REVISED DRAFT

2.1 THE RECOMMENDED FISCALLY CONSTRAINED TRANSPORTATION PLAN

Federal regulations require the Region's transportation plan to only include projects that can be funded with existing and reasonably expected revenues, given existing and reasonably expected restrictions on the use of those revenues for specific types of projects or services. Therefore, only the recommended portion of VISION 2050 that can be funded with these revenues is considered the "fiscally constrained" regional transportation plan by the Federal Government and is titled the Recommended Fiscally Constrained Transportation Plan (FCTP) for VISION 2050. This chapter describes the FCTP, which includes all of the transportation elements of VISION 2050 except for the public transit element. As discussed in Chapter 1, the public transit element included in VISION 2050 cannot be implemented within expected funds due to a gap in funding.

Just like the transportation component of VISION 2050, the FCTP includes the following six elements: public transit, bicycle and pedestrian, transportation systems management, travel demand management, arterial streets and highways, and freight transportation. Each element is described below, including specific plan recommendations.

Description of Public Transit Element

Due to insufficient current and reasonably expected future revenues, and limitations on how those funds can be used, transit service under the FCTP would be expected to decline rather than significantly improve as recommended under VISION 2050. The only notable service expansions from existing service levels would be the implementation of the East-West BRT project currently being studied by Milwaukee County and the initial Milwaukee Streetcar lines, both of which have secured funding or have

Table 2.1
Fixed-Route Public Transit Service Levels: Fiscally Constrained Transportation Plan

Average Weekday Transit		Fiscally Constrained Transportation Plan (2050)	
Service Characteristics	Existing (2014)		
Revenue Vehicle-Hours			
Rapid Transit		90	
Commuter Rail	0	0	
Commuter Bus	270	90	
Express Bus	500		
Local Transit	3,980	4,120	
Total	4,750	4,300	
Revenue Vehicle-Miles			
Rapid Transit		2,200	
Commuter Rail	100	100	
Commuter Bus	5,800	2,500	
Express Bus	6,300		
Local Transit	48,200	48,800	
Total	60,400	53,600	

identified reasonably expected sources of funding. The transit system included in the FCTP is consistent with the trends of declining transit service levels over the last 15 years, which were a result of transit funding levels during that period of time. The FCTP cannot assume that funding for the arterial streets and highways element can be flexed to transit projects, as that is not permitted at this time by the State Legislature.

Under the FCTP, service levels on the regional transit system would decline from service levels existing in 2014 by about 9 percent measured in terms of revenue transit vehicle-hours of service provided, from about 4,750 vehicle-hours of service on an average weekday in the year 2014 to 4,300 vehicle-hours of service in the year 2050 (see Table 2.1). The included service decline would result in a smaller transit service area (see Map 2.1) and a decline in the frequency of service. Table 2.2 shows the span of service hours and frequencies under the FCTP. The estimated costs and revenues associated with the FCTP are compared in constant 2015 dollars in Table 2.3 and in year of expenditure dollars in Table 2.4, including the costs of constructing, maintaining, and operating the public transit element and the expected revenues that would be available to fund the public transit element.

The estimated arterial street and highway system and transit system costs shown in Tables 2.3 and 2.4 include all capital costs and operating and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system such as arterial street resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under the FCTP.

The freeway system capital costs include the estimated cost to resurface the existing freeway system, as needed, estimated at \$1.1 billion or \$32 million per year in year 2015 constant dollars, and the estimated cost to rebuild those segments of the existing freeway system, which can be expected to be completed by the year 2050 and within the reasonably expected revenues available to modern design standards, estimated at \$8.4 billion or \$240 million per year in year 2015 constant dollars; the estimated incremental cost to rebuild 106 miles of the freeway system with additional lanes at \$540 million or \$15 million per year in year 2015 constant dollars; the estimated cost of two new freeway interchanges at \$73 million in year 2015 constant

Map 2.1
Transit Services: Fiscally Constrained Transportation Plan

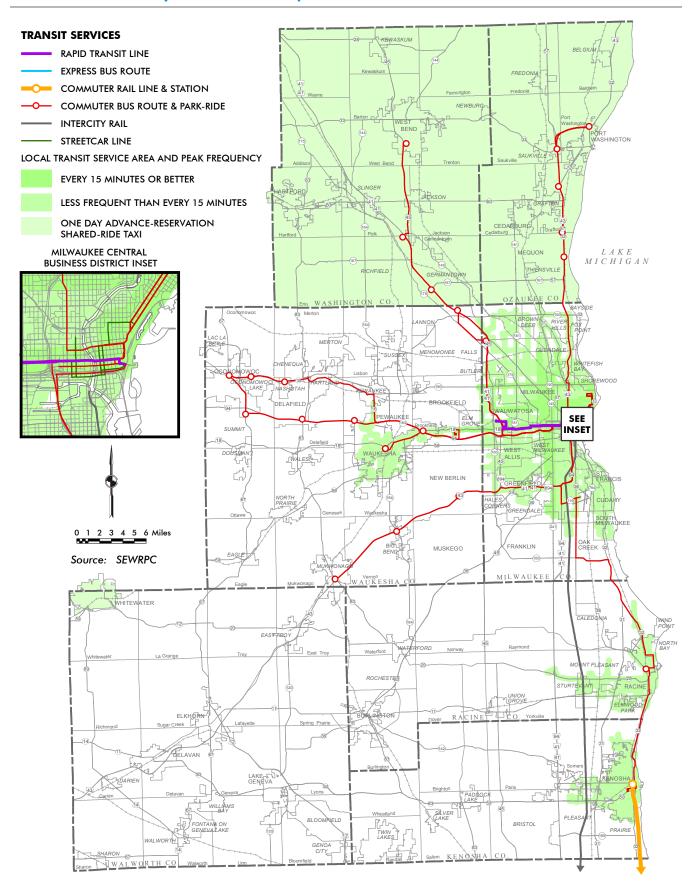


Table 2.2 Transit Service Hours and Frequency: Fiscally Constrained Transportation Plan

	Existing (2015)		Fiscally Constrained Transportation Plan (2050)		
Service Type	Service Hours	Service Headways	Service Hours	Service Headways	
Rapid Transit	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	
	No service	No service	4 a.m. – 2 a.m.	10 – 15 minutes	
	<u>Weekends</u>	Weekends	<u>Weekends</u>	<u>Weekends</u>	
	No service	No service	5 a.m. – 2 a.m.	15 – 20 minutes	
Commuter Rail	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	
	6 a.m. – 2 a.m.	30 – 360 minutes	6 a.m. – 2 a.m.	30 – 360 minutes	
	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	
	7 a.m. – 2 a.m.	60 – 480 minutes	7 a.m. – 2 a.m.	60 – 480 minutes	
Commuter Bus	Weekdays 5 a.m 10 a.m. 12 p.m. – 8 p.m. many services peak direction only	Weekdays 10 – 225 minutes, many services peak direction only	Weekdays 5 a.m 10 a.m. 3 p.m. – 8 p.m. many services peak direction only	Weekdays 25 – 250 minutes, many services peak direction only	
	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	Weekends	
	8 am – 11 p.m.	90 – 240 minutes	8 am – 11 p.m.	100 – 300 minutes	
	KRM Bus only	KRM Bus only	KRM Bus only	KRM Bus only	
Express Bus	Weekdays	Weekdays	<u>Weekdays</u>	<u>Weekdays</u>	
Milwaukee County	4 a.m. – 2 a.m.	10 – 35 minutes	No Service	No Service	
	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	
	5 a.m. – 2 a.m.	20 – 45 minutes	No Service	No Service	
Kenosha and	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	
Racine Counties	6 a.m. – 7 p.m.	60 – 75 minutes	No Service	No Service	
	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	<u>Weekends</u>	
	No Service	No Service	No Service	No Service	
Local Transit	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	Weekdays	
Milwaukee County	4 a.m. – 2 a.m.	10 – 70 minutes	4 a.m. – 2 a.m.	10 – 90 minutes	
	<u>Weekends</u>	Weekends	<u>Weekends</u>	<u>Weekends</u>	
	5 a.m. – 2 a.m.	12 – 100 minutes	5 a.m. – 2 a.m.	15 – 120 minutes	
Remainder of	Weekdays	<u>Weekdays</u>	<u>Weekdays</u>	<u>Weekdays</u>	
Region	6 a.m. – 10 p.m.	30 – 60 minutes	6 a.m. – 8 p.m.	35 – 70 minutes	
	<u>Weekends</u> 6 a.m. – 10 p.m.	<u>Weekends</u> 30 – 60 minutes	Weekends 6 a.m. – 6 p.m., no service on some systems	<u>Weekends</u> 60 – 90 minutes, no service on some systems	

Table 2.3

Average Annual Costs and Revenues Associated with the Fiscally Constrained

Transportation System in 2015 Constant Dollars: 2016 - 2050

Cost or Revenue Item	2015 Constant Dollars
Transportation System Cost (average annual 2016-2050 expressed as millions of dollars)a	
Arterial Street and Highway System	
Capital	
Freeway Reconstruction	\$276
Surface Arterial Reconstruction/Resurfacing and Freeway Resurfacing ^b	382
Subtotal	\$658
Operating	84
Highway Subtotal	\$742
Transit System	· · · · · · · · · · · · · · · · · · ·
Capital	\$25
Operating ^c	\$121
Transit Subtotal	\$146
Total	\$888
Transportation System Revenues (average annual 2016-2050 expressed as millions of dollars)a	
Highway Capital	
Freeway Reconstruction (Federal/State)	\$275
Surface Arterial Reconstruction/Resurfacing and Freeway Resurfacing	·
Federal/State	338
Local	67
Subtotal	\$680
Highway Operating	
State	\$41
Local	38
Subtotal	\$79
Highway Subtotal	\$759
Transit Capital	
Federal [']	\$17
Local	8
Subtotal	\$25
Transit Operating	
Federal	\$24
State	76
Local	21
Subtotal	\$121
Transit Subtotal	\$146
Total	\$905

The estimated arterial street and highway system and transit system costs include all capital costs and operating and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system such as arterial street resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under the Fiscally Constrained Transportation Plan. The freeway system capital costs include the estimated cost to resurface the existing freeway system, as needed, estimated at \$1.1 billion or \$32 million per year, and the estimated cost to rebuild those segments of the existing freeway system, which can be expected to be completed by the year 2050 and within the reasonably expected revenues available to modern design standards, estimated at \$8.4 billion or \$240 million per year; the estimated incremental cost to rebuild 106 miles of the freeway system with additional lanes at \$540 million or \$15 million per year; the estimated cost of two new freeway interchanges at \$73 million; and the estimated cost of the extension of the USH 12 freeway from Elkhorn to Whitewater at \$438 million. These freeway capital costs include the cost to reconstruct IH 43 between Howard Avenue and Silver Spring Drive to modern design standards. Should it be determined that this segment of IH 43 be widened, the project cost would incrementally increase by \$168 million. With respect to freeway resurfacing, it was assumed that segments of freeway that were reconstructed before 2016 would be resurfaced on average two times by 2050 and segments of freeway that are recommended to be reconstructed in 2016 and beyond would be resurfaced on average one time by 2050. Surface arterial capital costs include the costs of the estimated necessary resurfacing and reconstruction of the 3,157 miles of surface arterials that will require preservation of capacity over the plan design period, the estimated costs of reconstruction and widening with additional traffic lanes of about 163 miles of surface arterials, and the estimated costs of new construction of 63 miles of surface arterials. The estimated costs of resurfacing and reconstruction are based on the estimated lifecycle of existing surface arterials, and includes reconstruction of about 52 percent of surface arterials with approximately 66 percent resurfaced once, and 66 percent of the 48 percent resurfaced twice and 33 percent resurfaced three times. Unit costs for surface arterial resurfacing, reconstruction, widening, and new construction vary by cross-section from \$0.4 to \$13.4 million per mile (rural or urban, divided or undivided, and number of traffic lanes) and are based upon actual project costs over the past several years. The estimated capital cost of surface arterials is \$348 million per year, including \$298 million for preservation (resurfacing and reconstruction) and \$50 million for new arterials and arterials reconstructed with additional traffic lanes. Transit system capital costs include preservation of the existing transit system, including bus replacement on a 15-year schedule and replacement of fixed facilities, and costs associated with the initial phases of the Milwaukee Streetcar and Milwaukee County's BRT line between downtown Milwaukee and the Milwaukee Regional Medical Center, including needed additional vehicles and facilities.

Highway system operating (and maintenance) costs are based on estimated actual state and local highway system operating costs and verified by application of estimated unit lane-mile costs. Planned highway system operating costs are increased from estimated existing costs based on the proposed increase in the Fiscally Constrained Transportation Plan in arterial highway system lane-miles. Transit system operating (and maintenance) costs are based on existing estimated actual costs and unit costs based on service vehicle-miles and vehicle-hours. Planned transit system operating costs have been decreased from existing system operating costs based on the requisite decrease in in transit service vehicle-miles and vehicle-hours to match reasonably expected revenues available.

Highway Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years and are documented in Table 1.15 of Chapter 1 of this volume. Transit Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years and assessment of available Federal formula and program funds and are documented in Table 1.16.

b Also includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of the Fiscally Constrained Transportation Plan.

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

Table 2.4

Average Annual Costs and Revenues Associated with the Fiscally Constrained

Transportation System Based on Year of Expenditure: 2016 - 2050

Cost or Revenue Item	YOE Dollars
Transportation System Cost (average annual 2016-2050 expressed as millions of dollars)a	
Arterial Street and Highway System	
Capital	
Freeway Reconstruction	\$424
Surface Arterial Reconstruction/Resurfacing and Freeway Resurfacing ^b	590
Subtotal	\$1,014
Operating	130
Highway Subtotal	\$1,144
Transit System	
Capital	\$37
Operating ^c	\$170
Transit Subtotal	\$207
Total	\$1,351
Transportation System Revenues (average annual 2016-2050 expressed as millions of dollars) ^a	
Highway Capital	
Freeway Reconstruction (Federal/State)	\$417
Surface Arterial Reconstruction/Resurfacing and Freeway Resurfacing	
Federal/State	520
Local	92
Subtotal	\$1,029
Highway Operating	<u> </u>
State	\$60
Local	55
Subtotal	\$115
Highway Subtotal	\$1,144
Transit Capital	·
Federal	\$18
Local	19
Subtotal	\$37
Transit Operating	
Federal C	\$29
State	107
Local	34
Subtotal	\$170
Transit Subtotal	\$207
Total	\$1,351

^a The estimated arterial street and highway system and transit system costs include all capital costs and operating and maintenance costs. The estimated costs include the necessary costs to preserve the existing transportation system such as arterial street resurfacing and reconstruction and transit system bus replacement, and the estimated costs of the transportation system improvement and expansion recommended under the Fiscally Constrained Transportation Plan. The freeway system capital costs include the estimated cost to rebuild those segments of the existing freeway system, which can be expected to be completed by the year 2050 and within the reasonably expected revenues available to modern design standards, the estimated incremental cost to rebuild 106 miles of the freeway system with additional lanes, the estimated cost of two new freeway interchanges, and the estimated cost of the extension of the USH 12 freeway from Elkhorn to Whitewater. Surface arterial capital costs include the costs of the estimated necessary resurfacing and reconstruction of the 3,157 miles of surface arterials that will require preservation of capacity over the plan design period, the estimated costs of reconstruction and widening with additional traffic lanes of about 163 miles of surface arterials, and the estimated costs of new construction of 63 miles of surface arterials.

The capital costs of the Fiscally Constrained Transportation Plan are based on equal annual expenditures of funds, in constant dollars, over the 35-year period. The operating costs for the arterial street and highway system are based on equally increasing annual costs, in constant dollars, over the 35-year period. The conversion of year 2015 constant dollar cost to year of expenditure cost utilizes inflation rates based upon historical trends. The rate of inflation used for highway costs and transit construction costs of 2.3 percent was provided by WisDOT and is based on the average change in the Consumer Price Index over the previous 10 years. The inflation rate of 2.5 percent used for transit vehicle costs is based on the historical increase in the purchase price of transit vehicles as experienced by the transit operators of the Region. With regard to transit operating costs, the inflation rate of 2.0 percent is based on the historical inflation from the Consumer Price Index for the Milwaukee area and discussions with Milwaukee County Transit System staff.

Highway Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years and are documented in Table 1.15 of Chapter 1 of this volume. Transit Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years and assessment of available Federal formula and program funds and are documented in Table 1.16.

b Also includes the costs associated with the bicycle and pedestrian, TSM, and TDM elements of the Fiscally Constrained Transportation Plan.

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

dollars; and the estimated cost of the extension of the USH 12 freeway from Elkhorn to Whitewater at \$438 million in year 2015 constant dollars. These freeway capital costs include the cost to reconstruct IH 43 between Howard Avenue and Silver Spring Drive to modern design standards. Should it be determined that this segment of IH 43 be widened, the project cost would incrementally increase by \$168 million in year 2015 constant dollars. With respect to freeway resurfacing, it is assumed that segments of freeway that were reconstructed before 2016 would be resurfaced on average two times by 2050 and segments of freeway that are recommended to be reconstructed in 2016 and beyond would be resurfaced on average one time by 2050.

Surface arterial capital costs include the costs of the estimated necessary resurfacing and reconstruction of the 3,157 miles of surface arterials that will require preservation of capacity over the plan design period, the estimated costs of reconstruction and widening with additional traffic lanes of about 163 miles of surface arterials, and the estimated costs of new construction of 63 miles of surface arterials. The estimated costs of resurfacing and reconstruction are based on the estimated lifecycle of existing surface arterials, and includes reconstruction of about 52 percent of surface arterials with approximately 66 percent resurfaced once, and 67 percent of the 48 percent resurfaced twice and 33 percent resurfaced three times. Unit costs for surface arterial resurfacing, reconstruction, widening, and new construction vary by cross-section from \$0.4 to \$13.4 million per mile in year 2015 constant dollars (rural or urban, divided or undivided, and number of traffic lanes) and are based upon actual project costs over the past several years. The estimated capital cost of surface arterials is \$348 million per year in year 2015 constant dollars, including \$298 million for preservation (resurfacing and reconstruction) and \$50 million for new arterials and arterials reconstructed with additional traffic lanes.

Transit system capital costs include preservation of the existing transit system, including bus replacement on a 15-year schedule and replacement of fixed facilities, and costs associated with the initial phases of the Milwaukee Streetcar and Milwaukee County's BRT line between downtown Milwaukee and the Milwaukee Regional Medical Center, including needed additional vehicles and facilities.

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

The capital costs of the FCTP are based on equal annual expenditures of funds, in constant dollars, over the 35-year period. The operating costs for the arterial street and highway system are based on equally increasing annual costs, in constant dollars, over the 35-year period. The conversion of year 2015 constant dollar cost to year of expenditure cost in Table 2.4 utilizes inflation rates based upon historical trends. The rate of inflation used for highway costs and transit construction costs of 2.3 percent was provided by WisDOT and is based on the average change in the Consumer Price Index over the previous 10 years. The inflation rate of 2.5 percent used for transit vehicle costs is based on the historical increase in the purchase price of transit vehicles as experienced by the transit operators of the Region. With regard to

transit operating costs, the inflation rate of 2.0 percent used is based on the historical inflation from the Consumer Price Index for the Milwaukee area and discussions with Milwaukee County Transit System staff.

Highway Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years and are documented in Table 1.15 of Chapter 1 of this volume. Transit Federal, State, and local capital and operating revenues are based on historic expenditures over the last several years, and assessment of available Federal formula and program funds and are documented in Table 1.16.

A significant portion of the arterial street and highway system expenses is related to the construction and reconstruction of freeway segments, which are shown in greater detail in Table 2.5, and the construction of new surface arterial segments and the reconstruction of existing arterial segments of four or more miles in length, which are shown in greater detail in Table 2.6. These tables are provided to give more insight into the costs associated with specific projects contained within the arterial streets and highways element.

Despite the decline in transit service included in the FCTP, there are some recommendations from VISION 2050 that could marginally improve the experience of riding transit in the Region without increasing the net cost of operating the transit system, making the services that remain slightly faster and more attractive to residents. Those recommendations are included in the FCTP, and are listed below. More detail on these recommendations can be found in Chapter 1 of Volume III.

- ➤ Recommendation 2.6: Implement "transit-first" designs on urban streets
- ▶ Recommendation 2.7: Enhance stops, stations, and park-ride facilities with state-of-the-art amenities
- ➤ Recommendation 2.8: Accommodate bicycles on all fixed-route transit vehicles
- ▶ Recommendation 2.9: Implement programs to improve access to suburban employment centers
- ➤ Recommendation 2.10: Provide information to promote transit use
- ➤ Recommendation 2.12: Consider implementation of proof-ofpayment on heavily-used transit services

Description of Bicycle and Pedestrian Element

Given that bicycle and pedestrian facility costs are primarily included in the costs for surface arterial streets and highways, and typically represent a fraction of the cost to reconstruct an arterial facility, there would likely be enough revenue to fund the bicycle and pedestrian element as recommended under VISION 2050. As discussed in Chapter 3 of Volume I, the bicycle and pedestrian element of the year 2035 regional transportation plan has been substantially implemented since that plan was adopted, further supporting this conclusion. Therefore, the bicycle and pedestrian element is unchanged between VISION 2050 and the FCTP.

Bicycle recommendations for the FCTP include providing on-street bicycle accommodations on the arterial street and highway system (non-freeways),

Table 2.5
Estimated Cost and Potential Schedule of Freeway Reconstruction: 2016 - 2050°

			Estimo	Estimated		
Period Completed and Open to Traffic	Facility	Limits of Project	Year 2015 Constant Dollars (millions) ^b	Year of Expenditure Dollars (millions)b	Funding- Year of Expenditure Dollars (millions)	
2016 to 2020	IH 794 ^c Zoo IC ^c	Lake Interchange to Carferry Drive (Including Lakefront Gateway) Zoo Interchange	45.3 660.9	46.4 707.9	•	
2020	20010	Subtotal	706.2	754.2	1,518.7	
2021 to 2025	IH 94 ^c IH 94 IH 43	Illinois to Mitchell Interchange 70 th Street to 16 th Street (including Stadium Interchange) Silver Spring Drive to STH 60	560.4 852.0 471.6 1,884.0	635.5 1,106.0 559.4 2,300.9	1,676.8	
2026 to 2030	IH 43, IH 43/894, & IH 894	Lincoln Avenue to 27th Street (STH 241), Racine Avenue (CTH Y) to Hale Interchange (Including Hale Interchange)	1,001.7	1,316.6		
		Subtotal	1,001.7	1,316.6	1,851.3	
2031 to 2035	IH 94 IH 43 ^d	Jefferson Co. to 124TH Howard to Silver Spring (excluding Marquette Interchange)	954.5 817.9	1,358.9 1,214.0		
		Subtotal	1,772.3	2,572.9	2,044.0	
2036 to 2040	IH 41 STH 175° USH 41° IH 43°	Burleigh to Richfield Interchange Stadium Interchange to Lisbon Avenue Richfield Interchange to Dodge County STH 83 to Racine Avenue (CTH Y)	817.3 140.5 394.3 258.4	1,274.3 235.1 672.8 398.7		
		Subtotal	1,610.5	2,580.9	2,256.7	
2041 to 2050	IH 43° IH 43° USH 12 IH 43° STH 16° STH 145° USH 45°	IH 43 & USH 12 Interchange STH 60 to Sheboygan County Illinois to Rock County Rock County to STH 83 STH 67 to IH 94 Hampton Avenue to Good Hope Road Richfield Interchange to CTH D	68.7 391.3 729.6 585.5 418.5 185.7 309.3	131.9 758.0 1,411.1 1,130.5 887.9 381.3 671.2		
	USH 45°	Subtotal	2,688.6	5,371.8	5,242.5	
		Total	9,663.2	14,897.3	14,590.0	

^a It is assumed that the State will continue to provide the necessary level of funding for freeway reconstruction through the year 2050. In recent State budgets, the State has chosen to provide this level of funding through bonding, which has been criticized by some as unsustainable. However, it is reasonable to expect that the State will address its long-term funding issues in order to reconstruct the aging freeway system in the Region. Project prioritization beyond the year 2021 is subject to change.

Source: Wisconsin Department of Transportation and SEWRPC

^b Constant dollar and year of expenditure cost estimates for projects are reported in the period that the project is expected to be completed and open to traffic. Actual project expenditures will occur over multiple years and could extend over multiple periods dependent on the scope and complexity attendant to each project.

^c Project is currently underway. Only those construction costs programmed for years 2016 through 2050 are included.

d The Fiscally Constrained Transportation Plan does not make a recommendation for whether IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, would be reconstructed with or without additional traffic lanes. The decision of how this segment of IH 43 would be reconstructed would be determined through preliminary engineering. Following the conclusion of the preliminary engineering for the reconstruction, the Fiscally Constrained Transportation Plan would be amended to reflect the decision made as to how this segment of IH 43 would be reconstructed. The estimated cost shown in this table reflects the cost to reconstruct this segment of IH 43 to modern design standards without additional traffic lanes. Providing the additional traffic lanes along this segment of IH 43 is estimated to have an incremental cost of \$168 million.

^e Current Majors Program budget levels will not provide funding for these projects before 2050; therefore, this project schedule assumes additional funding availability in the years shown. Projects listed for completion after 2036 will have to compete for Majors funding with other large projects statewide, on the basis of economic impact, traffic flow, safety, and environmental considerations.

Table 2.6 **Estimated Cost and Potential Schedule of Major Surface Arterial** Construction and Reconstruction Projects^{a, b}

Period Completed and Open to Traffic	County	Facility	Limits of Project	Cost (Millions 2015 Dollars) ^c	Cost (Millions Year of Expenditure Dollars)	Mileage
2016 to	Kenosha	CTH S (part)	CTH H to STH 31	9.0	ĺ	1.9
2020	Waukesha	CTH M (part)	CTH YY to Highland Drive and Lilly Road to 124th Street	13.1		1.7
	Waukesha	Waukesha West Bypass	IH 94 to STH 59	43.1		5.1
		7.	Subtotal	65.2	69.8	8.7
2021 to	Kenosha	CTH S (part)	E. Frontage Road to CTH H	7.5		1.9
2025	Kenosha	STH 50"	IH 94 to 39th Avenue	61.0		4.8
	Waukesha	CTH M (part)	CTH Y to CTH YY	22.3		2.9
	T G G I G G I G	, (pan)	Subtotal	90.9	109.1	9.6
2026 to	Kenosha	CTH H (Part)	CTH S to STH 50	17.5		2.6
2030	Ozaukee	CTH W (part)	Highland Road to W. Glen Oaks Lane	6.7		1.0
	Milwaukee and Racine	STH 32	STH 100 to Five Mile Road	29.5		5.1
	Walworth	STH 50	IH 43 to STH 67	23.3		4.3
	Waukesha	STH 83	USH 18 to Phylis Parkway	31.5		2.4
	Waukesha	STH 83	Mariner Drive to STH 16	31.5		3.6
	Waukesha	CTH D (part)	Milwaukee County line to Calhoun Road	11.9		3.0
	Waukesha	CTH Y (part)	Hickory Trail to Downing Drive	15.8		4.0
			Subtotal	167.7	225.5	26.0
2031 to	Kenosha	CTH H (Part)	STH 50 to STH 165	13.0		3.0
2035	Milwaukee	USH 45/STH 100	Rawson Avenue to 60th Street	22.0		4.8
	Racine	STH 20	IH 94 to Oaks Road	41.0		4.5
	Waukesha	Pilgrim Road	USH 18 to Lisbon Road	32.4		4.8
	Waukesha	CTH SR/Town Line Road extension (part)	CTH JJ to STH 190	21.6		3.2
	Waukesha	CTH Y (part)	CTH L to College Avenue	11.4		2.1
			Subtotal	141.3	170.3	22.4
2036 to	Ozaukee	CTH W (part)	CTH V to Lakeland Road	20.9		3.1
2040	Waukesha	STH 67 (part)	CTH DR to USH 18	13.2		2.9
	Waukesha	STH 190	STH 16 to Brookfield Road	49.0		5.4
	Waukesha	CTH D (part)	Calhoun Road to STH 59/164	15.2	1// 0	3.8
			Subtotal	98.3	166.0	15.2
2041 to	Ozaukee	CTH W (part)	Lakeland Road to Highland Road	20.8		3.1
2045	Waukesha	STH 59/164	CTH XX to Arcadian Avenue	51.6		4.8
	Waukesha	CTH SR/Town Line Road extension (part)	STH 190 to Weyer Road	7.3		1.5
			Subtotal	79.7	150.8	9.4
2046 to	Milwaukee	Lake Pkwy Extension	E. Edgerton Avenue to STH 100	219.7		6.0
2050			Subtotal	219.7	465.5	6.0
			Total	862.9	1,357.1	97.3

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

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

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

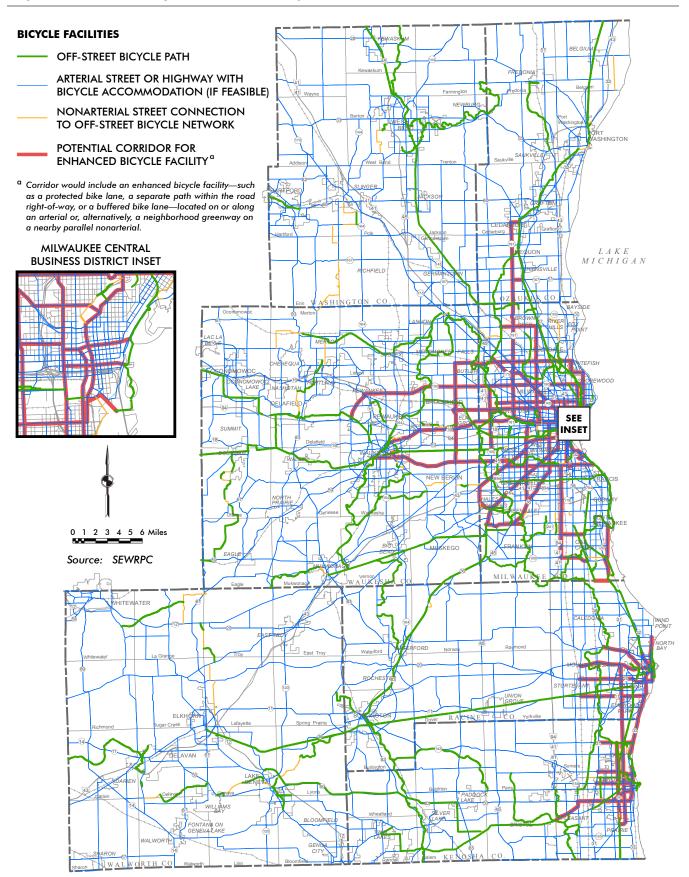


Table 2.7 Miles of Bicycle Facilities: Fiscally Constrained Transportation Plan

	Estimated Mileages			
Bicycle Facility	Fiscally Constrain Transportation Pla Existing (2015) (2050)			
On-street Accommodations	3 ()	,		
Standard	814.7	3,026.8		
Enhanced	71.8	363.2		
Off-Street Paths	299.2	714.9		

expanding the off-street bicycle path system, implementing enhanced bicycle facilities in key regional corridors, and expanding bike share program implementation. As shown in Table 2.7, the FCTP includes approximately 3,027 miles of standard on-street bicycle accommodations, 363 miles of enhanced bicycle facilities, and 715 miles of off-street bicycle paths. Map 2.2 shows the recommended bicycle network, which identifies on-street bicycle facilities, potential corridors for enhanced bicycle facilities, off-street bicycle paths, and nonarterial street connections to the off-street bicycle network.

The FCTP also includes recommendations for the location, design, and construction of pedestrian facilities and further recommends that local communities develop bicycle and pedestrian plans to supplement the regional plan. More detail on all of these recommendations can be found in Chapter 1 of Volume III.

- ➤ Recommendation 3.1: Expand the on-street bicycle network as the surface arterial system is resurfaced and reconstructed
- ▶ Recommendation 3.2: Expand the off-street bicycle path system to provide a well-connected regional network
- ► Recommendation 3.3: Implement enhanced bicycle facilities in key regional corridors
- ► Recommendation 3.4: Expand bike share program implementation
- Recommendation 3.5: Provide pedestrian facilities that facilitate safe, efficient, and accessible pedestrian travel
- ▶ Recommendation 3.6: Prepare local community bicycle and pedestrian plans

Description of Transportation Systems Management Element

Similar to the bicycle and pedestrian element, the costs associated with the transportation systems management (TSM) element are primarily included in the costs for surface arterial streets and highways, and typically represent a fraction of the cost to reconstruct an arterial facility. Therefore, there would likely be enough revenue to fund the TSM element as recommended under VISION 2050. As discussed in Chapter 3 of Volume I, the TSM element of the year 2035 regional transportation plan has been substantially implemented since that plan was adopted, further supporting this conclusion. Therefore, the TSM element is unchanged between VISION 2050 and the FCTP.

TSM involves managing and operating existing transportation facilities to maximize their carrying capacity and travel efficiency. TSM recommendations included in the FCTP relate to freeway traffic management, surface arterial street and highway traffic management, and major activity center parking management and guidance. The specific TSM measures within each of the three categories collectively would be expected to result in a more efficient and safer transportation system. More detail on all of these recommendations can be found in Chapter 1 of Volume III.

Freeway Traffic Management

Freeway traffic management strategies include measures that improve the operational control, advisory information, and incident management on the regional freeway system.

- ➤ Recommendation 4.1: Implement freeway operational control measures
- ➤ Recommendation 4.2: Implement advisory information measures for the Region's freeway system
- ► Recommendation 4.3: Implement incident management measures for the freeway system

Surface Arterial Street and Highway Traffic Management

Surface arterial street and highway traffic management strategies are measures that improve the operation and management of the regional surface arterial street and highway network.

- ▶ Recommendation 4.4: Improve and expand coordinated traffic signal systems
- ➤ Recommendation 4.5: Improve arterial street and highway traffic flow at intersections
- ► Recommendation 4.6: Expand curb-lane parking restrictions
- ▶ Recommendation 4.7: Develop and adopt access management standards
- ➤ Recommendation 4.8: Enhance advisory information for surface arterial streets and highways
- ▶ Recommendation 4.9: Expand the use of emergency vehicle preemption

Major Activity Center Parking

The FCTP recommends strategies to improve parking around major activity centers that allow motorists to find available parking quickly, reducing traffic volume and congestion, and attendant air pollutant emissions and fuel consumption.

- ▶ Recommendation 4.10: Implement parking management and guidance systems in major activity centers
- ➤ Recommendation 4.11: Implement demand-responsive pricing for parking in major activity centers

Regional Transportation Operations Plan

The current regional transportation operations plan (RTOP), completed in 2012, is a five-year program identifying candidate corridor and intersection TSM projects prioritized for implementation and funding, particularly with respect to FHWA Congestion Mitigation and Air Quality Improvement (CMAQ) Program funding.

► Recommendation 4.12: Review and update regional transportation operations plan

Description of Travel Demand Management Element

Travel demand management (TDM) refers to a series of measures or strategies intended to reduce personal and vehicular travel or to shift such travel to alternative times and routes, allowing for more efficient use of the existing capacity of the transportation system. The general intent of such measures is to reduce traffic volume and congestion, and attendant air pollutant emissions and fuel consumption. To be effective, these measures should be technically and politically feasible; integrated with public transit, bicycle and pedestrian, and arterial street and highway improvements; and combined into coherent packages so that a variety of measures are implemented. As such, the recommendations included in the TDM element of VISION 2050 are either policy initiatives that do not require public funding, or are infrastructure investments that are made largely as part of the construction and operation of arterial streets and highways, and therefore are likely to be funded and are included in the FCTP. More detail on all of these recommendations can be found in Chapter 1 of Volume III.

- ➤ Recommendation 5.1: Enhance the preferential treatment for high-occupancy vehicles
- ➤ Recommendation 5.2: Expand the network of park-ride lots
- ➤ Recommendation 5.3: Price personal vehicle travel at its true cost
- ➤ Recommendation 5.4: Promote travel demand management
- ➤ Recommendation 5.5: Facilitate transit, bicycle, and pedestrian movement in local land use plans and zoning

Description of Arterial Streets and Highways Element

A comparison of estimated costs to expected revenues for the VISION 2050 transportation system, shown in Tables 2.3 and 2.4, indicates there may be enough revenue to fund the recommended arterial system improvements during the plan period, and therefore the arterial streets and highways element is unchanged between VISION 2050 and the FCTP.

Arterial streets and highways are that portion of the total street and highway system principally intended to provide travel mobility, serving the through movement of traffic and providing transportation service between major subareas of a region and also through the region. The arterial street and highway system under VISION 2050 and the FCTP totals 3,670.0 routemiles. Approximately 90 percent, or 3,315.9 of these route-miles, are recommended to be resurfaced and reconstructed to their existing traffic carrying capacity. Approximately 268.8 route-miles, or about 7 percent of the year 2050 arterial street and highway system, are recommended for capacity expansion through widening to provide additional through traffic lanes. Approximately 75.1 route-miles, or about 2 percent of the total

arterial street mileage, are recommended for capacity expansion through the construction of new arterial facilities. Of the total of about 357.5 routemiles of planned arterial capacity expansion, about 79.9 route-miles, or 22 percent, is part of a committed project—currently underway or recommended as part of a completed or nearly completed preliminary engineering study.

The FCTP does not make any recommendation with respect to whether the 10.2 route-miles of IH 43 between Howard Avenue and Silver Spring Drive, when reconstructed, should be reconstructed with or without additional traffic lanes. The FCTP recommends that preliminary engineering conducted for the reconstruction of this segment of IH 43 should include the consideration of alternatives for rebuilding the freeway with additional lanes and rebuilding it with the existing number of lanes. The decision of how this segment of IH 43 would be reconstructed would be determined by the Wisconsin Department of Transportation (WisDOT) through preliminary engineering and environmental impact study. During preliminary engineering, WisDOT would consider and evaluate a number of alternatives, including rebuild as is, various options of rebuilding to modern design standards, compromises to rebuilding to modern design standards, rebuilding with additional lanes, and rebuilding with the existing number of lanes. Only at the conclusion of preliminary engineering would a determination be made as to how this segment of IH 43 freeway would be reconstructed. Following the conclusion of the preliminary engineering for the reconstruction, VISION 2050 and the FCTP would be amended to reflect the decision made as to how IH 43 between Howard Avenue and Silver Spring Drive would be reconstructed. Any construction along this segment of IH 43 prior to preliminary engineering such as bridge reconstruction—should fully preserve and accommodate the future option of rebuilding the freeway with additional lanes.

Table 2.8 and Maps 2.3 through 2.9 display the arterial streets and highways element of the FCTP. More detail on the following recommendations can be found in Chapter 1 of Volume III.

- ➤ Recommendation 6.1: Preserve the Region's arterial street and highway system
- ➤ Recommendation 6.2: Incorporate "complete streets" concepts for arterial streets and highways
- ➤ Recommendation 6.3: Expand arterial capacity to address residual congestion
- ► Recommendation 6.4: Avoid, minimize, or mitigate environmental impacts of arterial capacity expansion
- ➤ Recommendation 6.5: Address safety needs on the arterial street and highway network
- ▶ Recommendation 6.6: Address security needs related to the arterial street and highway system

Description of Freight Transportation Element

VISION 2050 recommends a multi-modal freight transportation system designed to provide for the efficient and safe movement of raw materials and finished products to, from, and within Southeastern Wisconsin. Nearly all recommendations included in the freight transportation element would be expected to be included as part of the regular operations and

Table 2.8

Arterial Street and Highway System Preservation, Improvement, and Expansion by Arterial Facility Type by County: Fiscally Constrained Transportation Plan

		System Preservation	System Improvement	System Expansion	Total
County	Arterial Facility Type	(miles)	(miles)	(miles)	Miles
Kenosha	Freeway	8.5	3.5	0.0	12.0
	Standard Arterial	318.0	31.2	4.7	353.9
	Subtotal	326.5	34.7	4.7	365.9
Milwaukee	Freeway	29.6	38.2	0.0	67.8
	Standard Arterial	719.3	11.3	7.0	737.6
	Subtotal	748.9	49.5	7.0	805.4
Ozaukee	Freeway	13.3	14.2	0.0	27.5
	Standard Arterial	262.4	18.5	4.0	284.9
	Subtotal	275.7	32.7	4.0	312.4
Racine	Freeway	0.0	12.0	0.0	12.0
	Standard Arterial	413.2	11.1	12.6	436.9
	Subtotal	413.2	23.1	12.6	448.9
Walworth	Freeway	49.8	4.8°	12.4	67.0°
	Standard Arterial	409.2	4.3	10.3	423.8
	Subtotal	459.0	9.1	22.7	490.8
Washington	Freeway	35.8	6.4	0.0	42.2
	Standard Arterial	388.8	8.7	16.9	414.4
	Subtotal	424.6	15.1	16.9	456.6
Waukesha	Freeway	32.4	26.4	0.0	58.8
	Standard Arterial	645.8	78.2	7.2	731.2
	Subtotal	678.2	104.6	7.2	790.0
Region	Freeway	169.4	105.5♭	12.4	287.3 ^b
	Standard Arterial	3,156.7	163.3	62.7	3,382.7
	Total	3,326.1	268.8	75.1	3,670.0

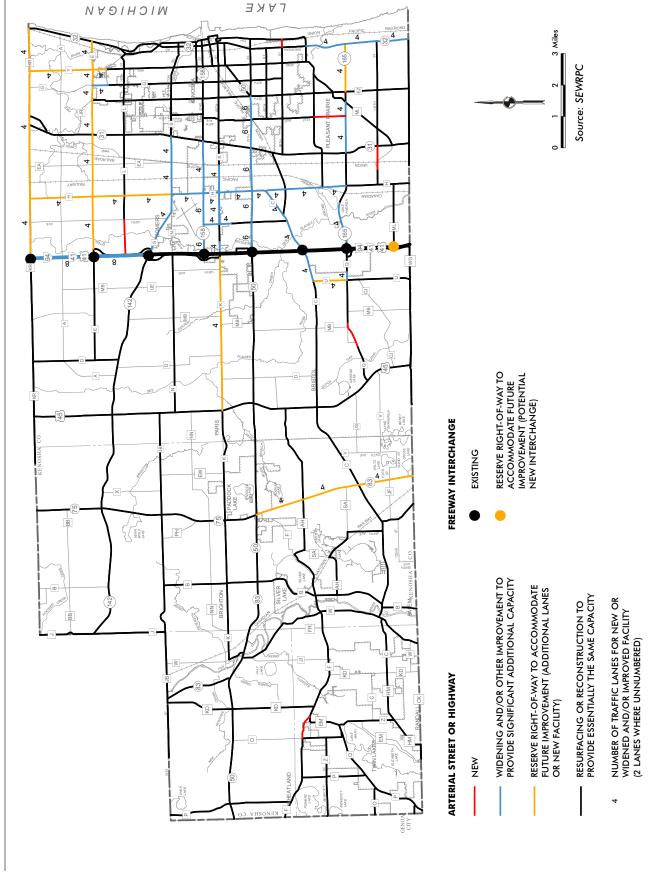
^a Represents the conversion of approximately 4.8 miles of the USH 12 Whitewater bypass, currently a two traffic lane surface arterial to a four traffic lane freeway.

maintenance of the arterial street and highway system, or would not require additional public funding to implement, and therefore are unchanged between VISION 2050 and the FCTP. However, constructing the Muskego Yard Bypass (Recommendation 7.5 in Chapter 1 of Volume III) would likely require additional public funding, and therefore is not included in the FCTP. More detail on the following recommendations can be found in Chapter 1 Volume III.

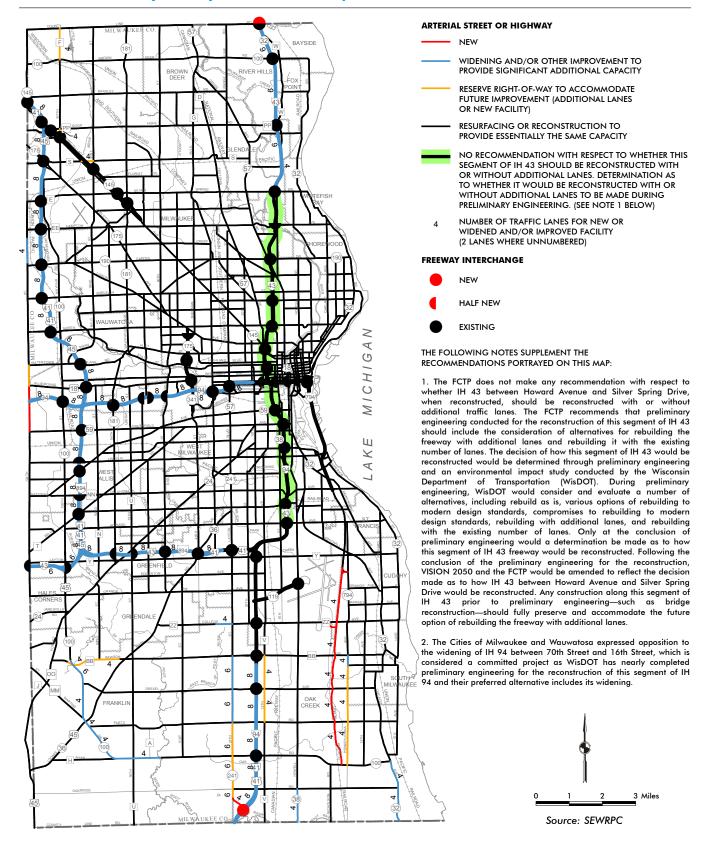
- ➤ Recommendation 7.1: Accommodate truck traffic on the regional highway freight network
- ➤ Recommendation 7.2: Accommodate oversize/overweight shipments to, from, and within Southeastern Wisconsin
- ➤ Recommendation 7.3: Pursue development of a new truck-rail intermodal facility in or near Southeastern Wisconsin
- ➤ Recommendation 7.4: Develop truck size and weight regulations in Wisconsin consistent with neighboring states

^b Includes the widening of approximately 100.7 miles of the existing 2015 regional freeway system, and the conversion of about 4.8 miles of the USH 12 Whitewater bypass, currently a two traffic lane surface arterial, to a four traffic lane freeway.

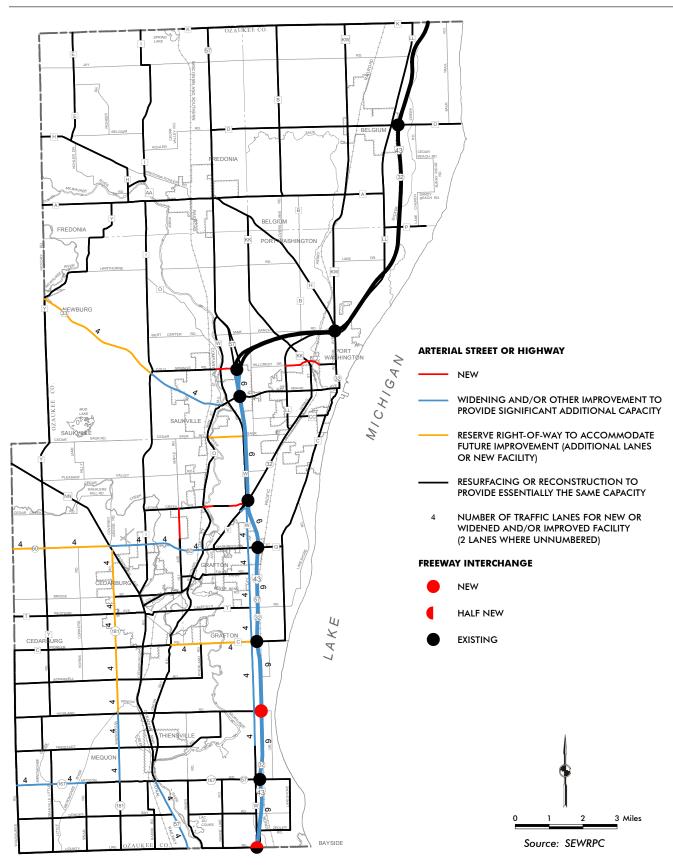
Functional Improvements to the Arterial Street and Highway System in Kenosha County: Fiscally Constrained Transportation Plan Map 2.3



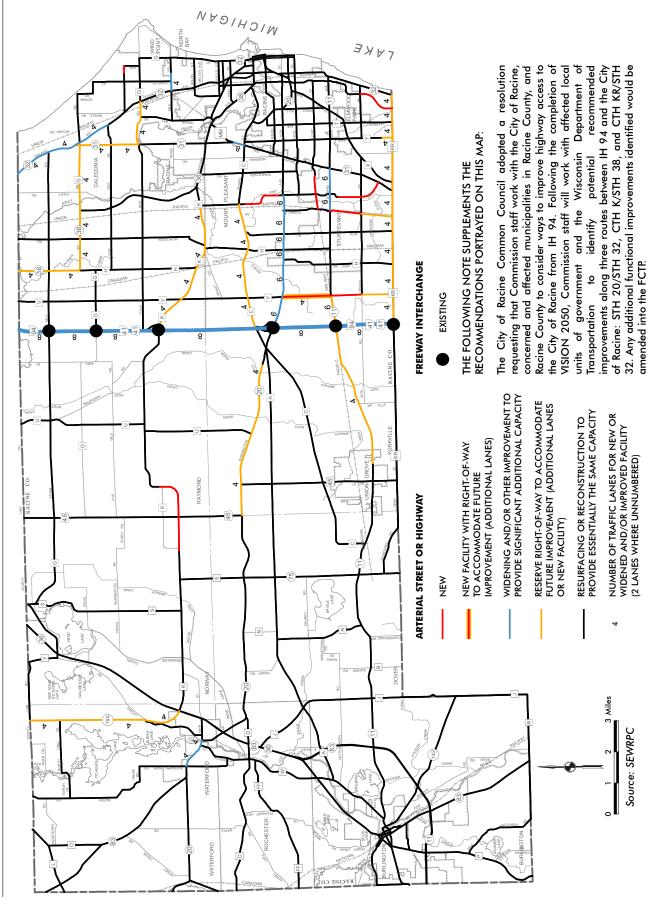
Map 2.4
Functional Improvements to the Arterial Street and Highway System in Milwaukee County: Fiscally Constrained Transportation Plan



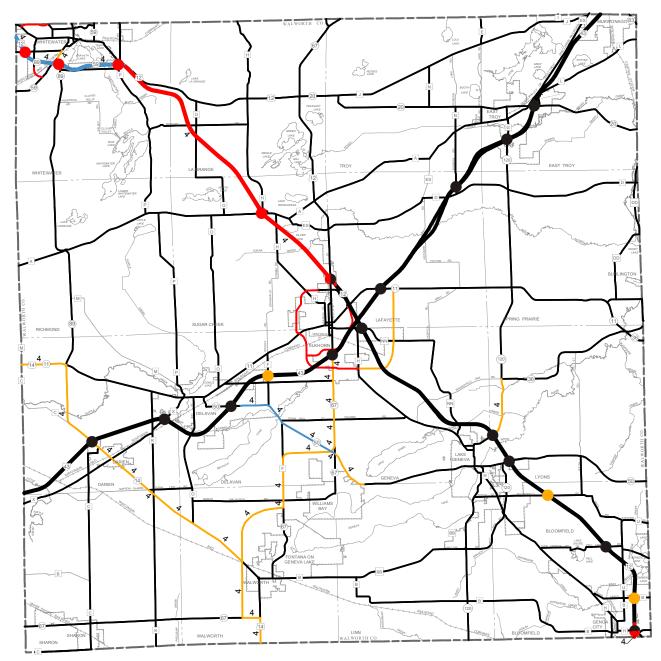
Map 2.5
Functional Improvements to the Arterial Street and Highway System in Ozaukee County: Fiscally Constrained Transportation Plan



Functional Improvements to the Arterial Street and Highway System in Racine County: Fiscally Constrained Transportation Plan **Map 2.6**



Map 2.7
Functional Improvements to the Arterial Street and Highway System in Walworth County: Fiscally Constrained Transportation Plan



ARTERIAL STREET OR HIGHWAY

--- NEW

WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY

RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)

RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY

4 NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE

NEW

HALF NEW

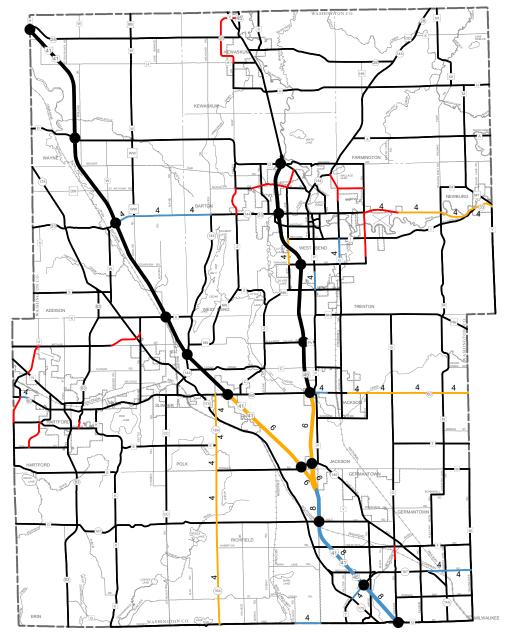
EXISTING

RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (POTENTIAL NEW INTERCHANGE)



Map 2.8

Functional Improvements to the Arterial Street and Highway System in Washington County: Fiscally Constrained Transportation Plan



ARTERIAL STREET OR HIGHWAY

NEW

WIDENING AND/OR OTHER IMPROVEMENT TO PROVIDE SIGNIFICANT ADDITIONAL CAPACITY

RESERVE RIGHT-OF-WAY TO ACCOMMODATE FUTURE IMPROVEMENT (ADDITIONAL LANES OR NEW FACILITY)

RESURFACING OR RECONSTRUCTION TO PROVIDE ESSENTIALLY THE SAME CAPACITY

NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

FREEWAY INTERCHANGE



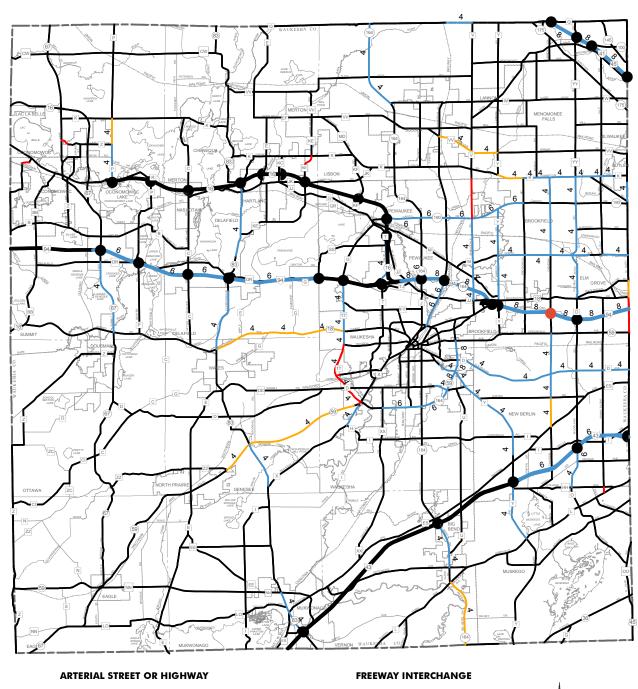
EXISTING

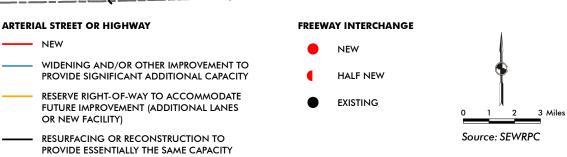
THE FOLLOWING NOTE SUPPLEMENTS THE RECOMMENDATIONS PORTRAYED ON THIS MAP:

Commission staff was asked by Washington County to evaluate alternative east-west arterial reliever routes north of the City of Hartford and Village of Slinger, and potential improvements to STH 60 between the west county line and IH 41. The study is expected to be completed beyond the completion of VISION 2050. Should the results of this study differ from what is shown on this map, the FCTP will be amended to reflect the results of the study.



Map 2.9 Functional Improvements to the Arterial Street and Highway System in Waukesha County: Fiscally Constrained Transportation Plan





NUMBER OF TRAFFIC LANES FOR NEW OR WIDENED AND/OR IMPROVED FACILITY (2 LANES WHERE UNNUMBERED)

- ➤ Recommendation 7.6: Address the potential need for truck drivers in Southeastern Wisconsin
- ➤ Recommendation 7.7: Address safety needs related to freight transportation
- ➤ Recommendation 7.8: Address security needs related to freight transportation
- ➤ Recommendation 7.9: Support efforts in areas outside the Region that improve freight movement to and from the Region

2.2 CONSEQUENCES OF NOT ADDRESSING THE TRANSIT FUNDING GAP

The evaluation of the Preliminary Recommended Plan, and of the alternatives during a previous stage of VISION 2050, illustrated numerous benefits of improving and expanding transit service. The transit funding gap would result in the Region not realizing these benefits, and not implementing the recommended transit system would have the following negative consequences:

- Infill and redevelopment in existing urban areas is the focus of the land use development pattern presented under VISION 2050. TOD is anticipated to contribute to the levels of infill and redevelopment envisioned under VISION 2050. Consistent with national trends, high-density TOD would be expected to occur within walking distance of the rapid transit and commuter rail stations proposed under VISION 2050. As a result, the forecast regional population and employment from 2010 to 2050 was increased under VISION 2050 from the intermediate-growth projections prepared at the beginning of the VISION 2050 process to account for anticipated growth in the station areas and maintain the intermediategrowth forecast for portions of the Region outside of those station areas. The focus on infill and redevelopment and the general development pattern in urban areas throughout the Region would remain under the FCTP; however, the levels of infill and redevelopment in the most highly urbanized areas of the Region envisioned under VISION 2050 may not occur without the rapid transit and commuter rail stations to act as a catalyst for investment.
- The traffic carrying capacity in the Region's heavily traveled corridors and densely developed activity centers would be reduced under the FCTP as less transit service would result in more people using automobiles.
- Carbon emissions from transportation would be slightly higher under the FCTP as travelers would be more dependent on their cars.
- Access to jobs, healthcare, education, and other daily needs would be less under the FCTP, particularly for the 1 in 10 households in the Region without access to a car. In addition, a large number of the Region's jobs would be inaccessible to those households without a car due to excessive travel times on the remaining transit services. This particularly impacts minority and low-income populations, which use public transit at a rate proportionally higher than other population groups. Only 50 to 60 percent of Black and Hispanic adults in Milwaukee County have a driver's license, compared to about 80 percent of nonminority adults.

- A smaller labor force would be available to employers under the FCTP.
- The ability to develop compact, walkable neighborhoods, which encourage active transportation and improve public health, would be reduced under the FCTP.
- · Costs of public infrastructure and services, and the taxes necessary to support them, may be higher under the FCTP as improved and expanded public transit would not be available to support and promote more efficient higher density development.
- The ability for the Region's residents to age in place as their ability to drive declines would be less under the FCTP.
- The lack of a regional rapid transit network under the FCTP has the potential to reduce the economic competitiveness of the Region, given that only six out of 39 metropolitan areas with more than 1.5 million residents in the United States (Cincinnati, Columbus, Detroit, Indianapolis, Milwaukee, and San Antonio) do not have light rail, bus rapid transit, or commuter rail.
- · Out-of-pocket costs for transportation for some of the Region's households would be higher under the FCTP due to an inability to replace one or more of the household's cars with an annual transit pass. As a result, these households would have less money to save or spend on other goods.
- Communities would be less able to reduce or eliminate parking requirements, developers would be less able to build fewer spaces, and commercial and residential tenants would pay more for goods and rent under the FCTP.
- Economic resiliency would be lower under the FCTP. Should the Region experience greater economic success than currently predicted, the increase in congestion caused by a growing workforce could have significant negative impacts without a reliable alternative to driving. Similarly, should fuel prices rise dramatically before alternative methods of powering cars and trucks are more mainstream, the negative impacts on the Region's residents and its economy would be significant without a robust transit system to provide an alternative to driving.

All of these consequences may negatively impact economic growth in Southeastern Wisconsin and the quality of life of its residents. Future projections indicate that soon the Region will no longer be able to support economic growth with internal growth of the Region's labor force. If the Region is to experience even a modest growth in jobs, the Region will need to in-migrate population and labor force. An inability to sustain and expand public transit service presents an obstacle to attracting labor force and business growth to Southeastern Wisconsin, and every effort should be made to authorize the necessary funding to achieve all the elements of VISION 2050.