, Zipcar expanded its fleet from 38 to 44 vehicles throughout Milwaukee between 2015 and 2019, including three new locations near the University of Wisconsin-Milwaukee campus in 2016. Application-based ride hailing services, Uber and Lyft, have become more prevalent since VISION 2050 was completed. While these services can increase VMT and emissions if used to replace transit or traditional carpooling trips, they also have the potential to provide last-mile or emergency ride home solutions that support transit and other modes, and can provide the utility of a personal automobile on an as-needed basis.

Map 2.13 Implementation of VISION 2050 Planned Park-Ride Lots: 2019

EXISTING PARK-RIDE LOTS

- P EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- P NO EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- P EXISTING TRANSIT SERVICE - RELOCATED/EXPANDED BETWEEN 2016 AND 2019

Note: The park-ride lot located at the interchange of IH 41/IH 94 and STH 11 has been temporarily out of service due to the reconstruction of IH 41/IH 94. WisDOT plans to reconstruct the lot at the same location and with the same capacity by 2021.



Since the adoption of VISION 2050, the private sector, in coordination with public agencies, continues to advance shared mobility services and platforms that promote TDM in the Region by providing more transportation options and alternatives to car ownership and SOV trips. Cloud-based trip planning services, such as Google Maps, Mapquest, and Open Street Maps, now incorporate bicycle, walking, and public transit in addition to driving. The expansion of Bublr Bikes and now dockless scooters, described further under the bicycle and pedestrian element, supports non-SOV travel.

► **Recommendation 5.5: Facilitate transit, bicycle, and pedestrian movement in local land use plans and zoning**

VISION 2050 recommends that local governments facilitate transit, bicycle, and pedestrian movement as they prepare and implement detailed, site-specific neighborhood and major activity center land use plans.

Local governments have been implementing this recommendation by incorporating recommendations that enhance use of those modes of transportation through narrower building setbacks, higher-density development, mixed-use development, and combining planning for land use and multimodal transportation planning in neighborhood and comprehensive plans. Below are examples of plans completed since VISION 2050 was adopted that have a particular focus on connecting multimodal transportation and land use:

- The City of Milwaukee's *Moving Milwaukee Forward: Equitable Growth Through Transit-Oriented Development* plans were developed for the Walker's Point and Historic Dr. Martin Luther King, Jr. Drive neighborhoods to address the connection between land use and transit development in anticipation of The Hop streetcar extensions.
- The City of Milwaukee's *Near North Side Comprehensive Area Plan* is currently being amended to include a strategic action plan titled *Connecting the Corridor*, which will prioritize mobility, parks, and off-street paths in and around the current and planned development within the 30th Street Industrial Corridor, which includes the ongoing development of the former A.O. Smith/Tower Automotive site.
- The City of Wauwatosa adopted several master plans that include recommendations related to improving transit, bicycle, and pedestrian movements within various neighborhoods throughout Wauwatosa.
- The *Milwaukee Aerotropolis Development Plan*, completed in February 2017, includes land use and transportation recommendations for the communities around Milwaukee Mitchell International Airport.

Conclusions from Review of Travel Demand Management Implementation

Since VISION 2050 was completed, there have been modest changes to the TDM practices in the Region. With relatively low fuel prices, and the absence of substantial employer-based incentives to reduce SOV commutes, there has been minimal demand for expanded TDM measures, policies, or practices. The mobile technology that supports on-demand, shared transportation options that have emerged in the Region in recent years could assist in the achievement of the TDM goals of VISION 2050 as they may encourage increased transit use, walking, and biking in the Region.

Arterial Streets and Highways Element

Arterial streets and highways are those portions of the total street and highway system principally intended to provide travel mobility, serving the through movement of traffic and providing transportation service between major subareas of a region and also through a region. The planned arterial street and highway system under VISION 2050, as amended,³ totals 3,670 route-miles. Approximately 90 percent, or 3,313 of these route-miles, are recommended to be resurfaced and reconstructed to their existing traffic carrying capacity. Approximately 284 route-miles, or about 8 percent of these route-miles, are recommended for capacity expansion through widening to provide additional through traffic lanes. Approximately 73 route-miles, or about 2 percent of the total arterial street mileage, are recommended for capacity expansion through the construction of new arterial facilities. A map of the functional improvements to the arterial street and highway system recommended in VISION 2050 is shown on Map 2.14.

When VISION 2050 was initially prepared, the financial analysis identified a funding gap affecting the recommended transit element, which required identifying the funded portion of the recommended transportation system. As noted under the public transit element, this funded portion was referred to as the “Fiscally Constrained Transportation Plan (FCTP)” and is presented in Chapter 2 of Volume III of the VISION 2050 plan report, and updated in the second amendment to VISION 2050.² The updated financial analysis prepared as part of the second amendment showed, in addition to the transit funding gap, that without additional revenue, the Region will not be able to complete the recommended reconstruction of several portions of the Region’s arterial street and highway system by 2050, particularly of the Region’s freeway system. To this end, the funded portion of the Region’s arterial street and highway system under the FCTP was identified, and is shown on Map 2.15.

Below is a brief explanation of each recommendation under the arterial streets and highways element of VISION 2050, with a description of any notable implementation of those recommendations that has occurred since the plan was completed.

► Recommendation 6.1: Keep the Region’s arterial street and highway system in a state of good repair

VISION 2050 recommends that the condition of all 3,600 miles of the roadways that are part of the Region’s existing arterial street and highway system be preserved to maintain their ability to effectively carry higher levels of people and goods. Preserving the condition of the Region’s arterial streets and highways—including pavement, bridges, and all other infrastructure in the roadway right-of-way—is critical to provide for safe and efficient travel throughout the Region. Since VISION 2050 was adopted, approximately 450 miles of arterial streets and highways were resurfaced, reconditioned, or reconstructed. An evaluation over the same time period that categorizes pavement into good, fair, or poor condition shows that the percentages of pavement considered good and poor have both declined slightly. In a similar evaluation of bridge

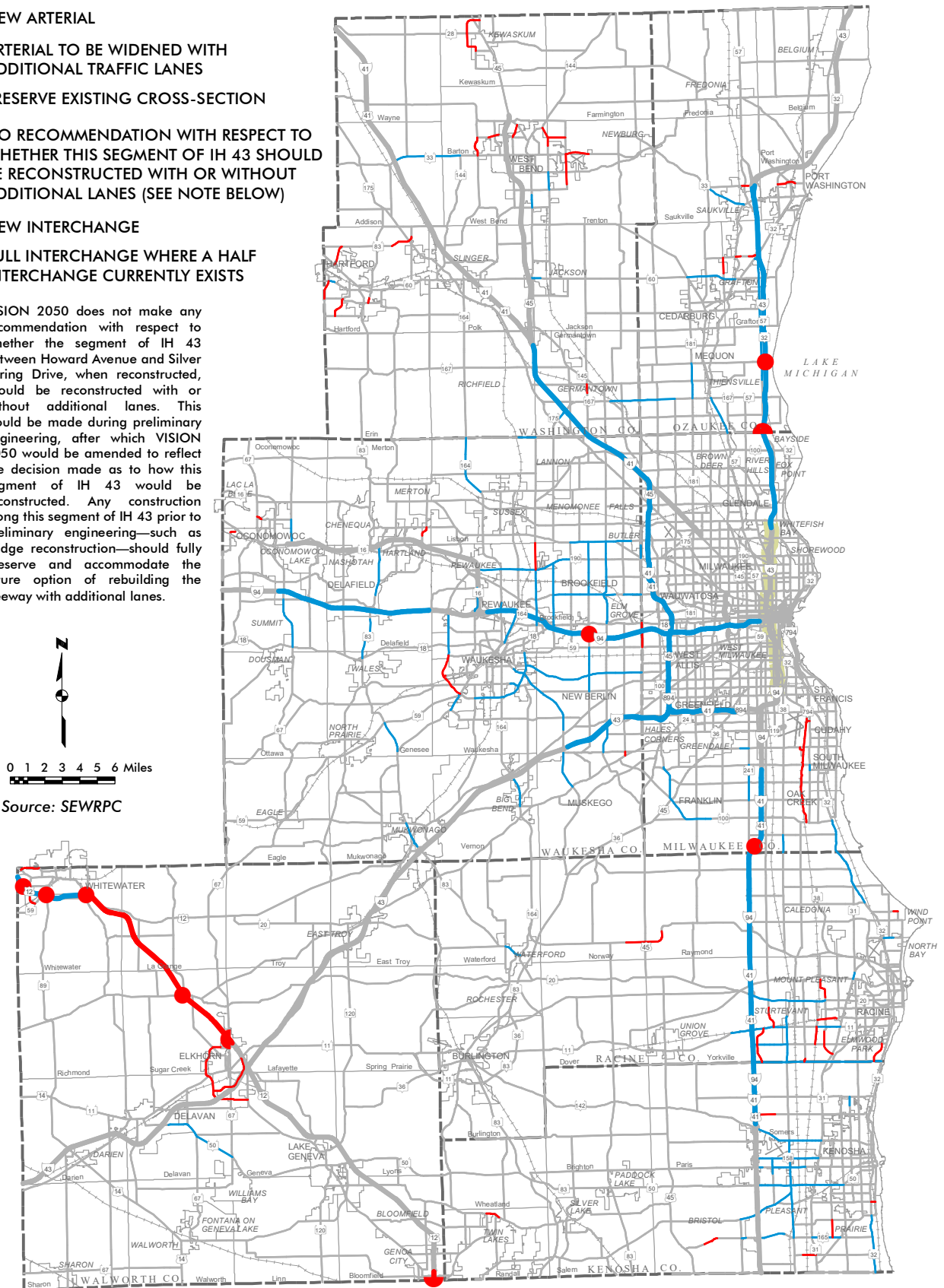
³ The mileage and maps in this section include changes to the planned capacity improvements—widening and new arterials—under VISION 2050 and the FCTP made as part of the second amendment to VISION 2050 adopted in December 2018. However, for the purposes of tracking implementation over the four-year period since the original adoption of VISION 2050 in July 2016, the mileage and maps in this section include planned capacity improvements that were implemented since the original plan adoption.

Map 2.14

Functional Improvements to the Arterial Street and Highway System in the Region: VISION 2050

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NO RECOMMENDATION WITH RESPECT TO WHETHER THIS SEGMENT OF IH 43 SHOULD BE RECONSTRUCTED WITH OR WITHOUT ADDITIONAL LANES (SEE NOTE BELOW)
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS

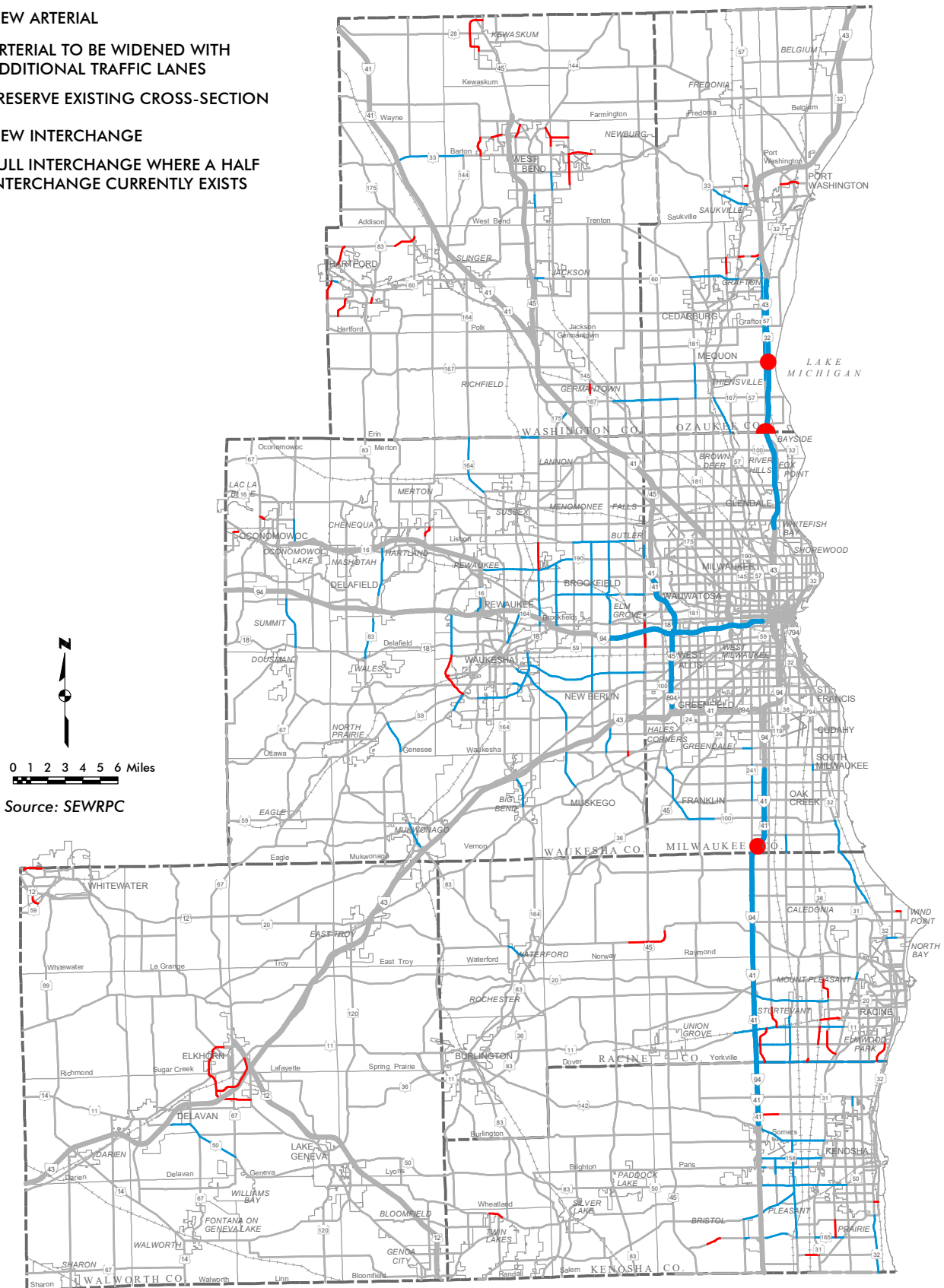
Note: VISION 2050 does not make any recommendation with respect to whether the segment of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional lanes. This would be made during preliminary engineering, after which VISION 2050 would be amended to reflect the decision made as to how this segment of IH 43 would be reconstructed. Any construction along this segment of IH 43 prior to preliminary engineering—such as bridge reconstruction—should fully preserve and accommodate the future option of rebuilding the freeway with additional lanes.



Note: Includes amendments through December 2018

Map 2.15 Fiscally Constrained Arterial Street and Highway System

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS



0 1 2 3 4 5 6 Miles
Source: SEWRPC

Note: Includes amendments through December 2018

condition, the percentage of bridges considered in good condition have slightly increased, while the percentage of bridges considered in poor condition has nearly doubled. More information about existing pavement and bridge conditions is included in Appendix A.

MAP-21 created a national performance management framework that established uniform performance measures and target setting to, in part, create a consistent nationwide process for monitoring the effectiveness of Federal transportation investments. As a part of this effort, MAP-21 requires each state to develop a risk-based asset management plan for the National Highway System (NHS) to improve or preserve the condition of the assets and the performance of the system. To fulfill this requirement, WisDOT completed the statewide Transportation Asset Management Plan (TAMP) in September 2019. Per Federal regulations, the Commission is required to integrate the TAMP into its planning processes.

► **Recommendation 6.2: Incorporate “complete streets” concepts on arterial streets and highways**

Complete streets is a roadway design concept focused on providing for the safe and convenient travel of all roadway users (of all ages and abilities) traveling by various modes (walking, bicycling, transit, or automobile) within the roadway right-of-way. Complete street features can be implemented to encourage walking and bicycling and the use of transit as alternatives to travel by automobile. VISION 2050 recommends that complete street concepts be considered as part of the reconstruction of existing surface arterial roadways, the construction of new surface arterial roadways, and when practical during maintenance and preservation projects. Additionally, VISION 2050 recommends considering road diets, which involve reducing the number of travel lanes, on multilane roadways that have existing and future traffic volumes that do not require the current number of travel lanes.

The level of complete street features implemented for a particular roadway is dependent on the types of land use adjacent to the roadway (urban, suburban, or rural), the prevalence of each type of user, and the preferences of the community in which the roadway is located. Complete street features can include accommodations such as sidewalks, bicycle lanes, or safe crossing treatments; aesthetic features, like plantings and trees; practical features like bicycle racks, sidewalk benches, and tables and chairs; enhanced transit stops that are safer, more accessible, and more comfortable; or features that make development more accessible for pedestrians, including modified setbacks and access points.

Below is a selection of project examples that incorporate complete street concepts and have been implemented since VISION 2050 was completed. Additional details about recently implemented bicycle facility improvements and public transit enhancements—both complete street concepts—are described in this chapter under the bicycle and pedestrian element and the public transit element.

- Road diets have been implemented on South 2nd Street, South 60th Street, and Roosevelt Drive in the City of Milwaukee; and on STH 38 (Northwestern Avenue and State Street) in the City of Racine as a part of roadway projects.
- A Pedestrian Hybrid Beacon, with a pedestrian refuge island, has been implemented on Bluemound Road near the Milwaukee County

Zoo, and a significant reconstruction and streetscaping project in the City of Wauwatosa's Village area was completed to improve pedestrian safety, visibility, and wayfinding.

- Protected bicycle lanes were added to the Locust Street and North Avenue bridges in the City of Milwaukee.
- A shared-use pathway was added along portions of North Avenue (CTH M) in Waukesha County.

In 2017, the City of Wauwatosa adopted a "Tosa Streets" ordinance to ensure that a comprehensive and integrated network of bicycle and pedestrian facilities is equitably developed for all users throughout the City.

In 2018, the City of Milwaukee passed a Complete Streets policy that directs the City to incorporate complete street principles of street design for all modes of transportation. The policy requires that implementation prioritizes safety for all users of the roadway and encourages walking, biking, and transit trips in a manner that respects the surrounding context. The policy also established a Complete Streets Committee that began meeting in March 2019. Among other things, the committee will lead the development of a Complete Streets Handbook for the City, which will guide the incorporation of complete street concepts into the project development process.

In 2019, the City of Racine adopted its Bicycle and Pedestrian Master Plan, which includes a recommendation to pursue a Complete Streets policy.

► **Recommendation 6.3: Expand arterial capacity to address residual congestion**

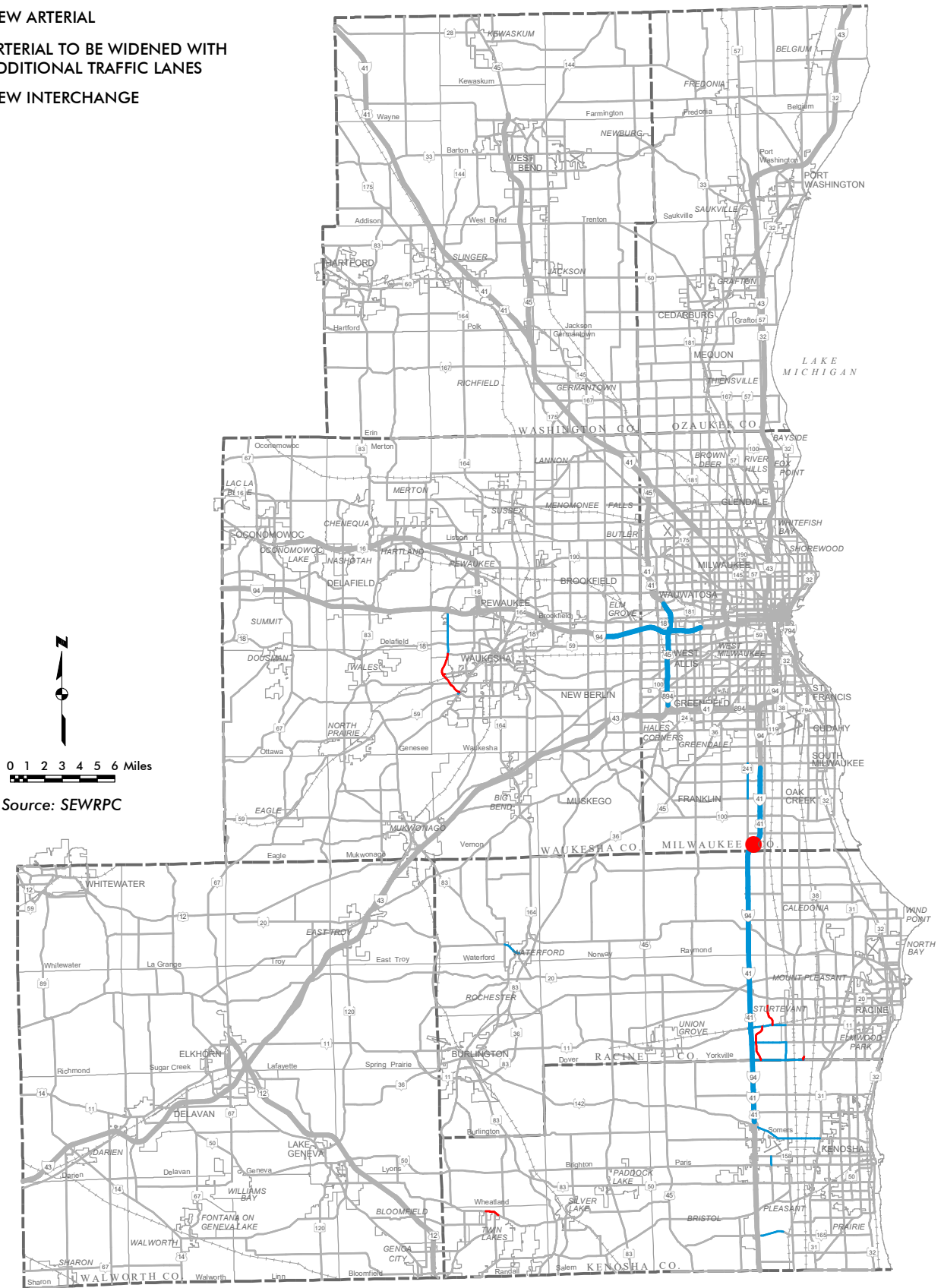
VISION 2050 recommends approximately 284 route-miles be widened to provide additional through traffic lanes, representing about 8 percent of the total VISION 2050 arterial street and highway system mileage, including 105 miles of existing freeways shown in blue on Map 2.14. In addition, VISION 2050 recommends 73 route-miles of new arterial facilities, representing about 2 percent of the total year 2050 arterial street mileage (shown in red on Map 2.14). These highway improvements are recommended to address the residual congestion that may not be alleviated by recommended land use, systems management, demand management, bicycle and pedestrian facilities, and public transit measures. In addition, many of the recommended new arterial facilities are designed to provide a grid of arterial streets and highways at the appropriate spacing as the planned urban areas of the Region develop to the year 2050.

Since VISION 2050 was completed in 2016, approximately eight miles of new arterial facilities and 51 miles of arterial facilities planned to be widened with additional traffic lanes have been constructed or are currently under construction in 2020, as shown on Map 2.16. These projects include:

- The reconstruction of the Zoo Interchange, except for the north leg of the project (IH 41 between Swan Boulevard and Burleigh Street)
- The reconstruction with additional lanes of IH 94 between College Avenue in Milwaukee County and STH 142 in Kenosha County, which includes the construction of a new freeway interchange at Elm Road in southern Milwaukee County

Map 2.16
Complete or In-Progress Functional Improvements to the Arterial
Street and Highway System in the Region: 2016-2020

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- NEW INTERCHANGE



Source: SEWRPC

- The provision of additional lanes as part of the resurfacing of IH 894 between Lincoln Avenue and the Hale Interchange in Milwaukee County
- The construction of the West Waukesha Bypass, which consists of a new four-lane divided highway from STH 59 to Rolling Ridge Drive in Waukesha County
- The reconstruction with additional lanes of South 27th Street (STH 241) between Rawson Avenue and Drexel Avenue in Milwaukee County
- The reconstruction with additional lanes of Braun Road, CTH KR, CTH H, and STH 11 and the construction of International Drive and Wisconsin Valley Way in Racine County—all near the planned Foxconn manufacturing campus
- The reconstruction with additional lanes (initially striped as two lanes) of STH 20/83 between Buena Park Road and 1st Street in the Village of Waterford in Racine County
- The reconstruction with additional lanes of STH 165 in the Village of Pleasant Prairie in Kenosha County
- The reconstruction with additional lanes of CTH S in Kenosha County between CTH H and IH 94, which began construction in early 2020
- The reconstruction with additional lanes of 104th Avenue between STH 158 and CTH K in Kenosha County
- The extension of CTH F between CTH O and 352nd Avenue in Kenosha County

Additionally, the 2019-2021 State budget provided dedicated funds for the completion of the north leg of the Zoo Interchange and enumerated the reconstruction and expansion of IH 43 between Silver Spring Drive and STH 60 in Milwaukee and Ozaukee Counties, both considered committed projects during the development of VISION 2050 and included in the FCTP.

A review of the congestion experienced on the arterial street and highway system shows that overall arterial congestion has slightly decreased between 2011—the base year of the traffic data utilized in developing VISION 2050—and 2017. While overall congestion slightly decreased, congestion on the Region’s freeway system increased over the same time period. More details on the congestion experienced are provided in Appendix A.

► **Recommendation 6.4: Avoid, minimize, or mitigate environmental impacts of arterial capacity expansion**

VISION 2050 recommends that impacts to natural resource areas (such as primary environmental corridors and wetlands) due to transportation system improvements be avoided. Should impacts to these areas be found to be unavoidable through preliminary engineering and environmental impact study, VISION 2050 recommends that impacts to such areas be minimized and, if required, mitigated. Arterial street and highway capacity expansion included in VISION 2050 was routed to avoid, if possible, impacts to environmentally sensitive resources. The Commission has developed and

maintains extensive databases of the location and quality of environmentally sensitive resources in the Region and Commission staff frequently complete wetland delineations for transportation projects in the Region.

Potential impacts to environmental resource areas due to the recommended functional improvements to the arterial streets and highways element are expected to be modest—typically representing less than 0.1 percent of the total natural resource areas. For the projects that were recently completed or are underway that involve either a capacity expansion or construction of a new arterial, efforts were made to avoid or minimize impacts to wetlands, primary environmental corridors, and other resource areas; however, it was not possible to completely avoid impacts while also addressing the purpose and need of the various projects.

Two large projects that were completed since VISION 2050 was adopted were the West Waukesha Bypass and the Zoo Interchange (except the north leg). For both projects, impacts to wetlands or primary environmental corridors were identified. In the case of the West Waukesha Bypass—a new, four-lane divided arterial on the west side of the City of Waukesha—an environmental study determined that several acres of wetlands were expected to be impacted as a result of the project. Design modifications, including steepened side slopes along the sides of the new roadway, the use of additional materials to reduce the impacts of water runoff, and narrowing the overall right-of-way width in certain areas, were implemented to minimize impacts to wetlands for this project. For the Zoo Interchange, geometric modifications were made to reduce impact areas near environmental resources, visual screenings and plantings were used to buffer and blend the new interchange with surrounding natural areas, and stormwater management techniques were implemented to mitigate increased stormwater runoff. Additional details about activities to avoid, minimize, and mitigate impacts can be found in the environmental document completed for each project.

► **Recommendation 6.5: Address safety needs on the arterial street and highway network**

Crashes can have a negative effect on the Region as they contribute to overall transportation costs; increase public costs for police, emergency medical, and other social services; and cause nonrecurring congestion on the highway system. In addition, vehicular crashes take a heavy toll on life and property damage, and cause human suffering. Vehicular crashes occur due to one or a combination of the following factors: human error, vehicular failure, and roadway/environmental conditions. VISION 2050 recommends that Federal, State, and local governments, and the Commission, work to:

- Minimize total traffic crashes on the arterial street and highway system
- Minimize total traffic crashes, along with crashes involving fatalities and serious injuries, on the arterial street and highway system
- Minimize bicycle and pedestrian-involved crashes
- Reduce conflicts between automobiles and public transit vehicles
- Reduce vehicle traffic conflicts
- Develop a Regional Safety Implementation Plan (RSIP)

Since VISION 2050 was completed, several improvements to the Region's transportation system have been implemented that will address these goals. Expansion of bicycle and pedestrian facilities, described further in the bicycle and pedestrian element of this chapter, should help reduce growth in vehicle travel, reduce conflicts and crashes between bicyclists and pedestrians and vehicular traffic, and encourage increased travel on safer facilities. Continued reconstruction and modernization of the freeway system and the surface arterial street and highway system, with additional travel lanes where necessary, should reduce traffic congestion and related traffic crashes. The implementation of targeted safety projects funded through the Federal and State Highway Safety Improvement Programs (HSIP) and by State and local governments yield spot-level improvements, often at intersections that experience higher-than-average crash rates. Finally, continued enforcement of existing access management standards, and developing new standards, can reduce the number of conflicts that can result in vehicular crashes.

A review of the crashes that have occurred in Southeastern Wisconsin showed that total crashes have increased by about 28 percent between 2012 and 2018, with most of the increase involving property damage-only crashes. While fluctuating over the seven-year time period, the number of fatal crashes and fatalities decreased slightly by about 5 percent and 7 percent, respectively. The number of non-fatal, serious-injury crashes also fluctuated over the same time period, with the total number of such crashes increasing slightly by about 5 percent. With respect to bicycle crashes, the number of total bicycle-involved crashes and such crashes that resulted in a fatality or serious injury decreased from 2012 to 2018 by about 25 percent and 36 percent, respectively. While total pedestrian-involved crashes decreased by 4 percent over the seven-year time period, the number of crashes involving a pedestrian fatality or serious injury increased by about 13 percent. With respect to crash rate, the five-year average crash rate increased by about 12 percent for the freeway system and by about 2 percent for surface arterials on the state trunk highway system. More details on vehicular crashes is provided in Appendix A.

► **Recommendation 6.6: Address security needs related to the arterial street and highway system**

Ongoing efforts to prevent and respond to attacks affecting the arterial street and highway system encompass a wide range of Federal, State, and local programs, measures, and initiatives. It is expected that Federal and State agencies will continue to refine transportation security measures over the upcoming years, and work toward closer cooperation, coordination, and integration of tasks at all levels of government in an effort to provide secure transportation networks and facilities throughout the United States. Although the Commission does not currently have a direct role in Federal and State transportation security policy decisions and implementation, the Commission will continue to maintain a supportive regional role for transportation security planning.

One particular role for the Commission related to transportation security planning is assisting counties and local governments with hazard mitigation plans. Since VISION 2050 was completed, hazard mitigation plan updates for Kenosha County, Racine County, and the City of Milwaukee were completed, and a new hazard mitigation plan was completed for Washington County. Commission staff are currently assisting Ozaukee County in updating its hazard mitigation plan. All of these plans include a transportation component that supports the

VISION 2050 recommendation to address security needs related to the arterial street and highway system.

Conclusions from Review of Arterial Street and Highway Implementation

Since VISION 2050 was completed, the expected preservation and maintenance activities, as well as the functional improvements to the Region's arterial street and highway system have continued to largely align with what was expected under the FCTP. Since the initial pavement and bridge condition analyses were completed in 2013, approximately 13 percent of arterial streets and highways in the Region were resurfaced, reconditioned, or reconstructed. During the four years since VISION 2050 was adopted, the estimated percentages of pavement that are considered good and poor have both declined slightly, and the percentage of bridges considered in good condition have slightly increased, while the percentage of bridges considered in poor condition has nearly doubled.

Since VISION 2050 was completed, approximately eight miles, or 11 percent, of the total planned 73 miles of new arterial facilities, and 51 miles, or 18 percent, of the 284 miles of arterial facilities planned to be widened to provide additional traffic lanes, have been constructed or are currently under construction in 2020. While a large portion of the planned arterial widenings have been implemented, most of these widenings occurred as part of the Zoo Interchange and IH 94 North-South freeway projects. Unless there is an increase in State and Federal funding at the State level for freeway reconstruction in Southeastern Wisconsin, it is unlikely that all of the planned arterial widenings would be completed by the year 2050. Between 2011 and 2017, overall arterial congestion has slightly decreased, but freeway congestion has increased.

With respect to safety, investments have been made since VISION 2050 was completed to improve safety on the roadways in Southeastern Wisconsin, either through stand-alone safety projects or as part of larger roadway improvement projects. While the number and rate of crashes has increased in recent years, there have been decreases in the number of crash-related fatalities, the number of bicycle-involved crashes and such crashes that resulted in either a fatality and serious injury, and the number of pedestrian-involved crashes.

Freight Transportation Element

The movement of freight is essential for maintaining and growing Southeastern Wisconsin's economy. Truck, rail, water, and air modes of transportation bring raw materials to the Region's manufacturers, carry finished goods to domestic and international trade markets, move the goods that stock the Region's retail stores, and deliver parcels to consumers.

VISION 2050 recommends a multimodal freight transportation system designed to provide for the efficient and safe movement of raw materials and finished products to, from, and within Southeastern Wisconsin. To achieve this goal, VISION 2050 recommends improvements to the Region's transportation infrastructure as well as intergovernmental cooperation and other actions to preserve key transportation corridors, address regulatory inefficiencies, meet trucking industry workforce needs, and increase transportation safety and security.

Below is a brief summary of the VISION 2050 freight recommendations, and a description of notable implementation that has occurred since the plan was completed.

► **Recommendation 7.1: Accommodate truck traffic on the regional highway freight network**

Freight shipments in Southeastern Wisconsin—including freight movements by ship, airplane, and rail—rely heavily on trucks using the Region’s arterial street and highway system. In particular, the movement of freight depends in large part on trucks using the regional highway freight network (RHFN)—arterial streets and highways in the Region intended to carry a higher percentage of truck traffic. The RHFN is based on the National Highway System (NHS) as well as the State’s designated routes for long trucks, and is shown on Map 2.17. Higher levels of congestion and the presence of bottlenecks on the RHFN can result in increased shipping delays and higher shipping costs, negatively impacting businesses and manufacturers in the Region.





VISION 2050 recommends implementing the capacity expansion improvements described in the arterial streets and highways element of the plan, which would help mitigate existing and forecast future traffic congestion on the RHFN. Since VISION 2050 was completed, approximately 36 miles of planned arterial widenings that are part of the RHFN have been constructed or are currently under construction (described under the arterial streets and highways element).

The Fixing America’s Surface Transportation (FAST) Act directed the U.S. Department of Transportation (USDOT) to establish a National Highway Freight Network (NHFN) to strategically focus Federal resources and policies toward improved freight movement. Included in the NHFN are Critical Urban Freight Corridors (CUFCs) and Critical Rural Freight Corridors (CRFCs) that provide regional and local connectivity to the NHFN. In accordance with the FAST Act, the Commission, in consultation with WisDOT, designated CUFCs for the Milwaukee urbanized area in 2019. Similarly, WisDOT, in consultation with the Commission, designated CUFCs and CRFCs in the Region’s other urbanized and non-urbanized areas. During the process of designating the CUFCs for the Milwaukee urbanized area, Commission staff evaluated potential CUFC roadway segments, including WisDOT’s Primary and Secondary Highway Freight Corridors and oversize/overweight (OSOW) routes serving Port Milwaukee. This evaluation used different types of freight data, including truck volume, tonnage, and value data provided by WisDOT and the locations of major industrial areas in the Region. Based on the designation of CUFCs and CRFCs, staff incorporated the designated CUFC and CRFC corridors into the RHFN.

Projects located within the CUFCs and CRFCs would be eligible to receive National Highway Freight Program (NHFP) funding. Once a project or set of improvements is completed within a CUFC or CRFC, it will be possible to designate a different portion of the same corridor, or a different corridor, in need of investment. Map 2.17 shows the current RHFN, including the designated CUFCs and CRFCs, as of November 2019.

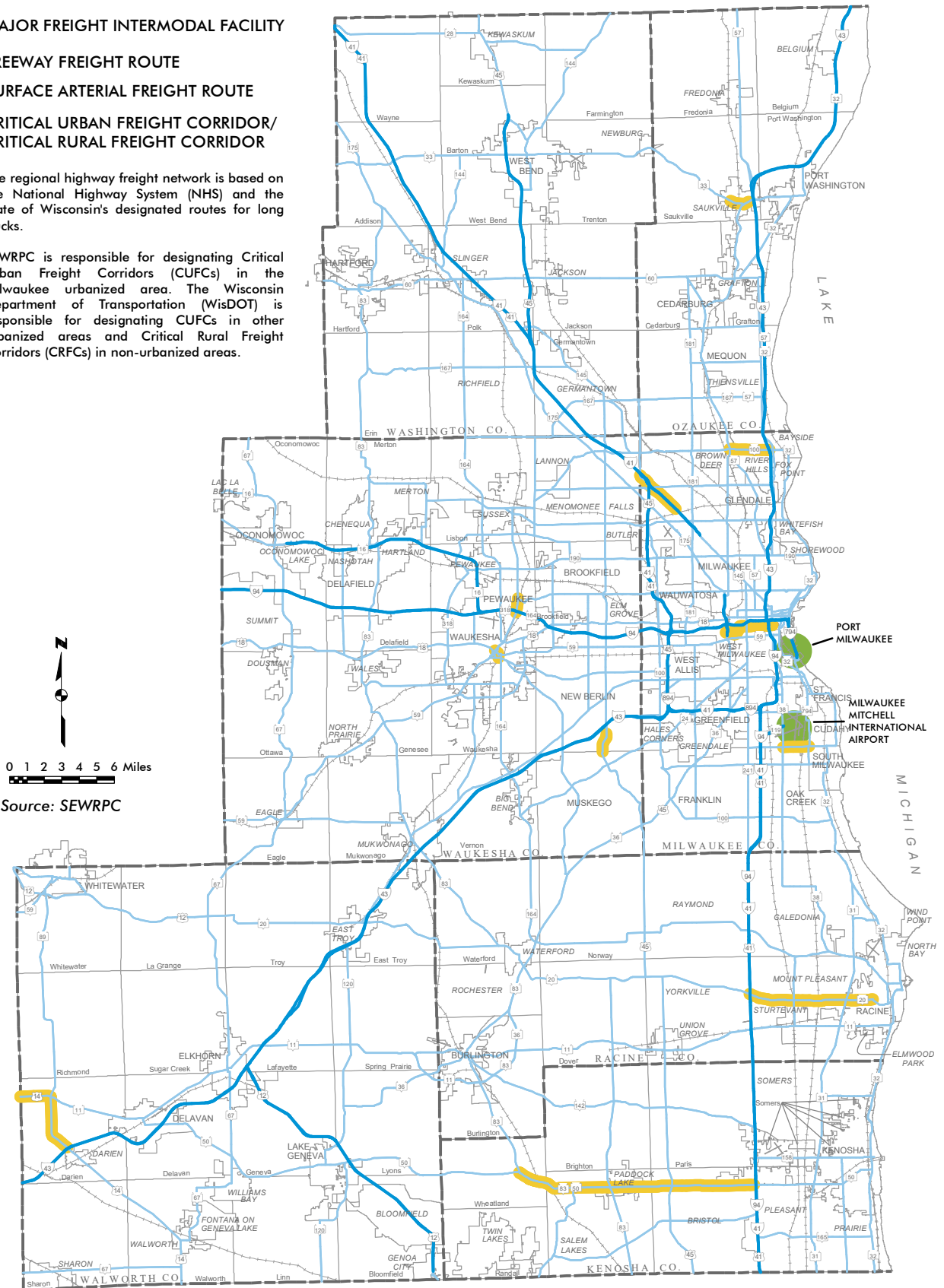
WisDOT completed the Wisconsin State Freight Plan in April 2018, which includes information on many of the topics included in VISION 2050 freight recommendations, as well as a prioritized list of freight projects that could potentially be eligible for newly established NHFP funding. As of November 2019, none of the projects identified in the State Freight Plan are located in Southeastern Wisconsin.

Map 2.17 Regional Highway Freight Network: 2019

-  MAJOR FREIGHT INTERMODAL FACILITY
-  FREEWAY FREIGHT ROUTE
-  SURFACE ARTERIAL FREIGHT ROUTE
-  CRITICAL URBAN FREIGHT CORRIDOR/
CRITICAL RURAL FREIGHT CORRIDOR

Note: The regional highway freight network is based on the National Highway System (NHS) and the State of Wisconsin's designated routes for long trucks.

SEWRPC is responsible for designating Critical Urban Freight Corridors (CUFCs) in the Milwaukee urbanized area. The Wisconsin Department of Transportation (WisDOT) is responsible for designating CUFCs in other urbanized areas and Critical Rural Freight Corridors (CRFCs) in non-urbanized areas.



0 1 2 3 4 5 6 Miles

Source: SEWRPC

► **Recommendation 7.2: Accommodate oversize/overweight shipments to, from, and within Southeastern Wisconsin**

Unusually large or heavy goods shipped within or through the Region require that specific OSOW truck routes be used. In some cases, the movement of OSOW shipments may require temporarily moving infrastructure along the shipment's route—such as raising utility wires or moving traffic signals—or following a more circuitous route to avoid physical restrictions, such as low bridges or structures with weight restrictions. While OSOW shipments constitute only a small percentage of all truck shipments in the Region, they include high-value goods—including exports of locally manufactured products to other countries—that are important to the Region's economy.

VISION 2050 recommends that State and local governments work with the Commission staff and local manufacturers, shippers, and utilities to improve the accommodation of OSOW shipments by truck on the Region's arterial street and highway network. Specifically, VISION 2050 recommends the following actions to improve the accommodation of OSOW shipments:

- Study past OSOW truck shipments in the Region
- Delineate a regional OSOW truck route network
- Identify OSOW truck route infrastructure needs
- Preserve OSOW truck routes

Many of these actions have been completed since VISION 2050 was adopted. Based on a study of past OSOW truck shipments in the Region and feedback from stakeholders, WisDOT coordinated an OSOW Working Group, from 2014 through 2018, to identify roadway constraints impacting the movement of OSOW truck shipments in the Region, and develop solutions to address the constraints. The Working Group included representatives from WisDOT, the Commission, the Cities of West Allis and Milwaukee (including Port Milwaukee staff), and the private sector. Through the Working Group's efforts, a set of privately funded infrastructure improvements to facilitate OSOW shipments along a key OSOW route connecting the City of West Allis and Port Milwaukee was identified. In 2017, *Wisconsin Statute 86.50* was enacted that prohibits any future actions that would make any portion of this OSOW route unavailable for use by a truck transporting a load up to 28-feet wide and 23-feet high.

Consistent with VISION 2050's recommendations for accommodating OSOW shipments, WisDOT initiated its Truck Route Evaluation and Efficiency (TREE) project in 2017 with an objective of using historical OSOW permit data to reevaluate and refine the State's network of designated OSOW routes. As a result of this effort, WisDOT has defined an updated statewide network of OSOW routes as well as an internal process to ensure that OSOW height and width standards are preserved when roadway improvements are planned along the routes. WisDOT's updated network of OSOW routes includes:

- OSOW truck routes (OSOW-TR)
- OSOW high-clearance routes with a goal of providing a minimum 20-foot clearance for new and replacement bridges and sign structures
- Wind tower corridors

► **Recommendation 7.3: Pursue development of a new truck-rail intermodal facility in or near Southeastern Wisconsin**

In many cases, freight shipments between Southeastern Wisconsin and other states or countries are most effectively transported using more than one mode of transportation. The domestic portions of these intermodal shipments often use trucks for the shorter portion of the trip and rail for the longer portion of the trip. Currently, the truck-rail intermodal facilities—where containerized shipments are interchanged between trucks and freight trains—closest to Southeastern Wisconsin are located in the Chicago area, where intermodal shipments sometimes experience significant congestion-related delays. Locating such a facility in or near Southeastern Wisconsin could provide transportation benefits to the Region’s manufacturers and shippers, including lower shipping costs.

VISION 2050 recommends that local governments, the Commission, local manufacturers and shippers, freight railroads, and the State work together to pursue development of a new truck-rail intermodal facility in or near Southeastern Wisconsin. Steps to achieve this recommendation, as outlined in the plan, include conducting a study on the feasibility of developing a new truck-rail intermodal facility and supporting private sector efforts to develop a new truck-rail intermodal facility.

In 2014, WisDOT established the Wisconsin Freight Advisory Committee (FAC) to provide a means for representatives from the private sector, key state economic sectors, and the public sector to collectively review and discuss key freight transportation issues as well as provide input to WisDOT regarding priorities and policies that affect freight transportation in the State. In late 2017, WisDOT created the FAC’s Intermodal Subcommittee that was tasked with identifying current and future challenges and opportunities for connecting Wisconsin’s businesses with domestic and international markets through the increased use of containerized shipping. In 2019, the Subcommittee completed a report, *Overview of Intermodal Freight in Wisconsin*, that describes current domestic and international intermodal shipping practices, summarizes future challenges and opportunities associated with intermodal shipping, and presents a set of potential strategies for making Wisconsin more attractive for intermodal facility development and operations. More discussion and study is needed to understand the most feasible location for developing an intermodal facility in or near the Region.

In 2018, WisDOT awarded Port Milwaukee a \$3.0 million Freight Railroad Preservation Program (FRPP) grant, matched by \$0.7 million in local funding, to rehabilitate and construct over 8,000 feet of railroad track within the port. The project will support the City of Milwaukee’s efforts to re-establish truck-rail intermodal service at Port Milwaukee that previously ceased in 2012.

► **Recommendation 7.4: Develop truck size and weight regulations in Wisconsin consistent with neighboring states**

Inefficient movement of goods by truck between the Region and neighboring states can result from differences in truck size and weight regulations between Wisconsin and neighboring states (e.g., a truck may not be able to be fully loaded due to a neighboring state’s lower weight restrictions).

VISION 2050 recommends that the State work with neighboring states and FHWA to develop truck size and weight regulations that are consistent

across state lines. The State has not yet undertaken efforts to develop regulations consistent with neighboring states.

► **Recommendation 7.5: Construct the Muskego Yard Bypass**

Canadian Pacific Railway (CP) freight trains traveling through downtown Milwaukee currently pass through the Milwaukee Intermodal Station (MIS). The station is a stop for Amtrak's Hiawatha and Empire Builder intercity passenger trains. Upgrading track and signaling through CP's Muskego Yard, which passes through the Menomonee Valley south of MIS, would allow freight trains traveling through downtown Milwaukee to bypass the station. This would improve the station's ability to accommodate Amtrak and additional commuter and intercity passenger rail service, and it would improve safety and reduce delays to both freight and passenger trains traveling through Milwaukee. In line with this recommendation, WisDOT obtained \$26.6 million in Federal funding in March 2020 to implement the project, and is undergoing work to complete the necessary environmental clearance and conceptual engineering for the project.

► **Recommendation 7.6: Address the potential need for truck drivers in Southeastern Wisconsin**

The trucking industry expects to experience a nationwide, significant shortage of qualified truck drivers in the near future, primarily due to increasing demand for shipping goods by truck in conjunction with the impending retirement of a large number of current truck drivers.

VISION 2050 recommends that workforce development agencies and technical colleges in Southeastern Wisconsin monitor the trucking industry's need for qualified drivers in the Region and work with the trucking industry to help address potential driver shortages. Truck driver training to help individuals prepare to pass Wisconsin's Commercial Driver's License (CDL) exam is currently available in Kenosha, Milwaukee, Washington, and Waukesha Counties, including at Gateway Technical College, Milwaukee Area Technical College, and Waukesha County Technical College.

► **Recommendation 7.7: Address safety needs related to freight transportation**

Crashes involving freight transportation negatively impact the wellbeing of Southeastern Wisconsin's residents as well as its economy. VISION 2050 recommends that Federal, State, and local governments, the Commission, and private freight carriers continue to work to:

- Minimize total traffic crashes on the RHFN
- Implement positive train control (PTC) systems
- Reduce conflicts involving trucks
- Reduce conflicts involving freight trains

VISION 2050 recommends implementing the capacity expansion improvements on the RHFN to help to reduce freight congestion and, in turn, reduce crashes. Progress on this recommendation is described under the arterial streets and highways element.

The Rail Safety Improvement Act of 2008 requires Amtrak and Class I railroads transporting certain types of hazardous materials or hosting

passenger rail service to implement PTC systems to prevent accidents caused by human error, including train-to-train collisions, train derailments caused by excessive speed, unauthorized incursions by trains onto sections of track undergoing maintenance, and the movement of trains through incorrectly set switches. By spring 2019, the Class I railroads were operating PTC systems on 48,000 miles (83 percent) of the 58,000 track miles nationwide required by Federal law, and the railroads anticipate that PTC systems will be fully operational by the end of 2020.

► **Recommendation 7.8: Address security needs related to freight transportation**

Ongoing efforts to prevent and respond to security incidents affecting freight movements by truck, train, ship, and airplane encompass a wide range of Federal, State, and local programs, measures, or initiatives. VISION 2050 recommends that the State and local governments continue to work with the Federal government, the Commission, and private freight carriers and businesses to address security needs related to freight transportation, including:

- Conduct periodic vulnerability assessments and monitor and strengthen vulnerable infrastructure
- Develop and maintain county and/or local government all hazards mitigation plans
- Maintain a resilient RHFN
- Study the needs of essential freight movement

In line with this recommendation, an update on county and/or local government all hazards mitigation plans and details on implementation of recommended functional improvements to the arterial street and highway system are included under the arterial streets and highways element.

► **Recommendation 7.9: Support efforts in areas outside the Region that improve freight movement to and from the Region**

Freight transportation issues in neighboring metro areas and states—such as highway and rail congestion in the Chicago area—can negatively impact the Region’s manufacturers and shippers. In some cases, neighboring metro areas, states, the Federal government, and/or private sector freight transportation providers have initiated efforts to address these issues. VISION 2050 recommends that the State, the Commission, and local manufacturers and shippers participate in and support efforts outside Southeastern Wisconsin that address issues affecting freight movement to and from the Region.

Commission staff have long coordinated with other MPOs and regional planning commissions in Wisconsin and in neighboring states, including the East Central Wisconsin Regional Planning Commission (ECWRPC), Chicago Metropolitan Agency for Planning (CMAP), Northwestern Indiana Regional Planning Commission (NIRPC), and Southwest Michigan Planning Commission (SWMPC). In 2009, the Commission joined CMAP, NIRPC, and SWMPC in adopting the Wingspread Regional Accord, recognizing the socio-economic and environmental interdependence of the four-state region and agreeing to work together to address regional issues, including freight transportation. Consistent with the vision of the Accord, the Executive Directors of the Commission, CMAP, NIRPC,

and SWMPC meet quarterly to discuss topics of regional importance. In addition, Commission staff serve on CMAP's standing Transportation Committee, and CMAP staff serve on the Commission's standing Advisory Committee on Regional Transportation Planning.

Commission staff also serve on the Executive Board of the Alliance for Regional Development, a coalition of leaders from the private sector, governments, and higher education that are working to improve the economic competitiveness of the tri-state region comprised of southeast Wisconsin, northeast Illinois, and northwest Indiana. The Alliance's efforts focus on four key areas: workforce development, innovation, transportation and logistics, and green growth.

As previously mentioned, WisDOT established the Wisconsin Freight Advisory Committee (FAC) in 2014 to provide a means for representatives from the private sector, key state economic sectors, and the public sector to collectively review and discuss key freight transportation issues as well as provide input to WisDOT regarding priorities and policies that affect freight transportation in the State. Commission staff have served on the FAC since its inception.

The Commission continues to monitor and indirectly support the efforts of the Chicago Region Environmental and Transportation Efficiency (CREATE) program. Initiated in 2003, CREATE is a public-private partnership between the USDOT, the State of Illinois, the City of Chicago, freight railroads, Metra, and Amtrak. This partnership has identified 70 projects in the Chicago region that will reduce freight rail congestion, decrease auto and truck delays at grade crossings, improve safety, and reduce air pollution emissions. Given the Chicago region's importance as the nation's largest rail hub, and its proximity to Southeastern Wisconsin, CREATE initiatives can provide important benefits to freight travel in the Region. As of summer 2019, 30 of the 70 CREATE projects have been completed, and an additional 21 projects are under construction or in a planning stage.

Conclusions from Review of Freight Transportation Implementation

Since the completion of VISION 2050, 36 miles of planned arterial widenings have been implemented on the RHFN, which would be expected to improve the movement of freight on those facilities. The Commission and WisDOT have also collaborated to designate CUFCs and CRFCs, which have been added to the RHFN. With respect to OSOW, WisDOT has worked with the Commission staff, Milwaukee County, and concerned and affected communities in the County on identifying roadway constraints and potential corrective improvements along identified OSOW routes. In addition, WisDOT has worked to refine the State's network of OSOW routes in Southeastern Wisconsin based on historical OSOW permit data. With respect to the development of a new truck-rail intermodal facility within or near the Region, WisDOT has worked with representatives from the freight industry to study and identify strategies to make Wisconsin more attractive for the development and operation of intermodal stations. Port Milwaukee is also implementing improvements to the rail lines that were utilized by a previously operated intermodal facility. In addition, WisDOT obtained Federal funding to implement the recommended Muskego Yard Bypass.

2.4 TARGETS ESTABLISHED FOR FEDERAL PERFORMANCE MEASURES

The Moving Ahead for Progress in the 21st Century Act (MAP-21), enacted in 2012, created a national performance management framework that established uniform performance measures and target setting to, in part, create a consistent nationwide process for monitoring the effectiveness of Federal transportation investments. As part of implementing the national performance management framework, MPOs, like the Commission, are to establish transit and highway targets for performance measures under the following categories:

- Transit Asset Management (TAM)
- Transit Safety
- Highway Safety
- National Highway System (NHS) Bridge and Pavement Condition
- NHS and Freight Reliability
- Congestion Mitigation and Air Quality Improvement (CMAQ)

In implementing the national performance management framework in Southeastern Wisconsin, the Commission has established performance targets for all but the transit safety performance measures.⁴ In developing the targets, it was determined that, since the required short-range targets were to be incorporated into VISION 2050, a long-range plan, long-term regional targets should be established, as appropriate, for the TAM, highway safety, NHS, freight, and CMAQ performance measures. As such, the short-term targets that were established for either the Metropolitan Planning Area or the Milwaukee urbanized area, as required as part of the national performance measure framework,⁵ are based on these long-term regional targets. Highway safety-related targets were formally amended into VISION 2050 in June 2018, and the TAM, NHS, freight, and CMAQ-related targets were formally amended into VISION 2050 in June 2019.

Appendix B summarizes the short-term and year 2050 regional targets, along with the process for developing the targets, for the TAM, highway safety, NHS, freight, and CMAQ performance measures. Appendix B also includes a summary of the progress in achieving the targets in the short period of time since they were established.

⁴ The transit safety targets are to be set within 180 days following the development of safety plans and transit safety target setting by all of the transit operators in Southeastern Wisconsin, which is due to be completed in 2020.

⁵ Under the national performance management framework, the Commission is required to establish performance targets for the Region's Metropolitan Planning Area for all but two of the performance measures, and the Milwaukee urbanized area for two of the CMAQ-related measures. In addition, the TAM and highway safety targets are to be established annually, and the NHS, freight, and CMAQ targets are to be established every four years.



Credit: VISIT Milwaukee

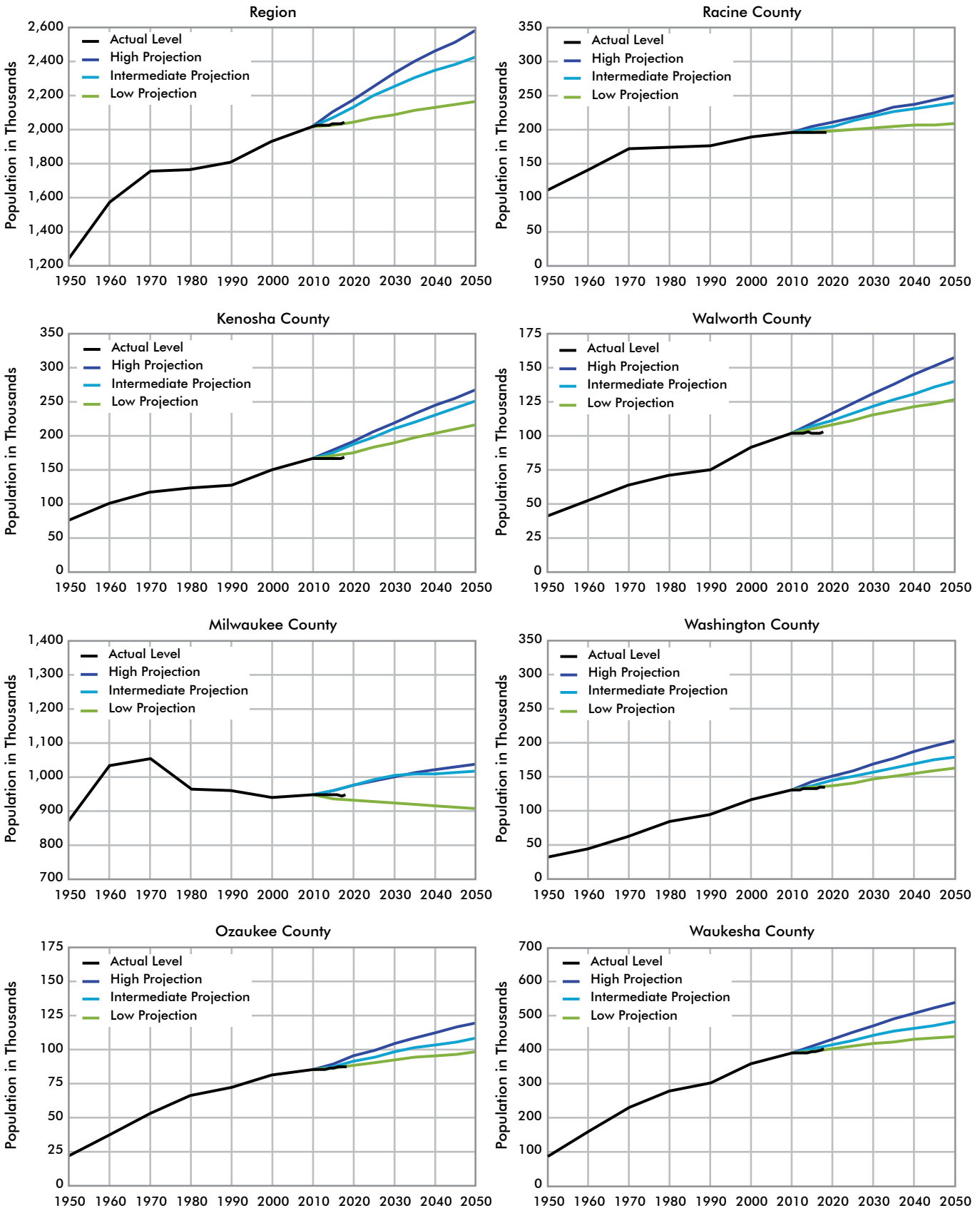
3.1 INTRODUCTION

This chapter reviews the forecasts prepared under VISION 2050 for their continued validity, including demographic and economic forecasts of population, households, and employment; and travel, traffic, and related forecasts, which include regional vehicle-miles of travel, transit system ridership, and personal vehicle availability. The forecasts were compared to either year 2017 or year 2018 data, depending on their availability. As appropriate, forecasts were adjusted as part of the second amendment to VISION 2050 related to the Foxconn development.

3.2 DEMOGRAPHIC AND ECONOMIC FORECASTS

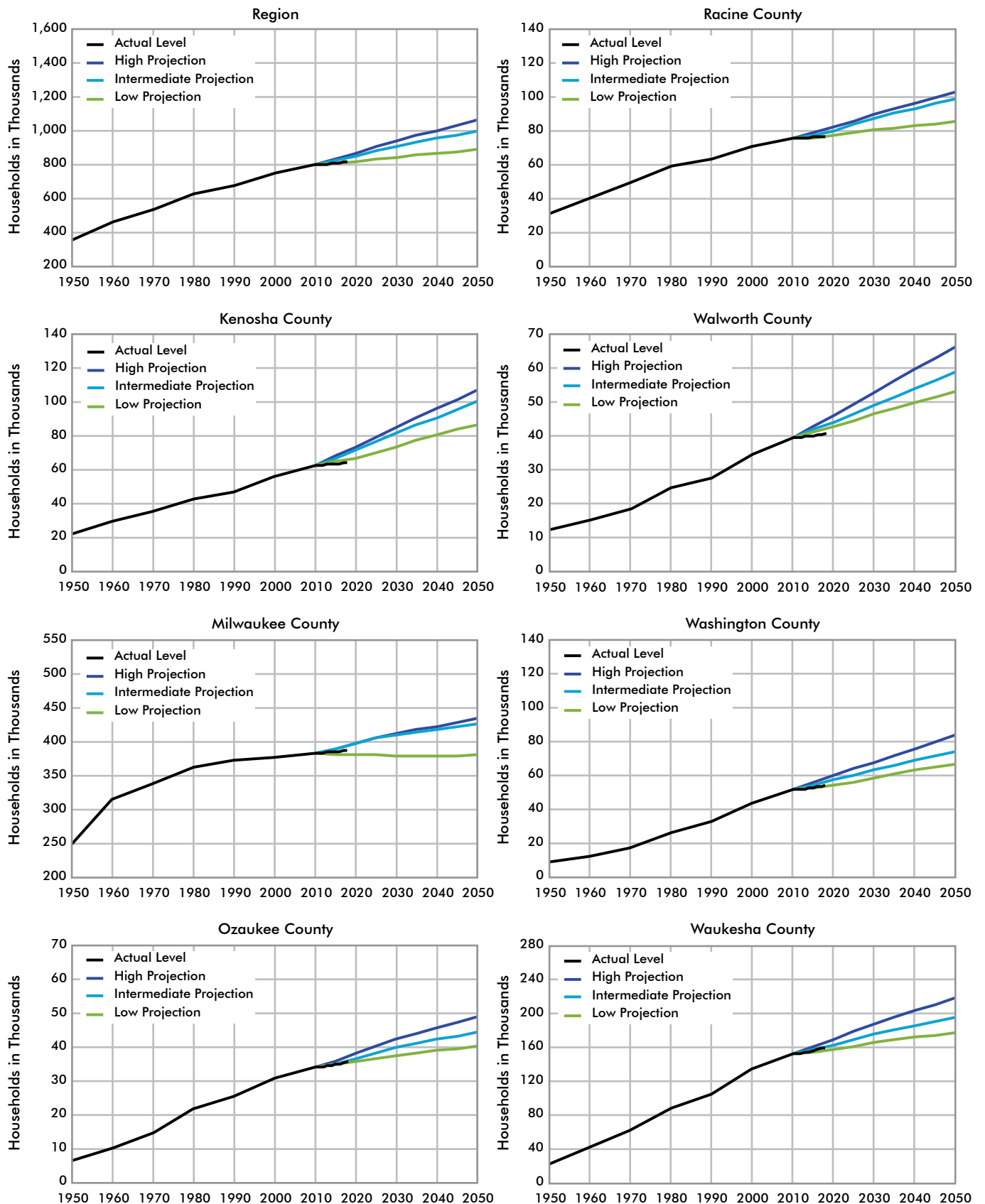
Figures 3.1 through 3.3 document for the Region and each of the seven counties the historical growth and change in population, employment, and households over the last 30 to 50 years through the year 2010, the base year for the development of the demographic and economic forecasts for VISION 2050. Also shown are the population, household, and employment forecasts for the year 2050 upon which VISION 2050 was based, the plan being specifically based on the intermediate growth projection shown in Figures 3.1 through 3.3. In addition, the figures show the trends in the growth and change in population, households, and employment in the Region and in each of the seven counties from the year 2010 through the year 2017 or 2018. Comparing the estimated current year 2018 population and household levels to forecast (intermediate growth) levels, estimates of population and households are lagging forecasts with estimates at the regional and county levels generally being within 2 to 8 percent of forecasts. With respect to jobs, estimates of employment are exceeding forecasts generally by about 3 to 10 percent, as a result of the economic recovery that has been experienced in the Region since 2010.

Figure 3.1
Actual and Projected Population in the Region by County: 1950-2050



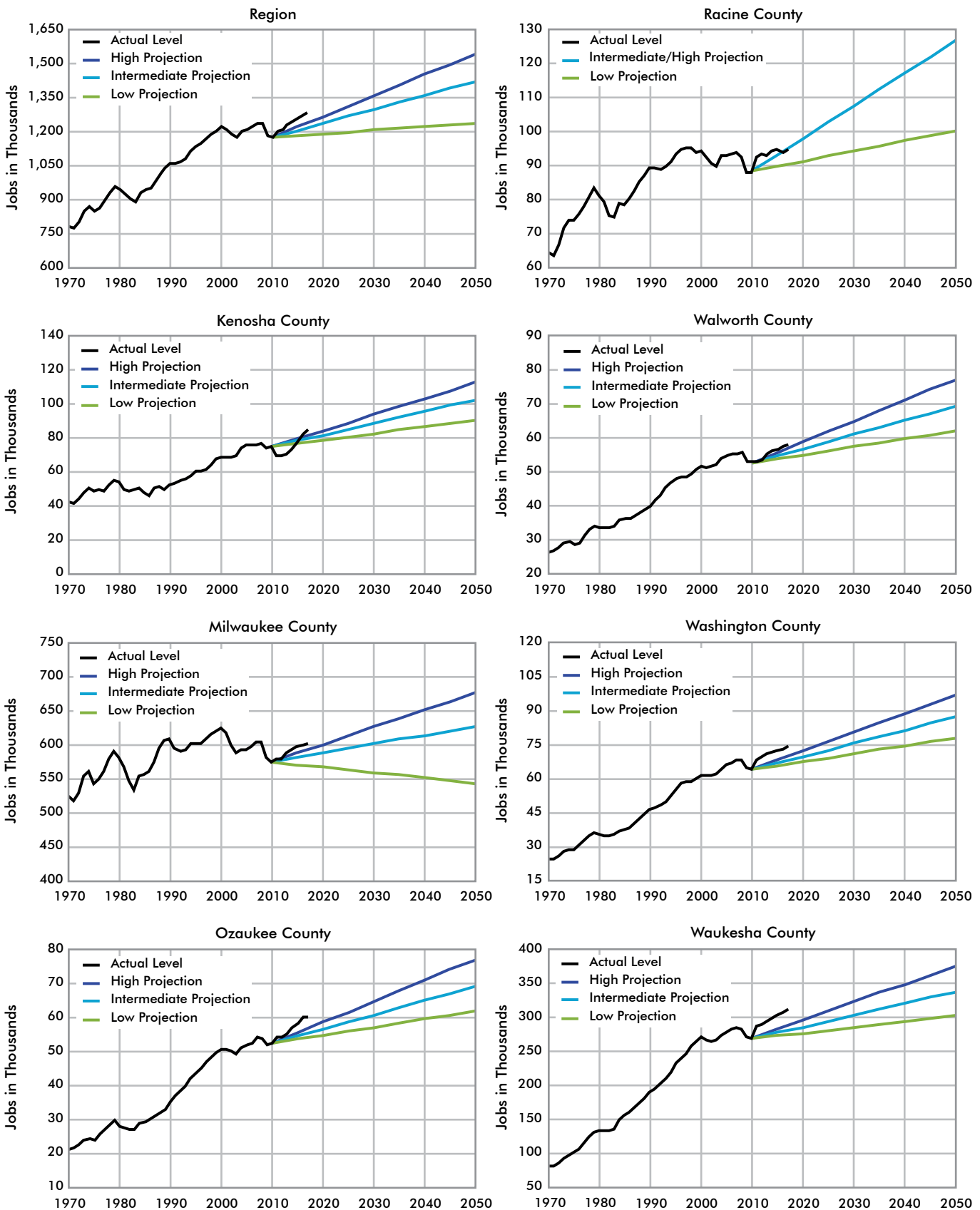
Source: U.S. Bureau of the Census and SEWRPC

Figure 3.2
Actual and Projected Households in the Region by County: 1950-2050



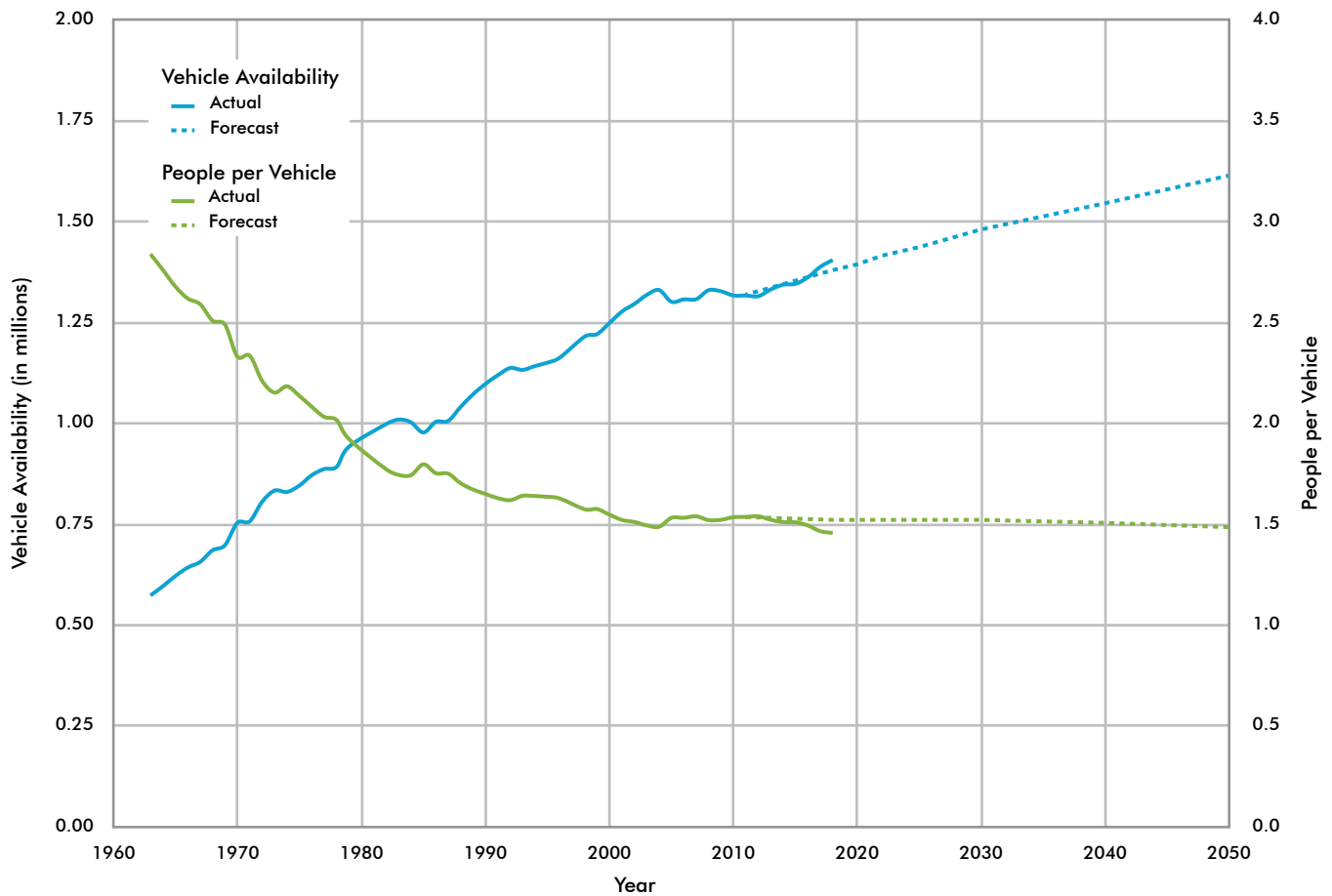
Source: U.S. Bureau of the Census and SEWRPC

Figure 3.3
Actual and Projected Employment in the Region by County: 1970-2050



Source: U.S. Bureau of Economic Analysis and SEWRPC

Figure 3.4
Personal-Use Vehicle Availability: 1963-2050



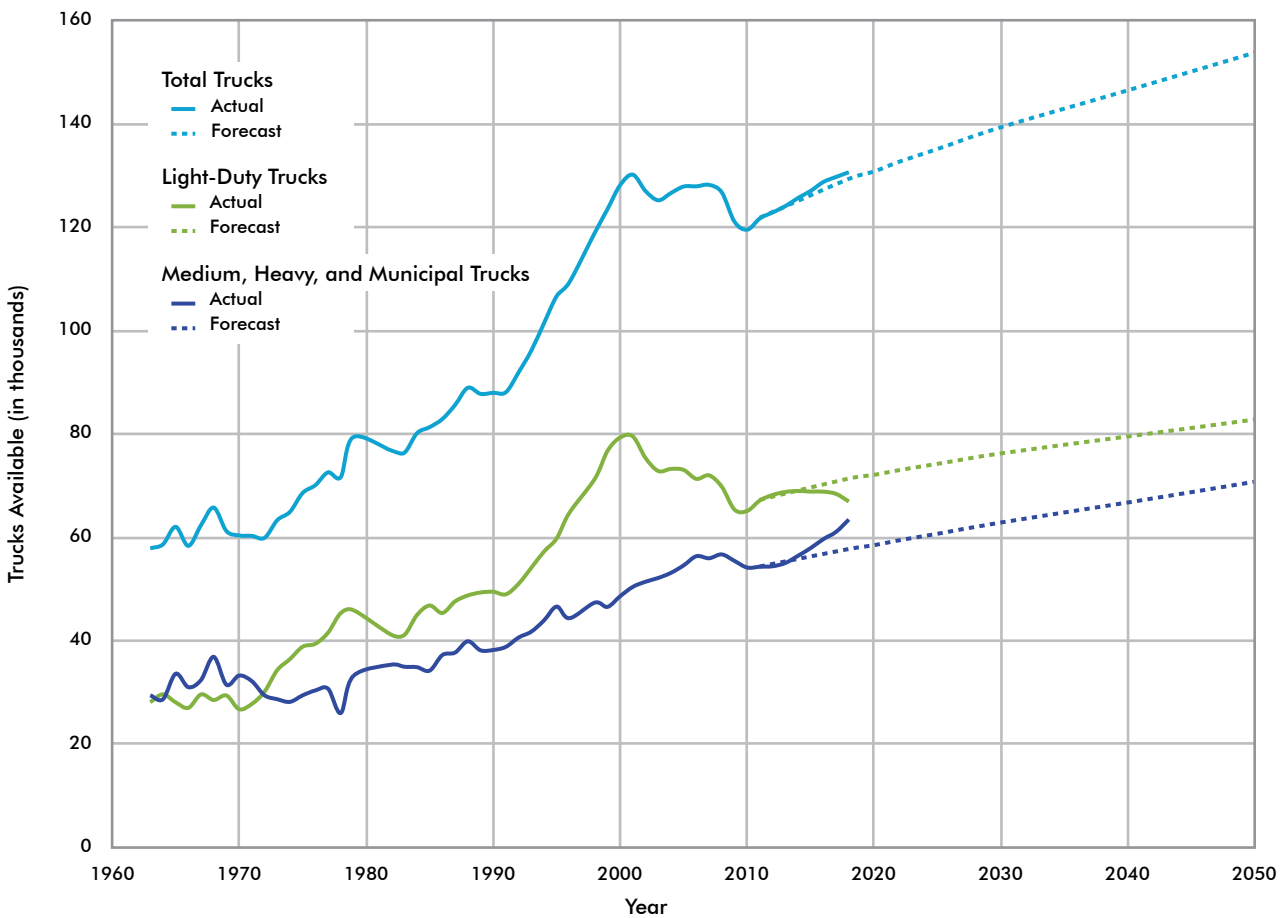
Source: SEWRPC

3.3 PERSONAL-USE VEHICLE AND COMMERCIAL TRUCK AVAILABILITY FORECASTS

The historical and forecast annual number of available personal-use vehicles—automobiles, trucks, and vans used by residents of the Region for personal transportation—is shown in Figure 3.4. Over the past 50 years, there has been a generally steady, long-term trend of continued increase in the number of personal-use vehicles available to residents of the Region. The average annual rate of growth in personal-use vehicle availability within the Region from 1963 through 2018 was 1.6 percent. The number of personal-use vehicles in 2018 of about 1,406,500 million was about 2 percent higher than the personal-use vehicle availability level envisioned under VISION 2050.

The historical and forecast number of persons per personal-use vehicle within the Region is also shown in Figure 3.4. The number of persons per personal-use vehicle has been relatively stable for over a decade, with only minor fluctuations. The forecast of the number of persons per personal-use vehicle under VISION 2050 expected long-term stability as well. A persons per personal-use vehicle of 1.45 in 2018 is 4.6 percent lower than the forecast level under VISION 2050.

Figure 3.5
Commercial Truck Availability: 1963-2050



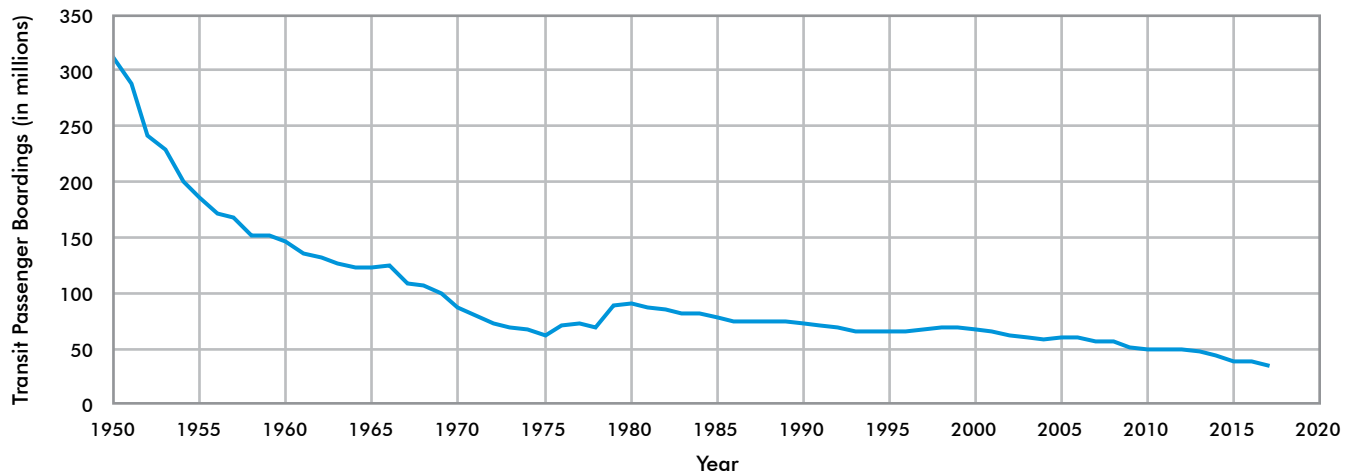
Source: SEWRPC

The number of commercial and municipal trucks available in the Region during 2018 totaled about 130,600, or about 1 percent greater than the forecast level of 129,200 in 2018 envisioned under VISION 2050, as shown in Figure 3.5.

3.4 PUBLIC TRANSIT RIDERSHIP AND VEHICLE-MILES OF SERVICE FORECASTS

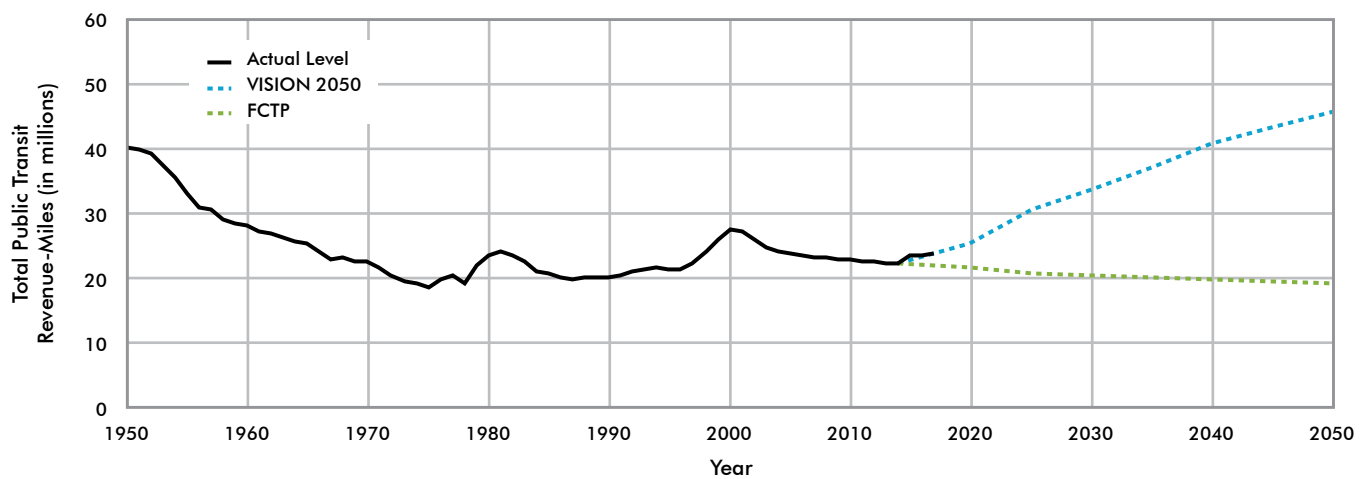
Public transit service was provided in the Region in 2018 through 10 intracounty systems and five intercounty systems. Figure 3.6 shows the long-term trend in public transit passenger boardings in the Region. Between 2011 and 2017, the number of total transit boardings declined by about 29 percent, or by about 5 percent annually. Nearly all of the declines in ridership over this period occurred on intracounty bus systems, with slight declines in ridership for the intercounty bus systems and a slight increase in ridership for the shared-ride taxi systems. Figure 3.7 shows the historical and forecast annual public transit vehicle-miles of service in the Region. Public transit vehicle-miles of service are forecast to increase with implementation of the transit recommendations of VISION 2050. However, under the FCTP (described in previous chapters), the declines in public transit vehicle-miles of service experienced between 2004 and 2014 are expected to continue. Annual public transit vehicle-miles of service increased from 2011 to 2017 by about 5 percent to 23,655,400 vehicle-miles of service, which is consistent

Figure 3.6
Transit Passenger Boardings in the Region: 1950-2017



Source: National Transit Database and SEWRPC

Figure 3.7
Annual Public Transit Vehicle-Miles of Service in the Region: 1950-2050



Source: National Transit Database and SEWRPC

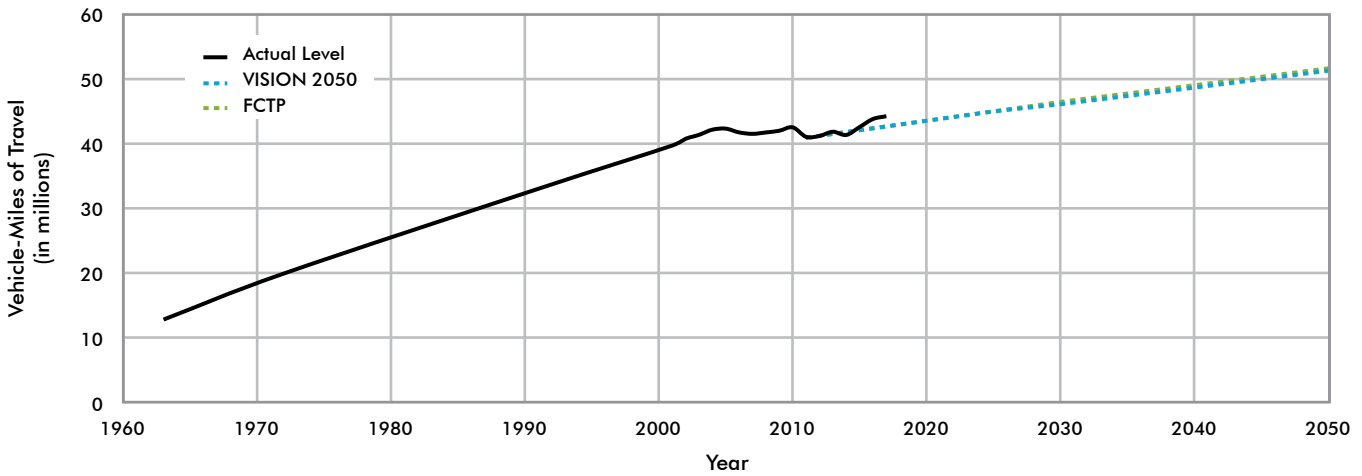
with the VISION 2050 forecast. However, with the elimination of the two bus routes implemented as part of the Zoo Interchange settlement, reductions in freeway flyer service, and elimination of special school service in 2018, it is expected that public transit vehicle-miles of service will decline to levels near those of the FCTP. Without additional funding beyond what is expected to be available over the next 30 years, the transit expansion and improvement recommended under VISION 2050 will not be implemented.

3.5 VEHICLE-MILES OF TRAVEL FORECASTS

Figure 3.8 presents historical and forecast future levels in vehicle-miles of travel (VMT) in the Region. While VMT grew annually by a fairly consistent amount between 1975 and 2004, VMT declined to about 41.0 million VMT in 2011—the base year for the VISION 2050 VMT forecasts and the year of the regional travel and traffic inventories conducted as part of VISION 2050. The VMT under both VISION 2050 and the FCTP is forecast to again increase at a fairly consistent amount annually over the next 30 years, but at

Figure 3.8

Arterial Vehicle-Miles of Travel in the Region on an Average Weekday: 1963-2050



Source: Wisconsin Department of Transportation and SEWRPC

a slower annual increase than occurred prior to 2004. The VMT in the Region totaled 44.2 million in 2017 on the arterial system on an average weekday, approximately 3.3 percent and 3.1 percent greater than the estimated arterial system VMT on an average weekday in 2017 under VISION 2050 and the FCTP, respectively.

3.6 SUMMARY AND CONCLUSIONS

Review of forecasts prepared for VISION 2050, including population, households, employment, vehicle availability, public transit ridership, and vehicle miles-of-travel, indicate that these forecasts remain valid for long-range transportation planning purposes.



Credit: Wisconsin Bike Fed

4.1 INTRODUCTION

This chapter describes the changes being made to VISION 2050 as part of the 2020 Review and Update. Updates to plan recommendations are based on plan implementation that has occurred to date, as described in Chapter 2; changes that have occurred in technology, demographics, or the economy, as described in Chapters 2 and 3; and input received from the public and other stakeholders, as described in the following section of this chapter.

As part of this review and update of VISION 2050, Commission staff updated the analysis of existing and reasonably expected costs and revenues associated with the transportation system recommended in VISION 2050. Through this analysis, staff confirmed a funding gap for the recommended transportation system and identified the portion of the recommended system that can be implemented with reasonably expected revenues. For the 2020 Review and Update, the title of the funded portion of the recommended system, previously referred to as the “Fiscally Constrained Transportation Plan (FCTP),” has been changed to the “Fiscally Constrained Transportation System (FCTS).” Staff changed the title to better make the important distinction that the portion of the recommended transportation system that can be implemented with reasonably expected revenues does not represent a desired “plan;” rather, it represents the transportation system expected to occur without sufficient funding levels to maintain and improve transportation infrastructure and services as recommended in VISION 2050.

Staff also updated the equity analyses, which include evaluations of potential benefits and impacts to people of color, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050. Notably, the equity analysis for the transportation component, summarized in this chapter and presented

in detail in Appendix D, indicated that the recommended more than doubling of transit service would significantly improve transit access for these population groups to jobs, healthcare, education, and other activities. However, the reduction in transit service and minimal provision of higher-quality transit service expected under the FCTS would result in less access to jobs, healthcare, education, and other daily needs than under VISION 2050. Without additional funding to implement the VISION 2050 public transit element, a disparate impact on the Region's people of color, low-income populations, and people with disabilities is likely to occur.

Following the completion of the 2020 Review and Update, the Commission will publish a Second Edition of Volume III, "Recommended Regional Land Use and Transportation Plan," of the VISION 2050 plan report. This updated edition will incorporate the changes to VISION 2050 and the FCTS made as part of this planning effort, including the updated financial and equity analyses. Targets established for the National Performance Measures, as described in Appendix B, will also be incorporated into the Second Edition of Volume III.

4.2 OVERVIEW OF ROUND 1 PUBLIC INVOLVEMENT

The purpose of the first round of public involvement was to share information with the public about how well the various plan elements are being implemented, and collect feedback about this progress. Staff also obtained comments on changes, since VISION 2050 was adopted, that should be considered while updating the plan's recommendations. During the first round, staff shared information from the first three chapters of the 2020 Review and Update, including how well VISION 2050 is being implemented, how well the year 2050 forecasts underlying the plan compare to current estimates, and how well the existing transportation system is performing.

Comments during the first of two rounds of public involvement for the 2020 Review and Update were obtained during a formal public comment period from November 18 through December 20, 2019. Seven public meetings were held across the Region (one in each county) from December 3 through 12 and two separate meetings with the Commission's community partner organizations were held on December 7 and 15. In addition, staff created an online questionnaire that replicated the feedback opportunities of the meetings. A total of 277 individuals participated in the first round by attending one of the nine public or partner meetings or completing the online questionnaire. All comments received were considered by Commission staff and the Advisory Committees guiding VISION 2050 as staff prepared the 2020 Review and Update of VISION 2050. Appendix E provides a summary of all public comments received during the first round.⁶

Comments on the 2020 Review and Update made by members of the Advisory Committees guiding VISION 2050 prior to the first round of public involvement can be found in the minutes of the Committees' October 30, 2019, meeting (see www.sewrpc.org/RLUPAC or www.sewrpc.org/RTPAC). Comments made by members of the Commission's Environmental Justice Task Force can be found in the minutes of the Task Force's November 6, 2019, meeting (see www.sewrpc.org/EJTF).

⁶ A separate report entitled Record of Public Comments: 2020 Review and Update of VISION 2050, documents all comments received during preparation of the 2020 Review and Update.

Staff used two primary means of obtaining public input during the first round. The first was a worksheet distributed to each participant with eight questions about specific aspects of the VISION 2050 land use and transportation components, which were to be answered while reviewing a series of informational display boards. The second was a set of interactive boards designed to obtain input on important topics considered by staff during the 2020 Review and Update. The topics included public health, environmental resilience, equity, shared mobility, and connected and autonomous vehicles. Both the worksheet and interactive boards were also replicated on the online questionnaire.

Regarding the worksheet questions related to land use, much of the input was supportive of the recommended compact development pattern, with comments focusing on affordable housing, benefits and impacts to people of color, walkable neighborhoods, access to healthy foods, access to medical care, environmentally sensitive areas, stormwater and green infrastructure, and job/housing balance. When asked specifically about why single-family homes developed in recent years have tended to be on larger lots than VISION 2050 recommends—a primary deficiency in implementing the land use component—comments were mixed. While a majority of participants indicated that new single-family housing should be built on smaller lots, a significant number of participants indicated a preference for larger lots. Those who indicated a preference for smaller lots cited reasons such as affordability and walkability. Those who indicated a preference for larger lots cited reasons such as privacy and space for family recreation.

Regarding the worksheet questions related to transportation, there was overwhelming support for providing additional funding for public transit (over 90 percent of respondents), with a variety of potential revenue sources identified, such as increasing State funding for transit, sales taxes, business contributions, the gas tax, and vehicle registration fees. Respondents also identified desired transit improvements, including new commuter rail service, improved transit to/from employers, more bus routes, and new intercity/high-speed passenger rail service. There was also significant support for providing additional public funding for street and highway improvements (over 90 percent supported or would support under certain conditions). Similar to public transit, respondents identified a variety of potential revenue sources, including increasing the gas tax, increasing vehicle registration fees, implementing tolling, obtaining more private sector support/partnerships, and increasing State funding. When asked about bicycle and pedestrian improvements, respondents expressed support for a variety of improvement types, including protected or buffered bike lanes, multi-use paths, sidewalks, enhanced crosswalks, and accessibility improvements. Lastly, top concerns regarding safety for different roadway users included reckless driving, vehicle speeds, inattentive driving, and traffic congestion. The most popular ways of addressing these safety concerns identified by respondents included protected/separated bike lanes, introducing speed/red-light cameras, better lighting, and education for drivers. In addition, a large contingency voiced their support for building a planned USH 12 freeway extension in Walworth County between Elkhorn and Whitewater.

For three of the five interactive boards (public health, environmental resilience, and equity), the intent was to better understand attendees' priorities as staff considered enhancing or expanding on each of these important issues within VISION 2050. Related to public health, water quality was identified as the greatest concern, followed by limited access to health care, air quality, and health problems related to poor nutrition or lack of physical activity. The most

popular responses to a question about which land use or transportation strategies would have the greatest impact on improving public health were bicycle and pedestrian improvements, walkable development, and improving public transit. Considering the effects of a changing climate, the greatest risks to health, safety, and wellbeing identified by respondents included water quality issues, flooding, and more frequent and extreme heat/cold events. The top resiliency strategies related to land use and transportation that were identified were installing green infrastructure and encouraging alternatives to driving alone. When asked to identify the greatest barriers to equity, the most common responses were limited access to jobs, a lack of affordable housing options, and a lack of affordable transportation options. The top land use or transportation strategies that respondents believed would help achieve equity were improving public transit and providing more affordable housing.

For the remaining two interactive boards (shared mobility and connected and autonomous vehicles), the intent was to obtain residents' ideas as staff considered how these major technological trends could impact or be incorporated into VISION 2050. When asked about dockless electric scooters on the shared mobility board, the most important considerations respondents identified were concerns regarding safety and parking and that scooters are not appropriate in rural areas. When asked about transportation network companies (e.g., Uber or Lyft), the most common considerations identified were concerns regarding the safety of drivers and passengers and the affordability of the companies' services. When asked about the potential impacts of connected and autonomous vehicles on the Region's transportation system and land use patterns, the most common responses involved concerns about the safety, risks, and liability associated with autonomous vehicles.

Much of the feedback summarized in this section supported existing plan recommendations, most of which remain unchanged under the 2020 Review and Update. However, several of the updates described in the following section were developed, in part, in response to the comments received through the first round of public involvement. Specifically, comments related to shared mobility, autonomous vehicles, and reckless driving were considered as staff developed new or expanded plan recommendations, described in more detail under their respective plan elements. In addition, the following section describes how VISION 2050 is being updated to provide additional clarity and emphasis regarding how implementing the plan would help to address public health, equity, and environmental resilience issues.

4.3 UPDATES TO VISION 2050

Below is a description of updates to recommendations in the land use and transportation components of VISION 2050. Substantial shifts in Region demographics, the economy, or other external factors have not occurred since plan adoption, with the exception of the planned development of the Foxconn manufacturing campus addressed by the second amendment to VISION 2050 adopted in December 2018. Therefore, updates to recommendations are largely in response to plan implementation that has occurred, public and stakeholder feedback, and recent changes in technology, and do not represent a major overhaul of the plan.

Land Use Component

Based on review of the implementation evaluation presented in Chapter 2 and the input received during the first round of public outreach, the VISION 2050 land use recommendations remain unchanged with this update.

While some of the Region’s recent development trends have helped to implement the recommendations and some have been inconsistent with the recommendations, the findings of the implementation evaluation do not warrant any changes. The recommended land use development pattern is shown on Map 4.1⁷ and a description of the land use categories is provided in Figure 4.1.

Additionally, much of the input received during the first round of public involvement was supportive of the compact development pattern that is embodied throughout the land use recommendations. The focus of the comments was on affordable housing, benefits and impacts to people of color, walkable neighborhoods, access to healthy foods, access to medical care, environmentally sensitive areas, stormwater and green infrastructure, and job/housing balance. A number of VISION 2050 recommendations address these comments. These recommendations will be highlighted in the Second Edition of Volume III.

One topic where mixed comments were received was about the size of new single-family residential lots. VISION 2050 recommends developing most new single-family housing on smaller lots (one-quarter acre or less). A majority of participants indicated that new single-family housing should be built on smaller lots; however, a significant number of participants indicated a preference for larger lots. Those who indicated a preference for smaller lots cited reasons such as affordability and walkability. Those who indicated a preference for larger lots cited reasons such as privacy and space for family recreation. Recommendation 1.1 is most directly related to the recommended single-family lot size of one-quarter acre or less. After reviewing the preliminary recommended plan evaluation presented in Appendix H of Volume II and the land use equity analysis presented in Appendix L of Volume III, it was determined that Recommendation 1.1 should not be revised to include an increase in lower-density single-family housing. The higher-density single-family housing recommended under Recommendation 1.1 would encourage affordability, walkability, a balance between jobs and housing, a more cost-effective development pattern for extending and maintaining public services, and preserving agricultural and natural resources.

Transportation Component

This section describes the updates that being made to the transportation component of VISION 2050. The transportation component includes the following six elements: public transit, bicycle and pedestrian, transportation systems management, travel demand management, arterial streets and highways, and freight transportation. The original plan maps and tables can be referenced in the First Edition of Volume III of the VISION 2050 plan report available at www.vision2050sewis.org.

The majority of the updates being made to the plan fall under policy-focused recommendations. Infrastructure-related recommendations such as the significant improvement and expansion of the Region’s public transit system, the expansion and increased connectivity of the bicycle network and pedestrian facilities in the Region, and the preservation and functional improvements to the arterial street and highway system remain largely

⁷ While not a change to the recommendations, one minor change was made to the map based on a request from the Village of Menomonee Falls. The change categorizes the downtown Menomonee Falls area as Mixed-Use Traditional Neighborhood, instead of Small Lot Traditional Neighborhood, to better reflect the type of development in the downtown area.

Map 4.1
Land Use Development Pattern: VISION 2050 as Updated

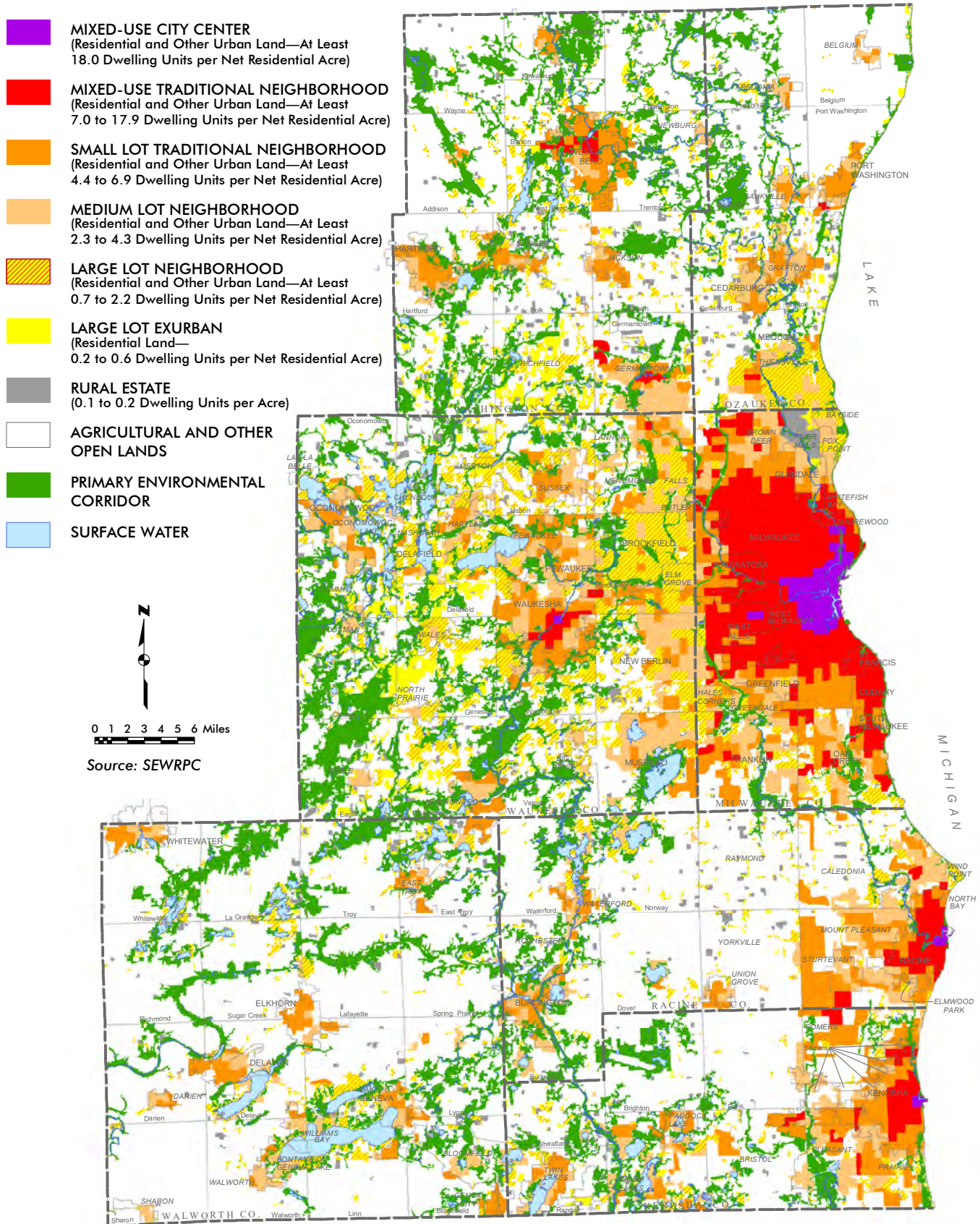


Figure 4.1
VISION 2050 Land Use Categories

The recommended VISION 2050 land use pattern was developed by allocating new households and employment envisioned for the Region under the Commission’s year 2050 growth projections to a series of seven land use categories that represent a variety of development densities and mixes of uses.



MIXED-USE CITY CENTER
 Mix of very high-density offices, businesses, and housing found in the most densely populated areas of the Region



MEDIUM LOT NEIGHBORHOOD (showing lots of about 15,000 square feet)
 Primarily single-family homes on ¼- to ½-acre lots found at the edges of cities and villages



LARGE LOT NEIGHBORHOOD (showing lots of about ½ acre)
 Primarily single-family homes on ½-acre to one-acre lots found at the edges of cities and villages and scattered outside cities and villages



MIXED-USE TRADITIONAL NEIGHBORHOOD
 Mix of high-density housing, businesses, and offices found in densely populated areas



LARGE LOT EXURBAN (showing lots of about 1.5 acres)
 Single-family homes at an overall density of one home per 1.5 to five acres scattered outside cities and villages



SMALL LOT TRADITIONAL NEIGHBORHOOD (showing lots of about 7,000 square feet)
 Mix of housing types and businesses with single-family homes on lots of ¼-acre or less and multifamily housing found within and at the edges of cities and villages



RURAL ESTATE (showing a cluster subdivision with one-acre lots)
 Single-family homes at an overall density of one home per five acres scattered outside cities and villages

unchanged. A financial analysis of the updated VISION 2050 transportation component is described in the subsequent section of this chapter, including identification of funding gaps related to implementing the recommended transportation system, potential revenue sources to achieve the full plan, and updates to the FCTS.

Public Transit Element

VISION 2050 as updated continues to recommend a significant improvement and expansion of public transit in Southeastern Wisconsin, including the addition of eight rapid transit lines; four commuter rail lines; and significantly expanded local bus, express bus, commuter bus, and shared-ride taxi services. These recommendations remain largely unchanged, with the exception of a change in the routing of a rapid transit line and an express transit route in southern Milwaukee County and an extension of an express bus route in western Kenosha County further west into Walworth County.

The plan is being updated to recommend that rapid transit continue south to W. Drexel Avenue, along S. 27th Street (previously a recommended express bus route), and that the route connecting S. 27th Street with Southridge Mall via Oklahoma Avenue, W. Forest Home Avenue, and S. 76th Street be an express bus route (previously a recommended rapid transit line). This change is due to a decrease in trip generation at Southridge Mall and an increase in expected demand along the S. 27th Street corridor between W. Oklahoma Avenue and W. Drexel Avenue and has been requested by Milwaukee County. This update is shown in Figure 4.2.

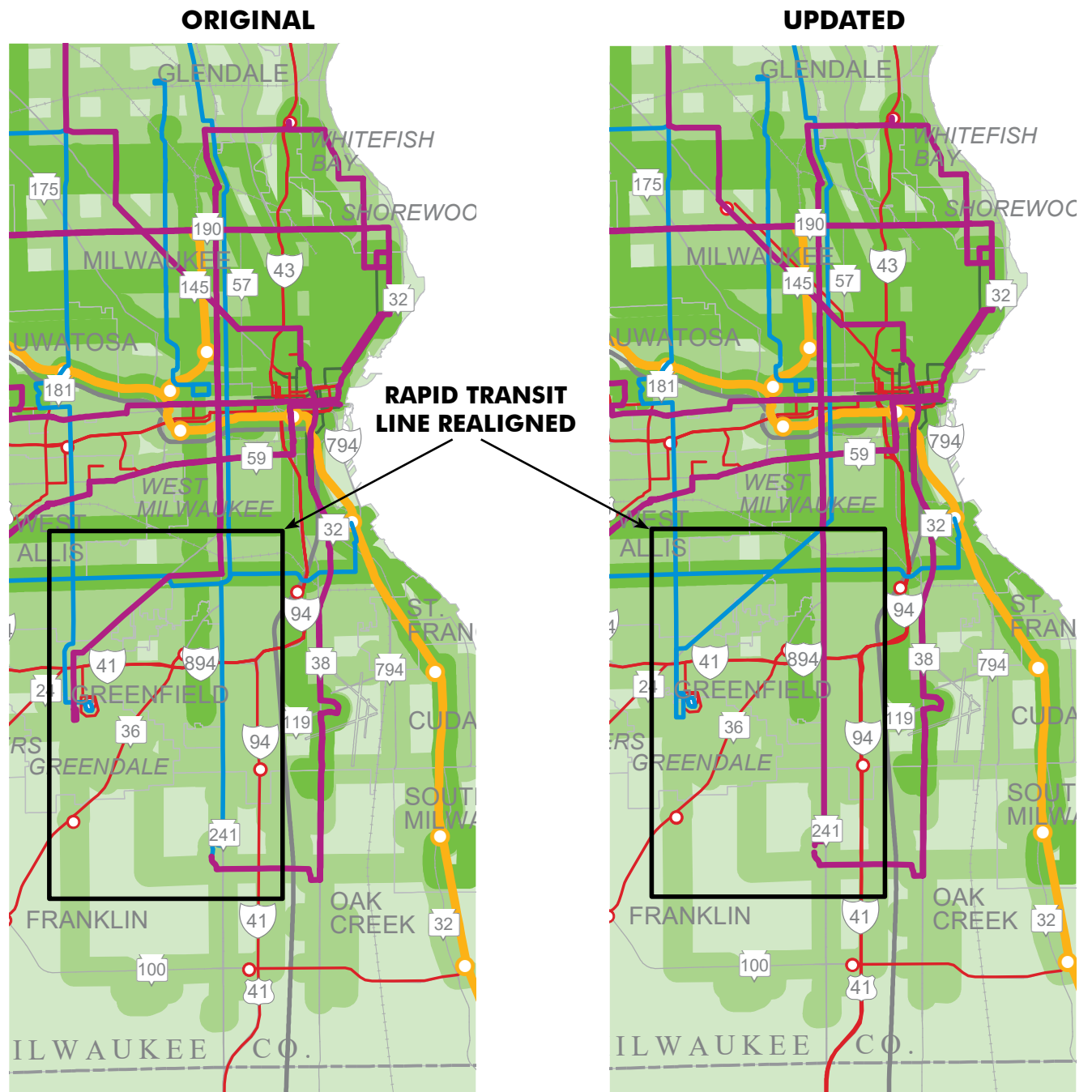
The plan is also being updated to extend a recommended express bus route in western Kenosha County from Twin Lakes to Genoa City, connecting to the recommended commuter bus stop at the Genoa City Park and Ride Lot and continuing into downtown Genoa City. This update is shown in Figure 4.3.

As needed, recommendations are being updated to reflect implementation that has occurred, such as the addition and expansion of express bus service in Milwaukee County, the implementation of The Hop Streetcar in the City of Milwaukee, the expansion of fixed-route bus service in the City of Kenosha, and real-time bus tracking service now available for RYDE (the City of Racine transit system) and The Hop. The recommended transit system is shown on Map 4.2. Table 4.1 provides updated fixed-route public transit service levels as they will be included in the Second Edition of Volume III. Updates to policy-focused recommendations within the public transit element are described below.

► Recommendation 2.4: Increase the frequency and expand the service area of local transit

This recommendation is being updated to change the title of the “Local Bus Service” section to “Local Transit Service” to make it clear that alternatives to traditional fixed-route bus services should also be considered. Examples of such alternatives include the operation of shuttles, microtransit (a form of demand-responsive transit that can be a useful alternative to traditional local bus service by using smaller vehicles and, in some cases, flexible routes and schedules), and shared-use automobiles through partnerships with transportation network companies like Uber and Lyft. In some cases these alternatives may provide a better fit for users and operators by offering more flexible and cost-effective options than traditional fixed-route bus services.

Figure 4.2
Updates to Transit Services in Milwaukee County: VISION 2050

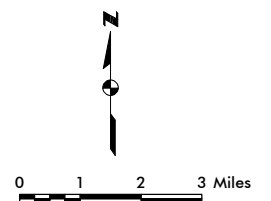


TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- STREETCAR LINE

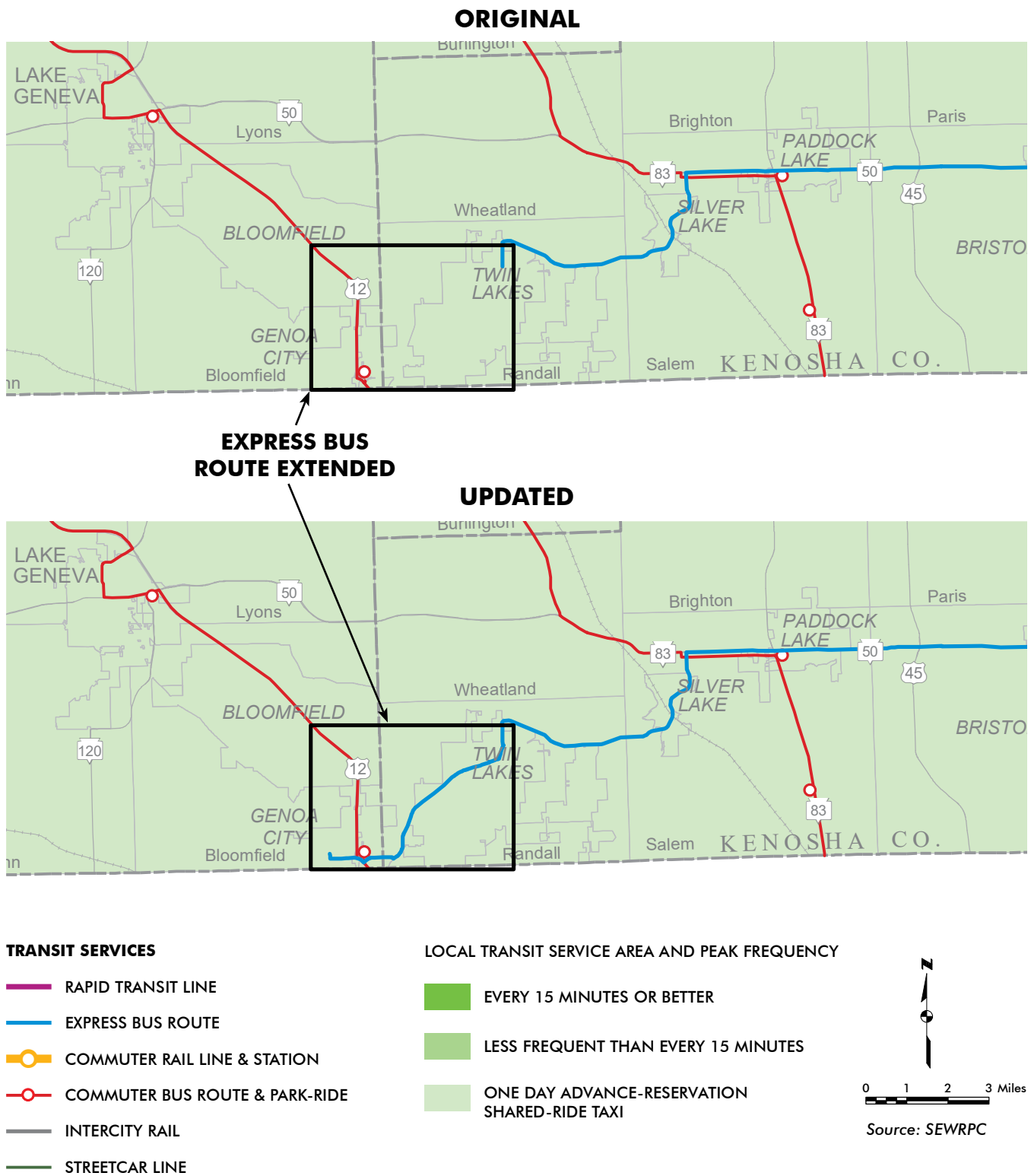
LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

- EVERY 15 MINUTES OR BETTER
- LESS FREQUENT THAN EVERY 15 MINUTES
- ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI



Source: SEWRPC

Figure 4.3
Updates to Transit Services in Kenosha and Walworth Counties: VISION 2050



Map 4.2 Public Transit Element: VISION 2050 as Updated

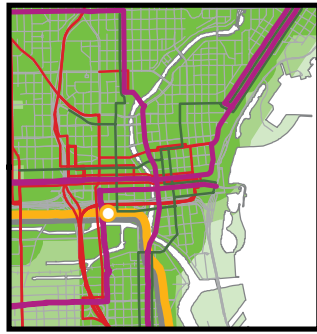
TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

- EVERY 15 MINUTES OR BETTER
- LESS FREQUENT THAN EVERY 15 MINUTES
- ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC

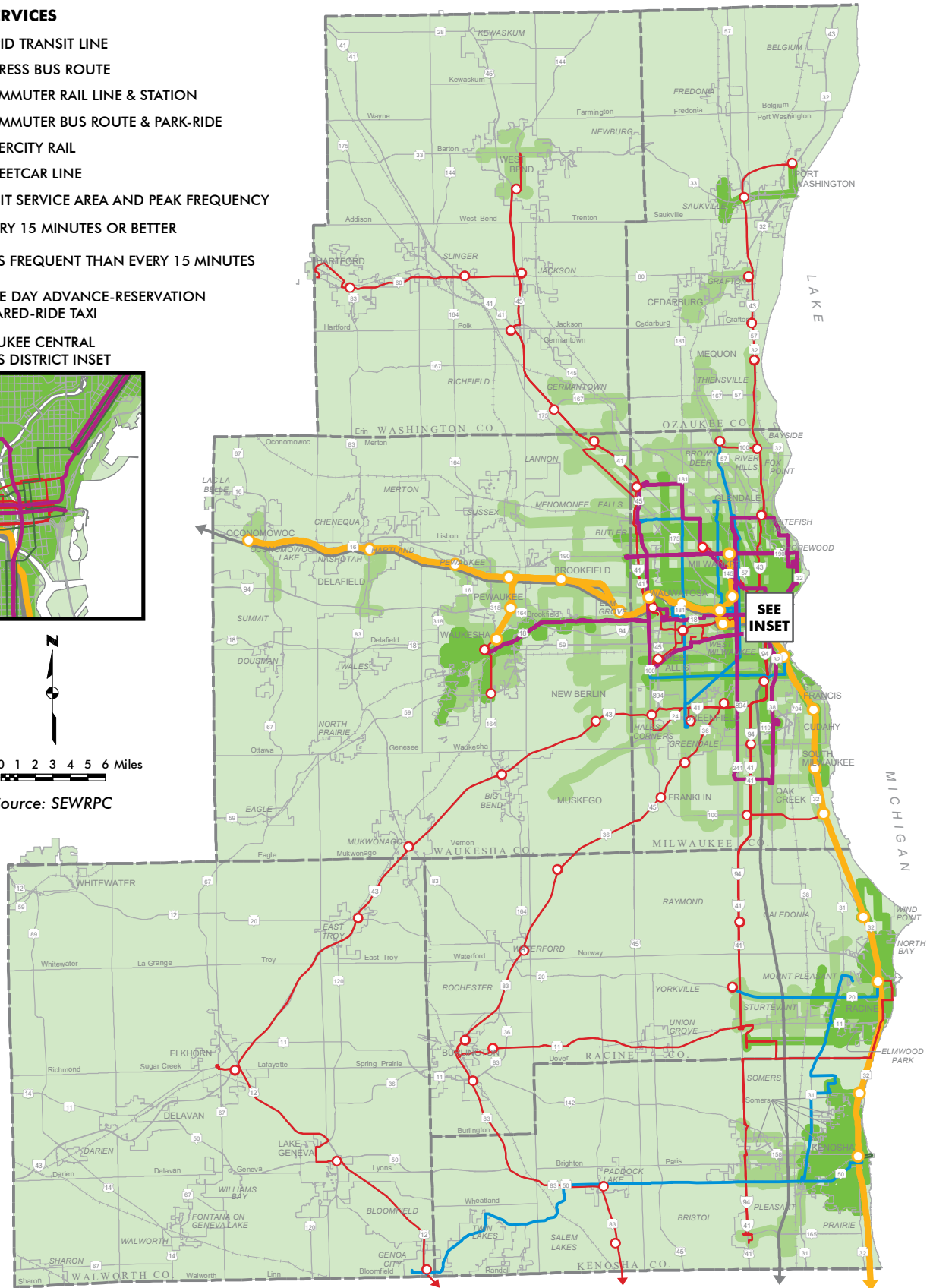


Table 4.1
Fixed-Route Public Transit Service Levels: VISION 2050 as Updated

Average Weekday Transit Service Characteristics	Existing (2018)	Plan (2050)
Revenue Vehicle-Hours		
Rapid Transit	--	1,170
Commuter Rail	10	190
Commuter Bus	290	990
Express Bus	880	870
Local Transit	3,690	7,130
Total	4,870	10,350
Revenue Vehicle-Miles		
Rapid Transit	--	23,500
Commuter Rail	100	8,200
Commuter Bus	5,700	24,300
Express Bus	10,400	12,670
Local Transit	46,100	84,100
Total	62,300	152,770

Source: National Transit Database, MCTS, and SEWRPC

► **Recommendation 2.9: Implement programs to improve access to suburban employment centers**

VISION 2050 recommends a series of programs be considered to improve access to suburban employment centers, including: vanpool programs; partnerships with transportation network companies such as Uber or Lyft; pedestrian facility enhancements; and job access programs. This recommendation is being updated to reference the newly created Workforce Mobility Team and add that the Commission should continue to support and expand the Team’s efforts.

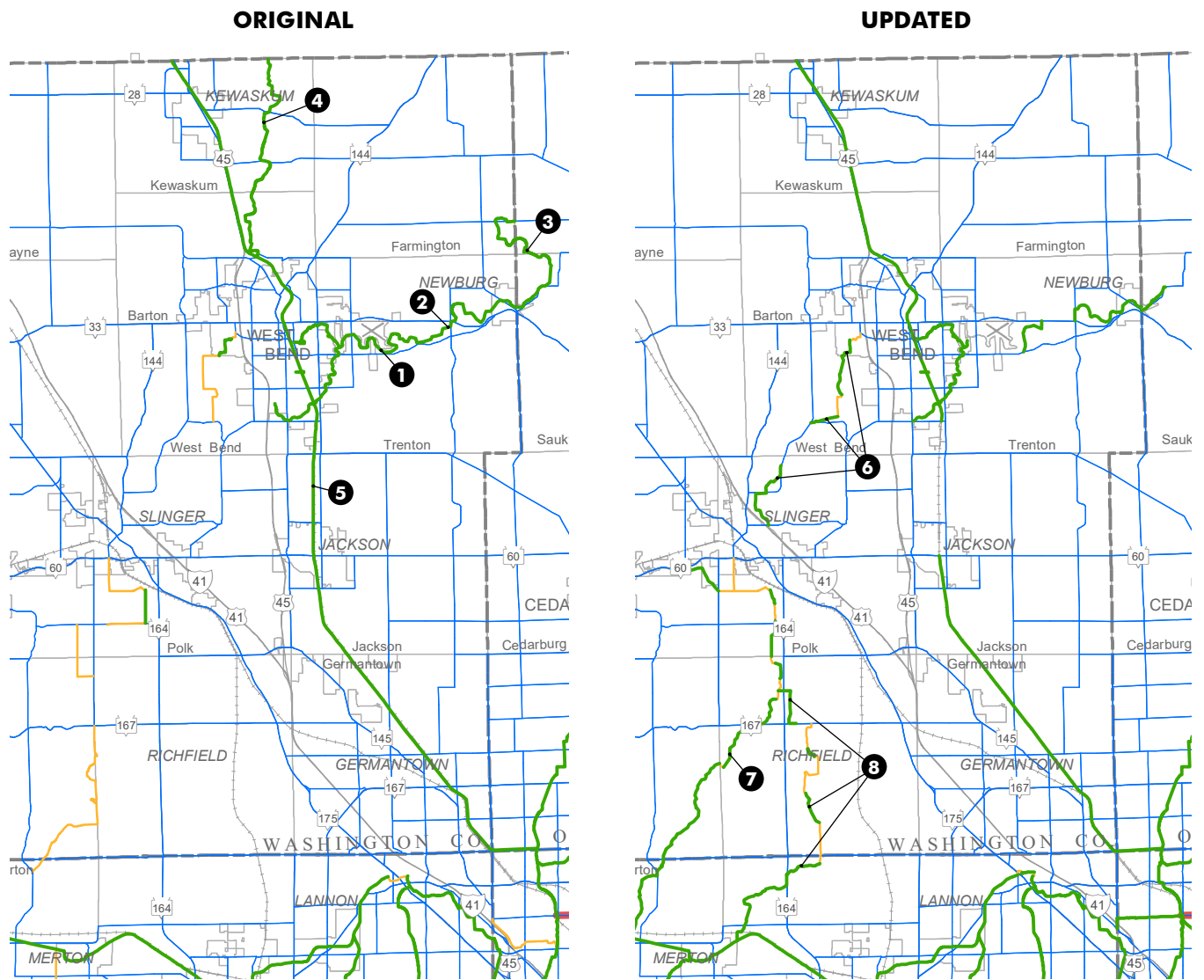
The Workforce Mobility Team was created in July 2018 through a collaboration between the Commission and the Regional Transit Leadership Council. The Team is staffed by the Commission and provides assistance to employers in the Region who experience challenges retaining and attracting workers as a result of those workers having limited or no commuting transportation options available. VISION 2050 as updated continues to recommend that all levels of government support and expand job access programs regionally and identify and implement innovative solutions.

Bicycle and Pedestrian Element

VISION 2050 as updated continues to recommend a well-connected bicycle and pedestrian network that improves access to activity centers, neighborhoods, and other destinations in the Region. The recommended bicycle network is being updated to be consistent with recent changes to the recommended Route of the Badger⁸ trail network and the Washington County Bikeway and Trail Network Plan, which was adopted in June 2019. Updates related to the Washington County Bikeway and Trail Network Plan are shown in Figure 4.4. The following updates are being made to reflect changes related to the Route of the Badger trail network:

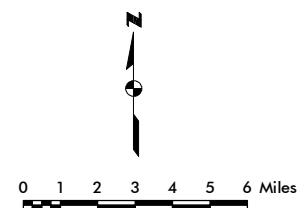
⁸The Route of the Badger is a TrailNation project supported by the national organization, Rails-to-Trails Conservancy, and the Wisconsin Bike Fed. The effort represents a vision for increased connectivity in the trail network in Southeastern Wisconsin through collaboration between state and local governments as well as private sector partners.

Figure 4.4
Updates to the VISION 2050 Bicycle Network in Washington County



BICYCLE FACILITIES

- OFF-STREET BICYCLE PATH
- ARTERIAL STREET OR HIGHWAY WITH BICYCLE ACCOMMODATION (IF FEASIBLE)
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK



Source: SEWRPC

SUMMARY OF UPDATES

Based on the recently adopted Washington County Bikeway and Trail Network Plan

Recommended paths to be removed:

- ❶ Along the Milwaukee River near the West Bend Airport
- ❷ Along the Milwaukee River from the West Bend Lakes Golf Club east to CTH M
- ❸ Along the Milwaukee River in Ozaukee and Washington Counties from Hawthorne Drive north to CTH A
- ❹ East of the Village of Kewaskum from the Eisenbahn State Trail north to Fond du Lac County
- ❺ Extension of the Eisenbahn State Trail from Rusco Road (current end of the trail) south to STH 60

New recommended paths:

- ❻ From the City of West Bend southwest to the Village of Slinger
- ❼ From the Town of Polk (near STH 164/Pioneer Road) southwest to the Bugline Trail in Waukesha County
- ❽ From Town of Polk (near STH 164/Pioneer Road) south through the Village of Richfield and along the Bark River in Waukesha County to the Bugline Trail near Lake Five Road

- Recommending a new off-street bicycle path in Ozaukee County generally along CTH I from CTH Z (north of the Village of Fredonia) into Sheboygan County
- Recommending a new off-street bicycle path along a railroad right-of-way in the 30th Street Industrial Corridor, between W. Wisconsin Avenue and W. Congress Street in the City of Milwaukee
- Removing a segment of recommended off-street bicycle path east of Milwaukee Mitchell International Airport between W. Drexel Avenue and W. Layton Avenue
- Changing the alignment of a recommended extension of the Oak Leaf Trail through the Cities of Franklin and Oak Creek near the Milwaukee/Racine County line, and removing segments of recommended enhanced bicycle facility corridor along the new alignment
- Truncating a recommended off-street bicycle path between the Village of Big Bend and the Village of Mukwonago east of IH 43, rather than west of IH 43 to STH 83

The recommended bicycle network, as updated, is shown on Map 4.3.

Table 4.2 shows the existing and planned number of miles of bicycle accommodations by type. The table has been updated to reflect implementation that has occurred since VISION 2050 was adopted and the updates described above.

VISION 2050 as updated continues to recommend providing on-street bicycle accommodations on the arterial street and highway system, expanding the off-street bicycle path system, expanding and improving connectivity of sidewalks in areas of existing or planned urban development, implementing enhanced bicycle facilities in key regional corridors, and expanding bike share programs in the Region. Updates to two of the recommendations within the bicycle and pedestrian element are described below.

► **Recommendation 3.3: Implement enhanced bicycle facilities in key regional corridors**

This recommendation is being expanded to describe additional implementation of bike boulevards outside of enhanced bicycle corridors, and to recommend that bike boulevards be considered as an alternative bicycle facility when a nearby arterial street has limited right-of-way that restricts construction of a standard or enhanced bicycle facility.

► **Recommendation 3.4: Expand bike share and dockless scooter implementation**

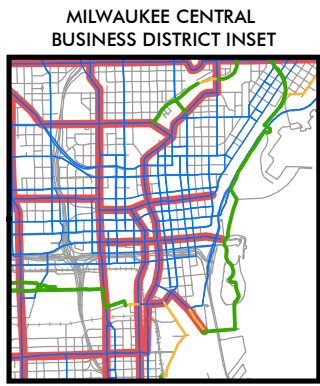
This recommendation is being expanded to include dockless scooters, dockless bike share, and electric bicycles (e-bikes) and address the benefits and potential safety concerns relating to this type of micromobility. Dockless scooter and dockless bike share programs can expand the geographic coverage area of standard bike share since they do not need to be returned to designated stations. These programs also provide important first-mile/last-mile connections, and may extend the reach of transit services. E-bikes provide additional value to bike share systems by enabling riders to travel longer distances with less effort, helping them to get to destinations faster, and reducing physical obstacles to

Map 4.3 Bicycle Network: VISION 2050 as Updated

BICYCLE FACILITIES

- OFF-STREET BICYCLE PATH
- ARTERIAL STREET OR HIGHWAY WITH BICYCLE ACCOMMODATION (IF FEASIBLE)
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- RECOMMENDED CORRIDOR FOR ENHANCED BICYCLE FACILITY ^a

^a Corridor would include an enhanced bicycle facility—such as a protected bike lane, a separate path within the road right-of-way, or a buffered bike lane—located on or along an arterial or, alternatively, a bike boulevard on a nearby parallel nonarterial.



MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC

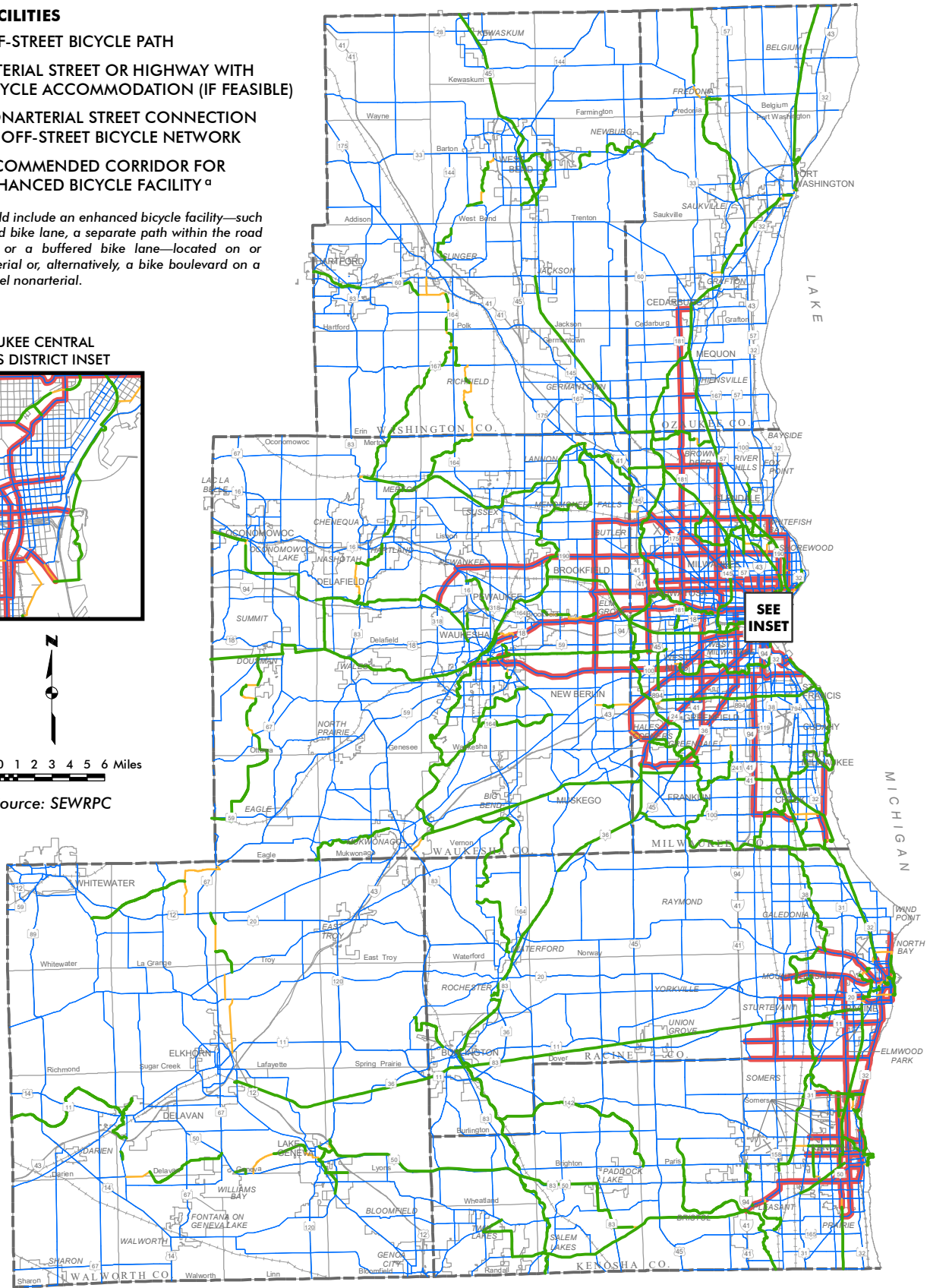


Table 4.2
Miles of Bicycle Facilities: VISION 2050 as Updated

Bicycle Facility	Estimated Mileages	
	Existing (2019)	Plan (2050)
On-street Accommodations		
Standard	893.9	2,997.3
Enhanced	106.9	392.7
Off-Street Paths	310.6	730.5

Source: SEWRPC

bicycling, such as climbing hills. These alternative modes can reduce vehicle trips and are a viable option for utilitarian, commuter, and other short-distance trips. VISION 2050 as updated also recommends that local governments address safety concerns relating to dockless scooters and bike share by ensuring users obey traffic laws and establish requirements for appropriate parking of scooters in the public right-of-way.

Transportation Systems Management Element

Transportation systems management (TSM) involves managing and operating existing transportation facilities to maximize their carrying capacity and travel efficiency. There are no substantive updates to TSM recommendations with this update. Inventory data, such the number of ramp meters, variable message signs, closed-circuit television cameras, and crash investigation sites, will be updated in the Second Edition of Volume III based on implementation that has occurred since VISION 2050 was adopted.

Travel Demand Management Element

Travel demand management (TDM) refers to a series of measures or strategies intended to reduce personal travel and vehicular travel or to shift such travel to alternative times and routes, allowing for more efficient use of the existing capacity of the transportation system. Updates to recommendations within the TDM element are described below.

► **Recommendation 5.3: Price personal vehicle travel at its true cost**

VISION 2050 as updated continues to recommend that a larger percentage of the full costs of construction, maintenance, and operation of street, highway, and parking facilities and services be borne by the users of the system, with strategies including cash-out of employer-paid parking, road pricing, and parking pricing. Staff is updating this recommendation to reflect activity that has taken place around the study and discussion of tolling and vehicle-miles of travel (VMT) fees since VISION 2050 was adopted.

Specifically, in 2016, the Wisconsin Department of Transportation (WisDOT) conducted a study on the feasibility of tolling as a potential user fee model to fund transportation. This report was part of a requirement included in the 2015-17 State budget and did not make any recommendations about transportation revenue and expenditure options, including tolling, but provided scenarios and options for consideration. In 2019, during the development of the 2019-2021 State budget, further study of VMT fees and tolling was discussed by the State Legislature, although no study requirements were included in the adopted budget.

► **NEW - Recommendation 5.6: Partner with private-sector shared mobility service providers**

A new recommendation is being added to VISION 2050 to encourage government entities to work with private-sector mobility providers to consider opportunities for partnerships that work to advance an equitable, affordable, and efficient transportation system in the Region. Emerging trends in shared-use transportation are rapidly evolving, with private-sector mobility providers offering new services such as shared micromobility (e.g., bike share and e-scooters), app-based ridesourcing (e.g., Uber and Lyft), on-demand carpooling, and other app-based mobility options. These new services have the potential to have both positive and negative impacts on the Region. For example, shared-use transportation services could reduce personal vehicle ownership and drive-alone personal vehicle travel, particularly when they are used to complement regular public transit use. However, these services also have the potential to pose safety hazards, increase VMT, and replace public transit use. The recommended partnerships should encourage safety, accessibility, affordability, active and shared-use transportation, and data sharing. They should also explore options to support public transit services by providing first-mile/last-mile connections and supplementing regular service during off-peak times or in areas with lower-density development patterns.

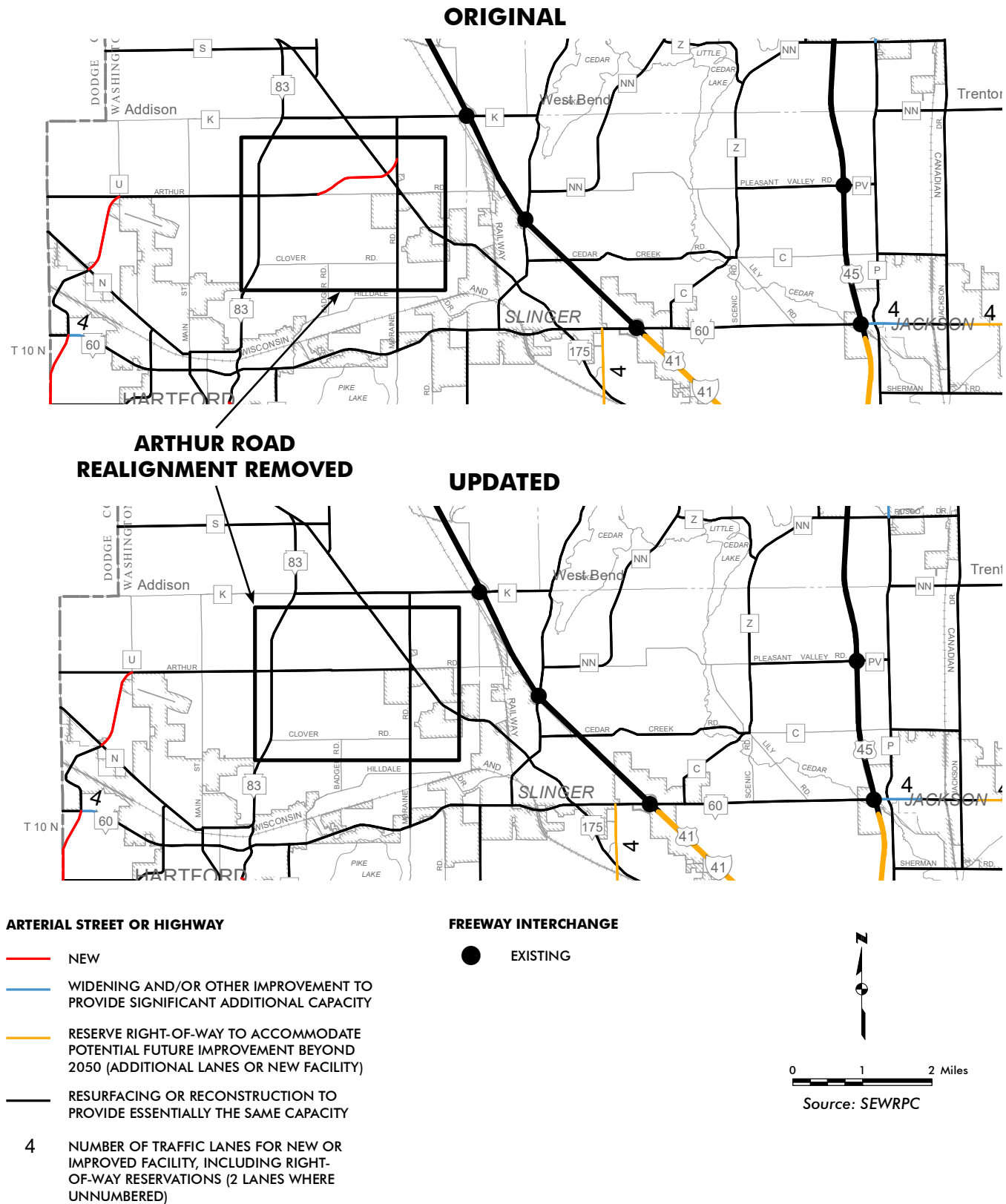
Arterial Streets and Highways Element

VISION 2050 as updated continues to recommend the arterial street and highway system be maintained to effectively carry higher levels of people and goods and be expanded to address residual congestion. Recommended functional improvements—widening of an existing arterial or constructing a new arterial—to the arterial street and highway system remain primarily unchanged with this plan update, with the exception of the removal of the planned northern STH 60 reliever route in Washington County.

The STH 60 northern reliever route was originally proposed in a study conducted by Washington County in 2005, and was subsequently added to the regional transportation plan in 2006, as part of development of the year 2035 regional transportation plan. At the request of Washington County, the Commission staff, working with Washington County staff, conducted an additional study to identify and evaluate potential northern reliever routes to STH 60. At the conclusion of that study, an alternative reliever route was identified and later included in VISION 2050. After further, more-detailed study by Washington County, along with public feedback, the Washington County Board of Supervisors determined to not pursue the alternative reliever route further and to request that the Commission remove the reliever route from VISION 2050. Removing the STH 60 reliever route from VISION 2050 involves eliminating the previously planned realignment of Arthur Road between a point west of Bramble Wood Drive and Kettle Moraine Road, as shown in Figure 4.5.

Based on this modest update, along with the implementation that has occurred since the adoption of VISION 2050, the planned arterial street and highway system under VISION 2050 totals 3,669.1 route-miles. Approximately 92 percent, or 3,371.2 of these route-miles, are recommended to be resurfaced and reconstructed to their existing traffic carrying capacity. Approximately 6 percent, or 233.1 of these route-miles, are recommended for capacity expansion through widening to provide additional through traffic lanes. Approximately 2 percent, or 64.8 of these route-miles, are recommended for capacity expansion through the construction of new arterial facilities. The updated VISION 2050 arterial streets and highways element is shown on

Figure 4.5
Updates to Functional Improvements to the Arterial Street and
Highway System in Washington County: VISION 2050



Map 4.4 and the system preservation, improvement, and expansion mile totals by county are presented in Table 4.3.

Updates to policy-focused recommendations within the arterial streets and highways element are described below.

► **Recommendation 6.2: Incorporate “complete streets” concepts for arterial streets and highways**

This recommendation is being updated to add innovative approaches to curbside management as examples of complete streets concepts. Expansion in shared mobility transportation options—such as bike share, dockless scooters, ridesourcing, and carsharing—and the growth in online shopping and associated deliveries, has increased demand for curbside pick-ups, drop-offs, and dwell times in some areas of the Region. Curbside management techniques, such as flexible loading zones, space for shared micromobility parking, and electric vehicle charging, are emerging complete streets concepts that should be considered in some contexts to improve the experience of all roadway users.

► **Recommendation 6.5: Address safety needs on the arterial street and highway network**

This recommendation is being updated to recommend that Federal, State, and local governments and the Commission work to minimize crashes due to reckless driving. During the first round of public involvement for this update to VISION 2050, the Commission staff received a number of comments from members of the public, local officials, and members of the Commission’s Environmental Justice Task Force expressing concern about reckless driving occurring throughout the Region. Reckless driving typically involves drivers operating vehicles with disregard for traffic laws and the safety of others, including driving at excessive speeds. Driving recklessly can greatly increase the opportunity for crashes and the severity of those crashes. For example, nearly 40 percent of vehicular-related fatalities that occurred in 2018 could be attributed, among other factors, to drivers travelling at excessive speed or too fast for conditions.

Measures effective in addressing reckless driving include infrastructure improvements, public education, and increased accountability and enforcement.

- **Infrastructure Improvements** – Narrowing travel lanes, providing protected or separated bicycle accommodations, reducing unnecessary travel lanes (road diets), providing pedestrian curb bump-outs, visually narrowing the roadway using streetscaping (such as street trees), ensuring speed limits are appropriate for surrounding land uses, and incorporating other complete streets concepts have all been found to lower travel speeds and assist in reducing reckless driving.
- **Public Education** – Campaigns that provide information about the consequences of reckless driving and excessive speeding can be implemented through traditional drivers’ education courses, web-based media campaigns, youth programs and activities, community outreach events, and traditional public service announcements.
- **Enforcement and Accountability** – Increased enforcement in known problem areas, mandated safe-driving classes for offenders, and increased data sharing among all agencies, are strategies

Map 4.4

Arterial Street and Highway Element: VISION 2050 as Updated

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NO RECOMMENDATION WITH RESPECT TO WHETHER THIS SEGMENT OF IH 43 SHOULD BE RECONSTRUCTED WITH OR WITHOUT ADDITIONAL LANES (SEE NOTE BELOW)
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS

Note: VISION 2050 does not make any recommendation with respect to whether the segment of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional lanes. This would be made during preliminary engineering, after which VISION 2050 would be amended to reflect the decision made as to how this segment of IH 43 would be reconstructed. Any construction along this segment of IH 43 prior to preliminary engineering—such as bridge reconstruction—should fully preserve and accommodate the future option of rebuilding the freeway with additional lanes.

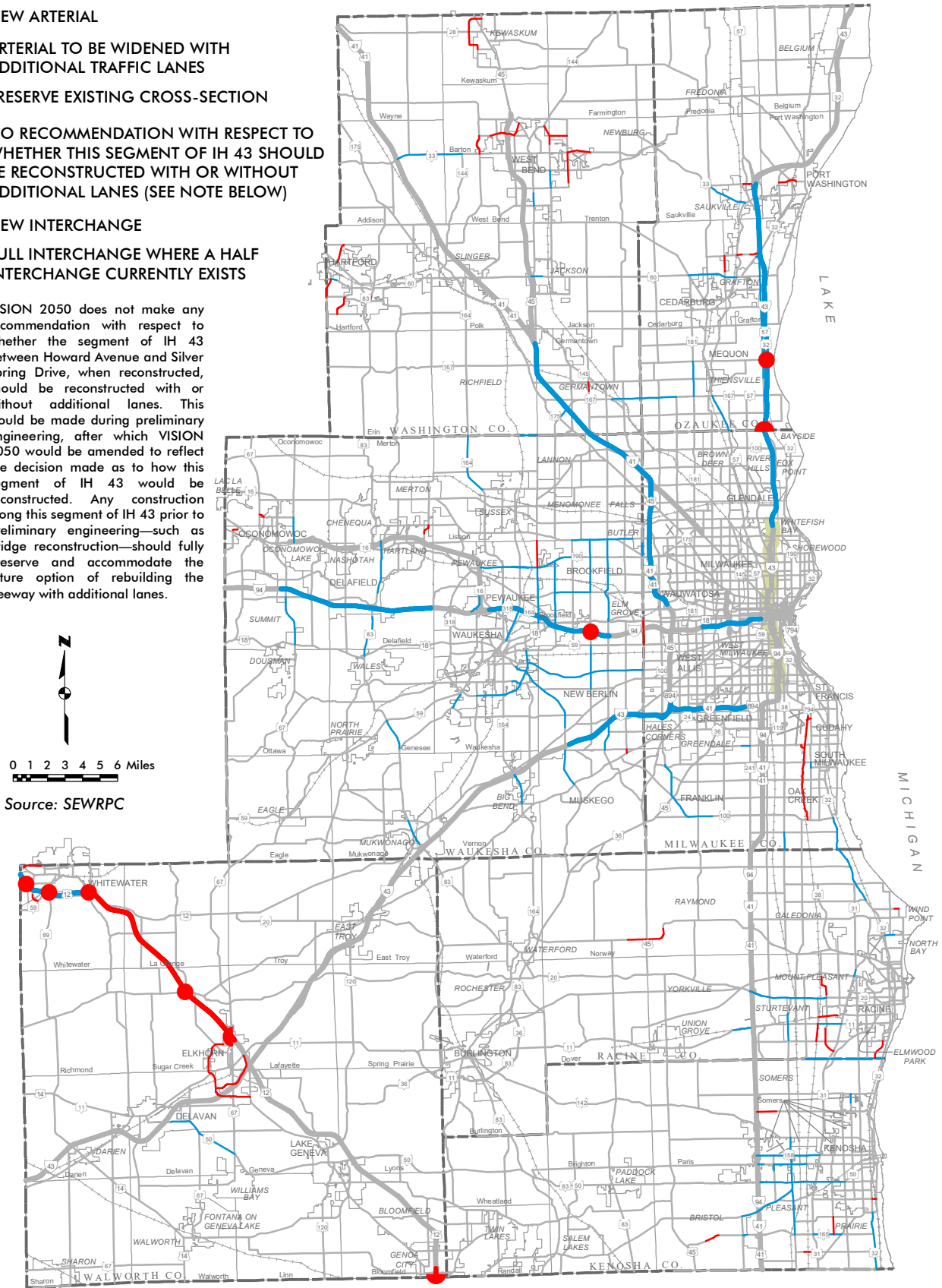


Table 4.3
Arterial Street and Highway System Preservation, Improvement, and Expansion
by Arterial Facility Type by County: VISION 2050 as Updated

County	Arterial Facility Type	System Preservation (miles)	System Improvement (miles)	System Expansion (miles)	Total Miles
Kenosha	Freeway	12.0	--	--	12.0
	Surface Arterial	322.2	27.4	3.9	353.5
	Subtotal	334.2	27.4	3.9	365.5
Milwaukee	Freeway	44.6 ^a	23.4	--	68.0
	Surface Arterial	719.0	9.3	6.5	734.8
	Subtotal	763.6	32.7	6.5	802.8
Ozaukee	Freeway	13.3	14.1	--	27.4
	Surface Arterial	262.4	18.5	3.1	284.0
	Subtotal	275.7	32.6	3.1	311.4
Racine	Freeway	12.0	--	--	12.0
	Surface Arterial	416.1	15.8	8.8	440.7
	Subtotal	428.1	15.8	8.8	452.7
Walworth	Freeway	49.8	4.8 ^b	12.4	67.0 ^b
	Surface Arterial	408.8	4.4	10.3	423.5
	Subtotal	458.6	9.2	22.7	490.5
Washington	Freeway	35.8	6.4	--	42.2
	Surface Arterial	389.8	8.8	15.5	414.0
	Subtotal	425.6	15.2	15.5	456.4
Waukesha	Freeway	34.4	24.4	--	58.8
	Surface Arterial	650.9	75.8	4.3	731.0
	Subtotal	685.3	100.2	4.3	789.8
Region	Freeway	201.9	73.1 ^c	12.4	287.4 ^c
	Surface Arterial	3,169.3	160.0	52.4	3,381.7
	Total	3,371.2	233.1	64.8	3,669.1

^a Includes the 10.0 miles of IH 43 between Howard Avenue and Silver Spring Drive. VISION 2050 does not make a recommendation regarding whether this section should be reconstructed with or without additional traffic lanes.

^b Represents the conversion of approximately 4.8 miles of the USH 12 Whitewater bypass, currently a two-traffic-lane surface arterial, to a four-traffic-lane freeway.

^c Includes the widening of approximately 63.6 miles of the existing regional freeway system, and the conversion of about 4.8 miles of the USH 12 Whitewater bypass, currently a two-traffic-lane surface arterial, to a four-traffic-lane freeway.

Source: SEWRPC

that have been found to reduce reckless driving. While currently not permitted in Wisconsin, automated traffic enforcement (red-light and speed cameras) have also been found to be effective in increasing the obedience of traffic laws and in reducing reckless driving and crashes. Since 2017, members of the State Legislature have been working on legislation to permit a pilot automated traffic enforcement program in the City of Milwaukee.

VISION 2050 as updated recommends that these measures and others be reviewed and implemented in a coordinated effort through State and local transportation departments, law enforcement agencies, and local stakeholders. In some cases, action by the State Legislature may be required.

► **NEW – Recommendation 6.7: Monitor growth and development of automated vehicles**

A new plan recommendation is being added recommending that Commission staff work with Federal, State, and local governments to monitor the growth and development of automated vehicles to determine

their effect on VISION 2050. Since VISION 2050 was adopted, advances in this technology, including new automated features that are now available on the market, and the continued pursuit of further advancements in the technology merit the addition of a new plan recommendation.

Specifically, Commission staff will monitor changes in policies and infrastructure under the following topics as automated vehicle technology advances: (1) vehicle ownership; (2) operator requirements and liability laws; (3) land use implications; (4) interaction with other users of the roadway, particularly pedestrians and bicyclists; (5) connected vehicle infrastructure; and (6) implications for public transit and freight movement. Staff will review such changes in the context of potential changes to VISION 2050 as part of subsequent updates to the plan.

Freight Transportation Element

VISION 2050 as updated continues to recommend a multimodal freight transportation system designed to provide for the efficient and safe movement of raw materials and finished products to, from, and within Southeastern Wisconsin. To achieve this goal, VISION 2050 recommends improvements to the Region's transportation infrastructure as well as intergovernmental cooperation and other actions to preserve key transportation corridors, address regulatory inefficiencies, meet trucking industry workforce needs, and increase transportation safety and security. There are no substantive updates to freight recommendations with this update.

The Second Edition of Volume III will be updated to reflect the revisions to the regional highway freight network (discussed in Chapter 2) and implementation that has occurred since VISION 2050 was adopted, including the completion of the Wisconsin State Freight Plan (SFP), the work of WisDOT's Oversize/Overweight (OSOW) Working Group, WisDOT's Truck Route Efficiency Project, the Wisconsin Freight Advisory Committee (FAC), and the FAC's Intermodal Subcommittee.

Additional Updates

Incorporate VISION 2050 Plan Objectives into Recommended Plan

VISION 2050 recommendations were developed to address a series of plan objectives that fall under four important themes: Healthy Communities (which includes both public health- and environmental sustainability-related objectives), Equitable Access, Costs and Financial Sustainability, and Mobility. Since VISION 2050 was adopted, feedback received from elected officials, local government staff, and other stakeholders encouraged more emphasis on the four themes and their underlying objectives within the recommended plan. Specifically, a need to improve the understanding of how the recommended plan addresses public health, equity, and environmental resilience objectives was identified. Objectives under these topics are addressed throughout plan recommendations under various elements, but are not always clearly identified as such. Feedback garnered through an interactive public participation activity during the first round of public involvement for this effort helped further identify priorities and answer questions related to these three specific topics.

To respond to this feedback and enhance the awareness of the four themes in the recommended plan, staff will incorporate more information about the plan objectives into the recommended plan presented in Chapter 1 of the Second Edition of Volume III of the VISION 2050 plan report. A description of the VISION 2050 plan objectives, under the four themes described above, is provided in Figure 4.6.

Figure 4.6
VISION 2050 Plan Objectives Under the Four Plan Themes



HEALTHY COMMUNITIES

This theme revolves around creating healthy communities within our Region, with active transportation options and environmental preservation serving as cornerstones of the theme.

- Objective 1.1:** Vibrant, walkable neighborhoods that contribute to the Region's distinct character.
- Objective 1.2:** Active transportation options that encourage healthy lifestyles.
- Objective 1.3:** Compact urban development and limited rural development that maximize open space and productive agricultural land.
- Objective 1.4:** Environmentally sustainable development and transportation that minimize the use of nonrenewable resources and adverse impacts on the Region's natural environment, including biodiversity, air, and water.
- Objective 1.5:** A transportation system that minimizes disruption of neighborhood and community development, including adverse effects on the property tax base.
- Objective 1.6:** Safe and secure travel environments that minimize loss of life, injury, and property damage.



EQUITABLE ACCESS

This theme focuses on providing access to opportunity for all of the Region's residents.

- Objective 2.1:** Benefits and impacts of investments in the Region's transportation system should be shared fairly and equitably and serve to reduce disparities between white and minority populations.
- Objective 2.2:** Affordable transportation and housing that meet the needs and preferences of current and future generations.
- Objective 2.3:** Reduce job-worker mismatch.



COSTS AND FINANCIAL SUSTAINABILITY

This theme takes into account the need to make wise investment decisions that consider all the direct and indirect costs of developing the Region's land and transportation system.

- Objective 3.1:** A land development pattern and transportation system that support economic growth and a globally competitive economy.
- Objective 3.2:** A financially sustainable transportation system that minimizes life-cycle capital and operating transportation costs.
- Objective 3.3:** Transportation options that minimize private transportation costs.
- Objective 3.4:** Urban development that can be efficiently served by transportation, utilities, and public facilities.



MOBILITY

This theme is aimed at achieving a multimodal transportation system that serves the mobility needs of all of the Region's residents and provides access to important places and services.

- Objective 4.1:** A balanced, integrated, well-connected transportation system that provides choices among transportation modes.
- Objective 4.2:** Reliable, efficient, and universal access to employment centers, educational opportunities, services, and other important places.
- Objective 4.3:** Well-maintained transportation infrastructure.
- Objective 4.4:** An acceptable level of service on the transportation system.
- Objective 4.5:** Fast, frequent, and reliable public transit services that maximize the people and jobs served.
- Objective 4.6:** Convenient, efficient, and reliable movement of goods and people.

Incorporate Targets Established for National Performance Measures into Recommended Plan

As required by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the Fixing America's Surface Transportation (FAST) Act, the Commission established targets for a number of performance measures developed by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). The targets are included in Appendix B of this report. This appendix will also be added to the Second Edition of Volume III.

4.4 UPDATED FINANCIAL ANALYSIS FOR VISION 2050 TRANSPORTATION SYSTEM

As part of this update, the Commission staff reviewed and updated the analysis of existing and reasonably expected costs and revenues associated with the transportation system recommended in VISION 2050. When VISION 2050 was initially prepared, this financial analysis resulted in identification of a gap between the funds needed to construct, operate, and maintain the recommended regional transportation system and the available revenues, with expected funds being insufficient to support a large portion of the recommended expansion of the Region's transit element. In December 2018, an updated financial analysis included in the second amendment to the plan showed that the funding gap remained for public transit and also that expected funding levels would be insufficient to support the recommended reconstruction of several portions of the Region's arterial street and highway system.

Though the 2019-2021 State budget increased transportation funding over previous years, increases in vehicle fuel efficiency are expected to continue to limit growth in State funding. As such, State revenues are expected to be constant in nominal dollars through the year 2050, resulting in continuing declines in purchasing power due to inflationary pressures on construction and operating costs. This dynamic, combined with State-imposed limitations on the ability of local governments to generate revenue, results in the funding gaps shown in Table 4.4. These funding gaps mean that without additional revenue the Region will still be unable to achieve the public transit system recommended in VISION 2050 or complete the recommended reconstruction of several portions of the Region's arterial street and highway system by 2050. No funding gap was identified for the bicycle and pedestrian element as a part of this updated financial analysis, which is consistent with previous financial analyses completed for VISION 2050.

The updated financial analysis prepared as part of the 2020 Review and Update relies on a more detailed analysis of existing and reasonably expected revenues for the Region's transportation system, which is shown in Figure 4.7 for the arterial streets and highways element and Table 4.5 for the public transit element. In addition to a more detailed process for estimating revenues, Commission staff also substantially refined the models used to estimate costs. The updated financial analysis, summarizing the estimated costs to implement VISION 2050 and the available revenues, is presented in 2019 constant dollars in Table 4.6 and year of expenditure dollars in Table 4.7.

The portion of the VISION 2050 transportation component that can be expected to be implemented without an increase in expected revenues is referred to as the "Fiscally Constrained Transportation System (FCTS)." The estimated costs and revenues associated with the updated FCTS are compared in constant 2019 dollars in Table 4.8 and in year of expenditure dollars in Table 4.9.

Table 4.4
Estimated Gap Between VISION 2050 Costs and
Existing and Reasonably Expected Revenues

Constant Year 2019 Dollars (Average Annual Through Year 2050)	
Highway	
Capital	\$367 million
Operating	\$19 million
Public Transit	
Capital	\$113 million
Operating	\$140 million
Year of Expenditure Dollars (Average Annual Through Year 2050)	
Highway	
Capital	\$683 million
Operating	\$49 million
Public Transit	
Capital	\$144 million
Operating	\$194 million

Source: SEWRPC

Under the updated FCTS, service levels on the regional transit system would decline by about 35 percent, from about 4,870 revenue vehicle-hours of service on an average weekday in the year 2018 to 3,190 vehicle-hours of service in the year 2050. This represents an even greater decline than was predicted by previous financial analyses. In terms of the recommended expansion and improvement of transit in VISION 2050, the updated FCTS only includes the recommended east-west rapid transit line between downtown Milwaukee and the Milwaukee Regional Medical Center and the lakefront and 4th Street extensions of the Milwaukee Streetcar. A map of the public transit system expected under the FCTS is shown on Map 4.5.

The difference between the estimated costs to implement the arterial streets and highways element recommended in VISION 2050 and the expected revenues will result in a reduction in the amount of freeway and surface arterials that can be reconstructed, widened, or newly constructed. With respect to surface arterials under the FCTS, approximately two-thirds of the total miles that would be expected to be reconstructed by 2050 would instead be rehabilitated—extending the overall life of the roadway, but likely resulting in a reduction in pavement quality.

Specifically, only approximately 20 miles, or 11 percent, of the 186 miles of remaining freeway reconstruction recommended in VISION 2050 would be expected to be implemented by the year 2050 under the updated FCTS, as shown on Map 4.6. As such, the FCTS does not include approximately 106 miles of planned freeway reconstruction at existing capacity, 48 miles of planned freeway expansion, and 12 miles of planned new freeway facilities. With respect to surface arterials, all of the surface arterial capacity expansion recommended in VISION 2050 is included in the updated FCTS, with the exception of the planned extension of the Lake Parkway between Edgerton Avenue and STH 100 in Milwaukee County and the extension of Cold Springs Road between CTH O and IH 43 (associated with the reconstruction of the IH 43/STH 57 interchange) in Ozaukee County, as shown on Map 4.7.

Table 4.10 shows the estimated cost and potential schedule of significant arterial construction and reconstruction projects through 2050 under the FCTS.

Figure 4.7
Estimate of Existing and Reasonably Expected Arterial Street and Highway Revenues

Federal and State Capital and Operating Funding Assessment of Historical Statewide Funding (millions of nominal dollars)							
Program	Averaging Timeframe	Bonds		Federal	State	Total	Annual Growth (Percent)
		Transportation Revenue	General Obligation				
Major Highway Development	2020-2021 Budget	\$71	\$--	\$169	\$26	\$266	
	20-Year	132	13	91	55	291	1.55
	10-Year	115	21	109	74	319	-1.92
	5-Year	65	6	128	58	257	-4.08
State Highway Rehabilitation	2020-2021 Budget	\$--	\$--	\$448	\$520	\$968	
	20-Year	--	70	383	261	714	1.98
	10-Year	--	61	417	335	813	-0.75
	5-Year	--	30	438	357	825	0.05
Southeastern Wisconsin Freeway Megaproject	2020-2021 Budget	\$--	\$43	\$34	\$32	\$109	
	18-Year	--	91	86	33	210	-1.37
	10-Year	--	126	79	29	235	-14.85
	5-Year	--	150	48	13	211	-32.26
Operations and Maintenance	2020-2021 Budget	\$--	\$--	\$1	\$299	\$300	
	20-Year	--	--	3	218	221	-0.50
	10-Year	--	--	3	254	257	0.04
	5-Year	--	--	2	283	285	0.00
Local Roads and Bridges	2020-2021 Budget	\$--	\$--	\$--	\$203	\$203	
	20-Year	--	--	--	195	195	0.62
	10-Year	--	--	--	190	190	1.17
	5-Year	--	--	--	199	199	2.36
General Transportation Assistance	2020-2021 Budget	\$--	\$--	--	\$495	\$495	
	20-Year	--	--	--	395	395	1.56
	10-Year	--	--	--	422	422	1.01
	5-Year	--	--	--	429	429	2.28
Total	2020-2021 Budget	\$71	\$43	\$652	\$1,575	\$2,341	
	20-Year	132	174	563	1,158	2,027	
	10-Year	115	208	609	1,304	2,235	
	5-Year	65	187	615	1,339	2,205	

Reasonably Available/Expected Federal and State Annual Funding Levels: Statewide

Program	Bonding	Federal	State	Total
Major Highway Development	\$71	\$169	\$26	\$266
State Highway Rehabilitation	--	448	520	968
Southeastern Wisconsin Freeway Megaproject	43	34	32	109
Operations and Maintenance	--	1	299	300
Local Roads and Bridges	--	--	203	203
General Transportation Aids	--	--	495	495
Total	\$114	\$652	\$1,575	\$2,341

Though the 2019-2021 State budget increased transportation funding over previous years, increases in vehicle fuel efficiency are expected to continue to limit growth in State funding. As such, State funding levels are expected to be constant in nominal dollars through the year 2050.

Based on the FAST Act, Federal funding levels are expected to increase by 2.0 percent annually.

Capital Funding Assumptions

Southeastern Wisconsin represents approximately 35 percent of the State in population, employment, income, and assessed value, and about 30 percent of vehicle-miles of travel. In the years after freeway system construction, and before freeway system reconstruction, Southeastern Wisconsin received about 25 to 30 percent of State highway system revenues.

State Highway System

To estimate Southeastern Wisconsin's share of State revenues, Option 1 allocates all Southeast Freeway Rehabilitation funds to Southeast Wisconsin and 25 percent of all other funds to Southeastern Wisconsin. Option 2 allocates 30 percent of all funds to Southeastern Wisconsin.

Option 1

$$\$109 + 0.25(\$1,234) = \$418 \text{ million}$$

Option 2

$$\$1,343 \times 0.30 = \$403 \text{ million}$$

Conclusion

\$418 million Federal and State annual highway revenue in nominal dollars

Figure continued on next page.

Figure 4.7 (Continued)

Local and County Trunk Highway System	
<u>Local Roads and Bridges</u>	\$203 x 0.30 = \$61 million
<u>General Transportation Aids (Capital)</u>	Southeastern Wisconsin has historically received approximately 20 percent of Statewide General Transportation Aids. Capital expenses have typically represented approximately 40 percent of all General Transportation Aids expenditures, with approximately 25 percent of those expenditures being on arterial streets and highways. \$495 x 0.20 x 0.40 x 0.25 = \$10 million
<u>Local Capital Transportation Funding</u>	Assessment of Historical Funding \$48 million annually Conclusion – 2050 Plan \$48 million

Operating and Maintenance Funding Assumptions	
State Highway System	
State highway operations and maintenance expenditures have historically represented approximately 20 percent of statewide operations and maintenance expenditures \$300 x 0.20 = \$60 million	
Local and County Trunk Highway System	
<u>General Transportation Aids (O&M)</u>	Southeastern Wisconsin has historically received approximately 20 percent of Statewide General Transportation Aids. Operating expenses have typically represented approximately 30 percent of all General Transportation Aids expenditures attributed to highway operations and maintenance, with approximately 25 percent of those expenditures being on local arterial streets and highways. \$495 x 0.20 x 0.30 x 0.25 = \$7 million
<u>Local Transportation Funding</u>	Assessment of Historical Funding \$34 million annually Conclusion – 2050 Plan \$34 million

Reasonably Available/Expected Annual Funding Levels: Southeastern Wisconsin					
Program	Bonding	Federal	State	Local	Total
State					
Capital	\$61	\$188	\$169	\$--	\$418
Operating & Maintenance	--	--	60	--	60
Subtotal	\$61	\$188	\$229	\$--	\$478
County & Local Municipalities					
Capital	\$--	\$--	\$71	\$48	\$119
Operating & Maintenance	--	--	7	34	41
Subtotal	\$--	\$--	\$78	\$82	\$160
Total	\$61	\$188	\$307	\$82	\$638

Source: 2018-2019 Transportation Budget Trends (Wisconsin Department of Transportation) and SEWRPC

Table 4.5
Estimate of Existing and Reasonably Expected Transit Revenues

Regional Capital and Operating Funding Assessment (millions of nominal dollars)						
Program	Averaging Timeframe (1998-2017)	Federal	State	Local	Total	Annual Growth (Percent)
Operating	20-Year	\$26	\$74	\$24	\$124	2.23
	10-Year	31	81	26	138	0.91
	5-Year	29	80	27	136	3.17
Capital	20-Year	\$15	\$--	\$4	\$19	1.98
	10-Year	17	--	5	22	-0.75
	5-Year	14	--	6	20	0.05

Additional Federal Revenue (From Committed Projects)

City of Milwaukee Streetcar
 Capital
 FTA 5337 – \$263,800 beginning in 2025, 2026, and 2027 (\$191,100 average annual)
 Operating
 FTA 5307 – \$547,300 beginning in 2020, 2021, and 2022 (\$474,600 average annual)
 \$2.9 million average annual parking revenue
 Milwaukee County Bus Rapid Transit
 Capital
 FTA 5337 – \$860,000 beginning in 2026 (\$623,000 average annual)
 Operating
 FTA 5307 – \$1 million beginning in 2021 (\$857,100 average annual)

Reasonably Available/Expected Funding Levels

Program	Federal	State	Local	Total
Operating	\$31	\$80	\$30	\$141
Capital	15	--	8	23
Total	\$46	\$80	\$38	\$164

Though the 2019-2021 State budget increased transportation funding over previous years, increases in vehicle fuel efficiency are expected to continue to limit growth in State funding. As such, State funding levels are expected to be constant in nominal dollars through the year 2050.

Transit service levels envisioned in VISION 2050 would be expected to generate an additional \$54 million in Federal capital and operating funding annually on average.

Based on the FAST Act, Federal funding levels are expected to increase by 2.0 percent annually.

Source: SEWRPC

Approximately 94 percent, or 3,426 of the total 3,650 miles, of the expected year 2050 arterial street and highway system would be resurfaced or reconstructed to their same capacity under the updated FCTS. Approximately 179 miles, or 5 percent of the total expected year 2050 arterial system, would be widened to provide additional through traffic lanes as part of their reconstruction. The remaining 46 miles, or about 1 percent of the total expected year 2050 arterial system, would be new arterial roadways. The arterial street and highway capacity improvements—both freeway and surface arterial—under the updated FCTS are shown on Map 4.8.

Table 4.6
Average Annual Costs and Revenues Associated with the VISION 2050
Transportation System in 2019 Constant Dollars: 2021-2050

Cost or Revenue Item	2019 Dollars (millions)
Transportation System Cost^a	
Arterial Street and Highway System	
Capital	
Freeway	
Reconstruction, Modernization, and Committed Capacity Improvements	\$284
Increment Associated with Recommended Capacity Improvements	38
Resurfacing and Rehabilitation	80
Surface Arterial Reconstruction/Resurfacing ^b	458
Operating & Maintenance	98
	Highway Subtotal
	\$958
Transit System	
Capital	\$201
Operating^c	285
	Transit Subtotal
	\$486
	Total
	\$1,444
Transportation System Revenues^a	
Highway Capital	
Federal/State	\$425
Local	68
	Subtotal
	\$493
Highway Operating & Maintenance	
State	\$47
Local	32
	Subtotal
	\$79
	Highway Subtotal
	\$572
Transit Capital	
Federal	\$82
Local	6
	Subtotal
	\$88
Transit Operating	
Federal	\$54
State	63
Local	28
	Subtotal
	\$145
	Transit Subtotal
	\$233
	Total
	\$805

^a The estimated arterial street and highway system and transit system costs include all capital, operating, and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system, such as arterial street and highway resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under VISION 2050. Costs for freeway and surface arterial resurfacing, reconstruction, widening, and new construction are based upon actual project costs over the past several years. Transit system capital costs include preservation, improvement, and expansion of the existing transit system, including bus replacement on a 12-year schedule.

Highway system operating and maintenance costs are based on estimated actual State and local highway system operating costs and verified by application of estimated unit lane-mile costs. Planned highway system operating costs are increased from estimated existing costs based on the recommended increase in arterial highway system lane-miles under VISION 2050. Transit system operating and maintenance costs are based on existing estimated actual costs and unit costs based on service vehicle-miles and vehicle-hours.

Highway Federal, State, and local capital and operating revenues are based on estimated Federal, State, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historical expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State maintaining estimated average year 2020-2021 funding levels through the year 2050.

^b Includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of VISION 2050.

^c Net operating cost (total operating costs less fare-box revenue).

Source: SEWRPC

Table 4.7
Average Annual Costs and Revenues Associated with the VISION 2050
Transportation System Based on Year of Expenditure: 2021-2050

Cost or Revenue Item	YOE Dollars (millions)
Transportation System Cost^a	
Arterial Street and Highway System	
Capital	
Freeway	
Reconstruction, Modernization, and Committed Capacity Improvements	\$430
Increment Associated with Recommended Capacity Improvements	59
Resurfacing and Rehabilitation	122
Surface Arterial Reconstruction/Resurfacing ^b	705
Operating & Maintenance	150
	Highway Subtotal
	\$1,466
Transit System	
Capital	\$257
Operating^c	381
	Transit Subtotal
	\$638
	Total
	\$2,104
Transportation System Revenues^a	
Highway Capital	
Federal/State	\$545
Local	88
	Subtotal
	\$633
Highway Operating & Maintenance	
State	\$60
Local	41
	Subtotal
	\$101
	Highway Subtotal
	\$734
Transit Capital	
Federal	\$105
Local	8
	Subtotal
	\$113
Transit Operating	
Federal	\$72
State	80
Local	35
	Subtotal
	\$187
	Transit Subtotal
	\$300
	Total
	\$1,034

^a The estimated arterial street and highway system and transit system costs include all capital, operating, and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system, such as arterial street and highway resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under VISION 2050. Costs for freeway and surface arterial resurfacing, reconstruction, widening, and new construction are based upon actual project costs over the past several years. Transit system capital costs include preservation, improvement, and expansion of the existing transit system, including bus replacement on a 12-year schedule.

Highway system operating and maintenance costs are based on estimated actual State and local highway system operating costs and verified by application of estimated unit lane-mile costs. Planned highway system operating costs are increased from estimated existing costs based on the recommended increase in arterial highway system lane-miles under VISION 2050. Transit system operating and maintenance costs are based on existing estimated actual costs and unit costs based on service vehicle-miles and vehicle-hours.

Highway Federal, State, and local capital and operating revenues are based on estimated Federal, State, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historical expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State maintaining estimated average year 2020-2021 funding levels through the year 2050.

^b Includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of VISION 2050.

^c Net operating cost (total operating costs less fare-box revenue).

Source: SEWRPC

Table 4.8
Average Annual Costs and Revenues Associated with the Fiscally Constrained
Transportation System in 2019 Constant Dollars: 2021-2050

Cost or Revenue Item	2019 Dollars (millions)
Transportation System Cost^a	
Arterial Street and Highway System	
Capital	
Freeway	
Committed Projects	\$60
Resurfacing and Rehabilitation	120
Surface Arterial Reconstruction/Resurfacing ^b	253
Operating & Maintenance	97
	Highway Subtotal
	\$530
Transit System	
Capital	\$22
Operating^c	126
	Transit Subtotal
	\$148
	Total
	\$678
Transportation System Revenues^a	
Highway Capital	
Federal/State	\$422
Local	68
	Subtotal
	\$490
Highway Operating & Maintenance	
State	\$47
Local	32
	Subtotal
	\$79
	Highway Subtotal
	\$569
Transit Capital	
Federal	\$16
Local	6
	Subtotal
	\$22
Transit Operating	
Federal	\$31
State	63
Local	29
	Subtotal
	\$123
	Transit Subtotal
	\$145
	Total
	\$714

^a The estimated arterial street and highway system and transit system costs include all capital, operating, and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system, such as arterial street and highway resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion expected under the FCTS. Costs for freeway and surface arterial resurfacing, reconstruction, widening, and new construction are based upon actual project costs over the past several years. Estimated preservation costs reflect a reduced frequency for surface arterial and freeway reconstruction, resurfacing, and reconditioning. Transit system capital costs include preservation of the existing transit system, including bus replacement on a 15-year schedule and replacement of fixed facilities, and costs associated with the initial phases of the Milwaukee Streetcar and Milwaukee County's BRT line between downtown Milwaukee and the Milwaukee Regional Medical Center, including needed additional vehicles and facilities.

Highway system operating and maintenance costs are based on estimated actual State and local highway system operating costs and verified by application of estimated unit lane-mile costs. Estimated highway system operating costs are increased from estimated existing costs based on the expected increase in the FCTS in arterial highway system lane-miles. Transit system operating and maintenance costs are based on existing estimated actual costs and unit costs based on service vehicle-miles and vehicle-hours. Estimated transit system operating costs have been decreased from existing system operating costs based on the requisite decrease in transit service vehicle-miles and vehicle-hours to match reasonably expected revenues available.

Highway Federal, State, and local capital and operating revenues are based on estimated Federal, State, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historical expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State maintaining estimated average year 2020-2021 funding levels through the year 2050.

^b Includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of the FCTS.

^c Net operating cost (total operating costs less fare-box revenue).

Source: SEWRPC

Table 4.9
Average Annual Costs and Revenues Associated with the Fiscally Constrained
Transportation System Based on Year of Expenditure: 2021-2050

Cost or Revenue Item	YOE Dollars (millions)
Transportation System Cost^a	
Arterial Street and Highway System	
Capital	
Freeway	
Committed Projects	\$73
Resurfacing and Rehabilitation	183
Surface Arterial Reconstruction/Resurfacing ^b	388
Operating & Maintenance	149
	Highway Subtotal
	\$793
Transit System	
Capital	\$29
Operating^c	161
	Transit Subtotal
	\$190
	Total
	\$983
Transportation System Revenues^a	
Highway Capital	
Federal/State	\$541
Local	88
	Subtotal
	\$629
Highway Operating & Maintenance	
State	\$60
Local	41
	Subtotal
	\$101
	Highway Subtotal
	\$730
Transit Capital	
Federal	\$21
Local	8
	Subtotal
	\$29
Transit Operating	
Federal	\$40
State	80
Local	36
	Subtotal
	\$156
	Transit Subtotal
	\$185
	Total
	\$915

^a The estimated arterial street and highway system and transit system costs include all capital, operating, and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system, such as arterial street and highway resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion expected under the FCTS. Costs for freeway and surface arterial resurfacing, reconstruction, widening, and new construction are based upon actual project costs over the past several years. Estimated preservation costs reflect a reduced frequency for surface arterial and freeway reconstruction, resurfacing, and reconditioning. Transit system capital costs include preservation of the existing transit system, including bus replacement on a 15-year schedule and replacement of fixed facilities, and costs associated with the initial phases of the Milwaukee Streetcar and Milwaukee County's BRT line between downtown Milwaukee and the Milwaukee Regional Medical Center, including needed additional vehicles and facilities.

Highway system operating and maintenance costs are based on estimated actual State and local highway system operating costs and verified by application of estimated unit lane-mile costs. Estimated highway system operating costs are increased from estimated existing costs based on the expected increase in the FCTS in arterial highway system lane-miles. Transit system operating and maintenance costs are based on existing estimated actual costs and unit costs based on service vehicle-miles and vehicle-hours. Estimated transit system operating costs have been decreased from existing system operating costs based on the requisite decrease in transit service vehicle-miles and vehicle-hours to match reasonably expected revenues available.

Highway Federal, State, and local capital and operating revenues are based on estimated Federal, State, and local expenditures over the last several years. Transit Federal capital and operating revenues are based on historical expenditures over the last several years, and assessment of available Federal formula and program funds. State transit revenues are based on the State maintaining estimated average year 2020-2021 funding levels through the year 2050.

^b Includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of the FCTS.

^c Net operating cost (total operating costs less fare-box revenue).

Source: SEWRPC

Map 4.5 Fiscally Constrained Transit Services as Updated

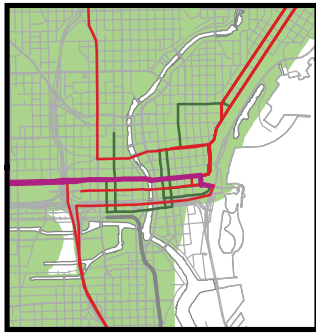
TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE (NONE)
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

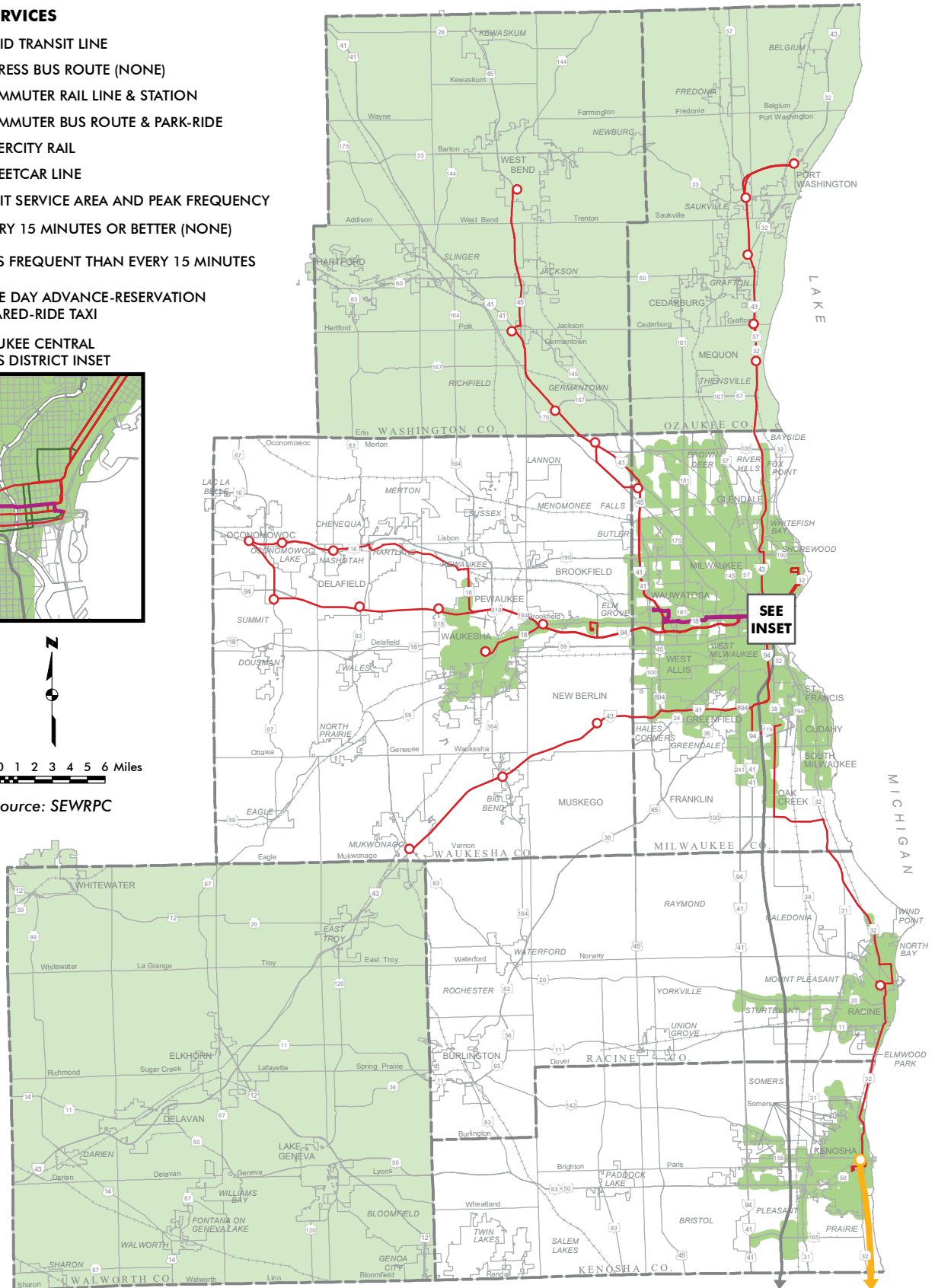
- EVERY 15 MINUTES OR BETTER (NONE)
- LESS FREQUENT THAN EVERY 15 MINUTES
- ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC



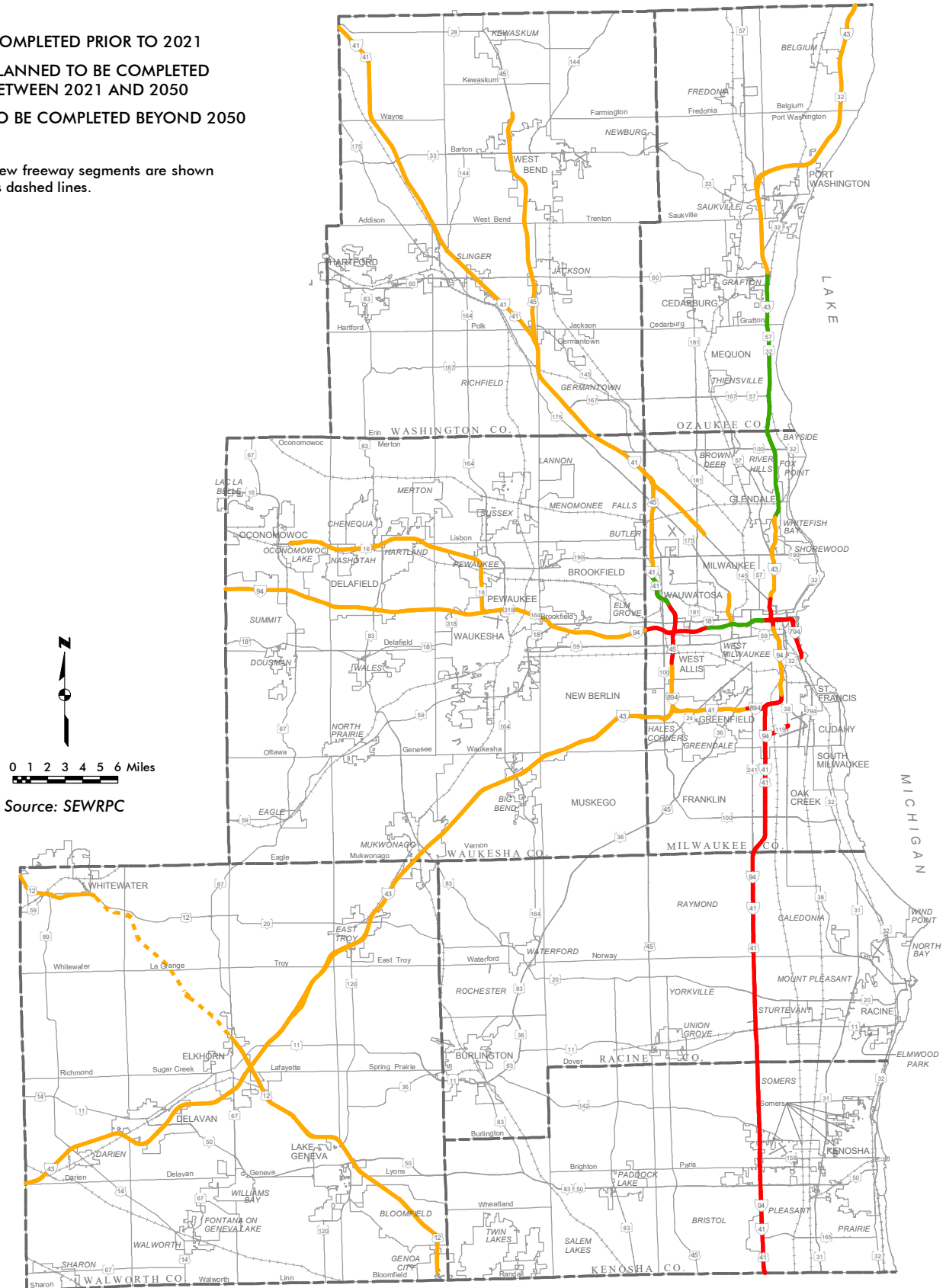
Map 4.6

Schedule for Reconstructing the Freeway System Under the Updated FCTS

FREEWAY

- COMPLETED PRIOR TO 2021
- PLANNED TO BE COMPLETED BETWEEN 2021 AND 2050
- TO BE COMPLETED BEYOND 2050

Note: New freeway segments are shown as dashed lines.

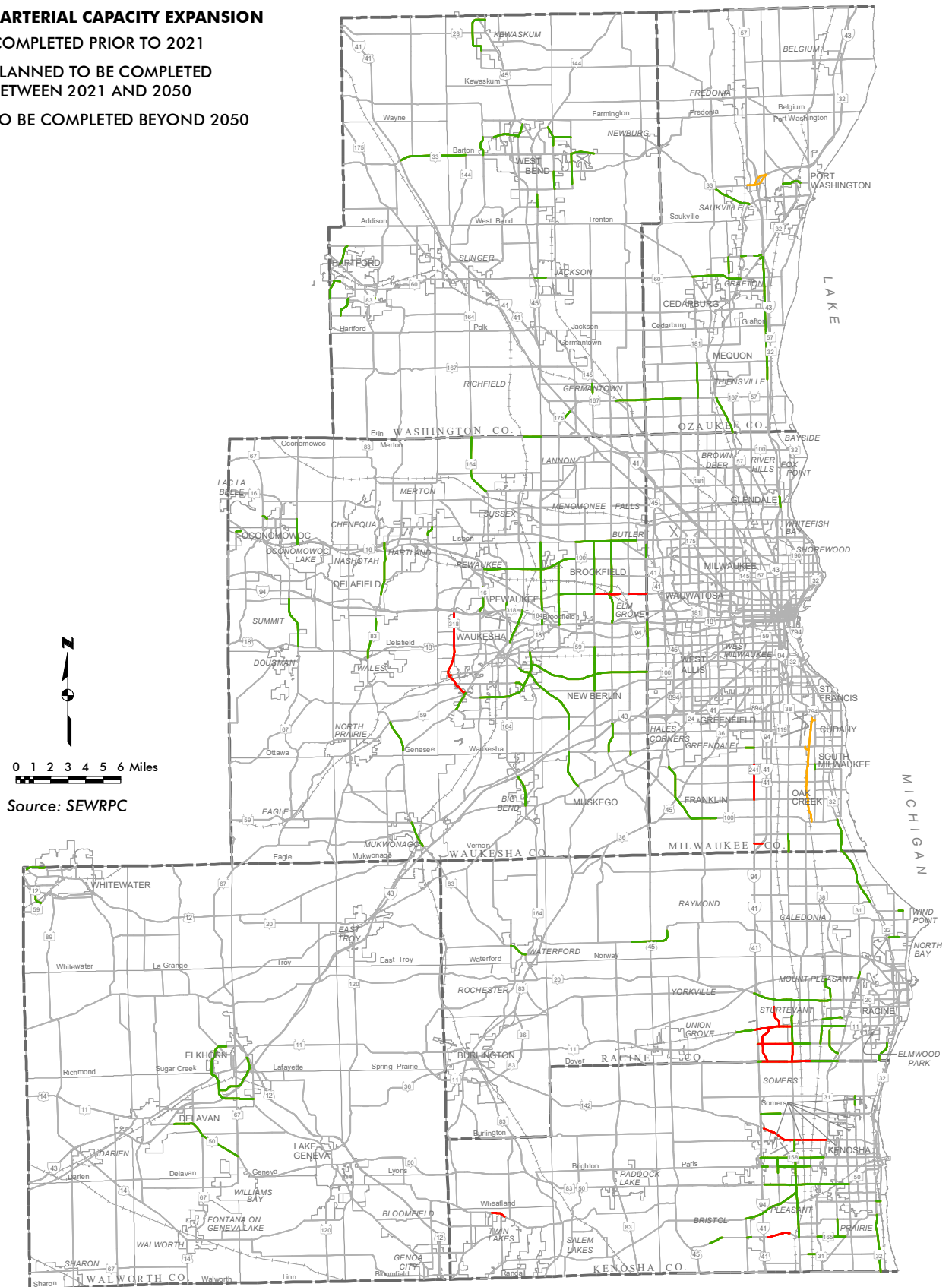


Map 4.7

Schedule for Reconstructing Surface Arterials with Capacity Expansion Under the Updated FCTS

SURFACE ARTERIAL CAPACITY EXPANSION

- COMPLETED PRIOR TO 2021
- PLANNED TO BE COMPLETED BETWEEN 2021 AND 2050
- TO BE COMPLETED BEYOND 2050



0 1 2 3 4 5 6 Miles
Source: SEWRPC

Table 4.10
Estimated Cost and Potential Schedule of Significant Arterial
Construction and Reconstruction Projects: 2021-2050^{a,b}

Period Completed and Open to Traffic	County	Facility	Limits of Project	Cost (Millions 2019 Dollars)^c	Cost (Millions YOE Dollars)	Mileage	
2021 to 2025	Kenosha	CTH S (part)	E. Frontage Road to CTH H	\$8.5	\$9.3	1.9	
	Kenosha	STH 50	IH 94 to 39th Avenue	68.6	75.2	4.8	
	Milwaukee	Zoo Interchange	Completion of North Leg	188.6	211.3	1.7	
	Racine	CTH KR	IH 94 to Old Green Bay Road	77.8	85.3	4.4	
	Waukesha	CTH M (part)	CTH Y to CTH YY	25.1	27.5	2.9	
			Subtotal	\$368.6	\$408.6	15.7	
2026 to 2030	Kenosha	CTH H (Part)	CTH S to STH 50	\$19.7	\$24.2	2.6	
	Milwaukee	IH 94	70th Street to 16th Street (Including Stadium Interchange)	871.0	1,069.4	3.5	
	Milwaukee and Ozaukee	IH 43	Silver Spring Dr. to STH 60	551.6	639.5	12.6	
	Milwaukee and Racine	STH 32	STH 100 to Five Mile Road	33.2	40.8	5.1	
	Ozaukee	CTH W (part)	Highland Road to W. Glen Oaks Lane	7.6	9.3	1.0	
	Racine	CTH KR	Old Green Bay Road to STH 32	21.7	26.6	2.8	
	Walworth	STH 50	IH 43 to STH 67	26.2	32.2	4.3	
	Waukesha	STH 83	USH 18 to Phylis Parkway	35.4	43.5	2.4	
	Waukesha	STH 83	Mariner Drive to STH 16	35.4	43.5	3.6	
	Waukesha	CTH D (part)	Milwaukee County line to Calhoun Road	13.4	16.5	3.0	
	Waukesha	CTH Y (part)	Hickory Trail to Downing Drive	17.7	21.7	4.0	
				Subtotal	\$1,632.9	\$1,967.2	44.9
	2031 to 2035	Kenosha	CTH H (Part)	STH 50 to STH 165	\$14.6	\$20.1	3.0
Racine		STH 20	IH 94 to Oaks Road	46.1	63.4	4.5	
Milwaukee		IH 794 Lake Interchange	Milwaukee River to Hoan Bridge	200.0	257.3	0.7	
Milwaukee		USH 45/STH 100	Rawson Avenue to 60th Street	24.7	34.0	4.8	
Waukesha		Pilgrim Road	USH 18 to Lisbon Road	36.4	50.1	4.8	
Waukesha		CTH SR/Town Line Road extension (part)	CTH JJ to STH 190	24.2	33.3	3.2	
Waukesha		CTH Y (part)	CTH L to College Avenue	12.8	17.6	2.1	
			Subtotal	\$358.8	\$475.8	23.1	
2036 to 2040	Ozaukee	CTH W (part)	CTH V to Lakeland Road	\$23.5	\$36.2	3.1	
	Waukesha	STH 67 (part)	CTH DR to USH 18	14.9	23.0	2.9	
	Waukesha	STH 190	STH 16 to Brookfield Road	55.1	84.9	5.4	
	Waukesha	CTH D (part)	Calhoun Road to STH 59/164	17.1	26.4	3.8	
			Subtotal	\$110.6	\$170.5	15.2	
2041 to 2045	Ozaukee	CTH W (part)	Lakeland Road to Highland Road	\$23.3	\$40.2	3.1	
	Waukesha	STH 59/164	CTH XX to Arcadian Avenue	58.1	100.3	4.8	
	Waukesha	CTH SR/Town Line Road extension (part)	STH 190 to Weyer Road	8.2	14.2	1.5	
			Subtotal	\$89.6	\$154.7	9.4	
			Total	\$2,560.5	\$3,176.8	108.3	

^a Significant projects include those projects involving new construction or widening with a cumulative length of four or more miles.

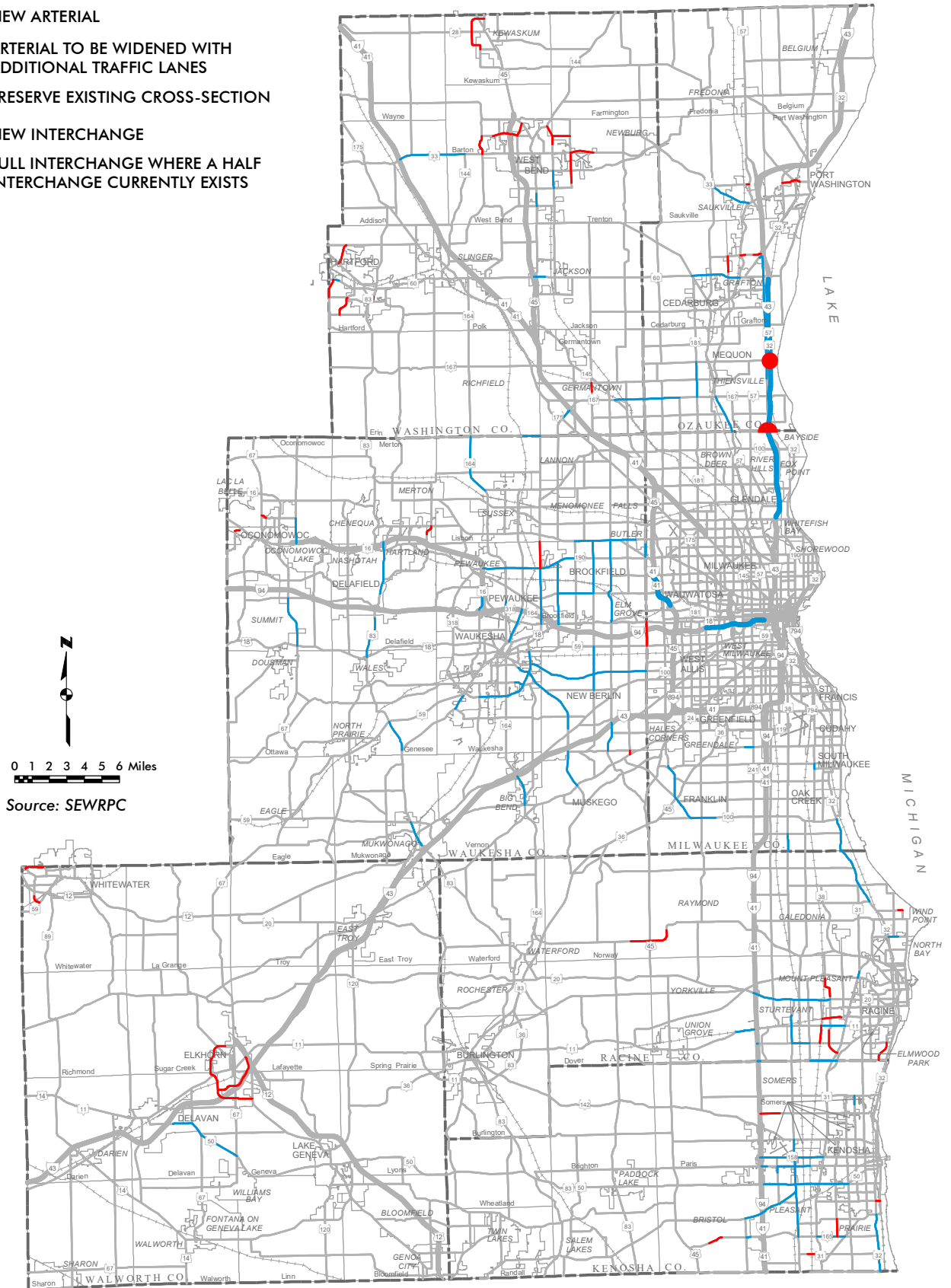
^b The schedule shown in this table represents an estimate of the timing of construction and reconstruction for the purposes of comparison of costs and revenues, and is not a recommendation for the schedule of construction and reconstruction. Such a schedule can only be developed by the responsible implementing agency and will necessarily entail frequent updating, for example, due to pavement and structure condition.

^c Cost of Construction does not include the cost of right-of-way required for the project.

Source: SEWRPC

Map 4.8 Fiscally Constrained Arterial Street and Highway System as Updated

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS



Potential Revenue Sources to Fund Recommended Transportation System

VISION 2050 makes strong recommendations for improving and expanding the Region's transportation system, but implementing this system will require adequate funding. State legislation to create local dedicated transit funding would likely be necessary to achieve the transit system improvement and expansion recommended under VISION 2050, although this funding could also be provided through additional State financial assistance to transit. Providing sufficient funding to complete the recommended reconstruction of the Region's arterial street and highway system would also require State action.

The 2019-2021 State budget provided increased revenues for transportation through an increase in annual vehicle registration fees, an increase in the vehicle title fee, and a structure for implementing a previously approved surcharge on hybrid electric vehicles, resulting in an estimated total statewide increase of approximately \$188 million annually. This revenue increase added funding to the State's Transportation Fund, which supports the arterial street and highway system and public transit operations statewide. The State budget also provided a 2 percent increase in mass transit operating assistance in calendar year 2020, and funded a one-time, \$75-million competitive grant program available to local governments for local transportation system projects, including roads, bridges, transit capital and facilities, bicycle and pedestrian accommodations, railroads, and harbors.

While these recent increases represent progress toward achieving the recommended plan, a more substantial revenue increase that provides sustainable, long-term funding would be necessary to achieve VISION 2050. Numerous potential revenue sources that would allow improved and expanded transit services and provide stable funding for arterial street and highway reconstruction have been identified and proposed in recent years. These include an advisory referendum in 2008 in Milwaukee County that approved a 1.0 percent sales tax supporting public transit, county parks, and emergency medical services, and subsequent unsuccessful attempts at the State level to allow a sales tax for transit. In January 2013, the Wisconsin Transportation Finance and Policy Commission made recommendations to the Governor and State Legislature on "options to achieve a stable balance between transportation expenditures, revenues and debt service over the next decade." The WisDOT Secretary proposed including a number of the revenue sources recommended by that Commission in the subsequent 2015-2017 State budget, but the Governor did not include them in his proposed budget. In December 2016, WisDOT completed a report to the Legislature on the solvency of the State's Transportation Fund, including a review of current and projected transportation revenues and a Tolling Feasibility Study. In 2017, the Legislative Fiscal Bureau prepared a paper for the Joint Finance Committee that provided information on "possible revenue increases that could be enacted to improve the sustainability of the transportation fund." These efforts provide the basis for the revenue sources and estimates presented in this section.

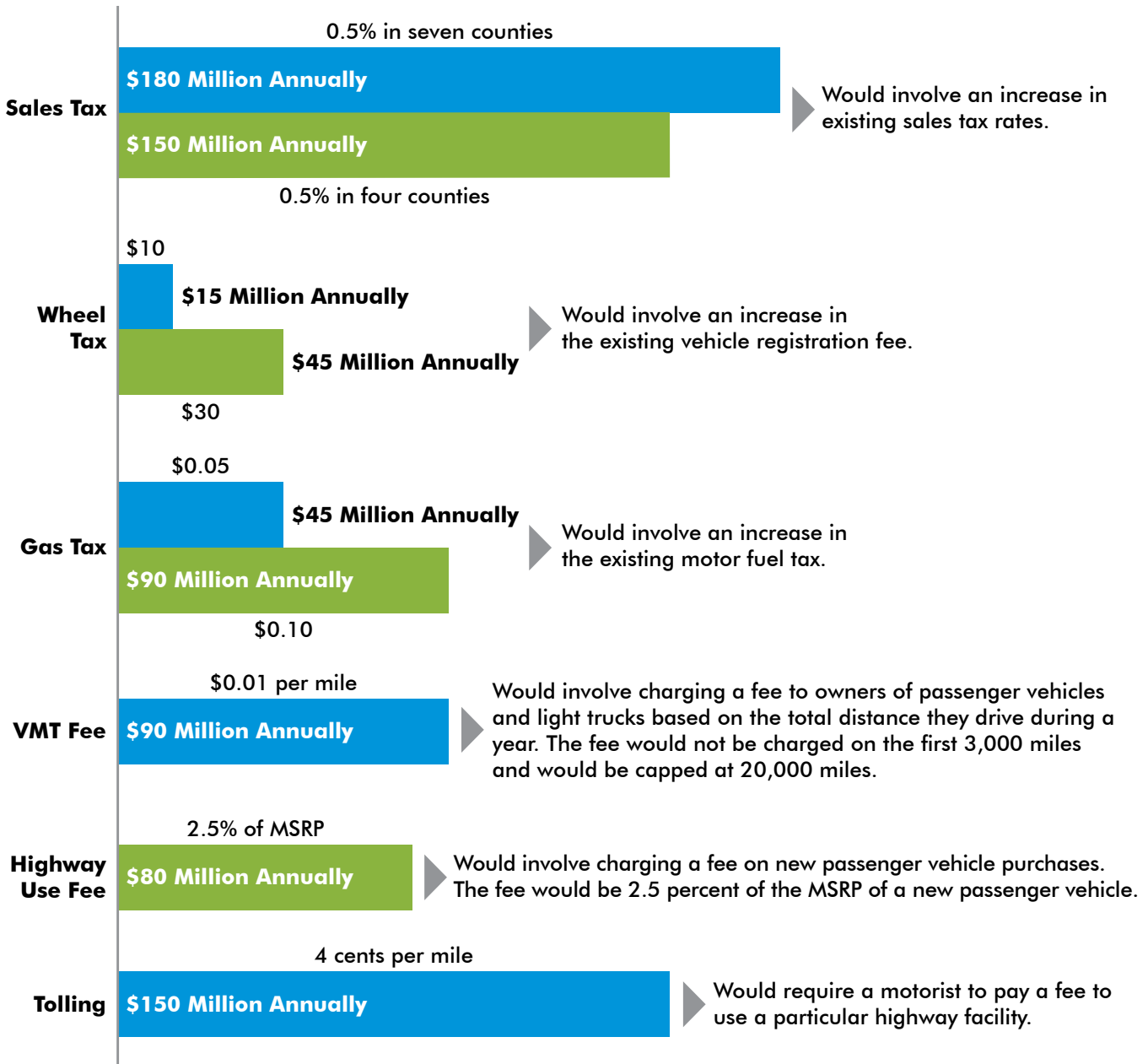
This section presents potential revenue sources that could be considered to provide sufficient transportation funding, along with estimates of the revenue each source could potentially generate on an annual basis. It is important to note that staff prepared generalized revenue estimates to demonstrate each individual source's potential for providing the funding necessary to achieve the recommended transportation system. More detailed estimates would need to be prepared as decision makers determine whether to pursue a

particular revenue source. It is also important that potential equity concerns be considered related to whether lower-income residents would pay a higher proportion of their incomes than higher-income residents if a particular revenue source were implemented.

While there are certainly more sources that could help address insufficient funding levels, this section focuses on a series of “primary revenue sources” that have been seriously considered and are likely to generate revenues on a scale sufficient to implement all or most of the transit improvements and highway reconstruction recommended under VISION 2050. It should be noted that State legislation to create local dedicated transit funding would likely be necessary to achieve the transit system improvement and expansion recommended under VISION 2050, although this funding could also be provided through additional State financial assistance to transit. Six primary revenue sources are discussed below and a generalized comparison of annual revenue estimates is presented in Figure 4.8.

- **Sales tax** – Involves an increase in existing sales tax rates. A 0.5 percent sales tax could generate about \$180 million annually in the Region. Transportation revenues from a sales tax could be obtained in two ways. The first way would involve the State increasing the statewide sales tax rate, with the revenues added to the State’s Transportation Fund. These revenues could be used to increase State funding towards sufficiently funding both the highway and transit elements of VISION 2050. The second way, which has been more frequently discussed in Southeastern Wisconsin, would involve the State allowing municipalities or counties to enact a sales tax at their discretion. A sales tax is the most common dedicated local transit funding source in other areas of the country and has the potential to generate the needed revenue to implement the transit improvements recommended under VISION 2050. A 0.5 percent sales tax enacted in each county would likely generate significantly more revenue in some counties than the level of transit service recommended in those counties. In addition, the amount of transit funding envisioned under VISION 2050 in some counties may not require dedicated funding, particularly if State funding for transit is sufficiently increased. Alternatively, a sales tax could be levied only in the more urban areas of the Region that would be served by a majority of the recommended transit improvements and expansion. Enactment of a dedicated sales tax for transit would also permit counties and municipalities to eliminate or partially eliminate the use of property tax revenues to fund transit. In addition, a portion of sales tax revenues also comes from out-of-state visitors. It should be noted that sales tax revenues also tend to be impacted by downturns in the economy. Some alternative dedicated sources used by peer metro areas, although not as common as the sales tax, include the payroll tax, income tax, and dedicated property tax.
- **Vehicle registration fee (“wheel tax”)** – Involves an increase in the existing vehicle registration fee. A \$10 vehicle registration fee enacted in all counties in the Region could generate about \$15 million annually. The vehicle registration fee is unaffected by, and unrelated to, how much the vehicle’s owner actually uses the transportation system. The vehicle registration fee is essentially the only revenue source available to municipal and county governments to increase transportation funding without a change in State law. Milwaukee County (\$30) and the City of Milwaukee (\$20)

Figure 4.8
Estimates for Potential Revenue Sources to Fund the
Recommended Transportation System (2019 Dollars)



Note: All revenue estimates assume the source is levied regionwide, except the four-county sales tax (only in Kenosha, Milwaukee, Racine, and Waukesha Counties) and tolling (estimate is based on tolling these interstate facilities: IH 43 between Beloit and Muskego, IH 41/IH 43/IH 94/IH 794/IH 894 in metropolitan Milwaukee, and IH 94 between Seven Mile Road and the Illinois State Line).

currently levy a vehicle registration fee in addition to the statewide annual registration fee collected by WisDOT. A number of other municipalities and counties across the State also levy a vehicle registration fee, with fees ranging from \$10 to \$30. Alternatively, the State could further increase the statewide registration fee (now \$85 for most automobiles, and ranging from \$100 to \$106 for light trucks and from \$173 to \$2,578 for heavy trucks), with the revenues being added to the State's Transportation Fund. In addition to the increased vehicle registration fees that went into effect in 2019, the State also began assessing a \$75 surcharge on hybrid electric vehicles, which is collected with the regular annual registration fee. A \$100 surcharge on electric vehicles went into effect in 2017. Additional revenue from the registration fee could be generated by indexing the fee based on inflation, charging an additional variable fee based on a vehicle's value or weight, or increasing the fees for heavy trucks.

- **Motor fuel tax ("gas tax")** – Involves an increase in the existing motor fuel tax rate levied by the State. A five cent increase could generate about \$45 million annually in the Region, assuming current fuel consumption levels. However, unlike the other revenue sources discussed in this section, those revenues would likely decline long term as vehicles become more fuel efficient on average. In addition, the motor fuel tax is impacted by the level of use of alternative fuels. The State currently levies a 30.9 cents per gallon motor fuel tax, which has not increased since 2006 when the State eliminated automatic annual indexing of the motor fuel tax based on inflation. Additional revenue from this source could be generated by reinstating annual indexing based on inflation, adjusting the tax rate to reflect lost indexing, eliminating the exemption for farming, or charging a higher rate for diesel fuel. Another related revenue source would involve eliminating the existing sales tax exemption for motor fuel sales.
- **VMT/mileage-based registration fee ("VMT fee")** – Involves charging a fee to owners of passenger vehicles and light trucks based on the total distance they are driven during a year. The fee would not be charged on the first 3,000 miles and would be capped at 20,000 miles. As an example, such a fee on a vehicle driven 13,000 miles during a year would be \$100. Based on current travel levels, a one cent per mile fee could generate about \$90 million annually in the Region. Unlike the motor fuel tax and vehicle registration fee, a distance-based fee provides a more equitable means of paying for the costs of the construction, maintenance, and operation of the transportation system as motorists would pay for their actual use of the transportation system. A VMT fee is unaffected by vehicle fuel efficiency or alternative fuels and can encourage residents to drive less, potentially reducing total VMT, traffic volumes, and congestion. Implementing a VMT fee utilizing technologies, such as a GPS unit or an in-vehicle device that would collect mileage data, has faced obstacles due to technology uncertainty, privacy concerns, and cost implementation issues. Low-technology options, such as incorporating odometer readings during the annual vehicle registration process, are also possible. Additional revenue from this source could be generated by indexing the fee to inflation.

- **Highway use fee** – Involves charging a fee on new passenger vehicle purchases. A fee of 2.5 percent of the manufacturer’s suggested retail price (MSRP) of a new passenger vehicle could generate about \$80 million annually in the Region. Given that the fee would only be collected at the time of a vehicle’s initial purchase, it would not directly impact those selling or purchasing used vehicles. New vehicle purchasers could also incorporate the fee into the financing of the vehicle, spreading out payment of the fee over time. Revenue from this type of fee has the potential to naturally increase over time with increases in new vehicle values, although it would decline during economic downturns when new vehicle sales volumes are lower. Critiques of the fee include that it is essentially an extra sales tax on new vehicle purchases and that it targets only one subset of the users of the transportation system. Similar to the highway use fee, the vehicle title fee, which the State increased as part of the 2019-2021 State budget, involves charging a fee on passenger vehicle purchases. However, the title fee is charged whenever an owner applies for a Certificate of Title, regardless of whether the vehicle is new or used.
- **Tolling** – Would require a motorist to pay a fee to use a particular highway facility. Federal law has traditionally prohibited implementing tolls on highways that have received Federal funds. However, a number of exceptions have been added to Federal transportation law over the years. The State could also apply under the Federal Interstate System Reconstruction and Rehabilitation Pilot Program (ISRRPP) to collect tolls on one interstate facility for which funding reconstruction or rehabilitation would not otherwise be possible. In 2016, WisDOT completed a preliminary study of the feasibility of tolling Wisconsin’s interstate highways, at the direction of the State Legislature. This Tolling Feasibility Study identified issues and challenges related to tolling in Wisconsin and included traffic and revenue estimates for all interstate corridors in the State. Based on the study’s revenue estimates, a four cents per mile toll on interstate facilities could generate about \$150 million annually in net revenues (accounting for operating and maintenance costs) in the Region.⁹ Tolling would also involve upfront capital costs, which are not accounted for in the annual revenue estimate. Like a VMT fee, tolling involves paying for the costs of the construction, maintenance, and operation of the transportation system based on actual use and it is unaffected by vehicle fuel efficiency or alternative fuels. It also ensures that out-of-state motorists pay for their use of the interstate system. Tolling revenues would likely need to be used for improvements within the interstate corridor in which they are generated, although that could potentially free up revenues for improvements elsewhere in the Region. One challenge associated with tolling would be the potential for traffic to divert from tolled facilities to parallel non-tolled facilities. Related to tolling, congestion pricing can be employed on an express lane or highway facility, with the fee adjusted based on the time of day and level of congestion. Effective express lane congestion pricing ensures free flowing traffic

⁹The annual revenue estimate is based on tolling these interstate facilities: IH 43 between Beloit and Muskego, IH 41/IH 43/IH 94/IH 794/IH 894 in metropolitan Milwaukee, and IH 94 between Seven Mile Road and the Illinois State Line. The annual revenue estimate may be somewhat low because it does not include these interstate facilities: IH 43 north of STH 57 in Ozaukee County, IH 41 north of CTH Q in Washington County, and IH 94 west of STH 67 in Waukesha County.

in the toll lanes and provides additional revenue for the construction, maintenance, and operation of the transportation system.

Consequences of Not Sufficiently Funding Transportation System

There are numerous benefits associated with significantly improving and expanding public transit and it is critical that the Region's arterial streets and highways be reconstructed in a timely manner. Not fully implementing the transportation system recommended under VISION 2050 due to the limitations of current and expected transportation revenues would result in significant negative consequences for Southeastern Wisconsin.

Not improving and expanding transit service will likely result in the following negative impacts:

- Limited transit-oriented development and redevelopment
- Reduced traffic carrying capacity in the Region's heavily traveled corridors
- Reduced access to jobs, healthcare, education, and other daily needs, particularly for the 1 in 10 households in the Region without access to a car, which is more likely to affect people of color and low-income residents
- Smaller labor force available to employers
- Reduced ability to develop compact, walkable neighborhoods

Postponing reconstruction of freeways beyond their service life and not adding capacity on highly congested segments will have the following negative impacts:

- Costly emergency repairs and inefficient pavement maintenance due to unnecessary, and increasingly ineffective, repaving projects
- Increased traffic congestion and travel delays, along with decreased travel reliability
- Increased crashes due to traffic congestion, antiquated roadway design, and deteriorating roadway condition

4.5 EQUITY ANALYSIS OF UPDATED LAND USE AND TRANSPORTATION COMPONENTS

The original VISION 2050 plan identified significant disparities between the white population and people of color in the Region, particularly in the Milwaukee metropolitan area, with respect to educational attainment levels, per capita income, and poverty.¹⁰ These disparities are more pronounced than in almost all other peer metro areas. An equity evaluation was conducted at different stages of the initial VISION 2050 planning process to ensure that the benefits and impacts of investments in the Region's transportation system are shared fairly and equitably and serve to reduce existing disparities between whites and people of color.

¹⁰These disparities are documented in SEWRPC Memorandum No. 221, A Comparison of the Milwaukee Metropolitan Area to Its Peers, which was updated as part of the 2020 Review and Update of VISION 2050.

As part of this update, staff reviewed the land use equity analysis documented in the First Edition of Volume III of the VISION 2050 plan report. The original analysis concluded that all of the land use recommendations would have a positive impact on the Region's population as a whole and none of the recommendations would have an adverse impact on people of color, low-income populations, and people with disabilities. In addition, a number of recommendations would have a positive impact on these population groups. The conclusions of the original land use equity analysis remain valid because there are no changes to the land use recommendations being made as part of the 2020 Review and Update. Although the conclusions remain valid, input from the first round of public involvement regarding the impact of local government decision making on implementing VISION 2050 is related to the analysis.

Local government decision making plays a role in implementing all of the land use recommendations to varying degrees. The recommended land use component acknowledges this by recognizing the important role of communities in development decisions, and encouraging communities to act on the land use recommendations presented in VISION 2050 to make the Region an attractive place for all current and future residents and businesses. The land use component also states that VISION 2050 is intended to provide a guide, or overall framework, for future land use within the Region, and that implementing the land use recommendations ultimately relies on the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector. Chapter 3 of Volume III, "Plan Implementation," provides further detail regarding the actions local governments can take to implement the VISION 2050 land use recommendations.

As part of this update, Commission staff prepared an updated equitable access evaluation for people of color, low-income populations, and people with disabilities in relation to the updated transportation component of VISION 2050 and the updated FCTS. Just as previous equity evaluations prepared for VISION 2050 concluded, this evaluation concluded that, under both the updated VISION 2050 plan and the updated FCTS, no area of the Region would disproportionately bear the impact of the planned freeway and surface arterial capacity improvements and people of color and low-income populations would benefit from the modest improvement in highway accessibility to employment. With respect to public transit, under the updated VISION 2050 plan, the recommended more than doubling of transit service would significantly improve transit access for people of color, low-income populations, and people with disabilities to jobs, healthcare, education, and other activities. However, the reduction in transit service and minimal provision of higher-quality transit service under the updated FCTS would result in less access to jobs, healthcare, education, and other daily needs than under the updated VISION 2050, and in many cases, less access via transit than exists today. For the 1 in 10 households in the Region without access to an automobile, households that are more likely to be people of color or of low income than their overall proportion of the Region's population, mobility and access to jobs and activities within the Region would be limited. Therefore, should the reasonably available and expected funding for implementing the public transit element of VISION 2050 continue as estimated under the FCTS, a disparate impact to the Region's people of color, low-income populations, and people with disabilities is likely to occur. Given current limitations at the State level on local government revenue generation and on WisDOT's ability to allocate funds between different programs, the ability for Southeastern Wisconsin to avoid such a disparate impact is dependent

on the State Legislature and Governor providing additional State funding for transit services, or allowing local units of government and transit operators to generate such funds on their own.

4.6 OVERVIEW OF ROUND 2 PUBLIC INVOLVEMENT

The purpose of the second round of public involvement was to share information with, and obtain feedback from, the public regarding the draft 2020 Review and Update. The information, from the preliminary draft of Chapter 4, included proposed plan changes and the updated financial analysis and equity analyses. This round was interrupted by the COVID-19 pandemic and resulted in staff canceling three of seven planned public open house meetings across the Region, along with several meetings scheduled with the Commission's community partner organizations. In lieu of the canceled in-person meetings, staff extended the original comment period and provided alternative ways for residents to learn about the draft plan update and to provide feedback, including two virtual meetings, a YouTube video presentation, and an online questionnaire.

Comments during the second of two rounds of public involvement for the 2020 Review and Update were obtained during a formal public comment period from February 27 through April 8, 2020. The four public meetings were held across the Region from March 9 through 12 and the two virtual public meetings were held on March 31 and April 1. Residents unable to attend an in-person meeting were asked to complete an online questionnaire that replicated the feedback opportunities of the meetings. A total of 125 individuals participated in the second round by attending one of the four public meetings, attending one of the two virtual meetings, completing the online questionnaire, or submitting comments through the Hmong American Friendship Association (HAFA) offices after reviewing display boards in their lobby. All comments received were considered by Commission staff and the Advisory Committees guiding VISION 2050 as staff prepared the revised draft 2020 Review and Update of VISION 2050. Appendix E provides a summary of all public comments received during the second round.¹¹

Comments on the 2020 Review and Update made by members of the Advisory Committees guiding VISION 2050 prior to the second round of public involvement can be found in the minutes of the Committees' February 12, 2020, meeting (see www.sewrpc.org/RLUPAC or www.sewrpc.org/RTPAC). Comments made by members of the Commission's Environmental Justice Task Force can be found in the minutes of the Task Force's February 18, 2020, meeting (see www.sewrpc.org/EJTF).

Staff asked those interested in providing comments to review summary materials and provide feedback on the main topics of the 2020 Review and Update, including land use, public transit, bicycle and pedestrian, streets and highways, TDM, TSM, freight, and transportation funding. A summary of themes from the comments received during the second round is presented below. A more detailed summary of the comments received, along with staff responses as appropriate, can be found in Appendix E.

Regarding land use, much of the input was supportive of the land use component included in the 2020 Review and Update. Affordable housing,

¹¹ A separate report entitled Record of Public Comments: 2020 Review and Update of VISION 2050, documents all comments received during preparation of the 2020 Review and Update.

mixed-use development, and environmental corridor preservation were among the most frequent topics commented upon. A few commenters provided specific suggestions, such as requests to prepare a regional water trail plan, scale back anticipated development related to Foxconn, add a sustainability component to the plan, recommend county and local governments include sustainability-related components in their comprehensive plans, recommend against Concentrated Animal Feeding Operations, and prepare an analysis related to the amount of agricultural land available to grow food. Other commenters highlighted specific concerns, including a concern that higher-density development is associated with segregation and negative outcomes and a desire to address recent reductions in environmental regulations.

Regarding transportation, numerous commenters expressed support for the public transit element included in the 2020 Review and Update. The most frequent transit comment was support for the plan change recommending alternatives to fixed-route buses (e.g., flexible shuttles, microtransit, and shared vehicles) when expanding transit in certain lower-density areas. One commenter suggested extending a recommended east-west express bus route in western Kenosha County further west into Walworth County. Staff reviewed this suggestion and decided to add the extension to the plan. Other specific comments included support for creating multimodal transit hubs, developing a larger system of Milwaukee Streetcar lines, and trying to estimate revenues lost by businesses unable to attract or employees due to transportation and/or housing costs.

Numerous commenters also expressed support for the updated bicycle and pedestrian element. The most frequent comments supported adding dockless scooters to the bike share recommendation and addressing safety concerns related to dockless scooters. One commenter suggested also providing guidance for dockless bike share and electric bicycles (e-bikes), which is being added to the bike share recommendation in addition to dockless scooters. Another commenter suggested recommending a network of bike boulevards in the City of Milwaukee. After consideration, the plan recommendation related to enhanced bicycle facilities is being revised to more clearly address bike boulevards. Commission staff is also willing to assist local communities in planning for local bike boulevard networks.

Incorporating strategies to reduce reckless driving and the recommendation to keep the street and highway system in a state of good repair were the most common streets and highways comments. A couple commenters also suggested developing curb regulations (i.e., “price the curb”) to encourage carpooling, ridesharing, or transit use by prioritizing loading zones over on-street parking. Curbside management practices are being more formally addressed as part of the 2020 Review and Update and in subsequent guidance on implementing complete street measures. Another set of commenters requested emphasis on reducing road capacity in areas where there is excessive capacity, which is referenced in the plan’s complete streets recommendation. Staff will be working with partners to identify candidate roadways for capacity reduction (road diets) following completion of the 2020 Review and Update.

Many commenters expressed support for the updated TDM element, including general support for expanding transportation options and for the new TDM recommendation encouraging government entities to work with private-sector mobility providers on possible partnerships.

Related to transportation funding, participants were asked two questions related to addressing the transportation funding gap identified in the updated financial analysis. Similar to the first round, over 90 percent of those who responded supported providing additional funding for transportation, with some indicating they only supported additional funding for public transit. A few commenters also indicated that they only supported increasing funding for streets and highways for maintenance, safety, and complete streets improvements. When asked which of the six potential revenue sources examined in the financial analysis should be considered to provide additional funding for transportation, respondents expressed a similar level of support for each of the six sources, with support for each source ranging from about one-half to two-thirds of respondents.

Participants provided a number of additional comments during the second round that were either unrelated to, or covered multiple, main topics of the 2020 Review and Update. Several commenters expressed appreciation for the opportunities to attend virtual public meetings and provide input online. A group of five commenters expressed concerns regarding racial and environmental justice in relation to the conclusions of the updated equity analysis, including the need to raise awareness of the importance of expanding public transit and the negative and potentially discriminatory consequences of continuing transit decline.

In general, the feedback summarized in this section supported existing plan recommendations and/or the proposed plan changes. However, several changes were made to the updates described previously in this chapter, in part, in response to the comments received through the second round of public involvement.

4.7 SUMMARY AND CONCLUSIONS

This chapter describes the changes that being made to VISION 2050 as part of the 2020 Review and Update. As part of this review and update, Commission staff updated the analysis of existing and reasonably expected costs and revenues associated with the transportation system recommended in VISION 2050. Through this analysis, staff confirmed a funding gap for the recommended transportation system and identified the portion of the recommended system that can be implemented with reasonably expected revenues. The funded portion of the recommended system is referred to as the “Fiscally Constrained Transportation System (FCTS),” which represents the system expected to occur without sufficient funding levels to maintain and improve the transportation system as recommended in VISION 2050.

Staff also updated the equity analyses, which include evaluations of potential benefits and impacts to people of color, low-income populations, and people with disabilities related to the updated land use and transportation components of VISION 2050. Notably, the equity analysis for the transportation component indicated that the recommended more than doubling of transit service would significantly improve transit access for these population groups to jobs, healthcare, education, and other activities. However, the reduction in transit service and minimal provision of higher-quality transit service expected under the FCTS would result in less access to jobs, healthcare, education, and other daily needs than under VISION 2050. Without additional funding to implement the VISION 2050 public transit element, a disparate impact on the Region’s people of color, low-income populations, and people with disabilities is likely to occur.

The chapter also summarizes two rounds of public involvement conducted for the 2020 Review and Update. The purpose of the first round of public involvement was to share information with the public about how well the various plan elements are being implemented, and collect feedback about this progress. Staff also obtained comments on changes, since VISION 2050 was adopted, that should be considered while updating the plan's recommendations. The purpose of the second round of public involvement was to share information with, and obtain feedback from, the public regarding the draft 2020 Review and Update, including proposed plan changes and the updated financial analysis and equity analyses.

Following the completion of the 2020 Review and Update, the Commission will publish a Second Edition of Volume III, "Recommended Regional Land Use and Transportation Plan," of the VISION 2050 plan report. This updated edition will incorporate the changes to VISION 2050 and the FCTS made as part of this planning effort, including the updated financial and equity analyses. Targets established for the National Performance Measures will also be incorporated into the Second Edition of Volume III.

APPENDICES

INTRODUCTION

This appendix summarizes the current performance of the transportation system in Southeastern Wisconsin as it relates to public transit, the arterial street and highway system, park-ride lots, and transportation-related emissions. Performance is reported for the year the most recent data are available, and is noted accordingly. Historical data and base year data from the development of VISION 2050 are also included in some measures, and are also noted accordingly.

PUBLIC TRANSIT PERFORMANCE

Review of Existing Transit Service

Map A.1 shows public transit services currently provided in the Region. Below is a description of the public transit service types provided in the Region.

Commuter Transit Service

Commuter transit service within the Region in 2019 consisted of 14 bus routes operating primarily over the freeway system with extensions over major arterial streets and highways to serve communities or major trip generators located off the freeway system. These routes principally served and connected the Milwaukee urban area to Ozaukee, Washington, and Waukesha Counties with service provided by the Milwaukee County Transit System (MCTS), Waukesha County, Washington County, and Wisconsin Coach Lines (sponsored by the City of Racine). Base adult fares for commuter bus service in the Region ranged from \$2.25 to \$4.50 per trip.

Express Transit

Express transit service provides fixed-route bus service with higher frequency and fewer stops to more efficiently service major thoroughfares in an area. As of 2019, there were five express routes operating in the Region, all provided by MCTS. These routes provided service from 4:30 a.m. to 2:00 a.m. seven days a week, with buses arriving every 10 to 30 minutes during the week and every 15 to 45 minutes on weekends. Base adult fares for express transit service was \$2.25 per trip.

Fixed-Route Local Transit Service

Fixed-route local public transit was provided in 2019 within the Kenosha, Milwaukee, and Racine urbanized areas. More information about the local transit services provided in these areas is described below.

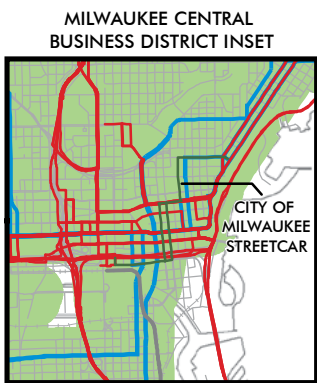
Kenosha

The Kenosha Area Transit system provided fixed-route local transit service in the City of Kenosha in 2019 over seven routes and an electric streetcar line. Local service is provided on most routes from 6:00 a.m. to 7:30 p.m. on weekdays and 6:00 a.m. to 5:00 p.m. on Saturday, with buses arriving every 30 to 60

Map A.1 Public Transit Services in the Region: 2019

TRANSIT SERVICES

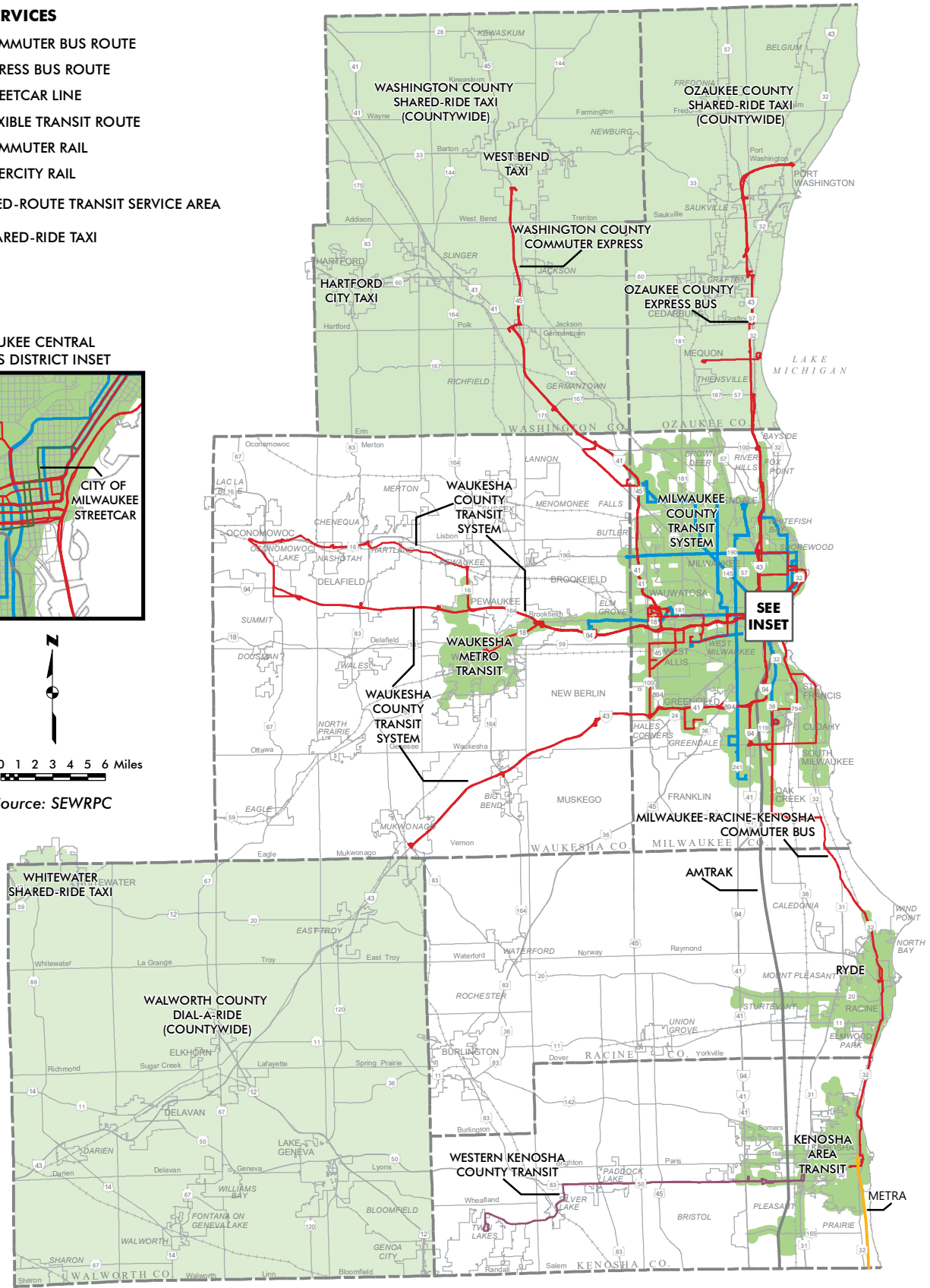
- COMMUTER BUS ROUTE
- EXPRESS BUS ROUTE
- STREETCAR LINE
- FLEXIBLE TRANSIT ROUTE
- COMMUTER RAIL
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA
- SHARED-RIDE TAXI



N

0 1 2 3 4 5 6 Miles

Source: SEWRPC



minutes during weekday peak periods and every 60 minutes during weekday off-peak periods and on Saturday. Service was provided on the streetcar line every 15 minutes from 11:00 a.m. to 6:30 p.m. on weekdays and from 10:00 a.m. to 5:30 p.m. on Saturdays, with limited hours from January to March. The adult cash fares charged by the Kenosha area transit system were \$1.50 per trip for bus service and \$1.00 per trip for the streetcar line.

Racine

In 2019, RYDE (formerly the Belle Urban System), operated by the City of Racine, provided local service over nine fixed routes. The system provided service from 5:30 a.m. to 10:00 p.m. on weekdays, from 5:30 a.m. to 6:30 p.m. on Saturdays, and from 9:30 a.m. to 6:30 p.m. on Sundays. Buses arrived every 30 to 60 minutes on weekdays and every 60 minutes on Saturdays and Sundays. The adult cash fare charged by the City of Racine was \$2.00 per trip.

Milwaukee

MCTS provided local transit service in the Milwaukee area in 2019 over 28 regular fixed routes, with additional limited-service shuttles. The system provided local bus service seven days a week, typically from 5:00 a.m. to 1:00 a.m., with an adult cash fare of \$2.25 per trip. On most routes serving central Milwaukee County, buses arrived every 10 to 20 minutes during weekday peak periods and every 15 to 30 minutes during weekday off-peak periods. Buses arrived every 15 to 60 minutes on the routes serving outer portions of the County on weekdays and on most routes on weekends.

Service on The Hop Streetcar in the City of Milwaukee began in November 2018 with service approximately every 15 to 20 minutes seven days a week from 5:00 a.m. to 12:00 a.m. The Hop Streetcar is electric powered and runs on a fixed-rail guideway on public streets. The route has 18 stops, connecting the Milwaukee Intermodal Station, the Historic Third Ward, City Hall, Burns Commons, and locations in between. Construction of a 0.4-mile lakefront extension is underway and is expected to open in late 2020. Extensions north to the Bronzeville District and south to the Walker's Point neighborhood are also being planned. Through an initial private sponsorship provided by Potawatomi Casino and Hotel, no fares have been charged so far for trips on The Hop Streetcar.

Waukesha

Waukesha Metro Transit, operated by the City of Waukesha, provided service over 10 fixed routes in 2019, with service provided from approximately 5:30 a.m. to 10:30 p.m. on weekdays, from 8:00 a.m. to 10:00 p.m. on Saturdays, and from 9:00 a.m. to 7:00 p.m. on Sundays. Buses on the routes arrived every 30 to 60 minutes. The adult cash fare was \$2.00 per trip.

Demand-Responsive Transit

Demand-responsive public transit was provided in rural areas of the Region through publicly operated shared-ride taxi services and in parts of Kenosha County by the Western Kenosha County Transit system via a flexible bus service. Shared-ride taxi was operated at the municipal level by the Cities of Hartford, West Bend, and Whitewater, and at the county level by Ozaukee, Walworth, and Washington Counties.

Each of the taxi systems in the Region operated seven days a week in 2019, with the hours of operation varying by system. Many systems required or preferred 24-hour advanced reservations. Fares ranged from \$3.00 to \$9.00 per trip and vary by provider and length of trip. Many of the taxi systems contracted with private companies to provide the services.

The Western Kenosha County Transit system's flexible bus service provided route deviation and door-to-door service throughout Kenosha County, mainly serving communities in rural western Kenosha County, with additional service provided to the City of Lake Geneva in Walworth County, the City of Kenosha, and the Village of Antioch in Illinois. Service to the Village of Antioch included connections to Metra commuter trains operating to and from Chicago. The adult cash fare charged by Western Kenosha County Transit was \$2.00 for a one-way fare with an additional \$1.00 fee for route variance.

Intercity Passenger Rail

In 2019, Amtrak provided intercity passenger rail service in Southeastern Wisconsin with stops within the Region at the Milwaukee Intermodal Station in downtown Milwaukee, Milwaukee Mitchell International Airport, and Sturtevant. Under contract with the State of Wisconsin and the State of Illinois, Amtrak operated seven daily Hiawatha Service trains in each direction between Milwaukee and Chicago, with intermediate stops at Milwaukee Mitchell International Airport, Sturtevant, and Glenview. As part of its national network, Amtrak operated the Empire Builder with one daily train in each direction between Seattle/Portland and Chicago, serving Wisconsin through stops in La Crosse, Tomah, Wisconsin Dells, Portage, Columbus, and Milwaukee.

Commuter Rail

In 2019, the only commuter rail service operated in the Region was Metra's Union Pacific North Line between Kenosha and Chicago, with intermediate stops in the north shore suburbs of Northeastern Illinois. Metra is the commuter rail service division of the Regional Transportation Authority, which serves the six-county Northeastern Illinois Region. Service on this route was provided by Union Pacific Railroad under contract with Metra and at no cost to any Wisconsin units of government.

Intercity Bus Service

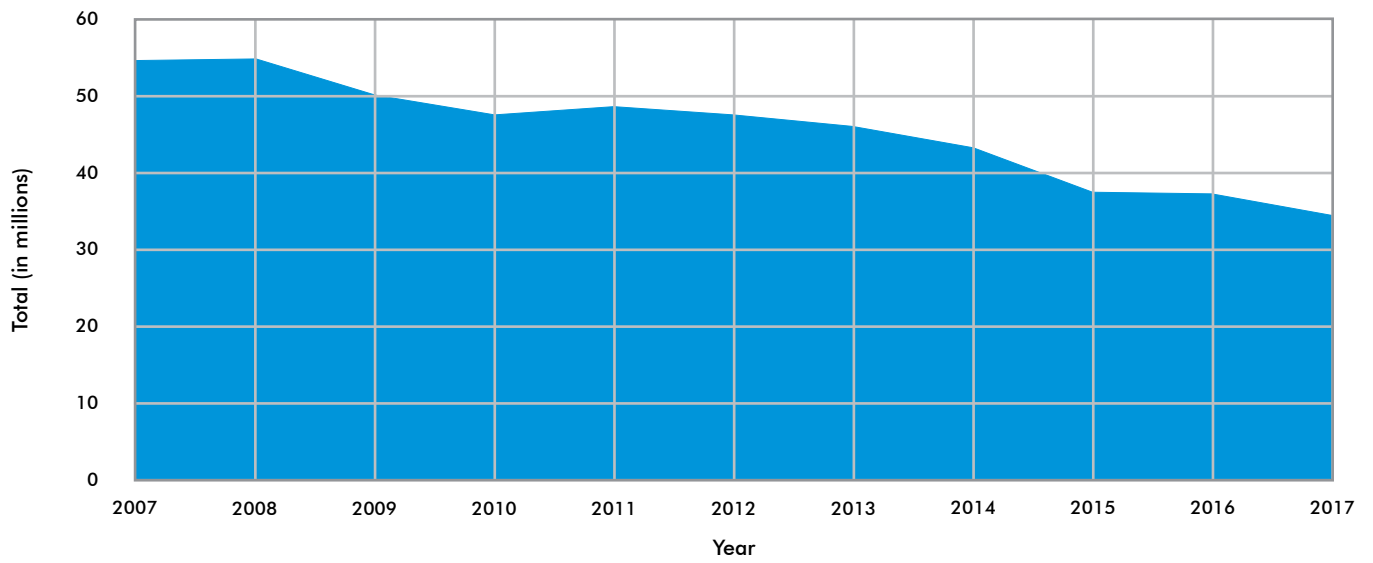
In 2019, scheduled intercity bus services were provided by eight carriers: Amtrak Thruway; Badger Coaches, Inc.; Greyhound Lines, Inc.; Indian Trails, Inc.; Jefferson Lines, Inc.; Lamers Bus Lines, Inc.; Megabus; and Wisconsin Coach Lines. Intercity bus service currently connects the Region to Appleton, Chicago, Eau Claire, Fond du Lac, Green Bay, Madison, Manitowoc, Marinette, Menomonie, Minneapolis-St. Paul, Oconto, Oshkosh, Peshtigo, Sheboygan, Stevens Point, Waupaca, Wausau, and several communities in Michigan's Upper Peninsula.

Ridership and Service Levels

As discussed in Chapter 2, ridership for transit services continues to steadily decline, likely due to a variety of external reasons including demographic changes, sustained low fuel prices, an increased availability of sub-prime automobile financing, current economic conditions, and the increased availability of ride-hailing services.

Passenger boardings for intracounty fixed-route transit systems and intercounty bus systems between 2007 and 2017 are provided in Figures A.1 and A.2. Passenger boardings on intracounty transit systems have declined by 20 percent between 2014 and 2017, and by 37 percent during the ten-year period between 2007 and 2017. Similarly, intercounty bus systems have seen similar reductions in boarding rates with a decrease of 13 percent between 2014 and 2017, and 18 percent during the ten-year period between 2007 and 2017.

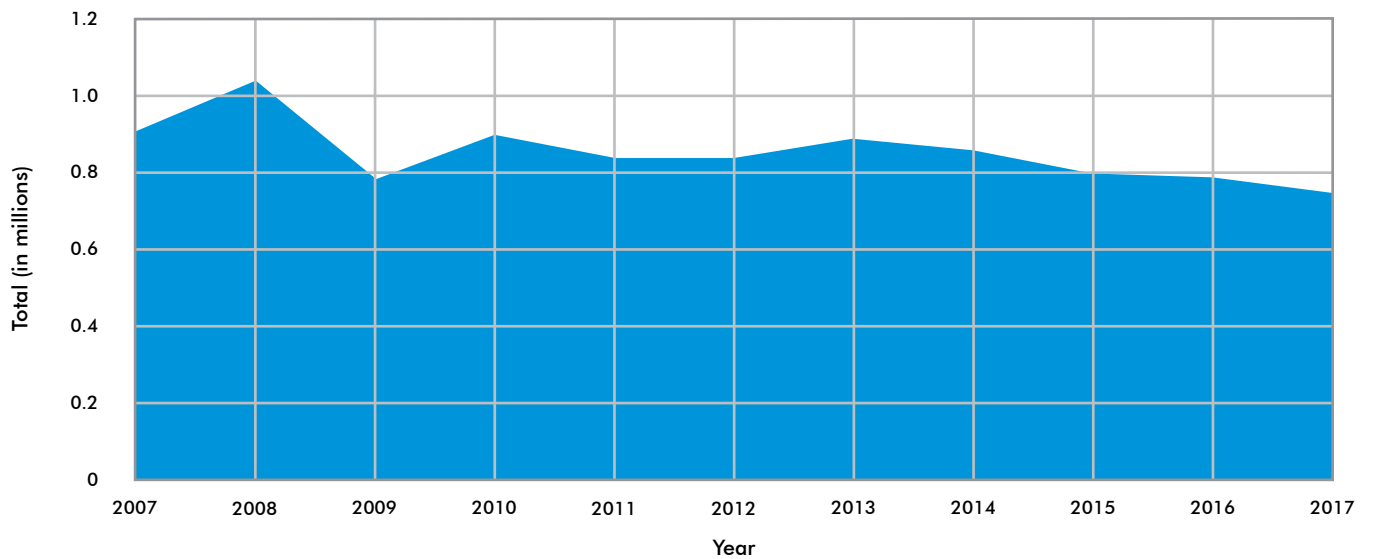
Figure A.1
Passenger Boardings on Intracounty Transit Systems in the Region: 2007-2017



Note: Includes Kenosha Area Transit, Milwaukee County Transit System, Waukesha Metro, and RYDE.

Source: National Transit Database and SEWRPC

Figure A.2
Passenger Boardings on Intercounty Bus Systems in the Region: 2007-2017



Note: Includes Waukesha County, Kenosha-Racine-Milwaukee Commuter Bus, Washington County Commuter Express, Ozaukee County Express, and Western Kenosha County Transit.

Source: National Transit Database and SEWRPC

Annual vehicle-miles of service for intracounty transit systems and intercounty bus systems are provided in Figures A.3 and A.4, respectively, for the years 2007 through 2017. While there have been significant decreases in passenger boardings over the time period since VISION 2050 was completed, vehicle-miles of service have remained more stable than ridership, with a modest decrease over the ten-year period between 2007 and 2017. Between 2014 and 2017, annual vehicle-miles of service for intracounty transit systems increased by 5 percent, during which time MCTS introduced its express service and the JobLines routes were initiated; however, annual vehicle-miles of service decreased by 2 percent overall during the ten-year period between 2007 and 2017. Similarly, annual vehicle-miles of service for intercounty bus increased by 5 percent between 2014 and 2017, but decreased by 3 percent between 2007 and 2017. Table A.1 shows revenue vehicle-hours and revenue vehicle-miles in 2014 and 2017 for intracounty transit and intercounty bus services in the Region.

For demand-responsive public shared-ride taxi service, both passenger boardings and annual vehicle-miles of service have increased since 2014 and over the ten-year period between 2007 and 2017, as shown in Figures A.5 and A.6, respectively.

Ridership on Amtrak's Hiawatha Service between 2000 and 2018 is shown in Figure A.7. Ridership increased by 12 percent from 766,167 in 2008 to 858,000 in 2018. Ridership on the Hiawatha service has continued to grow since 2014, with a 7 percent increase in ridership between 2014 and 2018. No major service improvements were implemented between 2008 and 2018.

Bus Vehicle Age

The average age of buses operated by transit operators in the Region was about 6.6 years in 2017, approximately the same average age as in 2016. The Commission staff monitors and sets regional targets for bus vehicle age as part of the Federal transit asset management target-setting process described in Appendix B.

Transit Safety and Reliability

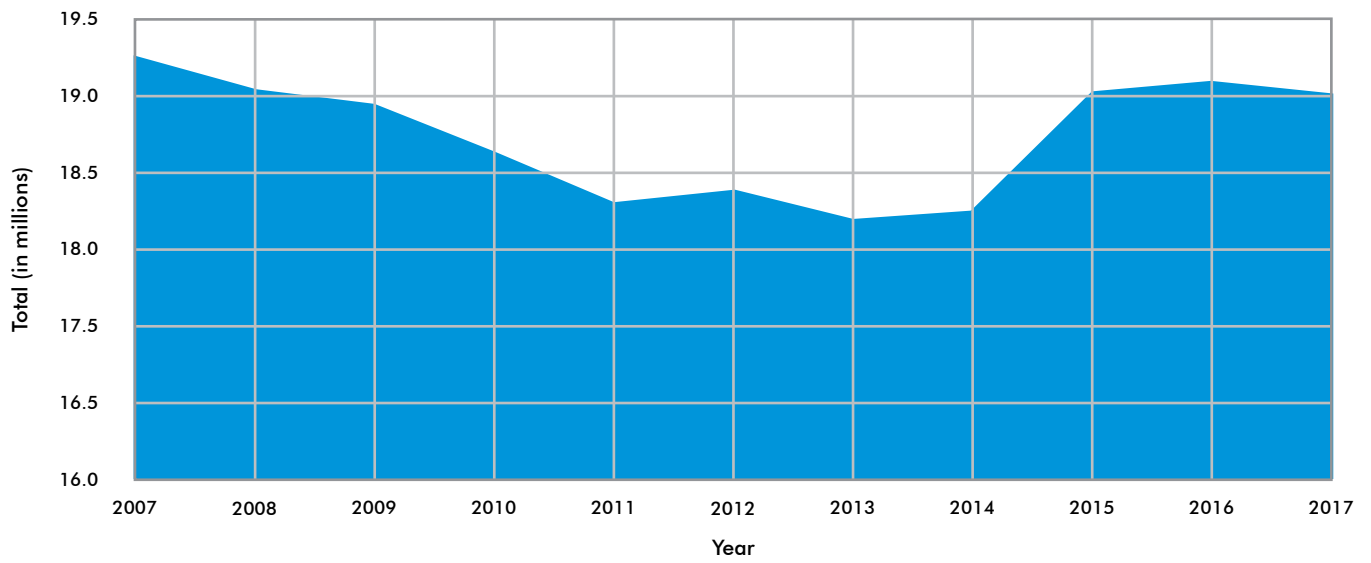
Table A.2 provides a comparison of transit safety performance based on criteria established by the Federal transit safety target-setting process. The rate of fatalities per 100,000 revenue vehicle-miles increased between 2014 and 2017 for intracounty transit systems, while the rate of injuries and safety events decreased or stayed the same for all other transit services. In previous years, Commission staff reported bus reliability as the total number of service calls reported. The number of service calls increased over 100 percent from 531 in 2016 to 1,103 in 2017. The Federal Transit Administration now defines bus reliability as the mean distance between major mechanical failures and Commission staff will be monitoring data consistent with the updated transit safety performance measures. As shown in Table A.2, the average revenue vehicle-miles between service calls decreased for intracounty transit systems and intercounty bus systems.

ARTERIAL STREETS AND HIGHWAYS PERFORMANCE

Pavement Condition

The Commission coordinates with the State, county, and local governments to monitor pavement conditions using a combination of the International Roughness Index (IRI), used by the State, and the Pavement Surface Evaluation and Rating (PASER) scale, used by county and local governments in the State. For the purposes of a more general analysis and evaluation of

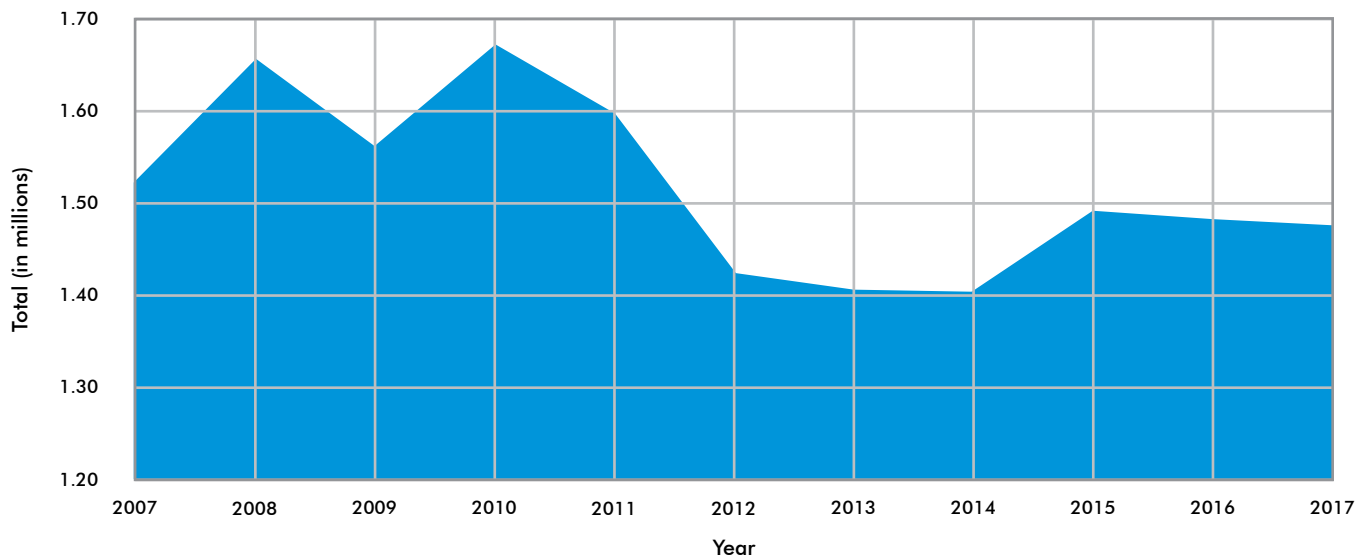
Figure A.3
Annual Vehicle-Miles of Service for Intracounty Transit Systems in the Region: 2007-2017



Note: Includes Kenosha Area Transit, Milwaukee County Transit System, Waukesha Metro, and RYDE.

Source: National Transit Database and SEWRPC

Figure A.4
Annual Vehicle-Miles of Service for Intercounty Bus Systems in the Region: 2007-2017



Note: Includes Waukesha County, Kenosha-Racine-Milwaukee Commuter Bus, Washington County Commuter Express, Ozaukee County Express, and Western Kenosha County Transit.

Source: National Transit Database and SEWRPC

Table A.1
Fixed-Route Public Transit Service Levels: 2014 and 2018

Average Weekday Transit Service Characteristics	2014^a	2018
Revenue Vehicle-Hours		
Rapid Transit	--	--
Commuter Rail	10	10
Commuter Bus	290	290
Express Bus	470	880
Local Transit	3,860	3,690
Total	4,630	4,870
Revenue Vehicle-Miles		
Rapid Transit	--	--
Commuter Rail	100	100
Commuter Bus	6,400	5,700
Express Bus	5,800	10,400
Local Transit	47,000	46,100
Total	59,300	62,300

^a The revenue vehicle-hours and revenue vehicle-miles for 2014 vary slightly from those reported in VISION 2050 due to changes in the methodology for calculating average weekday service.

Source: National Transit Database, MCTS, and SEWRPC

pavement conditions in the Region, scores from these two rating systems are designated as good, fair, and poor, as follows: for state trunk highways, a roadway with an IRI of less than 1.5 is considered in good condition, an IRI between 1.5 and 3.5 is considered in fair condition, and an IRI of more than 3.5 is considered in poor condition. For county and local trunk highways, a roadway having a PASER of 7 or more is considered in good condition, a PASER of 5 or 6 is considered in fair condition, and a PASER of 4 or less is considered in poor condition.

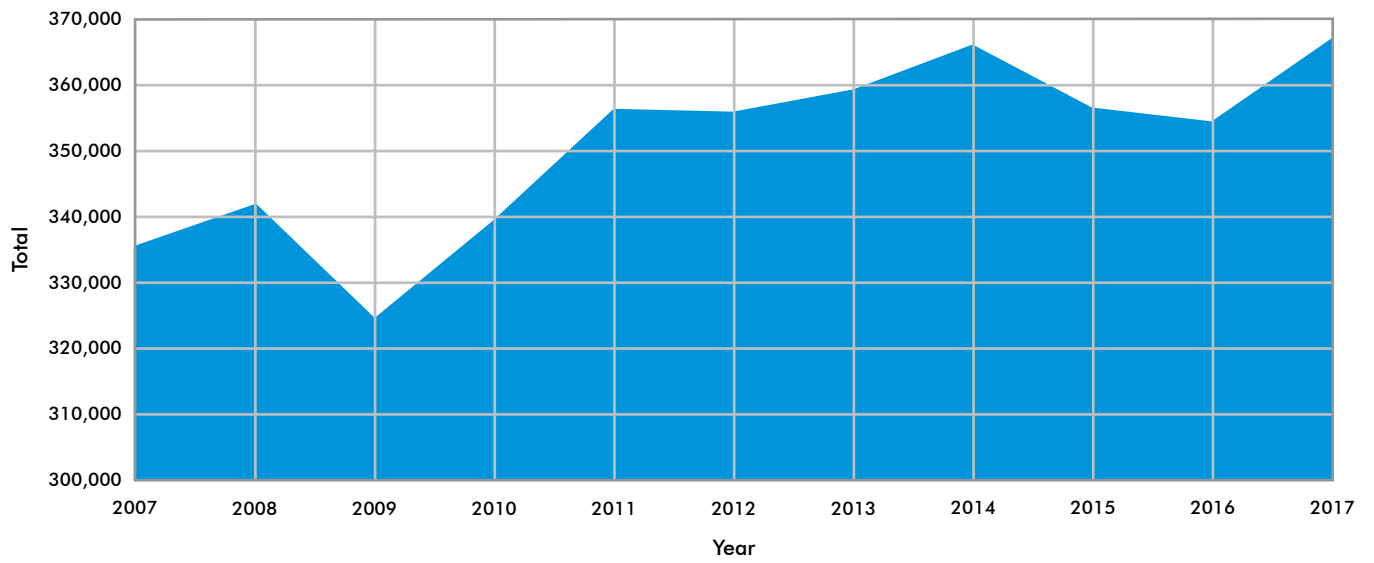
As of the most recently available data (2016 for state trunk highways and 2017 for county and local trunk highways), 51.4 percent of pavement is in good condition, 39.2 percent of pavement is in fair condition, and 9.4 percent of pavement is in poor condition. Map A.2 shows the current condition of pavement in Southeastern Wisconsin, with the percent change in pavement condition by category since 2013 shown in Table A.3.

Bridge Condition

Similarly, the Commission monitors bridge condition in the Region using bridge sufficiency ratings provided by WisDOT. These data are collected through bridge inspections performed by WisDOT and local municipalities following federal guidelines for bridge inspection and maintenance. A bridge sufficiency rating scale of 0 to 100 is used, with 0 being a failing structure and 100 being a structure in perfect condition. Ratings are based on four factors: structural adequacy and safety; serviceability and functional obsolescence; essentiality for public use; and special reductions. For the purposes of this analysis, sufficiency ratings are designated as good, fair, and poor, as follows: a bridge with a sufficiency rating of 80 or greater is considered to be in good condition, a bridge with a sufficiency rating of 50 to 79.9 is considered to be in fair condition, and a bridge with a sufficiency rating less than 50 is considered to be in poor condition.

As of 2018, 74.1 percent of bridges were rated in good condition, 18.2 percent were rated in fair condition, and 7.7 percent were rated in poor condition. Map A.3 shows bridge condition in the Region and Table A.4 lists bridge structure condition by count and percent, including the percent change since 2013.

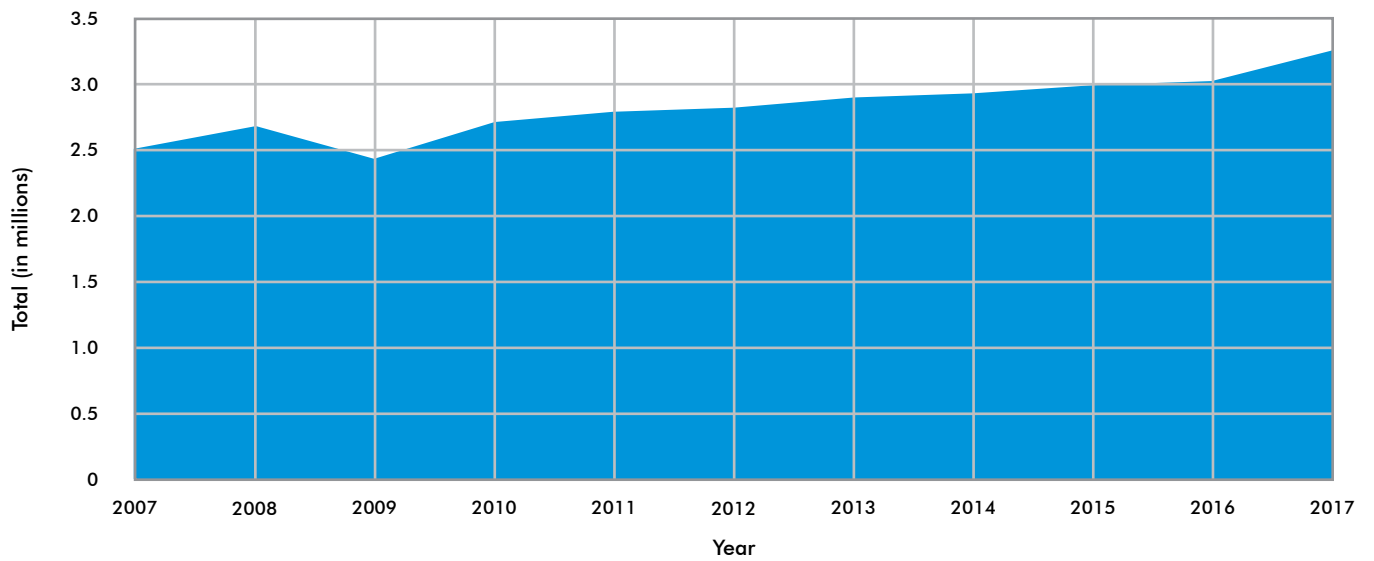
Figure A.5
Passenger Boardings on Public Shared-Ride Taxi Systems in the Region: 2007-2017



Note: Includes taxi service in Washington County, Ozaukee County, City of Whitewater, City of Hartford, City of West Bend, and Walworth County Dial-a-Ride.

Source: National Transit Database and SEWRPC

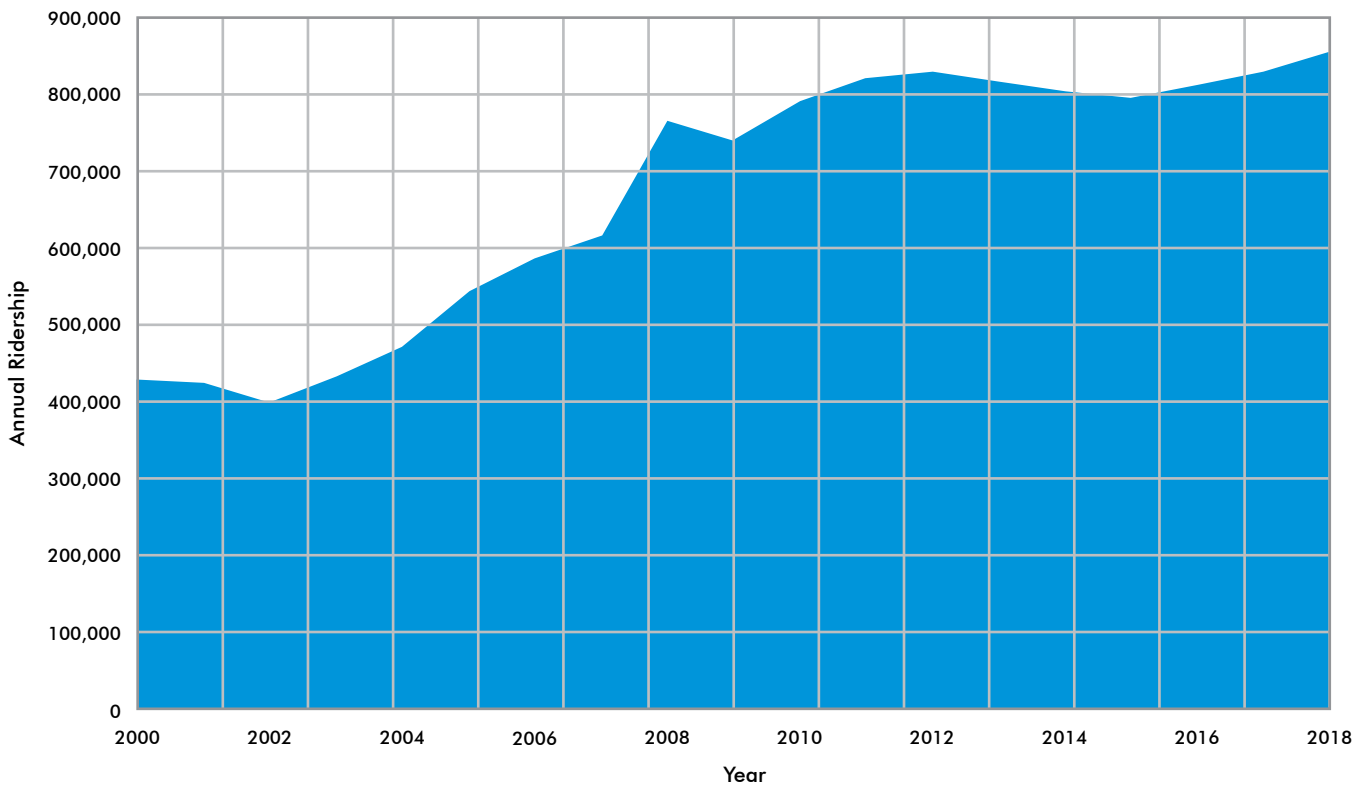
Figure A.6
Annual Vehicle-Miles of Service for Public Shared-Ride Taxi Systems in the Region: 2007-2017



Note: Includes taxi service in Washington County, Ozaukee County, City of Whitewater, City of Hartford, City of West Bend, and Walworth County Dial-a-Ride.

Source: National Transit Database and SEWRPC

Figure A.7
Annual Ridership on Amtrak Hiawatha Service: 2000-2018



Source: Amtrak and SEWRPC

Table A.2
Transit Safety Performance: 2014 and 2017

Transit System Type	Fatalities per 100,000 Revenue Vehicle Miles		Injuries per 100,000 Revenue Vehicle Miles		Safety Events per 100,000 Revenue Vehicle Miles		System Reliability ^a	
	2014	2017	2014	2017	2014	2017	2014	2017
Intracounty Transit Systems	0.00	0.01	0.49	0.29	0.31	0.24	22,134	17,940
Intercounty Bus Systems	0.00	0.00	0.00	0.00	0.00	0.00	51,784	20,977
Shared-Ride Taxi	0.00	0.00	0.14	0.05	0.03	0.03	N/A	N/A

Note: Performance categories are based on safety performance criteria established under the National Public Transportation Safety Plan pursuant to 49 CFR Part 673, Public Transportation Agency Safety Plan.

^a System Reliability is measured as revenue miles operated divided by the number of major mechanical failures. The large difference between 2014 and 2017 is primarily due to changes in how major mechanical failures were reported to the National Transit Database.

Source: National Transit Database and SEWRPC

Traffic Congestion and Delay **Congestion on the Arterial Street and Highway System**

Traffic congestion on the arterial street and freeway system may be categorized as moderate, severe, or extreme, with each level characterized by travel speed, operating conditions, and level of service, (see Table A.5). The freeway system represents only about 8 percent of total arterial system mileage, but carries about 39 percent of total regional average weekday vehicle-miles of travel. Given the utilization of the freeway system, a much greater proportion of the freeway system—compared to the surface arterial street system—experiences extreme and severe peak-hour traffic congestion, as well as experiencing traffic congestion during hours of the weekday

Map A.2

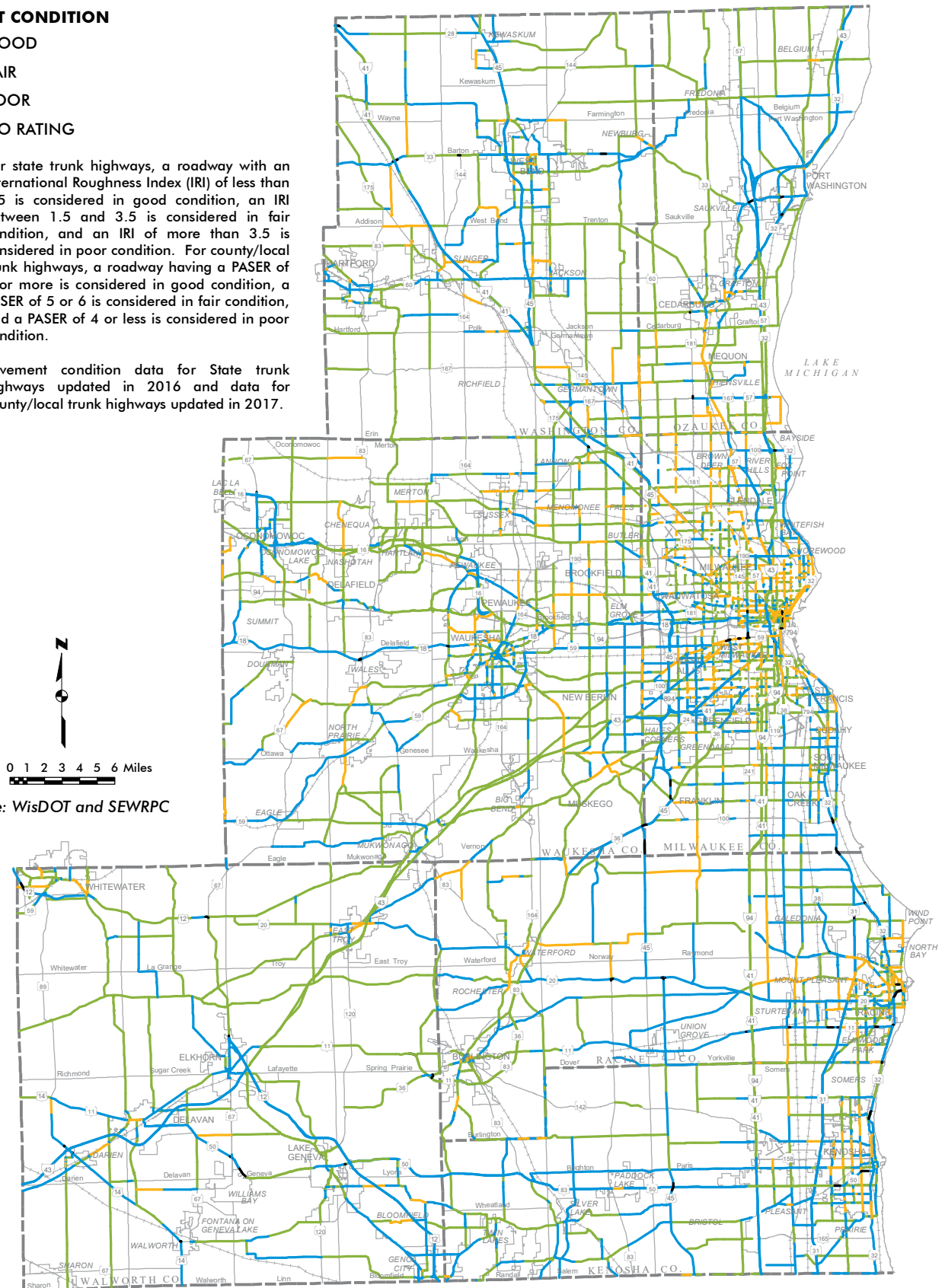
Pavement Condition on Arterial Streets and Highways in the Region: 2016 and 2017

PAVEMENT CONDITION

- GOOD
- FAIR
- POOR
- NO RATING

Note: For state trunk highways, a roadway with an International Roughness Index (IRI) of less than 1.5 is considered in good condition, an IRI between 1.5 and 3.5 is considered in fair condition, and an IRI of more than 3.5 is considered in poor condition. For county/local trunk highways, a roadway having a PASER of 7 or more is considered in good condition, a PASER of 5 or 6 is considered in fair condition, and a PASER of 4 or less is considered in poor condition.

Pavement condition data for State trunk highways updated in 2016 and data for county/local trunk highways updated in 2017.



Source: WisDOT and SEWRPC

**Table A.3
Pavement Condition of Arterial Streets and Highways**

Condition ^a	Base Year (2013)		2016 (State Facilities) and 2017 (Local and County Facilities) ^b		Percent Change 2013 to 2016/2017
	Miles	Percent	Miles	Percent	
Poor	380	10.6	338	9.4	-11.3
Fair	1,239	34.7	1,410	39.2	13.0
Good	1,958	54.7	1,849	51.4	-6.0
Total	3,577	100.0	3,598	100.0	--

^a For state trunk highways, a roadway with an International Roughness Index (IRI) of less than 1.5 is considered in good condition, an IRI between 1.5 and 3.5 is considered in fair condition, and an IRI of more than 3.5 is considered in poor condition. For county/local trunk highways, a roadway having a PASER of 7 or more is considered in good condition, a PASER of 5 or 6 is considered in fair condition, and a PASER of 4 or less is considered in poor condition.

^b The data year for state trunk highways is 2016 and the data year for local/county trunk highways is 2017.

Source: WisDOT and SEWRPC

other than the peak traffic hours. The existing levels of traffic congestion experienced in the years 2011 and 2017 are presented in Table A.6 and on Map A.4.

Congestion on Designated Truck Routes and the National Highway System

The levels of traffic congestion experienced on designated truck routes and the National Highway System (NHS) for the years 2011 and 2017 are presented in Table A.7 and on Map A.5. The State of Wisconsin maintains a truck operations map that identifies streets and highways for the operation of vehicles and combinations of vehicles for which the overall lengths cannot be limited. In addition, the truck operations map identifies restricted truck routes where the overall lengths are limited. The NHS includes highways important to the nation’s economy, defense, and mobility. As part of the Moving Ahead for Progress in the 21st Century Act (MAP-21), the NHS was expanded to include urban and rural principal arterials that were not included in the NHS before October 1, 2012. Though the miles of designated truck routes and NHS facilities carrying traffic volumes exceeding their design capacity has remained relatively stable since 2011, decreasing only 4.9 percent from 244 miles in 2011 to 232 miles in 2017, decreases in congestion on these roadways improve travel time and freight movement.

Roadway Safety Number of Crashes

After a downward trend of total vehicular crashes in the Region since the mid-1990s, the total number of crashes has gradually increased from 2012 to 2018 by about 28 percent (see Figure A.8). The total number of vehicular crashes increased about 7 percent from 42,646 in 2017 to 45,419 in 2018. Crashes involving an injury or a fatality increased slightly to 12,623 crashes in 2018, representing about 28 percent of all crashes. Over the period 1998-2018, crashes involving an injury or a fatality decreased by about 24 percent and property-damage-only crashes increased by about 5 percent, to 32,796 crashes.

Fatal Crashes

There were 133 fatal vehicular crashes in the Region in 2018 that resulted in 145 fatalities. As shown in Figure A.9, the number of fatalities has oscillated over the 20-year period from 1998-2018, including a peak of 195 fatalities in 2005 and a low of 123 fatalities in 2013. Figure A.10 presents selected characteristics of vehicle crash-related fatalities in the Region during 2018.

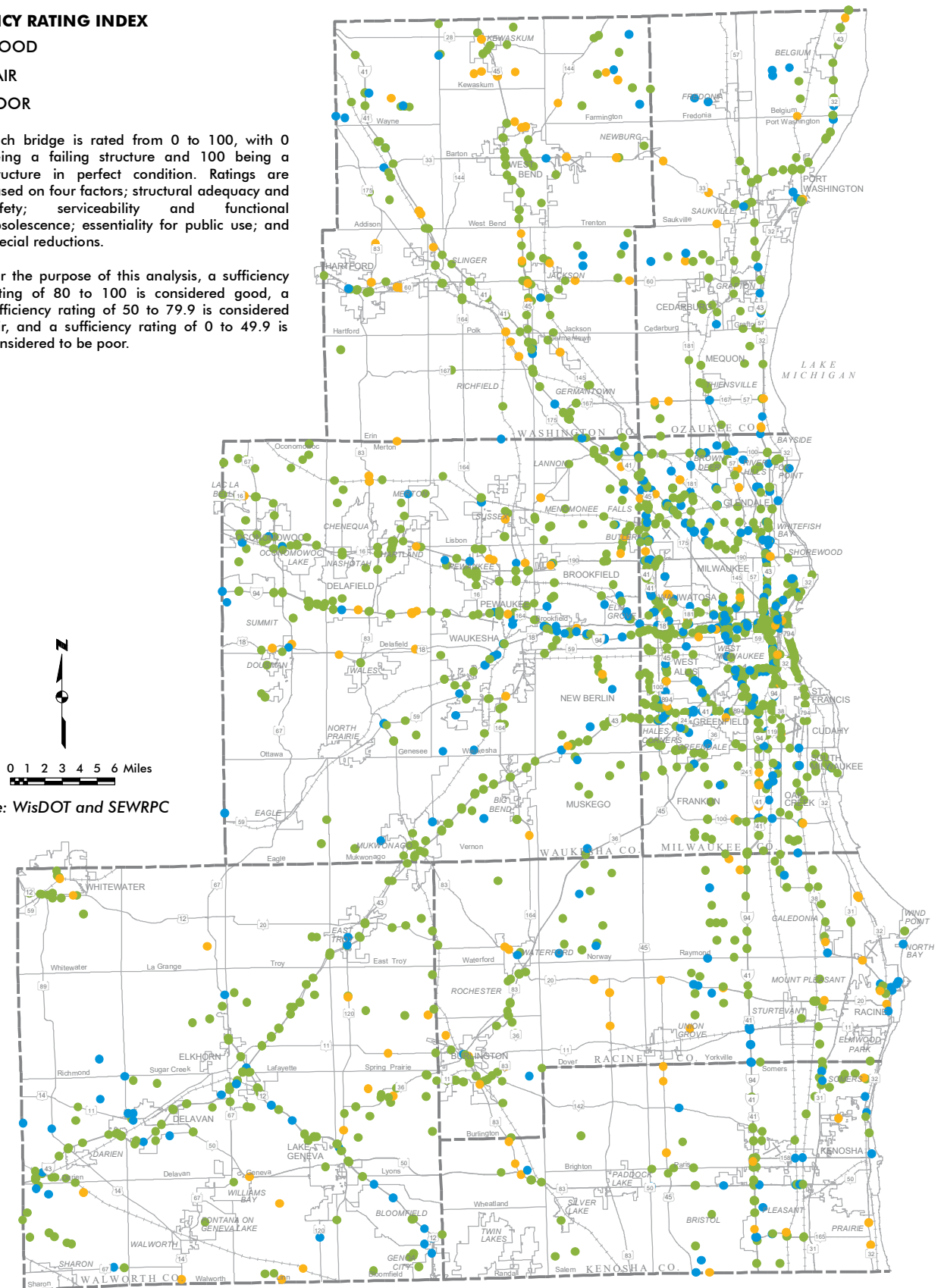
Map A.3 Bridge Structure Condition in the Region: 2018

SUFFICIENCY RATING INDEX

- GOOD
- FAIR
- POOR

Note: Each bridge is rated from 0 to 100, with 0 being a failing structure and 100 being a structure in perfect condition. Ratings are based on four factors; structural adequacy and safety; serviceability and functional obsolescence; essentiality for public use; and special reductions.

For the purpose of this analysis, a sufficiency rating of 80 to 100 is considered good, a sufficiency rating of 50 to 79.9 is considered fair, and a sufficiency rating of 0 to 49.9 is considered to be poor.



Source: WisDOT and SEWRPC

Table A.4
Bridge Structure Condition in the Region: 2013 and 2018

Sufficiency Rating ^a	2013		2018		Percent Change 2013-2018
	Number of Bridges	Percent	Number of Bridges	Percent	
Poor	81	4.3	156	7.7	79.1
Fair	441	23.3	371	18.2	-21.9
Good	1,372	72.4	1,508	74.1	2.3
Total	1,894	100.0	2,035	100.0	--

^a Each bridge is rated from 0 to 100, with 0 being a failing structure and 100 being a structure in perfect condition. Ratings are based on four factors; structural adequacy and safety; serviceability and functional obsolescence; essentiality for public use; and special reductions. For the purpose of this analysis, a sufficiency rating of 80 to 100 is considered good, a sufficiency rating of 50 to 79.9 is considered fair, and a sufficiency rating of 0 to 49.9 is considered to be poor.

Source: WisDOT and SEWRPC

Table A.5
Freeway and Surface Arterial Traffic Congestion Levels

Freeway			
Level of Traffic Congestion	Level of Service	Average Speed	Operating Conditions
None	A and B	Freeway operates at free-flow speed	No restrictions on ability to maneuver and change lanes.
None	C	Freeway operates at free-flow speed	Ability to maneuver and change lanes noticeably restricted.
Moderate	D	Freeway operates at 1 to 2 mph below free-flow speed	Ability to maneuver and change lanes more noticeably limited. Reduced driver physical and psychological comfort levels.
Severe	E	Freeway operates at up to 10 mph below free-flow speed	Virtually no ability to maneuver and change lanes. Operation at maximum capacity. No usable gaps in the traffic stream to accommodate lane changing.
Extreme	F	Freeway average speeds are 20 to 30 mph or less	Breakdown in vehicular flow with stop-and-go, bumper-to-bumper traffic.

Surface Arterial			
Level of Traffic Congestion	Level of Service	Average Speed	Operating Conditions
None	A and B	70 to 100 percent of free-flow speed	Ability to maneuver within traffic stream is unimpeded. Control delay at signalized intersections is minimal.
None	C	50 to 100 percent of free-flow speed	Restricted ability to maneuver and change lanes at mid-block locations.
Moderate	D	40 to 50 percent of free-flow speed	Restricted ability to maneuver and change lanes. Small increases in flow lead to substantial increases in delay and decreases in travel speed.
Severe	E	33 to 40 percent of free-flow speed	Significant restrictions on lane changes. Traffic flow approaches instability.
Extreme	F	25 to 33 percent of free-flow speed	Flow at extremely low speeds. Intersection congestion with high delays, high volumes, and extensive queuing.

Source: SEWRPC

Table A.6
Traffic Congestion on the Arterial Street and Highway System
in the Region by County: 2011 and 2017

2011									
County	Under or at Design Capacity ^a		Over Design Capacity ^a						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha	303.2	94.8	11.3	3.5	4.9	1.5	0.6	0.2	320.0
Milwaukee	647.5	82.1	64.6	8.2	49.5	6.3	26.8	3.4	788.4
Ozaukee	236.2	94.2	9.6	3.8	4.7	1.9	0.3	0.1	250.8
Racine	345.0	96.3	9.5	2.7	2.5	0.7	1.3	0.4	358.3
Walworth	442.6	99.3	2.4	0.5	0.4	0.1	0.2	0.0	445.6
Washington	397.8	97.9	6.1	1.5	2.3	0.6	0.3	0.1	406.5
Waukesha	676.5	89.8	43.4	5.8	27.9	3.7	5.5	0.7	753.3
Region	3,048.8	91.8	146.9	4.4	92.2	2.8	35.0	1.1	3,322.9

2017									
County	Under or at Design Capacity ^a		Over Design Capacity ^a						Total Mileage
			Moderate Congestion		Severe Congestion		Extreme Congestion		
	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	Mileage	Percent of Total	
Kenosha	304.6	95.2	8.7	2.7	6.5	2.0	0.2	0.1	320.0
Milwaukee	635.9	80.6	72.4	9.2	51.0	6.5	29.1	3.7	788.4
Ozaukee	239.0	95.3	10.8	4.3	1.0	0.4	--	--	250.8
Racine	342.5	95.0	15.3	4.2	2.4	0.7	0.5	0.1	360.7
Walworth	445.3	99.4	2.0	0.4	0.3	0.1	0.2	0.1	447.8
Washington	399.4	98.3	5.8	1.4	1.3	0.3	--	--	406.5
Waukesha	686.8	91.2	37.9	5.0	24.6	3.3	4.0	0.5	753.3
Region	3,053.5	91.8	152.9	4.6	87.1	2.6	34.0	1.0	3,327.5

^a Design capacity is the maximum level of traffic volume a facility can carry before beginning to experience morning and afternoon peak traffic hour traffic congestion, and is expressed in terms of number of vehicles per average weekday.

Source: SEWRPC

About 22 percent of fatalities involved bicyclists and pedestrians and 14 percent involved motorcyclists. Alcohol was cited as a contributing factor in about 28 percent of all fatalities.

Serious Injury Crashes

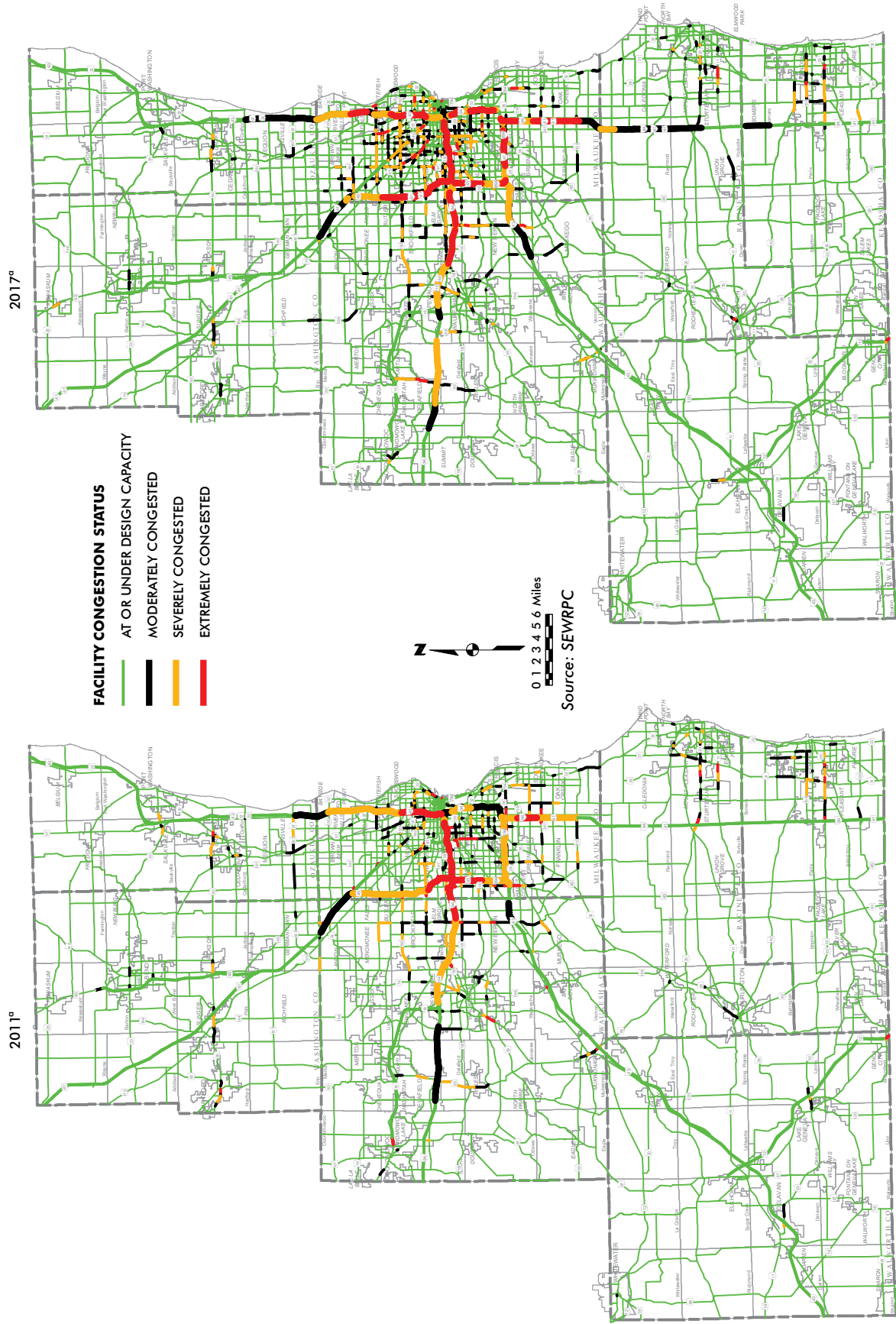
In 2018, there were 873 vehicle crashes in the Region that resulted in at least one serious injury, representing a 3 percent decrease from 2017 as shown in Figure A.11. Between 1998 and 2018, the number of crashes resulting in serious injury declined significantly, by about 54 percent.

Bicycle and Pedestrian Crashes

In 2018, there were 317 vehicular crashes involving bicycles and 696 vehicular crashes involving pedestrians. Over the past 20 years, the number of bicycle and pedestrian crashes has significantly decreased by nearly 44 percent and 30 percent, respectively (see Figure A.12). In 2018, there were 28 bicycle crashes and 151 pedestrian crashes resulting in a fatality or serious injury. Historically, the number of bicycle and pedestrian crashes resulting in a fatality or serious injury have generally decreased, as shown in Figure A.13. However, over the last 10 years, there has been only a slight decline in the number of bicycle crashes resulting in a fatality or serious injury and a slight increase in the number of such pedestrian crashes.

Map A.4

Congestion on the Arterial Street and Highway System in the Region: Years 2011 and 2017



^a During 2011, the traffic volume on the freeway system was impacted by lane closures attendant to the resurfacing of IH 94 between STH 16 and the Stadium Interchange, and the reconstruction of the Mitchell Interchange. In 2017, the traffic volume on the freeway system was impacted by lane and ramp closures primarily attendant to the reconstruction of the Zoo and Lake Interchanges.

Table A.7
Traffic Congestion on Designated Truck Routes and the
National Highway System in the Region: 2011 and 2017

Year	Under or At Design Capacity	Over Design Capacity			Total Mileage
		Moderate Congestion	Severe Congestion	Extreme Congestion	
2011	1,403	124	86	34	1,647
2017	1,419	123	77	32	1,651

Source: SEWRPC

State Trunk Highway Vehicular Crash Rates

A summary of the five-year average annual crash rates on those freeways and surface arterials on the state trunk highway network in the Region is presented in Table A.8 for two time periods—2008-2012 and 2012-2016. Crash rates, expressed on the basis of the number of crashes per 100 million vehicle-miles driven, slightly increased for both freeways and surface arterials on the Region’s state trunk highway system.

Arterial Highway Travel Times

Estimated peak-hour arterial street and highway travel time contours for 2011 and 2017 are shown on Map A.6 for two locations: the Milwaukee central business district and the Milwaukee Regional Medical Center.

PARK-RIDE FACILITY AND TRANSIT STATION UTILIZATION

Park-Ride Lots Served by Transit

In 2018, there were 51 park-ride lots in the Region, with 37 lots served by commuter or express bus transit service, as shown on Map A.7 and in Table A.9. These intermodal parking facilities provided 6,325 parking spaces. The utilization of parking spaces at all park-ride lots served by transit in 2018 ranged from a high of 117 percent at the lot located at IH 43 and CTH C in the Town of Grafton (with vehicles parked outside of designated parking stalls) to a low of 12 percent at the lot located at STH 16 and CTH C in the Town of Oconomowoc. In addition to the IH 43 and CTH C site, other park-ride lots served by transit with utilization rates greater than 60 percent include: IH 43 and Silver Spring Drive (Bayshore) in the City of Glendale; USH 45 and Paradise Drive in the City of West Bend; and IH 94 and CTH Y (Goerke’s Corners) in the Town of Brookfield. Overall, on an average weekday during 2018, 42 percent of parking spaces at park-ride lots served by transit were in use.¹²

Park-Ride Lots Not Served by Transit

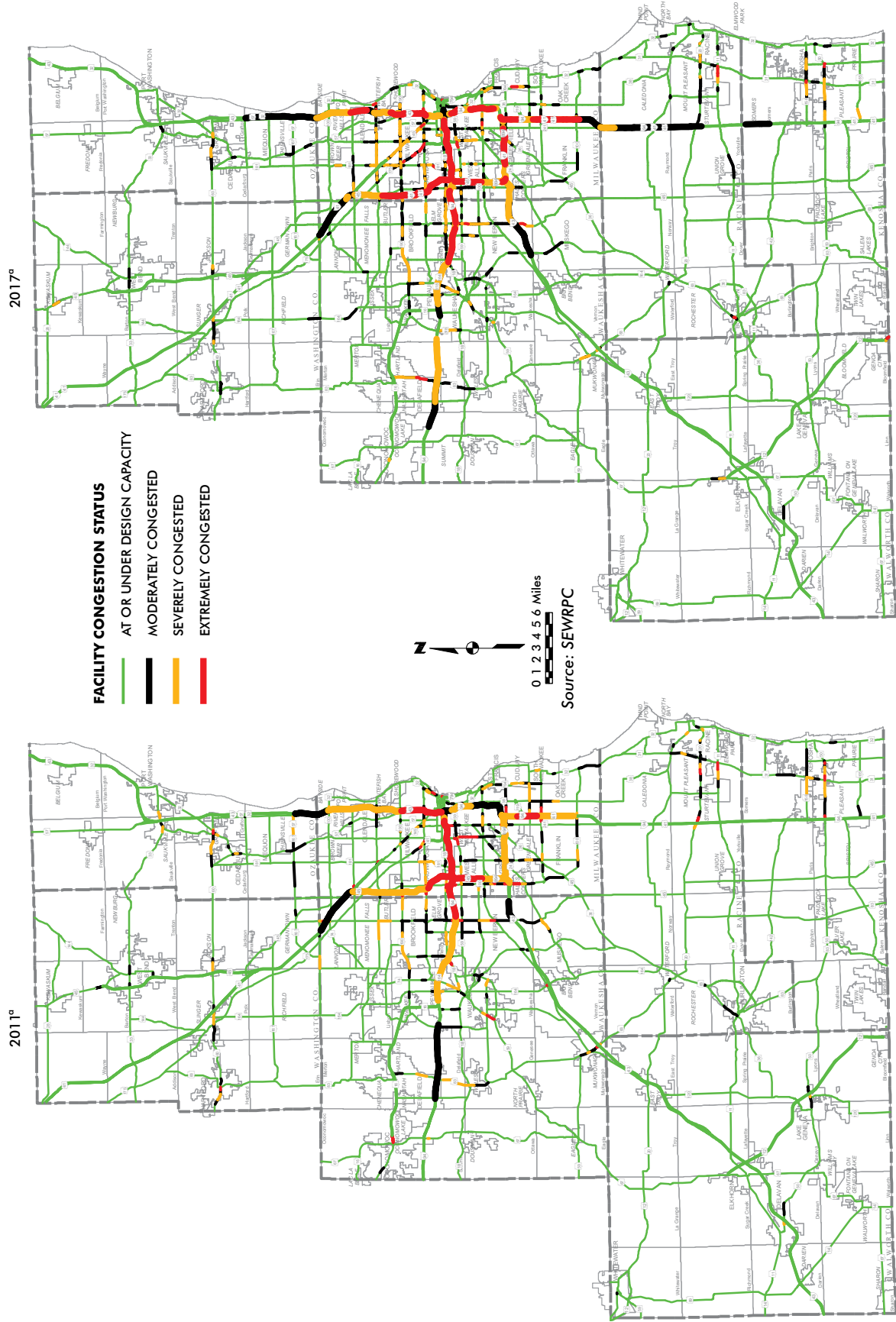
In 2018, there were 14 park-ride lots not served by transit located within the Region, providing 1,298 parking spaces, which are also shown on Map A.7 and in Table A.9. The utilization of parking spaces at the individual park-ride lots not served by transit ranged from a high of 101 percent at the lot located at IH 94 and STH 20 in Ives Grove to 3 percent at the lot located at Timmerman Airport in the City of Milwaukee. No other park-ride lots not served by transit had utilization rates greater than 60 percent in 2018. Overall, on an average weekday during 2018, 23 percent of parking spaces at park-ride lots not served by transit were in use.¹³

¹²The utilization rate is based on park-ride lots served by transit where data on available parking spaces and autos parked on an average weekday are known.

¹³The utilization rate is based on park-ride lots not served by transit where data on available parking spaces and autos parked on an average weekday are known.

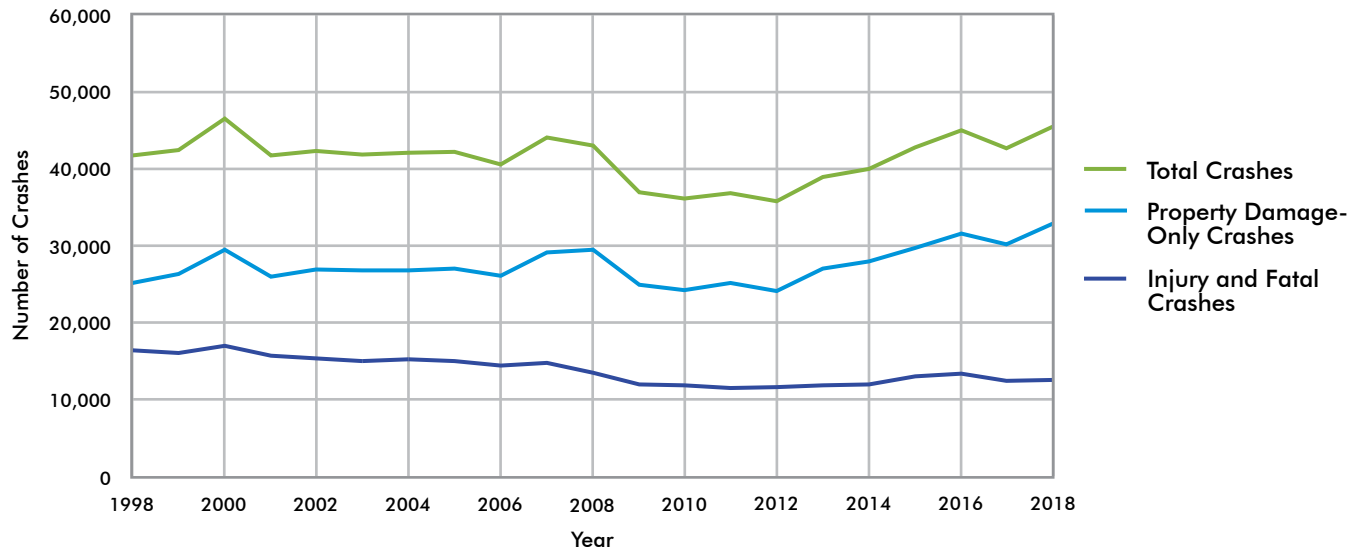
Map A.5

Congestion on the Regional Freight Network in the Region: Years 2011 and 2017



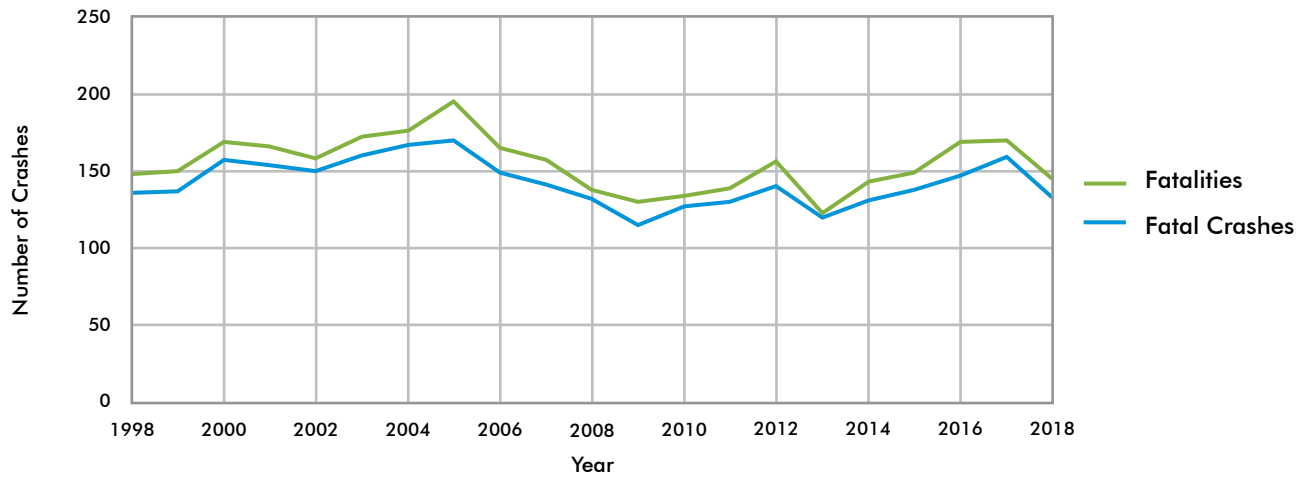
^a During 2011, the traffic volume on the freeway system was impacted by lane closures attendant to the resurfacing of IH 94 between STH 16 and the Stadium Interchange, and the reconstruction of the Mitchell Interchange. In 2017, the traffic volume on the freeway system was impacted by lane and ramp closures primarily attendant to the reconstruction of the Zoo and Lake Interchanges.

Figure A.8
Total, Property Damage-Only, and Injury and Fatal
Vehicular Crashes Reported in the Region: 1998-2018



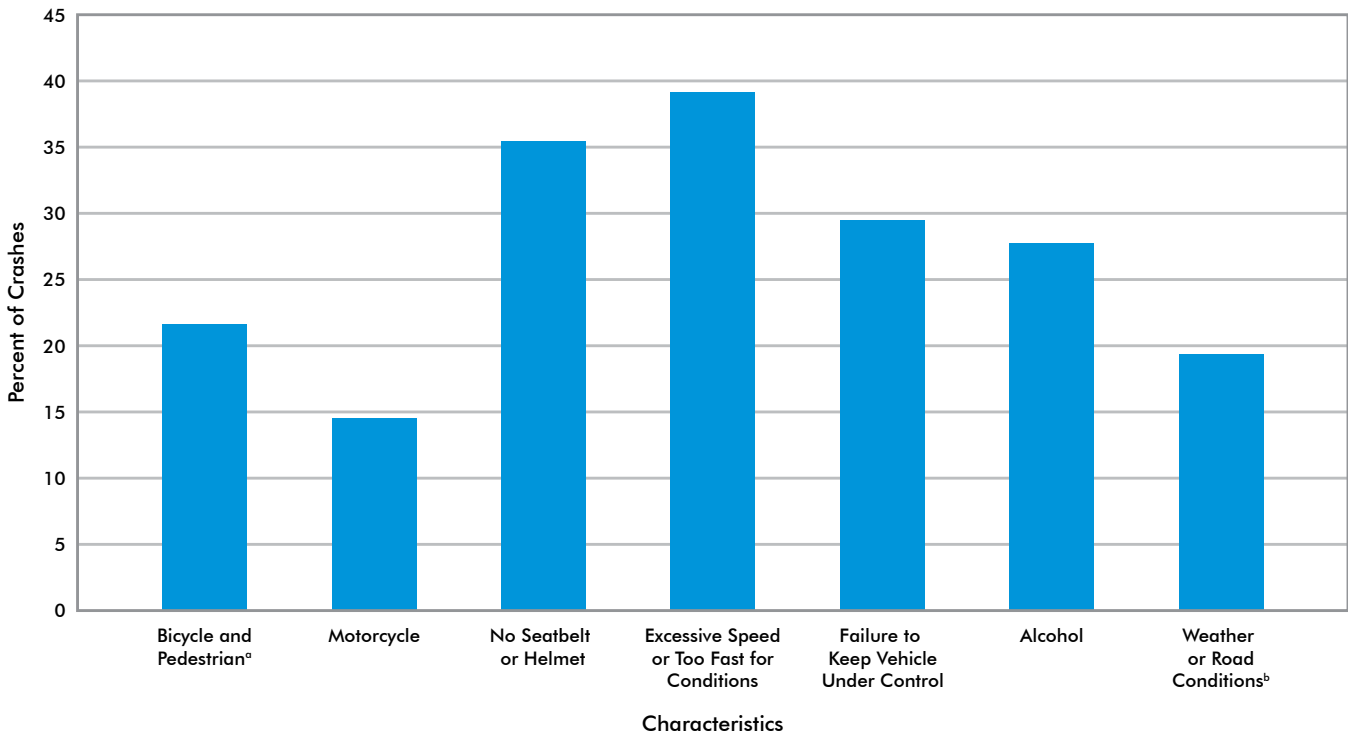
Source: WisDOT and SEWRPC

Figure A.9
Fatal Vehicular Crashes and Fatalities Reported in the Region: 1998-2018



Source: WisDOT and SEWRPC

Figure A.10
Selected Characteristics of Vehicular Crash Fatalities in the Region: 2018



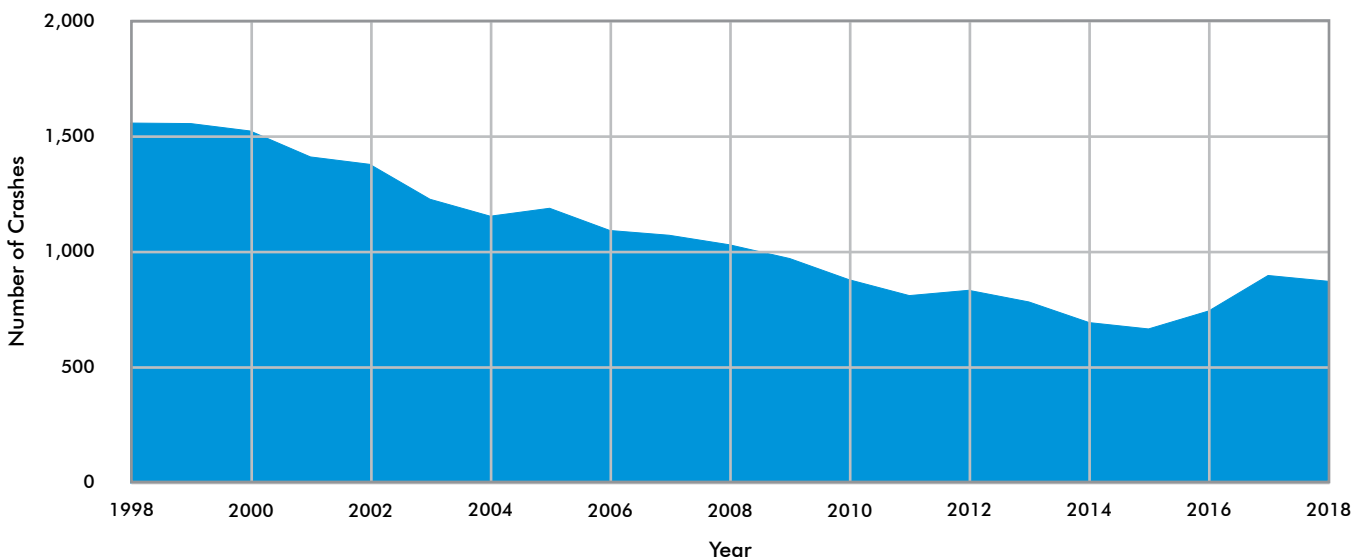
Note: Fatalities attributable to multiple categories are counted more than once.

^aIn 2018 there was one bicycle fatality (0.7 percent of total fatal crashes) and 31 pedestrian fatalities (21.4 percent of total fatal crashes).

^bThis category includes snowy, rainy, and foggy conditions and snow-covered, icy or wet roads.

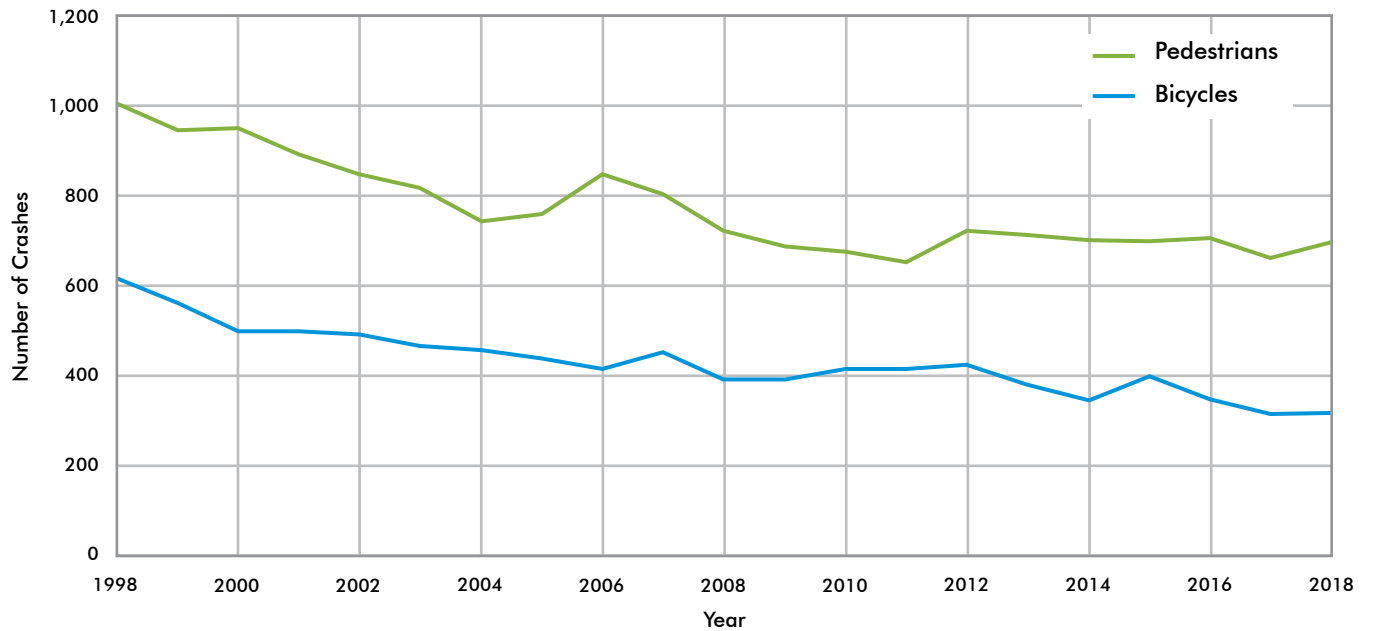
Source: SEWRPC

Figure A.11
Total Number of Crashes Resulting in a Serious Injury Reported in the Region: 1998-2018



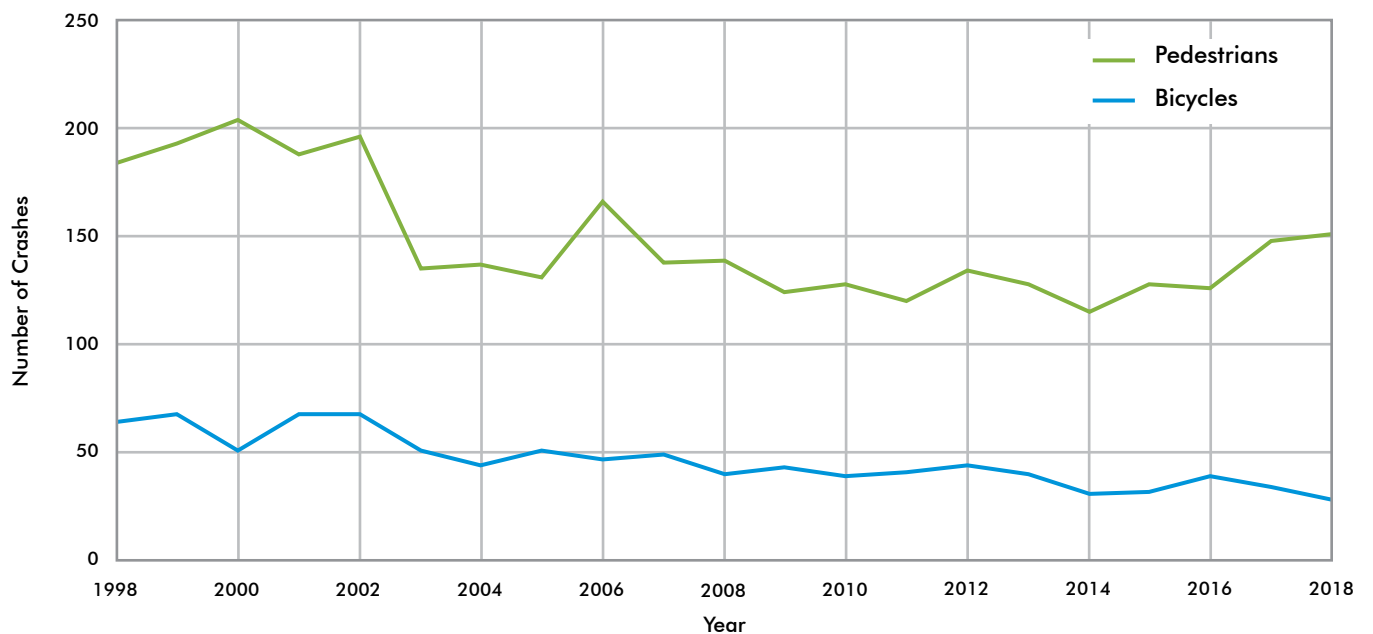
Source: WisDOT and SEWRPC

Figure A.12
Total Number of Vehicular Crashes Involving Bicycles or Pedestrians as Reported in the Region: 1998-2018



Source: Wisconsin Traffic Operations and Safety Laboratory and SEWRPC

Figure A.13
Total Number of Vehicular Crashes Involving Bicycles or Pedestrians Resulting in a Fatality or a Serious Injury as Reported in the Region: 1998-2018



Source: Wisconsin Traffic Operations and Safety Laboratory and SEWRPC

Table A.8
Average Vehicular Crash Rate of State Trunk Highways by
Arterial Type by County in the Region: 2008-2012 and 2012-2016

County	Crash Rate per 100 Million Vehicle Miles			
	Freeways		Standard Arterials	
	2008-2012	2012-2016	2008-2012	2012-2016
Kenosha	45.7	46.8	255.6	249.7
Milwaukee	120.2	129.8	372.8	414.6
Ozaukee	41.0	45.9	119.0	154.0
Racine	33.7	46.3	234.9	250.4
Walworth	38.3	33.2	139.2	135.3
Washington	43.3	52.6	215.0	210.7
Waukesha	53.7	54.3	222.4	201.9
Region	72.5	81.2	265.0	271.0

Note: Crashes that occurred on segments of roadway that no longer exist due to a recent roadway reconfiguration are not included.

Source: SEWRPC

Total Park-Ride Lot Utilization

Table A.10 shows that utilization of all park-ride lots has decreased by about 7 percent between 2014 and 2018, despite a slight increase in available spaces.

TRANSPORTATION AIR POLLUTANT AND AIR TOXIC EMISSIONS

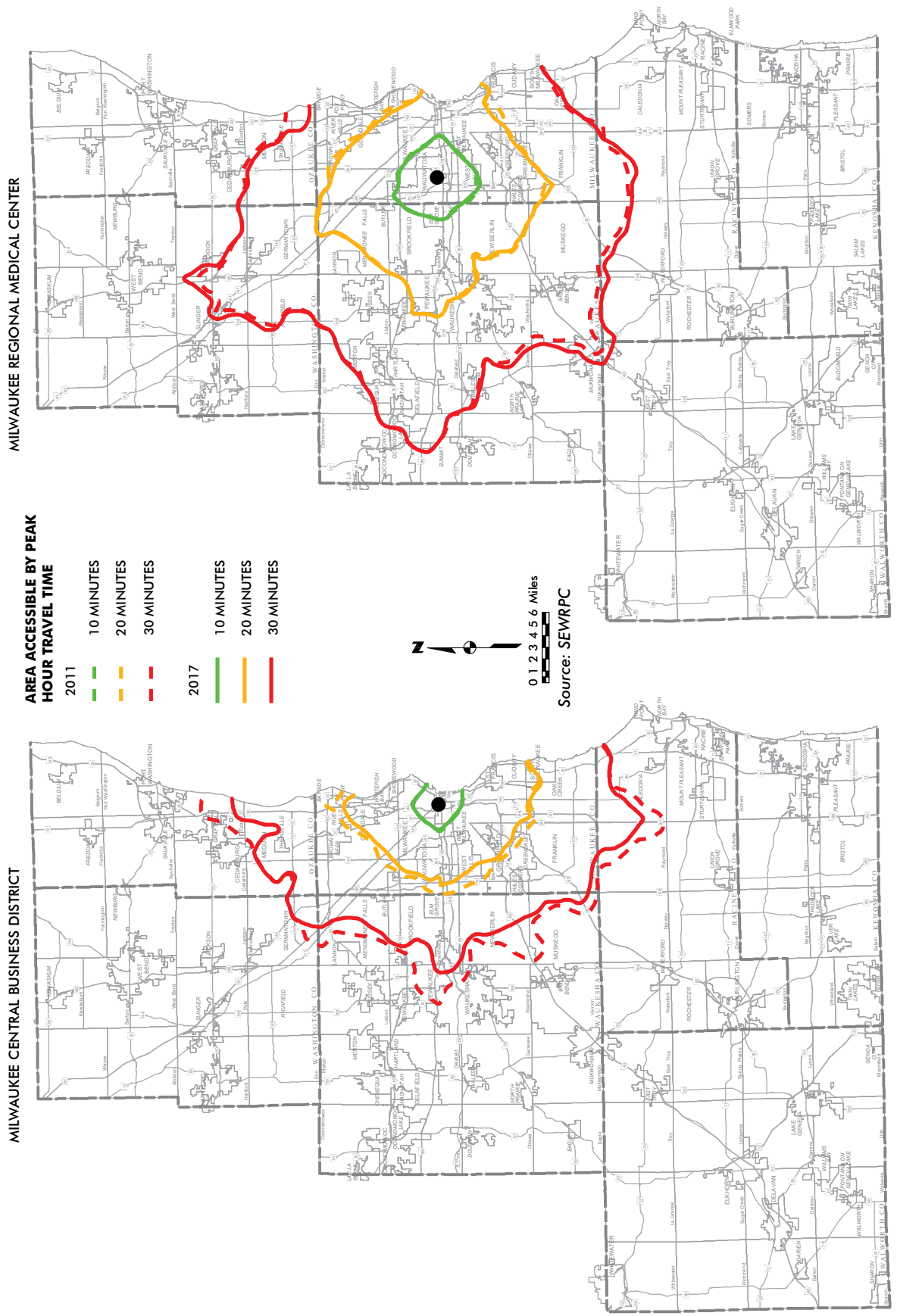
The estimated transportation-related greenhouse gas emissions and other air pollutants for Southeastern Wisconsin for the years 2011 and 2017 are shown in Table A.11. Estimated air pollutant emissions have declined for all pollutants between these years, and quite significantly in many cases, with reductions of over 30 percent for 11 of the 13 pollutants included in this analysis. These changes are due in large part to past and current Federal fuel and vehicle fuel economy standards, which have led to the adoption of modern automotive technologies that improve emissions controls, including computers, fuel injection, and on-board diagnostics.

SUMMARY AND CONCLUSIONS

This appendix has summarized the current performance of the transportation system in Southeastern Wisconsin as it relates to public transit, the arterial street and highway system, park-ride lots, and transportation-related emissions. A review of the performance of public transit shows that there have been relatively minor changes in levels of service with varying levels of ridership. While level of service on intracounty transit service and intercounty bus service has remained relatively stable, ridership has continued to steadily decline. However, an increase in demand for and ridership on public shared-ride taxi services has likely resulted in an increase in taxi service levels. Ridership on the Amtrak Hiawatha service has continued to grow, and while there have been some improvements in service, growth in ridership has likely been due to myriad external factors, including the strength of the economy, which has increased both business and personal travel between the Milwaukee and Chicago areas.

Since VISION 2050 was completed, there have been some changes to the condition of pavement and bridges in the Region, with improvements in some cases and declines in others. The percentage of pavement that is considered

Map A.6
Estimated Peak Hour Arterial Street and Highway Travel Time Contours: Years 2011 and 2017



Map A.7

Existing Park-Ride Lots and Transit Stations Located in the Region: 2019

EXISTING PARK-RIDE LOTS

- P EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- P NO EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- P EXISTING TRANSIT SERVICE - RELOCATED/EXPANDED BETWEEN 2016 AND 2019
- 51 PARK-RIDE LOT NUMBER (SEE TABLE A.9)

Note: The park-ride lot located at the interchange of IH 41/IH 94 and STH 11 is temporarily out of service in 2019 due to reconstruction of IH 41/IH 94. WisDOT plans to reconstruct the lot at the same location and with the same capacity by 2021.

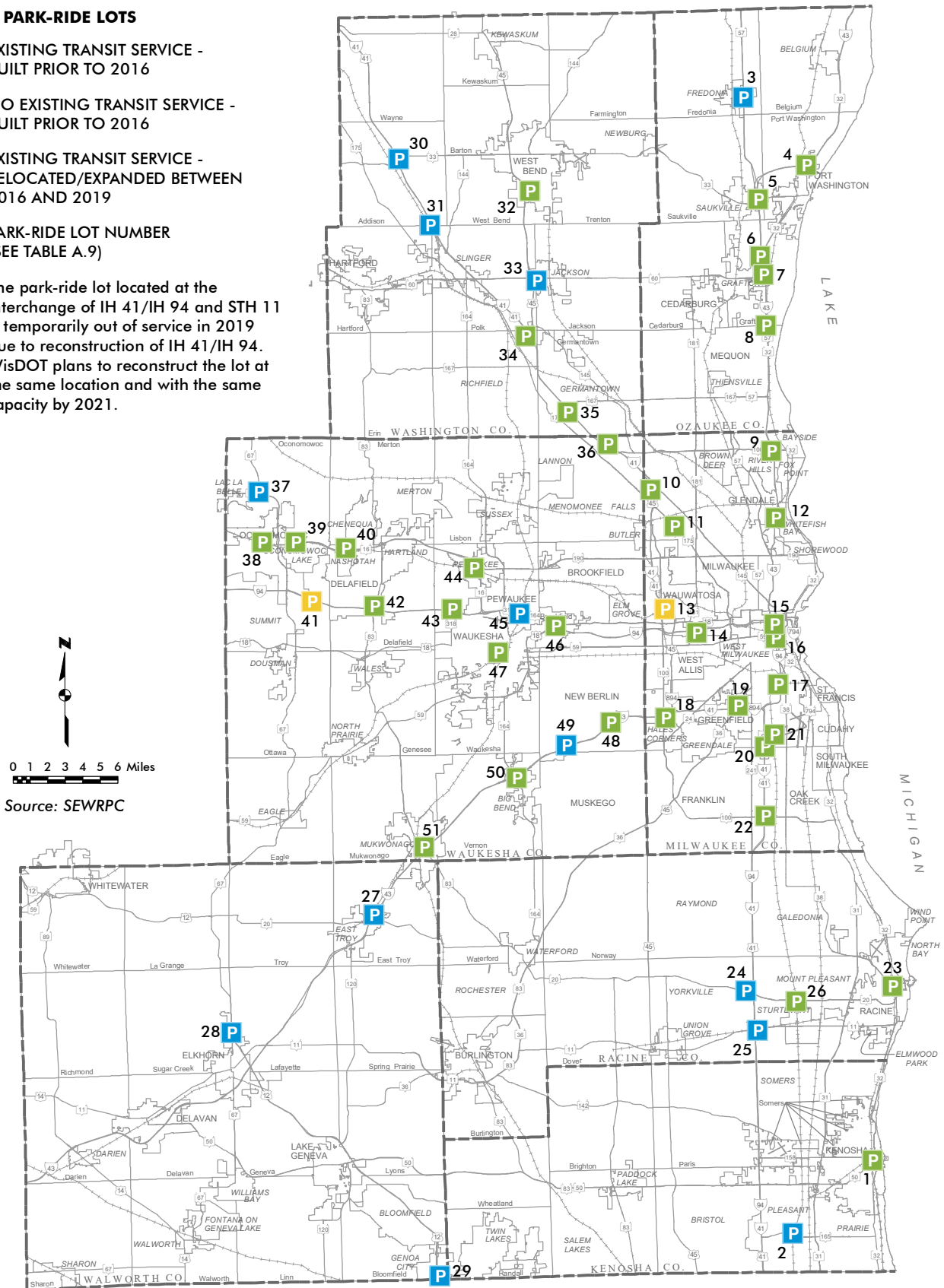


Table A.9
Average Weekday Use of Park-Ride Lots and Transit Stations: 2019

No. On Map A.7	Location	Served by Transit	Not Served by Transit	Shared Use	Available Parking Spaces	Autos Parked on an Average Weekday: 2019	Percent of Spaces Used
Kenosha County							
1	Metra Station (Kenosha)	X		X	143 ^a	-- ^b	-- ^b
2	STH 165 and Terwall Terrace (Pleasant Prairie)		X	X	387 ^a	-- ^b	-- ^b
Ozaukee County							
3	STH 57 and CTH H (Fredonia)		X		46	11	24
4	IH 43 and STH 32-CTH H (Port Washington)	X			89	29	33
5	Walmart (Saukville)	X		X	-- ^c	-- ^b	-- ^b
6	IH 43 and CTH V (Grafton)	X			79	15	19
7	IH 43 and STH 60 (Grafton)	X		X	-- ^c	-- ^b	-- ^b
8	IH 43 and CTH C (Grafton)	X			64	74	116
Milwaukee County							
9	W. Brown Deer Road (River Hills)	X			335	106	32
10	W. Good Hope Road (Milwaukee)	X			131	31	24
11	Timmerman Field (Milwaukee)		X		140	4	3
12	North Shore (Glendale)	X			130	84	65
13	W. Watertown Plank Road (Wauwatosa)	X			236	95	40
14	State Fair Park (Milwaukee)	X			285	112	39
15	Downtown Milwaukee Intermodal Amtrak Station	X			282	-- ^b	-- ^b
16	National Avenue and IH 43/94 (Milwaukee)	X		X	173 ^a	-- ^b	-- ^b
17	W. Holt Avenue (Milwaukee)	X			234	95	41
18	Whitnall (Hales Corners)	X			355	157	44
19	W. Loomis Road (Greenfield)	X			358	62	17
20	W. College Avenue (Milwaukee)	X			702	335	48
21	Mitchell Airport Amtrak Station (Milwaukee)	X			280	-- ^b	-- ^b
22	W. Ryan Road (Oak Creek)	X			307	87 ^d	28 ^d
Racine County							
23	Racine Metro Transit Center (Racine)	X			125	-- ^b	-- ^b
24	IH 94 and STH 20 (Ives Grove)		X		78	104	133
25	IH 94 and STH 11 (Mount Pleasant)		X		-- ^e	-- ^e	-- ^e
26	Sturtevant Amtrak Station (Sturtevant)	X			181	-- ^b	-- ^b
Walworth County							
27	East Troy Municipal Airport (East Troy)		X		54	5	9
28	USH 12 and STH 67 (Elkhorn)		X		47	5	11
29	USH 12 and CTH P (Genoa City)		X		77	8	10
Washington County							
30	IH 41 and STH 33 (Allenton)		X		113	35	31
31	IH 41 and CTH K (Addison)		X		53	8	15
32	USH 45 and Paradise Drive (West Bend)	X			103	72	70
33	STH 60 and CTH P (Jackson)		X		132	10	8
34	IH 41 and Pioneer Road (Richfield)	X			282	-- ^b	-- ^b
35	IH 41 and Lannon Road (Germantown)	X			158	89	56

Table continued on next page.

Table A.9 (Continued)

No. On Map A.7	Location	Served by Transit	Not Served by Transit	Shared Use	Available Parking Spaces	Autos Parked on an Average Weekday: 2019	Percent of Spaces Used
Waukesha County							
36	Pilgrim Road (Menomonee Falls)	X			68	36	53
37	STH 67 and Lang Road (Oconomowoc)		X		39	8	21
38	Collins Street Parking Lot (Oconomowoc)	X		X	125 ^f	-- ^b	-- ^b
39	STH 16 and CTH P (Oconomowoc)	X			45	7	16
40	STH 16 and CTH C (Nashotah)	X			59	7	12
41	IH 94 and CTH P (Summit)	X			145	43	30
42	IH 94 and STH 83 (Delafield)	X			199	84	42
43	IH 94 and CTH G/CTH SS (Pewaukee)	X			247	57	23
44	Kiwanis Village Park (Pewaukee)	X		X	153 ^a	-- ^b	-- ^b
45	IH 94 and CTH F (Pewaukee)		X		83	14	17
46	Goerke's Corners (Brookfield)	X			322	283	89
47	Waukesha Metro Transit Downtown Transit Center (Waukesha)	X		X	494 ^a	-- ^b	-- ^b
48	IH 43 and Moorland Road (New Berlin)	X			140	36	26
49	IH 43 and CTH Y (New Berlin)		X		49	14	29
50	IH 43 and STH 164 (Big Bend)	X			147	38	26
51	IH 43 and STH 83 (Mukwonago)	X			166	60	36

^a Park-ride lot also serves non-transportation uses (e.g., stores, restaurants, and parks).

^b Data not available.

^c Parking available within a larger private or public lot or structure.

^d Data for July through December only. Park-ride lot was closed due to construction from January through June.

^e Park-ride lot closed due to construction.

^f Number of long-term (10-hour) parking spaces within the larger municipal parking lot.

Source: WisDOT and SEWRPC

good and poor have both declined slightly, and the percentage of bridges considered in good condition has slightly increased, while the percentage of bridges considered in poor condition has nearly doubled.

Over the five years since VISION 2050 was completed, total vehicular crash rates have increased. While there was a slight decrease in crashes between 2016 and 2017, crashes again increased from 2017 to 2018. The severity of crashes in terms of serious injury and fatality has slightly decreased from 2017 to 2018, but remains slightly higher than in 2014. Vehicular crashes involving bicycles have decreased, while vehicular crashes involving pedestrians have decreased, between 2014 and 2018.

A review of congestion on the arterial street and highway system shows an overall increase in congestion, with some areas experiencing an increase in congestion and some experiencing a decrease in congestion since VISION 2050 was completed.

Regarding park-ride lots, although new capacity has been added since VISION 2050 was completed, there has been a 15 percent reduction in utilization.

Table A.10
Park-Ride Lot Utilization in the Region: 2014 and 2019

Year	Available Parking Spaces ^a	Autos Parked on Average Weekday	Percent of Spaces Used
2014	5,645	2,603	46.1
2019	6,015	2,320	38.6
		Percent Change	-7.5

^a Capacity only included for park-ride lots with utilization data available.

Source: WisDOT and SEWRPC

Table A.11
Transportation-Related Greenhouse Gas Emissions and Other Air Pollutants: 2011 and 2017

Pollutant Name	Type	Average Annual Emissions from Transportation Sources (tons)	
		2011	2017
Carbon Dioxide (CO ₂)	GHG	10,435,000	9,878,000
Methane (CH ₄) (in CO ₂ equivalents)	GHG	10,200	9,700
Nitrous Oxide (N ₂ O) (in CO ₂ equivalents)	GHG	100,300	57,300
Carbon Monoxide (CO)	Criteria	124,200	108,500
Fine Particulate Matter (PM _{2.5})	Criteria	1,382	752
Sulfur Dioxide (SO ₂)	Criteria and precursor for PM _{2.5}	182	70
Nitrogen Oxides (NO _x)	Precursor for Ozone/PM _{2.5}	28,460	14,150
Volatile Organic Compounds (VOC)	Precursor for Ozone/PM _{2.5}	12,740	8,120
Acetaldehyde (C ₂ H ₄ O)	Air toxic	150	92
Acrolein (C ₃ H ₄ O)	Air toxic	15	9
Ammonia (NH ₃)	Air toxic	704	485
Benzene (C ₆ H ₆)	Air toxic	309	173
Butadiene (C ₄ H ₆)	Air toxic	47	26
Formaldehyde (CH ₂ O)	Air toxic	233	139

Source: SEWRPC

REVIEW OF TARGETS ESTABLISHED FOR THE NATIONAL PERFORMANCE MEASURES APPENDIX B

INTRODUCTION

To establish a consistent nationwide process for monitoring the effectiveness of Federal transportation investments, the Moving Ahead for Progress in the 21st Century (MAP-21), enacted in 2012, created a framework for a national performance management approach to transportation decision-making on investments with Federal highway and transit funding. In implementing the performance management approach, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have developed specific highway and transit performance measures, and requirements for States, transit operators, and metropolitan planning organizations (MPOs) in establishing and reporting short-term (two- to four-year) targets, along with monitoring achievement of the targets, for each performance measure. The performance measures established by FHWA and FTA can be found in Table B.1. The transit asset management (TAM) and highway safety targets are to be established annually, and the National Highway System (NHS) condition and reliability, freight reliability, and congestion mitigation and air quality improvement (CMAQ) performance measures are to be established every four years. Depending on the performance measure, the targets are required to be established for the Southeastern Wisconsin metropolitan planning area (MPA) or for a specific urbanized area—initially the Milwaukee urbanized area. Map B.1 shows the MPA and the urbanized areas in Southeastern Wisconsin.

As part of implementing the national framework, the Commission has established targets for nearly all performance measures for Southeastern Wisconsin, which were amended into VISION 2050 in June 2018 for the highway safety targets and June 2019 for the TAM, NHS condition and reliability, freight reliability, and CMAQ performance measures.¹⁴ The remaining transit safety performance measures will be added to VISION 2050 following the establishment of transit safety targets by the Region’s transit operators in coordination with the Commission and State. The Commission has also included in the current transportation improvement program (TIP)¹⁵ a description of how the projects programmed in the TIP would promote the achievement of the performance targets.

¹⁴ *The development of the highway safety targets is documented in a SEWRPC report entitled, First Amendment to VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin, Establishing Targets for Federal Performance Measures: Highway Safety. The remaining targets established to date are documented in a SEWRPC report entitled, Third Amendment to VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin, Establishing Targets for Federal Performance Measures: Transit Asset Management, National Highway System Condition and Performance, Freight Performance, and Congestion Mitigation and Air Quality Improvement.*

¹⁵ *The current TIP is documented in a SEWRPC report entitled, A Transportation Improvement Program for Southeastern Wisconsin: 2019-2022.*

Table B.1**Transit Asset Management, Transit Safety, Highway Safety, National Highway System, Freight, and Congestion Mitigation and Air Quality Transportation Performance Measures Developed by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA)**

Performance Measure Area	Performance Measure
FHWA Highway Safety Improvement Program (HSIP)	
Number of Fatalities and Serious Injuries	Number of Fatalities
	Number of Serious Injuries
	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
Rate of Fatalities and Serious Injuries	Rate of Fatalities per 100 Million Vehicle-Miles Traveled (MVMT)
	Rate of Serious Injuries per 100 MVMT
FHWA National Highway Performance Program (NHPP)	
Condition of Pavements on the Interstate System	Percentage of Pavement of the Interstate System in Good Condition
	Percentage of Pavement of the Interstate System in Poor Condition
Condition of Pavements on the National Highway System (NHS) Excluding the Interstate	Percentage of Pavement of the Non-Interstate NHS in Good Condition
	Percentage of Pavement of the Non-Interstate NHS in Poor condition
Condition of Bridges on the NHS	Percentage of NHS Bridges Classified as in Good Condition
	Percentage of NHS Bridges Classified as in Poor Condition
Performance of the Interstate System	Percentage of the Person-Miles Traveled on the Interstate that are Reliable
Performance of the NHS Excluding the Interstate	Percentage of the Person-Miles Traveled on the Non-interstate NHS that are Reliable
FHWA National Highway Freight Program (NHFP)	
Freight Movement on the Interstate System	Freight Reliability Index
FHWA Congestion Mitigation and Air Quality Improvement Program (CMAQ)	
On-Road Source Emissions	Estimate of Emission Reductions for Projects Funded by CMAQ
Traffic Congestion	Peak Hour Excessive Delay (PHED) Per Capita
	Percentage of Non-Single Occupancy Vehicles
FTA Section 53 Funding (including Sections 5307, 5310, 5311, 5337, and 5339)	
Transit Asset Management	Percentage of Revenue Vehicles At or Exceeding the Useful Life Benchmark (ULB)
	Percentage of Vehicles and Equipment At or Exceeding the ULB
	Percentage of Facilities Exceeding the Transit Economic Requirements Model (TERM) Scale
	Percentage of Track Segments Having Performance Restrictions
Transit Safety	Number of Reportable Fatalities
	Rate of Reportable Fatalities per Vehicle-Revenue Mile
	Number of Reportable Injuries
	Rate of Reportable Injuries per Vehicle-Revenue Mile
	Number of Reportable Events
	Rate of Reportable Events per Vehicle-Revenue Mile
	Mean Distance Between Major Mechanical Failures

Source: Federal Highway Administration, Federal Transit Administration, and SEWRPC

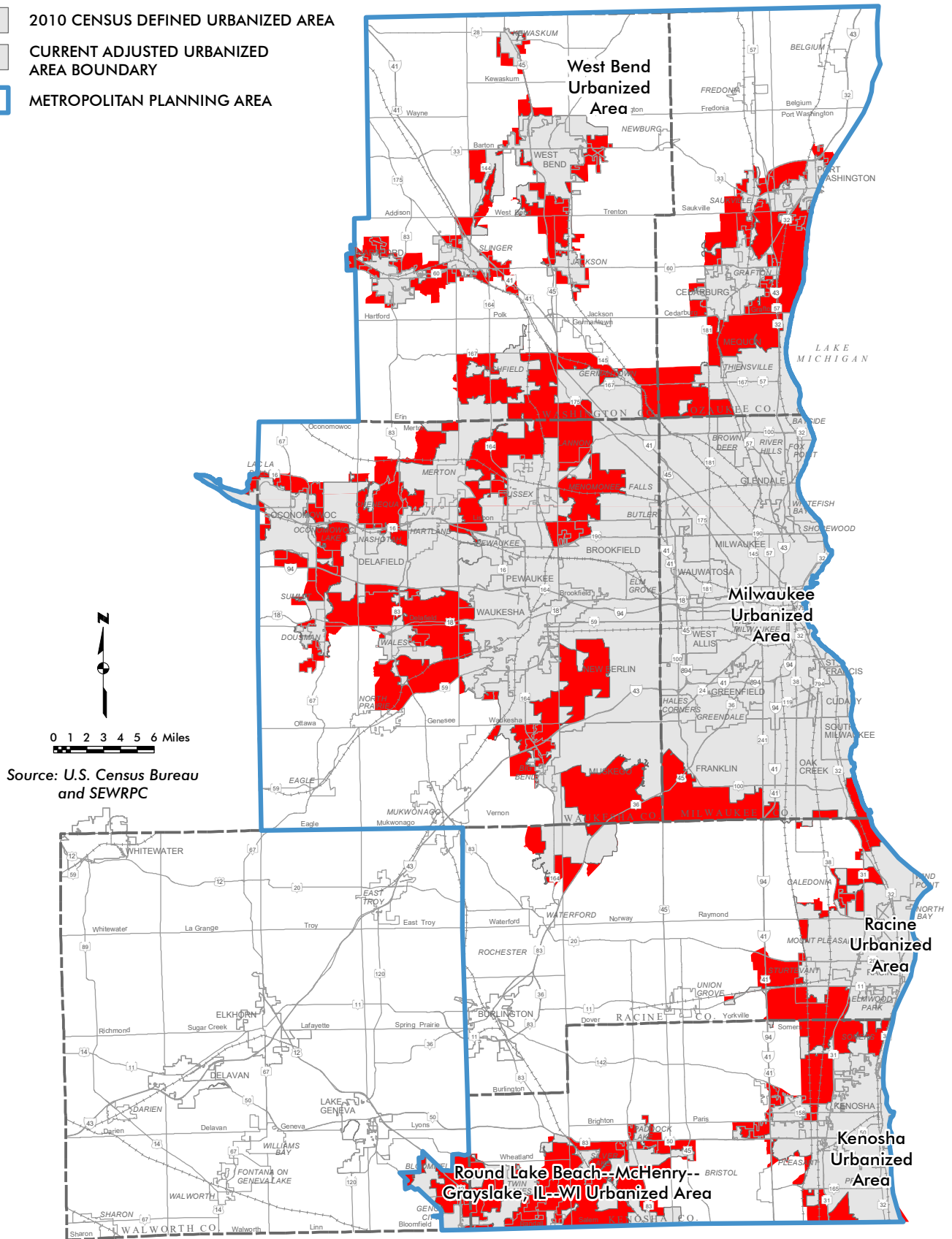
Given the requirement to include the short-range target-setting process into VISION 2050, a long-range plan, it was determined that long-term regional targets should be established, as appropriate, for the TAM, highway safety, NHS, freight, and CMAQ performance measures. The establishment of the short-term targets for the MPA, as required as part of the national performance measure framework, was based on the long-term regional targets.

With respect to establishing long-term TAM, highway safety, NHS, freight, and CMAQ targets, the following process was used:

1. Baseline data for each of the measures was developed for the Region, plus those portions of Jefferson and Dodge Counties within the MPA.
2. The methodologies used by transit operators and WisDOT to establish their targets were reviewed.
3. Historical regional trends, as available, of the performance measures were reviewed.

Map B.1
The Southeastern Wisconsin Metropolitan Planning Area and Census
Defined and Adjusted Urbanized Area Boundaries: 2010

- 2010 CENSUS DEFINED URBANIZED AREA
- CURRENT ADJUSTED URBANIZED AREA BOUNDARY
- METROPOLITAN PLANNING AREA



Source: U.S. Census Bureau and SEWRPC

4. The relevant recommendations of VISION 2050 and other State and regional plans were reviewed to determine their potential effect on the performance measures in the Region.
5. Based on the evaluations of the historical trends and the review of relevant recommendations of VISION 2050 and other plans, preliminary recommended year 2050 targets for each performance measure were developed for inclusion in VISION 2050.

The remainder of this appendix summarizes the targets established for the each of the performance measures. In addition, this appendix compares the established targets to available data to determine whether progress is being made towards achieving the targets. While there may be consequences for the State for not making progress towards achieving targets or meeting minimum thresholds, as indicated in Federal Regulations, there are no such consequences for MPOs not doing so.

TRANSIT ASSET MANAGEMENT TARGETS

As part of the National Performance Management Framework, FTA developed regulations for monitoring the condition of transit assets nationwide. Specifically, FTA developed four transit performance measures for target-setting purposes: 1) the percentage of revenue vehicles at or exceeding the Useful Life Benchmark (ULB), 2) the percentage of vehicles and equipment at or exceeding the ULB, 3) the percentage of facilities exceeding the Transit Economic Requirements Model (TERM) scale, and 4) the percentage of track segments having performance restrictions. The methodology for calculating these measures is shown in Figure B.1. The TAM performance measures are calculated based on the data that transit operators annually submit to FTA on their assets and system operation for inclusion in the National Transit Database (NTD). Transit operators are required, as part of the framework, to report asset inventory, condition, and performance information to the NTD beginning in 2019 for reporting year 2018. The 2017 NTD includes only the number and age of the transit rolling stock. Baseline performance of transit equipment, facilities, and infrastructure are addressed in TAM plans, to be submitted to FTA for reporting year 2019.

Table B.2 shows the year 2050 targets for each of the TAM performance measures. While current funding levels make it difficult for transit operators to maintain the desired replacement of buses every 12 years, the TAM targets were established based on the VISION 2050 recommendations for the more than doubling of transit service by the year 2050 and the associated substantial investment in transit assets that would occur if that doubling is achieved. Specifically, the year 2050 targets for the rolling stock (revenue and non-revenue vehicles) owned by the transit operators were based on a vehicle being replaced on average one year before exceeding its Federally defined maximum useful life. The targets for the remaining measures were set as 0 percent based on the assumption that investment levels needed to implement the VISION 2050 recommendations would be sufficient to achieve these targets. With respect to the short-term targets, more achievable targets were established for the year 2018 targets based on current State and Federal transit capital levels not being sufficient for achieving the long-term targets. The future short-term targets (beyond 2018) for the rolling stock-related measure are to be based on the year 2018 targets, as shown in Table B.2, until additional Federal and State funding becomes available for transit capital projects.

Figure B.1 Methodology for Calculating the Transit Asset Management Performance Measures

The following is the methodology developed by FTA for calculating the following four TAM performance measures:

- Percent of revenue vehicles that have either met or exceeded their useful life benchmarks (ULB)
 - Percent of vehicles and equipment that have either met or exceeded their ULB
 - Percent of segments that have performance restrictions
 - Percent of facilities exceeding the Transit Economic Requirements Model (TERM) scale
1. As part of the national performance management framework, transit operators are required to conduct an inventory of their transit assets as outlined in the following table:

Transit Asset Category	Asset Class	Applicable Assets
Rolling Stock	All revenue vehicles used in the provision of public transit	Only revenue vehicles with direct capital responsibility
Equipment	All non-revenue service vehicles and equipment over \$50,000 used in the provision of public transit, except third-party equipment assets	Only non-revenue service vehicles with direct capital responsibility
Infrastructure	All guideway infrastructure used in the provision of public transit	Only fixed-rail guideway with direct capital responsibility
Facilities	All passenger stations and all exclusive-use maintenance facilities used in the provision of public transit, excluding bus shelters	Maintenance and administrative facilities with direct capital responsibility. Passenger stations (buildings) and parking facilities with direct capital responsibility.

2. Calculate each performance measure, based on the number of assets under each transit asset category that are not in state-of-good repair. For rolling stock and non-revenue service vehicles, the state-of-good repair is identified based on the useful life benchmarks (ULB) from FTA's *Transit Database Asset Inventory Module*. The identification of the state-of-good repair for infrastructure and facilities is based on FTA's *Transit Economic Requirements Model (TERM) scale*, as provided in the *TAM Facility Performance Measure Reporting Guidebook: Condition Assessment Calculation*.

Source: Federal Transit Administration and SEWRPC

Table B.2 Years 2018 and 2050 Regional Transit Asset Management Targets^a

Asset Class	Asset Examples	Performance Measure	Recommended Year 2050 Target	Year 2018 Target ^a
Rolling Stock				
Buses, Other Passenger Vehicles, and Railcars	Bus, Cutaway, Van, Minivan, and Streetcars	Percent of revenue vehicles that have either met or exceeded their useful life benchmark	< 10	< 30
Equipment				
Non-Revenue Service Vehicles and Equipment Over \$50,000	Route Supervisor Vehicles, Maintenance Trucks, Pool Vehicles, DPF Cleaning System, Bus Wash Systems, Fare Collection Systems, Vehicle Lifts	Percent of vehicles and equipment that have either met or exceeded their useful life benchmark	< 20	< 30
Facilities				
Support	Maintenance and Administrative Facilities	Percent of facilities within an asset class rated below 3 on condition reporting system	0	< 15
Passenger	Rail Terminals, Bus Transfer Stations	Percent of facilities within an asset class rated below 3 on condition reporting system	0	0
Parking	Park-Ride Lots with Direct Capital Responsibility	Percent of facilities within an asset class rated below 3 on condition reporting system	0	0
Infrastructure				
Fixed Guideway	Track Segments, Exclusive Bus Rights-of-Way, Catenary Segments, and Bridges	Percent of segments that have performance restrictions	0	0

^a Future short-term targets (beyond 2018) for these performance measures will be based on the year 2018 target until additional Federal and State funding becomes available for transit capital projects.

Source: SEWRPC

TRANSIT SAFETY TARGETS

FTA has developed regulations for the monitoring of transit safety for transit operators nationwide. Specifically, FTA established seven performance measures for target-setting purposes: 1) the total number of reportable fatalities, 2) the rate of reportable fatalities per total vehicle-revenue miles, 3) total number of reportable injuries, 4) the rate of reportable injuries per total vehicle-revenue miles, 5) the total number of reportable safety events (derailments, collisions, fires, and evacuations), 6) the rate of reportable events per total vehicle miles, and 7) the mean distance between major mechanical failures. Per the FTA regulations, the Commission will be establishing transit safety-related targets in 2021 following the development of transit safety plans by transit operators and WisDOT due to be completed by late 2020.

HIGHWAY SAFETY TARGETS

FHWA has developed five safety-related performance measures that are to be established annually for all public roadways: 1) the number of fatalities, 2) the rate of fatalities per one hundred million vehicle-miles traveled (HMVMT), 3) number of serious injuries, 4) the rate of serious injuries per HMVMT, and 5) the number of non-motorized fatalities and serious injuries.¹⁶ The targets are set for each of the five performance measures as a rolling five-year average¹⁷ ending the year after the reporting year. The methodology for calculating these measures is shown in Figure B.2. The targets are compared to a base rolling five-year average ending in the year previous to the reporting year. Table B.3 shows the years 2012-2016 five-year rolling average (representing the baseline) for the five safety performance measures for the Region, including the portions of Jefferson and Dodge Counties within the MPA.

Table B.3 shows the years 2046-2050 targets for each of the five safety performance measures. These targets were established based on an evaluation of short-term and long-term trends in the number of fatalities and serious injuries and consideration of the safety improvement recommendations of the State's 2017-2020 Strategic Highway Safety Plan (SHSP) and VISION 2050. Specifically, the targets were established based on a continuation of the overall trend of a long-term reduction of fatalities and serious injuries that have occurred over the last 20 to 40 years. Table B.4 shows the resulting short-term years 2014-2018 through years 2018-2022 safety targets for both the MPA and the seven-county Region.

Figure B.3 shows a comparison of the actual and target five-year averages from the baseline years of 2012-2016 through years 2046-2050 for the number and rate of fatalities, the number and rate of serious injuries, and the number of non-motorized fatalities and serious injuries. Table B.5 shows a comparison of the actual and target five-year 2014-2018 averages for both the MPA and the Region. As shown in these figures and table, none of the actual five-year averages met the established targets. In addition,

¹⁶ A non-motorized fatality or serious injury involves any vehicular crash that results in the death or serious injury of a pedestrian, bicyclist, or person utilizing a wheelchair (manual or motorized).

¹⁷ Due to the somewhat random nature of crashes, the frequency of crashes from year-to-year can fluctuate, and it is possible that the number of crashes in one year may be lower or higher than a typical year. Thus, to avoid annual anomalies, the annual average of the number of crashes over a certain time period is commonly used (such as three or five years).

Figure B.2 Methodology for Calculating the Highway Safety Performance Measures

The following is the methodology developed by FHWA for calculating the following five highway safety performance measures:

- Number of Fatalities
 - Number of Serious Injuries
 - Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries
 - Rate of Fatalities per 100 Million Vehicle-Miles Traveled (HMVMT)
 - Rate of Serious Injuries per HMVMT
1. Assemble fatality, serious injury, and vehicle-miles traveled (VMT) data for all public roadways over a five-year period from the following sources:

Data	Source
Fatalities	National Highway Transportation Safety Association (NHTSA) Fatality Analysis Reporting System (FARS)
Serious Injuries	State DOT-supplied Data Source
VMT	MPO-Documented VMT Methodology

2. Calculate the five-year average for each performance measure, based on the following formula:

$$\text{Number of Fatalities} = \frac{\sum(\text{Number of Fatalities})_{\text{years 1-5}}}{5 \text{ Years}}$$

$$\text{Number of Serious Injuries} = \frac{\sum(\text{Number of Serious Injuries})_{\text{years 1-5}}}{5 \text{ Years}}$$

$$\text{Number of Non-Motorized Fatalities and Serious Injuries} = \frac{\sum(\text{Number of Non-Motorized Fatalities and Serious Injuries})_{\text{years 1-5}}}{5 \text{ Years}}$$

$$\text{Rate of Fatalities Per HMVMT} = \frac{\sum\left(\frac{\text{Number of Fatalities} \times 100,000,000}{\text{Annual VMT}}\right)_{\text{years 1-5}}}{5 \text{ Years}}$$

$$\text{Rate of Serious Injuries Per HMVMT} = \frac{\sum\left(\frac{\text{Number of Serious Injuries} \times 100,000,000}{\text{Annual VMT}}\right)_{\text{years 1-5}}}{5 \text{ Years}}$$

Source: Federal Highway Administration and SEWRPC

**Table B.3
Years 2046-2050 Regional Targets for National Safety-Related Performance Measures**

Performance Measure	2012-2016 Baseline Data	2046-2050 Target	Percent Change from 2012-2016 Base Year
Number of Fatalities	152.2	91.9	-39.6
Rate of Fatalities	0.962	0.488	-49.3
Number of Serious Injuries	798.2	144.1	-82.0
Rate of Serious Injuries	5.053	0.766	-84.8
Number of Non-Motorized Fatalities and Serious Injuries	167.2	45.7	-72.7

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

Table B.4
Years 2014-2018 Through 2018-2022 Targets for the National Safety-Related Performance Measures for the Metropolitan Planning Area and Seven-County Region

Metropolitan Planning Area						
Performance Measure	2012-2016 Baseline Data	2014-2018 Target	2015-2019 Target	2016-2020 Target	2017-2021 Target	2018-2022 Target
Number of Fatalities	137.2	133.2	131.2	129.3	127.4	125.5
Fatality Rate	0.923	0.884	0.862	0.843	0.827	0.811
Number of Serious Injuries	743.8	672.5	639.5	608.1	578.2	549.9
Serious Injury Rate	5.005	4.464	4.203	3.968	3.754	3.554
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	143.6	138.2	133.0	128.1

Seven-County Region						
Performance Measure	2012-2016 Baseline Data	2014-2018 Target	2015-2019 Target	2016-2020 Target	2017-2021 Target	2018-2022 Target
Number of Fatalities	152.2	147.7	145.6	143.4	141.3	139.2
Fatality Rate	0.962	0.922	0.899	0.879	0.861	0.844
Number of Serious Injuries	798.2	729.7	686.3	652.6	620.5	590.1
Serious Injury Rate	5.053	4.504	4.241	4.002	3.784	3.579
Number of Non-Motorized Fatalities and Serious Injuries	167.2	154.9	149.1	143.5	138.2	133.0

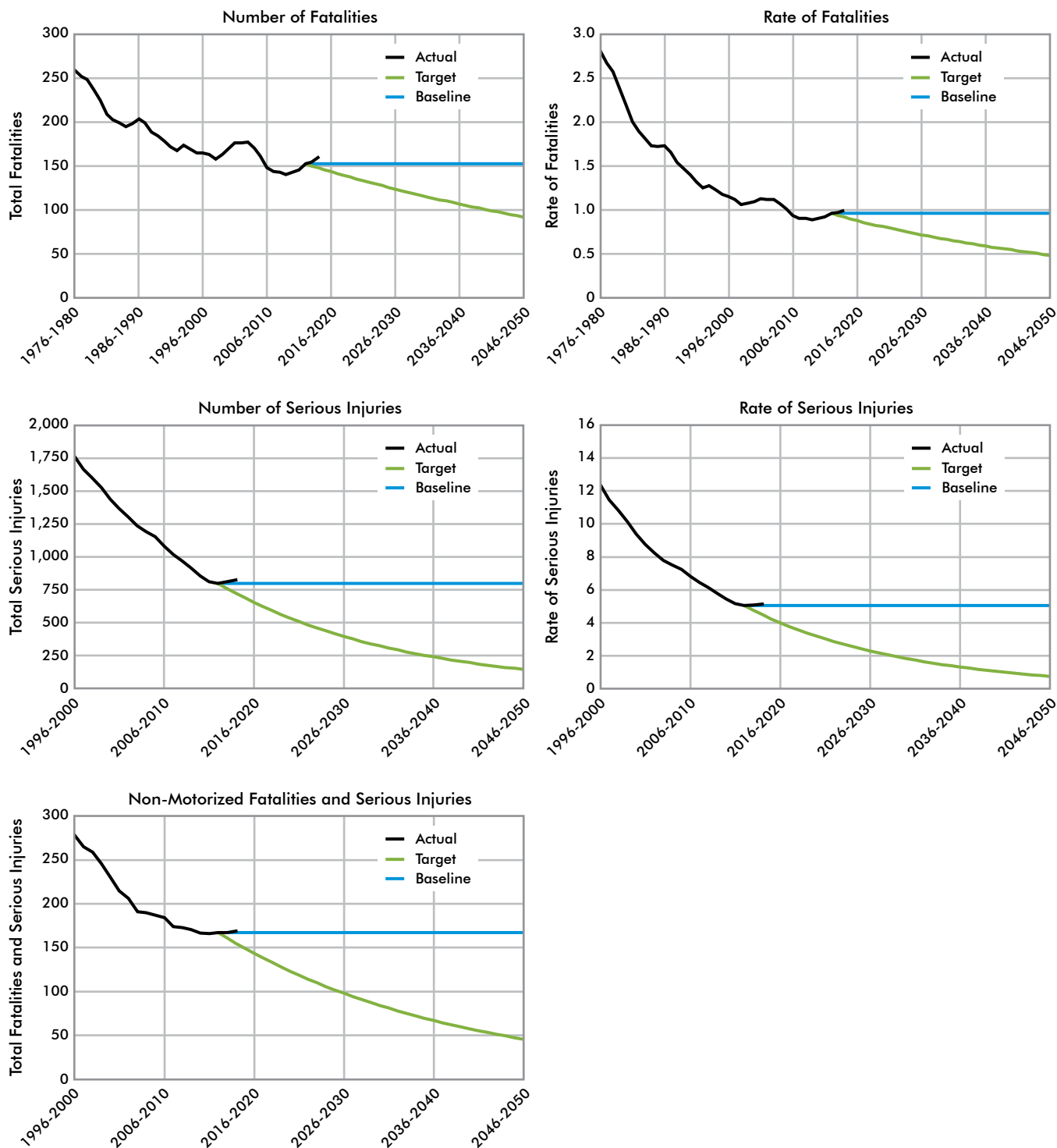
Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

the actual five-year results for all five performance measures exceed the baseline levels. The increases in the five-year averages for the performance measures are a result of continuous increases in the number of fatalities and serious injuries that occurred following the achievement of their all-time lows of 2013 and 2015, respectively. Specifically, the annual number of fatalities increased from 125 fatalities in 2013 to a peak of 179 in 2016 (an 11-year high), and the annual number of serious injuries increased from 716 in 2015 to a peak of 955 in 2017 (an eight-year high). However, by 2018, there were slight drops in both fatalities and serious injuries, with 151 fatalities and 908 serious injuries occurring that year. Should these declines continue in subsequent years through efforts in implementing recommendations of statewide and regional safety recommendations, along with other efforts (such as improved vehicle technology), it is expected that the long-term decline in fatalities and serious injuries would resume.

NHS PAVEMENT CONDITION TARGETS

As part of the National Performance Management Framework, FHWA developed four performance measures to monitor pavement condition: 1) percentage of the Interstate system in good condition, 2) percentage of the Interstate system in poor condition, 3) percentage of the non-Interstate NHS in good condition, and 4) percentage of the non-Interstate NHS in poor condition. The methodology for calculating each of the four pavement condition performance measures is provided in Figure B.4. The data utilized to develop the performance measures are based on data submitted annually by WisDOT to FHWA through its Highway Performance Monitoring System (HPMS). Based on the methodology developed by FHWA, a rating of good, fair, or poor is determined based on the criteria established for various types of pavement. Then, the performance measures are calculated by dividing the lane-miles of good or poor pavement by the total lane-miles of evaluated pavement for both the Interstate system and the non-Interstate NHS. Map B.2 shows the base year 2017 pavement condition of each segment of highway for the NHS. Table B.6 shows the total lane-miles and percentage of NHS roadways in Southeastern Wisconsin that have a condition of good, fair, and poor in 2017.

Figure B.3
Comparison of Actual and Target Five-Year Averages for the
National Highway Safety Performance Measures



Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

Table B.5
Years 2014-2018 Actual Data and Targets for the National Safety-Related Performance
Measures for the Metropolitan Planning Area and Seven-County Region

Metropolitan Planning Area				
Performance Measure	2012-2016 Baseline Data	2014-2018 Target	2014-2018 Actual	Progress Made in Achieving Target
Number of Fatalities	137.2	133.2	144.4	No
Fatality Rate	0.923	0.884	0.957	No
Number of Serious Injuries	743.8	672.5	774.2	No
Serious Injury Rate	5.005	4.464	5.129	No
Number of Non-Motorized Fatalities and Serious Injuries	161.0	149.2	163.4	No

Seven-County Region				
Performance Measure	2012-2016 Baseline Data	2014-2018 Target	2014-2018 Actual	Progress Made in Achieving Target
Number of Fatalities	152.2	147.7	159.8	No
Fatality Rate	0.962	0.922	0.996	No
Number of Serious Injuries	798.2	729.7	824.4	No
Serious Injury Rate	5.053	4.504	5.135	No
Number of Non-Motorized Fatalities and Serious Injuries	167.2	154.9	169.0	No

Note: Progress is made in achieving target by either meeting target outright or by improving upon baseline data.

Source: Fatality Analysis Reporting System (FARS), Wisconsin Traffic Operations and Safety (TOPS) Laboratory, and SEWRPC

Table B.7 shows the year 2050 pavement targets for the Interstate system and the non-Interstate NHS in the Region. These targets were established based on an evaluation of recent trends in the pavement condition on the Region’s arterial roadways and the recommendation in VISION 2050 related to maintaining or improving the condition of Region’s arterial roadways. Specifically, the targets for the NHS pavement performance measures were established based on the amount of existing lane-miles in good condition increasing by 10 percent and the amount of lane-miles in poor condition decreasing by 10 percent between 2017 (the base year of the data) and the design year 2050. Table B.8 shows the resulting year 2021 targets for the MPA and Region.

Establishing targets would have ideally been done with detailed information on where each segment of roadway is in its life cycle and an asset management model that would allow the evaluation of the effect on pavement condition of different pavement management programs. As part of future target setting, the Commission staff intends to work with WisDOT and county/local governments having portions of the NHS under their jurisdiction to assemble detailed historical information on each segment of roadway and to develop a long-range asset management model.

NHS BRIDGE CONDITION TARGETS

FHWA developed two performance measures to monitor bridge condition: 1) percentage of NHS bridges in good condition and 2) percentage of NHS bridges in poor condition. The methodology for calculating the two bridge condition performance measures is provided in Figure B.5. A rating of good, fair, or poor is determined based on the criteria established by FHWA for bridges and culverts. Then, the performance measures are calculated by dividing the total deck area of good or poor bridges by the total deck area of evaluated pavement for both the Interstate system and the non-Interstate NHS. Map B.3 shows the base year 2017 condition of each bridge on the NHS in Southeastern Wisconsin. Table B.9 shows the total bridge area

Figure B.4 Methodology for Calculating the National Pavement Performance Measures for the Interstate System and the Non-Interstate National Highway System (NHS)

The following is the methodology developed by FHWA for calculating the four pavement-related performance measures:

- Percent of Lane-Miles of Interstate Highway System with Good Pavement Condition
 - Percent of Lane-Miles of Interstate Highway System with Poor Pavement Condition
 - Percent of Lane-Miles of Non-Interstate NHS with Good Pavement Condition
 - Percent of Lane-Miles of Non-Interstate NHS with Poor Pavement Condition
1. The following four criteria from data submitted by the State to the Highway Performance Management System (HPMS) are utilized for asphalt and concrete pavement, as follows:

Pavement Type	International Roughness Index (IRI)	Percent Cracking	Average Rutting	Average Faulting
Asphaltic Pavement (AP)	X	X	X	
Jointed Concrete Pavement (JCP)	X	X		X
Continuous Reinforced Concrete Pavement (CRCP)	X	X		

2. For every segment of the Interstate system or the Non-Interstate NHS having pavement condition data in the HPMS, identify the Good and Poor condition for each of the relevant criteria based on the following thresholds:

Measure Criteria	Good	Fair	Poor
IRI	<95	95-170	>170
Percent Cracking	<5	AP: 5-20 JCP: 5-15 CRCP: 5-10	AP: >20 JCP: >15 CRCP: >10
Average Rutting (Inches)	<0.20	0.20-0.40	>0.40
Average Faulting (Inches)	<0.10	0.10-0.15	>0.15

3. Determine the overall Good or Poor pavement condition for every segment of Interstate system or the Non-Interstate NHS, based on the following:

Good	AP and JCP: All Three Criteria Good CRCP: Both Criteria Good
Poor	AP and JCP: Two Criteria Poor CRCP: Both Criteria Poor
Fair	All Other Conditions

4. Calculate the respective performance measure by the following formula:

$$\text{Percent of Interstate or Non-Interstate NHS Having Good or Poor Pavement} = \frac{\text{Lane-Miles of Good or Poor Pavement}}{\text{Total Lane Miles}}$$

Source: Federal Highway Administration and SEWRPC

and percentage of arterial bridges in Southeastern Wisconsin that have a condition of good, fair, or poor in 2017.

Table B.10 shows the year 2050 bridge targets for the NHS in the Region. These targets were established based on an evaluation of recent trends in bridge condition on the Region's arterial roadways and the recommendation in VISION 2050 related to maintaining or improving the condition of the Region's bridges on the arterial roadway system. Specifically, the targets for the NHS bridge performance measures were established based on the amount of existing bridge deck in good condition increase by 10 percent and the amount of deck area in poor condition decrease by 10 percent between 2017 (the base year of the data) and the design year 2050. Establishing targets would have ideally been done with detailed information on where bridges are in their life cycle and an asset management model that would

Map B.2

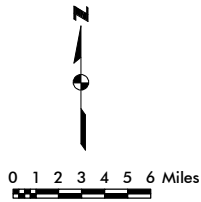
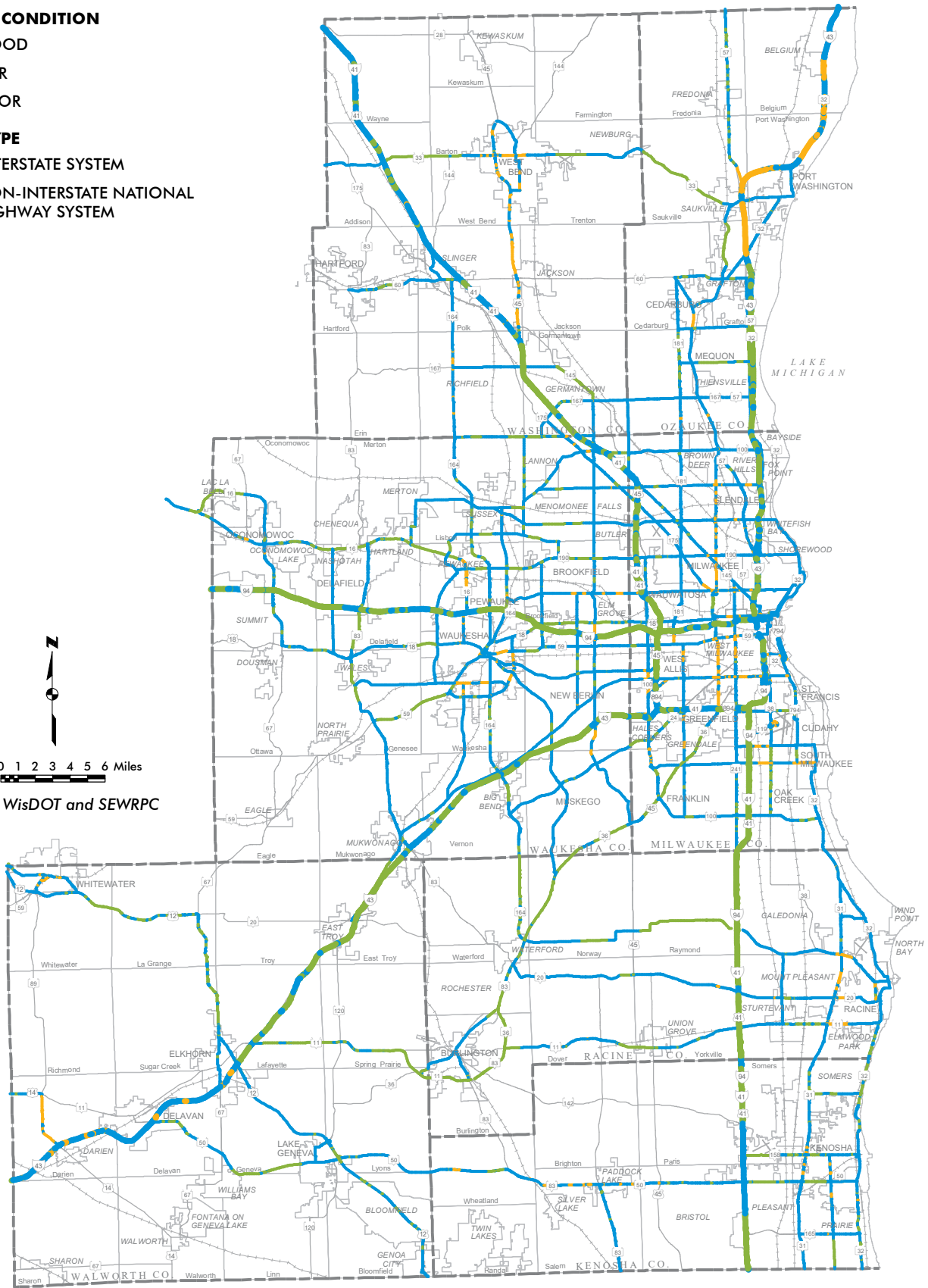
Pavement Condition of the National Highway System in the Region: 2017

PAVEMENT CONDITION

- GOOD
- FAIR
- POOR

FACILITY TYPE

- INTERSTATE SYSTEM
- NON-INTERSTATE NATIONAL HIGHWAY SYSTEM



Source: WisDOT and SEWRPC

Table B.6
Pavement Condition on Interstate System and Non-Interstate National Highway System: Base Year 2017

Rating	Interstate System		Non-Interstate National Highway System	
	Lane-Miles	Percent of Lane-Miles	Lane-Miles	Percent of Lane-Miles
Good	604	59.0	627	18.9
Fair	373	36.4	2,477	74.5
Poor	47	4.6	220	6.6
Total	1,024	100.0	3,324	100.0

Source: WisDOT and SEWRPC

Table B.7
Year 2050 Regional Targets for the National Highway System (NHS) Pavement Performance Measures

Performance Measure	Year 2017 Regional Baseline Data	Year 2050 Regional Target
Interstate NHS Pavement Condition		
Percentage of Lane-Miles in Good Condition	59.0	≥ 64.9
Percentage of Lane-Miles in Poor Condition	4.6	≤ 4.1
Non-Interstate NHS Pavement Condition		
Percentage of Lane-Miles in Good Condition	18.9	≥ 20.8
Percentage of Lane-Miles in Poor Condition	6.6	≤ 5.9

Source: WisDOT and SEWRPC

Table B.8
Year 2021 Targets for the National Highway System (NHS) Pavement Performance Measures for the Metropolitan Planning Area and Seven-County Region Based on the Year 2050 Regional Targets

Performance Measure	Metropolitan Planning Area		Seven-County Region	
	Year 2017 Baseline Data	Year 2021 Target	Year 2017 Baseline Data	Year 2021 Target
Interstate NHS Pavement Condition				
Percentage of Lane-Miles in Good Condition	61.1	≥ 61.8	59.0	≥ 59.7
Percentage of Lane-Miles in Poor Condition	4.4	≤ 4.3	4.6	≤ 4.5
Non-Interstate NHS Pavement Condition				
Percentage of Lane-Miles in Good Condition	17.6	≥ 17.8	18.9	≥ 19.1
Percentage of Lane-Miles in Poor Condition	6.8	≤ 6.7	6.6	≤ 6.5

Source: WisDOT and SEWRPC

allow the evaluation of the effect on bridge condition of different bridge management programs. However, such a model has not yet been developed for the NHS in the Region. As such, the Commission staff intends to work with WisDOT and county/local governments having portions of the NHS under their jurisdiction to assemble detailed historical information on each bridge and to develop an asset management model. Table B.11 shows the resulting year 2021 targets for the MPA and Region.

Federal regulations do not require a comparison of the actual and target information on bridge condition until year 2021 data are available. However, Commission staff will monitor the progress of achieving these targets as data become available. Table B.12 compares actual year 2018 NHS bridge condition to year 2018 targets that would result from the established year 2050 targets. As expected, there has not been a significant change in bridge condition since 2017—the baseline year.

Figure B.5 Methodology for Calculating the National Bridge Performance Measures for the National Highway System (NHS)

The following is the methodology developed by FHWA for calculating the two bridge-related performance measures:

- Percent of Deck Area of NHS Bridges in Good Condition
 - Percent of Deck Area of NHS Bridges in Poor Condition
1. Identify the Good and Poor condition for each of the relevant criteria based on the following thresholds for the ratings as reported to the National Bridge Inventory:

Measure Criteria	Good	Fair	Poor
Deck	≥7	5 or 6	≤4
Superstructure	≥7	5 or 6	≤4
Substation	≥7	5 or 6	≤4
Culvert	≥7	5 or 6	≤4

2. Calculate overall bridge condition based on the lowest condition of the three criteria for bridges—Deck, Superstructure, and Substation—and the Culvert criteria for culverts.
3. Calculate the respective performance measure by the following formula:

$$\frac{\text{Percent of NHS Bridges Having Good or Poor Pavement}}{\text{Total Deck Area}} = \frac{\text{Deck Area of Good or Poor Pavement}}{\text{Total Deck Area}}$$

Source: Federal Highway Administration and SEWRPC

NHS SYSTEM RELIABILITY AND FREIGHT RELIABILITY TARGETS

As part of the National Performance Management Framework, FHWA developed three reliability-based performance measures¹⁸: 1) percent of the Interstate system that is reliable, 2) percent of the non-Interstate NHS that is reliable, and 3) freight reliability ratio. Figures B.6 and B.7 show the methodology that is to be utilized to calculate the three performance measures. The travel time data that are to be used to calculate these performance measures come from a data set provided by FHWA, called the National Performance Management Research Data Set (NPMRDS). These data are based on probe data that are collected from a third-party and geo-referenced to segments of the NHS. For the year 2017, NPMRDS data are available for nearly the entire Interstate System in Southeastern Wisconsin. However, NPMRDS data are only available for about 80 percent of the non-Interstate NHS. As these data are updated annually, it is expected that the quality and quantity of NPMRDS data will increase. Map B.4 shows the segments of the NHS in 2017 that are reliable and unreliable in the Region under the NHS reliability measures, and Map B.5 shows the freight reliability index for each segment of the Interstate system in 2017. Table B.13 shows the regional base year 2017 performance for the three performance measures.

¹⁸ Transportation system reliability reflects the degree to which travelers are able to reach their destinations on time. Travelers using a less reliable transportation system would be more likely to experience unexpected delays that can result in negative impacts, such as increased total travel time delay for personal vehicles and public transit, increased vehicle emissions, increased energy use, and increased freight shipping travel time and costs. Improving the ability of travelers to reach their destinations on time depends on a variety of factors, including: 1) reducing overall congestion; 2) reducing the frequency of vehicular crashes on arterial streets and highways, which can cause non-recurring congestion; 3) improving alternative routes and modes that can provide an opportunity for travelers to avoid congestion; and 4) expanding transportation options (such as commuter rail, light rail, and bus rapid transit) that are less impacted by inclement weather and crashes.

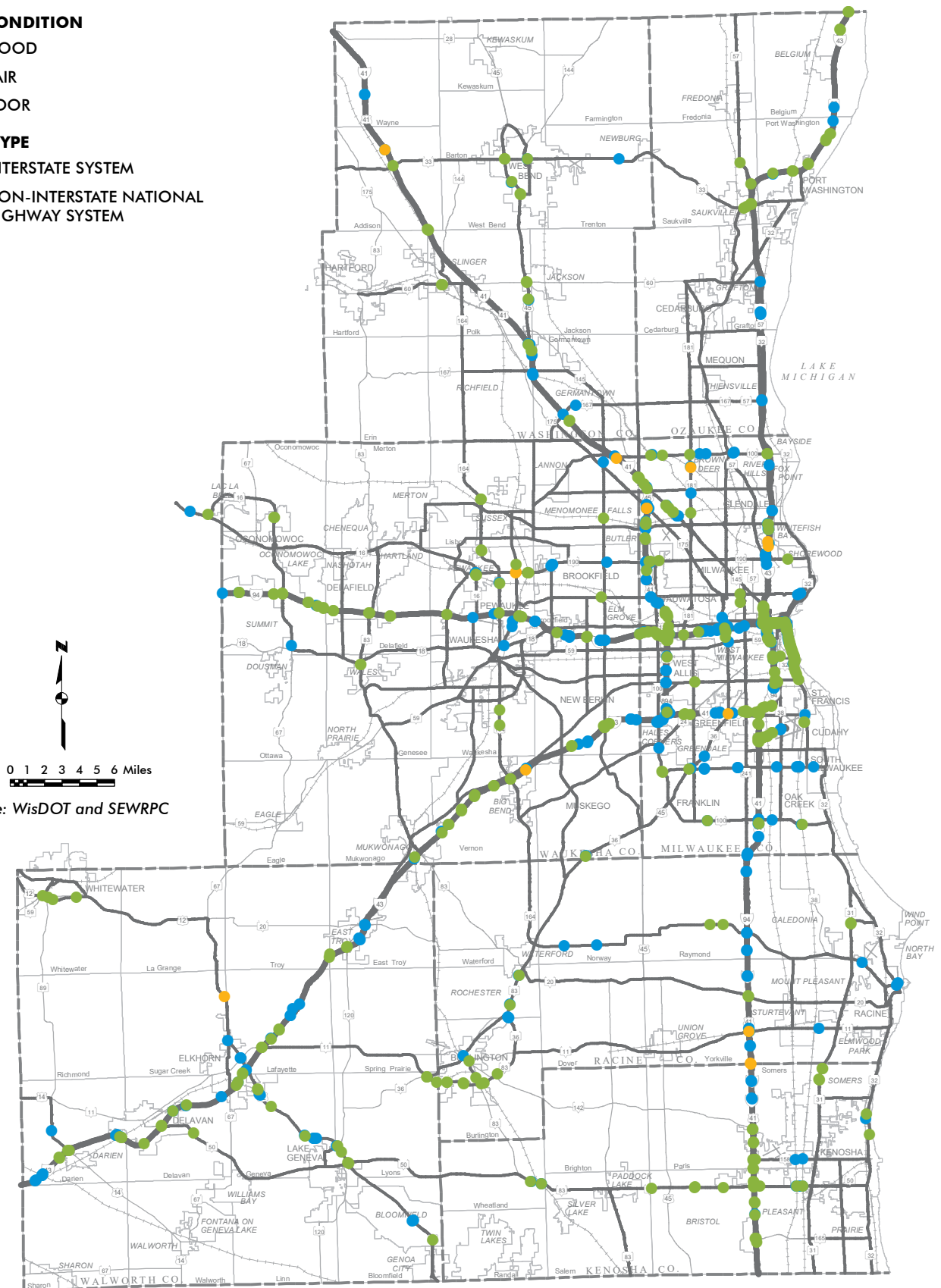
Map B.3 Bridge Condition of the National Highway System in the Region: 2017

BRIDGE CONDITION

- GOOD
- FAIR
- POOR

FACILITY TYPE

- INTERSTATE SYSTEM
- NON-INTERSTATE NATIONAL HIGHWAY SYSTEM



Source: WisDOT and SEWRPC

Table B.9
Condition of Bridges on the National Highway System: Base Year 2017

Rating	Number of Bridges	Total Deck Area (square feet)	Percent of Total Deck Area
Good	422	607,406	58.0
Fair	334	426,379	40.7
Poor	15	13,468	1.3
Total	771	1,047,257	100.0

Source: WisDOT and SEWRPC

Table B.10
Year 2050 Regional Targets for National Highway System (NHS) Bridge Performance Measures

Performance Measure	Year 2017 Regional Baseline Data	Year 2050 Regional Target
Percentage of NHS Bridge Deck Area in Good Condition	58.0	≥ 63.8
Percentage of NHS Bridge Deck Area in Poor Condition	1.3	≤ 1.2

Source: WisDOT and SEWRPC

Table B.11
Year 2021 Target for the National Highway System (NHS) Bridge Performance Measures for the Metropolitan Planning Area and Seven-County Region Based on the Year 2050 Regional Targets

Performance Measure	Metropolitan Planning Area		Seven-County Region	
	Year 2017 Baseline Data	Year 2021 Target	Year 2017 Baseline Data	Year 2021 Target
Percentage of NHS Bridge Deck Area in Good Condition	58.3	≥ 59.0	58.0	≥ 58.7
Percentage of NHS Bridge Deck Area in Poor Condition	1.3	≤ 1.3	1.3	≤ 1.3

Source: WisDOT and SEWRPC

Table B.13 shows the year 2050 targets for the three reliability-based targets. These targets were established based on an evaluation of recent trends and the recommendations of VISION 2050 expected to assist in improving the reliability of the NHS, such as the planned improvement and expansion of transit, expansion of bicycle/pedestrian facilities, expansion of transportation systems and demand management measures, widening of existing arterials, and construction of new arterials. Specifically, the year 2050 regional reliability targets are based on a modest 5 percent improvement over the short-term average. For the two NHS performance measures, this would result in an improvement over the year 2017 levels. With respect to the freight measure, the preliminary target would result in a decline from 2017 levels. However, this may be reasonable given how much lower the 2017 level was compared to the short-term average. Table B.13 shows the resulting year 2021 reliability targets for the MPA and Region. Initially, the short-term targets for the MPA and Region are the same. As more years of NPMRDS data become available, the Commission staff will study the effect certain measures have on system reliability within the Region for consideration when these targets are reviewed and improved.

Table B.12
Year 2018 Actual Data and Targets for the National Highway System (NHS) Bridge
Performance Measures for the Metropolitan Planning Area and Seven-County Region

Performance Measure	Metropolitan Planning Area			Seven-County Region		
	Year 2017 Baseline Data	Year 2018 Target	Year 2018 Actual	Year 2017 Baseline Data	Year 2018 Target	Year 2018 Actual
Percentage of NHS Bridge Deck Area in Good Condition	58.3	≥ 58.5	57.3	58.0	≥ 58.2	57.6
Percentage of NHS Bridge Deck Area in Poor Condition	1.3	≤ 1.3	1.6	1.3	≤ 1.3	1.7

Source: WisDOT and SEWRPC

Figure B.6
Methodology for Calculating the Travel Time Reliability Performance Measures for
the Interstate System and the Non-Interstate National Highway System (NHS)

The following is the methodology developed by FHWA for calculating the two NHS reliability performance measures:

- Percent of Person-Miles on Interstate System that is Reliable
 - Percent of Person-Miles on Non-Interstate NHS that is Reliable
1. Utilizing travel time data from the National Performance Management Research Data Set (NPMRDS), calculate the 80th percentile and the 50th percentile highest travel time for every segment of the Interstate system or the Non-Interstate NHS for each of the following four time periods from January 1st through December 31st of a given year:
 - a. 6 a.m. – 10 a.m. (Monday through Friday)
 - b. 10 a.m. – 4 p.m. (Monday through Friday)
 - c. 4 p.m. – 8 p.m. (Monday through Friday)
 - d. 6 a.m. – 8 p.m. (Saturday and Sunday)

2. For each time period, calculate the level of travel time reliability (LOTTR) for every reporting segment of Interstate system or Non-Interstate NHS for by the following formula:

$$\text{Segment Level of Travel Time Reliability} = \frac{80\text{th Percentile TravelTime of Segment}}{50\text{th Percentile TravelTime of Segment}}$$

3. Identify as reliable any reporting segment of the Interstate system or the Non-Interstate NHS that has an LOTTR of below a threshold of 1.50 for all four time periods.
4. Calculate for each reporting segment of the Interstate system or Non-Interstate NHS the annual person-miles of travel (APMT) based on the Annual Average Daily Traffic (AADT) volumes provided by the State for the national Highway Performance Monitoring System (HPMS) by the following formula:

$$\text{Segment APMT} = \text{Segment Length} \times \text{AADT} \times \text{Directional Factor} \times \text{Occupancy Factor}$$

With the directional factor based on data provided to the HPMS and the occupancy factor provided by the State or MPO.

5. Calculate each of the performance measures by the following formula:

$$\text{Percent of System APMT that is Reliable} = 100 \times \frac{\text{Total APMT of Reliable Segments}}{\text{Total System APMT}}$$

Source: Federal Highway Administration and SEWRPC

Figure B.7 Methodology for Calculating the Freight Travel Time Reliability Performance Measure for the Interstate System

The following is the methodology developed by FHWA for calculating the Freight reliability performance measure—the Freight reliability ratio.

1. Utilizing travel time data from the National Performance Management Research Data Set (NPMRDS), calculate the 95th percentile and the 50th percentile highest truck travel time for every reporting segment of the Interstate system for each of the following five time periods from January 1st through December 31st of a given year:
 - a. 6 a.m. – 10 a.m. (Monday through Friday)
 - b. 10 a.m. – 4 p.m. (Monday through Friday)
 - c. 4 p.m. – 8 p.m. (Monday through Friday)
 - d. 6 a.m. – 8 p.m. (Saturday and Sunday)
 - e. 8 p.m. – 6 a.m. (Monday through Sunday)
2. For each time period, compute the truck travel time reliability (TTTR) for each reporting segment by the following formula:

$$TTTR = \frac{95th\ Percentile\ Travel\ Time\ of\ Reporting\ Segment}{50th\ Percentile\ Travel\ Time\ of\ Reporting\ Segment}$$

3. Identify for each reporting segment the maximum TTTR of all of the five time periods.
4. Calculate each of the performance measures for the reporting segments by the following formula:

$$Freight\ Reliability\ Ratio = \frac{\sum (Segment\ Length \times Segment\ maxTTTR)}{Total\ System\ Length}$$

Source: Federal Highway Administration and SEWRPC

CONGESTION MITIGATION AND AIR QUALITY

As part of the National Performance Management Framework, FHWA developed three CMAQ-related performance measures:¹⁹ 1) annual peak hour excessive delay per capita (PHED) measure, 2) the percent of travel occurring via non-single occupancy vehicles (non-SOV) measure, and 3) the on-road mobile source (i.e., vehicle) emissions measure. Per the regulations, applicability of these measures is dependent upon whether the geographic areas subject to the performance measures contained a nonattainment area or maintenance area under the 2008 ozone standard and the 2016 fine particulate standards on October 1, 2017. For the two capacity-related measures (the PHED and non-SOV measures), the geographic area is only for large urbanized areas (having a population over 1 million). For the emissions-based measure, the geographic area is the MPA. As shown on Map B.6, both the Milwaukee urbanized area and the MPA contain 2008 ozone or 2016 fine particulate nonattainment and maintenance areas. Thus, targets for all three CMAQ-related performance measures are required to be established for Southeastern Wisconsin—PHED and non-SOV targets for the Milwaukee urbanized area and emission reduction targets for the MPA.

¹⁹ The Congestion Mitigation and Air Quality Improvement (CMAQ) Program was created by the Intermodal Surface Transportation Efficiency Act (ISTEA), enacted in 1991, with a primary goal of directing Federal funding towards transportation programs and projects that help improve air quality and reduce traffic congestion in areas designated by the U.S. Environmental Protection Agency (EPA) as nonattainment or in maintenance of the National Ambient Air Quality Standards (NAAQS). CMAQ projects generally fall into one of three categories: 1) projects that reduce the number of vehicle trips and/or vehicle-miles traveled (VMT), 2) projects that reduce emissions by improving traffic congestion, and 3) projects that reduce emissions through improved vehicle and fuel technologies. Currently, projects in counties that have historically been included in designated nonattainment or maintenance areas are eligible for funding. Thus, as all seven counties in Southeastern Wisconsin are currently, or have previously been, in nonattainment of either the ozone or PM_{2.5} standards, projects located in any of these counties are eligible for funding.

Map B.4

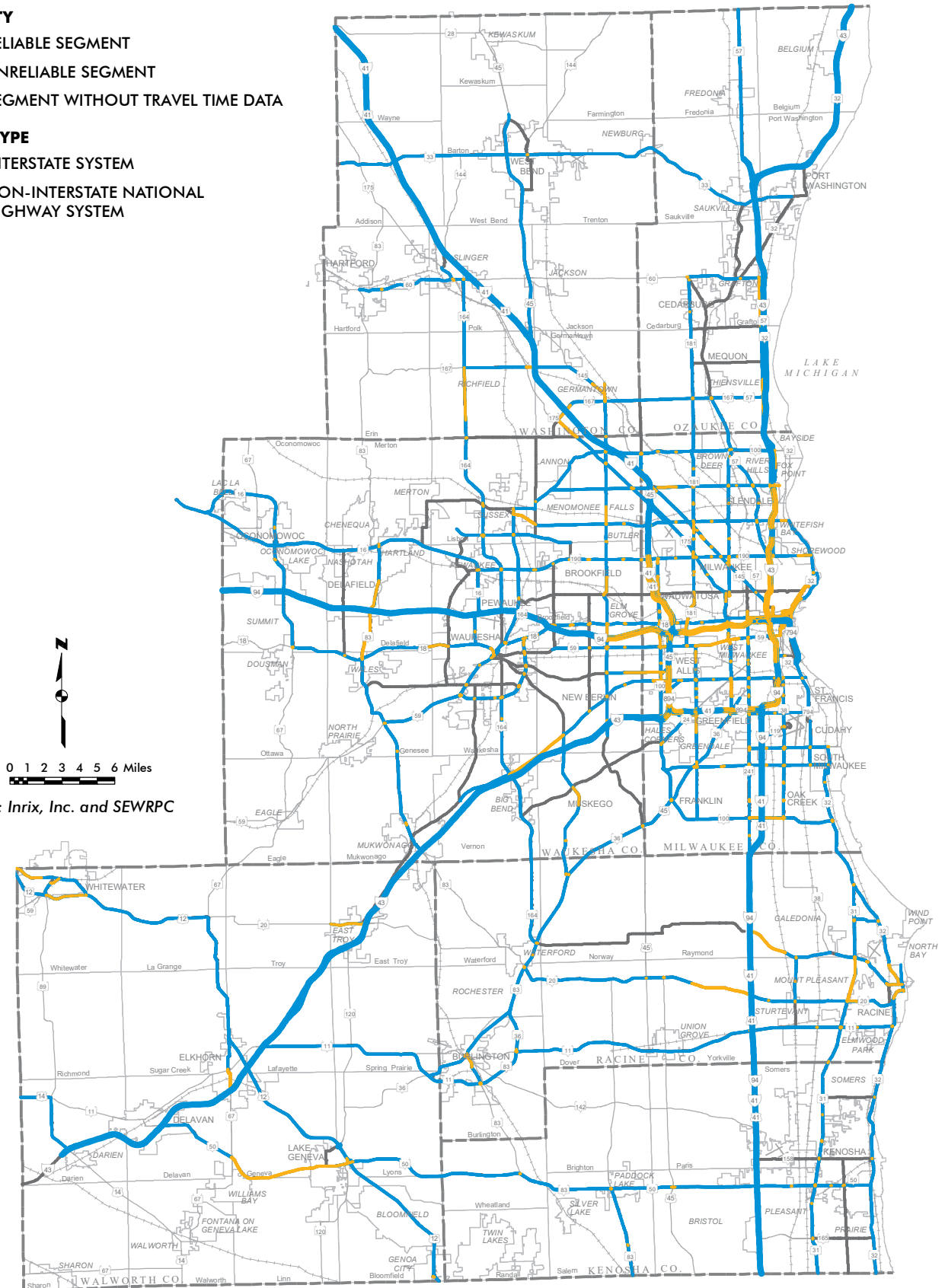
Interstate System and Non-Interstate National Highway System Reliability in the Region: 2017

RELIABILITY

- RELIABLE SEGMENT
- UNRELIABLE SEGMENT
- SEGMENT WITHOUT TRAVEL TIME DATA

FACILITY TYPE

- INTERSTATE SYSTEM
- NON-INTERSTATE NATIONAL HIGHWAY SYSTEM

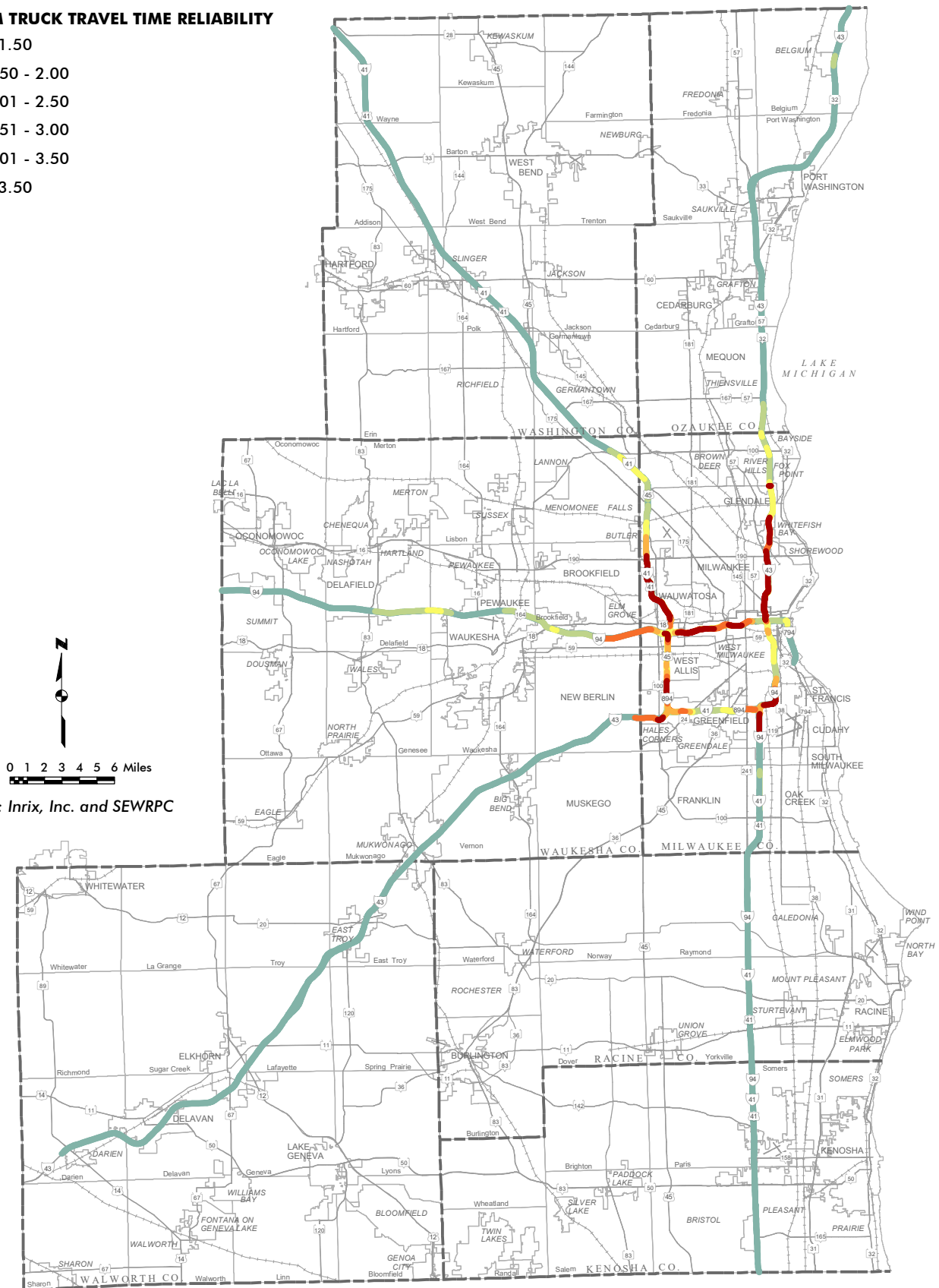


Source: Inrix, Inc. and SEWRPC

Map B.5 Freight Reliability Index for the Interstate System in the Region: 2017

MAXIMUM TRUCK TRAVEL TIME RELIABILITY

- <1.50
- 1.50 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 3.50
- >3.50



Source: Inrix, Inc. and SEWRPC

Table B.13
Year 2050 and Year 2021 Regional Targets for National Highway System (NHS) and Freight Reliability Performance Measures

Performance Measure	Year 2017 Baseline Data		Year 2050 Targets ^a	Year 2021 Targets ^a
	Metropolitan Planning Area	Seven-County Region		
Travel Time Reliability				
Percent of Person-Miles Traveled on the Interstate NHS that are Reliable	83.9	84.5	≥ 85.5	≥ 81.9
Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	90.9	90.8	≥ 95.2	≥ 91.2
Freight Reliability				
Freight Reliability Index	1.54	1.49	≤ 1.64	≤ 1.72

^a Initially, the Regional and MPA targets will be the same.

Source: Inrix, Inc., WisDOT, and SEWRPC

Per the regulations, WisDOT and the Commission are required to jointly establish identical targets for the two congestion-related performance measures. With respect to the emission reduction-related measure, WisDOT establishes a target for the State and the Commission establishes a target for the MPA.

The following sections describe the establishing of the targets for the three CMAQ-related performance measures. As the three targets are vastly different in their subject and data needs, they are addressed separately.

CMAQ – Peak Hourly Excessive Delay

Figure B.8 shows how the PHED measure is to be calculated for the Milwaukee urbanized area. WisDOT and the Commission, per the Federal regulations, must jointly calculate baseline data and establish two-year and four-year targets for the PHED measure for the Milwaukee urbanized area every four years. WisDOT, the Commission staff, and the Traffic Operations and Safety (TOPS) Laboratory based at the University of Wisconsin-Madison collaborated on developing the baseline data for the PHED measure.

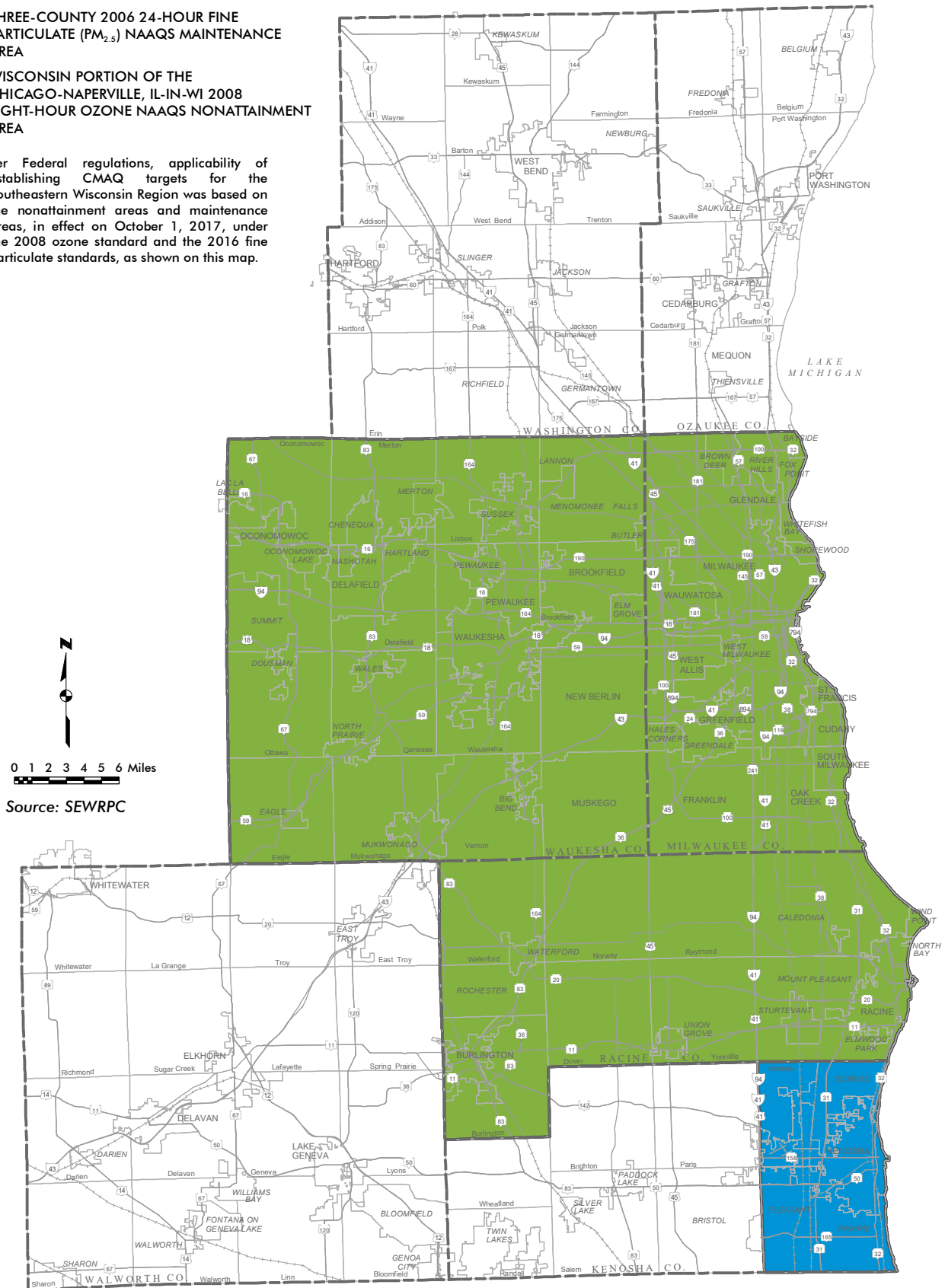
The baseline data and the four-year target²⁰ for the PHED measure are shown in Table B.14. To develop the four-year target, Commission staff and WisDOT developed a methodology to estimate growth rates between the base year 2017 and future year 2021 (four-year target year) utilizing the Commission’s fifth-generation travel demand model to estimate changes in total annual average delay per capita during the AM and PM peak hours as a proxy for PHED per capita. By utilizing the travel demand model, the impact of added roadway capacity and anticipated population growth on the PHED measure could be estimated. The modeled results indicated that projects completed between 2017 and 2021—principally the Zoo Interchange reconstruction project and the resurfacing and restriping of IH 94/IH 894 between the Hale and Zoo Interchanges—would positively impact travel in the Milwaukee urbanized area by reducing PHED by approximately 8 percent. Given the uncertainty in forecasting the future, Commission and WisDOT staffs agreed that half of the modeled reduction (4 percent) in PHED would be applied to the base year PHED per capita to estimate the four-year target PHED per capita. WisDOT formally approved the four-year target on May 18, 2018. The Commission approved the target on November 16, 2018.

²⁰ Per Federal regulations, WisDOT and Commission staffs were not required to establish a two-year target for the PHED measure in the initial round of target setting. However, the two agencies will be required to establish a two-year target during the second CMAQ Performance Plan cycle starting in 2022.

Map B.6 NAAQS Nonattainment and Maintenance Areas in the Region

- THREE-COUNTY 2006 24-HOUR FINE PARTICULATE (PM_{2.5}) NAAQS MAINTENANCE AREA
- WISCONSIN PORTION OF THE CHICAGO-NAPERVILLE, IL-IN-WI 2008 EIGHT-HOUR OZONE NAAQS NONATTAINMENT AREA

Note: Per Federal regulations, applicability of establishing CMAQ targets for the Southeastern Wisconsin Region was based on the nonattainment areas and maintenance areas, in effect on October 1, 2017, under the 2008 ozone standard and the 2016 fine particulate standards, as shown on this map.



Source: SEWRPC

Figure B.8 Methodology for Calculating the Annual Hours of Peak Hour Excessive Delay (PHED) per Capita Performance Measure

The following is the methodology developed by FHWA for calculating the CMAQ performance measure related to annual hours of PHED per capita.

1. Determine the Excessive Delay Threshold Travel Time (EDTTT) for each reporting segment of the National Highway System (NHS) by the following formula:

$$EDTTT \text{ (in seconds)} = 3,600 \times \frac{\text{Segment Length}}{\text{Higher of 20 mph or } 0.6 \times \text{Speed Limit}}$$

2. Utilizing travel time data from the National Performance Management Research Data Set (NPMRDS), calculate for each NHS reporting segment the travel time segment delay (RSD) for every 15-minute time bin within the following time periods:

- a. 6 a.m. – 10 a.m. (Monday through Friday)
- b. 3 p.m. – 7 p.m. or 4 p.m. – 8 p.m. (Monday through Friday)

$$RSD \text{ (in seconds)} = \text{Average Travel Time} - EDTTT$$

3. Calculate Excessive Delay (ED) for every 15-minute bin within both time periods with the following formula:

$$ED \text{ (in hours)} = \begin{cases} \frac{RSD}{3,600} & \text{when } RSD \geq 0 \\ \text{or} \\ 0 & \text{when } RSD < 0 \end{cases}$$

4. Calculate the Average Vehicle Occupancy (AVO) for each segment with the following formula:

$$AVO_{total} = (\text{Percent Cars} \times AVO_{cars}) + (\text{Percent Buses} \times AVO_{buses}) + (\text{Percent Trucks} \times AVO_{trucks})$$

Where the percentage for each vehicle can be provided by the State/MPO or by bus, truck, car traffic volume data provided for the HPMS, and the AVO for each vehicle type can be provided by the State and/or MPO.

5. Calculate the Total Excessive Delay (TED) for each NHS report segment to the nearest hundredth for the entire year by the following formula:

$$\text{Segment TED (in person - hours)} = \sum \left(AVO_{total} \times ED \times \frac{\text{hourly volume}}{4} \right)$$

Where the hourly volume is estimated by the State and/or MPO for all days and for all reporting segments where ED is measured.

6. Calculate the performance measure by the following formula:

$$\text{Annual Hours of PHED per Capita} = \frac{\sum \text{Segment TED}}{\text{Total Population}}$$

Where the Total Population is the total population in the urbanized area from the most recent annual population published by the U.S. Census.

Source: Federal Highway Administration and SEWRPC

Table B.14 Years 2021 and 2050 Peak Hourly Excessive Delay Targets for the Milwaukee Urbanized Area Within Southeastern Wisconsin

Performance Measure	Year 2017 Baseline Data	Year 2021 Target	Year 2050 Target
Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita	8.96	≤ 8.60 ^a	≤ 7.84

^a Per regulations, this target was established jointly by the Wisconsin Department of Transportation and the Commission.

Source: Inrix, Inc., Wisconsin Transportation Operations and Safety (TOPS) Laboratory, WisDOT, and SEWRPC

In addition to the year 2021 PHED target established with WisDOT for the Milwaukee urbanized area, the Commission also established a year 2050 PHED target based on the methodology developed by the Commission staff, as shown in Table B.14. The year 2050 target, and the methodology for establishing the target, will guide Commission staff as they collaborate with WisDOT on future short-term targets for the urbanized area.

Early in 2020, WisDOT and Commission staffs began a joint review of actual PHED data that occurred following 2017—the base year—to determine whether adjustments should be made to the year 2021 targets.

CMAQ – Non-Single Occupancy Vehicle Travel

Figure B.9 shows how the non-SOV measure is to be calculated for the Milwaukee urbanized area. Federal regulations require the Commission and WisDOT to use the same travel time data set for calculating the non-SOV measure, and the two agencies are required to establish and report unified non-SOV baseline and two-year and four-year target values for the Milwaukee urbanized area. As shown in Figure B.9, there are three sources of data that are permitted to be utilized for this measure. Based on data being readily available, WisDOT and Commission staffs calculated the non-SOV measure using the five-year estimate for “Commuting to Work” totaled by mode from the U.S. Census Bureau’s American Community Survey (ACS) data set for the Milwaukee urbanized area.

The base year data, the year 2019 (two-year) target, and the year 2021 (four-year) target for the non-SOV measure for the Milwaukee urbanized area are shown in Table B.15. To establish the targets for the non-SOV measure, WisDOT and Commission staffs considered three alternative methodologies to estimate years 2019 (two-year) and 2021 (four-year) targets: 1) based on the historical non-SOV travel trend, 2) based on the VISION 2050 modeled non-SOV travel, and 3) based on the fiscally constrained transportation system (FCTS) modeled non-SOV travel. The three methodologies and potential targets were presented and discussed at a meeting between WisDOT and Commission staffs on March 15, 2018. It was agreed that an averaging of the potential targets based on historical trends and the FCTS model would be used to set the two-year and four-year targets for non-SOV travel. WisDOT formally approved the four-year target on May 18, 2018. The Commission approved the targets on November 16, 2018.

In addition to the years 2019 and 2021 non-SOV targets established jointly by WisDOT and Commission staffs for the Milwaukee urbanized area, the Commission staff established year 2050 targets based on the methodology developed by the Commission staff, as shown in Table B.15. The year 2050 target, and the methodology used for establishing the target, will guide Commission staff as they collaborate with WisDOT on future short-term targets for the urbanized area.

Early in 2020, WisDOT and Commission staffs began a joint review of actual non-SOV data available for years following 2017—the base year—to determine whether adjustments should be made to the year 2021 targets.

CMAQ – Emission Reductions

The methodology for calculating the emission reduction measure is shown in Figure B.10. Unlike the two congestion-related CMAQ measures, this measure is to be calculated separately by the State for a statewide target and the Commission for the MPA. The data to be utilized for this measure are the emission reduction estimates for projects implemented using CMAQ

Figure B.9 Methodology for Calculating the Non-Single Occupancy Vehicle (Non-SOV) Performance Measure

FHWA provided three methodologies that can be utilized to calculate the CMAQ performance measure related to percent of non-SOV travel in an urbanized area. The following describe the three methodologies:

1. Utilize SOV travel data that are available from the U.S. Census American Community Survey to calculate the performance measures with the following formula:

$$\text{Percent of non-SOV Travel} = 100 \text{ percent} - \text{percent of SOV Travel}$$

2. Utilize the percent of non-SOV travel, as calculated using data derived from a local survey that was conducted within the last two years.
3. Calculate the percent of non-SOV travel based on system monitoring data of the actual use of the transportation system. Sample or continuous measurements may be utilized to count the number of travelers using different modes of transportation. The results of the measurements would need to be factored to represent the travel on the entire transportation system and be representative of annual travel. Additionally, the percent of non-SOV travel would need to be updated at least every two years.

Source: Federal Highway Administration and SEWRPC

Table B.15
Years 2019, 2021, and 2050 Non-Single Occupancy Vehicle (Non-SOV) Performance Targets for the Milwaukee Urbanized Area Within Southeastern Wisconsin

Performance Measure	Year 2017 Baseline Data	Year 2019 Target	Year 2021 Target	Year 2050 Target
Percent of Non-SOV Travel	20.3 ^a	≥ 20.2 ^b	≥ 20.1 ^b	≥ 21.2

^a Data are from 2016

^b Per regulations, this target was established jointly by the Wisconsin Department of Transportation and the Commission.

Source: U.S. Census American Community Survey, WisDOT, and SEWRPC

Figure B.10 Methodology for Calculating the Total Emission Reductions Performance Measures

The following describes the methodology that FHWA developed for calculating the CMAQ performance measures related to total emission reductions. The performance measures are calculated for each criteria pollutant that a portion of the State or metropolitan planning area is in non-attainment or maintenance for. In Southeastern Wisconsin, the three criteria pollutants that an emission reduction measure is to be calculated are for Fine Particulate Matter (PM_{2.5}), Volatile Organic Compound (VOC), and Nitrogen Oxide (NO_x).

1. Calculate the performance measures for each relevant criteria pollutant by totaling over a two- or four-year period the total estimated emission reduction estimated to have occurred from projects previously implemented with CMAQ funding (for baseline data and monitoring progress) or estimated to occur through implementation of CMAQ projects.

Source: Federal Highway Administration and SEWRPC

funding, as entered by WisDOT into the CMAQ Public Access System. Thus, this measure is the only performance measure established by FHWA that is linked entirely to the implementation of projects funded by a particular funding source. The baseline data for the emission reduction measure for the Region is shown in Table B.16. For this measure, the baseline data consist of the emission reductions estimated for all the projects implemented with CMAQ funding over the four-year time period of 2014 through 2017.

The two-year and four-year emission reduction targets for the State are shown in Table B.16. While not required by Federal regulations, WisDOT and the Commission jointly developed the targets for the State. In developing the targets, WisDOT and Commission staffs considered the estimated emission reductions attributable to CMAQ-funded projects that were previously

Table B.16
Emission Reduction Targets for the Seven-County Region

Performance Measure	2014-2017 Baseline Data	2018-2019 Target	2018-2022 Target
Reduction in VOC (kg/day)	41.268	≥ 10.860	≥ 27.032
Reduction in NO _x (kg/day)	109.545	≥ 83.316	≥ 137.350
Reduction in PM _{2.5} (kg/day)	3.291	≥ 7.797	≥ 12.096

Source: WisDOT and SEWRPC

implemented and CMAQ projects that would be implemented within the next two to four years. The Commission established two-year and four-year emissions reduction targets based on the share of CMAQ projects expected to be implemented within the MPA and the Region.

INTRODUCTION

This appendix provides an inventory of existing transportation systems management (TSM) infrastructure located on the freeway and surface arterial street and highway system in Southeastern Wisconsin. The TSM infrastructure included in this appendix is as follows:

Freeway System

- Locations of Ramp Meters on the Existing Freeway System in the Region (Map C.1 and Table C.1)
- Locations of Variable Message Signs on the Existing Freeway System in the Region (Map C.2 and Table C.2)
- Locations of Crash Investigation Sites Along the Existing Freeway System in the Region (Map C.3 and Table C.3)
- Extent of Freeway Service Patrols (Map C.3)
- Locations of Closed-Circuit Television Cameras on the Existing Freeway System in the Region (Map C.4 and Table C.4)

Surface Arterial Street and Highway System

- Locations of Variable Message Signs on the Existing Surface Arterial Street and Highway System in the Region (Map C.5 and Table C.5)
- Locations of Closed-Circuit Television Cameras on the Existing Surface Arterial Street and Highway System in the Region (Map C.6 and Table C.6)

Map C.1

Locations of Ramp Meters on the Existing Freeway System in the Region: 2019

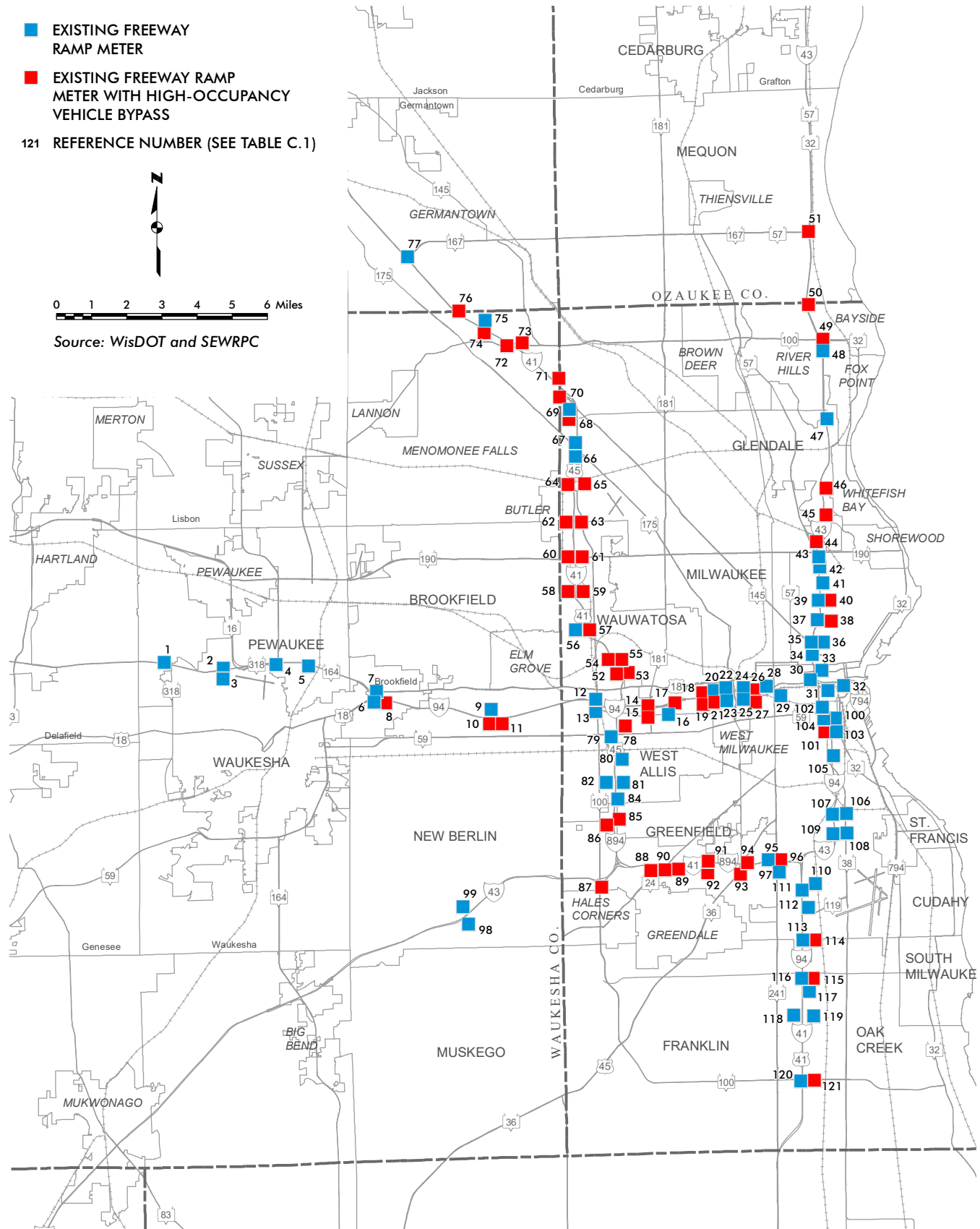


Table C.1

Locations of Ramp Meters on the Existing Freeway System in the Region: 2019

Reference Number ^a	Ramp Meter Location	Reference Number ^a	Ramp Meter Location
IH 94 East-West Corridor		IH 41/USH 45 Corridor (continued)	
1	Westbound at CTH G	55	Northbound at Watertown Plank Road
2	Eastbound at CTH T (Grandview Boulevard)	56	Southbound at W. North Avenue
3	Westbound at CTH T (Grandview Boulevard)	57	Northbound at W. North Avenue
4	Eastbound at STH 164/CTH J	58	Southbound at W. Burleigh Street
5	Eastbound at STH 83	59	Northbound at W. Burleigh Street
6	Westbound at CTH JJ	60	Southbound at STH 190 (W. Capitol Drive)
7	Eastbound at USH 18	61	Northbound at STH 190 (W. Capitol Drive)
8	Eastbound at Barker Road	62	Southbound at CTH EE (W. Hampton Avenue)
9	Westbound at CTH O (Moorland Road)	63	Northbound at CTH EE (W. Hampton Avenue)
10	CTH O (Moorland Road) Southbound to Eastbound IH 94	64	Southbound at CTH E (W. Silver Spring Drive)
11	CTH O (Moorland Road) Northbound to Eastbound IH 94	65	Northbound at CTH E (W. Silver Spring Drive)
12	Westbound at STH 100 (S. 108th Street)	66	Southbound at STH 175 (W. Appleton Avenue)
13	Eastbound at STH 100 (S. 108th Street)	67	Northbound at USH 41 (W. Appleton Avenue)
14	Westbound at STH 181 (N. 84th Street)	68	Eastbound CTH PP (W. Good Hope Road) to Southbound USH 45
15	Eastbound at STH 181 (N. 84th Street)	69	Westbound CTH PP (W. Good Hope Road) to Southbound USH 45
16	Westbound at N. 70th Street	70	Southbound at N. 124th Street (Waukesha-Milwaukee County Line)
17	Eastbound at N. 68th Street	71	Northbound at N. 124th Street (Waukesha-Milwaukee County Line)
18	Westbound at Hawley Road	72	Southbound at STH 74 (Main Street)
19	Eastbound at Hawley Road	73	Northbound at STH 74 (Main Street)
20	Eastbound at Mitchell Boulevard	74	Southbound at Pilgrim Road
21	Westbound at Mitchell Boulevard	75	Northbound at Pilgrim Road
22	USH 41 Southbound to Westbound IH 94	76	Southbound at CTH Q (Washington-Waukesha County Line Road)
23	USH 41 Southbound to Eastbound IH 94	77	Southbound at Lannon Road
24	STH 341 Northbound to Eastbound IH 94	78	Northbound at STH 59 (W. Greenfield Avenue)
25	STH 341 Northbound to Westbound IH 94	79	Southbound at STH 59 (W. Greenfield Avenue)
26	Westbound at N. 35th Street	80	Northbound at W. Lincoln Avenue
27	Eastbound at N. 35th Street	81	Northbound at CTH ES (W. National Avenue)
28	Westbound at N. 28th Street	82	Southbound at CTH ES (W. National Avenue)
29	Eastbound at N. 25th Street	84	Northbound at CTH NN (W. Oklahoma Avenue)
30	Westbound at W. Tory Hill Street and N. 11th Street	85	Northbound at W. Beloit Road
31	Westbound at N. 7th Street and W. Clybourn Avenue	86	Southbound at W. Beloit Road
32	Northbound/Southbound at N. 2nd Street and W. Clybourn Avenue	87	Northbound at STH 100 (S. 108th Street)
IH 43 Corridor		88	Westbound at S. 84th Street
33	Southbound at W. Wisconsin Avenue	89	Eastbound at W. Forest Home Avenue
34	Northbound at W. Highland Avenue and W. Kilbourn Avenue	90	Eastbound at S. 76th Street
35	Southbound at W. Fond du Lac Avenue (W. McKinley Avenue)	91	Eastbound at S. 60th Street
36	Northbound at W. Fond du Lac Avenue	92	Westbound at S. 60th Street
37	Southbound at W. North Avenue	93	Eastbound at STH 36 (S. Loomis Road)
38	Northbound at W. North Avenue	94	Westbound at STH 36 (S. Loomis Road)
39	Southbound at W. Locust Street	95	Southbound WIS 241 (S. 27th Street) to Westbound IH 894
40	Northbound at W. Locust Street	96	Southbound at STH 241 (S. 27th Street) to Eastbound IH 894
41	Southbound at W. Keefe Avenue	97	Northbound WIS 241 (S. 27th Street) to Westbound IH 894
42	Northbound at Atkinson Avenue	98	Southbound at Moorland Road northbound
43	Southbound at N. 9th Street and W. Abert Place	99	Northbound at Moorland Road northbound
44	Southbound at Green Bay Avenue	IH 94 North-South Corridor	
45	Southbound at W. Hampton Avenue	100	Northbound at S. 6th Street and Mineral Street
46	Southbound at W. Silver Spring Drive	101	Southbound at Lapham Boulevard (C-D)
47	Southbound at CTH PP (W. Good Hope Road)	102	Southbound at S. 9th Street and Mineral Street
48	Westbound STH 100 (W. Brown Deer Road) to Southbound IH 43	103	Northbound at Lapham Boulevard
49	Eastbound STH 100 (W. Brown Deer Road) to Southbound IH 43	104	Southbound at Lapham Boulevard
50	Southbound at Milwaukee-Ozaukee County Line Road	105	Southbound at Becher Street
51	Southbound at STH 57/167 (Mequon Road)	106	Northbound at Holt Avenue
IH 41/USH 45 Corridor		107	Southbound at Holt Avenue
52	Southbound at N. 97th Street and W. Wisconsin Avenue	108	Northbound at W. Howard Avenue
53	Northbound at W. Wisconsin Avenue	109	Southbound at W. Howard Avenue
54	Southbound at Watertown Plank Road		

Table continued on next page.

Table C.1 (continued)

Reference Number^a	Ramp Meter Location	Reference Number^a	Ramp Meter Location
IH 94 North-South Corridor (continued)		IH 94 North-South Corridor (continued)	
110	Northbound at CTH Y (W. Layton Avenue)	117	Eastbound CTH BB (W. Rawson Avenue) to Northbound IH 94
111	Southbound at CTH Y (W. Layton Avenue)	118	Drexel Avenue to Southbound at IH 94
112	STH 119 Westbound to Northbound IH 94	119	Drexel Avenue to Northbound at IH 94
113	Southbound at CTH ZZ (W. College Avenue)	120	Southbound at STH 100 (W. Ryan Road)
114	Northbound at CTH ZZ (W. College Avenue)	121	Northbound at STH 100 (W. Ryan Road)
115	Southbound at CTH BB (W. Rawson Avenue)		
116	Westbound CTH BB (W. Rawson Avenue) to Northbound IH 94		

^a See Map C.1

Source: Wisconsin Department of Transportation and SEWRPC

Map C.2

Locations of Variable Message Signs on the Existing Freeway System in the Region: 2019

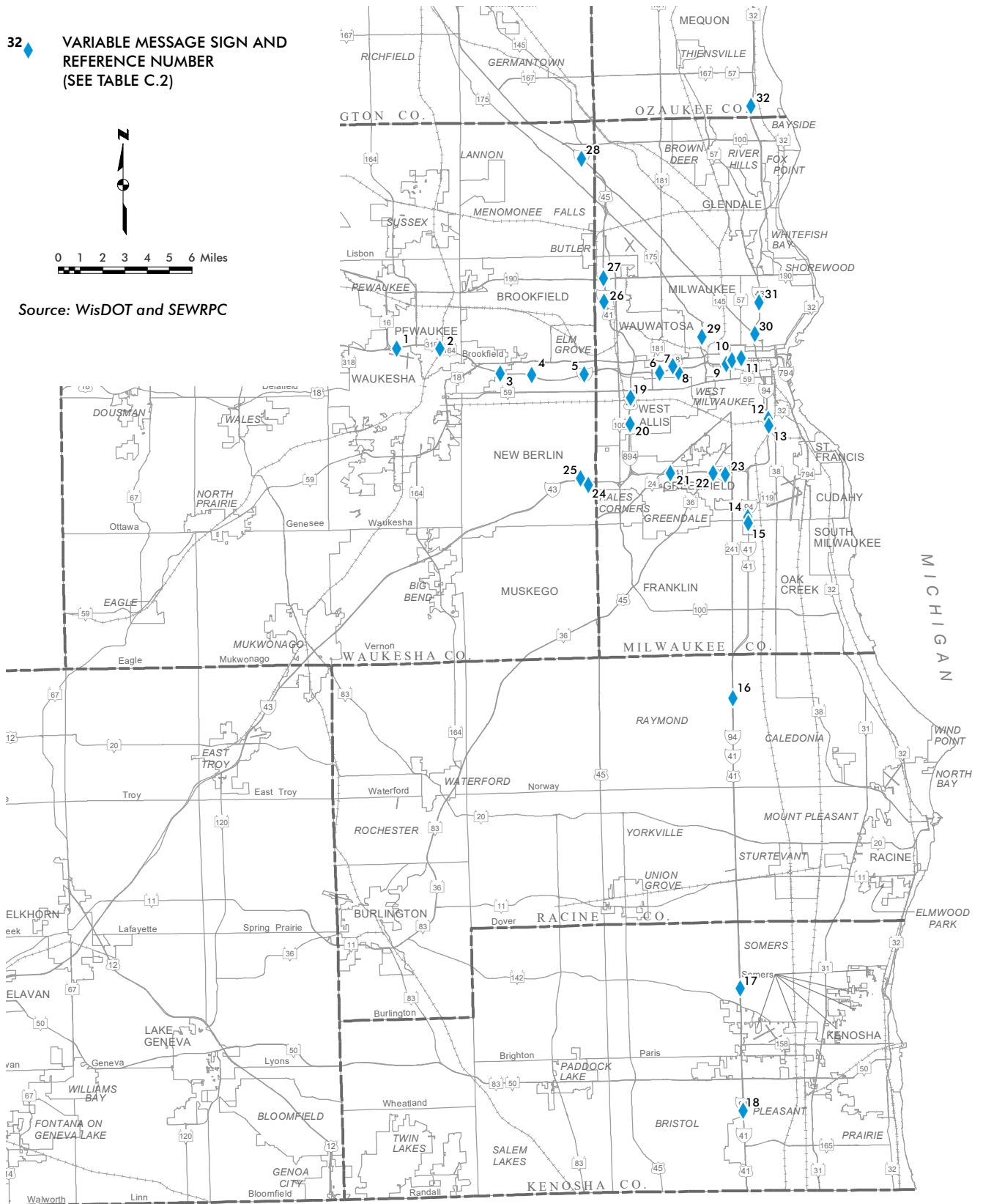


Table C.2**Locations of Variable Message Signs on the Existing Freeway System in the Region: 2019**

Reference Number^a	Variable Message Sign Location	Reference Number^a	Variable Message Sign Location
IH 94 East-West Corridor		IH 94 North-South Corridor (continued)	
1	Eastbound at STH 16 (Silvernail Road)	18	Northbound at CTH C
2	Eastbound at CTH F	IH 41/USH 45/IH 894 Corridor	
3	Eastbound at Brookfield Road	19	Southbound at Cleveland Avenue
4	Westbound at Calhoun Road	20	Northbound at Cleveland Avenue
5	Eastbound at Elm Grove Road	21	Eastbound at S. 72nd Street
6	Eastbound at N. 76th street	22	Westbound at STH 36 (W. Loomis Road)
7	Eastbound at N. 68th street	23	Northbound at Kinnickinnic River
8	Westbound at N. 68th street	24	Northbound at CTH T (W. Beloit Road)
9	Eastbound at N. 30th Street	25	Southbound south of STH 60
10	Westbound at N. 27th Street	26	Southbound at W. Burleigh Street
11	Westbound at N. 22nd Street	27	Southbound north of Capitol Drive
IH 94 North-South Corridor		28	Southbound at Main Street
12	Northbound at Kinnickinnic River	STH 175 Corridor	
13	Southbound at Oklahoma Avenue	29	Southbound at W. Cherry Street
14	Southbound at CTH ZZ (W. College Avenue)	IH 43 Corridor	
15	Northbound at CTH ZZ (W. College Avenue)	30	Northbound at W. Walnut Street
16	Northbound at CTH G	31	Southbound at W. Locust Avenue
17	Northbound at STH 142	32	Southbound at Ozaukee-Milwaukee County Line

^a See Map C.2

Source: Wisconsin Department of Transportation and SEWRPC

Map C.3

Extent of Freeway Service Patrols and Location of Crash Investigation Sites Along the Existing Freeway System in the Region: 2019

- MILWAUKEE COUNTY ENHANCED SERVICE PATROL
- IH 94 NORTH-SOUTH ENHANCED SERVICE PATROL (UNDER CONSTRUCTION)
- CRASH INVESTIGATION SITE
- 33 REFERENCE NUMBER (SEE TABLE C.3)

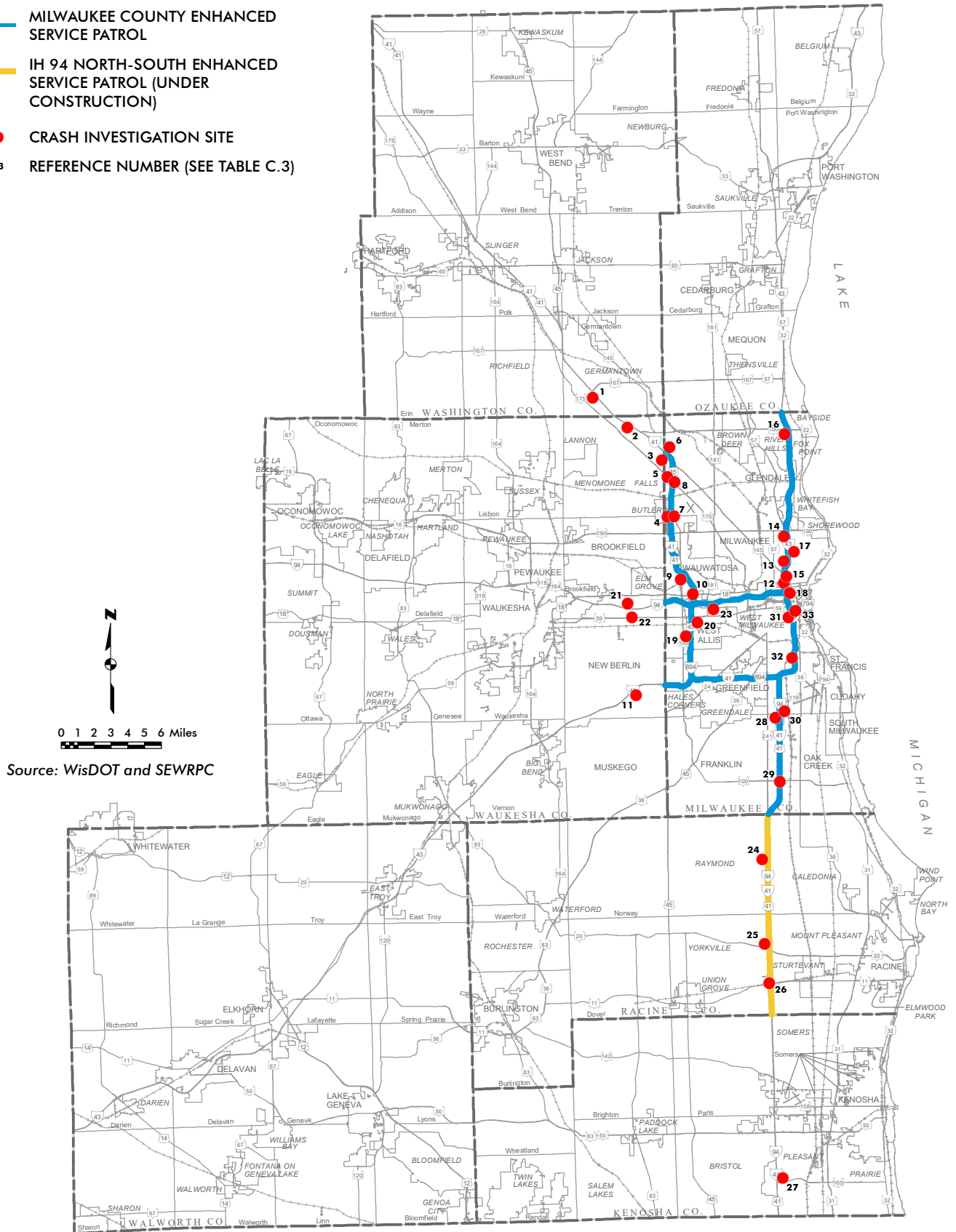


Table C.3**Locations of Crash Investigation Sites on the Existing Freeway System in the Region: 2019**

Reference Number^a	Crash Investigation Site Location	Reference Number^a	Crash Investigation Site Location
IH 41/USH 45 Corridor		IH 794 Corridor	
1	Lannon Road park-ride lot	18	Eastbound exit ramp to St. Paul Avenue
2	Northwest of the Pilgrim Road/USH 45 interchange on Stopler Drive	IH 894 Corridor	
3	Southbound exit ramp to CTH PP (W. Good Hope Road)	19	Southbound exit ramp to W. Lincoln Avenue
4	Southbound exit ramp to CTH EE (W. Hampton Avenue)	20	Northbound exit ramp to STH 59 (W. Greenfield Avenue)
5	Northbound exit ramp to USH 41 (W. Appleton Avenue)	IH 94 (East-West) Corridor	
6	Northbound exit ramp to STH 145 (N. 124th Street)	21	Westbound exit ramp to CTH O (Moorland Road) Southbound
7	Northbound exit ramp to CTH EE (W. Hampton Avenue)	22	Eastbound exit ramp to CTH O (Moorland Road) Southbound
8	Southbound exit ramp to USH 41 (W. Appleton Avenue)	23	State Fair Park park-ride lot (S. 76th Street)
9	Watertown Plank Road park-ride Lot	24	State Patrol truck weigh station (CTH G)
10	Southbound exit ramp to Bluemound Road	IH 94 (North-South) Corridor	
IH 43 Corridor		25	Racine County Sheriff's substation (STH 20)
11	CTH O (Moorland Road) park-ride lot	26	STH 11 (Durand Avenue) park-ride lot
12	Southbound exit ramp to W. Highland Avenue	27	Wisconsin Tourism Information Center (STH 165)
13	Southbound exit ramp to W. North Avenue	28	Southwest W. College Avenue park-ride lot
14	Southbound exit ramp to Atkinson Avenue	29	W. Ryan Road park-ride lot
15	Northbound exit ramp to Westbound W. Fond du Lac Avenue	30	Northeast W. College Avenue park-ride lot
16	STH 100 (W. Brown Deer Road) park-ride lot	31	Southbound exit ramp to E. Becher Street/ Lincoln Avenue
17	Northbound exit ramp to Locust Street	32	Holt Avenue park-ride lot
		33	Northbound exit ramp to E. Becher Street/ Mitchell Street

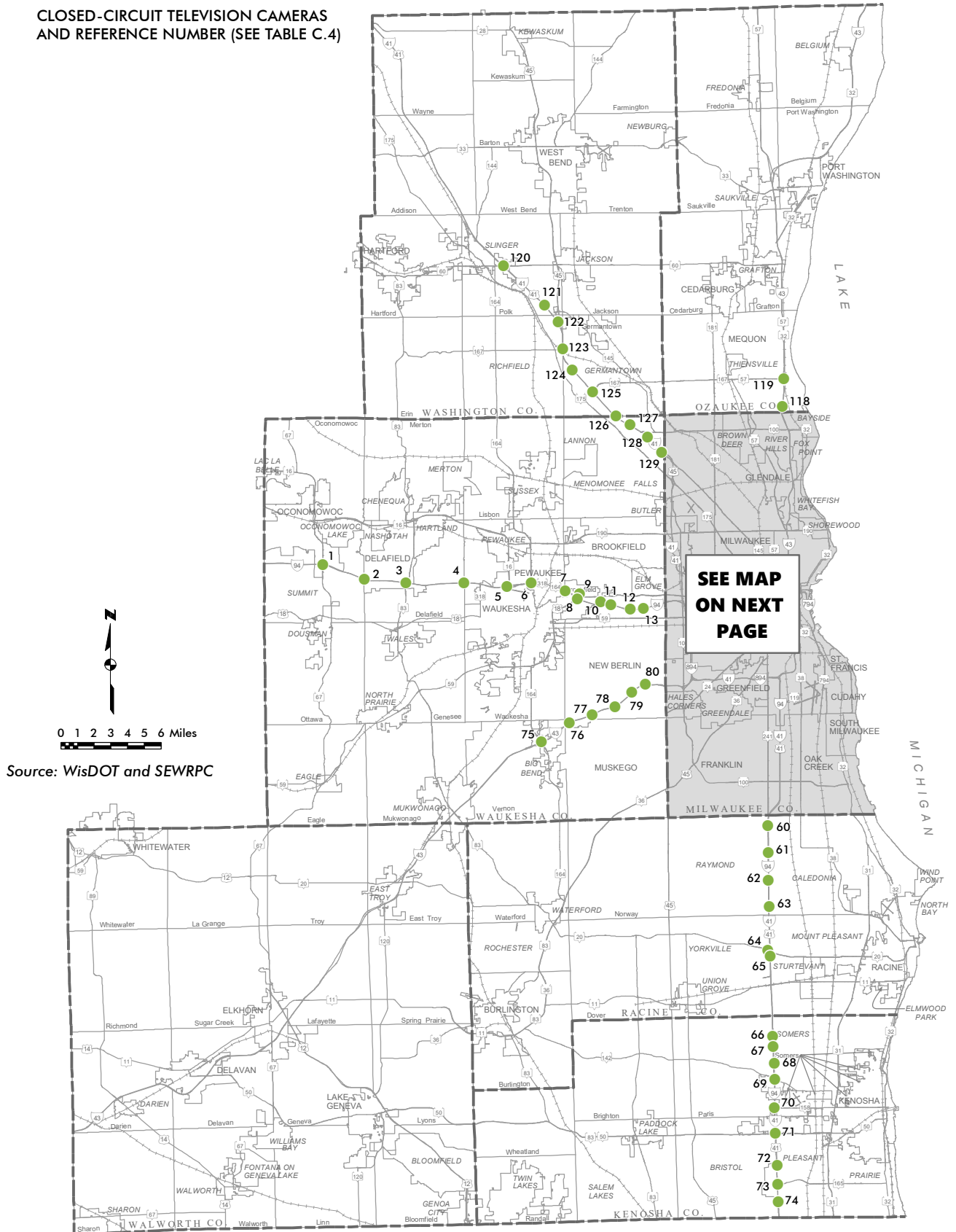
^a See Map C.3

Source: Wisconsin Department of Transportation and SEWRPC

Map C.4

Locations of Closed-Circuit Television Cameras on the Existing Freeway System in the Region: 2019

167 ● CLOSED-CIRCUIT TELEVISION CAMERAS AND REFERENCE NUMBER (SEE TABLE C.4)

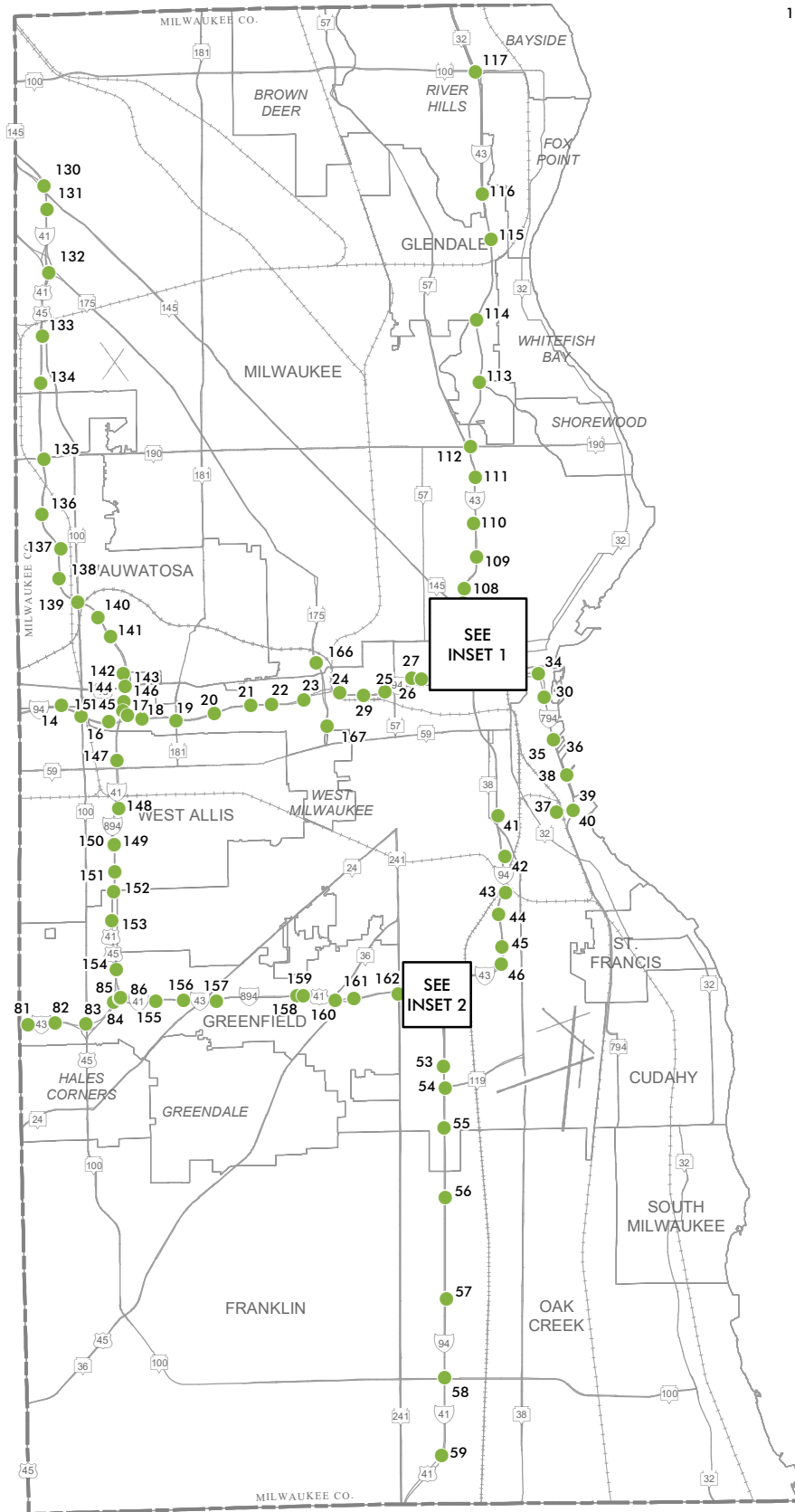


Source: WisDOT and SEWRPC

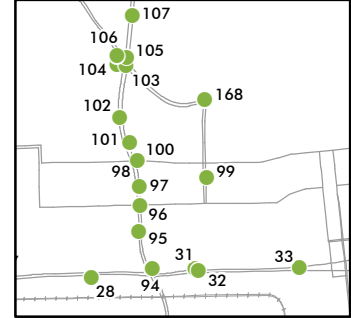
Map C.4 (Continued)

168 ●

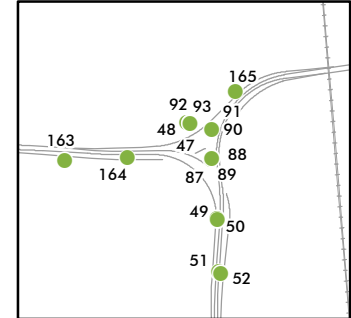
CLOSED-CIRCUIT TELEVISION CAMERAS AND REFERENCE NUMBER (SEE TABLE C.4)



1. MARQUETTE INTERCHANGE



2. MITCHELL INTERCHANGE



Source: WisDOT and SEWRPC

Table C.4

Locations of Closed-Circuit Television Cameras on the Existing Freeway System in the Region: 2019

Reference Number ^a	Closed-Circuit Television Camera Location	Reference Number ^a	Closed-Circuit Television Camera Location
IH 94 East-West Corridor		IH 94 North-South Corridor (continued)	
1	IH 94 at STH 67 (Summit Avenue)	61	IH 94 at CTH G
2	IH 94 at CTH P (N. Sawyer Road)	62	IH 94 at CTH K
3	IH 94 at STH 83	63	IH 94 at CTH E (W. 27th Street)
4	IH 94 at CTH SS	64	IH 94 at STH 20 (Washington Avenue)
5	IH 94 at CTH T	65	IH 94 at STH 11 (W. Durand Avenue)
6	IH 94 at STH 164 (Pewaukee Road)	66	IH 94 at CTH A (W. 7th Street)
7	IH 94 at Springdale Road	67	IH 94 at CTH KR (County Line Road)
8	IH 94 at USH 18 (Blue Mound Road)	68	IH 94 at CTH E (W. 12th Street)
9	IH 94 at Moorland Road	69	IH 94 at STH 142 (Burlington Road)
10	IH 94 west of N. Brookfield Road	70	IH 94 at STH 158 (W. 52nd Street)
11	IH 94 at Calhoun Road	71	IH 94 at STH 50 (W. 75th Street)
12	IH 94 at Sunnyslope Road	72	IH 94 at CTH C (Spring Street)
13	IH 94 at Elm Grove Road	73	IH 94 at STH 165 (W. 104th Street)
14	IH 94 at N. 113th Street	74	IH 94 at CTH ML (Springbrook Road)
15	IH 94 at STH 100 (N. 108th Street)	IH 43 Corridor	
16	IH 94 west of IH 41/USH 45	75	IH 43 at STH 164 (Big Bend Road)
17	IH 94 at IH 41/IH 894/USH 45 and (Zoo Interchange) Upper	76	IH 43 at Crowbar Road
18	IH 94 at S. 92nd Street	77	IH 43 at CTH Y (S. Racine Avenue)
19	IH 94 at STH 181 (N. 84th Street)	78	IH 43 at Calhoun Road
20	IH 94 at S. 76th Street	79	IH 43 at S. Moorland Road
21	IH 94 at N. 68th Street	80	IH 43 at S. Sunnyslope Road
22	IH 94 at Hawley Road	81	IH 43 at S. 124th Street
23	IH 94 at Mitchell Boulevard	82	IH 43 at S. 112th Street
24	IH 94 at N. 39th Street	83	IH 43 at STH 100 (S. 108th Street)
25	IH 94 at N. 30th Street	84	IH 43 at Hale Interchange
26	IH 94 at N. 25th Street	85	IH 43/IH 94 at Mitchell Interchange (NE)
27	IH 94 at N. 20th Street	86	IH 43 at Mitchell Interchange (SW)
28	IH 94 at N. 13th Street	87	IH 43 East Entrance Tunnel
29	IH 94 at N. 35th Street	88	IH 43 West Entrance Tunnel
IH 794 Corridor		89	IH 43 East Exit Tunnel
30	IH 794 at north end of Daniel W. Hoan Bridge	90	IH 43 West Exit Tunnel
31	IH 794 at N. 7th Street (James Lovell Street) Upper	91	IH 43/IH 94 at S. 15th Street
32	IH 794 at N. 7th Street (James Lovell Street) Lower	92	IH 43 North-West Ramp #1
33	IH 794 at N. 2nd Street/Plankinton Avenue	93	IH 43 North-West Ramp #2
34	IH 794 at Lincoln Memorial Drive (Lake Interchange)	94	IH 43 Northwest Ramp North
35	IH 794 at south end of Daniel W. Hoan Bridge (Upper)	95	IH 43 Northwest Ramp Northwest
36	IH 794 at south end of Daniel W. Hoan Bridge (Lower)	96	IH 43 at W. Wisconsin Avenue
37	IH 794 at E. Bay Street	97	IH 43 at W. Wells Street
38	IH 794 at Lake Pier	98	IH 43 at W. Kilbourn Avenue Tunnel Entrance
39	IH 794 at S. Carferry Drive (Upper)	99	IH 43 at W. Kilbourn Avenue Tunnel Exit
40	IH 794 at S. Carferry Drive (Lower)	100	IH 43 at STH 18 (W. State Street)
IH 94 North-South Corridor		101	IH 43 at W. Highland Avenue
41	IH 94/IH 43 at W. Mitchell Street	102	IH 43 at W. Juneau Avenue
42	IH 94/IH 43 at STH 38 (Chase Avenue)	103	IH 43 at STH 145 SW (W. Fond Du Lac Avenue)
43	IH 94/IH 43 at W. Oklahoma Avenue	104	IH 43 at STH 145 E (W. Fond Du Lac Avenue)
44	IH 94/IH 43 at W. Holt Avenue	105	IH 43 at STH 145 NE (W. Fond Du Lac Avenue)
45	IH 94/IH 43 at W. Howard Avenue	106	IH 43 at STH 145 W (W. Fond Du Lac Avenue)
46	IH 94/IH 43 at W. Plainfield Avenue	107	IH 43 at W. Walnut Street
47	IH 94 West-North Ramp #1	108	IH 43 at W. Brown Street
48	IH 94 West-North Ramp #2	109	IH 43 at W. Wright Street
49	IH 94 and IH 894 South-West Exit Tunnel	110	IH 43 at W. Locust Street
50	IH 94 and IH 894 South-West Entrance Tunnel	111	IH 43 at W. Keefe Avenue
51	IH 94 at CTH Y (W. Layton Avenue)	112	IH 43 at STH 190 (W. Capitol Drive)
52	IH 94 at CTH Y (W. Layton Avenue) Tunnel Signs	113	IH 43 at W. Hampton Avenue
53	IH 94 at Grange Avenue	114	IH 43 at W. Silver Spring Drive
54	IH 94 at STH 119 (Airport Interchange)	115	IH 43 at W. Daphne Road
55	IH 94 at CTH ZZ (W. College Avenue)	116	IH 43 at CTH PP (W. Good Hope Road)
56	IH 94 at CTH BB (W. Rawson Avenue)	117	IH 43 at STH 100 (W. Brown Deer Road)
57	IH 94 at W. Drexel Avenue	118	IH 43 at County Line Road
58	IH 94 at S. STH 100 (W. Ryan Road)	119	IH 43 at STH 167 and STH 57 (Mequon Road)
59	IH 94 at W. Oakwood Road	IH 41/USH 45 Corridor	
60	IH 94 at Seven Mile Road	120	IH 41 at STH 60
		121	IH 41 at Mayfield Road

Table continued on next page.

Table C.4 (Continued)

Reference Number ^a	Closed-Circuit Television Camera Location	Reference Number ^a	Closed-Circuit Television Camera Location
IH 41/USH 45 Corridor		IH 894 Corridor	
122	IH 41 at USH 45 Split	147	IH 41/IH 894/USH 45 at STH 59 (W. Greenfield Avenue)
123	IH 41/USH 45 at STH 167 (Holy Hill Road)	148	IH 41/IH 894/USH 45 at W. Lincoln Avenue
124	IH 41/USH 45 at CTH F (Freistadt Road)	149	IH 41/IH 894/USH 45 at W. National Avenue
125	IH 41/USH 45 at STH 167 (Lannon Road)	150	IH 41/IH 894/USH 45 at W. National Avenue
126	IH 41/USH 45 at CTH Q (Washington-Waukesha County Line Road)	151	IH 41/IH 894/USH 45 at W. Cleveland Avenue
127	IH 41/USH 45 at Pilgrim Road	152	IH 41/IH 894/USH 45 at CTH NN (W. Oklahoma Avenue)
128	IH 41/USH 45 at Leon Road	153	IH 41/IH 894/USH 45 at CTH T (W. Beloit Road)
129	IH 41/USH 45 at Waukesha-Milwaukee County Line (N. 124th Street)	154	IH 41/IH 894/USH 45 at Cold Spring Road
130	IH 41/USH 45 at W. Park Place	155	IH 43/IH 894 at CTH N (S. 92nd Street)
131	IH 41/USH 45 at CTH PP (W. Good Hope Road)	156	IH 43/IH 894 at S. 84th Street
132	IH 41/USH 45 and STH 100 at USH 41 (W. Appleton Avenue)	157	IH 43/IH 894 at CTH U (S. 76th Street)
133	IH 41/USH 45 at CTH E (W. Silver Spring Drive)	158	IH 43/IH 894 at S. 60th Street
134	IH 41/USH 45 at W. Hampton Avenue	159	IH 43/IH 894 at S. 51st Street
135	IH 41/USH 45 at STH 190 (W. Capitol Drive)	160	IH 43/IH 894 at STH 36 (W. Loomis Road)
136	IH 41/USH 45 at W. Burleigh Road	161	IH 43/IH 894 at S. 35th Street
137	IH 41/USH 45 at W. Center Street	162	IH 43/IH 894 at STH 241 (S. 27th Street)
138	IH 41/USH 45 at W. North Avenue	163	IH 43/IH 894 at S. 22nd Street Tunnel Signs
139	IH 41/USH 45 at STH 100 (N. Mayfair Road)	164	IH 43/IH 894 at S. 20th Street
140	IH 41/USH 45 at Swan Boulevard	165	IH 43/IH 894 at S. 19th Street
141	IH 41/USH 45 at W. Watertown Plank Road	STH 175 Corridor	
142	IH 41/USH 45 at Wisconsin Avenue	166	STH 175 at W. Wells Street
143	IH 41/USH 45 at USH 18 (W. Bluemound Road)	STH 341 Corridor	
144	IH 41/USH 45 at USH 18 (W. Bluemound Road)	167	STH 341 (Miller Park Way) at Stadium Pedestrian Bridge
145	IH 41/USH 45 at Bluemound Road Tunnel	USH 145 Corridor	
146	IH 94/USH 45 at 84th Street Tunnel	168	USH 145 at McKinley Avenue

^a See Map C.4

Source: Wisconsin Department of Transportation and SEWRPC

Map C.5
Locations of Variable Message Signs on the Existing Surface
Arterial Street and Highway System in the Region: 2019

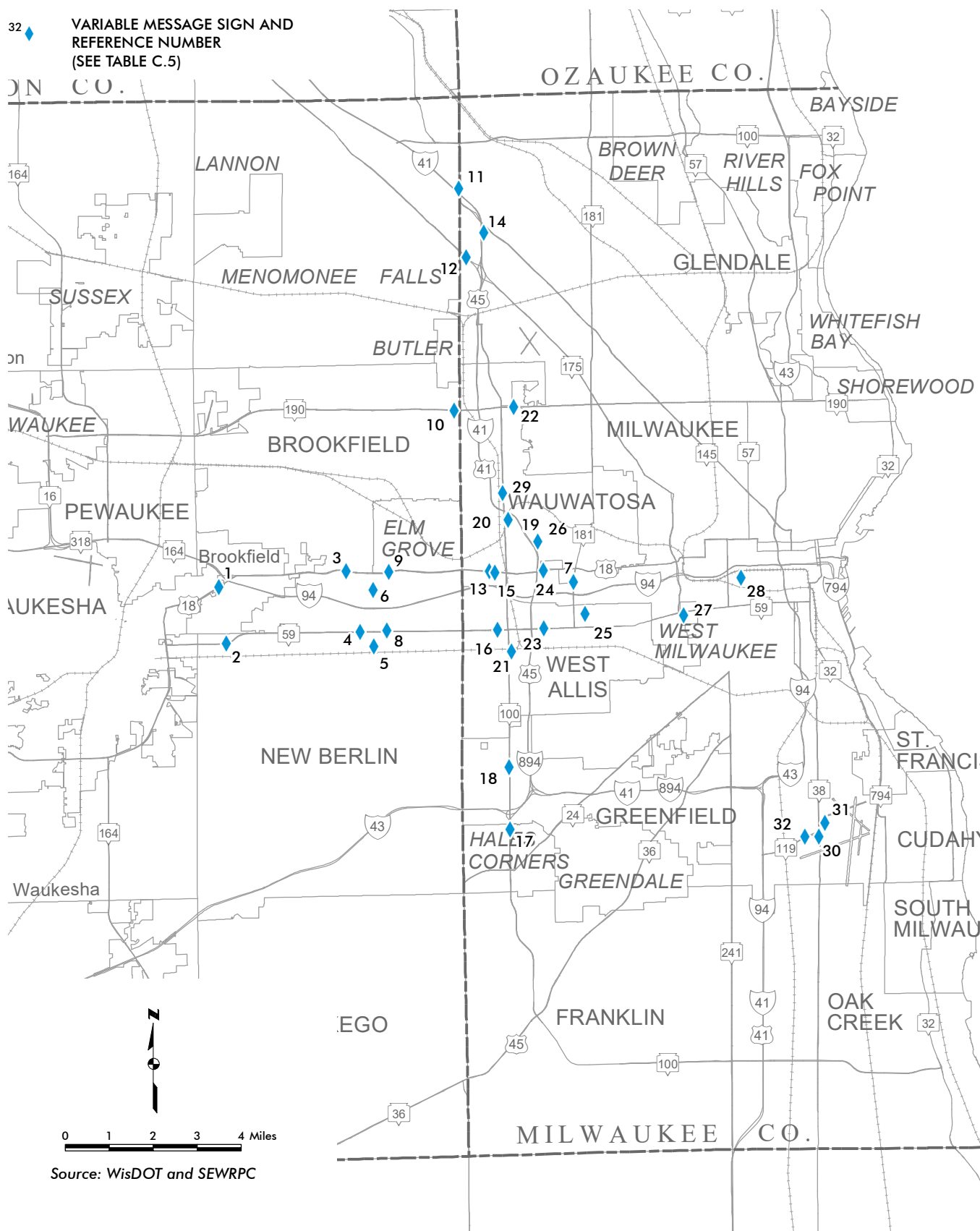


Table C.5
Locations of Variable Message Signs on the Existing Surface
Arterial Street and Highway System in the Region: 2019

Reference Number^a	Variable Message Sign Location	Reference Number^a	Variable Message Sign Location
1	USH 18/Moreland Boulevard at IH 94	18	STH 100 (N. 108th Street) Northbound at Cold Spring Road
2	Greenfield Avenue Eastbound west of Barker Road/Downie Road	19	STH 100 (N. 108th Street) Southbound at W. Walnut Street
3	Bluemound Road Eastbound west of Moorland Road	20	STH 100 (N. 108th Street) Northbound at Watertown Plank Road
4	Greenfield Avenue Eastbound west of Moorland Road	21	STH 100 (N. 108th Street) Northbound at W. Lapham Street
5	Moorland Road Northbound south of Greenfield Avenue	22	Capitol Drive Westbound west of STH 100/Grantosa Drive
6	Moorland Road Southbound north of IH 94 (Brookfield Square)	23	Greenfield Avenue Westbound at 95th Street
7	84th Street Northbound south of IH 94 (Adler Street)	24	Bluemound Road Westbound at 94th Street
8	Greenfield Avenue Westbound east of Moorland Road	25	84th Street Southbound at IH 94
9	Bluemound Road Westbound east of Moorland Road	26	Watertown Plank Road Westbound east of US 45/95th Street
10	STH 190 (Capitol Drive) at 124th Street	27	Miller Park Way Northbound at STH 59 (W. National Avenue)
11	STH 145/124th Street at Bradley Road	28	W. Canal Street Westbound at 25th Street
12	STH 175 (Appleton Avenue) Eastbound at STH 100 (N. 108th Street)	29	STH 100 Southbound north of North Avenue
13	USH 18/Bluemound Road at 114th Street	30	Mitchell International Airport at Airport Parking Ramp Exit
14	Good Hope Road at IH 41/USH 45	31	Mitchell International Airport at Airport Drop-off Exit
15	STH 100 (N. 108th Street) Southbound at USH 18 (W. Bluemound Road)	32	STH 119 (Howell Avenue) Westbound at Mitchell International Airport
16	STH 59 (W. Greenfield Avenue) Eastbound at 111th Street		
17	STH 100 (N. 108th Street) Northbound at Edgerton Road		

^a See Map C.5

Source: Wisconsin Department of Transportation and SEWRPC

Map C.6

Locations of Closed-Circuit Television Cameras on the Existing Surface Arterial Street and Highway System in the Region: 2019

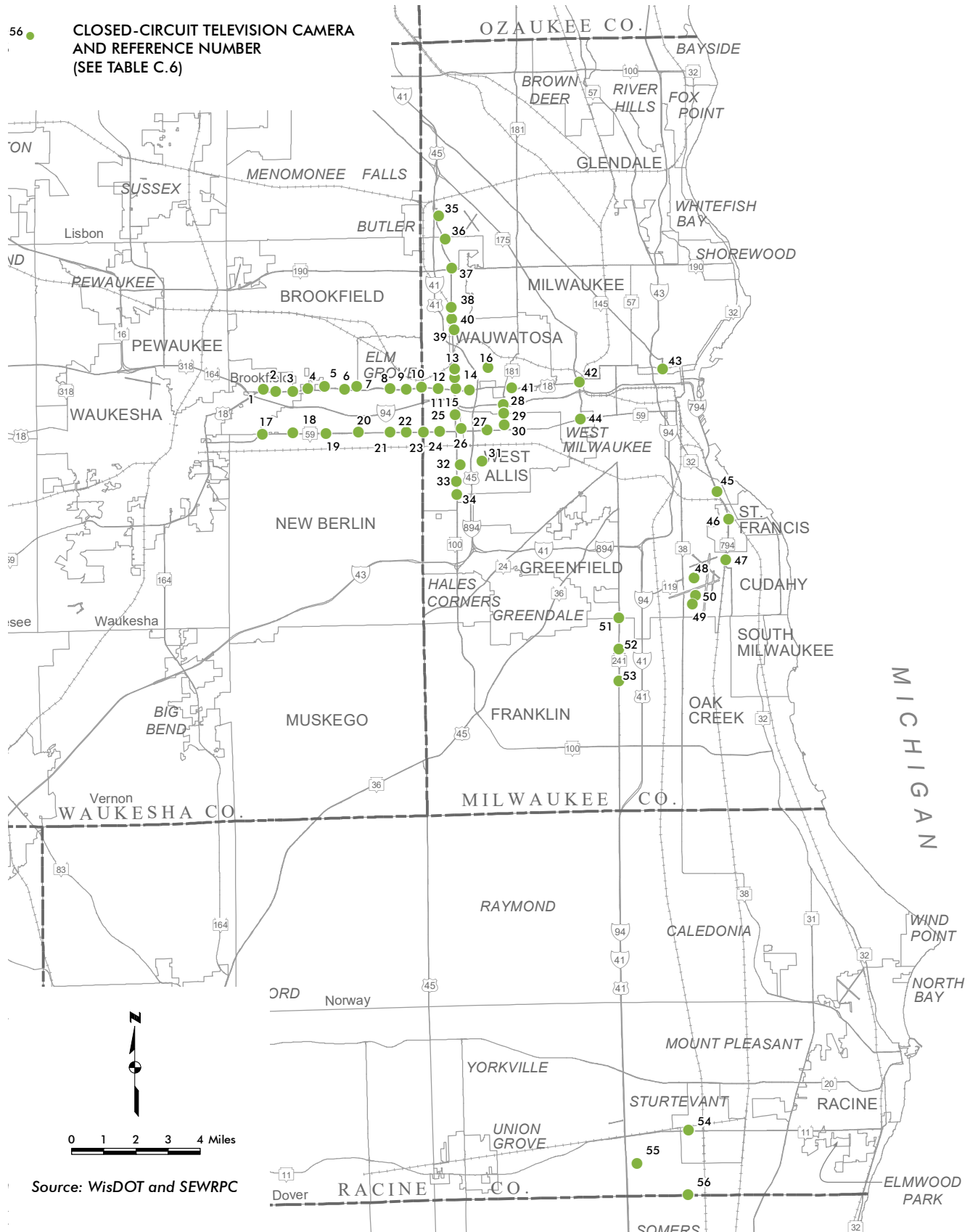


Table C.6
Locations of Closed-Circuit Television Cameras on the Existing Surface
Arterial Street and Highway System in the Region: 2019

Reference Number^a	Closed-Circuit Television Camera Location	Reference Number^a	Closed-Circuit Television Camera Location
1	USH 18 (W. Bluemound Road) at CTH Y (Barker Road)	29	S. 84th Street at W. Schlinger Avenue (south of IH 94)
2	USH 18 (W. Bluemound Road) at Janacek Road	30	S. 84th Street at W. Greenfield Avenue
3	USH 18 (W. Bluemound Road) at Brookfield Road	31	W. National Avenue at W. Lincoln Avenue
4	USH 18 (W. Bluemound Road) at Woelfel Road	32	STH 100 (S. 108th Street) at W. Lincoln Avenue
5	USH 18 (W. Bluemound Road) at Calhoun Road	33	STH 100 (S. 108th Street) at W. National Avenue
6	USH 18 (W. Bluemound Road) at Executive Drive	34	STH 100 (S. 108th Street) at W. Oklahoma Avenue
7	USH 18 (W. Bluemound Road) at CTH O (Moorland Road)	35	STH 100 (N. 108th Street) at CTH E (W. Silver Spring Drive)
8	USH 18 (W. Bluemound Road) at Sunnyslope Road	36	STH 100 (N. 108th Street) at CTH EE (W. Hampton Avenue)
9	USH 18 (W. Bluemound Road) at Elm Grove Road	37	STH 100 (N. 108th Street) at STH 190 (W. Capitol Drive)
10	USH 18 (W. Bluemound Road) at N. 124th Street	38	STH 100 (N. 108th Street) at W. Burleigh Street
11	USH 18 (W. Bluemound Road) at N. 114th Street	39	STH 100 (N. 108th Street) at W. Center Street
12	STH 100 (N. 108th Street) at Research Drive	40	STH 100 (N. 108th Street) at W. North Avenue
13	STH 100 (N. 108th Street) at Watertown Plank Road	41	USH 18 (W. Bluemound Road) at N. 80th Street
14	STH 100 (N. 108th Street) at USH 18 (W. Bluemound Road)	42	STH 175 at USH 18 (W. Bluemound Road)
15	USH 18 (W. Bluemound Road) west of N. 99th Street (HAWK)	43	Kilbourn Avenue at Tunnel Entrance and Exit
16	Watertown Plank Road at N. 92nd Street	44	USH 341 (Miller Parkway) at STH 59 (W. National Avenue)
17	STH 59 (W. Greenfield Avenue) at Barker Road	45	STH 794 (Lake Parkway) at E. Oklahoma Avenue
18	STH 59 (W. Greenfield Avenue) at Brookfield Road	46	STH 794 (Lake Parkway) at Howard Avenue
19	STH 59 (W. Greenfield Avenue) at Calhoun Road	47	STH 794 (Lake Parkway) at E. Layton Avenue
20	STH 59 (W. Greenfield Avenue) at Moorland Road	48	USH 119 at USH 38 (S. Howell Avenue)
21	STH 59 (W. Greenfield Avenue) at Sunnyslope Road	49	USH 38 (S. Howell Avenue) at North Airport Tunnel
22	STH 59 (W. Greenfield Avenue) at Elm Grove Road	50	USH 38 (S. Howell Avenue) at South Airport Tunnel
23	STH 59 (W. Greenfield Avenue) at S. 124th Street	51	STH 241/S. 27th Street at College Avenue
24	STH 59 (W. Greenfield Avenue) at S. 116th Street	52	STH 241/S. 27th Street at Rawson Avenue
25	STH 100 (S. 108th Street) at Theodore Trecker Way	53	STH 241/S. 27th Street at Drexel Avenue
26	STH 100 (S. 108th Street) at STH 59 (W. Greenfield Avenue)	54	STH 11 at CTH H/105th Street
27	STH 59 (W. Greenfield Avenue) at S. 92nd Street	55	Braun Road/60th Street east of IH 41/IH 94
28	S. 84th Street north of IH 94	56	CTH KR at CTH H/105th Street

^a See Map C.6

Source: Wisconsin Department of Transportation and SEWRPC

INTRODUCTION

Significant disparities exist between minority populations and non-minority populations in the Region, particularly in the Milwaukee metropolitan area, with respect to educational attainment levels, per capita income, and poverty.²¹ These disparities are long-standing, and are more pronounced than in almost all other metro areas. Reducing these disparities requires significant action on many fronts. With respect to the development of the transportation component of the original VISION 2050 plan (adopted in July 2016), equity evaluations were conducted at different stages in the planning process to ensure that the benefits and impacts of investments in the Region’s transportation system are shared fairly and equitably and serve to reduce existing disparities between white and minority populations. Specifically, an equitable access evaluation was conducted on the VISION 2050 alternative plans,²² the Preliminary Recommended Plan,²³ and the original Fiscally Constrained Transportation Plan (FCTP)²⁴ with respect to 1) accessibility for minority populations and low-income populations by transit and automobile to jobs and other activity centers, 2) minority populations and low-income populations served by transit, 3) transit service quality for minority populations and low-income populations, 4) benefits and impacts of new and widened arterial streets and highways on minority populations and low-income populations, and 5) transportation-related air quality impacts on minority populations and low-income populations. An updated equitable access evaluation was conducted as part of the second amendment to VISION 2050, which was completed in December 2018. This amendment incorporated land use changes to accommodate additional residents and jobs associated with, and transportation improvements to serve, the Foxconn development area. The amendment also reviewed and revised the FCTP based on changes in funding for transportation projects

²¹ These disparities are documented in SEWRPC Memorandum No. 221, A Comparison of the Milwaukee Metropolitan Area to Its Peers, which was updated as part of the 2020 Review and Update of VISION 2050.

²² The equitable access evaluation of the VISION 2050 alternative plans is documented in Appendix F of Volume II of the VISION 2050 plan report.

²³ The equitable access evaluation of the VISION 2050 Preliminary Recommended Plan is documented in Appendix H of Volume II of the VISION 2050 plan report.

²⁴ Federal regulations require the Region’s transportation plan to only include projects that can be funded with existing and reasonably expected revenues. Therefore, only the funded portion of the final plan would be considered for purposes of air-quality conformity and for inclusion in the regional transportation improvement program. The equitable access evaluation of the original VISION 2050 Fiscally Constrained Transportation Plan is documented in Appendix N of the First Edition of Volume III of the VISION 2050 plan report.

EQUITY ANALYSIS OF UPDATED TRANSPORTATION COMPONENT APPENDIX D

in the 2017-2019 State budget, particularly with respect to reconstructing freeways in the Region.²⁵

This appendix documents the equitable access evaluation conducted during the 2020 Review and Update of VISION 2050 and includes analysis for both the recommended and fiscally constrained transportation components. It is important to note that, for the 2020 Update, the title of the funded portion of the recommended system, previously referred to as the “Fiscally Constrained Transportation Plan (FCTP),” has been changed to the “Fiscally Constrained Transportation System (FCTS).” Staff changed the title to better make the importation distinction that the portion of the recommended transportation system that can be implemented with reasonably expected revenues does not represent a desired “plan.” Rather, it represents the “system” expected to occur without sufficient funding levels to maintain and improve the transportation system as recommended in VISION 2050.

Based on the results of this evaluation, it was concluded that no area of the Region, including areas with higher-than-average proportions of minority populations and low-income populations, would disproportionately bear the impact of the planned freeway and surface arterial capacity improvements. As the segments of freeway to be widened under either the updated VISION 2050 or the updated FCTS would directly serve areas of minority populations and low-income populations, these populations would benefit from the expected modest improvement in highway accessibility to employment associated with the freeway widenings, with the improvement under the updated VISION 2050 being greater than under the updated FCTS. With respect to public transit, implementing the more than doubling of transit service recommended under the updated VISION 2050 would significantly improve the transit access of minority populations, low-income populations, and people with disabilities to jobs, healthcare, education, and other activities.

However, the 35 percent reduction in transit service and minimal addition of higher-quality transit service under the updated FCTS would result in significantly less access to jobs, healthcare, education, and other daily needs, and an overall reduction in transit service quality when compared to both VISION 2050, and the transit system that exists today. For the 1 in 10 households in the Region without access to an automobile, households that are more likely to be minority or low income than the overall proportion of the Region’s population, mobility and access to jobs and activities within the Region would be limited. Therefore, should the reasonably available and expected funding that dictates what portions of the updated VISION 2050 are included in the updated FCTS remain unchanged, a disparate impact on the Region’s minority populations, low-income populations, and people with disabilities is likely to occur. Given current limitations at the State level on local government revenue generation and on the Wisconsin Department of Transportation’s ability to allocate funds between different programs, the ability for the Region to avoid such a disparate impact is dependent on the State Legislature and Governor providing additional State funding for transit services, or allowing local units of government and transit operators to generate such funds on their own. Not addressing this funding shortage limits access to jobs, education, and other opportunities for households without, or with limited access to, an automobile, perpetuating the Region’s

²⁵ The equitable access evaluation of the VISION 2050 and FCTP transportation components as amended in December 2018 is documented in Appendix C of the report documenting the second amendment of VISION 2050.

racial and economic segregation and the long-standing disparities that are at least partially attributed to that segregation.²⁶

LOCATION AND TRAVEL PATTERNS OF MINORITY POPULATIONS AND LOW-INCOME POPULATIONS IN SOUTHEASTERN WISCONSIN

Maps D.1 through D.7 and Table D.1 show the magnitude and location of the minority populations in the Region estimated from data available from the most recent decennial U.S. Census of population, which was conducted in 2010. The magnitude and location of the low-income populations within Southeastern Wisconsin, based upon the 2014-2018 U.S. Census American Community Survey (ACS), are summarized in Table D.2 and shown on Map D.8. The low-income population was defined as families with incomes below 2018 federally defined poverty levels, shown in Table D.3.

Although the automobile is the dominant mode of travel for the Region's minority population, minority residents utilize public transit at a higher percentage relative to other modes of travel than the white population. Based on data from the 2017 National Household Travel Survey (NHTS), the Region's minority population utilizes public transit for more of its travel (6 percent) than the Region's white population (less than 1 percent). Automobile travel is the dominant mode of travel by both the Region's minority population (76 percent) and white population (86 percent). In addition, based on the transit travel survey conducted as part of the Commission's 2011 travel survey for Southeastern Wisconsin, the minority population represents a greater proportion of total transit ridership than it does of total population, as shown in Table D.4.

More robust and detailed data available by county from the year 2014-2018 ACS indicate a similar pattern by race and ethnic group for work trips in Southeastern Wisconsin as for all travel, as shown in Table D.5. As these data only include travel to and from work, they exclude those without employment who are more likely to be among the poorest people in the Region. Nonetheless, the data indicate that, in Milwaukee County, between 4 and 13 percent of the minority population uses public transit to travel to and from work, with the highest proportion (13 percent) by the African-American population. Only about 3 percent of the white population uses public transit for travel to and from work. Similarly, about 13 percent of the low-income population (residing in a family with an income below the poverty level) uses public transit to travel to and from work, compared to 5 percent of the population with higher wages. Regarding automobile use in Milwaukee County, minority populations use the automobile for 80 to 89 percent of their travel to and from work. This compares to 87 percent of the white population. Similarly, about 70 percent of travel by low-income populations to and from work is by automobile, compared to 89 percent for populations of higher income. Data as robust as the 2014-2018 ACS data are not available for modes of travel for non-work trips within Southeastern Wisconsin by race and ethnicity.

²⁶ A summary of the adverse effects of segregation on minority populations and low-income populations in Southeastern Wisconsin, and on the regional economy, can be found in SEWRPC Planning Report No. 54, A Regional Housing Plan for Southeastern Wisconsin: 2035, March 2013, (p. 327).

Map D.1

Concentrations of Black/African American People in the Region: 2010

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF BLACK/AFRICAN AMERICAN PEOPLE EXCEEDS THE REGIONAL AVERAGE OF 15.8 PERCENT BASED ON THE 2010 U.S. CENSUS

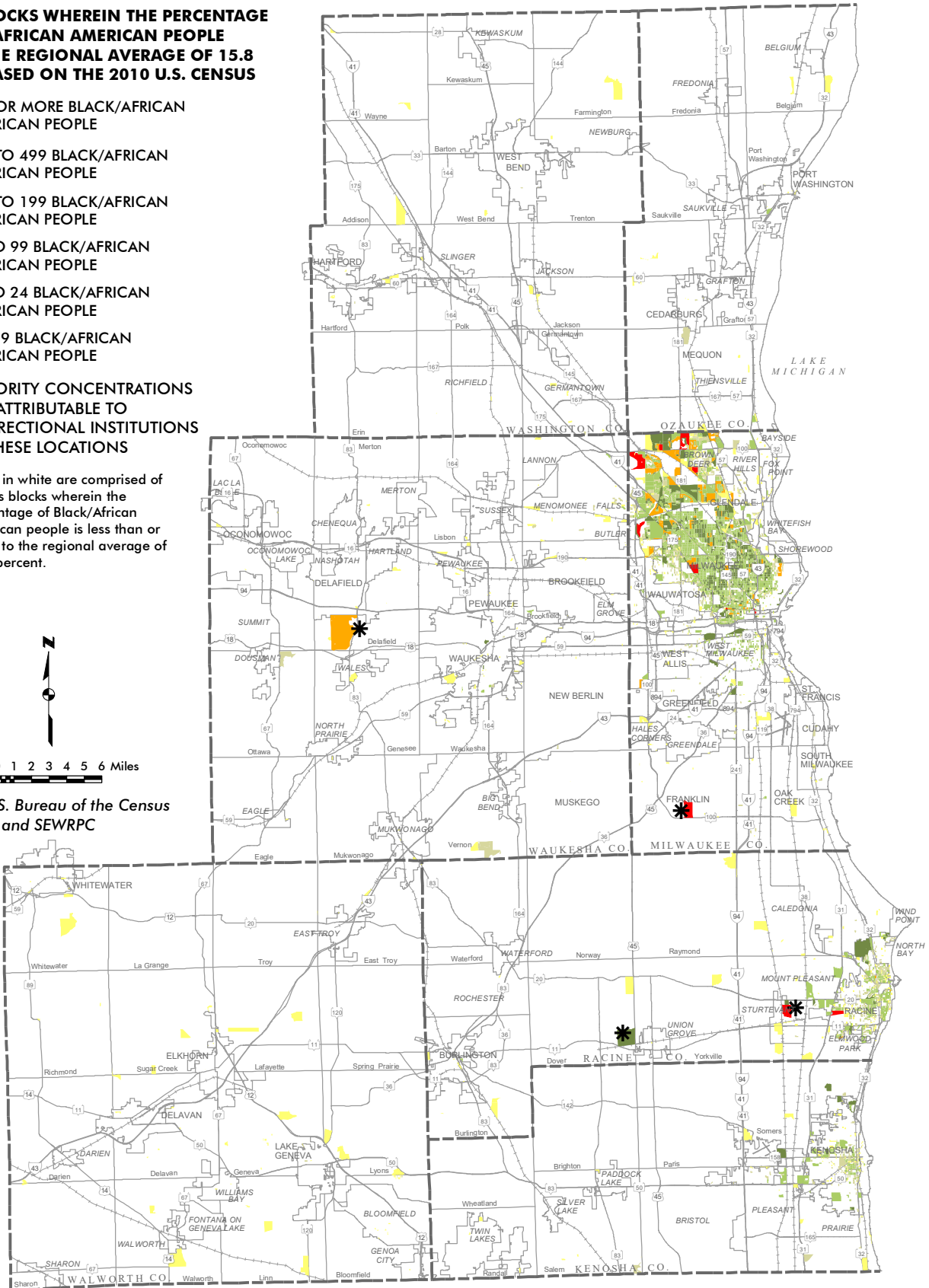
- 500 OR MORE BLACK/AFRICAN AMERICAN PEOPLE
- 200 TO 499 BLACK/AFRICAN AMERICAN PEOPLE
- 100 TO 199 BLACK/AFRICAN AMERICAN PEOPLE
- 25 TO 99 BLACK/AFRICAN AMERICAN PEOPLE
- 10 TO 24 BLACK/AFRICAN AMERICAN PEOPLE
- 1 TO 9 BLACK/AFRICAN AMERICAN PEOPLE
- * MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of Black/African American people is less than or equal to the regional average of 15.8 percent.



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



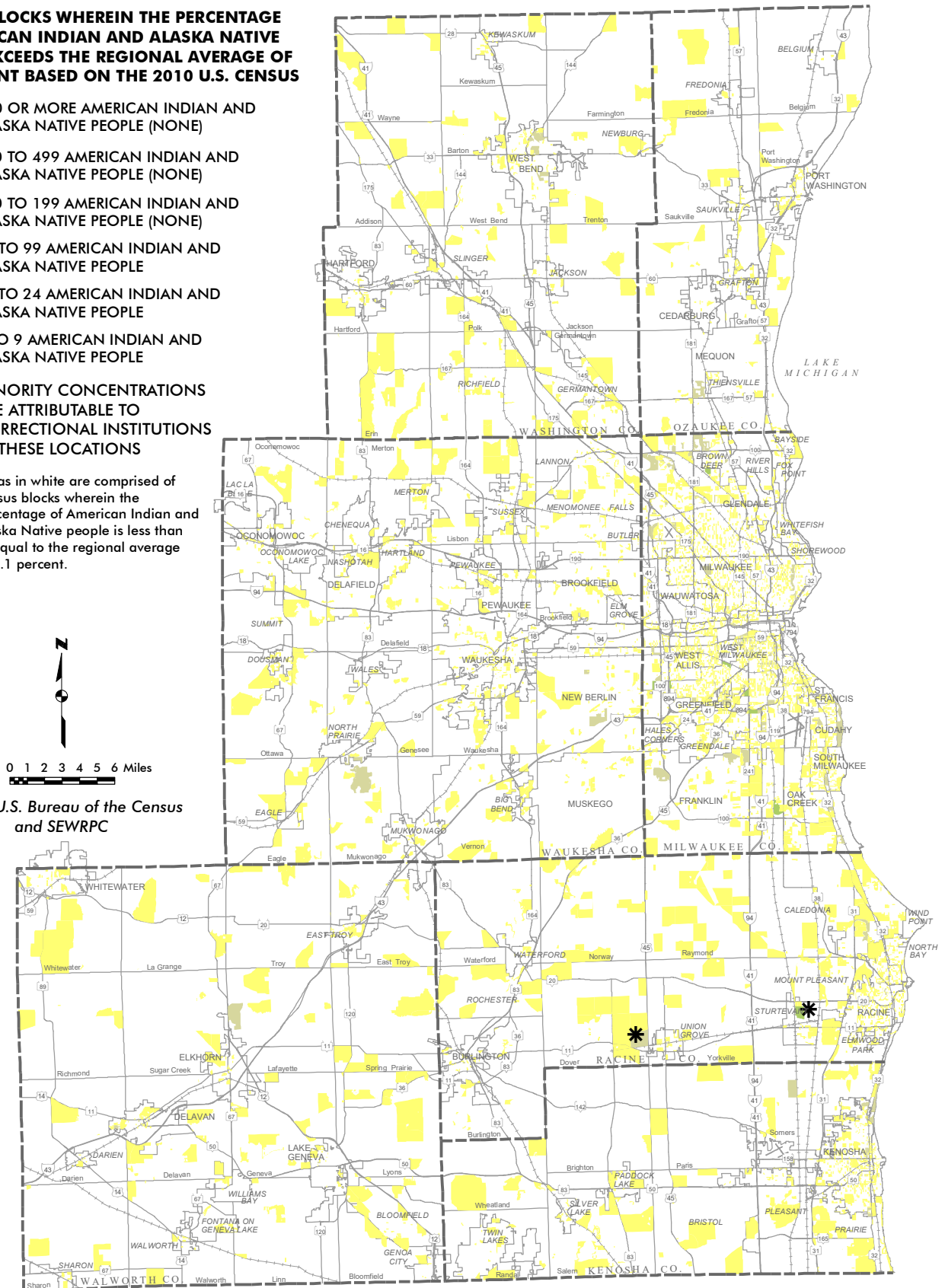
Map D.2

Concentrations of American Indian and Alaska Native People in the Region: 2010

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF AMERICAN INDIAN AND ALASKA NATIVE PEOPLE EXCEEDS THE REGIONAL AVERAGE OF 1.1 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE AMERICAN INDIAN AND ALASKA NATIVE PEOPLE (NONE)
- 200 TO 499 AMERICAN INDIAN AND ALASKA NATIVE PEOPLE (NONE)
- 100 TO 199 AMERICAN INDIAN AND ALASKA NATIVE PEOPLE (NONE)
- 25 TO 99 AMERICAN INDIAN AND ALASKA NATIVE PEOPLE
- 10 TO 24 AMERICAN INDIAN AND ALASKA NATIVE PEOPLE
- 1 TO 9 AMERICAN INDIAN AND ALASKA NATIVE PEOPLE
- * MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of American Indian and Alaska Native people is less than or equal to the regional average of 1.1 percent.



Source: U.S. Bureau of the Census and SEWRPC

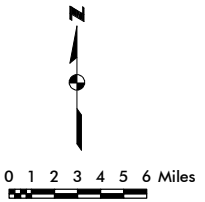
Map D.3

Concentrations of Asian and Pacific Islander People in the Region: 2010

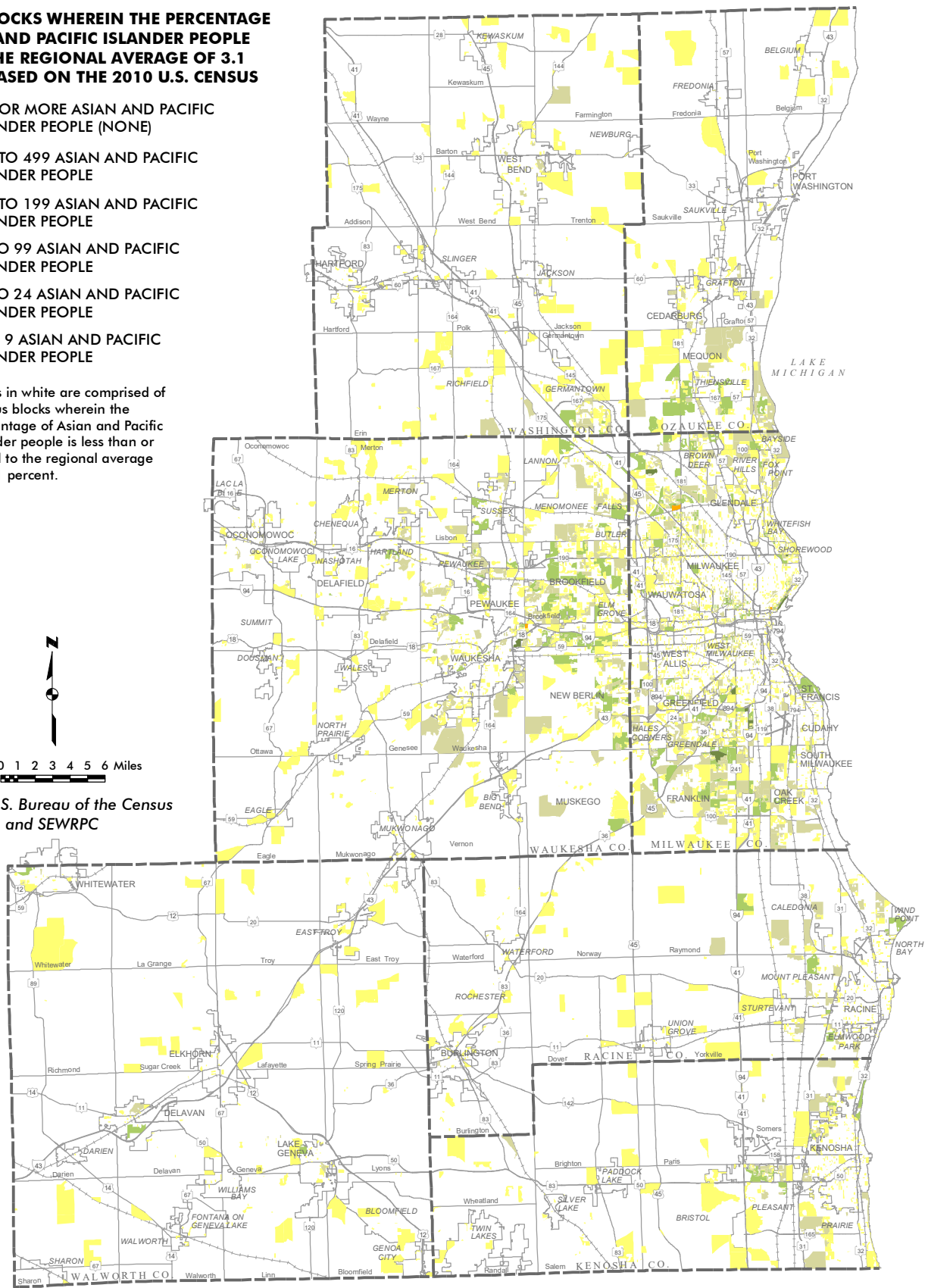
CENSUS BLOCKS WHEREIN THE PERCENTAGE OF ASIAN AND PACIFIC ISLANDER PEOPLE EXCEEDS THE REGIONAL AVERAGE OF 3.1 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE ASIAN AND PACIFIC ISLANDER PEOPLE (NONE)
- 200 TO 499 ASIAN AND PACIFIC ISLANDER PEOPLE
- 100 TO 199 ASIAN AND PACIFIC ISLANDER PEOPLE
- 25 TO 99 ASIAN AND PACIFIC ISLANDER PEOPLE
- 10 TO 24 ASIAN AND PACIFIC ISLANDER PEOPLE
- 1 TO 9 ASIAN AND PACIFIC ISLANDER PEOPLE

Note: Areas in white are comprised of census blocks wherein the percentage of Asian and Pacific Islander people is less than or equal to the regional average of 3.1 percent.



Source: U.S. Bureau of the Census and SEWRPC



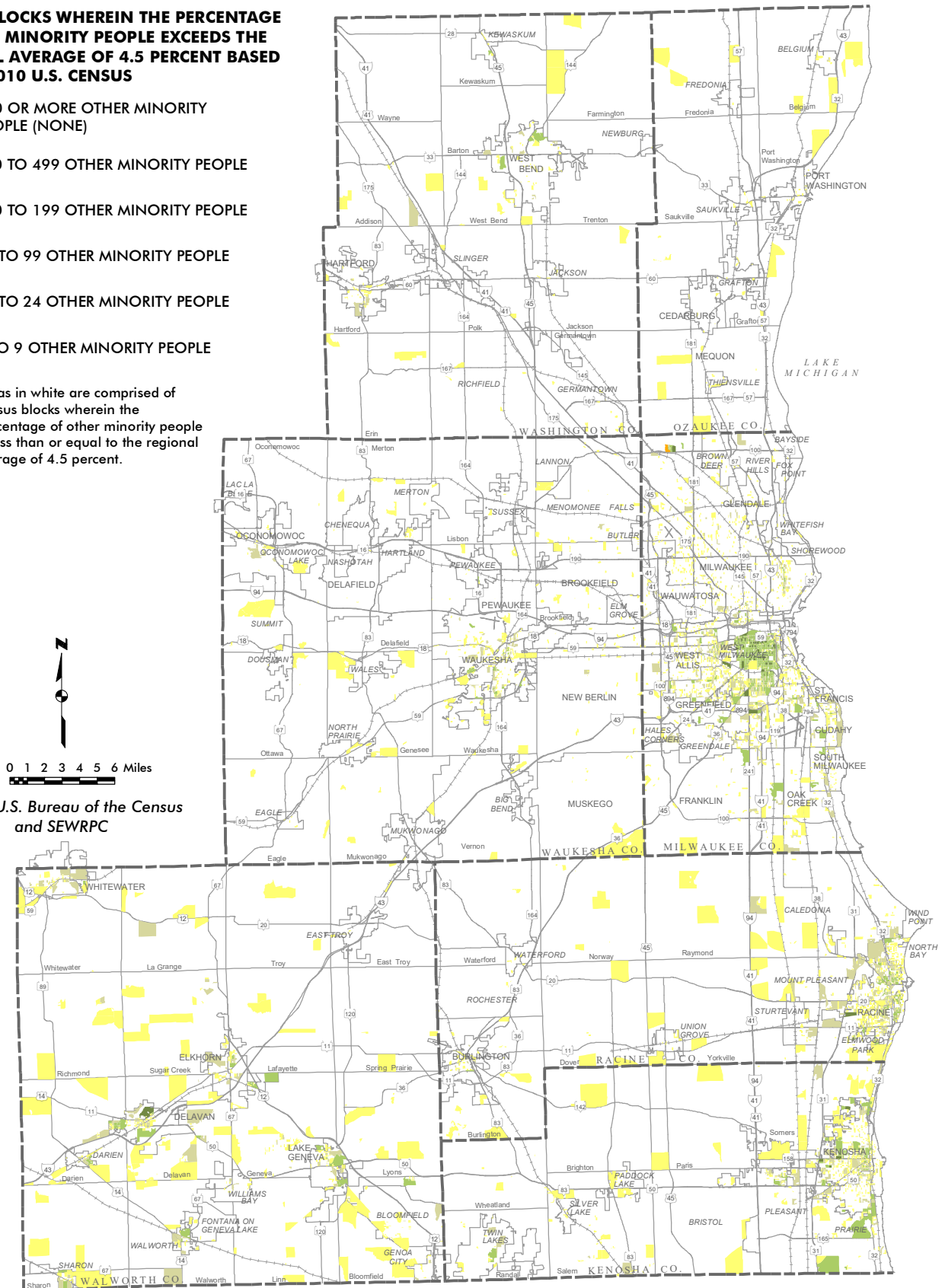
Map D.4

Concentrations of Other Minority People in the Region: 2010

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF OTHER MINORITY PEOPLE EXCEEDS THE REGIONAL AVERAGE OF 4.5 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE OTHER MINORITY PEOPLE (NONE)
- 200 TO 499 OTHER MINORITY PEOPLE
- 100 TO 199 OTHER MINORITY PEOPLE
- 25 TO 99 OTHER MINORITY PEOPLE
- 10 TO 24 OTHER MINORITY PEOPLE
- 1 TO 9 OTHER MINORITY PEOPLE

Note: Areas in white are comprised of census blocks wherein the percentage of other minority people is less than or equal to the regional average of 4.5 percent.



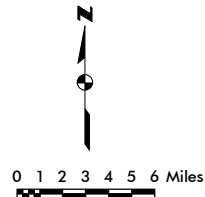
Source: U.S. Bureau of the Census and SEWRPC

Map D.5 Concentrations of Hispanic People in the Region: 2010

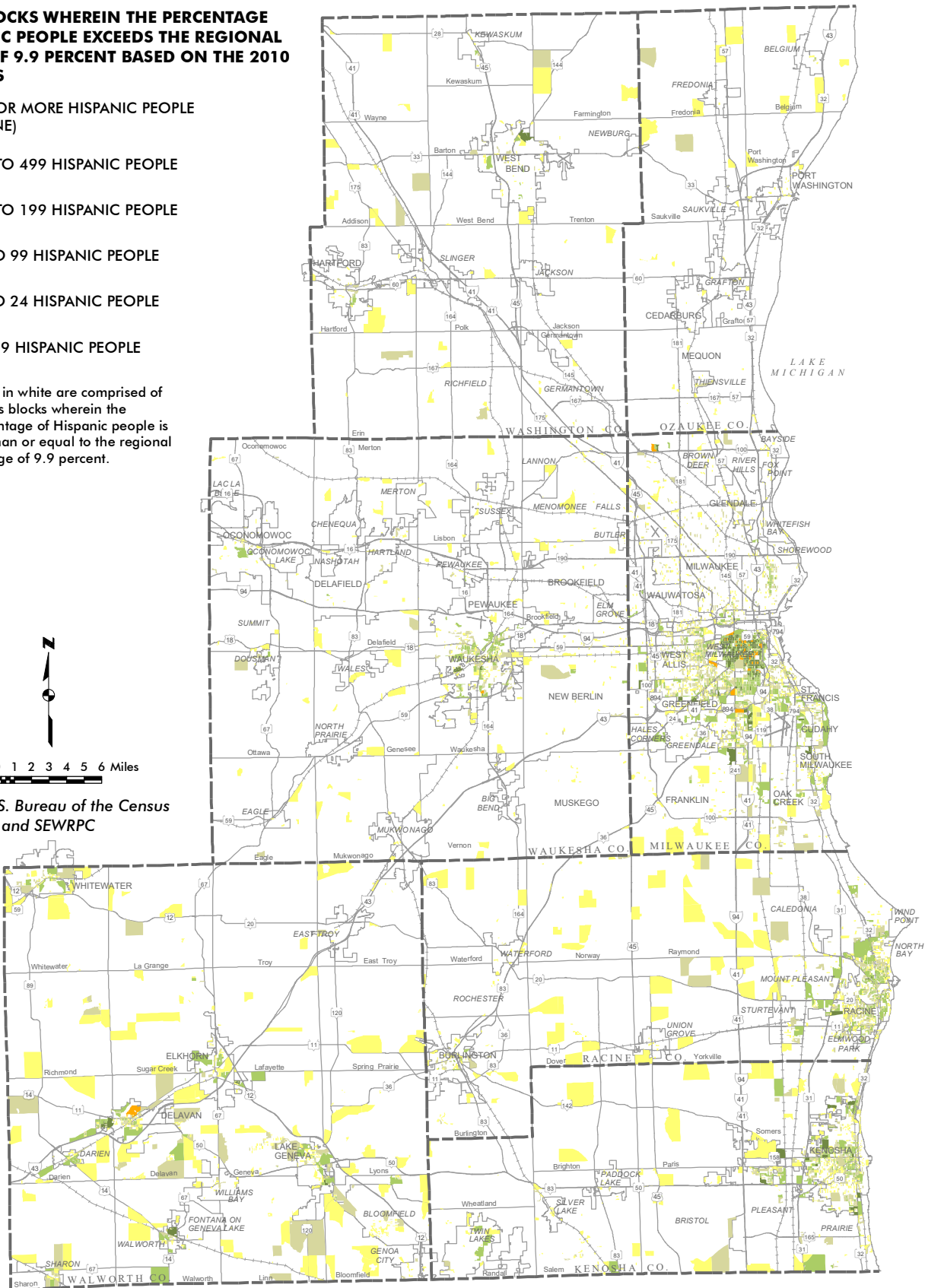
CENSUS BLOCKS WHEREIN THE PERCENTAGE OF HISPANIC PEOPLE EXCEEDS THE REGIONAL AVERAGE OF 9.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE HISPANIC PEOPLE (NONE)
- 200 TO 499 HISPANIC PEOPLE
- 100 TO 199 HISPANIC PEOPLE
- 25 TO 99 HISPANIC PEOPLE
- 10 TO 24 HISPANIC PEOPLE
- 1 TO 9 HISPANIC PEOPLE

Note: Areas in white are comprised of census blocks wherein the percentage of Hispanic people is less than or equal to the regional average of 9.9 percent.



Source: U.S. Bureau of the Census and SEWRPC



Map D.6

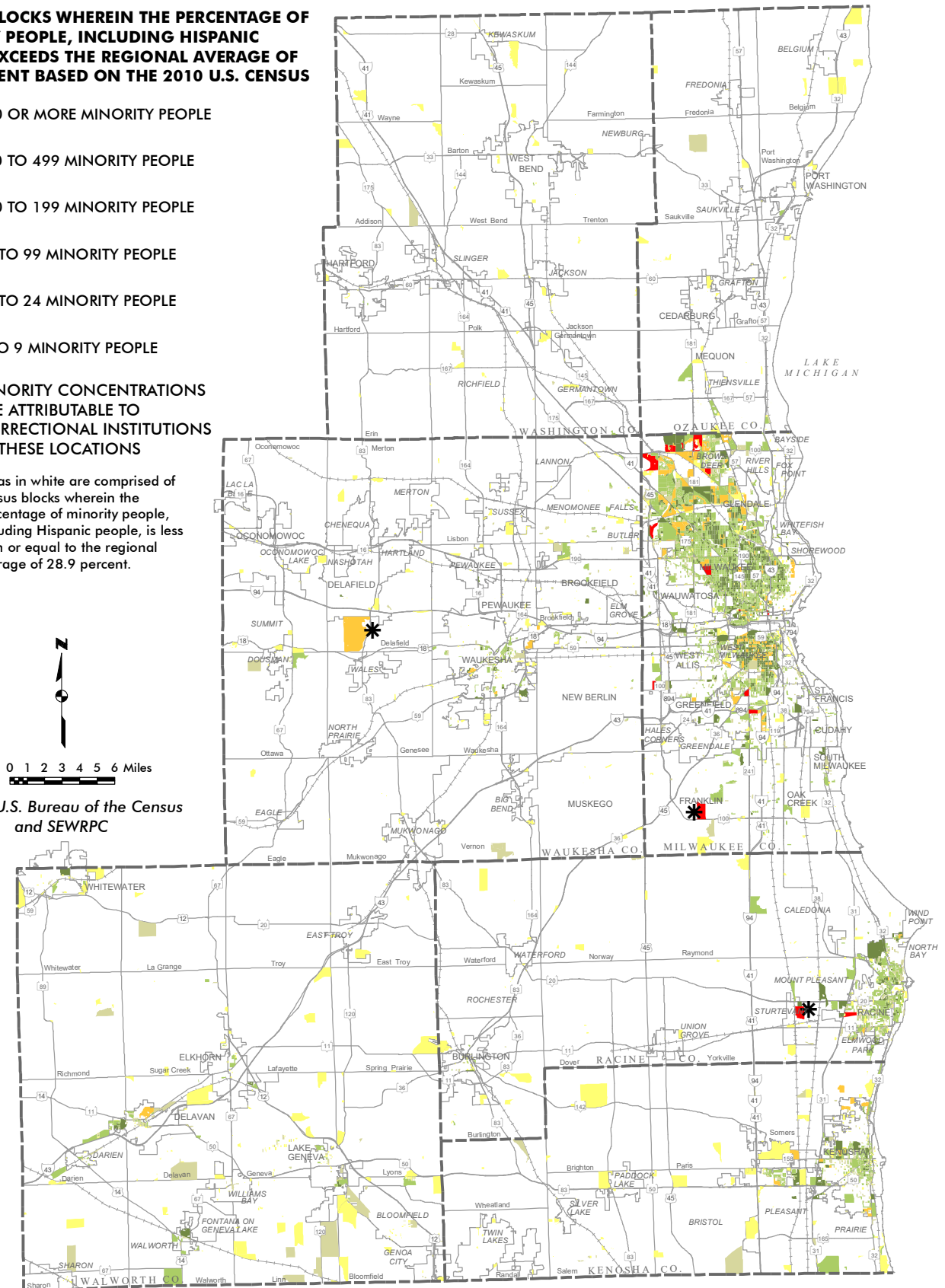
Concentrations of Total Minority Population in the Region: 2010

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.



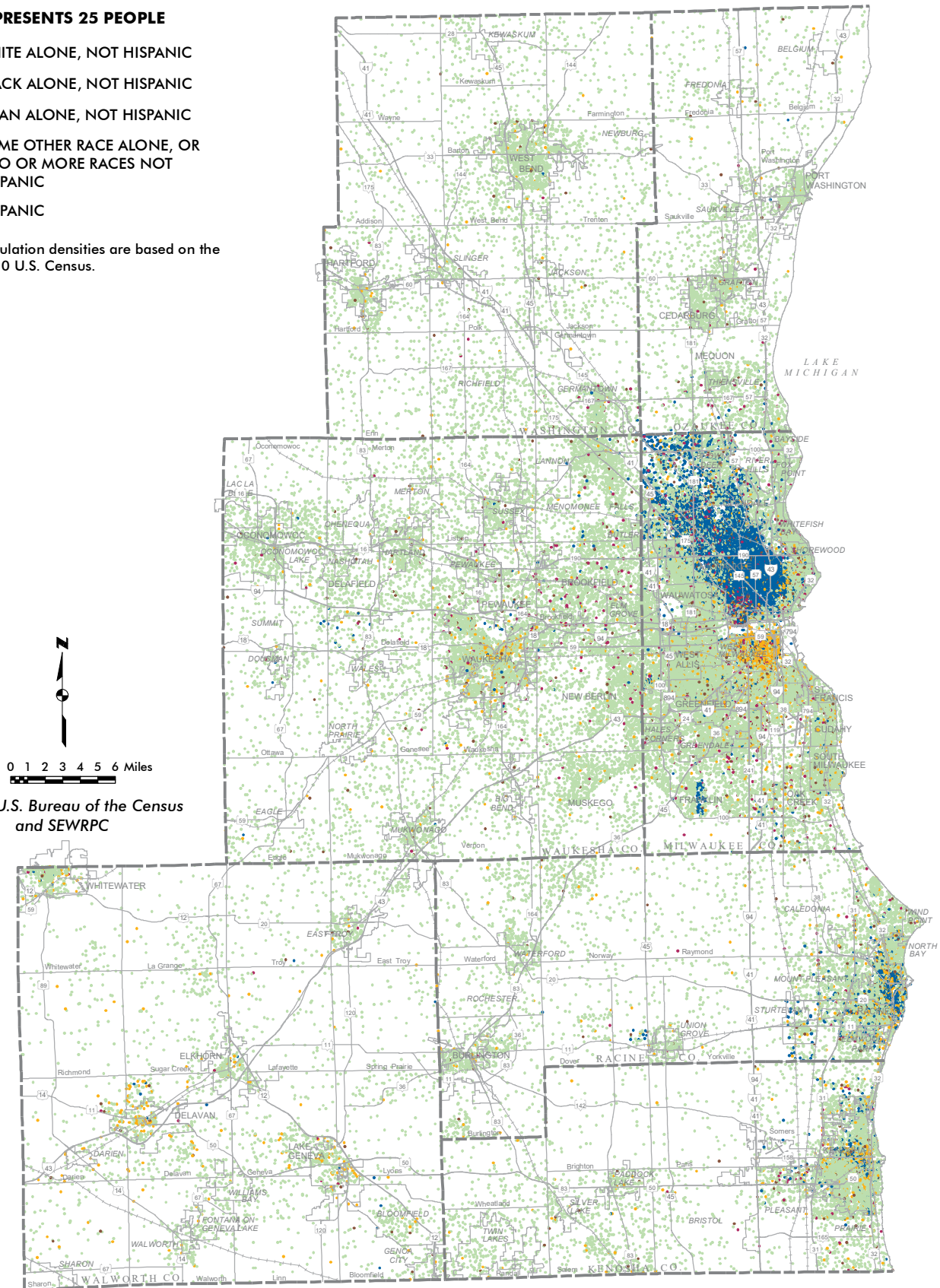
Source: U.S. Bureau of the Census and SEWRPC

Map D.7 Concentrations of Year 2010 Races/Ethnicities

1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

Note: Population densities are based on the 2010 U.S. Census.



Source: U.S. Bureau of the Census
and SEWRPC

Table D.1
Population by Race and Hispanic Ethnicity in the Region by County: 2010

County	White Alone, Non-Hispanic		Minority								Total Population		
			Black/African American		American Indian and Alaska Native		Asian and Pacific Islander		Other Race			Hispanic	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total		Number	Percent of Total
Kenosha	129,892	78.0	13,336	8.0	1,849	1.1	3,549	2.1	9,160	5.5	19,592	11.8	166,426
Milwaukee	514,958	54.3	269,246	28.4	13,729	1.4	38,642	4.1	58,663	6.2	126,039	13.3	947,735
Ozaukee	80,689	93.4	1,518	1.8	467	0.5	1,957	2.3	597	0.7	1,956	2.3	86,395
Racine	145,414	74.4	24,471	12.5	1,806	0.9	2,898	1.5	11,363	5.8	22,546	11.5	195,408
Walworth	88,690	86.8	1,436	1.4	738	0.7	1,215	1.2	5,098	5.0	10,578	10.3	102,228
Washington	124,348	94.3	1,740	1.3	798	0.6	1,889	1.4	1,327	1.0	3,385	2.6	131,887
Waukesha	353,114	90.6	6,528	1.7	2,205	0.6	12,852	3.3	4,955	1.3	16,123	4.1	389,891
Region	1,437,105	71.1	318,275	15.8	21,592	1.1	63,002	3.1	91,163	4.5	200,219	9.9	2,019,970

Note: As part of the 2010 Federal census, individuals could be reported as being of more than one race. In addition, people of Hispanic ethnicity can be of any race or combination of races. The figures in this table indicate the number of people reported as being white alone and non-Hispanic (non-minority) and those of a given minority race or Hispanic ethnicity (as indicated by the column heading), including those who were reported as that race exclusively and those who were reported as that race and one or more other races. Accordingly, the population figures by race and Hispanic ethnicity sum to more than the total population for each county and the Region.

Source: U.S. Bureau of the Census and SEWRPC

Table D.2
Families with Incomes Below the Poverty Level in the Region by County: 2014-2018

County	Families with Incomes Below the Poverty Level		
	Total Families	Number	Percent of Families
Kenosha	41,876	4,027	9.6
Milwaukee	215,024	32,691	15.2
Ozaukee	25,144	866	3.4
Racine	52,243	4,559	8.7
Walworth	26,787	1,801	6.7
Washington	38,089	1,178	3.1
Waukesha	110,394	3,454	3.1
Region	509,557	48,576	9.5

Source: U.S. Bureau of the Census American Community Survey and SEWRPC

IDENTIFYING THE TRANSPORTATION NEEDS OF MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

During the development of the original VISION 2050 plan, staff identified the needs of minority populations and low-income populations, in large part, based on obtaining comments as part of public outreach to minority populations and low-income populations. As part of the extensive public outreach during the initial VISION 2050 process, the Commission partnered with eight community organizations specifically targeted at reaching and engaging minority populations, low-income populations, and people with disabilities.²⁷ Each of these partner organizations hosted five of their own workshops, which corresponded to the five rounds of workshops open to the general public. The participants of the workshops sponsored by the partner organizations were specifically asked to identify their transportation needs. Input at these workshops, including the identification of transportation needs, was documented and considered in developing VISION 2050. Following the initial VISION 2050 process, the Commission continued to

²⁷The eight original partner organizations included: Common Ground, Ethnically Diverse Business Coalition, Hmong American Friendship Association, IndependenceFirst, the Milwaukee Urban League, Southside Organizing Center, Urban Economic Development Association of Wisconsin, and the Urban League of Racine and Kenosha.

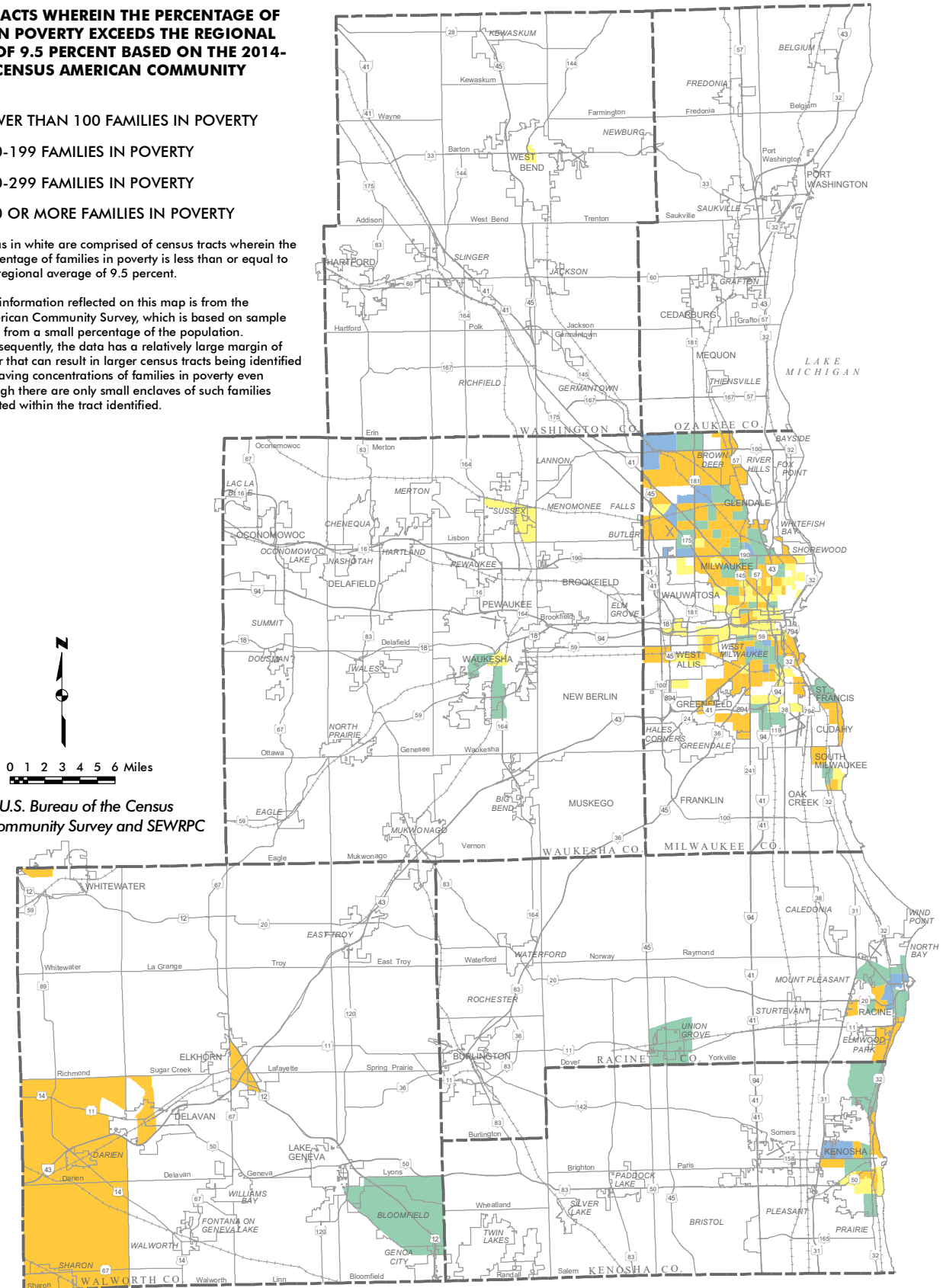
Map D.8 Concentrations of Families in Poverty in the Region: 2014-2018

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC

Table D.3
Poverty Thresholds by Size of Family and Number of Children Under 18 Years of Age: 2010 Average

Size of Family Unit	Related Children Under 18 Years								
	None	One	Two	Three	Four	Five	Six	Seven	Eight or More
One Person (Unrelated Individual)									
Under 65 Years	\$13,064	--	--	--	--	--	--	--	--
65 Years and Over	12,043	--	--	--	--	--	--	--	--
Two People									
Under 65 Years	16,815	\$17,308	--	--	--	--	--	--	--
65 Years and Over	15,178	17,242	--	--	--	--	--	--	--
Three People	19,642	20,212	\$20,231	--	--	--	--	--	--
Four People	25,900	26,324	25,465	\$25,554	--	--	--	--	--
Five People	31,234	31,689	30,718	29,967	\$29,509	--	--	--	--
Six People	35,925	36,068	35,324	34,612	33,553	\$32,925	--	--	--
Seven People	41,336	41,594	40,705	40,085	38,929	37,581	\$36,102	--	--
Eight People	46,231	46,640	45,800	45,064	44,021	42,696	41,317	\$40,967	--
Nine People or More	55,613	55,883	55,140	54,516	53,491	52,082	50,807	50,491	\$48,546

Source: U.S. Bureau of the Census and SEWRPC

Table D.4
Distribution of Employed People by County of Residence, Race, and Mode of Travel to Work: 2014-2018

Race	Mode of Travel	County of Residence						
		Kenosha	Milwaukee	Ozaukee	Racine	Walworth	Washington	Waukesha
White Alone, Non-Hispanic	Drive Alone	85.8	80.4	85.6	86.4	82.4	86.7	87.5
	Carpool	7.3	6.8	5.3	6.4	7.2	6.1	5.4
	Bus	0.9	3.0	0.7	0.7	0.5	0.6	0.5
	Other	2.7	5.5	2.7	2.5	4.9	2.9	1.8
	Work at Home	3.3	4.3	5.7	4.0	5.0	3.7	4.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Black or African American Alone	Drive Alone	74.3	70.7	94.2	71.4	65.3	68.9	67.6
	Carpool	13.4	9.5	5.3	10.3	16.5	13.0	18.1
	Bus	3.6	12.5	0.5	8.6	2.2	0.0	3.3
	Other	7.2	3.8	0.0	6.4	16.0	15.1	3.2
	Work at Home	1.5	3.5	0.0	3.3	0.0	3.0	7.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Asian Alone	Drive Alone	84.2	72.9	78.7	82.9	56.3	75.7	77.6
	Carpool	14.4	13.2	11.0	5.5	35.5	19.8	16.0
	Bus	0.0	4.4	0.0	1.2	0.0	0.0	1.4
	Other	0.0	6.1	3.1	7.2	6.9	2.8	1.3
	Work at Home	1.4	3.4	7.2	3.2	1.3	1.7	3.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Other Race Alone or Two or More Races	Drive Alone	81.1	70.1	73.0	74.0	80.2	86.2	82.4
	Carpool	11.7	16.9	21.1	17.3	11.4	9.4	12.4
	Bus	1.8	5.8	0.0	1.1	0.0	0.5	0.8
	Other	2.1	5.0	2.3	6.3	7.3	1.5	2.2
	Work at Home	3.3	2.2	3.6	1.3	1.1	2.4	2.2
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Hispanic	Drive Alone	82.5	71.9	78.0	76.7	71.6	85.5	77.8
	Carpool	12.7	17.5	13.7	15.7	19.0	5.8	13.8
	Bus	0.7	4.7	0.0	1.8	0.7	0.0	1.5
	Other	3.0	4.0	7.3	3.6	5.2	6.2	4.2
	Work at Home	1.1	1.9	1.0	2.2	3.5	2.5	2.7
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Bureau of the Census American Community Survey and SEWRPC

**Table D.5
Comparison of the Percentages of Minority Populations and Minority Population
Transit Ridership in Milwaukee, Ozaukee, Washington, and Waukesha
Counties, and the Cities of Kenosha, Racine, and Waukesha**

Location of Transit Operations	Year 2010 Percent Minority Population	Year 2011 Percent Minority Transit Ridership
Milwaukee County	46	60
Ozaukee County Commuter Service	7	14
Ozaukee County Shared Ride-Taxi Service	7	10
Washington County Commuter Service	6	7
Washington County Shared-Ride Taxi Service	6	2
Waukesha County	9	13
City of Kenosha	31	58
City of Racine	47	61
City of Waukesha	20	32

Source: U.S. Bureau of the Census and SEWRPC

engage these partner organizations, and added Renew Environmental Public Health Advocates as a ninth partner. During outreach for the 2020 Review and Update of VISION 2050, staff engaged its now nine community partners once again, including holding multiple meetings with the partners during both rounds of meetings for the general public.

The transportation needs identified by participants at the workshops held by the eight community organization partners during the initial VISION 2050 process included expanded and integrated public and private transportation modes; better connections by transit to jobs and other activity centers (including better links between urban and suburban areas); expanded bus routes and hours of service; more transit options and services for seniors and people with disabilities; an expanded transit system to include more streetcar, commuter, and rapid transit service; improved roadway maintenance; and better bicycle and pedestrian accommodations. Comments received were mixed with respect to capacity expansion of the arterial system, with most comments expressing opposition to widening existing arterials and adding new arterial facilities, but some comments expressing support for capacity expansion to improve access within or between communities. Comments received during the 2020 Review and Update of VISION 2050 generally affirmed the needs identified during the initial VISION 2050 process, in particular needs associated with improving public transit services. Notable additional needs identified during the 2020 Update included support for providing additional funding for public transit and the transportation system as a whole and for identifying ways to address reckless driving and excessive vehicular speeds on roadways.

ARTERIAL STREETS AND HIGHWAYS ELEMENT OF UPDATED VISION 2050 AND FCTS

Updated VISION 2050

The arterial street and highway capacity improvements under the updated VISION 2050 are shown on Map D.9. These improvements were modestly updated as part of the 2020 Update to include removal of a planned new arterial²⁸ and to reflect implementation that had occurred following the

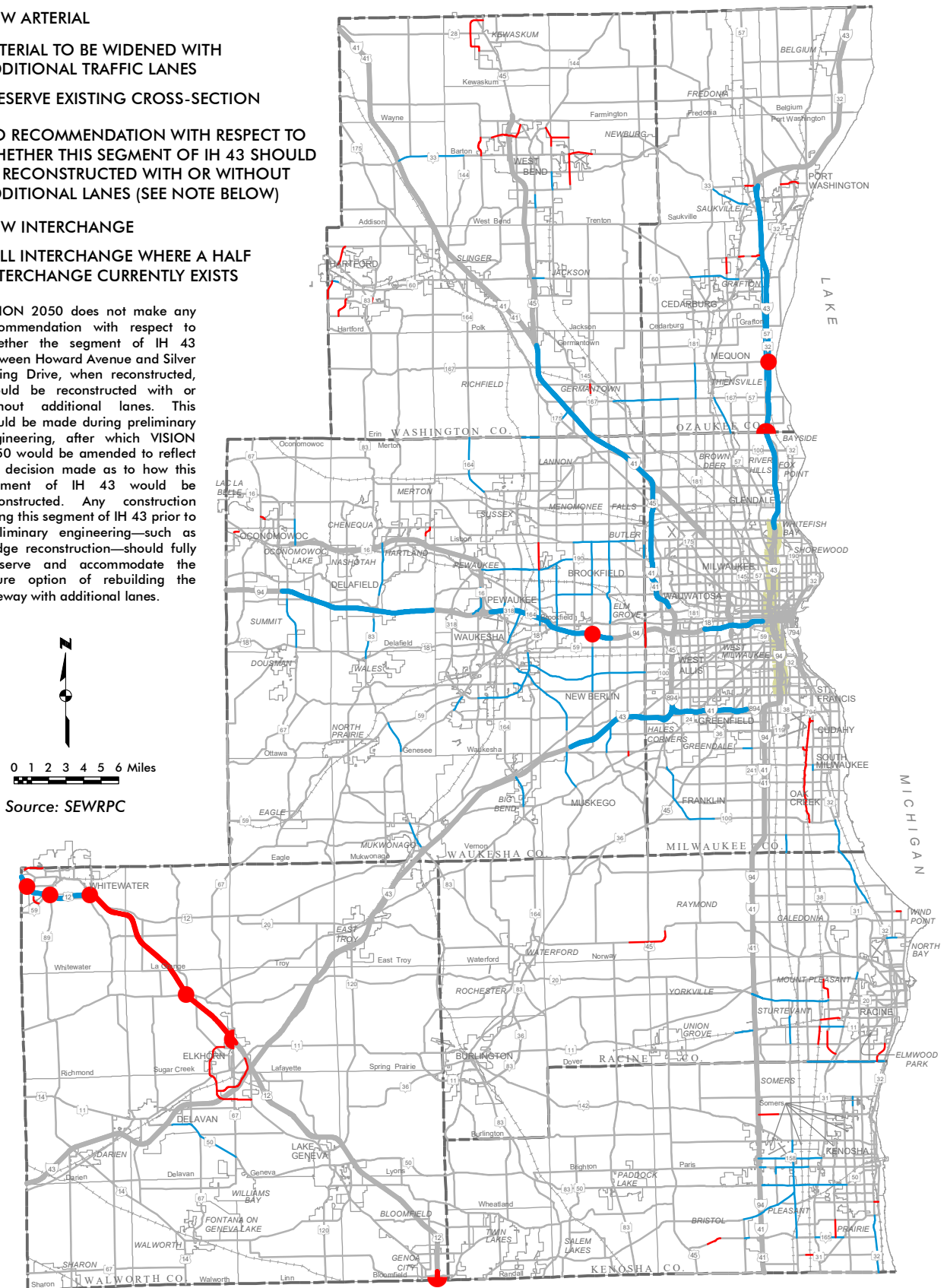
²⁸ Based on a request by the Washington County Board of Supervisors to remove the planned northern reliever route from VISION 2050, the previously planned realignment of Arthur Road between a point west of Bramble Wood Drive and Kettle Moraine Road was removed as part of the 2020 Review and Update of VISION 2050.

Map D.9

Arterial Street and Highway Element: VISION 2050 as Updated

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NO RECOMMENDATION WITH RESPECT TO WHETHER THIS SEGMENT OF IH 43 SHOULD BE RECONSTRUCTED WITH OR WITHOUT ADDITIONAL LANES (SEE NOTE BELOW)
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS

Note: VISION 2050 does not make any recommendation with respect to whether the segment of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional lanes. This would be made during preliminary engineering, after which VISION 2050 would be amended to reflect the decision made as to how this segment of IH 43 would be reconstructed. Any construction along this segment of IH 43 prior to preliminary engineering—such as bridge reconstruction—should fully preserve and accommodate the future option of rebuilding the freeway with additional lanes.



original adoption of VISION 2050. The planned arterial street and highway system under VISION 2050 totals 3,669 miles. Approximately 92 percent, or 3,371 of these miles, are recommended to be resurfaced and reconstructed to their existing traffic carrying capacity. Approximately 6 percent, or 233 of these miles, are recommended for capacity expansion through widening to provide additional through traffic lanes. Approximately 2 percent, or 65 miles, are recommended for capacity expansion through the construction of new arterial facilities. VISION 2050 recommends this planned capacity expansion to address the residual congestion that may not be alleviated recommended land use, public transit, bicycle and pedestrian, systems management, and demand management measures. In addition, many of the recommended new arterial facilities are recommended to provide a grid of arterial streets and highways at the appropriate spacing as the planned urban areas of the Region develop to the year 2050.

The updated VISION 2050 does not make any recommendation with respect to whether the remaining 10.0 route-miles of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional traffic lanes. The plan recommends that preliminary engineering conducted for the reconstruction of this segment of IH 43 should include the consideration of alternatives for rebuilding the freeway with additional lanes and rebuilding it with the existing number of lanes. The decision as to how this segment of IH 43 would be reconstructed would be made by the Wisconsin Department of Transportation (WisDOT) through preliminary engineering and environmental impact study. During preliminary engineering, WisDOT would consider and evaluate a number of alternatives, including rebuilding as is, various options for rebuilding to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how this segment of IH 43 freeway would be reconstructed. Following the conclusion of the preliminary engineering for the reconstruction, VISION 2050 and the FCTS—should funding be available—would be amended to reflect the decision made as to how IH 43 between Howard Avenue and Silver Spring Drive would be reconstructed.

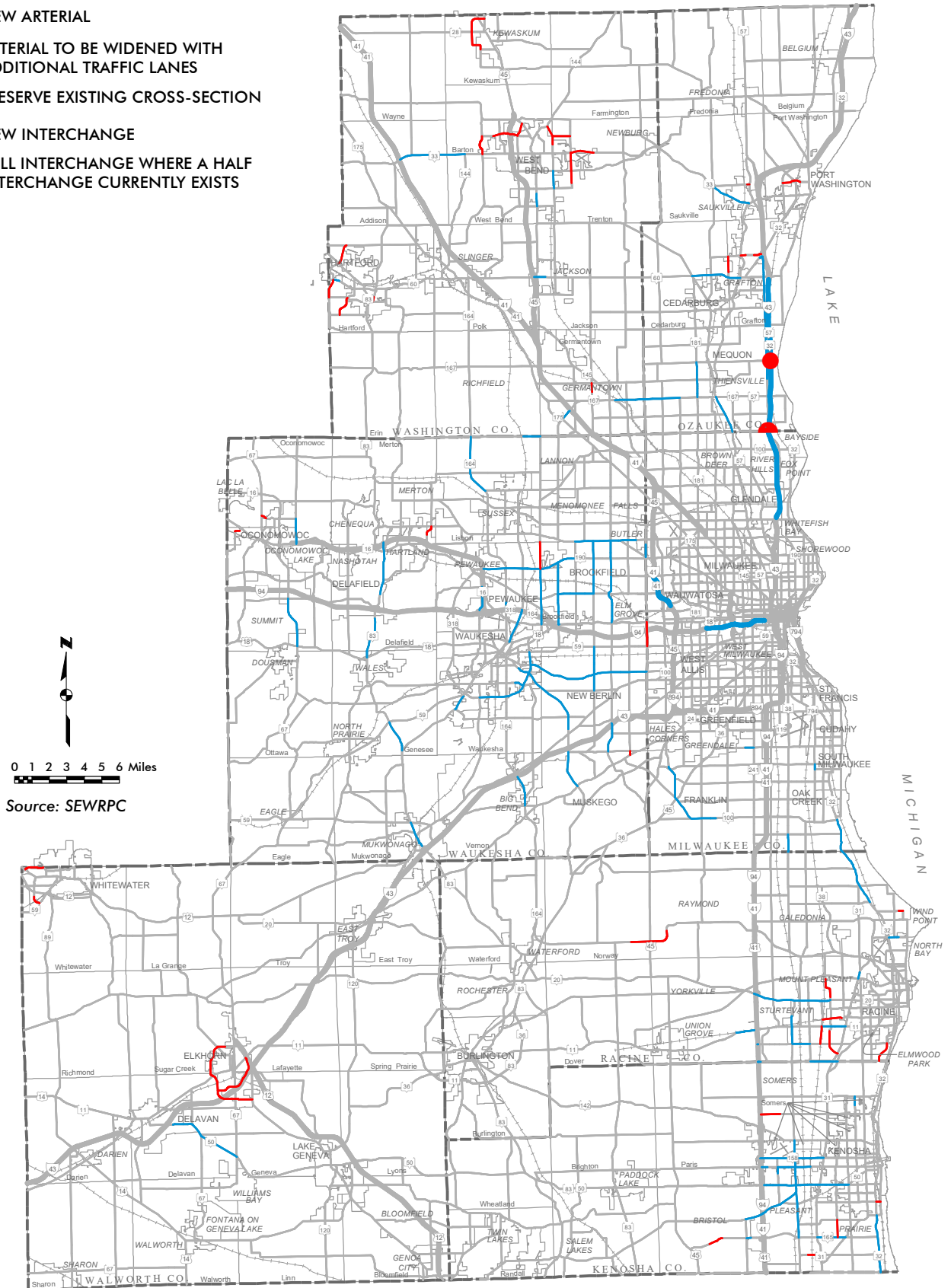
Updated FCTS

The arterial street and highway capacity improvements under the updated FCTS are shown on Map D.10. The updated FCTS does not include reconstructing the remaining portions of the freeway system recommended in the updated VISION 2050, with the exception of the reconstructions of IH 94 between 70th Street and 16th Street, the north leg of the Zoo Interchange, and IH 43 between Silver Spring Drive and STH 60. Thus, the updated FCTS does not include the reconstruction of IH 43 between Silver Spring Avenue and Howard Avenue, in addition to many other segments of the freeway system. In addition, the updated FCTS does not include the planned extension of the USH 12 freeway between the Cities of Elkhorn and Whitewater.

With respect to surface arterials under the updated FCTS, approximately half of the total miles of arterial roadways recommended for reconstruction in VISION 2050 would instead be rehabilitated—extending the overall life of the roadway, but likely resulting in a reduction in long-term pavement quality. The updated FCTS includes all of the surface arterial capacity expansion recommended in the updated VISION 2050, with the exception of the planned extension of the Lake Parkway between Edgerton Avenue and STH 100 in Milwaukee County and the extension of Cold Springs Road between CTH O and IH 43 in Ozaukee County.

Map D.10 Fiscally Constrained Arterial Street and Highway System as Updated

- NEW ARTERIAL
- ARTERIAL TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW INTERCHANGE
- ◐ FULL INTERCHANGE WHERE A HALF INTERCHANGE CURRENTLY EXISTS



Approximately 94 percent, or 3,426 of the total 3,650 miles, of the expected year 2050 arterial street and highway system would be resurfaced or reconstructed to their same capacity under the updated FCTS. Approximately 179 miles, or 5 percent of the total expected year 2050 arterial system, would be widened to provide additional through traffic lanes as part of their reconstruction. The remaining 46 miles, or about 1 percent of the total expected year 2050 arterial system, would be new arterial roadways.

Potential Funding Sources for Updated VISION 2050

The updated VISION 2050 identifies potential funding sources that, should they be utilized, could potentially permit the funding of all or portions of the VISION 2050 highway recommendations that were not included in the updated FCTS. These sources could include increasing the motor fuel tax, sales tax, or registration fees; establishing tolls on the freeway system; creating a highway use fee that charges a one-time sales tax on new vehicle purchases; and/or creating a mileage-based registration fee. Other potential funding could involve the State allocating more funding in the biennial budget for freeway reconstruction. Implementing these funding measures would require action by the State Legislature and Governor. In the case of tolling, its full implementation would require action by the U.S. Congress and President to be able to toll on the freeway system.

PUBLIC TRANSIT ELEMENT OF UPDATED VISION 2050 AND FCTS

Updated VISION 2050

The transit system under the updated VISION 2050 is shown on Map D.11. The public transit element of VISION 2050 recommends a significant improvement and expansion of public transit in Southeastern Wisconsin, including eight rapid transit lines; four commuter rail lines; and significantly expanded local bus, express bus, commuter bus, and shared-ride taxi and other flexible transit services. Implementing these recommendations would be expected to more than double transit service from 4,870 revenue vehicle-hours of service on an average weekday in 2018 to 10,350 vehicle-hours of service in 2050.

Updated FCTS







Due to the expected funding gap between the costs of constructing and operating the transit system recommended under the updated VISION 2050 and the existing and reasonably expected available revenues (including an increase in transit fares at the rate of inflation) to implement the plan, transit service under the updated FCTS would be expected to decline in the Region by about 35 percent, from 4,870 revenue vehicle-hours of service on an average weekday in 2018 to 3,190 vehicle-hours of service in 2050. The expected transit service decline would likely result in a smaller transit service area and a decline in the frequency of service. The only improvement or expansion in transit service under the updated FCTS is the East-West Bus Rapid Transit (BRT) project between downtown Milwaukee and the Regional Medical Center and the lakefront and 4th Street extensions of the Milwaukee Streetcar. The transit system expected under the updated FCTS is shown on Map D.12.

Potential Funding Sources for Updated VISION 2050




The updated VISION 2050 identifies potential funding sources, such as local dedicated transit funding and a renewal of adequate annual State financial assistance, needed to fully fund the plan. Implementing these funding measures would require action by the State Legislature and Governor. Additionally, transit operators could secure funding outside of traditional revenue streams

Map D.11 Public Transit Element: VISION 2050 as Updated

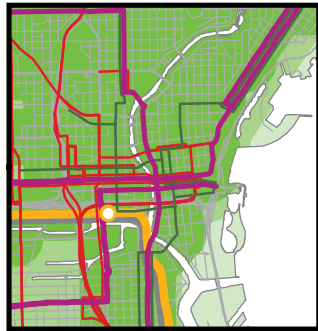
TRANSIT SERVICES

-  RAPID TRANSIT LINE
-  EXPRESS BUS ROUTE
-  COMMUTER RAIL LINE & STATION
-  COMMUTER BUS ROUTE & PARK-RIDE
-  INTERCITY RAIL
-  STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

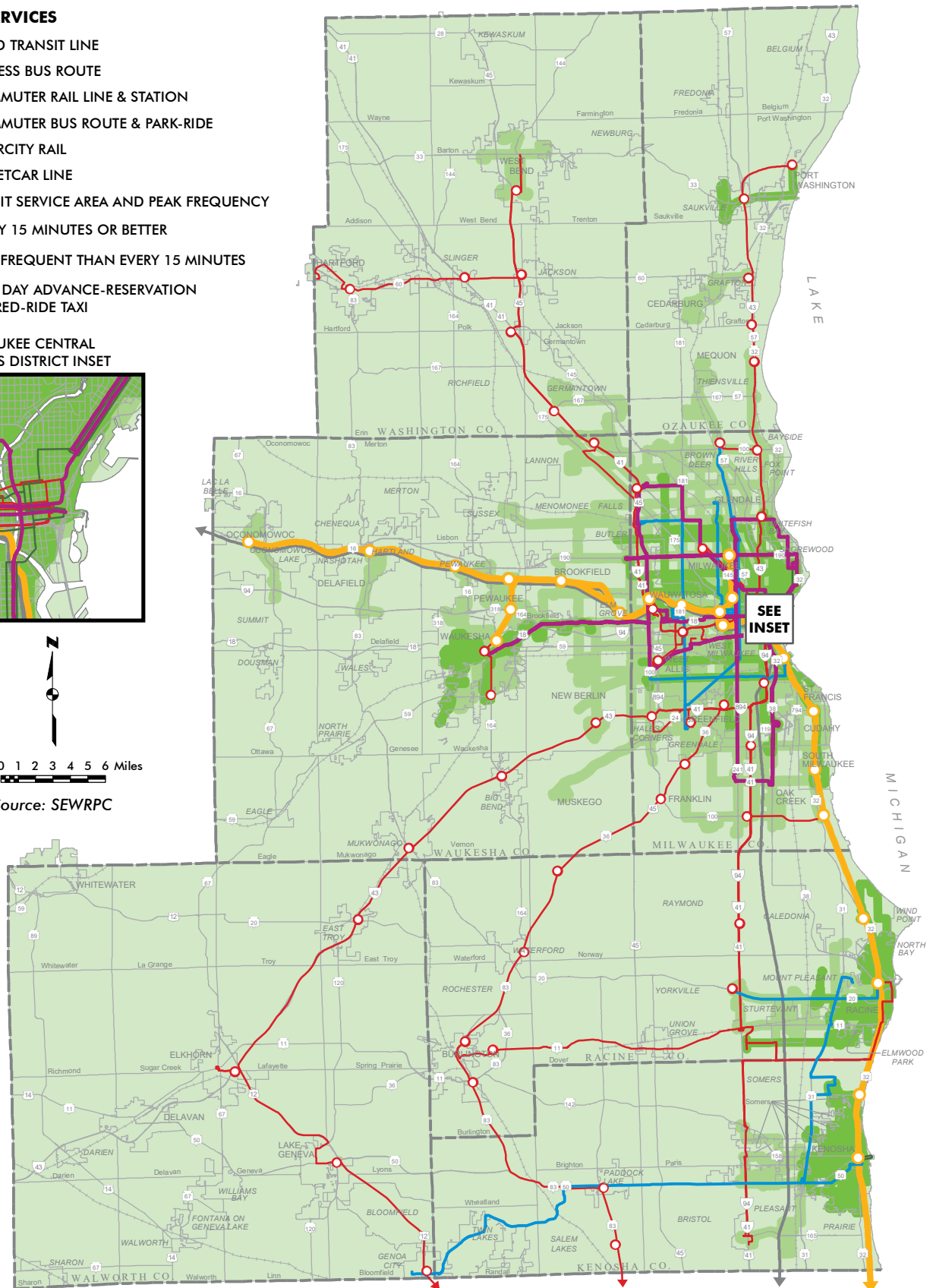
-  EVERY 15 MINUTES OR BETTER
-  LESS FREQUENT THAN EVERY 15 MINUTES
-  ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET









0 1 2 3 4 5 6 Miles

Source: SEWRPC






Map D.12 Fiscally Constrained Transit Services as Updated

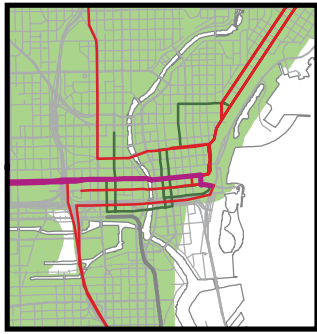
TRANSIT SERVICES

-  RAPID TRANSIT LINE
-  EXPRESS BUS ROUTE (NONE)
-  COMMUTER RAIL LINE & STATION
-  COMMUTER BUS ROUTE & PARK-RIDE
-  INTERCITY RAIL
-  STREETCAR LINE

LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

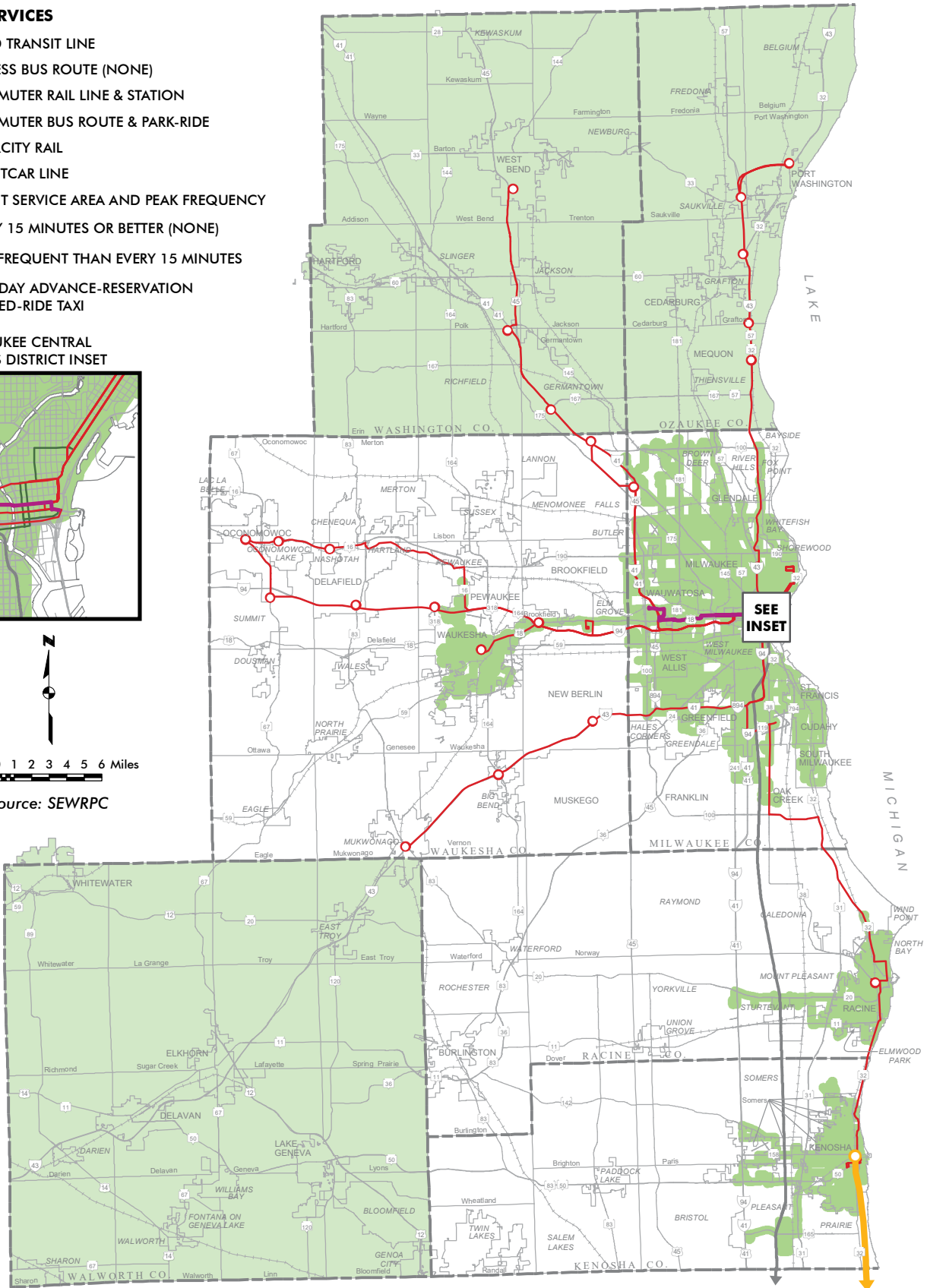
-  EVERY 15 MINUTES OR BETTER (NONE)
-  LESS FREQUENT THAN EVERY 15 MINUTES
-  ONE DAY ADVANCE-RESERVATION SHARED-RIDE TAXI

MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC



for public transit, similar to the initial Milwaukee Streetcar lines. Should any additional transit capital and operating funding become available, the FCTS would be amended to include the resulting increased level of transit service.

LEVEL OF ACCESSIBILITY TO JOBS AND ACTIVITY CENTERS FOR MINORITY POPULATIONS AND LOW-INCOME POPULATIONS BY MODE

The updated VISION 2050 and FCTS were evaluated based on their ability for existing minority populations and low-income²⁹ populations to reach jobs and other activity centers, such as retail centers, major parks, public technical colleges/universities, health care facilities, grocery stores, the Milwaukee Regional Medical Center (MRMC), and Milwaukee Mitchell International Airport. In addition, this evaluation analyzes the ability of families with incomes less than twice the poverty level and people with disabilities to reach jobs and other destinations using transit. The following sections describe the results of these analyses to determine the accessibility by minority populations and low-income populations to jobs and other activities by automobile and transit under the updated VISION 2050 and FCTS.

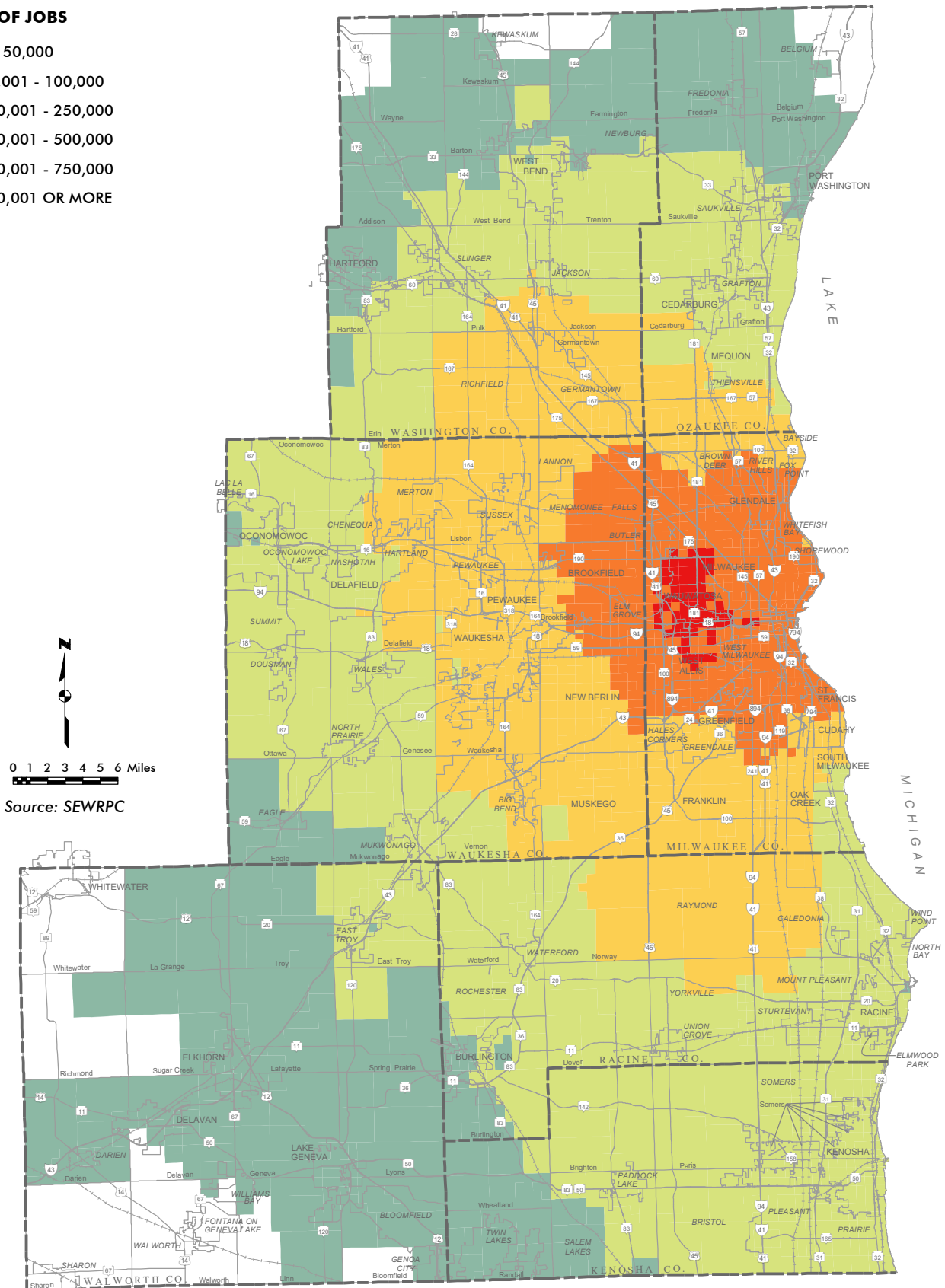
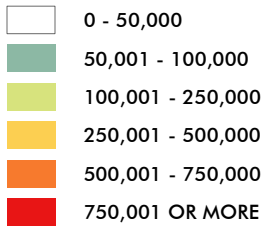
- **Driving Accessibility to Jobs and Other Activities:** Automobile travel is the dominant mode of travel by both the Southeastern Wisconsin minority population (76 percent) and white population (86 percent). In Milwaukee County, minority populations use the automobile for 80 to 89 percent of their travel to and from work (depending on race or ethnicity), compared to 87 percent of the white population. Similarly, in Milwaukee County about 70 percent of travel by low-income populations to and from work is by automobile, compared to 89 percent for populations of higher income. More robust and detailed data available by county from the year 2014-2018 ACS indicate a similar pattern by race and ethnic group for work trips in Southeastern Wisconsin as for all travel. However, as these data only include travel to and from work, they exclude those without employment who are more likely to be among the poorest people in the Region. Data as robust as the 2014-2018 ACS data are not available for modes of travel for non-work trips within Southeastern Wisconsin by race and ethnicity. Given that automobile travel is the dominant mode, improvements in accessibility by automobile to jobs and other activities would likely benefit a significant proportion of minority populations and low-income populations. The Region would generally be able to modestly improve accessibility via automobile with implementation of the highway improvements—new roadways and highway widening—under both the updated VISION 2050 and FCTS. Should these improvements not be implemented, access to jobs and other activities via automobile would be expected to decline for the Region’s residents, particularly residents in Milwaukee County, including for minority populations and low-income populations.

The number of jobs accessible within 30 minutes by automobile under existing conditions, the updated VISION 2050, and the updated FCTS are shown on Maps D.13 through D.15. These maps were compared to areas of existing concentrations of minority populations

²⁹ For purposes of this evaluation, a low-income person is defined as a person residing in a household with an income level at or below the poverty level (about \$25,701 for a family of four in 2010).

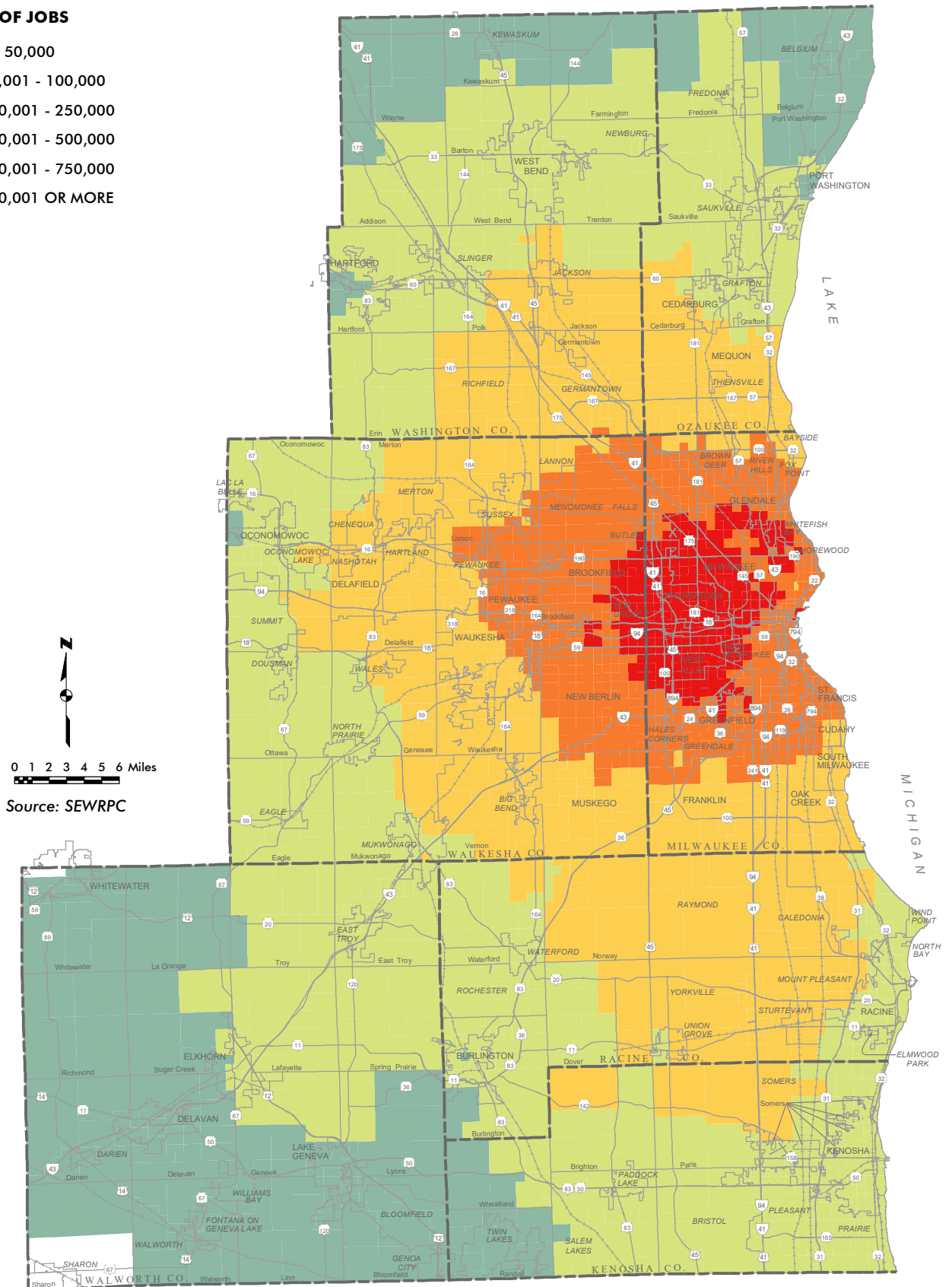
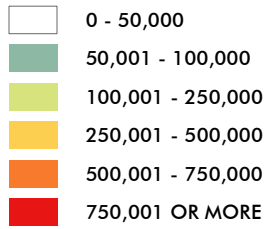
Map D.13 Jobs Accessible Within 30 Minutes by Automobile: Existing

NUMBER OF JOBS



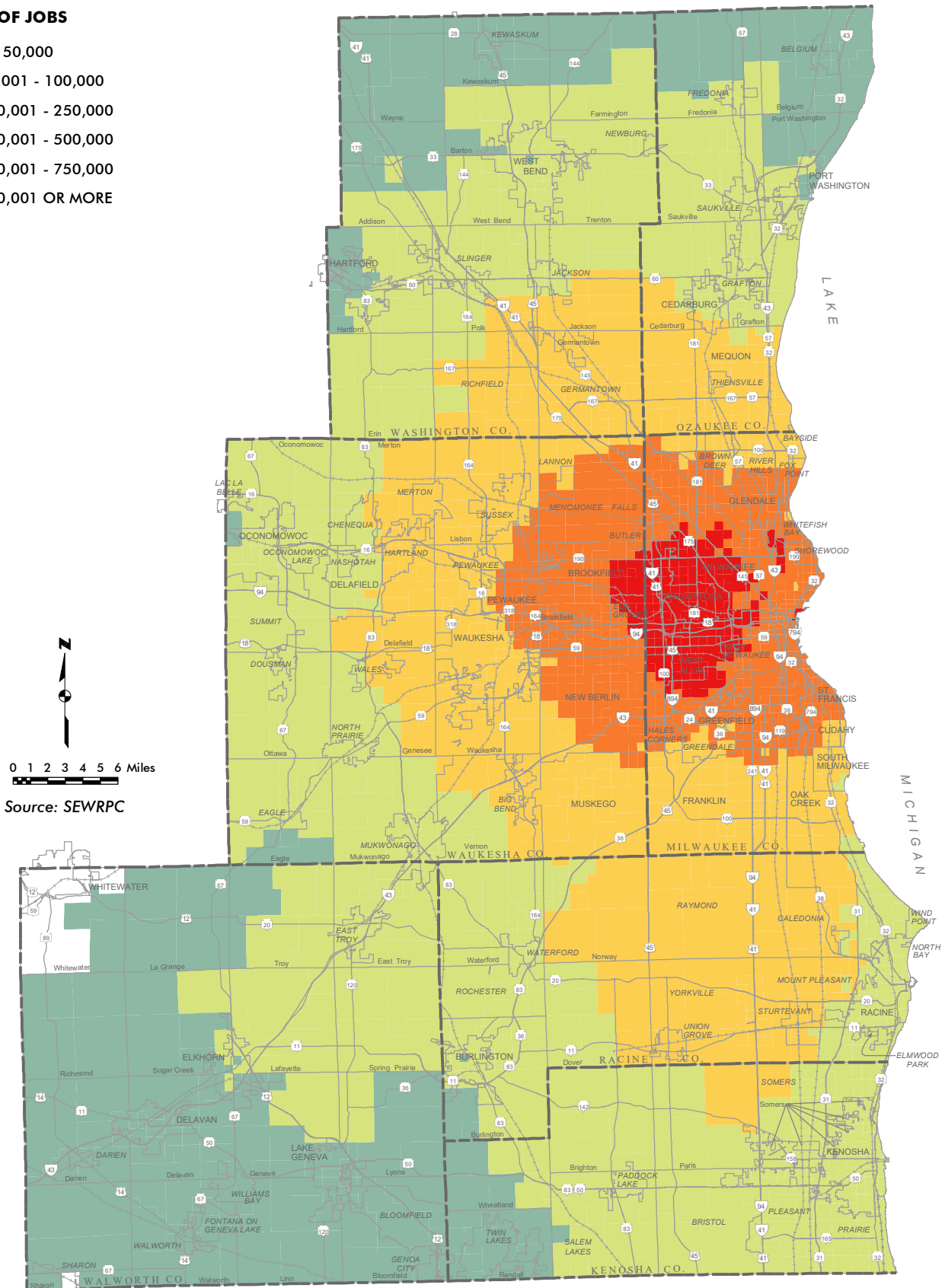
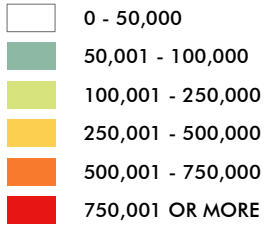
Map D.14 Jobs Accessible Within 30 Minutes by Automobile: VISION 2050

NUMBER OF JOBS



Map D.15 Jobs Accessible Within 30 Minutes by Automobile: FCTS

NUMBER OF JOBS



and low-income populations (as shown on Maps D.6 and D.8). The highway improvements under the updated VISION 2050 and FCTS would modestly improve access to jobs by automobile for areas of concentrations of minority populations and low-income populations. As shown in Table D.6, it is projected that the existing minority population with access to at least 500,000 jobs by automobile would increase from about 70 percent to about 74 and 72 percent under the updated VISION 2050 and FCTS, respectively, with the updated VISION 2050 providing access for slightly more minority people (429,800 people) than the updated FCTS (418,100 people). Similarly, the existing families in poverty with access to at least 500,000 jobs by automobile would increase from about 63 percent to about 66 and 65 percent under the updated VISION 2050 and FCTS, respectively, with the updated VISION 2050 providing access for slightly more families in poverty (32,200 families) than the updated FCTS (31,500 families). Under both the updated VISION 2050 and FCTS, a larger proportion of the Region's minority population than the proportion of the Region's non-minority population would have access to 500,000 or more, 250,000 or more, and 100,000 or more jobs within 30 minutes by automobile. The same is true for families in poverty compared to families not in poverty.

The number of lower-wage jobs accessible within 30 minutes by automobile under existing conditions, the updated VISION 2050, and the updated FCTS are shown on Maps D.16 through D.18. Lower-wage jobs are estimated to represent about 32 percent of total jobs. These maps were compared to areas of existing concentrations of minority populations and low-income populations (as shown on Maps D.6 and D.8). The highway improvements under the updated VISION 2050 and FCTS would improve access to jobs for areas of existing concentrations of minority populations and low-income populations. As shown in Table D.7, it is projected that the existing minority population with access to at least 200,000 lower-wage jobs by automobile would increase from about 70 percent to about 74 and 72 percent under the updated VISION 2050 and FCTS, respectively, with the updated VISION 2050 providing access for slightly more minorities (430,200 people) than the updated FCTS (418,200 people). Similarly, the existing families in poverty with access to at least 200,000 lower-wage jobs by automobile would increase from about 63 percent to about 67 and 65 percent under the updated VISION 2050 and FCTS, respectively, with the updated VISION 2050 providing access for slightly more families in poverty (32,300 families) than the updated FCTS (31,500 families). Under both the updated VISION 2050 and the updated FCTS, a larger proportion of the Region's minority population than the proportion of the Region's non-minority population would have access to 200,000 or more, 100,000 or more, and 50,000 or more lower-wage jobs within 30 minutes by automobile. The same is true for families in poverty compared to families not in poverty.

As shown in Table D.8, nearly all (about 90 to 100 percent) of the existing minority population and families in poverty in the Region would have reasonable access by automobile to the activity centers under both the updated VISION 2050 and FCTS, with the updated FCTS providing slightly less access than the updated VISION 2050.

Table D.6
Access to Jobs Within 30 Minutes by Automobile

Minority Population ^a							
Plan	500,000 or More Jobs		250,000 or More Jobs		100,000 or More Jobs		Total Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2010	407,700	69.9	467,500	80.2	562,900	96.6	582,900
VISION 2050	429,800	73.7	479,500	82.3	569,400	97.7	582,900
FCTS - 2050	418,100	71.7	475,700	81.6	568,300	97.5	582,900

Non-Minority Population ^a							
Plan	500,000 or More Jobs		250,000 or More Jobs		100,000 or More Jobs		Total Non-Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2010	454,700	31.6	824,700	57.4	1,266,900	88.1	1,437,500
VISION 2050	581,100	40.4	935,600	65.1	1,332,100	92.7	1,437,500
FCTS - 2050	529,500	36.8	897,200	62.4	1,319,200	91.8	1,437,500

Families in Poverty ^a							
Plan	500,000 or More Jobs		250,000 or More Jobs		100,000 or More Jobs		Total Families in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2010	30,500	62.9	35,400	73.0	45,700	94.2	48,500
VISION 2050	32,200	66.4	37,100	76.5	46,600	96.1	48,500
FCTS - 2050	31,500	64.9	36,600	75.5	46,400	95.7	48,500

Families Not in Poverty ^a							
Plan	500,000 or More Jobs		250,000 or More Jobs		100,000 or More Jobs		Total Families Not in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2010	164,800	35.8	277,400	60.2	411,800	89.4	460,600
VISION 2050	202,800	44.0	310,500	67.4	431,000	93.6	460,600
FCTS - 2050	186,800	40.6	299,000	64.9	427,400	92.8	460,600

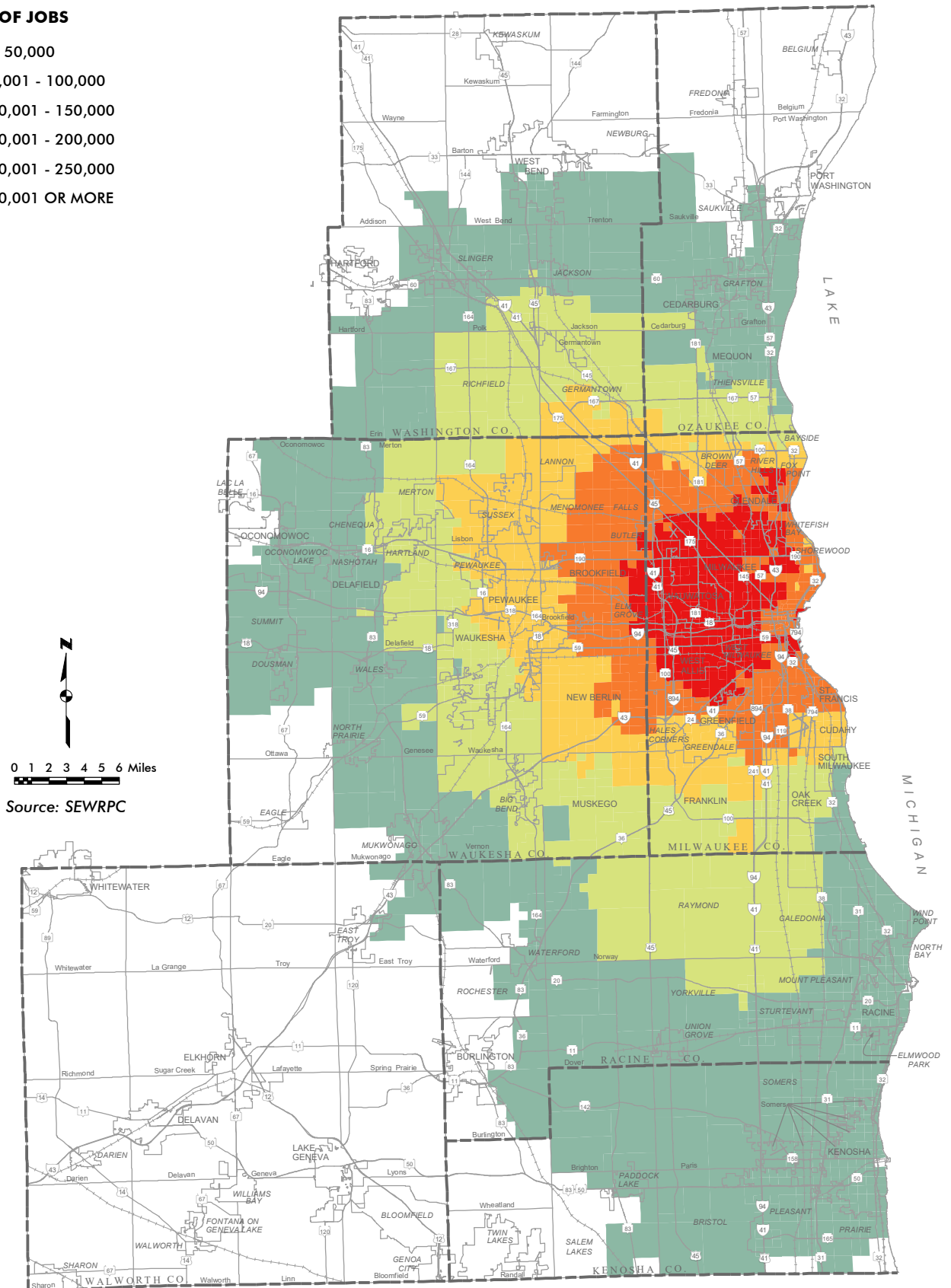
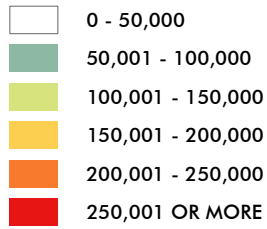
^a Minority and non-minority population are based on the 2010 U.S. Census and families in poverty and families not in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

- Transit Accessibility to Jobs and Other Activities:** Although the automobile is the dominant mode of travel for the Region’s minority population, the minority population utilizes public transit at a higher percentage relative to other modes of travel than the white population. Based on data from the 2017 National Household Travel Survey (NHTS), the Region’s minority population utilizes public transit for more of its travel (6 percent) than the white population (less than 1 percent). In addition, based on the transit travel survey conducted as part of the Commission’s 2011 travel survey for Southeastern Wisconsin, the minority population represents a greater proportion of total transit ridership than it does of total population. More robust and detailed data available by county from the year 2014-2018 ACS indicate a similar pattern by race and ethnic group for work trips in Southeastern Wisconsin as for all travel, as shown in Table D.5. As these data only include travel to and from work, they exclude those without employment who are more likely to be among the poorest people in the Region. Nonetheless, the data indicate that, in Milwaukee County, between 4 and 13 percent of the minority population uses public transit to travel to and from work, with the highest proportion (13 percent) by the African-American population. Only about 3 percent of the white population uses public transit for travel to and from work. Similarly, about 13 percent of the

Map D.16
Lower-Wage Jobs Accessible Within 30 Minutes by Automobile: Existing

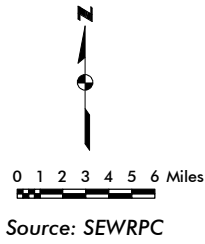
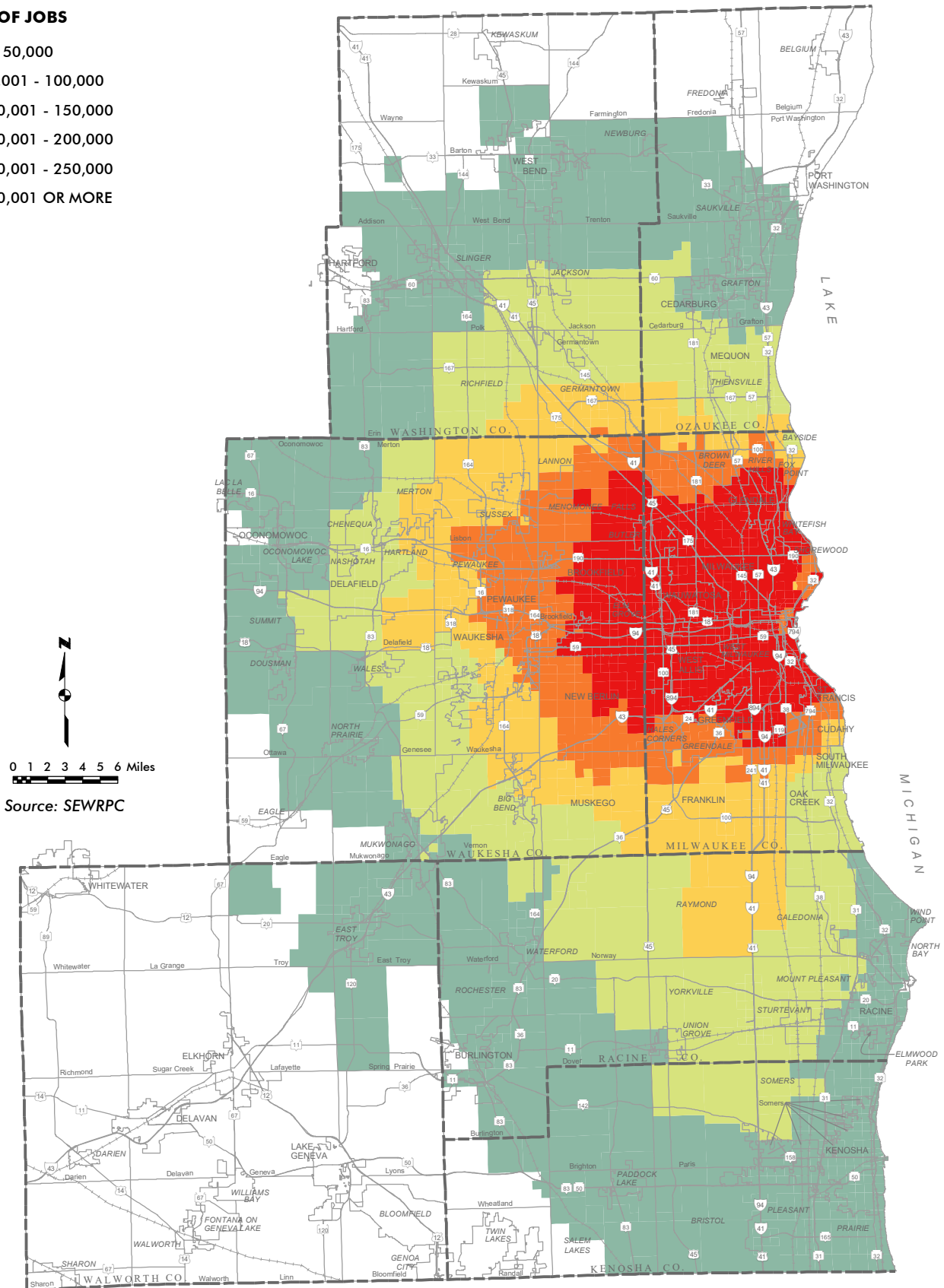
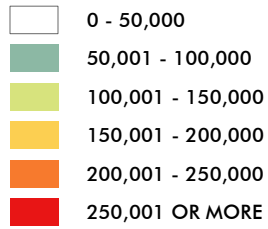
NUMBER OF JOBS



Map D.17

Lower-Wage Jobs Accessible Within 30 Minutes by Automobile: VISION 2050

NUMBER OF JOBS



Map D.18 Lower-Wage Jobs Accessible Within 30 Minutes by Automobile: FCTS

NUMBER OF JOBS

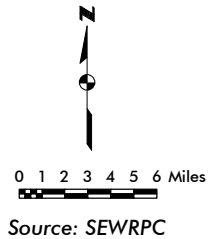
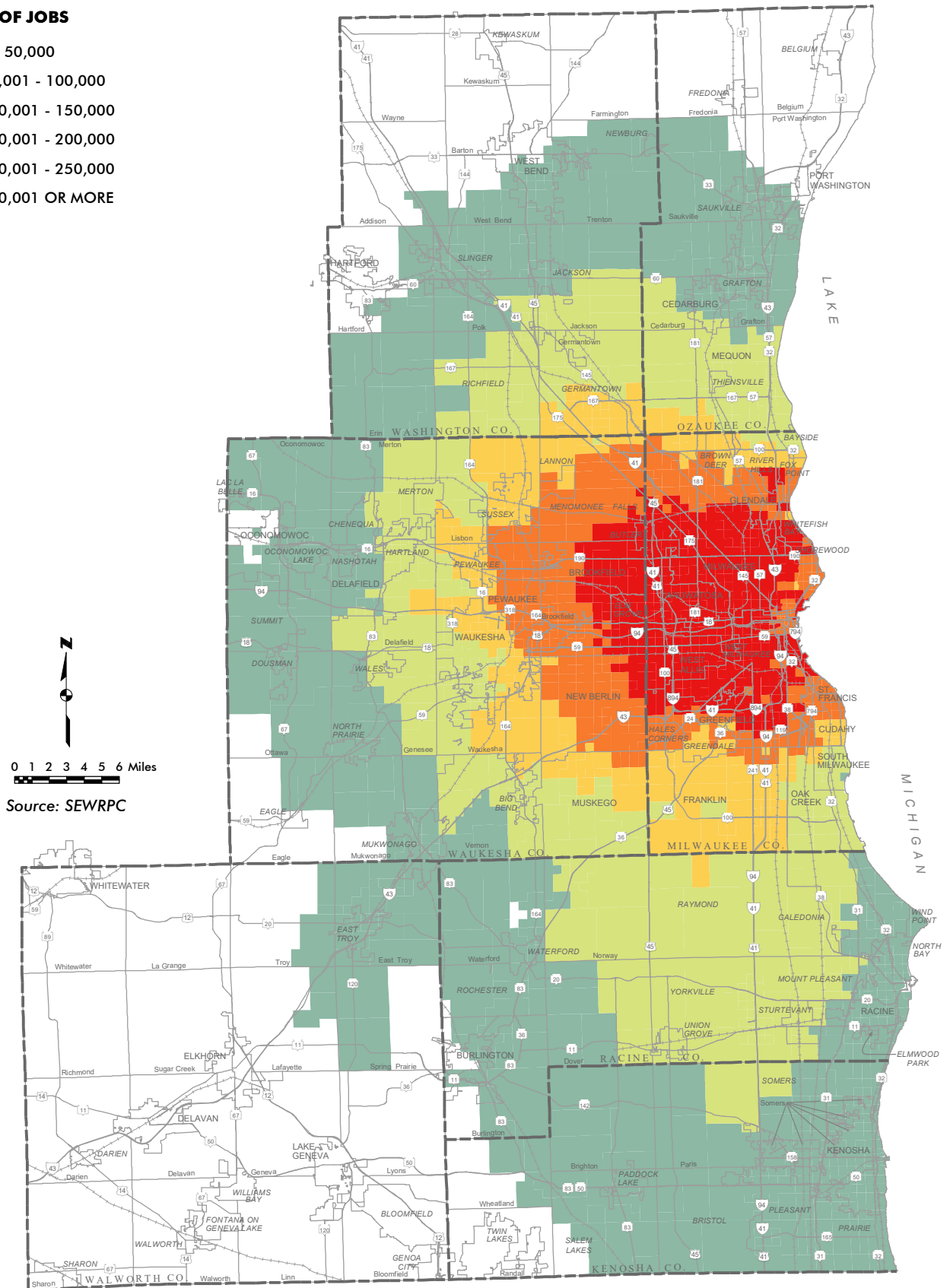
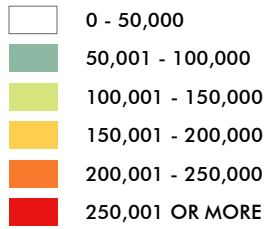


Table D.7
Access to Lower-Wage Jobs Within 30 Minutes by Automobile

Minority Population ^a							
Plan	200,000 or More Jobs		100,000 or More Jobs		50,000 or More Jobs		Total Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2010	407,400	69.9	468,700	80.4	558,300	95.8	582,900
VISION 2050	430,200	73.8	478,300	82.1	564,600	96.9	582,900
FCTS - 2050	418,200	71.7	475,900	81.6	563,400	96.7	582,900

Non-Minority Population ^a							
Plan	200,000 or More Jobs		100,000 or More Jobs		50,000 or More Jobs		Total Non-Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2010	455,600	31.7	833,800	58.0	1,207,200	84.0	1,437,500
VISION 2050	585,100	40.7	928,200	64.6	1,286,500	89.5	1,437,500
FCTS - 2050	534,400	37.2	899,400	62.6	1,266,300	88.1	1,437,500

Families in Poverty ^a							
Plan	200,000 or More Jobs		100,000 or More Jobs		50,000 or More Jobs		Total Families in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2010	30,500	62.9	35,600	73.4	45,000	92.8	48,500
VISION 2050	32,300	66.6	36,900	76.1	46,000	94.8	48,500
FCTS - 2050	31,500	64.9	36,700	75.7	45,700	94.2	48,500

Families Not in Poverty ^a							
Plan	200,000 or More Jobs		100,000 or More Jobs		50,000 or More Jobs		Total Families Not in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2010	165,800	36.0	280,100	60.8	395,000	85.8	460,600
VISION 2050	204,000	44.3	308,200	66.9	417,600	90.7	460,600
FCTS - 2050	188,100	40.8	299,500	65.0	412,000	89.4	460,600

^a Minority and non-minority population are based on the 2010 U.S. Census and families in poverty and families not in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

low-income population (residing in a family with an income below the poverty level) uses public transit to travel to and from work, compared to 5 percent of the population with higher wages.

As shown in Tables D.9 through D.11, low-income households and a number of minority populations are particularly dependent upon transit, as a significant proportion of these populations have no private vehicle available for travel. For example, in Milwaukee County, about 74 percent of Black/African-American households indicated they had an automobile available for travel, compared to about 92 percent of non-minority households. Similarly, only about 65 percent of Milwaukee County families in poverty indicated they had an automobile available for travel, compared to 91 percent of families not in poverty. Historical driver's license data indicate a similar conclusion. In 2005, a study found that only about 60 percent of Black/African American adults and 50 percent of Hispanic adults had a driver's license, compared to about 80 percent of non-minority adults. Another transit-dependent population group is people with disabilities, with about 10 percent of this population group in Milwaukee County utilizing transit for travel to and from work. It should be noted that data regarding travel to work exclude those without employment.

Table D.8
Reasonable Access to Activity Centers by Automobile^a

Activity Center	Minority Population ^b						Total Minority Population
	Existing (2010)		VISION 2050		FCTS (2050)		
	People	Percent	People	Percent	People	Percent	
Retail Centers	565,400	97.0	564,500	96.8	563,900	96.7	582,900
Major Parks	582,900	100.0	582,900	100.0	582,900	100.0	582,900
Public Technical Colleges and Universities	582,800	100.0	582,700	100.0	582,700	100.0	582,900
Health Care Facilities	581,800	99.8	582,900	100.0	581,400	99.7	582,900
Grocery Stores	582,900	100.0	582,900	100.0	582,900	100.0	582,900
Milwaukee Mitchell International Airport	571,500	98.0	571,100	98.0	568,200	97.5	582,900
Milwaukee Regional Medical Center	531,000	91.1	542,300	93.0	519,900	89.2	582,900

Activity Center	Families in Poverty ^b						Total Families in Poverty
	Existing (2010)		VISION 2050		FCTS (2050)		
	Families	Percent	Families	Percent	People	Percent	
Retail Centers	46,000	94.8	45,900	94.6	45,700	94.2	48,500
Major Parks	48,500	100.0	48,500	100.0	48,500	100.0	48,500
Public Technical Colleges and Universities	48,500	100.0	48,500	100.0	48,400	99.8	48,500
Health Care Facilities	48,300	99.6	48,500	100.0	48,200	99.4	48,500
Grocery Stores	48,500	100.0	48,500	100.0	48,500	100.0	48,500
Milwaukee Mitchell International Airport	46,600	96.1	46,700	96.3	46,200	95.3	48,500
Milwaukee Regional Medical Center	42,900	88.5	43,800	90.3	42,000	86.6	48,500

^a Reasonable access is defined as the ability to travel by automobile within 60 minutes to Milwaukee Mitchell International Airport and the Milwaukee Regional Medical Center and within 30 minutes to all the other activity centers.

^b Minority population is based on the 2010 U.S. Census and families in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

Maps D.19 through D.21 show those areas of the Region with the highest job densities that would be directly served by transit under existing conditions, the updated VISION 2050, and the updated FCTS. As shown on these maps, the transit service areas under the updated VISION 2050 and FCTS would principally serve the areas of the Region with the highest density of jobs. However, the expected decrease in transit service hours and shift times covered under the updated FCTS would result in access to fewer jobs than the existing transit system, and far fewer jobs than the updated VISION 2050. Specifically, implementing the updated VISION 2050 would significantly increase the number of jobs within the transit service area, from 704,900 jobs under current conditions to 1,025,800 jobs in 2050. Under the updated FCTS, the number of jobs within the transit service area would increase to 735,900 in 2050. The increase in the number of jobs within the transit service area under both the updated VISION 2050 and FCTS is in part due to the increase in jobs in the Region projected under the land use component of the updated VISION 2050. However, as stated previously, likely decreases in the hours of the day that transit service would be available in some areas under the updated FCTS means that fewer jobs are likely to be accessible than under the existing system.

Maps D.22 through D.24 show the number of jobs that could be accessible within 30 minutes by transit under existing conditions, the updated VISION 2050, and the updated FCTS. Comparing these maps to areas of existing concentrations of minority populations (Map D.6), lower-income populations (Map D.8 for families in poverty and Map D.25 for families with incomes less than twice the poverty level), and people with disabilities (Map D.26) indicates that access to jobs for

Table D.9

Households by Number of Vehicles Available and Race/Ethnicity of Householder: 2014-2018

Kenosha County					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability		
	Total	Percent	One or More Vehicles Available	No Vehicle Available	
				Households	Percent
White (Non-Hispanic)	51,150	79.3	48,574	2,576	5.0
Black/African American	3,955	6.1	3,270	685	17.3
American Indian and Alaskan Native	1,416	2.2	531	885	62.5
Asian and Pacific Islander	913	1.4	913	--	0.0
Other Minority	870	1.4	870	--	0.0
Hispanic	6,195	9.6	6,195	--	0.0
County Total	62,950	100.0	58,804	4,146	6.6

Milwaukee County					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability		
	Total	Percent	One or More Vehicles Available	No Vehicle Available	
				Households	Percent
White (Non-Hispanic)	229,536	55.4	210,389	19,147	8.3
Black/African American	101,768	24.6	75,832	25,936	25.5
American Indian and Alaskan Native	3,897	0.9	3,373	524	13.4
Asian and Pacific Islander	13,838	3.3	12,773	1,065	7.7
Other Minority	21,651	5.2	19,246	2,405	11.1
Hispanic	43,993	10.6	39,534	4,459	10.1
County Total	384,280	100.0	334,200	50,080	13.0

Ozaukee and Washington Counties					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability		
	Total	Percent	One or More Vehicles Available	No Vehicle Available	
				Households	Percent
White (Non-Hispanic)	86,832	94.1	84,516	2,316	2.7
Black/African American	1,593	1.7	1,593	18	0.0
American Indian and Alaskan Native	146	0.2	146	--	0.0
Asian and Pacific Islander	1,259	1.4	1,229	30	2.4
Other Minority	309	0.3	309	--	0.0
Hispanic	2,120	2.3	2,120	--	0.0
County Total	91,750	100.0	89,404	2,346	2.6

Racine County					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability		
	Total	Percent	One or More Vehicles Available	No Vehicle Available	
				Households	Percent
White (Non-Hispanic)	60,627	77.8	57,776	2,851	4.7
Black/African American	9,153	11.7	6,608	2,545	27.8
American Indian and Alaskan Native	349	0.4	349	--	0.0
Asian and Pacific Islander	1,373	1.8	1,373	--	0.0
Other Minority	230	0.3	99	131	57.0
Hispanic	6,215	8.0	6,215	--	0.0
County Total	76,808	100.0	71,412	5,396	7.0

Walworth County					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability		
	Total	Percent	One or More Vehicles Available	No Vehicle Available	
				Households	Percent
White (Non-Hispanic)	37,976	90.2	36,311	1,665	4.4
Black/African American	218	0.5	218	--	0.0
American Indian and Alaskan Native	332	0.8	332	--	0.0
Asian and Pacific Islander	730	1.7	730	--	0.0
Other Minority	574	1.4	574	--	0.0
Hispanic	2,270	5.4	2,270	--	0.0
County Total	40,865	100.0	39,200	1,665	4.1

Table continued on next page.

Table D.9 (Continued)

Waukesha County					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability	Household Vehicle Availability	
	Total	Percent		One or More Vehicles Available	No Vehicle Available
			Households		Percent
White (Non-Hispanic)	144,633	90.2	138,847	5,786	4.0
Black/African American	4,033	2.5	4,033	--	0.0
American Indian and Alaskan Native	570	0.4	570	--	0.0
Asian and Pacific Islander	4,665	2.9	4,541	124	2.7
Other Minority	347	0.2	347	--	0.0
Hispanic	6,167	3.8	6,167	--	0.0
County Total	158,369	100.0	152,459	5,910	3.7

Region					
Race/Ethnicity	Households		Race/Ethnicity Group Household Vehicle Availability	Household Vehicle Availability	
	Total	Percent		One or More Vehicles Available	No Vehicle Available
			Households		Percent
White (Non-Hispanic)	610,754	71.7	576,413	34,341	5.6
Black/African American	120,720	14.2	91,554	29,166	24.2
American Indian and Alaskan Native	6,710	0.8	5,301	1,409	21.0
Asian and Pacific Islander	22,778	2.7	21,559	1,219	5.4
Other Minority	23,981	2.8	21,445	2,536	10.6
Hispanic	66,960	7.8	62,501	4,459	6.7
Region Total	815,022	100.0	745,479	69,543	8.5

Source: U.S. Bureau of the Census American Community Survey Public Use Microdata Sample and SEWRPC

these populations would improve significantly due to the improvement and expansion of transit service under the updated VISION 2050. As shown in Table D.12, the updated VISION 2050’s recommended transit improvement and expansion would provide access to at least 100,000 jobs within 30 minutes by transit to a significantly higher proportion of the existing minority population (18.6 percent), families in poverty (16.3 percent), families with incomes less than twice the poverty level (14.1 percent), and people with disabilities (14.6 percent). Regarding the updated FCTS, the expected decrease in transit service hours would slightly reduce the percent of the minority population, families in poverty, and families with incomes less than twice the poverty level that have potential access to 100,000 or more jobs within 30 minutes by transit. For people with disabilities, the updated FCTS would provide a slight increase to the percent of those that have potential access to 100,000 or more jobs.

As shown in Table D.13, the existing percent of the minority population with potential access to at least 100,000 jobs by transit would be about 15 percentage points more under the updated VISION 2050, compared to about 12 percentage points more for the non-minority population. The existing families in poverty with potential access to at least 100,000 jobs by transit would be about 13 percentage points more and families with incomes less than twice the poverty level would be about 12 percentage points more, compared to about 11 percentage points more for families not in poverty and incomes higher than twice the poverty level. With respect to people with disabilities, potential access to 100,000 jobs would be about 12 percentage points more compared to about 13 percentage points more for people without disabilities.

Table D.10
Households by Number of Vehicles Available and Minority Householders: 2014-2018

County	Minority Household Vehicle Availability			Non-Minority Household Vehicle Availability		
	One or More Vehicles Available	No Vehicle Available		One or More Vehicles Available	No Vehicle Available	
		Households	Percent		Households	Percent
Kenosha County	11,779	1,570	11.8	48,574	2,576	5.0
Milwaukee County	150,758	34,389	18.6	210,389	19,147	8.3
Ozaukee and Washington Counties	5,397	30	0.6	84,516	2,316	2.7
Racine County	14,644	2,676	15.5	57,776	2,851	4.7
Walworth County	4,124	--	0.0	36,311	1,665	4.4
Waukesha County	15,658	124	0.8	138,847	5,786	4.0
Region	202,360	38,789	16.1	576,413	34,341	5.6

Source: U.S. Bureau of the Census American Community Survey Public Use Microdata Sample and SEWRPC

Table D.11
Households by Number of Vehicles Available for Families in Poverty: 2012-2016

County	Vehicle Availability for Families in Poverty			Vehicle Availability for Families Not in Poverty		
	One or More Vehicles Available	No Vehicle Available		One or More Vehicles Available	No Vehicle Available	
		Families	Percent		Families	Percent
Kenosha County	6,530	1,965	23.1	52,070	2,430	4.5
Milwaukee County	47,935	26,035	35.2	280,430	28,380	9.2
Ozaukee County	1,770	320	15.3	31,565	1,110	3.4
Racine County	6,520	2,505	27.8	63,280	2,985	4.5
Walworth County	4,480	865	16.2	33,350	1,270	3.7
Washington County	2,635	590	18.3	48,395	1,565	3.1
Waukesha County	7,115	1,425	16.7	142,350	4,885	3.3
Region	76,985	33,705	30.4	651,440	42,625	6.1

Source: U.S. Census Transportation Planning Products and SEWRPC

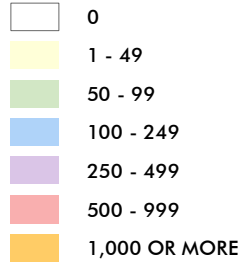
Additionally, the existing percentage of the minority population with potential access to at least 10,000 jobs by transit would be about 35 percentage points more under the updated VISION 2050, compared to about 42 percentage points more for the non-minority population. The existing families in poverty with potential access to at least 10,000 jobs by transit would be about 37 percentage points more and families with incomes less than twice the poverty level would be about 39 percentage points more, compared to about 42 percentage points more for both families not in poverty and families with incomes higher than twice the poverty level. With respect to people with disabilities, potential access to 10,000 jobs by transit would be about 41 percentage points more for people with disabilities compared to about 40 percentage points more for people without disabilities.

As shown in Table D.13, the existing percent of all populations with potential access to at least 100,000 jobs by transit would remain essentially the same under the updated FCTS.

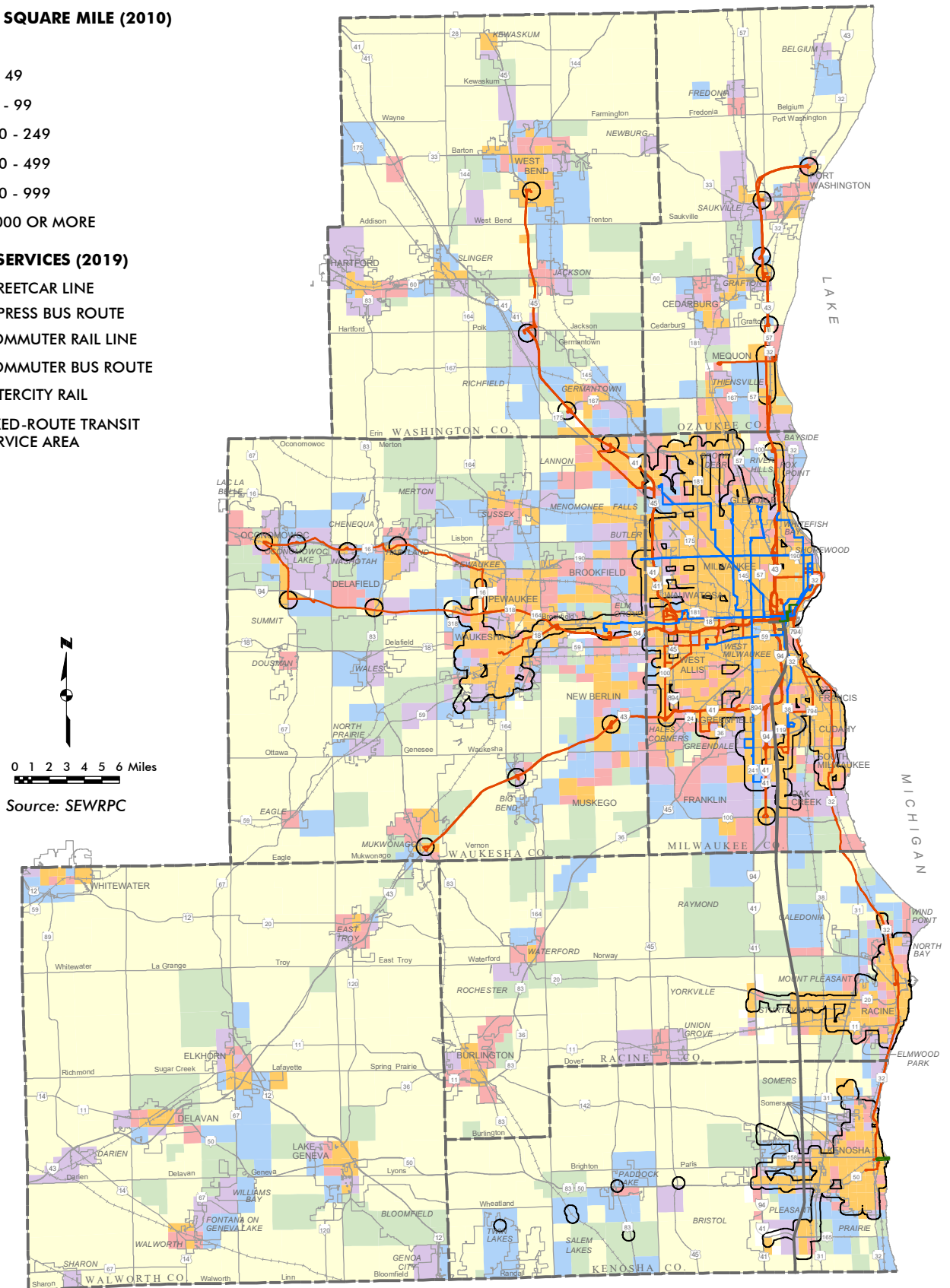
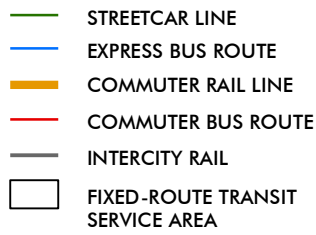
For all populations, the existing percentage of people with potential access to at least 10,000 jobs by transit would decrease significantly under the updated FCTS, as shown in Table D.13. The existing percentage of the minority population with access to at least 10,000 jobs by transit is expected to be about 23 percentage points less under the updated FCTS, compared to about 8 percentage points less for the

Map D.19 Comparison of Public Transit Services to Job Density: Existing

JOBS PER SQUARE MILE (2010)



TRANSIT SERVICES (2019)

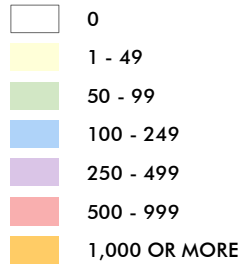


0 1 2 3 4 5 6 Miles
Source: SEWRPC

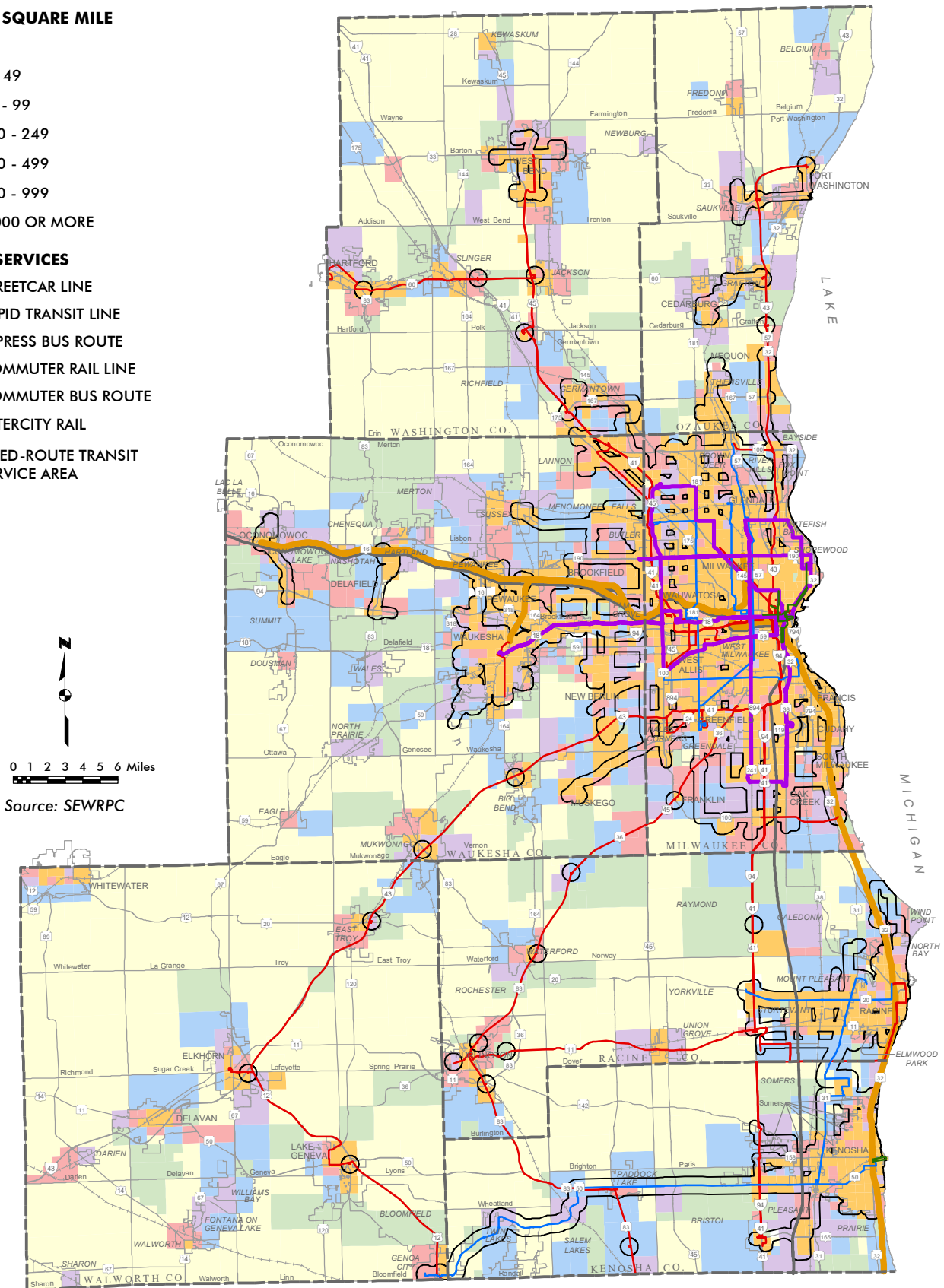
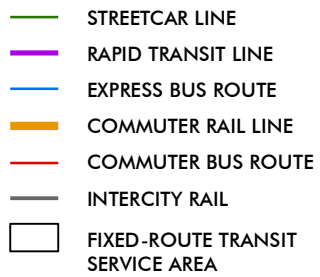
Map D.20

Comparison of Public Transit Services to Job Density: VISION 2050

JOBS PER SQUARE MILE

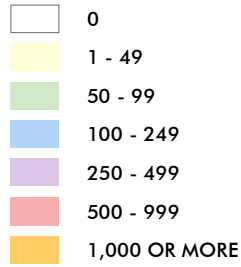


TRANSIT SERVICES

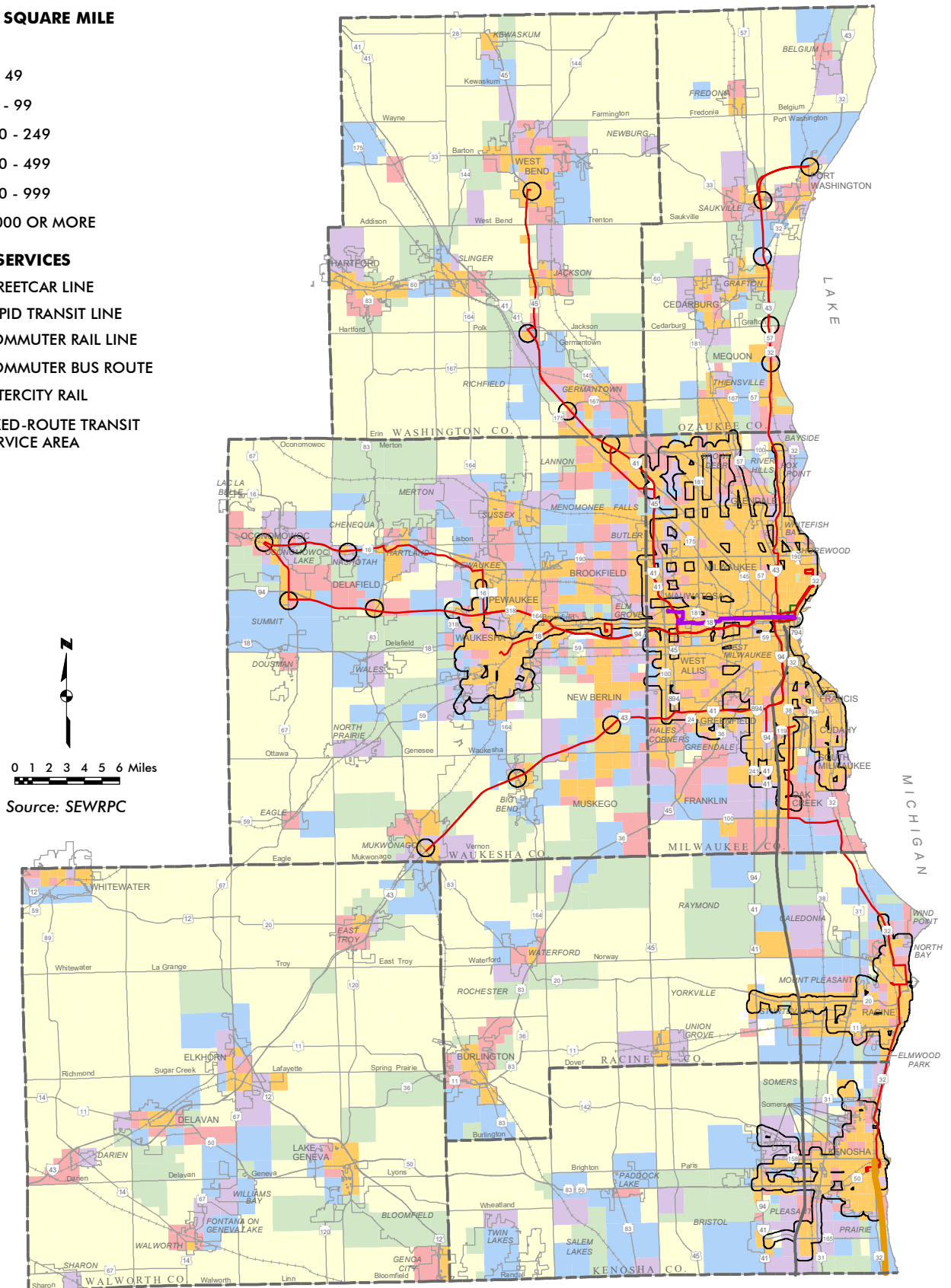
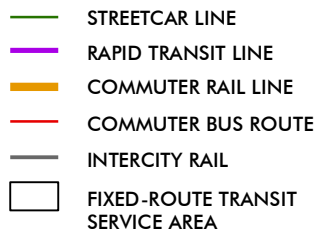


Map D.21 Comparison of Public Transit Services to Job Density: FCTS

JOBS PER SQUARE MILE



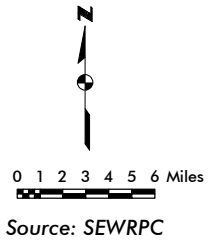
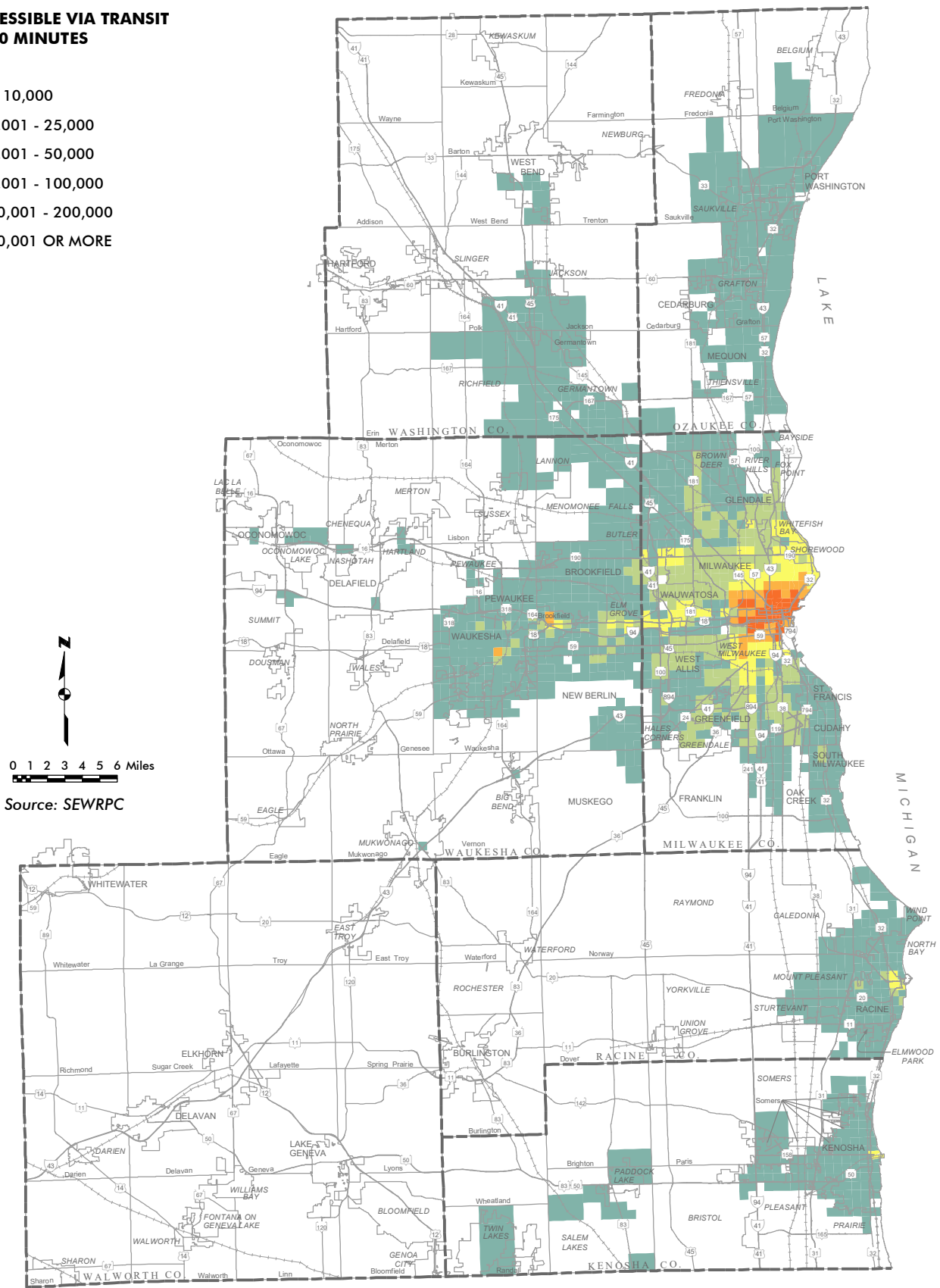
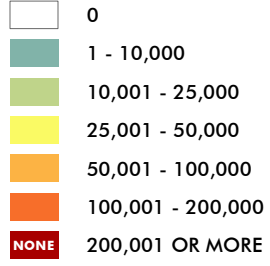
TRANSIT SERVICES



0 1 2 3 4 5 6 Miles
Source: SEWRPC

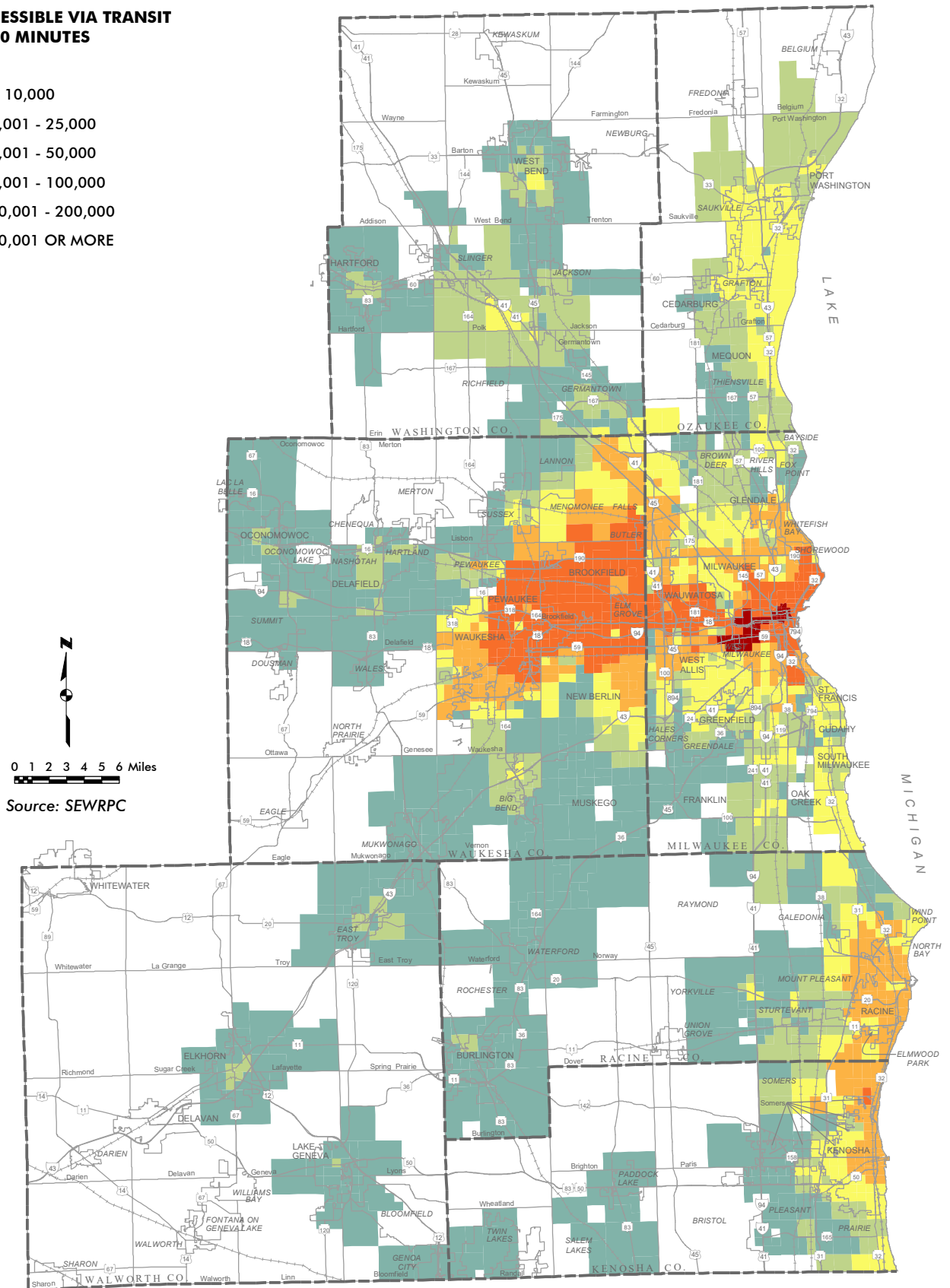
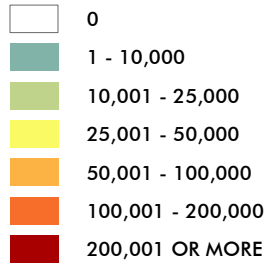
Map D.22 Jobs Accessible Within 30 Minutes by Transit: Existing

JOBS ACCESSIBLE VIA TRANSIT WITHIN 30 MINUTES



Map D.23 Jobs Accessible Within 30 Minutes by Transit: VISION 2050

JOB ACCESSIBLE VIA TRANSIT WITHIN 30 MINUTES

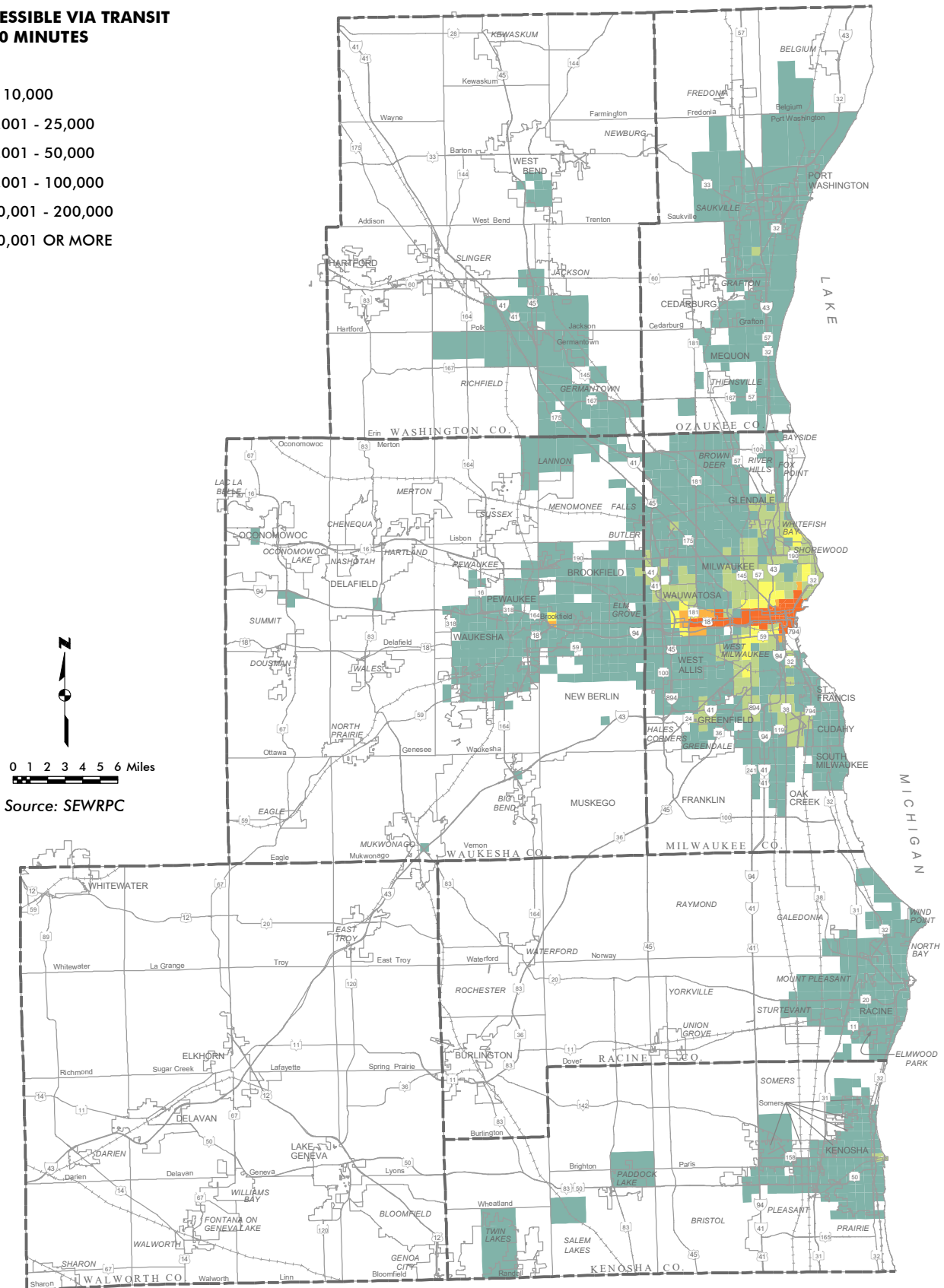
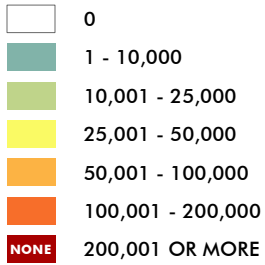


0 1 2 3 4 5 6 Miles

Source: SEWRPC

Map D.24
Jobs Accessible Within 30 Minutes by Transit: FCTS

**JOBS ACCESSIBLE VIA TRANSIT
 WITHIN 30 MINUTES**



Map D.25

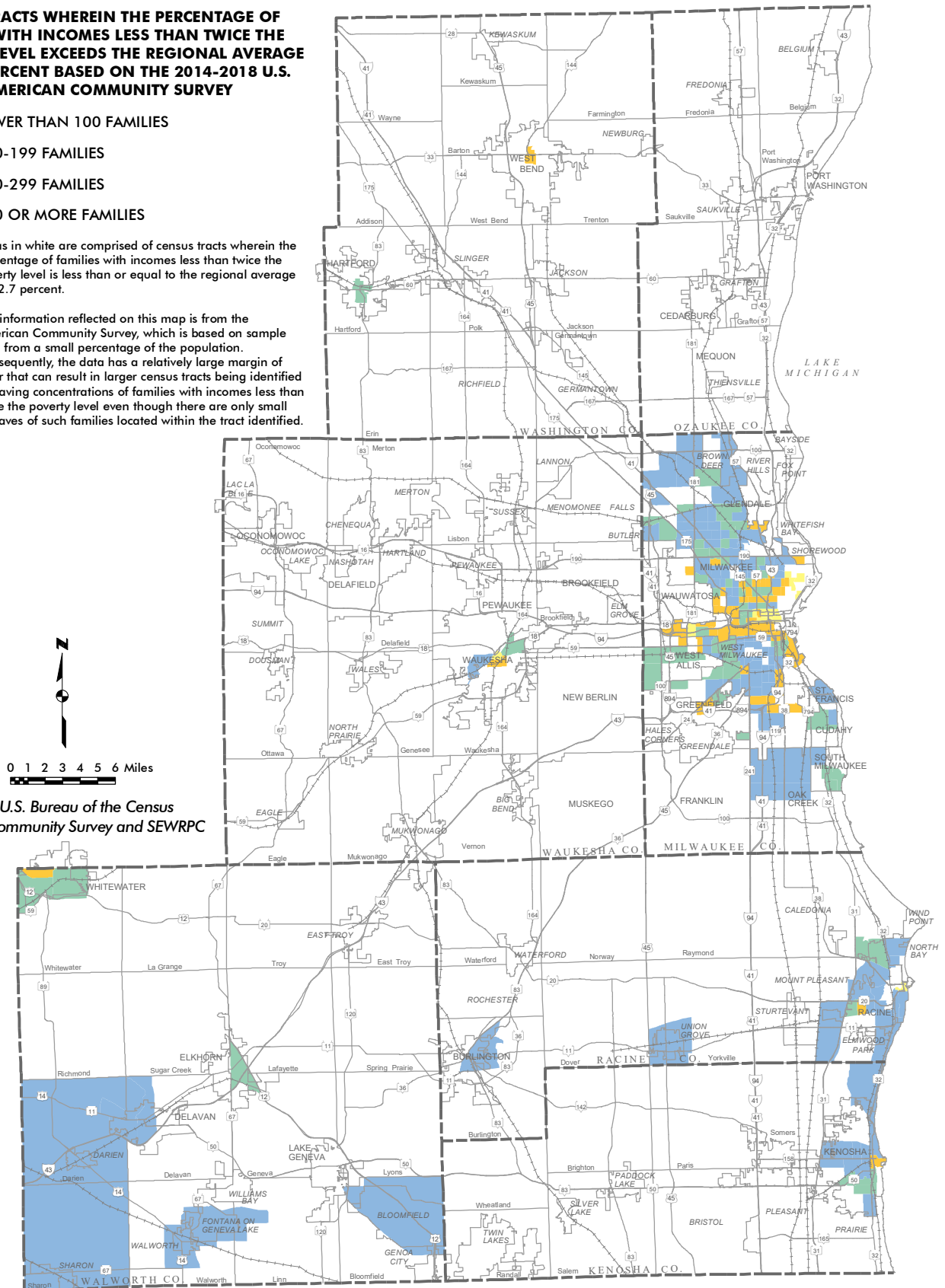
Concentrations of Families with Incomes Less Than Twice the Poverty Level: 2014-2018

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC

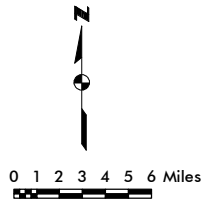
Map D.26 Concentrations of People with Disabilities: 2014-2018

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC

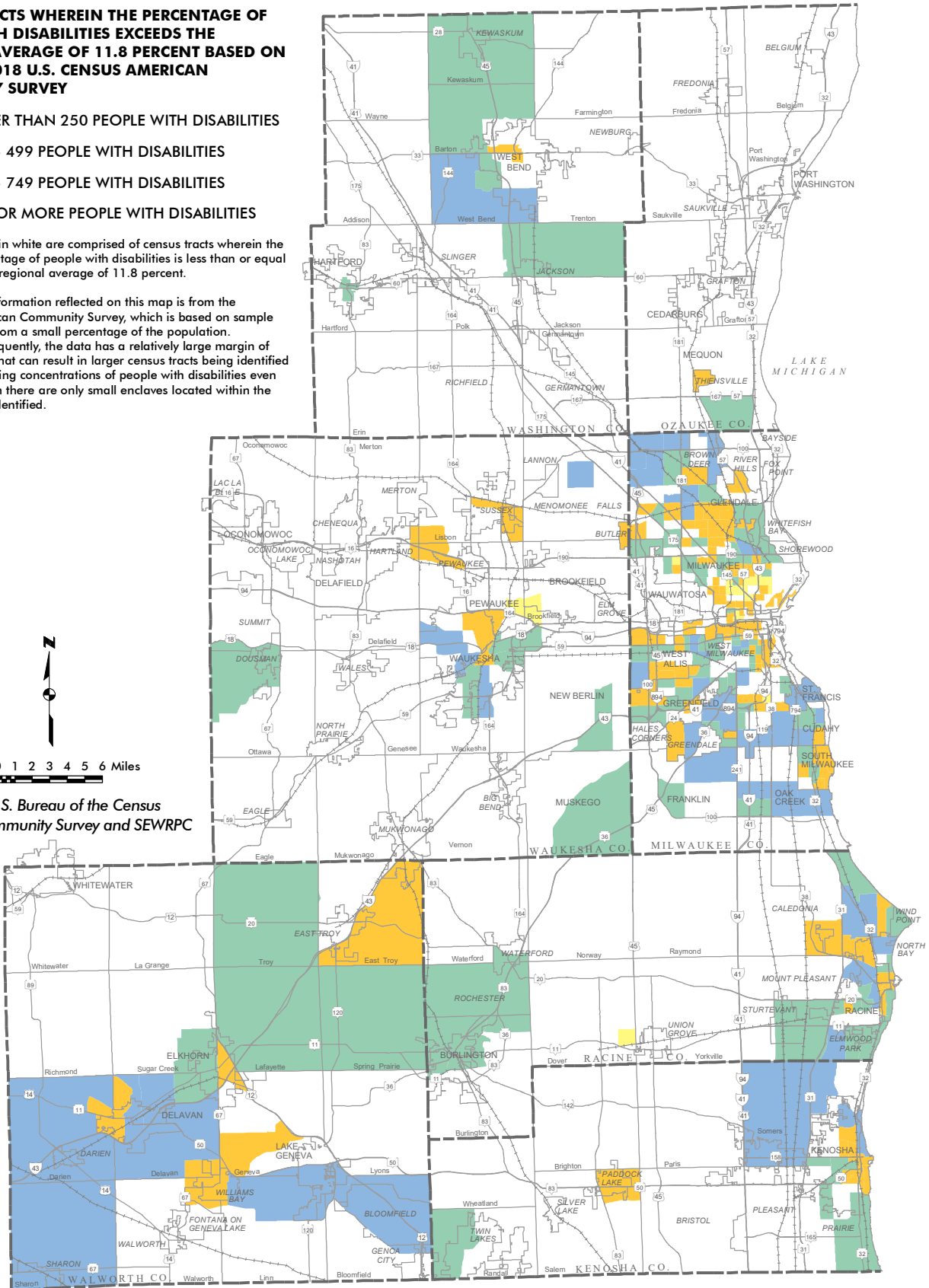


Table D.12
Access to Jobs Within 30 Minutes by Transit

Minority Population^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2017	21,800	3.7	74,000	12.7	312,800	53.7	582,900
VISION 2050	108,600	18.6	295,600	50.7	518,100	88.9	582,900
FCTS - 2050	19,900	3.4	21,700	3.7	179,100	30.7	582,900

Non-Minority Population^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Non-Minority Population
	People	Percent	People	Percent	People	Percent	
Existing - 2017	24,800	1.7	42,300	2.9	266,900	18.6	1,437,500
VISION 2050	191,700	13.3	393,900	27.4	876,500	61.0	1,437,500
FCTS - 2050	32,600	2.3	42,200	2.9	150,100	10.4	1,437,500

Families in Poverty^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Families in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	1,500	3.1	5,200	10.7	23,300	48.0	48,500
VISION 2050	7,900	16.3	22,700	46.8	41,100	84.7	48,500
FCTS - 2050	1,400	2.9	1,700	3.5	13,500	27.8	48,500

Families Not in Poverty^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Families Not in Poverty
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	4,300	0.9	13,100	2.8	101,200	22.0	460,600
VISION 2050	54,600	11.9	133,800	29.0	293,800	63.8	460,600
FCTS - 2050	5,500	1.2	7,600	1.7	52,400	11.4	460,600

Families with Incomes Less Than Twice the Poverty Level^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Families with Incomes Less Than Twice the Poverty Level
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	2,500	2.2	9,200	8.0	47,800	41.3	115,600
VISION 2050	16,300	14.1	48,700	42.1	92,900	80.4	115,600
FCTS - 2050	2,400	2.1	3,000	2.6	26,200	22.7	115,600

Families with Incomes More Than Twice the Poverty Level^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Families with Incomes More Than Twice the Poverty Level
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	3,400	0.9	9,000	2.3	76,700	19.5	393,500
VISION 2050	46,300	11.8	107,800	27.4	241,900	61.5	393,500
FCTS - 2050	4,500	1.1	6,300	1.6	39,700	10.1	393,500

People with Disabilities^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Population with Disabilities
	People	Percent	People	Percent	People	Percent	
Existing - 2017	5,500	2.3	14,700	6.2	75,300	31.7	237,700
VISION 2050	34,600	14.6	86,400	36.3	172,900	72.7	237,700
FCTS - 2050	6,100	2.6	7,200	3.0	41,700	17.5	237,700

People Without Disabilities^a							
Plan	100,000 or More Jobs		50,000 or More Jobs		10,000 or More Jobs		Total Population Without Disabilities
	People	Percent	People	Percent	People	Percent	
Existing - 2017	41,200	2.3	101,700	5.7	504,400	28.3	1,782,600
VISION 2050	265,800	14.9	603,100	33.8	1,221,700	68.5	1,782,600
FCTS - 2050	46,300	2.6	56,800	3.2	287,500	16.1	1,782,600

^a Minority population is based on the 2010 U.S. Census and families in poverty, families with incomes less than twice the poverty level, and people with disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

Table D.13
Change in Percent Having Access to Jobs by Transit

		Minorities^a			
Plan		Minority Population	Non-Minority Population		
100,000 or More Jobs	VISION 2050	15	12		
	FCTS - 2050	0	1		
Families in Poverty and with Incomes Less Than Twice the Poverty Level^a					
Plan		Families in Poverty	Families Not in Poverty	Families with Incomes Less Than Twice the Poverty Level	Families with Incomes More Than Twice the Poverty Level
100,000 or More Jobs	VISION 2050	13	11	12	11
	FCTS - 2050	0	0	0	0
People with Disabilities^a					
Plan		People with Disabilities	People Without Disabilities		
100,000 or More Jobs	VISION 2050	12	13		
	FCTS - 2050	0	0		
		Minorities^a			
Plan		Minority Population	Non-Minority Population		
10,000 or More Jobs	VISION 2050	35	42		
	FCTS - 2050	-23	-8		
Families in Poverty and with Incomes Less Than Twice the Poverty Level^a					
Plan		Families in Poverty	Families Not in Poverty	Families with Incomes Less Than Twice the Poverty Level	Families with Incomes More Than Twice the Poverty Level
10,000 or More Jobs	VISION 2050	37	42	39	42
	FCTS - 2050	-20	-11	-19	-9
People with Disabilities^a					
Plan		People with Disabilities	People Without Disabilities		
10,000 or More Jobs	VISION 2050	41	40		
	FCTS - 2050	-14	-12		

^a Minority population and non-minority population are based on the 2010 U.S. Census and families in poverty, families not in poverty, families with incomes less than twice the poverty level, families with incomes more than twice the poverty level, people with disabilities, and people without disabilities are based on the 2014-2018 American Community Survey.

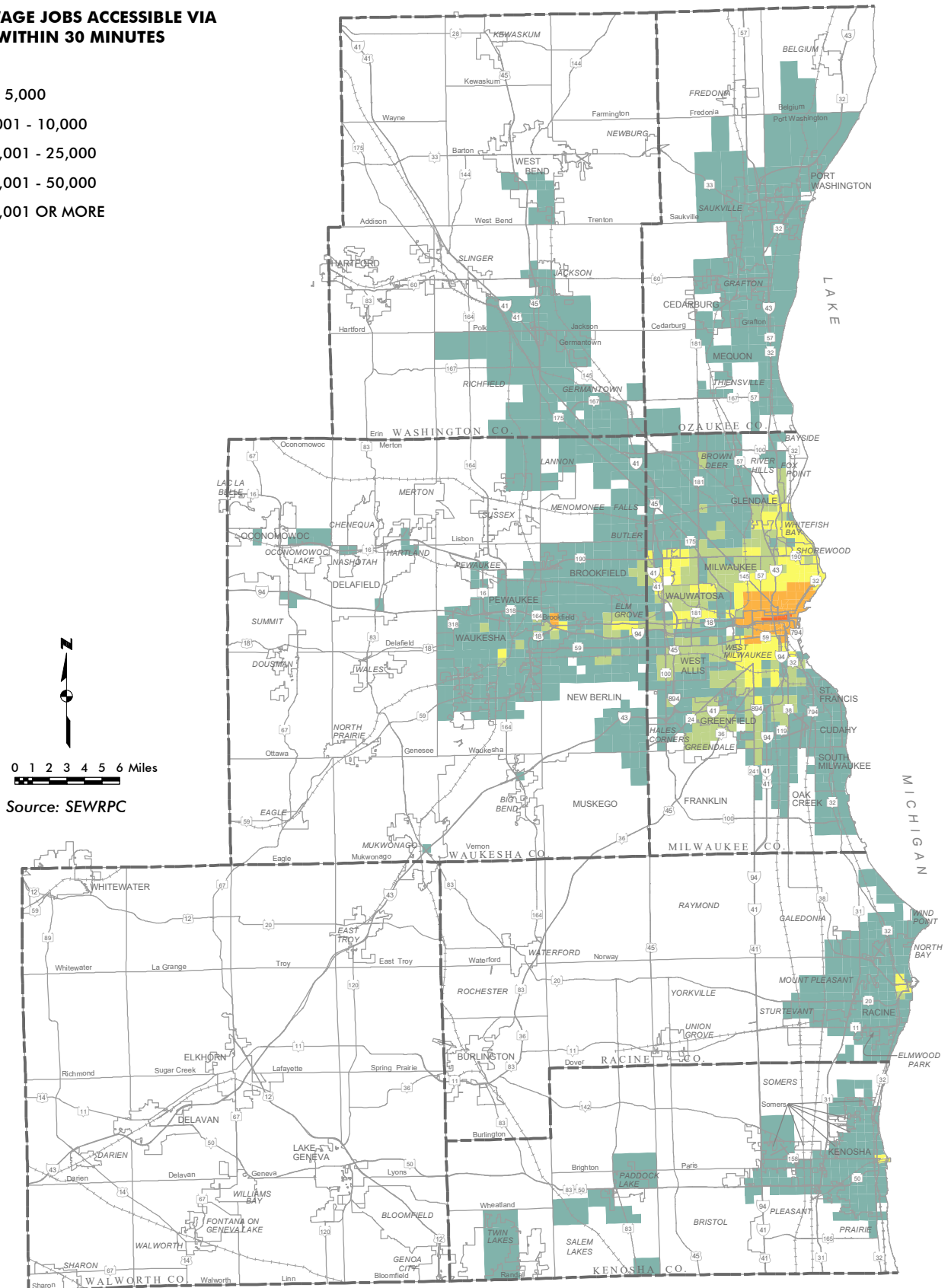
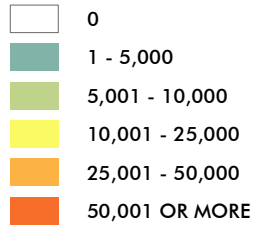
Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

non-minority population. The existing percent of families in poverty and families with incomes less than twice the poverty level with potential access to at least 10,000 jobs by transit would be about 20 and 19 percentage points less under the updated FCTS, respectively, compared to about 11 and 9 percentage points less for families not in poverty and with incomes higher than twice the poverty level. With respect to people with disabilities, the existing percent of people with disabilities with potential access to at least 10,000 jobs by transit would be about 14 percentage points less under the updated FCTS, compared to about 12 percentage points less for people without disabilities.

Maps D.27 through D.29 show the number of lower-wage jobs that would potentially be accessible in 30 minutes under existing conditions, the updated VISION 2050, and the updated FCTS. Lower-wage jobs are estimated to represent about 32 percent of total jobs in the Region.

Map D.27
Lower-Wage Jobs Accessible Within 30 Minutes by Transit: Existing

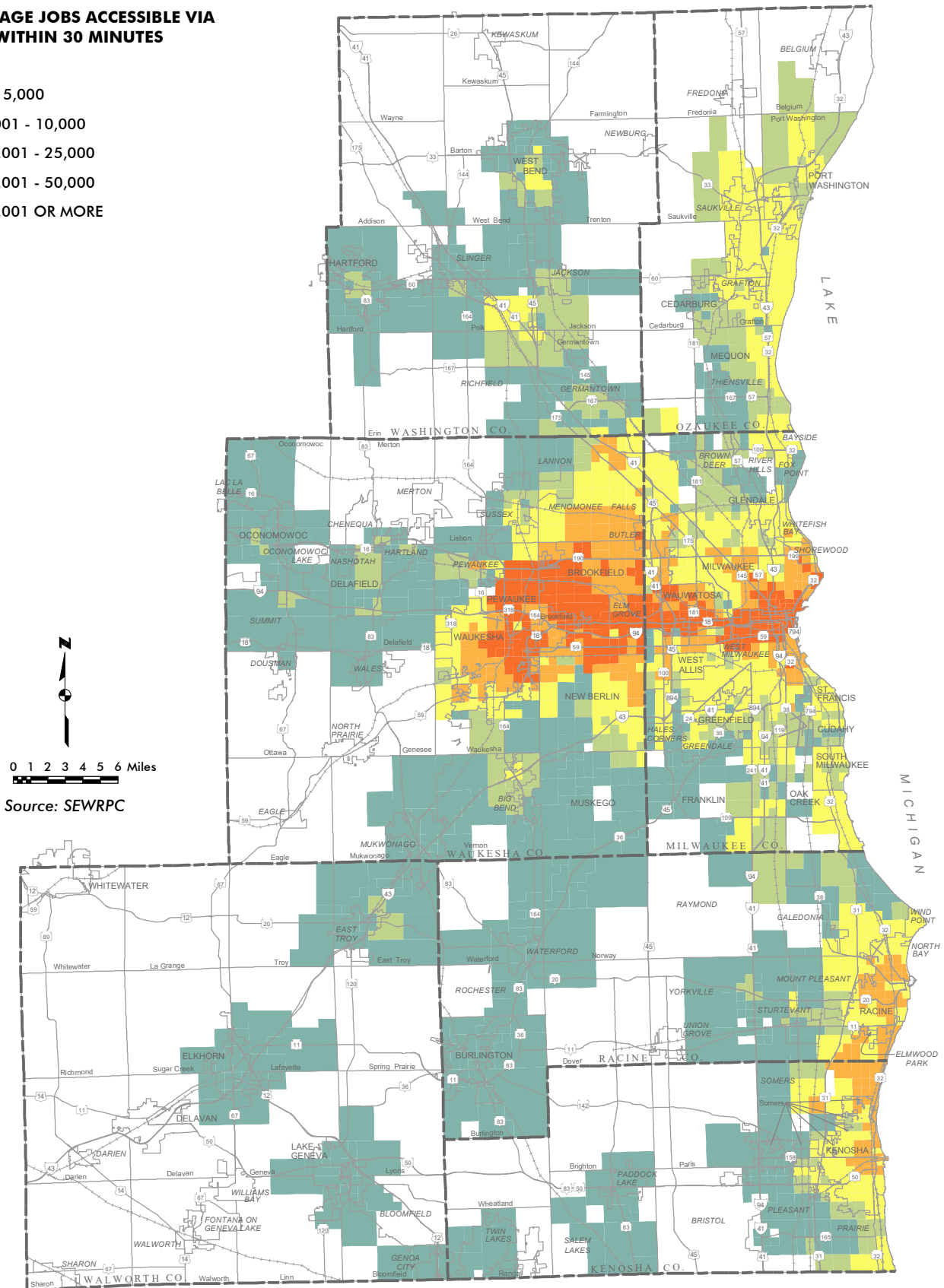
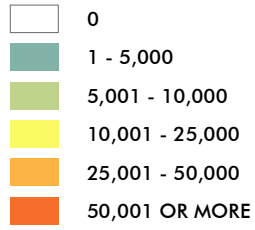
LOWER-WAGE JOBS ACCESSIBLE VIA TRANSIT WITHIN 30 MINUTES



Map D.28

Lower-Wage Jobs Accessible Within 30 Minutes by Transit: VISION 2050

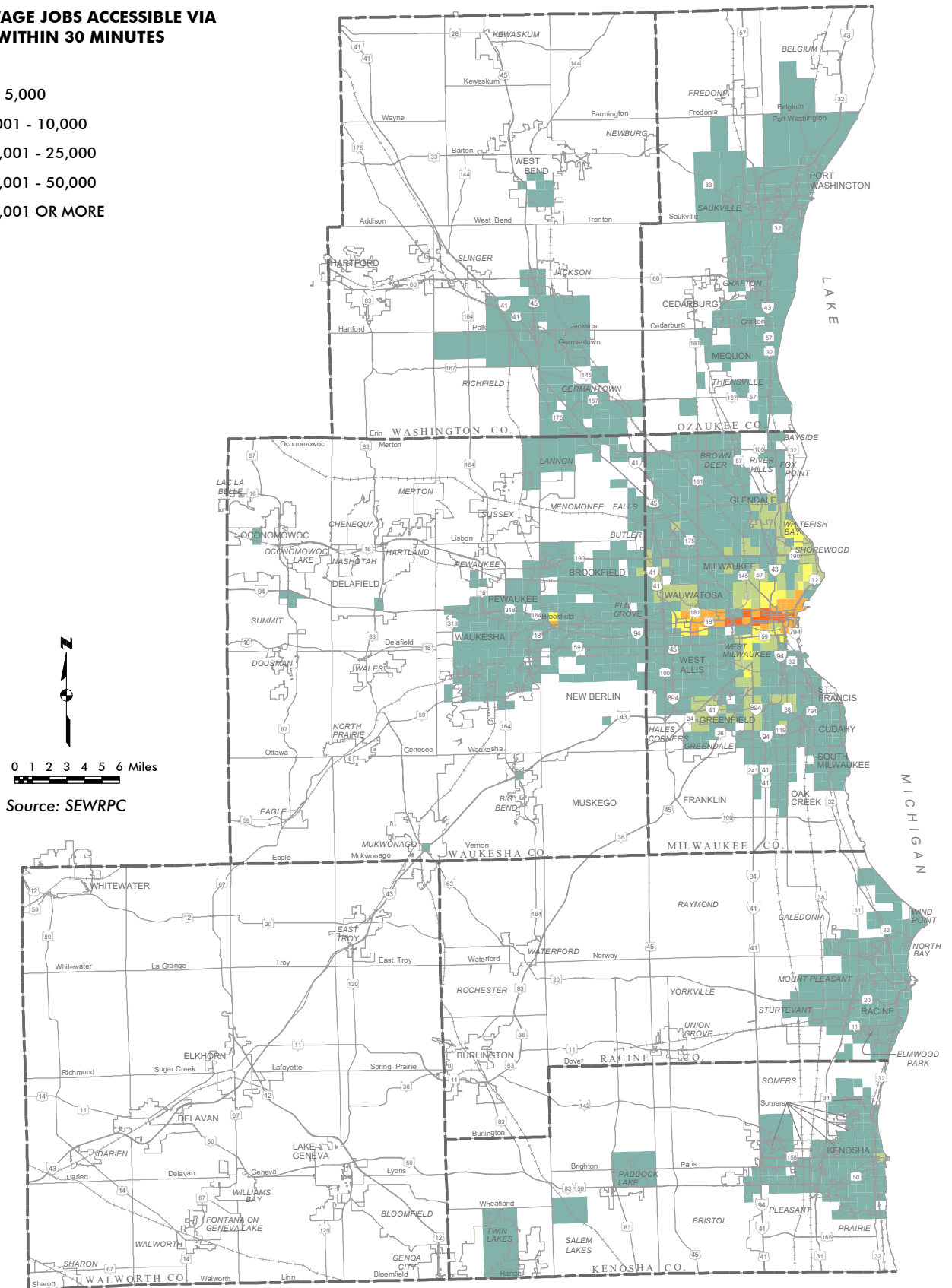
LOWER-WAGE JOBS ACCESSIBLE VIA TRANSIT WITHIN 30 MINUTES



0 1 2 3 4 5 6 Miles
Source: SEWRPC

Map D.29
Lower-Wage Jobs Accessible Within 30 Minutes by Transit: FCTS

LOWER-WAGE JOBS ACCESSIBLE VIA TRANSIT WITHIN 30 MINUTES



0 1 2 3 4 5 6 Miles
 Source: SEWRPC

Comparing these maps to areas of existing concentrations of minority populations (Map D.6), lower-income populations (Map D.8 for families in poverty and Map D.25 for families with incomes less than twice the poverty level), and people with disabilities (Map D.26) shows that potential access to lower-wage jobs for these populations would improve significantly due to the improvement and expansion of transit service under the updated VISION 2050. As shown in Table D.14, it is projected that about 38 percent of the existing minority population would have potential access to at least 25,000 lower-wage jobs within 30 minutes by transit under the updated VISION 2050, compared to about 4 percent under the updated FCTS. Similarly, it is projected that about 36 percent of the families in poverty and about 31 percent of families with incomes less than twice the poverty level would have potential access to at least 25,000 lower-wage jobs within 30 minutes by transit under the updated VISION 2050, compared to about 3 and 2 percent, respectively, under the updated FCTS. With respect to people with disabilities, it is projected that about 28 percent of this population would have potential access to at least 25,000 lower-wage jobs within 30 minutes under the updated VISION 2050, compared to 3 percent under the updated FCTS.

The substantial increase in transit service under the updated VISION 2050 would provide better access than under the updated FCTS to existing retail centers, major parks, public technical colleges/universities, health facilities, grocery stores, the Milwaukee Regional Medical Center, and Milwaukee Mitchell International Airport. Table D.15 shows the existing minority populations, lower-income populations, and people with disabilities that would have reasonable access (within 30 minutes) by transit to various activity centers under existing conditions, the updated VISION 2050, and the updated FCTS. Under the updated VISION 2050, the proportion of existing minority populations, lower-income populations, and people with disabilities provided access by transit service to the activity centers analyzed would be between 11 and 36 percentage points more than under the updated FCTS.

As shown in Table D.16, the improvement and expansion of transit under the updated VISION 2050 would result in between 9 and 35 additional percentage points of the total minority population having reasonable access to the various activity centers compared to existing conditions. This is greater than the 6 to 25 additional percentage points of the non-minority population that would have access under the updated VISION 2050. Similarly, the improvement and expansion of transit under the updated VISION 2050 would result in between 9 and 32 additional percentage points of the total families in poverty and families with incomes less than twice the poverty level having reasonable access to the various activity centers compared to existing conditions. This is greater than the 6 to 25 additional percentage points of the total families not in poverty and families with incomes higher than twice the poverty level that would have access under the updated VISION 2050. With respect to people with disabilities, the updated VISION 2050 would result in between 8 and 27 additional percentage points of people with disabilities having reasonable access to the various activity centers compared to existing conditions. This is slightly greater than the 7 to 26 additional percentage points of people without disabilities having reasonable access to the various activity centers compared to existing conditions.

Table D.14
Access to Lower-Wage Jobs Within 30 Minutes by Transit

Plan	Minority Population ^a						Total Minority Population
	25,000 or More Jobs		10,000 or More Jobs		5,000 or More Jobs		
	People	Percent	People	Percent	People	Percent	
Existing - 2017	49,900	8.6	165,800	28.4	282,700	48.5	582,900
VISION 2050	222,000	38.1	446,100	76.5	511,600	87.8	582,900
FCTS - 2050	20,200	3.5	59,000	10.1	144,200	24.7	582,900

Plan	Families in Poverty ^a						Total Families in Poverty
	25,000 or More Jobs		10,000 or More Jobs		5,000 or More Jobs		
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	3,600	7.4	12,500	25.8	21,000	43.3	48,500
VISION 2050	17,200	35.5	34,900	72.0	40,500	83.5	48,500
FCTS - 2050	1,500	3.1	4,300	8.9	11,100	22.9	48,500

Plan	Families with Incomes Less Than Twice the Poverty Level ^a						Total Families with Incomes Less Than Twice the Poverty Level
	25,000 or More Jobs		10,000 or More Jobs		5,000 or More Jobs		
	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	6,100	5.3	23,600	20.4	42,800	37.0	115,600
VISION 2050	36,300	31.4	77,400	67.0	91,300	79.0	115,600
FCTS - 2050	2,700	2.3	8,000	6.9	21,500	18.6	115,600

Plan	People with Disabilities ^a						Total Population with Disabilities
	25,000 or More Jobs		10,000 or More Jobs		5,000 or More Jobs		
	People	Percent	People	Percent	People	Percent	
Existing - 2017	10,900	4.6	34,700	14.6	68,600	28.9	237,700
VISION 2050	65,400	27.5	140,800	59.2	169,100	71.1	237,700
FCTS - 2050	6,600	2.8	13,900	5.8	34,500	14.5	237,700

^a Minority population is based on the 2010 U.S. Census and families in poverty, families with incomes less than twice the poverty level, and people with disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

As shown in Table D.17, the transit service under the updated FCTS would result in between 1 and 9 fewer percentage points of the total minority population that would have reasonable access to the various activity centers compared to existing conditions. These reductions in access are slightly greater than the reductions in access for the non-minority population under the updated FCTS, which is between 2 and 4 fewer percentage points compared to existing conditions. Similarly, the transit service under the updated FCTS would result in between 1 and 9 fewer percentage points for total families in poverty and families with incomes less than twice the poverty level having reasonable access to the various activity centers compared to existing conditions. These reductions in access are slightly greater than the reductions in access for total families not in poverty and families with incomes higher than twice the poverty level under the updated FCTS, which is between 2 and 5 fewer percentage points compared to existing conditions. With respect to people with disabilities, the updated FCTS would result in between 2 and 7 fewer percentage points for total people with disabilities having reasonable access to the various activity centers compared to existing conditions, which is a slightly greater change than for people without disabilities, with retail centers again being an exception.

Table D.15
Reasonable Access to Activity Centers by Transit^a

Activity Center	Minority Population ^b						Total Minority Population
	Existing (2017)		VISION 2050		FCTS (2050)		
	People	Percent	People	Percent	People	Percent	
Retail Centers	108,300	18.6	265,700	45.6	58,800	10.1	582,900
Major Parks	41,600	7.1	150,200	25.8	25,200	4.3	582,900
Public Technical Colleges and Universities	141,900	24.3	244,800	42.0	107,900	18.5	582,900
Health Care Facilities	265,000	45.5	353,400	60.6	214,500	36.8	582,900
Grocery Stores	470,100	80.6	523,700	89.8	439,500	75.4	582,900
Milwaukee Mitchell International Airport	71,200	12.2	121,600	20.9	39,900	6.8	582,900
Milwaukee Regional Medical Center	128,800	22.1	331,900	56.9	120,800	20.7	582,900

Activity Center	Families in Poverty ^b						Total Families in Poverty
	Existing (2017)		VISION 2050		FCTS (2050)		
	Families	Percent	Families	Percent	Families	Percent	
Retail Centers	7,400	15.3	20,300	41.9	4,400	9.1	48,500
Major Parks	3,400	7.0	12,100	24.9	1,800	3.7	48,500
Public Technical Colleges and Universities	10,700	22.1	19,400	40.0	8,200	16.9	48,500
Health Care Facilities	21,300	43.9	28,500	58.8	17,100	35.3	48,500
Grocery Stores	35,500	73.2	40,200	82.9	33,400	68.9	48,500
Milwaukee Mitchell International Airport	5,500	11.3	10,100	20.8	3,200	6.6	48,500
Milwaukee Regional Medical Center	9,500	19.6	25,200	52.0	9,000	18.6	48,500

Activity Center	Families with Incomes Less Than Twice the Poverty Level ^b						Total Families with Incomes Less Than Twice the Poverty Level
	Existing (2017)		VISION 2050		FCTS (2050)		
	Families	Percent	Families	Percent	Families	Percent	
Retail Centers	16,100	13.9	48,200	41.7	9,500	8.2	115,600
Major Parks	7,100	6.1	27,600	23.9	4,000	3.5	115,600
Public Technical Colleges and Universities	23,200	20.1	44,200	38.2	17,600	15.2	115,600
Health Care Facilities	45,400	39.3	64,400	55.7	36,000	31.1	115,600
Grocery Stores	77,300	66.9	90,800	78.5	72,300	62.5	115,600
Milwaukee Mitchell International Airport	11,500	9.9	21,500	18.6	7,100	6.1	115,600
Milwaukee Regional Medical Center	20,100	17.4	54,900	47.5	18,800	16.3	115,600

Activity Center	People with Disabilities ^b						Total Population with Disabilities
	Existing (2017)		VISION 2050		FCTS (2050)		
	People	Percent	People	Percent	People	Percent	
Retail Centers	37,000	15.6	100,300	42.2	24,100	10.1	237,700
Major Parks	17,800	7.5	59,400	25.0	11,500	4.8	237,700
Public Technical Colleges and Universities	41,300	17.4	84,400	35.5	31,100	13.1	237,700
Health Care Facilities	74,200	31.2	120,600	50.7	58,700	24.7	237,700
Grocery Stores	129,000	54.3	166,800	70.2	119,400	50.2	237,700
Milwaukee Mitchell International Airport	19,400	8.2	38,000	16.0	11,900	5.0	237,700
Milwaukee Regional Medical Center	37,600	15.8	102,700	43.2	33,900	14.3	237,700

^a Reasonable access is defined as the ability to travel by transit within 60 minutes to Milwaukee Mitchell International Airport and the Milwaukee Regional Medical Center and within 30 minutes to all the other activity centers.

^b Minority population is based on the 2010 U.S. Census and families in poverty, families with incomes less than twice the poverty level, and people with disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

Table D.16

Additional Percent Having Reasonable Access^a to Activity Centers by Transit: VISION 2050

Minority Population^b		
Activity Center	Minority Population	Non-Minority Population
Retail Centers	27	25
Major Parks	19	16
Public Technical Colleges and Universities	18	17
Health Care Facilities	15	22
Grocery Stores	9	21
Milwaukee Mitchell International Airport	9	6
Milwaukee Regional Medical Center	35	22

Families in Poverty and Families with Incomes Less Than Twice the Poverty Level^b				
Activity Center	Families in Poverty	Families Not in Poverty	Families with Incomes Less Than Twice the Poverty Level	Families with Incomes More Than Twice the Poverty Level
Retail Centers	27	25	28	24
Major Parks	18	16	18	16
Public Technical Colleges and Universities	18	17	18	16
Health Care Facilities	15	21	16	22
Grocery Stores	10	19	12	20
Milwaukee Mitchell International Airport	10	6	9	6
Milwaukee Regional Medical Center	32	24	30	24

People with Disabilities^b		
Activity Center	People with Disabilities	People Without Disabilities
Retail Centers	27	26
Major Parks	18	16
Public Technical Colleges and Universities	18	17
Health Care Facilities	20	20
Grocery Stores	16	17
Milwaukee Mitchell International Airport	8	7
Milwaukee Regional Medical Center	27	26

^a Reasonable access is defined as the ability to travel by transit within 60 minutes to Milwaukee Mitchell International Airport and the Milwaukee Regional Medical Center and within 30 minutes to all the other activity centers.

^b Minority population is based on the 2010 U.S. Census and families in poverty, families with incomes less than twice the poverty level, and people with disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

- Comparing Accessibility for Transit and Driving:** A comparison of the improvements in accessibility under the transit element of the updated VISION 2050 to the highway element of the updated VISION 2050 clearly indicates that the transit element would result in substantial increases in transit accessibility to jobs and other activities, and the highway element would result in only modest increases in highway accessibility to jobs and other activities. The modest increases in highway accessibility would benefit the majority of minority residents and low-income residents who travel by automobile. The substantial increases in transit accessibility would provide significant benefits to those who may not be able to afford or use a car and need public transit service to be able to reach jobs and other activities.

Under the updated FCTS, the analysis indicates that the highway element would result in about the same accessibility to jobs and other activities for all residents of the Region that travel by automobile—with accessibility to some activities slightly better and some slightly worse.

Table D.17

Reduced Percent Having Reasonable Access^a to Activity Centers by Transit: FCTS

Minority Population^b		
Activity Center	Minority Population	Non-Minority Population
Retail Centers	-9	-4
Major Parks	-3	-3
Public Technical Colleges and Universities	-6	-3
Health Care Facilities	-9	-4
Grocery Stores	-5	-3
Milwaukee Mitchell International Airport	-5	-2
Milwaukee Regional Medical Center	-1	-2

Families in Poverty and Families with Incomes Less Than Twice the Poverty Level^b				
Activity Center	Families in Poverty	Families Not in Poverty	Families with Incomes Less Than Twice the Poverty Level	Families with Incomes More Than Twice the Poverty Level
Retail Centers	-6	-5	-6	-5
Major Parks	-3	-2	-3	-2
Public Technical Colleges and Universities	-5	-3	-5	-3
Health Care Facilities	-9	-5	-8	-4
Grocery Stores	-4	-3	-4	-3
Milwaukee Mitchell International Airport	-5	-2	-4	-2
Milwaukee Regional Medical Center	-1	-2	-1	-2

People with Disabilities^b		
Activity Center	People with Disabilities	People Without Disabilities
Retail Centers	-6	-6
Major Parks	-3	-3
Public Technical Colleges and Universities	-4	-4
Health Care Facilities	-7	-5
Grocery Stores	-4	-3
Milwaukee Mitchell International Airport	-3	-3
Milwaukee Regional Medical Center	-2	-2

^a Reasonable access is defined as the ability to travel by transit within 60 minutes to Milwaukee Mitchell International Airport and the Milwaukee Regional Medical Center and within 30 minutes to all the other activity centers.

^b Minority population is based on the 2010 U.S. Census and families in poverty, families with incomes less than twice the poverty level, and people with disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

In contrast, the expected declines in transit, along with the minimal expected expansion and improvement of transit, under the updated FCTS are expected to generally result in small to significant declines in the accessibility to jobs and other activities—depending on the activity—for residents utilizing transit. The impact of any decline in accessibility would likely be greater on minority populations and low-income populations, as those populations are more likely to not have access to an automobile and to utilize transit.

MINORITY POPULATIONS AND LOW-INCOME POPULATIONS SERVED BY TRANSIT

An evaluation was conducted of the characteristics of the existing population located within the service area of the public transit system under existing conditions, the updated VISION 2050, and the updated FCTS. Table D.18 and Maps D.30 through D.44 show information on the existing minority populations, lower-income populations (families in poverty and families with

Table D.18
Access to Transit and Fixed-Guideway Transit

Minority Population^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Minority Population
	People	Percent	People	Percent	
Existing - 2019	487,440	83.6	3,200	0.5	582,900
VISION 2050	522,200	89.6	242,800	41.7	582,900
FCTS - 2050	470,100	80.6	22,500	3.9	582,900

Non-Minority Population^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Non-Minority Population
	People	Percent	People	Percent	
Existing - 2019	590,900	41.1	2,200	0.2	1,437,100
VISION 2050	826,100	57.5	240,900	16.8	1,437,100
FCTS - 2050	556,400	38.7	32,900	2.3	1,437,100

Families in Poverty^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Families in Poverty
	Families	Percent	Families	Percent	
Existing - 2019	37,200	75.8	300	0.6	49,100
VISION 2050	40,100	81.7	18,300	37.3	49,100
FCTS - 2050	35,800	72.9	1,700	3.5	49,100

Families Not in Poverty^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Families Not in Poverty
	Families	Percent	Families	Percent	
Existing - 2019	197,200	42.7	700	0.2	461,600
VISION 2050	258,700	56.0	83,500	18.1	461,600
FCTS - 2050	182,500	39.5	7,400	1.6	461,600

Families with Incomes Less Than Twice the Poverty Level^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Families with Incomes Less Than Twice the Poverty Level
	Families	Percent	Families	Percent	
Existing - 2019	80,800	69.3	500	0.4	116,600
VISION 2050	89,800	77.0	37,600	32.2	116,600
FCTS - 2050	77,300	66.3	3,200	2.7	116,600

Families with Incomes More Than Twice the Poverty Level^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Families with Incomes More Than Twice the Poverty Level
	Families	Percent	Families	Percent	
Existing - 2019	153,600	39.0	400	0.1	394,100
VISION 2050	209,100	53.0	64,000	16.2	394,100
FCTS - 2050	141,100	35.8	5,900	1.5	394,100

People with Disabilities^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Population with Disabilities
	People	Percent	People	Percent	
Existing - 2019	135,300	56.7	800	0.3	238,800
VISION 2050	161,100	67.5	62,000	26.0	238,800
FCTS - 2050	127,400	53.4	6,800	2.8	238,800

People Without Disabilities^a					
Plan	Total Transit Service		Fixed-Guideway Transit Service^b		Total Population Without Disabilities
	People	Percent	People	Percent	
Existing - 2019	894,900	50.0	3,800	0.2	1,788,200
VISION 2050	1,108,400	62.0	413,700	23.1	1,788,200
FCTS - 2050	838,100	46.9	49,000	2.7	1,788,200

^a Minority population and non-minority population are based on the 2010 U.S. Census and families in poverty, families not in poverty, families with incomes less than twice the poverty level, families with incomes more than twice the poverty level, people with disabilities, and people without disabilities are based on the 2014-2018 American Community Survey.

^b Includes rapid transit and commuter rail services.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

Map D.30
Comparison of Existing Concentrations of Total
Minority Population to Public Transit Services: Existing

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

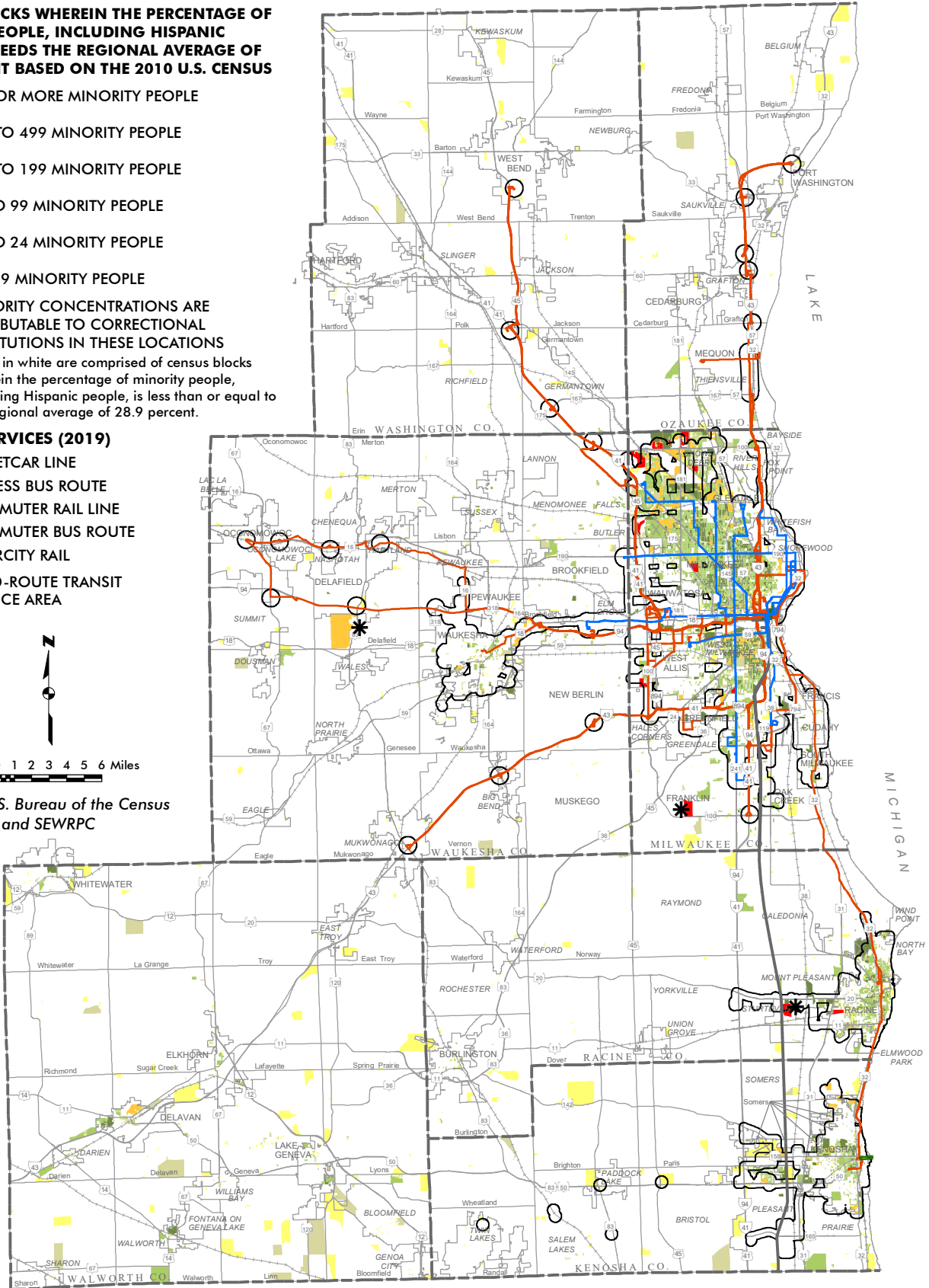
TRANSIT SERVICES (2019)

- STREETCAR LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.31
Comparison of Existing Concentrations of Total
Minority Population to Public Transit Services: VISION 2050

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

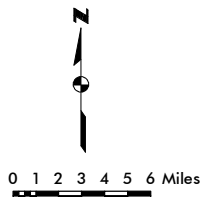
- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

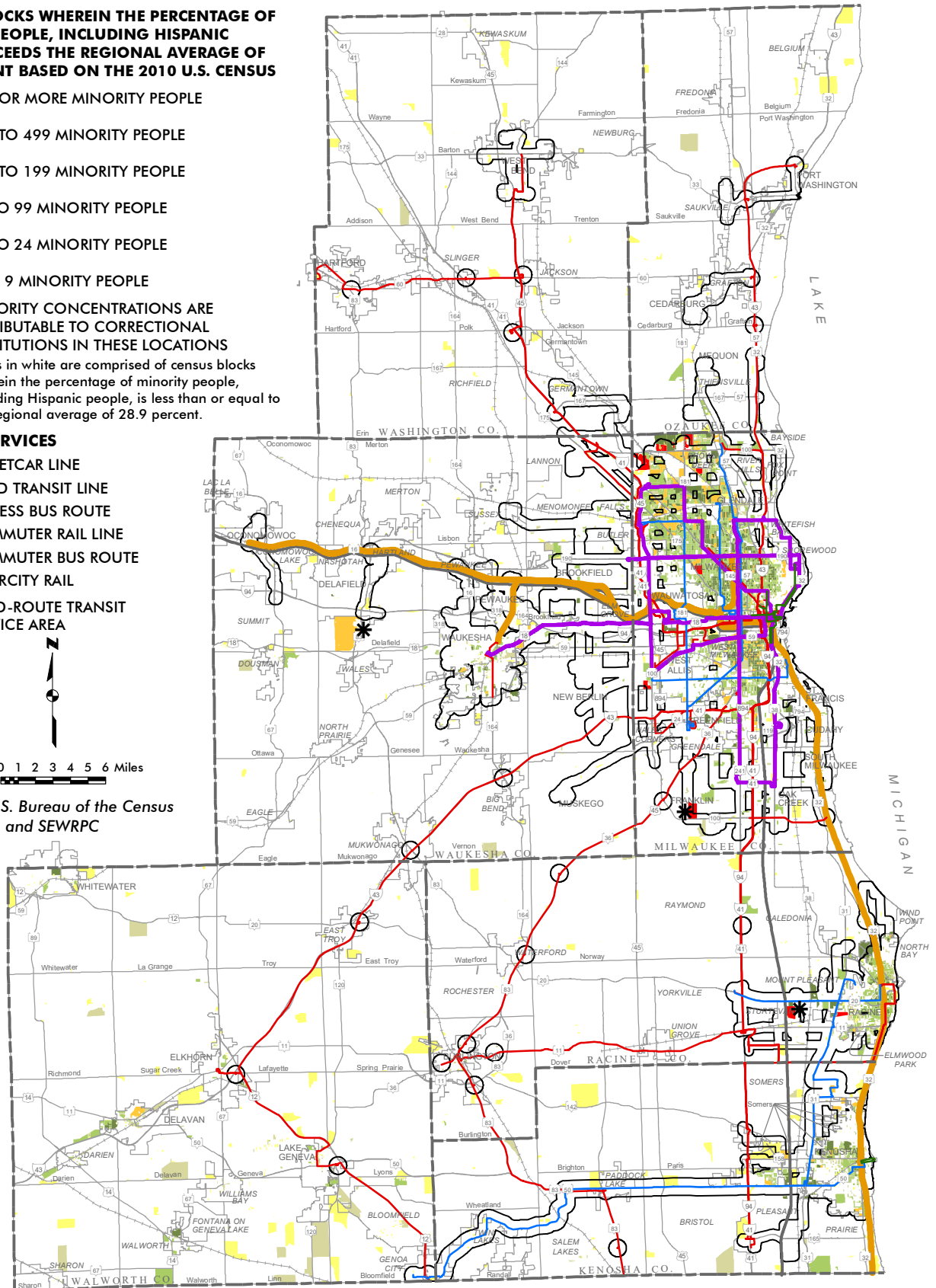
Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



Source: U.S. Bureau of the Census and SEWRPC



Map D.32

Comparison of Existing Concentrations of Total Minority Population to Public Transit Element: FCTS

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

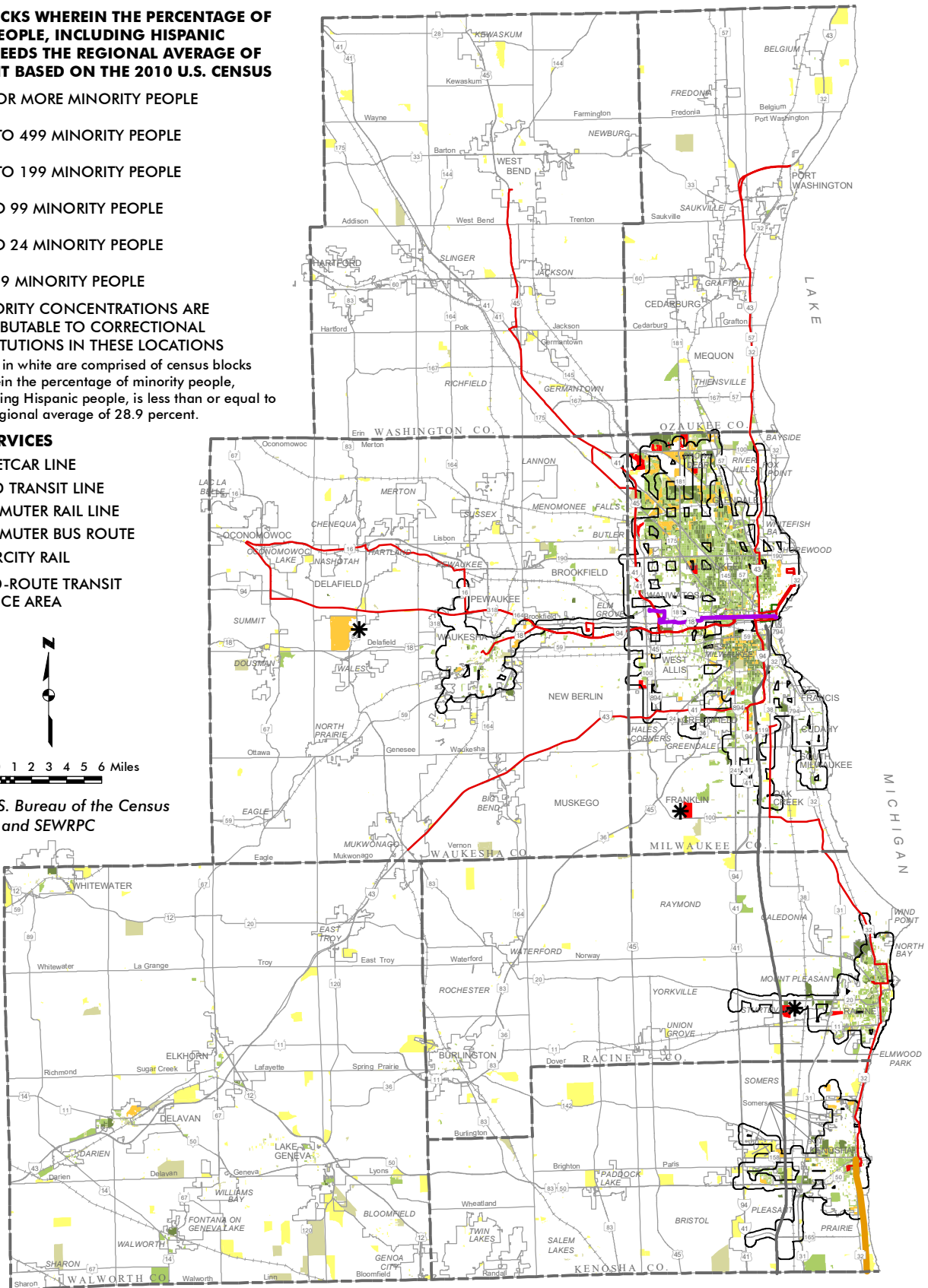
TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.33

Comparison of Concentrations of Year 2010 Races/Ethnicities to Public Transit Element: Existing

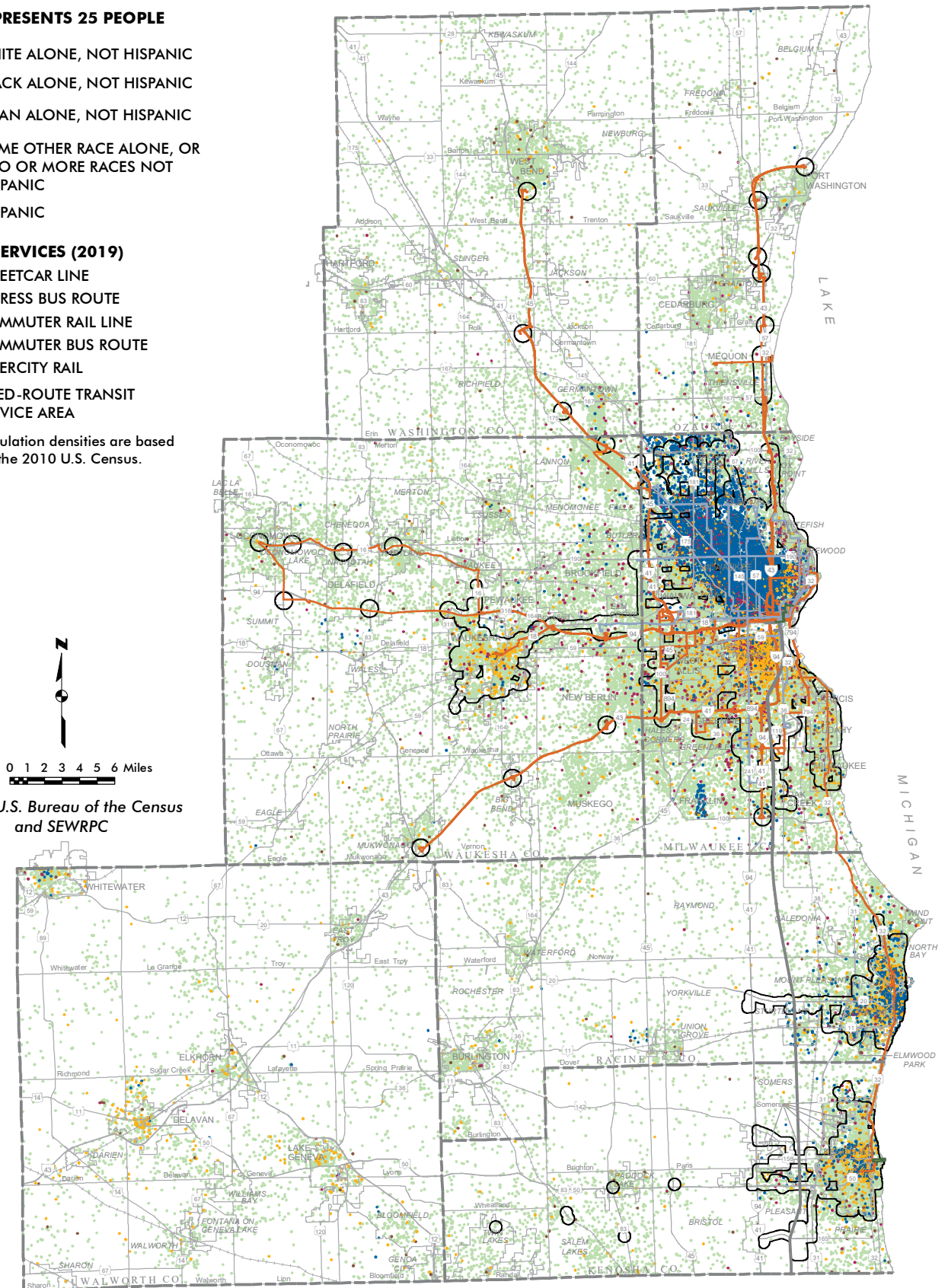
1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

TRANSIT SERVICES (2019)

- STREETCAR LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA

Note: Population densities are based on the 2010 U.S. Census.



Map D.34

Comparison of Concentrations of Year 2010 Races/Ethnicities to Public Transit Element: VISION 2050

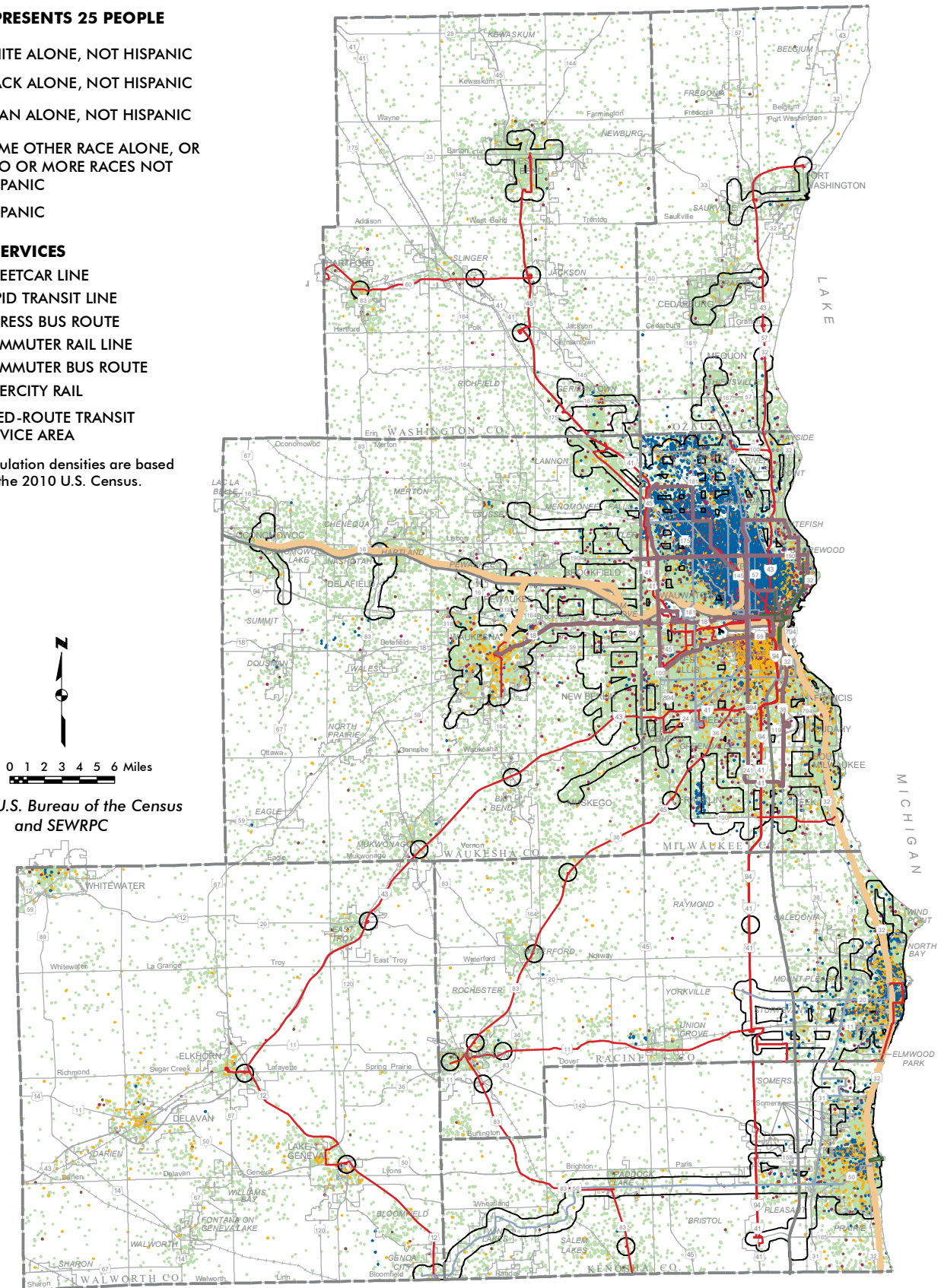
1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA

Note: Population densities are based on the 2010 U.S. Census.



Source: U.S. Bureau of the Census and SEWRPC

Map D.35

Comparison of Concentrations of Year 2010 Races/Ethnicities to Public Transit Element: FCTS

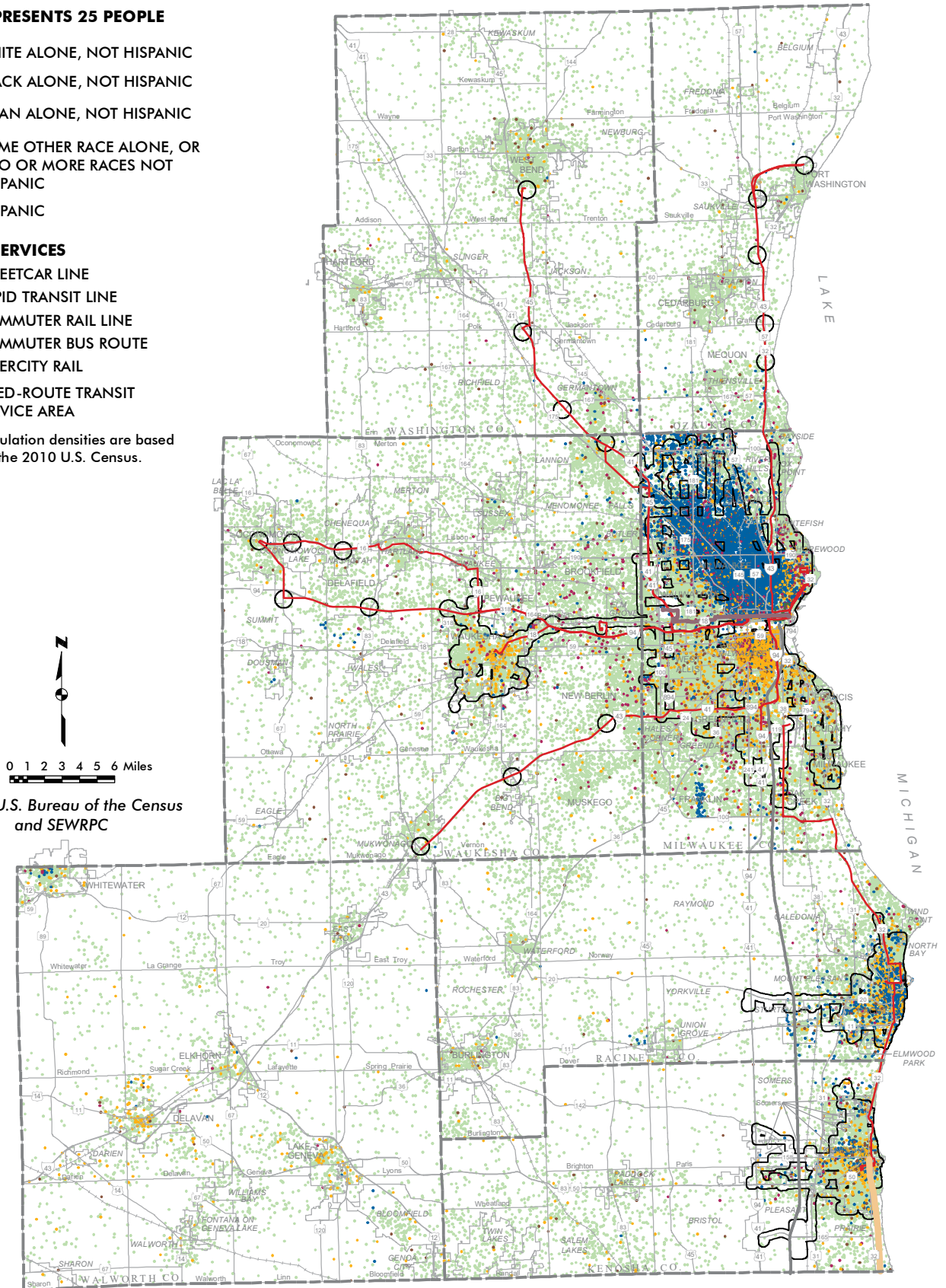
1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA

Note: Population densities are based on the 2010 U.S. Census.



Source: U.S. Bureau of the Census and SEWRPC

Map D.36

Comparison of Existing Concentrations of Families in Poverty to Public Transit Services: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

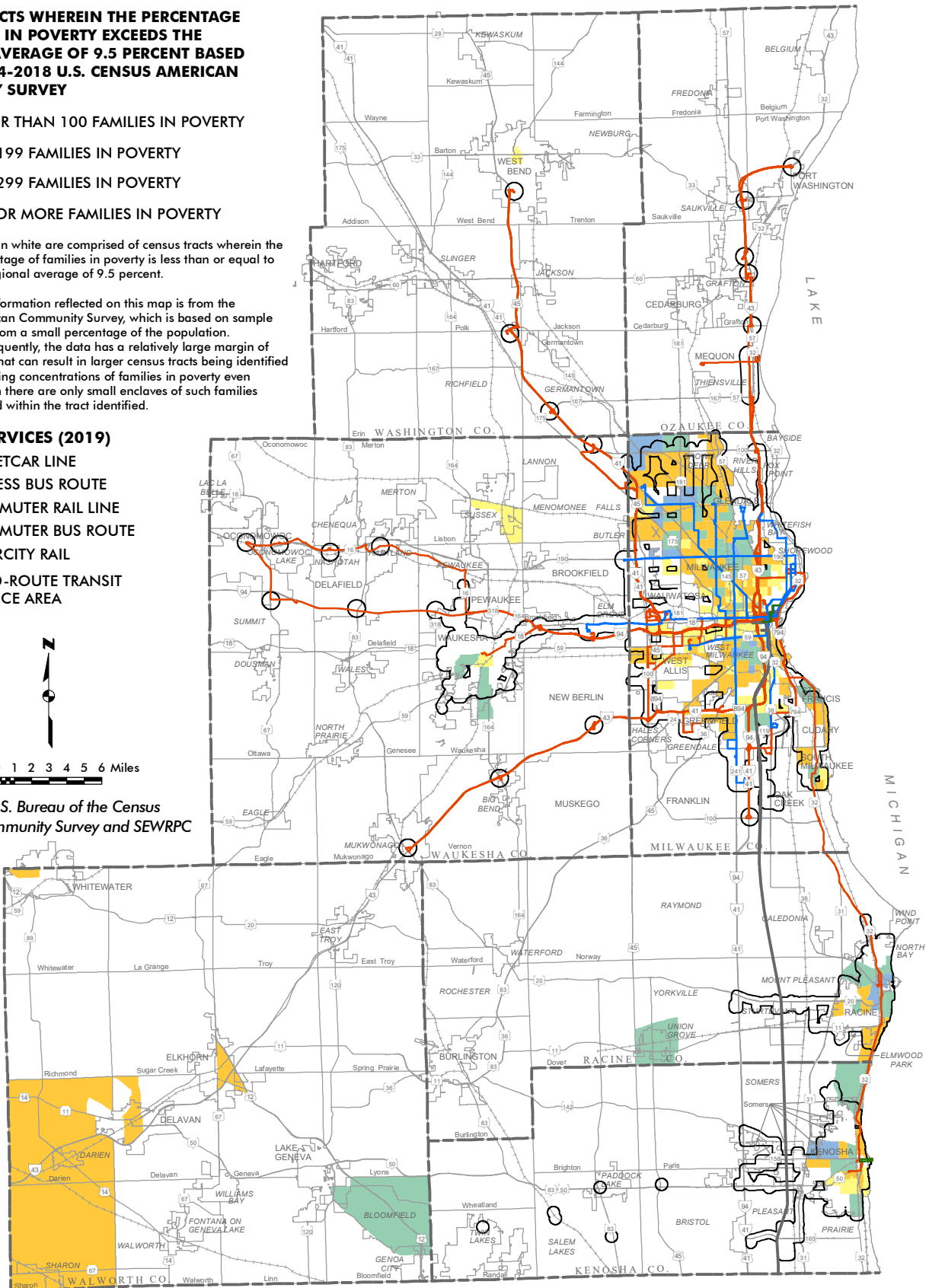
TRANSIT SERVICES (2019)

- STREETCAR LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.37

Comparison of Existing Concentrations of Families in Poverty to Public Transit Services: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

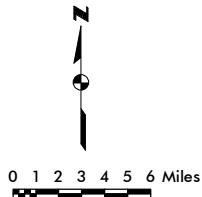
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

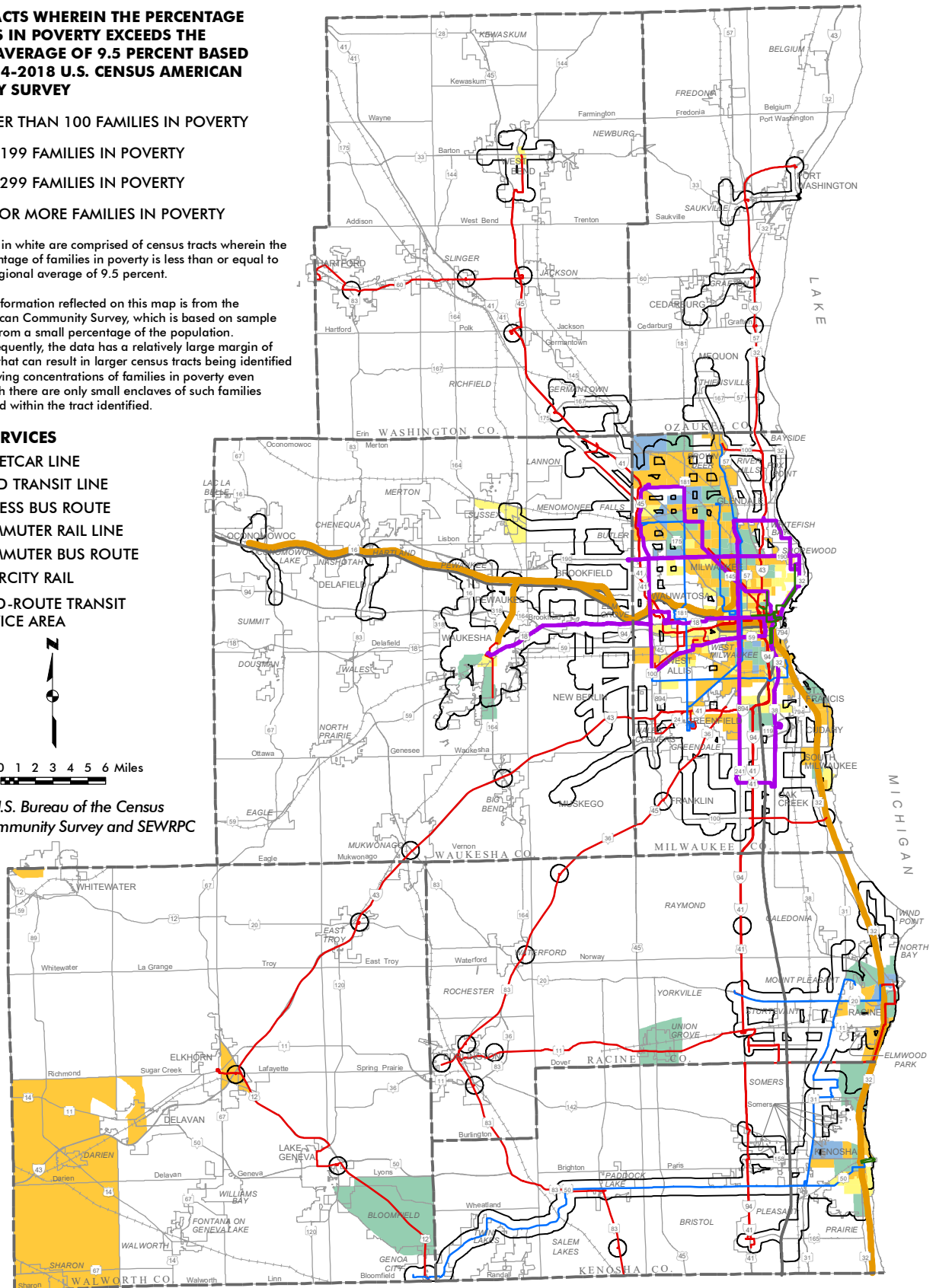
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.38

Comparison of Existing Concentrations of Families in Poverty to Public Transit Services: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

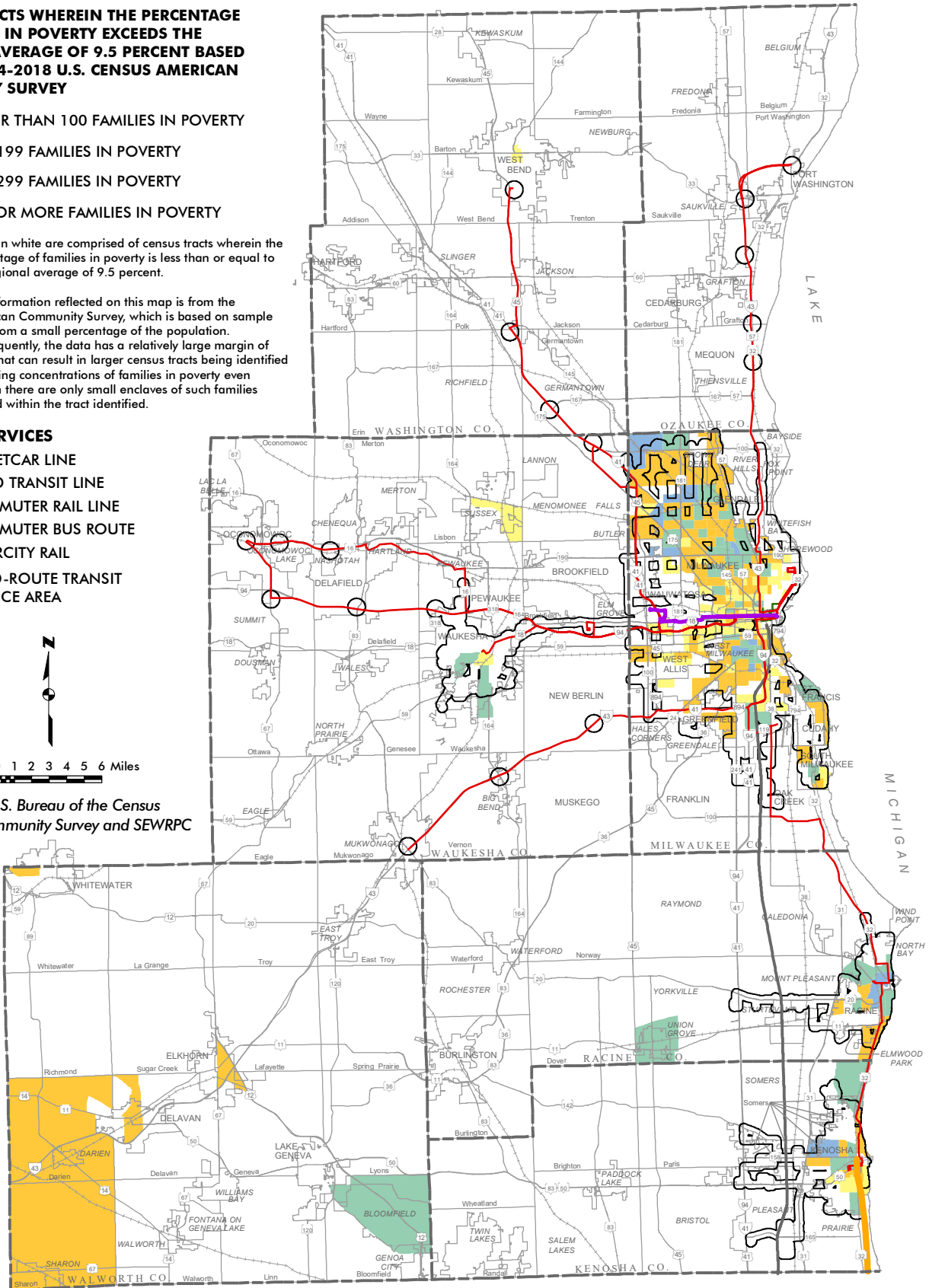
TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.39 Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Public Transit Services: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

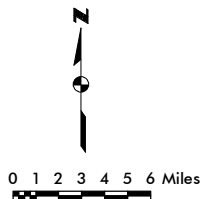
- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

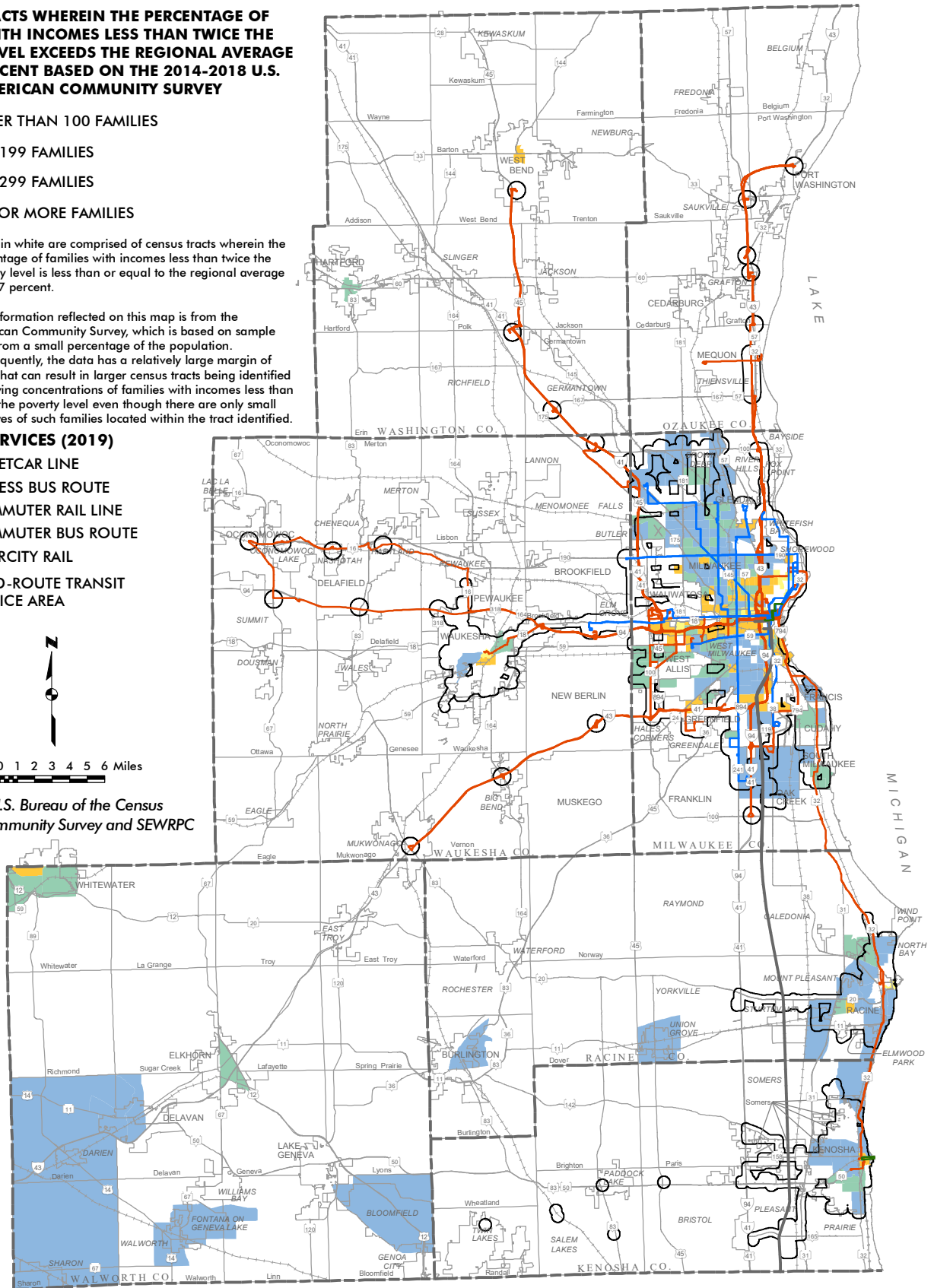
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICES (2019)

- STREETCAR LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC



Map D.40

Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Public Transit Services: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

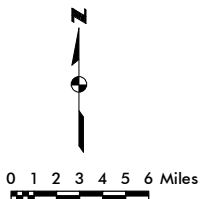
- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

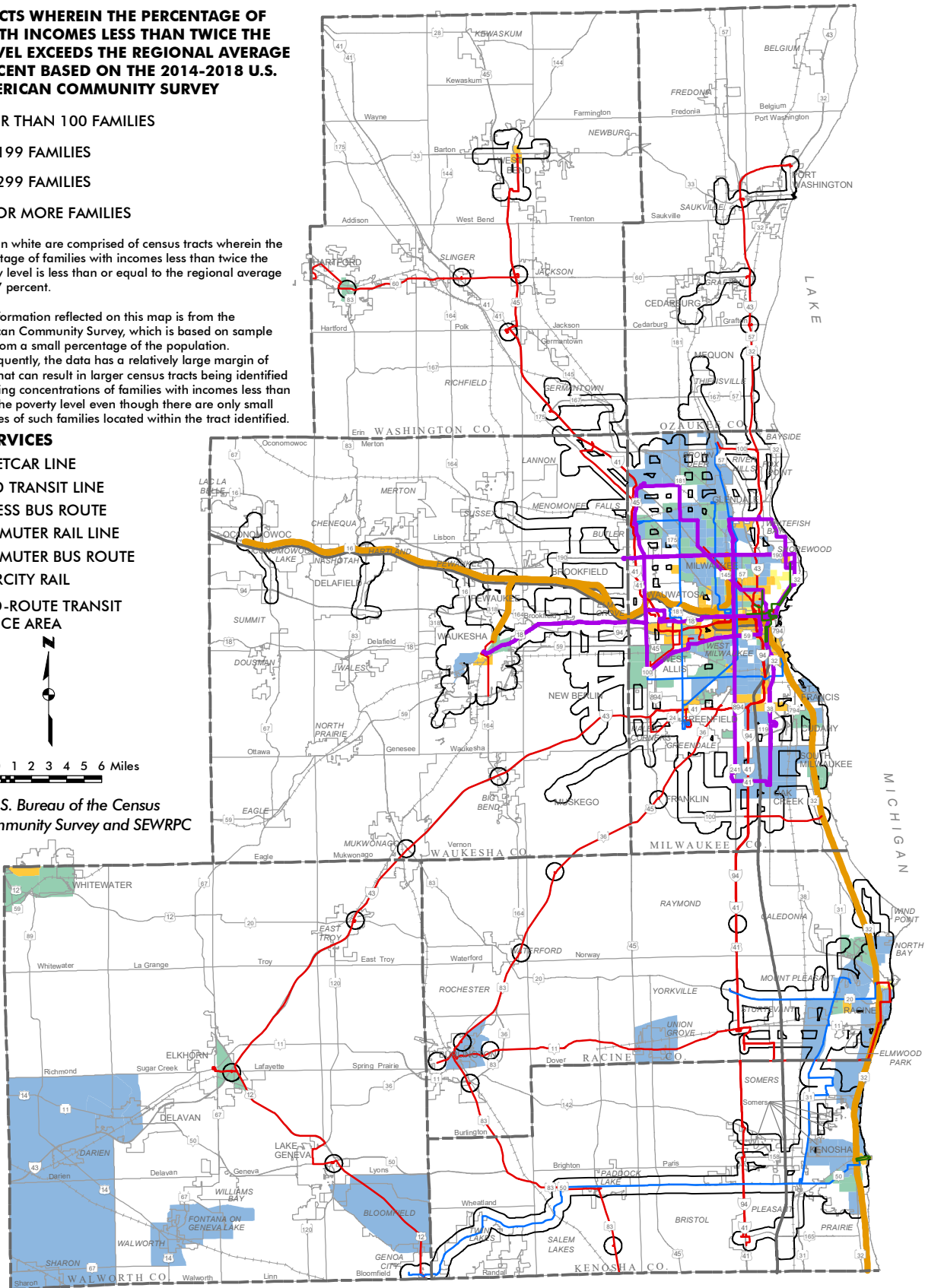
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.41 Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Public Transit Services: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

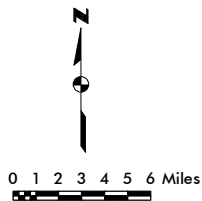
- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

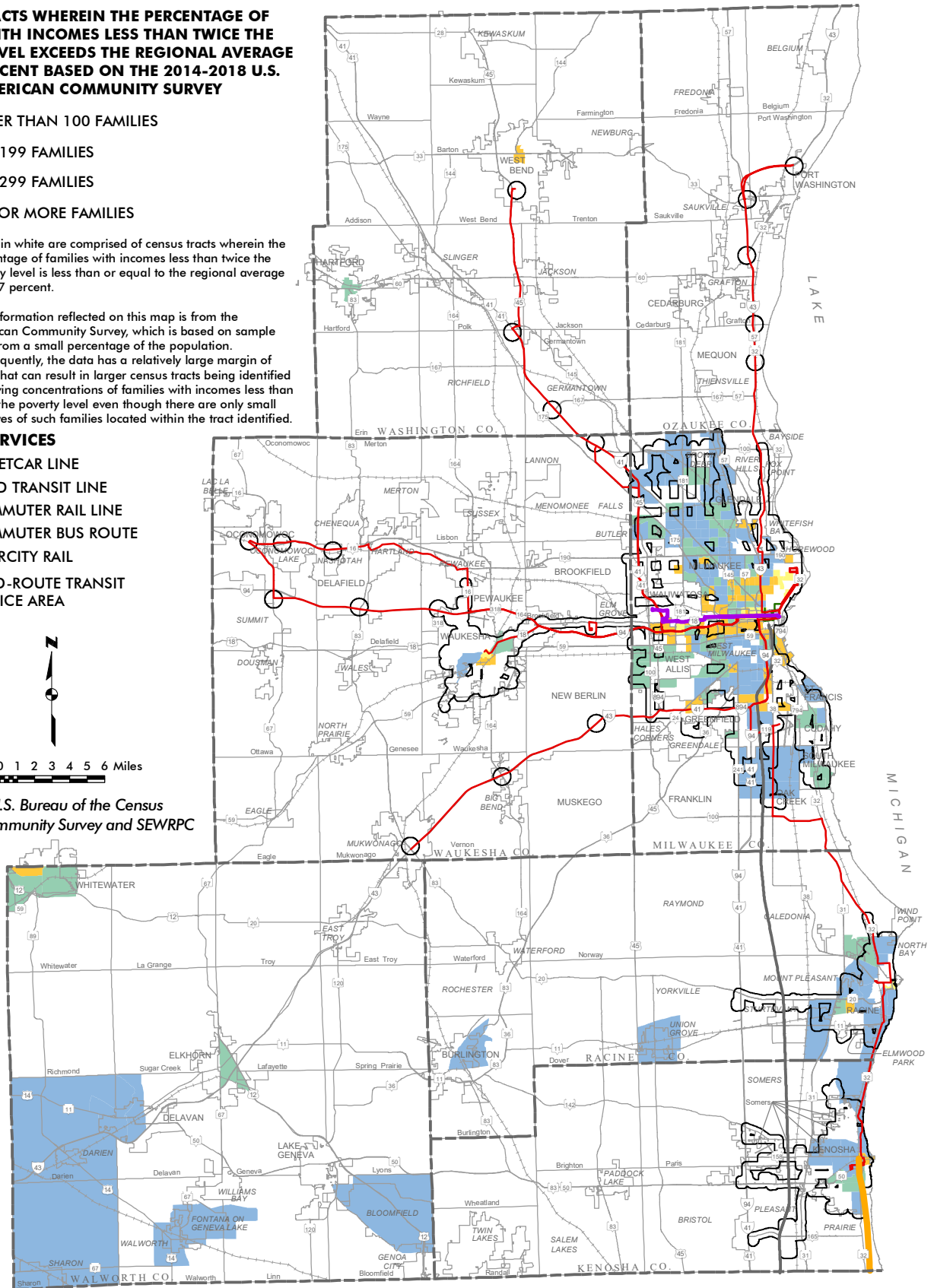
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.42
Comparison of Existing Concentrations of People
with Disabilities to Public Transit Services: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

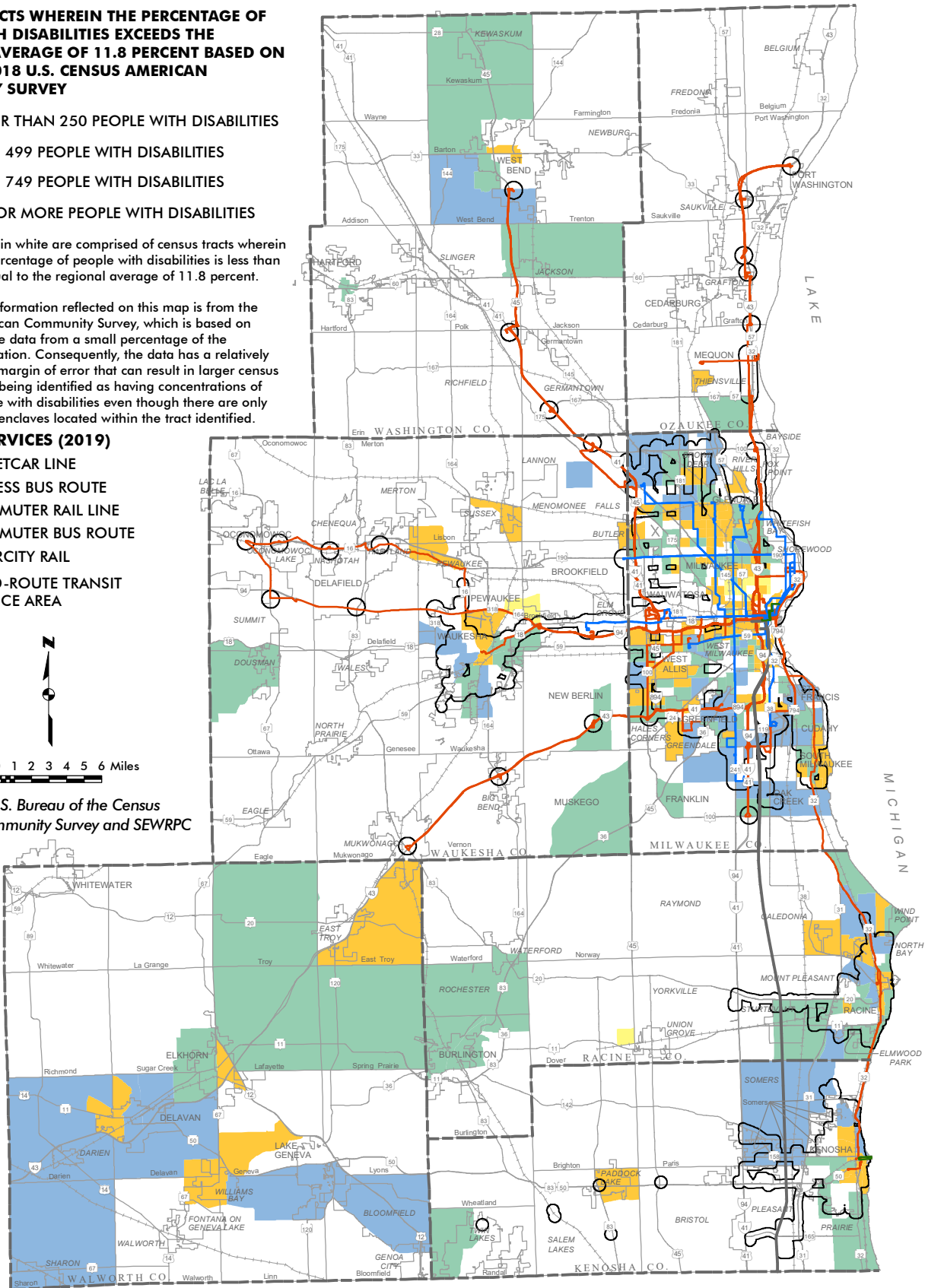
TRANSIT SERVICES (2019)

- STREETCAR LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census
 American Community Survey and SEWRPC



Map D.43 Comparison of Existing Concentrations of People with Disabilities to Public Transit Services: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

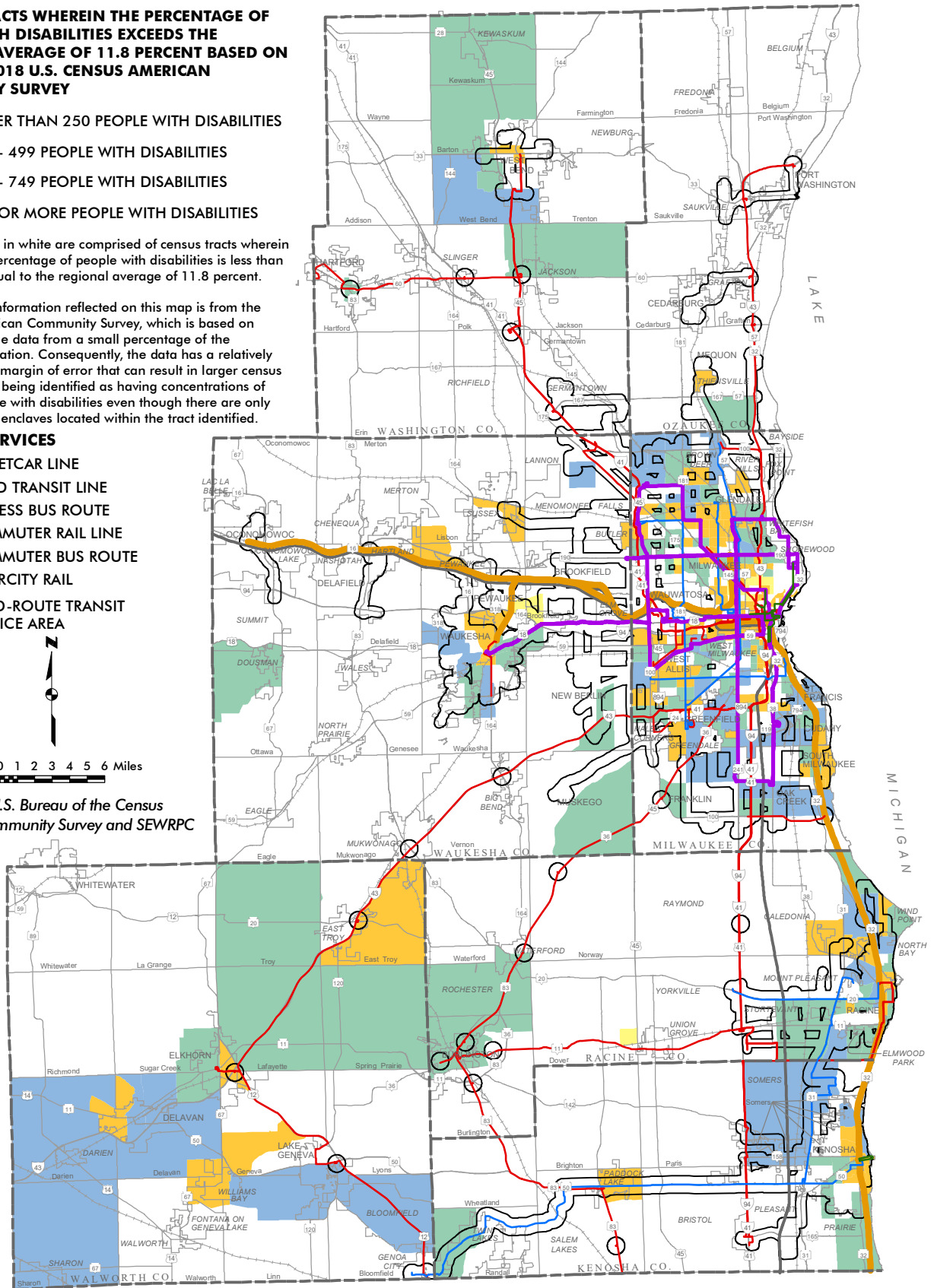
TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census
American Community Survey and SEWRPC



Map D.44
Comparison of Existing Concentrations of People with Disabilities to Public Transit Services: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

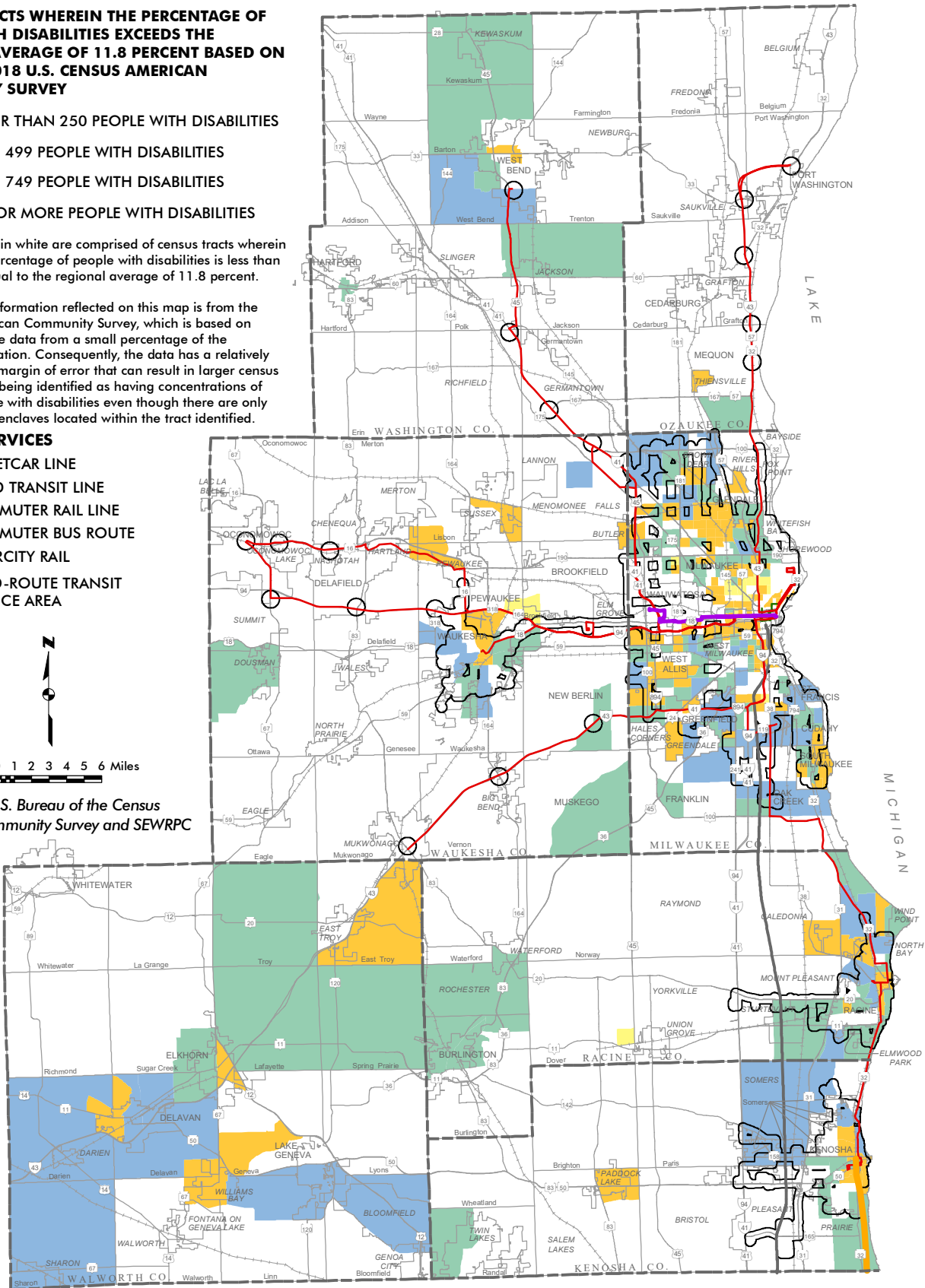
TRANSIT SERVICES

- STREETCAR LINE
- RAPID TRANSIT LINE
- COMMUTER RAIL LINE
- COMMUTER BUS ROUTE
- INTERCITY RAIL
- FIXED-ROUTE TRANSIT SERVICE AREA



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census
 American Community Survey and SEWRPC



incomes less than twice the poverty level), and people with disabilities within walking distance of transit and fixed-guideway transit (either rapid transit or commuter rail) under existing conditions, the updated VISION 2050, and the updated FCTS.

- **Existing Transit Service:** Most of the base year 2019 routes and service areas for the public transit systems in the Region serve the principal concentrations of existing minority populations, lower-income populations, and people with disabilities. Specifically, about 487,440 minority people (or 84 percent of the total minority population) and 590,900 non-minority people (or 41 percent of the total non-minority population) were served by public transit services provided in the year 2019. With respect to lower-income populations, 37,200 (or 76 percent of) families in poverty and 197,200 (or 43 percent of) families not in poverty were served by public transit services provided in the year 2019. Similarly, 80,800 (or 69 percent of) families with incomes less than twice the poverty level and 153,600 (or 39 percent of) families with incomes more than twice the poverty level were served by public transit services provided in the year 2019. With respect to people with disabilities, 135,300 (or 57 percent of) people with disabilities and 894,900 (or 50 percent of) people not having a disability were served by public transit services provided in the year 2019.

With respect to higher levels of transit, less than 1 percent of all eight population groups had access to fixed-guideway transit in 2019 (a limited commuter rail service was provided to Kenosha from northeastern Illinois on Metra's Union Pacific North Line).

- **VISION 2050:** About 522,200 minority people (or about 90 percent of the total minority population) and 826,100 non-minority people (or 58 percent of the total non-minority population) would be served by public transit under the updated VISION 2050. With respect to lower-income populations, 40,100 (or 82 percent of) families in poverty and 258,700 (or 56 percent of) families not in poverty would be served by public transit under the updated VISION 2050. Similarly, 89,800 (or 77 percent of) families with incomes less than twice the poverty level and 209,100 (or 53 percent of) families with incomes more than twice the poverty level would be served by public transit under the updated VISION 2050. With respect to people with disabilities, 161,100 (or 68 percent of) people with disabilities and 1,108,400 (or 62 percent of) people not having a disability would be served by public transit under the updated VISION 2050.

The extensive expansion of fixed-guideway transit under the updated VISION 2050 would result in increased access to fixed-guideway transit from the current levels of 0.2 to 0.6 percent to about 27 to 42 percent for existing minority populations, lower-income populations, and people with disabilities. Access for non-minority populations, families not in poverty, families with incomes more than twice the poverty level, and people without disabilities would increase from the current levels of 0.1 to 0.3 percent to about 16 to 23 percent.

- **The FCTS:** While the overall extent of transit service under the updated FCTS would be expected to decline, most of the transit routes and service areas under the updated FCTS would continue to serve the principal concentrations of existing minority populations,

lower-income populations, and people with disabilities. Specifically, about 470,100 minority people (or 81 percent of the total minority population) and 556,400 non-minority people (or 39 percent of the total non-minority population) would be served by public transit under the updated FCTS. With respect to lower-income populations, 35,800 (or 73 percent of) families in poverty and 182,500 (or 40 percent of) families not in poverty would be served by public transit under the updated FCTS. Similarly, 77,300 (or 66 percent of) families with incomes less than twice the poverty level and 141,100 (or 36 percent of) families with incomes more than twice the poverty level would be served by public transit under the updated FCTS. With respect to people with disabilities, 127,400 (or 53 percent of) people with disabilities and 838,100 (or 47 percent of) people not having a disability would be served by public transit under the updated FCTS.

Due to the planned bus rapid transit line between downtown Milwaukee and the Milwaukee Regional Medical Center, access to fixed-guideway transit would modestly increase for each of the eight population groups. Under the updated FCTS, access to fixed-guideway transit would increase from the current levels of 0.2 to 0.6 percent to about 3 to 4 percent for existing minority populations, lower-income populations, and people with disabilities. Access for non-minority populations, families not in poverty, families with incomes more than twice the poverty level, and people without disabilities would increase from the current levels of 0.1 to 0.2 percent to about 2 to 3 percent.

TRANSIT SERVICE QUALITY FOR MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

Based on the amount and speed of transit service, levels of transit service quality—Excellent, Very Good, Good, and Basic³⁰—that would be provided under existing conditions, the updated VISION 2050, and the updated FCTS to existing minority populations, low-income populations, and people with disabilities were determined. Based on this analysis, the quality of transit service provided under existing conditions, the updated VISION 2050, and the updated FCTS is shown on Maps D.45 through D.47, respectively. Table D.19 and Maps D.48 through D.59 compare transit service quality under existing conditions, the updated VISION 2050, and the updated FCTS to locations of existing minority populations, lower-income populations (families in poverty

³⁰ Areas with “Excellent” transit service are areas that are typically within walking distance of at least one rapid transit station, and also within walking distance of multiple frequent local or express bus services. A resident living in an area of the Region with Excellent transit service has a high likelihood of not needing to own a car.

Areas with “Very Good” transit service typically include parts of the Region that are within walking distance of a rapid transit or commuter rail station, but may have fewer local or express bus routes nearby than an area with Excellent service. Alternatively, areas with Very Good service may not be within walking distance of a rapid transit or commuter rail station, but may instead be near multiple frequent local and express bus routes.

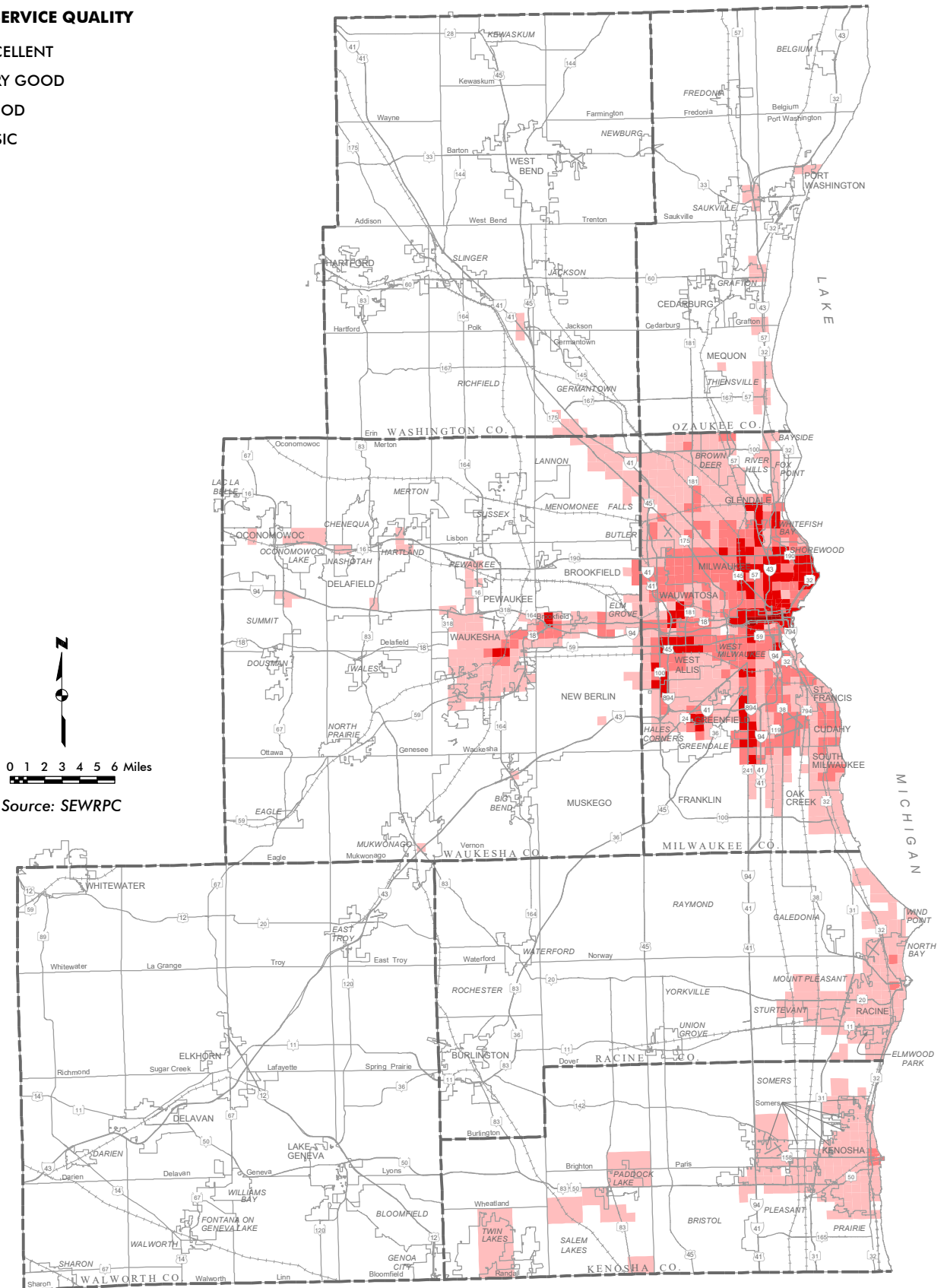
To have “Good” transit service, an area would be within walking distance of one local or express bus route that provides service at least every 15 minutes all day, or may be near three or more local bus routes that do not provide frequent, all-day service. An area with Good transit service typically would not have access to a rapid transit line.

If a part of the Region is served by “Basic” transit service, it is within walking distance of at least one local bus route, but generally not more than two routes. The routes are not likely to have service better than every 15 minutes all day.

Map D.45
Transit Service Quality: Existing

TRANSIT SERVICE QUALITY

- EXCELLENT
- VERY GOOD
- GOOD
- BASIC

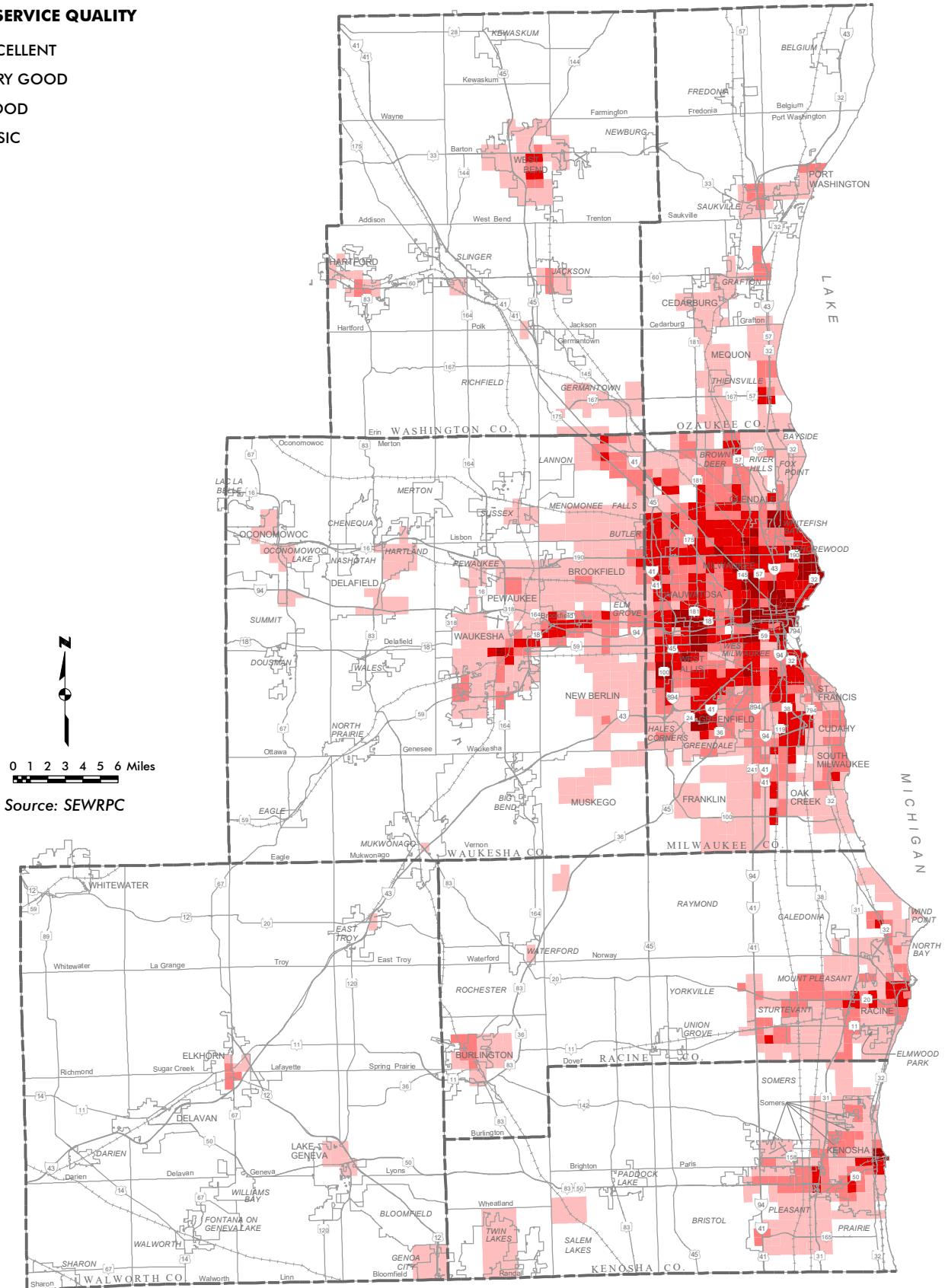


0 1 2 3 4 5 6 Miles
 Source: SEWRPC

Map D.46
Transit Service Quality: VISION 2050

TRANSIT SERVICE QUALITY

- EXCELLENT
- VERY GOOD
- GOOD
- BASIC



0 1 2 3 4 5 6 Miles
 Source: SEWRPC

Map D.47
Transit Service Quality: FCTS

TRANSIT SERVICE QUALITY

- EXCELLENT
- VERY GOOD
- GOOD
- BASIC

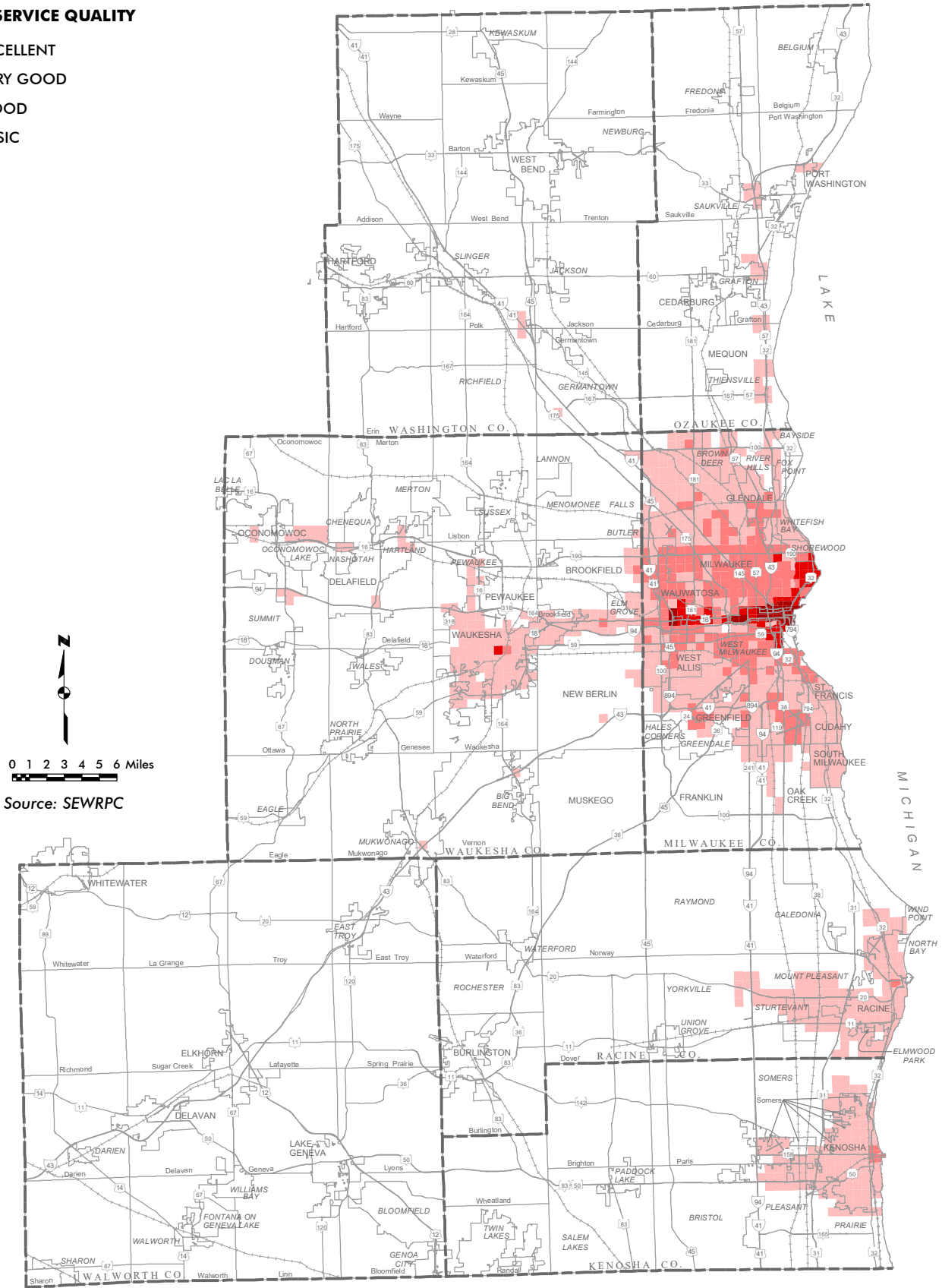


Table D.19
Transit Service Quality

Minority Population^a									
Plan	Excellent		Very Good		Good		Basic		Total Minority Population
	People	Percent	People	Percent	People	Percent	People	Percent	
Existing - 2017	1,300	0.2	61,000	10.5	224,300	38.5	224,600	38.5	582,900
VISION 2050	69,900	12.0	205,100	35.2	149,000	25.6	113,000	19.4	582,900
FCTS - 2050	5,500	0.9	13,800	2.4	94,300	16.2	394,300	67.6	582,900

Non-Minority Population^a									
Plan	Excellent		Very Good		Good		Basic		Total Non-Minority Population
	People	Percent	People	Percent	People	Percent	People	Percent	
Existing - 2017	2,300	0.2	58,700	4.1	177,600	12.4	396,400	27.6	1,437,500
VISION 2050	65,800	4.6	180,400	12.5	223,100	15.5	402,400	28.0	1,437,500
FCTS - 2050	9,800	0.7	20,300	1.4	50,400	3.5	522,300	36.3	1,437,500

Families in Poverty^a									
Plan	Excellent		Very Good		Good		Basic		Total Families in Poverty
	Families	Percent	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	100	0.2	5,200	10.7	16,200	33.4	17,800	36.7	48,500
VISION 2050	5,300	10.9	15,400	31.8	11,600	23.9	9,200	19.0	48,500
FCTS - 2050	300	0.6	1,200	2.5	7,000	14.4	30,500	62.9	48,500

Families Not in Poverty^a									
Plan	Excellent		Very Good		Good		Basic		Total Families Not in Poverty
	Families	Percent	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	200	0.0	16,500	3.6	73,000	15.8	135,700	29.5	460,600
VISION 2050	19,000	4.1	71,700	15.6	78,500	17.0	126,200	27.4	460,600
FCTS - 2050	1,000	0.2	3,900	0.8	23,200	5.0	188,100	40.8	460,600

Families with Incomes Less Than Twice the Poverty Level^a									
Plan	Excellent		Very Good		Good		Basic		Total Families with Incomes Less Than Twice the Poverty Level
	Families	Percent	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	100	0.1	9,600	8.3	33,900	29.3	43,000	37.2	115,600
VISION 2050	9,900	8.6	32,900	28.5	26,800	23.2	25,000	21.6	115,600
FCTS - 2050	400	0.3	1,900	1.6	13,900	12.0	69,200	59.9	115,600

Families with Incomes More Than Twice the Poverty Level^a									
Plan	Excellent		Very Good		Good		Basic		Total Families with Incomes More Than Twice the Poverty Level
	Families	Percent	Families	Percent	Families	Percent	Families	Percent	
Existing - 2017	200	0.1	12,100	3.1	55,300	14.1	110,500	28.1	393,500
VISION 2050	14,400	3.7	54,300	13.8	63,400	16.1	110,400	28.1	393,500
FCTS - 2050	900	0.2	3,100	0.8	16,400	4.2	149,400	38.0	393,500

People with Disabilities^a									
Plan	Excellent		Very Good		Good		Basic		Total Population with Disabilities
	People	Percent	People	Percent	People	Percent	People	Percent	
Existing - 2017	300	0.1	15,800	6.6	53,800	22.6	79,900	33.6	237,700
VISION 2050	18,000	7.6	50,000	21.0	48,000	20.2	59,900	25.2	237,700
FCTS - 2050	1,400	0.6	4,400	1.9	20,800	8.8	119,400	50.2	237,700

People Without Disabilities^a									
Plan	Excellent		Very Good		Good		Basic		Total Population Without Disabilities
	People	Percent	People	Percent	People	Percent	People	Percent	
Existing - 2017	3,200	0.2	103,900	5.8	348,200	19.5	541,100	30.4	1,782,600
VISION 2050	117,700	6.6	335,600	18.8	324,100	18.2	455,500	25.6	1,782,600
FCTS - 2050	14,000	0.8	29,700	1.7	123,900	7.0	797,300	44.7	1,782,600

^aMinority population and non-minority population are based on the 2010 U.S. Census and families in poverty, families not in poverty, families with incomes less than twice the poverty level, families with incomes more than twice the poverty level, people with disabilities, and people without disabilities are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

Map D.48 Comparison of Existing Concentrations of Total Minority Population to Transit Service Quality: Existing

**CENSUS BLOCKS WHEREIN THE PERCENTAGE OF
MINORITY PEOPLE, INCLUDING HISPANIC
PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF
28.9 PERCENT BASED ON THE 2010 U.S. CENSUS**

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

*** MINORITY CONCENTRATIONS
ARE ATTRIBUTABLE TO
CORRECTIONAL INSTITUTIONS
IN THESE LOCATIONS**

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

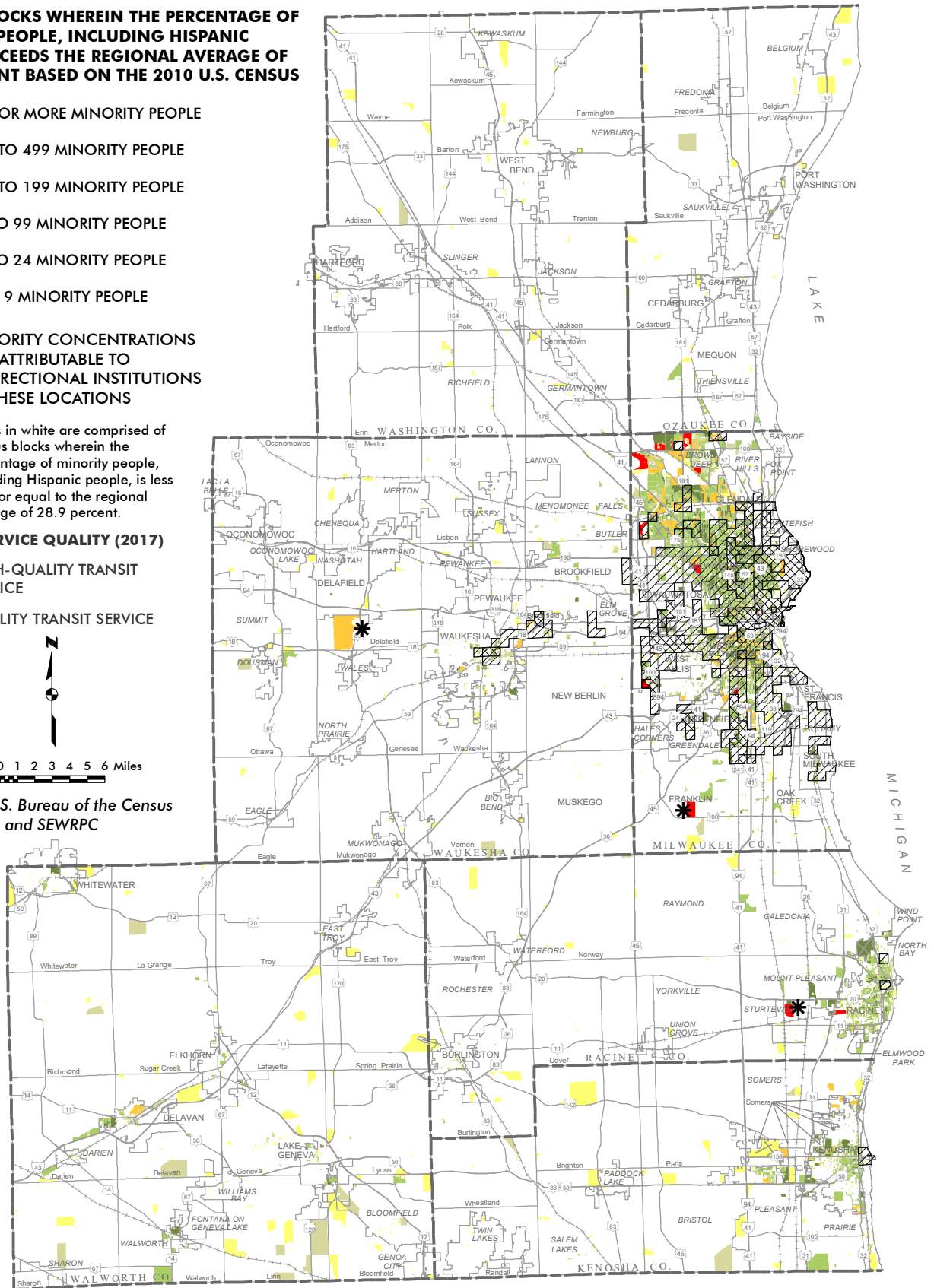
TRANSIT SERVICE QUALITY (2017)

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census
and SEWRPC



Map D.49
Comparison of Existing Concentrations of Total
Minority Population to Transit Service Quality: VISION 2050

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

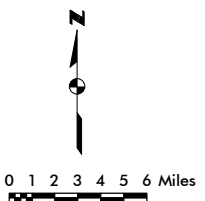
- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

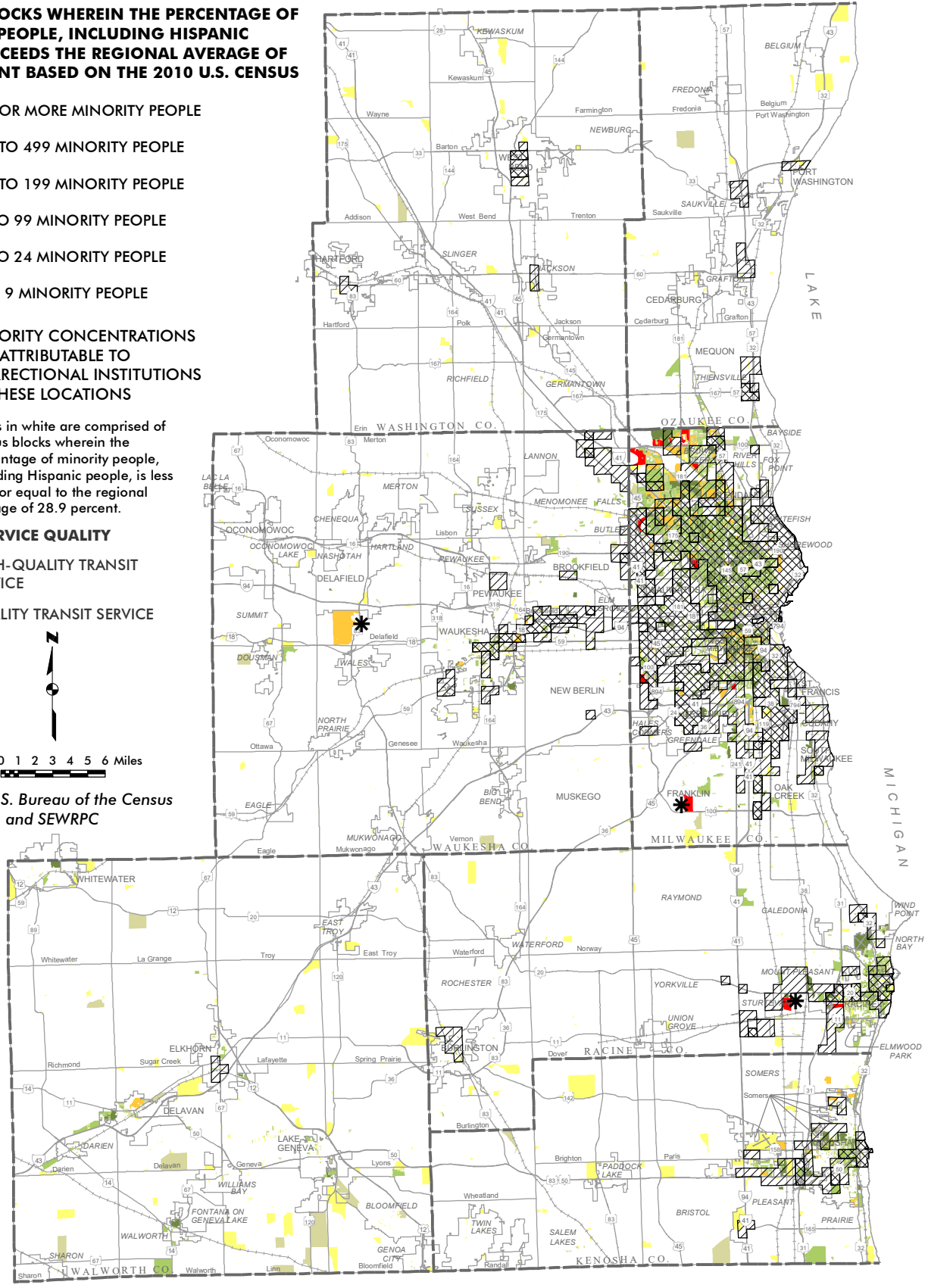
Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census and SEWRPC



Map D.50
Comparison of Existing Concentrations of Total
Minority Population to Transit Service Quality: FCTS

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
 - 200 TO 499 MINORITY PEOPLE
 - 100 TO 199 MINORITY PEOPLE
 - 25 TO 99 MINORITY PEOPLE
 - 10 TO 24 MINORITY PEOPLE
 - 1 TO 9 MINORITY PEOPLE
- *** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

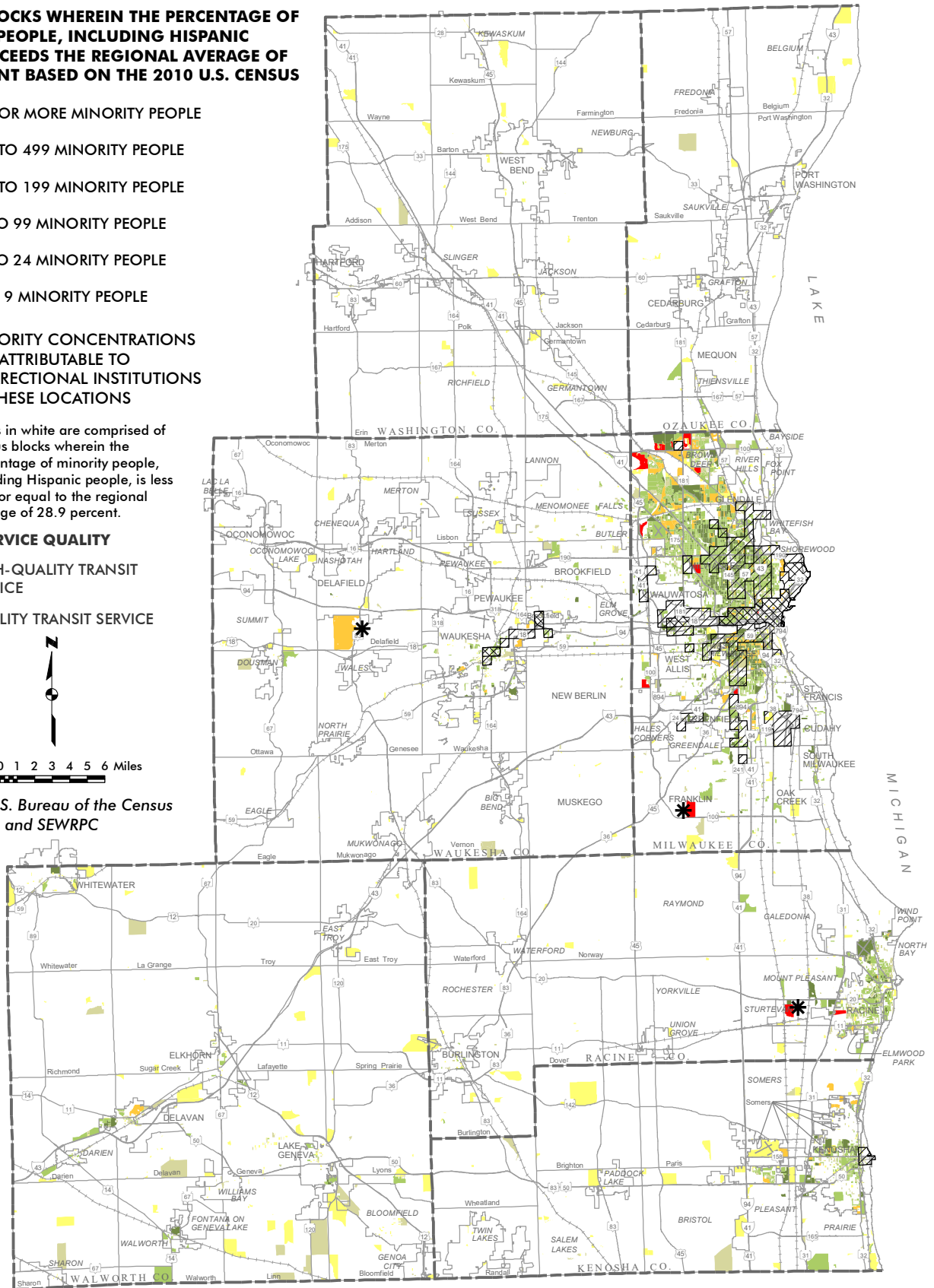
TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.51

Comparison of Existing Concentrations of Families in Poverty to Transit Service Quality: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

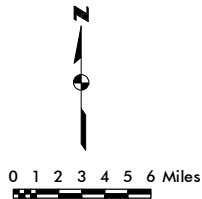
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

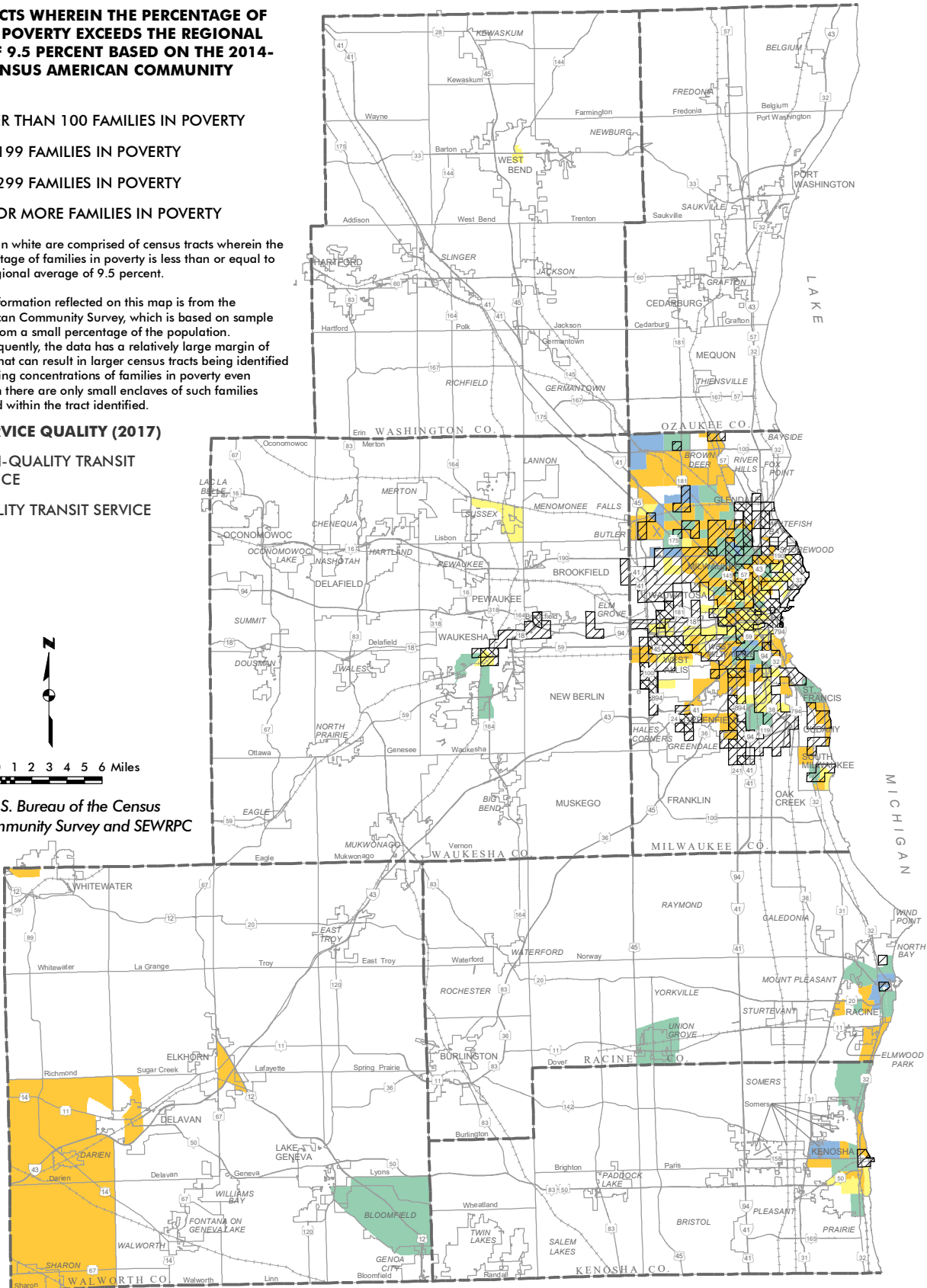
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICE QUALITY (2017)

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.52

Comparison of Existing Concentrations of Families in Poverty to Transit Service Quality: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

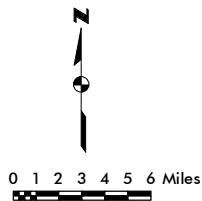
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

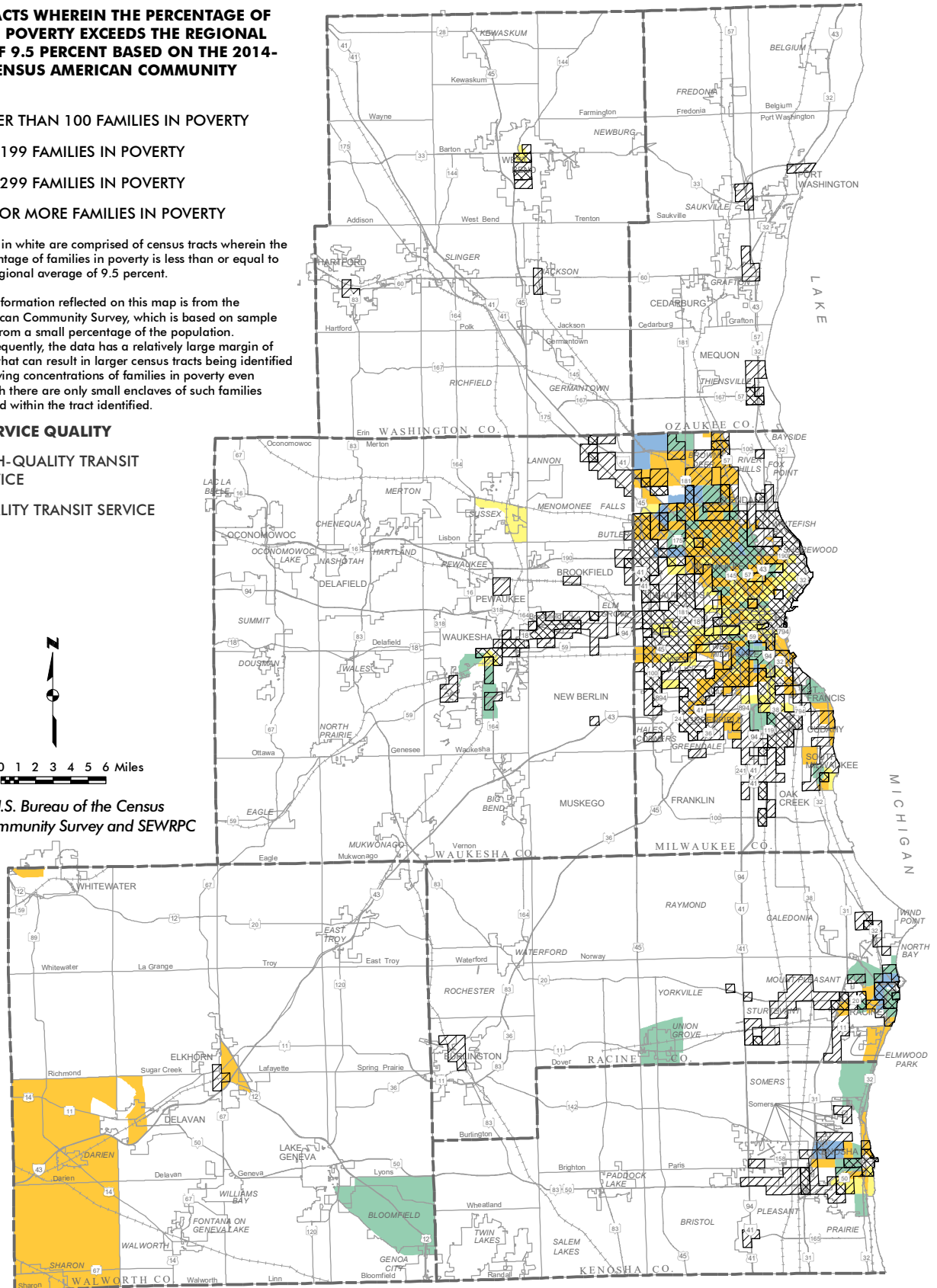
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.53

Comparison of Existing Concentrations of Families in Poverty to Transit Service Quality: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

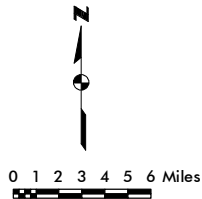
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

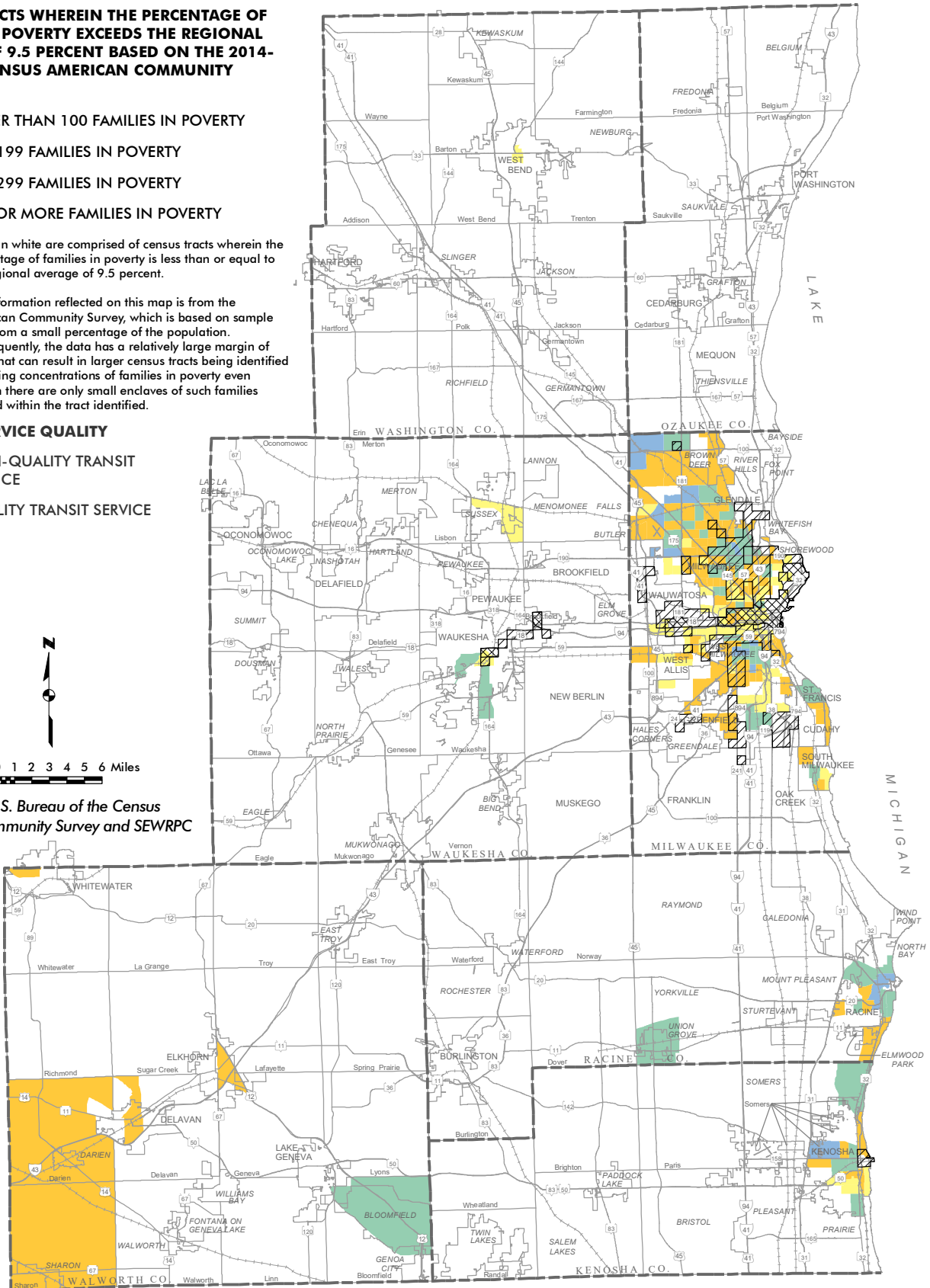
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.54 Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Transit Service Quality: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

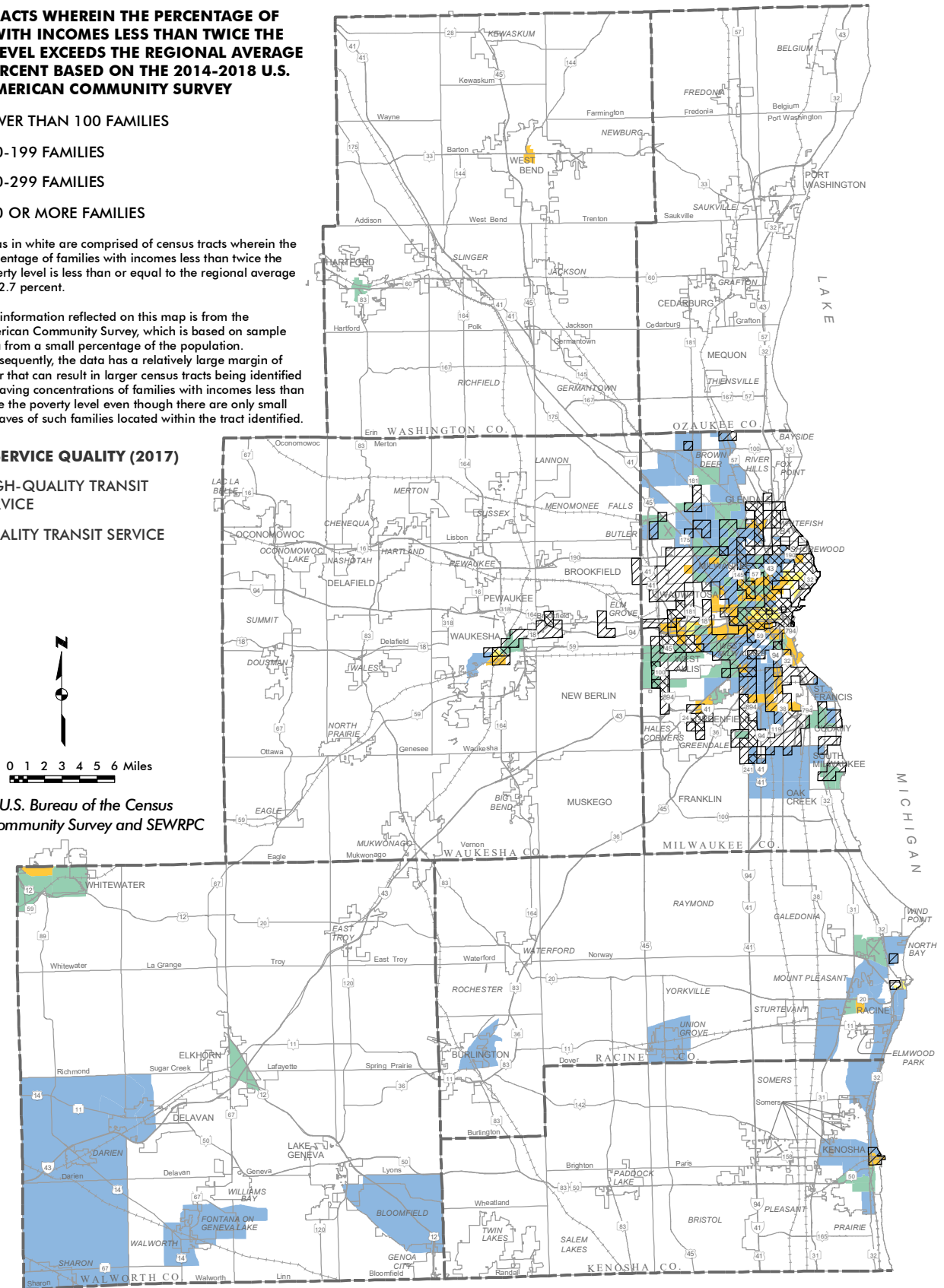
- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICE QUALITY (2017)

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC

Map D.55

Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Transit Service Quality: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

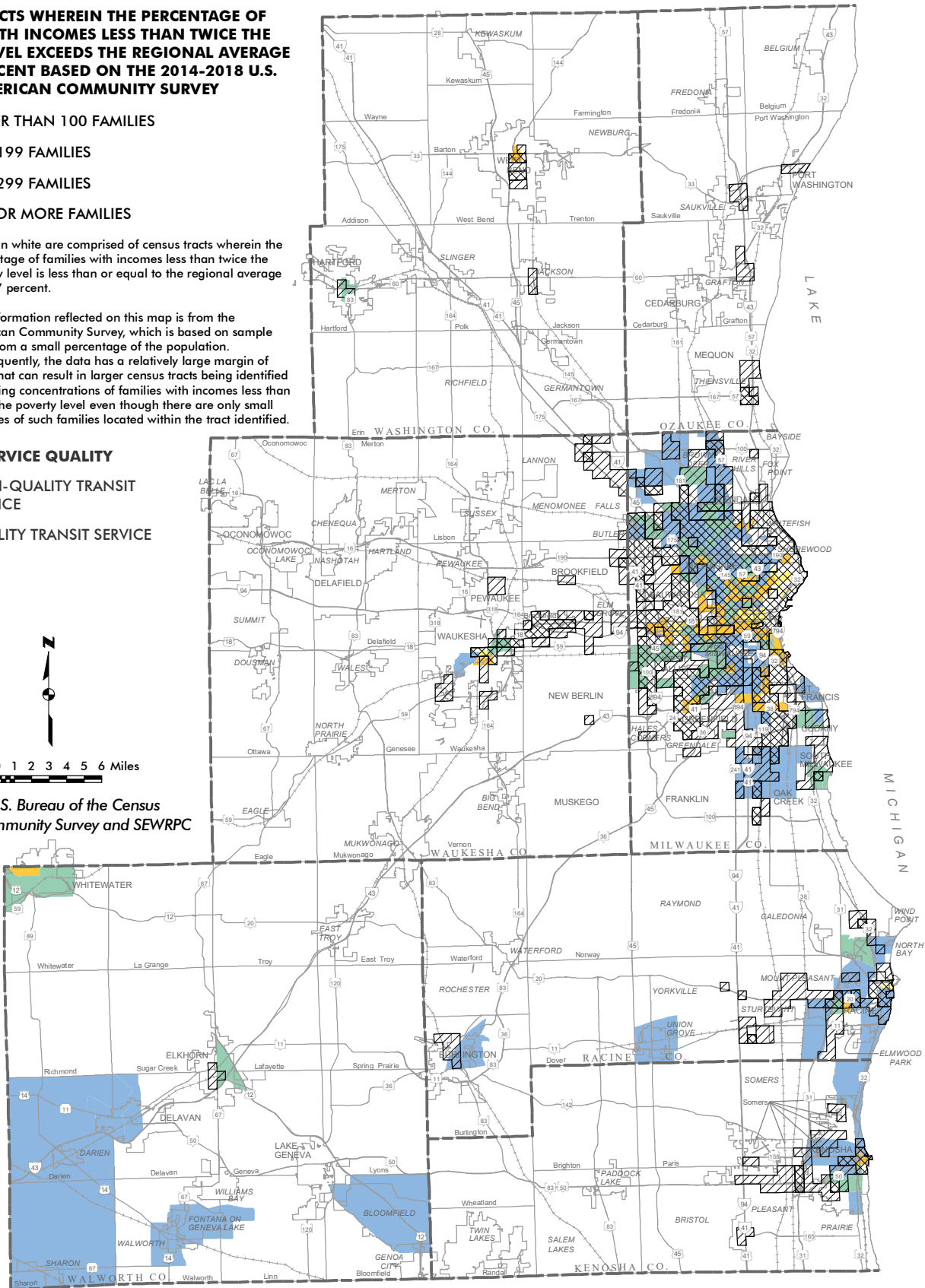
TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.56 Comparison of Existing Concentrations of Families with Incomes Less Than Twice the Poverty Level to Transit Service Quality: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES WITH INCOMES LESS THAN TWICE THE POVERTY LEVEL EXCEEDS THE REGIONAL AVERAGE OF 22.7 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

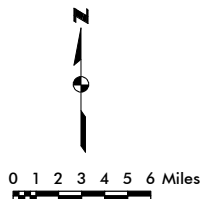
- FEWER THAN 100 FAMILIES
- 100-199 FAMILIES
- 200-299 FAMILIES
- 300 OR MORE FAMILIES

Notes: Areas in white are comprised of census tracts wherein the percentage of families with incomes less than twice the poverty level is less than or equal to the regional average of 22.7 percent.

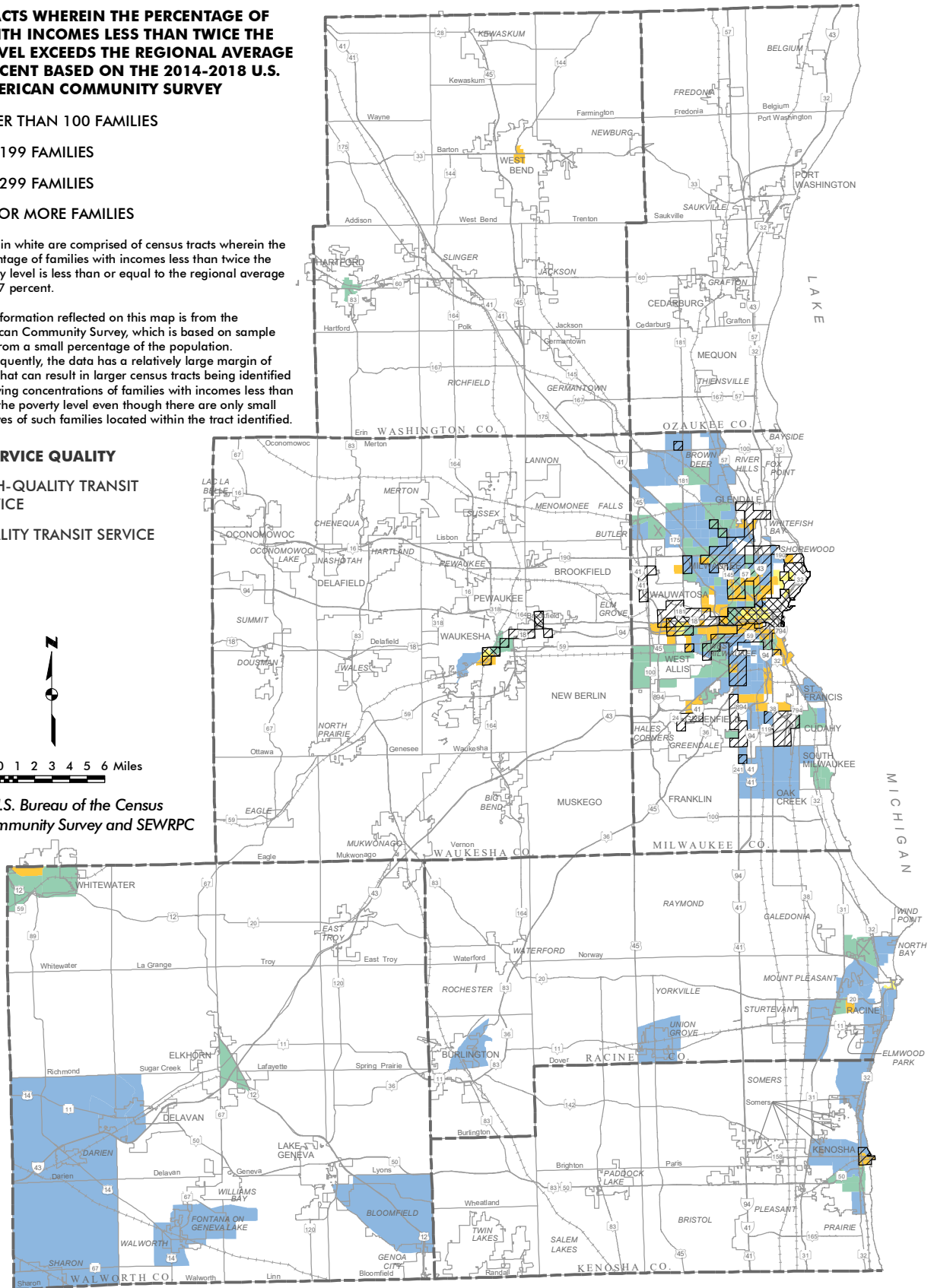
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families with incomes less than twice the poverty level even though there are only small enclaves of such families located within the tract identified.

TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC



Map D.57

Comparison of Existing Concentrations of People with Disabilities to Transit Service Quality: Existing

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

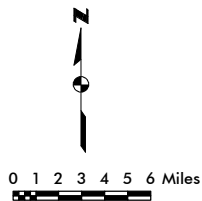
- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

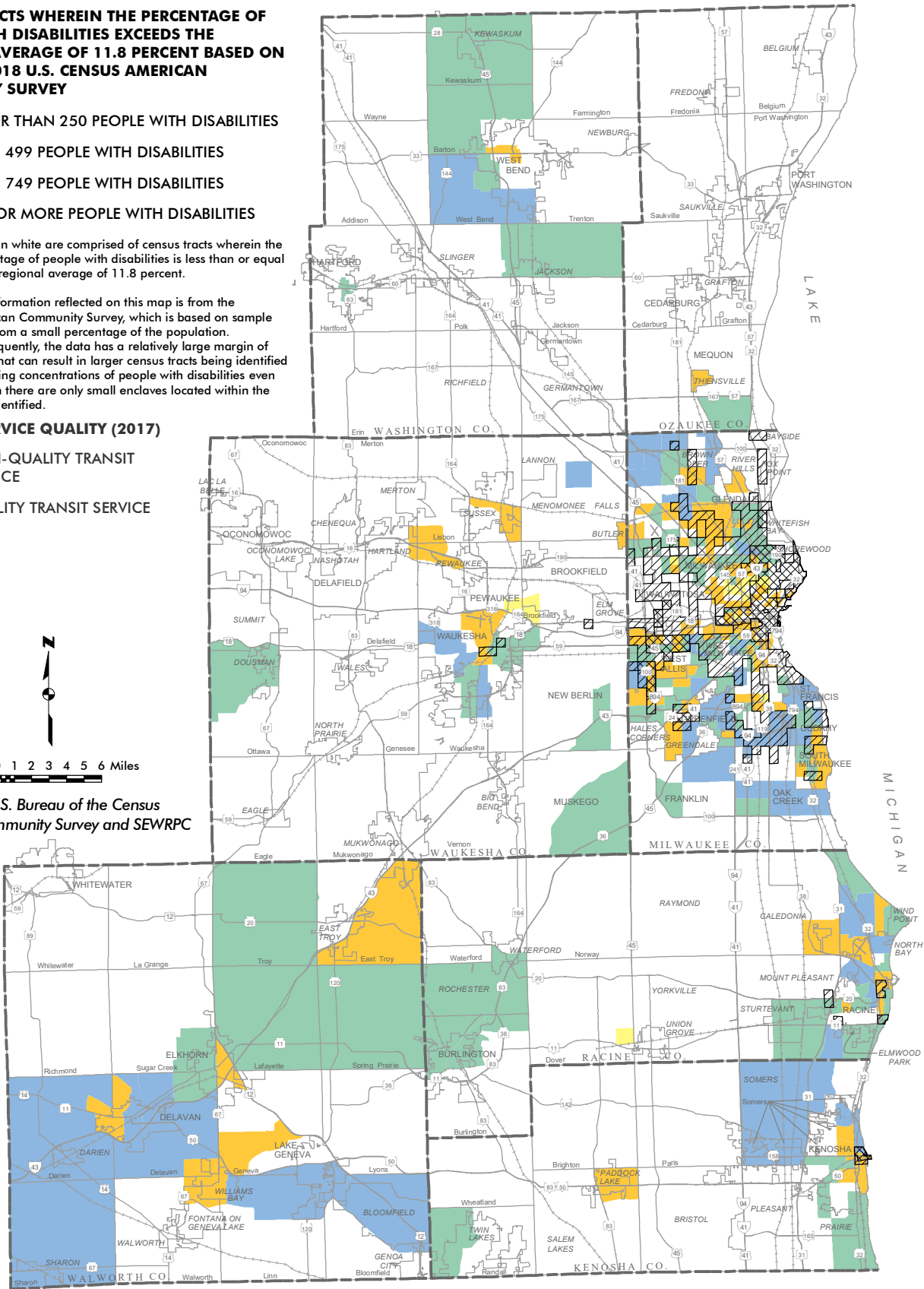
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

TRANSIT SERVICE QUALITY (2017)

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.58 Comparison of Existing Concentrations of People with Disabilities to Transit Service Quality: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

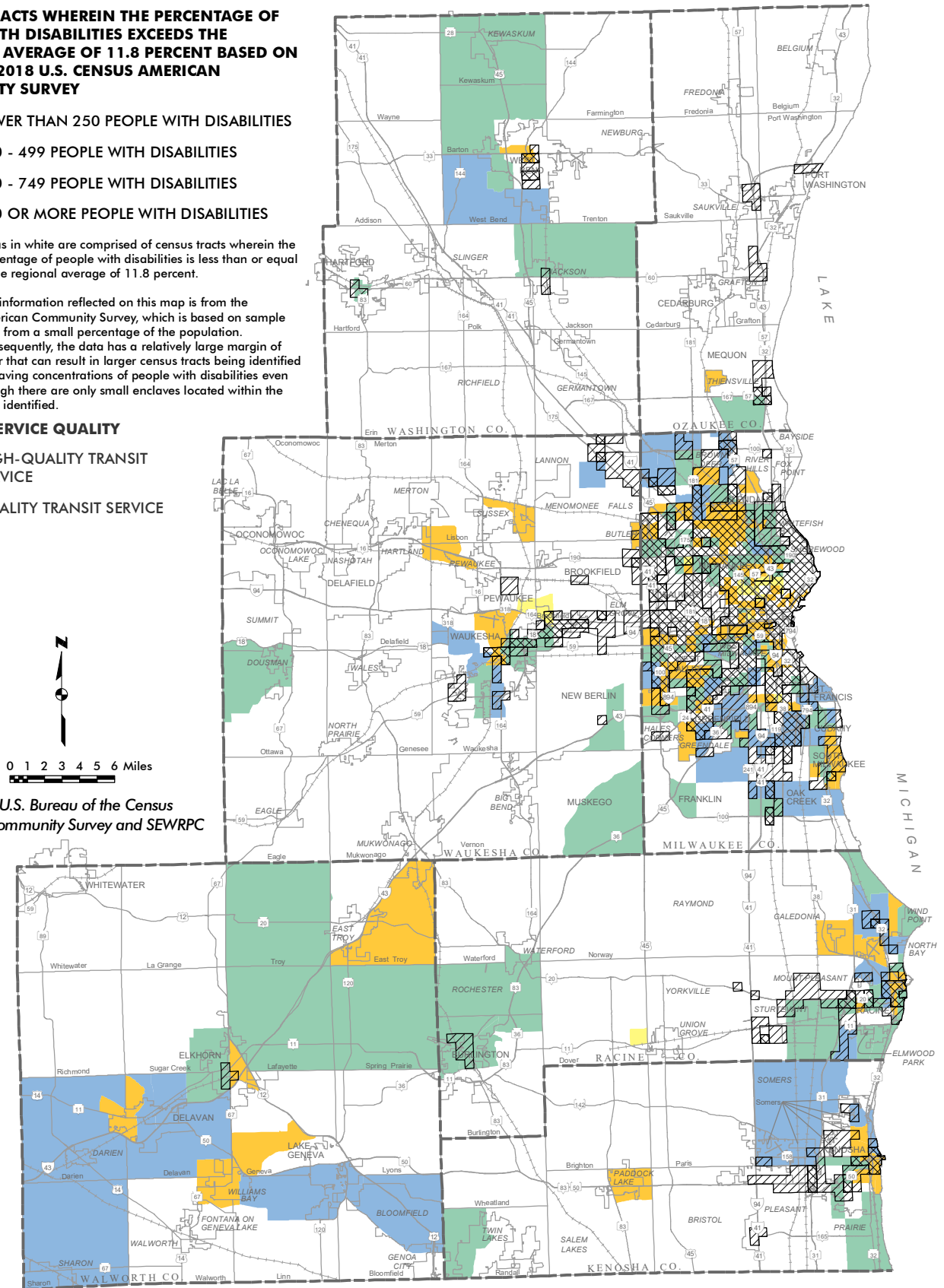
- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



Source: U.S. Bureau of the Census
American Community Survey and SEWRPC

Map D.59

Comparison of Existing Concentrations of People with Disabilities to Transit Service Quality: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF PEOPLE WITH DISABILITIES EXCEEDS THE REGIONAL AVERAGE OF 11.8 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 250 PEOPLE WITH DISABILITIES
- 250 - 499 PEOPLE WITH DISABILITIES
- 500 - 749 PEOPLE WITH DISABILITIES
- 750 OR MORE PEOPLE WITH DISABILITIES

Notes: Areas in white are comprised of census tracts wherein the percentage of people with disabilities is less than or equal to the regional average of 11.8 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of people with disabilities even though there are only small enclaves located within the tract identified.

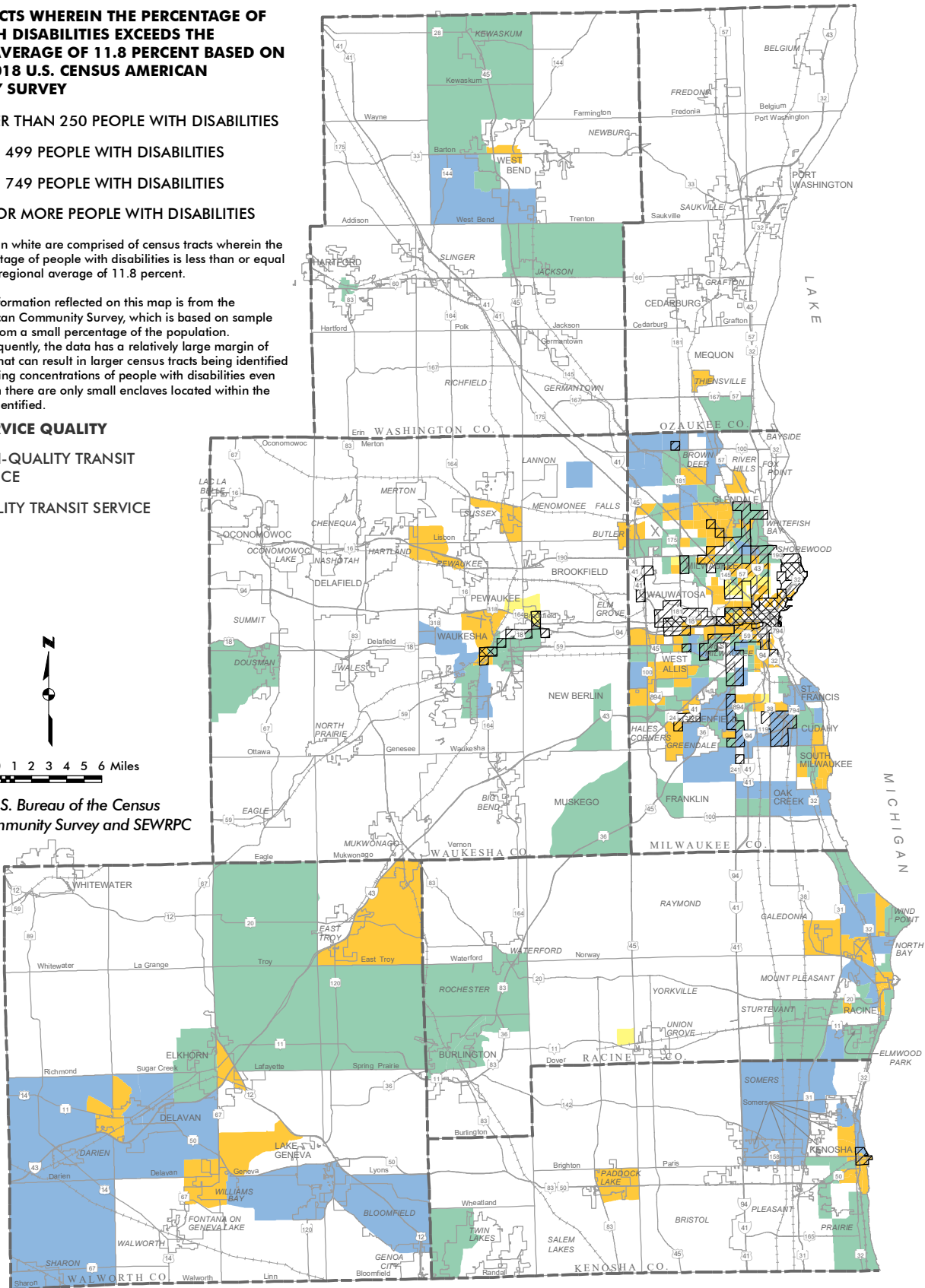
TRANSIT SERVICE QUALITY

- HIGH-QUALITY TRANSIT SERVICE
- QUALITY TRANSIT SERVICE



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census American Community Survey and SEWRPC



and families with incomes less than twice the poverty level), and people with disabilities in the Region.³¹

- **Existing Transit Service:** Most of the year 2017 routes and service areas providing quality transit service in the Region serve the principal concentrations of existing minority populations, lower-income populations, and people with disabilities. Specifically, about 286,600 minority people (or 49 percent of the total minority population) and 238,600 non-minority people (or 17 percent of the total non-minority population) are served by quality transit service—Excellent, Very Good, and Good—under existing conditions. With respect to lower-income populations, 21,500 (or 44 percent of) families in poverty and 89,700 (or 20 percent of) families not in poverty are served by quality transit service under existing conditions. About 43,600 (or 38 percent of) families with incomes less than twice the poverty level and 67,600 (or 17 percent of) families with incomes more than twice the poverty level are served by quality transit service under existing conditions. With respect to people with disabilities, 69,600 (or 29 percent of) people with disabilities and 455,300 (or 26 percent of) people not having a disability are served by quality transit service under existing conditions.

With respect to high-quality transit service (Excellent or Very Good), about 62,300 minority people (or 11 percent of the total minority population) and 61,000 non-minority people (or 4 percent of the total non-minority population) are served by high-quality transit service under existing conditions. With respect to lower-income populations, 5,300 (or 11 percent of) families in poverty and 16,700 (or 4 percent of) families not in poverty are served by high-quality transit service under existing conditions. About 9,700 (or 8 percent of) families with incomes less than twice the poverty level and 12,300 (or 3 percent of) families with incomes more than twice the poverty level are served by high-quality transit service under existing conditions. With respect to people with disabilities, 16,100 (or 7 percent of) people with disabilities and 107,100 (or 6 percent of) people not having a disability are served by high-quality transit service under existing conditions.

- **VISION 2050:** The extensive improvement and expansion of transit service under the updated VISION 2050 would result in about 424,000 minority people (or 73 percent of the total minority population) and 469,300 non-minority people (or 33 percent of the total non-minority population) being served by quality transit service (Excellent, Very Good, and Good) under the updated VISION 2050.

³¹ Table D.19 and Maps D.48 through D.59 must be considered together when evaluating changes to transit service quality. The table presents the number of each population group served, and, therefore, enables a direct comparison of both the number of people in a given group that are served under the existing, VISION 2050, and FCTS transit systems and the changes anticipated if VISION 2050 or the FCTS were implemented. The maps display the land areas served overlain on areas where there are varying concentrations of each group. Thus, Table D.19 is most useful for evaluating the number of people potentially affected by changes in transit service levels, while Maps D.48 through D.59 highlight the geographic areas where changes in transit service would be expected, providing a general, but less precise, indication of the degree to which the identified population groups may be affected. As an example, because high proportions of minority populations and lower-income populations in the Region reside in higher-density urban areas, the small area shown on Maps D.48 through D.59 as being served by quality transit may actually correspond to a relatively large number of people being served with such service, as reflected in Table D.19.

With respect to lower-income populations, 32,300 (or 67 percent of) families in poverty and 169,200 (or 37 percent of) families not in poverty and about 69,600 (or 60 percent of) families with incomes less than twice the poverty level and 132,100 (or 34 percent of) families with incomes more than twice the poverty level would be served by quality transit service under the updated VISION 2050. With respect to people with disabilities, 116,000 (or 49 percent of) people with disabilities and 777,400 (or 44 percent of) people not having a disability would be served by quality transit service under the updated VISION 2050.

It is expected that implementing the updated VISION 2050 would result in the increase in the percent of the minority population with quality transit service (24 additional percentage points) being greater than that of the non-minority population (16 additional percentage points). Similarly, the increase in the percent of families in poverty with quality transit service (22 additional percentage points) would be greater than that of families not in poverty (17 additional percentage points), and the increase in the percent of families with incomes less than twice the poverty level with quality transit service (23 additional percentage points) would be greater than that of families with incomes more than twice the poverty level (16 additional percentage points). The increase in the percent of people with disabilities with quality transit service (20 additional percentage points) would be greater than that of people without disabilities (18 additional percentage points).

With respect to high-quality transit service (Excellent or Very Good), about 275,000 minority people (or 47 percent of the total minority population) and 246,200 non-minority people (or 17 percent of the total non-minority population) would be served by high-quality transit service under the updated VISION 2050. With respect to lower-income populations, 20,700 (or 43 percent of) families in poverty and 90,700 (or 20 percent of) families not in poverty and about 42,800 (or 37 percent of) families with incomes less than twice the poverty level and 68,700 (or 18 percent of) families with incomes more than twice the poverty level would be served by high-quality transit service under the updated VISION 2050. With respect to people with disabilities, 68,000 (or 29 percent of) people with disabilities and 453,300 (or 25 percent of) people not having a disability would be served by high-quality transit service under VISION 2050.

It is expected that implementing the updated VISION 2050 would result in the increase in the percent of minority population with high-quality transit service (37 additional percentage points) being greater than that of the non-minority population (13 additional percentage points). Similarly, the estimated increase in the percent of families in poverty with high-quality transit service (32 additional percentage points) would be greater than that of families not in poverty (16 additional percentage points), and the increase in the percent of families with incomes less than twice the poverty level with high-quality transit service (29 additional percentage points) would be greater than that of families with incomes more than twice the poverty level (14 additional percentage points). The estimated increase in the percent of people with disabilities with high-quality transit service (22 additional percentage points) would be greater than that of people without disabilities (19 percentage points).

- **The FCTS:** With the expected decrease in transit service hours and shift times covered under the updated FCTS, overall transit quality is expected to decline. Additionally, the service areas providing quality transit service (Excellent, Very Good, and Good) under the updated FCTS would serve a smaller proportion of existing minority populations, lower-income populations, and people with disabilities, including in areas where these populations are concentrated. Specifically, about 113,600 minority people (or 20 percent of the total minority population) and 80,500 non-minority people (or 6 percent of the total non-minority population) would be served by quality transit service under the updated FCTS. With respect to lower-income populations, 8,500 (or 18 percent of) families in poverty and 28,100 (or 6 percent of) families not in poverty, and about 16,200 (or 14 percent of) families with incomes less than twice the poverty level and 20,400 (or 5 percent of) families with incomes more than twice the poverty level, would be served by quality transit service under the updated FCTS. With respect to people with disabilities, 26,600 (or 11 percent of) people with disabilities and 167,600 (or 10 percent of) people without disabilities would be served by quality transit service under the updated FCTS.

It is expected that implementing the updated FCTS would result in the decline in the percent of the minority population with quality transit service (30 fewer percentage points) being greater than that of the non-minority population (11 fewer percentage points). Similarly, the decline in the percent of families in poverty with quality transit service (27 fewer percentage points) would be greater than that of families not in poverty (13 fewer percentage points), and the decline in the percent of families with incomes less than twice the poverty level with quality transit service (24 fewer percentage points) would be greater than that of families with incomes more than twice the poverty level (12 fewer percentage points). The decline in the percent of people with disabilities with quality transit service (18 fewer percentage points) would be slightly greater than that of people without disabilities (16 fewer percentage points).

With respect to high-quality transit service (Excellent or Very Good), about 19,300 minority people (or 3 percent of the total minority population) and 30,100 non-minority people (or 2 percent of the total non-minority population) would be served by high-quality transit service under the updated FCTS. With respect to lower-income populations, 1,500 (or 3 percent of) families in poverty and 4,900 (or 1 percent of) families not in poverty would be served by high-quality transit service under the updated FCTS. Similarly, 2,300 (or 2 percent of) families with incomes less than twice the poverty level and 4,000 (or 1 percent of) families with incomes more than twice the poverty level would be served by high-quality transit service under the updated FCTS. With respect to people with disabilities, 5,800 (or 3 percent of) people with disabilities and 43,700 (or 3 percent of) people without a disability would be served by high-quality transit service under the updated FCTS.

It is expected that implementing the updated FCTS would result in the decline in the percent of the minority population with high-quality transit service (7 fewer percentage points) being greater than that of the non-minority population (2 fewer percentage points). Similarly, the decline in the percent of families in poverty with high-quality transit

service (8 fewer percentage points) would be greater than that of families not in poverty (3 fewer percentage points), and the decline in the percent of families with incomes less than twice the poverty level with high-quality transit service (7 fewer percentage points) would be greater than that of families with incomes more than twice the poverty level (2 fewer percentage points). The decline in the percent of both people with disabilities and people without disabilities with high-quality transit service would be about the same (4 fewer percentage points).

MINORITY POPULATIONS AND LOW-INCOME POPULATIONS BENEFITED AND IMPACTED BY NEW AND WIDENED ARTERIAL STREET AND HIGHWAY FACILITIES

An evaluation was conducted as to whether the existing minority populations and low-income populations within the Region would receive a disproportionate share of the impacts—both costs and benefits—of the highway improvements under the updated VISION 2050 and FCTS. Specifically, an analysis was conducted to determine the extent to which the existing minority populations and low-income populations living in these areas would receive benefits—such as improved accessibility and improved safety—from the new and widened arterials under the updated VISION 2050 and FCTS. As part of this analysis, a select link analysis was conducted to determine whether existing minority populations and low-income populations would be expected to utilize the segments of arterial streets and highways that would be improved under the updated VISION 2050 and FCTS. An analysis was also conducted to determine whether the existing minority populations and low-income populations would disproportionately bear any potential impacts from the new and widened facilities.

- **Benefits from Arterial Improvements:** While minority populations and low-income populations utilize public transit at a higher proportion relative to other modes of travel than do non-Hispanic white and higher-income populations in the Region, the automobile is by far the dominant mode of travel for minority populations and low-income populations. In Milwaukee County, about 80 to 89 percent of travel by minority populations to and from work is by automobile (depending on the race or ethnicity), compared to 87 percent of the white population. Similarly, in Milwaukee County about 70 percent of travel by low-income populations to and from work is by automobile, compared to 89 percent for populations of higher income. More robust and detailed data available by county from the year 2014-2018 ACS indicate a similar pattern by race and ethnic group for work trips in Southeastern Wisconsin as for all travel. However, as these data only include travel to and from work, they exclude those without employment who are more likely to be among the poorest people in the Region. Data as robust as the 2014-2018 ACS data are not available for modes of travel for non-work trips within Southeastern Wisconsin by race and ethnicity. Given that automobile travel is the dominant mode, improvements in accessibility by automobile to jobs and other activities would likely benefit a significant proportion of minority populations and low-income populations. The Region would generally be able to modestly improve accessibility via automobile with implementation of the highway improvements—new roadways and highway widenings—under both the updated VISION 2050 and FCTS. Should these improvements not be implemented, access to jobs and other activities via automobile would be expected to decline for

the Region's residents, particularly residents in Milwaukee County, including for minority populations and low-income populations.

Maps D.60 and D.61 show the proportion of automobile trips within each traffic analysis zone (TAZ) that would utilize the new or widened surface arterial segments under the updated VISION 2050 and FCTS. These maps were compared to locations of current concentrations of minority populations and low-income populations (as shown on Maps D.6 and D.8). The areas that would have the greatest use of these improved arterials are largely adjacent to, or near, the new or widened surface arterials under the updated VISION 2050 and FCTS. The new and widened surface arterials would largely be located outside of existing areas of minority populations and low-income populations.

Maps D.62 and D.63 show the percentage of the automobile trips within each TAZ that would utilize the new or widened freeway segments under the updated VISION 2050 and FCTS. These maps were compared to locations of current concentrations of minority populations and low-income populations (as shown on Maps D.6 and D.8). The segments of freeway recommended to be widened under the updated VISION 2050 and FCTS would directly serve areas of minority populations and low-income population, particularly those residing in Milwaukee County. As a result, it is expected that minority populations and low-income populations, particularly those residing adjacent to the freeway widenings, would be utilizing and experiencing benefit from the expected improvement in accessibility associated with the widenings. The updated VISION 2050 does not make any recommendation with respect to whether the segment of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional lanes. The determination as to whether this segment of IH 43 would be reconstructed with or without additional lanes would be made during preliminary engineering. Following the conclusion of the preliminary engineering for the reconstruction, VISION 2050 would be amended to reflect the decision made as to how this segment IH 43 would be reconstructed. If it is ultimately determined that this segment of IH 43 is to be reconstructed with additional lanes, the minority populations and low-income populations residing adjacent to this freeway widening would directly benefit from the resulting improvement in accessibility. The reconstruction of this segment of IH 43 is not included in the updated FCTS.

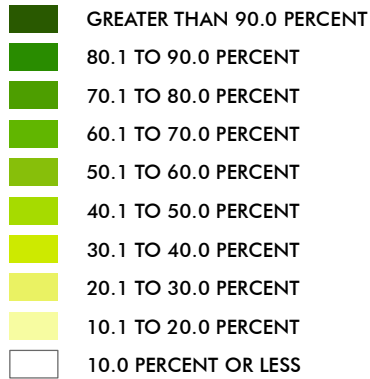
As previously noted, even as traffic volumes increase through the year 2050, the additional arterial street and highway system capacity under the updated VISION 2050 and FCTS would modestly improve accessibility to jobs and other activity centers for minority populations and low-income populations.

With respect to safety, rear-end collision rates have historically been 5 to 20 times higher on congested freeways (with the highest rear-end crash rates on the most extremely congested freeways). By improving safety through the reduction in congestion along the freeway segments that would be widened, there would also be direct benefits to the existing minority populations and low-income populations that would use the widened freeway segments under the updated VISION 2050 and FCTS, with the freeway widening under VISION 2050 having a greater impact on freeway safety than the updated FCTS.

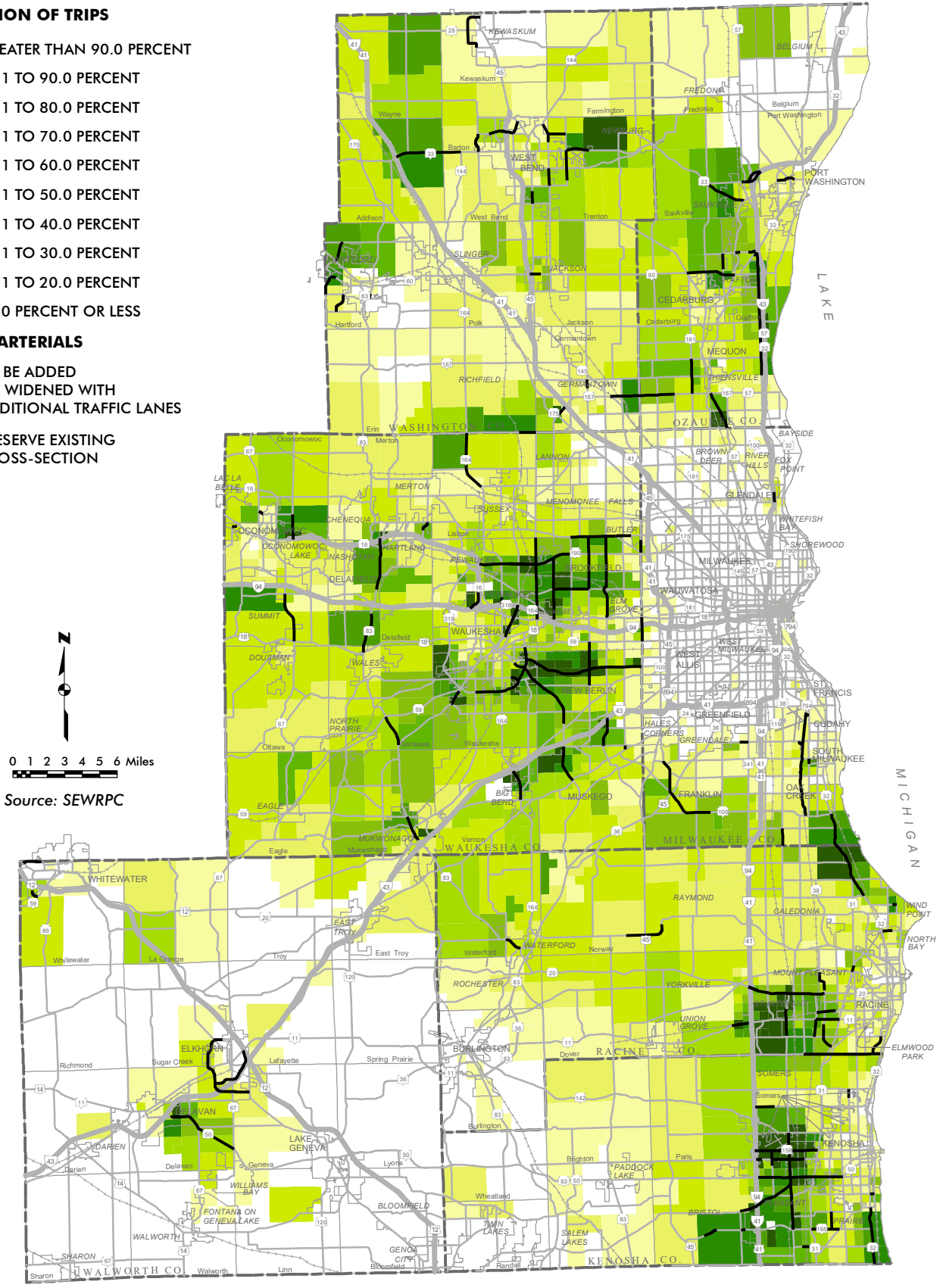
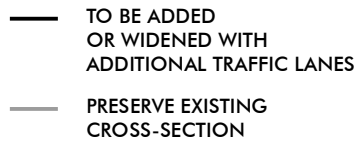
Map D.60

Proportion of Automobile Trips Using the New or Widened Surface Arterial Segments Within Each Traffic Analysis Zone: VISION 2050

PROPORTION OF TRIPS



SURFACE ARTERIALS

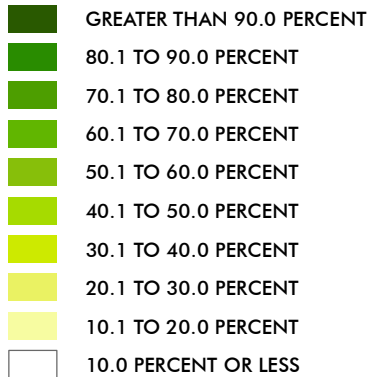


Source: SEWRPC

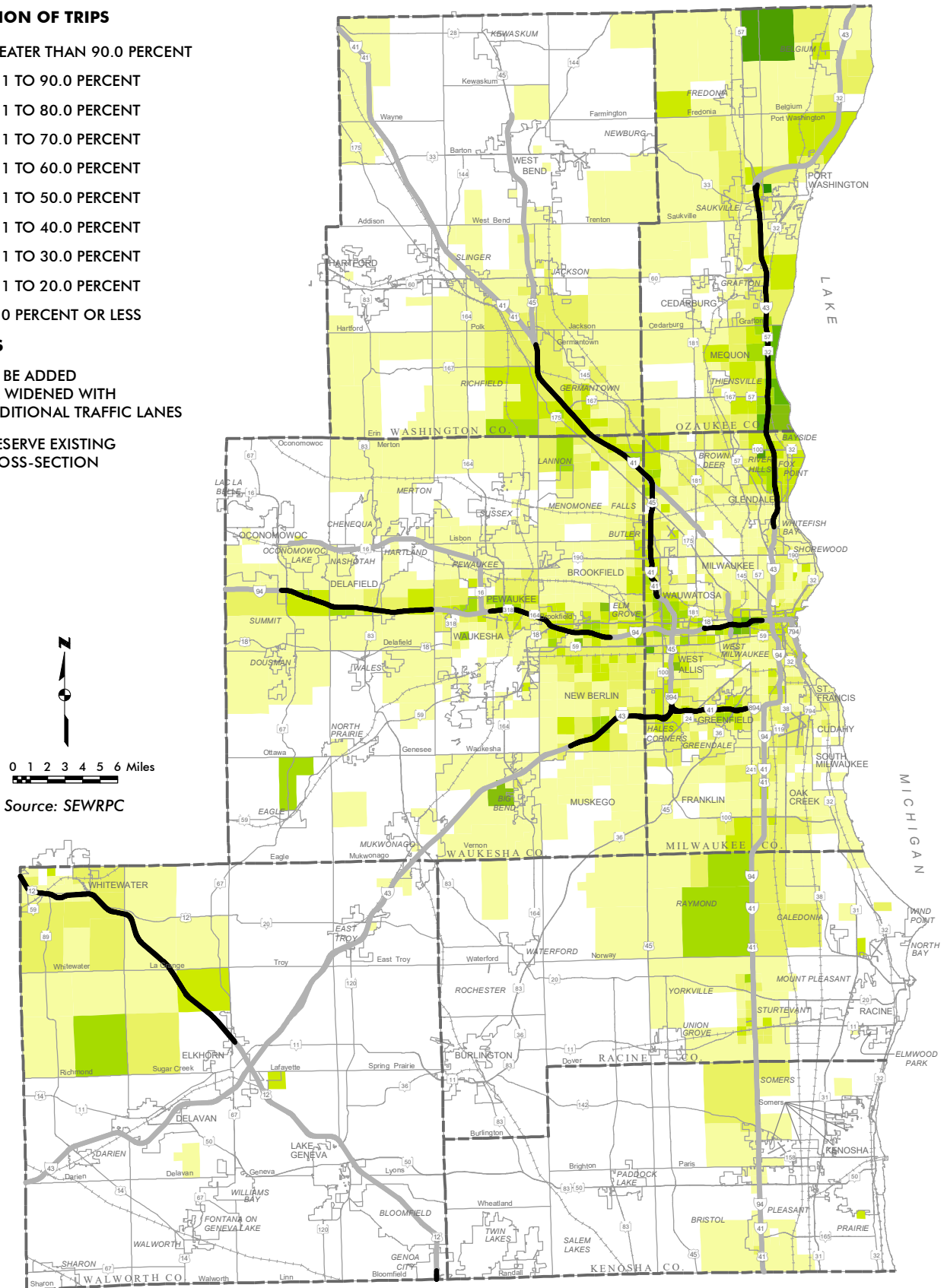
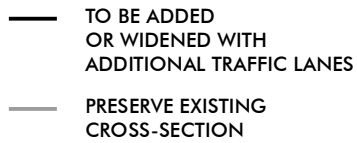
Map D.62

Proportion of Automobile Trips Using the New or Widened Freeway Segments Within Each Traffic Analysis Zone: VISION 2050

PROPORTION OF TRIPS



FREEWAYS

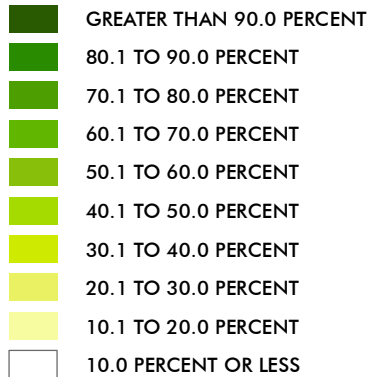


0 1 2 3 4 5 6 Miles

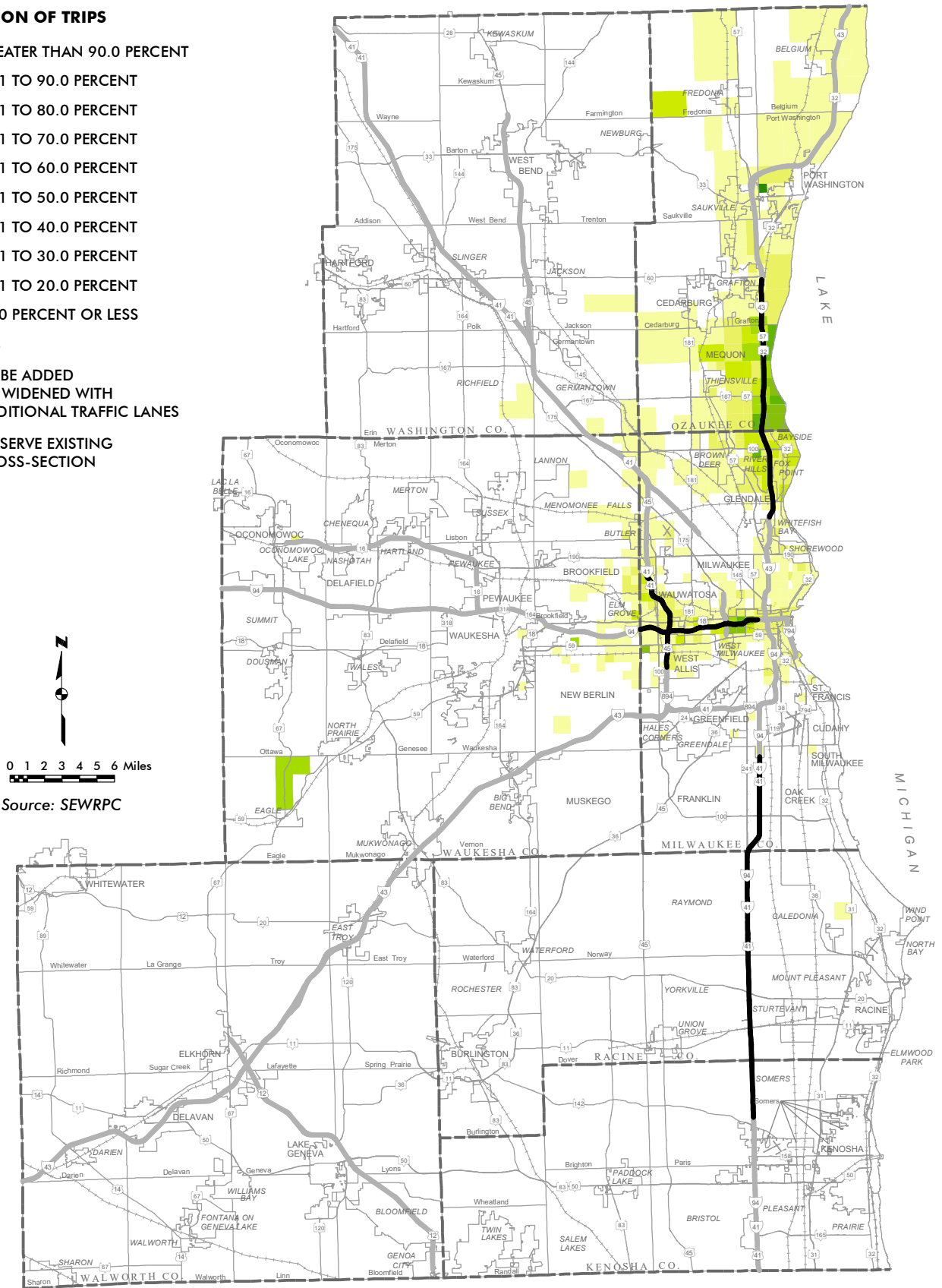
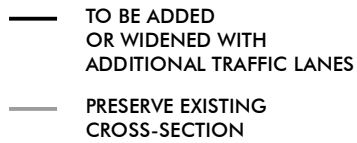
Source: SEWRPC

Map D.63
Proportion of Automobile Trips Using the New or Widened
Freeway Segments Within Each Traffic Analysis Zone: FCTS

PROPORTION OF TRIPS



FREEWAYS



Source: SEWRPC

- Impacts of Widening and New Facilities:** Maps D.64 through D.69 compare the locations of the highway capacity improvements under the updated VISION 2050 and FCTS to the areas with current concentrations of minority populations and low-income populations. In general, no area of the Region, or minority or low-income community, would be expected to disproportionately bear the impact of these highway improvements. Recommended surface arterial improvements are largely located outside areas of existing minority populations and low-income populations, and therefore their widening, new construction, and subsequent operation would be expected to have minimal negative impacts on minority populations and low-income populations. With respect to the recommended freeway widenings and new construction, some segments are located adjacent to existing minority populations, but most segments are not, for both the updated VISION 2050 and FCTS.
- Impacts from Freeway Widening:** Maps D.70 through D.73 show the locations of freeways that would be widened under the updated VISION 2050 and FCTS compared to the areas with current concentrations of minority populations and low-income populations. Table D.20 shows the estimated existing minority populations and low-income populations residing in proximity (one-quarter mile to one-half mile) to freeway widenings. Under the updated VISION 2050, about 23,500 minority people and 2,300 families in poverty would reside within one-half mile of a freeway widening while 10,200 minority people and 1,100 families in poverty would reside within one-quarter mile. The proportion of the minority population (about 22 percent) and families in poverty (about 8 percent) residing within one-half mile or one-quarter mile would be below the proportion of the regional population that is minority (about 23 percent) and the proportion of the Region's families in poverty (about 8 percent).

With respect to the updated VISION 2050, if it is ultimately determined that the segment of IH 43 between Howard Avenue and Silver Spring Drive is widened, then about 81,800 minority people and 4,100 families in poverty would reside within one-half mile of a freeway widening while 38,300 minorities and 1,800 families in poverty would reside within one-quarter mile. Accordingly, the proportion of the minority population (about 40 percent) and families in poverty (about 12 percent) residing within one-half mile or one-quarter mile would exceed the regional averages of 28.9 percent and 9.5 percent, respectively.

Under the updated FCTS, about 13,300 minority people and 1,200 families in poverty would reside within one-half mile of a freeway widening while 5,500 minorities and 540 families in poverty would reside within one-quarter mile. The proportion of the minority population (about 28 percent) and families in poverty (about 13 percent) residing within one-half mile or one-quarter mile would be at or slightly above the regional averages of 28.9 percent and 9.5 percent. The reconstruction of the segment of IH 43 between Howard Avenue and Silver Spring Drive is not included in the updated FCTS as it is not expected to be completed by the year 2050 given the expected available funding.

Another way of examining the relative impact of freeway widenings is to compare the proportion of minority population and families in poverty to the proportion of non-minority population and families not

Map D.64

Comparison of Existing Concentrations of Total Minority Population to Highway Element: VISION 2050

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE
- * MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

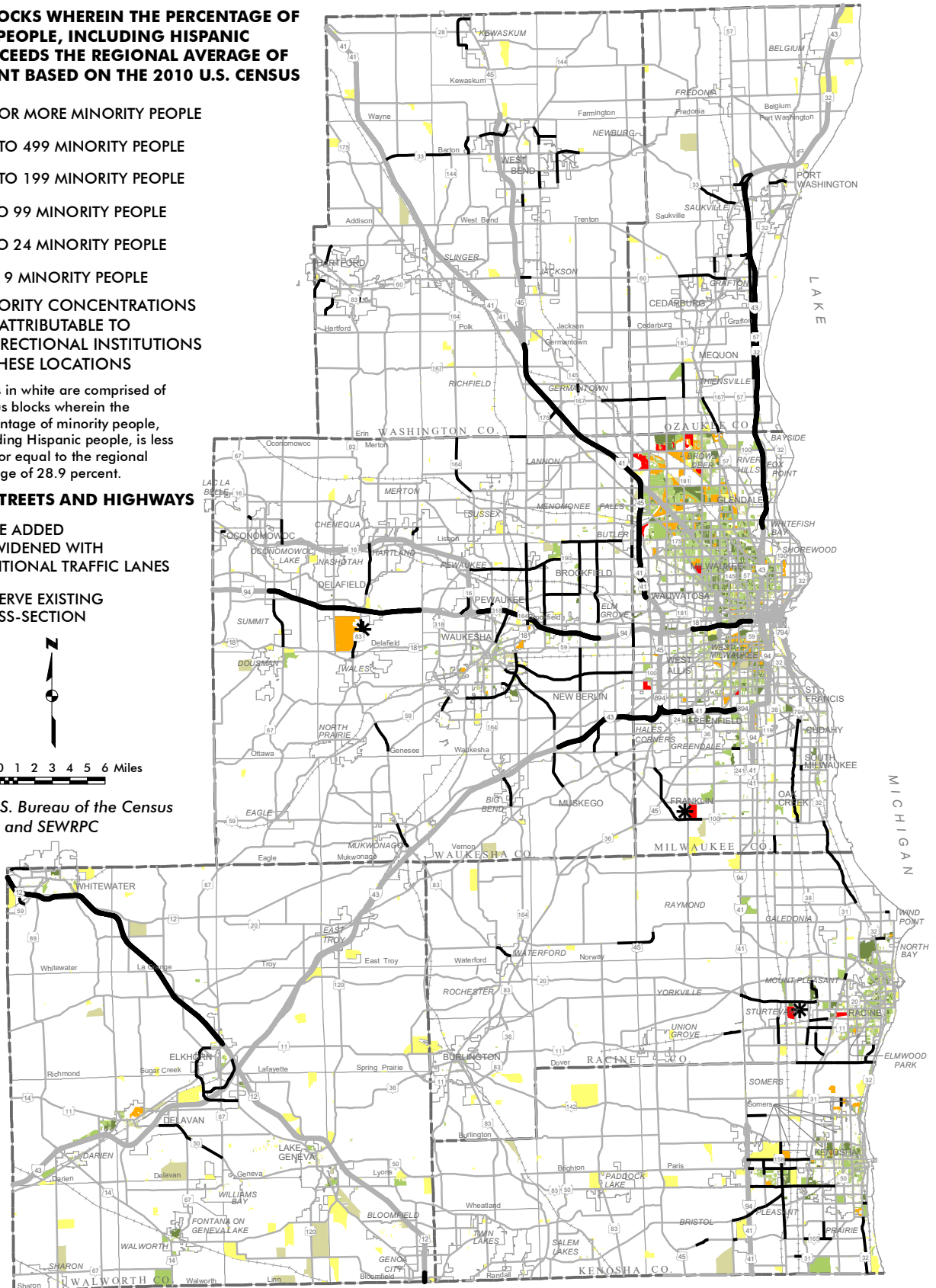
ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.65

Comparison of Existing Concentrations of Families in Poverty to Highway Element: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

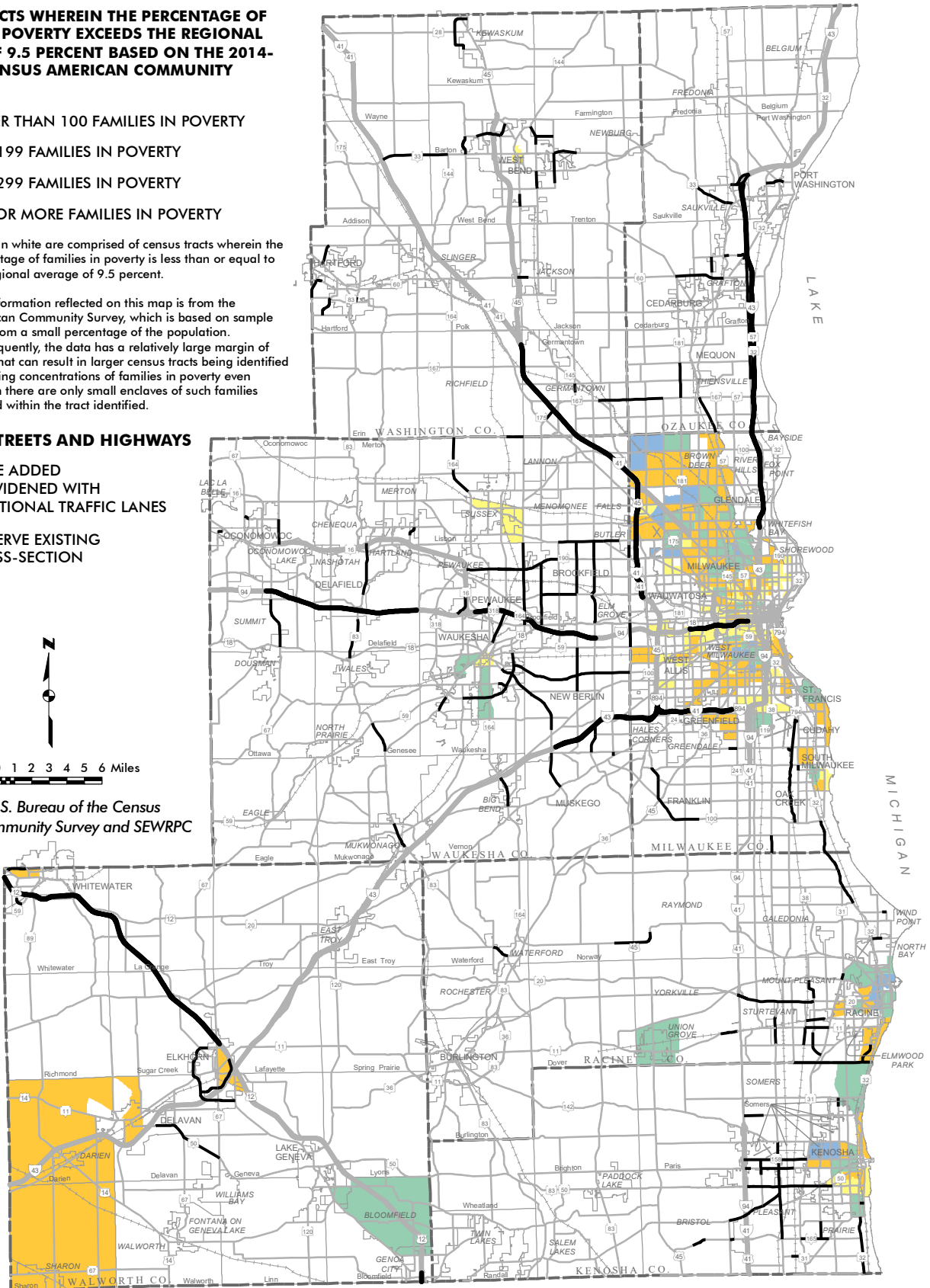
ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.66

Comparison of Concentrations of Year 2010 Races/Ethnicities to Highway Element: VISION 2050

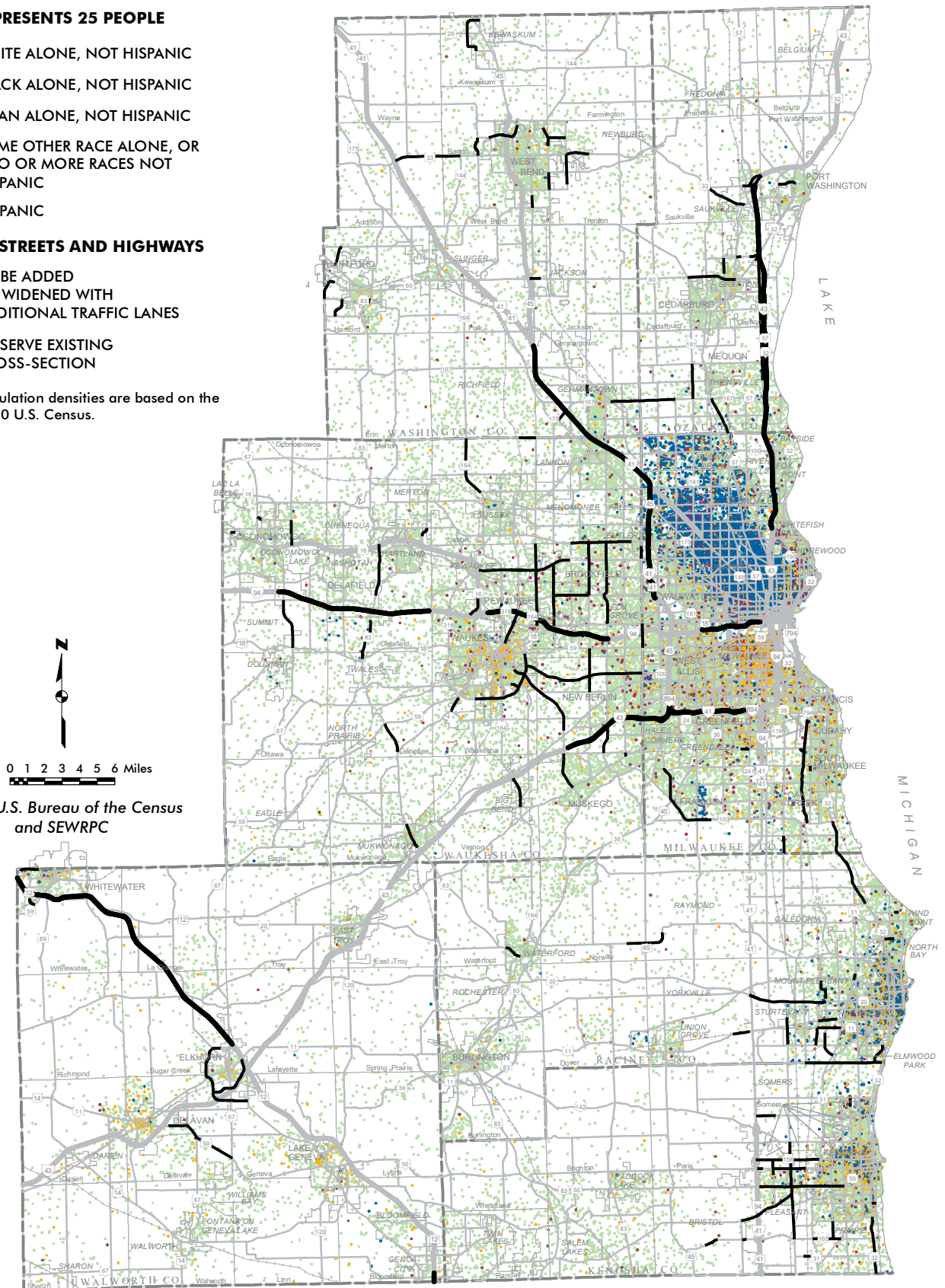
1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION

Note: Population densities are based on the 2010 U.S. Census.



Source: U.S. Bureau of the Census and SEWRPC

Map D.67

Comparison of Existing Concentrations of Total Minority Population to Highway Element: FCTS

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE
- * MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

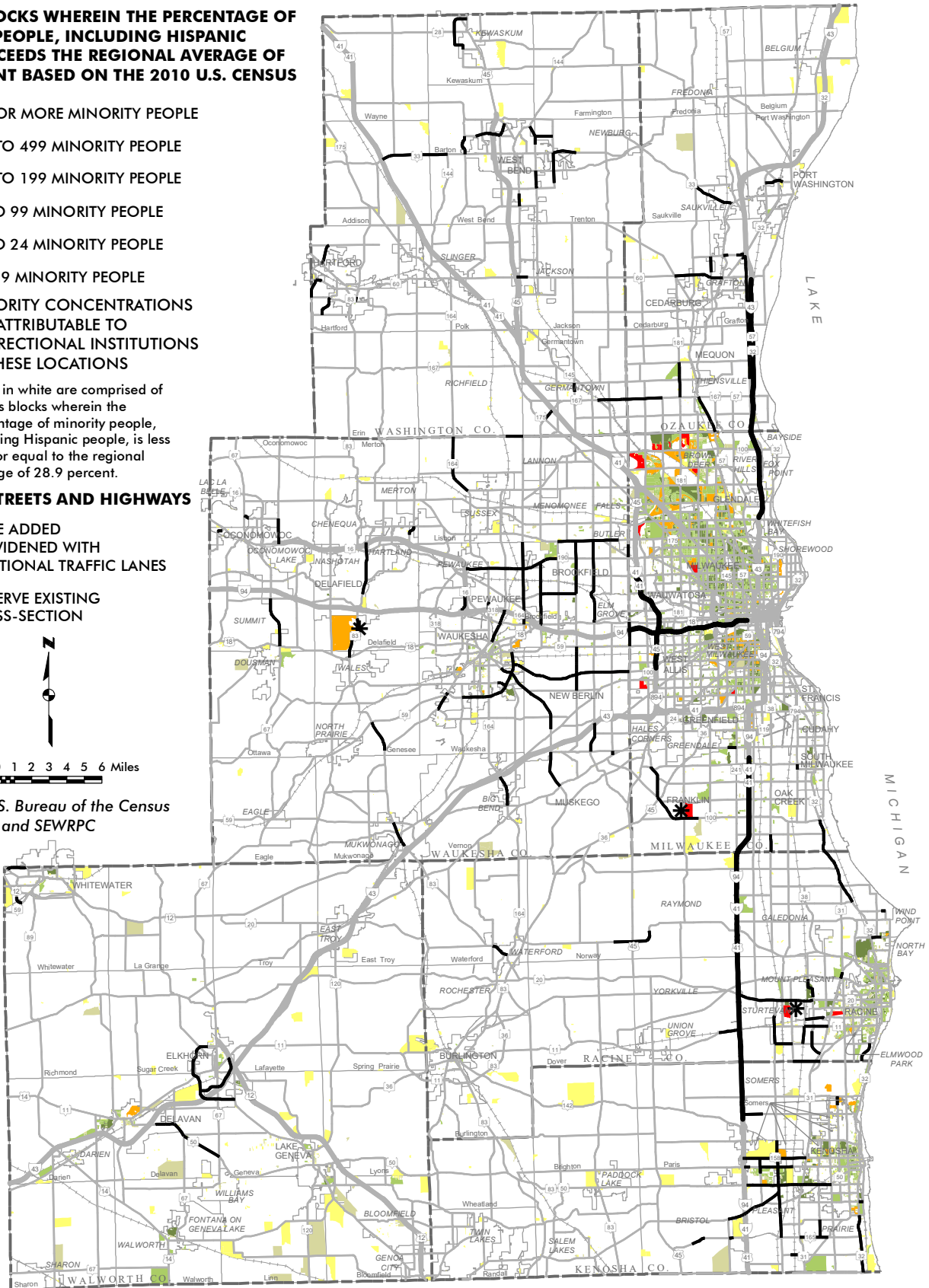
ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.68

Comparison of Existing Concentrations of Families in Poverty to Highway Element: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

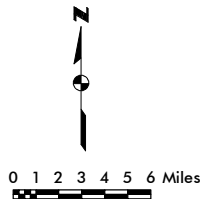
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

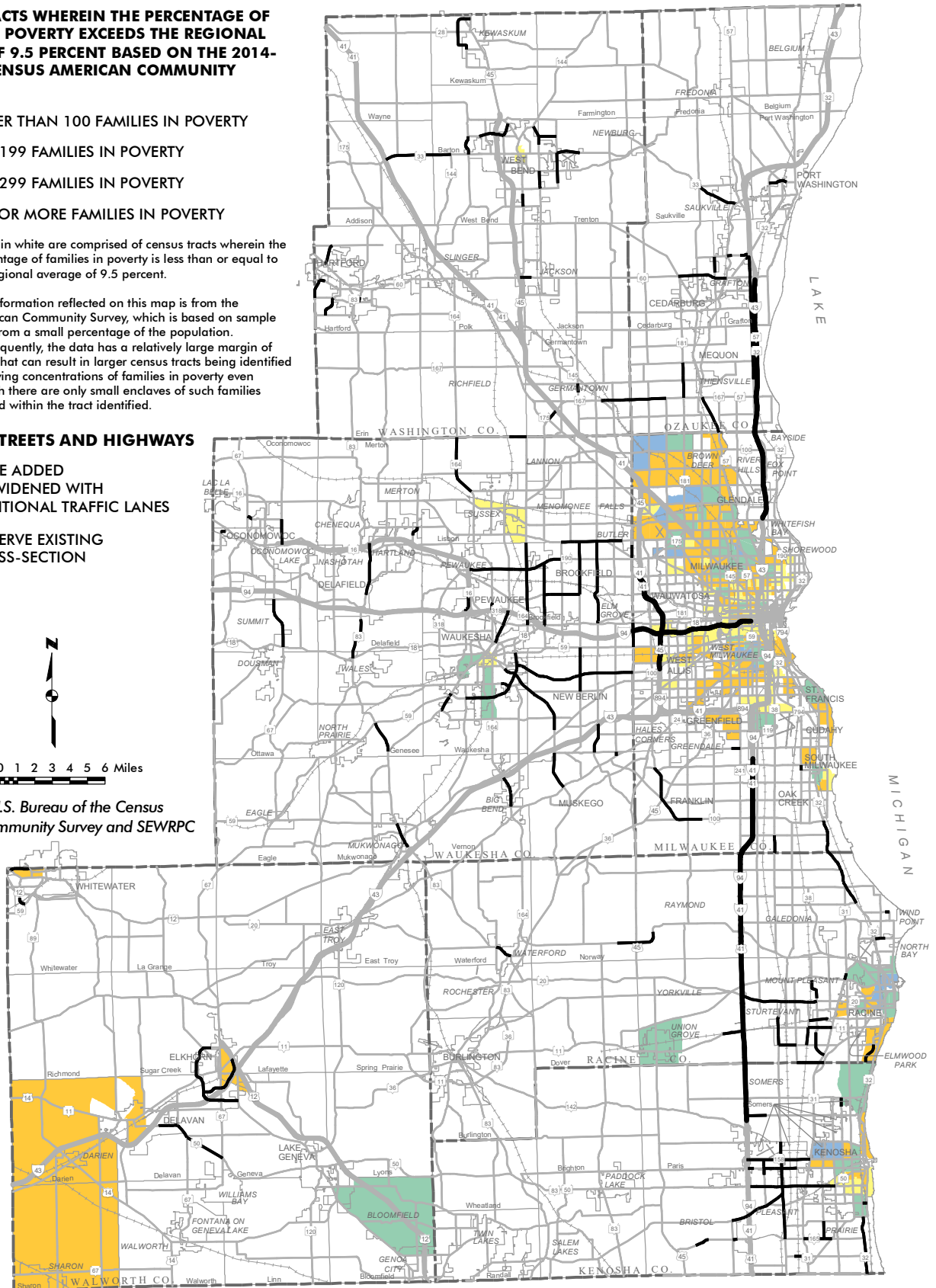
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.69

Comparison of Concentrations of Year 2010 Races/Ethnicities to Highway Element: FCTS

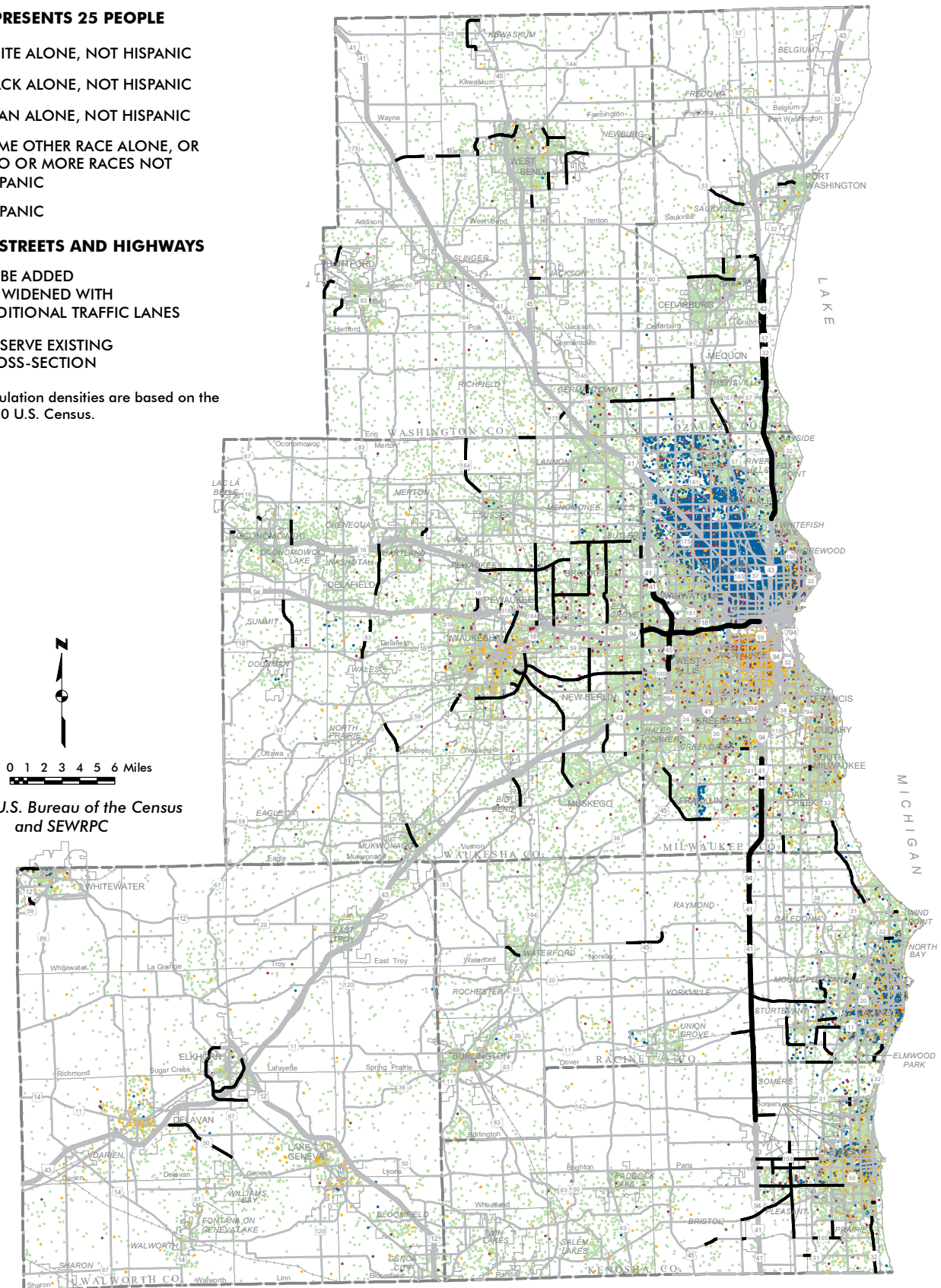
1 DOT REPRESENTS 25 PEOPLE

- WHITE ALONE, NOT HISPANIC
- BLACK ALONE, NOT HISPANIC
- ASIAN ALONE, NOT HISPANIC
- SOME OTHER RACE ALONE, OR TWO OR MORE RACES NOT HISPANIC
- HISPANIC

ARTERIAL STREETS AND HIGHWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION

Note: Population densities are based on the 2010 U.S. Census.



Map D.70

Comparison of Existing Concentrations of Total Minority Population to Freeways: VISION 2050

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE
- * MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

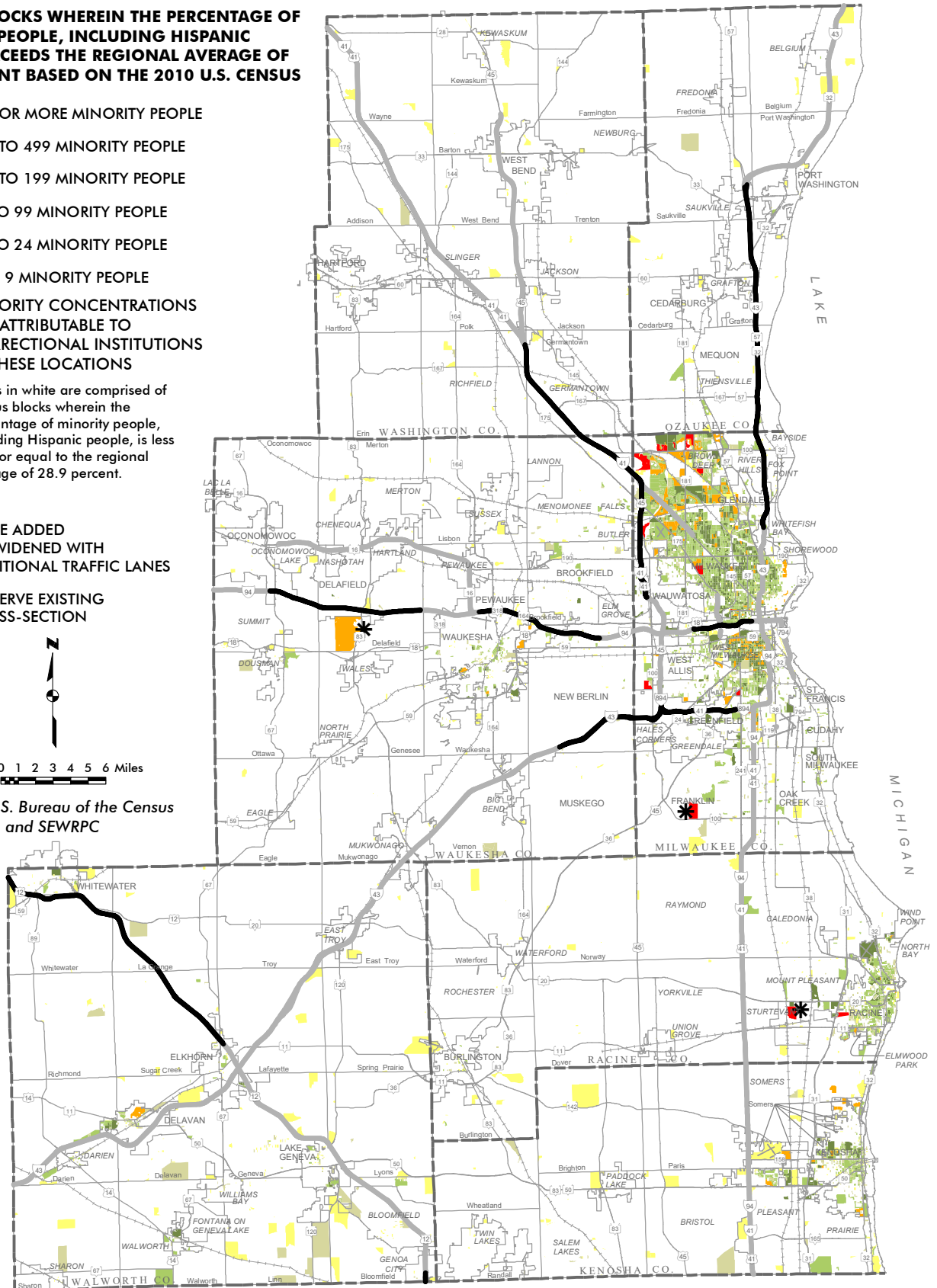
FREEWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.71

Comparison of Existing Concentrations of Families in Poverty to Freeways: VISION 2050

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

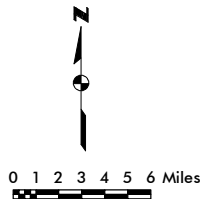
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

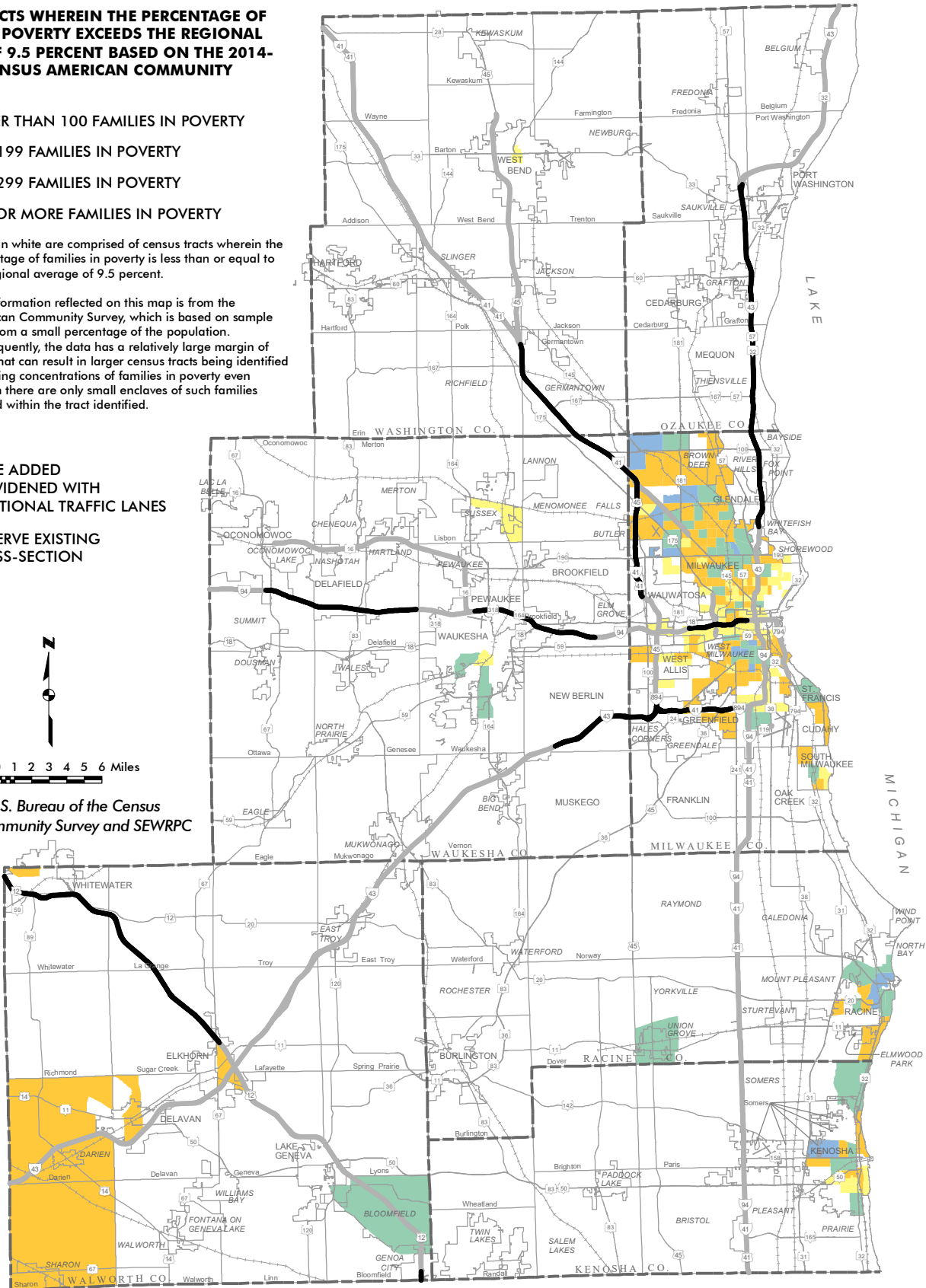
The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

FREEWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



Source: U.S. Bureau of the Census American Community Survey and SEWRPC



Map D.72

Comparison of Existing Concentrations of Total Minority Population to Freeways: FCTS

CENSUS BLOCKS WHEREIN THE PERCENTAGE OF MINORITY PEOPLE, INCLUDING HISPANIC PEOPLE, EXCEEDS THE REGIONAL AVERAGE OF 28.9 PERCENT BASED ON THE 2010 U.S. CENSUS

- 500 OR MORE MINORITY PEOPLE
- 200 TO 499 MINORITY PEOPLE
- 100 TO 199 MINORITY PEOPLE
- 25 TO 99 MINORITY PEOPLE
- 10 TO 24 MINORITY PEOPLE
- 1 TO 9 MINORITY PEOPLE

***** MINORITY CONCENTRATIONS ARE ATTRIBUTABLE TO CORRECTIONAL INSTITUTIONS IN THESE LOCATIONS

Note: Areas in white are comprised of census blocks wherein the percentage of minority people, including Hispanic people, is less than or equal to the regional average of 28.9 percent.

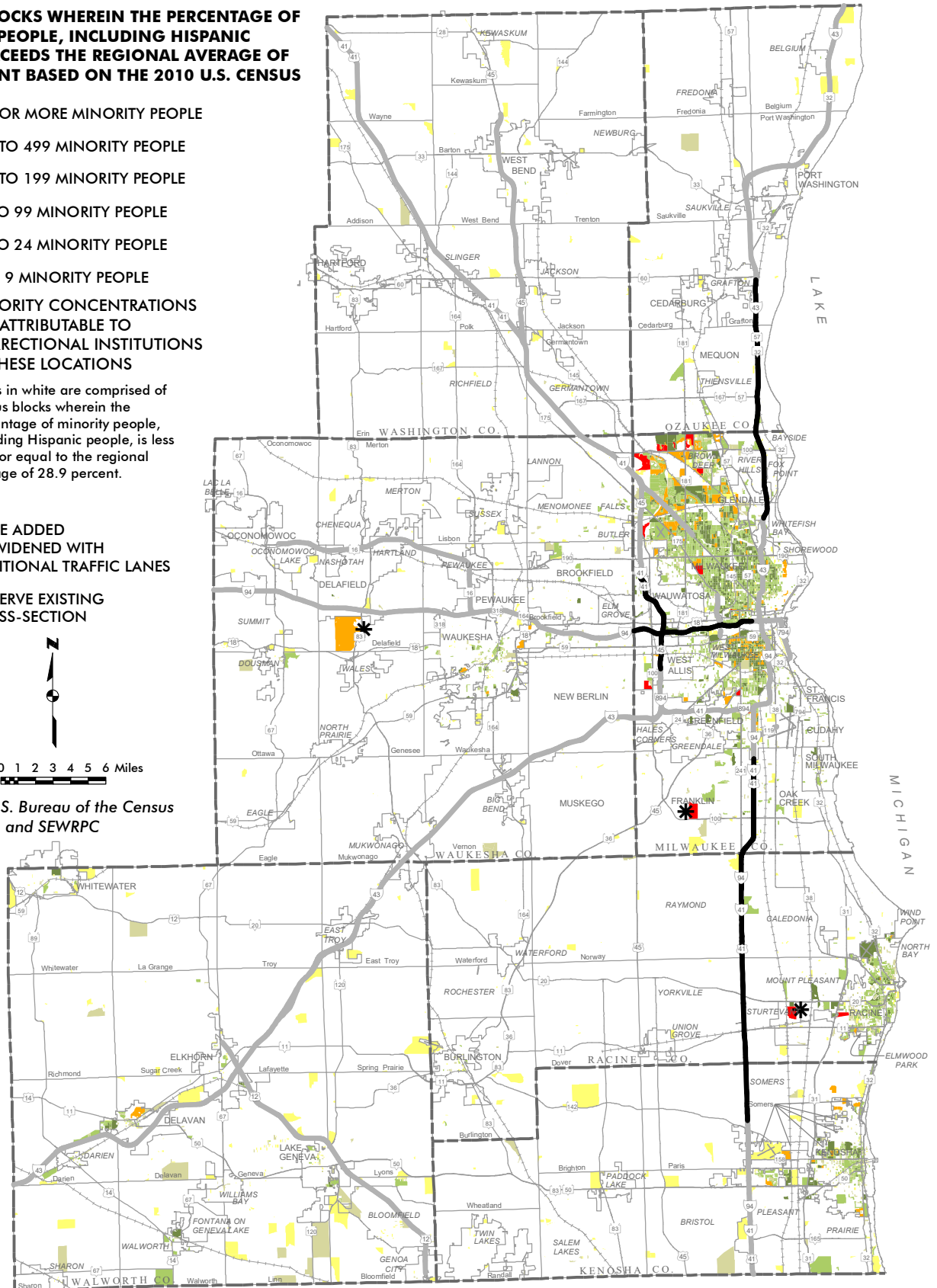
FREEWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



0 1 2 3 4 5 6 Miles

Source: U.S. Bureau of the Census and SEWRPC



Map D.73

Comparison of Existing Concentrations of Families in Poverty to Freeways: FCTS

CENSUS TRACTS WHEREIN THE PERCENTAGE OF FAMILIES IN POVERTY EXCEEDS THE REGIONAL AVERAGE OF 9.5 PERCENT BASED ON THE 2014-2018 U.S. CENSUS AMERICAN COMMUNITY SURVEY

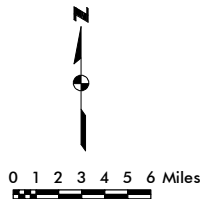
- FEWER THAN 100 FAMILIES IN POVERTY
- 100-199 FAMILIES IN POVERTY
- 200-299 FAMILIES IN POVERTY
- 300 OR MORE FAMILIES IN POVERTY

Notes: Areas in white are comprised of census tracts wherein the percentage of families in poverty is less than or equal to the regional average of 9.5 percent.

The information reflected on this map is from the American Community Survey, which is based on sample data from a small percentage of the population. Consequently, the data has a relatively large margin of error that can result in larger census tracts being identified as having concentrations of families in poverty even though there are only small enclaves of such families located within the tract identified.

FREEWAYS

- TO BE ADDED OR WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION



Source: U.S. Bureau of the Census American Community Survey and SEWRPC

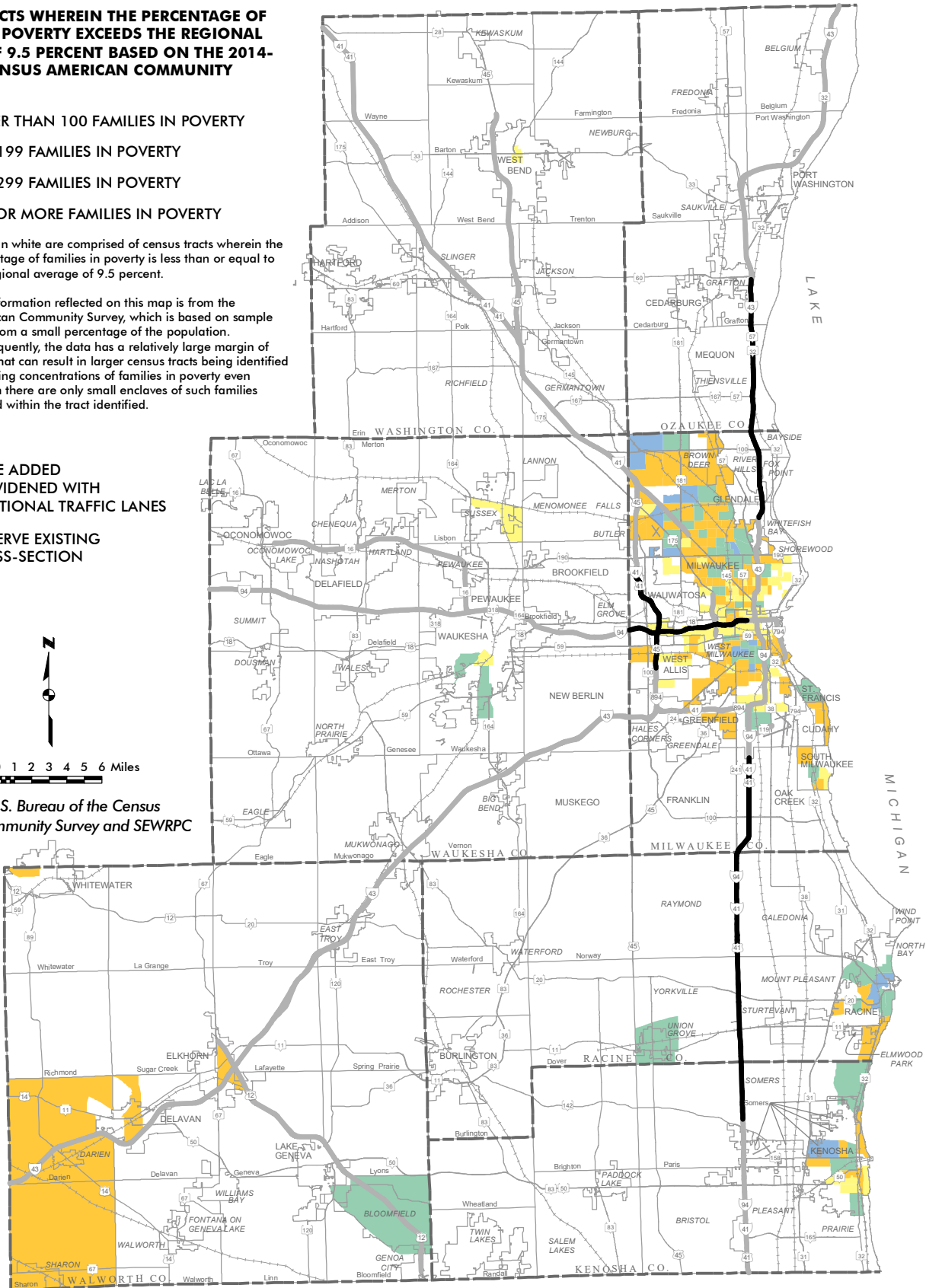


Table D.20
Minority Population and Families in Poverty Residing in Proximity to a Freeway Widening^a

Population and Families Within One-Half Mile						
Plan	Total Population Near a Freeway Widening	Minority Population		Total Families Near a Freeway Widening	Families in Poverty	
		Near a Freeway Widening	Percent of Total		Near a Freeway Widening	Percent of Total
VISION 2050	106,500	23,500	22.1	28,400	2,300	8.1
FCTS - 2050	47,400	13,300	28.1	9,500	1,200	12.6

Population and Families Within One-Quarter Mile						
Plan	Total Population Near a Freeway Widening	Minority Population		Total Families Near a Freeway Widening	Families in Poverty	
		Near a Freeway Widening	Percent of Total		Near a Freeway Widening	Percent of Total
VISION 2050	44,200	10,200	23.1	13,500	1,100	8.1
FCTS - 2050	18,300	5,500	30.1	4,400	540	12.3

^a Total population and minority population are based on the 2010 U.S. Census and total families and families in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

in poverty that reside in proximity to the freeway widenings, as shown in Table D.21. Under the updated VISION 2050, the existing minority population and families in poverty that reside within one-half mile of freeway widenings would represent about 4 and 5 percent of the total minority population and families in poverty, respectively, compared to about 6 percent of the non-minority population and families not in poverty. The existing minority population and families in poverty that reside within one-quarter mile of freeway widenings would represent about 2 percent of the total minority population and families in poverty, compared to about 3 percent of the non-minority population and families not in poverty.

Under the updated FCTS, the existing minority population and families in poverty that reside within one-half mile of freeway widenings would represent about 2 percent of the total minority population and families in poverty, which is about the same as the non-minority population and families not in poverty. The existing minority population and families in poverty that reside within one-quarter mile of freeway widenings would represent about 1 percent of the total minority population and families in poverty, which is about the same as the non-minority population and families not in poverty.

TRANSPORTATION-RELATED AIR POLLUTION IMPACTS ON MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

Automobiles and trucks traveling on arterial streets and highways emit air pollutants that generally exist in higher concentrations in the atmosphere near the arterial streets and highways with the most traffic, such as the Region’s freeways. The lower speeds and starting/stopping of vehicles associated with congested conditions increase the level of transportation air pollutant emissions. Individuals living in proximity to the Region’s freeways may be exposed to higher levels of transportation-related air pollutants.

Due in large part to past, current, and future Federal fuel and vehicle fuel economy standards and improved emissions controls, transportation-related air pollutant emissions in the Region have been declining and are expected to continue to decline in the future. This decline is expected to continue through the year 2050, even with the projected approximately 27 percent

Table D.21
Percent of Total Minority/Non-Minority Populations
and Families in Poverty/Families Not in Poverty
Residing in Proximity to a Freeway Widening^a

Population and Families Within One-Half Mile				
Plan	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
VISION 2050	4	6	5	6
FCTS - 2050	2	2	2	2

Population and Families Within One-Quarter Mile				
Plan	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
VISION 2050	2	3	2	3
FCTS - 2050	1	1	1	1

^a Minority population and non-minority population are based on the 2010 U.S. Census and families in poverty and families not in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

increase in vehicle-miles of travel under both the updated VISION 2050 and FCTS. Table D.22 shows that both the updated VISION 2050 and FCTS would be expected to result in lower levels of transportation-related air pollutant emissions (generally about a 20 to 38 percent decrease in greenhouse gases and up to 88 percent decrease in other transportation-related air pollutants compared to existing conditions), thereby reducing exposure of residents of the Region to these pollutants, including minority populations and low-income populations.

Even with the expected significant reductions in transportation-related air pollutant emissions, residents of the Region, including minority populations and families in poverty, living in proximity to roads with higher traffic volumes, such as freeways, may be exposed to higher levels of transportation-related air pollutants. The following is an assessment of whether there would be an expected disproportionate impact on, or over-representation of, existing minority populations and low-income populations residing along the planned freeway systems under both the updated VISION 2050 and FCTS.

- Evaluation Results:** Tables D.23 and D.24 show the existing total and minority population and the existing total number of families and families in poverty that reside in proximity to the freeway system under the updated VISION 2050 and FCTS. Maps D.70 through D.73 show the freeway system, including those freeway segments to be widened, under the updated VISION 2050 and FCTS compared to locations of current concentrations of minority populations and low-income populations. The percentages of the total population located in proximity to the freeway system under the updated VISION 2050 and FCTS that are of minority populations or of low-income populations are generally similar (equal or within several percentage points lower or higher) relative to the percentage of the total minority population and low-income population residing within each county. At the regional level, about 36 percent of the existing population residing within one-half mile or one-quarter mile of a freeway are minority residents, compared to about 29 percent of the total population of the Region that are minority residents. With regards to existing low-income populations, about 12 to 14 percent of the families residing within one-half mile or one-quarter mile of a freeway are in poverty, compared to 10 percent of the total families in the Region.

Table D.22**Transportation-Related Greenhouse Gas Emissions and Other Air Pollutants**

Pollutant Name	Type	Average Annual Emissions from Transportation Sources (tons)		
		Existing (2017)	VISION 2050	FCTS (2050)
Carbon Dioxide (CO ₂)	GHG	9,878,000	7,866,000	7,910,000
Methane (CH ₄) (in CO ₂ equivalents)	GHG	9,700	7,600	7,700
Nitrous Oxide (N ₂ O) (in CO ₂ equivalents)	GHG	57,300	35,600	35,900
Carbon Monoxide (CO)	Criteria	108,500	31,500	36,000
Fine Particulate Matter (PM _{2.5})	Criteria	752	228	273
Sulfur Dioxide (SO ₂)	Criteria and precursor for PM _{2.5}	70	57	117
Nitrogen Oxides (NO _x)	Precursor for Ozone/PM _{2.5}	14,150	3,250	3,430
Volatile Organic Compounds (VOC)	Precursor for Ozone/PM _{2.5}	8,120	2,280	2,240
Acetaldehyde (C ₂ H ₄ O)	Air toxic	92	27	21
Acrolein (C ₃ H ₄ O)	Air toxic	9	3	3
Ammonia (NH ₃)	Air toxic	485	480	482
Benzene (C ₆ H ₆)	Air toxic	173	32	53
Butadiene (C ₄ H ₆)	Air toxic	26	3	4
Formaldehyde (CH ₂ O)	Air toxic	139	57	55

Source: SEWRPC

As shown in Table D.25, at the regional level, about 20 to 24 percent each of existing minorities and of families in poverty are located within one-half mile of a freeway, while about 9 to 10 percent are located within one-quarter mile, compared to about 15 percent each of existing non-minorities and of families not in poverty that reside within one-half mile of a freeway and about 8 percent of those same categories who are within one-quarter mile of a freeway. Within each county, the percentages of existing total minority populations and non-minority populations, and the percentages of existing families in poverty and families not in poverty, that reside within one-half mile or one-quarter mile of a freeway are generally equal or within several percent lower or higher.

SUMMARY AND CONCLUSIONS

This section summarizes the conclusions of the evaluation conducted to determine whether the minority populations or low-income populations within Southeastern Wisconsin receive a disproportionate share of the estimated impacts—both costs and benefits—of the updated VISION 2050 and FCTS.

Based on comparisons of the location of the freeway and surface arterial street and highway capacity improvements under the updated VISION 2050 and FCTS to areas of the Region with concentrations of minority populations and low-income populations, it was concluded that no area of the Region, including minority populations and low-income populations, would disproportionately bear the impact of the planned freeway and surface arterial capacity improvements. As the segments of freeway to be widened under either the updated VISION 2050 or the updated FCTS would directly serve areas of minority populations and low-income populations, these populations would benefit from the expected modest improvement in highway accessibility to employment associated with the freeway widenings, with the improvement under the updated VISION 2050 being greater than the updated FCTS. Similarly, the anticipated improved safety that would potentially occur from a reduction in congestion would directly benefit minority populations and low-income populations that would be served by the widened freeway segments under the updated VISION 2050 and FCTS.

Table D.23

Total and Minority Populations Residing in Proximity to a Freeway^a

		Population Within One-Half Mile					
		Total and Minority Populations in the Region			Total and Minority Populations Within One-Half Mile of Freeways		
County	Total Population	Minority Population		Total Population	Minority Population		
		Population	Percent of Total		Population	Percent of Total	
Kenosha	166,426	36,534	22.0	1,550	230	14.8	
Milwaukee	947,735	432,777	45.7	239,200	110,400	46.2	
Ozaukee	86,395	5,706	6.6	9,500	800	8.4	
Racine	195,408	49,994	25.6	1,200	90	7.5	
Walworth	102,228	13,538	13.2	16,600	2,400	14.5	
Washington	131,887	7,539	5.7	15,200	840	5.5	
Waukesha	389,891	36,777	9.4	46,300	4,400	9.5	
Region	2,019,970	582,865	28.9	329,550	119,160	36.2	

		Population Within One-Quarter Mile					
		Total and Minority Populations in the Region			Total and Minority Populations Within One-Quarter Mile of Freeways		
County	Total Population	Minority Population		Total Population	Minority Population		
		Population	Percent of Total		Population	Percent of Total	
Kenosha	166,426	36,534	22.0	520	35	6.7	
Milwaukee	947,735	432,777	45.7	109,700	49,900	45.5	
Ozaukee	86,395	5,706	6.6	3,400	310	9.1	
Racine	195,408	49,994	25.6	530	45	8.5	
Walworth	102,228	13,538	13.2	6,100	780	12.8	
Washington	131,887	7,539	5.7	7,100	370	5.2	
Waukesha	389,891	36,777	9.4	21,300	2,200	10.3	
Region	2,019,970	582,865	28.9	148,650	53,640	36.1	

		Population Within One-Half Mile					
		Total and Minority Populations in the Region			Total and Minority Populations Within One-Half Mile of Freeways		
County	Total Population	Minority Population		Total Population	Minority Population		
		Population	Percent of Total		Population	Percent of Total	
Kenosha	166,426	36,534	22.0	1,550	230	14.8	
Milwaukee	947,735	432,777	45.7	239,200	110,400	46.2	
Ozaukee	86,395	5,706	6.6	9,500	800	8.4	
Racine	195,408	49,994	25.6	1,200	90	7.5	
Walworth	102,228	13,538	13.2	13,300	2,000	15.0	
Washington	131,887	7,539	5.7	15,200	840	5.5	
Waukesha	389,891	36,777	9.4	46,300	4,400	9.5	
Region	2,019,970	582,865	28.9	329,550	119,160	36.2	

		Population Within One-Quarter Mile					
		Total and Minority Populations in the Region			Total and Minority Populations Within One-Quarter Mile of Freeways		
County	Total Population	Minority Population		Total Population	Minority Population		
		Population	Percent of Total		Population	Percent of Total	
Kenosha	166,426	36,534	22.0	520	35	6.7	
Milwaukee	947,735	432,777	45.7	109,700	49,900	45.5	
Ozaukee	86,395	5,706	6.6	3,400	310	9.1	
Racine	195,408	49,994	25.6	530	45	8.5	
Walworth	102,228	13,538	13.2	5,100	650	12.7	
Washington	131,887	7,539	5.7	7,100	370	5.2	
Waukesha	389,891	36,777	9.4	21,300	2,200	10.3	
Region	2,019,970	582,865	28.9	148,650	53,640	36.1	

VISION 2050

Fiscally Constrained Transportation System

^a Total population and minority population are based on the 2010 U.S. Census.

Source: U.S. Bureau of the Census and SEWRPC

Table D.24
Families in Poverty Residing in Proximity to a Freeway^a

		Families Within One-Half Mile					
		Total Families and Families in Poverty in the Region			Total Families and Families in Poverty Within One-Half Mile of Freeways		
County	Total Families	Families in Poverty		Total Families	Families in Poverty		
		Families	Percent of Total		Families	Percent of Total	
Kenosha	41,876	4,027	9.6	1,000	30	3.0	
Milwaukee	215,024	32,691	15.2	52,700	9,200	17.5	
Ozaukee	25,144	866	3.4	3,200	110	3.4	
Racine	53,393	5,049	9.4	630	20	3.2	
Walworth	26,787	1,801	6.7	4,900	380	7.8	
Washington	38,089	1,178	3.1	4,400	150	3.4	
Waukesha	110,394	3,454	3.1	14,800	440	3.0	
Region	510,707	49,066	9.6	81,630	11,510	14.1	

		Families Within One-Quarter Mile					
		Total Families and Families in Poverty in the Region			Total Families and Families in Poverty Within One-Quarter Mile of Freeways		
County	Total Families	Families in Poverty		Total Families	Families in Poverty		
		Families	Percent of Total		Families	Percent of Total	
Kenosha	41,876	4,027	9.6	510	20	3.9	
Milwaukee	215,024	32,691	15.2	25,500	4,400	17.3	
Ozaukee	25,144	866	3.4	1,600	50	3.1	
Racine	53,393	5,049	9.4	320	10	3.1	
Walworth	26,787	1,801	6.7	2,600	200	7.7	
Washington	38,089	1,178	3.1	2,200	70	3.2	
Waukesha	110,394	3,454	3.1	7,500	220	2.9	
Region	510,707	49,066	9.6	40,230	4,970	12.4	

		Families Within One-Half Mile					
		Total Families and Families in Poverty in the Region			Total Families and Families in Poverty Within One-Half Mile of Freeways		
County	Total Families	Families in Poverty		Total Families	Families in Poverty		
		Families	Percent of Total		Families	Percent of Total	
Kenosha	41,876	4,027	9.6	1,000	30	3.0	
Milwaukee	215,024	32,691	15.2	52,700	9,200	17.5	
Ozaukee	25,144	866	3.4	3,200	110	3.4	
Racine	53,393	5,049	9.4	630	20	3.2	
Walworth	26,787	1,801	6.7	3,800	310	8.2	
Washington	38,089	1,178	3.1	4,400	150	3.4	
Waukesha	110,394	3,454	3.1	14,800	440	3.0	
Region	510,707	49,066	9.6	80,530	10,260	12.7	

		Families Within One-Quarter Mile					
		Total Families and Families in Poverty in the Region			Total Families and Families in Poverty Within One-Quarter Mile of Freeways		
County	Total Families	Families in Poverty		Total Families	Families in Poverty		
		Families	Percent of Total		Families	Percent of Total	
Kenosha	41,876	4,027	9.6	510	20	3.9	
Milwaukee	215,024	32,691	15.2	25,500	4,400	17.3	
Ozaukee	25,144	866	3.4	1,600	50	3.1	
Racine	53,393	5,049	9.4	320	10	3.1	
Walworth	26,787	1,801	6.7	2,000	170	8.5	
Washington	38,089	1,178	3.1	2,200	70	3.2	
Waukesha	110,394	3,454	3.1	7,500	220	2.9	
Region	510,707	49,066	9.6	39,630	4,940	12.5	

^a Total families and families in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census American Community Survey and SEWRPC

Table D.25
**Minority/Non-Minority Populations and Families in Poverty/
 Families Not in Poverty Residing in Proximity to a Freeway^a**

Population and Families Within One-Half Mile				
County	Percent of Population Within One-Half Mile of Freeways		Percent of Families Within One-Half Mile of Freeways	
	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
Kenosha	0.6	1.0	0.7	2.6
Milwaukee	25.5	25.0	28.1	23.9
Ozaukee	14.0	10.8	12.7	12.7
Racine	0.2	0.8	0.4	1.3
Walworth	17.7	16.0	21.1	18.1
Washington	11.1	11.5	12.7	11.5
Waukesha	12.0	11.9	12.7	13.4
Region	20.4	14.6	23.5	15.2

Population and Families Within One-Quarter Mile				
County	Percent of Population Within One-Quarter Mile of Freeways		Percent of Families Within One-Quarter Mile of Freeways	
	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
Kenosha	0.1	0.4	0.5	1.3
Milwaukee	11.5	11.6	13.5	11.6
Ozaukee	5.4	3.8	5.8	6.4
Racine	0.1	0.3	0.2	0.6
Walworth	5.8	6.0	11.1	9.6
Washington	4.9	5.4	5.9	5.8
Waukesha	6.0	5.4	6.4	6.8
Region	9.2	6.6	10.1	7.6

Population and Families Within One-Half Mile				
County	Percent of Population Within One-Half Mile of Freeways		Percent of Families Within One-Half Mile of Freeways	
	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
Kenosha	0.6	1.0	0.7	2.6
Milwaukee	25.5	25.0	28.1	23.9
Ozaukee	14.0	10.8	12.7	12.7
Racine	0.2	0.8	0.4	1.3
Walworth	14.8	12.7	17.2	14.0
Washington	11.1	11.5	12.7	11.5
Waukesha	12.0	11.9	12.7	13.4
Region	20.4	14.6	20.9	15.2

Population and Families Within One-Quarter Mile				
County	Percent of Population Within One-Quarter Mile of Freeways		Percent of Families Within One-Quarter Mile of Freeways	
	Minority Population	Non-Minority Population	Families in Poverty	Families Not in Poverty
Kenosha	0.1	0.4	0.5	1.3
Milwaukee	11.5	11.6	13.5	11.6
Ozaukee	5.4	3.8	5.8	6.4
Racine	0.1	0.3	0.2	0.6
Walworth	4.8	5.0	9.4	7.3
Washington	4.9	5.4	5.9	5.8
Waukesha	6.0	5.4	6.4	6.8
Region	9.2	6.6	10.1	7.5

^aMinority population and non-minority population are based on the 2010 U.S. Census and families in poverty and families not in poverty are based on the 2014-2018 American Community Survey.

Source: U.S. Bureau of the Census, U.S. Census and American Community Survey; and SEWRPC

With respect to public transit, implementing the more than doubling of transit service recommended under the updated VISION 2050 would significantly improve the transit access of minority populations, low-income populations, and people with disabilities to jobs, healthcare, education, and other activities. While the number of additional members of minority populations and low-income populations and of people with disabilities with access to transit service would only modestly increase under the updated VISION 2050, the number of such populations with access to higher-quality transit, including fixed-guideway transit service, would significantly increase.

The 35 percent reduction in transit service and minimal addition of higher-quality transit service expected under the updated FCTS would result in significantly less access to jobs, healthcare, education, and other daily needs, and an overall reduction in transit service quality when compared to both VISION 2050 and the transit system that exists today. For the 1 in 10 households in the Region without access to an automobile, households that are more likely to be minority or low income than their overall proportion of the Region's population, mobility and access to jobs and activities within the Region would be limited. In addition, a large number of the Region's jobs would be inaccessible to those households without an automobile due to excessive transit travel times. This inaccessibility to jobs for households may be even more limited than indicated in this analysis, as it is difficult to account for the potential reduction in job access due to reduced hours of the day in which transit service is available or due to the potential elimination of service on weekends. This inaccessibility to jobs via transit particularly impacts minority populations, low-income populations, and people with disabilities, who utilize public transit at a rate proportionately higher than other population groups.

Therefore, should the reasonably available and expected funding for implementing the public transit element of VISION 2050 continue as estimated under the FCTS, a disparate impact on the Region's minority populations, low-income populations, and people with disabilities is likely to occur. Given current limitations at the State level on both local government revenue generation and on the Wisconsin Department of Transportation's ability to allocate funds between different programs, the ability for the Region to avoid such a disparate impact is dependent on the State Legislature and Governor providing additional State funding for transit services or allowing local units of government and transit operators to generate such funds on their own.

INTRODUCTION

This appendix presents a summary of all public comments received during the 2020 interim review and update process. Staff conducted two rounds of public involvement for the 2020 Review and Update.

Comments from the first round were obtained at the November 6, 2019, Environmental Justice Task Force meeting and during a formal public comment period from November 18 through December 20, 2019, in the following ways:

- Seven public meetings held across the Region (one in each county) from December 3 through 12
- An online questionnaire that replicated the feedback opportunities of the seven public meetings
- A “Community Conversation” event on December 7 with several of the Commission’s community partners
- A meeting of the Hmong American Friendship Association (HAFA) on December 15
- Email or online comment form (note: no comments were submitted via U.S. mail or fax)

Comments from the second round were obtained at the February 18, 2020, Environmental Justice Task Force meeting and during a formal public comment period from February 27 through April 8, 2020, in the following ways:

- Four public meetings held across the Region from March 9 through 12 (note: three additional public meetings and all meetings scheduled with the Commission’s community partners were canceled due to public health concerns related to the COVID-19 pandemic)
- An online questionnaire that replicated the feedback opportunities of the public meetings
- Email or online comment form (note: no comments were submitted via U.S. mail or fax)

In lieu of the canceled public and partner meetings during the second round, staff held two virtual public meetings on March 31 and April 1, prepared a YouTube video presentation, and extended the original comment period from March 27 to April 8.

All comments received were considered by Commission staff and the Advisory Committees guiding VISION 2050 as staff prepared the 2020 Review and Update of VISION 2050.

SUMMARY OF ROUND 1 COMMENTS RECEIVED

A total of 277 unique individuals participated in the first round of public involvement by attending one of the nine public or partner meetings held in December or completing the online questionnaire. A summary of the comments received during the first round is presented below.

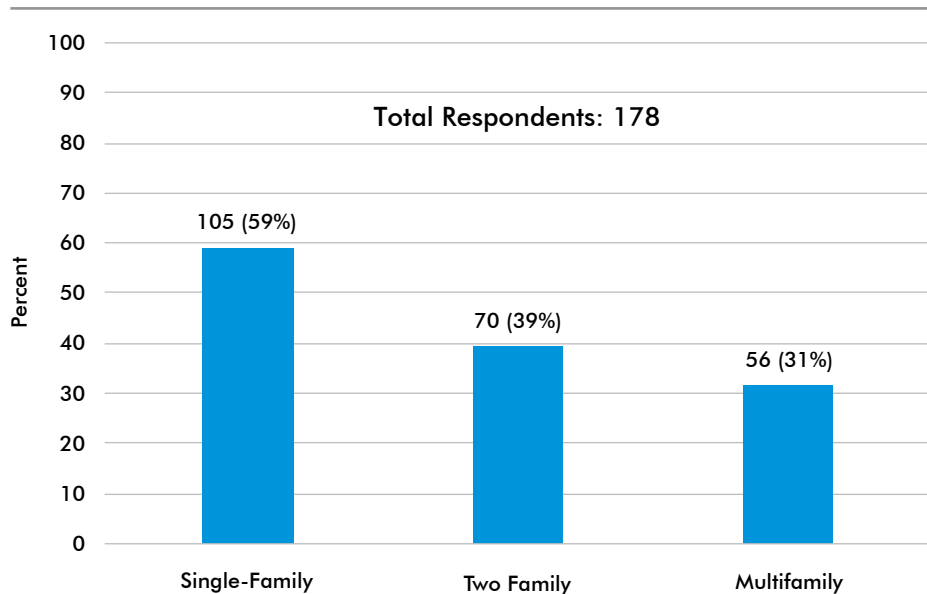
Responses to Worksheet Questions

At each of the seven public meetings, staff distributed a worksheet to attendees with a series of eight questions about land use and transportation. This worksheet was also distributed at the December 7 Community Conversation and December 15 HAFA meeting, and the same eight questions were asked via the online questionnaire. The responses to the worksheet questions are summarized below. Note that the comments are from a self-selected sample of individuals and were not obtained via a statistically significant survey method.

Worksheet Question 1: What types of housing development would you like to see more of in the Region?

Figure E.1 shows the percent of responses for each type of housing development participants would like to see more of in the Region.

Figure E.1
Round 1 Feedback: Types of Housing Development
Participants Would Like More of in the Region



Source: SEWRPC

Additional comments in response to Question 1 included:

- Support for affordable housing (18)
- Support for mixed-use development (5)
- Support for a variety of housing types (5)
- Support for higher-density housing near transit stops (3)
- Support for senior housing (3)
- Support for common greenspace in housing developments (2)
- Support for walkable neighborhoods (2)

- Opposition to developing any single-family homes
- Support for accessible housing for people with disabilities
- Support for co-op housing
- Support for farmettes
- Support for infill development
- Support for land trusts
- Support for mixed-income housing
- Support for multi-generation housing
- Support for passive housing design that minimizes the energy needed for heating/cooling
- Support for renovation of older homes and buildings (e.g. lead abatement)
- Support for tiny homes
- Support for townhouses instead of traditional duplexes

Worksheet Question 2: The single-family homes recommended by VISION 2050 would largely be on lots of 1/4-acre or less (the Small Lot Traditional Neighborhood land use category), but most single-family homes developed since 2010 have been on larger lots. Do you think developing single-family homes on smaller lots is a good idea? Why do you think most single-family homes are being developed on larger lots?

Most commenters supported developing single-family homes on smaller lots (83). Reasons cited for their support included:

- Smaller lots encourage alternative modes of transportation and reduce the dependency on automobiles
- Smaller lots tend to be more affordable
- Smaller lots tend to preserve more land as open space
- Smaller lots tend to be more cost-effective (utilities, public services)
- Smaller lots tend to be more profitable to developers
- Smaller lots encourage people to use public spaces and explore their community
- Smaller lots support development of public transit
- Smaller lots would allow better racial integration in different communities

A significant number of commenters were opposed to developing single-family homes on smaller lots (40). Reasons cited for their opposition included:

- Larger lots better preserve the character of rural communities
- Larger lots provide large yards for families with children and for gardening
- Larger lots generate less traffic congestion

Commenters provided the following possible reasons why most single-family homes are being developed on larger lots, rather than on smaller lots as VISION 2050 recommends:

- People desire larger lots for a variety of reasons (e.g., space, privacy, family activities, natural lighting, gardening, connection to nature, safety, status)

- Larger housing on larger lots may be seen as more profitable to developers
- Homes on smaller lots may require too many stairs for kids, seniors, and people with disabilities
- People moving from the Chicago area can afford larger homes on larger lots
- Local regulations do not promote housing development on smaller lots and/or limit housing development on larger lots
- Larger lots are more environmentally friendly
- Smaller lots put a higher strain on local infrastructure
- Demand for larger lots is due to people's sense of self-importance over the collective good
- Demand for larger lots is due to people's tendency to self-segregate
- Larger lots are facilitated by approval of sewer extensions, water service, and roadways to serve such developments

Additional comments in response to Question 2 included:

- Housing and lot size should reflect people's specific needs and circumstances
- Providing common public spaces within smaller lot developments can eliminate the need for large yards
- Smaller lots may be suitable for urban areas, but larger lots may be more appropriate for suburban and/or rural areas
- If larger lots are developed, they should include accessory dwelling units
- Municipalities should consider allowing smaller minimum lot sizes in sewer service areas
- There is an increased need for rental units for younger generations and retiring baby boomers
- Housing should be designed in a neighborhood setting and in a way that encourages community cohesiveness
- More education needs to be done in counties that are not receptive to smaller lots
- New homes seem to be larger regardless of lot size
- Private land managed to benefit stormwater retention, infiltration, and with native vegetation should be taxed at a lower rate
- Single-family development should be as infill and in mixed-use neighborhoods
- Smaller lots should be developed to allow space for agriculture
- Slow population growth may be causing low demand for single-family homes
- Fewer people are buying homes due to lower wages and higher debt
- Larger lot development tends to exclude low-income people, which perpetuates and exacerbates discrimination, especially against people of color and people with disabilities, whom are disproportionately concentrated in the City of Milwaukee

- The process for extending water, sewer, and roadways should be reconsidered, including applying more stringent criteria focused on reducing regional inequities and de-prioritizing criteria like traffic congestion

Worksheet Question 3: VISION 2050 previously identified a gap in funding for the recommended transit system and identified possible ways to provide additional funding. Would you support providing additional public funding for transit? If so, are there particular revenue sources you think should be considered?

Most commenters supported providing additional funding for public transit (116). Potential revenue sources that were suggested included:

- Allocate more State funding to transit (10)
- Increase sales taxes and/or create a sales tax dedicated to transit (7)
- Increase taxes on and/or support from businesses (7)
- Increase the gas tax (7)
- Increase vehicle registration fees (6)
- Implement tolling (5)
- Increase property taxes (4)
- Reallocate highway funding to benefit transit (4)
- Increase development fees (3)
- Increase Federal funding (3)
- Implement a vehicle-miles of travel (VMT) fee (2)
- Implement congestion pricing (2)
- Increase funding from out-of-state travelers (2)
- Increase hotel room tax (2)
- Increase user fees (2)
- Generate revenue from developing public land
- Implement a one-time property tax increase
- Implement an excise tax
- Implement a payroll tax
- Implement a dedicated income tax
- Increase car rental fees
- Increase fines for driving under the influence of alcohol or other drugs
- Increase parking fees
- Increase rates of all types of taxes currently used to fund transit
- Increase revenue from tourism
- Increase sales tax on car purchases
- Increase taxes on gambling
- Increase taxes on the wealthy
- Increase transit fares
- Increase use of Federal grants
- Index the gas tax to inflation
- Obtain sponsorships for bus routes

- Reallocate local tax revenue to benefit transit
- Reallocate parking ticket revenues to benefit transit
- Tax tow lots on every car that is towed

Some commenters were opposed to providing additional funding for public transit (11). Only one commenter cited a reason for their opposition, indicating they believed the existing transit system is sufficient.

Additional comments in response to Question 3 included:

- Implement a regional transit authority (RTA)
- Increase vehicle registration fees specifically for larger vehicles
- Consider the impact of revenue sources on low-income individuals
- Consider revenue sources that do not directly impact residents
- Improving public transit will generate cost savings by reducing the need to expand highways
- Do not increase transit fares
- Bicycles and electric cars should be exempt from tolls and parking fees
- Educate State and Federal elected officials on the benefits of transit
- Implement financial incentives to encourage transit use
- Make existing transit services more cost-efficient
- Locate new jobs near the existing workforce to reduce the cost to provide transit services
- Establish a transit foundation
- Stop building new or expanded highways in areas that lack transit and affordable housing, which will incentivize regional collaboration
- Funding for expanded transit is needed to reduce substantial racial disparities in the Region

Worksheet Question 4: Have your transportation options been impacted by recent expansions or reductions in transit service? What transportation options would you like to see more of in the Region to better meet your needs?

Some commenters responded that their transportation options have been impacted by recent expansions or reductions in transit service (22), while most commenters responded that their transportation options not been impacted by recent expansions or reductions in transit service (49). Commenters provided the following transportation options that they would like to see more of in the Region to better meet their needs:

- New commuter rail, including between Kenosha, Racine, and Milwaukee; in the 30th Street Industrial Corridor in Milwaukee; between Walworth County and Milwaukee; and between Chicago and Lake Geneva (9)
- Improved transit to/from employers (7)
- More bus routes (6)
- New intercity/high-speed passenger rail service to/from destinations such as Madison, the Twin Cities, and Chicago (6)
- Increased bus frequency (5)
- Increased intercounty transit (5)

- Expansion of streetcar in Milwaukee (4)
- Lower transit fares (4)
- More transit service between the City of Milwaukee and suburban communities (4)
- New light rail (4)
- Increased hours of service, including nights and weekends (3)
- Better first-mile/last-mile options such as Uber/Lyft (2)
- Faster transit service (2)
- Free transit (2)
- Improved transit to/from medical facilities (2)
- Increased bike-share options (2)
- Increased ride-share options (2)
- New bus rapid transit (BRT) service (2)
- Additional door-to-door service to senior centers and meal sites
- Better connections between transit services
- Free rides for seniors and people with disabilities
- Improved transit serving smaller communities
- Improved transit to/from grocery stores
- Increased electric scooter options
- Increased Metra commuter rail frequency in Kenosha
- Increased transit service to/from UW-Parkside
- More affordable options for seniors and people in poverty
- More bus service to events
- More express bus service
- More on-street bike lanes
- More parking spaces at park-ride lots served by transit
- More reliable service
- More safe, welcoming bicycle and pedestrian environments, especially in underserved communities
- More service/options for people with disabilities
- More shared-ride taxi service in less-dense areas of the Region
- More transit focused on underserved communities
- New Amtrak station in Kenosha County
- New bus system in Walworth County
- New commuter bus service to/from the Highway 67 park-ride lot north of Elkhorn
- New dedicated bus lanes on freeways
- New subway system
- New transit service between Lake Geneva and Kenosha
- New transit service between Madison, Milwaukee, and Racine

Additional comments in response to Question 4 included:

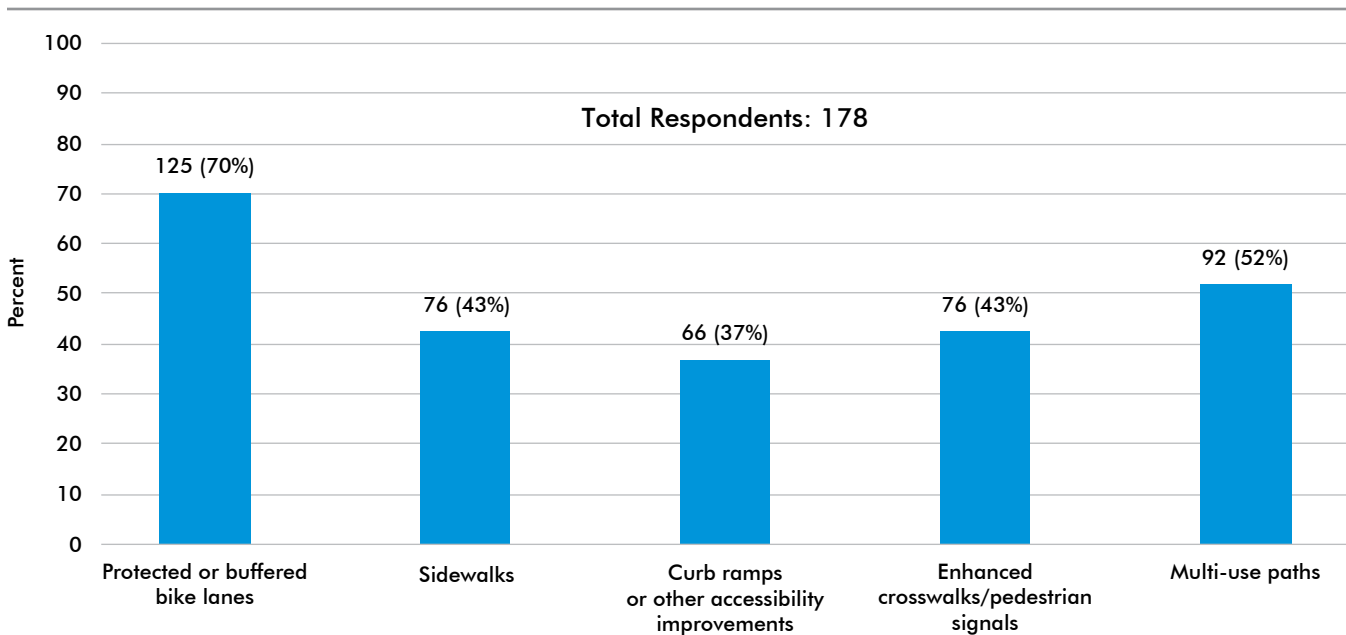
- Do not eliminate service on the MCTS Gold Line

- Driving should not be as convenient
- Focus on repairing local roads before expanding highways
- Implement complete streets concepts in roadway projects
- Implement preferential treatment for transit on roadways
- Improve lighting at bus stops
- Increase parking capacity
- Prohibit electric scooters
- Provide options to compensate for slow traffic caused by the Hop streetcar
- Provide additional traffic lanes to accommodate transit services
- Spend less on roads
- Use renewable energy for transit (e.g., electric vehicles)
- Use smaller buses to allow more frequent service

Worksheet Question 5: What types of biking and walking improvements would you like to see more of in the Region?

Figure E.2 shows the percent of responses for each type of biking and walking improvement participants would like to see more of in the Region.

Figure E.2
Round 1 Feedback: Types of Biking and Walking Improvements
Participants Would Like More of in the Region



Source: SEWRPC

Additional comments in response to Question 5 included:

- Better maintain existing multi-use paths
- Better snow removal from sidewalks and curb ramps
- Bicycle facilities are not used in winter
- Construct more multi-use paths along and through natural areas (e.g., Lake Michigan, woods, wetlands)

- Construct more off-street multi-use paths
- Construct more protected and buffered bike lanes
- Designate separate areas on multi-use paths for biking and walking
- Do not construct more protected and buffered bike lanes if they will increase traffic congestion
- Do not construct new multi-use trails if they will negatively impact primary environmental corridors and natural areas
- Do not construct new protected and buffered bike lanes or off-street multi-use paths
- Do not prioritize bicycle and pedestrian improvements over building the USH 12 freeway extension between Elkhorn and Whitewater
- Do not widen roadways with additional traffic lanes
- Eliminate gaps in the bicycle network
- Improve bicycle and pedestrian facilities
- Improve bicycle and pedestrian wayfinding signage
- Improve pedestrian crossings at signals to ensure enough time for people with disabilities to cross and add sound signals for visually impaired to know when it is safe to cross
- Improve pedestrian signals at intersections
- Install more speed/red-light cameras along roadways to improve safety
- Install sidewalks and streetlights on Washington Avenue between Green Bay Road and 39th Avenue in the City of Kenosha
- Limit bicycle traffic on streets and highways
- Limit sidewalks to high-pedestrian areas
- Maintain the right-of-way for sidewalks (e.g., trimming trees/shrubs)
- Make sidewalks more accessible for disabled pedestrians by easing the transition between sidewalks and driveways
- Modify the Hoan Bridge to accommodate bicycles
- Prohibit motorized vehicles on multi-use paths
- Provide an equitable distribution of bike and walking facilities
- Provide designated pedestrian/bike paths (e.g., Sanibel Island, FL)
- Provide more raised bike lanes
- Provide more sidewalks in suburban communities
- Repair damaged sidewalks

Worksheet Question 6: What bicycle- and/or pedestrian-related safety concerns do you have? Is there anything you'd like to see more of in the Region to address these concerns?

Commenters expressed the following bicycle and pedestrian safety concerns:

- Reckless driving (11)
- Vehicle speeds (8)
- Dangerous to ride bicycles on rural roads without bike lanes (4)
- Traffic signals that prioritize traffic flow over pedestrians (3)
- Biking or walking on high-speed rural roads (2)

- Inattentive driving such as texting while driving (2)
- Potholes in bike lanes (2)
- Snow removal from sidewalks and curb ramps (2)
- Bicyclists who do not follow traffic laws
- Bike lanes that are too narrow
- Bike/car merging (e.g., Hawley Road, State Street bridge)
- Bikes lanes on heavily trafficked roads (e.g., National Avenue in West Allis)
- Dockless scooters riding on sidewalks
- Electric vehicles that make less noise so bicyclists and pedestrians may not hear them coming
- Incomplete pedestrian facilities in suburban shopping centers
- Narrow roads for bicyclists (e.g., the Kettle Moraine area of Walworth County)
- Not enough traffic signals to slow traffic
- Roads that are too wide to cross safely
- Roundabouts are unsafe for pedestrians
- Sharrows and unprotected bike lanes are dangerous for bicyclists
- Sprawling development patterns

Commenters provided the following suggestions for how to address bicycle and pedestrian safety concerns:

- Protected/separated/buffered bike lanes (21)
- Better lighting (9)
- Education for drivers regarding bicycle and pedestrian safety (7)
- Bike trails (6)
- Education on safe bicycling practices (5)
- Bike lanes (4)
- Complete streets and/or roadways that prioritize transit, bikes, and pedestrians (4)
- Sidewalks (4)
- Wider roads (4)
- Accessible pedestrian facilities (3)
- Speed/red-light cameras (3)
- Build the USH 12 freeway extension between Elkhorn and Whitewater (2)
- Enforcement of traffic laws (2)
- Flashing signals at street crossings for pedestrians and bike paths (2)
- Multi-use paths (2)
- Prohibit vehicles from parking in bike lanes (2)
- Repair damaged sidewalks (2)
- Single-use trails (2)
- Wider bike lanes (2)
- Adequate time for people with mobility impairments to cross at signals

- Better paved surfaces
- Bublr bike stations
- Bus lanes in inner cities
- Clearly marked pedestrian right-of-way
- Clearly placed signs for pedestrian right-of-way
- Consider pedestrians and bicyclists when placing orange construction barrels in Downtown Milwaukee
- Enact and enforce helmet laws
- Ensure bicycle and pedestrian improvements are made in the central city and underserved neighborhoods
- Improved pedestrian facilities
- Incentives to encourage people to bike to work
- Local bicycle/pedestrian plans
- Maintain parkway roads
- Maps to show bicycle and pedestrian connections to transit
- Marked crosswalks
- More sidewalks in commercial parking lots connecting to public sidewalks
- Oscillating sound for visually impaired pedestrians crossing roadways
- Painted bike lanes and crosswalks
- Pedestrian median islands
- Promote biking and walking
- Protected sidewalks along busy streets
- Provide protection for bicyclists and pedestrians
- Public transportation to reduce the number of motorized vehicles on the road
- Raised bike lanes
- Reduced speed limits within cities
- Safer bike paths
- Safer street crossings for bike paths
- Separate multi-use paths (e.g., along Highway 20 in Rock and Jefferson Counties)
- Shared parking lots at shopping centers to encourage walkability
- Sidewalks in suburban communities
- Sidewalks on STH 32 between Racine and Kenosha
- Smaller bike lanes
- Technology at signals that anticipates when a pedestrian is approaching
- Traffic calming
- Well-connected biking and walking paths
- Wide paved shoulders

Additional comments in response to Question 6 included:

- Bicycles should be on trails not roadways

- Do not construct new multi-use trails if they negatively impact primary environmental corridors and natural areas
- Should not waste money on bicycle and pedestrian accommodations on rural highways

Worksheet Question 7: What types of automobile-related safety concerns do you have? Is there anything you'd like to see more of in the Region to address these concerns?

Commenters expressed the following automobile-related safety concerns:

- Reckless driving (24)
- Vehicle speeds (18)
- Inattentive driving such as texting while driving (10)
- Traffic congestion (9)
- Red light running (7)
- Road conditions (7)
- Dangerous traffic congestion and roadway design along USH 12 between Elkhorn and Whitewater (6)
- Drivers not obeying traffic laws (4)
- Wide roads that encourage high vehicle speeds (4)
- Painted lines that have worn away (3)
- Construction zones on freeways (2)
- Drunk driving (2)
- Poor visibility of painted lines at night and/or when wet (2)
- Speed limit increases on highways (2)
- Unlicensed/uninsured drivers (2)
- Blind curves on rural highways
- Drivers not yielding to pedestrians
- Drivers that drive too slow
- Hit-and-run crashes
- Limited public transit, which results in increased traffic congestion
- Kids stealing and crashing cars
- Large vehicles compared to smaller vehicles, bicycles, and pedestrians
- Narrow lanes on rural highways
- Police chases
- Road conditions in neighborhoods with concentrations of people of color and poverty
- Slow-moving vehicles on rural highways (e.g., farm implements)
- Stop signs that are difficult to see and/or are partially hidden
- Too many access points along rural highways
- Truck traffic

Commenters provided the following suggestions for how to address automobile-related safety concerns:

- Build the USH 12 freeway extension between Elkhorn and Whitewater (17)

- Speed/red-light cameras (13)
- Bring driver's education back to public schools (6)
- Enforce traffic laws (6)
- Roundabouts (6)
- Better planning for construction projects (4)
- Intersection improvements at USH 12/STH 67 intersection at CTH A and/or CTH ES (4)
- Measures to protect pedestrians (e.g., curb bumpouts, refuge islands) (4)
- Repair potholes (4)
- Stricter drunk driving laws (4)
- Traffic calming (4)
- Bicycle facilities (3)
- More high-occupancy vehicle (HOV) lanes to encourage carpooling (3)
- Road diets (3)
- Alternatives to driving (2)
- Better lighting (e.g., rural intersections) (2)
- Fewer cars on the road (2)
- Improve public transit (2)
- Promote carpooling/ride-sharing (2)
- Stops signs at intersections (2)
- Turn lanes on USH 12 in Walworth County (2)
- Additional traffic lanes to address congestion
- Autonomous vehicles
- Better paved surfaces
- Complete a corridor study for the USH 12 freeway extension between Elkhorn and Whitewater
- Complete streets implementation
- Discourage single-occupancy automobile use
- Driver's license recovery programs
- Electric car stations
- Fewer traffic signals
- Flashing red lights on stop signs
- Implement vanpooling programs
- Incentivize carpooling and ride-sharing
- Light rail on highways
- Measures to get old and toxic vehicles off the road
- "No turn on red" signs
- Opposed to expanding highways
- Opposed to expanding highways without also increasing public transit options
- Opposed to roundabouts

- Pilot of 5-10 counties to conduct more frequent safety education programs for drivers
- Provide automobiles rather than buses to workers needing to reach jobs in the suburbs
- Public education campaign to address reckless driving
- Pullover lanes in case of emergencies
- Reduce dependence on automobiles
- Reduce lane widths once autonomous vehicles are implemented
- Reduce traffic congestion
- Require driver's license to purchase gas
- Require periodic online driver's testing as a condition for maintaining a valid driver's license
- Require traffic to stop for school buses in the City of Milwaukee
- Resurface USH 12 from STH 50 to STH 67 in Walworth County
- Road resurfacing projects
- Safer roadway crossings for pedestrians and people with disabilities
- Technology in cars to prevent them from traveling faster than 50 mph within a city
- Traffic lanes on streets and highways to reduce congestion
- Traffic signals
- Truck lanes for semis
- Wide shoulders for bicyclists and pedestrians

Worksheet Question 8: VISION 2050 previously identified a gap in funding for the recommended street and highway system and identified possible ways to provide additional funding. Would you support providing additional public funding for street and highway improvements? If so, are there particular revenue sources you think should be considered?

Most commenters supported providing additional funding for street and highway improvements (80). Potential revenue sources that were suggested included:

- Increase the gas tax (11)
- Increase vehicle registration fees (8)
- Implement tolling (8)
- Obtain more private sector support/partnerships (7)
- Increase State funding (7)
- Increase sales taxes (5)
- Increase user fees (3)
- Charge drivers for the true cost to maintain the transportation system (2)
- Increase the excise tax on alcohol (2)
- Increase property taxes (2)
- Increase the sales tax on vehicle purchases (2)
- Index the gas tax to inflation (2)
- Implement a vehicle-miles of travel (VMT) fee (2)

- Implement congestion pricing
- Implement red-light cameras
- Increase Federal funding
- Increase fees on heavy trucks
- Increase taxes on businesses
- Increase the use of Federal grants
- Legalize recreational cannabis
- Allocate more State funding to transportation
- Tax the wealthy

Some commenters indicated they may support providing additional funding for street and highway improvements under certain conditions (15). Conditions needing to be met to obtain their support included:

- If the additional funding is used to build the USH 12 freeway extension between Elkhorn and Whitewater (5)
- If the additional funding will make roads safer (3)
- If the additional funding will improve public transit (2)
- If the additional funding will improve and maintain road conditions (2)
- If the additional funding will add high-occupancy vehicle (HOV) lanes (2)
- If the public is able to determine by majority how funds are allocated

Some commenters were opposed to providing additional funding for street and highway improvements (9). Reasons cited for their opposition included:

- Should invest in public transit instead of providing additional public funding (2)
- Public funds are not being spent effectively
- Should invest more aggressively instead of providing additional public funding
- Unable to afford paying higher taxes

Additional comments in response to Question 8 included:

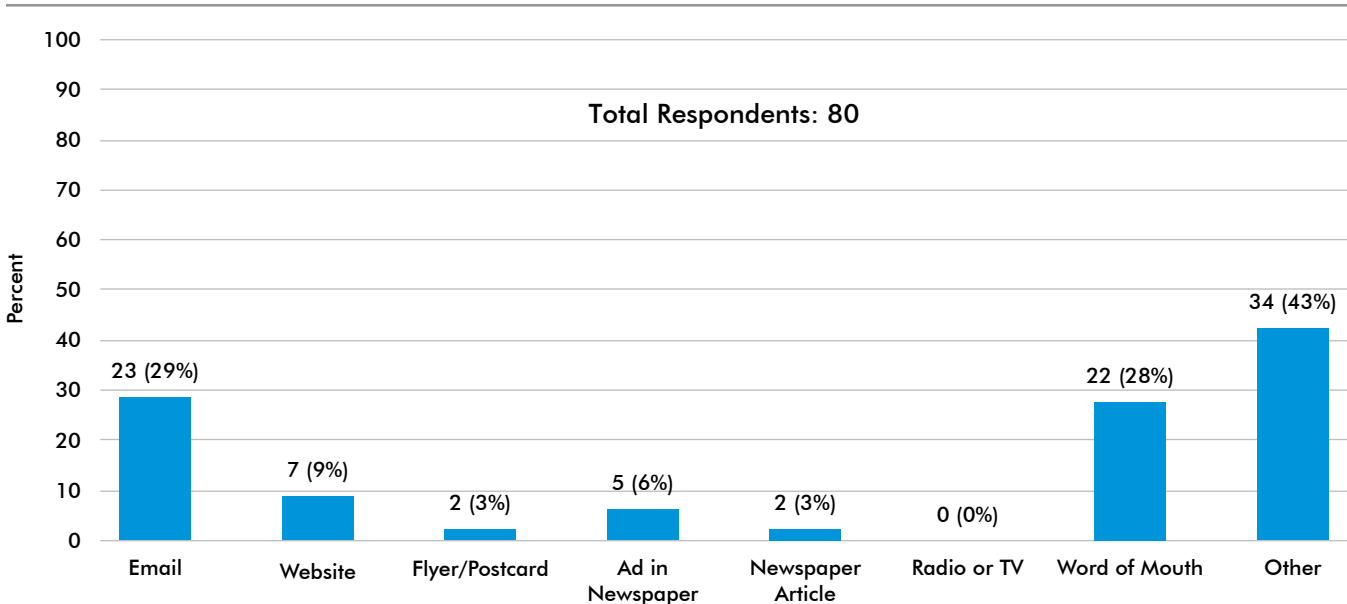
- Additional funding should be directed to urban areas with high concentrations of people of color
- Additional funding should be spent on local roads not highways
- Apply tolling to out-of-state vehicles only
- Charge out-of-county drivers
- Compare the rate of resurfacing to needs and past trends
- Compensate for the impact of additional taxes on low-income people
- Congestion cannot be eliminated and encourages alternative transportation modes
- Congestion should be de-prioritized in determining roadway improvements
- Consider revenue sources that do not directly impact residents
- Eliminate wasteful spending
- Funding should be distributed in an equitable way

- Funding should be spent to maintain existing roadways not widen roadways
- Funding should first be spent to maintain existing roadways
- Funding sources should be progressive
- Improving the transportation system will attract young people to the Region
- Include funding for bicycle, pedestrian, and transit improvements
- Invest in more environmentally friendly and durable equipment (e.g., snow plows)
- Opposed to spending on bicycle and pedestrian accommodations
- Opposed to increasing property taxes as it increases the burden on residents
- Provide additional public transit funding
- Reduce the salaries of State legislators
- Research best practices for road repair
- Shift highway funding to passenger rail
- Spend less in Milwaukee and surrounding areas to build the USH 12 freeway extension between Elkhorn and Whitewater
- Switch to LED lighting to reduce long-term energy costs

Worksheet Question: How did you learn about this meeting?

Figure E.3 shows the percent of responses for the way attendees of the seven public meetings heard about the meeting.

Figure E.3
Round 1 Feedback: How Participants Heard About the Public Meetings



Source: SEWRPC

Respondents that selected the “Other” option provided the following additional ways they learned about the meeting:

- Through a member of the Commission’s Public Involvement and Outreach staff
- Through one of the Commission’s nine community partners
- Through the SOPHIA Interfaith group in Waukesha County

Responses to Interactive Board Questions

At each of the seven public meetings, a series of five interactive boards were on display, providing an opportunity to provide feedback on the following topics being considered during the 2020 Review and Update:

- Planning for Public Health
- Planning for Equity
- Planning for Environmental Resilience
- Emerging Trends in Shared Mobility
- Connected and Autonomous Vehicles

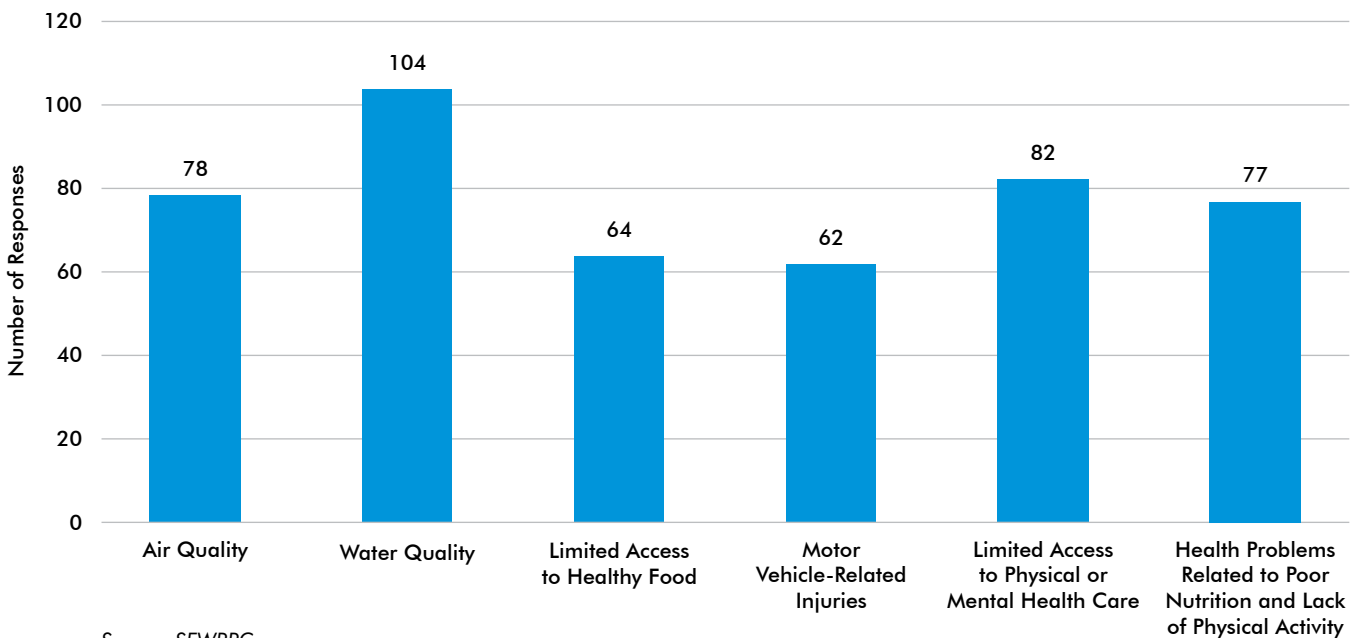
These boards were also on display at the December 15 Hafa meeting, and the questions on each board were asked via the online questionnaire. At the December 7 Community Conversation, rather than interactive boards, staff facilitated a series of small group discussions during which staff asked the same questions.

This input activity involved placed dots next to different options to indicate residents’ priorities and adding ideas via sticky notes. The purpose of the activity varied by topic. For public health, environmental resilience, and equity, the intent was to better understand resident’s priorities as staff considered enhancing or expanding on each important issue within VISION 2050. For shared mobility and connected and autonomous vehicles, the intent was to obtain residents’ ideas as staff considered how these major technological trends could impact or be incorporated into VISION 2050. The responses to the interactive board questions are summarized below.

Planning for Public Health Question 1: What are your greatest concerns regarding public health in Southeastern Wisconsin?

Figure E.4 shows what respondents identified as the greatest concerns regarding public health in Southeastern Wisconsin.

Figure E.4
Round 1 Feedback: Greatest Concerns Regarding Public Health



Source: SEWRPC

Additional comments in response to this question included:

- Bicycle/pedestrian safety (4)
- Lead exposure (e.g., water, paint, soil) (4)
- Access to social activities for seniors (3)
- Gun violence (3)
- Number and quality of bus shelters (e.g., maintenance, garbage cans, snow removal) (3)
- Access to affordable health care/health insurance (2)
- Access to healthcare in the inner city (2)
- Lack of affordable housing (2)
- Noise pollution (2)
- Older housing stock (e.g., lead, asbestos, safety, cost prohibitive repairs) (2)
- Treatment of trauma/stress (2)
- Access to healthcare for people with disabilities
- Aging out of foster care
- Dangerous intersections
- Drug use
- Education on access to fresh foods
- Education on access to medical services

- Emergency situations for people without access to a car
- Lack of a robust network of electric vehicle charging stations
- Lack of accessible housing
- Lack of accessible taxis to access healthcare
- Lack of bicycle facilities
- Lack of community education regarding public health
- Lack of speed/red-light cameras
- Mental health related to domestic violence
- Mental illness and the Region's aging population
- Missing mental health appointments due to transportation issues
- Pedestrian accessibility (e.g., curb cuts)
- Public transit access for workers caring for people aging in place
- Reckless driving
- Secondhand smoke in multifamily housing
- Serving at-need populations
- Snow removal on sidewalks
- Stressful driving due to traffic congestion/delay
- Time for pedestrians to cross at signals
- Unsustainable model for communities to grow using revenues from new development

Planning for Public Health Question 2: What land use or transportation strategies, if any, would have the greatest impact on improving public health?

Commenters identified the following land use or transportation strategies to improve public health:

- Bicycle and pedestrian improvements (20)
 - More bike lanes (7)
 - Multi-use paths (4)
 - Bike paths (3)
 - Sidewalks (2)
 - Widened bike lanes (2)
 - Bicycle lockers and bike racks at bus stops, especially park-ride lots
 - Connect bicycle paths and sidewalks to transit stops
 - Make trails usable throughout the year
 - Protect sidewalks from traffic
 - Protected/separated bike lanes
 - Safe street crossings for pedestrians
 - Walking paths in natural areas
- Walkable development (12)
- Build the USH 12 freeway extension between Elkhorn and Whitewater (7)
- Improve public transit (6)

- Improve access to healthy foods and grocery stores (5)
- Include green space in developments (5)
- Improve access to physical and mental health care (4)
- Fewer fast food restaurants (3)
- Improve and maintain parks (3)
- Reduce vehicle emissions (3)
- “Last-mile” options to reach employment centers (2)
- Affordable housing in suburban communities (2)
- Implement complete streets concepts (2)
- Co-op markets to encourage local food production (e.g., Wild Root Market in Racine) (2)
- Incentives for people to live close to jobs (2)
- More mobility options (2)
- Reduce automobile dependency (2)
- Alternative transportation options
- Built environment that promotes good health
- Bus shelters
- Community centers with exercise equipment and classes
- Community gardens
- Compact development pattern
- Connectivity to improve mental health
- Convenient micro-transportation and/or transit that connects major destinations
- Development that promotes community cohesion (green space, sidewalks, lighting, public transit)
- Divert traffic from neighborhoods with high traffic volumes
- Education and incentives to encourage people to make healthy choices
- Education on the impact of transportation options on community health
- Electric vehicle charging stations
- Enforce inattentive driving laws
- Explore hydrogen fuel for vehicles
- Implement a regional transit authority (requires a change to State Statutes)
- Improve air quality
- Improve signage for public transit
- Improve water quality
- Increase shared revenues from the State to Milwaukee
- Increased roadway visibility (e.g., more street lights)
- Less big box development
- Map health disparities in the Region (e.g., life expectancy, infant mortality by race)

- Map public health concerns in underserved communities
- Minimize roadway expansion
- More electric vehicles
- More medical facilities in the City of Milwaukee
- More stringent emission standards
- Porous concrete
- Promote transit-oriented development (TOD) (review examples in Canada)
- Public transit options to medical facilities outside Milwaukee County
- Reduce vehicle-miles of travel (VMT)
- Reduce wait time for shared-ride taxi
- Renewable energy (e.g., require Foxconn to use 100% renewable energy)
- Replace lead pipes in the City of Milwaukee
- Road bypasses around heavily used residential, commercial and recreational areas
- Road maintenance
- Roundabouts
- Sponsors for bus routes (e.g., MCTS Gold Line)
- Stricter drunk driving laws
- Tobacco-free outdoor areas (e.g., parks, Summerfest, bus stops)
- Traffic calming
- Transit service to walkable developments (e.g., Drexel Town Square)
- Transportation system that allows first responders to respond faster to urgent medical needs
- Use technology to achieve cost efficiencies

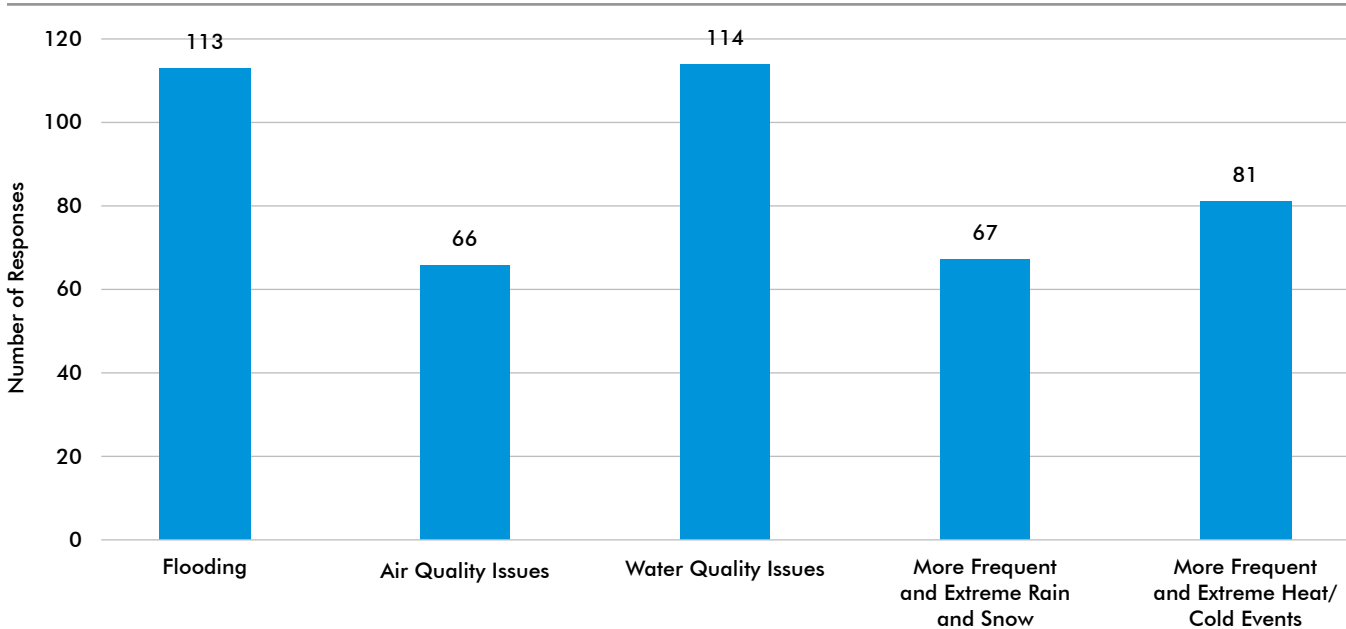
Additional comments in response to this question included:

- Make healthy food more affordable
- Increase nutrition education
- Account for the role of politics
- Include climate change in planning considerations
- Provide incentives to increase the number of mental health providers (e.g., TIFs for practices, property tax breaks for individuals)
- Inner city hospitals have become emergency wards
- Ensure physical education, nutrition education, and health care professionals are available in public schools
- MCTS workers should be praised for their assistance to those in need
- Remove fluoride from tap water

Planning for Environmental Resilience Question 1: When thinking about the effects of a changing climate on Southeastern Wisconsin, what do you perceive as the greatest risk to health, safety, and well-being in the Region?

Figure E.5 shows what respondents identified as the greatest risks to health, safety, and wellbeing related to the effects of a changing climate.

Figure E.5
Round 1 Feedback: Greatest Risks to Health, Safety, and Wellbeing Associated with a Changing Climate



Source: SEWRPC

Additional comments in response to this question included:

- Temperature extremes are difficult for seniors (2)
- Climate is the weather and it will always change
- Rain barrels and the deep tunnel may not be enough to handle increased stormwater
- Where people choose to live impacts climate change
- State patrol should remove snow from highways
- Seniors have fears about using public transit
- Temperature extremes are difficult for seniors
- Temperature extremes increase energy bills
- More frequent and extreme rain events are negatively impacting farmers and increased stormwater runoff from farms negatively impacts water quality
- Changing climate makes it more difficult to grow organic natural foods, resulting in increased pesticide use and engineered food products
- Climate change is a hoax; what we are experiencing is normal weather change
- Weather is never going to be predictable

Planning for Environmental Resilience Question 2: What resiliency strategies related to land use and transportation should be considered or expanded upon in VISION 2050?

Commenters identified the following resiliency strategies related to land use and transportation:

- Install green infrastructure (e.g., rain gardens, bioswales, green roofs, porous pavements, infiltration basins) (23)
- Encourage alternatives to driving alone (6)
- Expand clean/renewable energy (5)
- More electric vehicles and charging stations (5)
- Reduce traffic congestion (5)
- More alternative fuel vehicles and supportive infrastructure (4)
- Protect and expand green space (4)
- Reduce emissions (4)
- Build the USH 12 freeway extension between Elkhorn and Whitewater (3)
- Increase the capacity of stormwater infrastructure (3)
- Less roadway expansion (3)
- More walkable development (3)
- Reduce urban sprawl (3)
- Address agricultural runoff (2)
- Improve public transit (2)
- Increase wetland restoration and maintenance (2)
- More infill development (2)
- Prepare emergency preparedness plans (2)
- Reduce fossil fuel dependency (2)
- Require businesses to retain more stormwater onsite (2)
- Restore abandoned lots to natural spaces (2)
- Allow recreation uses on stormwater facilities
- Better road construction and maintenance
- Better road planning
- Better stormwater management
- Bicycle and pedestrian improvements
- Build facilities to accommodate transit users in sudden rain/snow
- Close the coal power plant in Oak Creek
- Conduct an erosion study of Lake Michigan shorelines and bluffs (study should be conducted by the Army Corps of Engineers)
- Consider wildlife and birds (e.g., bird migration)
- Install deep tunnel cameras to monitor storm impacts
- Dredge creeks
- Educate the public on how to reduce emissions (e.g., recycling, reduce fossil fuel use, and reduce energy)
- Educate the public on resilience needs and strategies
- Encourage trip chaining

- End the use of restrictive covenants and common interest development that limit the ability of homeowners to grow food or trees on their property
- Expand tree planting projects
- Improve the fuel efficiency of older vehicles
- Increase habitat restoration
- Increase parking fees to encourage alternative modes of travel
- Increase zoning restrictions in environmentally sensitive corridors
- Improve infrastructure in low-income communities (e.g., weatherization, energy efficiency, energy ownership)
- Limit development along waterways
- Incentivize density and transit options in local planning decisions
- Maintain and expand pollution control requirements
- Maintain buffer zones along water bodies to minimize the impact of flooding
- Make all transit free
- Prevent Lake Michigan water from being diverted outside the Lake Michigan basin
- Protect Lake Michigan from pollution and misuse
- Protect public lands from private uses
- Provide shelter for vulnerable people during extreme heat and cold events
- Redraw floodplain maps to reflect expected conditions in 2050
- Reduce energy use
- Reduce freight traffic
- Reduce the velocity of stormwater entering the MMSD sewer system
- Reduce vehicle-miles of travel
- Remove concrete to increase water infiltration
- Strengthen the Great Lakes Compact

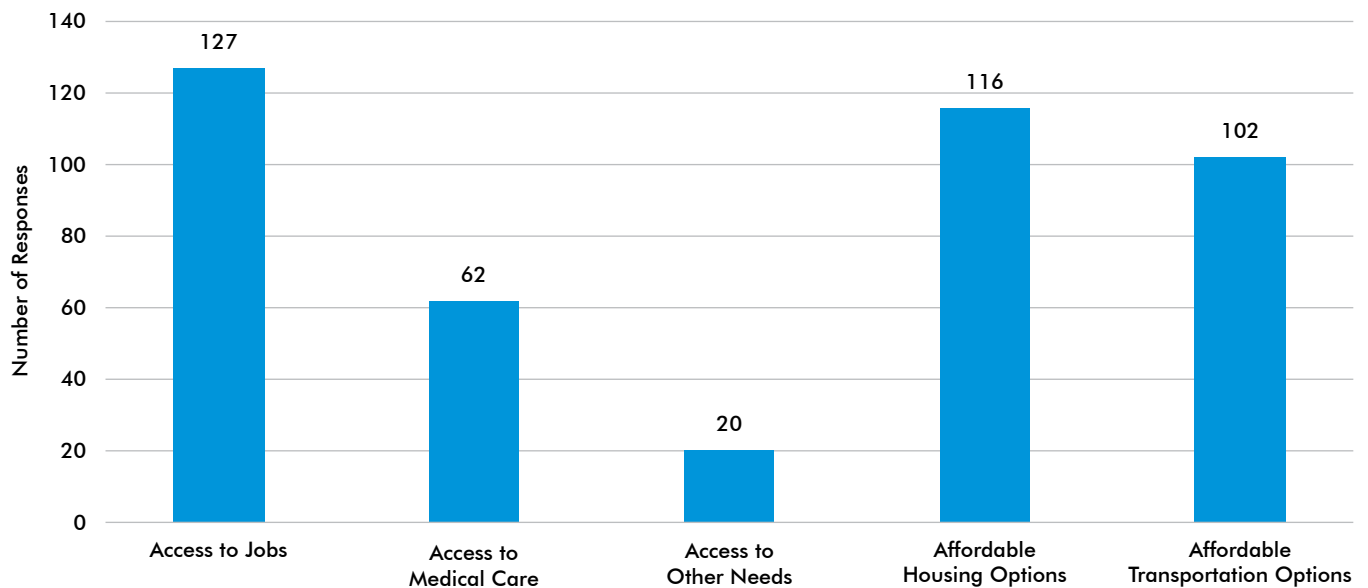
Additional comments in response to this question included:

- Consider mitigation strategies in addition to resiliency strategies
- Improve recycling programs
- Incentivize homeowners to use green alternatives
- Increase the use of reusable containers
- MMSD Water Drop Alerts encourage residents to reduce their water use during heavy rain events
- Place requirements on lawn/farm fertilizers, especially near water bodies
- Place requirements on roof/downspout runoff near water bodies
- Resiliency strategies should be determined by experts not ordinary residents

Planning for Equity Question 1: In terms of land use and transportation, what are the greatest barriers to equity in the Region?

Figure E.6 shows what respondents identified as the greatest barriers to equity.

Figure E.6
Round 1 Feedback: Greatest Barriers to Equity



Source: SEWRPC

Additional comments in response to this question included:

- Access to mental healthcare
- Access to well-paying jobs that can sustain a family
- Equity in pay (e.g., CEO vs. workers)
- Equity is not an issue and this is a political question
- Gentrification
- High real estate taxes and the high cost of government spending and pension liability
- Inequitable allocation of funding
- Inequitable distribution of green environments (e.g., parks) and park facilities in the City of Milwaukee
- Lack of a jobs/housing balance
- Lack of education related to equity issues
- Maintenance of park facilities in low-income neighborhoods
- Milwaukee not receiving enough shared revenues from the State
- People and resources leaving Milwaukee
- Process for prioritizing transportation project decisions
- Racism
- Reluctance of suburban communities to allow affordable housing
- Segregation
- State control over local revenue generation

- State policies regarding mass incarcerations, justice inequities, and limiting expungement possibilities
- Transit service being limited to urban areas
- Weak laws to limit urban sprawl

Planning for Equity Question 2: What transportation and land use strategies do you think would have the greatest impact on improving equity in the Region?

Commenters identified the following land use or transportation strategies to improve equity:

- Improve public transit (25)
 - Transit between affordable housing and jobs (3)
 - Make public transit free (2)
 - Expand the hours and days of transit service operation
 - Extend the Milwaukee streetcar to other neighborhoods
 - Implement a passenger rail service between Walworth County and Chicago
 - Implement commuter rail service (e.g., KRM)
 - Make public transit viable in rural areas
 - Make transit more convenient
 - More subways
 - Partnerships between employers and transit agencies to improve workforce transportation options
 - Smaller transit vehicles (e.g., smaller buses or vans)
 - Special transit for people who work at factories
- More affordable housing (9)
- Build the USH 12 freeway extension between Elkhorn and Whitewater (8)
- Employer-provided transportation to the workplace (3)
- Locate jobs near the potential workforce (2)
- More “last-mile” options to reach employment centers (2)
- More housing options (2)
- More transportation options for neighborhoods that need jobs (2)
- Allow people to live where they want and have easy access to other parts of the Region
- Encourage high-occupancy vehicle (HOV) use
- Establish equity metrics
- Establish requirements for affordable housing and public transit throughout the Region
- Improve access to mental health care
- Improve access to quality housing
- Improve passenger rail services
- Improve road maintenance
- Include a map of race and ethnicity as part of the 2020 Review and Update

- Limit roadway expansion, which encourages people to move farther from cities
- Map lead issues
- Modify local zoning codes
- More activities in downtown Milwaukee (e.g., theaters, restaurants, shopping)
- More assisted living facilities that are affordable
- More development in the City of Milwaukee
- More employment options
- More mixed-use development
- More opportunities to mix socioeconomic backgrounds
- More small clinics closer to people rather than large clinics/hospitals
- More transit-oriented development
- Planned higher-density development with accompanying amenities
- Provide a public transit option in Walworth County
- Redevelop underutilized areas
- Reduce traffic congestion
- Smaller lot sizes
- The process for extending water, sewer, and roadways should be reconsidered, including applying more stringent criteria focused on reducing regional inequities and de-prioritizing criteria like traffic congestion

Additional comments in response to this question included:

- Change leadership
- Conduct a study on why the two worst places for Black Americans are located in Southeastern Wisconsin, what State policies affect this, and how can it can be approached as a regional issue
- Educate elected officials in Racine County on race and equity issues
- Increase access to fast internet
- Increase funding
- Invest in public schools
- Legalize marijuana with an equity restoration package for those who have most suffered from its criminalization
- Lower costs for food and entertainment in downtown Milwaukee
- Make the equity conversation more accessible and relatable to people
- Mass commutation of inmates by the Governor as was done in Oklahoma
- More co-ops and investments locally
- More mobile health centers
- More shared services between neighboring municipalities
- More workforce training and education
- Public transit does not address equity issues in rural and outer suburban communities
- Reduce barriers to participating in job readiness programs

Emerging Trends in Shared Mobility Question 1: Thinking about the following examples of shared mobility that are relatively new to the Region, are there any benefits, concerns, risks, or other impacts that should be considered as staff updates VISION 2050? (Examples: Dockless electric scooters, transportation network companies such as Uber and Lyft)

Commenters identified the following benefits, concerns, risks, or other impacts that should be considered related to dockless electric scooters:

- Concerns regarding safety (e.g., helmet use, riding on sidewalks, driver familiarity, potholes, riding recklessly) (18)
- Scooters are not appropriate in rural areas (10)
- Concerns regarding scooter parking (6)
 - Should not be left on sidewalks (3)
 - Need cameras near scooter parking areas
 - Need designated parking areas
 - Users need to be respectful regarding where they leave the scooters
- Users need to follow the rules/laws (5)
- Only usable part of the year (3)
- Concerns regarding a lack of supportive infrastructure (e.g., protected bike lanes, multi-use paths) (2)
- Concerns regarding equity (e.g., even distribution throughout the City of Milwaukee, access to smart phones and credit cards) (2)
- Concerns regarding residents damaging scooters (2)
- Concerns that drivers are not accustomed to scooters (2)
- Need rules governing how scooter companies are allowed to operate in a community (2)
- Provides an additional transportation option in cities (2)
- Use appears to go down significantly after initial introduction (2)
- Users should be licensed and/or vetted (2)
- Can be challenging to access the internet in downtown Milwaukee
- Comfort levels will improve as drivers and users get used to them
- Concerns about the effects on community aesthetics
- Concerns about the effects on the environment
- Concerns regarding theft
- Concerns regarding increased traffic congestion
- Concerns regarding scooter maintenance
- Concerns that scooters are a waste of money
- Could attract younger people to Milwaukee
- Could be a low-cost transportation option
- Could be allowed on buses to address last-mile issues
- Could be paired with more protected/off-street facilities
- Could generate tourism revenue
- Could improve air quality

- Could increase the demand for bike lanes and other bicycle infrastructure
- Could provide a “last-mile” option to reach employment centers
- Historical regulations regarding scooters and other vehicle types should be reviewed given new technologies and offerings
- Milwaukee is only following the national trend
- Not used by seniors
- Require scooter companies to provide data in order to operate in a community
- Scooters are going to be a temporary fad

Commenters identified the following benefits, concerns, risks, or other impacts that should be considered related to transportation network companies (e.g., Uber or Lyft):

- Safety of drivers and passengers (14)
- Not an affordable transportation option (7)
- Reduces drunk driving/driving under the influence (5)
- Accessibility of vehicles (e.g., wheelchair and other restrictions) (4)
- Driver pay and benefits (4)
- Drivers do not receive adequate wages (2)
- Drivers do not receive benefits
- Drivers lack job security
- Provides a substitute to car ownership (4)
- Could increase use of carpooling (3)
- Can increase traffic congestion (2)
- Can reduce transit ridership, which harms the transit system (2)
- Helpful in rural areas where traditional taxis do not operate (2)
- Reduces the number of cars in an area (2)
- Still need a good public transit system (2)
- Can reduce parking issues in some areas
- Consider programs to make the cost more affordable (e.g., Washington, DC)
- Could partner with public transit providers
- Helpful for traveling to/from medical appointments
- Helps create jobs
- Increases emissions due to idling and driving without passengers
- Increases access to jobs
- Individual companies should not be allowed to monopolize the TNC industry
- May not work for everyone
- Not a great option for commuting to and from work
- Not appropriate in rural areas
- Not everyone has access to a smart phone or credit card
- Only cost-effective in urban areas (i.e., too expensive in suburbs)

- Regulate TNCs so they provide good jobs and do not compete with public transit
- Require cameras for all vehicles
- Require TNCs to provide data in order to operate in a community
- Should limit how many vehicles are allowed to operate in a given area

Emerging Trends in Shared Mobility Question 2: What other emerging trends in shared mobility should be considered as staff updates VISION 2050? (Examples: dockless bike sharing, peer-to-peer car sharing)

Commenters identified the following emerging trends in shared mobility that should be considered:

- Car sharing (e.g., peer-to-peer or neighborhood) (5)
- Bike sharing (3)
- Dockless scooter/bike sharing (2)
- Ride sharing (2)
- Mini buses connecting to transit hubs

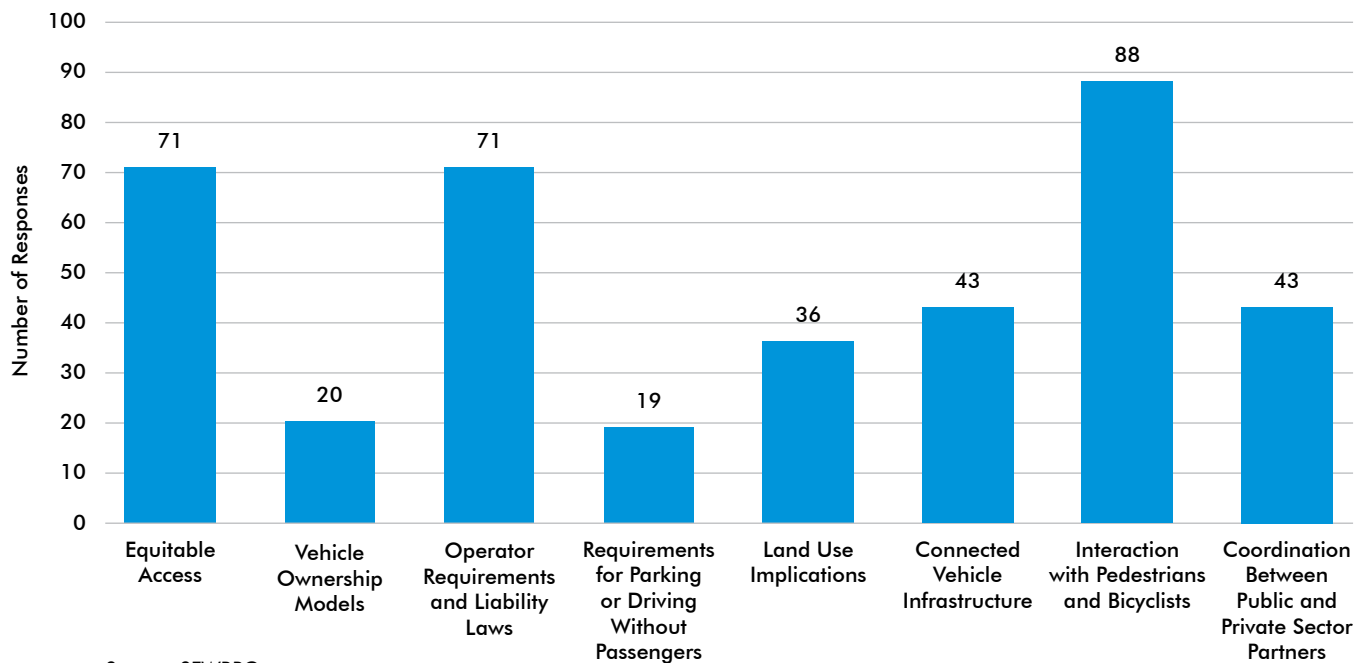
Additional comments in response to this question included:

- BublR Bikes bike sharing program is coming to Racine in 2020
- Consider accessibility for people with disabilities
- Consider the noise impacts of each option
- Encourage group walk (e.g., walk buddies)
- Improvement in the accessibility and functionality of electric bicycles would expand bicycling as a shared mobility option
- Must change attitudes in personal transportation options
- Need to have a foundation of integrity and community trust before any new ideas can work
- Need transportation options that allow flexibility, which public transit schedules do not allow
- Options that would reduce traffic congestion should be pursued
- Outlying areas of the Region have very limited options
- Ride sharing should be affordable
- The automobile will continue to be the primary mode of transportation
- This question is political and promotes an agenda

Connected and Autonomous Vehicles Question 1: When considering the impact that connected or autonomous vehicles could have on the Region’s transportation system and land use patterns, which of the following factors, if any, should be considered as staff updates VISION 2050? Please share any additional comments on this topic that you would like staff to consider.

Figure E.7 shows what respondents identified as the greatest factors to consider related to connected or autonomous vehicles.

Figure E.7
Round 1 Feedback: Greatest Factors to Consider Related to Connected or Autonomous Vehicles



Source: SEWRPC

Additional comments in response to this question included:

- Concern about safety, risks, and liability associated with autonomous vehicles (10)
 - Create too much confusion for seniors
 - Concern about all the risks associated with autonomous vehicles
 - Concern about the safety of bicyclists and pedestrians
 - Difficult decisions regarding whether to hit a vehicle, pedestrian, or another object will be dependent on sensors and a pre-determined decision tree, which may not be completely accurate or make the same decision a human being would make
 - Do not trust autonomous vehicles
 - Focus on safety
 - Liability is a huge concern
 - Partially autonomous vehicles could provide safety benefits, but they could also result in less-attentive drivers
 - Risks and liability associated with relying on technology
 - Will reduce driver reaction times and the number of crashes, but will not completely eliminate crashes

- May be many years until fully autonomous vehicles are available (3)
- Autonomous vehicles will still use highways and require capacity expansion (2)
- Autonomous vehicles without passengers could increase traffic congestion and impact parking availability (2)
- Low priority compared to other needs (2)
- Weather could be a limiting factor in implementing autonomous vehicles (e.g., snow, ice) (2)
- Autonomous public transit vehicles will put drivers out of work
- Autonomous vehicles could replace the need for high-speed rail
- Autonomous vehicles function better on freeways than on local roads
- Autonomous vehicles may require wider right-of-way to prevent tall vegetation from disrupting vehicle sensors
- Concern that funding for autonomous vehicles is being diverted from other needs
- Concern about access for all residents
- Consider how autonomous vehicles could benefit rural areas in addition to urban areas
- Consider that younger people are less likely to own a vehicle
- Coordinate with TNCs as they transition to autonomous vehicles
- Could fund autonomous vehicles with revenue generated by legalizing recreational cannabis
- Developing autonomous vehicle technology is costly and will likely result in increased taxes
- Economic and social advantages of autonomous vehicles are unclear
- Important to have laws and structure in place prior to fully autonomous vehicles becoming available
- Invite Google Waymo to drive in Milwaukee to help its algorithm learn and be ready for deployment
- Much more research needs to be done before autonomous vehicles are implemented
- Need Federal rules and regulations for autonomous vehicles
- Public and private sectors need to work together
- Should assist the driver, but not replace the driver
- Should be part of an integrated transportation system
- Should focus on serving the many rather than the individual
- Should have less government control
- Should invest in public transit rather than private vehicles
- Should not be allowed to travel more than 2,000 feet without a passenger
- Should not have autonomous trucks
- The consumer should have input in the design of autonomous vehicles
- There are benefits associated with interacting with strangers using public transit and autonomous vehicles may lead to greater social isolation

Comments in Support of Building the USH 12 Freeway Extension Between Elkhorn and Whitewater

Numerous commenters expressed support for building the USH 12 freeway extension between Elkhorn and Whitewater, which is recommended under VISION 2050 (31). Supporters provided the following additional comments regarding USH 12:

- Dangerous traffic congestion and roadway design along the existing USH 12 between Elkhorn and Whitewater (23)
- Economic benefits would be provided by the freeway extension, including benefits to the UW-Whitewater, Whitewater University Technology Park, Whitewater Business Park, and Wisconsin's tourism industry (6)
- Widening the existing USH 12 rather than building the freeway extension would have negative impacts to communities, businesses, and the environment (5)
- In the short term, intersection improvements should be made at USH 12/STH 67 intersection at CTH A and/or CTH ES (4)
- The freeway extension should be built much sooner than VISION 2050's plan year of 2050 (4)
- In the short term, turn lanes should be added along the existing USH 12 corridor (2)
- Not implementing the long-planned freeway extension creates uncertainty about future land uses and limits economic development in Walworth County (2)
- A corridor study for the USH 12 freeway extension between Elkhorn and Whitewater should be completed
- Funding functional improvements to the existing USH 12 between Elkhorn and Whitewater would be wasteful spending and would not fully address traffic congestion and safety issues
- High traffic volumes on the existing USH 12 create noise impacts to nearby properties
- The freeway extension should follow the route previously mapped by WisDOT
- Not implementing the long-planned freeway extension creates uncertainty for homeowners that could be impacted by a future USH 12 project

Additional Comments Received

Additional public comments provided via email, online comment form, general comment form, court reporter, letter, discussions with staff, and the November 6 Environmental Justice Task Force meeting are summarized below.

- Comments from members of the public during the Environmental Justice Task Force meeting held on November 6, 2019:
 - Local academics, City of Milwaukee staff, and non-profits such as the Milwaukee Food Council can be a resource for future regional food system planning efforts
 - It is important to identify ways to avoid potential gentrification and displacement when developing transit-oriented development (TOD)
 - Milwaukee Public Schools may have recently restored free driver's education, which could be a factor in addressing reckless driving

- Commission staff should identify best practices for addressing reckless driving
- November and December can be difficult months to attract participants to public involvement meetings
- Publicly promoting and discussing plan recommendations will increase implementation of VISION 2050 and Commission staff should expand its communication efforts
- Comments related to how the municipal funding structure and local budget constraints are leading to more urban sprawl:
 - Municipals budget have been negatively impacted by decreases in State and Federal funding to local governments and by corporate tax laws that allow companies to avoid paying taxes
 - As an example, the Village of Big Bend is facing a false choice between generating new revenue from a large development that includes Walmart or laying off municipal workers and reducing municipal services
 - The proposed Walmart development in Big Bend will result in lost local farm land and will negatively impact small businesses; a similar Walmart store allowed in the City of New Berlin was developed on land that had been planned to be green space
- Comments related to the diversion of Lake Michigan water to Waukesha:
 - Construction of the water pipeline to transport Lake Michigan water to Waukesha will disrupt New Berlin residents for two years
 - Due to urban sprawl and population growth in Waukesha County, green space is being taken for the construction of large water tanks to support the provision of Lake Michigan water to Waukesha
- Comments related to the Commission’s public outreach efforts:
 - Improve VISION 2050 outreach and publicity to promote implementation of the plan’s recommendations
 - Some of the questions asked of residents during this round of public involvement should be addressed by experts, not ordinary residents who are unqualified to answer the questions
 - Staff should make additional efforts to make meetings more accommodating and welcoming for people with hearing loss
 - Staff should hold more public meetings in Milwaukee
 - The public should have been informed of VISION 2050 public meetings via a mailing
- City of Milwaukee elected officials are trying to force their ideas on residents through VISION 2050
- Extend I-794 south to Ryan Road (STH 100) and then west to connect to I-94 between Ryan Road and 7 Mile Road
- Implement business-provided rides between stores and transit hubs
- Local governments in Southeastern Wisconsin should establish smart-growth policies that restrict urban sprawl, such as those in Germany and Portland, Oregon, which have resulted in livable, economically sustainable areas
- More highway funding should be spent outside of the Milwaukee area

- Need a regional approach to providing transit service to/from new jobs in Kenosha County near I-94
- SEWRPC should have more control over plan implementation
- Southeastern Wisconsin should capitalize on its proximity to other assets (e.g., Chicago O'Hare International Airport, abandoned railroad corridors)
- State funding for transit systems has not been keeping up with inflation and the State should allow local governments to enact dedicated funding sources for transit
- The State should be more involved in planning and implementing transit service improvements
- Use lighted displays on expressways
- Wheel tax being levied for transit in Milwaukee County is being paid by County residents and not by visitors to the County
- When improving roadway infrastructure, preserve the possibility for future multimodal uses of the roadway corridor
- VISION 2050 should accommodate new types of jobs (e.g., business analytics)
- VISION 2050 should be open to any new ideas that would improve the transportation system
- VISION 2050 should identify appropriate locations, or criteria for identifying appropriate locations, for extractive land uses, with a goal of avoiding negative impacts to populated and environmentally sensitive areas

SUMMARY OF ROUND 2 COMMENTS RECEIVED

A total of 125 unique individuals participated in the second round of public involvement by attending one of the four public meetings, attending one of the two virtual meetings, completing the online questionnaire, or submitting comments through the Hmong American Friendship Association (HAFA) offices. Staff asked those interested in providing comments to review summary materials and provide feedback on main topics of the 2020 Update, including land use, public transit, bicycle and pedestrian, streets and highways, TDM, TSM, freight, and transportation funding. A summary of the comments received during the second round is presented below. Note that the comments are from a self-selected sample of individuals and were not obtained via a statistically significant survey method.

Land Use Comments

Numerous commenters expressed support for the land use component included the 2020 Review and Update (13). These commenters provided the following additional comments or specific reasons for their support:

- Support for increasing affordable housing (4)
- Support for mixed-use development (3)
- Support for preserving and/or increasing environmental corridors (3)
- Important to encourage development that minimizes carbon footprint while meeting people's needs
- Support for a variety of lot sizes
- Support for affordable, mixed-income housing, specifically in suburban communities

- Support for developing job centers in locations that already have transit service rather than on agricultural lands
- Support for increasing housing accessible to people with disabilities.
- Support for protecting land for open agricultural use, particularly as a way to increase food security and improve air quality through carbon sequestration in nearby high-density areas
- Support for providing a mix of housing types
- Support for small and medium-sized residential lots near employment centers that reduce the need to travel long distances
- Support for traditional neighborhoods and small lot neighborhoods close to suburban job centers
- Support for transit-oriented development
- Support for walkable development
- Support for green infrastructure, but need to provide adequate maintenance funding

Additional land use comments included:

- A regional water trail plan should be prepared, which could be further detailed and refined by county and local governments.

Response: SEWRPC has undertaken water trail planning as part of park and open space plans and for the Fox River. Expanding these efforts could be considered if requested by county and local governments in the Region.

- Concern that higher-density development is associated with segregation and negative outcomes, such as low educational attainment, low income levels, low wealth accumulation through homeownership, low quality of life, and high crime.

Response: Numerous analyses conducted in conjunction with VISION 2050 have shown concentrations of people of color and low-income populations in the Region as well as significant disparities between minority populations and non-minority populations, particularly in educational attainment, income, and poverty rate. The equity analysis of the VISION 2050 land use component found that the recommended land use development pattern, if implemented by local governments, would allow for the development of multifamily housing and single-family homes on smaller lots that tend to be more affordable to a wider-range of households than single-family homes on larger lots in areas of the Region that may have a shortage of affordable workforce housing. This would increase access to new job opportunities for low- and moderate-income households, which would have a positive impact on the Region's minority populations and low-income populations.

- Consider adding a recommendation that environmental regulations in place between 1980 and 2018 be enforced for any new development given recent reductions in environmental regulations.

Response: The VISION 2050 recommendations regarding preserving natural resources have remained unchanged since adoption of the plan in 2016; however, the plan does recognize that implementation of the recommendations ultimately relies on the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector. While damage to natural resources is a concern and inconsistent with VISION 2050 recommendations, it would be difficult to develop a recommendation that would appropriately

address the many changes that have occurred in environmental regulations between 1980 and 2018.

- Consider identifying an “agricultural zone” or similar so that prime agricultural land is preserved beyond the year 2050.

Response: A key VISION 2050 recommendation is preserving productive agricultural land, which is largely found in the Agricultural and Other Open Lands land use category under the recommended VISION 2050 land use development pattern. Urban development outside of planned public sanitary sewer service areas identified under the recommended VISION 2050 land use development pattern was limited to existing urban development or where commitments to urban development had been made through approved subdivisions or certified survey maps during or before the VISION 2050 planning process. The recommended land use development pattern under VISION 2050 is also advisory in nature, and implementation relies, in part, on the actions of local and county government. The VISION 2050 land use implementation measures recommend that local and county governments designate prime agricultural lands for continued agricultural use in their comprehensive plans and zoning ordinances.

- Consider preparing an analysis of food that could be harvested on remaining agricultural lands and the populations it could feed to determine if we have enough land available to sustain ourselves.

Response: VISION 2050 recommends developing a regional food system (Recommendation 1.15) that connects food producers, distributors, and consumers to ensure access to healthy food throughout the entire Region. Developing an analysis of food that could be harvested on the Region’s remaining agricultural lands and the populations it could feed could be a future implementation activity under this recommendation. SEWRPC could consider conducting a similar analysis if requested by county and local governments in the Region.

- Consider scaling back development in the updated land use component given the lack of implementation associated with Foxconn.

Response: The recommended land use development pattern was revised as part of the Second Amendment to VISION 2050 in response to amendments to local government comprehensive plans that could support a significant amount of new urban development in the area of the main Foxconn manufacturing campus. As such, while there is uncertainty regarding how exactly the Foxconn campus itself will be built, Commission staff believes the amount of development incorporated into VISION 2050 in the areas directly and indirectly impacted by the campus remains reasonable.

- Primary environmental corridors do not appear to match Racine County maps, and it is unclear what uses are prohibited within primary environmental corridors.

Response: SEWRPC updates primary environmental corridors periodically, primarily based on updated aerial photography. VISION 2050 recommends limiting development within primary environmental corridors to essential transportation and utility facilities and compatible outdoor recreational uses (Recommendation 1.10). It also recognizes that very low-density residential development could occur in upland portions of PEC. More detailed guidelines for development considered compatible with environmental corridors can be found in Table K.1 in

Appendix K of Volume III of VISION 2050. VISION 2050 recommends that local and county land use policies, including comprehensive plans and land use ordinances, incorporate this recommendation and the related guidelines. VISION 2050 also recognizes that implementation ultimately relies on the actions of local, county, State, and Federal agencies and units of government in conjunction with the private sector.

- Support for energy infrastructure that can create electricity and reduce greenhouse gases (e.g., hydrogen fuel cells).
- Support for stormwater treatment using biochar to filter out pollutants from soil and water.
- The overall regional plan should include a sustainability component that includes resiliency and a goal of achieving a net zero carbon and water footprint.

Response: Developing a sustainability component to the regional plan could be considered if requested by county and local governments within the Region. However, while VISION 2050 does not include a separate sustainability component, the plan recommendations embody sustainable land use concepts through higher-density, mixed-use development/redevelopment in compact urban service areas. It does make numerous recommendations that address resiliency and would help to achieve sustainability goals, including a section within the land use component devoted to sustainable land use concepts and development practices. The land use design guidelines further describe sustainable development practices that local and county governments should consider.

- The Small Lot Traditional Neighborhood land use category should recognize common lot sizes in the City of Milwaukee.

Response: The areas shown in red on Map 4.1 of the 2020 Review and Update report (Land Use Development Pattern: VISION 2050), are in the Mixed-Use Traditional Neighborhood land use category. Both the Mixed-Use Traditional Neighborhood and Small Lot Traditional Neighborhood land use categories would accommodate lot sizes of 10,000 square feet or less. This would include the typical lot sizes found in the City of Milwaukee.

- VISION 2050 should address the types of agriculture envisioned on agricultural lands and Concentrated Animal Feeding Operations should not be included in the envisioned types.

Response: Following best practices for all aspects of farming to preserve sensitive natural resources will be added to the measures to protect agricultural production, scenic beauty, and cultural heritage of the Region listed under "Recommendation 1.13: Preserve productive agricultural land" in the VISION 2050 Land Use Design Guidelines presented in Appendix K of the original VISION 2050 plan report.

- VISION 2050 should recommend that county and local governments include sustainability, resiliency, water conservation, and/or energy conservation components in their comprehensive plans to address how they plan to reduce environmental impacts, in order to achieve a net zero carbon and water footprint by a specific year. These components should contain specific goals and detailed metrics or performance standards to achieve these goals.

Response: Many local governments and counties in the Region will be preparing 10-year comprehensive plan updates in the upcoming years, which would provide an opportunity to include or enhance

sustainability goals and performance measures. Comprehensive plans can also be amended specifically to address sustainability if local or county governments choose to do so. The VISION 2050 sustainable land use recommendations and related design guidelines could inform these efforts.

Public Transit Comments

Numerous commenters expressed support for the public transit element included in the 2020 Review and Update (26). These commenters provided the following additional comments or specific reasons for their support:

- Support for recommending alternatives to fixed-route buses (e.g., flexible shuttles, microtransit, and shared vehicles) when expanding transit in certain areas (4)
- A robust transit system increases the Region's competitiveness with other metro areas (2)
- Support for expanding intercity rail connections (2)
- Support for extending Milwaukee Streetcar service into neighborhoods beyond downtown Milwaukee (2)
- Support for improving and expanding public transit to improve access to jobs (2)
- Concern that the fiscally constrained transportation system does not reflect the Region's transit needs
- Need to engage and inform elected officials regarding the importance of funding public transit improvements, including sharing the benefits of improving public transit identified in the updated equity analysis
- Need to provide accessible transportation options for people with disabilities
- Public transit services should be affordable
- Support for adding frequency to the Amtrak passenger rail service between Milwaukee and St. Paul, Minnesota, and improving reliability by routing freight trains on sidings to allow passenger rail trains to pass them
- Support for additional transportation options for people with disabilities
- Support for bus rapid transit, light rail, passenger rail, and intercity bus
- Support for expanding transit options for seniors and people with disabilities to access social and recreational activities and healthcare
- Support for expanding transit service to areas outside of Milwaukee County
- Support for extending the initial East-West bus rapid transit line to connect City of Milwaukee residents to jobs in Waukesha County
- Support for extending public transit service to the Village of Sussex
- Support for improving public transit serving employers within the City of Milwaukee
- Support for light rail transit between Waukesha and Milwaukee Counties
- Support for the initial East-West bus rapid transit (BRT) line and for expanding BRT throughout the Region

- Support for the Regional Transit Leadership Council’s plan to integrate the current transit system with last-mile initiatives
- Support for public transit, but only where it can be operated with minimal public funding
- Suggest for pursuing partnerships with transportation network companies (e.g., Uber and Lyft) to extend transportation options beyond areas served by fixed-route public transit services
- Support for increasing the frequency of transit service

Additional public transit comments included:

- Concern about the impact that providing publicly funded transit serving large corporations will have on local businesses
- Consider extending the east-west express bus route in western Kenosha County, which is currently recommended to end in Twin Lakes, to connect to the Lake Geneva Park-Ride Lot and the recommended commuter bus route serving that lot.

Response: As part of the 2020 Review and Update, staff is proposing to extend the recommended east-west express bus route in western Kenosha County, which is currently recommended to end in Twin Lakes. The extension would operate between Twin Lakes and Genoa City, providing a connection to the recommended commuter bus route along USH 12 that serves the Lake Geneva Park-Ride Lot.

- Opposition to current forms of public transit
- Opposition to public transit because people want the freedom associated with individualized transportation
- Provide more detailed map views of areas affected by proposed changes.

Response: In providing a high-level overview of the proposed changes to the public transit element, staff decided to describe the minimal changes to the recommended transit service map rather than include a map. These changes can be seen in Figure 4.2 of the preliminary draft of Chapter 4 of the 2020 Review and Update report, which was made available for review during the second round of public involvement. Based on this feedback, staff will try to improve the way it communicates proposed changes for future public involvement opportunities. It is also worth noting that staff will be updating the interactive map for the recommended transit system, available on the VISION 2050 website, following completion of the 2020 Review and Update.

- Support for developing multimodal transit hubs for transit, shared vehicles, and private transportation (e.g., Goerke’s Corners Park-Ride Lot).

Response: Multimodal transit hubs, while not explicitly referred to as such in VISION 2050, are absolutely consistent with the recommended plan. In particular, this concept is reflected in the plan recommendations to provide additional transit and flexible transportation services to park-ride lots. Many park-ride lots identified in VISION 2050 are in suburban or less dense areas of the Region and would be strong candidates for multimodal transit hubs. One change proposed as part of the 2020 Review and Update is to make it clear that there are a number of alternatives to traditional fixed-route bus service that could better fit the needs of certain areas, which would apply to multimodal transit hubs. Examples of such alternatives include shuttles,

microtransit, and shared-use automobiles through partnerships with transportation network companies like Uber and Lyft.

- Support for including planned extensions of the Milwaukee Streetcar in the plan and adding extensions beyond those currently being pursued by the City of Milwaukee, rather than focusing on building a regional commuter rail network.

Response: To clarify, while the plan does recommend commuter rail lines, the primary focus of the substantial capital improvements recommended under the public transit element is actually on the rapid transit lines that create a grid across much of the transit-supportive densities in the Milwaukee metro area. However, Commission staff has worked closely with City of Milwaukee to balance the rapid transit corridors (intended to serve trip lengths longer than 2 to 3 miles) with the corridors served by streetcar (which serves shorter trips due to its slower travel speeds). The extensions of the Milwaukee Streetcar (referred to as The Hop) currently planned by the City of Milwaukee are incorporated into the recommended transit element. As the City continues to plan for extensions of The Hop to additional neighborhoods beyond downtown Milwaukee, Commission staff will coordinate with City staff to ensure that changes in the planned streetcar network are incorporated into the regional plan, and that the network is integrated with the other types of transit service recommended under the VISION 2050 public transit element.

- The public transit element does not appear to significantly impact Walworth County.

Response: While the plan does not recommend substantial fixed-route public transit services in Walworth County, largely due to the lower-density development pattern in most of the county, the plan does include transit recommendations that would benefit Walworth County residents and businesses. Since its adoption in 2016, the plan has recommended countywide shared-ride taxi service in Walworth County, which the County introduced in 2017 and refers to as Wal-to-Wal DIAL-a-RIDE. The plan also recommends commuter bus routes along IH 43 serving the City of Elkhorn, Village of East Troy, and locations in Milwaukee and Waukesha Counties, as well as along USH 12 serving the Cities of Elkhorn and Lake Geneva, Village of Genoa City, and locations in northern Illinois. As part of the 2020 Review and Update, staff is also proposing to extend the recommended east-west express bus route in western Kenosha County, which is currently recommended to end in Twin Lakes, into Genoa City to connect to the recommended commuter bus route along USH 12.

- Transit vehicles should be fueled by renewable energy sources
- Try to quantify the revenue lost by businesses unable to attract or retain employees due to transportation and/or housing costs in areas outside Milwaukee County, and compare the lost revenue to the increased investment required to expand transit to those businesses.

Response: In discussions with employers, particularly through the Commission's Workforce Mobility Team, it has been clear that transportation is a major factor in attracting and retaining employees when the workplace is located in areas with limited or no service by transit systems. In addition, high housing costs in some areas of the Region make it difficult for lower-income residents to live near workplaces in those communities. However, there are numerous additional factors related to employee retention and attraction

that make it very difficult to isolate the precise impact of a lack of transportation and/or high housing costs. While this means that estimating lost revenue is problematic, it is worth noting that studies typically show that investments in additional transit services have a high return on investment (ROI) and that improving mobility in general can benefit the economy.

Bicycle and Pedestrian Comments

Numerous commenters expressed support for the bicycle and pedestrian element included the 2020 Review and Update (26). These commenters provided the following additional comments or specific reasons for their support:

- Support for adding dockless scooters to the bike share recommendation (6)
- Support for addressing safety concerns related to dockless scooters (6)
- Support for expanding protected bicycle facilities (3)
- Support for separating bicycle facilities from motorized traffic for safety reasons (3)
- Support for addressing gaps in the bicycle network (2)
- Improved bicycle and pedestrian facilities make the Region more attractive to young people
- Bicycling is more economical, which is desirable during economic recessions
- Support for separate paths to allow bicycle commuting
- Support for using complete streets concepts in roadway design
- Support for increasing sidewalks

Additional bicycle and pedestrian comments included:

- Concern about safety and infrastructure needs related to dockless scooters
- Consider adding a north-south enhanced bicycle facility corridor along Jefferson Street in downtown Milwaukee.

Response: VISION 2050 recommends that standard or enhanced bicycle accommodations be considered as the existing arterial street system is resurfaced or reconstructed. Although Jefferson Street is not considered an arterial street on the regional system, bicycle facilities are still encouraged for local streets to further improve safety for bicyclists and increase connectivity in the bicycle network.

- E-bikes could make cycling more accessible to a larger segment of the population
- In Walworth County, recreational paths can only be implemented within a public or abandoned railroad right-of-way and require property owner buy-in if they encroach on private property.

Response: The off-street path network recommended in VISION 2050 for Walworth County is consistent with the recommendations in the Walworth County Parks and Open Space Plan in which some proposed off-street path segments were shifted to on-street routes due to concerns by some communities. The off-street path segments would generally be located within environmental corridors and other open space lands and, as necessary, would be subject to negotiations with landowners to purchase land for these paths.

- Opposition to dockless scooters given potential risks
- Opposition to reducing driving lanes in favor of bicycle lanes
- Question about what can be done to require local development laws to be consistent with the plan, specifically as it relates to requiring developers to provide and connect sidewalk infrastructure.

Response: As State Statutes mandate that Commission plans be advisory, the Commission is unable to require pedestrian accommodations be constructed. However, VISION 2050 recommends that sidewalks be provided along arterial streets and highways in areas of existing or planned urban development. Local governments are encouraged to construct sidewalks as part of new developments and as part of street reconstruction projects to further improve pedestrian connectivity between neighborhoods, businesses, parks, and schools.

- Support for walkable neighborhoods, but need to recognize that the livability of an area is influenced by many factors such as crime and schools
- Support for well-connected bicycle and pedestrian networks, but concern about public safety issues that may make it difficult to walk or bike in some areas
- Support for wider bike lanes and increasing bicyclist and driver education regarding safety
- The Commission should provide guidance for dockless bike share and electric bicycles (e-bikes).

Response: Although VISION 2050 mostly recommends improvements to infrastructure, it recognizes the benefits of dockless bike share and electric bicycles, or e-bikes. Dockless scooter and dockless bike share programs can expand the geographic coverage area of standard bike share since bicycles do not need to be returned to designated stations. These programs are also effective for short-distance trips and provide important first-mile/last-mile connections, and may extend the reach of transit services. E-bikes provide additional value to bike share systems by enabling riders to travel longer distances with less effort, helping them to get to destinations faster, and reducing physical obstacles to bicycling, such as climbing hills. These alternative modes help reduce vehicle trips and can encourage people to bike for utilitarian, commuter, and other short distance trips. Recommendation 3.4 in Chapter 4 will be revised to include the benefits of dockless bike share and e-bikes.

- VISION 2050 should recommend a network of bike boulevards on narrower, lower-volume roadways in the City of Milwaukee, particularly in corridors where it is difficult to provide enhanced bicycle facilities on a nearby arterial roadway.

Response: VISION 2050 recommends enhanced bicycle facility corridors on many arterial streets to serve as regional connections among several communities. These corridors may include a neighborhood greenway (“bike boulevard”) on a parallel nonarterial since the corridor includes about two blocks in either direction of an arterial street. Constructing enhanced bicycle facilities on arterial streets outside of these corridors are also recommended. Bike boulevards should be considered as an alternative bicycle facility when a nearby arterial street has limited right-of-way that restricts construction of a standard or enhanced bicycle facility. Recommendation 3.3 in Chapter 4 will be revised to reflect this implementation of bike boulevards. Since VISION 2050 is a

regional plan that recommends bicycle facilities on arterial streets and bike boulevards are implemented on local streets, the Commission could assist local communities with planning for local bike boulevard networks outside the context of the plan.

Streets and Highways Comments

The following comments were provided related to the updated streets and highways element included in the 2020 Review and Update:

- Support for incorporating strategies to reduce reckless driving (8)
- Support for the recommendation to keep the street and highway system in a state of good repair (4)
- Communities should develop curb regulations (i.e., “price the curb”) to encourage carpooling, ridesharing, or transit use by prioritizing loading zones over on-street parking (2)

Response: Currently, VISION 2050 makes recommendations under Recommendation 6.2 that complete street measures be implemented on arterial roadways, which includes utilizing existing parking stalls or unused or underused curb-side space for providing safer and convenient traffic stops (including bus bulbs and enhanced stops), to provide bicycle accommodations, to provide safer pedestrian crossings, and to enhance adjacent mixed-use developments. As part of the update to VISION 2050, staff is proposing to add a formal discussion describing such practices, called curbside management. The discussion will also include additional suggested uses of the curbside areas, including flexible loading zones, space for shared micromobility parking, electric vehicle charging, designated space for mobile businesses, and stormwater management. In addition, it will suggest that curb regulations are means for communities to more effectively implement curbside management. Following the completion of the VISION 2050 update, Commission staff intends to prepare guidance on implementing complete street measures, including providing guidance on implementing curbside management and curb regulations.

- Opposition to expanding the capacity of streets and highways (2)
- Provide additional emphasis on reducing road capacity in areas where there is excessive capacity (2)

Response: It is recognized under Recommendation 6.2 of VISION 2050 related to complete streets, that reducing the number of travel lanes on multi-lane roadways that have existing and future traffic volumes that do not require the current number of travel lanes—called road diets—is an effective way to implement the bicycle/pedestrian recommendations of the plan and improve safety along the roadway. Following the completion of the current plan update, Commission staff intends to review the existing and expected future traffic volume of the multi-lane arterials of the Region, and identify those roadways that would have volumes such that it would be appropriate to reduce the number of travel lanes. In addition, following the completion of the VISION 2050 update, Commission staff intends to prepare guidance on implementing complete street measures, including providing guidance on implementing road diets.

- Support for more speed bumps to slow traffic on certain roadways (2)
- Support for the updated streets and highways element (2)

- Add a discussion about the effects of environmentally friendly automobiles, trucks, and buses

Response: Due in large part to past, current, and future Federal fuel and vehicle fuel economy standards and improved emissions controls, transportation-related air pollutant emissions in the Region have been declining, and are expected to continue to decline in the future. This decline is expected to continue through the year 2050, even with the projected increase in vehicle-miles of travel under the FCTS and VISION 2050. This impact was discussed in greater detail during the scenario planning and alternatives evaluation process utilized to originally develop VISION 2050.

- Bright headlights on newer vehicles make it difficult to see street signs, bicyclists, and pedestrians
- Concern that expanding highway capacity will increase reckless driving, make it more difficult to achieve compact development pattern, and reduce stormwater infiltration
- Consider converting Good Hope Road in Milwaukee County into a freeway so that freeways in higher-density areas can be decommissioned and rebuilt as limited-access boulevards or landscaped parkways. This would include IH 43 between Lincoln Avenue and Capitol Drive and IH 94 east of Hawley Road.

Response: As part of the freeway reconstruction study conducted by the Commission at the request of WisDOT in 2003, Commission staff conducted a traffic impact analysis on three potential new northern freeway segments to connect IH 43 and USH 45 in northern Milwaukee County/southern Ozaukee County. The intent of this analysis was to assess whether a new northern freeway would have a significant impact on reducing traffic volumes and congestion or increasing traffic volumes and congestion on segments of the existing freeway system, and thereby, potentially affect the need for reconstruction and the need to consider design, safety, and capacity addition improvements on any segment of the existing freeway system. These three alternative alignments included one north of Good Hope Road, one north of County Line Road, and one south of Pioneer Road. The analysis showed that with respect to traffic impacts on the surface arterial street system, each alternative was expected to provide a significant reduction of traffic on parallel surface arterial streets proximate to each of the alternatives, thereby reducing congestion on certain segments of those streets, and provide a higher level of service to traffic. However, with respect to the impact of the possible new freeway segments on the existing freeway system, the proposed new freeway segments would not be expected to substantially modify the routing of traffic, or traffic patterns, on the existing freeway system and the net impact on reducing or increasing freeway traffic volume was expected to be negligible. Because the possible new freeway segments connecting IH 43 and USH 45 in northern Milwaukee County and southern Ozaukee County would have little impact on reducing or increasing freeway traffic volume on any segment of the existing freeway system, they would also have little impact on the traffic congestion on the existing freeway system and little impact on the need to address existing freeway system design, safety, and congestion problems. At that time it was not recommended that a new freeway segment be included for further consideration. Since development patterns have not changed significantly in the Region since the conduct of the analysis this issue has not been reexamined. Additionally, it would be expected that conversion of

Good Hope Road to a freeway would have significant impacts to the adjacent neighborhoods and communities. Since a new freeway segment in the Good Hope Road corridor would not be expected to significantly reduce traffic volumes on existing freeway segments, the conversion of existing freeway segments to boulevards would be expected to increase congestion within the existing freeway corridor, and divert traffic from the corridor to adjacent facilities, increasing congestion on those facilities and reducing safety within and adjacent to the freeway segment through an increase of congestion-related crashes. In addition, the cost of constructing a new freeway would likely be prohibitive, particularly given the significant funding gap for streets and highways identified in the updated financial analysis for the 2020 Update.

- Ensure that bicycle lanes are kept in a state of good repair
- Ensure that roads in low-income neighborhoods are well maintained
- Need better warnings at freeway exits to prevent wrong-way driving
- Need to provide sufficient stormwater management along streets and highways
- Opposition to the Lake Parkway (STH 794) extension between Edgerton Avenue and STH 100 in Milwaukee County
- Opposition to prioritizing streets and highways over other modes of transportation, but recognize the need to expand highways for commuters as population growth occurs
- Political will is needed to construct the USH 12 extension between Lake Geneva and Whitewater in Walworth County
- Support for expanding highway capacity to address traffic congestion on IH 43 between Milwaukee and Grafton
- Support for improving streets and highways in anticipation of more ridesharing and autonomous vehicles
- Support for minimizing congestion on the Region's freeway system

TDM, TSM, and Freight Comments

The following comments were provided related to the updated TDM, TSM, and freight elements included in the 2020 Review and Update:

- Support for the updated TDM element (11)
- Support for expanding transportation options (6)
- Support for the new TDM recommendation encouraging government entities to work with private-sector mobility providers on possible partnerships (6)
 - One commenter noted that these partnerships could be particularly useful for people with disabilities who are physically unable to walk to a bus stop
- Add a recommendation that infrastructure improvements address the risk of climate catastrophes as a result of ethanol shipments through Port Milwaukee and that the Commission's planned study on transportation resiliency to flooding include a discussion about whether to retreat or rebuild certain infrastructure

Response: The Commission is currently conducting a flooding study of the arterial streets and highways within the Region with respect to the risk of overtopping during 100- and 500-year events. This study is the first phase of a larger effort to identify critical transportation

infrastructure on the arterial street and highway system that may need to be hardened to improve the transportation system's resiliency to increased flooding potential from more frequent high-intensity rainfall events. However, even with a changing climate, it is expected that Lake Michigan water levels will be similar to historical highs and low into the future. While current FEMA floodplain maps do not show the Port facilities as being within a floodplain, new FEMA mapping along the lakeshore is currently underway. Should the Port facility be included in a floodplain the Port will need to consider how their facilities may need to be modified to mitigate future flooding risk. The Port of Milwaukee should be as a normal operating practice be identifying and mitigating the risk associated with hazardous shipments through the Port.

- Concern about the long-term sustainability of Lyft and Uber and the sensibility of investing in them rather than public transit
- Consider equity related to park-ride lots, specifically using them to improve access to jobs in the suburbs, and not only serving suburban drivers

Response: Providing access to jobs across the Region within a reasonable travel time, particularly for the 1 in 10 households in the Region without access to a car, is one of the primary motivators for recommending the improvement and expansion of transit services. In relation to park-ride lots, while these lots are often used by commuters with jobs in urban where parking is more difficult and expensive than less dense job centers, VISION 2050 recommends a significant improvement and expansion of existing commuter bus routes serving park-ride lots. This includes providing more frequent service, serving areas not currently served, and providing service in both directions throughout the day. A number of the rapid transit, commuter rail, express bus, and local transit services would also serve park-ride lots. The plan recognizes that some suburban employment centers cannot be realistically served by fixed-route transit, and also makes recommendations for programs providing last-mile connections to suburban job centers. In addition, as part of the 2020 Review and Update, staff is proposing to add a recommendation encouraging government entities to work with private-sector mobility providers to consider opportunities for partnerships that work to advance an equitable, affordable, and efficient transportation system in the Region. Within this new recommendation, staff will emphasize that such partnerships should address service affordability and explore options to support public transit services by providing first-mile/last-mile connections and supplementing regular service during off-peak times or in areas with lower-density development patterns.

- Support for incorporating the recently completed State Freight Plan, which is being done as part of the 2020 Update
- Support for limiting freight networks on local streets to those that serve an existing or anticipated freight users, in a way that is least intrusive to neighborhoods and local business districts
- Support for the freight element, including the recommendation to construct the Muskego Yard bypass
- Support for the TDM recommendation to enhance preferential treatment for transit and high-occupancy vehicles (HOV) through HOV bypass and transit-only lanes as a method to both reward and encourage carpooling and using public transit

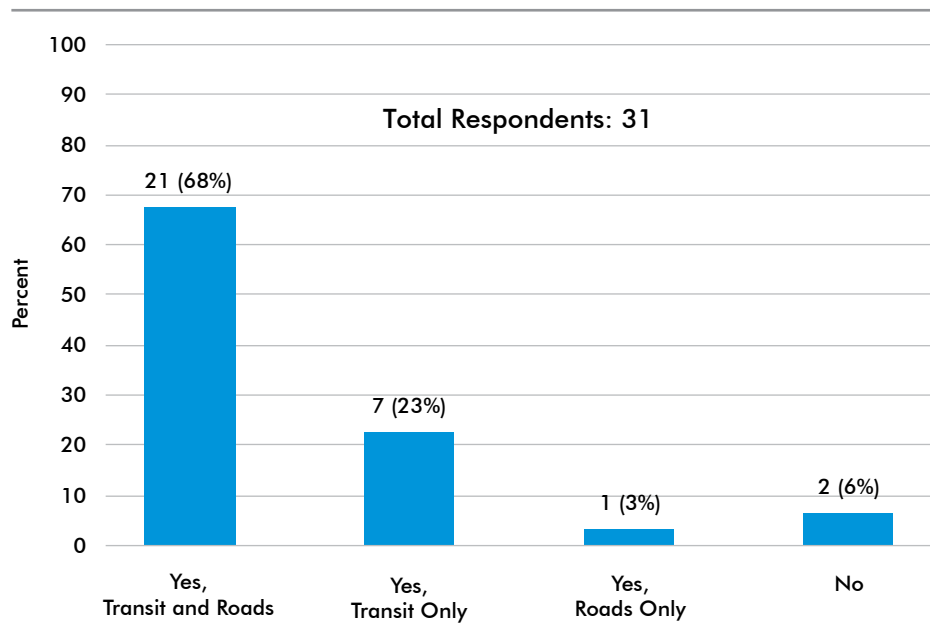
- Support for the TDM recommendation that personal vehicle travel be priced at its true cost
- Support for the TDM recommendations that have the potential to reduce vehicle-miles of travel (VMT)
- Support for using cameras and sensors for traffic enforcement and creating smart parking networks
- Support for using electric vehicles for last-mile transportation connections, as well as expanding electric vehicle charging stations

Transportation Funding Comments

At the in-person public meetings and in the online questionnaire, participants were asked two questions related to addressing the transportation funding gap identified in the updated financial analysis prepared as part of the 2020 Review and Update.

Figure E.8 shows whether respondents would support providing additional funding for transportation.

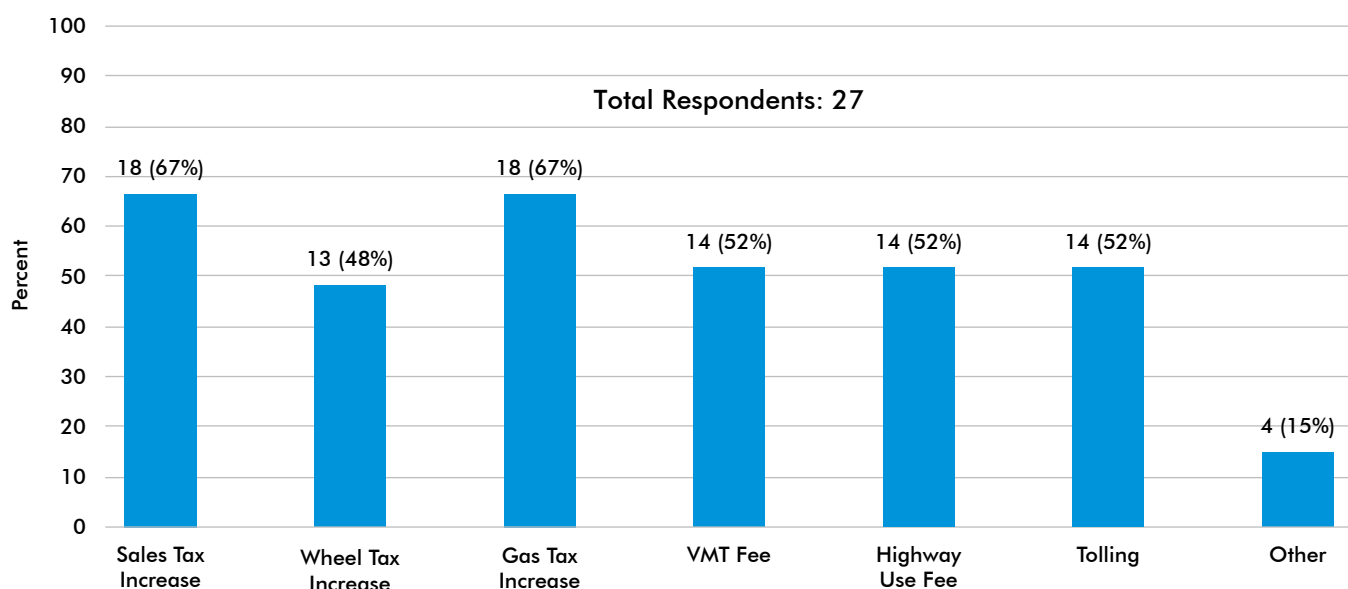
Figure E.8
Round 2 Feedback: Would You Support Providing Additional Funding for Transportation?



Source: SEWRPC

Figure E.9 shows which revenue sources respondents indicated should be considered to provide additional funding for transportation.

Figure E.9
Round 2 Feedback: Which Revenue Sources Do You Think Should Be Considered?



Source: SEWRPC

The following additional comments were provided related to transportation funding and the updated financial analysis included in the 2020 Review and Update:

- Support for increasing funding for streets and highways, but only for maintenance, safety, and complete streets improvements (3)
- Concern about how the roadway users from outside the Region or State, including freight users, are sharing the costs of road maintenance

Response: This is an issue that many states are considering as they look for ways to fill the impending funding shortfalls due to increased fuel efficiency. With respect to the gas tax, users from outside the Region and State would potentially share in the costs of the transportation system when they purchase fuel within the Region. This is one reason why the gas tax may not be completely replaced by any of the other potential funding options discussed in VISION 2050. Tolling limited access highways would also ensure that all users, regardless of where they live, would contribute to the costs of a roadway.

- Concern about the capital and ongoing infrastructure costs associated with tolling
- Concern about the potential cost to commuters if a vehicle-miles of travel (VMT) fee is implemented
- Concern that funding transportation investments supports large corporations, especially oil companies, which contributes to the climate crisis and negatively impacts small businesses
- Important to demonstrate the benefits associated with providing additional funding for transportation

- In addition to funding, shared-ride taxi services depend on volunteer drivers, and more drivers are needed
- Need to provide additional funding for public transit to benefit low-income residents, seniors, and people with disabilities
- Open to considering tolling, but it is not the most desirable revenue source
- Opposition to borrowing money (bonding) to finance transportation expenses
- Opposition to gas and wheel taxes because they are not charged according to vehicle weight, time, and miles traveled, which is how costs are incurred
- Opposition to increasing funding for public transit because ride sharing and autonomous vehicles are the future of transportation
- Opposition to increasing funding for public transit because the demand does not support additional investment
- Opposition to increasing wheel taxes (vehicle registration fees), since the wheel tax is a regressive tax that takes a larger percent of income from low-income earners
- Opposition to a vehicle-miles of travel (VMT) fee because it disadvantages individuals who live in rural parts of the Region and State
- Stronger language should be used to describe the need for new funding sources to support transit

Response: The updated financial analysis for the 2020 Review and Update clearly shows the consequences of not providing additional funding for public transit, including an expected decline in transit service levels of about 35 percent. The VISION 2050 public transit element also clearly identifies the expected benefits of improving and expanding public transit, which is why the plan recommends more than a doubling of transit service by the year 2050. Upon completion of the 2020 Review and Update, Commission staff intends to prepare a summary document that will describe the updated VISION 2050 and fiscally constrained transportation system (FCTS), including identifying the importance of implementing the transit recommendations, the level of public support for implementing the transit recommendations expressed as part of the 2020 Update, and the consequences of not implementing these recommendations. In addition, staff intends to prepare a second edition of Volume III of the VISION 2050 plan report—which presents the recommendations of VISION 2050—to reflect the updated VISION 2050 plan and other analyses conducted as part of the 2020 Update, including the equity analysis. Also as part of the second edition of Volume III, staff intends to strengthen the reasons for implementing the transit recommendations given the continued decline in transit.

- Support for additional funding to improve road maintenance
- Support for directing funding at environmentally sound solutions that contribute to an improved approach to meeting human and natural resource needs
- Support for fees based on usage, not fixed costs that disproportionately impact non-users
- Support for implementing a highway use fee because it is a more progressive tax

- Support for increasing funding for public transit
- Support for increasing funding for transportation through an equitable and sustainable revenue source
- Support for increasing the sales tax, particularly on higher-priced items
- Support for increasing the sales tax because it is the most straightforward and is partially paid by visitors, but it has been politically difficult to implement it
- Support for increasing transportation funding for local governments
- Support for re-allocating funding for street and highway expansion projects to support improving and expanding public transit
- Support for user fees to fund transportation, but need to consider who will be impacted most

Additional Comments

The following additional comments were provided during the second round of public involvement for the 2020 Review and Update:

- Appreciation for the opportunities to attend virtual public meetings and provide input online (6)
- A group of five commenters expressed concerns regarding racial and environmental justice and made the following comments related to VISION 2050 and its implementation:
 - The commenters expressed support for implementing the expansion and improvement of transit service recommended in the updated VISION 2050. However, given the continued decline in transit service and minimal expansion and improvement of transit, they expressed the need for Commission staff to raise more awareness to the public and public officials of the importance of expanding public transit and the negative and potentially discriminatory consequences of continuing transit decline. Particularly, they expressed the need for SEWRPC to highlight the broad public support for improving and expanding public transit identified during the development of VISION 2050, and to highlight the importance of expanding public transit for the economic health of the Region, for the health and quality of life of its population, and for beginning to mitigate the ongoing impacts of decades of discrimination and segregation.

Response: The 2020 Review and Update of VISION 2050 continues to recommend more than doubling transit service in the Region by the year 2050, through the implementation of higher-quality transit services and improving local transit service. However, the financial analysis conducted for the plan update found that the current and expected transportation revenues would result in a 35 percent reduction in public transit service and minimal implementation of transit expansion and improvement. Commission staff presented this information—along with the consequences of not implementing the transit recommendations of VISION 2050—to the public as part of the public outreach conducted for the plan update and to the local, State, and Federal officials that are members of the Commission’s Advisory Committees on Regional Land Use Planning and Regional Transportation Planning.

As part of the 2020 Review and Update, Commission staff will be preparing a summary document that will describe the updated VISION 2050 and fiscally constrained transportation system (FCTS),

including identifying the importance of implementing the transit recommendations, the level of public support for implementing the transit recommendations expressed as part of the update, and the consequences of not implementing these recommendations. In addition, staff will be preparing a second edition of Volume III of the VISION 2050 plan report—which presents the recommendations of VISION 2050—to reflect the updated VISION 2050 plan and other analyses conducted as part of the update, including the equity analysis. In the section of Volume III that presents the transit recommendations, reasons for including the extensive improvement to transit services in the plan and pursuing its implementation are outlined. These reasons include providing increased accessibility to jobs and other activities, which would be particularly beneficial for individuals without access to a car. As part of the second edition of Volume III, staff intends to update this section to reflect current data identified as part of the plan update, and to strengthen the reasons for implementing the transit recommendations given the continued decline in transit.

Based on comments received during the first round of public involvement for the plan update, staff also intends to provide information on how the VISION 2050 recommendations achieve the plan objectives under four important themes established during the development of the original plan—Healthy Communities (which includes public health and environmental sustainability), Equitable Access, Costs and Financial Sustainability, and Mobility. The 2020 Review and Update report and its summary document, along with the second edition of Volume III of the VISION 2050 plan report, will be sent to each of the local governments of the Region and to the relevant Federal and State agencies, along with being made available on the Commission’s website.

In addition, staff intends to continue to reach out to the public and to local officials through future public involvement activities and meetings with local officials, including meetings of the Commission’s advisory committees. As an example, staff has expressed the importance of utilizing a portion of FHWA highway funding for eligible transit projects with the Commission’s various Advisory Committees on Transportation Planning and Programming (TIP Committees) for the Region’s five urbanized areas. This has resulted in the Commission, working with those committees, along with WisDOT and WDNR staffs, to allocate over half of available FHWA Congestion Mitigation and Air Quality Improvement Program (CMAQ) funds for transit capital and operating projects, such as bus replacement and the initial operating costs for improved or expanded services in Milwaukee County and the City of Kenosha. In addition, Commission staff has worked with the Milwaukee TIP Committee in utilizing a portion of the available FHWA Surface Transportation Block Grant Program – Milwaukee Urbanized Area (STP-M) funds for bus replacement projects.

- o The commenters expressed support for the conclusions of the equity analysis completed for the 2020 Review and Update related to people of color and people with lower incomes in the Region benefiting from the transit recommendations of the updated plan and that those populations would likely experience disparate negative impacts should funding not become available to implement those recommendations. However, they had the following suggestions related to the equity analysis: a) analyze

the adverse effects of a transit funding gap on people of color, people with lower incomes, and people with disabilities in the context of the transportation system as a whole (highway and transit elements together), b) account for the fact that a higher proportion of people of color, low-income residents, and people with disabilities are unemployed when analyzing the benefits of highway construction and expansion, and c) consider the extent to which highway and other roadway expansion projects have had and/or are likely to have a cumulative adverse effect on people of color, people with lower incomes, and people with disabilities.

Response: The equity analysis for the plan update provides a system-level analysis of the impacts—both costs and benefits—of implementing the highway and transit recommendations of the updated VISION 2050 and FCTS—with the latter showing the effects of the continued decline of transit service and minimal expansion and improvement of transit on the people of color, people with lower incomes, and people with disabilities of the Region. As the highway and transit systems are functionally different, the analyses of the two systems are conducted separately. However, when the two systems were evaluated by the same criteria (such as accessibility to jobs and other activity centers), the same methodologies were utilized to evaluate the two systems. This allowed for an easy comparison between the effects of the transit and highway systems under each scenario (the updated VISION 2050 and the updated FCTS).

A summary of the comparison of the accessibility for transit and driving is provided in the equity analysis under both the updated VISION 2050 and FCTS. Upon reviewing the summary, Commission staff determined that the text describing the comparison under the FCTS should be made clearer for the final 2020 Review and Update report. As such, staff has proposed to revise this text to indicate that while the highway element would result in about the same accessibility to jobs and other activities for all residents of the Region that have access to an automobile, the expected declines in transit, along with the minimal expected expansion and improvement of transit, under the updated FCTS are expected to generally result in small to significant declines in the accessibility to jobs and other activities—depending on the activity—for residents utilizing transit. Further, the impact of any decline in accessibility would likely be greater on minority populations and low-income populations, as those populations are more likely to not have access to an automobile.

With respect to the second request regarding the evaluation of highways, the equity analysis recognizes that while people of color and people with lower incomes have higher percentages of unemployment, of zero-automobile households, and of public transit use (relative to the other modes of travel) than the rest of the population, the automobile is still the dominant mode of travel for the Region's minority population and low-income population. For example, the 2017 National Household Travel Survey (NHTS) found that 76 percent of the Region's minority residents make all trips—including for work, shopping, schooling, social/recreational, and other purposes—by automobile, compared to 86 percent of the non-minority population. Similarly, the 2014-2018 U.S. Census American Community Survey (ACS) data show that in Milwaukee County about 70 percent of travel by low-income populations

to and from work is by automobile, compared to 89 percent for populations of higher income. Thus, while typically at a lower proportion than the remaining residents, the people of color and people with lower incomes that have access to, and utilize the, automobile for their trips would benefit from improvements to the highway system through less congestion, increased safety, and increased accessibility.

With respect to the third request related to evaluating cumulative effects, the equity analysis included estimating the cumulative effects on people of color and people with lower incomes in the Region under the updated VISION 2050 and FCTS for criteria related to accessibility, availability of transit service (both extents and quality), highway expansion impacts and benefits, and air-quality impacts. Following the completion of the 2020 Review and Update, Commission staff intends to work with the Commission's Environmental Justice Task Force to review the equity analysis for potential changes for the next update of VISION 2050 in 2024. As part of that review, consideration would be given to whether the current criteria utilized are appropriate as is, should be expanded or improved, or should not be utilized further. In addition, the review would include consideration of new criteria to be added to the equity analysis, including criteria related to housing/transportation costs and economic effects.

- The commenters suggested that it should be made clear that not providing enough funding to improve and expand transit, especially while expanding highway capacity, has a potentially discriminatory effect and that transit expansion needs to occur simultaneously with highway projects.

Response: The updated equity analysis concluded that the reduction of accessibility to jobs and other activity centers under the FCTS would particularly impact people of color, people with lower incomes, and people with disabilities, who utilize public transit at a rate proportionally higher than other population groups. The analysis further concluded that, should the amount of available and reasonably expected funding for transit continue as estimated under the FCTS, a disparate impact on the Region's people of color, people with lower incomes, and people with disabilities is likely to occur. Given current limitations at the State level on local government revenue generation and on WisDOT's ability to allocate funds between different programs, the ability for the Region to avoid such a disparate impact is dependent on the State Legislature and Governor providing additional State funding for transit services, or allowing local units of government and transit operators to generate such funds on their own. This conclusion is also summarized in Chapter 4 of the 2020 Review and Update report and will be included in the summary document for the plan update.

- The commenters suggested that Commission staff reaffirm the obligation of the State of Wisconsin and other recipients of Federal funding to mitigate adverse effects on people of color, people with lower incomes, and people with disabilities, and that mitigating measures should include improving and expanding public transit and giving higher priority to plans, projects, and services that directly benefit people of color, people with lower incomes, and people with disabilities.

Response: With respect to the 2020 Review and Update, the equity analysis states that avoiding the disparate impacts on the Region’s minority populations, lower-income residents, and people with disabilities that would be expected under the FCTS is dependent on action by the State Legislature and Governor. Such action would negate the need for any sort of mitigation, as the disparate impacts would have been avoided.

With respect to individual projects, any potential impact—positive or negative—to people of color and lower-income residents needs to be identified during preliminary engineering for any project utilizing Federal funding. Should negative impacts be identified, implementing agencies are required to consider alternatives to avoid those impacts or to mitigate the impacts if they are unavoidable. Commission staff is often asked to serve on technical advisory committees or are asked to comment directly during preliminary engineering of larger highway projects, especially those where capacity expansion is being considered. Should mitigation of impacts be found to be necessary as part of those projects, Commission staff would work with implementing agencies to identify necessary mitigation measures—particularly should it relate to mitigation via plan implementation. As an example, long-term transit improvements could be identified as a mitigation strategy for freeway projects in urban areas.

- Ensure that offsetting benefits are included in VISION 2050 to counter the long-standing, racially disparate, and adverse effects that these communities have suffered.

Response: Implementing the transit improvement and expansion recommendations of VISION 2050 is expected to result in a more than doubling of current service levels, well beyond the service levels of 2010. As indicated in the updated equity analysis, implementing those recommendations would greatly benefit the people of color and lower-income residents of the Region. However, as previously indicated, implementing the transit recommendations is dependent on action by the State Legislature and Governor to either make more transit funding available or permit local units of government and transit operators to generate funds on their own.

- Engage more stakeholder groups in the process (e.g., corporate leaders, small businesses, faith organizations, K-12 schools, universities, county organizations) (2)

Response: During the original VISION 2020 planning process, Commission staff conducted extensive public outreach over a three-year period. The process was guided by the Commission’s Regional Land Use and Transportation Planning Advisory Committees (comprised of local and county government representatives from throughout the Region, as well as representatives from relevant Federal and State agencies), and involved working with its Environmental Justice Task Force, eight community partner organizations, and nine task forces on specific topics. Through this process, staff engaged many of the stakeholder groups included in this comment and continues to work regularly with many of them as it relates to plan implementation and obtaining input on changes to the plan. Staff is always willing to discuss the plan with any interested group and has given numerous presentations to a wide range of different groups since the plan was originally completed, including regular presentations to students at multiple local universities. In addition, the Commission’s Public Involvement and

Outreach (PIO) Division engages additional stakeholders, community-based organizations, and members of the public throughout the year. PIO maintains an expanding list of over 100 target organizations that serve as a formal distribution network for information about Commission planning activities. These organizations serve low-income areas; areas predominantly consisting of communities of color and targeted ethnicities; people with disabilities; women's groups; veterans; seniors; and/or communities or neighborhoods where issues related to employment, transportation, land use, economic development, housing, and environmental deterioration relate directly to the Commission's planning efforts. Staff will continue to explore expanding its stakeholder engagement and is always open to specific ideas and opportunities to help facilitate implementation of the plan.

- A detailed study is needed on the effectiveness of the investment in the Foxconn manufacturing campus to better understand the economic impacts, other outcomes, and what makes an area attractive beyond the presence of jobs

Response: While the second amendment of VISION 2050 incorporated land use changes and transportation improvements related to the Foxconn campus in Racine County, the plan does not take a position regarding the investment made to bring Foxconn to Wisconsin. A detailed study of effectiveness of that investment could be conducted separate from VISION 2050 if requested by the affected local and county governments. Commission staff could potentially assist the appropriate agency if a separate study is conducted.

- Broaden the approach for the plan to look at the built environment and the systems it supports from a public health perspective, and respond to community concerns such as living wage jobs, access to fresh food, public safety, affordable housing, quality education, climate resiliency, and equity

Response: VISION 2050 recommendations were developed to address a series of plan objectives that fall under four important themes: Healthy Communities (which includes both public health- and environmental sustainability-related objectives), Equitable Access, Costs and Financial Sustainability, and Mobility. Based on comments such as this one, and feedback received from elected officials, local government staff, and other stakeholders since VISION 2050 was adopted in 2016, staff will be providing more emphasis on the four themes and their underlying objectives within the recommended plan. Specifically, feedback such as this comment has identified a need to improve the understanding of how the recommended plan addresses objectives related to public health, equity, and environmental resilience. Objectives under these topics are addressed throughout plan recommendations under various elements, but are not always clearly identified as such. Feedback garnered through an interactive public participation activity during the first round of public involvement for this effort helped further identify priorities and answer questions related to these three specific topics. To respond to this feedback and enhance the awareness of the four themes in the recommended plan, staff will incorporate more information about the plan objectives into the recommended plan, which will be presented in Chapter 1 of the Second Edition of Volume III of the VISION 2050 plan report, to be prepared following completion of the 2020 Review and Update. In addition to VISION 2050, other elements of the regional plan also address concerns related to the environment and affordable housing.

- Concern about the uncertainty related to using 2050 as the planning horizon. Suggest reviewing the plan every 3 to 5 years to keep the plan current

Response: While Commission staff recognizes the degree of uncertainty related to planning three decades into the future, federal regulations for preparing a regional transportation plan require the long-range plan to have a minimum 20-year planning horizon. The regulations also require the plan to be reviewed and updated every four years, which staff is fulfilling through the 2020 Review and Update and will fulfill again in future updates. The next update will occur in 2024.

- Consider the impacts of any recommended changes on county and municipal services
- Need to consider how to include pandemics in planning for transportation.

Response: At the time of this response, it is clear that the COVID-19 pandemic is resulting in a decline in travel and an impact to the economy; however, it is too soon to understand how commuting patterns, the economy, and other activities of daily life may change in the medium- and long-term. Commission staff will continue to monitor the impacts that this pandemic may have on the plan in this regard, discuss changes that may be needed as a result of potential long-term impacts, and be available to assist communities in their response as needed.

- Provide data on seniors and include them in the equity analysis

Response: In terms of travel patterns for seniors, staff completed a separate analysis during the initial development of VISION 2050, which looked at some more aggregate travel habits by generational cohort. Specifically, Table 5.14 of Volume I, Chapter 5 (page 278) of the VISION 2050 plan report shows the modal share by generation from the Commission’s 2011 and 2001 regional travel inventory, which indicates that a significant proportion of the population age 67 or older travel by automobile and less than 1 percent travel by transit. However, the plan recognizes that the existing transportation system may not meet the needs of the growing population of seniors who may be unable or prefer not to drive and many plan recommendations would benefit seniors and support their ability to age in place, including more walkable development where residents would live in proximity to many of their daily needs and significant improvements to various types of transit services. The plan recognizes that one of the consequences of not addressing the identified gap in funding for the recommended transit system is a reduced ability for the Region’s residents to age in place as their ability to drive declines.

With respect to the VISION 2050 equity analysis, minority populations and families living in poverty are specifically included in the analysis to comply with Federal requirements. In addition, people with disabilities and families living in twice the poverty level—other transit-dependent populations—were included in the analyses conducted related to transit. Following the completion of the 2020 Update, Commission staff intend to continue to monitor the travel habits and patterns of the Region’s senior populations, and to work with the Commission’s Environmental Justice Task Force to determine whether and how analyses related to seniors would be incorporated into the equity analysis of future updates to VISION 2050.

- Support for the updated plan and increasing efforts to implement the plan’s recommendations

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