

# ALTERNATIVE LAND USE AND TRANSPORTATION PLANS

# 3



Credit: SEWRPC Staff

## 3.1 INTRODUCTION

This chapter presents a series of alternative regional land use and transportation plans prepared as part of the VISION 2050 planning process. The alternatives were developed through refinement of five conceptual land use and transportation scenarios, which were the focus of the third step in the VISION 2050 process.<sup>1</sup> The scenarios were developed to allow consideration of the long-term consequences of alternative future paths of developing the Region's land and transportation system. Public input, as well as input from the Commission's Advisory Committees on Regional Land Use Planning and Regional Transportation Planning, Environmental Justice Task Force, and VISION 2050 Task Forces on key areas of interest, were used to refine the conceptual scenarios into detailed alternatives.

Each alternative includes a detailed land use development pattern and transportation system, representing alternative visions for the Region. The alternatives were developed and evaluated using a set of objectives and criteria based on the Guiding Statements that form the initial vision for the Region, which is discussed in Chapter 1 of this volume. The preliminary recommended year 2050 regional land use and transportation plan for Southeastern Wisconsin (documented in Chapter 4 of this volume) was prepared based on consideration of this evaluation and public input on the alternatives. The goal of the preliminary recommended plan is to achieve a consensus vision for the regional land use development pattern and its supporting transportation system, which involved considering the most effective elements of the alternatives.

**The alternatives were developed through refinement of the conceptual scenarios.**

**The preliminary recommended plan was prepared based on the evaluation of the alternatives and public input.**

<sup>1</sup> An overview of the five conceptual scenarios and their evaluation is set forth in Chapter 2 of this Volume.

Section 3.2 of this chapter describes the land use development pattern and transportation system that constitutes each of the alternatives and Section 3.3 sets forth the evaluation of the alternatives, including plan objectives and evaluation criteria. Section 3.4 documents public feedback received on the evaluation of the alternatives, which was the focus of the fourth series of VISION 2050 workshops.

**A “Trend” alternative and two detailed alternative plans were developed and evaluated as the fourth step in the VISION 2050 process.**

### **3.2 DESCRIPTION OF ALTERNATIVE PLANS**

A baseline alternative, referred to as the Trend, and two detailed alternative plans, Alternative Plan I and Alternative Plan II, were developed for evaluation as the fourth step in the VISION 2050 planning process. The Trend is a projection of land use development and transportation investment trends to the year 2050 based primarily on changes experienced from 1990 to 2010, and was used as a comparison for Alternative Plans I and II. Alternative Plans I and II differ from the Trend by including more compact regional land use development patterns and changes in transportation system investments.

#### **Common Elements**

The Trend and Alternative Plans I and II differ in land use development pattern and transportation investment; however, they share some common elements. These common elements include:

- Regional population and employment projections
- Land use development and transportation projects that were committed to prior to the development of the alternatives
- Local government comprehensive plans
- Natural and agricultural resources
- Bicycle and pedestrian accommodations

**The amount of proposed growth by county varies between the alternatives.**

#### ***Regional Population and Employment Projections***

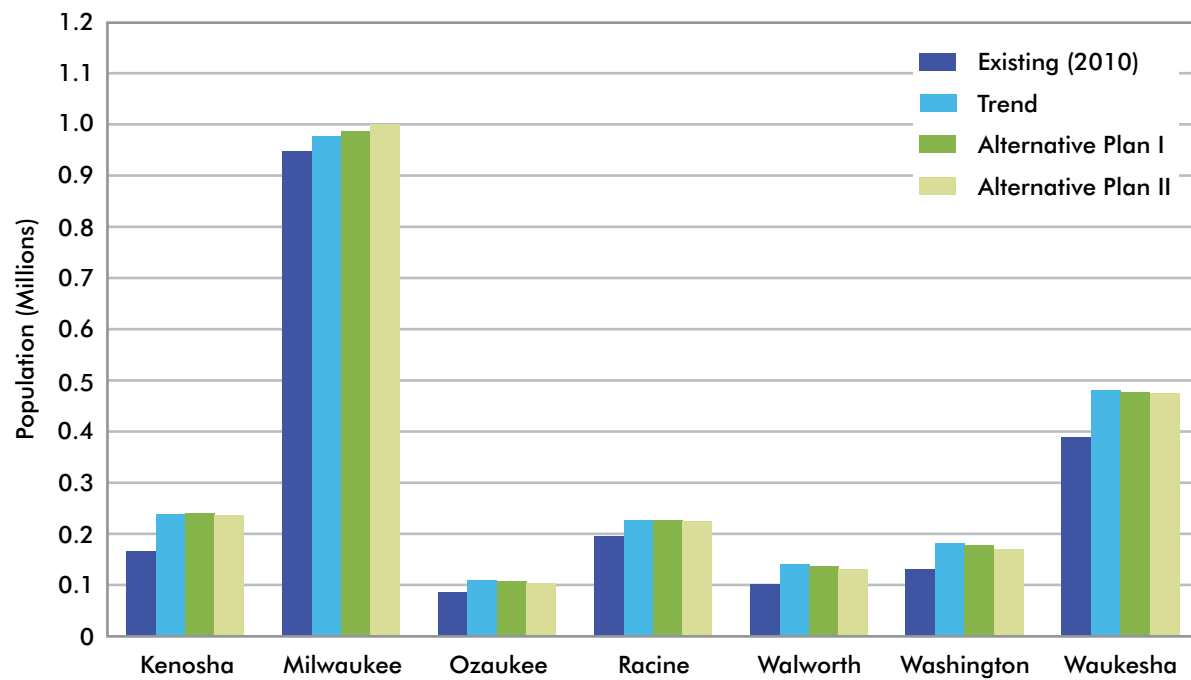
The alternatives are designed to accommodate the year 2050 regional intermediate-growth population and employment projections developed by the Commission for the VISION 2050 plan.<sup>2</sup> The Region’s population is projected to increase from about 2.02 million people in 2010 to 2.35 million people in 2050 (17 percent increase) and employment is projected to increase from about 1.18 million jobs in 2010 to 1.39 million jobs in 2050 (18 percent increase). The number of households is projected to increase from about 0.80 million in 2010 to about 0.97 million 2050 (22 percent). The amount of proposed growth accommodated by county varies between the alternatives, which is discussed under the descriptions of Alternative Plans I and II. Proposed population, household, and employment distributions by county under the Trend and Alternative Plans I and II is shown in Figures 3.1, 3.2, and 3.3, respectively.

#### ***Committed Land Use Development and Transportation Projects***

Preparing the alternatives involved allocating future increments in population, households, and employment to urban and rural areas of the Region. The allocations incorporated residential, commercial, and industrial developments that were already under construction during development of

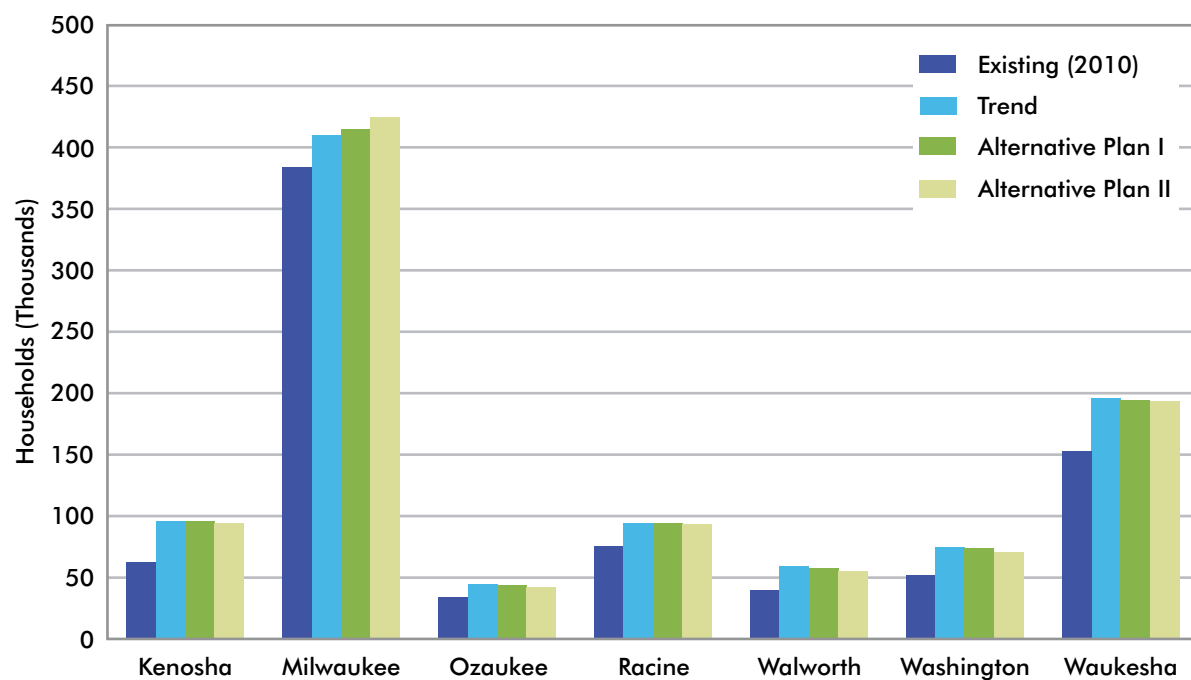
<sup>2</sup> The year 2050 population, household, and employment projections and their underlying methodology and assumptions are presented in Volume I, Chapter 6.

**Figure 3.1**  
Existing and Planned Population in the Region: 2010 and VISION 2050 Alternatives



Source: SEWRPC

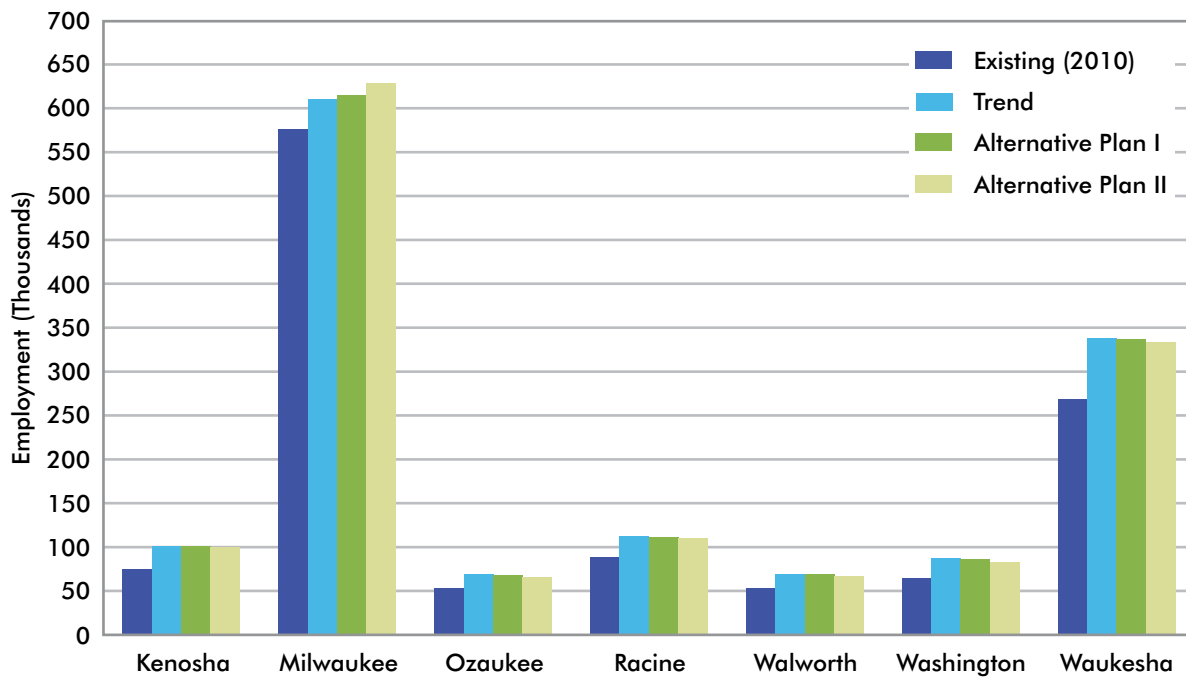
**Figure 3.2**  
Existing and Planned Households in the Region: 2010 and VISION 2050 Alternatives



Source: SEWRPC

**Figure 3.3**

**Existing and Planned Employment in the Region: 2010 and VISION 2050 Alternatives**



Source: SEWRPC

the alternatives. This information was obtained through meetings with staff or elected officials from sewer communities in the Region. Committed arterial highway capacity improvement and expansion projects and fixed-guideway transit projects were also incorporated into the Trend and Alternative Plans I and II. This included projects that were under construction, undergoing final engineering and design, or had a preferred alternative selected as part of preliminary engineering/environmental impact study at the time the alternatives were developed. They are shown on Map 3.1 and listed in Table 3.1.

**Local comprehensive plans were an important consideration in developing the alternatives.**

**Local Government Comprehensive Plans**

Local government comprehensive plans were an important consideration in developing the land use patterns for the alternatives because of their significance to local land use control decisions under the State comprehensive planning law. Households were allocated to areas designated for residential use or mixed use in local plans and jobs were allocated to areas designated for land uses compatible with employment in local plans, such as commercial, industrial, business park, and mixed use. Background discussion and analyses regarding local government comprehensive plans is presented in Volume I, Chapter 2 and a companion report documented in Appendix B to Volume I.

**Natural and Agricultural Resources**

Incremental households and employment were not allocated to areas with significant natural resource features under any of the alternatives, including primary environmental corridors, secondary environmental corridors, and isolated natural resource areas. Incremental households and employment were also excluded from other wetlands, woodlands, natural areas, critical species habitat sites, and park and open space sites outside environmental corridors. In addition, incremental households and employment were not allocated to farmland preservation areas (identified in county farmland preservation plans) under any of the alternatives.



### Map 3.1

## Committed Arterial Highway Capacity Improvement and Expansion Projects and Fixed-Guideway Transit Projects Included in the Trend and Alternative Plans I and II

#### ARTERIAL STREETS AND HIGHWAYS

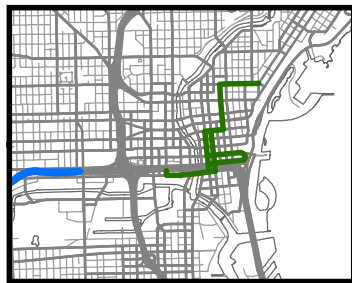
- PROPOSED NEW ARTERIAL
- ARTERIAL PROPOSED TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- OTHER ARTERIAL
- NEW SYSTEM INTERCHANGE
- ◐ CONVERSION OF HALF INTERCHANGE TO A FULL INTERCHANGE

#### FIXED-GUIDEWAY ROUTE

- STREETCAR

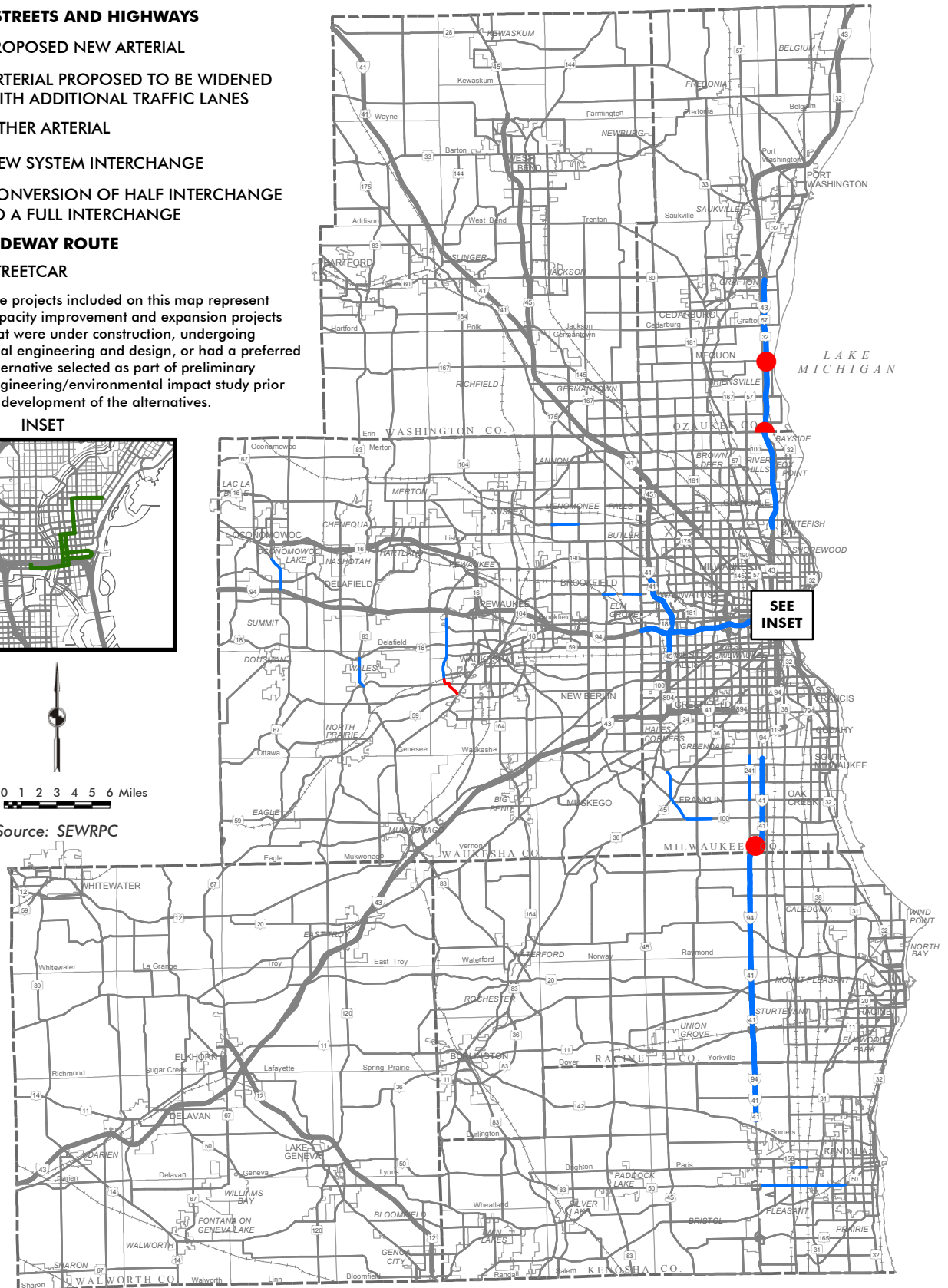
**Note:** The projects included on this map represent capacity improvement and expansion projects that were under construction, undergoing final engineering and design, or had a preferred alternative selected as part of preliminary engineering/environmental impact study prior to development of the alternatives.

#### INSET



0 1 2 3 4 5 6 Miles

Source: SEWRPC



**Table 3.1**  
**Committed Arterial Highway Capacity Improvement and Expansion Projects and**  
**Fixed-Guideway Transit Projects Included in the Trend and Alternative Plans I and II**

County	Improvement Type	Facility	Termini	Description
<b>Kenosha</b>	Widening	CTH K (60th Street)	CTH H to Union Pacific Railroad	Widen from two to four traffic lanes
		IH 94	STH 142 to Racine County line	Widen from six to eight traffic lanes
		STH 50	IH 94/USH 41 to 39th Avenue	Widen from four to six traffic lanes
<b>Milwaukee</b>	Fixed-Guideway Transit	Milwaukee Streetcar Phase 1	Milwaukee Intermodal Station to Burns-Commons	Construct streetcar line
		Milwaukee Streetcar Lakefront Extension (on E. Michigan Street and E. Clybourn Street)	N. Broadway to N. Lincoln Memorial Drive	Construct streetcar expansion
	Expansion	Elm Road extension	27th Street to IH 94	Construct two lanes on new alignment
		IH 94	Elm Road Interchange	Construct new interchange
	Widening	STH 241 (27th Street)	College Avenue to Drexel Avenue	Widen from four to six traffic lanes
		IH 43	Silver Spring Drive to STH 60	Widen from four to six traffic lanes
		IH 94	Racine County line to College Avenue	Widen from six to eight traffic lanes
		IH 94	70th Street to 16th Street	Widen from six to eight traffic lanes
		IH 94 (Zoo Interchange)	124th Street to 70th Street	Widen from six to eight traffic lanes
		IH 894 (Zoo Interchange)	Zoo Interchange to Lincoln Avenue	Widen from six to eight traffic lanes
		USH 45 (Zoo Interchange)	Zoo Interchange to Burleigh Street	Widen from six to eight traffic lanes
		Port Washington Road	Bender Road to Daphne Road	Widen from two to four traffic lanes
		USH 45/STH 100	Rawson Avenue to Drexel Avenue	Widen from four to six traffic lanes
		USH 45/STH 100 (Ryan Road)	Drexel Avenue to 60th Street	Widen from two to four traffic lanes
<b>Ozaukee</b>	Expansion	IH 43	Highland Road Interchange	Construct new interchange
		IH 43	County Line Road Interchange	Conversion of half to full interchange
<b>Racine</b>	Widening	IH 94	Kenosha County line to Milwaukee County line	Widen from six to eight traffic lanes
<b>Waukesha</b>	Expansion	Waukesha West Bypass	CTH X to Sunset Drive	Construct four lanes on new alignment
	Widening	CTH VV (Silver Spring Drive)	CTH Y (Lannon Road) to Jackson Drive	Widen from two to four traffic lanes
		CTH M (North Avenue)	Lilly Road to 124th Street	Widen from two to four traffic lanes
		CTH M (North Avenue)	Pilgrim Road to 147th Street	Widen from two to four traffic lanes
		CTH TT/Meadowbrook Road	Sunset Drive (CTH D) to Rolling Ridge Drive	Widen from two to four traffic lanes
		STH 67 (Summit Avenue)	IH 94 to Summit Avenue	Widen from four to five/six traffic lanes
		STH 83	USH 18 (High Meadow Lane) to CTH DE	Widen from two to four traffic lanes

Note: The projects included in this table represent capacity improvement and expansion projects that were under construction, undergoing final engineering and design, or had a preferred alternative selected as part of preliminary engineering/environmental impact study at the time the alternatives were developed.

Source: SEWRPC

### ***Bicycle and Pedestrian Accommodations***

While the bicycle and pedestrian element differs between the alternatives, all three alternatives envision that on-street bicycle accommodations will be provided throughout the arterial street and highway system, the off-street path system will be significantly expanded, and pedestrian facilities will be designed and constructed consistent with Americans with Disabilities Act (ADA) requirements to accommodate people with disabilities. The differences between the alternatives are described later in the chapter.

### **Alternative Plans – Land Use Component**

The Trend and Alternative Plans I and II are designed to accommodate the year 2050 regional intermediate-growth population and employment projections through different land use development patterns. The following section provides a description of those development patterns and how they differ between the alternatives and the existing land use pattern of the Region.

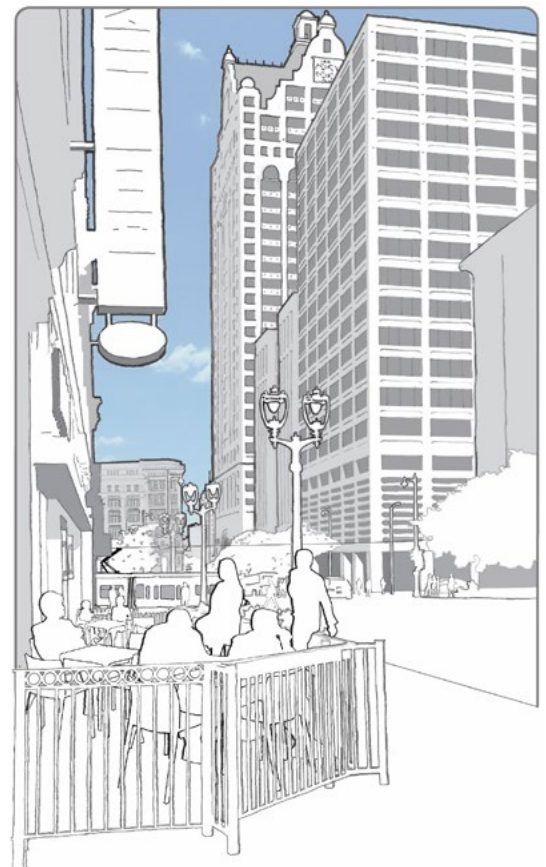
### ***Alternative Plan Land Use Categories***

The land use development patterns in the Trend and Alternative Plans I and II were developed by allocating households and jobs to the following land use categories, which represent a variety of development densities and mixes of uses.

#### **► Mixed-Use City Center**

Mixed-Use City Center is found in the core of the most densely populated areas of the Region, particularly in the City of Milwaukee. Mixed-Use City Center includes offices, stores, services, apartments, condominiums, and homes with small yards. Many of the offices, apartments, and condominiums may be in mid-rise buildings and high-rise towers (particularly in and around downtown Milwaukee). There may also be stores and services located on the ground floors of these buildings. There are fewer homes with yards in Mixed-Use City Center than in other areas of the Region, which makes common open space such as public parks very important.

People can walk to many everyday destinations in Mixed-Use City Center from their homes. In addition, transit access is typically very high, making Mixed-Use City Center particularly suitable for transit-oriented development (TOD). TODs in Mixed-Use City Center typically include a mix of apartments, condominiums, stores, services, and offices. They are found within easy walking distance from a fixed-guideway transit station (bus rapid transit, light rail, or commuter rail). Their locations near transit stations create a high demand for housing and businesses, making TODs denser than other types of development. There are also major employment centers in Mixed-Use City Center.



**Mixed-Use City Center**



**Mixed-Use Traditional Neighborhood**

### ► **Mixed-Use Traditional Neighborhood**

Mixed-Use Traditional Neighborhood is also found in the more densely populated areas of the Region, such as in Milwaukee County and in the Cities of Kenosha, Racine, and Waukesha. Mixed-Use Traditional Neighborhood includes stores, services, offices, apartments, and condominiums. Mixed-Use Traditional Neighborhood also includes more homes with small yards than Mixed-Use City Center. The offices, apartments, and condominiums may be in mid-rise and low-rise buildings with stores and services on the ground floor. Although there are more homes with yards in Mixed-Use Traditional Neighborhood than Mixed-Use City Center, there is still high demand for public open space.

People can walk to many everyday destinations in Mixed-Use Traditional Neighborhood and transit access is very high, similar to Mixed-Use City Center. TODs are also found in Mixed-Use Traditional Neighborhood. There are major employment centers as well.



**Small Lot Traditional Neighborhood (showing lots of about 7,000 square feet)**

### ► **Small Lot Traditional Neighborhood**

Small Lot Traditional Neighborhood is found within and at the edges of cities and villages throughout the Region. These areas typically include a mix of housing types such as homes with small lots (less than one-quarter acre in size) and apartments and condominiums. Small Lot Traditional Neighborhood also includes a mix of stores, services, and offices. The small yards and mix of building types means new development can be served efficiently with public sewer and water. Development can also be served efficiently by public transit. Major employment centers may be found in Small Lot Traditional Neighborhood adjacent to highways. TODs may also be found in Small Lot Traditional Neighborhood. Small Lot Traditional Neighborhood is not as dense as Mixed-Use City Center or Mixed-Use Traditional Neighborhood; however, people can still walk to many destinations from their homes.



**Medium Lot Neighborhood (showing lots of about 15,000 square feet)**

### ► **Medium Lot Neighborhood**

Medium Lot Neighborhood is typically found at the edges of cities and villages throughout the Region. These areas primarily include homes on lots of one-quarter acre to just under one-half acre in size. There may also be a mix of buildings with apartments and condominiums. Stores and services may be found in Medium Lot Neighborhood, with major employment centers along highways. People may be able to walk to some destinations such as parks and schools. It may be more difficult to walk to stores and services.



Medium Lot Neighborhood is served by public sewer and water. Serving these areas with public transit is possible, but may not be as efficient as higher-density areas. TODs are not generally located in Medium Lot Neighborhood, with the exception of commuter rail station areas.

► **Large Lot Neighborhood**

Large Lot Neighborhood may be found at the edges of cities and villages, where it is served by public sewer and water, but may also be found outside cities and villages with private onsite wastewater treatment and wells. Residential development largely includes homes on lots of a half-acre to an acre in size. Productive agricultural land may be consumed because of the lower-density and somewhat scattered development pattern. Large Lot Neighborhood cannot be efficiently served by public transit, and there would be no TOD. People would find it difficult to walk to destinations such as stores, parks, and schools from their homes.



**Large Lot Neighborhood (showing lots of about 1/2 acre)**

► **Large Lot Exurban**

Large Lot Exurban is typically found outside cities and villages with private onsite wastewater treatment and wells, where it may consume productive agricultural land. Large Lot Exurban typically includes homes on lots of 1.5 acres to five acres in size. There are no TODs and public transit cannot efficiently serve Large Lot Exurban. It is difficult for people to walk from their homes to destinations such as stores, parks, and schools.



**Large Lot Exurban (showing lots of about 1.5 acres)**

► **Rural Estate**

Rural Estate includes homes found outside cities and villages with private onsite wastewater treatment and wells. Cluster subdivision design can be used to accommodate a limited amount of rural estate development while retaining “rural character” and reducing consumption of productive agricultural land. Cluster subdivision designs generally involve locating homes on smaller lots in clusters to preserve open space with significant natural features or productive farmland, resulting in an overall density of one home per five acres.



**Rural Estate (showing one-acre lots using cluster subdivision design)**

► **Agricultural Land**

Agricultural Land includes land identified for farmland preservation in adopted county farmland preservation plans. Agricultural Land also includes land outside preservation areas that is covered by National Resource Conservation Service (NRCS) Class I and II soils that are suitable for a wide range of crops, otherwise known as prime agricultural land. Other lands that are farmed and not developed with other uses are included in Agricultural Land. The soils covering these lands may be suitable for a smaller range of crops and require more extensive conservation practices than Class I and II soils.



**Primary environmental corridor includes the most important elements of the Region's natural resource base.**

### ► **Primary Environmental Corridor**

Primary environmental corridor (PEC) includes the most important elements of the Region's natural resource base, such as woodlands, wetlands, prairies, wildlife habitat, and surface waters and related shorelands and floodplains. PEC may also include elements such as park and open space sites, scenic views, natural areas, and critical species habitat sites. The elements found in PEC often occur in linear patterns along major stream valleys, the Lake Michigan shoreline, around major inland lakes, and the Kettle Moraine.

Secondary environmental corridors also contain a variety of resource elements, often remnant resources from primary corridors that were developed for urban or agricultural uses. Secondary corridors are smaller than primary corridors and often connect to primary corridors. Isolated natural resource areas contain natural resource elements that have been separated from the environmental corridors. Secondary corridors and isolated natural resources areas are generally not considered of regional significance and consequently are not shown on the existing and planned land use maps. However, such resources may be important at the local level and should be considered for preservation by local governments in the development of local comprehensive plans.

### **Alternative Regional Development Patterns**

Maps and tables in this section present new household and job allocations, total planned households and employment, and alternative planned land uses for the Trend and Alternative Plans I and II.<sup>3</sup> Household and employment allocations are presented in Tables 3.2 and 3.3, and shown in Figures 3.4 and 3.5 and on Maps 3.3 through 3.8. Total existing and planned population, households, and employment are presented in Tables 3.4 through 3.6. The existing and planned development patterns of the Region using the alternative plan land use categories are shown on Maps 3.9 through 3.12 and are summarized in Table 3.7. Incremental households and jobs allocated to the alternative plan land uses categories are presented in Table 3.8. In addition, residential structure type data are presented in Table 3.9 and allocations to areas with fixed-guideway transit stations are presented in Table 3.10.

#### *Trend*

A significant amount of new development under the Trend is at the edges of existing cities and villages. The character of this development is typically a continuation of the adjacent existing development, although the homes and yards may become larger and it may become more difficult for residents to walk to destinations such as businesses, parks, and schools. It also becomes less cost effective to serve new development with public sewer, water, and transit. Businesses located in some of these areas may be difficult to reach by public transit.

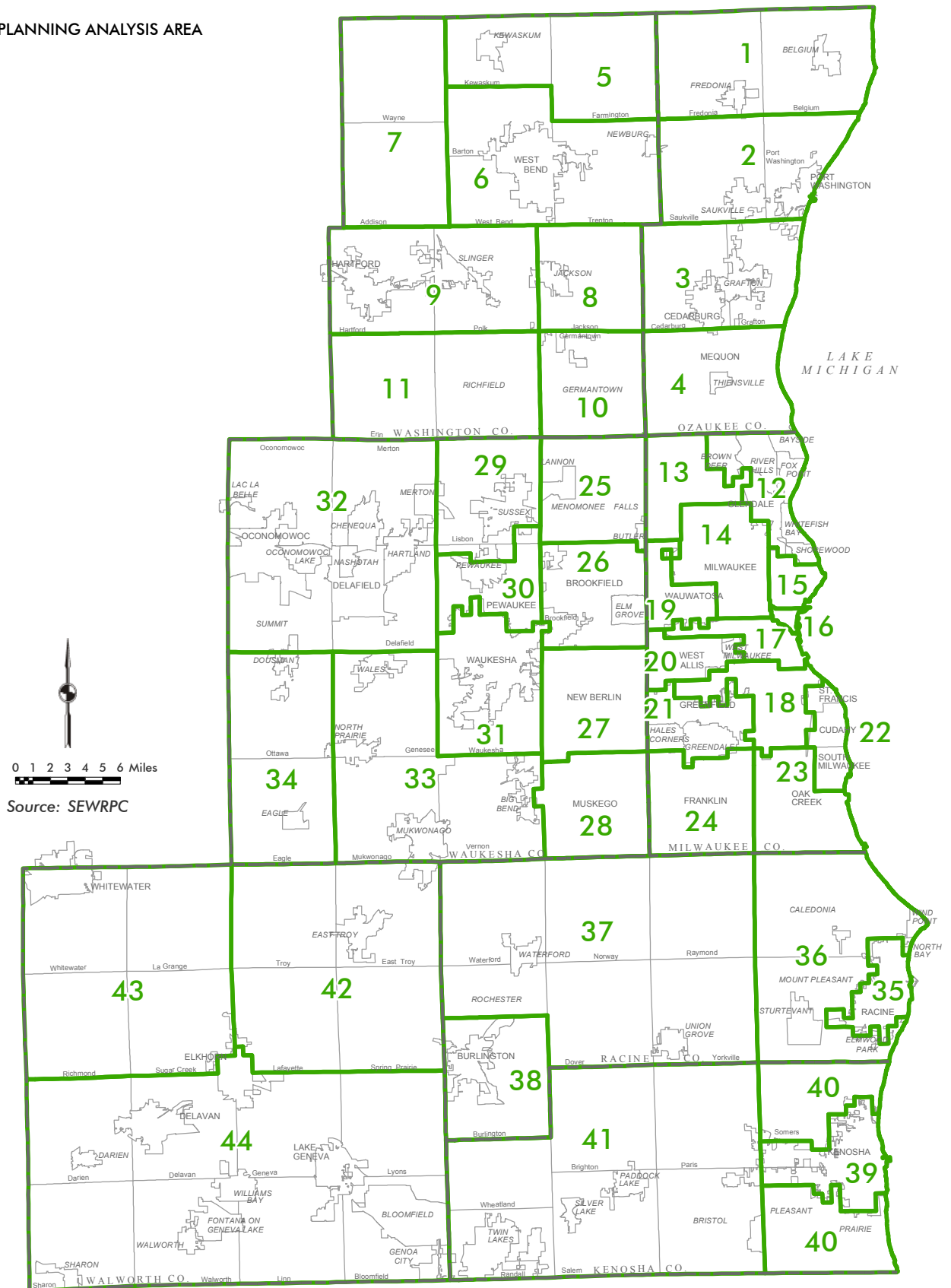
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<sup>3</sup> Several of the tables in this section present data using 44 planning analysis areas (PAA). PAAs were identified to facilitate the data collection and analysis necessary to develop and evaluate the Trend and Alternative Plans. The factors used in determining PAAs include municipal boundaries and census tracts, existing and potential public sewer and water service areas, existing and potential areas served by public transit, travel patterns centered on major commercial and industrial land use concentrations, school district boundaries, soil types, and natural and manmade barriers such as environmental corridors and major transportation corridors. Map 3.2 shows the PAAs in relation to counties and communities in the Region.

## Map 3.2 VISION 2050 Planning Analysis Areas

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PLANNING ANALYSIS AREA



**Table 3.2**  
**Incremental Households by VISION 2050 Alternative**

County	Planning Analysis Area	Trend		Alternative Plan I		Alternative Plan II	
		Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
Ozaukee	1	1,050	0.6	1,110	0.6	900	0.5
	2	2,390	1.4	2,280	1.3	1,990	1.2
	3	4,380	2.5	4,390	2.5	3,640	2.1
	4	2,460	1.4	1,870	1.1	1,670	1.0
	Subtotal	10,280	6.0	9,650	5.6	8,200	4.8
Washington	5	2,640	1.5	1,470	0.9	1,180	0.7
	6	5,310	3.1	6,820	4.0	5,980	3.5
	7	1,760	1.0	900	0.5	720	0.4
	8	2,630	1.5	2,700	1.6	2,220	1.3
	9	5,380	3.1	5,550	3.2	4,760	2.8
	10	2,770	1.6	3,710	2.2	3,060	1.8
	11	2,230	1.3	620	0.4	570	0.3
	Subtotal	22,720	13.2	21,770	12.6	18,490	10.7
Milwaukee	12	1,300	0.8	1,290	0.8	1,560	0.9
	13	2,220	1.3	2,200	1.3	2,840	1.6
	14	2,510	1.5	3,630	2.1	5,990	3.5
	15	2,150	1.2	3,550	2.1	4,120	2.4
	16	750	0.4	2,270	1.3	3,010	1.7
	17	1,190	0.7	2,080	1.2	2,600	1.5
	18	1,020	0.6	1,630	0.9	2,050	1.2
	19	1,360	0.8	1,560	0.9	4,930	2.9
	20	1,240	0.7	1,010	0.6	1,880	1.1
	21	2,750	1.6	2,430	1.4	2,870	1.7
	22	1,510	0.9	1,830	1.1	1,860	1.1
	23	5,010	2.9	4,370	2.5	4,780	2.8
	24	2,970	1.7	2,620	1.5	2,620	1.5
	Subtotal	25,980	15.1	30,470	17.7	41,110	23.9
Waukesha	25	3,400	2.0	3,970	2.3	3,860	2.2
	26	3,170	1.8	5,280	3.1	5,470	3.2
	27	3,360	1.9	3,270	1.9	3,150	1.8
	28	3,280	1.9	3,040	1.8	2,880	1.7
	29	4,230	2.5	3,210	1.9	3,020	1.8
	30	2,300	1.3	3,200	1.9	3,310	1.9
	31	5,030	2.9	6,980	4.1	6,900	4.0
	32	10,160	5.9	8,960	5.2	8,660	5.0
	33	5,850	3.4	2,870	1.7	2,520	1.5
	34	2,340	1.4	890	0.5	660	0.4
	Subtotal	43,120	25.0	41,670	24.2	40,430	23.5
Racine	35	1,760	1.0	2,030	1.2	2,060	1.2
	36	10,690	6.2	11,010	6.4	10,550	6.1
	37	4,160	2.4	3,580	2.1	3,380	2.0
	38	1,490	0.9	1,470	0.9	1,400	0.8
	Subtotal	18,100	10.5	18,090	10.5	17,390	10.1
Kenosha	39	4,410	2.6	5,130	3.0	5,190	3.0
	40	15,330	8.9	15,930	9.2	15,950	9.3
	41	13,080	7.6	11,760	6.8	10,390	6.0
	Subtotal	32,820	19.1	32,820	19.0	31,530	18.3
Walworth	42	2,760	1.6	2,310	1.3	1,860	1.1
	43	3,850	2.2	2,800	1.6	2,500	1.5
	44	12,680	7.4	12,730	7.4	10,800	6.3
	Subtotal	19,290	11.2	17,840	10.3	15,160	8.8
Region	Total	172,310	100.0	172,310	100.0	172,310	100.0

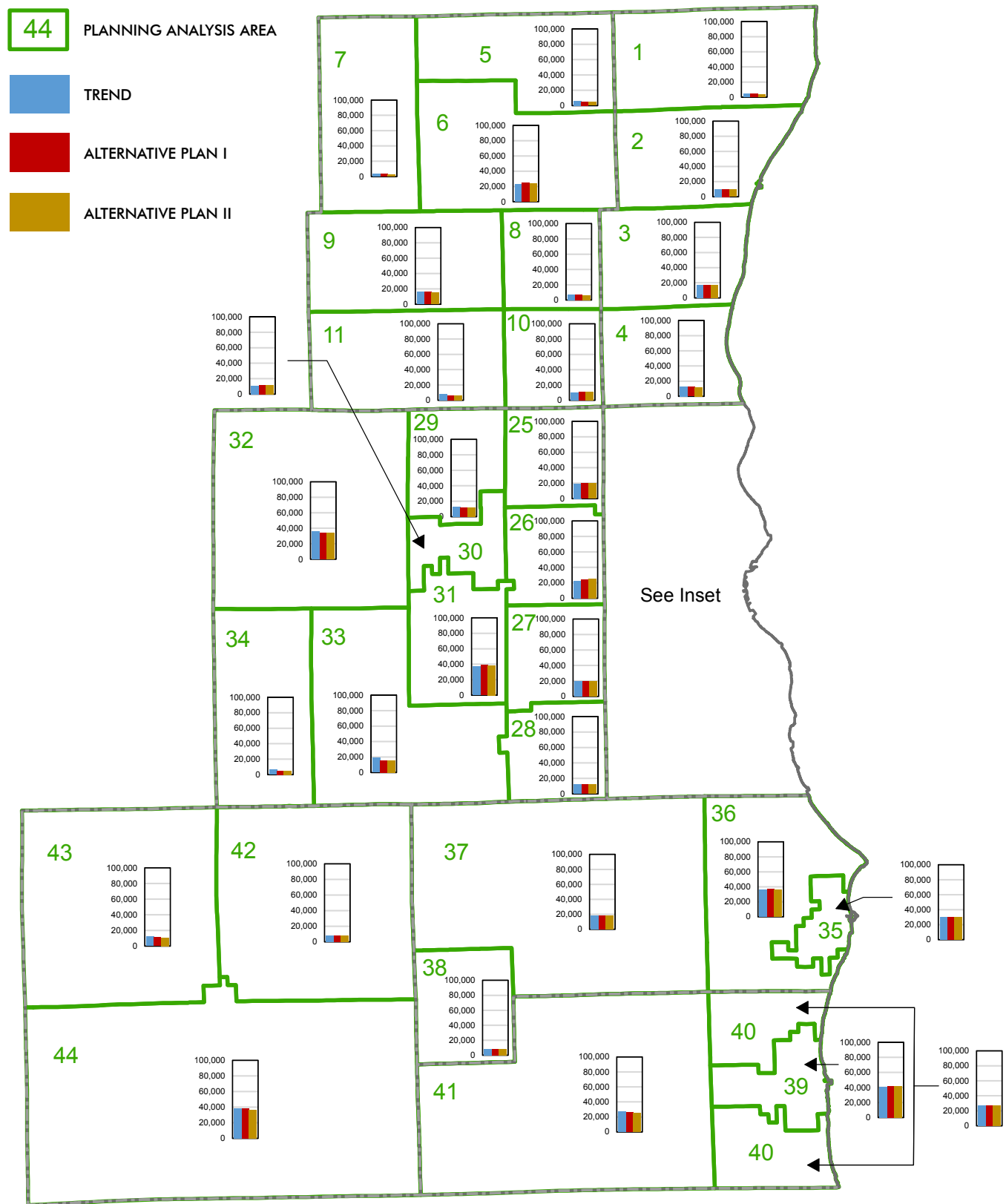
Source: SEWRPC

**Table 3.3**  
**Incremental Employment (Jobs) by VISION 2050 Alternative**

County	Planning Analysis Area	Trend		Alternative Plan I		Alternative Plan II	
		Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
Ozaukee	1	1,790	0.9	2,080	1.0	1,610	0.8
	2	3,960	1.9	4,150	2.0	3,270	1.6
	3	7,090	3.4	5,550	2.6	4,740	2.3
	4	3,940	1.9	3,990	1.9	3,280	1.6
	Subtotal	16,780	8.0	15,770	7.5	12,900	6.1
Washington	5	1,310	0.6	900	0.4	730	0.3
	6	5,750	2.7	7,500	3.6	6,100	2.9
	7	1,680	0.8	770	0.4	620	0.3
	8	790	0.4	1,000	0.5	820	0.4
	9	5,800	2.8	6,280	3.0	5,100	2.4
	10	5,100	2.4	4,730	2.2	4,040	1.9
	11	3,080	1.5	1,320	0.6	1,230	0.6
	Subtotal	23,510	11.2	22,500	10.7	18,640	8.9
Milwaukee	12	2,430	1.2	1,690	0.8	1,980	0.9
	13	2,250	1.1	1,490	0.7	2,820	1.3
	14	2,230	1.1	3,580	1.7	7,170	3.4
	15	870	0.4	2,600	1.2	3,060	1.5
	16	3,530	1.7	8,220	3.9	8,370	4.0
	17	2,660	1.3	3,890	1.9	4,580	2.2
	18	2,510	1.2	3,120	1.5	4,200	2.0
	19	2,760	1.3	2,920	1.4	4,990	2.4
	20	2,990	1.4	2,330	1.1	4,230	2.0
	21	2,970	1.4	1,940	0.9	2,530	1.2
	22	1,450	0.7	1,620	0.8	1,640	0.8
	23	3,750	1.8	2,790	1.3	3,830	1.8
	24	3,110	1.5	2,380	1.1	2,930	1.4
	Subtotal	33,510	15.9	38,570	18.3	52,330	24.9
Waukesha	25	7,490	3.6	8,180	3.9	7,690	3.7
	26	7,920	3.8	11,200	5.3	11,070	5.3
	27	6,750	3.2	5,830	2.8	5,540	2.6
	28	3,530	1.7	2,730	1.3	2,590	1.2
	29	4,120	2.0	3,510	1.7	3,340	1.6
	30	6,820	3.2	6,670	3.2	6,910	3.3
	31	9,250	4.4	10,190	4.8	9,840	4.7
	32	12,920	6.1	11,460	5.5	10,820	5.1
	33	9,120	4.3	6,920	3.3	6,490	3.1
	34	1,570	0.7	780	0.4	740	0.4
	Subtotal	69,490	33.1	67,470	32.1	65,030	30.9
Racine	35	3,250	1.5	4,820	2.3	4,640	2.2
	36	9,750	4.6	10,090	4.8	9,700	4.6
	37	7,790	3.7	4,610	2.2	4,370	2.1
	38	3,160	1.5	3,420	1.6	3,240	1.5
	Subtotal	23,950	11.4	22,940	10.9	21,950	10.4
Kenosha	39	6,900	3.3	7,990	3.8	7,860	3.7
	40	8,010	3.8	8,860	4.2	8,750	4.2
	41	11,470	5.5	9,530	4.5	9,120	4.3
	Subtotal	26,380	12.5	26,380	12.5	25,730	12.2
Walworth	42	3,180	1.5	2,660	1.3	2,150	1.0
	43	2,520	1.2	2,230	1.1	1,840	0.9
	44	10,910	5.2	11,710	5.6	9,660	4.6
	Subtotal	16,610	7.9	16,600	7.9	13,650	6.5
Region	Total	210,230	100.0	210,230	100.0	210,230	100.0

Source: SEWRPC

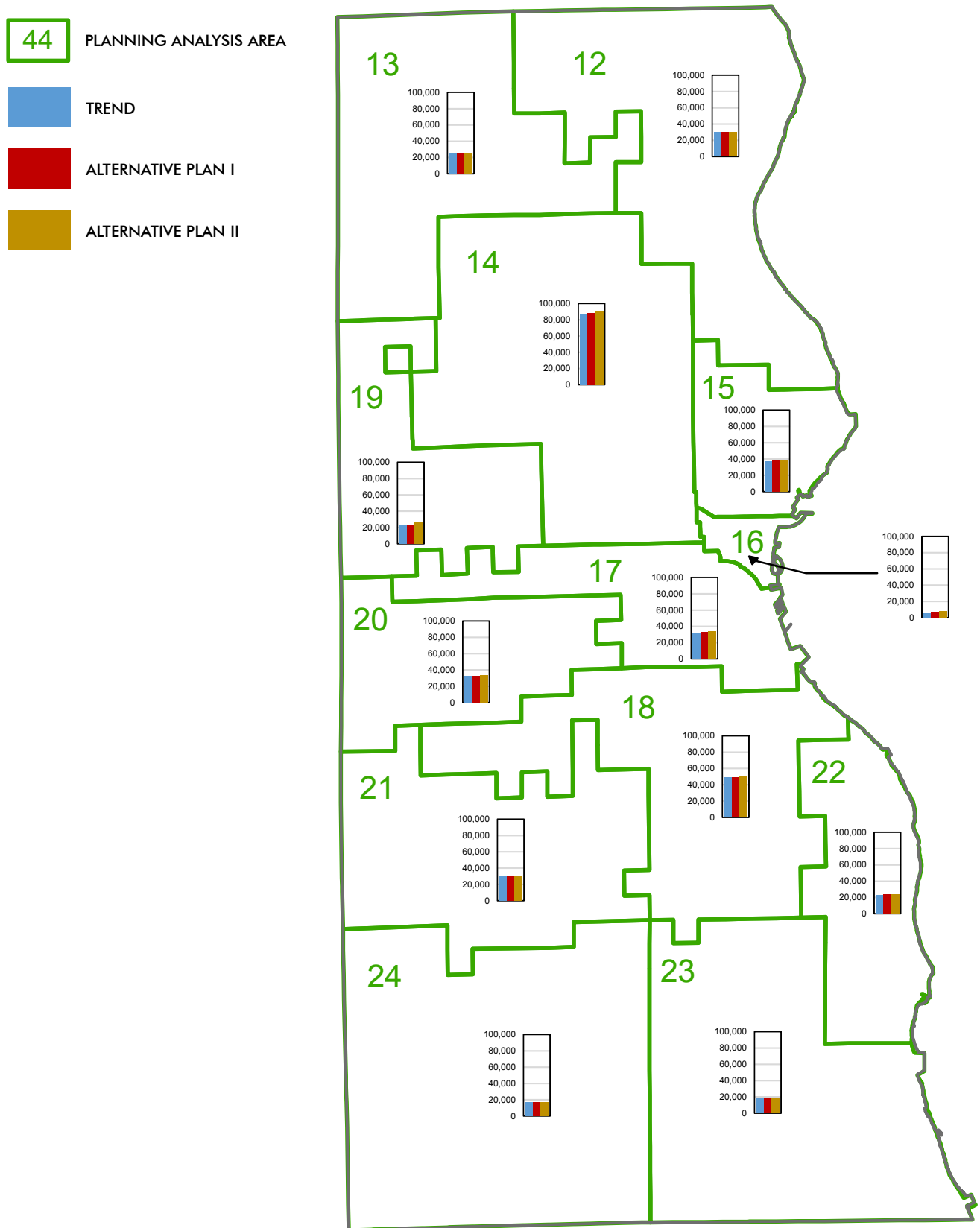
**Figure 3.4**  
**Total Households by Planning Analysis Area: 2050**



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

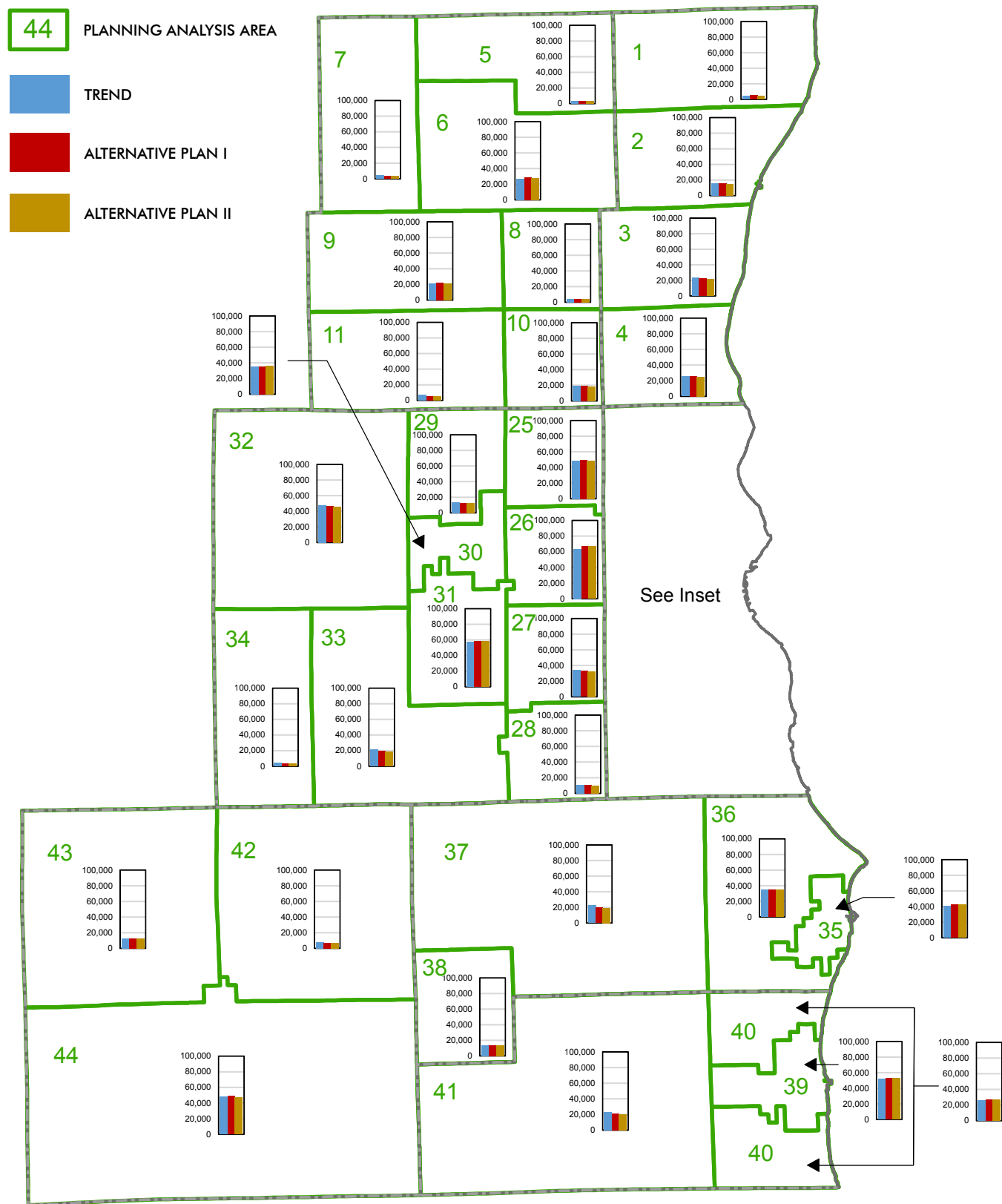


**Figure 3.4 (Continued)**  
**Inset for Milwaukee County**



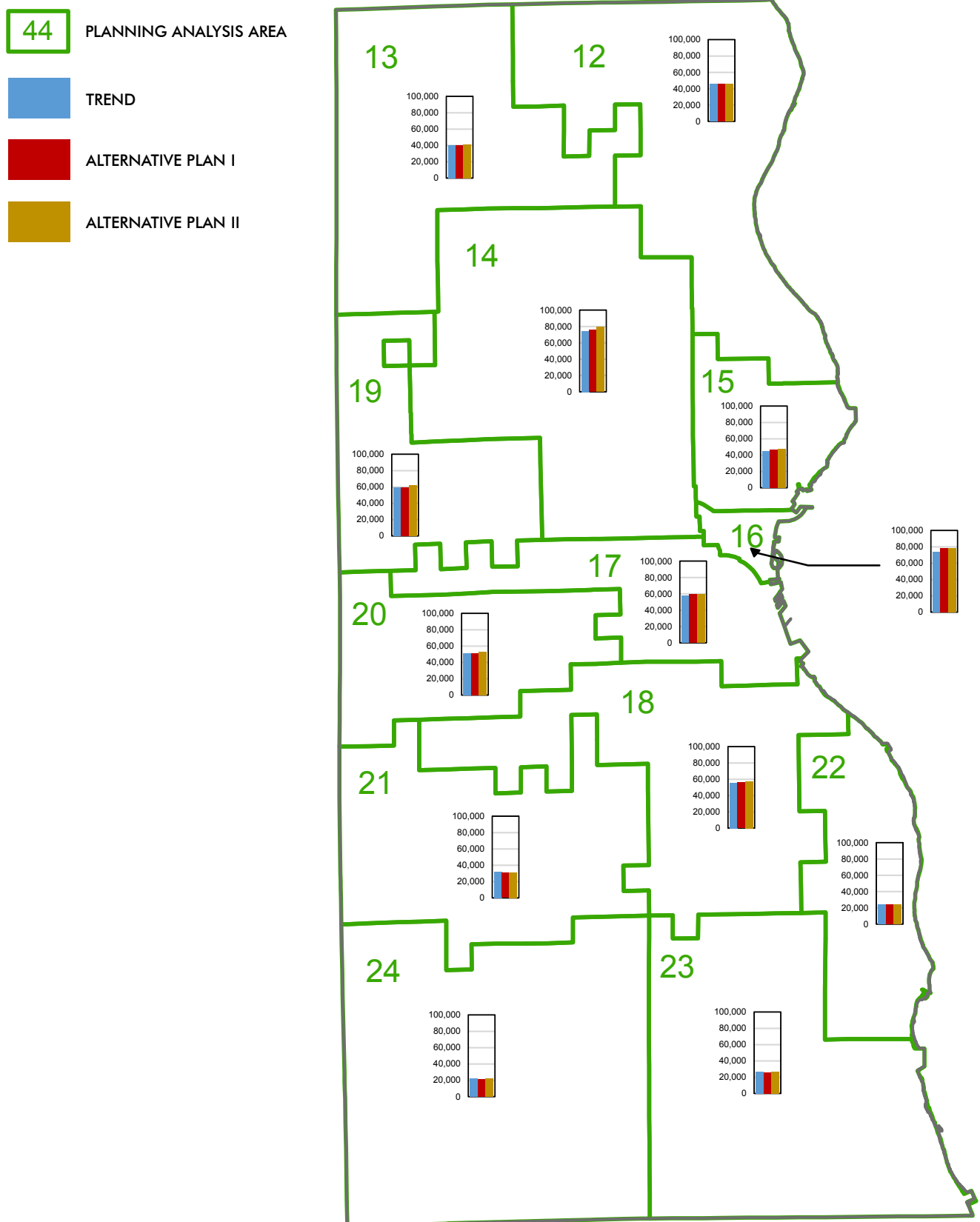
Source: U.S. Bureau of the Census and SEWRPC

**Figure 3.5**  
**Total Employment by Planning Analysis Area: 2050**



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

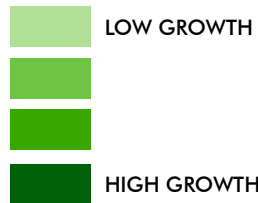
**Figure 3.5 (Continued)**  
**Inset for Milwaukee County**



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

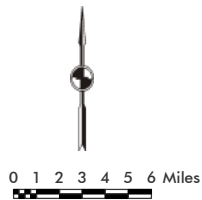
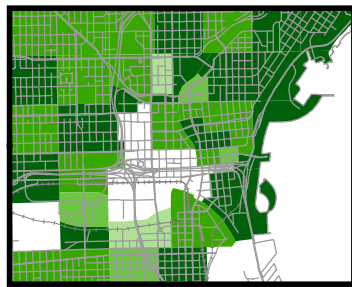
### Map 3.3 Incremental Households: Trend

#### HOUSEHOLD GROWTH

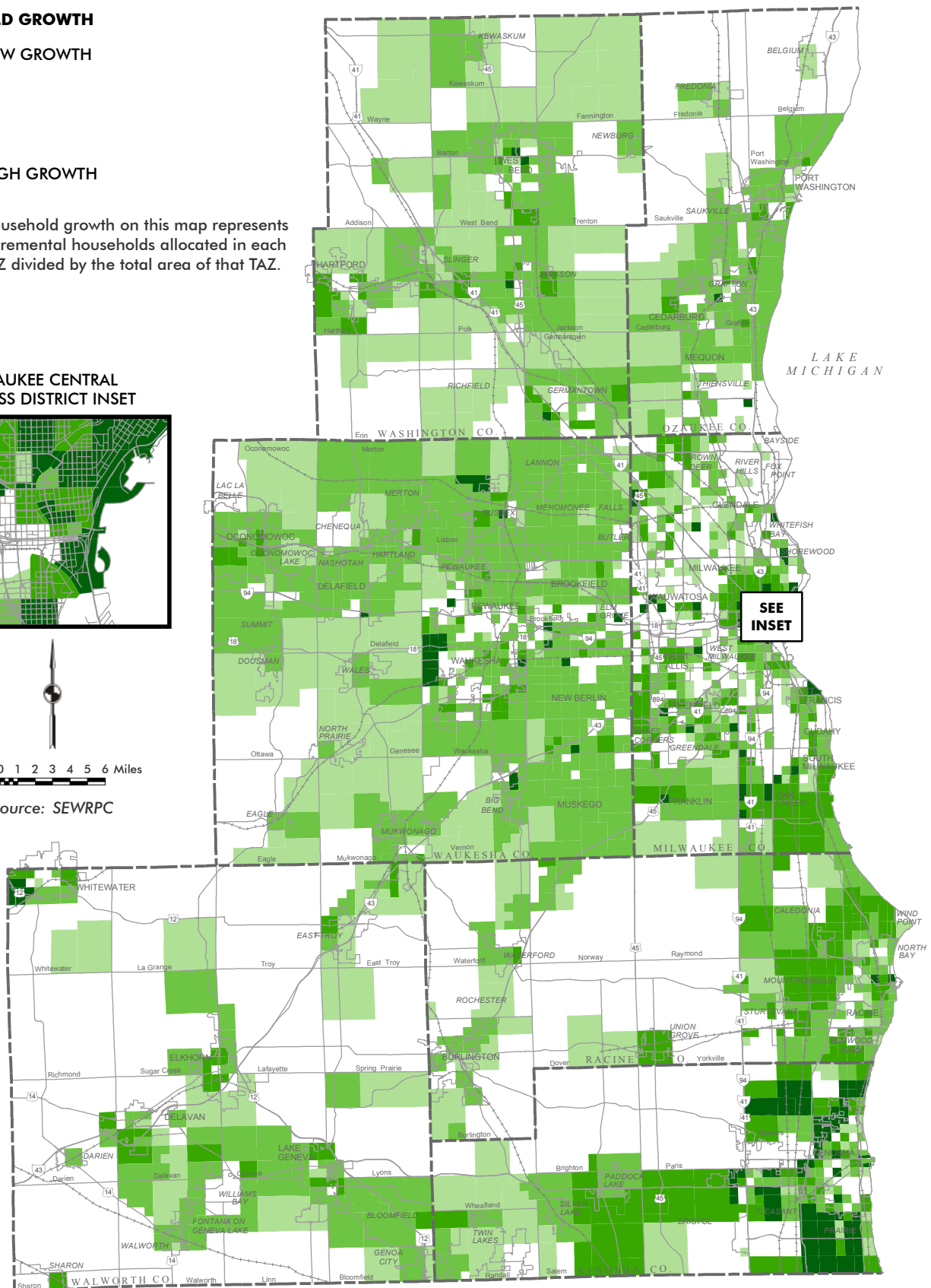


Note: Household growth on this map represents incremental households allocated in each TAZ divided by the total area of that TAZ.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET

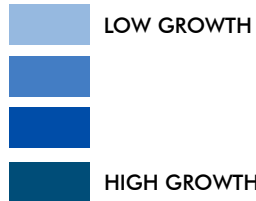


Source: SEWRPC



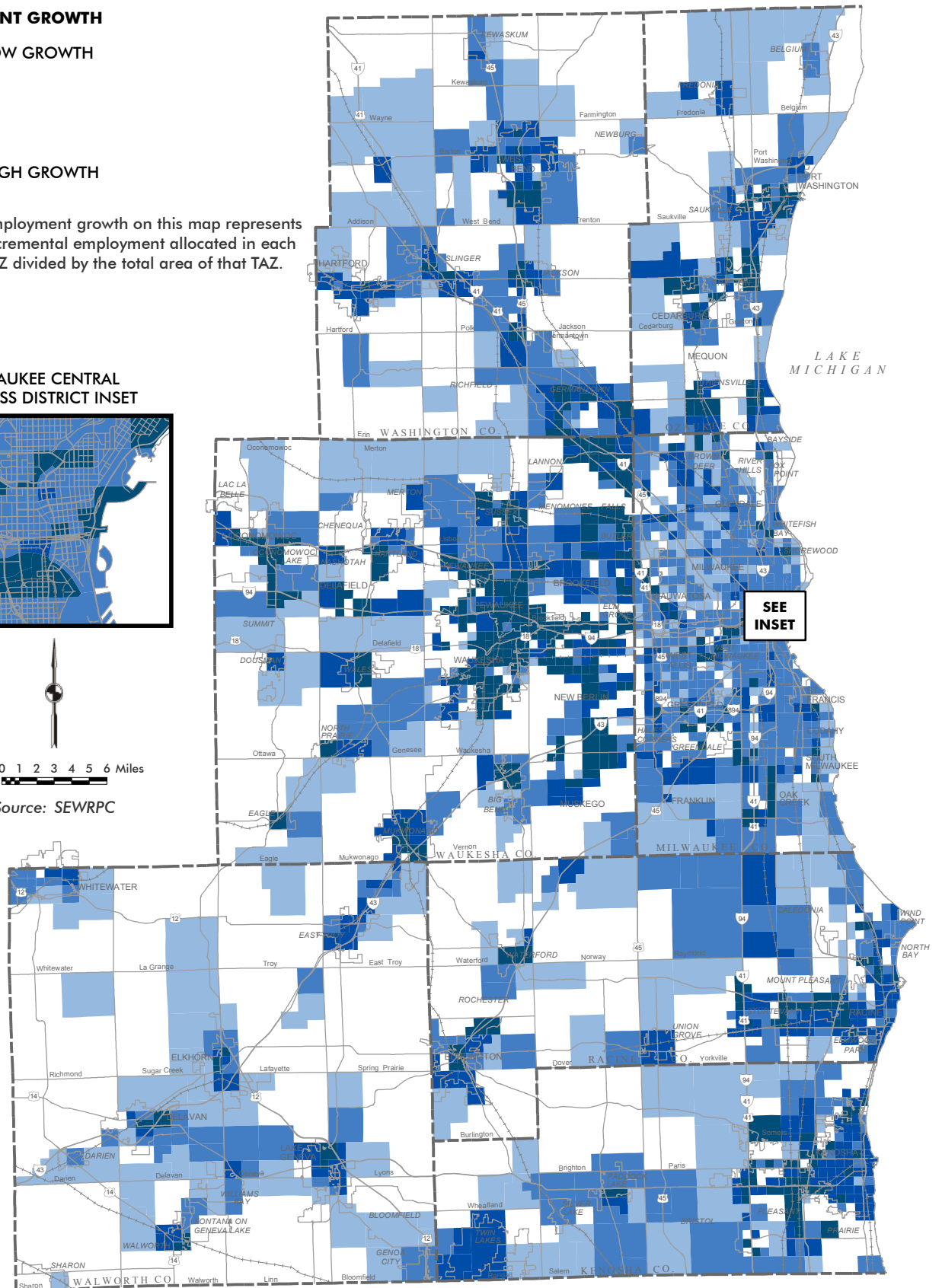
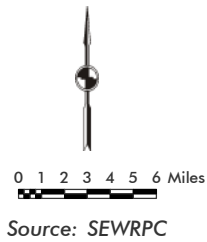
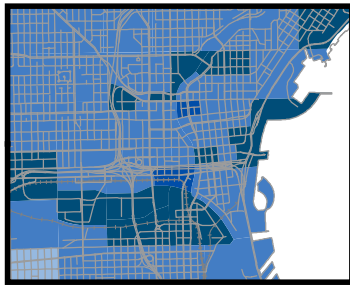
### Map 3.4 Incremental Jobs: Trend

#### EMPLOYMENT GROWTH



Note: Employment growth on this map represents incremental employment allocated in each TAZ divided by the total area of that TAZ.

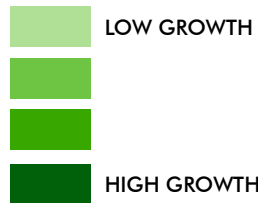
#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET





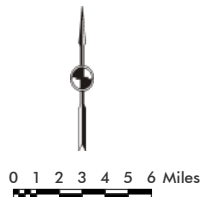
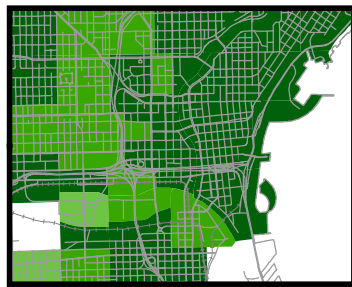
### Map 3.5 Incremental Households: Alternative Plan I

#### HOUSEHOLD GROWTH

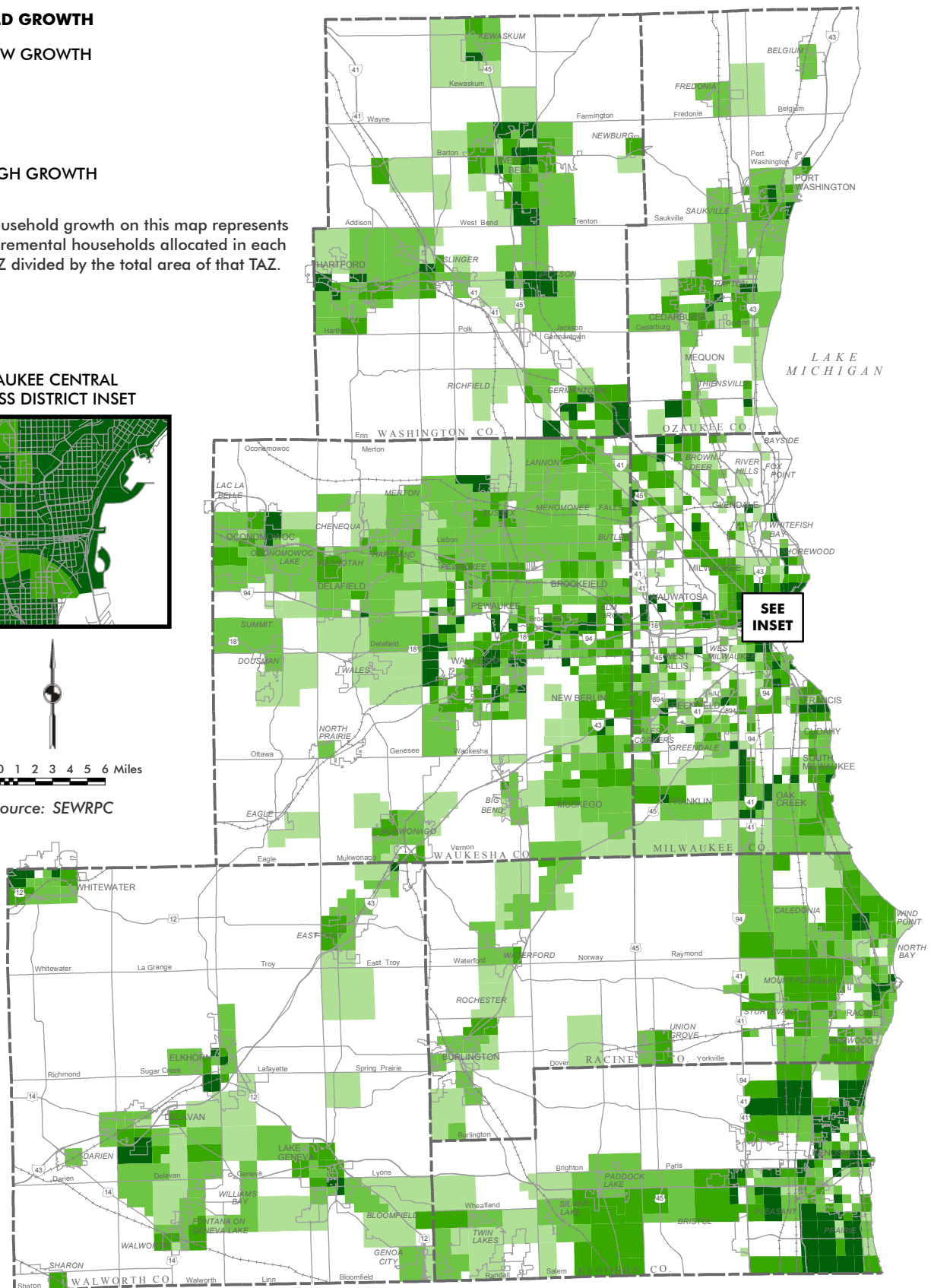


Note: Household growth on this map represents incremental households allocated in each TAZ divided by the total area of that TAZ.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET

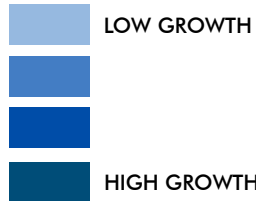


Source: SEWRPC



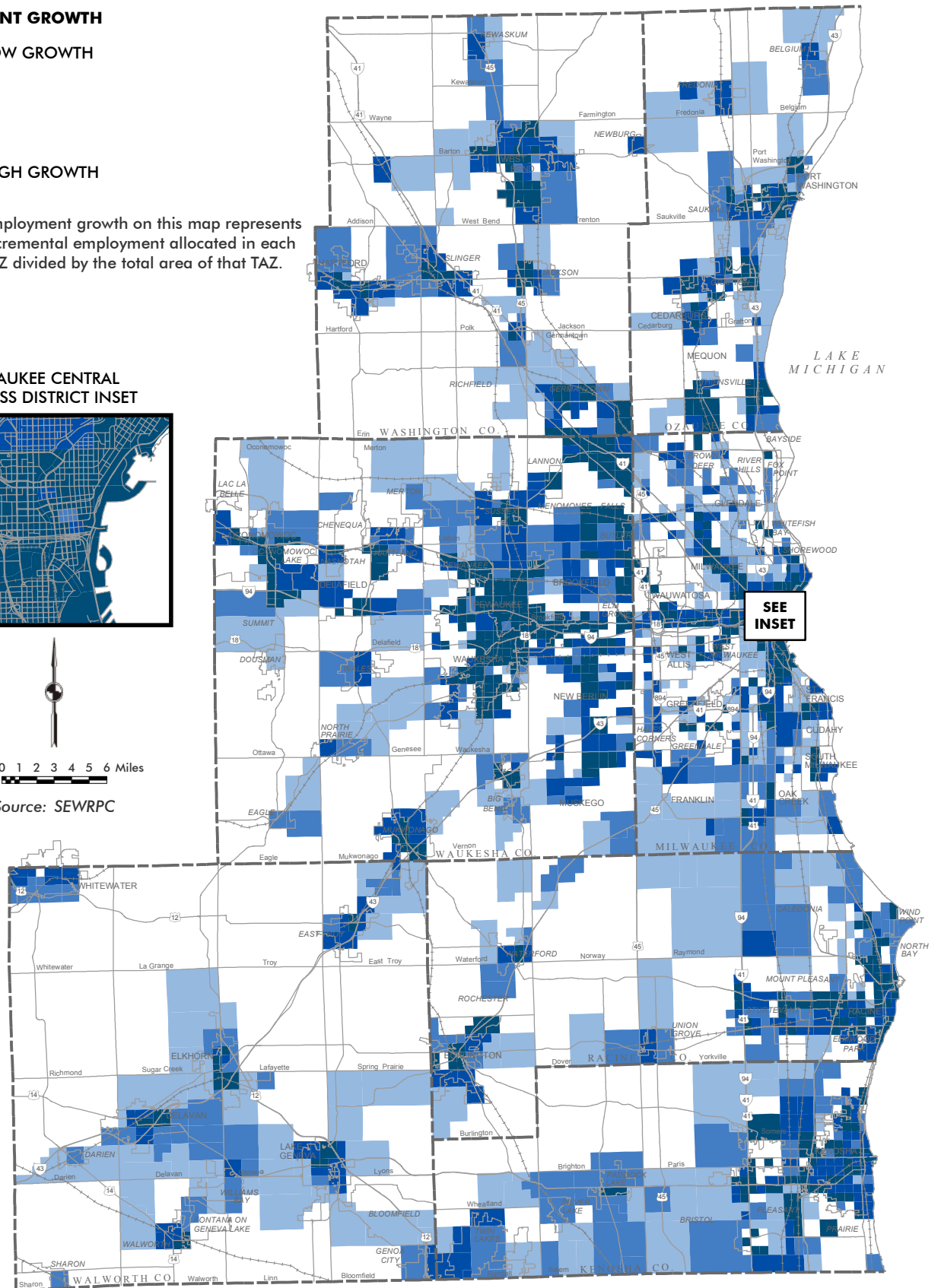
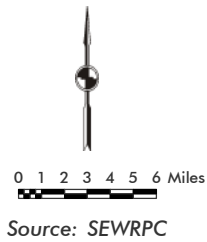
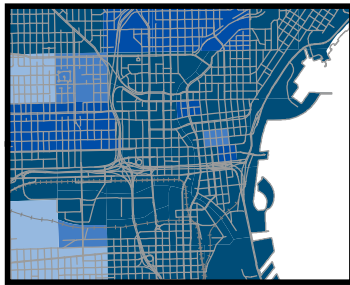
### Map 3.6 Incremental Jobs: Alternative Plan I

#### EMPLOYMENT GROWTH



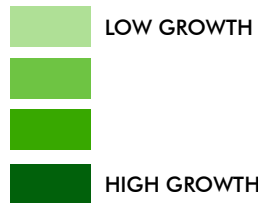
Note: Employment growth on this map represents incremental employment allocated in each TAZ divided by the total area of that TAZ.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



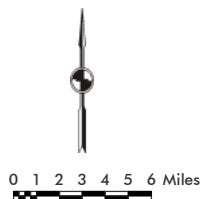
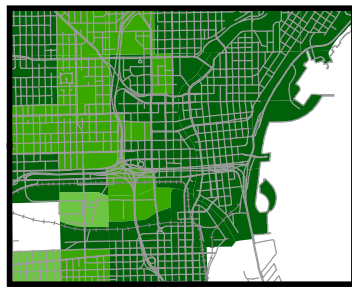
### Map 3.7 Incremental Households: Alternative Plan II

#### HOUSEHOLD GROWTH

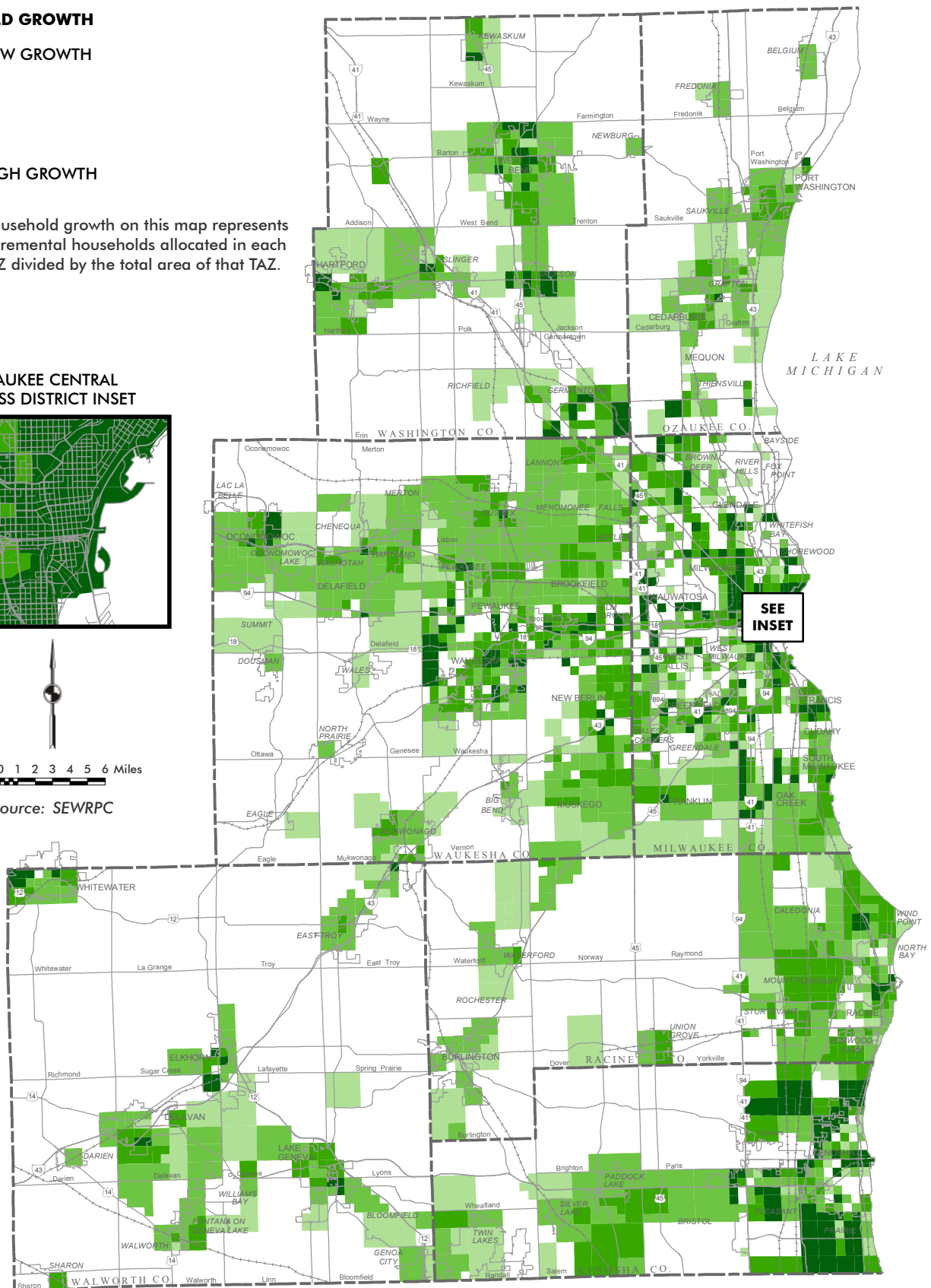


Note: Household growth on this map represents incremental households allocated in each TAZ divided by the total area of that TAZ.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET

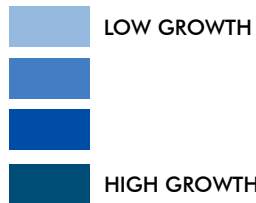


Source: SEWRPC



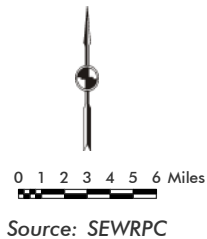
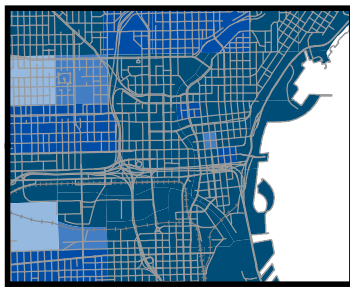
### Map 3.8 Incremental Jobs: Alternative Plan II

#### EMPLOYMENT GROWTH

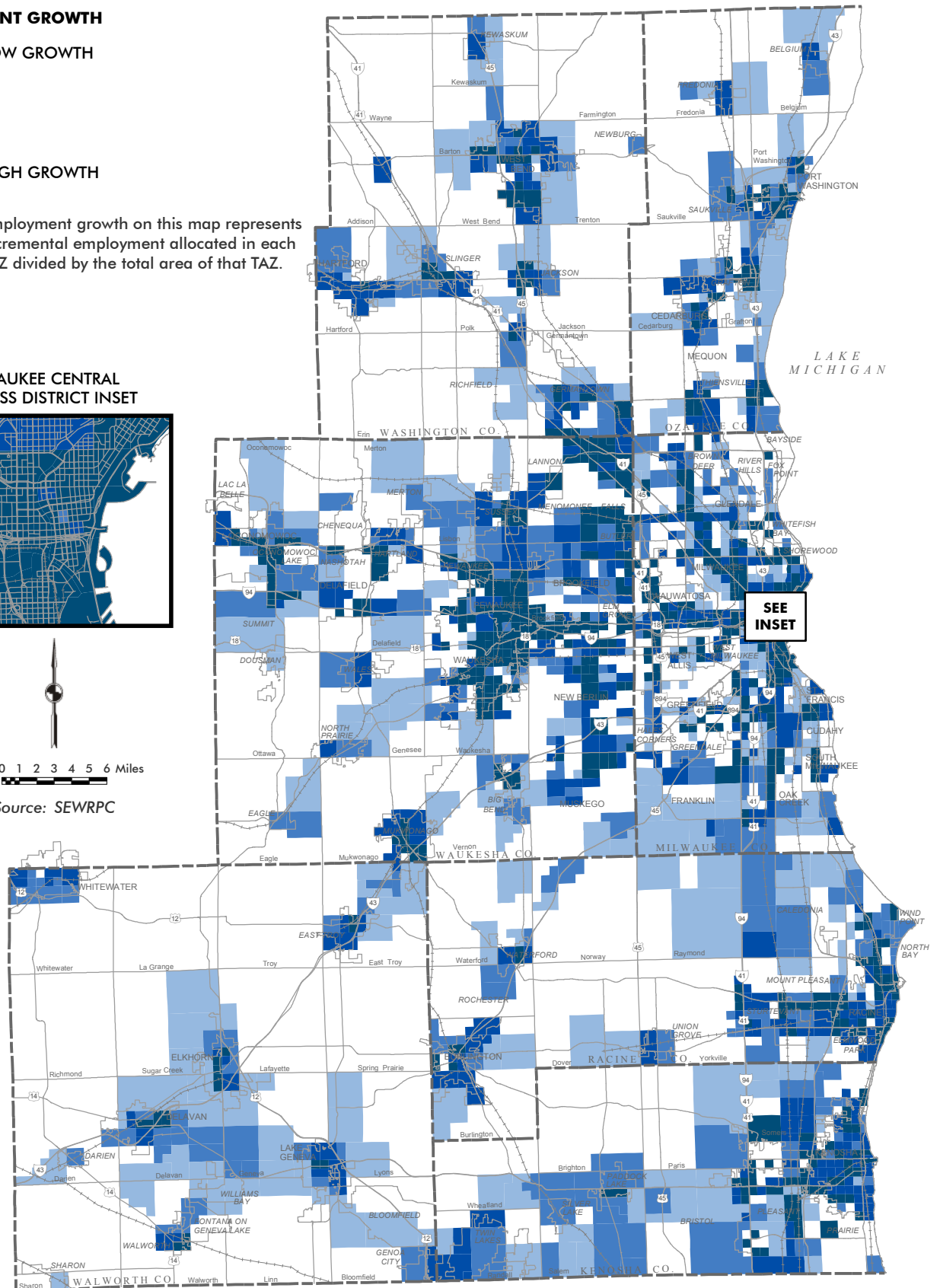


Note: Employment growth on this map represents incremental employment allocated in each TAZ divided by the total area of that TAZ.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



Source: SEWRPC





**Table 3.4**  
**Existing and Planned Population by VISION 2050 Alternative**

County	Planning Analysis Area	Existing (2010)		Trend		Alternative Plan I		Alternative Plan II	
		Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
Ozaukee	1	7,990	0.4	10,370	0.4	10,650	0.5	10,110	0.4
	2	18,680	0.9	24,010	1.0	23,790	1.0	23,090	1.0
	3	32,870	1.6	42,390	1.8	42,620	1.8	40,850	1.7
	4	26,860	1.3	32,320	1.4	31,110	1.3	30,630	1.3
	Subtotal	86,390	4.3	109,090	4.6	108,170	4.6	104,680	4.4
Washington	5	9,070	0.4	15,240	0.6	12,310	0.5	11,600	0.5
	6	44,380	2.2	54,950	2.3	58,600	2.5	56,660	2.4
	7	5,660	0.3	9,690	0.4	7,440	0.3	7,030	0.3
	8	10,830	0.5	16,440	0.7	16,510	0.7	15,420	0.7
	9	26,890	1.3	38,510	1.6	39,010	1.7	37,140	1.6
	10	20,000	1.0	25,890	1.1	28,190	1.2	26,610	1.1
	11	15,050	0.7	19,770	0.8	15,820	0.7	15,710	0.7
	Subtotal	131,890	6.5	180,490	7.7	177,880	7.6	170,170	7.2
Milwaukee	12	65,450	3.2	66,210	2.8	66,090	2.8	66,720	2.8
	13	58,540	2.9	61,920	2.6	61,770	2.6	63,380	2.7
	14	229,170	11.3	227,420	9.7	229,780	9.8	235,650	10.0
	15	76,000	3.8	78,810	3.3	82,080	3.5	83,510	3.5
	16	10,480	0.5	12,380	0.5	16,060	0.7	17,830	0.8
	17	91,230	4.5	91,110	3.9	93,100	4.0	94,430	4.0
	18	118,120	5.8	116,470	4.9	117,740	5.0	118,840	5.0
	19	48,360	2.4	49,860	2.1	50,200	2.1	57,390	2.4
	20	69,990	3.5	70,220	3.0	69,620	3.0	71,480	3.0
	21	59,930	3.0	63,740	2.7	62,960	2.7	63,930	2.7
	22	49,070	2.4	50,680	2.2	51,290	2.2	51,390	2.2
	23	34,820	1.7	45,380	1.9	43,790	1.9	44,790	1.9
	24	36,580	1.8	42,470	1.8	41,560	1.8	41,590	1.8
	Subtotal	947,730	46.9	976,670	41.5	986,040	41.9	1,010,930	42.9
Waukesha	25	38,580	1.9	45,110	1.9	46,510	2.0	46,280	2.0
	26	49,620	2.5	55,450	2.4	60,640	2.6	61,140	2.6
	27	39,590	2.0	46,110	2.0	45,710	1.9	45,440	1.9
	28	24,140	1.2	31,490	1.3	30,930	1.3	30,560	1.3
	29	23,020	1.1	32,460	1.4	29,910	1.3	29,460	1.3
	30	20,160	1.0	24,630	1.0	26,690	1.1	26,950	1.1
	31	80,000	4.0	89,920	3.8	94,510	4.0	94,370	4.0
	32	67,440	3.3	90,040	3.8	87,070	3.7	86,360	3.7
	33	35,800	1.8	49,200	2.1	41,550	1.8	40,710	1.7
	34	11,550	0.6	16,960	0.7	13,310	0.6	12,740	0.5
	Subtotal	389,890	19.3	481,370	20.4	476,830	20.3	474,010	20.1
Racine	35	74,170	3.7	74,250	3.2	74,900	3.2	75,020	3.2
	36	65,010	3.2	86,700	3.7	87,470	3.7	86,450	3.7
	37	39,260	1.9	47,270	2.0	45,850	1.9	45,380	1.9
	38	16,970	0.8	19,520	0.8	19,450	0.8	19,300	0.8
	Subtotal	195,410	9.7	227,740	9.7	227,670	9.7	226,150	9.6
Kenosha	39	97,410	4.8	102,190	4.3	104,970	4.5	105,200	4.5
	40	30,520	1.5	66,860	2.8	69,000	2.9	69,100	2.9
	41	38,490	1.9	68,960	2.9	66,340	2.8	62,850	2.7
	Subtotal	166,430	8.2	238,010	10.1	240,310	10.2	237,150	10.1
Walworth	42	15,040	0.7	20,600	0.9	19,520	0.8	18,450	0.8
	43	22,170	1.1	29,760	1.3	27,200	1.2	26,560	1.1
	44	65,020	3.2	90,270	3.8	90,380	3.8	85,900	3.6
	Subtotal	102,230	5.1	140,630	6.0	137,100	5.8	130,910	5.6
Region	Total	2,019,970	100.0	2,354,000	100.0	2,354,000	100.0	2,354,000	100.0

Note: The existing population, household, and employment data presented by planning analysis area in this table is approximated by quarter section, and may differ slightly from data presented in other chapters of this report.

Source: SEWRPC

**Table 3.5**  
**Existing and Planned Households by VISION 2050 Alternative**

County	Planning Analysis Area	Existing (2010)		Trend		Alternative Plan I		Alternative Plan II	
		Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
Ozaukee	1	3,000	0.4	4,050	0.4	4,120	0.4	3,900	0.4
	2	7,650	1.0	10,040	1.0	9,930	1.0	9,640	1.0
	3	13,170	1.6	17,550	1.8	17,560	1.8	16,820	1.7
	4	10,400	1.3	12,860	1.3	12,280	1.3	12,070	1.2
	Subtotal	34,220	4.3	44,500	4.6	43,890	4.5	42,430	4.4
Washington	5	3,440	0.4	6,080	0.6	4,920	0.5	4,620	0.5
	6	17,750	2.2	23,060	2.4	24,570	2.5	23,730	2.4
	7	2,080	0.3	3,840	0.4	2,980	0.3	2,790	0.3
	8	4,320	0.5	6,950	0.7	7,020	0.7	6,540	0.7
	9	10,580	1.3	15,960	1.6	16,130	1.7	15,340	1.6
	10	7,860	1.0	10,630	1.1	11,570	1.2	10,920	1.1
	11	5,580	0.7	7,810	0.8	6,190	0.6	6,140	0.6
	Subtotal	51,610	6.5	74,330	7.6	73,380	7.5	70,080	7.2
Milwaukee	12	28,430	3.6	29,730	3.1	29,730	3.1	29,990	3.1
	13	22,350	2.8	24,560	2.5	24,540	2.5	25,190	2.6
	14	84,930	10.6	87,430	9.0	88,560	9.1	90,920	9.4
	15	34,560	4.3	36,710	3.8	38,110	3.9	38,680	4.0
	16	4,830	0.6	5,580	0.6	7,110	0.7	7,840	0.8
	17	31,280	3.9	32,470	3.3	33,360	3.4	33,880	3.5
	18	47,710	6.0	48,730	5.0	49,340	5.1	49,760	5.1
	19	21,340	2.7	22,700	2.3	22,900	2.4	26,270	2.7
	20	31,180	3.9	32,420	3.3	32,180	3.3	33,050	3.4
	21	26,850	3.4	29,600	3.0	29,280	3.0	29,730	3.1
	22	21,760	2.7	23,270	2.4	23,590	2.4	23,620	2.4
	23	14,200	1.8	19,220	2.0	18,570	1.9	18,980	2.0
	24	14,180	1.8	17,150	1.8	16,800	1.7	16,800	1.7
	Subtotal	383,600	47.9	409,570	42.1	414,070	42.6	424,710	43.7
Waukesha	25	15,940	2.0	19,340	2.0	19,910	2.0	19,800	2.0
	26	19,610	2.5	22,780	2.3	24,890	2.6	25,080	2.6
	27	16,290	2.0	19,650	2.0	19,560	2.0	19,440	2.0
	28	9,070	1.1	12,350	1.3	12,110	1.2	11,950	1.2
	29	8,520	1.1	12,750	1.3	11,730	1.2	11,540	1.2
	30	8,790	1.1	11,090	1.1	11,990	1.2	12,110	1.2
	31	31,750	4.0	36,790	3.8	38,740	4.0	38,660	4.0
	32	25,450	3.2	35,610	3.7	34,420	3.5	34,110	3.5
	33	13,120	1.6	18,970	2.0	15,980	1.6	15,640	1.6
	34	4,120	0.5	6,450	0.7	5,000	0.5	4,770	0.5
	Subtotal	152,660	19.1	195,780	20.1	194,330	20.0	193,100	19.9
Racine	35	28,620	3.6	30,380	3.1	30,650	3.2	30,680	3.2
	36	25,790	3.2	36,480	3.8	36,800	3.8	36,340	3.7
	37	14,490	1.8	18,650	1.9	18,080	1.9	17,870	1.8
	38	6,750	0.8	8,240	0.8	8,210	0.8	8,140	0.8
	Subtotal	75,650	9.5	93,750	9.6	93,740	9.6	93,030	9.6
Kenosha	39	36,710	4.6	41,120	4.2	41,840	4.3	41,900	4.3
	40	11,420	1.4	26,750	2.8	27,340	2.8	27,370	2.8
	41	14,520	1.8	27,610	2.8	26,280	2.7	24,920	2.6
	Subtotal	62,650	7.8	95,480	9.8	95,460	9.8	94,190	9.7
Walworth	42	5,840	0.7	8,600	0.9	8,140	0.8	7,690	0.8
	43	8,460	1.1	12,310	1.3	11,260	1.2	10,970	1.1
	44	25,400	3.2	38,080	3.9	38,130	3.9	36,200	3.7
	Subtotal	39,700	5.0	58,990	6.1	57,530	5.9	54,860	5.6
Region	Total	800,090	100.0	972,400	100.0	972,400	100.0	972,400	100.0

Note: The existing population, household, and employment data presented by planning analysis area in this table is approximated by quarter section, and may differ slightly from data presented in other chapters of this report.

Source: SEWRPC



**Table 3.6**  
**Existing and Planned Employment (Jobs) by VISION 2050 Alternative**

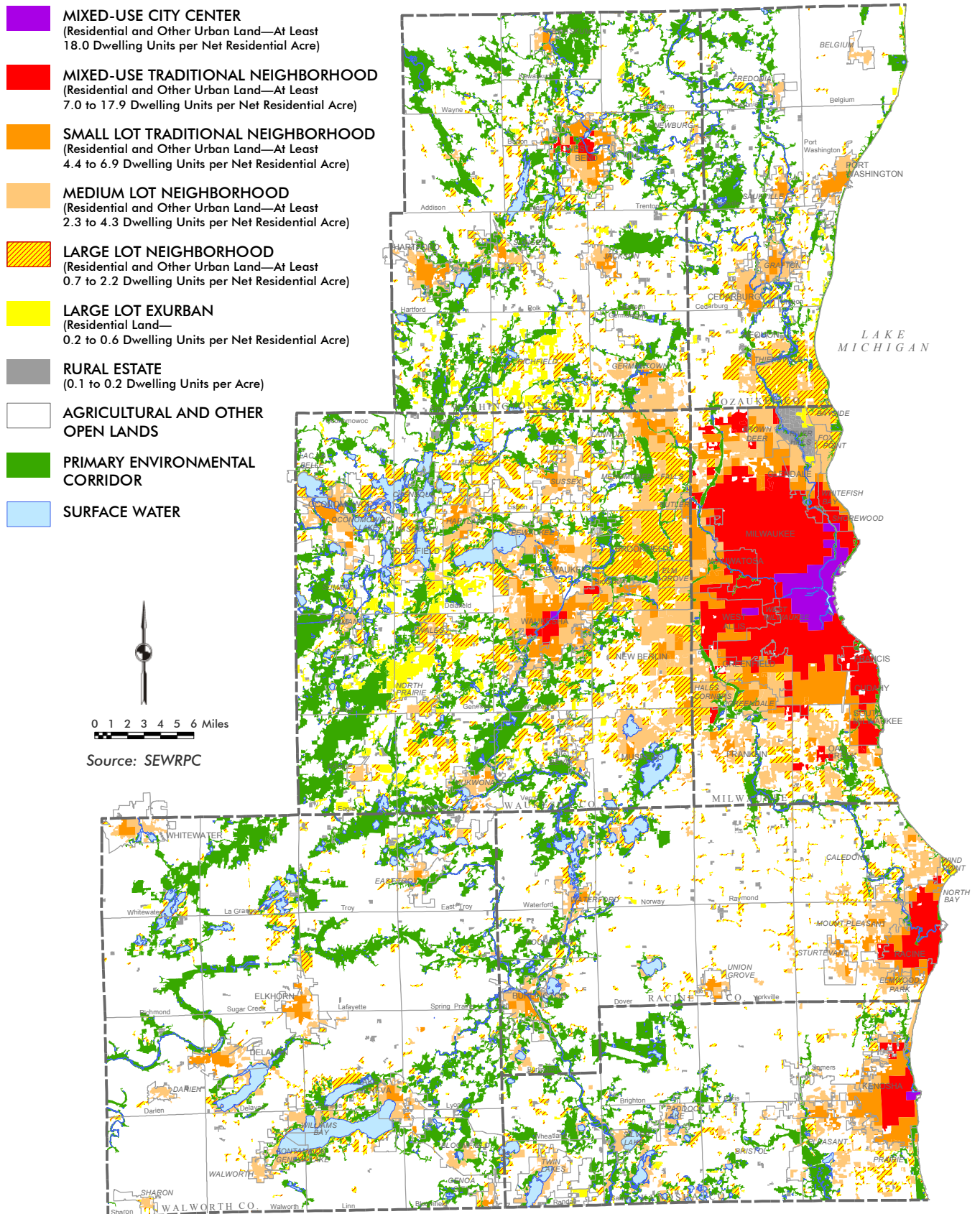
County	Planning Analysis Area	Existing (2010)		Trend		Alternative Plan I		Alternative Plan II	
		Number	Percent of Region	Number	Percent of Region	Number	Percent of Region	Number	Percent of Region
<b>Ozaukee</b>	1	2,840	0.2	4,630	0.3	4,920	0.4	4,450	0.3
	2	11,280	1.0	15,240	1.1	15,430	1.1	14,550	1.0
	3	16,540	1.4	23,620	1.7	22,080	1.6	21,270	1.5
	4	21,720	1.8	25,650	1.9	25,700	1.9	24,990	1.8
	Subtotal	52,380	4.5	69,140	5.0	68,130	4.9	65,260	4.7
<b>Washington</b>	5	2,370	0.2	3,680	0.3	3,270	0.2	3,100	0.2
	6	21,670	1.8	27,420	2.0	29,170	2.1	27,770	2.0
	7	2,550	0.2	4,230	0.3	3,320	0.2	3,170	0.2
	8	3,640	0.3	4,430	0.3	4,640	0.3	4,460	0.3
	9	15,830	1.3	21,630	1.6	22,110	1.6	20,930	1.5
	10	14,230	1.2	19,320	1.4	18,950	1.4	18,260	1.3
	11	3,610	0.3	6,690	0.5	4,930	0.4	4,840	0.3
	Subtotal	63,900	5.4	87,400	6.3	86,390	6.2	82,530	6.0
<b>Milwaukee</b>	12	43,700	3.7	46,120	3.3	45,380	3.3	45,670	3.3
	13	38,450	3.3	40,700	2.9	39,940	2.9	41,270	3.0
	14	72,150	6.1	74,380	5.4	75,730	5.5	79,320	5.7
	15	44,280	3.8	45,150	3.3	46,880	3.4	47,340	3.4
	16	70,280	6.0	73,810	5.3	78,500	5.7	78,650	5.7
	17	55,050	4.7	57,710	4.2	58,940	4.3	59,630	4.3
	18	53,230	4.5	55,740	4.0	56,350	4.1	57,430	4.1
	19	56,910	4.8	59,670	4.3	59,830	4.3	61,900	4.5
	20	48,530	4.1	51,520	3.7	50,860	3.7	52,760	3.8
	21	28,850	2.5	31,820	2.3	30,790	2.2	31,380	2.3
	22	22,410	1.9	23,860	1.7	24,030	1.7	24,050	1.7
	23	23,280	2.0	27,030	1.9	26,070	1.9	27,110	2.0
	24	19,230	1.6	22,340	1.6	21,610	1.6	22,160	1.6
	Subtotal	576,350	49.0	609,850	44.0	614,910	44.4	628,670	45.3
<b>Waukesha</b>	25	41,250	3.5	48,740	3.5	49,430	3.6	48,940	3.5
	26	55,630	4.7	63,550	4.6	66,830	4.8	66,700	4.8
	27	27,140	2.3	33,890	2.4	32,970	2.4	32,680	2.4
	28	7,730	0.7	11,260	0.8	10,460	0.8	10,320	0.7
	29	9,420	0.8	13,540	1.0	12,930	0.9	12,760	0.9
	30	29,020	2.5	35,840	2.6	35,690	2.6	35,930	2.6
	31	48,470	4.1	57,720	4.2	58,660	4.2	58,310	4.2
	32	35,040	3.0	47,960	3.5	46,500	3.4	45,860	3.3
	33	12,160	1.0	21,280	1.5	19,080	1.4	18,650	1.3
	34	2,930	0.2	4,500	0.3	3,710	0.3	3,670	0.3
	Subtotal	268,790	22.9	338,280	24.4	336,260	24.3	333,820	24.1
<b>Racine</b>	35	37,450	3.2	40,700	2.9	42,270	3.0	42,090	3.0
	36	25,000	2.1	34,750	2.5	35,090	2.5	34,700	2.5
	37	15,050	1.3	22,840	1.6	19,660	1.4	19,420	1.4
	38	10,550	0.9	13,710	1.0	13,970	1.0	13,790	1.0
	Subtotal	88,050	7.5	112,000	8.1	110,990	8.0	110,000	7.9
<b>Kenosha</b>	39	44,830	3.8	51,730	3.7	52,820	3.8	52,690	3.8
	40	17,770	1.5	25,780	1.9	26,630	1.9	26,520	1.9
	41	11,640	1.0	23,110	1.7	21,170	1.5	20,760	1.5
	Subtotal	74,240	6.3	100,620	7.3	100,620	7.3	99,970	7.2
<b>Walworth</b>	42	4,590	0.4	7,770	0.6	7,250	0.5	6,740	0.5
	43	10,640	0.9	13,160	0.9	12,870	0.9	12,480	0.9
	44	37,330	3.2	48,240	3.5	49,040	3.5	46,990	3.4
	Subtotal	52,560	4.5	69,170	5.0	69,160	5.0	66,210	4.8
<b>Region</b>	Total	1,176,270	100.0	1,386,460	100.0	1,386,460	100.0	1,386,460	100.0

Note: The existing population, household, and employment data presented by planning analysis area in this table is approximated by quarter section, and may differ slightly from data presented in other chapters of this report.

Source: SEWRPC

## Map 3.9

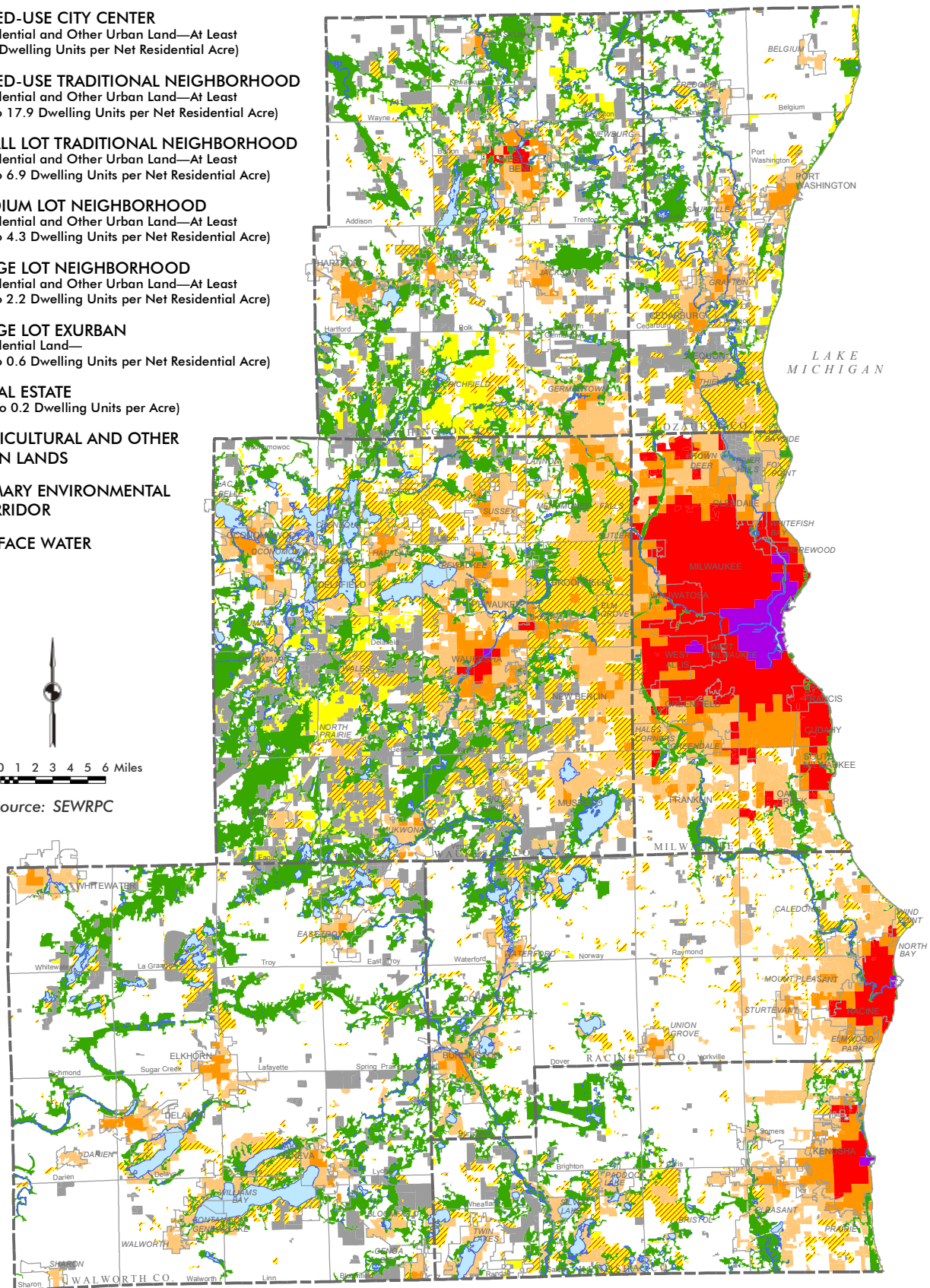
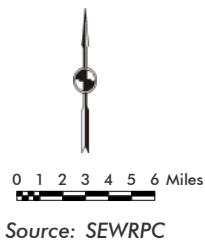
### Existing Urban Development: 2010



### Map 3.10

#### Urban Development Under the Trend: 2050

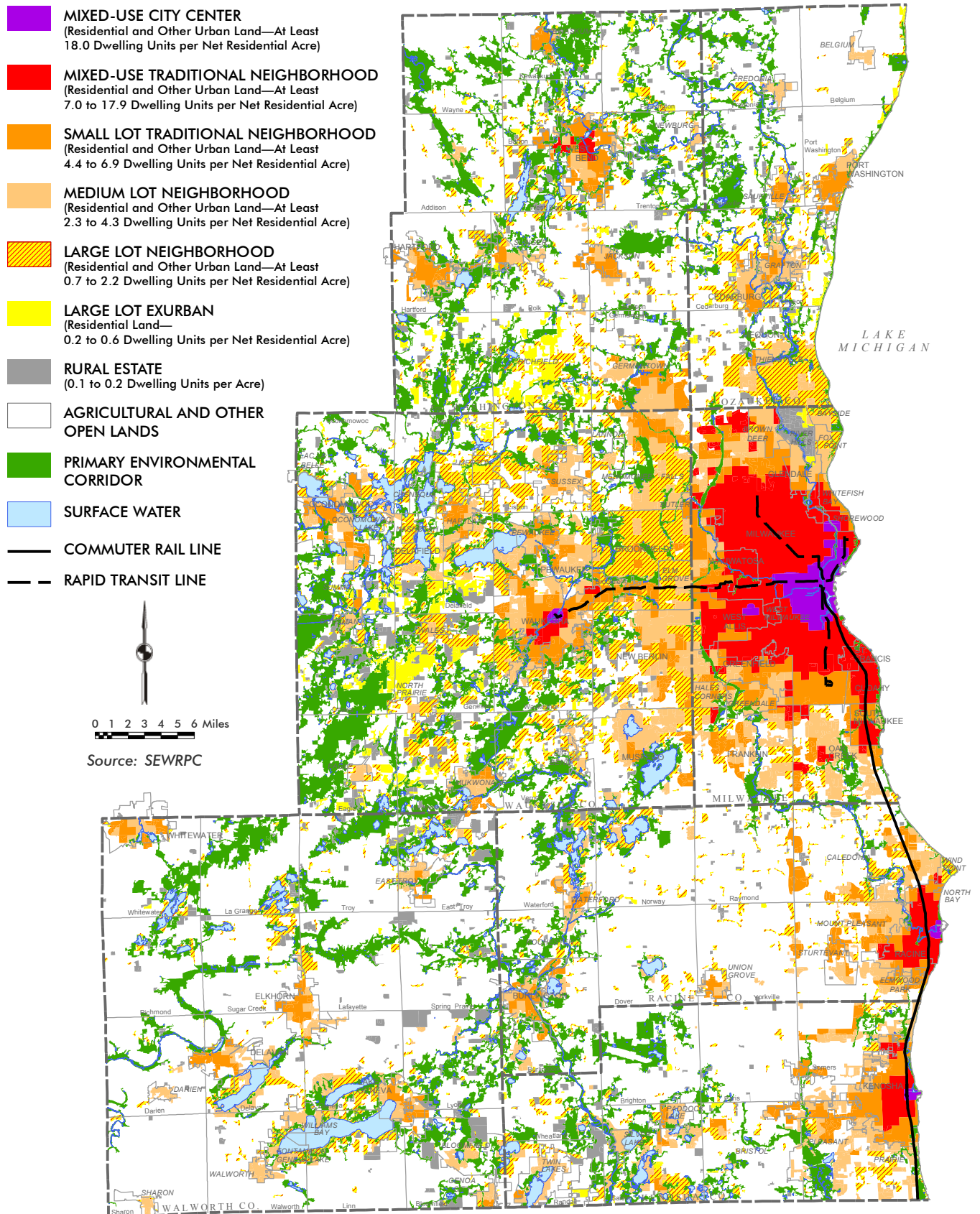
- MIXED-USE CITY CENTER**  
(Residential and Other Urban Land—At Least 18.0 Dwelling Units per Net Residential Acre)
- MIXED-USE TRADITIONAL NEIGHBORHOOD**  
(Residential and Other Urban Land—At Least 7.0 to 17.9 Dwelling Units per Net Residential Acre)
- SMALL LOT TRADITIONAL NEIGHBORHOOD**  
(Residential and Other Urban Land—At Least 4.4 to 6.9 Dwelling Units per Net Residential Acre)
- MEDIUM LOT NEIGHBORHOOD**  
(Residential and Other Urban Land—At Least 2.3 to 4.3 Dwelling Units per Net Residential Acre)
- LARGE LOT NEIGHBORHOOD**  
(Residential and Other Urban Land—At Least 0.7 to 2.2 Dwelling Units per Net Residential Acre)
- LARGE LOT EXURBAN**  
(Residential Land—0.2 to 0.6 Dwelling Units per Net Residential Acre)
- RURAL ESTATE**  
(0.1 to 0.2 Dwelling Units per Acre)
- AGRICULTURAL AND OTHER OPEN LANDS**
- PRIMARY ENVIRONMENTAL CORRIDOR**
- SURFACE WATER**





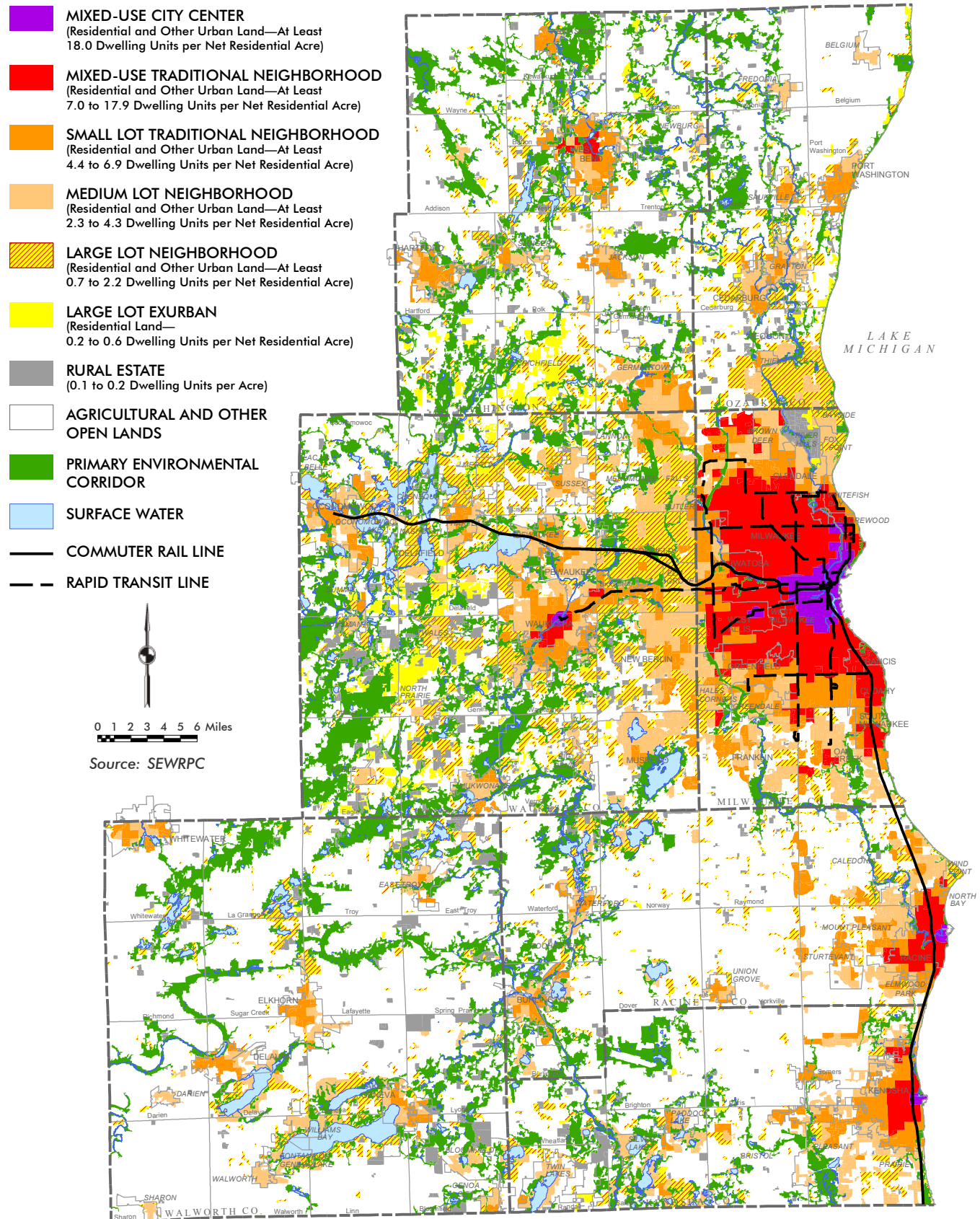
### Map 3.11

## Urban Development Under Alternative Plan I: 2050



## Map 3.12

### Urban Development Under Alternative Plan II: 2050



**Table 3.7**  
**Planned Land Use by VISION 2050 Alternative**

Alternative Plan Land Use Category <sup>a</sup>	Existing (square miles)	Trend		Alternative Plan I		Alternative Plan II	
		Increment (square miles)	Total (square miles)	Increment (square miles)	Total (square miles)	Increment (square miles)	Total (square miles)
Mixed-Use City Center <sup>b</sup>	12.0	0.6	12.6	0.7	12.7	0.8	12.8
Mixed-Use Traditional Neighborhood <sup>c</sup>	103.4	7.1	110.5	10.2	113.6	10.5	113.9
Small Lot Traditional Neighborhood <sup>d</sup>	95.6	6.9	102.5	51.7	147.3	46.4	142.0
Medium Lot Neighborhood <sup>e</sup>	184.9	67.3	252.2	5.8	190.7	5.3	190.2
Large Lot Neighborhood <sup>f</sup>	267.7	18.1	285.8	10.6	278.3	9.9	277.6
Large Lot Exurban <sup>g</sup>	41.6	19.3	60.9	6.4	48.0	5.6	47.2
Rural Estate <sup>h</sup>	74.0	36.8	110.8	10.7	84.7	7.9	81.9
Agricultural Land <sup>i</sup>	1,155.5	-77.3	1,078.2	-31.9	1,123.6	-25.8	1,129.7
Primary Environmental Corridor	487.3	9.1	496.4	9.1	496.4	9.1	496.4
Other Open Land <sup>j</sup>	267.7	-87.9	179.8	-73.3	194.4	-69.7	198.0
<b>Total</b>	<b>2,689.7</b>	<b>0.0</b>	<b>2,689.7</b>	<b>0.0</b>	<b>2,689.7</b>	<b>0.0</b>	<b>2,689.7</b>

<sup>a</sup> Alternative plan land use categories include applicable land uses such as residential; commercial; industrial; governmental and institutional; transportation, communication, and utilities; and recreational lands.

<sup>b</sup> Residential and other urban land – 18.0 or more dwelling units per net residential acre.

<sup>c</sup> Residential and other urban land – 7.0 to 17.9 dwelling units per net residential acre.

<sup>d</sup> Residential and other urban land – 4.4 to 6.9 dwelling units per net residential acre.

<sup>e</sup> Residential and other urban land – 2.3 to 4.3 dwelling units per net residential acre.

<sup>f</sup> Residential and other urban land – 0.7 to 2.2 dwelling units per net residential acre.

<sup>g</sup> 0.2 to 0.6 dwelling unit per net residential acre.

<sup>h</sup> No more than 0.2 dwelling unit per acre.

<sup>i</sup> Includes farmland preservation areas identified in county farmland preservation plans, prime agricultural land, and other agricultural land.

<sup>j</sup> Includes wetlands, woodlands, and surface water outside primary environmental corridors, landfill sites, quarries, and other unused lands.

Source: SEWRPC

Some new development also occurs as infill and redevelopment in existing cities and villages. The infill development and redevelopment can be reached easily by public services and it is easier to walk to different types of destinations. There is less infill and redevelopment under the Trend than either Alternative Plan I or II.

Additional development includes some new homes located outside cities and villages on larger lots that cannot be reached by public sewer, water, or transit services. Residents of these homes cannot typically walk to other destinations. Some of these homes may be developed at a very low overall density, but clustered on smaller lots. Cluster subdivision design allows

**Some new homes under the Trend would be located on larger lots that cannot be reached by public sewer, water, or transit services.**



**Table 3.8**  
**Incremental Households and Employment by Land Use Category**

<b>Households</b>						
<b>Land Use Category</b>	<b>Trend</b>		<b>Alternative Plan I</b>		<b>Alternative Plan II</b>	
	Number	Percent	Number	Percent	Number	Percent
Mixed-Use City Center	9,447	5.5	14,407	8.3	18,799	10.9
Mixed-Use Traditional Neighborhood	30,503	17.7	48,589	28.2	56,420	32.8
Small Lot Traditional Neighborhood	12,827	7.4	88,187	51.2	79,311	46.0
Medium Lot Neighborhood	82,911	48.1	7,353	4.3	6,387	3.7
Large Lot Neighborhood	7,591	4.4	4,282	2.5	4,033	2.3
Large Lot Exurban	4,237	2.5	1,333	0.8	1,167	0.7
Rural Estate	24,794	14.4	8,159	4.7	6,193	3.6
<b>Total</b>	<b>172,310</b>	<b>100.0</b>	<b>172,310</b>	<b>100.0</b>	<b>172,310</b>	<b>100.0</b>

<b>Employment (jobs)</b>						
<b>Land Use Category</b>	<b>Trend</b>		<b>Alternative Plan I</b>		<b>Alternative Plan II</b>	
	Number	Percent	Number	Percent	Number	Percent
Mixed-Use City Center	11,595	5.5	19,340	9.2	23,961	11.4
Mixed-Use Traditional Neighborhood	47,403	22.6	64,564	30.7	69,490	33.0
Small Lot Traditional Neighborhood	21,196	10.1	83,187	39.6	76,300	36.3
Medium Lot Neighborhood	94,707	45.1	24,554	11.7	24,073	11.5
Large Lot Neighborhood	32,043	15.2	16,898	8.0	14,757	7.0
Large Lot Exurban	3,021	1.4	1,634	0.8	1,635	0.8
Rural Estate	265	0.1	53	<0.1	14	<0.1
<b>Total</b>	<b>210,230</b>	<b>100.0</b>	<b>210,230</b>	<b>100.0</b>	<b>210,230</b>	<b>100.0</b>

Source: SEWRPC

**Table 3.9**  
**Incremental Residential Structure Type by VISION 2050 Alternative**

<b>Alternative</b>	<b>Single-Family Housing Units</b>		<b>Multifamily Housing Units</b>	
	Number	Percent	Number	Percent
Trend	128,952	74.8	43,357	25.2
Alternative Plan I	105,502	61.2	66,807	38.8
Alternative Plan II	93,247	54.1	79,062	45.9

Source: SEWRPC

for the preservation of rural character and more productive farmland as compared to traditional subdivision design. There is significantly more of this type of large lot or cluster subdivision development under the Trend than Alternatives I and II.

New development under the Trend is accommodated in the following alternative plan land use categories:

- Mixed-Use City Center (5.5 percent of new households, 5.5 percent of new jobs)
- Mixed-Use Traditional Neighborhood (17.7 percent of new households, 22.6 percent of new jobs)
- Small Lot Traditional Neighborhood (7.4 percent of new households, 10.1 percent of new jobs)
- Medium Lot Neighborhood (48.1 percent of new households, 45.1 percent of new jobs)
- Large Lot Neighborhood (4.4 percent of new households, 15.2 percent of new jobs)

**Table 3.10**  
**Incremental Household and Employment Allocations to**  
**Fixed-Guideway Station Areas by VISION 2050 Alternative**

<b>Trend</b>				
<b>County</b>	<b>Households</b>		<b>Employment (jobs)</b>	
	Number	Percent of Total Allocation	Number	Percent of Total Allocation
Kenosha	379	1.2	432	1.6
Milwaukee	1,098	4.2	3,356	10.0
Racine	--	--	--	--
Waukesha	--	--	--	--
Region	1,477	0.9	3,788	1.8

<b>Alternative Plan I</b>				
<b>County</b>	<b>Households</b>		<b>Employment (jobs)</b>	
	Number	Percent of Total Allocation	Number	Percent of Total Allocation
Kenosha	1,406	4.3	1,375	5.2
Milwaukee	11,676	38.3	19,761	51.2
Racine	595	3.3	809	3.5
Waukesha	3,311	7.9	6,385	9.5
Region	16,988	9.9	28,330	13.5

<b>Alternative Plan II</b>				
<b>County</b>	<b>Households</b>		<b>Employment (jobs)</b>	
	Number	Percent of Total Allocation	Number	Percent of Total Allocation
Kenosha	1,475	4.7	1,376	5.2
Milwaukee	31,759	77.3	32,092	83.2
Racine	1,237	7.1	1,490	6.5
Waukesha	6,661	16.5	13,962	20.7
Region	41,132	23.9	48,920	23.3

Source: SEWRPC

- Large Lot Exurban (2.5 percent of new households, 1.4 percent of new jobs)
- Rural Estate (14.4 percent of new households, 0.1 percent of new jobs)

#### *Alternative Plan I*

Infill development and redevelopment in existing cities and villages is the focus of Alternative Plan I. Much of the new infill development/redevelopment would be similar in character to existing adjacent development; however, some new development would occur in areas surrounding fixed-guideway transit stations proposed under the Transportation Component of Alternative I. It is widely accepted that fixed-guideway transit service can have a greater impact on land use and economic development than bus service in mixed traffic. Investment in residential, retail, and office development has been linked to investment in higher levels of transit service. Local bus service over existing streets and highways does not provide a long-term commitment, and therefore, is less likely to result in investment in development and redevelopment near bus stops.

Development in the transit station areas of Alternative I is typically denser than existing development, and denser than the development in comparable locations under the Trend. In addition, station area development may occur in the form of TODs (examples are presented in Figure 3.6). More households and jobs were allocated to Milwaukee County under Alternative I than the Trend to meet the anticipated demand for housing and employment in fixed-guideway station areas.

**Infill and redevelopment is the focus of Alternative Plan I, including some TOD.**

**Figure 3.6**  
**Transit-Oriented Development (TOD) Examples**



**Urban Center Plaza in Portland, Oregon**  
 Credit: SEWRPC Staff



**The Fitzgerald in Baltimore, Maryland**  
 Credit: Design Collective - Baltimore



**Del Mar Station in Pasadena, California**  
 Credit: Moule and Polyzoides, Architects and Urbanists



**Downtown San Leandro, California**  
 Credit: Page Southerland Page, Inc.

**New homes at the edges of cities and villages would be on smaller lots under Alternative I compared to the Trend.**

Some new development also occurs at the edges of cities and villages throughout the Region. New homes in these areas would have smaller lots than those in comparable locations under the Trend. There may also be a greater mix of apartments and condominiums than under the Trend. These areas are efficiently served by public sewer and water, and businesses can be reached by public transit in service areas. In addition, the compact development pattern of Alternative I consumes less farmland than the Trend development pattern.

New development under Alternative I is accommodated in the following alternative plan land use categories:

- Mixed-Use City Center (8.3 percent of new households, 9.2 percent of new jobs)
- Mixed-Use Traditional Neighborhood (28.2 percent of new households, 30.7 percent of new jobs)
- Small Lot Traditional Neighborhood (51.2 percent of new households, 39.6 percent of new jobs)

- Medium Lot Neighborhood (4.3 percent of new households, 11.7 percent of new jobs)
- Large Lot Neighborhood (2.5 percent of new households, 8.0 percent of new jobs)
- Large Lot Exurban (0.8 percent of new households, 0.8 percent of new jobs)
- Rural Estate (4.7 percent of new households, <0.1 percent of new jobs)

#### *Alternative Plan II*

The development pattern of Alternative Plan II is similar to Alternative Plan I with one area of departure. There would be more fixed-guideway transit lines and stations under the Transportation Component of Alternative II, particularly in Milwaukee County. The increase in stations and accessibility to more destinations on the fixed-guideway network are anticipated to increase housing and employment demand in Milwaukee County, which required an additional increase in the allocation of households and jobs to Milwaukee County.

**The development pattern of Alternative Plan II is similar to Alternative Plan I, but with more emphasis on TOD.**

New development would occur in the same alternative plan land use categories as under Alternative I, with more development occurring in Mixed-Use City Center and Mixed-Use Traditional Neighborhood:

- Mixed-Use City Center (10.9 percent of new households, 11.4 percent of new jobs)
- Mixed-Use Traditional Neighborhood (32.8 percent of new households, 33.0 percent of new jobs)
- Small Lot Traditional Neighborhood (46.0 percent of new households, 36.3 percent of new jobs)
- Medium Lot Neighborhood (3.7 percent of new households, 11.5 percent of new jobs)
- Large Lot Neighborhood (2.3 percent of new households, 7.0 percent of new jobs)
- Large Lot Exurban (0.7 percent of new households, 0.8 percent of new jobs)
- Rural Estate (3.6 percent of new households, <0.1 percent of new jobs)

#### **Alternative Plans – Transportation Component**

The transportation systems under the Trend and Alternative Plans I and II are associated with each alternative land use development pattern described previously in the chapter. The following section provides a description of those transportation systems and how they differ between the alternatives and the Region's existing transportation system.

**The transportation system for each alternative is associated with the alternative's land development pattern.**

#### **Transportation System Definitions**

The transportation systems in the Trend and Alternative Plans I and II are comprised of different types and levels of transportation investment. The following transportation system definitions are useful in understanding these differences.



**Figure 3.7**  
**Examples of Rapid Transit: Bus Rapid Transit and Light Rail**



**Healthline in Cleveland, Ohio**  
Credit: Greater Cleveland Regional Transit Authority



**MetroTransit Green Line in Minneapolis, Minnesota**  
Credit: Flickr user Michael Hicks

- **Local transit**  
Local transit consists of lower-speed routes with closely spaced stops, primarily with buses operating over arterial and collector streets and in mixed traffic. Local transit could also be provided on a fixed-route basis by streetcar, or on a demand-responsive basis by automobiles or vans (e.g., shared-ride taxi). Stops are typically spaced about one-eighth mile to one-quarter mile apart. Frequencies vary significantly, typically ranging from every 5 to 60 minutes in weekday peak travel periods and every 10 to 120 minutes in weekday off-peak periods and on weekends.
- **Express transit**  
Express transit consists of limited-stop, higher-speed routes, with buses operating in mixed traffic or in reserved street lanes. Stops are typically spaced about one-half mile to one mile apart, with one-quarter mile spacing in the central business district. Frequencies are typically every 10 minutes in weekday peak travel periods and every 15 to 30 minutes in weekday off-peak periods and on weekends.
- **Rapid transit**  
Rapid transit consists of either bus rapid transit (BRT) or light rail transit lines, operating in a fixed-guideway corridor. Stations for both BRT and light rail are typically spaced about one-half to one mile apart, with closer spacing in the central business district. Rapid transit would operate in the median of a roadway or in transit-only lanes in the center of the roadway, similar to light rail service in Minneapolis or BRT service in Cleveland (as shown in Figure 3.7). No matter the technology chosen, rapid transit includes signal priority or preemption at traffic signals and stations with level boarding and passenger amenities. Frequencies are typically every 8 to 12 minutes in weekday peak travel periods and every 10 to 15 minutes in weekday off-peak periods and on weekends.
- **Commuter transit**  
Commuter transit consists of longer-distance routes or lines, with either buses operating on freeways or rail vehicles operating in a rail

corridor (i.e., commuter rail). Stops or stations are typically spaced about three to five miles apart. Frequencies are typically every 10 to 30 minutes in weekday peak travel periods and every 30 to 60 minutes in weekday off-peak periods and on weekends.

- *Fixed-guideway transit*  
Fixed-guideway transit refers to either rapid transit (BRT or light rail) or commuter rail. For BRT and light rail, the fixed guideway would typically be provided in the median of a roadway or by a dedicated roadway lane. For commuter rail, the fixed guideway would be a rail corridor, most likely an existing freight rail corridor.
- *On-street bicycle facility*  
On-street bicycle facilities include accommodations for bicycles that are provided on arterial streets and highways. On-street facilities include enhanced bicycle facilities (defined below), bicycle lanes, paved shoulders, and widened outside travel lanes.
- *Off-street bicycle path*  
Off-street bicycle paths are separate from motor vehicle traffic and are typically developed within former railway rights-of-way and parkway corridors—rather than within a roadway’s right-of-way. They are mostly intended for seasonal use.
- *Enhanced bicycle facility*  
Enhanced bicycle facilities are on-street bicycle facilities that go beyond the standard bicycle lane, paved shoulder, or widened outside travel lane. Enhanced bicycle facilities are meant to improve safety, define bicycle space on roadways, and provide clear corridors for bicycle usage. Examples of enhanced bicycle facilities include the protected bicycle lane (also referred to as a cycle track or separated bicycle lane), which provides separation between bicyclists and the travel and/or parking lane via a physical barrier; the buffered bicycle lane, which provides a similar separation via a buffer space; the raised bicycle lane, which is vertically separated from traffic; and the separate path within a roadway’s right-of-way. Figure 3.8 presents some examples of enhanced bicycle facilities.
- *Arterial street/highway*  
Arterial streets are defined as streets and highways that are principally intended to provide a high degree of travel mobility, serving the through movement of traffic and providing transportation service between major subareas of an urban area or through the area. Together, the arterial streets should form an integrated, areawide system. Access to abutting property may be a secondary function of some types of arterial streets and highways, but it should be subordinate to the primary function of traffic movement. Arterials are typically spaced about one-half mile apart in Mixed-Use City Center and Mixed-Use Traditional Neighborhood areas, one mile in Small Lot Traditional Neighborhood and Medium Lot Neighborhood areas, two miles in Large Lot Neighborhood, and more than two miles in Large Lot Exurban and Rural Estate areas.
- *Surface (or standard) arterial street/highway*  
Surface arterial streets and highways are arterials with primarily at-grade intersections and may also provide direct access to abutting property through driveways.



**Figure 3.8**  
**Examples of Enhanced Bicycle Facilities**



**A one-way protected lane utilizing bollards to create separation for bicyclists on Kinzie Street in Chicago, Illinois**  
 Credit: Chicago Department of Transportation



**A buffered bike lane that utilizes a buffer zone on both the travel lane and parking lane sides in Kansas City, Kansas**  
 Credit: Bike Walk KC



**A raised bike lane on Bay Street in Milwaukee, Wisconsin**  
 Credit: Michael Sears



**A two-way protected bike lane utilizing bollards in Washington, DC**  
 Credit: Stewart Eastep



**A contra-flow bike lane allowing bicyclists to ride in the opposite direction of traffic in Boise, Idaho**  
 Credit: NACTO



**A buffered left-side bike lane in Portland, Oregon**  
 Credit: Bike Portland



**Figure 3.8**  
**(Continued)**



**A neighborhood greenway utilizing a mini traffic circle to slow auto speeds on the corridor in Tucson, Arizona**  
*Credit: NACTO*



**An intersection in Wauwatosa, Wisconsin utilizing a bike box at the head of a traffic lane**  
*Credit: SEWRPC Staff*



**Separate path within the road right-of-way in Pewaukee, Wisconsin**  
*Credit: SEWRPC Staff*



**Intersection crossing markings implemented in Seattle, Washington**  
*Credit: NACTO*

- **Freeway**

A freeway is a special type of arterial—the highest type of arterial—providing the highest degree of mobility and the most limited degree of access. A freeway is defined as a divided arterial highway with full control of access and grade separations (over- and under-passes) at all interchanges.

### **Alternative Transportation Systems**

The transportation system for each alternative is associated with the alternative's land development pattern, described previously in the chapter. Maps and tables in this section present the existing transportation system and the different transportation elements included in the Trend and Alternative Plans I and II. The existing public transit system is shown on Map 3.13 and the alternative public transit systems are shown on Maps 3.14 through 3.16. A comparison of the amount of service provided by the existing and alternative public transit systems is presented in Table 3.11, and the span of service hours and frequencies are presented in Table 3.12. The existing bicycle network is shown on Map 3.17 and the alternative bicycle networks are

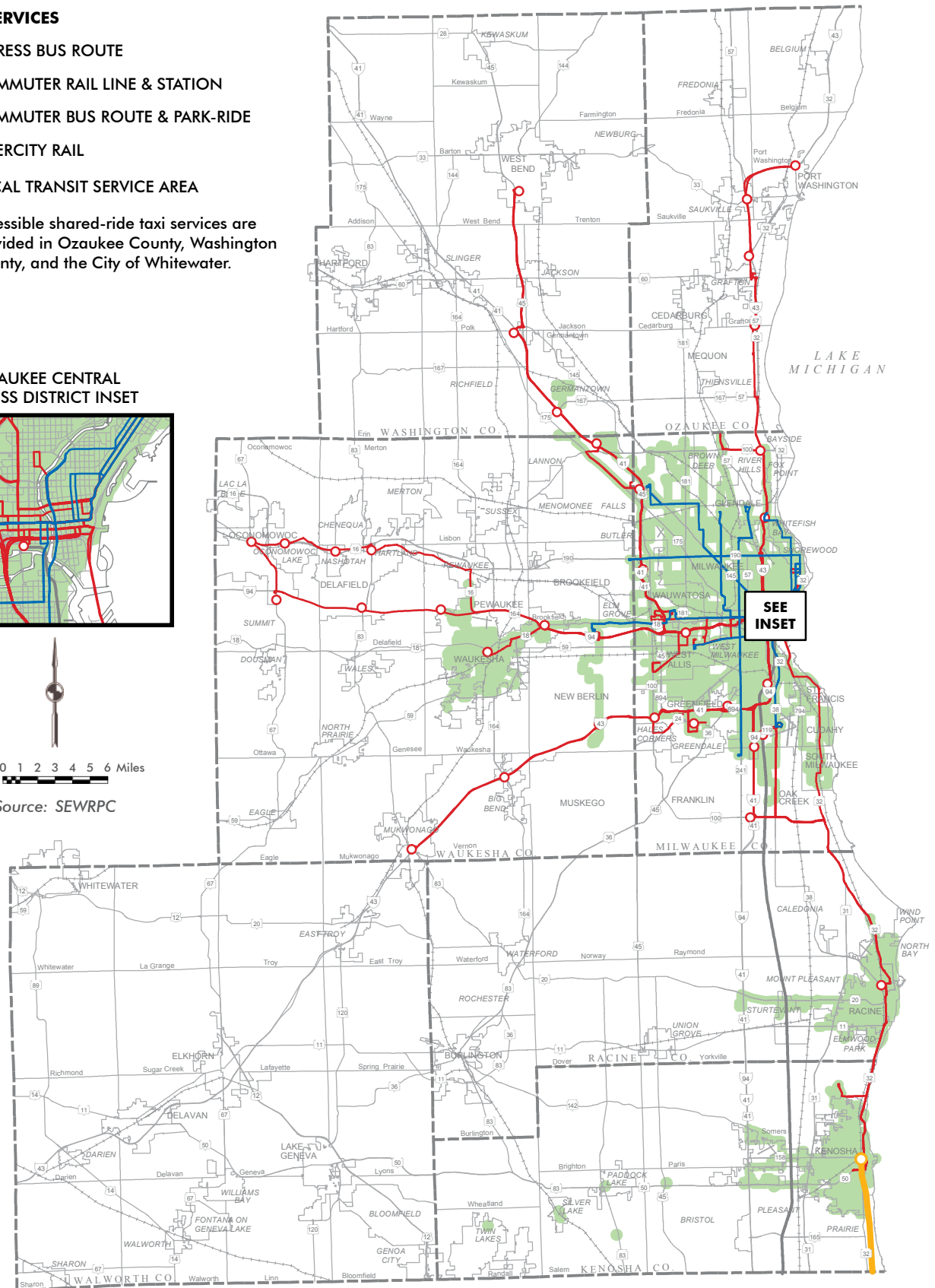
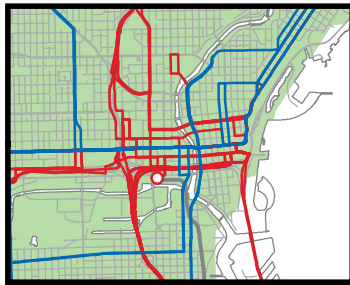
## Map 3.13 Transit Services: Existing

### TRANSIT SERVICES

- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- LOCAL TRANSIT SERVICE AREA





**Note:** Accessible shared-ride taxi services are provided in Ozaukee County, Washington County, and the City of Whitewater.

### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



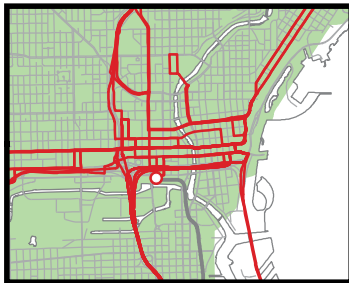
## Map 3.14 Transit Services: Trend

### TRANSIT SERVICES

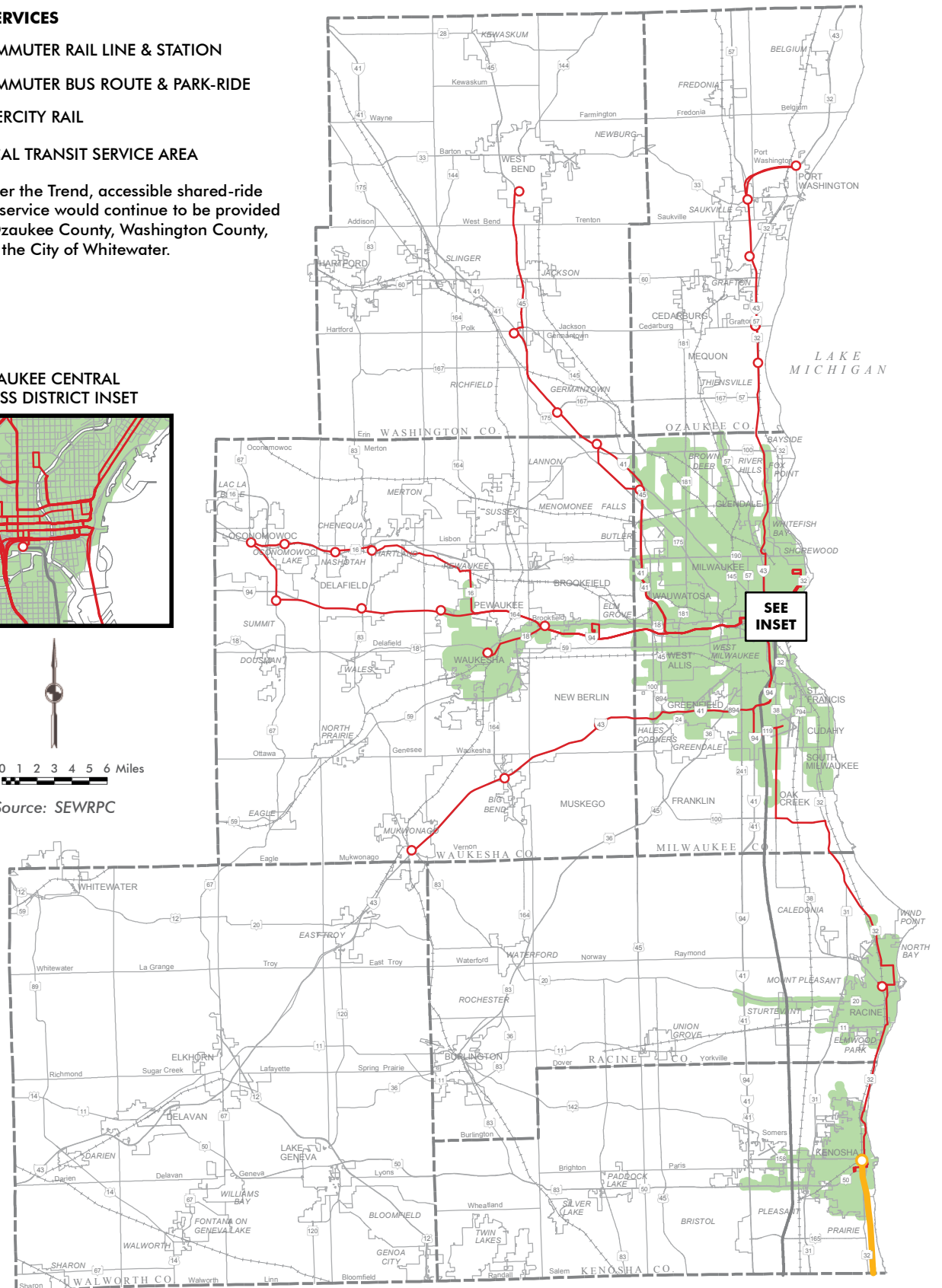
-  COMMUTER RAIL LINE & STATION
-  COMMUTER BUS ROUTE & PARK-RIDE
-  INTERCITY RAIL
-  LOCAL TRANSIT SERVICE AREA

**Note:** Under the Trend, accessible shared-ride taxi service would continue to be provided in Ozaukee County, Washington County, and the City of Whitewater.

### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



Source: SEWRPC





## Map 3.15

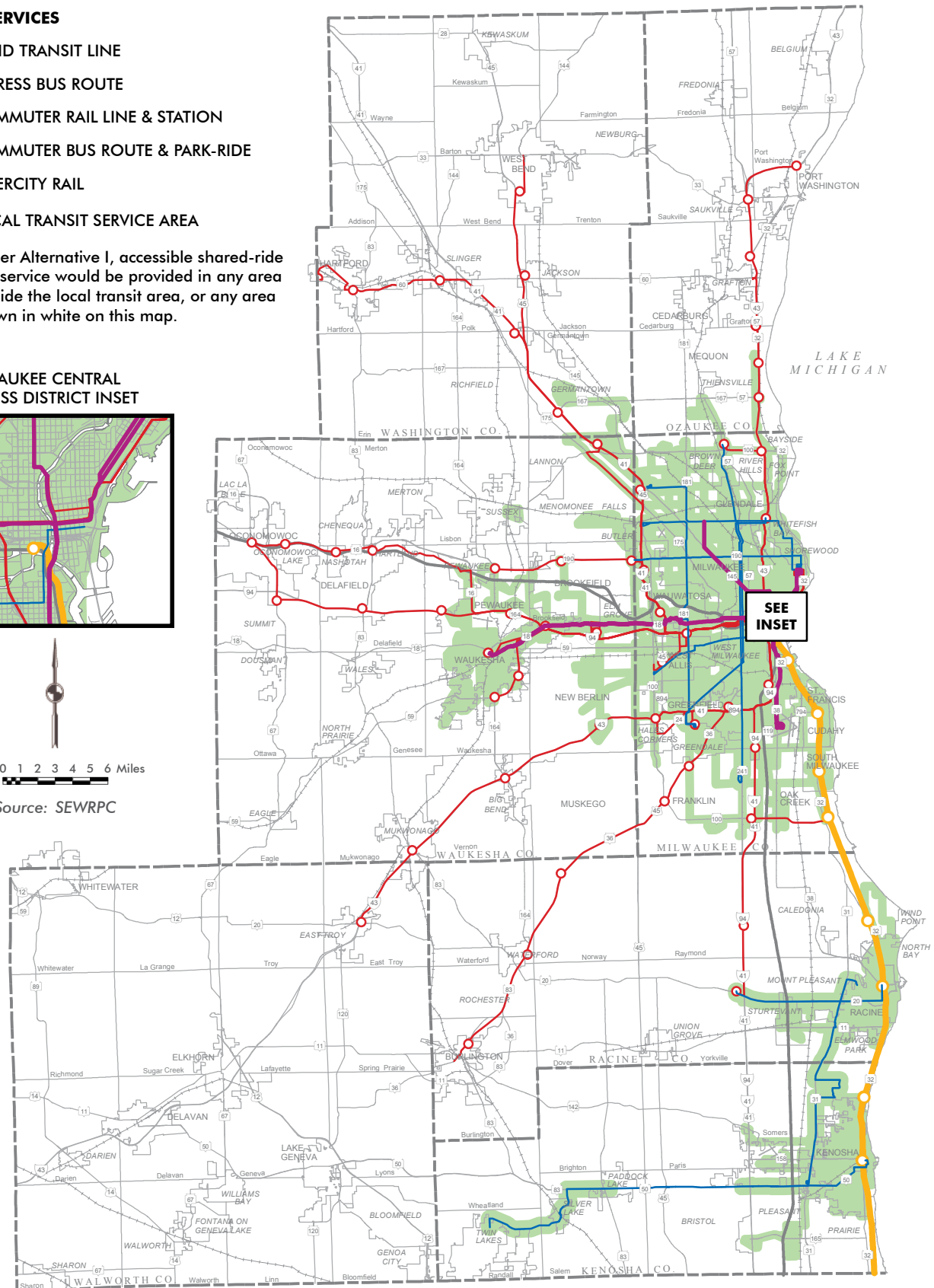
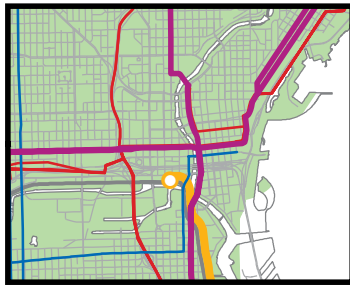
### Transit Services: Alternative Plan I

#### TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- LOCAL TRANSIT SERVICE AREA

**Note:** Under Alternative I, accessible shared-ride taxi service would be provided in any area outside the local transit area, or any area shown in white on this map.

#### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET



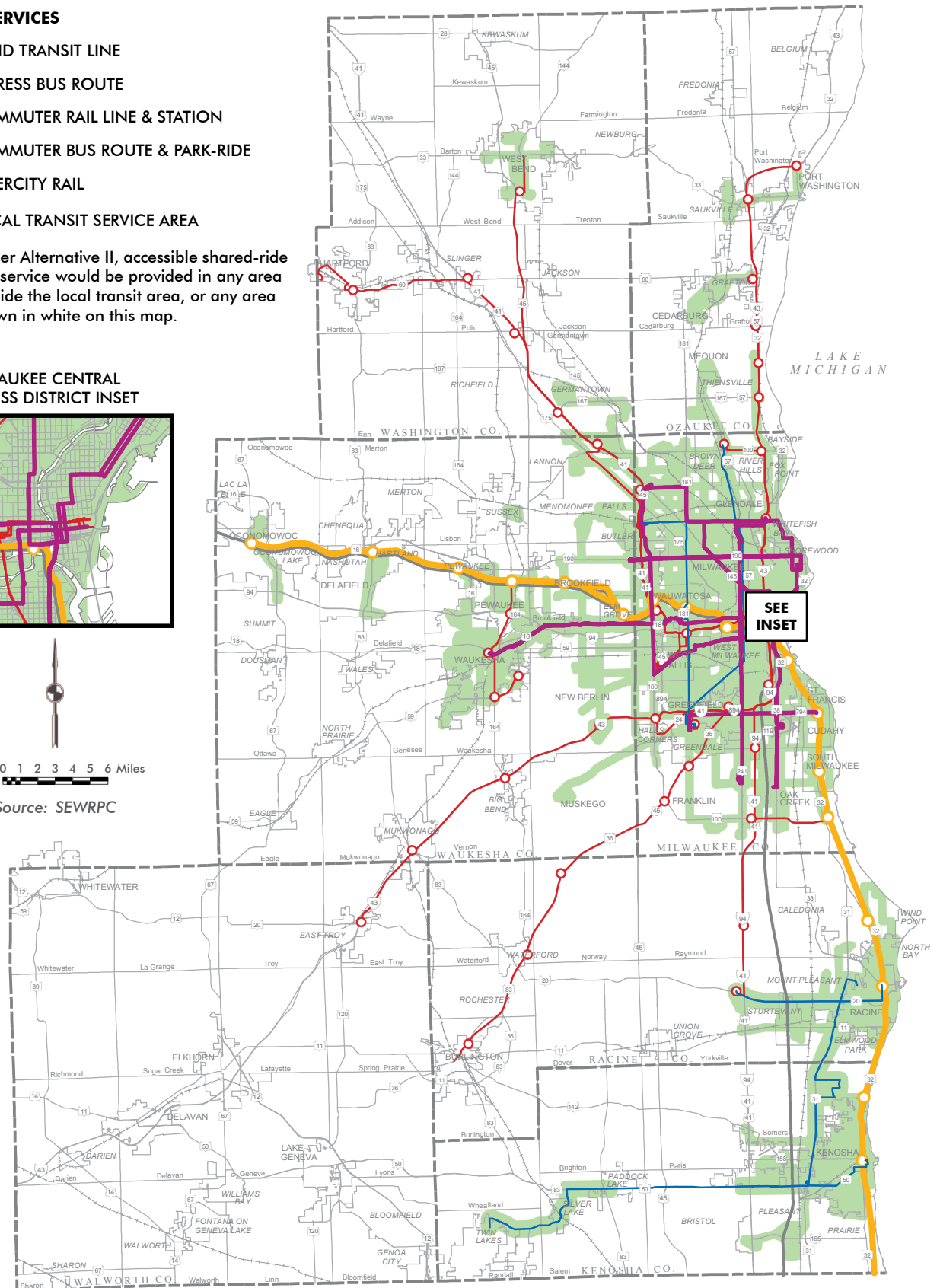
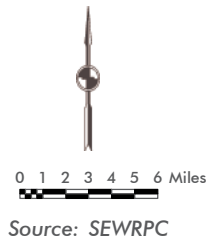
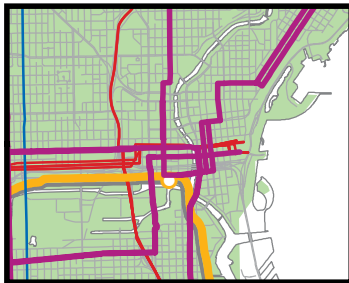
## Map 3.16 Transit Services: Alternative Plan II

### TRANSIT SERVICES

- RAPID TRANSIT LINE
- EXPRESS BUS ROUTE
- COMMUTER RAIL LINE & STATION
- COMMUTER BUS ROUTE & PARK-RIDE
- INTERCITY RAIL
- LOCAL TRANSIT SERVICE AREA

**Note:** Under Alternative II, accessible shared-ride taxi service would be provided in any area outside the local transit area, or any area shown in white on this map.

### MILWAUKEE CENTRAL BUSINESS DISTRICT INSET





**Table 3.11**  
**Fixed-Route Public Transit Service Levels by VISION 2050 Alternative**

Average Weekday Transit Service Characteristics	Existing (2013)	Trend	Alternative Plan I	Alternative Plan II
Revenue Vehicle-Hours				
Rapid Transit	--	--	420	1,260
Commuter Rail	<10	<10	70	140
Commuter Bus	260	100	940	660
Express Bus	500	--	1,530	820
Local Transit	3,980	3,600	7,640	8,680
<b>Total</b>	<b>4,740</b>	<b>3,700</b>	<b>10,600</b>	<b>11,560</b>
Revenue Vehicle-Miles				
Rapid Transit	--	--	8,100	24,900
Commuter Rail	100	100	3,900	7,100
Commuter Bus	5,900	3,200	26,600	17,700
Express Bus	6,300	--	22,800	12,300
Local Transit	48,600	44,600	90,400	103,700
<b>Total</b>	<b>60,900</b>	<b>47,900</b>	<b>151,800</b>	<b>165,700</b>

Source: SEWRPC

**Table 3.12**  
**Transit Service Hours and Frequency by VISION 2050 Alternative**

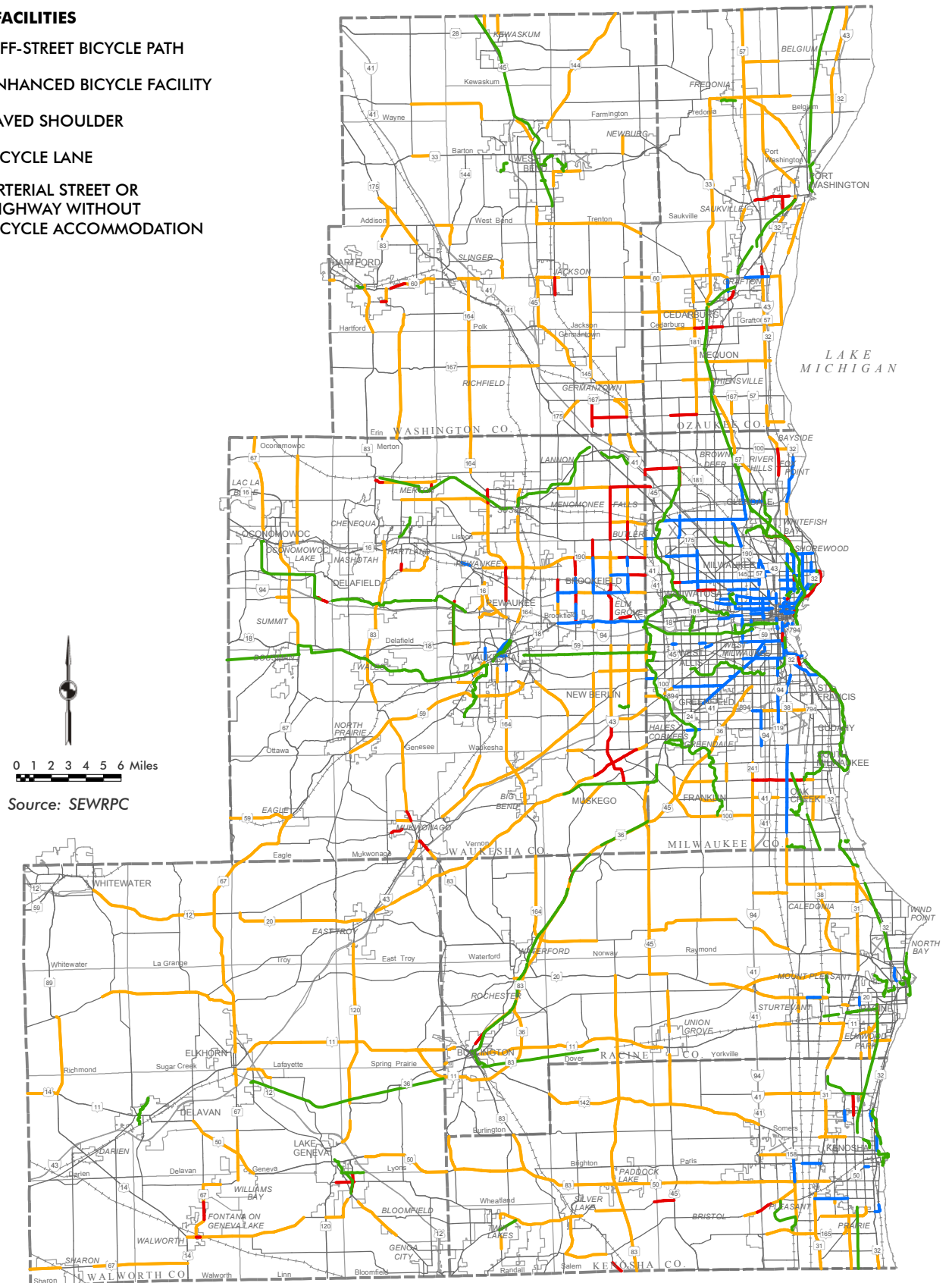
	Service Type	Weekdays/ Weekends	Existing (2015)	Trend	Alternative Plan I	Alternative Plan II
Transit Service Hours	Rapid Transit	Weekdays	No service	No service	4 a.m. – 2 a.m.	4 a.m. – 2 a.m.
		Weekends	No service	No service	5 a.m. – 3 a.m.	5 a.m. – 3 a.m.
	Commuter Rail	Weekdays	6 a.m. – 2 a.m.	6 a.m. – 2 a.m.	4 a.m. – 2 a.m.	4 a.m. – 2 a.m.
		Weekends	7 a.m. – 2 a.m.	7 a.m. – 2 a.m.	7 a.m. – 3 a.m.	7 a.m. – 3 a.m.
	Commuter Bus	Weekdays	5 a.m. – 10 a.m. 12 p.m. – 8 p.m. many services peak direction only	5 a.m. – 9 a.m. 3 p.m. – 7 p.m. peak direction only	4 a.m. – 11 p.m. both directions	4 a.m. – 11 p.m. both directions
		Weekends	8 a.m. – 11 p.m. KRM Bus only	No service	7 a.m. – 11 p.m. both directions	7 a.m. – 11 p.m. both directions
	Express Bus	Weekdays	4 a.m. – 2 a.m.	No service	4 a.m. – 2 a.m.	4 a.m. – 2 a.m.
		Weekends	5 a.m. – 2 a.m.	No service	5 a.m. – 2 a.m.	5 a.m. – 3 a.m.
	Local Service	Weekdays	4 a.m. – 2 a.m.	5 a.m. – 1 a.m.	4 a.m. – 2 a.m.	Up to 24 hours/day
		Weekends	5 a.m. – 2 a.m.	5 a.m. – 11 p.m.	5 a.m. – 2 a.m.	Up to 24 hours/day
Transit Service Headways	Rapid Transit	Weekdays	No service	No service	10 – 12 minutes	8 – 15 minutes
		Weekends	No service	No service	10 – 15 minutes	10 – 15 minutes
	Commuter Rail	Weekdays	30 – 360 minutes	30 – 360 minutes	15 – 30 minutes	15 – 30 minutes
		Weekends	60 – 480 minutes	60 – 480 minutes	30 – 60 minutes	30 – 60 minutes
	Commuter Bus	Weekdays	10 – 225 minutes many services peak direction only	20 – 240 minutes peak direction only	10 – 60 minutes both directions	10 – 60 minutes both directions
		Weekends	90 – 240 minutes KRM Bus only	No service	20 – 60 minutes both directions	20 – 60 minutes both directions
	Express Bus	Weekdays	10 – 60 minutes	No service	10 – 30 minutes	10 – 30 minutes
		Weekends	20 – 45 minutes no service on Western Kenosha County Transit	No service	10 – 30 minutes	10 – 20 minutes
	Local Service	Weekdays	10 – 70 minutes	13 – 90 minutes	10 – 60 minutes	10 – 60 minutes
		Weekends	12 – 100 minutes	15 – 120 minutes	10 – 60 minutes	10 – 60 minutes

Source: SEWRPC

## Map 3.17 Bicycle Network: Existing

### BICYCLE FACILITIES

- OFF-STREET BICYCLE PATH
- ENHANCED BICYCLE FACILITY
- PAVED SHOULDER
- BICYCLE LANE
- ARTERIAL STREET OR HIGHWAY WITHOUT BICYCLE ACCOMMODATION



shown on Maps 3.18 and 3.19. A comparison of the existing and alternative bicycle networks is presented in Table 3.13. The alternative arterial street and highway systems are shown on Maps 3.20 through 3.22. A comparison of the existing and alternative arterial street and highway systems is presented in Table 3.14.

**The concept for the Trend's transportation system is a continuation of recent trends in transportation investment in the Region.**

#### *Trend*

The Trend is intended to be a baseline against which Alternatives I and II can be compared. The concept for the Trend's transportation system is a continuation of recent trends in transportation investment in the Region. The Trend's transportation system is to an extent an extrapolation of past trends, and is also based on current and recent past investment levels and priorities, with similar levels and priorities assumed to continue through the year 2050.

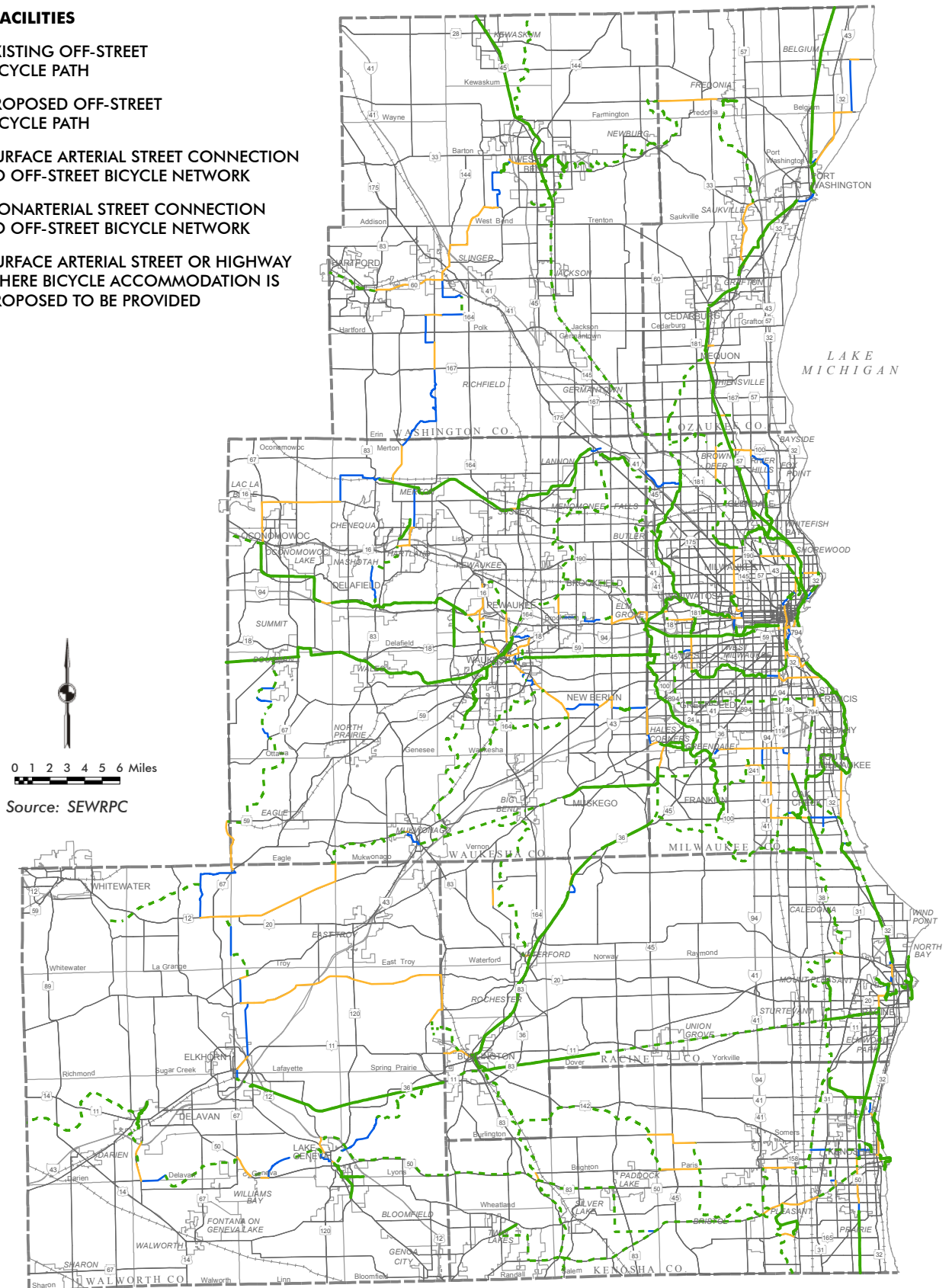
The trend in public transit service levels in the Region has been one of significant decline; a loss of nearly 25 percent of service since the early 2000s. Under the Trend, the already reduced transit service levels would be reduced by an additional 22 percent by the year 2050, as shown in Table 3.11, on Map 3.14, and in Figure 3.9. This further decline is based in part on an extrapolation of service level declines, but primarily is based on consideration of current and expected revenues and current and expected capital, operating, and maintenance costs for the Region's existing transit services. Future decline would particularly affect local bus service, potentially resulting in entire routes being cut, lower service frequencies, reduced service hours, and/or weekend service being eliminated, depending on the transit system. Existing express bus service would likely be eliminated as well. Passenger fares would increase faster than inflation as transit systems attempt to maintain service levels as high as possible. Existing shared-ride taxi services would continue to operate, but no new shared-ride taxi services would be established.

The trend in providing bicycle and pedestrian facilities has been greatly affected by Federal and State requirements that bicycle and pedestrian accommodations be provided in all new highway construction and reconstruction projects funded with State or Federal funds, unless demonstrated to be prohibitive. While the impact of recent changes to State requirements is not yet known, these changes will not affect Federally funded projects and it is anticipated that significant expansion of on-street accommodations will continue. Several municipal and county bicycle plans have also been completed in recent years, which have helped to implement both on- and off-street bicycle facilities. Substantial progress has been made to expand the off-street network through construction of additional paths, which is anticipated to continue. As shown in Table 3.13 and on Map 3.18, the Trend assumes recent trends in bicycle and pedestrian facility construction will continue to the year 2050, so the Trend does not differ substantially from Alternatives I and II in this regard. However, the Trend only assumes bicycle accommodations are provided through basic on-street bicycle facilities on the surface arterial street and highway system, including bicycle lanes, wider outside travel lanes, and paved shoulders. Alternatives I and II, as described on the following pages, include corridors of enhanced bicycle facilities that go beyond these standard accommodations. Under all alternatives, pedestrian facilities are envisioned to be designed and constructed consistent with Americans with Disabilities Act (ADA) requirements, thus accommodating people with disabilities. For the Trend, however, the connectivity of sidewalks is less than under Alternatives I and II due to a development pattern that generally includes lower densities and additional larger homes with larger yards.

## Map 3.18 Bicycle Network: Trend

### BICYCLE FACILITIES

- EXISTING OFF-STREET BICYCLE PATH
- - - PROPOSED OFF-STREET BICYCLE PATH
- SURFACE ARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- SURFACE ARTERIAL STREET OR HIGHWAY WHERE BICYCLE ACCOMMODATION IS PROPOSED TO BE PROVIDED



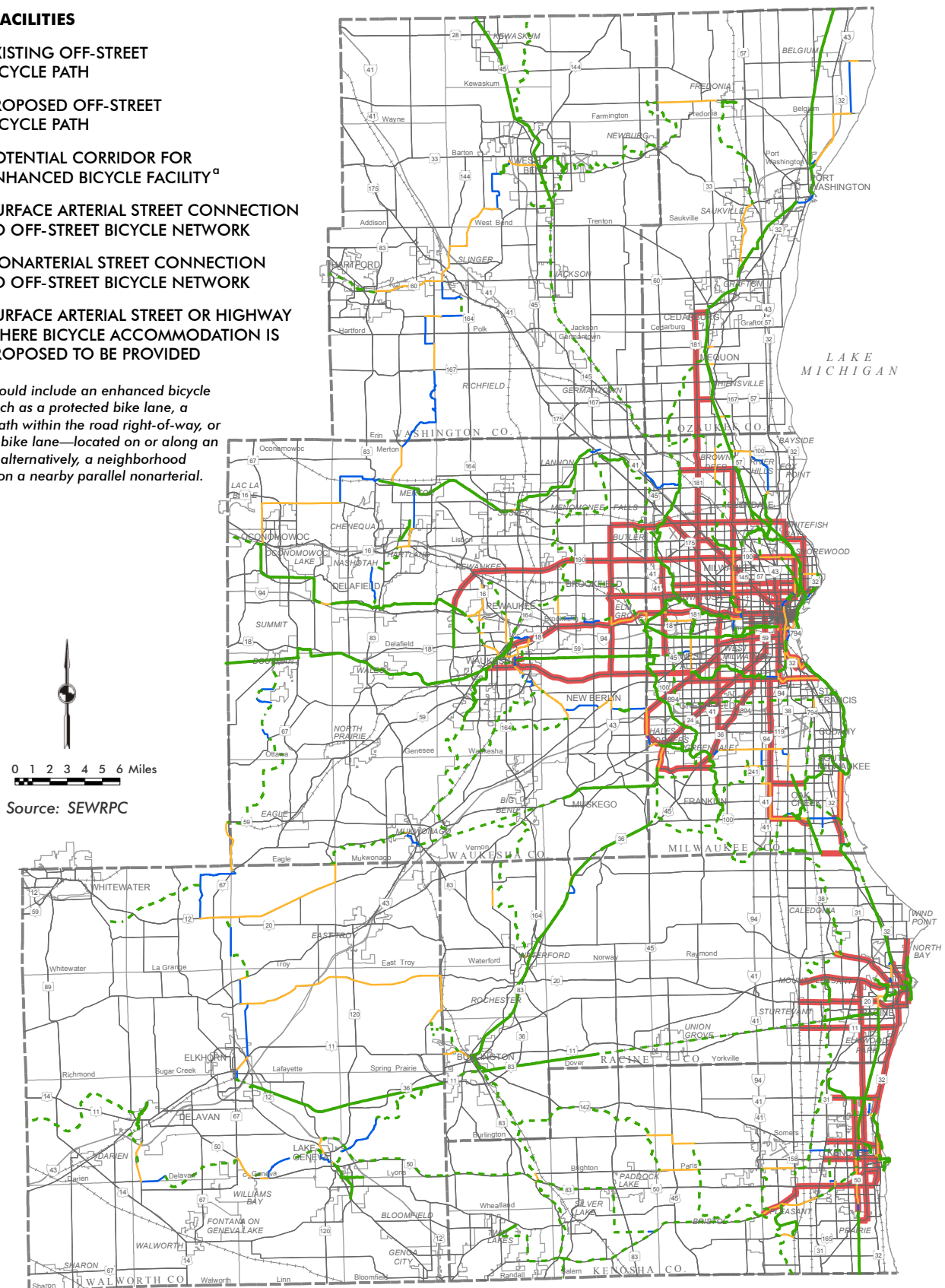


## Map 3.19 Bicycle Network: Alternative Plans I and II

### BICYCLE FACILITIES

- EXISTING OFF-STREET BICYCLE PATH
- - - PROPOSED OFF-STREET BICYCLE PATH
- POTENTIAL CORRIDOR FOR ENHANCED BICYCLE FACILITY<sup>a</sup>
- SURFACE ARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- NONARTERIAL STREET CONNECTION TO OFF-STREET BICYCLE NETWORK
- SURFACE ARTERIAL STREET OR HIGHWAY WHERE BICYCLE ACCOMMODATION IS PROPOSED TO BE PROVIDED

<sup>a</sup> 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.





**Table 3.13**  
**Miles of Bicycle Facilities by VISION 2050 Alternative**

Bicycle Facility	Estimated Mileages		
	Existing	Trend	Alternatives I and II
On-street Accommodations			
Standard	813.3	3,304.5	3,015.2
Enhanced	68.5	68.5	357.8
Off-street Paths	286.0	708.0	708.0

Source: SEWRPC

The trend in developing the arterial street and highway system has involved segment-by-segment reconstruction of the freeway system, with traffic lanes added on congested arterial facilities and some new facilities constructed. This would continue under the Trend, with necessary reconstruction occurring to modernize streets and highways to achieve current safety and design standards, and additional traffic lanes and new facilities added to address congestion. The highway capacity additions to address projected congestion under the Trend are shown in Table 3.14 and on Map 3.20.

#### *Alternative Plan I*

The transportation system of Alternative Plan I represents a measured departure from the Trend. Alternative I includes a significant increase in transit service and enhanced bicycle facilities. Additional traffic lanes and new arterial street and highway facilities are also added to address residual traffic congestion.

Transit service would be significantly expanded, as shown in Table 3.11, on Map 3.15, and in Figure 3.8, reversing the recent decline in transit service levels and introducing fixed-guideway transit in a few major travel corridors. Transit service improvements include an expansion of the service area and frequency of local bus routes, more express and commuter bus routes, and increased frequency on existing express and commuter bus routes. Shared-ride taxi would be provided in the remainder of the Region where local bus service would not be available. One commuter rail corridor and three rapid transit corridors are included in this alternative.

Bicycle facilities would be significantly improved, as shown in Table 3.13 and on Map 3.19. The improvements include the same off-street path network expansion as the Trend, and on-street bicycle accommodations on the surface arterial street and highway system as it is reconstructed. However, the on-street bicycle accommodations in Alternative I, like Alternative II, include enhanced bicycle facilities. Enhanced bicycle facilities are intended to increase the safety and comfort of bicyclists by creating either physical separation between bicyclists and vehicles or improving the visibility of the bicycle facility. Map 3.19 shows these facilities within corridors of regional significance, or arterial corridors that extend through two or more communities or provide connections between off-street facilities. The actual facility could be located on the surface arterial street within the corridor or, if this would be impractical, neighborhood greenways (i.e., “bike boulevards”) could be implemented on parallel nonarterial streets within about two blocks of the arterial. Standard bicycle facilities—bicycle lanes, wider outside travel lanes, and paved shoulders—would be provided as other arterials are reconstructed. Pedestrian facilities, as under the Trend, would be ADA-compliant. For Alternative I, however, the connectivity of sidewalks is improved due to a focus on a more compact development pattern, with limited lower-density development and the introduction of more walkable TOD around fixed-guideway transit stations.

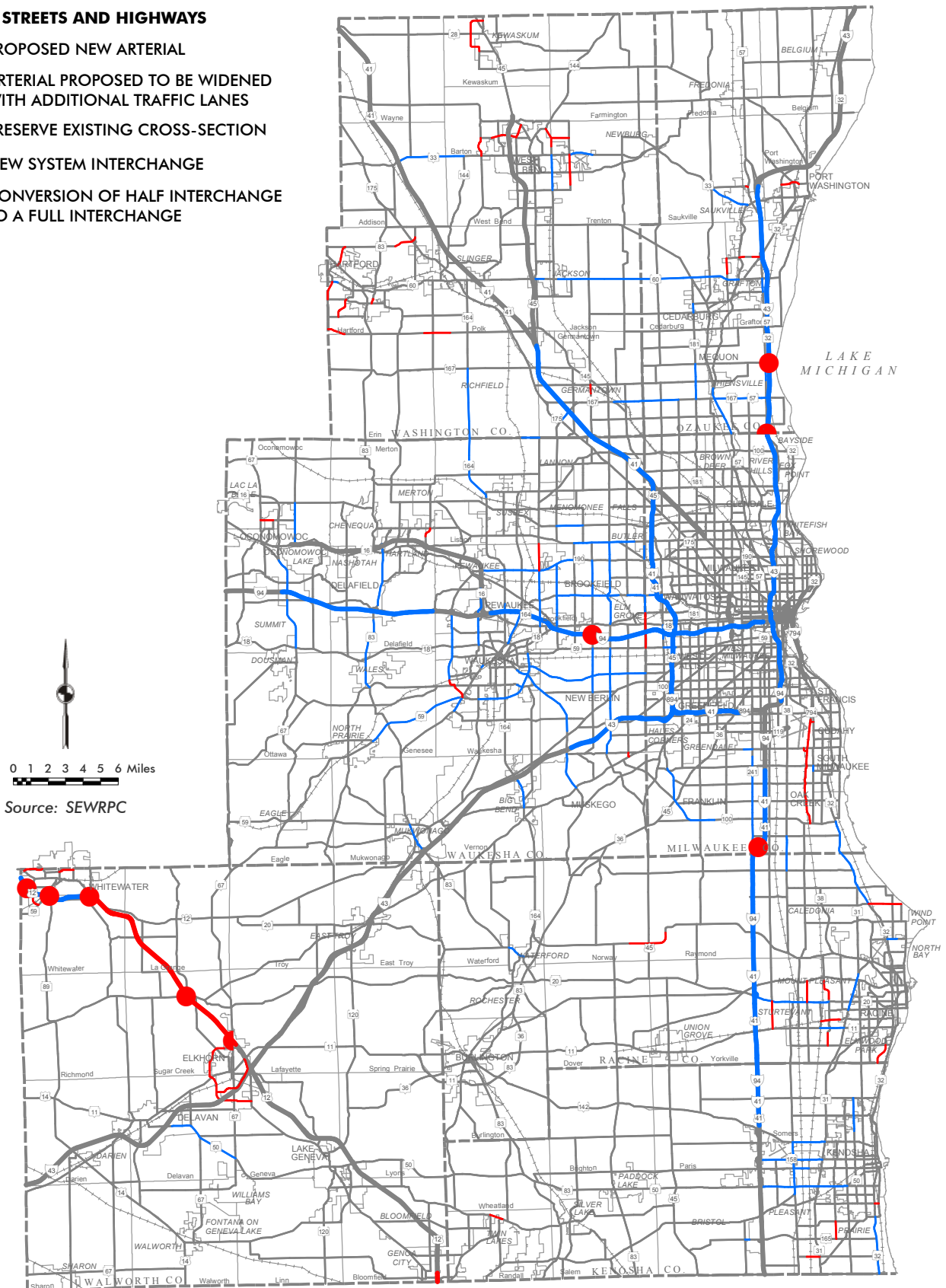
**The transportation system of Alternative Plan I represents a measured departure from the Trend, including a significant increase in transit service and enhanced bicycle facilities.**

## Map 3.20

### Arterial Street and Highway Element: Trend

#### ARTERIAL STREETS AND HIGHWAYS

- PROPOSED NEW ARTERIAL
- ARTERIAL PROPOSED TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW SYSTEM INTERCHANGE
- ◐ CONVERSION OF HALF INTERCHANGE TO A FULL INTERCHANGE

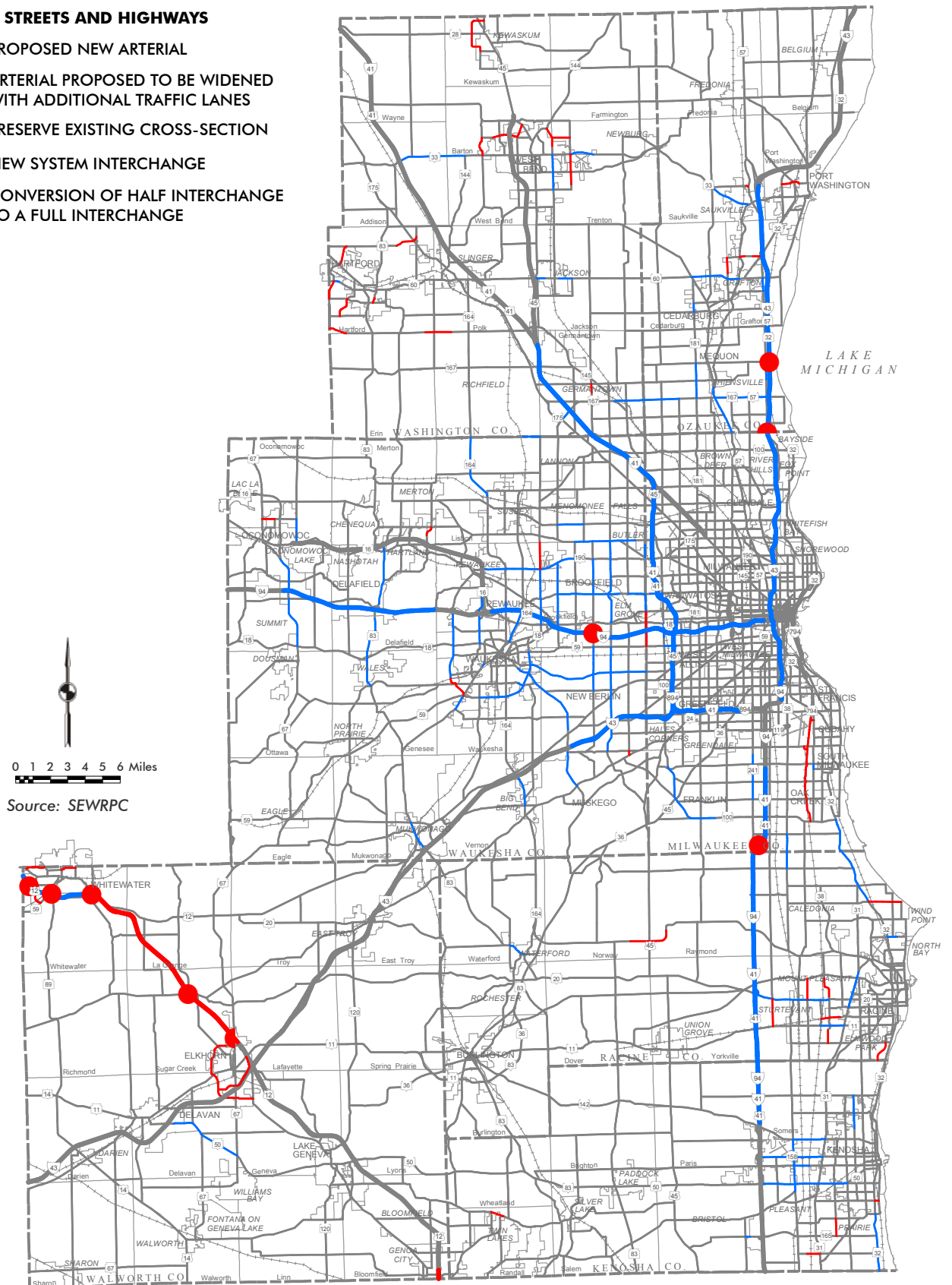


Source: SEWRPC

## Map 3.21 Arterial Street and Highway Element: Alternative Plan I

### ARTERIAL STREETS AND HIGHWAYS

- PROPOSED NEW ARTERIAL
- ARTERIAL PROPOSED TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW SYSTEM INTERCHANGE
- ◐ CONVERSION OF HALF INTERCHANGE TO A FULL INTERCHANGE

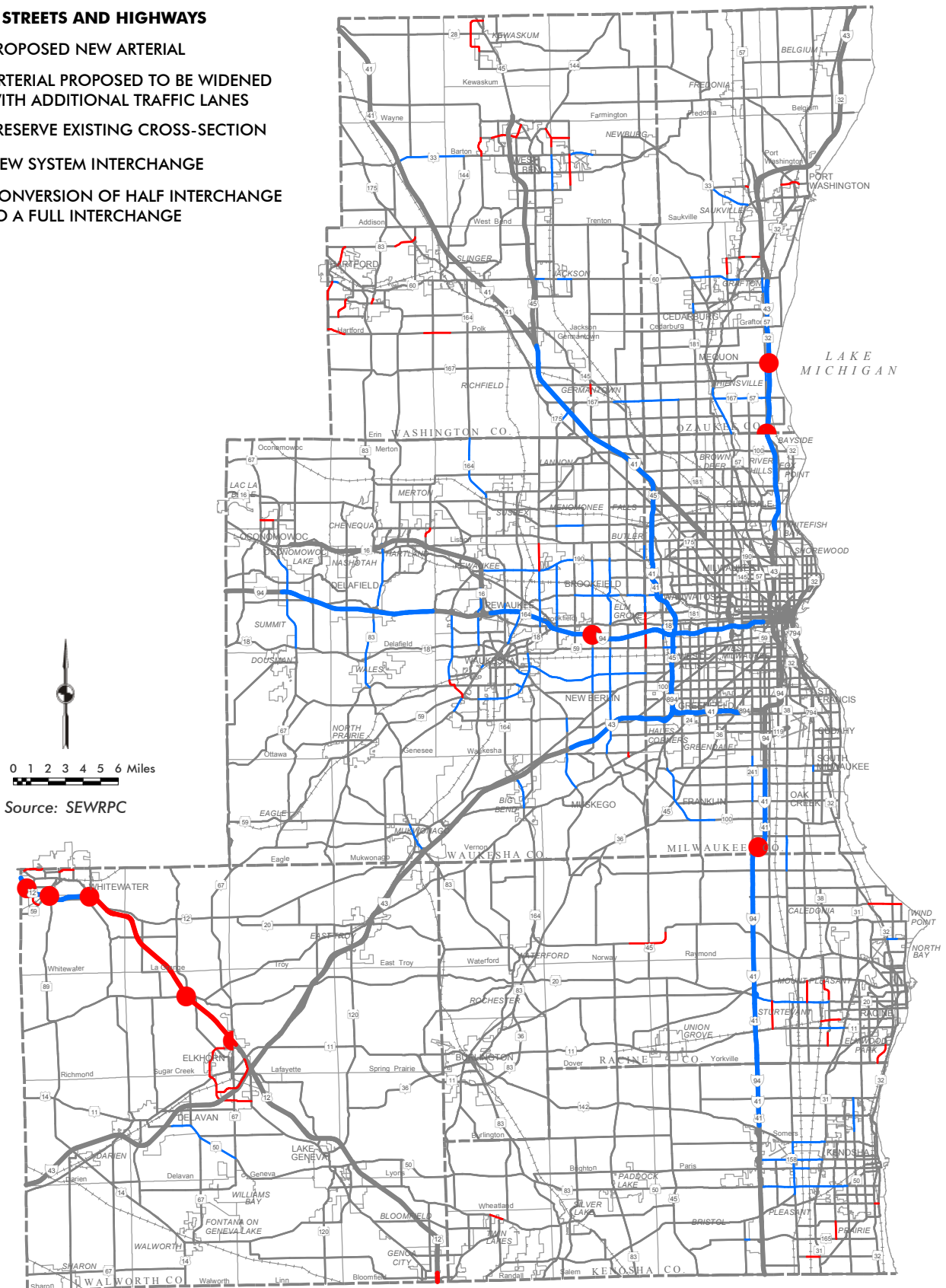


## Map 3.22

### Arterial Street and Highway Element: Alternative Plan II

#### ARTERIAL STREETS AND HIGHWAYS

- PROPOSED NEW ARTERIAL
- ARTERIAL PROPOSED TO BE WIDENED WITH ADDITIONAL TRAFFIC LANES
- PRESERVE EXISTING CROSS-SECTION
- NEW SYSTEM INTERCHANGE
- ◐ CONVERSION OF HALF INTERCHANGE TO A FULL INTERCHANGE



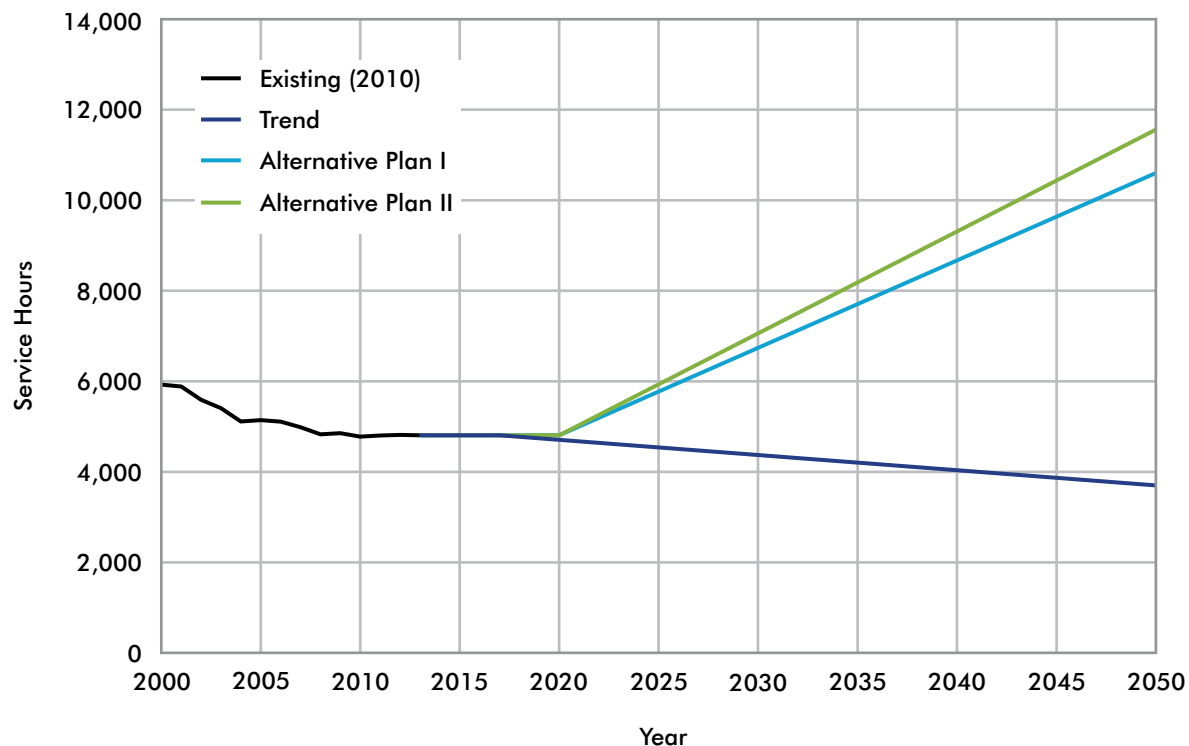
**Table 3.14**  
**Centerline Miles of Surface Arterial and Freeway**  
**Functional Improvements by VISION 2050 Alternative**

Surface Arterial and Freeway Functional Improvements	Existing and Committed (Miles)	Trend (Miles)	Alternative Plan I (Miles)	Alternative Plan II (Miles)
Facilities Resurfaced/Reconstructed to Existing Capacity				
Surface Arterials	--	3,112.6	3,133.0	3,157.9
Freeways	--	159.2	159.2	174.6
Subtotal	--	3,271.8	3,292.2	3,332.5
Facilities Reconstructed with Additional Traffic Lanes				
Surface Arterials	30.3	193.0	172.6	147.6
Freeways	47.0	115.7	115.7	100.3
Subtotal	77.3	308.7	288.3	247.9
New Facilities				
Surface Arterials	2.9	60.8	60.8	54.4
Freeways	0.0	12.5	12.5	12.5
Subtotal	2.9	73.3	73.3	66.9
Total	-- <sup>a</sup>	3,653.8	3,653.8	3,647.3

<sup>a</sup> The existing arterial street and highway system, including 2.9 miles of committed new facilities, totals 3,579.4 miles.

Source: SEWRPC

**Figure 3.9**  
**Average Weekday Transit Service Hours by VISION 2050 Alternative**



Source: National Transit Database and SEWRPC



Segment-by-segment reconstruction of the freeway system would continue under Alternative I, as it would under the Trend, with reconstruction of all arterial streets and highways including modernization to achieve current safety and design standards. Like the Trend, highway capacity additions, shown in Table 3.14 and on Map 3.18, would be implemented only to address the residual traffic congestion that may not be alleviated by other measures. In developing Alternative I, anticipated traffic congestion on the arterial network without any additional traffic lanes or new arterial facilities was first considered. Additional traffic lanes and some new arterial facilities were then added to mitigate traffic congestion that would not be alleviated by public transit. In the evaluation presented later in the chapter, the arterial element of Alternative I includes capacity expansions, but a secondary evaluation without any expansions beyond those committed is also presented.

**The transportation system of Alternative Plan II represents an even more substantial departure from the Trend than Alternative I.**

#### *Alternative Plan II*

The transportation system envisioned under Alternative Plan II represents an even more substantial departure from the Trend than Alternative I. Similar to Alternative I, Alternative II includes a significant increase in transit service, essentially the same bicycle improvements, and is also evaluated both with and without additional traffic lanes and new arterial facilities. However, Alternative II includes more fixed-guideway transit and highway capacity expansions are limited to the rural and low-density suburban areas not served by fixed-guideway transit lines.

The significant transit service expansion is shown in Table 3.11, on Map 3.16, and in Figure 3.9. In addition to significant expansion of local bus service, Alternative II includes a significant investment in fixed-guideway transit corridors, including commuter rail and rapid transit. Two commuter rail corridors and ten rapid transit corridors are included. The service area and frequency of local bus routes would be expanded and key corridors without a fixed-guideway investment would see high-frequency express or commuter bus routes. Shared-ride taxi would be provided in the remainder of the Region where local bus service would not be available.

The bicycle facilities under Alternative II, as shown in Table 3.13 and on Map 3.19, would essentially be the same as Alternative I. The improvements include the same off-street path network expansion as the Trend, enhanced bicycle facilities in regional corridors, and standard on-street bicycle accommodations on the other surface arterial streets and highways as they are reconstructed. Pedestrian facilities would also be the same in terms of being ADA-compliant, but Alternative II would have even higher sidewalk connectivity due to extensive TOD around fixed-guideway transit stations.

**Unlike the Trend and Alternative I, highway capacity improvements under Alternative II would primarily be limited to the rural and low-density suburban areas not served by fixed-guideway transit.**

Segment-by-segment reconstruction of the freeway system would continue under Alternative II, as it would under the Trend and Alternative I, with reconstruction of all arterial streets and highways including modernization to achieve current safety and design standards. Like the Trend and Alternative I, Alternative II also includes additional traffic lanes and some new arterial street and highway facilities, as shown in Table 3.14 and on Map 3.22, with the capacity additions included to mitigate increases in traffic congestion that would not be alleviated by public transit. Unlike the Trend and Alternative I, highway capacity improvements under Alternative II would primarily be limited to the rural and low-density suburban areas not served by the fixed-guideway transit investments included as part of this alternative. This results in fewer capacity additions envisioned under Alternative II compared to Alternative I and the Trend. Like Alternative I, in the evaluation presented later in the chapter, the arterial element of Alternative II includes capacity expansions,

but a secondary evaluation without any expansions beyond those committed is also presented.

### 3.3 EVALUATION OF ALTERNATIVES

The added level of detail included in the alternatives, compared to the more conceptual scenarios from the previous step in the VISION 2050 process (described in Chapter 2 of this volume), allows a more thorough evaluation using a larger set of criteria than were used to evaluate the scenarios. This evaluation is summarized below, along with the VISION 2050 plan objectives and a series of evaluation criteria. The full evaluation is detailed in Appendix F to this volume.

**The alternatives were thoroughly evaluated against the VISION 2050 plan objectives using a series of 50 evaluation criteria.**

#### **Plan Objectives and Criteria for Evaluating Alternatives**

An important part of any planning effort is formulating objectives to pursue through the implementation of plan recommendations. The plan objectives for VISION 2050 are specific goals, or ends, that guided the preparation and evaluation of the alternatives, and would be the desired outcome of the VISION 2050 recommendations presented in Volume III of this report. The objectives are organized into four important themes for VISION 2050, and no priority is implied by the order of the plan objectives. Associated with each objective are criteria used to evaluate the alternatives. The associated criteria measure the extent to which each alternative meets each objective. The objectives and criteria were developed by staff based on the Guiding Statements that form the initial vision for the Region (see Chapter 1 of this volume), with guidance from the Commission's Advisory Committees on Regional Land Use Planning and Regional Transportation Planning, and its Environmental Justice Task Force. The objectives and evaluation criteria are listed below, and descriptions of the criteria are presented in Table 3.15.

#### **Healthy Communities Objectives and Criteria**

The following objectives and their associated criteria revolve around creating healthy communities within our Region, with active transportation options and environmental preservation serving as cornerstones of this theme.

- **Objective 1.1:** Vibrant, walkable neighborhoods that contribute to the Region's distinct character.
  - o **Criterion 1.1.1:** Number of people living in walkable areas
  - o **Criterion 1.1.2:** Population density
  - o **Criterion 1.1.3:** Employment density
- **Objective 1.2:** Active transportation options that encourage healthy lifestyles.
  - o **Criterion 1.2.1:** Bicycle level of service
  - o **Criterion 1.2.2:** Bicycle network connectivity
  - o **Criterion 1.2.3:** Benefits and impacts to public health
- **Objective 1.3:** Compact urban development and limited rural development that maximize open space and productive agricultural land.
  - o **Criterion 1.3.1:** Remaining farmland and undeveloped land
  - o **Criterion 1.3.2:** Impacts to natural resource areas
- **Objective 1.4:** Environmentally sustainable development and transportation that minimize the use of nonrenewable resources and adverse impacts on the Region's natural environment, including biodiversity, air, and water.

**Table 3.15**  
**Description of Criteria for Evaluating Alternatives**

<b>Healthy Communities</b>		
<b>No.</b>	<b>Criterion</b>	<b>Criterion Description</b>
1.1.1	Number of people living in walkable areas	Estimates of the number of residents and the proportion of the Region in walkable areas in 2050. The walkability of an area is scored on a scale of 0 to 100, with greater than 50 considered “walkable.” Scores are based on pedestrian friendliness metrics (such as population density, block length, and intersection density) and walking distance to amenities (such as schools, parks, retail services, and employment).
1.1.2	Population density	Estimates of total population per square mile of residential land for the Region in 2010 and 2050 and of population per square mile of new residential development in the Region through 2050.
1.1.3	Employment density	Estimates of total jobs per square mile of employment-supporting land for the Region in 2010 and 2050 and of jobs per square mile of new employment-supporting development in the Region through 2050.
1.2.1	Bicycle level of service	An estimate of bicyclist comfort and existing/perceived operational conditions on bicycle facilities in the Region in 2050.
1.2.2	Bicycle network connectivity	Assessment of the connectivity of the Region’s bicycle network, including identification of potential gaps.
1.2.3	Benefits and impacts to public health	Assessment of the potential benefits and impacts of each alternative on public health in the Region through 2050.
1.3.1	Remaining farmland and undeveloped land	Estimates of the land that would remain as total farmland, unused and other open land, and farmland or unused and other open land with Class I or Class II soils in 2050.
1.3.2	Impacts to natural resource areas	Estimates of the land with natural resource features that would potentially be impacted by transportation projects in the Region through 2050. Lands include wetlands, primary and secondary environmental corridors, isolated natural areas, critical species habitats, Wisconsin Department of Natural Resources-managed lands and land legacy places, lands protected by land trusts and other non-profit natural resource conservation organizations, and prime farmland (Class I and II soils).
1.4.1	Preservation of areas with high groundwater recharge potential	An estimate of areas with very high and high groundwater recharge potential that would potentially be impacted by the alternatives.
1.4.2	Impervious surface	An estimate of the total impervious surface in the Region in 2050.
1.4.3	Energy use	Estimates of the average annual amounts of energy used by residential buildings and transportation in the Region in 2050.
1.4.4	Greenhouse gas emissions and other air pollutants	Estimates of annual greenhouse gas emissions and other air pollutants produced in the Region from transportation and residential buildings in 2050.
1.4.5	Impacts to water resources and water quality	Assessment of potential impacts of each alternative on the existing water resources and the quality of water in the Region.
1.4.6	Ability to address issues related to climate change	Assessment of how each alternative may perform related to climate change impacts, primarily related to impacts on infrastructure due to flooding associated with more frequent heavy storm events.
1.4.7	Overall environmental sustainability	Assessment of the expected environmental sustainability of the alternatives based on multiple environmental criteria. Includes discussion on sustainable building practices.
1.5.1	Homes, businesses, land, and parkland acquired	Estimates of the number of homes and businesses and the amount of land and parkland that would potentially be acquired for transportation projects in the Region through 2050.
1.6.1	Crashes by mode	Estimates of average annual crashes on surface arterials and freeways in the Region in 2050.
<b>Equitable Access</b>		
<b>No.</b>	<b>Criterion</b>	<b>Criterion Description</b>
2.1.1	Level of accessibility to jobs and activity centers for minority populations and low-income populations by mode	An assessment of whether minority populations and low-income populations would be expected to have improved accessibility to jobs and major activity centers by automobile and by transit. Includes a comparison of increases in transit accessibility to increases in highway accessibility.
2.1.2	Minority populations and low-income populations served by transit	An assessment of the minority populations and low-income populations residing within walking distance to fixed-route transit service.
2.1.3	Transit service quality for minority populations and low-income populations	An assessment of the number of minority populations and low-income populations that would be served by higher-quality transit service. Transit quality determined based on the amount, frequency, and speed of the transit service accessible from a particular area.
2.1.4	Minority populations and low-income populations benefited and impacted by new and widened arterial street and highway facilities	An assessment of the location of any new or widened arterial street/highway facilities to areas of minority populations and low-income populations. Includes analysis of: the extent to which areas would receive any potential benefits from the facilities; whether any area would disproportionately bear any potential impacts from the facilities (including possible property acquisition); and whether there is an over-representation of minority populations and low-income populations along any freeways that would be widened.
2.1.5	Transportation-related air pollution impacts on minority populations and low-income populations	An assessment of whether there would be an expected disproportionate impact on minority populations and low-income populations with respect to transportation-related air pollution.
2.2.1	Households with affordable housing + transportation costs	An estimate of the total number of housing units in the Region in 2050 that are affordable at the household median income, based on combined transportation costs and housing costs (45 percent of income or less is considered affordable).

**Table continued on next page.**

**Table 3.15**  
**(Continued)**

2.2.2	Ability to accommodate demographic shifts	Assessment of the ability to accommodate expected demographic shifts based on land development and travel patterns in the Region in 2050. Includes discussion on accessibility for people with disabilities.
2.3.1	Areas with a job-worker mismatch	An estimate of the ratio of jobs to households in areas throughout the Region in 2050.
<b>Cost and Financial Sustainability</b>		
<b>No.</b>	<b>Criterion</b>	<b>Criterion Description</b>
3.1.1	Impact of the distribution of growth on property values	Evaluation of the potential change in property values for various areas in the Region under different land development patterns based on national examples. Includes discussion of how compact development in built-out areas can increase property tax revenues.
3.1.2	Return on investment	Assessment of the various benefits and impacts associated with certain types of investment in each alternative in relation to the expected costs of those investments. Benefits and impacts expressed as estimated dollar amounts where appropriate.
3.1.3	Ability to connect to nearby metro areas and leverage the value of those areas	Assessment of how each alternative may provide better connections to nearby metro areas, such as Chicago, Madison, and the Fox Valley.
3.1.4	Potential for attracting residents and businesses	Assessment of how well each alternative would make the Region more attractive to potential residents and businesses based on multiple quality of life-related criteria.
3.2.1	Average annual transportation system investment	Estimates of operating, maintenance, and capital costs (annualized and in year 2015 dollars) of arterial streets/highways, transit, and bicycle facilities in 2050.
3.3.1	Private transportation costs per capita	Estimates of the typical costs (annualized and in year 2015 dollars) to individuals of driving and using transit in the Region in 2050.
3.3.2	Per household cost of delay	Estimates of the cost of travel time delay (average annual and average weekday) for personal and commercial travel as a result of lost time in congested roadway conditions in the Region in 2050.
3.3.3	Resilience in adapting to changing fuel prices	Assessment of how each alternative may perform under different future fuel price assumptions.
3.4.1	Supportive infrastructure costs	Capital cost estimate (in year 2014 dollars) of extending public sewer, water, and roads to new development in the Region through 2050 by density type and location.
<b>Mobility</b>		
<b>No.</b>	<b>Criterion</b>	<b>Criterion Description</b>
4.1.1	Trips per day by mode	Estimates of personal vehicle, transit, and non-motorized person trips on an average weekday in 2050.
4.1.2	Vehicle-miles of travel	An estimate of the average annual vehicle-miles of travel in the Region in 2050 (total and per capita).
4.1.3	Impacts of technology changes	Assessment of the potential for new technologies to impact travel in the Region by 2050. Includes identification of the likelihood and challenges related to implementing certain technologies.
4.2.1	Travel time to important places by mode	Estimates of the average travel times in 2050 to major activity centers by automobile and by transit.
4.2.2	Access to park-ride facilities	An estimate of the accessibility of park-ride facilities in 2050.
4.3.1	Pavement condition	An estimate of the cost to maintain or improve the condition of the arterial street and highway system through 2050.
4.3.2	Transit fleet condition	An estimate of the percentage of transit vehicles in the Region exceeding expected useful life in 2050.
4.4.1	Congestion on arterial streets and highways	Estimates of the degree of traffic congestion on arterial streets and highways (including freeways) in the Region in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion.
4.4.2	Travel time delay	Estimates of system-wide travel time delay (average annual and average weekday) for all modes and by mode in 2050.
4.4.3	Average trip times	Estimates of the average trip times in 2050 for various geographies and trip types.
4.5.1	Access to transit	Estimates of the total number of residents with access to fixed-route transit and the total number of jobs accessible by fixed-route transit in the Region in 2050.
4.5.2	Access to fixed-guideway transit	Estimates of the total number of residents with access to fixed-guideway transit and the total number of jobs accessible by fixed-guideway transit in the Region in 2050. Transit service is considered to be fixed-guideway if it has its own right-of-way (bus rapid transit, light rail, or commuter rail).
4.5.3	Transit service quality	An estimate of transit quality in the Region based on the amount, frequency, and speed of the transit service accessible from a particular area.
4.6.1	Transportation reliability	Assessment of the level of variability in travel times for personal vehicles and by transit for various geographies in 2050.
4.6.2	Congestion on the regional highway freight network	Estimates of the degree of traffic congestion on the regional highway freight network in 2050, measured in centerline miles experiencing moderate, severe, or extreme congestion.
4.6.3	Impacts to freight traffic	Assessment of impacts to freight travel of the alternatives based on multiple travel-related criteria.

Source: SEWRPC

- o **Criterion 1.4.1:** Preservation of areas with high groundwater recharge potential
- o **Criterion 1.4.2:** Impervious surface
- o **Criterion 1.4.3:** Energy use
- o **Criterion 1.4.4:** Greenhouse gas emissions and other air pollutants
- o **Criterion 1.4.5:** Impacts to water resources and water quality
- o **Criterion 1.4.6:** Ability to address issues related to climate change
- o **Criterion 1.4.7:** Overall environmental sustainability
- **Objective 1.5:** A transportation system that minimizes disruption of neighborhood and community development, including adverse effects on the property tax base.
  - o **Criterion 1.5.1:** Homes, businesses, land, and parkland acquired
- **Objective 1.6:** Safe and secure travel environments that minimize loss of life, injury, and property damage.
  - o **Criterion 1.6.1:** Crashes by mode

### ***Equitable Access Objectives and Criteria***

The objectives and criteria under this theme focus on providing access to opportunity for all of the Region's residents.

- **Objective 2.1:** Benefits and impacts of investments in the Region's transportation system should be shared fairly and equitably and serve to reduce disparities between white and minority populations.
  - o **Criterion 2.1.1:** Level of accessibility to jobs and activity centers for minority populations and low-income populations by mode
  - o **Criterion 2.1.2:** Minority populations and low-income populations served by transit
  - o **Criterion 2.1.3:** Transit service quality for minority populations and low-income populations
  - o **Criterion 2.1.4:** Minority populations and low-income populations benefited and impacted by new and widened arterial street and highway facilities
  - o **Criterion 2.1.5:** Transportation-related air pollution impacts on minority populations and low-income populations
- **Objective 2.2:** Affordable transportation and housing that meet the needs and preferences of current and future generations.
  - o **Criterion 2.2.1:** Households with affordable housing + transportation costs
  - o **Criterion 2.2.2:** Ability to accommodate demographic shifts
- **Objective 2.3:** Reduce job-worker mismatch.
  - o **Criterion 2.3.1:** Areas with a job-worker mismatch

### ***Costs and Financial Sustainability Objectives and Criteria***

The following objectives and criteria take into account the need to make wise investment decisions that consider all the direct and indirect costs of developing the Region's land and transportation system.

- **Objective 3.1:** A land development pattern and transportation system that support economic growth and a globally-competitive economy.
  - o **Criterion 3.1.1:** Impact of the distribution of growth on property values
  - o **Criterion 3.1.2:** Return on investment



- o **Criterion 3.1.3:** Ability to connect to nearby metro areas and leverage the value of those areas
- o **Criterion 3.1.4:** Potential for attracting residents and businesses
- **Objective 3.2:** A financially-sustainable transportation system that minimizes life-cycle capital and operating transportation costs.
  - o **Criterion 3.2.1:** Average annual transportation system investment
- **Objective 3.3:** Transportation options that minimize private transportation costs.
  - o **Criterion 3.3.1:** Private transportation costs per capita
  - o **Criterion 3.3.2:** Per household cost of delay
  - o **Criterion 3.3.3:** Resilience in adapting to changing fuel prices
- **Objective 3.4:** Urban development that can be efficiently served by transportation, utilities, and public facilities.
  - o **Criterion 3.4.1:** Supportive infrastructure costs

### ***Mobility Objectives and Criteria***

The objectives and criteria under this theme are aimed at achieving a multimodal transportation system that serves the mobility needs of all of the Region's residents and provides access to important places and services.

- **Objective 4.1:** A balanced, integrated, well-connected transportation system that provides choices among transportation modes.
  - o **Criterion 4.1.1:** Trips per day by mode
  - o **Criterion 4.1.2:** Vehicle-miles of travel
  - o **Criterion 4.1.3:** Impacts of technology changes
- **Objective 4.2:** Reliable, efficient, and universal access to employment centers, educational opportunities, services, and other important places.
  - o **Criterion 4.2.1:** Travel time to important places by mode
  - o **Criterion 4.2.2:** Access to park-ride facilities
- **Objective 4.3:** Well-maintained transportation infrastructure.
  - o **Criterion 4.3.1:** Pavement condition
  - o **Criterion 4.3.2:** Transit fleet condition
- **Objective 4.4:** An acceptable level of service on the transportation system.
  - o **Criterion 4.4.1:** Congestion on arterial streets and highways
  - o **Criterion 4.4.2:** Travel time delay
  - o **Criterion 4.4.3:** Average trip times
- **Objective 4.5:** Fast, frequent, and reliable public transit services that maximize the people and jobs served.
  - o **Criterion 4.5.1:** Access to transit
  - o **Criterion 4.5.2:** Access to fixed-guideway transit
  - o **Criterion 4.5.3:** Transit service quality
- **Objective 4.6:** Convenient, efficient, and reliable movement of goods and people.
  - o **Criterion 4.6.1:** Transportation reliability
  - o **Criterion 4.6.2:** Congestion on the regional highway freight network
  - o **Criterion 4.6.3:** Impacts to freight traffic

**Alternatives I and II were also evaluated with and without highway expansions beyond committed projects and freeway modernization.**

### **Summary of Evaluation Results**

Using the criteria above, the Commission staff thoroughly evaluated the alternatives based on their respective abilities to achieve each of the plan objectives. The evaluation also includes a secondary evaluation for select criteria of Alternatives I and II without highway expansions beyond committed projects and freeway modernization.<sup>4</sup> The evaluation results below are organized into the four themes for VISION 2050 and describe the primary findings of the evaluation. These findings were provided to all participants at the fourth round of workshops, and through the online tool that allowed residents to compare the alternatives and their evaluation. The feedback from the workshops and online tool is described in the next section of this chapter, and was considered in preparing the preliminary recommended plan presented in Chapter 4 of this volume. The detailed evaluation results can be found in Appendix F to this volume.

### **Healthy Communities Evaluation**

The potential health of the Region's communities was evaluated based on the degree that the Region's development pattern and transportation options would impact public health and preserve the Region's natural resource base.

#### *Connectivity and Access*

Connectivity and access are two critical components to the VISION 2050 alternatives that impact public health. A well-connected infrastructure, with bike lanes, off-street paths, and sidewalks, encourages active transportation through biking and walking. Access allows residents to reach various destinations such as parks, schools, retail services, and employment. Increasing the number of destinations one can access by a short walk, bike ride, or public transit trip increases the likelihood that people will incorporate active travel modes into their daily routine, thereby increasing their physical activity. It also increases employment and shopping opportunities for people without personal vehicles, which may result in improved access to healthy foods and ability to afford housing in good condition.

**Alternative II is expected to perform the best with respect to public health-related criteria, and Alternatives I and II both provide greater connectivity and access than the Trend.**

Alternative Plans I and II provide greater connectivity and access to important destinations than the Trend. They include a more compact development pattern, a greater mix of land uses, and a greater variety of transportation and housing options than the Trend. Almost 88 percent of new residential development under Alternative I and almost 90 percent of new residential development under Alternative II would be in walkable, mixed-use neighborhoods that can support high-quality public transit, compared to about 31 percent of new residential development under the Trend. As a result, Alternative II would be expected to perform the best, followed closely by Alternative I, and the Trend would perform the worst, with respect to public health-related evaluation criteria.

**The compact development patterns of Alternatives I and II would result in less impact on the Region's natural resources and greater protection of surface water and groundwater resources than the Trend.**

#### *Impacts on the Natural Resource Base*

The compact development patterns of Alternative Plans I and II would result in less impact on the Region's natural resources, including water resources and air quality, than the Trend. All three of the alternatives perform well with respect to their impact on natural resource areas because incremental households and employment were not allocated to areas with significant natural resources. Alternatives I and II perform better with respect to their impact on agricultural lands. More than twice as much agricultural land would be converted to urban uses under the Trend (77 square miles) than

<sup>4</sup> The Trend was not evaluated without highway expansion because it is intended to represent a projection of recent transportation system development trends.

under Alternative I (32 square miles) or under Alternative II (26 square miles). Potential impacts on natural and agricultural resource areas directly related to the transportation component of the alternatives would also be greater under the Trend than Alternatives I and II due to the greater number of miles of arterial capacity expansion envisioned under the Trend.

Similar to their impact on natural and agricultural resource areas, the compact development patterns of Alternatives I and II would result in greater protection of surface water and groundwater resources than the Trend. There would be less land converted to urban uses under Alternatives I and II than the Trend, resulting in reduced potential for flooding and greater protection of areas with high groundwater recharge potential. In addition, air pollution emissions from transportation sources, which would fall significantly by the year 2050 regardless of the alternatives due to current Federal fuel and vehicle fuel economy standards, would be about 1 to 2 percent lower under Alternatives I and II than the Trend because they encourage walking, biking, and public transit. Emissions would also be reduced under Alternatives I and II because there would be more multifamily housing than under the Trend, which is more energy efficient than single-family housing. About 25 percent of new housing units would be multifamily under the Trend, compared to 39 percent under Alternative I and 46 percent under Alternative II.

The Region would also be better equipped to adapt to climate change under Alternatives I and II than the Trend. The Wisconsin Initiative on Climate Change Impacts (WICCI) has examined potential adaption strategies for addressing the effects of climate change in the State. Strategies that could be implemented at a regional level involve preserving natural areas, preserving areas with high groundwater recharge potential, minimizing impervious surfaces, and reducing greenhouse gases and other air pollutants. Alternative II would provide somewhat more support for strategies to adapt to climate change than Alternative I. The Trend would provide the least support for these strategies.

### ***Equitable Access Evaluation***

VISION 2050 analyses have demonstrated that significant disparities exist between whites and minorities in the Region, particularly in the Milwaukee metropolitan area, and that these disparities are far more pronounced than the disparities in almost all other large metropolitan areas. The alternatives were evaluated based on the degree to which their benefits and impacts would be shared fairly and equitably and serve to reduce disparities between white and minority populations.

#### ***Accessibility***

One of the primary factors to evaluate the equitability of the alternatives is how well they improve the ability of minority populations and low-income populations to reach jobs and other important destinations, such as retail centers, major parks, public technical colleges/universities, health care facilities, grocery stores, and other major destinations.

The automobile is the dominant mode of travel in the Region for all population groups. Minority populations use the automobile for 81 to 88 percent of their travel to and from work in Milwaukee County (depending on race and ethnicity), compared to 88 percent for the white population. Similarly, in Milwaukee County about 70 percent of travel by low-income populations to and from work is by automobile, which compares to 89 percent for populations of higher income. Thus, improvements in accessibility by automobile to jobs and other activities would likely benefit a significant

portion of minority populations and low-income populations. The Region would generally be able to maintain existing accessibility via automobile if improvements are made to the arterial street and highway system under all of the alternatives, but would see a decline in access to jobs and other important destinations using automobiles if no capacity expansions are implemented on the Region's arterial street and highway system under Alternatives I and II. This would be experienced by all population groups, including whites, minorities, and families in poverty.

**Alternative II would provide transit accessibility to 74% of the Region's jobs, followed by 70% for Alternative I, and only 52% under the Trend.**

Although most minority residents use automobiles for their travel, minority residents use public transit (4 to 13 percent in Milwaukee County) at a higher proportion relative to other modes of travel than white residents (3 percent in Milwaukee County). For these individuals, the vast majority of whom are from households with income levels below the poverty threshold, it is essential that they be able to reach jobs and other destinations using public transit. About 734,000 jobs, or about 62 percent of the Region's total jobs, are currently accessible by transit. The number of jobs accessible by transit would decrease to 727,000 under the Trend, representing only 52 percent of the total jobs in the Region in 2050. This is a result of a 22 percent decrease in transit service from current levels by 2050. Transit service levels would be significantly expanded under Alternative I, resulting in the number of jobs accessible by transit increasing to 967,000, or 70 percent of total jobs in the Region. Alternative II would provide transit accessibility to 1,020,000 jobs, or 74 percent of the total jobs in the Region. Increased accessibility to other important destinations would also occur under Alternatives I and II. Therefore, the substantial increases in transit accessibility under Alternatives I and II would provide significant benefits to minority populations and low-income populations, particularly those who may not be able to afford a car and rely on public transit to access jobs and other destinations.

#### *Benefits and Impacts of New and Widened Arterial Street and Highway Facilities*

Another factor considered in evaluating the equitability of the alternatives was whether minority populations and low-income populations in the Region would receive a disproportionate share of the impacts—both cost and benefits—of new and widened arterial street and highway facilities. With respect to surface arterials, the areas that would have the greatest use of these proposed improved arterials are largely adjacent, or near, the proposed new or widened surface arterials. The proposed new and widened surface arterials are largely located outside areas of minority populations and low-income populations. With respect to freeways, the segments of freeway proposed to be widened under the alternatives would directly serve areas of minority population and low-income population, particularly in Milwaukee County. As a result, it is expected that minority populations and low-income populations, particularly those residing adjacent to the freeway widenings, would be utilizing, and experiencing benefit from, the expected improvement in accessibility associated with the proposed widenings. Therefore, benefits from improvements to the arterial street and highway system, such as increased accessibility, reduced congestion, and increased safety, would benefit the majority of the Region's minority residents and low-income residents.

The locations of highway capacity improvements and freeway widenings in relation to minority populations and low-income populations were analyzed to evaluate impacts on minority populations and low-income populations. In general, no area of the Region, or minority or low-income community, would be expected to disproportionately bear the impact of highway capacity improvements. While some freeway segments, including those proposed to



be widened, are located adjacent to minority populations, a vast majority of the freeway system and future widenings under the alternatives are not located adjacent to concentrations of minority populations and low-income populations. In comparing the alternatives (with freeway widenings under Alternatives I and II), Alternative II would have fewer minorities and families in poverty residing within one-half mile of proposed freeway widenings (27,000 minority people and 2,800 families in poverty) than the Trend and Alternative I (81,800 minority people and 7,500 families in poverty).

Transportation-related air pollution impacts on the Region's minority populations and low-income populations are expected to significantly decline from current levels under all three alternatives due primarily to current and future Federal fuel and vehicle fuel economy standards, even with forecast increases in regional travel. A significant decline in transportation-related air pollutants is expected, ranging from about 15 to 30 percent for carbon dioxide, methane, and ammonia and 65 to 90 percent for all other pollutants, including ozone-related pollution. Analyses indicate that about 20 percent of the Region's minority population resides within one-half mile of a freeway, somewhat more than the 15 percent of the Region's non-minority population that resides within one-half mile of a freeway. Alternative II would have fewer minorities and families in poverty residing near a freeway widening since it excludes some of the freeway widenings proposed in the Trend and Alternative I.

#### *Demographic Shifts*

Forecasts prepared for VISION 2050 anticipate continued change in the demographics of the Region, with the number of residents in the Region age 65 and older projected to double by 2050. Access to community amenities and accessible housing will become increasingly important as the Region's population ages. The compact development patterns of Alternatives I and II will support transit service, walkable neighborhoods, and multifamily housing, most of which is required to include basic accessibility features by Federal and State fair housing laws.

The mixed-use, high-density development found under Alternatives I and II, some of which would be in the form of TODs, may also appeal to the young workers that the Region will need to attract and retain to replenish its workforce. Alternatives I and II would have a better match of workers in proximity to jobs and more areas where the combined cost of housing and transportation would be affordable (45 percent or less of median household income) than the Trend.

#### **Costs and Financial Sustainability Evaluation**

The costs of the alternative development patterns and transportation systems were evaluated on largely quantifiable measures, such as the cost of extending infrastructure to new development and investment in the regional transportation system. Other factors that would contribute to the financial sustainability of the Region were also evaluated, such as the potential to attract residents and businesses to the Region and potential impacts on property values.

#### *Costs*

Density, building type, and location affect the cost of extending supportive infrastructure, such as sewer, water, and local roads, to new development (often borne by the developer and passed on to the consumer). Infrastructure can be extended to compact development in a more efficient and cost-effective manner than to lower-density development. The cost of extending

**The compact development patterns of Alternatives I and II support transit service, walkable neighborhoods, and multifamily housing, which would improve access to community amenities and accessible housing.**

**Alternatives I and II would require significantly more public investment than the Trend, but would also result in cost savings for local governments and residents.**

supportive infrastructure to new development is estimated to be the highest under the Trend at \$6.9 billion because almost 70 percent of new residential development would be in areas with large single-family lots that would have wide frontages and deep setbacks.<sup>5</sup> This increases the length of sewer and water mains, service laterals, and streets. About 12 percent and 10 percent of new residential development would be in these areas under Alternatives I and II, respectively. Alternative II is estimated to have the lowest supportive infrastructure cost at \$5.0 billion because it includes the most infill and redevelopment of the three alternatives. The cost of extending supportive infrastructure to new development under Alternative I is estimated at \$5.5 billion.

The Trend is less costly than Alternatives I and II when considering annual public investment in the transportation system. Alternative II would require the most public investment of the alternatives at about \$1.2 billion annually because it includes significantly increased investment in transit and bicycle facilities, while still adding arterial street and highway capacity primarily in the rural and suburban parts of the Region. Alternative I would be the second most costly of the alternatives with about \$1.1 billion in annual public investment. The Trend would require the least public investment at about \$808 million annually, which reflects a continuing decline in public transit service. Implementing Alternatives I or II without highway improvements would save about \$45 million in annual public investment.

It is also important to consider the money that residents would spend directly on transportation in addition to measuring public expenditures. These personal expenditures would include the costs of owning and operating a private vehicle and the fares to ride public transportation. The average vehicle in Southeastern Wisconsin costs its owner approximately \$5,500 per year, while an annual transit pass in Southeastern Wisconsin ranges from \$300 to \$1,000 depending on the transit system and whether or not the rider qualifies for discounted fares. Therefore, the availability of convenient transit service can have a significant impact on the amount of money residents of the Region spend on transportation. The combined average annual private transportation cost per capita would be the highest under the Trend at \$3,147 and lowest under Alternative II at \$3,068. The per capita cost under Alternative I would be \$3,091.

#### *Financial Sustainability*

There are many factors that affect where a business decides to locate or expand and where an individual or family decides to make their home. Transportation and housing are the primary attraction factors impacted by the alternatives. Many businesses in particular consider transportation access and housing opportunities as critical location factors, whether that means locating near a freeway interchange or locating in an area with robust transit and housing options available to their employees. Individuals and families also tend to consider how they would commute to work or school, or make trips to stores and restaurants.

Alternative I would perform slightly better in terms of traffic congestion than the Trend and Alternative II because Alternative I includes additional capacity to address congestion on the arterial street and highway system compared to Alternative II and significant improvements in the transit system

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<sup>5</sup> The cost of installing private onsite wastewater treatment systems and private wells for lots outside urban service areas were included in the supportive infrastructure cost calculations.

compared to the Trend. Despite the most significant improvement to transit in Alternative II, congestion would be slightly higher than under Alternative I because highway capacity expansion would primarily be limited to the rural and low-density suburban areas not served by fixed-guideway transit. The additional traffic congestion under the Trend and Alternative II would result in slightly longer travel times. The additional congestion would also result in a higher chance of crashes that would reduce travel time reliability, which is particularly important to businesses that need to ship their goods.

Alternative II would perform the best for people looking to avoid the need to drive, and for businesses looking for robust transit service and housing options for their employees. More people would have access to transit under Alternative II than the Trend or Alternative I, including fixed-guideway transit. Alternative II would also have the most walkable areas, providing prospective residents with the opportunity to walk to many destinations, and the greatest variety of housing options of the alternatives.

Alternative II may also have the greatest impact on property values of the alternatives because of the extensive fixed-guideway transit system and walkable areas. Previous studies in metropolitan areas with fixed-guideway transit networks have shown a range of property value increases in station areas, including 2 to 8 percent for condominiums (San Diego), 15 percent for office development (Santa Clara County), and 30 percent for retail development (Dallas). Studies have also found that walkable neighborhoods have a positive impact on residential property values. A study of 15 metropolitan areas found that homes in areas with above average walkscores sell for \$4,000 (Dallas) to \$34,000 (Sacramento) more than comparable homes in areas with average walkscores.

### ***Mobility Evaluation***

The ability of residents, visitors, and freight to travel throughout the Region in an efficient manner was evaluated by measuring changes in mode share, transit service quality, congestion, and travel time under each alternative, and assessing the impacts of these changes on the ability of freight to move quickly throughout the Region.

#### ***Changes in Travel***

As previously stated, the vast majority of personal travel by residents of the Region would continue to be by car in the future—regardless of the alternative. However, the additional transit service and more compact development patterns of Alternatives I and II would increase the number of people that use alternative modes of transportation, with 211,000 transit trips (62 percent more than the Trend) and 597,000 bicycle and pedestrian trips (5 percent more than the Trend) under Alternative II, and 191,000 transit trips (47 percent more than the Trend) and 587,000 bicycle and pedestrian trips (3 percent more than the Trend) under Alternative I.

Despite the increased use of alternative modes of transportation, automobile trips and vehicle-miles of travel (VMT) would still increase under Alternatives I and II compared to existing numbers, largely because of the increase in households and population expected by the year 2050. Approximately 6.46 million daily automobile trips (1.7 percent fewer than the Trend) producing 17.3 billion annual VMT by 2050 (3.0 percent fewer than the Trend) are forecasted under Alternative II. Approximately 6.50 million daily automobile trips (1.2 percent fewer than the Trend) producing 17.4 billion annual VMT by 2050 (2.2 percent fewer than the Trend) are forecasted under Alternative I. VMT per capita is forecasted to be approximately

**Automobile trips and vehicle-miles of travel would increase under all alternatives, but more trips would be made using alternative travel modes under Alternatives I and II.**

7,600 annually under the Trend, and approximately 7,400 annually under Alternatives I and II. Although automobile trips, VMT, and VMT per capita would be higher in 2050 than in 2011 under all three alternatives—with an average annual growth in VMT of 0.6 percent—much of this may be attributable to projected future increases in commercial travel, rather than increases in personal travel by the Region’s residents.

#### *Transit Service*

The significant expansion of transit service under Alternatives I and II would result in 60.4 percent of the Region’s residents having access to transit under Alternative II (compared to 44.3 percent under the Trend) and 56.4 percent having access to transit under Alternative I. Approximately 73.5 percent of the Region’s jobs would be accessible via transit under Alternative II (compared to 52.4 percent under the Trend), while 69.7 percent would be accessible under Alternative I. Transit access has many proven benefits, including lower employee turnover for businesses served by transit; congestion relief in mid-to large-sized metropolitan areas; a decreased likelihood that patients will forgo follow-up healthcare appointments, and, therefore, will have lower overall healthcare costs; and decreased household transportation costs caused by allowing residents to own fewer or no personal automobiles. In addition, about 1 in 10 households in the Region do not have any cars, and for the residents of those households, access to transit means access to jobs, healthcare, education, retail centers, and recreation.

**Under the Trend, only about 2% of the Region’s residents would have access to at least 100,000 jobs in under 30 minutes via transit, compared to 8% under Alternative I and 14% under Alternative II.**

In addition to greatly increasing access to transit, Alternatives I and II also increase the speed, reliability, and frequency of transit services in the Region. This is best shown by comparing the number of jobs accessible within 30 minutes under each alternative, which not only shows employment accessibility, but can be considered a proxy for accessibility to many other activities as well. Under the Trend, only about 2 percent of the Region’s residents have access to at least 100,000 jobs in under 30 minutes via transit, mainly those who live directly adjacent to downtown Milwaukee. In contrast, Alternative I would provide 8 percent of the Region’s residents with access to 100,000 jobs or more in under 30 minutes via transit, and that increases further to 14 percent under Alternative II.

#### *Congestion*

Congestion on the arterial street and highway system increases the time it takes for cars, buses, and trucks to travel within Southeastern Wisconsin. Compared to other Midwest metro areas and metro areas across the nation, congestion and associated travel time delays in the Region are relatively low, and have increased slower than nearly all other peer metro areas over the last 30 years. Even with relatively low levels of congestion, however, efforts to decrease congestion in the Region would contribute to a range of benefits, including reduced vehicle emissions, reduced travel time delay for personal vehicles and public transit, reduced energy use, improved connectivity to nearby metropolitan areas, and reduced freight shipping travel times and costs.

**Alternative I would have slightly less traffic congestion than the Trend and Alternative II.**

Due to its combination of a more compact development pattern, improved bicycle facilities, significantly enhanced transit service, and increases in highway capacity to address residual congestion, Alternative I would result in the least congested regional arterial street and highway system, with 6.6 percent (242.3 miles) of the system operating over its design capacity (moderate, severe, or extreme congestion) at some point during an average weekday. This compares to about 6.7 percent under the Trend (244.5 miles) and 7.3 percent under Alternative II (264.7 miles). Not including highway



improvements (except for committed highway expansion projects and freeway modernization) under Alternatives I and II would increase the percentage of congested arterial street and highway miles under these alternatives to about 10.1 percent (362.2 miles) and 10.3 percent (367.8 miles), respectively.

#### *Travel Time*

Due to increased highway capacity under all of the alternatives, travel times by car in 2050 are projected to be about the same as they are currently. However, the more compact development patterns and improved transit services under Alternatives I and II would result in significantly more of the Region's population living within a reasonable travel time by transit to a major activity center or regional destination. As an example, due to the declines in transit service levels expected under the Trend, approximately 60,000 fewer residents (22 percent less) would be within a 30-minute transit trip of a major retail center compared to today, despite a projected increase in the Region's total population of nearly 340,000 (17 percent more). Compared to the Trend, transit service within 30 minutes of a major retail center would be provided to about 460,000 additional residents (207 percent more) under Alternative I and about 680,000 additional residents (304 percent more) under Alternative II.

#### *Impacts on Freight Movement*

The safe and efficient movement of raw materials and finished goods to, from, and within Southeastern Wisconsin is essential for maintaining and growing the Region's economy. Freight shipments in the Region—including shipments involving ships, airplanes, and trains—rely heavily on trucks using the Region's arterial street and highway system. Congestion on the parts of the Region's arterial network that are intended to carry a higher percentage of truck traffic affects the movement of freight throughout the Region, negatively impacting businesses and manufacturers in the Region. Alternative I would result in the least congested regional highway freight network, with 10.7 percent (180.7 miles) of the network operating over its design capacity (moderate, severe, or extreme congestion) for at least part of an average weekday. This compares to about 11.0 percent under the Trend (185.7 miles) and 11.6 percent under Alternative II (196.1 miles).

### **3.4 FOURTH ROUND OF VISION 2050 WORKSHOPS**

A fourth round of interactive workshops, open to the general public and held throughout the Region, was conducted between November 9 and 19, 2015. The workshops were the fourth installment of the five rounds of public workshops held across the Region during the VISION 2050 process. The five rounds of workshops were used to provide information on, and obtain input into, the development of VISION 2050. Similar to the first three rounds, the Commission hosted one workshop in each county, with the Commission's eight partner community organizations holding individual workshops for their constituents between October 27 and December 3, 2015. A summary report of the eight partner workshops held in the fall of 2015 can be found in Appendix G-1 to this volume. As in the previous three rounds of workshops, the Commission staff offered to hold individual workshops by request, and held two such requested workshops in the fall of 2015.<sup>6</sup>

**The fourth round of visioning workshops, held in fall 2015, focused on reviewing and comparing the alternatives and their evaluation.**

<sup>6</sup> The Commission staff held individual workshops in November 2015 for City of Wauwatosa elected officials and staff and the Racine County Family Resource Network.

The focus of the fourth round of workshops was the review and comparison of a series of detailed regional land use and transportation alternatives and their evaluation. At each workshop, staff distributed a 20-page handout summarizing the alternatives and their evaluation ([www.sewrpc.org/v2050handout](http://www.sewrpc.org/v2050handout)) and led attendees through descriptions of the alternatives using the handout and a presentation. Staff then reviewed the evaluation results with attendees in small groups, where attendees had the opportunity to discuss and provide feedback on the alternatives and their evaluation. At the end of each workshop, staff asked attendees a series of questions related to which elements of the alternatives should be included in a preliminary recommended year 2050 regional land use and transportation plan. The feedback was used to develop and evaluate the preliminary recommended plan, which is described in Chapter 4 of this volume.

Nearly 410 residents attended one of the above workshops held in the fall of 2015—about 240 people participated in the public or requested workshops and about 170 people participated in the eight partner workshops.

A description of the activities at the fourth round of VISION 2050 workshops, along with a summary of the results of those activities follows.

**After an initial presentation, staff described the three alternatives then led attendees through an interactive small group activity devoted to reviewing the extensive evaluation results.**

### **Exploration of the Alternatives Evaluation Results**

The presentation at each workshop began with a brief summary of the results of the VISION 2050 process to date, referencing the initial visioning activities and conceptual scenarios stages already completed. Staff then described the purpose of the alternatives step and what was included in each of the three alternatives, referencing the first portion of a 20-page handout summarizing the alternatives and their evaluation.

Following the presentation, staff utilized the second portion of the summary handout to lead attendees through an interactive small group activity focused on reviewing the results of the extensive evaluation of the alternatives. During the activity, attendees were able to ask clarifying questions and provide oral feedback, which was recorded by the staff facilitating the activity. Differing from the scenarios small group activity, which drew upon the World Café Method, the small group activity for the alternatives involved staff rotating between groups in an effort to allow more time for discussion. Each table or cluster of tables, with the number of tables varying based on room size and expected attendance, was devoted to one of the four evaluation themes (described previously in this chapter).

The procedure for the activity involved participants gathering into small groups around each table. At their first table, staff introduced and summarized the evaluation theme, with participants then discussing how the alternatives performed under the theme for about 15 minutes. During the discussion, a staff person recorded the group's comments. The comments were mostly related to how an evaluation was conducted or suggestions for what to include in the preliminary recommended plan during the next step in the process. After each 15-minute interval was over, staff moved to a different table to review an evaluation theme with a group that had not yet explored that theme. This process continued until each participant had the opportunity to explore and comment on all four evaluation themes.

**At the end of each workshop, attendees used keypad polling devices to respond to questions about what should be included in the preliminary recommended plan.**

Each workshop concluded with staff asking attendees a series of questions related to which elements of the alternatives should be included in the preliminary recommended plan. Participants responded to the questions using keypad polling devices, and a tally of responses to each question was

graphically displayed on the screen in front of the room. The same questions were also asked of residents who participated through an interactive online tool (described below).

The Commission staff made available an interactive online tool dedicated to exploring the alternatives and their evaluation through December 18, 2015, particularly for those who were unable to attend one of the fall 2015 workshops. The online tool replicated the information and activities at the workshops. The tool had an initial page with four tabs, which described land use, bicycle and pedestrian facilities, public transit, and arterial streets and highways under the alternatives compared to existing conditions. Within each tab was a navigable map with GIS layers that could be turned on and off and the ability to flip between existing conditions and each alternative, allowing users to quickly compare what was included in each alternative. Each tab also provided links to a summary brochure, the 20-page summary handout, draft VISION 2050 plan report chapters, and the VISION 2050 plan objectives. Following the initial page describing the alternatives, there were four pages providing evaluation results, with one page for each of the four evaluation themes. The evaluation theme pages each included tabs with results about specific topics under that theme, including navigable maps and interactive graphics and charts. Also on each evaluation theme page was a link to the more detailed evaluation results specifically for that theme, which are documented in Appendix F to this volume. The final page of the tool allowed users to provide feedback on the alternatives and their evaluation, including an opportunity to respond to the same preference questions posed at the workshops.

A total of about 960 residents participated in the exploration of the alternatives and their evaluation, either at a workshop or online, providing a total of over 900 comments related to the alternatives (includes small group, individual, and online comments). The results are discussed below, and a summary of the results can be found in Appendix G-2 to this volume.

### **Feedback Related to the Alternatives**

Overall, as was the case with the feedback received on the conceptual scenarios, most participants at the workshops and through the online tool did not want to follow the current trends in land and transportation system development represented by the Trend alternative. Participants generally supported more compact and walkable development and there was significant support for improved and expanded public transit services, as envisioned under Alternative Plans I and II. As the alternatives stage involved a more thorough evaluation of possible futures for the Region, participants were able to more fully consider the potential benefits and consequences of alternative land development patterns and transportation system investments as they formed their comments and responses to a series of preference questions. The preference questions, in particular, offered an opportunity for participants to provide feedback directly related to what should be included in a preliminary recommended plan, following consideration of the results of the alternatives evaluation.

### **Land Use**

Three preference questions were asked related to the land use component of the alternatives. The responses to the first question indicated that respondents were very supportive of encouraging “more infill, redevelopment, and somewhat higher-density development.” For the Region, only 5 percent of respondents indicated that type of development and redevelopment is not important and 69 percent indicated it is very important. Comments received

**Participants generally supported more compact and walkable development and there was significant support for the improved and expanded public transit services under Alternatives I and II.**

**Regionally, 69% of respondents indicated it is very important, and only 5% indicated it is not important, to encourage “more infill, redevelopment, and somewhat higher-density development.”**

cited a number of benefits of encouraging this type of development, and suggested that retired individuals and Millennials increasingly prefer to live in urban areas where they do not need to drive to various destinations. There were also numerous comments indicating a need to avoid gentrification and displacement of existing residents, citing the potential for increased property values associated with redevelopment and TOD in existing urban areas under Alternatives I and II.

When asked about whether to recommend “a land development pattern that reflects development trends from the past 20 to 25 years, including very low-density development” respondents were more divided, with 48 percent indicating it is not important, but the majority still indicated it is somewhat or very important. There were a number of comments citing that development is often based on real estate market forces although some suggested more education and action is necessary to achieve more compact development.

One of the notable differences in land use between the alternatives was a shift from more development in the Medium Lot Neighborhood land use category (primarily single-family homes on lots between 1/4 and 1/2 acre in size) under the Trend to more development in the Small Lot Traditional Neighborhood land use category (mix of housing types and businesses with single-family homes on lots of 1/4 acre or less) under Alternative Plans I and II. When asked which of the two types of new development should be encouraged, 77 percent indicated support for the more walkable, transit-supporting Small Lot Traditional Neighborhood development over the larger yards offered in a Medium Lot Neighborhood development. This was consistent with the many comments that expressed support for encouraging more compact, walkable development that can be served by transit.

**Only 5% of respondents indicated they did not support any rapid transit in the Region, and only 1% indicated it is not important to connect residents to jobs by public transit.**

### **Public Transit**

There was significant support expressed for some level of improved and expanded public transit services, as opposed to the projected continued decline in services under the Trend. This support was evident in both the comments received and the responses to the three questions asked about the public transit component of the alternatives. Numerous participants cited potential benefits provided by public transit investment and made specific suggestions for important places to serve via public transit. Many participants, however, questioned whether the transit improvement and expansion proposed in Alternatives I and II could be achieved given significantly higher investment levels needed, and noted the need to address transit funding.

The first transit question was about the rapid transit corridors proposed in Alternative Plans I and II. For the Region, only 5 percent of respondents indicated they did not support any rapid transit in the Region, while 45 percent supported all ten rapid transit corridors from Alternative Plan II and another 40 percent supported the best performing five to seven routes from Alternative Plan II. In particular, participants from Milwaukee County expressed strong support for rapid transit, with 57 percent supporting all ten rapid transit corridors in Alternative II. Support for all ten corridors ranged from 24 to 33 percent in the other six counties.

Similar to rapid transit, only 5 percent of respondents indicated they do not support any commuter rail lines in the Region, with 75 percent supporting at least the Kenosha-Racine-Milwaukee and Oconomowoc-Brookfield-Milwaukee lines included in Alternative Plan II. This included 32 percent expressing support for additional lines not included in the alternatives, although some identified Madison as a destination, which would more



appropriately be served through higher-speed intercity passenger rail service rather than commuter rail. Many comments were received in support of the planned high-speed rail line between Chicago, Milwaukee, and Madison, which was envisioned under both Alternative Plans I and II.

The importance of connecting residents to jobs by public transit was nearly a consensus across the Region for those that responded, with 86 percent indicating it is very important, 13 percent indicating it is somewhat important, and only 1 percent indicating it is not important. Many comments expressed concern that if transit services continue to decline, many of the Region's residents will not be able to get to jobs, particularly low-income residents.

### ***Bicycle and Pedestrian***

Two questions were asked related to the bicycle and pedestrian component of the alternatives. In general, participants expressed support for providing bicycle facilities, with 62 percent indicating it is very important and only 7 percent indicating it is not important. There was even more support for separating bicycles from motor vehicle traffic, with 69 percent indicating it is very important and only 3 percent indicating it is not important. Many comments received cited potential benefits for improving and expanding bicycle facilities, as well as for implementing enhanced bicycle facilities, as proposed under Alternatives I and II. There were, however, numerous comments citing reasons for supporting limited bicycle investment, including the Region's colder climate, the recreational nature of most bicycle travel, and the relatively small number of residents that currently travel by bicycle compared to other modes.

**Regarding separating bicycles from motor vehicle traffic, 69% indicated it is very important and only 3% indicated it is not important.**

### ***Arterial Streets and Highways***

The final two questions were asked related to the arterial street and highway component of the alternatives. In terms of addressing congestion on the Region's freeways, 46 percent indicated it is very important, while 20 percent indicated it is not important. In terms of how congestion is addressed on the Region's arterial streets and highways, 39 percent expressed support for widenings to address congestion, while 29 percent supported limiting widenings to rural and suburban areas not served by fixed-guideway transit, which was proposed in Alternative Plan II. Another 32 percent, the majority of whom were from Milwaukee County, indicated they did not support widenings anywhere in the Region. A number of participants in general opposition to capacity expansion on the arterial system suggested traffic congestion is not a major issue in the Milwaukee metropolitan area, and indicated a preference instead for improved and expanded public transit and encouraging more bicycle and walking trips.

**While 46% indicated addressing congestion on the Region's freeways is very important, many supported limiting widenings as in Alternative II or did not support any widenings in the Region.**

### ***Additional Comments***

There were various comments that related to implementation; the economy or labor force; multiple transportation modes; or the VISION 2050 presentation, process, and analyses. Numerous comments indicated a need to explain how VISION 2050 would be implemented, including how investments would be funded and who would be responsible for implementation. There were also many participants expressing concern that current revenue sources would not be adequate to fund the improvements proposed in Alternatives I and II, some suggesting specific measures or revenue sources that could be considered to provide funding. Related to the investment levels and funding, a common theme among participants was to place an emphasis on the indirect economic benefits of Alternatives I and II, which involve quality of life improvements that are difficult to monetize but provide benefits that can offset the additional proposed investment. Various suggestions were also

made for how to improve the VISION 2050 process, including suggestions for ways to present information and additional analyses to consider.

The input received on the detailed land use and transportation alternatives was used during the next step of the VISION 2050 process, as Commission staff prepared a preliminary recommended year 2050 land use and transportation plan for Southeastern Wisconsin. The preliminary recommended plan is described in the next chapter and was presented at the fifth and final round of VISION 2050 workshops.