PROJECT ID 1440-13/15-00 FHWA-WI-EIS-04-03-LS SSF
WISCONSIN STATE HIGHWAY 23
FOND DU LAC to PLYMOUTH
FOND DU LAC AND SHEBOYGAN COUNTIES, WISCONSIN

2018 LIMITED SCOPE SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT STATEMENT,
and RECORD OF DECISION
and Section 4(f) Evaluation
Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303, and
Public Law 112-141, 126 Stat. 405, Section 1319(b)
By the
U.S. Department of Transportation
Federal Highway Administration
and
Wisconsin Department of Transportation

COOPERATING AGENCY
U.S. Army Corps of Engineers (pursuant to 33 CFR 230)

APPROVALS

10/15/18 [redacted]
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ABSTRACT

Wisconsin Highway 23 is part of the National Highway System (NHS) and is a rural principal arterial that connects Fond du Lac and Sheboygan in east central Wisconsin. Both west and east ends of the project are located in the growing urban areas of Fond du Lac and Plymouth. At 19.1 miles in length, this highway corridor serves high traffic volumes near the urban areas and lower traffic volumes in rural areas. This document evaluates the No-Build Alternative and several Build Alternatives that have the option to include corridor preservation for potential future transportation improvements.

FHWA and WisDOT have prepared this Limited Scope Supplemental Final Environmental Impact Statement (LS SFEIS) in accordance with 23 Code of Federal Regulations (CFR) 771.130. This LS SFEIS is used to address issues of limited scope associated with the overall project.

This LS SFEIS identifies the Preferred Alternative that reconstructs WIS 23 to a 4-lane divided highway on the existing alignment and creates interchanges, connector roads, and a trail. The Preferred Alternative also includes corridor preservation for potential future transportation improvements.

FHWA is issuing a single LS SFEIS and Record of Decision (ROD) document pursuant to Public Law 112-141, 126 Stat. 405, Section 1319(b). As a result, the 30-day waiting period between the LS SFEIS and ROD, prescribed in 23 CFR 771.127(a) will not occur.

NATIONAL ENVIRONMENTAL POLICY ACT STATEMENT

The National Environmental Policy Act (NEPA), 42 USC 4321-4347, became effective January 1, 1970. This law requires that all federal agencies have prepared for every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment a detailed Environmental Impact Statement (EIS). The Federal Highway Administration (FHWA) is therefore required to have prepared an EIS on proposals that are funded under its authority if the proposal is determined to be a major action significantly affecting the quality of the human environment.

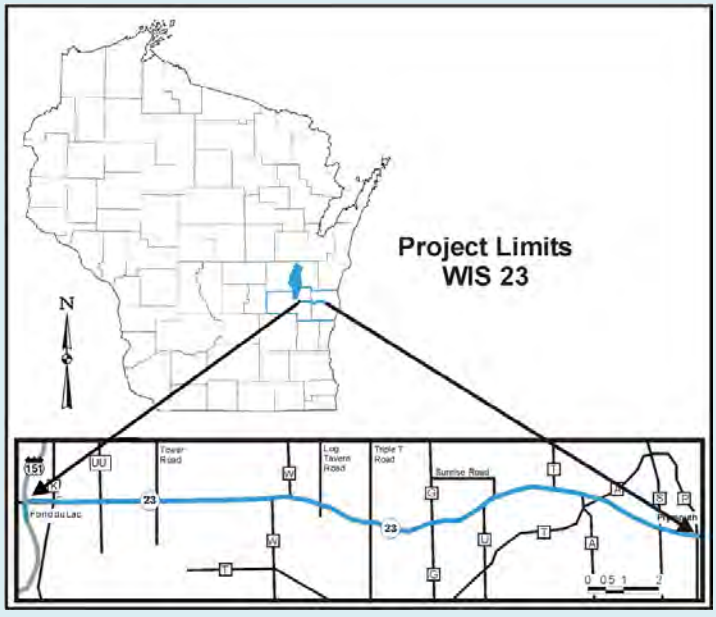
EISs are required for many transportation projects as outlined in NEPA. This Limited Scope Supplemental Environmental Impact Statement (LS SEIS) follows the same procedure as an original EIS, except that scoping is not required [40 CFR 1502.9(c), 23 CFR 771.130]. The processing of the LS SEIS is carried out in two stages: draft and final. The Limited Scope Supplemental Draft EIS (LS SDEIS) is circulated for review and comment to federal, state, and local agencies with jurisdiction by law or special expertise and it is made available to the public. The LS SDEIS must be made available to the public at least 15 days before the public hearing and no later than the first public hearing notice or notice of opportunity for a hearing. A minimum 45-day comment period is provided from the date the LS SDEIS notice of availability is published in the Federal Register. Wisconsin Department of Transportation (WisDOT) must receive agency and public comments on or before the date listed on the front cover of the LS SDEIS unless a time extension is granted by the FHWA and WisDOT. After the comment period for the LS SDEIS has elapsed, preparation of the Limited Scope Supplemental Final EIS (LS SFEIS) can begin. The LS SFEIS includes:

1. Basic content of the Limited Scope Supplemental Draft Environmental Impact Statement, as amended, due to internal agency comments, editing, additional alternatives being considered, and changes due to the time lag between the Draft, Supplemental Draft, and Supplemental Final EIS.
2. Summary of public hearing environmental comments.
3. Copies of comments received on the LS SDEIS.
4. Responses to each substantive comment.
5. Resolution of environmental issues and documentation of compliance with applicable environmental laws and related requirements.

The Draft, Supplemental Draft, and Final EIS are full-disclosure documents, which provide a full description of the proposed project, the existing environment, and an analysis of the anticipated beneficial or adverse environmental effects.

A Record of Decision (ROD) is the administrative action that approves the selected alternative. The ROD presents the basis for the decision, summarizes any mitigation measures that will, or are proposed to be incorporated in the project, and documents required Section 4(f) approvals. Public Law 112-141, 126 Stat. 405, Section 1319(b) states that to the maximum extent practicable, the lead agency shall expeditiously develop a single document that consists of a FEIS and a ROD. This environmental document is a combined LS SFEIS/ROD.

The names, addresses, and telephone numbers of the individuals from whom additional information can be obtained are listed on the cover of this document.



GENERAL REVIEWER INFORMATION

A gray box provided at the beginning of each section provides an introduction to the section and describes what has changed since the 2014 LS SFEIS. Yellow highlight signifies updates since the May 2018 LS SDEIS. Minor changes to grammar, punctuation, and usage are not highlighted. Highlighting of a figure or table title signifies updated or new information.

TABLE OF CONTENTS AND LIST OF ABBREVIATIONS

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Yellow highlight signifies updates since the May 2018 Limited Scope Supplemental Draft Environmental Impact Statement (LS SDEIS). Page numbers that have changed are not highlighted.

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Section 106	Section 106 of the National Historic Preservation Act, requires Federal agencies to take into account the effects of their undertakings on historic properties
Section 4(f)	Section 4(f) of the Department of Transportation Act dealing with impacts on historic places, parks, and wildlife refuges.
Section 6(f)	Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Water Conservation Act funds be coordinated with the Department of Interior.
AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ACHP	Advisory Council for Historic Preservation
ADA	Americans with Disabilities Act
ADID	Advanced Identification Program
ADT	Average Daily Traffic
AHI	Architecture and Historic Inventory
AIN	Agricultural Impact Notice
AIS	Agricultural Impact Statement
APE	Area of Potential Effect
AST	Aboveground Storage Tank
ATC	American Transmission Company
ATR	Automatic traffic recording
ATV	All-Terrain Vehicle
BLRPC	Bay-Lake Regional Planning Commission
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMF	Crash Modification Factor
CMM	Construction and Materials Manual
CO	carbon monoxide
CPI-U	Consumer Price Index for all Urban Consumers
CRF	Crash Reduction Factor
CSRP	Conceptual Stage Relocation Plan
CWA	Clean Water Action
DATCP	Wisconsin Department of Agriculture, Trade, and Consumer Protection
dBA	Decibel–a unit of measurement for sound level
DEIS	Draft Environmental Impact Statement
DHV	Design hourly volume
DOE	Determination of Eligibility, for the National Register of Historic Places
ECIP	Erosion Control Implementation Plan
ECWRPC	East Central Wisconsin Regional Planning Commission
EIS	Environmental Impact Statement
EJ	environmental justice
Endangered Species	Species identified by either the state or the federal government as likely to be in danger of becoming extinct through a significant portion of or all of its range

EO	Executive Order
FAST	Fixing America's Surface Transportation Act
FDM	Facilities Development Manual
FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FY	Fiscal Year
GIS	Geographic Information System
GPS	Global Positioning System
HazMat	Hazardous Materials
HCS	Highway Capacity Software
HEI	Health Effects Institute
HHS	Health and Human Services
IAT	Ice Age Trail
ICE	Indirect and Cumulative Effects
KMSF-NU	Kettle Moraine State Forest - Northern Unit
LEDPA	Least Environmentally Damaging Practicable Alternative
LF	linear foot
LIDAR	Light detection and ranging
LO	Lack of Objections
LOS	Level of Service, refers to the overall quality of traffic flow at an intersection or mainline section.
LS SDEIS	Limited Scope Supplemental Draft Environmental Impact Statement
LS SEIS	Limited Scope Supplemental Environmental Impact Statement
LS SFEIS	Limited Scope Supplemental Final Environmental Impact Statement
LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Fund
MOA	Memorandum of Agreement
MOVEs	Motor Vehicle Emission Simulator
mph	miles per hour
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MVEB	Motor Vehicle Emissions Budget
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NERTDM	Northeast Region Travel Demand Model
NHI	National Heritage Inventory
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
NLC	Noise Level Criteria
NLEB	Northern long-eared bat
NO	nitrogen oxide

Npfc	Not available for counties
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
PAC	Public Advisory Committee
Pb	lead
PCB	polychlorinated Biphenyls
PCN	Pre-Construction Notification
PM	particulate matter
RCUT	Restricted Crossing U-Turn
RI/RO	Right-in/Right-out
ROD	Record of Decision
ROR	Run-off-road
RTP	Regional Transportation Plan
SAMP	State Access Management Plan
SATP	Sheboygan Area Transportation Plan
SDEIS	Supplemental Draft Environmental Impact Statement
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	sulfur dioxide
STIP	Statewide Transportation Improvement Program
TAFIS	Traffic Analysis Forecasting Information System
TAZ	Traffic Analysis Zones
TCGP	Transportation Construction General Permit
Threatened Species	Species identified by either the state of federal government as likely to be in danger of becoming endangered in the foreseeable future
TEA-21	*Transportation Equity Act for the 21st Century*
THPO	Tribal Historic Preservation Officer
TIF	Tax Increment Financing
TIP	Transportation Improvement Program
TMP	Transportation Management Plan
TNM	Traffic Noise Model
TPC	Transportation Projects Committee
TSM	Transportation System Management
TSS	Total Suspended Solids
TWLTL	Two-Way Left-Turn Lane
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USDOI	United States Department of the Interior

USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UW	University of Wisconsin
VMT	vehicle miles traveled
VOC	Volatile Organic Compounds
vpd	vehicles per day
WDNR	Wisconsin Department of Natural Resources
WDOA	Wisconsin Department of Administration
WHS	Wisconsin Historical Society
WisDOT	Wisconsin Department of Transportation
WIS 23	Wisconsin State Highway 23
WPDES	Wisconsin Pollutant Discharge Elimination System
WPL	Wisconsin Power & Light
YOE	Year of Expenditure

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History

The Wisconsin State Highway (WIS) 23 study evaluates a 19.1-mile section of rural highway that spans from US 151 in Fond du Lac County to County P in Sheboygan County, Wisconsin. Evaluation of this portion of the WIS 23 corridor started in 2003 and extends through this document. Within that time the Wisconsin Department of Transportation (WisDOT) and Federal Highway Administration (FHWA) prepared and released Environmental Impact Statements and Supplemental Environmental Impact Statements. The following timeline summarizes key events in the study history.

October 1999	Wisconsin State Legislature enumerates WIS 23 as a major project and authorizes WisDOT to begin construction.[1]
November 2003	Notice of Intent published.
November 2004	WisDOT and FHWA release a Draft Environmental Impact Statement (DEIS) for the WIS 23 corridor.
December 2009	WisDOT and FHWA release a Supplemental DEIS (SDEIS) to address added alternative components such as multi-use path, interchanges, and access management measures.
June 2010	WisDOT and FHWA release a Final Environmental Impact Statement (FEIS) for the WIS 23 corridor.
September 2010	WisDOT and FHWA issue a Record of Decision (ROD) for WIS 23 project; selecting a 4-lane expansion (Preferred Alternative) for implementation.
June 2011	1,000 Friends of Wisconsin files a complaint against WisDOT and the US Department of Transportation in the US District Court, Eastern District of Wisconsin.
July 2013	WisDOT and FHWA release a Limited Scope SDEIS (LS SDEIS) that identified 4-lane expansion as the Preferred Alternative.
March 2014	WisDOT and FHWA release a combined Limited Scope SFEIS/ROD. The Limited Scope SFEIS identified 4-lane expansion as the Preferred Alternative. The ROD selects a 4-lane expansion as the Preferred Alternative.
August 2014	1,000 Friends of Wisconsin file an amended complaint.
May 2015	US District Court, Eastern District of Wisconsin vacates WIS 23 ROD.
May 2015	WisDOT cancels let construction project.
April 2016	WisDOT and FHWA's request to reinstate ROD is denied.
November 2016	WisDOT appeals and argues before US Court of Appeals, 7th Circuit to reinstate ROD.
June 2017	US Court of Appeals, 7th Circuit dismisses appeal for jurisdictional reasons.
August 29, 2017	WisDOT and FHWA publish Notice of Intent to prepare a new LS SEIS.
May 18, 2018	WisDOT and FHWA sign a LS SDEIS that identifies the Preferred Alternative as the 4-lane On-alignment Alternative with Corridor Preservation.
June 1, 2018	Notice of Availability of LS SDEIS published in the Federal Register.
June 19, 2018	Public hearing held on LS SDEIS.

[1] Wisconsin State Statute 84.013(3)(ra)

October 2018	WisDOT and FHWA release a combined LS SFEIS/ROD. The LS SFEIS identifies the Preferred Alternative as the 4-lane On-alignment Alternative with Corridor Preservation. The ROD selects the 4-lane On-alignment Alternative with Corridor Preservation.

Purpose

WisDOT and FHWA are preparing this new 2018 LS SEIS to evaluate and provide additional analysis on new or changed impacts since the March 2014 LS SFEIS. This 2018 LS SEIS will:

- Update and explain the methodology used to develop the traffic forecasts.
- Explain the role of demographic data in traffic forecasts.
- Update crash data and analysis to follow a new format.
- Address new or changed impacts to the human and natural environment since the March 2014 LS SFEIS.
- Review the evaluation of reasonable alternatives in light of updated traffic, demographic, crash, and environmental data.

While this is a LS SEIS, it will contain the same level of analysis and format as a regularly prepared EIS. This 2018 LS SEIS will incorporate analysis and decisions made in the 2014 LS SFEIS by reference. Specifically, this 2018 LS SEIS will adopt the following decisions of the 2014 LS SFEIS:

- Eliminating the off-existing alignment highway alternatives from further consideration.
- Eliminating the Transportation System Management alternative from further consideration.
- Eliminating the Transit alternative from further consideration.
- Eliminating the reconstruction of the existing 2-lane highway from further consideration.
- Selecting the No Corridor Preservation Alternative for the US 151/WIS 23 interchange.

The analyses and decisions for these adopted solutions can be reviewed at the following web link: http://wisconsindot.gov/Pages/projects/by-region/ne/wis23exp/enviro.aspx

The Purpose and Need for this project remains the same with updated information. This 2018 LS SEIS re-evaluates the range of reasonable alternatives. In the 2014 LS SFEIS two-lane alternatives with passing lanes as well as a Hybrid 2- and 4-lane alternative were evaluated and eliminated from consideration because they did not satisfy the project Purpose and Need. Updated 2017 traffic counts and traffic forecasts, prepared in 2018, that are lower than those used in the 2014 LS SFEIS now allow two-lane alternatives with passing lanes to partially satisfy the project Purpose and Need. While they do not fully satisfy the Purpose and Need, they are carried forward for detailed evaluation, as is the No-Build Alternative, in the Environmental Consequences section of this document to provide a comparison to the 4-lane On-alignment Alternative.

Regulatory Authority

FHWA is the federal lead agency for this LS SEIS under the National Environmental Policy Act of 1970. WisDOT is the state lead agency and is preparing the environmental document in consultation with FHWA.

Because this is a limited scope supplemental environmental document, scoping is not required according to 23 CFR 771.130(d). While scoping is not required, WisDOT and FHWA have coordinated with local, state, and federal agencies as well as the public in the preparation of this LS SEIS. These efforts have included:

- An Agency Coordination Meeting October 10, 2017.
- A Local Officials Meeting October 12, 2017.

- A Public Involvement Meeting October 12, 2017.
- An Indirect and Cumulative Effects Workshop with Local Land Use Experts on October 24, 2017.
- A Public Hearing on June 19, 2018.
- An Agency Coordination Meeting on July 19, 2018.
- An Agency Coordination Meeting on August 16, 2018
- Correspondence with State and Federal Agencies
- Correspondence with Native American Tribes.

This coordination identified issues to be addressed as well as developing the range of alternatives in accordance with 23 CFR 771.123.

The planning, agency coordination, public involvement, and impact evaluation for the project have been conducted in accordance with the National Environmental Policy Act (NEPA), the Clean Water Act, Executive Orders regarding wetland and floodplain protection, the Fish and Wildlife Coordination Act, the Migratory Bird Treaty Act, the Executive Order on Environmental Justice 12898, the National Historic Preservation Act of 1966, and other state and federal laws, executive orders, policies, and procedures for environmental impact analyses and preparation of environmental documents.

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EXECUTIVE SUMMARY

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The Executive Summary briefly describes the Purpose and Need, the Alternatives considered, and the impacts associated with the Alternatives. This Executive Summary is different from the 2014 Limited Scope Supplemental Final Environmental Impact Statement (LS SFEIS) in that:

- The Purpose and Need remains the same but has been updated to reflect more recent information.
- It does not summarize Alternatives that are dismissed through the adoption of decisions made in the 2014 LS SFEIS. These include the 4-lane Off-alignment Alternatives, Transportation System Management, the Transit Alternative, reconstruction of the existing 2-lane Highway, and the Corridor Preservation Alternative associated with the WIS 23/US 151 connection.
- It includes a description and analysis of build alternatives other than the 4-lane On-alignment Alternative, including the Passing Lane Alternative and Hybrid (4-lane and 2-lane) Alternative.
- The crash analysis has been updated and follows a new format.

Yellow highlight signifies updates since the May 2018 Limited Scope Supplemental Draft Environmental Impact Statement (LS SDEIS). Minor changes to grammar, punctuation, and usage are not highlighted. Highlighting of a figure or table title signifies updated or new information.

ES.1 DOCUMENT BASIS AND DESCRIPTION

The Wisconsin State Highway (WIS) 23 study started in 2003 and extends through this document. Within that time, the Wisconsin Department of Transportation (WisDOT) and Federal Highway Administration (FHWA) prepared and released Environmental Impact Statements and Supplemental Environmental Impact Statements. WisDOT and FHWA have prepared this new 2018 LS SEIS to evaluate and provide additional analysis on new or changed impacts since the March 2014 LS SFEIS. This 2018 LS SEIS will:

- Update and explain the methodology used to develop the traffic forecasts.
- Explain the role of demographic data in traffic forecasts.
- Update crash data and analysis to follow a new format.
- Address new or changed impacts to the human and natural environment since the March 2014 LS SFEIS.
- Review the evaluation of reasonable alternatives in light of updated demographic, traffic, crash, and environmental data.

This 2018 LS SEIS was prepared in accordance with Title 23, Part 771.130 of the Code of Federal Regulations. It will incorporate analysis and decisions made in the 2014 LS SFEIS by reference.

ES.2 LOCATION AND DESCRIPTION OF EXISTING FACILITY

The WIS 23 study evaluates a 19.1-mile section of rural highway that spans from US Highway 151 (US 151) in Fond du Lac County to County P in Sheboygan County, Wisconsin. Figure ES.2-1 shows the project limits.

Except for the western 1-mile 4-lane section, the majority of WIS 23 is a rural 2-lane highway with a posted speed of 55 miles per hour (mph). The 2018 LS SEIS study corridor begins at the US 151/WIS 23 interchange, on the east side of the city of Fond du Lac. The highway then extends 19.1 miles east to County P on the northwest side of the city of Plymouth. East of County P to WIS 67 in the city of Plymouth, WIS 23 was expanded to four lanes in 2004 and 2005. WIS 23 from WIS 67 to I-43 in the city of Sheboygan was previously expanded to four lanes. This leaves the Fond du Lac to Plymouth section as the remaining 2-lane segment between US 151 in the city of Fond du Lac and I-43 in the city of Sheboygan.

The project limits represent logical termini, spanning from one major US Highway (US 151) to a County Highway (County P) where the existing 4-lane WIS 23 begins. The 19.1-mile corridor is also of sufficient length to address environmental matters on a broad scope. The study corridor and range of alternatives being evaluated also have independent utility. The improvements would provide benefits that are usable to WIS 23 travelers even if no other transportation improvements are made in the surrounding area.

Figure ES.2-1 2018 LS SEIS Study Limits

ES.3 PROJECT PURPOSE AND NEED

A. Project Objectives

Objectives for a proposed action on WIS 23 include the following:

- Preserve the corridor for future transportation needs by coordinating local governmental land use plans with transportation improvement plans. These plans include nonmotorized transportation accommodations. Proper planning will help alleviate development pressures on WIS 23 while addressing environmental issues for the future highway project.
- Provide a safe and dependable highway connection to and from regional communities while reducing conflicts between local and through traffic.
- Improve the highway facility to meet the current design standards for this Connector route in Corridors 2030, part of the *Connections 2030 Statewide Long-Range Transportation Plan.*[1]
- Provide system continuity between the city of Sheboygan and the city of Fond du Lac. WIS 23 is a major east-west connecting highway between these population centers of east central Wisconsin.
- Improve safety at intersections, private driveways, and farm crossings.
- Increase the mobility by adding capacity [i.e., to provide appropriate and effective Level of Service (LOS)[2]] and minimizing public and private access.
- Improve the operational efficiency of the WIS 23 corridor, appropriate for the highway's function as a Corridors 2030 Connector route, promoting regional and statewide economic development.
- Maintain a rural highway-type facility while addressing the increased traffic needs of the expanding urban areas.
- Provide accommodations for nonmotorized transportation.
- Preserve right of way needed for future grade separations and interchanges so future safety improvements are easily implemented.

[1] The *Connections 2030 Long Range Transportation Plan* includes Corridors 2030, the identification of a series of system-level priority corridors that are critical to Wisconsin's travel patterns and support the state's economy. WIS 23 is a Connector Route in Corridors 2030, part of the *Connections 2030 Statewide Long-Range Transportation Plan*. Additional information is available at: http://wisconsindot.gov/Pages/projects/multimodal/c2030-maps.aspx

[2] LOS is a measure of traffic congestion which ranges from A (excellent conditions) to F (extremely congested conditions)

B. Summary of Project Purpose and Need

The purpose of the WIS 23 project is to provide additional highway capacity (i.e., to provide appropriate and effective LOS) to service existing and projected traffic volumes and improve operational efficiency and safety for local and through traffic while avoiding or minimizing environmental effects. Needs that support this purpose include the following, which are discussed further in Section 1.3:

System Linkage and Route Importance–WIS 23 is a Connector route in Corridors 2030, part of the *Connections 2030 Statewide Long-Range Transportation Plan*. It is a rural principal arterial between the city of Fond du Lac and the city of Sheboygan and a major east-west connecting highway between these and other population centers of east central Wisconsin. The route is also a National Highway System (NHS) route and a major link between I-43 and I-41. WIS 23 is a state-designated long truck route. The 115-mile Connector route link from the Madison metropolitan area to the city of Sheboygan and nearby recreational areas travels on 4-lane divided expressways and freeways except for the 2-lane section of WIS 23 addressed in this document (see Figure ES.3-1). Of the 33 miles from US 151 in Fond du Lac to I-43 in Sheboygan, 15 miles are already a 4-lane divided expressway facility and the remaining 18 miles between County K and County P is a 2-lane roadway. As a Connector route and NHS route, WIS 23 should be upgraded in accordance with criteria to adequately serve the existing and planned future traffic of the highway in a manner that is conducive to safety, durability, and economy of maintenance.

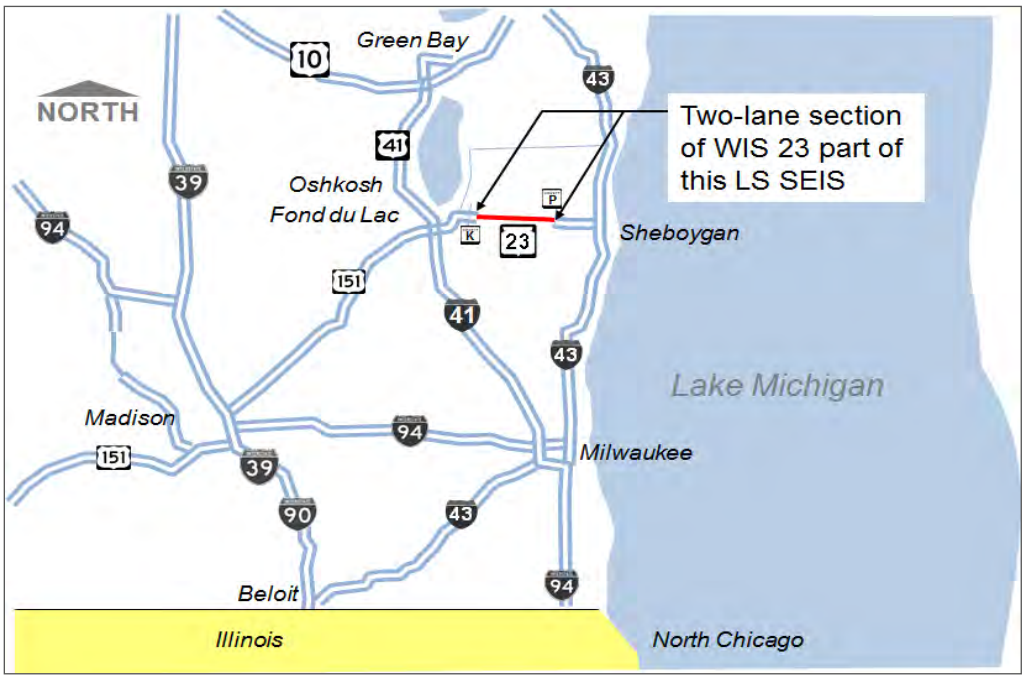

Figure ES.3-1 System Linkage

Transportation Demand and Regional Economic Development–WIS 23 provides a connection to numerous economic sectors within the east Wisconsin region. It helps connect east central Wisconsin to the Fox Valley, Green Bay, Milwaukee, and Madison, Wisconsin, and Chicago, Illinois, economic centers. The current roadway does not adequately meet the regional transportation needs of these economic sectors and decreases the region's competitiveness.

Legislative and Planning History–As a Corridors 2030 Connector route in the *Connections 2030 Statewide Long-Range Transportation Plan*, WIS 23 warrants increasing attention to mobility and safety. Because of this, in the 1999 biennial budget, the legislature enumerated WIS 23 as a major project. Authorization for a major project along the portion of WIS 23 from WIS 67 to US 41 in Sheboygan and Fond du Lac Counties is found in Wis. Stat. § 84.013(3)(ra).

Existing and Future Traffic Volumes and Resulting Operation–Roadway LOS is a measure of how well a highway serves the travel demands placed on it. LOS ranges from A to F in order of decreasing operational quality. Table ES.3-1 shows the 2017 daily traffic volumes and the LOS, numeric LOS, and percent time spent following another vehicle along WIS 23 during the peak hours of the day for the 2-lane portion of WIS 23.

Table ES.3-1 2017 Level of Service in 2-Lane Sections of WIS 23

	County UU to County G	County G to County P
Length	9.7 miles	8.0 miles
Westbound		
Weighted Average Daily Volume* (both directions, -vehicles per day) **2017**	7,140	7,640
% Time Spent Following	67.7%	66.3%
Numeric LOS	4.18	4.09
LOS	D	D
Eastbound		
Weighted Average Daily Volume* (both directions, -vehicles per day) **2017**	7,140	7,640
% Time Spent Following	67.5%	64.2%
Numeric LOS	4.17	3.95
LOS	D	C

This table divides the corridor into two sections because the 2017 volumes are slightly higher east of County G. Refer to Appendix A for more detail on segmentation and information on traffic analysis inputs.
*Weighted Average Daily Volume, needed for the traffic operations analysis, is the sum of all daily volumes multiplied by the length of highway they represent, divided by the total length of the analysis segment. Refer to Appendix A for sample calculations of the weighted average daily volume.

Table ES.3-2 provides the LOS for projected 2040 traffic volumes using a uniform peak hour.[3]

Table ES.3-2 Projected 2040 No-Build Level of Service in 2-Lane Sections of WIS 23

	County UU to County G	County G to County P
Length	9.7 miles	8.0 miles
Westbound		
Weighted Forecast Average Daily Volume* (both directions -vehicles per day) **2040**	7,610	7,810
% Time Spent Following	66.6%	64.9%
Numeric LOS	4.11	3.99#
LOS	D	C
Eastbound		
Weighted Forecast Average Daily Volume* (both directions -vehicles per day) **2040**	7,610	7,810
% Time Spent Following	66.3%	62.0%
Numeric LOS	4.09	3.80
LOS	D	C

*Weighted Forecast Average Daily Volume, needed for the traffic operations analysis, is the sum of all daily volumes multiplied by the length of highway they represent, divided by the total length of the analysis segment. Refer to Appendix A for sample calculations of the weighted forecast average daily volume.
The numeric LOS range for LOS C is 3.01 to 4.00, and for LOS D the range is 4.01 to 5.00. For County G to County P westbound, the 2040 No-Build LOS of 3.99 is just 0.02 away from LOS D.

[3] Within the four 15-minute periods of the peak hour, some periods have higher traffic volumes than others, and this is accounted for by using a peak hour factor. WisDOT policy is to account for peak hour traffic volume variations based on existing field data when performing traffic operations analysis for existing conditions. However, because it is difficult to predict how traffic volumes will vary within an hour in the future design year, WisDOT's Facilities Development Manual policy assumes uniform traffic volumes throughout the hour for the future design year. The combination of the small increase in the weighted forecast average daily volumes (2 to 7 percent) and the uniform distribution of volumes within the peak hour contributes to a projected 2040 LOS that will be about the same or slightly better than the LOS calculated for 2017 (0.08 to 0.15 difference in numeric LOS). See Appendix A.

According to WisDOT policy, the desired LOS is C (or at or below the numeric LOS of 4.0) for a Corridors 2030 Connector route in rural or small urban areas.[4] These thresholds are based on a balance of social, environmental, and dollar costs and may not match with every traveler's perception of when congestion warrants roadway improvements. Portions of WIS 23 have traffic operations that warrant consideration of capacity expansion.

Existing Highway Geometric Characteristics–The geometrics of existing WIS 23 generally fall within WisDOT design standards but there are some substandard features in various locations. These include substandard shoulder width adjacent to the westbound climbing lane at the east end of the project, substandard horizontal sight distance northbound along County G for trucks turning left onto WIS 23, a substandard intersection angle at Pit Road, and two locations of substandard grade.[5] Much of the route is marked for no passing and when passing zones are available, opposing traffic volumes reduce passing opportunities. Reduced passing opportunities negatively affect mainline LOS.

Access–The high number of access points impacts both highway safety and mobility. WIS 23 has greater numbers of driveway and side-road access than what is desired for a rural principal arterial. Local traffic and farm machinery enter and exit the highway from approximately 235 county and local roads, private driveways, and field access points.[6]

Safety–While the overall WIS 23 crash rate is below the statewide average for a 2-lane rural state trunk highway, some sections, particularly near high use intersections, experience higher than average crash rates. The area westbound from Whispering Springs Boulevard to County K and the area from 7 Hills Road to County W/Loehr Road experience fatal and injury crash rates higher than the state average. From 2013 to 2017 there were 58 crashes involving vehicles crossing the highway centerline. On high priority corridors such as WIS 23, it is desirable to reduce as many risk factors as possible that contribute to crashes, particularly at intersections.

Nonmotorized Travel Accommodations–Currently, there are no good east-west routes or accommodations on WIS 23 for nonmotorized travel between Fond du Lac's Prairie Trail and Sheboygan County's Old Plank Road Trail. Additionally, WIS 23 provides one of the few crossings of the Sheboygan River and other topographic features, yet there is a 16-mile gap on WIS 23 where separated pedestrian and bicycle facilities are not provided.

ES.4 ALTERNATIVES

This 2018 LS SEIS re-evaluated the range of reasonable alternatives in light of current socio-economic data, crash data, and updated traffic forecasts. Because of this updated information, two alternatives that were previously dismissed in the 2014 LS SFEIS (Passing Lane and Hybrid Alternatives) satisfy more of the Purpose and Need evaluation criteria, specifically criteria related to traffic operations. These two alternatives do not satisfy all of the Purpose and Need evaluation criteria, yet they are brought forward for detailed evaluation in this 2018 LS SEIS to provide lower impact alternatives for comparison to the 4-lane On-alignment Alternative. See Section ES.4-E for discussion of the Purpose and Need evaluation criteria.

A. No-Build Alternative

The No-Build Alternative involves the continued use of the existing WIS 23 without reconstruction or enhancements of the existing roadway. It includes the active and programmed WIS 23 resurfacing projects in Fond du Lac County (US 151 to County UU) and Sheboygan County (Division Road to

[4] Facilities Development Manual 11-5-3.2.1 Congestion and Facility LOS. Accessed March 23, 2018.
[5] Facilities Development Manual 11-10.5.4.1 for vertical grades. The minimum grade on roadways with rural cross sections is 0.0 percent (i.e. flat) except in areas of superelevation transition and other areas with pavement rotation. In areas of superelevation transition and other areas with pavement rotation, the combination of a flat longitudinal grade with a flat cross-slope results in pavement surface drainage problems. Provide a minimum grade in these areas based on AASHTO guidance for "Minimum Transition Grades". Accessed September 10, 2018.
[6] The recent acquisitions result in a net change of 3 fewer access points along the corridor, or a revised total of 232 access points along WIS 23. See Section 1.3.F for more discussion on existing access points.

County P). Although substandard roadway features are present in several locations and would require Design Exceptions to Standards, as noted in Section 1.3.E, they are not anticipated to impact the safety or operations of the roadway and would remain. Figure ES.4-1 schematically illustrates the No-Build Alternative.

Because this alternative does not satisfy the Purpose and Need, it was eliminated from consideration. The No-Build Alternative is still carried forward in the document as a baseline for comparison in accordance with 40 CFR 1502.14(d). See Section 2.2 for more discussion on the No-Build Alternative.

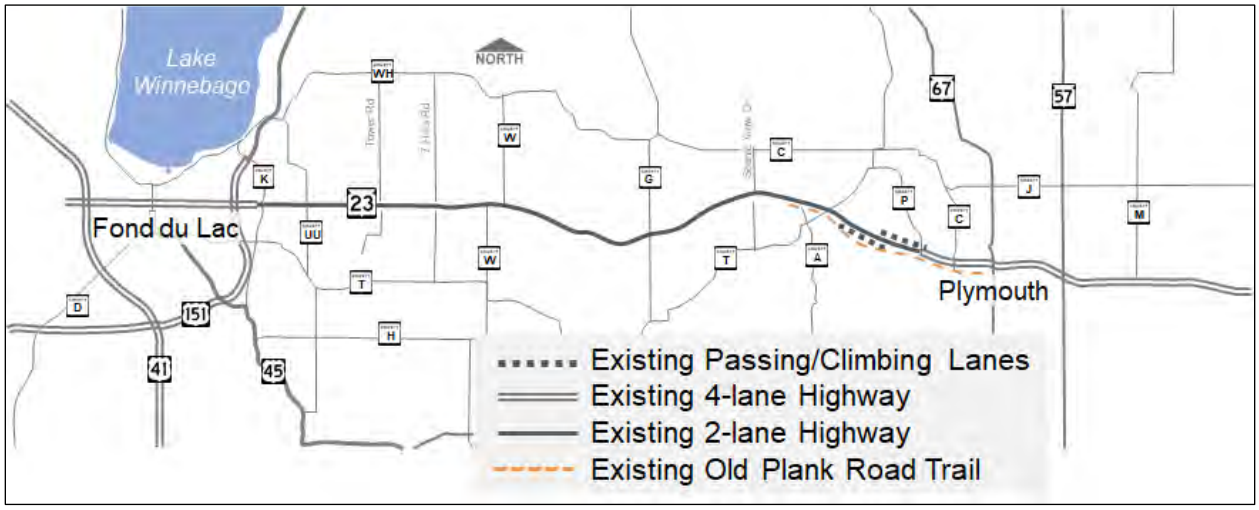

Figure ES.4-1 No-Build Alternative

B. Passing Lane Alternative

1. Passing Lane Alternative

WIS 23 is not designated as a passing lane corridor[7] in WisDOT's Facilities Development Manual (FDM), yet the weighted forecast average daily volume combined with other roadway attributes indicate design-hour volumes are within the thresholds for considering passing lanes based on FDM policy.[8] The Passing Lane Alternative installs two passing lanes in the eastbound direction and two passing lanes in the westbound direction to complement the existing eastbound and westbound climbing lanes between County A and County P in Sheboygan County. Posted speeds along WIS 23 would not be modified in this alternative. Figure ES.4-2 schematically illustrates the Passing Lane Alternative.

[7] Passing lane corridors are specified in the WisDOT FDM 11-15-10, Attachment 10.1 which shows a map of the Wisconsin roadways that are considered passing lane corridors.
[8] FDM 11-15, Attachment 10.2 Warrant for Considering Passing Lanes. WIS 23 assumptions: level terrain; K100=710 to 757 vph; Trucks=13% [from field data (PM peak); minimum assumptions, daily range is 22 to 26%], accessed May 11, 2018.

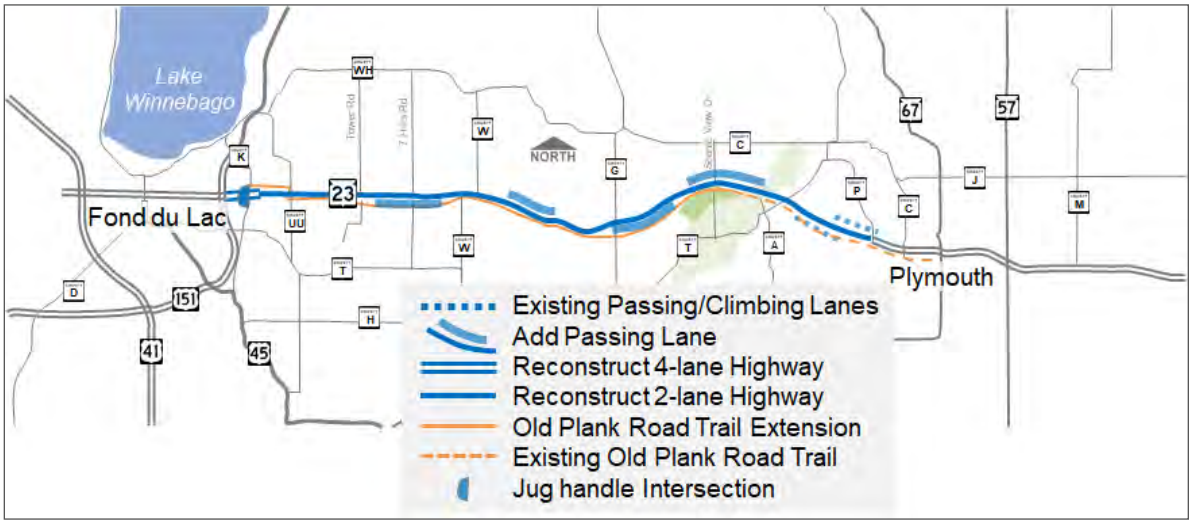

Figure ES.4-2 Passing Lane Alternative

The Passing Lane Alternative would generally, but not fully, meet design standards. Design Exceptions to Standards for grade would be required in two locations along the corridor, as noted in Table 1.3-3, because the existing substandard grades present would not be improved as part of the Passing Lane Alternative. Approval of Design Exceptions to Standards for grade is not anticipated to substantially impact the safety or operations of the roadway under this alternative and meeting the design standards for grade would result in substantial impacts to the natural environment and increased project costs. Justification of design exceptions is typical when building to full standards would result in only minor incremental benefits and the associated environmental impacts and costs would be substantial. Locations where the roadway grade is flat and will not meet the recommended minimum grade, while not requiring Design Exception to Standards, are also identified in the Design Exception to Standards reports. The other substandard items, the sight distance for northbound trucks turning left onto WIS 23 at County G and the intersection angle for Pit Road, will be documented in the Design Study Report during final design.

There are two sub-options with the Passing Lane Alternative: one that installs left-turn lanes at higher volume intersections and one that does not. The Passing Lane Alternative without left-turn lanes would upgrade side-road intersections with the intersection type recommended in WisDOT's FDM. However, under this alternative, left-turn lanes that would facilitate turning movements at higher volume intersections on WIS 23, would not be provided as part of the intersection upgrades because they would decrease the amount of roadway available for passing.[9]

The Passing Lane Alternative sub-option with left-turn lanes adds left-turn lanes on WIS 23 at ten higher volume intersections. The left-turn lane provides a refuge for left-turning vehicles, removing them from exposure to the through travel stream. The left-turn lane also adds a median area so that side road traffic can make a left turn onto WIS 23 as a two-stage maneuver. Adding the left-turn refuge increases safety at intersections but decreases the amount of roadway that is available for passing.

The Passing Lane Alternative would install a roundabout intersection at the Wisconsin American Drive intersection with WIS 23 in the city of Fond du Lac. It would also install a new jughandle intersection at County K to address crashes and higher traffic volumes at this intersection. The jughandle intersection may incorporate roundabouts and would have a grade separation with bridges that carry WIS 23 traffic over County K. This intersection treatment is shown in Figure 2.3-4.

[9] Providing left-turn lanes requires the installation of a median for a portion of the highway, reducing the ability to pass in these locations.

The Passing Lane Alternative would extend the Old Plank Road Trail, a multi-use path, from where it currently ends near the Northern Unit of the Kettle Moraine State Forest (KMSF-NU) in Sheboygan County, west to the Prairie Trail in Fond du Lac.[10] The section of the trail from the Prairie Trail to 2.5 miles east of County UU would be located on the north side of the WIS 23. Between Tower Road and Poplar Road, the trail would cross to the south side of WIS 23 through a grade-separated underpass. From that point east until it connects with the existing Old Plank Road Trail, near Plymouth, the Old Plank Road Trail extension would travel on the south side of WIS 23.

The Passing Lane Alternative would also include a grade-separated crossing (underpass) for the Ice Age Trail (IAT). The IAT and the State Equestrian Trail are joined as they cross WIS 23 at the Kettle Moraine State Forest. A snowmobile trail also crosses WIS 23 at this location. The IAT is one of only eight National Scenic Trails, and Wisconsin's only scenic trail. Because the IAT and State Equestrian Trail cross perpendicular to WIS 23 and the Kettle Moraine State Forest is located on both sides of WIS 23, there is no opportunity to avoid the trails. To address this crossing need, WisDOT would install a grade-separated underpass providing a clear width of 20 feet and a vertical clearance of 12 feet for the combined trails. This crossing was negotiated with National Park Service as part of the Section 6(f) conversion request in the 2014 LS SFEIS. This commitment remains in effect. This new crossing is shown in Figure ES.4-3.

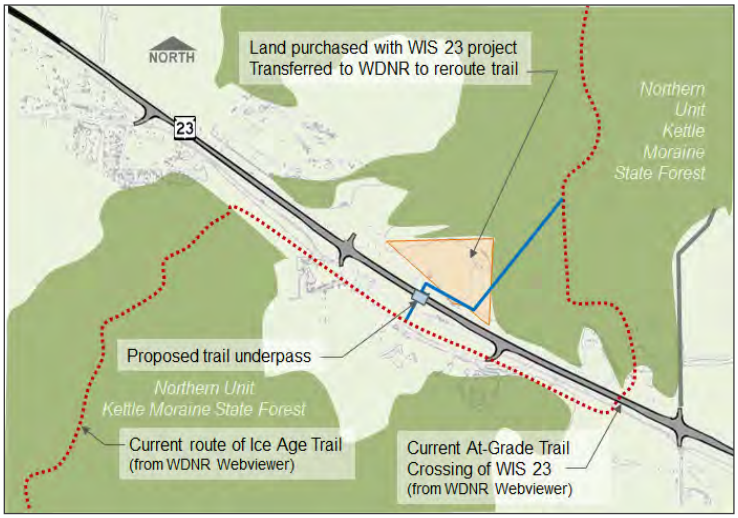

Figure ES.4-3 Ice Age Trail Treatments

See Section 2.3.A for more discussion on the Passing Lane Alternative.

2. Corridor Preservation Associated with Passing Lane Alternative

Corridor preservation seeks to preserve right of way for transportation improvements that are likely to be needed in the future. The preservation most often takes the form of official mapping, either by the local jurisdiction or by WisDOT. In mapping the areas likely to be needed for future transportation improvements, development within those areas can be minimized or avoided. This reduces costs for WisDOT, which would have to purchase those land improvements if the proposed transportation improvement is implemented. It also reduces impacts to property owners, who would have to replace or relocate investments on their property if possible future transportation improvements were implemented. In Wis. Stat. § 84.295(10), WisDOT is given the authority to establish locations and right-of-way widths for future freeways or expressways. Properties within the mapped areas are not impacted by the act of preservation, except that property owners wishing to erect or alter a structure within that mapped right of way must give WisDOT a 60-day notice before beginning that construction. If WisDOT receives a notice, they will either acquire the property or approve the construction to move forward. If approval is given and in the future WisDOT determines transportation improvements are needed within the preserved area, the property owner will be compensated as part of the normal WisDOT acquisition process. The statute also states that if notice is not given to WisDOT, compensation will not be made by WisDOT for structure improvements occurring within the corridor preservation area. In the future, if WisDOT determines that transportation improvements are

[10] For the Passing Lane Alternative, the Old Plank Road Trail is located to minimize right-of-way requirements. If in the future the Passing Lane Alternative were expanded to 4-lanes, about 12 miles of the Old Plank Road Trail would need to be reconstructed.

needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs.

Corridor preservation associated with the Passing Lane Alternative consists of preserving the right of way needed for possible future expansion of WIS 23 to a 4-lane roadway. It designates WIS 23 as a future Freeway/Expressway under Wis. Stat. § 84.295(10). Corridor preservation would also preserve right of way for possible future access modifications and improvements for future overpasses and interchanges. Any future improvements within preserved/mapped areas require environmental analysis and documentation to evaluate a range of alternatives and associated impacts and costs, in accordance with applicable laws and regulations.

Figure ES.4-4 schematically illustrates the corridor preservation measures associated with the Passing Lane Alternative. As noted earlier, additional environmental documentation would need to be completed prior to the implementation of improvements within the preserved/mapped areas. See Section 2.3.B for more discussion on the Corridor Preservation Associated with Passing Lane Alternative.

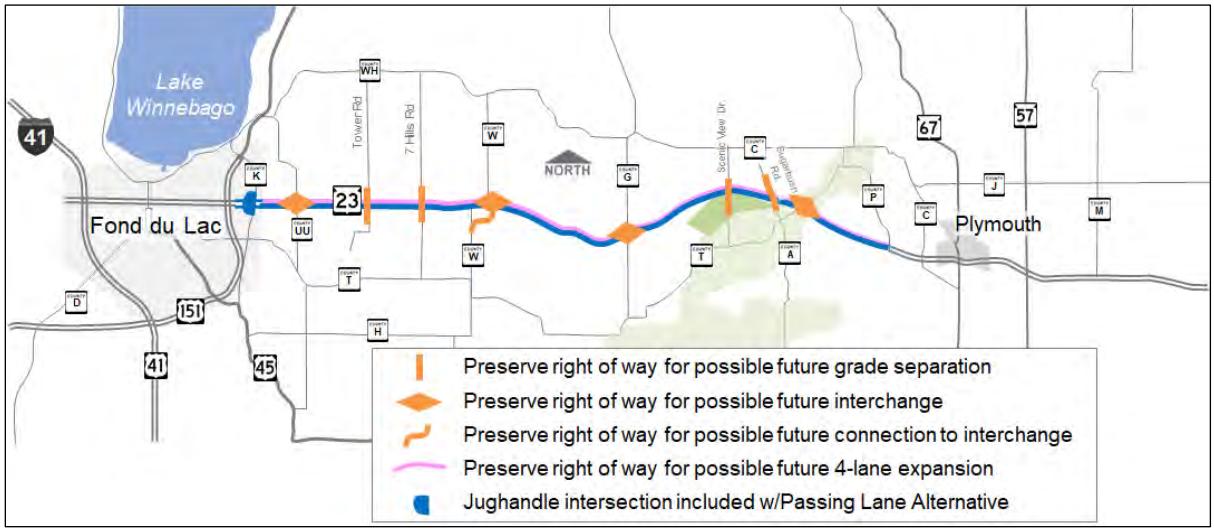

Figure ES.4-4 Corridor Preservation Associated with Passing Lane Alternative

C. Hybrid Alternative

1. Hybrid Alternative

The Hybrid Alternative provides a 4-lane divided highway for approximately 12 miles from US 151 to County G, and a 2-lane roadway with passing lanes and left-turn lanes for approximately 7 miles from County G to County P. Posted speeds along WIS 23 would not be modified in this alternative.

With this alternative, the eastbound passing lane east of County G is combined with the County G interchange on-ramp. Figure ES.4-5 schematically illustrates this alternative.

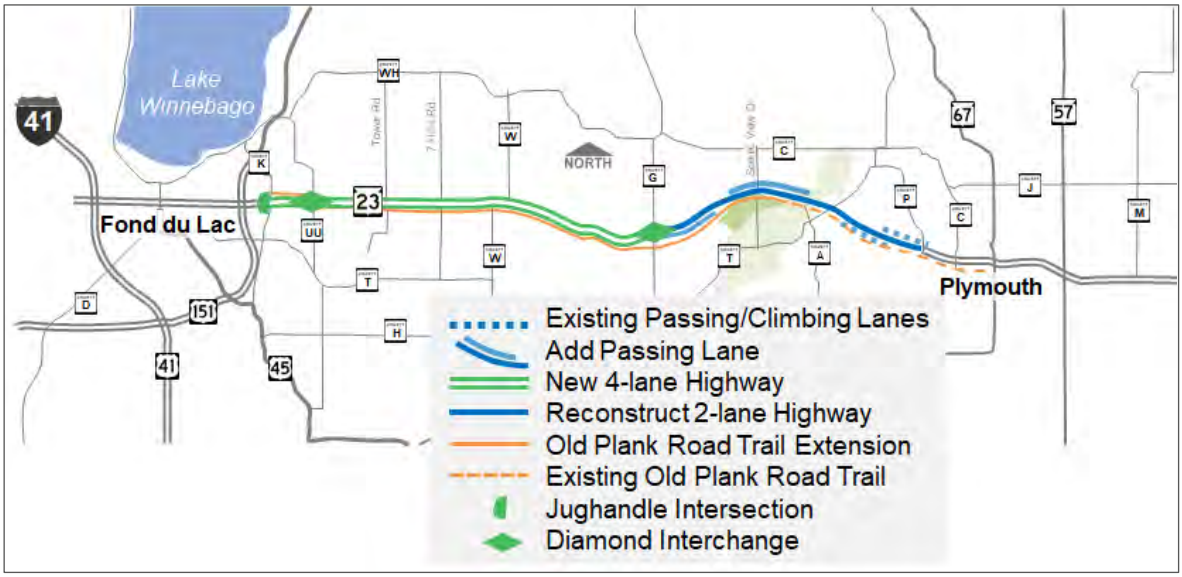

Figure ES.4-5 Hybrid Alternative–4 Lanes from US 151 to County G, 2 Lanes from County G to County P

The Hybrid Alternative would generally, but not fully, meet design standards. The proposed interchange at County G would address the substandard horizontal sight distance along northbound County G for trucks turning left onto WIS 23. Design Exceptions to Standards for grade would be required in two locations along the corridor, as noted in Table 1.3-3, because the existing substandard grades present would not be improved as part of the Hybrid Alternative. Approval of Design Exceptions to Standards for grade is not anticipated to impact the safety or operations of the roadway under this alternative and meeting the design standards for grade would result in substantial impacts to the natural environment and increased project costs. Justification of design exceptions is typical when building to full standards would result in only minor incremental benefits and the associated environmental impacts and costs would be substantial. Locations where the roadway grade is flat and will not meet the recommended minimum grade, while not requiring Design Exception to Standards, are also identified in the Design Exception to Standards reports. The substandard intersection angle for Pit Road will be documented in the Design Study Report during final design.

The Hybrid Alternative has a roundabout intersection at Wisconsin American Drive and a jughandle intersection at County K. The jughandle intersection may incorporate roundabouts and would have a grade separation with bridges that carry WIS 23 traffic over County K. This intersection treatment is shown in Figure 2.3-4. The Old Plank Road Trail extension would span from US 151 to the existing Old Plank Road Trail west of the city of Plymouth.

The Hybrid Alternative also installs a diamond interchange at County UU with County UU passing over WIS 23. This interchange may incorporate roundabouts at the ramp terminals and includes access roads that connect to adjacent property and a park and ride lot that connects with the Old Plank Road Trail extension. With the Hybrid Alternative, the Old Plank Road Trail would cross from the north to the south side of WIS 23 on County UU at the interchange.

The Hybrid Alternative also includes a diamond interchange at County G. The interchange may incorporate roundabouts at the ramp terminals and includes a park and ride lot in the southeast quadrant, as well as an access road to connect to adjacent properties.

Figure ES.4-6 RCUT Layout

The Hybrid Alternative makes access modifications in the 4-lane portion of the alternative. These access modifications include the installation of a Restricted Crossing U-Turn (RCUT), also known as a J-turn, at several high-volume intersections. The RCUT intersection design only allows right-in/right-out/left-in movements and removes most hazardous movements from the intersection. Lighting is installed at U-turn locations with rural RCUT intersections. Drivers that want to turn left or travel across WIS 23 from a side road must take a right and then make a U-turn at an appropriate distance from the intersection. The RCUT concept is shown in Figure ES.4-6.

See Section 2.4.A for more discussion on the Hybrid Alternative.

2. Corridor Preservation Associated with Hybrid Alternative

Corridor preservation associated with the Hybrid Alternative preserves right of way for possible future transportation improvements, as discussed with corridor preservation for the Passing Lane Alternative. It includes preserving right of way needed to expand the WIS 23 section from County G to County P to a 4-lane roadway and provide access modifications to convert WIS 23 to an expressway. In the future, if WisDOT determines that transportation improvements are needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs. Figure ES.4-7 schematically illustrates the corridor preservation associated with the Hybrid Alternative. See Section 2.4.B for more discussion on the Corridor Preservation Associated with Hybrid Alternative.

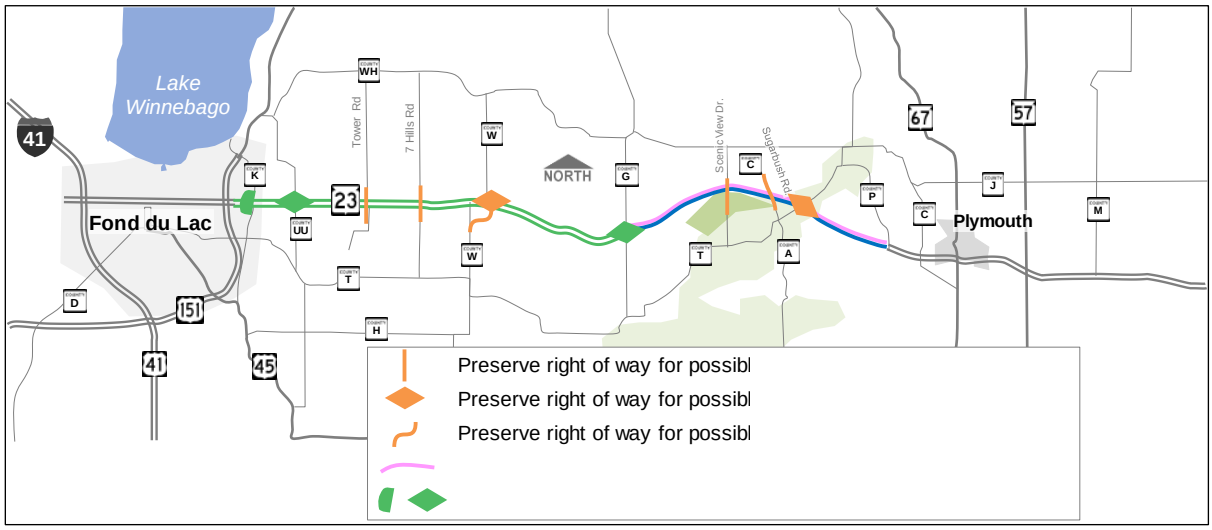

Figure ES.4-7 Corridor Preservation Associated with Hybrid Alternative

D. 4-lane On-alignment Alternative

1. 4-lane On-alignment Alternative

The 4-lane On-alignment Alternative evaluated in this document was the Preferred Alternative in the 2014 LS SFEIS. This alternative would provide a 4-lane divided highway on the existing alignment for the full length of the project. Like the Hybrid Alternative, it includes the roundabout at Wisconsin American Drive, the County K jughandle intersection, and diamond interchanges at County UU and County G. As discussed with the Hybrid Alternative, roundabouts may be incorporated with the County K jughandle intersection and the County UU and County G interchange ramp terminals and RCUTs are proposed at nine intersections. The County K jughandle intersection treatment is shown in Figure 2.3-4. The 4-lane On-alignment Alternative also includes the Old Plank Road Trail extension that extends from US 151 to the existing Old Plank Road Trail just west of Plymouth. The trail would cross from north to south of WIS 23 on County UU at the interchange, the same crossing as with the Hybrid Alternative. Figure ES.4-8 schematically illustrates the 4-lane On-alignment Alternative.

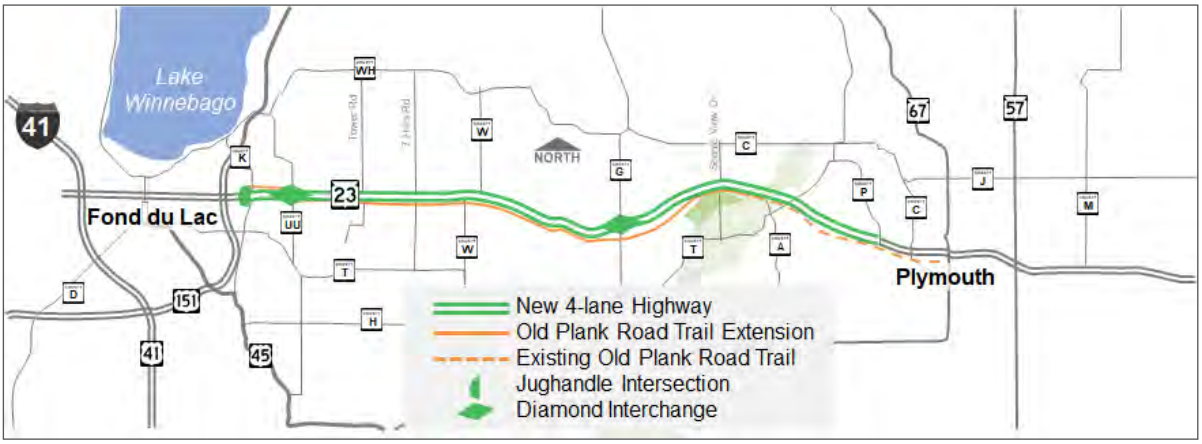

Figure ES.4-8 4-lane On-alignment Alternative

From US 151 to County UU, the 4-lane On-alignment typical section would include four 12-foot lanes, 8-foot inside shoulders, 10-foot outside shoulders, and a 16-foot median with mountable curb. The outside edges may flow into either a rural section with a ditch or use mountable curb and gutter. The posted speed for this section of roadway will be 45 mph. Figure ES.4-9 illustrates this cross section.

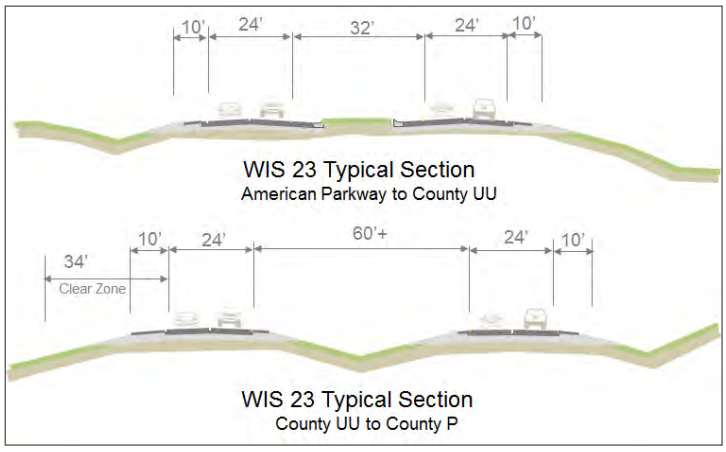

Figure ES.4-9 4-lane On-alignment Typical Sections

From County UU east to County P in Sheboygan County, WIS 23 has a typical expressway cross section. This includes four 12-foot lanes, 6-foot inside shoulders, 10-foot outside shoulders, and a 60-foot median. Generally, the existing roadbed will carry the eastbound lanes, and the westbound lanes will be constructed north of the existing roadway. The exception to this is between County W and Division Street, where the new lanes will be south of the existing roadbed. Figure ES.4-9 illustrates this cross section.

The 4-lane On-alignment Alternative would generally, but not fully, meet design standards. The proposed interchange at County G would address the substandard horizontal sight distance along northbound County G for trucks turning left onto WIS 23. Design Exceptions to Standards for grade have been approved for the various locations of substandard grades along the corridor, as noted in Table 1.3-3, because the proposed design grades are the same as the existing grades. Locations where the roadway grade is flat and will not meet the recommended minimum grade, while not requiring Design Exception to Standards, are also identified in the Design Exception to Standards reports.

The Design Exceptions to Standards were approved because they are not anticipated to substantially impact the safety or operations of the roadway and meeting the design standards for grade would result in substantial impacts to the natural environment and increased project costs. Justification of design exceptions is typical when building to full standards would result in only minor incremental benefits and the associated environmental impacts and costs would be substantial. The substandard intersection angle for Pit Road will be documented in the Design Study Report during final design.

The 4-lane On-alignment Alternative was designed to a 70-mph design speed (typically 5 mph above the posted speed). As a result of the design and expressway designation the facility will be posted at 65 mph, similar to portions of WIS 23 east of the study limits and other nearby 4-lane expressways such as US 151 between Columbus and Fond du Lac.[11] Wis. Stat. § 345.57(4) defines Wisconsin's fixed speed limits related to expressway designation.

See Section 2.5.A for more discussion on the 4-lane On-alignment Alternative.

2. Corridor Preservation Associated with 4-lane On-alignment Alternative

The corridor preservation for 4-lane On-alignment Alternative includes preserving right of way for interchanges at County W and County A, and overpasses at Tower Road, 7 Hills Road, Scenic View Drive, and Sugarbush Road. In the future, if WisDOT determines that transportation improvements are needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs. Figure ES.4-10 schematically illustrates the corridor preservation associated with the 4-lane On-alignment Alternative. See Section 2.5.B for more discussion on the Corridor Preservation Associated with 4-lane On-alignment Alternative.

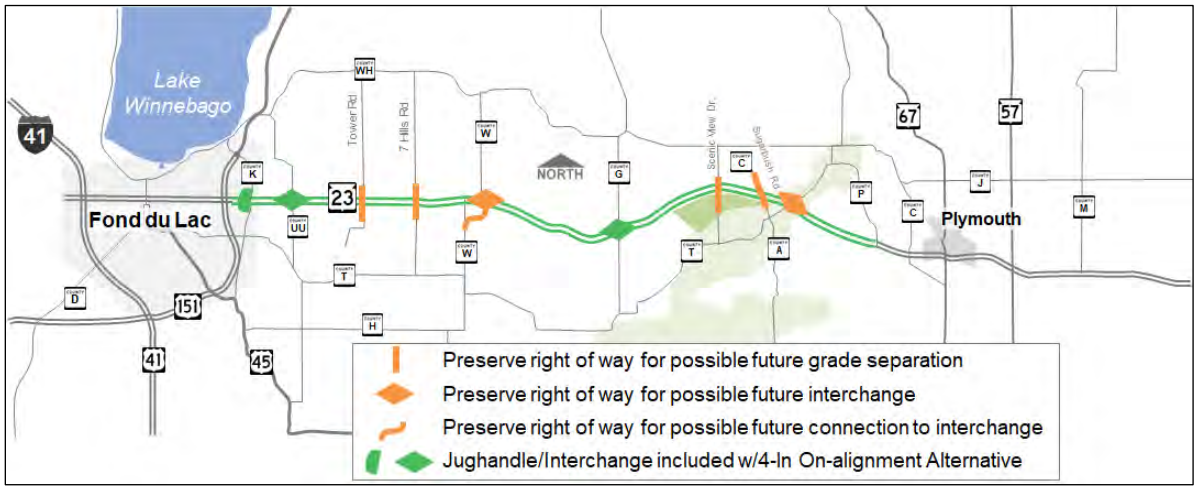

Figure ES.4-10 Corridor Preservation Associated with 4-lane On-alignment Alternative

[11] The urbanized segment on the west end of the corridor will be posted at 45 mph, the same as existing. Any other areas of posted speed limits below 65 mph will be determined during final design.

E. Preferred Alternative

WisDOT and FHWA identified a preferred alternative in the 2018 LS SDEIS. WisDOT and FHWA reviewed public and agency input from the public hearing and availability period on the 2018 LS SDEIS and confirmed the preferred alternative in the 2018 LS SFEIS (with agency concurrence). The 2018 ROD identifies the Selected Alternative.

During the process of identification of a preferred alternative prior to the release of the 2018 LS SDEIS, fifteen different evaluation criteria pertinent to the WIS 23 corridor were considered. The evaluation criteria were developed to:

- Determine how well each alternative met the eight purpose and need factors, which are detailed in Section 1.3.
- Provide the specific detail on how each of the purpose and need factors would be evaluated.

The evaluation criteria were based on WisDOT and FHWA policy, standards, procedures, and/or state-of-the-practice considerations related to each factor. The discussion about the evaluation criteria considered and the reasons for identification are discussed in detail in Appendix F. Updates related to crash data and geometric design deficiencies are not shown in the May 15, 2018 Preferred Alternative Identification Memorandum presented in Appendix F but are captured in this section and other applicable sections of this 2018 LS SEIS (see Appendix F, Pages F-1 and F-2 for more information).

The eight purpose and need factors and fifteen evaluation criteria are shown in Table ES.4-1.

Table ES.4-1 Purpose and Need Factors and Evaluation Criteria[12]

Purpose and Need Factor	Evaluation Criteria
System Linkage and Route Importance	How well does the alternative address truck traffic needs?
	Does the alternative provide system continuity?
Transportation Demand and Regional Economic Importance	How much does the alternative reduce travel time?
	How well does the alternative provide predictable travel?
Legislative and Transportation Planning History	Is the alternative consistent with and/or reflected in local land use and transportation plans?
	Is the alternative consistent with Wis. Stat. § 84.013(3)(ra)?
Existing and Future Traffic Volumes and Resulting Operation	How well does the alternative improve WIS 23 mainline operational efficiency and mobility by meeting desired LOS for a Corridors 2030 Connector Route?
	How well does the alternative provide a reasonable LOS for vehicles trying to access WIS 23 at highly used intersections?
Highway Geometry	How well does the alternative incorporate the appropriate design criteria for the roadway classification?
Access	How well does the alternative reduce the number of hazardous movements (left turns or crossing from sideroads) at public access points through the installation of access restrictions or interchanges?
	How well does the alternative reduce the number of private access points through right of way acquisition?
	Does the alternative designate and preserve land for future access modifications, such as overpasses and interchanges, through official mapping?
Safety	How well does the alternative address WIS 23 mainline safety?
	How well does the alternative address intersection safety?
Accommodations for Nonmotorized Travel	Does the alternative provide accommodations for non-motorized travel?

[12] Table ES.4-1 Purpose and Need Factors and Evaluation Criteria was not included in the May 2018 LS SDEIS.

A summary of the Preferred Alternative Identification is presented as follows.

1. Build Alternatives

For WIS 23, the factors used in the identification of the preferred build alternative include:

- How well the alternative addresses the Project Purpose and Need.
- The magnitude and significance of impacts.
- Public and stakeholder support.

Table ES.4-2 summarizes how well each alternative addresses these factors.

Table ES.4-2 Preferred Alternative Identification[13]

	No-Build Alternative	Passing Lane Alternative	Hybrid Alternative	4 lane On alignment Alternative
Purpose and Need satisfaction				
Number of criteria fully or substantially satisfied	0	4-5	3	14[5]
Number of criteria moderately satisfied	2	1	10	1[5]
Remaining impacts[1]				
Construction costs remaining	$3.8M	$52.2M	$85.7M	$101.4M
Business and farm relocations still needed	0	0	2	2
Right of way still needed	0 ac	58 ac	193 ac	193 ac
Wetlands filled	0	29.9 ac	45.9 ac	51.8 ac
Upland/Woodland	0	5 ac	9 ac	38 ac
New stream crossings[2]	0	1	4	5
Local governmental support letters received in October/November 2017[3]	0	2	2	8
Public support from Oct 12, 2017 meeting comments[4]	0	38	0	629

[1] Much of the right of way for the 4-lane On-alignment Alternative, the Preferred Alternative in the 2014 LS SFEIS, has been purchased and buildings razed. This occurred before the 2014 Record of Decision (ROD) was vacated. These represent sunk costs that are not supposed to influence future actions.
[2] New stream crossings indicate where the Old Plank Trail or a new set of 2-lanes would cross a stream/river. This could be accomplished through bridges or culvert extensions.
[3] Two letters supporting construction of a generic improvement of WIS 23 are attributed to each build alternative.
[4] No written comments received specifically mentioned support for either the No-Build or Hybrid Alternatives.
[5] Updates to geometric design deficiencies resulted in a different number of evaluation criteria being met for 4-lane On-alignment Alternative versus what was included in the May 2018 LS SDEIS. The May 2018 LS SDEIS indicated all 15 evaluation criteria were fully or substantially satisfied by the 4-lane On-alignment Alternative. See Appendix F (Pages F-1 and F-2) for more information.

After the public hearing and availability period on the 2018 LS SDEIS, WisDOT and FHWA reviewed public, agency, local government and tribal input as part of the process to confirm the Preferred Alternative.

The following summary provides the number of public comments received related to the alternatives.

342 Support 4-lane On-alignment Alternative.
13 of 342 - Number of people who support the 4-lane On-alignment Alternative and also mentioned support for corridor preservation.
24 Oppose the 4-lane Alternative.
24 Support Passing Lane Alternative.

[13] Table ES.4-2 Preferred Alternative Identification was not included in the May 2018 LS SDEIS.

7 Oppose Passing Lane Alternative.
1 Support Hybrid Alternative.
1 Oppose Hybrid Alternative.
1 Oppose No-Build Alternative.
8 Support project without specifying a specific alternative.
4 Oppose project without specifying support for No-Build Alternative.

There were 367 public commenters who specifically expressed support for an alternative, and more than 93 percent supported the 4-lane On-alignment Alternative. The local government and public support for each alternative since the public hearing is summarized in Table ES.4-3. See Section 7.3 for detail on local government comments and Section 7.5 for detail on public comments. Consideration of agency input is another important aspect of the alternative selection process used by WisDOT and FHWA. State and federal regulatory agencies concurred with the identified preferred alternative, as detailed in Section 7.4.

Table ES.4-3 Local Government and Public Input Following Public Hearing[14]

	No-Build Alternative	Passing Lane Alternative	Hybrid Alternative	4 lane On alignment Alternative
Local government support letters following the June 19, 2018 public hearing	0	0	0	3
Public support following the June 19, 2018 public hearing[1]	0	24	1	342

[1] Support was from written and verbal comments received at the public hearing as well as from comments submitted during the comment period.

The 4-lane On-alignment Alternative with Corridor Preservation is the Preferred Alternative in this 2018 LS SEIS. It is the same Selected Alternative as in the 2014 LS SFEIS/ROD. While the 2018 decision is the same as in previous documents, the 2018 decision includes consideration of additional alternatives that were not previously fully analyzed, and it reflects overwhelming support for the Preferred Alternative at the public hearing. Reasons for this selection include:

- Of the alternatives evaluated, the 4-lane On-alignment Alternative best fulfills WisDOT's statutory mission and responsibilities:
  - It provides better traffic operations.
  - It provides the most substantial benefit to safety.
- The 4-lane On-alignment Alternative most optimally addresses the Purpose and Need factors compared to the other alternatives.
- The majority of local governmental entities, along with commenting stakeholders, support the 4-lane On-alignment Alternative.

2. Corridor Preservation

The Preferred Alternative includes corridor preservation that designates WIS 23 as a Freeway/Expressway under Wis. Stat. § 84.295(10) and preserves right of way for possible future access modifications (including interchanges, grade separations and cul-de-sacs) at 10 locations as detailed in Section 2.1.E.2.

Reasons for including corridor preservation with the 4-lane On-alignment as an element of the Preferred Alternative include:

- WIS 23 corridor preservation will protect right of way for transportation improvements that are likely to be needed in the future. In preserving these areas for future transportation

[14] Table ES.4-3 Local Government and Public Input Following Public Hearing was not included in the May 2018 LS SDEIS.

improvements, development within those areas can be minimized or avoided, reducing costs for WisDOT.

- WIS 23 corridor preservation, while having some current effect on property owners, will reduce impacts to the property owners in the long term. Without corridor preservation, these property owners may invest in improvements that may later need to be removed or relocated for transportation improvements.
- Implementation of the improvements associated with the WIS 23 corridor preservation measures is likely to occur within the planning horizon (30 years from Wis. Stat. § 84.295(10) official mapping).
- WIS 23 corridor preservation provides information useful to local property owners and governments as they make property acquisition and development approval decisions.
- WIS 23 corridor preservation measures will facilitate future access reductions. Without preserving right of way needed for future access roads, development could make access removal prohibitively expensive. This in turn would diminish the future safety and mobility of the corridor.
- Designating WIS 23 as an expressway will provide cost savings in the future as right of way can be purchased before development can occur, will allow for fully conceptualized design concepts to be developed and approved, and will help local units of government in planning their development along the corridor.[15]

In the future, if WisDOT determines that transportation improvements are needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs.

ES.5 TRAFFIC

A. Traffic Forecasts

The traffic forecasting results presented in the main body of this 2018 LS SEIS (the formal National Environmental Policy Act [NEPA] study) were derived using an updated version of the Northeast Region Travel Demand Model (NERTDM) and recent traffic counts to develop consistent forecasts for the No-Build Alternative and each of the build alternatives. Per WisDOT Traffic Forecasting Section policy (as detailed in the May 2018 Transportation Planning Manual), a separate no-build forecast analysis was conducted based on the Traffic Analysis Forecasting Information System (TAFIS), standard regression modeling, and the NERTDM to establish reasonableness of the no-build forecast results presented in the formal NEPA study. Figure ES.5-1 illustrates how WisDOT developed and used traffic forecasts for WIS 23.

[15] WisDOT Facilities Development Manual 11-7-40-1.2, Accessed May 11, 2018.

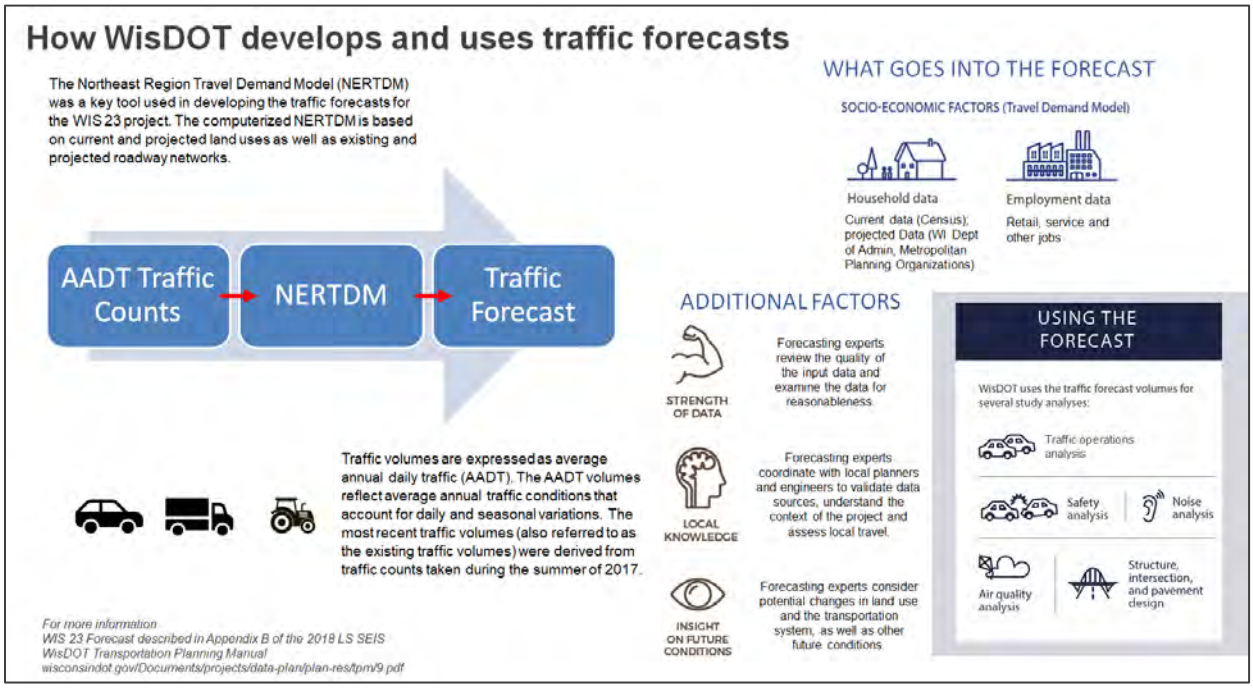

Figure ES.5-1 Traffic Forecasting Process[16]

Appendix B provides a more detailed explanation of the traffic forecasting procedures and results.

Once the NERTDM no-build forecast was developed, WisDOT constructed the alternatives in the NERTDM to analyze the build alternatives. Network changes were coded in the model to develop traffic forecasts for the build alternatives including the Passing Lane Alternative, Hybrid Alternative, and 4-lane On-alignment Alternative. The network changes showed modest capacity increases and access changes that affected traffic volumes illustrated in the Passing Lane Alternative. The Hybrid Alternative and 4-lane On-alignment Alternative showed larger traffic effects due to greater capacity increases and additional access improvements. The Hybrid and 4-lane On-alignment Alternatives attracted more traffic from the local system than the No-Build and Passing Lane Alternatives. Figure ES.5-2 shows the WIS 23 corridor 2040 forecasts for each of the alternatives being considered.

[16] Figure ES.5-1 Traffic Forecasting Process was not included in the May 2018 LS SDEIS.

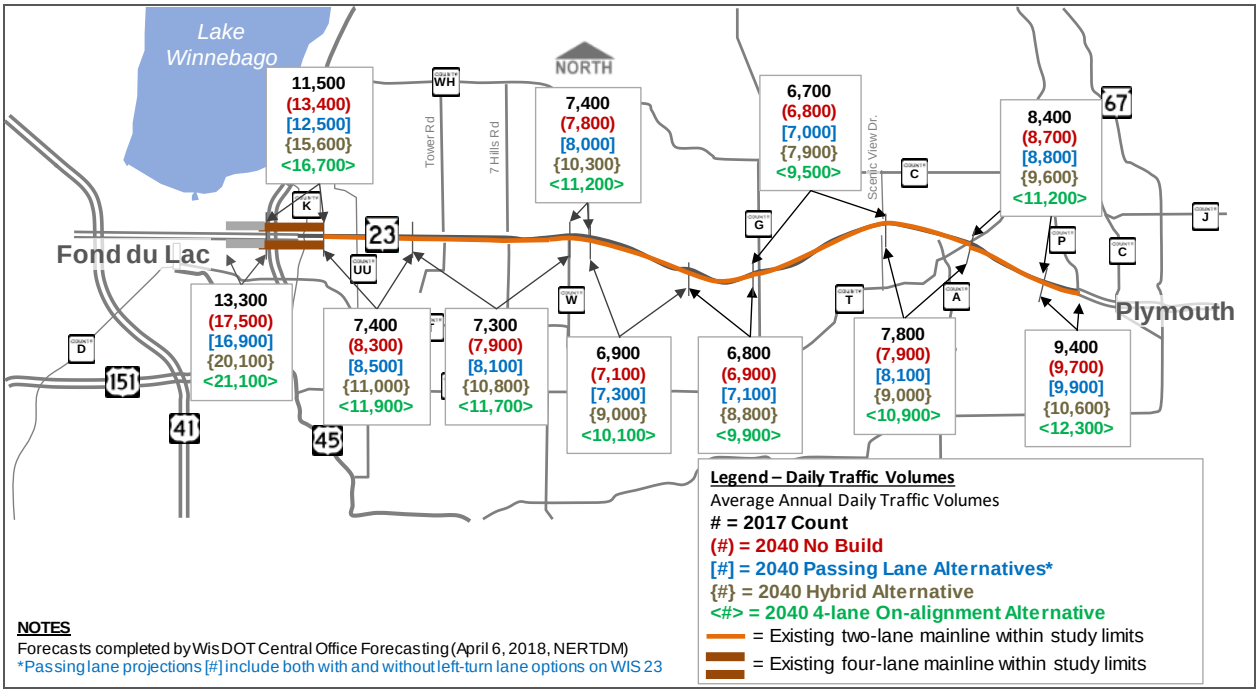

Figure ES.5-2 2040 Traffic Forecast Volumes for Alternatives

B. Operational Analysis

WisDOT performed an operational analysis for each alternative using Highway Capacity Software (HCS). Appendix A contains two memoranda describing the inputs and methodology used for the operational analysis. WIS 23 is a Corridors 2030 Connector route in the *Connections 2030 Statewide Long-Range Transportation Plan*. For a Corridors 2030 Connector route, the desirable LOS is C, or at or below the numeric LOS of 4.0 for rural and small urban areas as outlined in the WisDOT's FDM.[17] These thresholds are based on a balance of social, environmental, and dollar costs and may not match with every traveler's perception of when congestion warrants roadway improvements.[18]

Tables ES.5-1 and ES.5-2 show the operational analyses for the WIS 23 mainline. The tables divide the corridor into two sections because the 2017 volumes are slightly higher east of County G. As mentioned in Section ES.3, the 2017 operations analysis accounts for traffic variations within the peak hour. See Section 2.7.B for more discussion on the operational analysis.

Table ES.5-1 Alternative Operations–County UU to County G[19]

	No-Build Alternative		Passing Lane Alternative Without Left Turn Lanes		Passing Lane Alternative With Left Turn Lanes		Hybrid Alternative		4 lane On alignment Alternative	
	EB	WB	EB	WB	EB	WB	EB*	WB*	EB*	WB*
LOS 2017	D	D	2017 values are not shown for the Passing Lane, Hybrid, and 4-lane On-alignment Alternatives since 2017 represents an existing condition.							
LOS 2040	D	D	C	C	C	C	A	A	A	A

*4-Lane Highway Analysis

[17] Facilities Development Manual 11-5-3.2.1 Congestion and Facility LOS. Accessed March 23, 2018

[18] As mentioned, the tables show the 2040 LOS using fully uniform peaking characteristics. See footnote in Section ES.3.

[19] See Appendix A for two memoranda detailing the inputs and methodology used for the mainline operations analysis. For Table ES.5-1 and ES.5-2, 2017 values are not shown for the Passing Lane, Hybrid, and 4-lane On-alignment Alternatives since 2017 represents an existing condition. Additionally, the numeric LOS is not shown in alternatives with a 4-lane cross section because the variables in determining LOS are different for 2-lane and 4-lane analyses. More detail on the operations results is included in Section 2 as well as in Appendix A.

Table ES.5-2 Alternative Operations–County G to County P

	No-Build Alternative		Passing Lane Alternative Without Left Turn Lanes		Passing Lane Alternative With Left Turn Lanes		Hybrid Alternative		4-lane On alignment Alternative	
	EB	WB	EB	WB	EB	WB	EB	WB	EB*	WB*
LOS 2017	C	**D**	2017 values are not shown for the Passing Lane, Hybrid, and 4-lane On-alignment Alternatives since 2017 represents an existing condition.							
LOS 2040	C	C	C	C	C	C	**D**	C	A	A

*4-Lane Highway Analysis

ES.6 SAFETY[20]

A. Statewide Average Crash Rates

The WIS 23 crash rate for the entire two-lane portion of the corridor is lower than the statewide average crash rate on similar highways. However, some segments have higher crash rates than statewide average total and KAB (fatal and injury) crash rates. See Section 1.3.G for more discussion and statistics related to the existing crash trends throughout the corridor.

Wisconsin's statewide average crash rates are classified into different roadway peer group categories intended to represent a group of roadway segments throughout the state with similar characteristics (e.g. number of lanes, amount of access, presence of median, etc.). For the WIS 23 build alternatives being evaluated, the statewide average crash rates were used as a tool to compare what type of trends may occur when the facility type is changed with each of the build alternatives. These trends indicate that if WIS 23 is expanded from a 2-lane facility to a 4-lane 65 mph expressway, it is reasonable to assume a reduction in the KAB crash rate with the change in facility type if the characteristics of the facility in the build condition are similar to those included in the statewide average for 65 mph expressways. It should be noted that statewide average crash rates are not exclusively available for 2-lane roadways with passing lanes, therefore the effect of adding passing lanes in the Passing Lane and Hybrid Alternatives is not fully captured in this comparison. Using the statewide average crash rate as a basis of comparison for the alternatives indicates that the 4-lane On-alignment Alternative may provide a substantial benefit to safety along WIS 23. See Section 2.8.A for more information regarding statewide average crash rate comparisons.

B. Countermeasures

Safety improvements are often termed countermeasures because they counter specific safety issues. WisDOT frequently considers and incorporates countermeasures in highway improvements to address safety issues. Two references that provide guidance on countermeasures to existing crash problems are the *2010 Highway Safety Manual*, published by American Association of State Highway and Transportation Officials (AASHTO);[21] and the *2008 Desktop Reference for Crash Reduction Factors*[22] published by FHWA and based on report FHWA-SA-08-011. Information from these texts is referenced in this LS SEIS to provide an understanding of the potential effectiveness of the countermeasures being incorporated in the build alternatives addressed in this LS SEIS.

All of the build alternatives include safety countermeasures that address crash types to varying degrees. The 4-lane On-alignment Alternative includes safety countermeasures for all types of crashes experienced on WIS 23. Approximately half of the KAB crashes can be tied to vehicles crossing the

[20] This section has been updated to reflect crash data that became available after the publication of the May 2018 LS SDEIS and to provide additional detail in response to submitted comments regarding safety considerations of each alternative, which were previously discussed in Appendix F of the May 2018 LS SDEIS.

[21] *2010 Highway Safety Manual*, (American Association of State Highway and Transportation Officials, First Edition, 2010, http://www.highwaysafetymanual.org/Pages/default.aspx)

[22] *Desktop Reference for Crash Reduction Factors,* Report Number FHWA-SA-08-011; Bahar, Geni; Masliah, Maurice; Wolff, Rhys; Park, Pete; U.S. Department of Transportation, Federal Highway Administration (FHWA), Office of Safety; http://safety.fhwa.dot.gov/tools/crf/resources/fhwasa08011/

centerline and either colliding with another vehicle or departing the roadway altogether. Medians, a safety countermeasure to these types of crashes, address head-on and opposite direction sideswipe crashes. Other measures included added lanes, left-turn lanes, wider shoulders, and various intersection treatments. See Section 2.8.B for more information regarding specific countermeasures included with each of the build alternatives.

The 4-lane On-alignment Alternative includes more safety countermeasures than the other alternatives. The safety countermeasure analysis, combined with the relative comparison between statewide average crash rates between different facility types, indicates that the 4-lane On-alignment Alternative may provide the most substantial benefit to safety along WIS 23 of the alternatives considered in this LS SEIS.

ES.7 ENVIRONMENTAL IMPACTS

Environmental impacts are identified for each alternative. The impact analysis reviewed the following: economic and community/residential impacts; air and noise effects; farmland impacts; residential and business relocations; upland habitat impacts; wetlands, streams, lakes, and floodplains impacted; erosion control and potential stormwater impacts; endangered species impacted; potential impacts to archaeological and historical sites that may be eligible for the National Register of Historic Places (NRHP); locations of possibly contaminated sites; public and private access points; estimated right of way required; public input; and project costs.

A detailed discussion of environmental consequences is provided in Section 4.0. There have been several updates from that provided in the 2014 LS SFEIS. These include the following:

- The impact evaluation is updated to reflect the Passing Lane and Hybrid Alternatives that have been brought forward for detailed evaluation.
- Much of the right of way for the 4-lane On-alignment Alternative (the Preferred Alternative in the 2014 LS SFEIS) has been purchased and buildings razed based on the decisions in the 2010 FEIS and the 2014 LS SFEIS. The total environmental impacts under each resource category before acquisition are shown and considered in the discussion of impacts resulting from each alternative. The amount of land that has already been purchased is also presented.
- Since the release of the 2014 LS SFEIS, there have been species removed and added to the Wisconsin and Federal threatened and endangered species lists.
- Since the release of the 2014 LS SFEIS, the Transportation Construction General Permit (TCGP) is in effect.
- Since the release of the 2014 LS SFEIS, additional hazardous materials were identified in the corridor.
- Since the release of the 2014 LS SFEIS, demographic data has been updated.
- The 2014 LS SFEIS included a Section 4(f) *de minimis* finding for the Old Wade House State Park. The property is no longer a state park and is called the Wade House Historic Site. WDNR cleared Land and Water Conservation Fund (LWCF) interests for the purpose of WIS 23 reconstruction and Section 6(f) replacement lands are not required.

The tables summarizing the impacts associated with the No-Build, Passing Lane, Hybrid, and 4-lane On-alignment Alternatives have been revised since the 2018 LS SDEIS. Changes within the tables include dividing the original Alternative Comparison Matrix into two tables for readability. Cost information has been reorganized to clarify the costs expended prior to and after vacating the 2014 ROD. Costs for all alternatives have been updated. Clarifications for land impacts have been made and these include defining the acreage purchased prior to vacating the 2014 ROD that was needed for right of way, and the acreage not needed for right of way. Finally, the Corridor Preservation Comparison table was clarified to include the acreage purchased prior to vacating the 2014 ROD and needed for Wis. Stat. § 84.295(10) mapping.

Table ES.7-1a and ES.7-1b summarize the impacts associated with the No-Build, Passing Lane, Hybrid, and 4-lane On-alignment Alternatives.

Table ES.7-1a summarizes project costs. Costs provided show the design, real estate acquisition, utility relocation, and construction costs expended for the 4-lane On-alignment Alternative both before and after the 2014 ROD was vacated. After the 2014 ROD was vacated, WisDOT resurfaced WIS 23 in Fond du Lac County from 7 Hills Road to Division Road; the costs expended after vacating the 2014 ROD and through August 2018 include the resurfacing project cost. No-Build construction costs include active and programmed WIS 23 resurfacing projects in Fond du Lac County (US 151 to County UU) and Sheboygan County (Division Road to County P). The table also designates remaining costs to complete the improvements associated with each alternative in Fiscal Year (FY) 2019 dollars and year of expenditure (YOE) dollars. Table ES.7-1b summarizes the land and relocation impacts associated with the No-Build, Passing Lane, Hybrid, and 4-lane On-alignment Alternatives. It also designates how much acreage is needed based on the existing right of way prior to 2010, as well as how much has been purchased since 2010 but prior to the 2014 ROD being vacated. In some instances, more land was purchased than was needed because not purchasing the land would leave an uneconomic remnant. This land is considered excess right of way (see Figures 2.9-1 through -44).

Some of the right of way previously purchased for the 4-lane On-alignment Alternative is not required for the Passing Lane Alternative or the Hybrid Alternative. However, portions of that right of way will be part of the corridor preservation area associated with the Passing Lane and Hybrid Alternatives.

The WisDOT expenditures for right of way already acquired were not considered in the identification of the Preferred Alternative since they are a sunk cost.[23] The land could be resold to abutting landowners, but the human cost of relocations and the cost of razing buildings is irretrievable. Additionally, since no construction has taken place, impacts to natural and physical environment resources within the already acquired right of way have not occurred nor has mitigation for potential impacts progressed beyond the conceptual evaluation stage other than the Section 6(f) land conversion and boundary update.

[23] A sunk cost is a cost that WisDOT has incurred, and which it can no longer recover, or has great difficulty recovering. See Appendix F, Section 6, for more detail on sunk costs.

Table ES. 7-1a Alternative Comparison Matrix - Costs[24]

		UNIT	No-Build Alternative	Passing Lane Alternatives[1]	Hybrid Alternative	4-lane On-alignment Alternative
Road Length		Miles	19.1	19.1	19.1	19.1
COST						
Costs expended prior to vacating 2014 ROD	Design	Millions $	9.1			
	Real Estate	Millions $	19.1			
	Utility	Millions $	0.0			
	Construction	Millions $	1.7			
	Total	Millions $	**29.9**			
Costs expended after vacating 2014 ROD and through August 2018	Design	Millions $	2.5			
	Real Estate	Millions $	0.8			
	Utility	Millions $	0.4			
	Construction	Millions $	2.5			
	Total	Millions $	**6.2**			
Total costs expended through August 2018	Design	Millions $	11.6			
	Real Estate	Millions $	19.9			
	Utility	Millions $	0.4			
	Construction	Millions $	4.2			
	Total	Millions $	**36.1**			
Costs remaining (FY 2019 dollars)	Design	Millions $	0.3	6.3	4.1	2.8
	Real Estate	Millions $	0.0	1.6	5.6	5.6
	Utility	Millions $	0.0	3.0	4.6	4.6
	Construction	Millions $	3.8	52.2	85.7	101.4
	Total	Millions $	4.1[2]	63.1	100.0	114.4
Total Project Costs (FY 2019 dollars)		Millions $	**40.2**	**99.2**	**136.1**	**150.5**
Total Project Costs (Year of Expenditure)[3]		Millions $	**40.2**	**100.7**	**138.1**	**153.1**

[1] Passing Lane impacts are presented using the higher impact option: Passing Lane Alternative with Left-Turn Lanes.

[2] No-Build construction costs include active and programmed WIS 23 resurfacing projects in Fond du Lac County (US 151 to County UU) and Sheboygan County (Division Road to County P).

[3] "Year of Expenditure" is 2019-2023.

[24] Table ES.7-1a Alternative Comparison Matrix - Costs was not included in the May 2018 LS SDEIS.

Table ES.7-1b Alternative Comparison Matrix- Land, Relocations, and Other Impacts

	UNIT	No-Build Alternative	Passing Lane Alternatives[1]	Hybrid Alternative	4-lane On-alignment Alternative
Area Converted to Highway R/W for Alternative					
Cropland and Pasture needed for R/W	Acres	0	24	171	218
- Purchased prior to vacating 2014 ROD and needed for R/W	Acres	0	6	119	119
- Remaining to be purchased for needed R/W	Acres	0	18	99	99
- Purchased prior to vacating 2014 ROD but not needed for R/W (comprised of either excess R/W[4] or wetland mitigation acres)	Acres	318	312	199	199
Wetland Area needed for R/W	Acres	0	5	21	26
- Purchased prior to vacating 2014 ROD and needed for R/W	Acres	0	3	10	15
- Remaining to be purchased for needed R/W	Acres	0	2	11	11
- Purchased prior to vacating 2014 ROD but not needed for R/W (comprised of either excess R/W[4] or wetland mitigation acres)	Acres	30	27	20	15
Woodland/Upland Area to R/W	Acres	0	5	9	38
- Purchased prior to vacating 2014 ROD and needed for R/W	Acres	0	3	5	34
- Remaining to be purchased for needed R/W	Acres	0	2	4	4
- Purchased prior to vacating 2014 ROD but not needed for R/W (comprised of either excess R/W[4] or wetland mitigation acres)	Acres	44	41	39	10
Other Area needed for R/W[5]	Acres	0	45	120	128
- Purchased prior to vacating 2014 ROD and needed for R/W	Acres	0	9	41	49
- Remaining to be purchased for needed R/W	Acres	0	36	79	79
- Purchased prior to vacating 2014 ROD but not needed for R/W (comprised of either excess R/W[4] or wetland mitigation acres)	Acres	136	127	98	87
Total Area needed for Highway R/W	Acres	0	79	321	410
Total Area Already Purchased for Highway R/W[6]	Acres	528	528	528	528
Total Area Still Needed for Highway R/W	Acres	0	58	193	193
Excess R/W[4] and Wetland Mitigation					
Excess R/W purchased prior to vacating 2014 ROD and not required for Alternative	Acres	369	348	241	152
Wetland Mitigation	Acres	159	159	159	159
Relocations					
Total Residential Relocations needed	Number	0	12	28	30
- Residences relocated prior to vacating 2014 ROD	Number	30	30	30	30
- Residential Relocations where buildings were razed	Number	27	27	27	27
- Residential Relocations Still Needed	Number	0	0	0	0
Total Business Relocations Required (Not Including Farms)	Number	0	0	4	4
- Business relocated prior to vacating 2014 ROD	Number	3	3	3	3
- Business Relocations where buildings were razed	Number	3	3	3	3
- Business Relocations Still Needed	Number	0	0	1	1
Total Farm Relocations Required (One or more farm buildings)	Number	0	6	13	18
- Farms relocated prior to vacating 2014 ROD	Number	17	17	17	17
- Farm Relocations where buildings were razed	Number	16	16	16	16
- Farm Relocations Still Needed	Number	0	0	1	1
Farms Severed	Number	0	1	5	5
Other Impacts					
Eligible Historic Structures/Archeological Sites identified	Yes/No	Yes	Yes	Yes	Yes
Section 106 MOA Required	Yes/No	No	Yes	Yes	Yes
Section 4(f) Evaluation Required	Yes/No	No	Yes	Yes	Yes
Section 6(f) Land Conversion Required	Yes/No	No	No[7]	No[7]	Yes
Floodplain Encroachment	Yes/No	No	Yes	Yes	Yes
Total Wetlands to be Filled (includes wetlands in existing and new R/W)	Acres	0	29.9	45.9	51.8
Stream Crossings	Number	3	3	3	3
Threatened/Endangered Species	Yes/No	No	Yes	Yes	Yes
Noise Analysis Required	Yes/No	No	Yes	Yes	Yes
Receptors Impacted in the design year	Number	44	ND[8]	ND[8]	47
Contaminated Sites	Number	0	4	6	6

[4] Excess right of way is a result of parcels purchased because they have uneconomic remnants or are land-locked parcels. The purchase of right of way and excess right of way is consistent with normal procedures and is typical for this type of project.

[5] Other Area includes: Single- and Multi-Family Residential, Commercial, Industrial, Community, Institutional, Manufacturing, Mining, Retail Trade, Parks/Recreation, Undeveloped, and Transportation.

[6] Actual surveyed amount is 530 acres between excess right of way and wetland mitigation. Value shown represents the approximate amount calculated using GIS parcel line files, not surveyed right of way lines.

[7] While technically not required, the land conversion has already taken place. Correspondence with National Park Service indicates they expect the provisions of the 6(f) conversion agreement to be honored through the process.

[8] ND - Not Determined. The traffic noise analysis in the 2014 LS SFEIS modeled the 4-lane On-alignment Alternative and shows the worst case situation compared to the Passing Lane and Hybrid Alternatives. The Passing Lane and the Hybrid Alternatives (in Sheboygan County) would have a larger separation distance between the roadway traffic and the receptor and therefore the same or fewer receptors impacted in the design year.

Corridor preservation seeks to preserve right of way for transportation improvements that are likely to be needed in the future. The preservation most often takes the form of official mapping by WisDOT [Wis. Stat. § 84.295(10)]. In the future, if WisDOT determines that transportation improvements are needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs.[25]

Table ES.7-2 lists the resources, land types, residences, and businesses within the corridor preservation area. These resources are not impacted by the act of preservation, except that property owners wishing to erect or alter a structure within that mapped right of way must give WisDOT a 60-day notice before beginning that construction. If WisDOT receives a notice, they will either acquire the property or approve the construction to move forward. If approval is given and in the future WisDOT determines transportation improvements are needed within the preserved area, the property owner will be compensated as part of the normal WisDOT acquisition process. The statute also states that if notice is not given to WisDOT, compensation will not be made by WisDOT for structure improvements occurring within the corridor preservation area. In the future, if WisDOT determines that transportation improvements are needed within these preserved areas, subsequent environmental documentation would be prepared to evaluate a range of alternatives and associated impacts and costs.

Table ES.7-2 Corridor Preservation Comparison

	UNIT	Corridor Preservation associated with Passing Lane Alternatives [1]	Corridor Preservation associated with Hybrid Alternative [2]	Corridor Preservation associated with 4-lane On-alignment Alternative [3]
Land Types within Corridor Preservation Limits				
Cropland and Pasture	Acres	244	97	50
Wetland Area	Acres	22	6	1
Woodland/Upland Area	Acres	40	36	7
Other Area [4]	Acres	101	26	18
Total Land Required for Mapping/Corridor Preservation	Acres	**407**	**165**	**76**
Purchased prior to vacating 2014 ROD and needed for 84.295(10) Mapping	Acres	196	90	1
Area Still Needed for 84.295(10) Mapping	Acres	211	75	75
Excess R/W[5] and Wetland Mitigation				
Excess R/W purchased prior to vacating 2014 ROD and not required for Alternative	Acres	152		
Wetland Mitigation	Acres	159		
Potential Restriction of Property Improvement (Relocations)[6]				
Residences within Corridor Preservation Area	Number	21	5	3
Residences within Corridor Preservation Area relocated prior to vacating 2014 ROD	Number	18	2	0
Residential relocations where buildings were razed	Number	17	2	0
Businesses within Corridor Preservation Area	Number	6	2	2
Businesses within Corridor Preservation Area relocated prior to vacating 2014 ROD	Number	3	0	0
Business relocations where buildings were razed	Number	3	0	0
Farms within Corridor Preservation Area (One or more farm buildings)	Number	16	9	4
Farm Relocations completed prior to vacating 2014 ROD	Number	11	5	0
Farm Relocations where buildings were razed	Number	10	4	0
Other Impacts (if potential future improvements are implemented)				
Wetlands within Corridor Preservation Area (includes wetlands in existing and new R/W)	Acres	24.1	8.1	2.2

[1] Corridor Preservation consists of preserving the right of way needed to convert WIS 23 to a 4-lane facility. It also includes preserving right of way needed for future access modifications and improvements for possible future overpasses and interchanges.

[2] Corridor Preservation consists of preserving the right of way needed to convert WIS 23 to a 4-lane facility from County G to County P. It also includes preserving right of way needed for future access modifications and improvements for possible future overpasses and interchanges.

[3] Corridor Preservation consists of preserving right of way needed for future access modifications and improvements for possible future overpasses and interchanges.

[4] Other Area includes: Single- and Multi-Family Residential, Commercial, Industrial, Community, Institutional, Manufacturing, Mining, Retail Trade, Parks/Recreation, Undeveloped, and Transportation.

[5] Excess right of way is a result of parcels purchased because they have uneconomic remnants or are land-locked parcels. The purchase of right of way and excess right of way is consistent with normal procedures and is typical for this type of project.

[6] Right of way impacts have occurred on the project. These impacts were not to facilitate mapping, but for the construction of the previously identified selected alternative under the 2014 LS SFEIS and ROD.

[25] See Section 2 for more detail.

ES.8 OTHER ACTIVITIES REQUIRED

Because a WIS 23 construction project was previously awarded based on the 4-lane On-alignment Alternative, some project impacts and environmental compliance activities have already occurred. Specifically:

- All 30 of the residence relocations, 3 of the 4 business relocations, and 17 of the 18 farm relocations have already occurred prior to the 2014 ROD being vacated. WisDOT has purchased land for compensatory wetland mitigation sites and has plans for their conversion.
- Land was transferred to the KMSF-NU to compensate for right of way needed for WIS 23 to satisfy Section 6(f) conversion requirements.
- Previously applicable wetland permits and Section 401 water quality certifications were obtained for the corridor.
- Some pre-construction stipulations associated with the Section 106 Memorandum of Agreement have been fulfilled.

With the 4-lane On-alignment Alternative with Corridor Preservation as the Selected Alternative in this LS SFEIS/ROD, the following activities will be required.

- Relocation Assistance Plans will be revised to address any remaining farms or businesses that are required.
- New or amended Section 404 permits (wetland) and water quality certifications will need to be issued prior to project construction.
- A grade-separated structure for the Ice Age Trail will need to be constructed to fulfill agreements with the National Park Service associated with the Section 6(f) conversion request.
- Remaining stipulations of the Section 106 Memorandum of Agreement will need to be fulfilled. This includes construction site monitoring in certain areas and public interpretation measures associated with the Sippel Site.
- A Transportation Construction General Permit (TCGP) will need to be issued prior to project construction.

Mitigation commitments for affected Section 4(f) and Section 6(f) properties are included in this document in Section 5. A summary of project commitments is provided in Section 6. Project development will be monitored by FHWA and WisDOT to ensure conformance with the mitigation commitments made in this LS SFEIS/ROD prior to the authorization of federal-aid highway funds for construction. The project team will refer to Section 6, Measures to Minimize Adverse Effects, of this LS SFEIS/ROD during the project development process to ensure commitments are adequately reflected in the project plans and specifications and that the commitments are provided to project managers, leaders and inspectors to aid in monitoring during construction.

ES.9 REGULATORY COMPLIANCE

The planning, agency coordination, public involvement, and impact evaluation for the project have been conducted in accordance with the NEPA, the Clean Water Act, Executive Orders regarding wetland and floodplain protection, the Fish and Wildlife Coordination Act, the Migratory Bird Treaty Act, the Executive Order on Environmental Justice 12898, the National Historic Preservation Act of 1966, and other state and federal laws, executive orders, policies, and procedures for environmental impact analyses and preparation of environmental documents.

ES.10 PUBLIC COMMENTS AND AGENCY COORDINATION

Since the issuance of the Notice of Intent to Prepare a LS SEIS on August 29, 2017, WisDOT has had three agency meetings, one public involvement meeting, one local government officials meeting, one workshop to determine indirect and cumulative effects, and one public hearing. A summary of public and agency comments on the 2018 LS SEIS and responses from WisDOT and FHWA appears in Section 7.

- Of the over 700 comments received during the comment period following the October 12, 2017 public involvement meeting, 615 comments supported the 4-lane On-alignment Alternative and 24 comments supported the Passing Lane Alternative. The remaining comments did not mention support of any particular alternative.
- Of the 481 people that submitted comments during the comment period following the June 19, 2018 public hearing, 342 supported the 4-lane On-alignment Alternative, 24 comments supported the Passing Lane Alternative and one comment supported the Hybrid Alternative. Of the submitted comments, 24 comments opposed the 4-lane On-alignment Alternative, 7 comments opposed the Passing Lane Alternative, and one opposed the Hybrid Alternative. Additionally, 4 comments opposed the project without specifying support for the No-Build Alternative.
- Nine local government entities provided letters/resolutions supporting improvements to WIS 23. Eight of the nine letters/resolutions supported 4-lane improvements.

Because this is a limited scope supplemental environmental document, scoping is not required according to 23 CFR 771.130(d). While scoping is not required, WisDOT and FHWA have coordinated with local, state, and federal agencies as well as the public in the preparation of this LS SEIS. These efforts have included:

- An Agency Coordination Meeting October 10, 2017.
- A Local Officials Meeting October 12, 2017.
- A Public Involvement Meeting October 12, 2017.
- An Indirect and Cumulative Effects Workshop with Local Land Use Experts on October 24, 2017.
- A Public Hearing on June 19, 2018.
- An Agency Coordination Meeting on July 19, 2018.
- An Agency Coordination Meeting on August 16, 2018
- Correspondence with State and Federal Agencies.
- Correspondence with Native American Tribes.

This coordination identified issues to be addressed as well as developing the range of alternatives in accordance with 23 CFR 771.123.

FHWA is the federal lead agency for this LS SEIS under the NEPA of 1970. WisDOT is the state lead agency and is preparing the environmental document in consultation with FHWA.

U.S. Army Corps of Engineers (USACE) is the sole cooperating agency for this project. Cooperating agencies are typically federal agencies, other than the lead federal agency (FHWA), which have jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal or reasonable alternative. Cooperating agencies have a higher degree of authority, responsibility, and involvement in the environmental review process.

In cooperation with FHWA, WisDOT has followed the NEPA-404 merger process, which is a unified process for complying with the requirements of NEPA and Section 404 of the Clean Water Act. The NEPA-404 merger process includes concurrence on three decision points: Purpose and Need, Range of Alternatives Carried Forward for Detailed Study, and Preferred Alternative. While the

NEPA-404 merger agreement requires concurrence from USACE, U.S. Environmental Protection Agency (USEPA), and U.S. Fish and Wildlife Service (USFWS), WisDOT chose to seek concurrence from all state and federal resource agencies included in project coordination. WisDOT sent the agencies a series of three letters requesting Concurrence Point 1 (Purpose and Need), Concurrence Point 2 (Range of Alternatives Carried Forward for Detailed Study), and Concurrence Point 3 (Preferred Alternative).

WisDOT has received concurrence from all three NEPA-404 merger agencies for all three concurrence points, and USACE and USEPA identified the Preferred Alternative as the Least Environmentally Damaging Practicable Alternative (LEDPA). As part of the Clean Water Act Section 404 permitting process, USACE and USEPA are required to identify the LEDPA. WisDOT and FHWA typically seek this determination during the NEPA-404 merger process.

WisDOT made efforts to address any agency comments throughout the project and has continued to coordinate with agencies. WisDOT will coordinate with agencies as necessary during final design and construction to implement project commitments. Table 7.4-1 lists the agency correspondence received since the 2014 LS SFEIS. Table 7.4-2 summarizes agency comments received during and after the 2018 LS SDEIS comment period and includes a response (in italics), following each comment. Appendix C contains a copy of the correspondence and the project team responses.