**2020 REVIEW AND UPDATE OF VISION 2050:
A REGIONAL LAND USE AND TRANSPORTATION PLAN
FOR SOUTHEASTERN WISCONSIN**

Chapter 2

REVIEW OF VISION 2050 RECOMMENDATIONS AND IMPLEMENTATION TO DATE

INTRODUCTION

This chapter summarizes the VISION 2050 recommendations for land use and transportation, 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.

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.

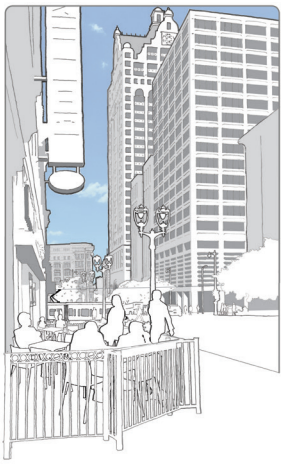
Recommendation 1.1: Develop urban service areas with a mix of housing types and land uses

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 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 sewered portions of the Region since 2010 have

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

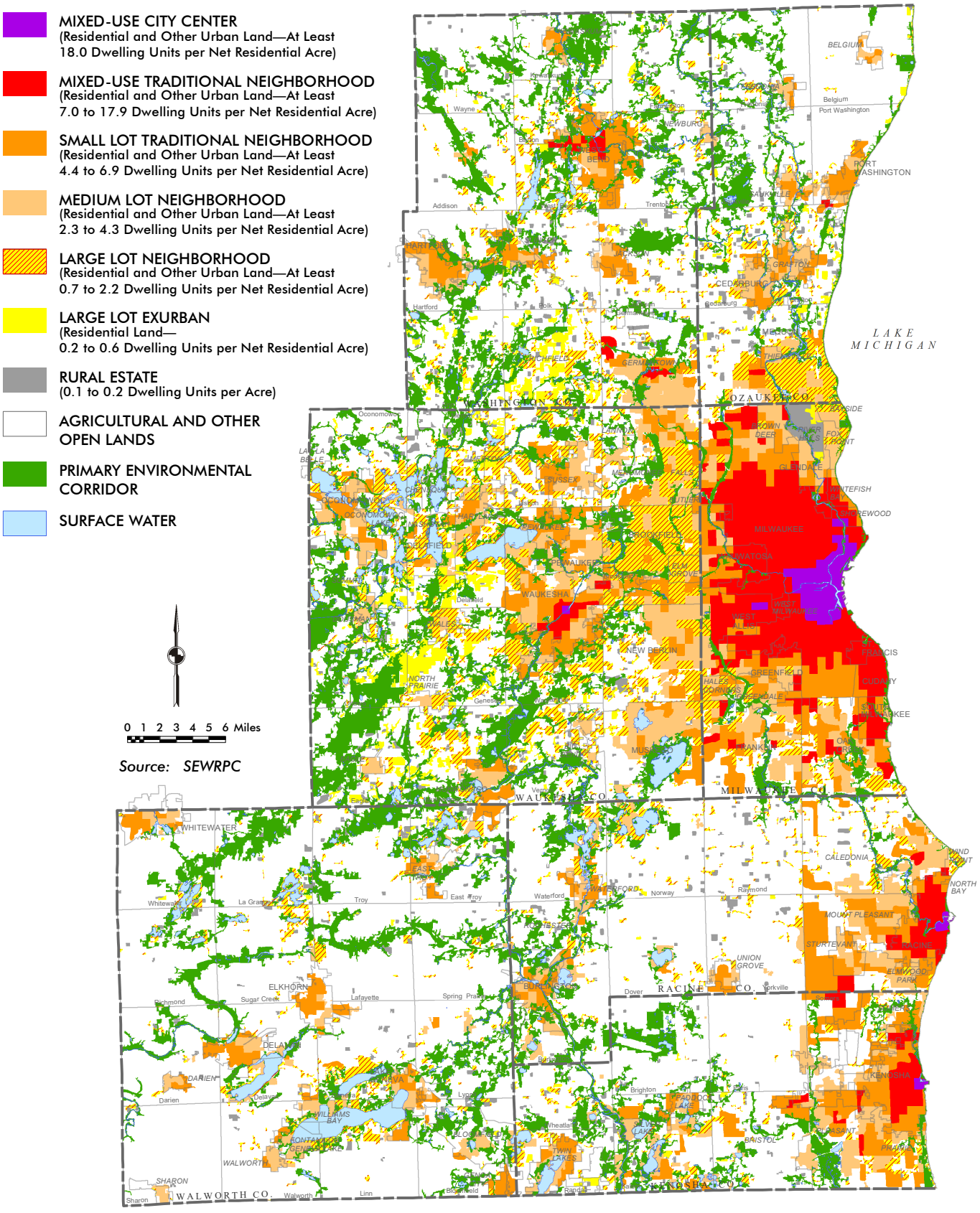
MIXED-USE TRADITIONAL NEIGHBORHOOD
Mix of high-density housing, businesses, and offices found in densely populated areas

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



Note: Includes amendments through December 2018

Table 2.1
New Housing Units by Structure Type in 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

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. Only about 13 percent of the 4,203 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 17 percent when looking at the sewered 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 sewered 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 the Commission's records, 11 sewered 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 sewered 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 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 has been occurring at a brisk pace within walking distance of the initial Hop 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 Hop 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 addition, of the 4,867 residential lots created through subdivision plats between 2010 and 2018, 4,208 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, and also benefit employers. Because of the relatively low overall unemployment rate in the Region, employers may 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 sewered 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 one 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 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 was 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 was 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. In addition, 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 (DAS)

VISION 2050 land use recommendations focus on infill, redevelopment, and compact development, and preserving significant natural resources that would result in the preservation of areas with high and very high groundwater recharge. 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, SEWRPC 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 Component

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.

TRANSPORTATION COMPONENT

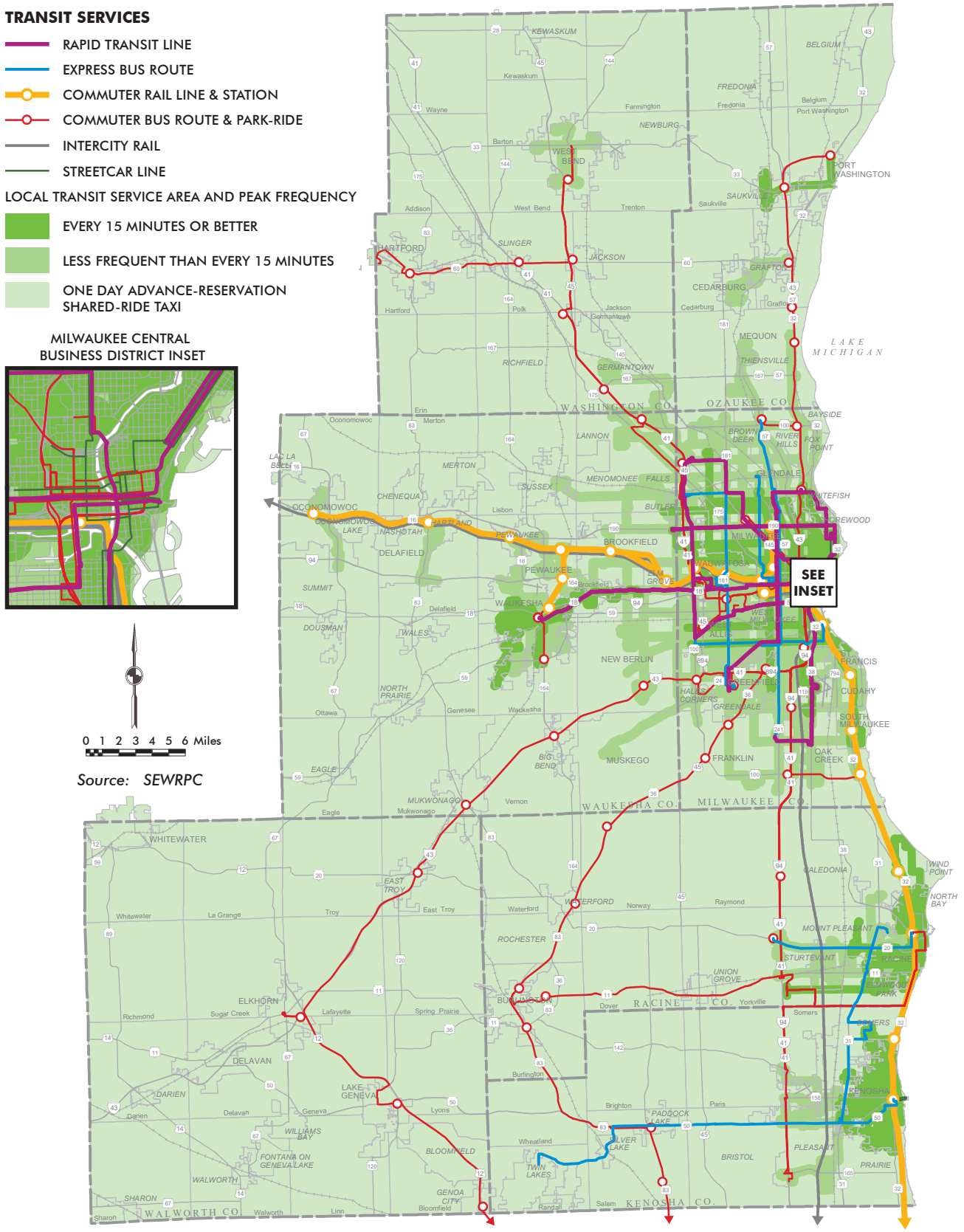
The transportation component of VISION 2050 includes the following six elements: public transit, bicycle and pedestrian, transportation systems management, travel demand management, arterial streets and highways, and freight transportation. Each element is summarized below, including specific plan recommendations 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 routes. The recommended transit service improvements and expansion include an increase 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 is 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. 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

Map 2.2
Transit Services: VISION 2050



Note: Includes amendments through December 2018

(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 2.2, average weekday service increased slightly between 2014 and 2017. As further shown in Table 2.2, 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 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, which is described in greater detail in Appendix A.

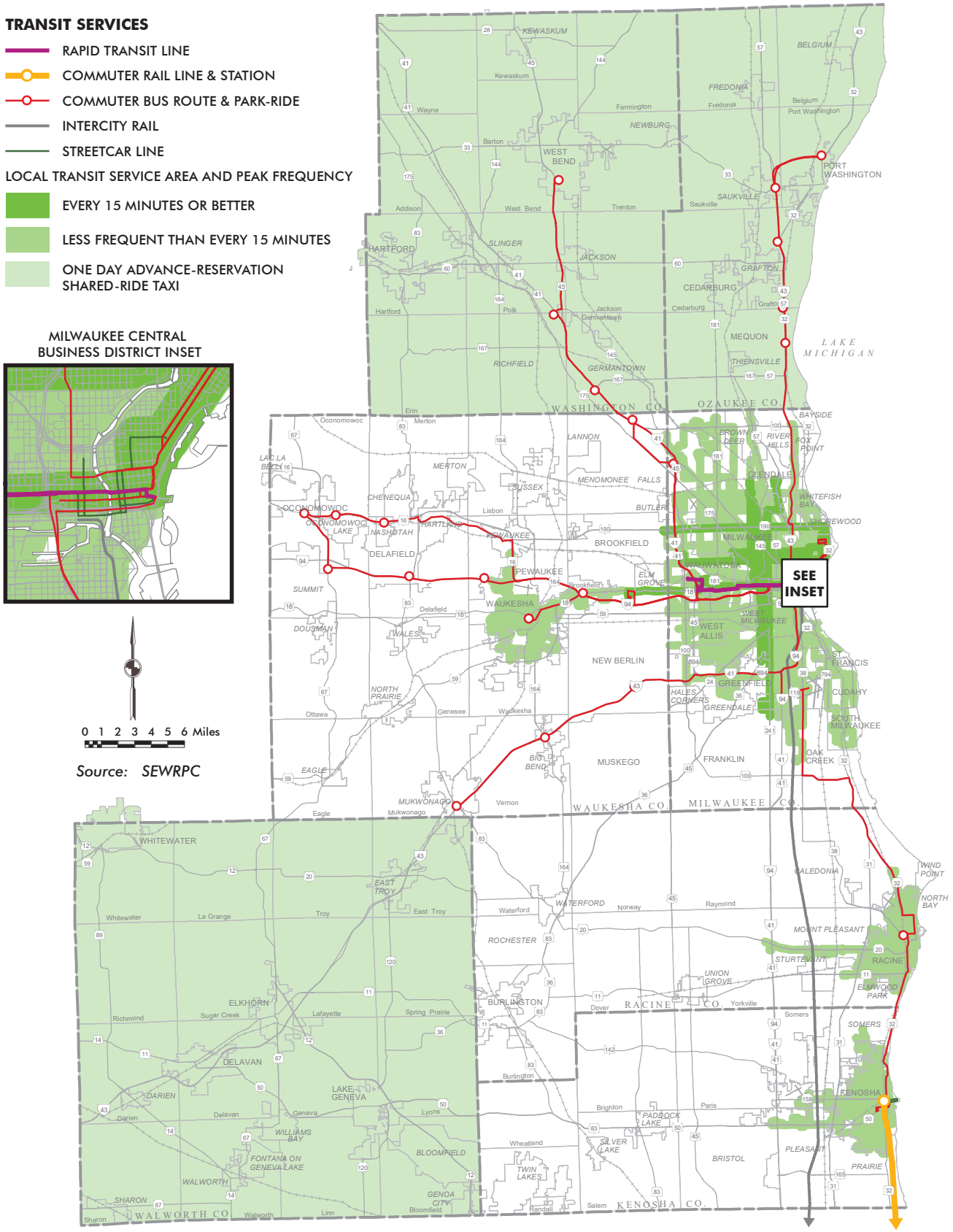
The following section summarizes the transit recommendations and describes progress toward meeting the transit recommendations since adoption of VISION 2050.

Recommendations 2.1 through 2.4: Develop a rapid transit network, 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

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. Pending funding approval, project construction is anticipated to begin in 2020 with service estimated to begin in 2021.

Map 2.3
Transit Services: Fiscally Constrained Transportation Plan



Note: Includes amendments through December 2018

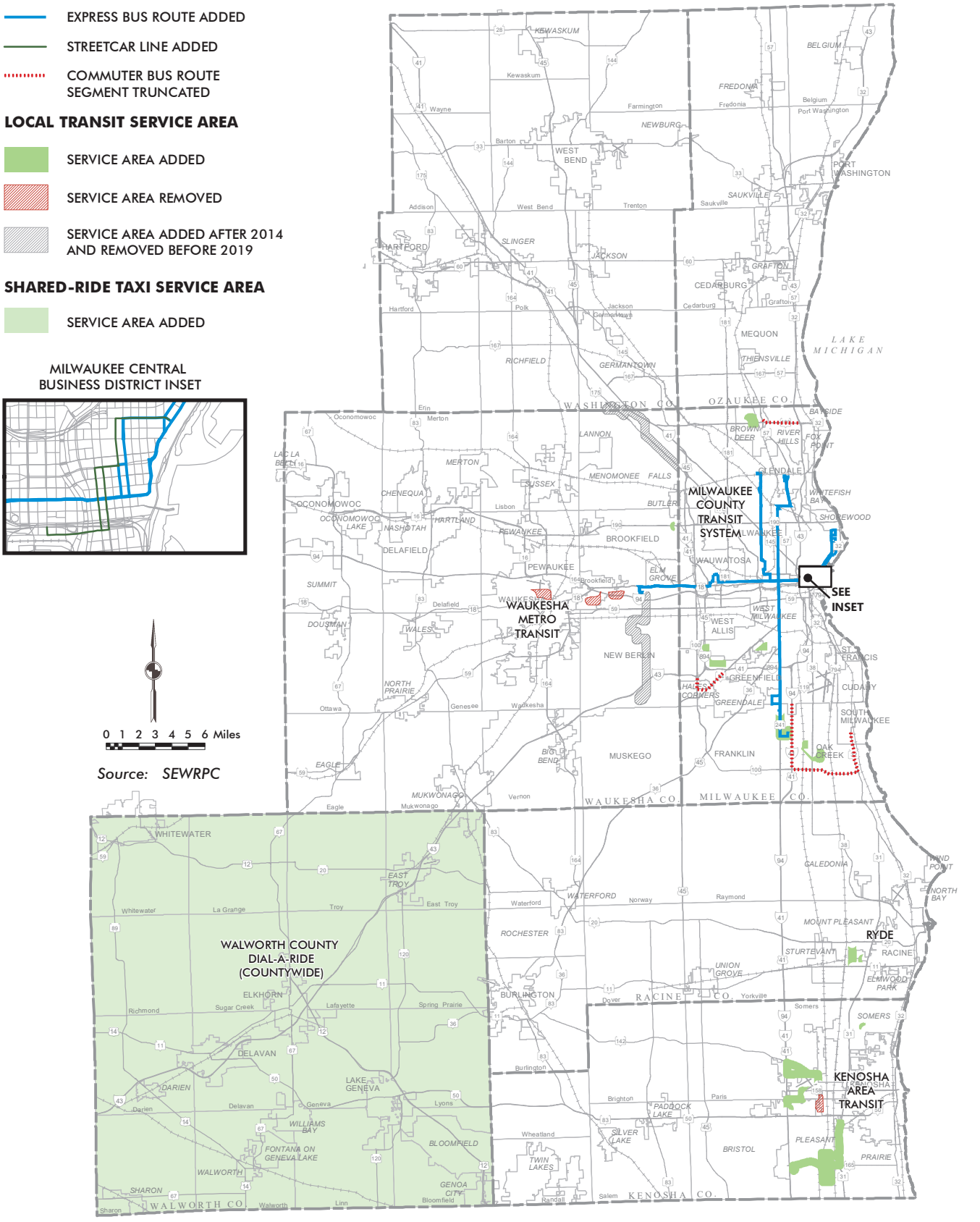
Table 2.2
Fixed-Route Public Transit Service Levels: VISION 2050 Update

Average Weekday Transit Service Characteristics	2014[a]	2017	Plan as Amended (2050)
Revenue Vehicle-Hours			
Rapid Transit			1,170
Commuter Rail	10	10	190
Commuter Bus	290	300	1,020
Express Bus	470	840	890
Local Transit	3,860	3,690	7,140
Total	4,630	4,840	10,410
Revenue Vehicle-Miles			
Rapid Transit			23,500
Commuter Rail	100	100	8,200
Commuter Bus	6,400	6,100	25,100
Express Bus	5,800	10,000	13,200
Local Transit	47,000	45,900	84,500
Total	59,300	62,100	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

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



- MCTS enhanced express bus services by merging local bus service along 27th Street with the PurpleLine 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 and is projected to open in late 2020. 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 job opportunities, with assistance from Federal Congestion Mitigation and Air Quality 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 the 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 and a coalition of social justice advocates. The two routes, marketed as the "JobLines" routes, served the New Berlin Industrial Park, 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 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 considered amid budget reduction proposals, and will be adjusted to reflect any final budgetary decisions.

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 of, 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, the MIS, and 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. Two projects that represent implementation of this recommendation include:

- A reconstruction of the passenger train concourse at the 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).

- 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), City of Kenosha, 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 grants 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 service that meet all shifts.

In July 2018, the Workforce Mobility Team was created to assist businesses with connecting workers to jobs in Southeastern Wisconsin. The Team is staffed by the Southeastern Wisconsin Regional Planning Commission and was developed cooperatively with the Regional Transit Leadership Council. The Team 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 to assist business with connecting workers to jobs in Southeastern Wisconsin. 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. VISION 2050 also recommends joint marketing and research among transit operators to enhance transit service, including innovative fare payment systems that facilitate intersystem transfers. Since VISION 2050 was completed, MCTS launched a smartphone application and real-time transit information has been added for the Milwaukee Streetcar and RYDE, as summarized below.

- The Ride MCTS app, which 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,

a 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 County of Waukesha, is currently working to obtain 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 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 street 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—are recommended to provide bicycle improvements to safely accommodate bicycle travel.

Map 2.6 shows the existing on-street bicycle accommodations provided in 2019 on the arterial street 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 street 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 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

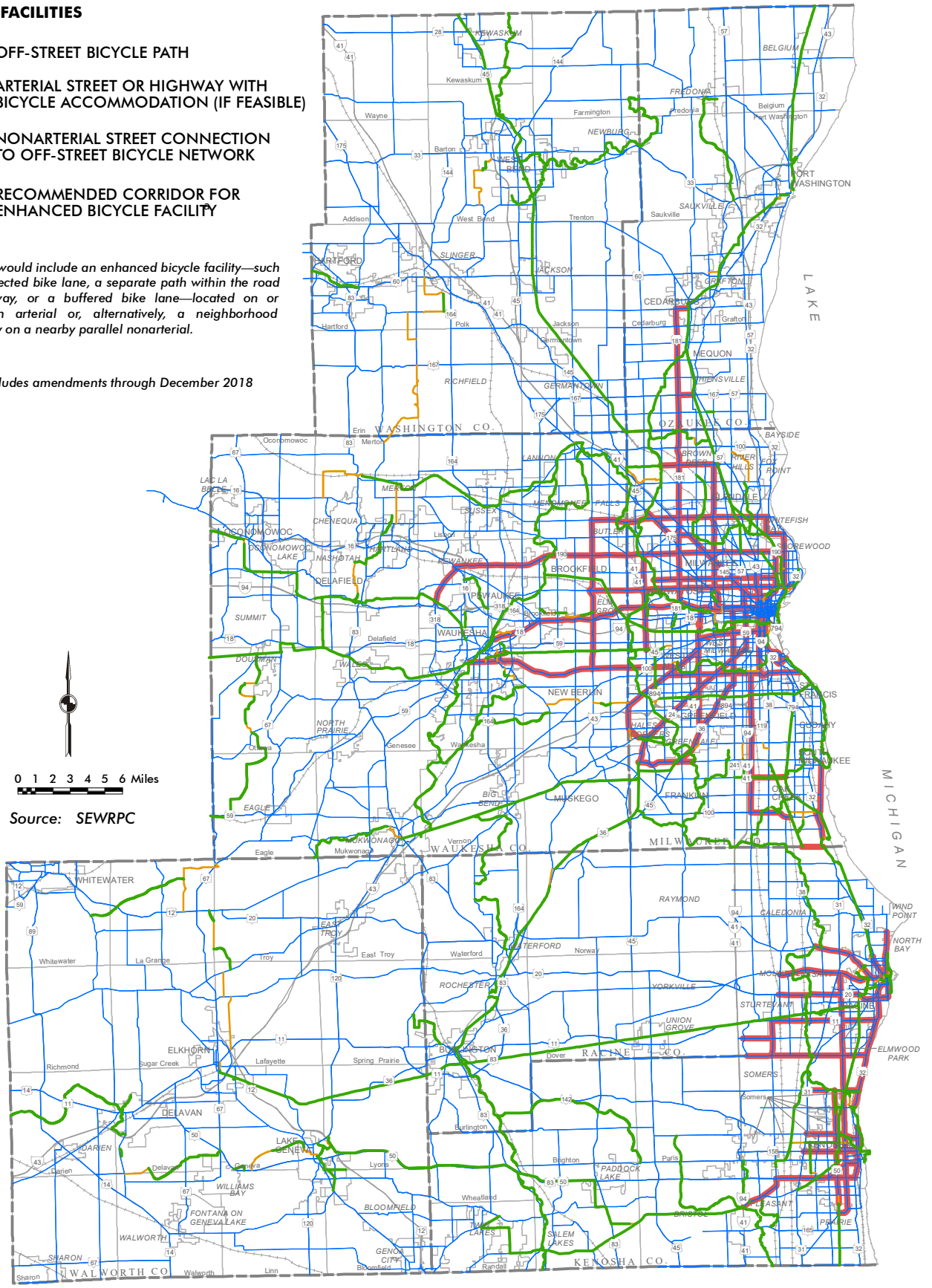
Map 2.5
Bicycle Network: VISION 2050

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.*

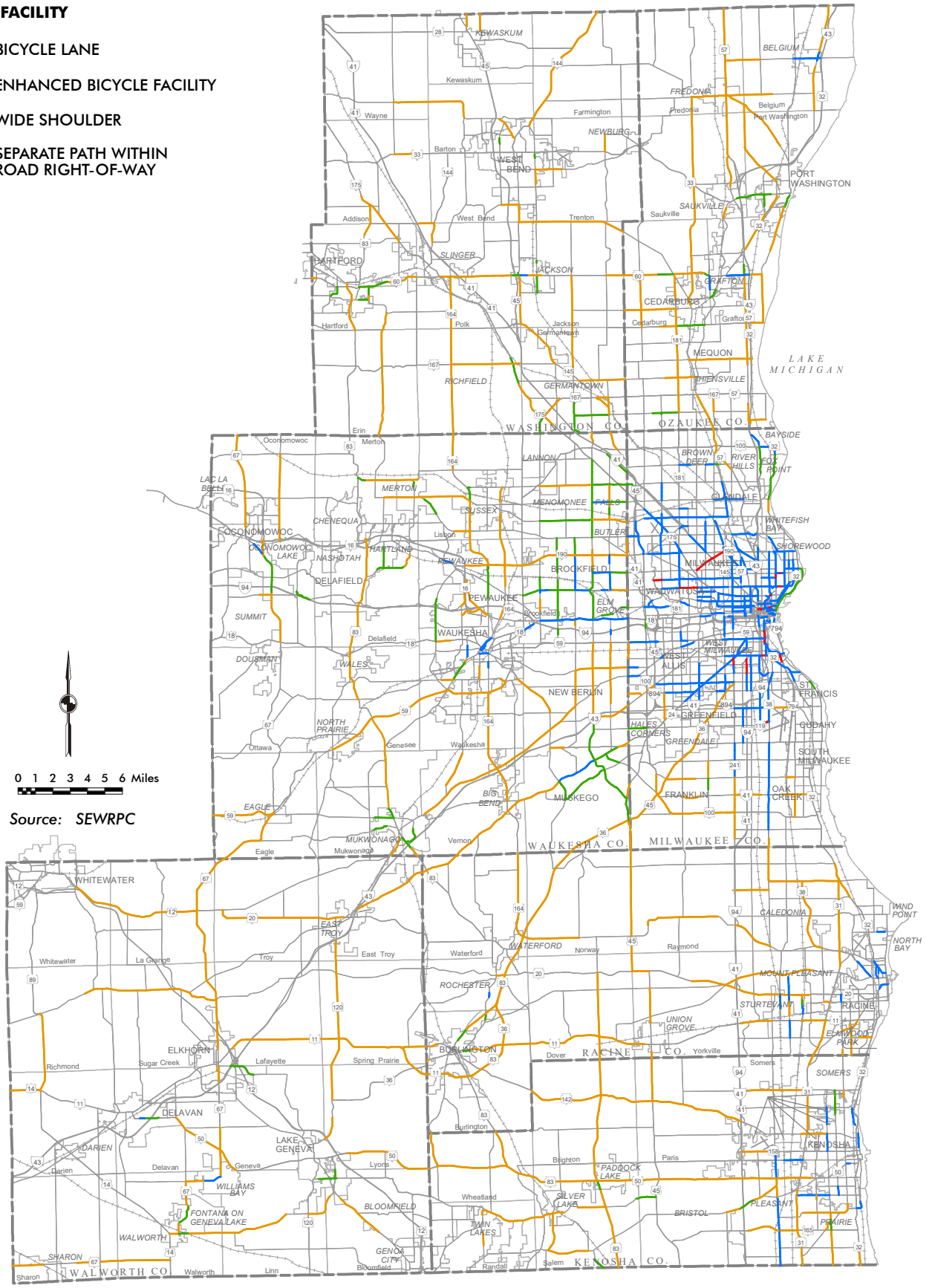
Note: Includes amendments through December 2018



Map 2.6
Existing On-Street Bicycle Facilities: 2019

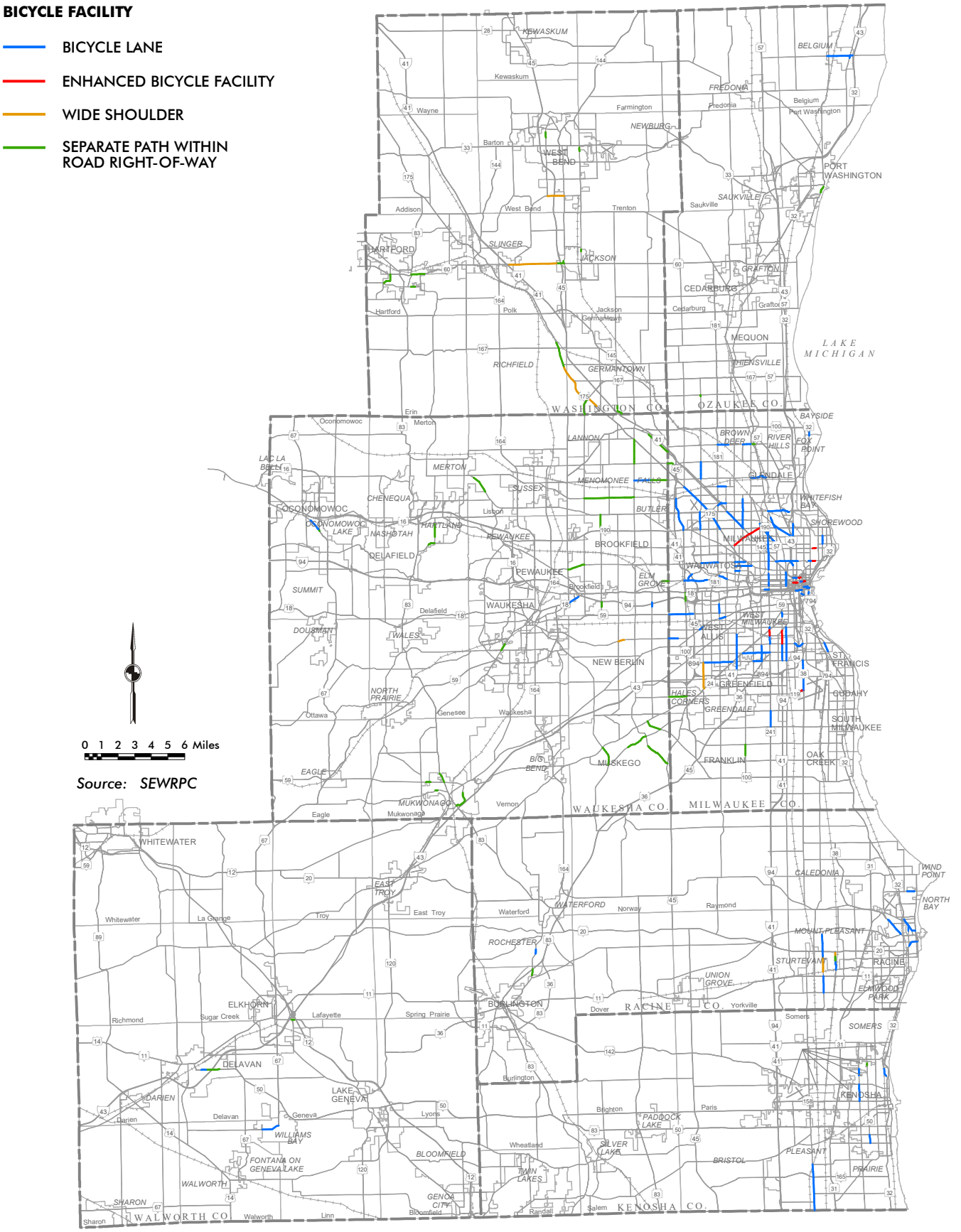
BICYCLE FACILITY

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



Source: SEWRPC

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



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.

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.

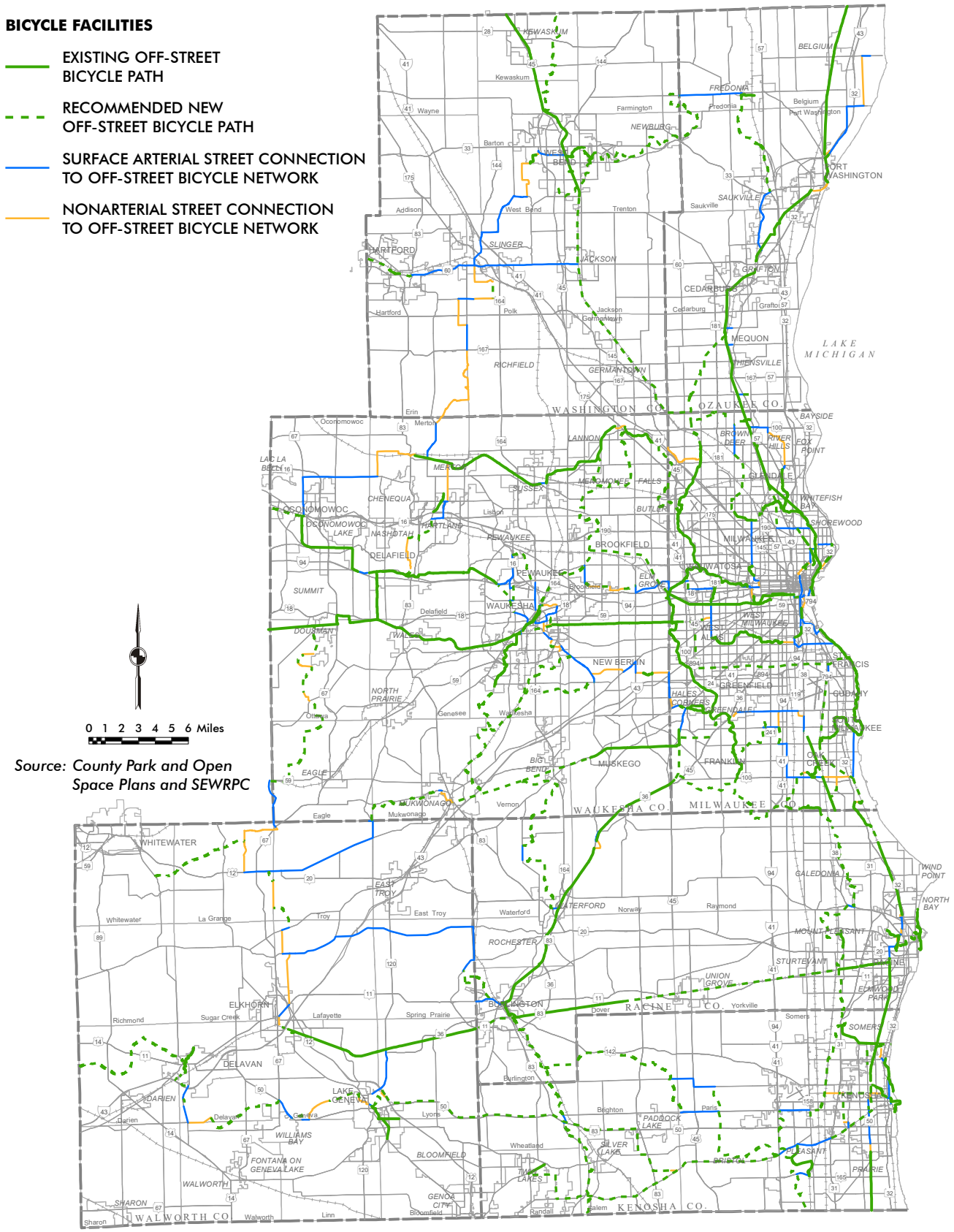
Map 2.9 shows the off-street bicycle paths that have been completed as of 2019. Since plan completion, approximately 11.4 miles of additional off-street bicycle paths have been completed in the Region, bringing the total of off-street bicycle paths up from 299.2 miles in 2015 to 310.6 in 2019.

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 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 the 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.

Map 2.8
Off-Street Bicycle Path System: VISION 2050



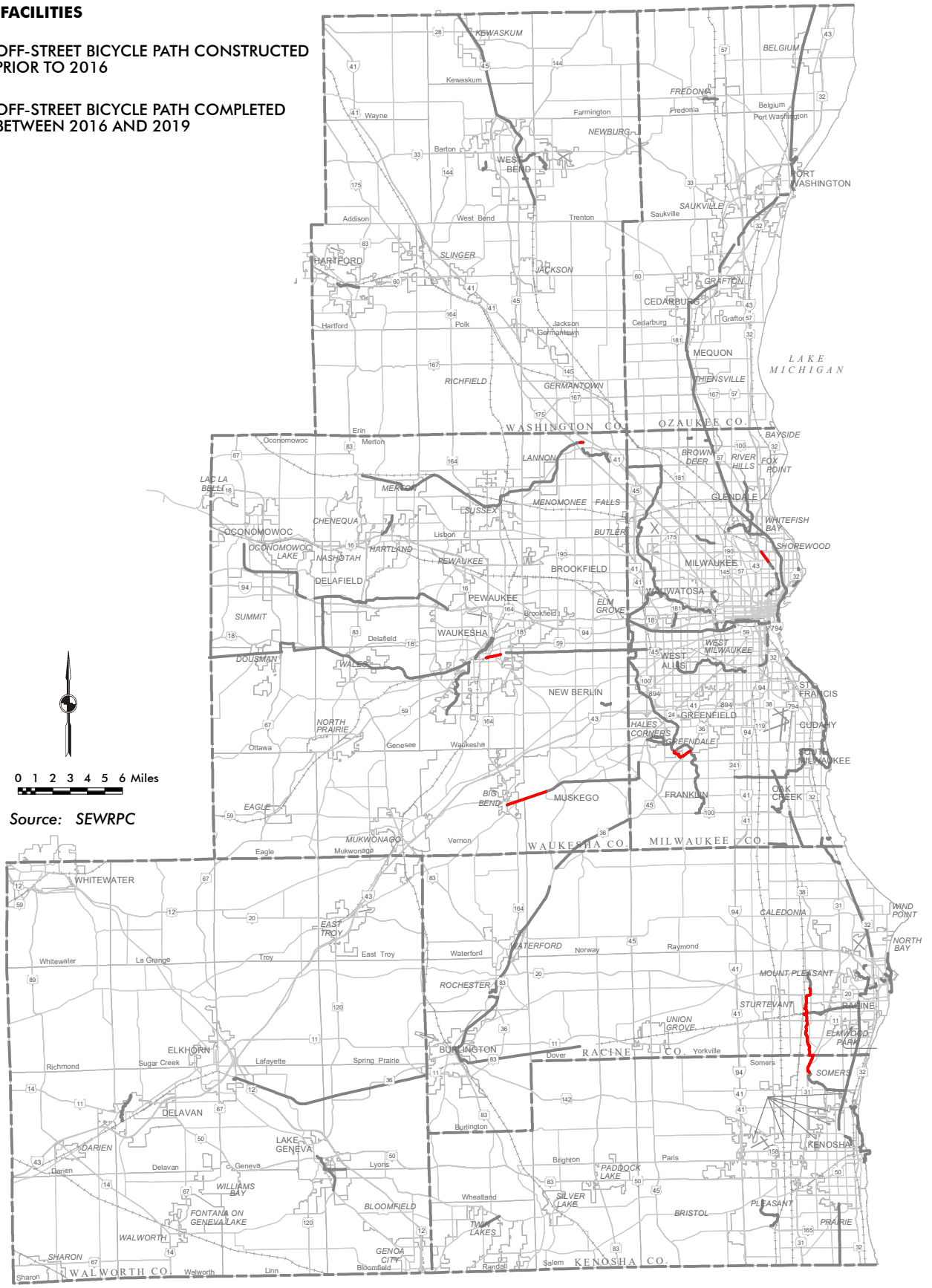
Note: Includes amendments through December 2018

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

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.

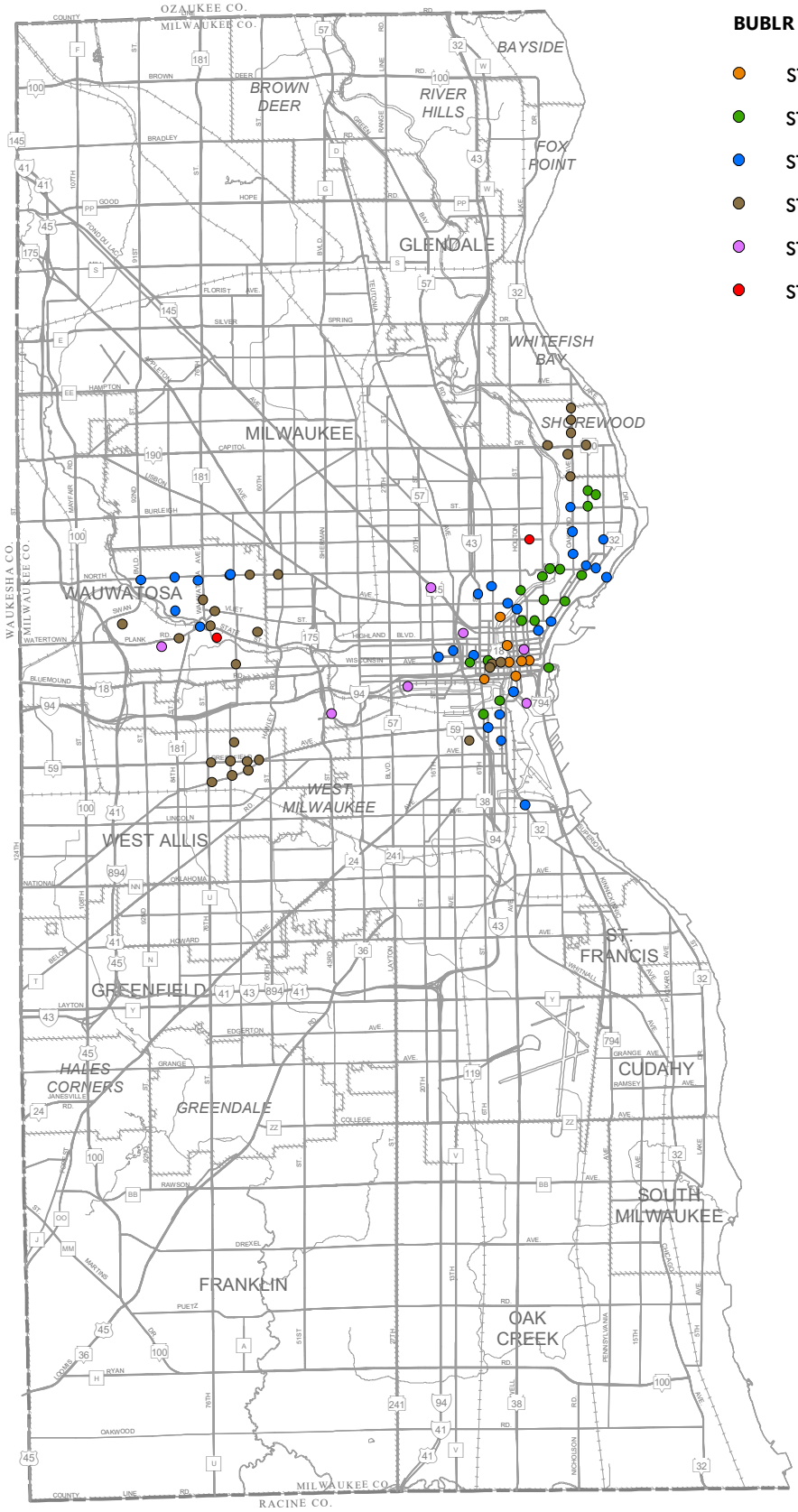
Bike share is currently operated in the Cities of Milwaukee, Wauwatosa, and West Allis and the Village of Shorewood by Bublr Bikes. In 2014, there were seven stations installed. Since plan completion, Bublr Bikes has expanded to a total of 89 stations in 2019, as shown on Map 2.10. The City of Milwaukee and Bublr Bikes are currently working to expand the system by 26 additional stations. 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. The program ends in December 2019 and will be evaluated by the City of Milwaukee in early 2020.

Although VISION 2050 only made recommendations for docked systems such as Bublr Bikes, dockless scooter and bicycle systems have begun operation in many cities, including a dockless scooter pilot study initiated by the City of Milwaukee in 2019 to evaluate the effectiveness of dockless scooters in the City. 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. Three scooter companies have been approved by the City of Milwaukee to participate in the pilot study, which ends in December 2019. The pilot study is expected to evaluate dockless scooters as a viable transportation option for short trips, assess their potential to serve first mile/last mile connections to transit, and provide guidance on regulations for scooter companies.

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

Map 2.10
Bublr Bike Stations Installed: 2014-2019



BUBLR BIKE STATIONS

- STATION INSTALLED IN 2014
- STATION INSTALLED IN 2015
- STATION INSTALLED IN 2016
- STATION INSTALLED IN 2017
- STATION INSTALLED IN 2018
- STATION INSTALLED IN 2019

0 1 2 3 Miles

Source: SEWRPC

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 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 with 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. Since plan completion, Washington County adopted a bikeway and trail network plan in June 2019 and the City of Racine is anticipating adoption of its bicycle and pedestrian plan in November 2019. These plans will be 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 recommended in VISION 2050 to have new 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 Bublr 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 provides 17 tricycles and hand cycles accessible to people of all abilities available through Bublr Bikes. The dockless scooter pilot study has deployed approximately 1,350 scooters by the three companies approved to participate in the pilot 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. Since data were last updated in 2013, during the development of VISION 2050, eight ramp meters have been added, bringing the total to 129 in 2019.

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 WisDOT 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 the 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 has increased from 31 to 49 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 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, and the implementation of CCTVs is shown on

Map C.4 and in Table C.4 of Appendix C. 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 170 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

Along with to 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 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 State Traffic Management Center, 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 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 and 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 Congestion Mitigation and Air Quality (CMAQ) Improvement Program 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 intention 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 places 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 statutes and 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.

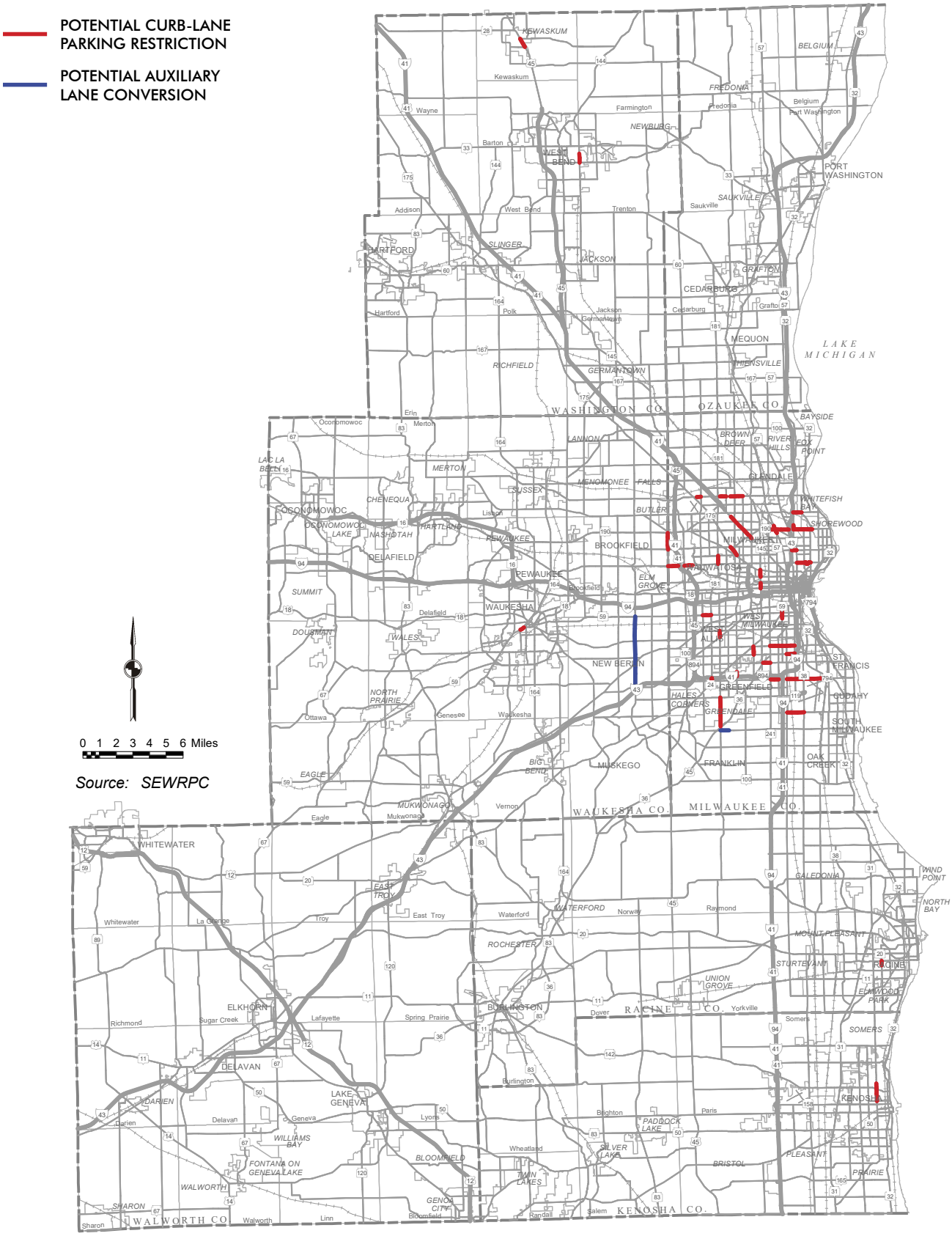
Advisory Information

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 31 locations in 2019

- Expansion of closed-circuit television cameras on the arterial street and highway system from 22 locations in 2013 to 54 locations in 2019 (both 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



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 and 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 early 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 implementation of 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 HOV 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 occupant 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.

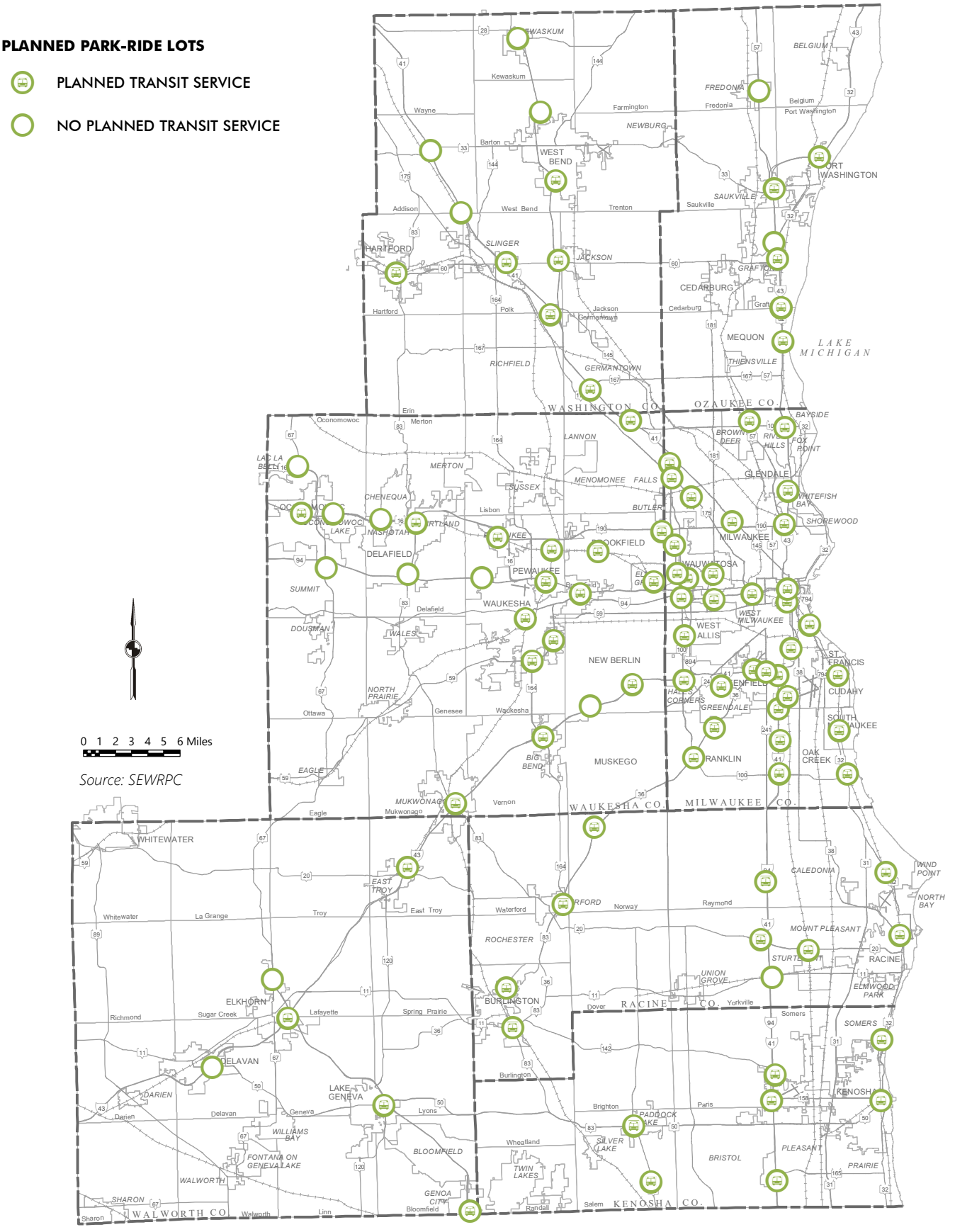
Recommendation 5.3: Price personal vehicle travel at its true cost

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

Map 2.12
Park-Ride Lots: VISION 2050

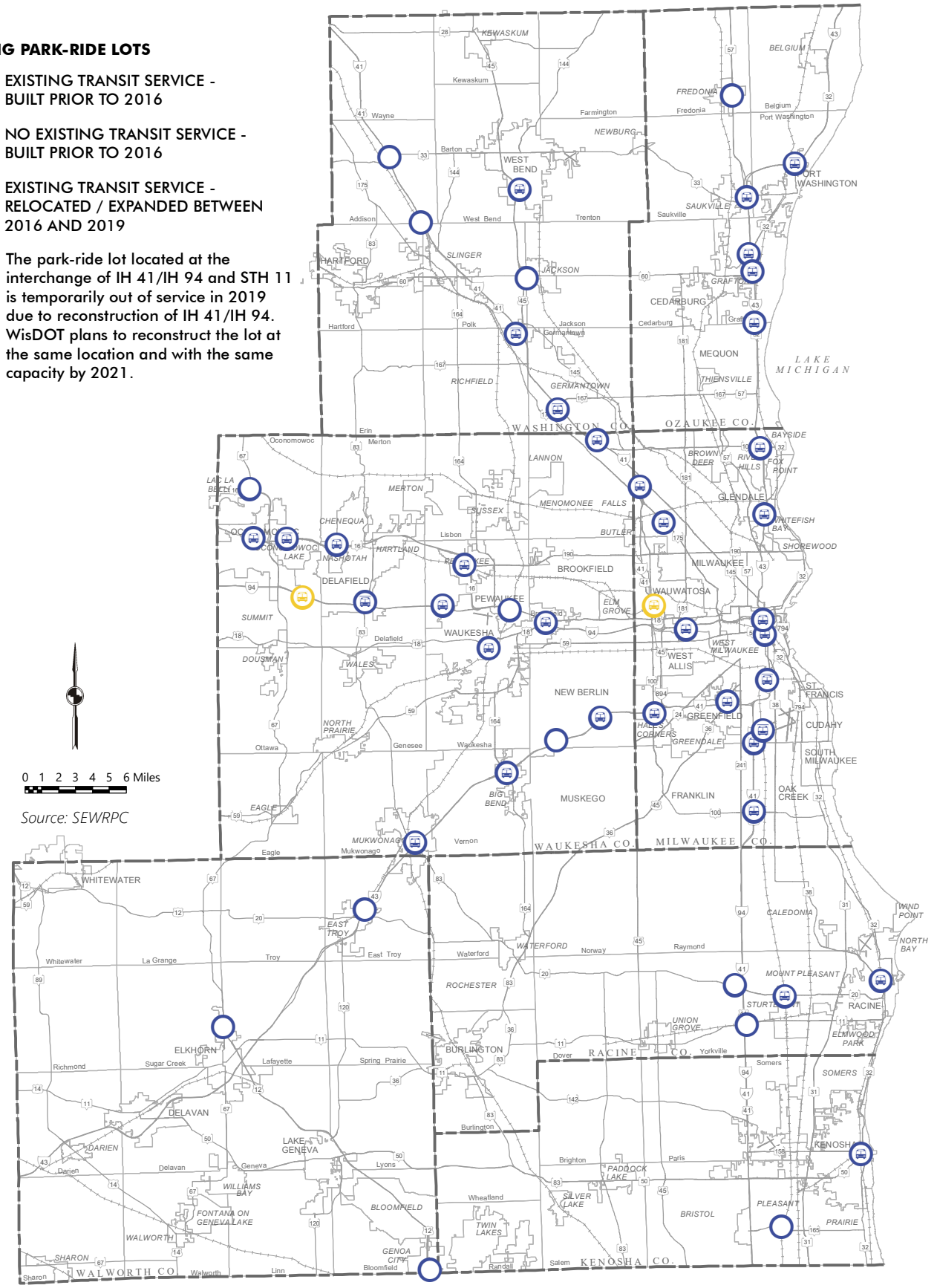


Map 2.13
Implementation of VISION 2050 Planned Park-Ride Lots: 2019

EXISTING PARK-RIDE LOTS

- EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- NO EXISTING TRANSIT SERVICE - BUILT PRIOR TO 2016
- 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 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.



Source: SEWRPC

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.

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 e-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 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 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

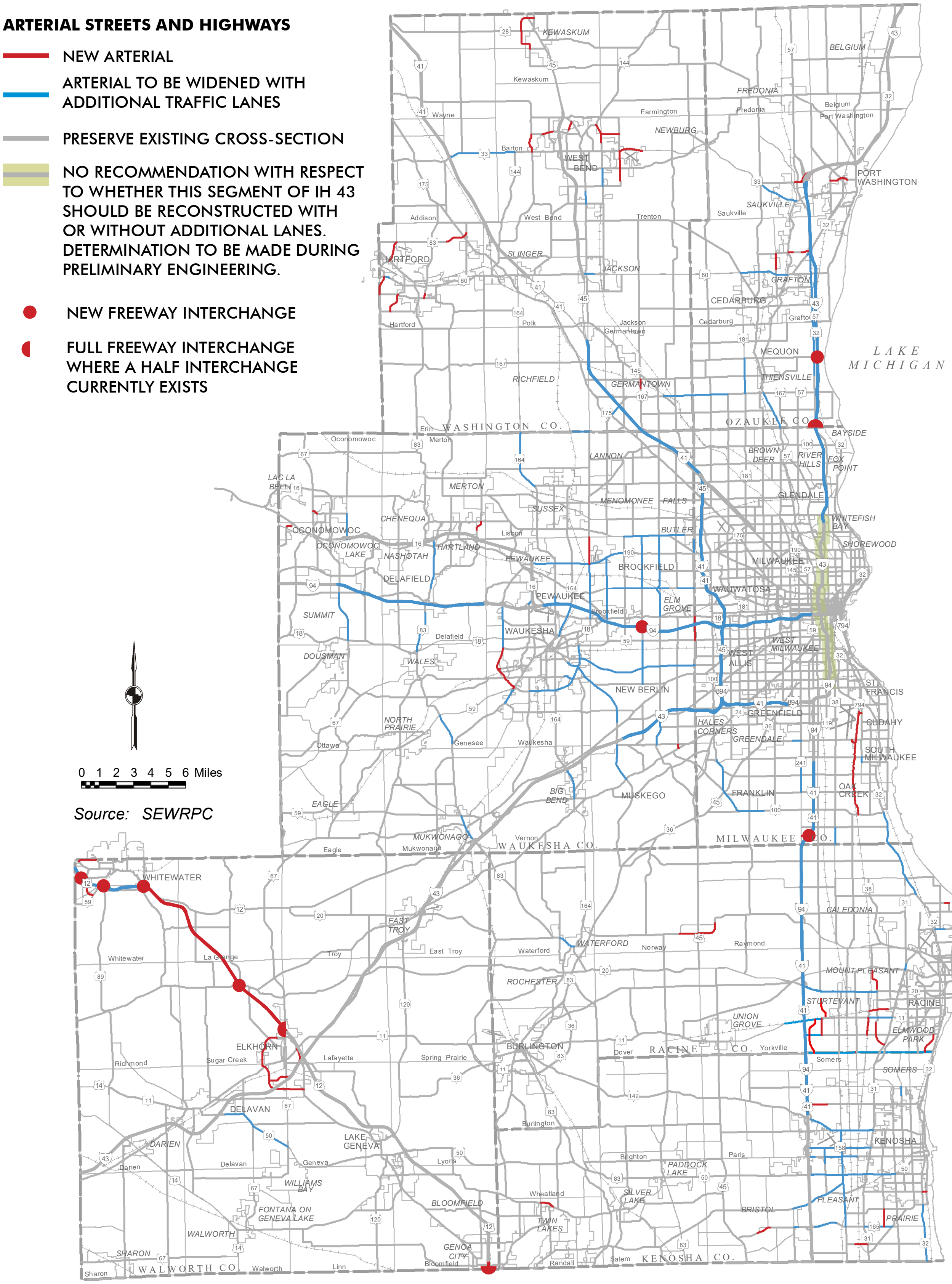
Since VISION 2050 was completed, there have been modest changes to the TDM practices in the Region. With relatively low fuel prices, and the absence of substantial employer-based incentives to reduce SOV commutes, there has been minimal demand for expanded TDM measures, policies, or practices. The mobile 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 totals 3,670 route-miles. Approximately 91 percent, or 3,326.1 of these route-miles, are recommended to be resurfaced and reconstructed to their existing traffic carrying capacity. Approximately 268.8 route-miles, or about 7 percent of these route-miles, are recommended for capacity expansion through widening to provide additional through traffic lanes. Approximately 75.1 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. This funded portion is referred to as the "Fiscally Constrained Transportation Plan

Map 2.14
Functional Improvements to the Arterial Street and Highway System in Southeastern Wisconsin: VISION 2050



Note: Includes amendments through December 2018

(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. 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

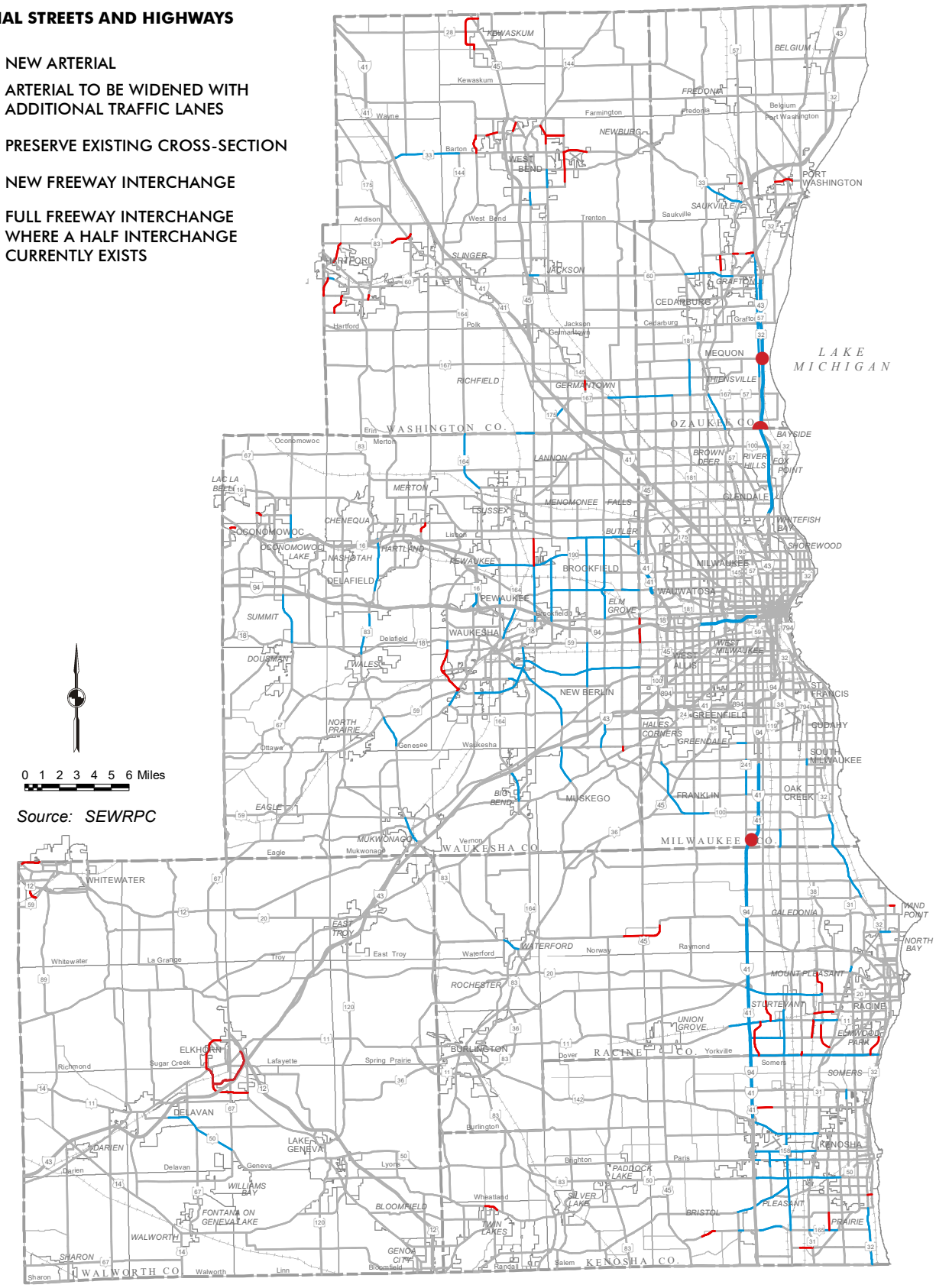
VISION 2050 recommends that the condition of all 3,600 miles of the roadways that are part of the Region's existing arterial street and highway system be preserved to maintain their ability to effectively carry higher levels of people and goods. Preserving the condition of the Region's arterial streets 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 480 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 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. WisDOT is currently in the process of developing the State asset management plan for Wisconsin. MAP-21 requires WisDOT to make its asset management plan available to the public and requires Metropolitan Planning Organizations (MPOs), such as SEWRPC, to integrate state asset management plans into their planning processes.

Map 2.15
Fiscally Constrained Arterial Street and Highway System

ARTERIAL STREETS AND HIGHWAYS

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



Source: SEWRPC

Note: Includes amendments through December 2018

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 consideration of 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 streets features can include accommodations such as sidewalks, bicycle lanes, or safe crossing treatments; aesthetic features, like plantings and trees; enhancing transit stops to make them safer, more accessible, and more comfortable; or facilitate more multi-modal trips by providing bicycle racks, sidewalk benches, or make development more accessible for pedestrians by modifying setbacks and access points.

Below is a selection of project examples that incorporate complete streets concepts and have been implemented since VISION 2050 was completed. Additional details about recently implemented bicycle facility improvements and public transit enhancements—both complete streets 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 in Wauwatosa.

- 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 addition, the City of Milwaukee passed a Complete Streets policy that directs the City to incorporate complete streets 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 streets concepts into the project development process.

Recommendation 6.3: Expand arterial capacity to address residual congestion

VISION 2050 recommends approximately 282.1 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 105.5 miles of existing freeways shown in blue on Map 2.14. In addition, VISION 2050 recommends 74.6 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, approximately 6.4 miles of new arterial facilities and 45 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:

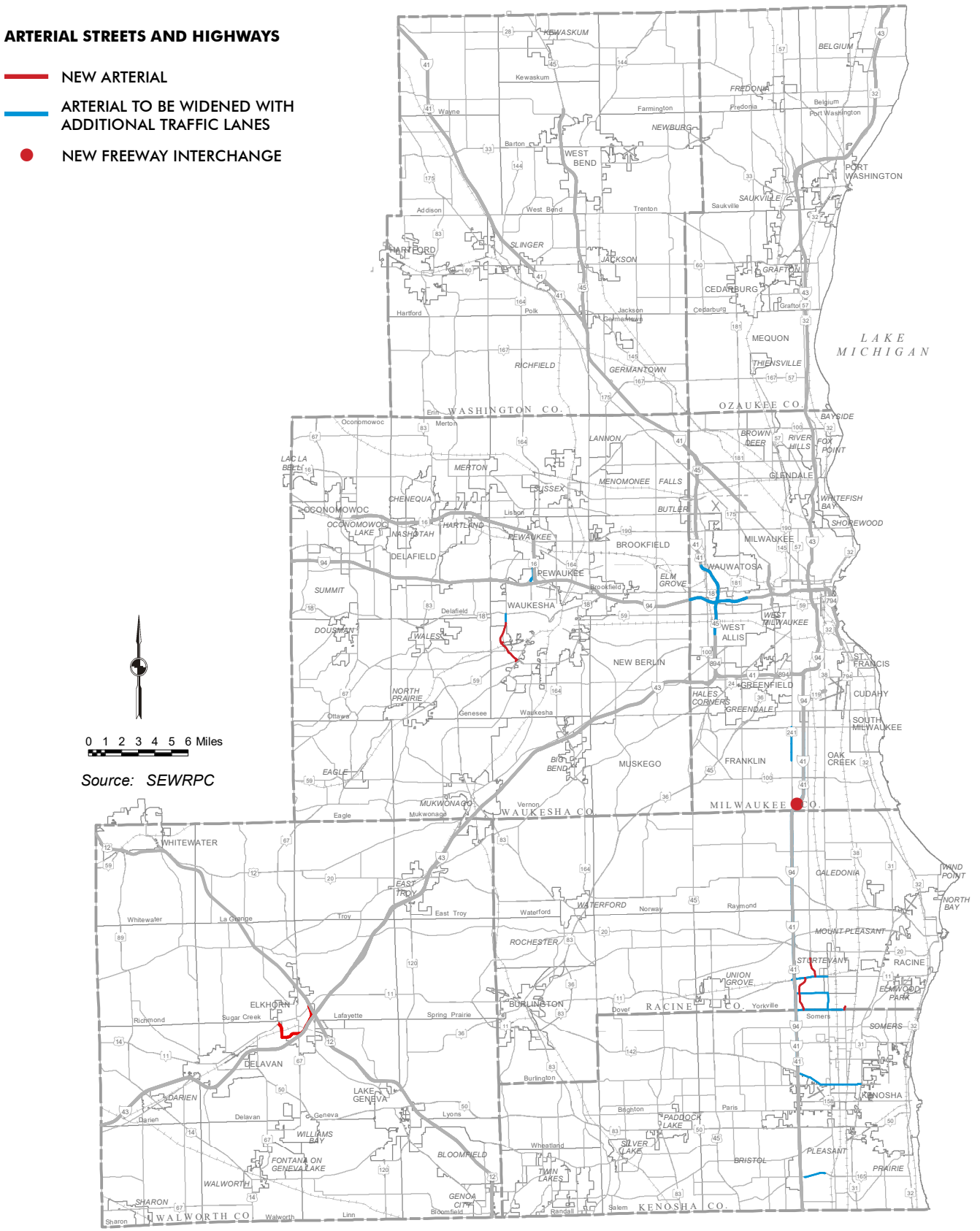
- The reconstruction of the Zoo Interchange, substantially completed in 2018

- 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

- The construction of the West Waukesha Bypass, which consists of a new four-lane divided highway from STH 59 to USH 18 in Waukesha County

- The reconstruction with additional lanes of South 27th St. (STH 241) between Rawson Avenue and Drexel Avenue in Milwaukee County

Map 2.16
Complete or In-Progress Functional Improvements to the Arterial Street and Highway System in Southeastern Wisconsin: 2016-2019



- The reconstruction with additional lanes of Braun Road, CTH KR, CTH H, and STH 11 and the construction of International Drive and Wisconn Valley Way in Racine County—all near the proposed Foxconn manufacturing campus

- 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 is expected to begin construction in 2020

Additionally, the 2019-2021 State budget provided dedicated funds for the completion 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 updated 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 is 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 on 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. 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 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 the Southeastern Wisconsin Region 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, the number of fatal crashes and fatalities decreased slightly by about 5 percent and 7 percent, respectively, between 2012 and 2018. 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, in the future 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 and Racine County were completed, and a new hazard mitigation plan was completed for Washington County. Ozaukee County and the City of Milwaukee are also currently undergoing the process to update their hazard mitigation plans. 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, it is estimated that 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, it is estimated that the percentage of pavement that is 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 6.4 miles, or 8.6 percent, of the planned 74.6 miles of new arterial facilities and 45 miles, or 16 percent, of the 282.1 miles of arterial facilities planned to be widened to carry 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 has 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, they 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 (see 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. As part of designating the CUFCs, Commission staff evaluated segments of WisDOT's Primary and Secondary Highway Freight Corridors not on the NHFN, oversize/overweight (OSOW) routes serving the Port of Milwaukee, utilizing truck volume, tonnage, and value data provided by WisDOT, and location of major industrial areas in the Region. Based on this evaluation and additional analysis completed for the WisDOT State Freight Plan, changes to the RHFN are currently being considered as part of this VISION 2050 update.

Projects located within the CUFCs and CRFCs would be eligible to receive newly established National Highway Freight Program (NHFP) funding. Once a project or set of improvements is completed within

Map 2.17
Regional Highway Freight Network: 2019

MAJOR FREIGHT INTERMODAL FACILITY

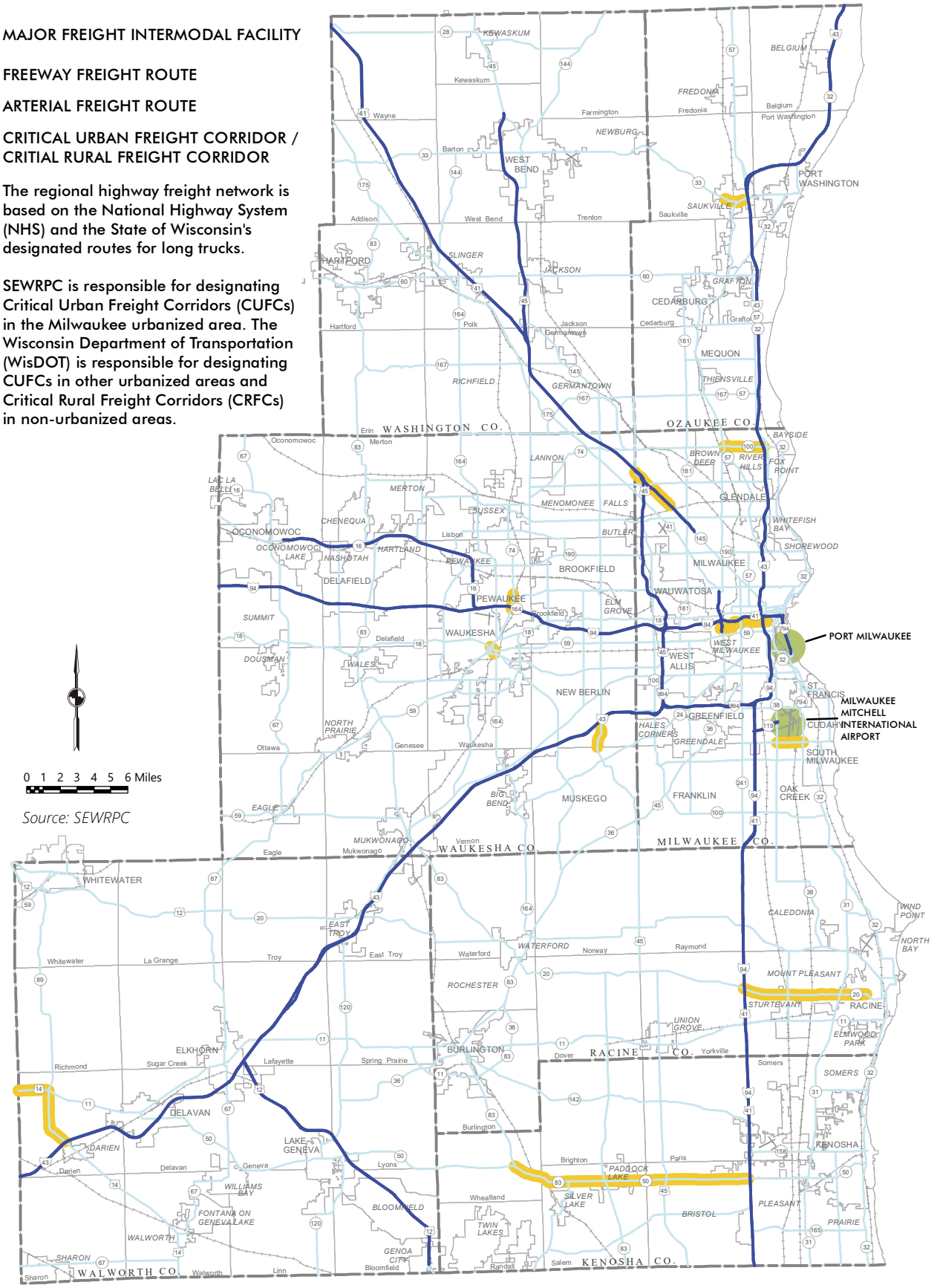
FREEWAY FREIGHT ROUTE

ARTERIAL FREIGHT ROUTE

CRITICAL URBAN FREIGHT CORRIDOR / CRITIAL RURAL FREIGHT CORRIDOR

Notes: 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.



Source: SEWRPC

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 currently designated CUFCs and CRFCs.

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. Currently, none of the projects identified in the SFP are located in Southeastern Wisconsin.

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. 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 2017, WisDOT formed 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 currently is not undertaking any 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 applied for Federal funding in July 2019 to support the project, and has begun 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 well-being 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 regional highway freight network
- 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 regional highway freight network 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 miles of 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 regional highway freight network
- 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 RPCs 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 formed the Wisconsin Freight Advisory Committee (FAC) in 2017 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 U.S. Department of Transportation, 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, 36.0 miles of planned arterial widenings have been implemented on the RHFN, which would be expected to improve the movement of freight on those facilities. 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 station 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. In addition, the Port of Milwaukee is implementing improvements to the rail lines that were utilized by a previously operated intermodal facility.

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, metropolitan planning organizations (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.[1] 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,[2] 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.

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[1] 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 July 2020.

[2] 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.