

ASSESSMENT OF CONFORMITY OF THE FISCALLY CONSTRAINED TRANSPORTATION SYSTEM AND TRANSPORTATION IMPROVEMENT PROGRAM



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MEMORANDUM REPORT
NUMBER 267

**ASSESSMENT OF CONFORMITY OF THE
FISCALLY CONSTRAINED TRANSPORTATION SYSTEM
AND TRANSPORTATION IMPROVEMENT PROGRAM**

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INTRODUCTION

This report provides the basis for a determination that the recommended year 2050 fiscally constrained transportation System¹ (FCTS) and also the year 2023-2026 transportation improvement program (TIP) are in conformance with the 2008, and 2015 eight-hour ozone, and the 2006 24-hour fine particulate (PM_{2.5}) national ambient air quality standards (NAAQS). Map 1 shows the nonattainment and maintenance areas within Southeastern Wisconsin. The report also demonstrates that the year 2023-2026 TIP will serve to implement the FCTS.²

The U.S. Environmental Protection Agency (USEPA) and the U.S. Department of Transportation (USDOT) have established criteria and procedures to be used by a Metropolitan Planning Organization (MPO) in making conformity determinations for regional transportation plans (RTP) and TIPs. The Southeastern Wisconsin Regional Planning Commission (SEWRPC) is the gubernatorially-designated Federal MPO for the Kenosha, Milwaukee, Racine, and West Bend urbanized areas, and the Wisconsin portion of the Round Lake Beach urbanized area. The conformity criteria established by USEPA are set forth in the Federal Register (40 CFR Part 51), and the criteria with respect to ozone and PM_{2.5} precursors apply to Southeastern Wisconsin. These Federal regulations identify the conformity criteria that should be applied at this time with respect to the ozone and fine particulate nonattainment and maintenance areas designated within Southeastern Wisconsin (shown on Map 1).

In addition to the Federal regulations governing the RTP and TIP conformity, SEWRPC, the Wisconsin Department of Natural Resources (WDNR), and the Wisconsin Department of Transportation (WisDOT) have adopted a memorandum of agreement regarding the conduct of RTP and TIP conformity determinations, which was approved by USEPA and became effective on April 22, 2013. Figure 1 provides a summary of the interagency agreement on the conformity criteria and tests which should be applied in this conformity determination. The principal agencies involved were SEWRPC, WisDOT, WDNR, USDOT Federal Highway and Transit Administrations, and USEPA. As described in Figure 1, the conformity criteria to be applied to the nonattainment and maintenance areas within Southeastern Wisconsin require the satisfaction of emissions budget tests described in 40 CFR 93.118.

The next section of this report describes the FCTS for the seven-county Southeastern Wisconsin Region. The following section summarizes the 2023-2026 TIP that implements the plan. The remaining sections of this report then identify the specific conformity procedure requirements and conformity determination criteria that have been established by USEPA for use in the determination of FCTS and TIP conformity. These sections also indicate the extent to which the conformity analysis, FCTS, and the TIP meet each of these requirements and criteria. The assessment of conformity with respect to each requirement and criterion concludes that the FCTS and the 2023-2026 TIP are in conformance with the state implementation plan (SIP) or maintenance plan attendant to each of the nonattainment or maintenance areas within the Region.

It is important to note that VISION 2050, FCTS, TIP, maintenance plans, and SIPs have been prepared in a cooperative manner by the Commission and WDNR, and have been extensively coordinated. The forecasts of vehicle-miles of travel (VMT) and air pollutant emissions utilized in the preparation of the FCTS were based on the adopted Commission intermediate growth forecasts for the year 2050, and the forecasts of emissions attendant to the each SIP or maintenance plan were based on alternative high growth VMT and emissions forecasts under the applicable Commission plan in force at that time, and increased by 7.5 percent to account for uncertainty in transportation emissions forecasts.

¹ An important aspect attendant to implementing VISION 2050 relates to funding. The amount of public funding needed to construct, operate, and maintain the transportation component of VISION 2050 has been compared to the amount of funding expected to be available. Federal metropolitan planning regulations (23 CFR Part 450) and conformity regulations (40 CFR Part 93.108) require that the Region's transportation plan be "fiscally constrained"—only including projects that can be funded with expected funds, taking into account the limitations placed on these funding sources by Federal and State law. Therefore, only the recommended portion of VISION 2050 that can be funded with these revenues is considered "fiscally constrained" by the Federal Government and is titled the Recommended Fiscally Constrained Transportation System (FCTS). The FCTS is used in the determination of conformity and in the development of the transportation improvement program.

² The regional transportation plan is documented in the second edition of Volume III of SEWRPC Planning Report No. 55, VISION 2050: A Regional Land Use and Transportation System Plan for Southeastern Wisconsin. The 2023-2026 Transportation Improvement Program is documented in a report entitled, A Transportation Improvement Program for Southeastern Wisconsin: 2023-2026.

Map 1 NAAQS Nonattainment/Maintenance Areas Within Southeastern Wisconsin

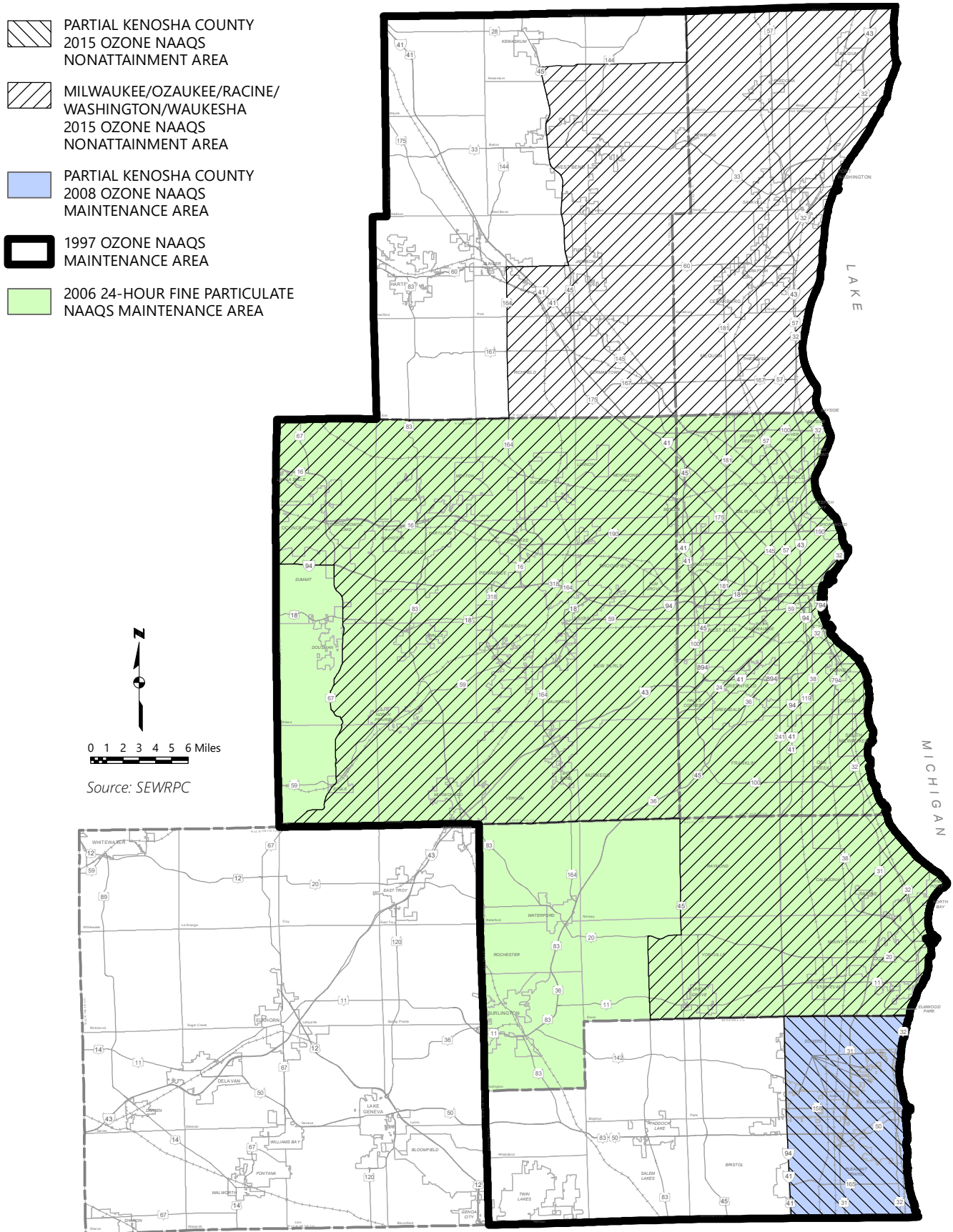


Figure 1
Proposed Conformity Analyses of the Fiscally Constrained
Transportation System and Transportation Improvement Program

Analysis Years and Budgets by Nonattainment/Maintenance Area									
Nonattainment/ Maintenance Area	Month	Emission	Plan Stage and Budgets to be Used (tons)						NAAQS Budgets Used
			2022	2025	2030	2035	2040	2050	
Partial Kenosha County 2008 Ozone Maintenance Area	July	NO _x VOC		1.470	0.850	0.750	0.750	0.750	2025, 2030, and 2035 budgets attendant to the 2008 Ozone NAAQS SIP and Maintenance Plans
				0.950	0.540	0.470	0.470	0.470	
Partial Kenosha County 2015 Ozone NAAQS Nonattainment Area	July	NO _x VOC		1.470	0.850	0.750	0.750	0.750	2025, 2030, and 2035 budgets attendant to the 2008 Ozone NAAQS SIP and Maintenance Plans
				0.950	0.540	0.470	0.470	0.470	
Milwaukee 2015 Ozone NAAQS Nonattainment Area	July	NO _x VOC	31.910		31.910		31.910	31.910	2022 budgets attendant to the 1997 Ozone NAAQS
			15.980		15.980		15.980	15.980	
2006 24-Hour Fine Particulate Maintenance Area	January	NO _x		28.690	28.690		28.690	28.690	2025 budgets attendant to the 2006 PM _{2.5} NAAQS
		VOC		13.778	13.778		13.778	13.778	
		PM _{2.5}		2.160	2.160		2.160	2.160	
		SO ₂		0.380	0.380		0.380	0.380	

MOVES3 Inputs			
Source	Moves Input	Last Updated	Notes
WDNR	Age Distribution	10/7/2022	10-year 2008-2017 Wisconsin statewide average 10-year 2008-2017 Wisconsin statewide average
	Month VMT Fraction	5/8/2020	
	Day VMT Fraction	5/8/2020	
	Fuels	10/7/2022	
	Inspection and Maintenance Program	10/7/2022	
	Meteorology	10/7/2022	
SEWRPC	Average Speed Distribution	Updated at Time of Conformity Demonstration	Provided as an output to the scenario being modeled using the Commission's current 5th generation travel demand model. MOVES3 county-level defaults updated based on VMT estimates
	Freeway and Non-Freeway Hour VMT Fraction		
	Ramp		
	Vehicle Type VMT		
	Road Type		
	Source Type Population		

Note: National defaults will be used with the exception of the following localized input data.

Conformity Analysis Notes
Commission staff will provide WDNR staff with MOVES3 input and output databases and run specification files attendant to this conformity demonstration.
For the Wisconsin portion of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone NAAQS Maintenance Area & Marginal 2015 8-Hour Ozone NAAQS Nonattainment Area, the demonstration of conformity will be established using the budget test. The 2025 VOC and NO _x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in January 2020 and determined adequate effective May 2, 2020 (85 FR 21351) and the 2030 and 2035 VOC and NO _x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in December 2021 and determined adequate effective May 11, 2022 (87 FR 21027)
With respect to the Milwaukee, WI Marginal 2015 8-Hour Ozone NAAQS Nonattainment Area, the demonstration of conformity will be established using the budget test. As budgets attendant to the 2015 ozone nonattainment areas have not been established, and this nonattainment area is entirely within the 1997 ozone maintenance area the budget test will use the VOC and NO _x MVEB's established in the maintenance plan for the 1997 8-hour ozone NAAQS submitted to USEPA in 2011 (77 FR 6727).
With respect to the 2006 24-hour PM _{2.5} NAAQS maintenance area, the demonstration of conformity will be established using the budget test. The budgets to be utilized were established in the attainment demonstration submitted to USEPA in June 2012 that established VOC, NO _x , PM _{2.5} , and SO ₂ MVEB's for 2020 and 2025. In December 2015, WDNR submitted a SIP revision for the three-county area which established new 2020 and 2025 MVEB's for VOC. Effective April 22, 2016, these updated VOC MVEB's will be used to demonstrate conformity (81 FR 8654).

Source: SEWRPC

Vehicle fleet, fuels, and meteorology inputs, which the Commission utilized to run USEPA's MOVES3.0.4 emission model and estimate air pollutant emissions in the preparation of this conformity assessment of the FCTS and TIP, were provided by WDNR. This conformity analysis includes the emission reduction benefits attendant to vehicle fleet turnover and Tier 3 motor vehicle and low sulfur fuel regulations. The MOVES model inputs that were used to establish the transportation emission budgets in the PM_{2.5} maintenance plan also accounted for the emission reduction benefits attendant to these more recent regulations. In addition, WDNR has relied upon the Commission's RTP for the identification and evaluation of potential transportation control measures considered for incorporation into the maintenance plan.

FISCALLY CONSTRAINED TRANSPORTATION SYSTEM

VISION 2050 includes both a land use component and transportation component. This plan represents the Region's vision or guide for the pattern of development and the attendant transportation system necessary to efficiently accommodate existing and anticipated future growth within the Region. An important aspect related to implementing VISION 2050 relates to funding. The amount of public funding needed to construct, operate, and maintain the transportation component of VISION 2050 has been compared to the amount of funding expected to be available. Federal metropolitan planning regulations (23 CFR Part 450) and conformity regulations (40 CFR Part 93.108) require that the Region's transportation plan be "fiscally constrained"—only including projects that can be funded with expected funds, taking into account the limitations placed on these funding sources by Federal and State law. Therefore, the FCTS only includes the transportation elements of VISION 2050 that can be implemented within reasonably expected funds and serves as the transportation system to be used in the determination of conformity and in the development of the TIP.

The FCTS has been developed to meet the requirements of a Federally recognized congestion management process, including the definition of performance measures to establish congestion problems and to assist in the evaluation of alternative measures to address congestion and the evaluation and recommendation of alternative measures to resolve the identified congestion problems. The development and evaluation of transportation alternatives that would address existing and anticipated future traffic congestion problems was done in a disciplined way so as to ensure that highway capacity expansion projects were proposed for inclusion in the plan only as a last resort. Appropriate, detailed, quantified attention was paid to determining the extent to which a wide variety of transportation system management measures, including land use, traffic management, and transit, could be used to resolve congestion problems. Once that extent was determined, highway capacity improvement proposals were placed into the plan to resolve many, but not all, of the residual congestion problems.

It should be noted that VISION 2050 and the FCTS do 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. As VISION 2050 does not include a recommendation regarding the future capacity needs for this segment of IH 43, the conformity demonstration of the FCTS, necessarily has been conducted based on the existing capacity of this segment of IH 43.

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

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

The arterial highway capacity improvement and expansion recommendations included in the FCTS are shown on Map 2 and are listed in Table 1. These represent all highway plan element projects with potential air quality impact and which are referred to in the Federal regulations as “nonexempt” projects. Table 1 and Map 3 also present the anticipated implementation stages for all highway capacity improvement and expansion recommended under the plan; more specifically, the planned capacity improvement and expansion to be open to traffic by the years 2022, 2025, 2030, 2035, 2040, and 2050 are identified. Table 2 summarizes the mileage of system improvement and expansion anticipated to be implemented at each of the identified stages of plan implementation. Given the potential for individual projects to be deferred or advanced due to considerations such as right-of-way acquisition, the anticipated implementation schedule for the plan is quantified via the mileage of county and local arterial system improvement and expansion, and the mileage of state trunk highway improvement and expansion as set forth in Table 2.

Given that transportation system management (TSM), travel demand management (TDM), freight, and 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 also likely be enough revenue to fund the TSM, TDM, freight, and bicycle and pedestrian elements as proposed under the Plan. As discussed in Chapter 3 of Volume I, of VISION 2050, the TSM and bicycle and pedestrian elements of the year 2035 regional transportation plan have also been substantially implemented since that plan was adopted, further supporting this conclusion.

As shown in Figure 2 and Table 3, under the updated FCTS, service levels on the regional transit system would decline from about 1,576,000 annual revenue vehicle-hours of service in the year 2017 to 925,800 vehicle-hours of service in the year 2050. In terms of the recommended expansion and improvement of transit in VISION 2050, the updated FCTS only includes the recommended east-west rapid transit line between downtown Milwaukee and the Milwaukee Regional Medical Center and the lakefront and 4th Street extensions of the Milwaukee Streetcar. A map of the public transit system expected under the FCTS is shown on Map 4.

2023 THROUGH 2026 TRANSPORTATION IMPROVEMENT PROGRAM FOR SOUTHEASTERN WISCONSIN

The 2023-2026 TIP for Southeastern Wisconsin is documented in the SEWRPC report entitled, *A Transportation Improvement Program for Southeastern Wisconsin: 2023-2026*. The TIP includes all Federally and otherwise funded arterial highway and public transit projects programmed within the seven-county Region both inside and outside the five urbanized areas within the Region—Milwaukee, Racine, Kenosha, and West Bend urbanized areas, and the Wisconsin portion of the Round Lake Beach urbanized area. The TIP also includes both arterial highway and public transit projects that receive Federal assistance and projects that are funded solely with State and/or local funds. The Commission’s TIP has historically included both Federally funded and otherwise funded projects and has included projects for the entire Southeastern Wisconsin Region as well, not just the five urbanized areas within that Region. The TIP has included more than the Federally required listing of Federally assisted projects in the five urbanized areas in order to provide a more complete picture of proposed arterial highway and public transit improvements. The continuation of the preparation of such a comprehensive TIP for Southeastern Wisconsin permits a comprehensive evaluation of transportation improvements with respect to air quality impacts.³ The TIP has been developed to be fiscally constrained, pursuant to USDOT metropolitan planning regulations (23 CFR Part 450) and USEPA conformity regulations (40 CFR Part 93.108). The funding needed to implement the TIP has been determined to be consistent with existing available Federal, State, and local funding levels. A current listing of all projects included in the TIP can be found at the Commission’s website (www.sewrpc.org/tip)

ASSESSMENT OF CONFORMITY OF THE FCTS AND TIP

This section of the report demonstrates the conformity of the FCTS and TIP for Southeastern Wisconsin with respect to each of the conformity criteria, as well as with respect to the procedures to be used to demonstrate conformity as established by USEPA for such conformity assessments. This conformity demonstration is for the 2008, and 2015 8-hour ozone, and the 2006 24-hour PM_{2.5} nonattainment and maintenance areas shown on Map 1.

³ All TIP projects with potential impact on air quality, or “nonexempt” projects, are listed later in this report in Table 5.

Map 2

Arterial Streets and Highways: Fiscally Constrained Transportation System

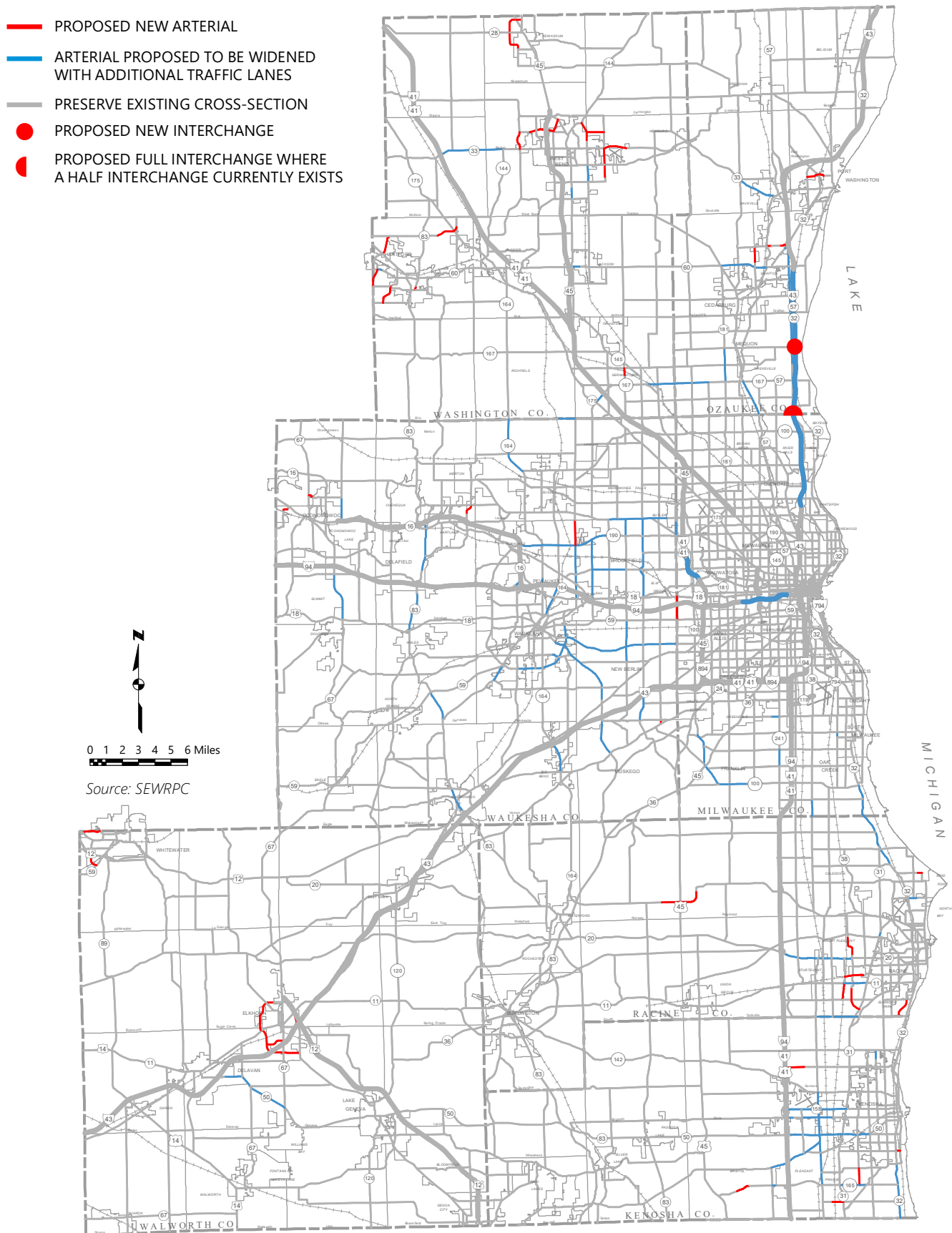


Table 1
Arterial Highway Capacity Improvement and Expansion Projects Included in the Fiscally Constrained Transportation System

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2025	Kenosha	Widening	CTH K	CTH H to Union Pacific Railway	Widen from two to four traffic lanes
	Milwaukee	Widening	IH 43	Silver Spring Drive to STH 60	Widen from four to six traffic lanes
			IH 41/USH 45	North Leg of Zoo Interchange	Interchange reconstruction and modernization
2030	Waukesha	Widening	CTH O	College Ave to Grange Avenue	Widen from two to four traffic lanes
	Kenosha	Expansion	51st Avenue extension	93rd Street to STH 165	Construct two lanes on new alignment
		Widening	CTH C	104th Avenue to CTH H	Widen from two to four traffic lanes
			CTH K	104th Avenue to CTH H	Widen from two to four traffic lanes
	Milwaukee	Widening	IH 94	70th Street to 16th Street	Widen from six to eight traffic lanes
			IH 94/USH 41/STH 341	Stadium Interchange	Interchange reconstruction and modernization
			Pennsylvania Avenue	Milwaukee Avenue to College Avenue	Widen from two to four traffic lanes
	Ozaukee	Widening	STH 167	Washington County Line to N Swan Road	Widen from two to four traffic lanes
	Racine	Expansion	21st Street extension	Loni Lane to Willow Road	Construct two lanes on new alignment
			Oakes Road extension	Braun Road to STH 31	Construct two lanes on new alignment
			Oakes Road extension	Braun Road to Oakes Road	Construct two lanes on new alignment
		Widening	Three Mile Road	STH 32 to Lasalle Street	Widen from two to four traffic lanes
	Walworth	Expansion	New Facility	STH 67 to STH 11	Construct two lanes on new alignment
			W Market Street extension	CTH H to Voss Road	Construct two lanes on new alignment
	Washington	Expansion	STH 33	Trenton Road to Oak Road	Construct two lanes on new alignment
2035			Trenton Road extension	STH 33 to Maple Road	Construct two lanes on new alignment
		Widening	CTH Y	STH 175 to USH 41/45	Widen from two to four traffic lanes
			STH 60	Independence Avenue to Existing four lane section	Widen from two to four traffic lanes
	Waukesha	Expansion	Oconomowoc Parkway	CTH BB (Concord Road) to Oconomowoc Parkway	Construct two lanes on new alignment
		Widening	CTH M (North Avenue)	Brookfield Road to Calhoun Road	Widen from two to four traffic lanes
			CTH M (North Avenue)	Barker Road to Brookfield Road	Widen from two to four traffic lanes
	Kenosha	Widening	CTH C	East Frontage Road to 104th Street	Widen from two to four traffic lanes
			CTH C	CTH U to West Frontage Road	Widen from two to four traffic lanes
			CTH H	CTH S to STH 50	Widen from two to four traffic lanes
			CTH H	CTH C to STH 165	Widen from two to four traffic lanes
			CTH H	CTH C to STH 50	Widen from two to four traffic lanes
			CTH K	IH 94 to 115th Avenue	Widen from two to four traffic lanes
			CTH Q	CTH U to IH 94	Widen from two to four traffic lanes
			STH 158 (52nd Street)	IH 94 to 95th Street	Widen from two to four traffic lanes
			STH 158 (52nd Street)	STH 31 to 95th Avenue	Widen from two to four traffic lanes

Table continued on next page.

Shared projects included in 2023-2026 Transportation Improvement Program

Table 1 (Continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2035	Kenosha	Widening	STH 165	STH 31 to CTH EZ	Widen from two to four traffic lanes
			STH 50	43rd Avenue to 39th Avenue	Widen from four to six traffic lanes
	Milwaukee	Widening	STH 100 (Ryan Road)	STH 36 (Loomis Road) to 60th Street	Widen from two to four traffic lanes
			STH 241 (27th Street)	Drexel Avenue to Puetz Road	Widen from four to six traffic lanes
			STH 32	County Line Road to STH 100	Widen from two to four traffic lanes
			STH 38	County Line to Oakwood Road	Widen from two to four traffic lanes
			USH 45/STH 100	Drexel Avenue to STH 36	Widen from two to four traffic lanes
			USH 45/STH 100	Rawson Avenue to Drexel Avenue	Widen from four to six traffic lanes
	Ozaukee	Expansion	Maple Road extension	Cedar Creek to Rose Street	Construct two lanes on new alignment
		Widening	CTH W	Glen Oaks Lane to Highland Road	Widen from two to four traffic lanes
			STH 181	STH 167 to Highland Road	Widen from two to four traffic lanes
			STH 33	CTH I to Progress Drive	Widen from two to four traffic lanes
			STH 33	Progress Drive to CTH O	Widen from two to four traffic lanes
2035	Racine		STH 60	STH 181 to 12th Avenue	Widen from two to four traffic lanes
		Expansion	Five Mile Road extension	North Point Drive to Erie Street	Construct two lanes on new alignment
			Oakes Road extension	Oakes Road to Airline Road	Construct two lanes on new alignment
		Widening	STH 11	Willow Road to STH 31	Widen from four to six traffic lanes
			STH 20	IH 94/USH 41 to Oakes Road	Widen from four to six traffic lanes
			STH 31	CTH MM to CTH C	Widen from six to eight traffic lanes
	Walworth		STH 32	STH 31 to Milwaukee County Line	Widen from two to four traffic lanes
			STH 32	Five Mile Road to STH 31	Widen from two to four traffic lanes
		Expansion	Deere Road extension	Deere Road to STH 11	Construct two lanes on new alignment
			W Market Street extension	STH 11 to CTH H	Construct two lanes on new alignment
2035	Washington	Widening	STH 50	North Shore Drive to CTH F	Widen from two to four traffic lanes
		Expansion	Arthur Road extension	CTH N to Arthur Road	Construct two lanes on new alignment
			Division Road extension	Main Street to Freistadt Road	Construct two lanes on new alignment
			Jefferson Street extension	North River Road to Trenton Road	Construct two lanes on new alignment
			Kettleview Road extension	STH 33 to Schuster Drive	Construct two lanes on new alignment
			Monroe Avenue extension	Monroe Avenue to Pond Road	Construct two lanes on new alignment
			North River Road extension	North River Road to STH 144	Construct two lanes on new alignment
			Wacker Drive extension	Lee Road to Monroe Avenue	Construct two lanes on new alignment
			Wilson Avenue extension	Monroe Avenue to Lincoln Avenue	Construct two lanes on new alignment
		Widening	CTH Y	USH 45 to STH 175	Widen from two to four traffic lanes
2035			STH 167	Fond Du Lac Avenue to Ozaukee County Line	Widen from two to four traffic lanes
			STH 60	USH 45 to Industrial Drive	Widen from two to four traffic lanes

Table continued on next page.

Table 1 (Continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2035	Waukesha	Expansion	Oconomowoc Parkway	STH 16 to CTH BB	Construct two lanes on new alignment
		Widening	Calhoun Road	STH 190 (Capitol Drive) to CTH K	Widen from two to four traffic lanes
			CTH D	Calhoun Road to Milwaukee County Line	Widen from two to four traffic lanes
			CTH F	USH 18 (Moreland Boulevard) to IH 94	Widen from four to six traffic lanes
			CTH P	CTH Z to STH 16	Widen from two to four traffic lanes
			CTH Q	Colgate Road to CTH V	Widen from two to four traffic lanes
			CTH X	STH 59 to CTH H	Widen from two to four traffic lanes
			CTH Y	North Avenue to STH 190	Widen from two to four traffic lanes
			CTH Y	North Avenue to USH 18	Widen from two to four traffic lanes
			CTH Y	STH 59/164 to Hickory Trail	Widen from two to four traffic lanes
			CTH Y	CTH L to College Avenue	Widen from two to four traffic lanes
			Pilgrim Road	North Avenue to USH 18	Widen from two to four traffic lanes
			Pilgrim Road	CTH K (Hampton Avenue) to North Avenue	Widen from two to four traffic lanes
			Pilgrim Road	CTH K (Hampton Avenue) to STH 190 (Capitol Drive)	Widen from two to four traffic lanes
			Racine Avenue	Downing Drive to STH 59/164	Widen from two to four traffic lanes
			Springdale Road	STH 190 (Capitol Drive) to CTH JJ	Widen from two to four traffic lanes
			STH 164	IH 43 to Edgewood Avenue	Widen from two to four traffic lanes
			STH 83	Phyllis Parkway to USH 18	Widen from two to four traffic lanes
			STH 83	Meadow Lane to STH 16	Widen from two to four traffic lanes
			Sunset Drive	Tenny Avenue to STH 59/164	Widen from two to four traffic lanes
2040	Kenosha	Expansion	85th Street extension	Sheridan Road to 7th Avenue	Construct two lanes on new alignment
			CTH ML extension	79th Avenue to STH 31	Construct two lanes on new alignment
	Ozaukee	Widening	30th Avenue	CTH E to 15th Street	Widen from two to four traffic lanes
			STH 32	128th Street to CTH T	Widen from two to four traffic lanes
		Expansion	Cedar Creek Road	CTH O to East Cedar Creek Road	Construct two lanes on new alignment
			E. Cedar Creek Road	East River Road to CTH W	Construct two lanes on new alignment
			Walters Street extension	CTH LL to Grant Street	Construct two lanes on new alignment
		Widening	CTH W	CTH V to Lakeland Road	Widen from two to four traffic lanes
			STH 57	Milwaukee County Line to STH 167	Widen from two to four traffic lanes
	Racine	Expansion	CTH K extension	Britton Road to 108th Street	Construct two lanes on new alignment
	Walworth	Expansion	E Market Street extension	STH 11 to STH 67	Construct two lanes on new alignment
	Washington	Expansion	Kettleview Road extension	CTH H to STH 28	Construct two lanes on new alignment
	Waukesha		Kettleview Road extension	STH 28 to USH 45	Construct two lanes on new alignment
			Schuster Drive extension	Schuster Drive to Beaver Dam Road	Construct two lanes on new alignment
		Expansion	CTH KE realignment	CTH K to 800 feet north	Construct two lanes on new alignment

Table continued on next page.

Table 1 (Continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2040	Waukesha	Widening	Calhoun Road	Coffee Road to Cleveland Avenue	Widen from two to four traffic lanes
			Calhoun Road	Cleveland Avenue to STH 59	Widen from two to four traffic lanes
			CTH D	STH 59/164 to Calhoun Road	Widen from two to four traffic lanes
			STH 164	Howard Lane to CTH Q (Washington County Line)	Widen from two to four traffic lanes
			STH 190	CTH Y (Barker Road) to Brookfield Road	Widen from four to six traffic lanes
			STH 190	STH 16 to CTH Y (Barker Road)	Widen from four to six traffic lanes
			STH 67	CTH DR to USH 18	Widen from two to four traffic lanes
			STH 83	Bay View Road to CTH NN	Widen from two to four traffic lanes
2050	Kenosha	Expansion	CTH Q realignment Lichter Rd	Winfield Road to 104th Street E Frontage Rd to 100th Ave	Construct two lanes on new alignment Construct two lanes on new alignment
		Widening	124th Street	Lisbon Avenue to Ruby Avenue	Widen from two to four traffic lanes
	Milwaukee	Widening	CTH ZZ (W College Avenue)	35th Street to 27th Street	Widen from two to four traffic lanes
	Ozaukee	Widening	CTH W	Lakeland Road to Highland Road	Widen from two to four traffic lanes
	Racine	Expansion	Four and a Half Mile Rd	STH 32 to Erie St	Construct two lanes on new alignment
		Expansion	Memorial Drive extension	Chicory Road to CTH KR	Construct two lanes on new alignment
		Expansion	Willow Road extension	STH 11 to Braun Road	Construct two lanes on new alignment
		Widening	STH 11	CTH H to Willow Road	Widen from four to six traffic lanes
		Expansion	Indian Mound Parkway extension New East-West Arterial	Indian Mound Parkway to STH 59 Main Street to Pratt Street	Construct two lanes on new alignment Construct two lanes on new alignment
		Expansion	Outer Ring Road	CTH H to Inner Ring Road	Construct two lanes on new alignment
	Washington	Expansion	18th Avenue extension Taylor Road extension	Jefferson Street to CTH D Pond Road to STH 60	Construct two lanes on new alignment Construct two lanes on new alignment
		Widening	CTH P (S. Main Street) River Road	Humar Street to CTH NN (Rusco Road) Decorah Road to Paradise Drive	Widen from two to four traffic lanes Widen from two to four traffic lanes
		Expansion	STH 33	USH 41 to STH 144	Widen from two to four traffic lanes
	Waukesha	Expansion	124th Street extension Capitol Dr extension Lake Drive extension	Bluemound Road (USH 18) to Greenfield Avenue (STH 59) Reddellen Rd to Capitol Dr Yosemite Rd to STH 67	Construct two lanes on new alignment Construct two lanes on new alignment Construct two lanes on new alignment
		Expansion	Sunnyslope Road extension Town Line Road extension	CTH HH to CTH L Weyer Road to STH 190	Construct two lanes on new alignment Construct two lanes on new alignment
		Widening	CTH K CTH K (Lisbon Road) CTH O CTH T Hampton Road	Brookfield Road to Calhoun Road Calhoun Road to Hampton Road IH 43 WB Ramp to W Grange Ave Golf Road to CTH SS Lisbon Road to 132nd Street	Widen from two to four traffic lanes Widen from two to four traffic lanes Widen from four to six traffic lanes Widen from two to four traffic lanes Widen from two to four traffic lanes

Table continued on next page.

Table 1 (Continued)

Year Open to Traffic	County	Improvement Type	Facility	Termini	Description
2050	Waukesha	Widening	STH 164	Riverwood Drive (North) to IH 94	Widen from four to six lanes
			STH 59	Sunset Drive to Arcadian Avenue	Widen from six to eight traffic lanes
			STH 59	CTH XX to Sunset Drive	Widen from four to six lanes
			STH 83	STH 59 to CTH X	Widen from two to four traffic lanes

Source: SEWRPC

Map 3 Highway Improvement and Expansion Project Staging: Fiscally Constrained Transportation System

YEAR OPEN TO TRAFFIC BY

- 2022
- 2025
- 2030
- 2035
- 2040
- 2050

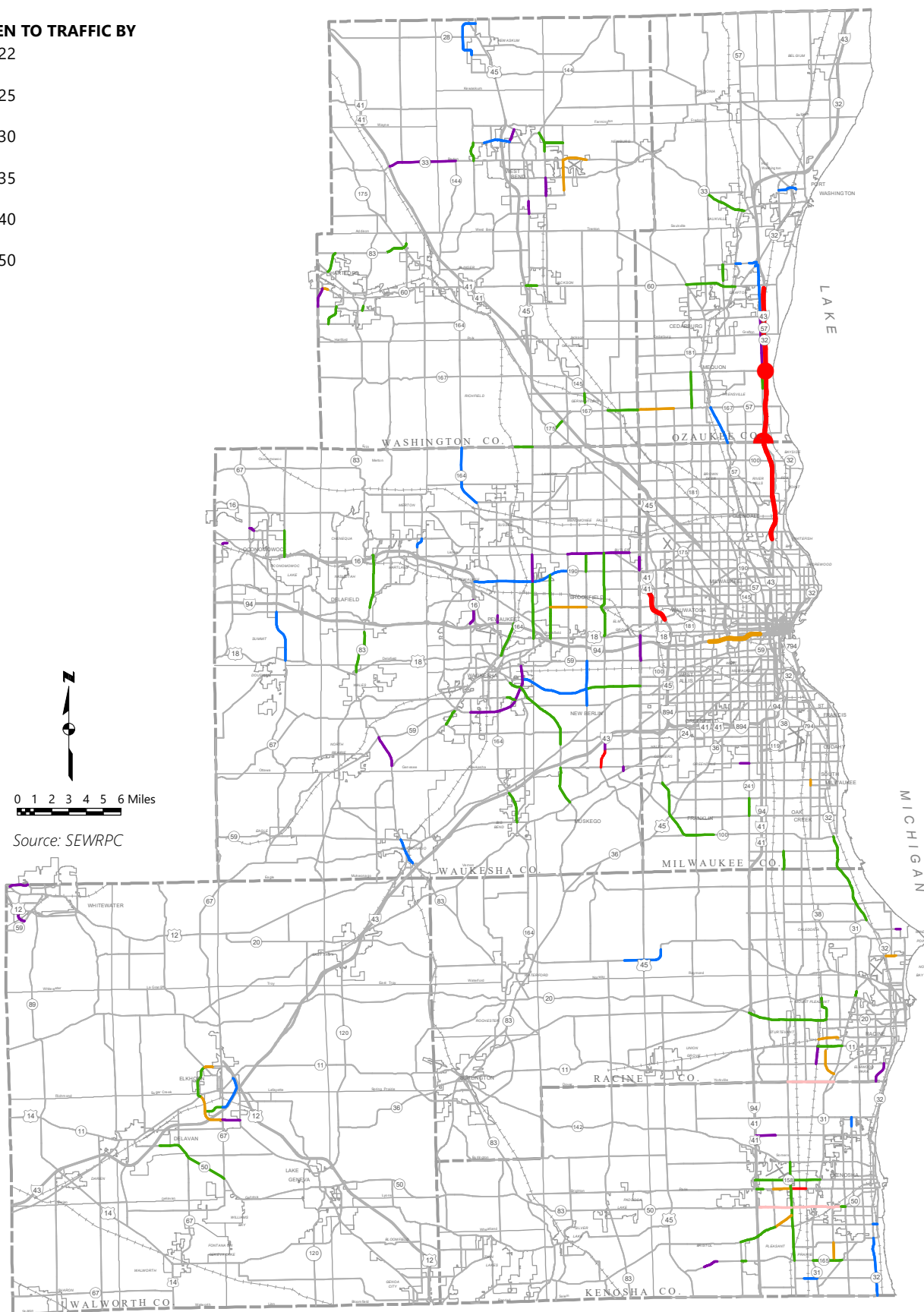
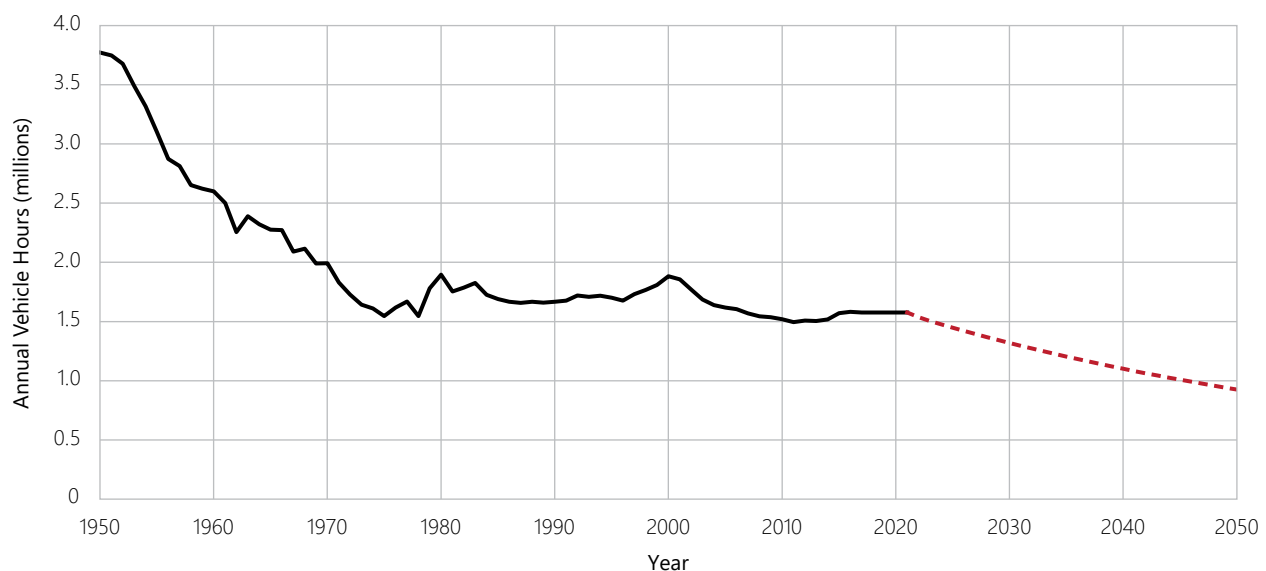


Table 2
Implementation Schedule for the Arterial Street and Highway Element
Capacity Improvement and Expansion: 2022-2050

Southeastern Wisconsin Region	Proposed Incremental Arterial System Improvement and Expansion Route Miles						
	2022	2025	2030	2035	2040	2050	Total
State Trunk Highway	6	16	7	41	22	10	102
County and Local Trunk Highway	1	3	13	53	19	26	115
Total Regional Arterial System	7	19	20	94	41	36	217

Source: SEWRPC

Figure 2
Historic and Planned Vehicle-Hours of Public Transit Service
Under the Fiscally Constrained Transportation Plan



Source: SEWRPC

Table 3
Potential Stages of the Transit Element: Fiscally Constrained Transportation System





Year	Description
2025	Annual transit service reduced to approximately 1,536,600 hours, maintain transit service area. <ul style="list-style-type: none"> Initiate operation of Milwaukee County Bus Rapid Transit Line between the Milwaukee Regional Medical Center and Downtown Milwaukee^a Initiate operation of the Lakefront Extension of the City of Milwaukee Streetcar^a
2030	Annual transit service reduced to approximately 1,447,900 hours, maintain transit service area.
2035	Annual transit service reduced to approximately 1,319,100 hours, maintain transit service area.
2040	Annual transit service reduced to approximately 1,101,100 hours, maintain transit service area.
2050	Annual transit service reduced to approximately 925,800 hours, maintain transit service area.

^a Project included in the 2023-2026 Transportation Improvement Program




Source: SEWRPC

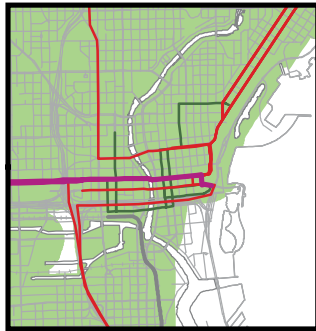
Transit Services: Fiscally Constrained Transportation System as Updated

TRANSIT SERVICES

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

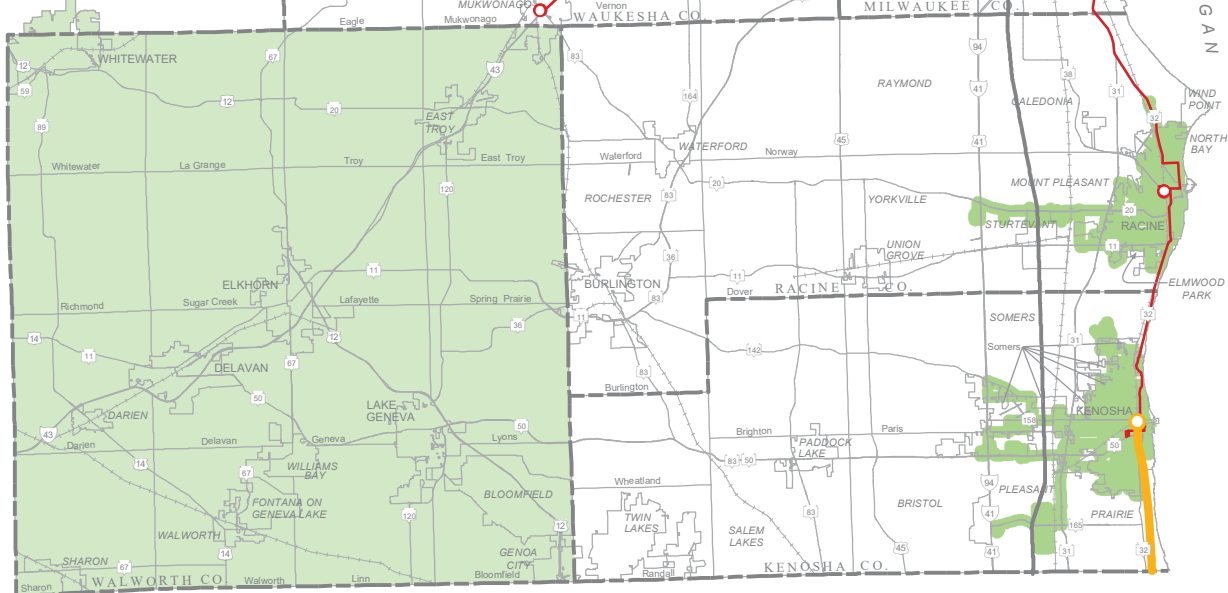
LOCAL TRANSIT SERVICE AREA AND PEAK FREQUENCY

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

MILWAUKEE CENTRAL
BUSINESS DISTRICT INSET

0 1 2 3 4 5 6 Miles

Source: SEWRPC



Conformity Determination Procedural Requirements

The procedures to determine conformity set forth in the *Federal Register* (40 CFR Parts 51 and 93) are: 1) use of latest planning assumptions, 2) use of latest emission model, 3) interagency and public consultation, 4) provision for timely implementation of transportation control measures, 5) transportation plan content, and 6) procedures for determining RTP related emissions.

Use of Latest Planning Assumptions

This conformity determination procedural requirement (40 CFR, Part 93.110) specifies that the conformity assessment must be based upon the official and most current planning assumptions, including current and future population levels, employment levels, travel demand, traffic volumes, and transit ridership.

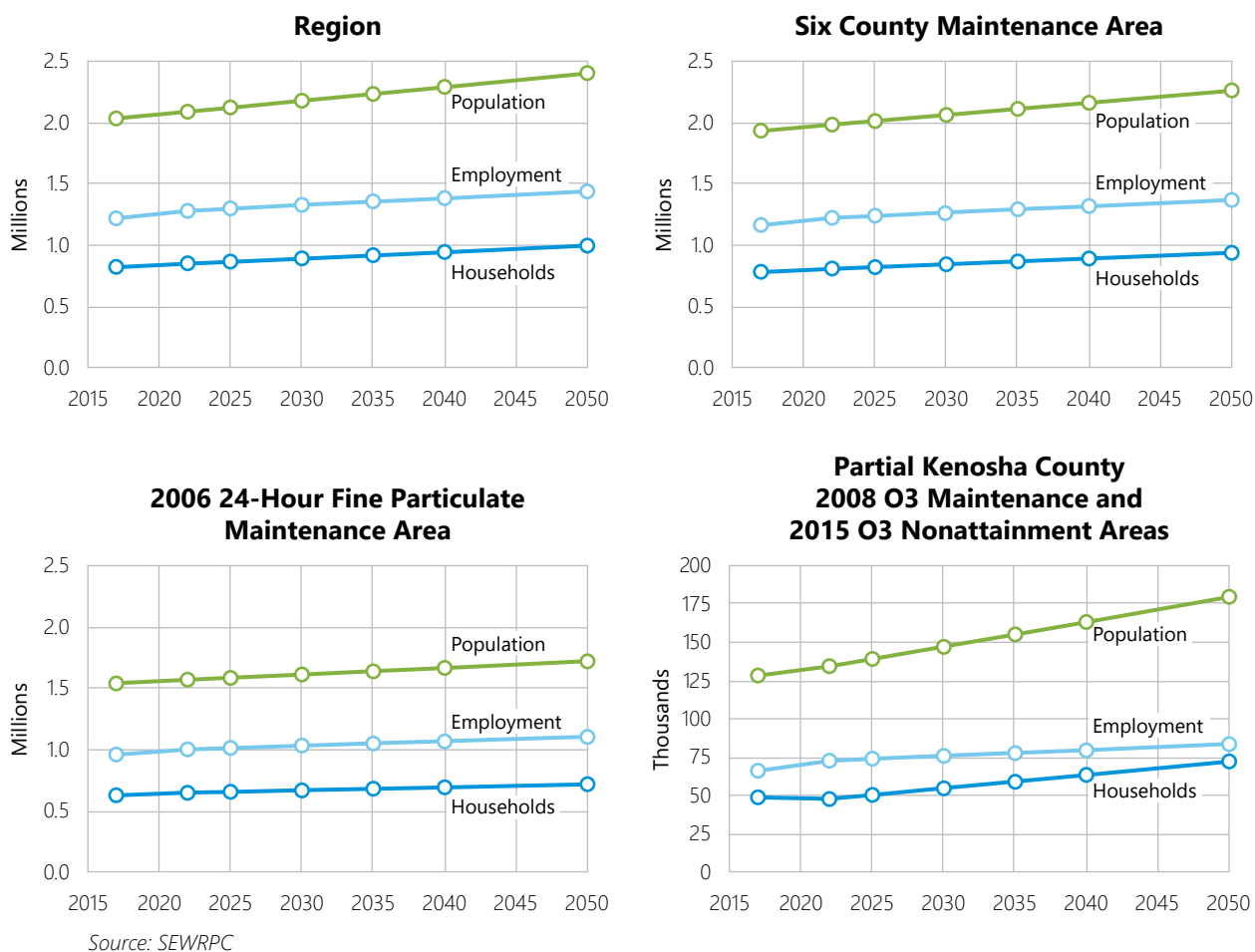
SEWRPC is the gubernatorially-designated MPO for the Kenosha, Milwaukee, Racine, and West Bend urbanized areas, and the Wisconsin portion of the Round Lake Beach urbanized area and also the statutory official areawide planning agency for the seven-county Southeastern Wisconsin Region, which contains these five urbanized areas. The Commission is the agency within Southeastern Wisconsin responsible under State law for the preparation of current population, household, employment, travel, and traffic estimates and also for the preparation of future household, employment, travel, and traffic forecasts. The Commission also maintains the travel and traffic simulation models that are used within Southeastern Wisconsin for transportation and air quality planning. The models used in this conformity analysis are the same as used by the Commission in its regional planning efforts, and in support of air quality planning by WDNR.

The determination of conformity of the FCTS and TIP requires specific travel and emission forecasts for the years 2022, 2025, 2030, 2035, 2040 and 2050. The population, household, and employment data at regional and subregional levels for the intermediate implementation stages of the plan have been projected by interpolating between existing regional and subregional estimates for the year 2020 and the year 2050 regional forecasts and subregional planned forecast allocations based upon the regional land use plan. The Region level, nonattainment area, and maintenance area level forecasts for population, households, and employment are set forth in Figure 3.

As part of regional transportation planning over the years, the implications of a range of different future development scenarios for Southeastern Wisconsin have historically been explored, including such scenarios with respect to VMT. The different scenarios included intermediate- and high-growth scenarios for the Region as a whole, centralized and decentralized land use patterns, and alternative regional transportation systems ranging from a “no-build” option, to an alternative that would substantially increase the price of automobile transportation, to the recommended system plan. The results of analyses of these scenarios indicated that the future annual growth in VMT within the Region is expected to range from about 1.0 percent to 2.0 percent. The analyses indicated that alternative land use patterns and transit and highway improvements are expected to have little impact on VMT, accounting for less than 0.1 percent variation in annual growth. Variations in regional economic growth and substantial changes in the perceived cost of automobile use may be expected to each account for about 0.5 percent variation in growth annually.

The determination of conformity utilizes the travel simulation models that have been maintained, refined, and validated by the Commission since the 1960s. These travel simulation models have been employed in the preparation of the RTP and for the motor vehicle emissions forecasts for the SIPs and Maintenance Plans developed by the WDNR. These models and their validation are described in SEWRPC Technical Report No. 51, *Travel Simulation Models of Southeastern Wisconsin*. The Commission travel models were revalidated and recalibrated, using new data provided by a major origin and destination travel survey completed within the Region in 2011 and 2012. The models were validated for the years 2001 and 2011 by applying the models with U.S. Census Bureau data and 2001 and 2011 transportation network data and comparing model estimates of trip generation, trip distribution, highway traffic, and transit ridership to estimates derived from travel surveys and actual traffic and transit ridership counts. The validation indicated that the models were able to accurately replicate not only observed trip generation, travel pattern, modal choice, and VMT data, but also model-estimated individual arterial street traffic volume. In 2021, the models were again revalidated for the year 2017 and is documented in Appendix A.

Figure 3
Forecast Population, Household, and Employment Levels: 2017-2050



Under this procedural requirement, changes in the transit system with respect to service levels and fares since the last plan and improvement program conformity determination are to be described. The last conformity demonstration was completed in December 2020 on the year 2050 FCTS and the 2021-2024 TIP. Since December 2020, transit fares have remained essentially unchanged. The last conformity demonstration of the FCTS and TIP—completed in December 2020—projected that transit service levels measured in vehicle-miles of service would decline 12 percent to the year 2050 and transit fares would increase at the rate of inflation. The reduction in transit service levels would be expected to be achieved primarily through reductions in local transit service frequency and the elimination of freeway flyer service in Milwaukee County. This analysis is based on the assumptions as described in FCTS section of this report, and are shown in Figure 2 and Table 3.

This conformity demonstration is based upon the Commission’s adopted intermediate growth year 2050 forecasts under the FCTS with an attendant 0.7 percent annual increase in vehicles miles travel from the year 2011 to the year 2022, an 0.4 percent annual increase from 2022 to 2025, an 0.5 percent annual increase from 2025 to 2030, an 0.6 percent annual increase from 2030 to 2035, an 0.6 percent annual increase from 2035 to 2040, and an 0.7 percent annual increase from 2040 to 2050. The VMT forecasts in the state implementation plan (SIP) or maintenance plans and the FCTS are consistent, with the SIPs and maintenance plan forecasts being equal to, or greater than, the FCTS forecasts. The higher rate of growth assumed in the SIP and maintenance plans provide latitude for potential VMT increases in a year or short-term period of years which may exceed long-term average increases, for example, during short-term periods of rapid economic growth and gasoline price decline. Lower rates of increase in VMT are anticipated in the future due to anticipated slower growth in employment and labor force levels, slower declines in household size, and slower growth in household levels.

Use of Latest Emissions Model

A second procedural requirement for the plan and program conformity determination (40 CFR 93.111) requires use of the latest air pollutant emissions estimation model. Accordingly, this determination of conformity utilizes the latest emission estimation model available, the USEPA MOVES3.0.4 air pollutant emissions estimation model. The assumptions in the emissions estimation model for the years 2022, 2025, 2030, 2035, 2040 and 2050 in this conformity analysis are presented in Figure 1. This conformity analysis utilizes the October 2022 update to the vehicle fleet age distribution, which is summarized in Figure 4, and assumes implementation of, and credit for, Tier 3 motor vehicle standards and low sulfur gasoline regulations. The conformity analysis accounts for vehicle fleet turnover and its impact on reducing emissions.

Interagency and Public Consultation

A third procedural requirement for plan and program conformity determination (40 CFR 93.112) relates to interagency and public consultation. The development of VISION 2050 and the FCTS has involved significant interagency and public consultation, including, specifically, such consultations with respect to air quality impacts and the implications for conformity of the new plan and its alternatives. The 2023-2026 TIP directly implements the FCTS and is consistent with the plan schedule for implementation. In particular, WisDOT, WDNR, USDOT, and the county and local units of government have all been extensively involved in the development of VISION 2050 and the FCTS, including the consideration and evaluation of alternatives. These Federal, State, county, and local units and agencies of government have also been consulted, and have, as members of the Commission's Advisory Committees, guided the preparation and level of detail of VISION 2050 and the FCTS.

In December 2014, the Commission's fourth-generation travel demand models were peer reviewed for consistency with current modeling practice. Potential model enhancements suggested by the peer review panel were considered and incorporated, as appropriate, during the development of the fifth-generation travel simulation models.⁴ These models were presented to the Commission's Advisory Committees guiding the preparation of VISION 2050.

VISION 2050 and the FCTS also incorporate the entire arterial street and highway network of the Region, including all arterials in both urban and rural areas and major collectors in rural areas. The agencies concerned have also given consideration to the treatment in the travel simulation modeling and in VISION 2050 and the FCTS of transportation control measures. In addition, there has been extensive public consultation with respect to VISION 2050 and the FCTS, including significant consultation on the land use and transportation components. The public consultation on VISION 2050 and the FCTS is documented in a series of reports that present the comments received on the plan and its social, economic, and environmental impacts, and the consideration and response to the public comment.

State, county, and municipal governments have also been directly involved in the preparation of the 2023-2026 TIP through their submittal of projects for inclusion in the TIP and their consideration and approval of the TIP.

Provision for Timely Implementation of Transportation Control Measures

A fourth procedural requirement for plan and program conformity determination, (40 CFR Part 93.113) is that the FCTS and TIP must provide for timely implementation and may not interfere with the implementation of any transportation control measures included in an applicable implementation plan (SIP, maintenance plan, or early progress plan). There are no transportation control measures included in the SIPs or maintenance plan for the nonattainment areas within Southeastern Wisconsin.

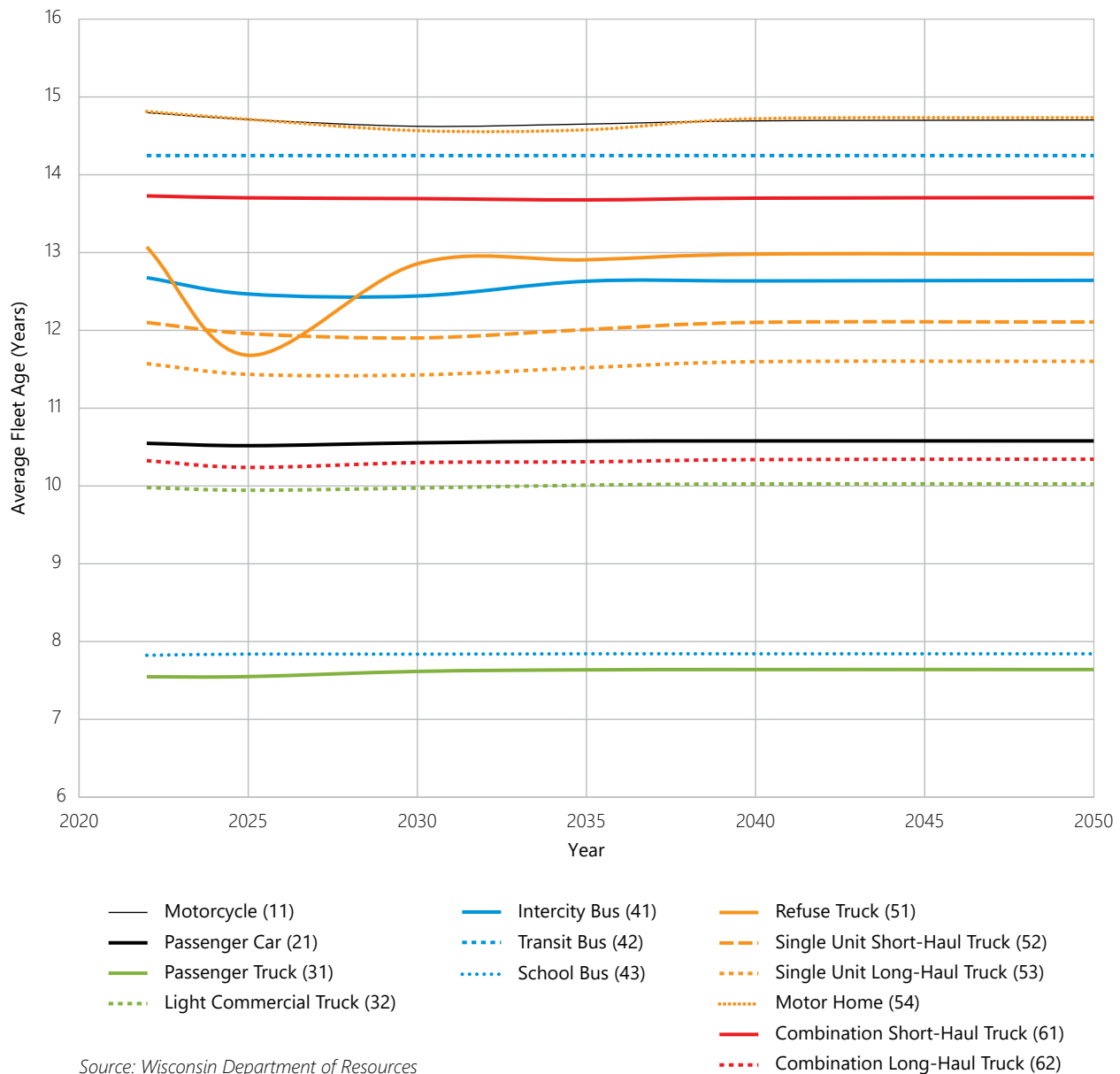
Transportation Plan Content

A fifth procedural requirement for plan and program conformity determination is the content, or level of detail, of the transportation plan. The FCTS and the travel simulation modeling analysis of attendant plan emissions fully meet the requirements of transportation plan content (40 CFR 93.106). The FCTS includes all additions to the transportation system with respect to both highway and public transit that can be expected to be completed by the year 2050 based on existing and reasonably expected revenues.

⁴ The peer review of the fourth-generation travel demand models are documented in Chapter 3 of SEWRPC Technical Report 51, Travel Simulation Models of Southeastern Wisconsin.

Figure 4

October 2020 Updated Average Vehicle Fleet Age by MOVES Vehicle Classification and Plan Stage



All additions of arterial street system highway capacity which can be expected to be completed by the year 2050, based on existing and reasonably expected revenues, including widening of arterial streets to provide additional traffic lanes and construction of new arterial facilities, are included in the FCTS. This arterial street system includes approximately 3,600 miles of streets within the seven-county Southeastern Wisconsin Region, or about one-third of the total street system, and includes all State, county, and municipal arterials within urban areas and all arterials and major collectors within rural areas of the Region. The plan also includes 1) the total existing transit system, including the existing local, express and rapid transit system components, 2) an expected significant reduction in local and express service levels and maintenance of the geographic coverage of the existing transit systems, and 3) the planned construction and operation of the City of Milwaukee streetcar and Milwaukee County's bus rapid transit line between the Milwaukee Regional Medical Center and downtown Milwaukee.

The travel simulation modeling conducted under this conformity analysis of the FCTS and TIP is fully consistent with, indeed identical to, the travel simulation modeling conducted by the Commission for the preparation of VISION 2050 and the FCTS and for the preparation of the maintenance plan. The travel

simulation modeling for the conformity determination is sensitive to the added capacity and service provided by each highway and transit plan proposal, accurately reflecting its potential effect through changes in travel time and attendant route choice, mode choice, travel patterns, and trip generation. VISION 2050 (including the FCTS) and its treatment in the travel simulation modeling analysis goes beyond the Federally-required consideration of Federally-recognized regionally significant projects, that is, principal arterials and transit fixed guideways, in that it includes all arterial and public transit facilities. The transportation and land use components of VISION 2050 were designed to be consistent with each other. The transportation component of VISION 2050 was designed to serve and promote implementation of the development pattern envisioned for the year 2050, and the land use component was designed to support the transit recommendations envisioned in the transportation system component, through increased development densities proximate to the proposed rapid transit lines. Because the projects included in the FCTS come out of VISION 2050, the accessibility provided by the FCTS should also serve and promote implementation of the land use plan.

Transportation Emissions and Travel Modeling Procedures

The procedures for estimating the FCTS and TIP emissions also fully meet the emission and travel modeling requirements, (40 CFR 93.122).⁵ Specifically, the travel simulation modeling analysis for this conformity determination incorporates all planned highway capacity improvements and expansion for all arterial facilities, including major collectors in rural areas, and for all transit improvements and expansion included in the FCTS. The travel simulation modeling analysis does not assume emission reductions for any transportation control measures or control programs external to the transportation system, as, for example, changes in motor fuel volatility or vehicle inspection and maintenance programs, except with respect to such programs incorporated in the maintenance plan.

The Federal requirements for determination of conformity after January 1, 1997, (40 CFR 93.122(d)), have been met under this conformity determination. The travel and traffic simulation models used to estimate the air pollutant emissions are network-based models that forecast travel demand and traffic volume based upon economic and demographic forecasts, planned land use allocation patterns, and the characteristics of the transportation system. As already noted, the travel models are fully described in Chapter 4, of SEWRPC Technical Report No. 51, *Travel Simulation Models of Southeastern Wisconsin*. The models were calibrated with year 2011-2012 large-scale travel survey data and are consistent with current accepted modeling practice. The fifth-generation travel simulation models incorporate many of the potential model enhancements identified during a peer review of the Commission's fourth-generation travel simulation models. The resulting fifth-generation travel simulation models were reviewed by the Commission's Advisory Committee on Regional Land Use and Transportation Planning, which includes representation from Federal, State, and local governments.

The fifth-generation travel demand model is a time-of-day model and as such incorporates sensitivity to peak- and off-peak travel times by modeling the trip distribution, modal choice, and a capacity restrained traffic assignment for four different periods of the day: AM (6:00 a.m. to 9:00 a.m.), Midday (9:00 a.m. to 2:30 p.m.), PM (2:30 p.m. to 6:00 p.m.), and Night (6:00 p.m. to 6:00 a.m.). The models incorporate an iteration, or feedback, of model steps so that the travel times attendant to each period used to determine travel patterns, transit ridership, and route choice are consistent with the travel times established in capacity restraint traffic assignment specific to each period. This feedback of congested travel times within each of the four periods is iterated until the traffic volumes assigned to the system stabilize, thus insuring that the travel times, pattern of travel, and mode choice are consistent and stable.

⁵ A U.S. Department of Transportation, Federal Highway Administration report issued May 21, 1997, on the Federal Review of the travel modeling conducted by the Commission, is documented in Appendix E of SEWRPC Memorandum Report No. 147, entitled, Assessment of Conformity of the Amended Year 2000-2002 Transportation Improvement Program and Amended Year 2020 Regional Transportation Plan With Respect to the State of Wisconsin Air Quality Implementation Plan—Six-County Severe Ozone Nonattainment Area and Walworth County Ozone Maintenance Area, along with a Commission report which cites how each requirement in 40CFR 93.122 is met. In addition, the Commission's fourth-generation travel demand models were peer reviewed by a panel of three national modeling experts in December 2014. The recommendations for potential model enhancements were considered and incorporated where appropriate into the Commission's fifth-generation travel simulation models. This peer review is documented in Chapter 3 of SEWRPC Technical Report No. 51, entitled Travel Simulation Models of Southeastern Wisconsin.

The constrained peak hour, and the free flow, or off-peak, travel speeds incorporated in the models are based upon actual field surveyed speeds and travel times. The last such analysis was conducted in 2014 utilizing GPS data collected as part of the 2011-2012 travel inventory. The models estimate travel times attendant to the traffic assigned within each model period and utilize these travel times within the trip distribution and modal choice for work, shopping, and other purposes. The trip distribution step is sensitive to the modes available and both the trip distribution and mode choice steps are directly sensitive to the price of travel, as well as travel time, including public transit travel time.

The future travel and traffic forecasts from the models have been compared to historical trends. The models were validated for the years 2001 and 2011 using 2000 and 2010 census and land use inventory data, and 2001-2002 and 2011-2012 travel survey and transportation system inventory data with respect to simulation of both transit ridership and arterial street and highway traffic by comparing model estimates to actual counts. As documented in Appendix A, the models were revalidated to the year 2017 with respect to simulation of both transit ridership and arterial street and highway traffic by comparing model estimates to actual counts. The VMT estimated by the models in the base year of their validation (2017) have been compared to estimates prepared with the WisDOT traffic counts included in the Highway Performance Monitoring System (HPMS), and it has been determined that the 2017 model estimate is consistent with the 2017 inventory estimate. Also, as previously noted the FCTS-based annual growth in VMT is between 0.7 and 0.4 percent to the year 2050, which is less than the historical growth rates, but consistent with the trend of declining VMT growth rates since the 1960s.⁶

In addition, for over 20 years the Commission has maintained procedures to estimate off-network roadway travel. The procedures have been periodically reevaluated and validated. Such procedures were developed as part of the first SIP for air quality, prepared by the Regional Planning Commission in 1978, and provide estimates for use in RTP and SIP preparation and conformity determination. The method is based on analyses that estimate off-network travel by calculating total intrazonal travel and trip lengths, based upon zone size and development distribution. The analyses indicate off-network travel represents about 9 percent of total travel. This is consistent with independent highway performance monitoring system estimates. Off-network travel is estimated for each alternative by factoring network travel forecasts by approximately 10 percent.

As previously noted, consistency of the land use and transportation system components of VISION 2050 is directly established, as both the land use and transportation components were designed to be consistent with each other. As the projects included in the FCTS come out of the transportation component of VISION 2050, the accessibility provided by the FCTS should also serve and promote implementation of the land use plan. The population, employment, land use, and other assumptions attendant to the travel and traffic forecast are documented in Volume III, Chapter 1 of SEWRPC Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation Plan for Southeastern Wisconsin*. These forecasts anticipate more moderate growth as compared to historical trends.

Conformity Determination Criteria—Consistency with Motor Vehicle Emissions Budgets

The test of FCTS and TIP conformity requires that the transportation system emissions forecasts under the FCTS and TIP must be consistent with—that is, equal to or less than—the motor-vehicle emission budgets (MVEB) established for each of the nonattainment and maintenance areas within Southeastern Wisconsin. A description of the source of the conformity demonstration budgets is provided in Figure 1 and in more detail below:

- ***Wisconsin portion of the Chicago-Naperville, IL-IN-WI 2008 8-Hour Ozone NAAQS Maintenance Area***

With respect to the Wisconsin portion of the Chicago-Naperville, IL-IN-WI maintenance area, the demonstration of conformity was established using the budget test. The 2025 VOC and NO_x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in January 2020 and determined adequate effective May 2, 2020 (85 FR 21351) and the 2030 and 2035 VOC and NO_x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in December 2021 and determined adequate effective May 11, 2022 (87 FR 21027)

⁶ Table 4.4 of Chapter 4 of Volume 1 of SEWRPC Planning Report No. 55, *VISION 2050: A Regional Land Use and Transportation System Plan for Southeastern Wisconsin*.

- **Wisconsin portion of the Chicago, IL-IN-WI Moderate 2015 8-Hour Ozone NAAQS Nonattainment Area**

With respect to the Wisconsin portion of the Chicago-Naperville, IL-IN-WI moderate nonattainment area, the demonstration of conformity was established using the budget test. The 2025 VOC and NO_x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in January 2020 and determined adequate effective May 2, 2020 (85 FR 21351) and the 2030 and 2035 VOC and NO_x MVEB's established in the redesignation request submitted for the 2008 8-hour ozone NAAQS submitted to USEPA in December 2021 and determined adequate effective May 11, 2022 (87 FR 21027)

- **Milwaukee, WI Marginal 2015 8-Hour Ozone NAAQS Nonattainment Area**

With respect to the Milwaukee, WI marginal nonattainment area, the demonstration of conformity was established using the budget test. As budgets attendant to the 2015 ozone nonattainment areas have not been established, and this nonattainment area is entirely within the 1997 ozone maintenance area the budget test will use the VOC and NO_x MVEB's established in the maintenance plan for the 1997 8-hour ozone NAAQS submitted to USEPA in 2011 (77 FR 6727).

- **2006 24-hour PM_{2.5} NAAQS maintenance Area**

With respect to the 2006 24-hour PM_{2.5} NAAQS maintenance area, the demonstration of conformity was established using the budget test. The budgets to be utilized were established in the attainment demonstration submitted to USEPA in June 2012 that established VOC, NO_x, PM_{2.5}, and SO₂ MVEB's for 2020 and 2025. In December 2015, WDNR submitted a SIP revision for the three-county area which established new 2020 and 2025 MVEBs for VOC. Effective April 22, 2016, these updated VOC MVEBs will be used to demonstrate conformity (81 FR 8654).

The transportation system emissions attendant to the FCTS and 2023-2026 TIP through the year 2050 were forecast through application of the Commission's fifth-generation travel and traffic simulation models under the year 2050 population, households, and employment forecasts and regional land use plan. Figure 5 presents the forecast VMT attendant to the forecast years 2018 through 2050. The transportation plan projects incorporated in each forecast year are listed in Tables 3 (transit) and 1 (arterial street and highway).

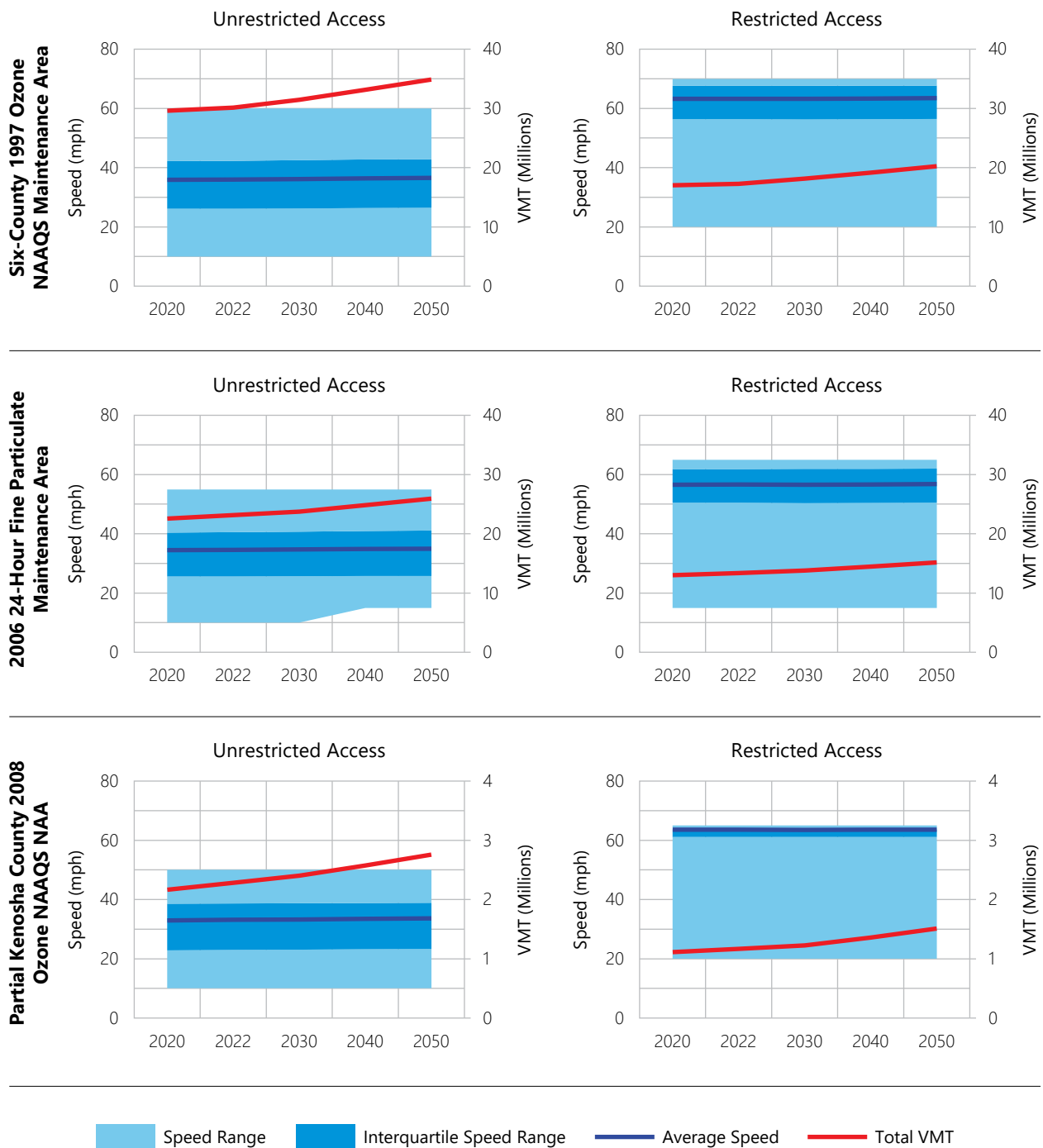
The 2023-2026 TIP is consistent with the FCTS and the plan's implementation schedule. All TIP projects, that is, projects with air quality impacts, are included in the plan. Also, the TIP includes all projects essential to implement the plan on schedule. The satisfaction of these two tests is demonstrated in Tables 1, 3, and 4.

Tables 1 and 3 list all projects with air quality impacts proposed in the FCTS, along with the plan-recommended implementation schedule, and they identify the plan projects that are included in the TIP. Table 4 lists all projects with air quality impact, so-called "nonexempt" projects in the TIP, confirms that they are included in the FCTS, and confirms that their schedule in the improvement program is consistent with their schedule for project completion proposed in the FCTS.⁷

Table 5 presents the forecast emissions from the transportation system within the five nonattainment and maintenance areas under the FCTS and 2023-2026 TIP and compares the forecast emissions to the MVEBs attendant to each. In all cases, the FCTS and TIP forecast emissions are less than the emissions budgets. Thus, this conformity criterion is shown to be fully met for the 2008, and 2015 ozone, and 2006 24-hour PM_{2.5} NAAQS by the FCTS and 2023-2026 TIP.

⁷ All 2023-2026 TIP projects can be found at the Commission's TIP webpage (www.sewrpc.org/tip).

Figure 5
Speed Distribution of Average Weekday Vehicle Miles of Travel
Within Southeastern Wisconsin: 2020-2050



Source: SEWRPC

Table 4
Nonexempt Projects Included in the 2023-2026 Transportation Improvement Program

PROJECT SPONSOR	PROJECT			ESTIMATED COSTS (\$1,000)						AIR QUAL STAT
	NO	DESCRIPTION / STATE ID	TYPE		2023	2024	2025	2026	REMAINING	
STATE OF WISCONSIN	65 (55)	RECONSTRUCTION WITH ADDITIONAL TRAFFIC LANES OF IH 43 FROM SILVER SPRING DR TO STH 60 AND CONSTRUCTION OF A NEW INTERCHANGE AT HIGHLAND RD IN MILWAUKEE AND OZAUKEE COUNTIES (14.0 MI)	HI	DETAIL COSTS	PE	2,714.9	--	--	--	NON-EXEMPT
					ROW	310.0	300.0	--	--	
					CONST	64,581.3	2,992.3	--	--	
					OTHER	6,325.0	--	--	--	
					TOTAL	73,931.2	3,292.3	--	--	
				SOURCE OF FUNDS	LOCAL	126.0	300.0	--	--	
					STATE	25,848.8	2,992.3	--	--	
					FEDERAL	47,956.4	--	--	--	
					TOTAL	73,931.2	3,292.3	--	--	
	8000079	1229-04-02	NHPP							
	66 (56)	IMPLEMENTATION OF THE PREFERRED ALTERNATIVE RESULTING FROM THE NEPA PROCESSES' RECORD OF DECISION FOR RECONSTRUCTION & MODERNIZATION OF IH 94 (EAST-WEST FREEWAY) FROM 70TH ST TO 16TH ST IN THE CITY OF MILWAUKEE (3.5 MI)	HI	DETAIL COSTS	PE	13,131.8	28,257.9	10,260.6	1,395.7	NON-EXEMPT
					ROW	15,546.8	21,189.2	--	45,443.3	
					CONST	110.0	114,636.0	156,398.2	426,759.0	
					OTHER	12,320.0	14,633.3	34,373.2	5,677.0	
					TOTAL	41,108.6	178,716.4	201,032.0	479,275.0	
				SOURCE OF FUNDS	LOCAL	--	--	--	--	
					STATE	30,526.1	75,864.8	83,344.7	179,427.2	
					FEDERAL	10,582.5	102,851.6	117,687.3	299,847.8	
					TOTAL	41,108.6	178,716.4	201,032.0	479,275.0	
	8009698	1060-27-03	NHPP							
KENOSHA (CITY)	358 (328)	EXPANSION OF THE CITY OF KENOSHA TRANSIT SYSTEM SERVICE TO INCLUDE 5 NEW ROUTES, EXPAND AND EXTEND SERVICE FOR 4 ROUTES, INCLUDING NEW SERVICE TO WALMART, AND PURCHASE NEW BUSES	TE	DETAIL COSTS	PE	--	--	--	--	NON-EXEMPT
					ROW	--	--	--	--	
					CONST	--	--	--	--	
					OTHER	600.0	600.0	--	--	
					TOTAL	600.0	600.0	--	--	
				SOURCE OF FUNDS	LOCAL	120.0	120.0	--	--	
					STATE	--	--	--	--	
					FEDERAL	480.0	480.0	--	--	
					TOTAL	600.0	600.0	--	--	
	1030006		CMAQ							
MILWAUKEE COUNTY	116 (116)	OPERATING ASSISTANCE FOR THE EAST - WEST BUS RAPID TRANSIT PROJECT BETWEEN DOWNTOWN MILWAUKEE AND THE REGIONAL MEDICAL CENTER IN MILWAUKEE COUNTY	TE	DETAIL COSTS	PE	--	--	--	--	NON-EXEMPT
					ROW	--	--	--	--	
					CONST	--	--	--	--	
					OTHER	4,950.0	2,475.0	--	--	
					TOTAL	4,950.0	2,475.0	--	--	
				SOURCE OF FUNDS	LOCAL	990.0	495.0	--	--	
					STATE	--	--	--	--	
					FEDERAL	3,960.0	1,980.0	--	--	
					TOTAL	4,950.0	2,475.0	--	--	
	4000004	1693-06-05	CMAQ							
MILWAUKEE (CITY)	146 (146)	OPERATING ASSISTANCE FOR THE LAKEFRONT LINE OF THE MILWAUKEE STREETCAR	TE	DETAIL COSTS	PE	--	--	--	--	NON-EXEMPT
					ROW	--	--	--	--	
					CONST	--	--	--	--	
					OTHER	1,100.0	--	--	--	
					TOTAL	1,100.0	--	--	--	
				SOURCE OF FUNDS	LOCAL	220.0	--	--	--	
					STATE	--	--	--	--	
					FEDERAL	880.0	--	--	--	
					TOTAL	1,100.0	--	--	--	
	4100188	1693-34-32	CMAQ							
	147 (147)	CONSTRUCTION OF THE LAKEFRONT EXTENSION OF THE MILWAUKEE STREETCAR BETWEEN N BROADWAY AND LINCOLN MEMORIAL DRIVE	TE	DETAIL COSTS	PE	--	--	--	--	NON-EXEMPT
					ROW	--	--	--	--	
					CONST	1,853.7	--	--	--	
					OTHER	--	--	--	--	
					TOTAL	1,853.7	--	--	--	
				SOURCE OF FUNDS	LOCAL	1,239.5	--	--	--	
					STATE	--	--	--	--	
					FEDERAL	614.2	--	--	--	
					TOTAL	1,853.7	--	--	--	
	4109959		FED TIGER							
WAUKESHA COUNTY	280 (259)	RECONSTRUCTION WITH ADDITIONAL LANES OF CTH O (MOORLAND RD) FROM CTH HH (COLLEGE AVE) TO GRANGE AVE IN THE CITY OF NEW BERLIN (1.07 MI)	HI	DETAIL COSTS	PE	--	--	--	--	NON-EXEMPT
					ROW	736.0	--	--	--	
					CONST	--	--	6,600.0	--	
					OTHER	--	--	--	--	
					TOTAL	736.0	--	6,600.0	--	
				SOURCE OF FUNDS	LOCAL	307.2	--	1,518.0	--	
					STATE	--	--	--	--	
					FEDERAL	428.8	--	5,082.0	--	
					TOTAL	736.0	--	6,600.0	--	
	7000054	2722-08-02	STP-M							

Source: SEWRPC

Table 5
Conformity Test of the Fiscally Constrained Transportation System
and 2023-2026 Transportation Improvement Program

Nonattainment/Maintenance Area	Month	Emission	Plan Stage and Budgets to be Used (tons)					
			2022	2025	2030	2035	2040	2050
Partial Kenosha County 2008 Ozone Maintenance Area	July	NO _x		1.470	0.850	0.750	0.750	0.750
		VOC		0.950	0.540	0.470	0.470	0.470
Partial Kenosha County 2015 Ozone Nonattainment Area	July	NO _x		1.470	0.850	0.750	0.750	0.750
		VOC		0.950	0.540	0.470	0.470	0.470
Milwaukee 2015 Ozone Nonattainment Area	July	NO _x	31.910		31.910		31.910	31.910
		VOC	15.980		15.980		15.980	15.980
2006 24-Hour Fine Particulate Maintenance Area	January	NO _x		28.690	28.690		28.690	28.690
		PM _{2.5}		2.160	2.160		2.160	2.160
		SO ₂		0.380	0.380		0.380	0.380
		VOC		13.778	13.778		13.778	13.778

Nonattainment/Maintenance Area	Month	Emission	Forecast Emissions (tons)					
			2022	2025	2030	2035	2040	2050
Partial Kenosha County 2008 Ozone Maintenance Area	July	NO _x		1.045	0.779	0.674	0.651	0.683
		VOC		0.685	0.516	0.454	0.421	0.424
Partial Kenosha County 2015 Ozone Nonattainment Area	July	NO _x		1.045	0.779	0.674	0.651	0.683
		VOC		0.685	0.516	0.454	0.421	0.424
Milwaukee 2015 Ozone Nonattainment Area	July	NO _x	19.468		10.830		8.793	8.985
		VOC	11.475		7.205		5.675	5.526
2006 24-Hour Fine Particulate Maintenance Area	January	NO _x		11.875	8.970		7.495	7.645
		PM _{2.5}		0.613	0.545		0.516	0.533
		SO ₂		0.086	0.079		0.076	0.079
		VOC		7.770	6.599		5.961	5.994

Nonattainment/Maintenance Area	Month	Emission	Remaining Safety Margin (tons)					
			2022	2025	2030	2035	2040	2050
Partial Kenosha County 2008 Ozone Maintenance Area	July	NO _x		0.425	0.071	0.076	0.099	0.067
		VOC		0.265	0.024	0.016	0.049	0.046
Partial Kenosha County 2015 Ozone Nonattainment Area	July	NO _x		0.425	0.071	0.076	0.099	0.067
		VOC		0.265	0.024	0.016	0.049	0.046
Milwaukee 2015 Ozone Nonattainment Area	July	NO _x	12.442		21.080		23.117	22.925
		VOC	4.505		8.775		10.305	10.454
2006 24-Hour Fine Particulate Maintenance Area	January	NO _x		16.815	19.720		21.195	21.045
		PM _{2.5}		1.547	1.615		1.644	1.627
		SO ₂		0.294	0.301		0.304	0.301
		VOC		6.008	7.179		7.817	7.784

Source: SEWRPC

APPENDICES

VALIDATION OF COMMISSION TRAVEL SIMULATION MODELS: 2017 APPENDIX A

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

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WAUKESHA



SEWRPC Staff Memorandum

VALIDATION OF COMMISSION TRAVEL SIMULATION MODELS: 2017

November 11, 2021

INTRODUCTION

Development of the Commission's fifth generation travel simulation models, also referred to as "2011 models" in this memorandum, was completed in 2015 using then-new 2011 and 2012 travel survey data, 2010 census population data, 2010 land use inventory data, 2010 employment data, and 2011 transportation network inventory data. The validation of these models with respect to their ability to estimate years 2001 and 2011 travel and traffic within Southeastern Wisconsin is documented in SEWRPC Technical Report No. 51, *Travel Simulation Models of Southeastern Wisconsin*. The model validation entailed applying the travel simulation models with the inventoried demographic, economic, and land use data and transportation system network data to estimate years 2001 and 2011 travel demand and traffic flows. The model-estimated years 2001 and 2011 travel demand and traffic flows were compared respectively to actual 2001 and 2011 travel demand flows through a comparison of model-estimated highway vehicle and transit passenger trips to actual observed vehicle and transit passenger counts. The model validation for the years 2001 and 2011 indicated that the travel simulation models have the ability to forecast transit and highway travel and traffic with sufficient accuracy for transportation facility planning and design purposes, as model estimates of total highway vehicle miles of travel were within two percent and transit ridership were within eight percent of estimates based upon traffic volume and transit ridership counts, and model-estimates of traffic volume of individual highway facilities were generally within 10 percent of actual traffic volume counts. In this respect, it should be recognized that the observed actual counts of vehicle traffic volume and transit ridership to which the model estimates are compared do in fact themselves represent "estimates" which may contain their own variation and errors. Many of the counts are taken only one or two days of the entire year and, therefore, reflect the effects of the daily and monthly variations in travel, requiring adjustment to attempt to reflect average weekday conditions.

This memorandum presents a second validation of the Commission's fifth generation travel simulation models. The model validation is with respect to estimation of travel and traffic within Southeastern Wisconsin for the year 2017. In 2024, a third validation of the Commission's travel simulation models will be completed using year 2020 census population data, year 2020 land use inventory data, year 2020 employment data, and year 2021 transportation network data. Also in 2024 and 2025 the Commission's travel simulation models will undergo a major review, refinement, and recalibration with 2022 and 2023 travel survey data.

TRAVEL MODEL VALIDATION—YEAR 2017

The year 2017 validation of the Commission's fifth generation travel simulation models entailed applying the travel simulation models with year 2017 transportation system network inventory data, 2017 employment estimate data, and 2017 population estimate data—based upon Wisconsin Department of Administration annual estimates. Travel costs per mile were adjusted to reflect changes in fuel prices in 2017 compared to 2011, and the Region's actual 2017 unemployment rate was used. The 2017 transit share of school trips was estimated by factoring 2011 school travel volumes and patterns, which was then proportionally adjusted based on the percent change in model-estimated 2017 transit share relative to base year 2011 to reflect the change in total transit ridership in the Region in 2017 compared to 2011. Finally, the 2017 validation of travel simulation models entailed comparison of the model estimates of 2017 highway traffic and transit ridership to actual observed year 2017 highway vehicle and transit passenger counts.

Table 1a compares year 2017 model-estimated average weekday vehicle-miles of travel for the Southeastern Wisconsin Region to estimates of year 2017 vehicle-miles of travel estimated from actual observed traffic counts. The model-estimated arterial street and highway system vehicle-miles of travel are generally within ten percent of vehicle-miles of travel estimated from traffic counts. **Table 1b** compares year 2011 model-estimated average weekday vehicle-miles of travel for the Southeastern Wisconsin Region to estimates of year 2011 vehicle-miles of travel estimated from actual observed traffic counts. The 2011 comparisons shown in **Table 1b** and elsewhere in this memorandum are reproduced from SEWRPC Technical Report No. 51, Travel Simulation Models of Southeastern Wisconsin, to compare model validation statistics between validation years 2011 and 2017.

Tables 2a and **2b** compare respectively 2017 and 2011 root mean squared errors of model-estimated average weekday traffic volume on arterial street and highway segments relative to estimated actual traffic volume by count volume range. The tables show that the root mean squared errors are within the accepted targets.

Figures 1a and **1b** show respectively years 2017 and 2011 relationships between average weekday traffic volumes from traffic counts and travel simulation models on arterial street and highway segments. **Maps 1a** and **1b** show respectively for selected arterial street and highway segments estimates of years 2017 and 2011 average weekday traffic volumes from traffic counts and travel simulation models. Model estimates of average weekday traffic volumes are generally within 10 percent of estimates from traffic counts, and the regional R^2 statistic is above the generally accepted target of 88%.

Tables 3a and **3b** compare respectively years 2017 and 2011 model-estimated average weekday transit ridership in the Southeastern Wisconsin Region to estimates based upon transit passenger counts. The model-estimated Region's transit ridership is approximately within the generally accepted target of 9 percent of ridership estimated by passenger counts. **Tables 4a** and **4b** compare respectively years 2017 and 2011 model estimates to passenger count estimates of average weekday ridership on the major Milwaukee County transit system bus routes. While on individual route the model-estimated transit ridership differs by as much as 77%, as a whole the model-estimated transit ridership on the major Milwaukee County transit system bus routes is within 7% of count estimates. Model-estimated transit ridership difference ranging from 20% to 150% on an individual transit line compared to count estimated ridership is generally considered acceptable depending on observed transit ridership for regional travel simulation models.

Table 1a
Comparison of Model-Estimated and Traffic Count Estimated Arterial
System Vehicle-Miles of Travel on an Average Weekday in the Region: 2017

County	Estimated 2017 Average Weekday Vehicle-Miles of Travel from Traffic Counts (thousands)	Estimated 2017 Average Weekday Vehicle-Miles of Travel from Travel Simulation Models^a (thousands)	Percent Difference
Kenosha	3,879	3,436	-11.4
Milwaukee	17,378	15,716	-9.6
Ozaukee	2,407	2,569	6.7
Racine	4,080	4,154	1.8
Walworth	2,759	3,075	11.5
Washington	3,739	3,906	4.5
Waukesha	9,927	10,386	4.6
Region	44,169	43,241	-2.1

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

Table 1b
Comparison of Model-Estimated and Traffic Count Estimated Arterial
System Vehicle-Miles of Travel on an Average Weekday in the Region: 2011

County	Estimated 2011 Average Weekday Vehicle-Miles of Travel from Traffic Counts (thousands)	Estimated 2011 Average Weekday Vehicle-Miles of Travel from Travel Simulation Models^a (thousands)	Percent Difference
Kenosha	3,497	3,112	-11.0
Milwaukee	16,210	14,672	-9.5
Ozaukee	2,378	2,310	-2.9
Racine	3,468	3,756	8.3
Walworth	2,452	2,859	16.6
Washington	3,442	3,656	6.2
Waukesha	9,415	9,883	5.0
Region	40,862	40,248	-1.5

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

Table 2a
Root Mean Squared Error of Model-Estimated Average Weekday Traffic Volume
Relative to Estimated Actual Count by Count Volume Range: 2017

Average Weekday Traffic Volume	Number of Links	RMSE	Percent RMSE (Target)	Percent RMSE (Actual)
0 to 4,999	3,276	1,417	100.0	48.4
5,000 to 9,999	2,230	2,807	45.0	39.7
10,000 to 14,999	739	4,100	35.0	33.9
15,000 to 19,999	301	4,714	30.0	27.5
20,000 to 29,999	80	5,969	27.0	26.0
30,000 to 39,999	15	4,706	25.0	13.5
40,000 to 49,999	31	5,753	25.0	12.6
50,000 to 59,999	14	6,500	20.0	11.8
Greater than 60,000	45	5,023	19.0	7.0
Areawide	6,731	2,704	45.0	38.5

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

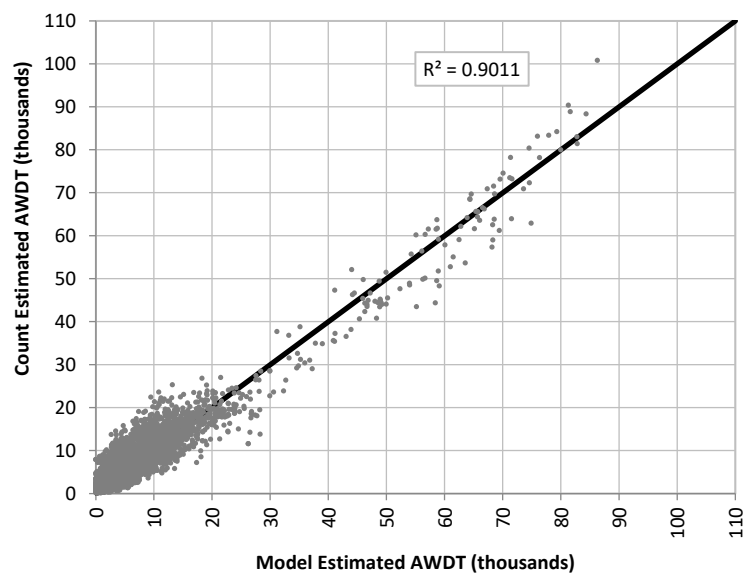
Table 2b
Root Mean Squared Error of Model-Estimated Average Weekday Traffic Volume
Relative to Estimated Actual Count by Count Volume Range: 2011

Average Weekday Traffic Volume	Number of Links	RMSE	Percent RMSE (Target)	Percent RMSE (Actual)
0 to 4,999	3,607	1,591	100.0	63.0
5,001 to 9,999	1,743	2,938	45.0	41.8
10,000 to 14,999	500	4,076	35.0	33.6
15,000 to 19,999	210	5,272	30.0	30.9
20,000 to 29,999	95	6,887	27.0	29.6
30,000 to 39,999	43	5,893	25.0	16.6
40,000 to 49,999	35	5,701	25.0	12.8
50,000 to 59,999	25	7,387	20.0	13.4
Greater than 60,000	78	5,518	19.0	7.8
Areawide	6,336	2,787	45.0	40.9

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

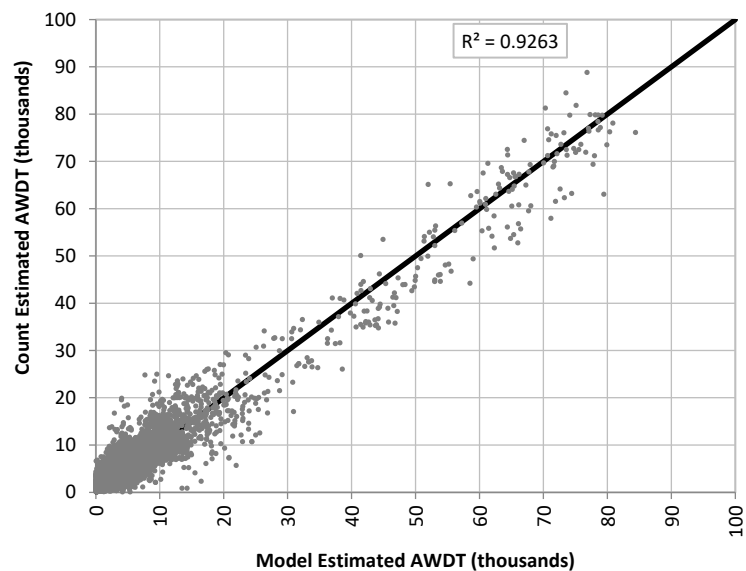
Figure 1a
Comparison of Traffic Count and Model Estimated Average Weekday
Traffic on Arterial Street and Highways in the Region: 2017



Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

Figure 1b
Comparison of Traffic Count and Model Estimated Average Weekday
Traffic on Arterial Street and Highways in the Region: 2011



Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

Source: SEWRPC

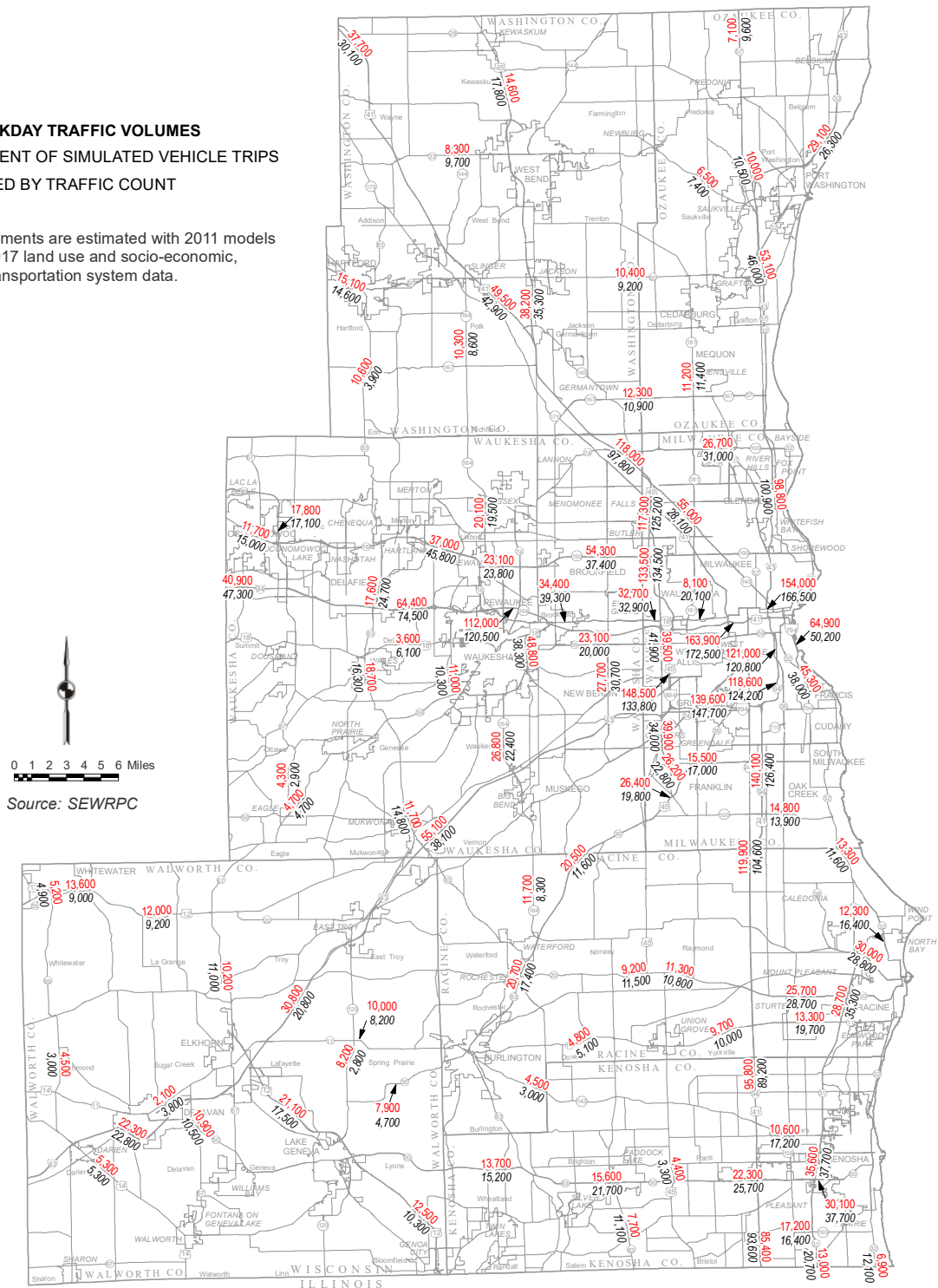
Map 1a
Comparison of Model Estimated and Traffic Count Estimated Average Weekday
Traffic Volume on Selected Arterial Streets and Highways: 2017

AVERAGE WEEKDAY TRAFFIC VOLUMES

26000 ASSIGNMENT OF SIMULATED VEHICLE TRIPS

24600 ESTIMATED BY TRAFFIC COUNT

Note: Assignments are estimated with 2011 models and 2017 land use and socio-economic, and transportation system data.



Map 1b
Comparison of Model Estimated and Traffic Count Estimated Average Weekday
Traffic Volume on Selected Arterial Streets and Highways: 2011

AVERAGE WEEKDAY TRAFFIC VOLUMES

26000 ASSIGNMENT OF SIMULATED VEHICLE TRIPS

24600 ESTIMATED BY TRAFFIC COUNT

Note: Assignments are estimated with 2011 models and 2010 land use and socio-economic data and 2011 transportation system data.

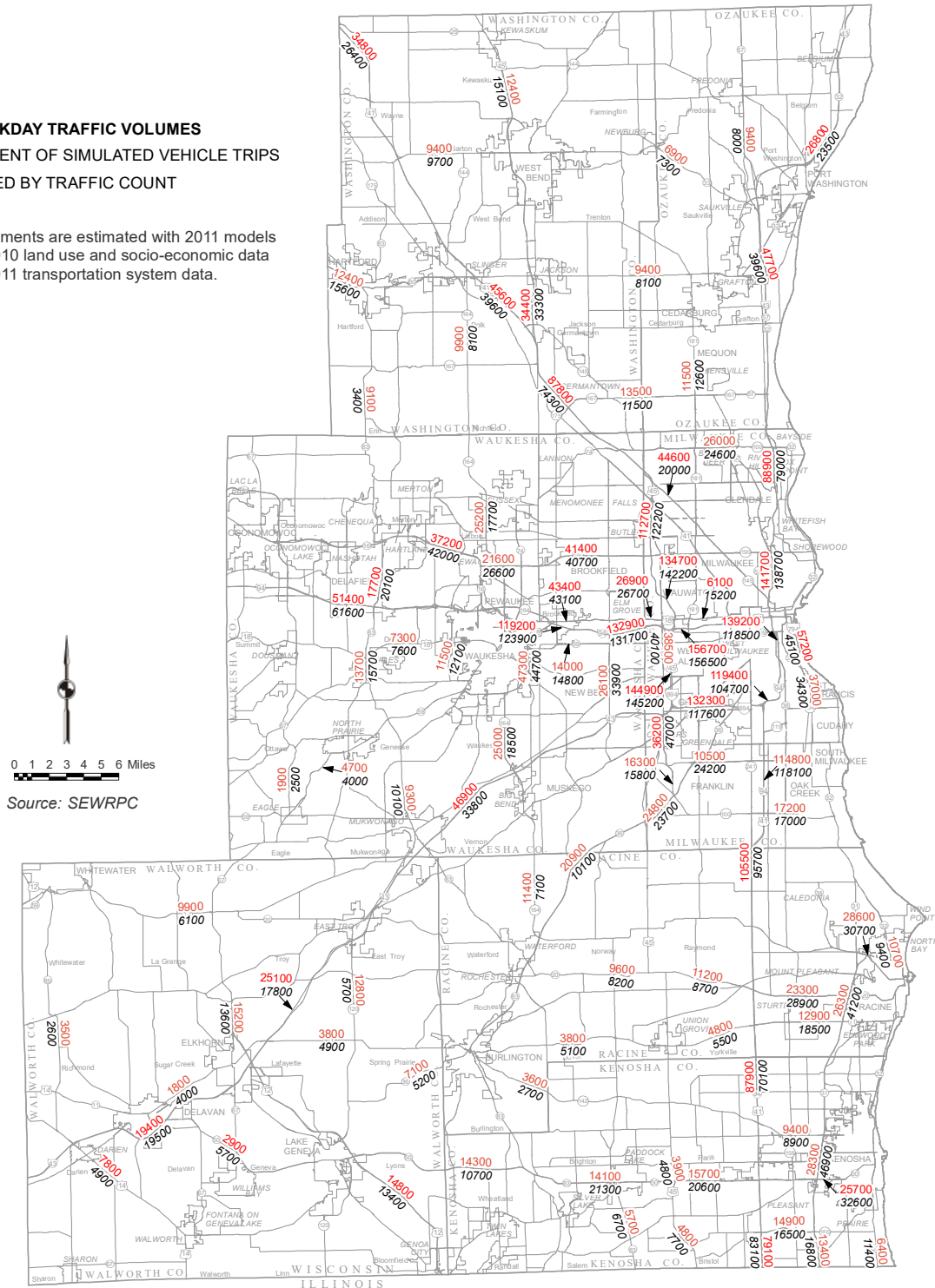


Table 3a**Comparison of Passenger Count and Model Estimates of Average Weekday Public Transit Boarding Passengers on the Region's Fixed-Route Bus Services: 2017**

Transit Systems	Average Weekday Unlinked Trips (boarding passengers)			
	2017	2017	Difference	
	Estimated	Actual	Model Estimated	
			Amount	Percent
Intracounty ^a and Intercounty ^b Bus Systems Total	150,620	165,300	14,680	9.7

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

^a City of Kenosha, Milwaukee County, City of Waukesha, and City of Racine

^b Waukesha County, Milwaukee-Racine-Kenosha Commuter Bus, Washington County Commuter Express, Ozaukee County Express, Western Kenosha County Transit

Source: National Transit Database and SEWRPC

Table 3b**Comparison of Passenger Count and Model Estimates of Average Weekday Public Transit Boarding Passengers on the Region's Fixed-Route Bus Services: 2011**

Transit Systems	Average Weekday Unlinked Trips (boarding passengers)			
	2011	2011	Difference	
	Estimated	Actual	Model Estimated ^a	
			Amount	Percent
Intracounty ^a and Intercounty ^b Bus Systems Total	194,540	184,400	-10,140	-5.2

Note: Estimated with 2011 models and 2017 land use, socio-economic, and transportation system data.

^a City of Kenosha, Milwaukee County, City of Waukesha, and City of Racine

^b Waukesha County, Milwaukee-Racine-Kenosha Commuter Bus, Washington County Commuter Express, Ozaukee County Express, Western Kenosha County Transit

Source: National Transit Database and SEWRPC

Table 4a**Comparison of Estimated Actual Transit Ridership Boarding Passenger Counts to Model
Estimated Transit Ridership on Select Milwaukee County Transit System Bus Routes: 2017**

Milwaukee County Transit System ^a	Average Weekday unlinked Trips (Boarding Passengers)			
	Estimated Actual ^b	2017 Model Estimated ^c	Difference	
			Amount	Percent
Selected Major Routes				
Gold Line (former Route 10)	6,240	6,510	270	4.3
Blue Line	5,720	4,530	-1,190	-20.8
Purple Line	5,060	5,100	40	0.8
Green Line	6,740	11,940	5,200	77.2
Red Line	6,620	6,470	-150	-2.3
Route 12	6,370	4,290	-2,080	-32.7
Route 15	5,090	5,090	-	-
Route 19	6,440	6,170	-270	-4.2
Route 21	4,640	4,520	-120	-2.6
Route 23	5,250	4,090	-1,160	-22.1
Route 27	5,420	5,630	210	3.9
Route 30	6,900	11,910	5,010	72.6
Route 35	4,200	2,190	-2,010	-47.9
Route 60	4,110	2,250	-1,860	-45.3
Route 62	2,160	1,190	-970	-44.9
Route 67	4,230	3,090	-1,140	-27.0
Route 76	5,790	5,970	180	3.1
Route 80	6,040	9,510	3,470	57.5
Subtotal	97,020	100,450	3,430	3.5
Remainder of Routes	39,220	45,330	6,110	15.6
Total	136,240	145,780	9,540	7.0

^a Includes Waukesha County Transit System routes operated by the Milwaukee County Transit System

^b Based on Milwaukee County Transit System's Quarterly Route Evaluation Summaries, September 2017 and National Transit Database.

^c Estimated with 2011 models and 2017 land use and socio-economic, and transportation system data.

Source: Milwaukee County Transit System, National Transit Database and SEWRPC

Table 4b**Comparison of Estimated Actual Transit Ridership Boarding Passenger Counts to Model
Estimated Transit Ridership on Select Milwaukee County Transit System Bus Routes: 2011**

Milwaukee County Transit System ^a	Average Weekday unlinked Trips (Boarding Passengers)			
	Estimated Actual ^b	2011 Model Estimated ^c	Difference	
			Amount	Percent
Selected Major Routes				
Route 10	6,890	8,720	1,830	26.6
Route 12	7,760	9,120	1,360	17.5
Route 15	8,410	12,870	4,460	53.0
Route 18	5,980	4,500	-1,480	-24.7
Route 19	7,700	5,530	-2,170	-28.2
Route 21	5,500	5,600	100	1.8
Route 23	8,760	6,550	-2,210	-25.2
Route 27	13,060	11,940	-1,120	-8.6
Route 30	14,100	17,630	3,530	25.0
Route 35	5,040	2,320	-2,720	-54.0
Route 60	4,430	3,420	-1,010	-22.8
Route 62	7,340	7,130	-210	-2.9
Route 67	4,260	4,000	-260	-6.1
Route 76	5,860	5,730	-130	-2.2
Route 80	7,120	10,690	3,570	50.1
Subtotal	112,210	115,750	3,540	3.2
Remainder of Routes	38,440	44,340	5,900	15.3
Total	150,650	160,090	9,440	6.3

Notes:

^a Includes Waukesha County Transit System routes operated by Milwaukee County Transit System.^b Based on actual operator counts taken during the months of September through May during 2010 and 2011 by the Milwaukee County Transit System.^c Estimated with 2011 models and 2010 land use and socio-economic data and 2011 transportation system data.

Source: Milwaukee County Transit System and SEWRPC

CONCLUSION

The comparison of model-estimated and traffic count-based estimates of highway traffic and transit ridership presented in this memorandum indicates that the Commission's fifth generation travel simulation models have the ability to forecast highway vehicle and transit passenger volume with adequate accuracy for transportation planning and design purposes. The Commission's fifth generation travel simulation models should therefore be considered validated with respect to the year 2017.

**REVIEW AGENCY CORRESPONDENCE REGARDING THE CONFORMITY
OF THE FISCALLY CONSTRAINED TRANSPORTATION SYSTEM
AND TRANSPORTATION IMPROVEMENT PROGRAM**

APPENDIX B



Federal Highway Administration
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Madison, WI 53717-2157

Federal Transit Administration
200 W. Adams Street, Suite 320
Chicago, IL 60606-5232

December 6, 2022

Mr. Benjamin McKay
Deputy Secretary
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607

Dear Mr. McKay:

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) concur with the Southeastern Wisconsin Regional Planning Commission's (SEWRPC) enclosed air quality conformity analysis, which supports a federal determination that the fiscally constrained VISION 2050 regional transportation plan (FCTP) and the proposed 2023-2026 Transportation Improvement Program (TIP), are in conformance with the 2008, and 2015 eight-hour ozone, and the 2006 24-hour fine particulate (PM_{2.5}) national ambient air quality standards (NAAQS). The basis of our response is summarized below.

FHWA and FTA find that the FCTP and TIP meet the following requirements:

- The fiscally constrained transportation system envisioned for horizon and analysis years is described, including identification of design concept, scope, and operating policies of regionally significant additions or modifications to the existing system sufficient to determine travel times, traffic volumes, transit ridership, and relationship with expected land use;
- The proposed 2023-2026 TIP is consistent with the FCTP and the plan's implementation schedule;
- Significant future transportation policies, requirements, services, and activities are described;
- Fiscal constraint is demonstrated consistent with federal metropolitan transportation planning requirements, policies, and guidance;
- Latest planning assumptions are used, including:
 - Estimates of current and future population, employment, travel, and congestion, based on:
 - Year 2050 population and employment forecasts, and
 - Adjustment to reconcile differences between modeled and estimated actual average weekday vehicle miles of travel.
 - Changes in transit operating policies (including fares and service levels) and assumed

- transit ridership since the previous conformity determination;
 - Reasonable assumptions about transit service and increases in transit fares over time;
 - There are no transportation control measures included in the SIPs or maintenance plan for the nonattainment areas within Southeastern Wisconsin; and
- Use of the latest emissions estimation model – MOVES3.0.4.

Interagency consultation occurred among the U.S. Environmental Protection Agency (EPA), Wisconsin Department of Natural Resources (WDNR), Wisconsin Department of Transportation (WisDOT), FHWA, FTA, and SEWRPC. Consultation included agreement on the latest planning assumptions, latest emissions model, and appropriate conformity tests and analysis years to be used in the regional emissions analysis as documented in the conformity assessment. The EPA, WDNR, and WisDOT all provided review and approval letters of the SEWRPC conformity demonstration (see enclosures).

SEWRPC provided opportunity for public comment on the 2023-2026 TIP. A virtual public meeting on the draft 2023-2026 TIP was held on Wednesday, November 16, 2022. In addition, written comments were accepted from November 11 through December 1, 2022.

There are no transportation control measures in the WDNR State Implementation Plan (SIP).

SEWRPC's regional emissions analysis demonstrates that the amended FCTP and proposed 2023-2026 TIP will result in mobile source emissions within the motor vehicle emissions budgets established by the WDNR and EPA.

Accordingly, FHWA and FTA jointly determine the SEWRPC amended Year 2050 FCTP and the proposed 2023-2026 TIP to be in conformance with the transportation planning requirements of Titles 23 and 49 U.S.C., the Clean Air Act Amendments, and related regulations as they pertain to the 2008, and 2015 eight-hour ozone, and the 2006 24-hour fine particulate PM_{2.5}.

This conformity finding is valid for a period of four years. A new air quality conformity determination will be required if either the FCTP or TIP is modified by adding, removing, or changing the implementation schedule of a regionally significant or non-exempt project or if any other triggering events specified in 40 CFR 93.104 occur. Conformity can also lapse if the FCTP or TIP is not updated within the required renewal period of four years.

Should you have any questions, please contact Karl Buck at (608) 829-7501.

Sincerely,



Glenn D. Fulkerson
Division Administrator
Federal Highway Administration

Sincerely,

**KELLEY
BROOKINS**
Kelley Brookins
Regional Administrator
Federal Transit Administration

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KELLEY BROOKINS
Date: 2022.12.02
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enclosures (4)

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Glenn Fulkerson, FHWA
Linda Swann, FHWA
Nick Perna, FHWA
Mary Forlenza, FHWA
Tim Klecker, FHWA
Tracy Duval, FHWA
Karl Buck, FHWA

Benjamin McKay, SEWRPC, bmckay@sewrpc.org

WisDOT (Division of Transportation System Development)
Environmental Services Section
4822 Madison Yards Way, Room S516
P O Box 7965
Madison, WI 53707-7965

Governor Tony Evers
Secretary Craig Thompson
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Email: DOTDOTSDDivision-Office@dot.wi.gov



November 28, 2022

Mr. Glenn Fulkerson
Division Administrator
Federal Highway Administration
525 Junction Road Suite 8000
Madison, WI 53717

Subject: Southeastern Wisconsin Regional Planning Commission's (SEWRPC's) Draft Assessment of Transportation Conformity of the Year 2050 Fiscally Constrained Transportation System (FCTS) and its implementing Year 2023-2026 Transportation Improvement Program (TIP) with Respect to the 2008 and 2015 Eight-Hour Ozone National Ambient Air Quality Standards (NAAQS), and the 2006 24-Hour Fine Particulate (PM_{2.5}) NAAQS

Dear Mr. Fulkerson:

The Wisconsin Department of Transportation (WisDOT) has completed its review of SEWRPC's Draft Assessment of Transportation Conformity of the FCTS and its implementing 2023-2026 TIP. In our review, we observed that SEWRPC's assessment meets all the criteria and procedural requirements of the transportation conformity regulations and was conducted in accordance with the Memorandum of Agreement between SEWRPC, the Wisconsin Department of Natural Resources, and WisDOT.

During the interagency consultation process, it was agreed that the "budget test" would be used to demonstrate transportation conformity for all NAAQS scenarios involving a nonattainment or maintenance area in the Southeastern Region. The data and the results of SEWRPC's analyses show that in all cases, the transportation emissions forecasts under the FCTS and its implementing TIP are clearly within the motor vehicle emissions budgets approved by the Environmental Protection Agency for the nonattainment and maintenance areas for use in demonstrating transportation conformity.

In view of the above, we conclude that SEWRPC has effectively demonstrated transportation conformity of its Year 2050 FCTS and the Year 2023-2026 TIP with respect to the partial Kenosha County 2008 ozone NAAQS nonattainment area, the partial Kenosha County 2015 ozone NAAQS nonattainment area, the Milwaukee/Ozaukee/Racine/Washington/Waukesha County 2015 ozone NAAQS nonattainment area, and the three-county 2006 fine particulate (PM_{2.5}) NAAQS maintenance area.

Should you have any questions regarding our conclusion, feel free to contact Alyssa Barrette of my staff at (608) 266-1017.

Sincerely,

A handwritten signature in cursive script that reads "Barry Paye".

Barry Paye, P.E., Director
Bureau of Technical Services

CC: William Wheeler, FTA
Evan Gross, FTA
Mary Forlenza, FHWA
Karl Buck, FHWA
Michael Leslie, USEPA Region 5
Gail Good, WDNR

David Bizot, WDNR
Christopher Hiebert, SEWRPC

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
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Tony Evers, Governor
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November 23, 2022

Glenn Fulkerson
Division Administrator
Federal Highway Administration
525 Junction Road, Suite 3000
Madison, WI 53717

Kelley Brookins
Regional Administrator
Federal Transit Administration
200 West Adams Street, Suite 320
Chicago, IL 60606

Subject: Southeastern Wisconsin Regional Planning Commission (SEWRPC)'s Draft Assessment of Transportation Conformity for the Recommended VISION 2050 Fiscally Constrained Transportation System (FCTS) and 2023-2026 Transportation Improvement Program (TIP)

Dear Mr. Fulkerson and Ms. Brookins:

The Wisconsin Department of Natural Resources (WDNR) has reviewed the draft transportation conformity assessment completed by SEWRPC for its recommended VISION 2050 FCTS and 2023-2026 TIP.¹ The WDNR's assessment is that this fiscally constrained plan and TIP conform to Wisconsin's state implementation plan.

The SEWRPC appropriately utilized the "budget test" to determine conformity. SEWRPC's assessment demonstrates that the projected emissions associated with the recommended FCTS and 2023-2026 TIP will remain within the latest motor vehicle emissions budgets that apply to the partial Kenosha County 2008 ozone NAAQS maintenance area, the partial Kenosha County and Milwaukee 2015 ozone NAAQS nonattainment areas, and the Milwaukee-Racine 2006 PM_{2.5} NAAQS maintenance area. Further, SEWRPC has documented how this assessment satisfies the transportation conformity criteria and procedural requirements required by 40 CFR Parts 51 and 93.

Based on this information, WDNR concurs that SEWRPC has demonstrated conformity for the FCTS and 2023-2026 TIP with respect to the partial Kenosha County 2008 ozone NAAQS maintenance area, the partial Kenosha County and Milwaukee 2015 ozone NAAQS nonattainment areas, and the Milwaukee-Racine 2006 PM_{2.5} NAAQS maintenance area.

Should you have any questions concerning this review, please contact David Bizot at David.Bizot@wisconsin.gov.

Sincerely,

DocuSigned by:
Gail E. Good

11/23/2022 | 7:14 AM CST

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Gail E. Good
Director, Air Management
Wisconsin Department of Natural Resources

¹ SEWRPC Memorandum Report No. 267.

cc: Karl Buck, FHWA
Evan Gross, FTA
Michael Leslie, EPA Region 5
Christopher Hiebert, SEWRPC
Jason Treutel, AM/7
David Bizot, AM/7



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

**AIR AND RADIATION DIVISION
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590**

REPLY TO THE ATTENTION OF:

Glenn Fulkerson
Division Administrator
Federal Highway Administration - Wisconsin Division
525 Junction Road, Suite 8000
Madison, Wisconsin 53717

Dear Mr. Fulkerson:

The U.S. Environmental Protection Agency (EPA) has completed its review of the conformity determination for the 2023-2026 Transportation Improvement Program (TIP) and the 2050 Fiscally Constrained Transportation Plan (Plan) for the Milwaukee metropolitan area. The TIP and Plan were prepared by the Southeastern Wisconsin Regional Planning Commission (SEWRPC). This letter provides the results of our review of the conformity determinations.

The SEWRPC planning area includes a 2008 8-hour ozone National Ambient Air Quality Standard (standard) maintenance area for a portion of Kenosha County; the 2015 8-hour ozone standard moderate nonattainment areas for Kenosha County and the Milwaukee metropolitan area; and the 2006 24-hour fine particulates (PM_{2.5}) standard maintenance area for Milwaukee, Racine, and Waukesha counties. The SEWRPC conformity areas have Motor Vehicle Emissions Budgets (budgets) for Oxides of Nitrogen (NO_x) and Volatile Organic Compounds (VOC), PM_{2.5}, and Sulfur Dioxide (SO₂) to address these standards.

EPA's MOVES3 model generated emissions factors (EFs) which SEWRPC used for the regional analyses. These EFs were developed using the latest local transportation planning assumptions for this area. Emissions were calculated for the years 2025, 2030, 2035, 2040, and 2050. The Milwaukee metropolitan area TIP and Plan demonstrated consistency with the NO_x, VOC, PM_{2.5}, and SO₂ budgets. The conformity analyses were developed through the interagency consultation process which included representatives of the local, State, and Federal governments.

In summary, the SEWRPC TIP and Plan conformity determinations for the Milwaukee metropolitan area meet the requirements of the conformity regulations. EPA recommends that these conformity determinations be approved. If you have any questions, feel free to contact Michael Leslie of my staff, at (312) 353-6680.

Sincerely yours,

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Pamela Blakley
Section Supervisor
Control Strategies Section

cc: David Bizot
Bureau of Air Management
Wisconsin Department of Natural Resources

Karl Buck
Federal Highway Administration
Wisconsin Division

Evan Gross
Federal Transit Administration – Region 5

Standard bcc: official file copy w/attachment(s)
Originators file copy w/attachment(s)
Originating organization reading file W/attachment(s)

Other bcc:

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